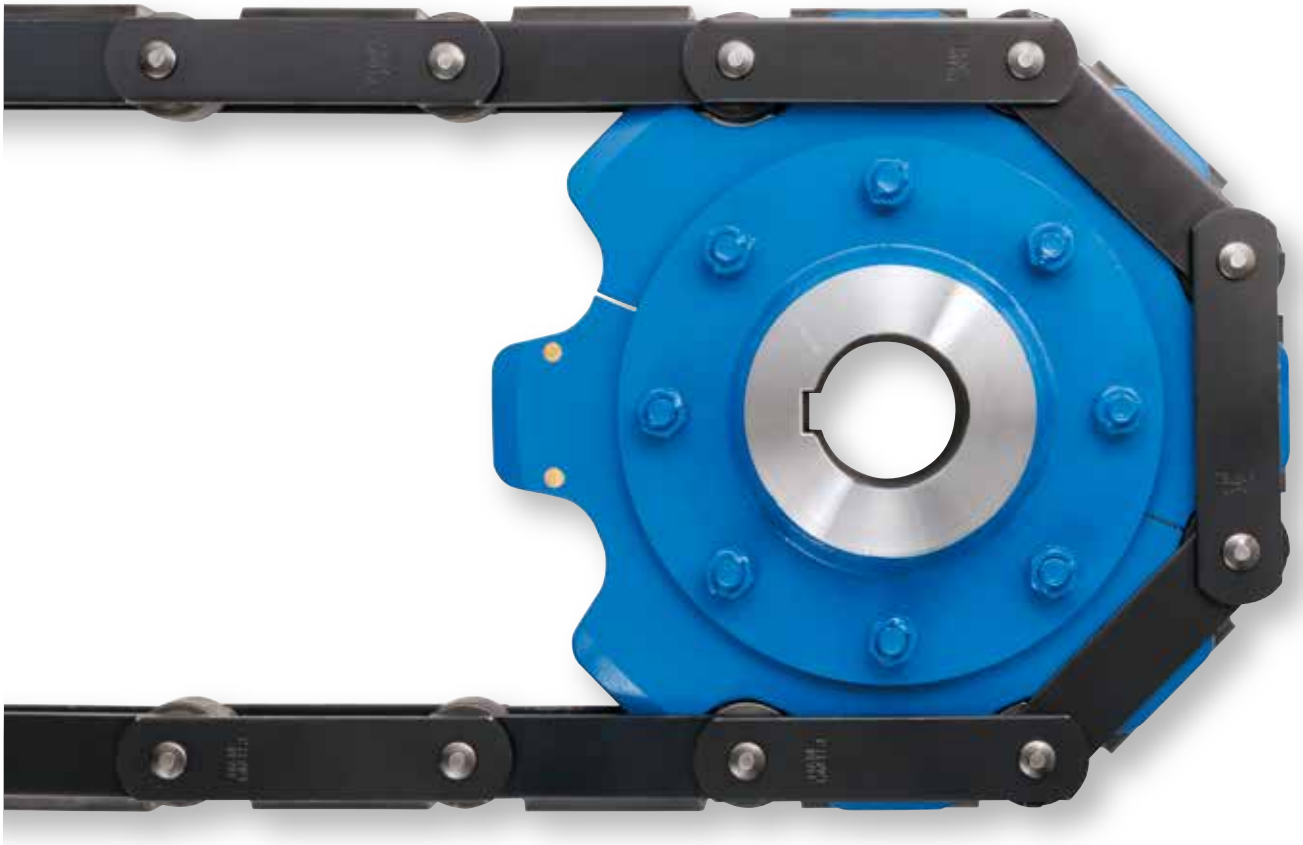
Innovation in Motion
TSUBAKI

TSUBAKI
LARGE SIZE CONVEYOR CHAINS & SPROCKETS

SMART Conveyor Chain



Catalog ver.2

TSUBAKI ECO LINK

3D CAD Download Service Launched

Tsubaki Power Transmission Products Information Site

https://tt-net.tsubakimoto.co.jp/tecs/top/index.asp

Please make use of our engineering support, which includes detailed product information, selection software, usage examples, 2D/3D CAD data, instruction manuals, and various data downloads.

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Screw Lock Link

TSUBAKI ECO LINK p.51–

Screw Lock Link allows safe and fast replacement

- Reduces chain maintenance time
- Same maximum allowable load as the base chain links.
  No reduction in strength.

See a video of Screw Lock Link

Makes work safe

No hammering required.

Reduces production loss

As long as you have spare parts on hand, restoration is fast.

Prevents improper installation

Avoid problems such as poor articulation due to the outer plate pushing in too far.

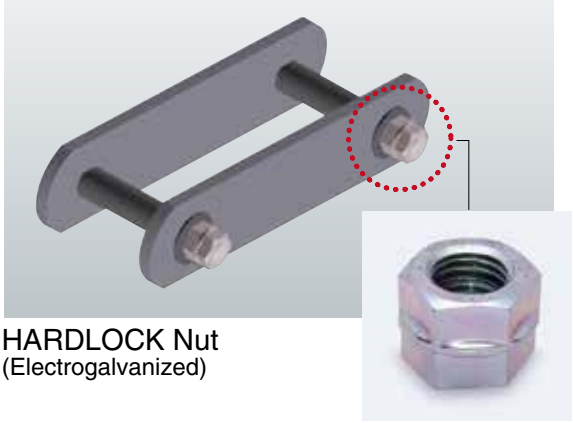
Easy installation

Reduces labor: the only tool needed is a torque wrench.

2 types of nuts available

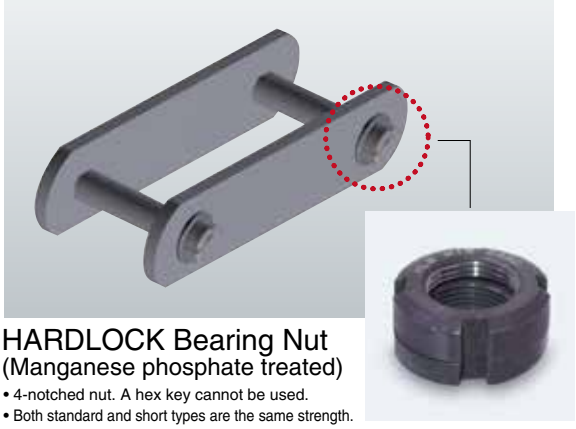
A short type with a minimized pin length is also available.

Standard type



HARDLOCK Nut
(Electrogalvanized)

Short type



HARDLOCK Bearing Nut
(Manganese phosphate treated)

- 4-notched nut. A hex key cannot be used.
- Both standard and short types are the same strength.

Note: Hardlock is a trademark of Hardlock Industry Co., Ltd.

Product Introduction

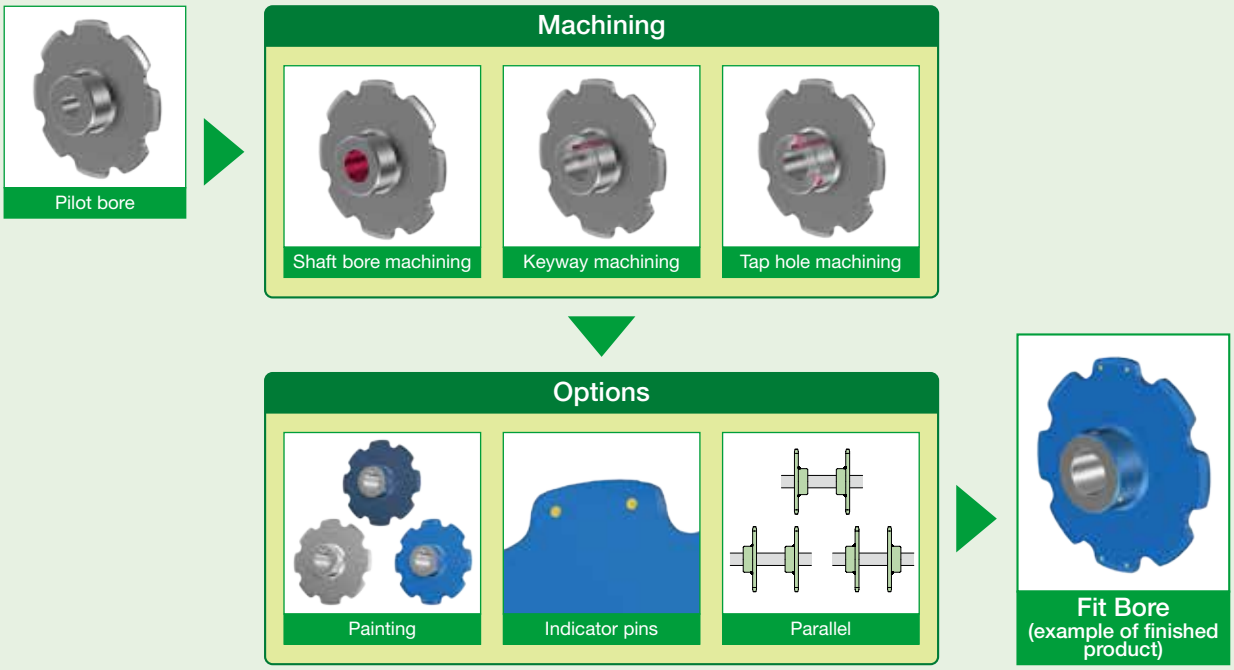
Sprockets for Large Size Conveyor Chains Fit Bore

p.53–

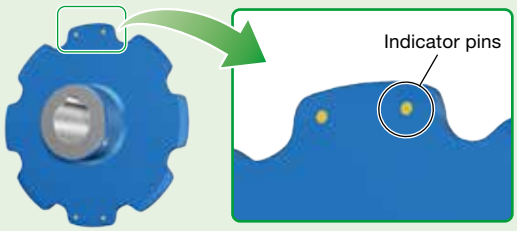
Fit Bore are sprockets with the shaft bores already finished

- Allows for accurate ordering with just the model number
- No drawings are required for processing
- Can be used as-is right after delivery

Machining and options



Indicator pins (optionally available) notify you when the sprocket teeth are nearing their end of life and the sprocket needs replacing.



- ◆ Reductions in inspection time and labor (speedy inspections)
- ◆ Uniform judgement (reliable inspections)
- ◆ Improved safety (safe inspections)

Visit our website

3D CAD data can be found on the **Tsubaki Power Transmission Products Information Site.**
https://tt-net.tsubakimoto.co.jp
Home > Download drawings < Large size conveyor chain

Advanced Models DTA Series / ATA Series / GSA Series / SSA Series

p.15–

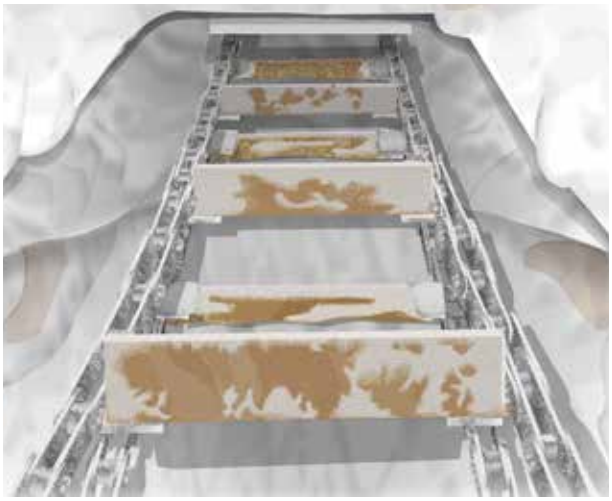
Tsubaki's Advanced Models are a new series of large size conveyor chains. Compared to our basic models, they offer improved wear resistance and support greater maximum loads. Choose our Advanced Models to further boost productivity and reduce running costs.

BASIC MODEL DT Series General-use conveyor chain — Longer life → ADVANCED MODEL DTA Series

Incinerator plant

Scraper conveyor for incinerator ash

- Prevents faulty rotation of rollers
- Reduces abnormal wear of rollers



BASIC MODEL AT Series Heavy-duty conveyor chain — Higher strength, longer life → ADVANCED MODEL ATA Series

Recycling plant

Curved slat conveyor for waste plastic

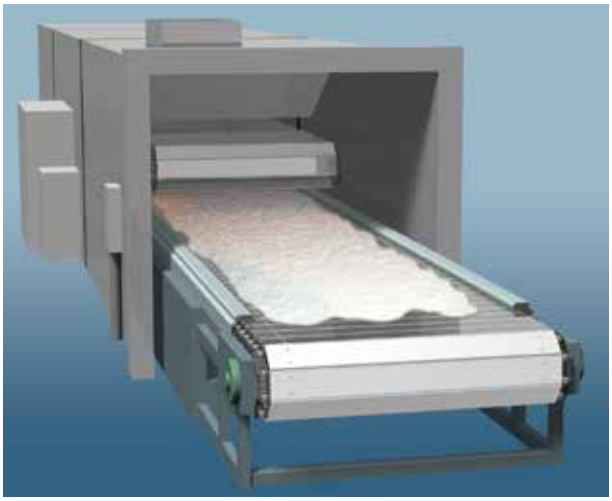
- Allows longer chain life
- Reduces replacement frequency and production costs

BASIC MODEL GS Series Corrosion-resistant conveyor chain — Higher strength, longer life → ADVANCED MODEL GSA Series

Chemical plant

Product conveyor

- Greatly reduces the generation of wear particles from the chain
- Reduces product defects and production losses

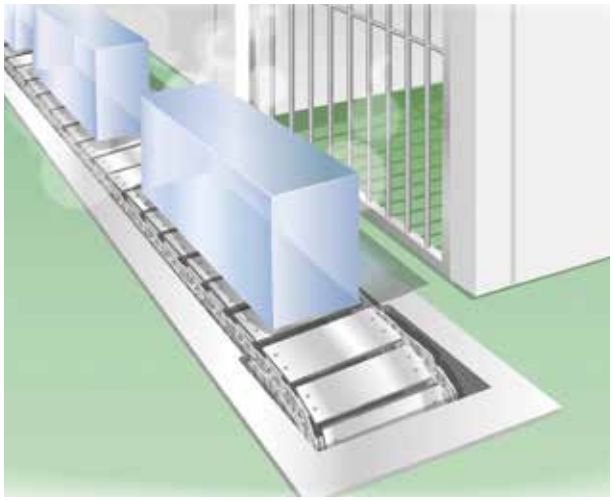


BASIC MODEL SS Series Corrosion-resistant conveyor chain — Longer life → ADVANCED MODEL SSA Series

Food factory

Slat conveyor for ice-making equipment

- The same high corrosion resistance as the SS Series
- Reduces chain replacement frequency



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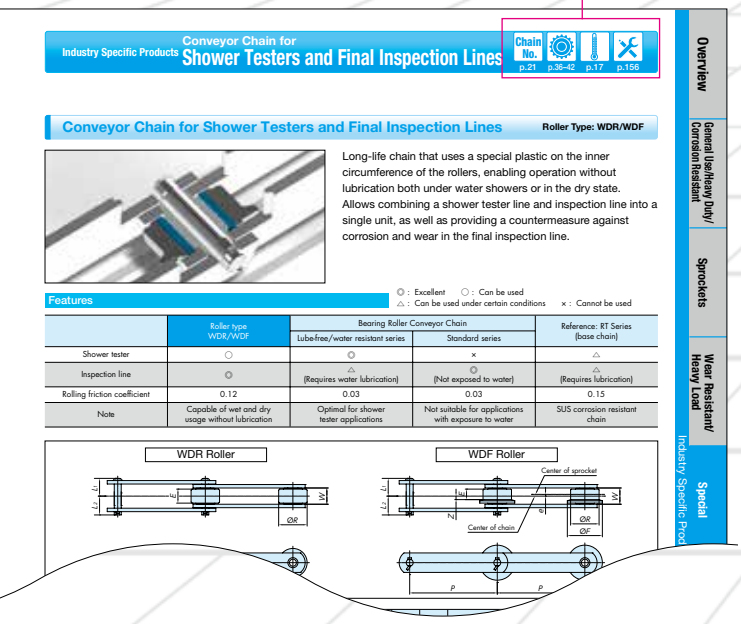

◆ What the pictograms mean

Chain number
Indicates the page explaining the chain number.

Sprockets
Indicates the page showing the corresponding sprockets.

Operating temperature range
Indicates the page showing the corresponding operating temperature range.

Engineering
Indicates the pages on selection, handling, troubleshooting, and more.

Tsubaki Eco Link
The Tsubaki Group cares about the environment. That is why we have established standards for evaluating the environmental friendliness of our products. Only products that meet our exacting guidelines are recognized as eco-products and certified with the Tsubaki Eco Link logo.

Special

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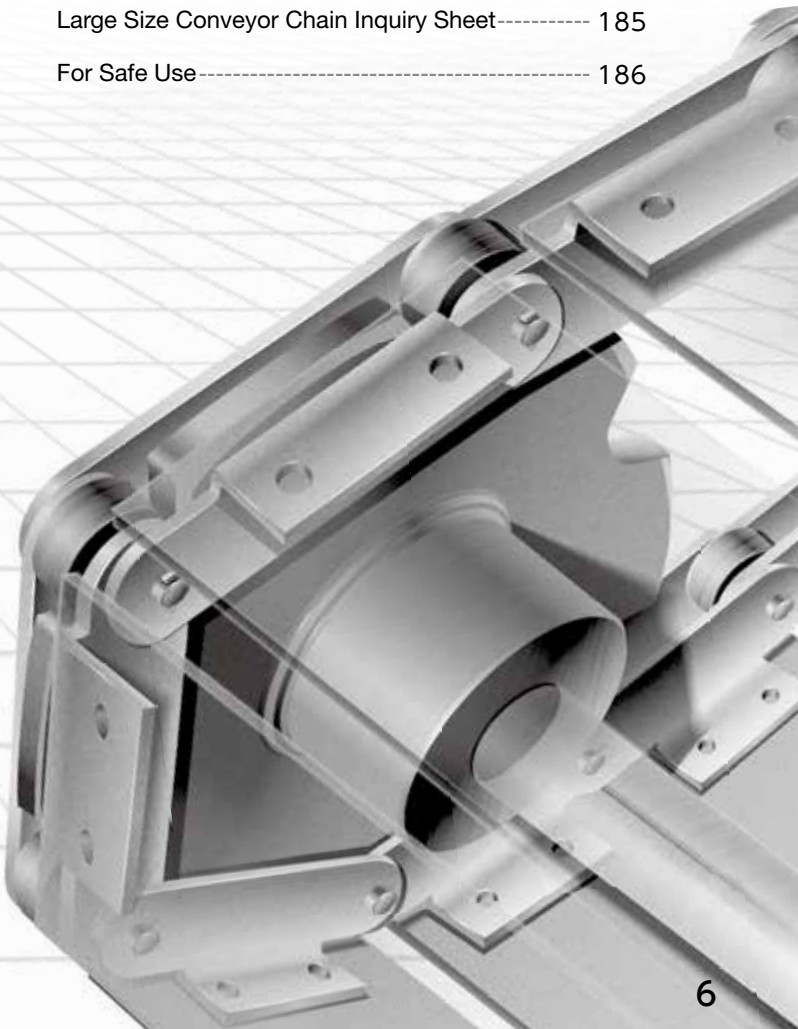
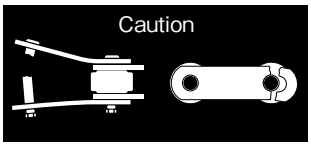


Precautions Before Use

Always read this catalog and make the proper selection before using your Large Conveyor Chain. Ensure that all maintenance personnel are familiar with the related sections.
Values given in this catalog are both in SI International Units and {Gravimetric Units}.
The dimensions given in this catalog are nominal dimensions and may differ from actual dimensions.

Read the Following Before Use



The Large Conveyor Chain is a convenient part of machinery for compact conveyance, but this does not mean it has unlimited life.

1. The conveyor chain is an expendable item requiring periodic checks and replacement.
2. The conveyor chain may ride up on the sprocket or break from wear elongation. Lubrication will help extend the wear life of your chain.
3. Wear between the bushings and the rollers may cause interference between the link plates and guide rails, increasing tension on the chain. This may lead to an increase in motor power consumption or cause chain failure. Avoid this problem with proper lubrication or by using bearing rollers.
4. Excessive tension may cause chain failure. Including inertial forces and other forces when making the proper selection can help avoid this problem.
5. Corrosion and other environmental factors can cause chain failure. Selecting material in light of usage conditions can help avoid this problem.
6. Poor centering and other layout problems can shorten the life of your chain, leading to chain failure. Installing equipment properly can help avoid this problem.
7. In situations where chain failure may pose a danger to human life or major damage to machinery, install the proper safety equipment to ensure against chain failure and potentially dangerous situations.
8. Select a chain based on any existing regulations based on rules or guidelines for chain selection and the maximum allowable load. The chain selected should have an ample amount of both.
9. Widening plate holes, reducing the pin diameter, or heating the chain to make pin insertion and removal easier will remarkably decrease the performance of your chain and lead to accidents.
10. Contact a Tsubaki representative regarding whether a product contains substances restricted for use in specific industries and applications.

Principles for Rationalizing Conveyance

1. Minimize conveyance distance.
2. Maximize conveyor operating rate.
3. Select the appropriate chain.
   Selecting the optimal conveyor type can tie directly into rationalizing conveyance. Read this catalog carefully to select the appropriate type of chain conveyor and rationalize your conveyance situation.

Features and Points for Chain Conveyors

Features

1. Can generally convey items of any shape or size.
2. Can increase applicable range of conveyor length, direction of conveyance, and usage conditions.
3. Conveys accurately with no slippage.
4. Can maintain a high endurance and efficiency.

Points

1. While no slippage is a benefit, it is necessary to select chain in light of shock impact resistance.
2. Fluctuations in speed will result from the mechanical nature of chain and sprocket engagement.

Glossary

1. Maximum Allowable Load

Limit value that takes fatigue fracture and wear into consideration, assuming use under lubricated conditions.
By determining a corrected chain tension based on a selection described in our catalog and using the chain below this value, no anomalies will occur early in operation. However, this does not apply when performance has deteriorated due to use under extreme environmental conditions.

2. Minimum Tensile Strength

Minimum value determined by taking into account past breakage results.
When a given chain breaks under tension, it does not pass Tsubaki standards if it breaks under a load lower than this value.

3. Average Tensile Strength

Tensile strength determined from the calculated strengths of each component, taking into account past results.
When tensile tests are performed, the value at failure may be higher or lower than this number, and thus, this value is not guaranteed.

4. Roller Allowable Load

Typical value that will not cause roller rotational failure or premature wear, assuming use under lubricated conditions.
When selecting, include an extra margin of safety over allowable values according to operating conditions (high speeds, heavy loads, long-term operation) and expected life.

5. Attachment Allowable Load

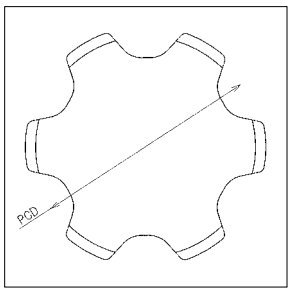
Vertical load that an “A” attachment can accept. When using “K” attachments, calculate this value by doubling the allowable load of the corresponding A attachment.
Depending on the shape and structure of attachments to be installed by the customer, force may be generated that will cause A attachments to twist. Contact a Tsubaki representative if you have any concerns.

6. Total Length Tolerance of Conveyor Chain

The length tolerance of any individual size when subjected to a measured load is –0.25% to +0.25% of the reference length. The reference length is calculated by multiplying the reference pitch (P) by the number of links.

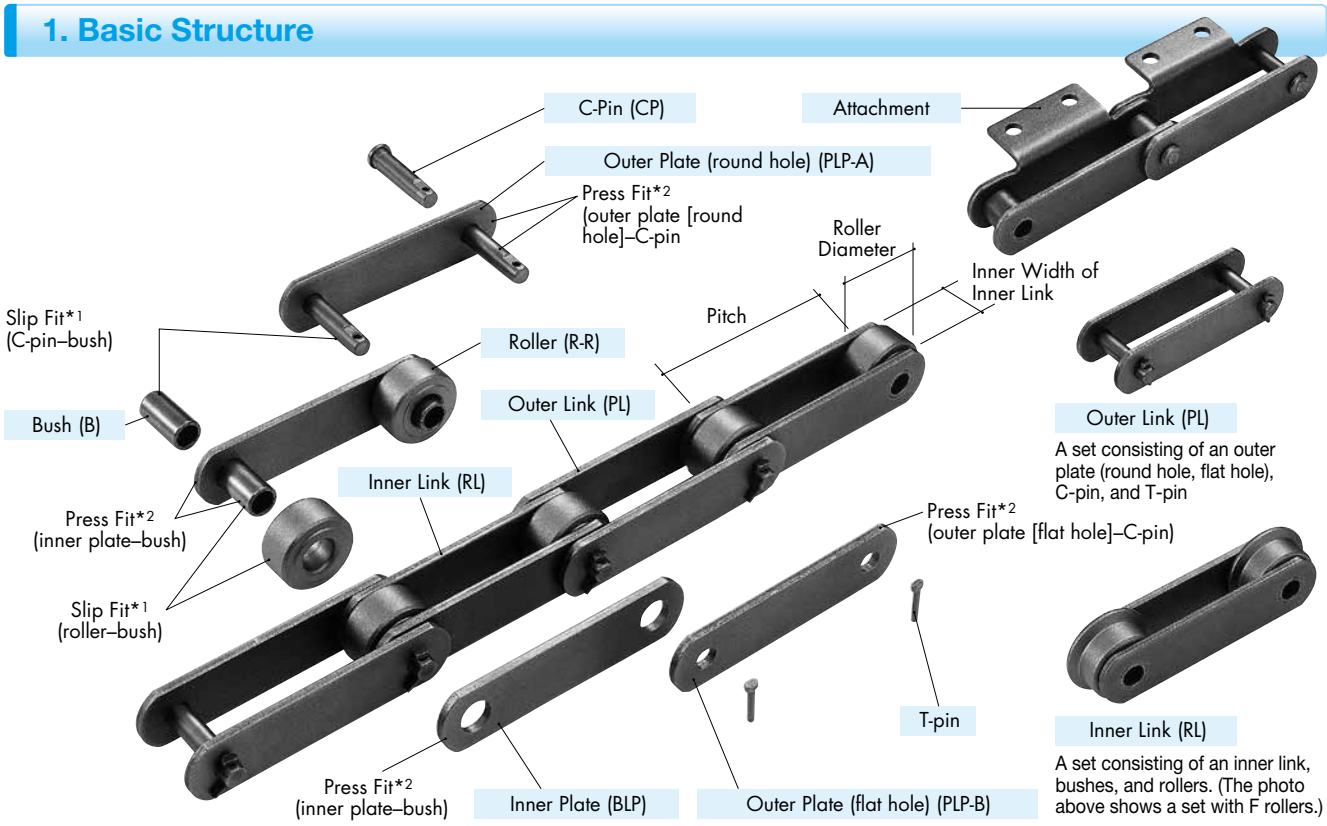
7. Pitch Circle Diameter (PCD)

Diameter of the circle circumscribing the tooth profile pitch of the sprocket.
(JIS B 1812:2015)



Conveyor Chain Construction

1. Basic Structure



Connecting links

- In general, large-size conveyor chains use outside links for the connecting links and the outer plate is press-fitted to the pin.
- For Screw Lock Link (connecting links that require no press-fitting of the connecting link plate and that cause no reduction in strength), please refer to page 51.

The Three Basic Dimensions

The three basic dimensions of conveyor chain are pitch, roller diameter, and inner link inner width. When these dimensions are the same, the chain and sprocket are compatible.

⚠ For Safety

Never weld additional parts onto an assembled chain. Doing so may cause chain kinking or twisting due to plate deformation, further reducing part hardness and leading to embrittlement fracture from the welding heat.

*1 Slip Fit

When the shafts (pins and bushes) and holes are fitted together, there is a continuous loose fit. This is a fit where the range of tolerance for the hole is larger than the range of tolerance for the shaft.

*2 Press Fit

When the shafts (pins and bushes) and holes are fitted together, there is a continuous interferential fit. This is a fit where the range of tolerance for the hole is smaller than the range of tolerance for the shaft.

◆ Plate (PLP-A, PLP-B, BLP)

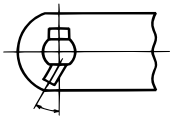
The plate mainly receives the tensile load along the chain's direction of travel while receiving vertical reactive forces while supporting the conveyed item. The outer plate and inner plate slide against each other during chain articulation, as well as against the sides of the sprocket teeth during sprocket engagement. Plate holes are either round or flat.

◆ Attachments

For attaching items to the chain.

◆ T-pin

After the outer plate is press-fitted to the C-pin, a T-pin is inserted and bent to prevent the C-pin from falling out.



30° or more

Bend 30° or more, or so that the end of the T-pin does not exceed the height of the plate.

◆ C-Pin (CP)

The most important role of the C-pin is connecting the inner link to the outer link. Along with the plate, it receives chain tension along the direction of travel while receiving vertical reactive forces from the conveyed items. The outer diameter of the C-pin suffers wear from sliding against the bush inner diameter when the chain articulates. The C-pin is an essential strength-bearing part and requires high wear resistance.

◆ Bush (B)

The bush is a strength-bearing part, receiving tension from the chain during sprocket engagement, but its major role is as a bearing part. The outer diameter of the bush suffers wear from sliding against the roller inner diameter during roller rotation, while the bush inner diameter suffers wear from sliding against the outer diameter of the C-pin when the chain articulates. Bush inner diameter wear is directly expressible as pitch elongation.

◆ Roller (R-R, F-R, S-R, M-R, N-R)

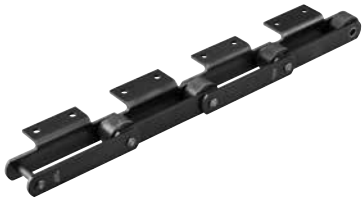
Forms a slip fit with the bush. Rotates when engaging with the sprocket, while alleviating the shock and wear from the teeth. Rotation also lowers running resistance.

Note: ( ) denotes codes for part names as found on drawings.

2. Roller Types

Tsubaki large size conveyor chains use three basic roller types.

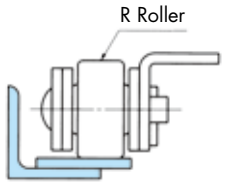
1. R Rollers



The outer diameter of the roller is larger than the height of the link plate.

Tsubaki's most basic, versatile roller type. It has a large allowable load and low frictional resistance.

Roller Type Model Numbering	
R	: Basic R Roller
BR	: Bearing roller
DBR	: Anti-dust bearing roller
EBR	: Standard lube-free bearing roller
WEBR	: Water-resistant lube-free bearing roller
WDR	: For shower tester and final inspection line
RP	: Engineering plastic roller

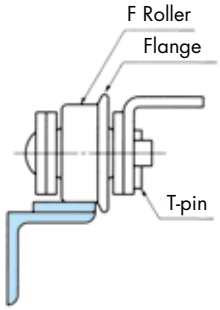


2. F Rollers

There is a flange on the roller, attached on the T-pin side, that acts as a guide.

These rollers are a simple way to prevent side oscillation. Ideal for regular slat conveyance. Be careful when using K attachments, as the attachment area may contact the roller flange.

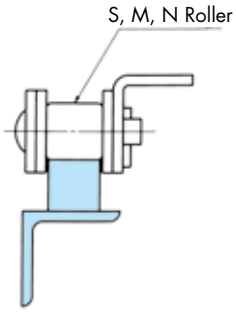
Roller Type Model Numbering	
F	: Basic F Roller
BF	: Bearing roller
DBF	: Anti-dust bearing roller
EBF	: Standard lube-free bearing roller
WEBF	: Water-resistant lube-free bearing roller
WDF	: For shower tester and final inspection line
FP	: Engineering plastic roller



3. S, M, and N Rollers

Sprockets alleviate impact and wear when engaging the chain. They have higher running resistance than R and F Rollers, allowing them to suffer less wear.

Roller Type Model Numbering	
S	: Roller outer diameter is smaller than the plate width
M	: Roller outer diameter is slightly larger than with S Rollers
N	: Same roller outer diameter as M rollers, with larger pin diameters for added strength (for RF26 and RF36 sizes only)



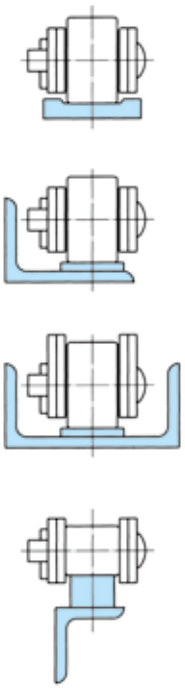
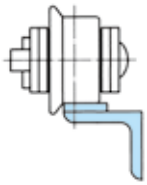
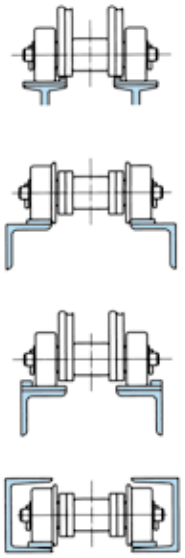
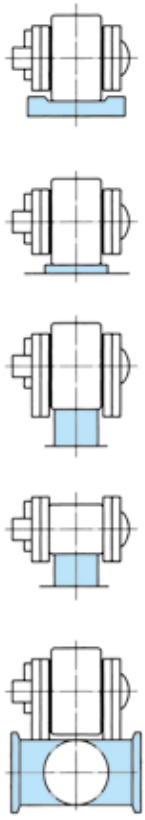
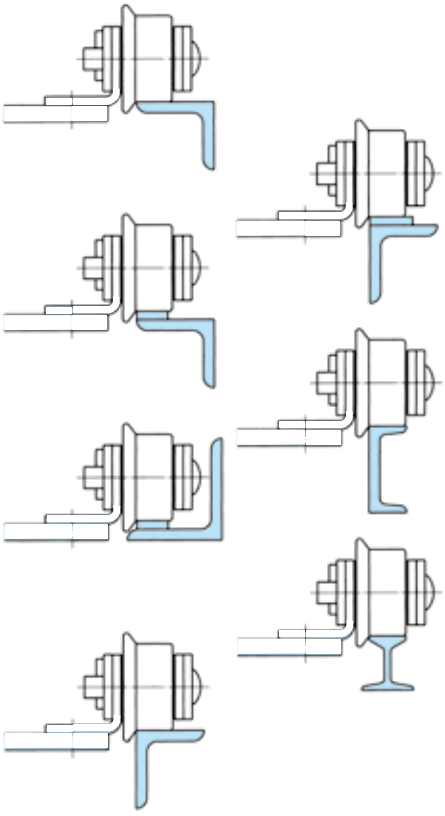
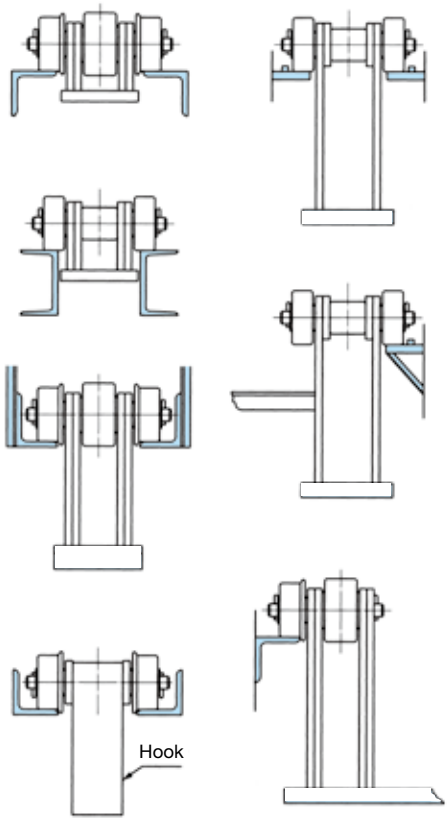
4. Other Roller Types

Double Plus Conveyor Chain: VR Roller

Roller Type Model Numbering	
VR	: Large-diameter and small-diameter rollers allow double speeds and accumulation.

Conveyor Chain Construction

The following shows examples of ways to guide the carry and return sides by roller type for smooth conveyance.

	R (S) Rollers	F Rollers	Outboard Rollers
Carry Side			
Return Side			

3. Attachment Types

Attachments can be attached at any link spacing.

1. Standard Attachments Standard attachments are both economical and versatile.

◆ A Attachments

A attachments have bolt holes on one side. They are referred to as A1, A2, or A3 attachments, depending on the number of bolt holes. Rollers on the chain body can be supported by a rail on the return side.

Attachment Model Numbering

A1 : A attachment with one bolt hole
(In some cases, the center hole of an A3 attachment may be used.)
A2 : A attachment with two bolt holes
A3 : A attachment with three bolt holes
A■RL: Indicates attachments will be attached on the inner link when the attachment spacing is even numbered links.
(Enter the number of bolt holes in the box■)

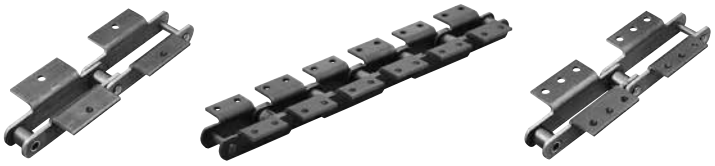
A1 Attachment A2 Attachment A3 Attachment

◆ K Attachments

K attachments have bolt holes on both sides. They are referred to as K1, K2, or K3 attachments, depending on the number of bolt holes. Allowable load is double that of A attachments.

Attachment Model Numbering

K1 : K attachment with one bolt hole
(In some cases, the center hole of a K3 attachment may be used.)
K2 : K attachment with two bolt holes
K3 : K attachment with three bolt holes
K■RL: Indicates attachments will be attached on the inner link when the attachment spacing is even numbered links.
(Enter the number of bolt holes in the box■)



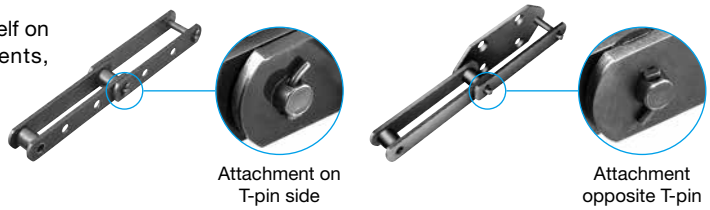
K1 Attachment K2 Attachment K3 Attachment

◆ GA Attachments

GA attachments have flat-head bolt holes in the link plate itself on one side. They are referred to as GA2 or GA4 attachments, depending on the number of bolt holes.

Attachment Model Numbering

GA2 : GA attachment with two bolt holes
GA4 : GA attachment with four bolt holes
GA2RL: Indicates attachments will be attached on the inner link when the attachment spacing is even numbered links.



GA2 Attachment GA4 Attachment

⚠ Never weld additional parts onto a chain.

- ◆ Chain kinking or twisting due to plate distortion.
- ◆ Brittle fracture and/or strength loss from heat.

Attachment Positioning

Attachments will be positioned as follows unless specified elsewise.

- ◆ Attachments will be attached on the outer link when attached on even numbered links. The above instructions are required when you want to attach on inner links.
- ◆ A and GA2 attachments will be attached on the T-pin side.
- ◆ GA4 attachments will be attached opposite of T-pins.
- ◆ Flanges for F rollers will be attached on the A attachment side.

2. Specialty Attachments

These attachments are used exclusively in specific industries and facilities.
For details, refer to Industry-Specific Products (page 81).

Outboard Roller Conveyor Chain

p.93

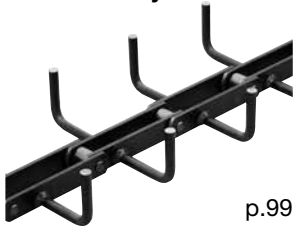
Top Roller Conveyor Chain

p.94

Deep Link Conveyor Chain

p.95

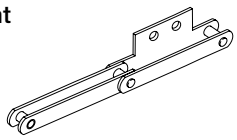
Flow Conveyor Chain

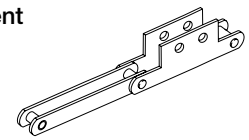


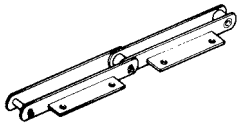
p.99

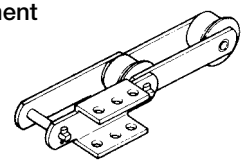
Conveyor Chain Construction

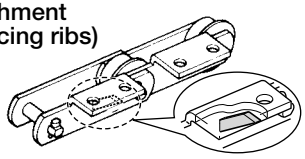
3. Special Attachments (Integrated Attachment Chain) See the appropriate page for more information.

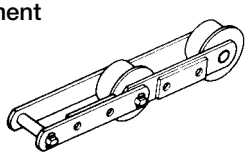
SA Attachment

Straight attachment on one side
Note: See Attachment section

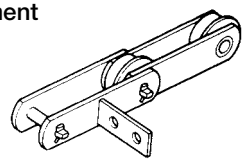
SK Attachment

Straight attachment on both sides
Note: See Attachment section

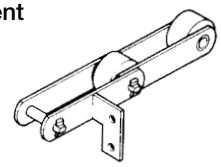
CA2 Attachment

Used to attach a mesh or slat with no spacing
p.116

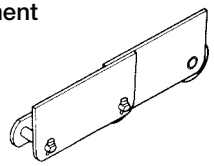
AA3 Attachment

Strong type; attachment fits between the plates
p.116

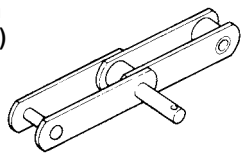
A2R Attachment (w/reinforcing ribs)

Increased flexural rigidity over A attachment
p.116

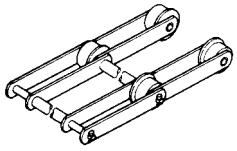
MG2 Attachment

Allows for one mounted jig to be used
p.117

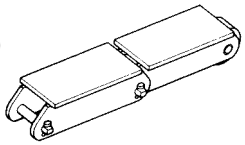
AS2 Attachment

Uses scraper or flight attachment
p.117

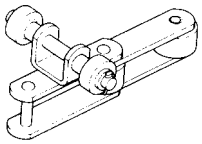
AF2 Attachment

Uses scraper or flight attachment
p.117

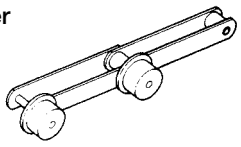
WSA0 Attachment

Prevents conveyed items from overspilling
p.118

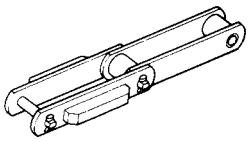
Extended Pin (Type: EP □)

Attaches easily to pin end
p.118

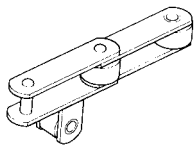
Stay Pin (Type: ST)

Attachment can be laid directly on stay pin, or mesh can be attached
p.118

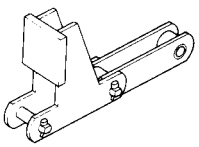
Top Plate (Type: TP □)

Prevents damage to conveyed items
p.119

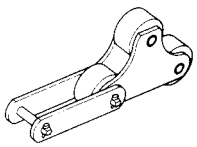
Trolley Roller (Type: TRO)

Used in long distance, horizontal applications
p.119

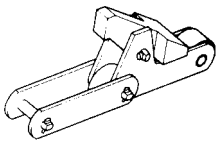
Outboard Roller (Type: OR)

Provides support for heavy loads
p.119

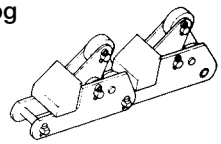
Guide Shoe (Type: GS □)

Prevents lateral movement
p.120

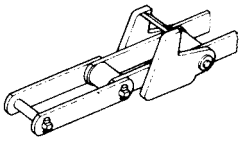
Guide Roller (Type: GR)

Used in horizontal applications
p.120

Fixed Dog (Type: KD □)

Conveys by pushing
p.121

Dog Roller (Type: RD)

Conveys round items by pushing
p.121

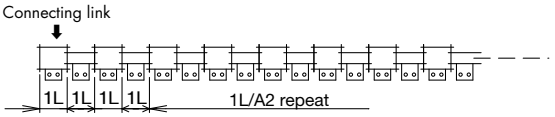
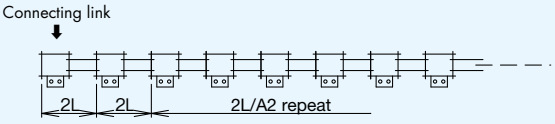
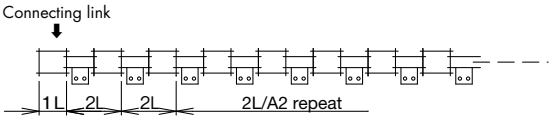
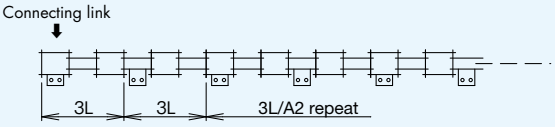
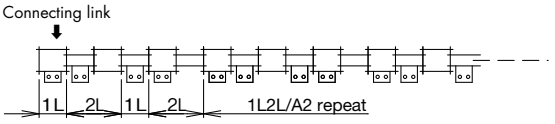
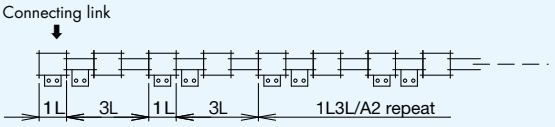
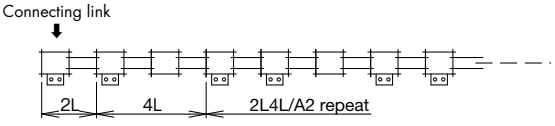
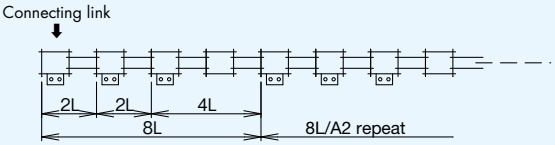
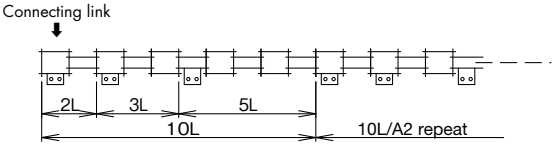
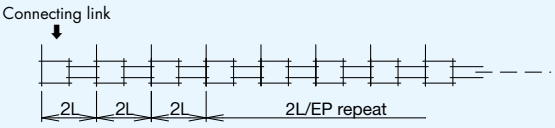
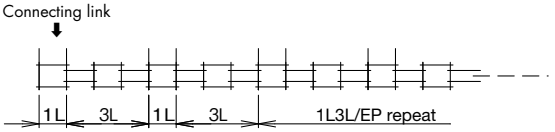
Tilting Dog (Type: CD)

Allows conveyed items coming from behind the chain to pass by
p.122

Roller Tilting Dog (Type: RCD)

Can accumulate round items
p.122

Ducking Dog (Type: DD)

Conveyed item will remain in fixed position
p.122

4. Attachment Spacing

Ask a Tsubaki representative for a quote when mounting multiple attachments in a repeating pattern.

Attachment Model Numbering	Basic Attachment Coding	Connecting Link Attachment Type	Diagram
RF12200R-1LA2 ·····	○LA2 ○=1 Attached every link	A2	
RF12200R-2LA2 ·····	○LA2 ○=2 Attached every 2nd link	A2	
RF12200R-2LA2RL ·····	○LA2RL ○=2 Attached every 2nd inner link	No attachment	
RF12200R-3LA2 ·····	○LA2 ○=3 Attached every 3rd link	A2	
RF12200R-1L2LA2 ·····	○L△LA2 ○=1、△=2 1 link/2 link repeat	A2	
RF12200R-1L3LA2 ·····	○L△LA2 ○=1、△=3 1 link/3 link repeat	A2	
RF12200R-2L4LA2 ·····	○L△LA2 ○=2、△=4 2 link/4 link repeat	A2	
RF12200R-2L2L4LA2 ·····	○L△L□LA2 ○=2、△=2、□=4 2 link/2 link/4 link repeat	A2	
RF12200R-2L3L5LA2·····	○L△L□LA2 ○=2、△=3、□=5 2 link/3 link/5 link repeat	A2	
RF12200R-2LEP□····· EP□: Extended pin (see p.118)	○LEP ○=2 Attached every 2nd link	EP single side	
RF12200R-1L3LEP□····· EP□: Extended pin (see p.118)	○L△LEP ○=2、△=3 2 link/3 link repeat	EP single side	

Wide Selection of Large Size Conveyor Chains

Three types of chain to provide the best solution.

Basic and Advanced Models

We've added advanced versions of our four basic series. Now it's easy to make the smart selection.

Maximum allowable load varies by size and combination of materials. Always confirm the maximum allowable load when considering any chain series.

Basic Models | **Advanced Models**

General Use Conveyor Chain

DT Series — Our most versatile chain

→ **DTA Series** — Features 3x the bush–roller wear resistance of DT Series, higher roller allowable load
Better wear resistance between bushes and rollers, higher roller allowable load

Better roller wear resistance
Higher maximum allowable load

AT Series — Features twice the maximum allowable load of DT Series

→ **ATA Series** — Compared to AT Series:
- Features 1.5x better wear resistance between pins and bushes
- Features 2x better wear resistance between bushes and rollers
- Features 1.2x higher maximum allowable load

Better pin–bush–roller wear resistance, higher maximum allowable load

Heavy Duty Conveyor Chains

Note: DTA and ATA Series chains are available with R and F Rollers only.

Corrosion Resistant Conveyor Chains

GS Series — Stainless steel chain with better corrosion resistance than DT Series

→ **GSA Series** — Features 1.5x the pin–bush wear resistance, 2x the bush–roller wear resistance, and 1.3x the maximum allowable load of GS Series
Better pin–bush–roller wear resistance, higher roller allowable load*, higher max. allowable load

SS Series — Stainless steel chain with superb corrosion, chemical, heat, and cold resistance

→ **SSA Series** — Features 1.5x the bush–roller wear resistance of SS Series
Better bush–roller wear resistance, higher roller allowable load*

*Higher roller allowable load applies to F or R Rollers only.

See p.17 for temperature ranges and p.174 (Table 14) for corrosion resistance.

Note: Based on in-house wear test comparisons. The amount of service life increase will vary depending on your operating conditions.

Function Specific Products

We can propose a specification with a combination of materials to match your application needs. Contact a Tsubaki representative for more information.

	Application		Features	Product Name (Series)	Page
Normal/dusty environments	Chain elongation resistance	Normal	Better wear resistance between pins and bushes than DT Series	CT	62
		Heavy duty	Higher max. allowable load than CT Series	BT	62
		Wear resistant	Twice the wear resistance between pins and bushes of BT Series	FB □	109
	Bush–roller wear resistance	Wear resistant	Better wear resistance between bushes and rollers; can use a variety of material combinations (only available with R/F Rollers)	DB □	80
			Three times the wear resistance between bushes and rollers of BT Series	FA	102
Slightly corrosive environments	Chain corrosion and wear elongation resistance	Normal	Same max. allowable load as DT Series but with better pin–bush corrosion resistance	MT	62
		Heavy duty	Same max. allowable load as GS Series but with better pin–bush corrosion resistance	VT	62
	Bush–roller corrosion wear resistance	Normal	Same max. allowable load as DT Series but with better pin–bush–roller corrosion resistance	RT	62
		Heavy duty	Same max. allowable load as GS Series but with better pin–bush–roller corrosion resistance	YT	62
Bush–roller wear resistance for heavy loads, energy savings, and to prevent stick-slipping			Chain uses unique cylindrical bearings inside the rollers to provide a low coefficient of friction and higher roller allowable load. Standard, water resistant, dust resistant, and lube-free specs available.	Bearing Roller Conveyor Chain	63
High precision stopping applications (indexing conveyance)			Chain whose construction minimizes elongation; ideal for high precision stopping/indexing applications	Bearing Bush Conveyor Chain	77
Clean environments (lube-free operation)			Chain that can be used without additional lubrication (Cannot be used in dusty or corrosive environments)	Lambda Plastic Roller Conveyor Chain	79

Note: 1. Depending on operating conditions, premature elongation may occur with GS, VT, MT, YT, and RT series chains due to seizing between C-pins and bushings. It is recommended that lubricant be applied as an initial running-in agent before use. Tsubaki also manufactures chains with an initial running-in agent pre-applied. Contact a Tsubaki representative for details.
2. Enter conveyor chain series in the blank □.

Industry Specific Products

Our line-up of industry specific chains is based on our experience in specialized industries of every kind. These chains can also be used in other industries as well.


See p.83
Automotive Industry


See p.85
Biomass Power Generation


See p.87
Cement Industry


See p.89
Steel Industry (super heavy load conveyance)


See p.91
Food Industry


See p.97
Waste Disposal Facilities


See p.123
Water Treatment Plants

REF In 2005, some model numbers of conveyor chains were changed. See table below.

Series Code before 2005	Current Series Code
PT	GS
ST	SS

Product Lineup

	Series	Application	Product Name	Features	Operating Temperature Range °C
Basic and Advanced Models	General-use Conveyor Chain	General use	DT Series	Our most versatile chain	–20 to 200
	Heavy Duty Conveyor Chain		DTA Series (available in R/F Rollers only)	3x the bush-roller wear resistance of DT Series	–20 to 200
			AT Series	2x the max. allowable load of DT Series. Same bush-roller wear resistance as DTA Series	–20 to 400 *5
			ATA Series (available in R/F Rollers only)	1.2x the maximum load, 1.5x the pin-bush wear resistance, and 2x the bush-roller wear resistance of AT Series	–20 to 200
	Corrosion Resistant Conveyor Chain	Corrosion, cold, and chemical resistance	GS Series	Stainless steel chain with better corrosion resistance than DT Series (SUS400 series stainless steel)	–20 to 400 *3
			GSA Series	1.3x the max. allowable load, 1.5x the pin-bush wear resistance, and 2x the bush-roller wear resistance of GS Series	–20 to 200
			SS Series	Stainless steel chain with superior corrosion, chemical, heat, and cold resistance (SUS300 series stainless steel)	–20 to 400 *3
			SSA Series	1.5x the bush-roller wear resistance of SS Series	–20 to 200
	Connecting link		Screw Lock Link	Connecting links that require no press-fitting	–20 to 150
Function Specific Chains	Heavy Load Conveyor Chain (Bearing Roller Conveyor Chain)	Bush-roller wear resistance Low friction Heavy loads Energy saving Compact operations	Standard Bearing Roller Conveyor Chain (previous model)	Uses cylindrical bearings in the roller for a low coefficient of friction and a high roller allowable load	–20 to 80
			Anti-Dust Bearing Roller Conveyor Chain	For use in dusty environments	–20 to 80
			Standard Lube-Free Bearing Roller Conveyor Chain	Can be used without lubricating the rollers (bush-roller joint)	–20 to 50
			Completely Lube-Free Bearing Roller Conveyor Chain	Can be used without any additional lubrication	–20 to 50
			Water Resistant Lube-Free Bearing Roller Conveyor Chain	Can be used in contact with water	0 to 50
	Specialty Conveyor Chain	For indexing conveyance	Bearing Bush Conveyor Chain	Uses needle bearings to minimize elongation. Allows stopping and indexing conveyance	–20 to 60
		Lube-free use	Lambda Plastic Roller Conveyor Chain	Can be used lube-free. Minimizes the generation of metal wear debris	0 to 50
		Bush-roller wear resistance	Shoulder Bush Conveyor Chain	Uses a bush that increases the roller allowable load and wear resistance	–20 to 200 *1
	Heavy Duty Conveyor Chain	Pin-bush wear resistance	CT Series	Better pin-bush wear resistance than DT Series	–20 to 200
			BT Series	Higher max. allowable load than CT Series	–20 to 200
	Corrosion Resistant Conveyor Chain	Pin-bush corrision resistance	MT Series	Same max. allowable load as DT Series but with better pin-bush corrosion resistance	–20 to 200
			VT Series	Same max. allowable load as GS Series but with better pin-bush corrosion resistance	–20 to 400
		Pin-bush-roller corrision resistance	RT Series	Same max. allowable load as DT Series but with better pin-bush-roller corrosion resistance	–20 to 200
			YT Series	Same max. allowable load as GS Series but with better pin-bush-roller corrosion resistance	–20 to 400
Industry Specific Chains	Specialty Conveyor Chain	For free flow use	Double Plus Conveyor Chain	Can convey items at 2.3x the chain speed	–20 to 200 *1
			Outboard Roller Conveyor Chain	Distributes loads over outboard rollers	–20 to 200 *1
			Top Roller Conveyor Chain	Enables direct conveyance of items on the top rollers	–20 to 200 *1
		Direct conveyance	Deep Link Conveyor Chain	Wide plates enable direct conveyance of items	–20 to 200
		For automotive industry	Conveyor Chain for Shower Tester and Final Inspection Line	Can be used lube-free in wet and dry environments	0 to 50
		For waste treatment	Waste Incineration Conveyor Chain	Available in a variety of specifications ideal for conveying material in various waste treatment processes	–20 to 200
		For flow conveyors	Flow Conveyor Chain	Available with a variety of flow attachments	–20 to 200 *1
		Bush-roller wear resistance on flow conveyors	FA Series	Special surface treatment for better wear resistance	–20 to 200
		Special applications	WD Series Drag Chain	Exceptionally durable and wear resistant drag chain	–20 to 200
		For bucket elevators	Bucket Elevator Conveyor Chain	Attachments ensure the same buckets can be used if they are the same pitch	–20 to 200 *1 *2
		To counter wear elongation	FB Series	Uses a solid lubricant between pins and bushes and a seal mechanism between links to minimize wear elongation	–15 to 200 *4
		For steel mills	Coil Transfer Conveyor Chain	Extremely highly durable chain for conveying especially heavy items	–20 to 200 *1
		Special applications	Block Chain	Extremely durable with a high tensile strength	–20 to 400 *3
			Block Chain for Flow Conveyors	For conveying especially wear inducing items	–20 to 400 *3

Special part surface treatments for better corrosion resistance available.

*1 Operating temperature varies by chain series. Temperatures shown are for DT Series. *2 400°C for Y Series. *3 Contact a Tsubaki representative regarding use under –20°C and over 400°C.
*4 Operating temperature range varies with construction. Contact a Tsubaki representative for more information. *5 –20°C to 200°C for RF03 size AT Series.

Size																							Page
Metric Pitches															Imperial Pitches								
RF03	RF05	RF08	RF10	RF12	RF17	RF26	RF36	RF52	RF60	RF90	RF120	RF280	RF360	RF440	RF430	RF204	RF450	RF650	RF214	RF205	RF6205	RF212	
✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔				✔	✔	✔	✔	✔	✔	✔	✔	From p27
✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔				✔		✔	✔	✔		✔	✔	
✔ *5	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	
		✔	✔	✔	✔	✔	✔																
✔	✔	✔	✔	✔	✔	✔									✔	✔	✔	✔	✔	✔	✔	✔	
✔	✔	✔	✔	✔	✔	✔									✔	✔	✔	✔	✔	✔	✔	✔	
✔	✔	✔	✔	✔	✔	✔									✔	✔	✔	✔	✔	✔	✔	✔	
✔	✔	✔	✔	✔	✔	✔									✔	✔	✔	✔	✔	✔	✔	✔	
			✔	✔	✔	✔	✔	✔	✔	✔													51
✔	✔	✔	✔	✔	✔	✔	✔																65
			✔	✔	✔	✔	✔																67
✔	✔	✔	✔	✔	✔	✔	✔																69
	✔	✔	✔	✔	✔	✔																	71
✔	✔	✔	✔	✔	✔	✔	✔																73
✔	✔	✔	✔	✔	✔	✔	✔																77
✔	✔																						79
			✔	✔	✔	✔	✔																80
✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔				✔	✔	✔	✔	✔	✔	✔	✔	62
✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔				✔	✔	✔	✔	✔	✔	✔	✔	
✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔				✔	✔	✔	✔	✔	✔	✔	✔	
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✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔				✔	✔	✔	✔	✔	✔	✔	✔	
✔	✔	✔	✔	✔	✔																✔		92
✔	✔	✔	✔	✔	✔	✔	✔								✔		✔				✔		93
✔	✔	✔	✔	✔	✔																✔		94
✔	✔	✔	✔	✔	✔	✔	✔	✔													✔		95
			✔	✔	✔	✔																	96
✔	✔	✔	✔	✔	✔	✔																	97
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Refer to the product page																							106
			✔	✔	✔	✔	✔		✔	✔	✔												107
		✔	✔	✔	✔	✔																	109
✔																							112
NF30	NF40	NF56	NF63	NF70	NF115	NF140	NF180	NF210	NF250	NF280													113
✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔													
✔		✔																					114

We can make chains in sizes and pitches other than those shown in this catalog. Contact a Tsubaki representative for more information.

See page 123 for water treatment conveyor chains.

Basic and Advanced Models Strength Table

Unit: kN{kgf}

	Chain Size		Series	General Use Conveyor Chain	Heavy Duty Conveyor Chain			Corrosion Resistant Conveyor Chain			
				DT Series	DTA Series	AT Series	ATA Series	GS Series	GSA Series	SS Series	SSA Series
Metric	RF03075 RF03100	Max. allowable load		4.20 {430}	4.20 {430}	9.95 {1010}	—	5.40 {550}	7.02 {720}	2.80 {280}	2.80 {280}
		Min. tensile strength		32.4 {3300}	32.4 {3300}	65.5 {6700}	—	46.8 {4800}	46.8 {4800}	32.2 {3300}	32.2 {3300}
	RF05075 RF05100 RF05125 RF05150	Max. allowable load		9.80 {1000}	9.80 {1000}	20.3 {2070}	—	10.8 {1100}	14.0 {1450}	5.70 {580}	5.70 {580}
		Min. tensile strength		67.6 {6900}	67.6 {6900}	127 {13000}	—	95.7 {9800}	95.7 {9800}	62.3 {6400}	62.3 {6400}
	RF08125 RF08150	Max. allowable load		11.2 {1140}	11.2 {1140}	20.3 {2070}	24.3 {2480}	12.3 {1250}	16.0 {1650}	5.70 {580}	5.70 {580}
		Min. tensile strength		74.6 {7600}	74.6 {7600}	117 {12000}	127 {13000}	108 {11000}	108 {11000}	62.3 {6400}	62.3 {6400}
	RF10100 RF10125 RF10150	Max. allowable load		17.6 {1790}	17.6 {1790}	32.3 {3290}	38.7 {3950}	17.7 {1800}	23.0 {2350}	9.00 {920}	9.00 {920}
		Min. tensile strength		107 {11000}	107 {11000}	169 {17000}	200 {20500}	155 {16000}	155 {16000}	98.5 {10000}	98.5 {10000}
	RF12200 RF12250	Max. allowable load		26.6 {2710}	26.6 {2710}	39.9 {4060}	47.8 {4880}	26.5 {2700}	34.5 {3500}	11.0 {1120}	11.0 {1120}
		Min. tensile strength		160 {16500}	160 {16500}	249 {25500}	249 {25500}	230 {23500}	230 {23500}	123 {12500}	123 {12500}
	RF17200 RF17250 RF17300	Max. allowable load		35.0 {3570}	35.0 {3570}	55.3 {5640}	66.3 {6770}	35.8 {3650}	46.5 {4750}	15.5 {1580}	15.5 {1580}
		Min. tensile strength		213 {22000}	213 {22000}	336 {34000}	348 {35500}	308 {31500}	308 {31500}	171 {17500}	171 {17500}
	RF26200 RF26250 RF26300 RF26450	Max. allowable load		44.9 {4570}	44.9 {4570}	74.3 {7580}	89.1 {9090}	46.1 {4700}	59.9 {6100}	20.8 {2120}	20.8 {2120}
		Min. tensile strength		285 {29000}	285 {29000}	448 {45500}	464 {47500}	411 {42000}	411 {42000}	228 {23500}	228 {23500}
	RF36250 RF36300 RF36450 RF36600	Max. allowable load		68.0 {6930}	68.0 {6930}	97.4 {9930}	117 {11900}	—	—	—	—
		Min. tensile strength		457 {46500}	457 {46500}	614 {62500}	614 {62500}	—	—	—	—
	RF52300 RF52450 RF52600	Max. allowable load		71.4 {7280}	—	147 {15000}	—	—	—	—	—
		Min. tensile strength		481 {49000}	—	953 {97000}	—	—	—	—	—
	RF60300 RF60350 RF60400	Max. allowable load		71.4 {7280}	—	149 {15200}	—	—	—	—	—
		Min. tensile strength		479 {49000}	—	1010 {103000}	—	—	—	—	—
	RF90350 RF90400 RF90500	Max. allowable load		113 {11500}	—	233 {23700}	—	—	—	—	—
		Min. tensile strength		754 {77000}	—	1600 {163000}	—	—	—	—	—
	RF120400 RF120600	Max. allowable load		159 {16200}	—	316 {32200}	—	—	—	—	—
		Min. tensile strength		1060 {108000}	—	2180 {222000}	—	—	—	—	—
	RF280400 RF280600	Max. allowable load		—	—	434 {44300}	—	—	—	—	—
		Min. tensile strength		—	—	2700 {276000}	—	—	—	—	—
	RF360400 RF360600	Max. allowable load		—	—	519 {52900}	—	—	—	—	—
		Min. tensile strength		—	—	3210 {328000}	—	—	—	—	—
	RF440400 RF440600	Max. allowable load		—	—	637 {65000}	—	—	—	—	—
		Min. tensile strength		—	—	3990 {407000}	—	—	—	—	—
Imperial	RF430	Max. allowable load		7.70 {790}	7.70 {790}	14.0 {1430}	—	8.35 {850}	—	4.00 {410}	—
		Min. tensile strength		49.7 {5100}	49.7 {5100}	89.4 {9100}	—	67.4 {6900}	—	44.0 {4500}	—
	RF204	Max. allowable load		11.2 {1140}	—	20.3 {2070}	—	12.3 {1250}	—	5.70 {580}	—
		Min. tensile strength		74.6 {7600}	—	117 {12000}	—	108 {11000}	—	62.3 {6400}	—
	RF450	Max. allowable load		11.2 {1140}	11.2 {1140}	20.3 {2070}	—	12.3 {1250}	—	5.70 {580}	—
		Min. tensile strength		74.6 {7600}	74.6 {7600}	117 {12000}	—	108 {11000}	—	62.3 {6400}	—
	RF650	Max. allowable load		16.1 {1650}	16.1 {1650}	20.3 {2070}	—	14.2 {1450}	—	5.70 {580}	—
		Min. tensile strength		115 {11700}	115 {11700}	127 {13000}	—	127 {13000}	—	62.3 {6400}	—
	RF214	Max. allowable load		18.1 {1850}	18.1 {1850}	34.3 {3500}	—	18.6 {1900}	—	10.3 {1050}	—
		Min. tensile strength		112 {11500}	112 {11500}	237 {24000}	—	162 {16500}	—	120 {12000}	—
	RF205	Max. allowable load		18.1 {1850}	—	34.3 {3500}	—	18.6 {1900}	—	10.3 {1050}	—
		Min. tensile strength		112 {11500}	—	237 {24000}	—	162 {16500}	—	120 {12000}	—
	RF6205	Max. allowable load		26.6 {2710}	26.6 {2710}	39.9 {4060}	—	26.5 {2700}	—	11.0 {1120}	—
		Min. tensile strength		160 {16500}	160 {16500}	249 {25500}	—	230 {23500}	—	123 {12500}	—
	RF212	Max. allowable load		35.0 {3570}	35.0 {3570}	55.3 {5640}	—	35.8 {3650}	—	15.5 {1580}	—
		Min. tensile strength		213 {22000}	213 {22000}	336 {34000}	—	308 {31500}	—	171 {17500}	—

Note 1. Maximum allowable load values are guaranteed values of performance based on Tsubaki standards. When using a competitor chain with similar tensile strength, be aware that wear, fatigue, and other conditions may cause a large difference in actual chain life to arise.
2. Contact a Tsubaki representative regarding average tensile strength.

Function Specific Products Strength Table

Unit: kN{kgf}

Application			Normal/dusty Environments		Slightly Corrosive Environments			
			Chain Wear Elongation Resistance		Chain Corrosion Wear Elongation Resistance		Chain Corrosion Wear Elongation/ Bush-Roller Corrosion Wear Resistance	
Series Code			CT	BT	MT	VT	RT	YT
Operating Temperature Range °C			−20 to 200	−20 to 200	−20 to 200	−20 to 400	−20 to 200	−20 to 400
Metric	RF03075 RF03100	Max. allowable load	4.20 {430}	7.30 {745}	4.20 {430}	5.40 {550}	4.20 {430}	5.40 {550}
		Min. tensile strength	32.4 {3300}	65.5 {6700}	32.4 {3300}	65.5 {6700}	32.4 {3300}	65.5 {6700}
	RF05075 RF05100 RF05125 RF05150	Max. allowable load	9.80 {1000}	14.0 {1430}	9.80 {1000}	10.8 {1100}	9.80 {1000}	10.8 {1100}
		Min. tensile strength	67.6 {6900}	127 {13000}	67.6 {6900}	127 {13000}	67.6 {6900}	127 {13000}
	RF08125 RF08150	Max. allowable load	11.2 {1140}	14.0 {1430}	11.2 {1140}	12.3 {1250}	11.2 {1140}	12.3 {1250}
		Min. tensile strength	74.6 {7600}	127 {13000}	74.6 {7600}	127 {13000}	74.6 {7600}	127 {13000}
	RF10100 RF10125 RF10150	Max. allowable load	17.6 {1790}	32.3 {3290}	17.6 {1790}	17.7 {1800}	17.6 {1790}	17.7 {1800}
		Min. tensile strength	107 {11000}	200 {20500}	107 {11000}	200 {20500}	107 {11000}	200 {20500}
	RF12200 RF12250	Max. allowable load	26.6 {2710}	39.9 {4060}	26.5 {2700}	26.5 {2700}	26.5 {2700}	26.5 {2700}
		Min. tensile strength	160 {16500}	249 {25500}	160 {16500}	249 {25500}	160 {16500}	249 {25500}
	RF17200 RF17250 RF17300	Max. allowable load	35.0 {3570}	55.3 {5640}	35.0 {3570}	35.8 {3650}	35.0 {3570}	35.8 {3650}
		Min. tensile strength	213 {22000}	348 {35500}	213 {22000}	348 {35500}	213 {22000}	348 {35500}
	RF26200 RF26250 RF26300 RF26450	Max. allowable load	44.9 {4570}	74.3 {7580}	44.9 {4570}	46.1 {4700}	44.9 {4570}	46.1 {4700}
		Min. tensile strength	285 {29000}	464 {47500}	285 {29000}	464 {47500}	285 {29000}	464 {47500}
	RF36250 RF36300 RF36450 RF36600	Max. allowable load	68.0 {6930}	97.4 {9930}	68.0 {6930}	68.2 {6950}	68.0 {6930}	68.2 {6950}
		Min. tensile strength	457 {46500}	614 {62500}	457 {46500}	614 {62500}	457 {46500}	614 {62500}
	RF52300 RF52450 RF52600	Max. allowable load	71.4 {7280}	147 {15000}	71.4 {7280}	80.4 {8200}	71.4 {7280}	80.4 {8200}
		Min. tensile strength	481 {49000}	953 {97000}	481 {49000}	953 {97000}	481 {49000}	953 {97000}
	RF60300 RF60350 RF60400	Max. allowable load	71.4 {7280}	149 {15200}	71.4 {7280}	79.9 {8150}	71.4 {7280}	79.9 {8150}
		Min. tensile strength	479 {49000}	1010 {103000}	479 {49000}	1010 {103000}	479 {49000}	1010 {103000}
	RF90350 RF90400 RF90500	Max. allowable load	113 {11500}	233 {23700}	113 {11500}	125 {12750}	113 {11500}	125 {12750}
		Min. tensile strength	754 {77000}	1600 {163000}	754 {77000}	1600 {163000}	754 {77000}	1600 {163000}
	RF120400 RF120600	Max. allowable load	159 {16200}	316 {32200}	159 {16200}	179 {18250}	159 {16200}	179 {18250}
		Min. tensile strength	1060 {108000}	2180 {222000}	1060 {108000}	2180 {222000}	1060 {108000}	2180 {222000}
Imperial	RF430	Max. allowable load	7.70 {790}	9.95 {1020}	7.70 {790}	8.35 {850}	7.70 {790}	8.35 {850}
		Min. tensile strength	49.7 {5100}	89.4 {9100}	49.7 {5100}	89.4 {9100}	49.7 {5100}	89.4 {9100}
	RF204	Max. allowable load	11.2 {1140}	14.0 {1430}	11.2 {1140}	12.3 {1250}	11.2 {1140}	12.3 {1250}
		Min. tensile strength	74.6 {7600}	127 {13000}	74.6 {7600}	127 {13000}	74.6 {7600}	127 {13000}
	RF450	Max. allowable load	11.2 {1140}	14.0 {1430}	11.2 {1140}	12.3 {1250}	11.2 {1140}	12.3 {1250}
		Min. tensile strength	74.6 {7600}	127 {13000}	74.6 {7600}	127 {13000}	74.6 {7600}	127 {13000}
	RF650	Max. allowable load	16.1 {1650}	16.1 {1650}	14.2 {1450}	14.2 {1450}	14.2 {1450}	14.2 {1450}
		Min. tensile strength	115 {11700}	127 {13000}	115 {11700}	127 {13000}	115 {11700}	127 {13000}
	RF214	Max. allowable load	18.1 {1850}	34.3 {3500}	18.1 {1850}	18.6 {1900}	18.1 {1850}	18.6 {1900}
		Min. tensile strength	112 {11500}	237 {24000}	112 {11500}	237 {24000}	112 {11500}	237 {24000}
	RF205	Max. allowable load	18.1 {1850}	34.3 {3500}	18.1 {1850}	18.6 {1900}	18.1 {1850}	18.6 {1900}
		Min. tensile strength	112 {11500}	237 {24000}	112 {11500}	237 {24000}	112 {11500}	237 {24000}
	RF6205	Max. allowable load	26.6 {2710}	39.9 {4060}	26.5 {2700}	26.5 {2700}	26.5 {2700}	26.5 {2700}
		Min. tensile strength	160 {16500}	249 {25500}	160 {16500}	249 {25500}	160 {16500}	249 {25500}
	RF212	Max. allowable load	35.0 {3570}	55.3 {5640}	35.0 {3570}	35.8 {3650}	35.0 {3570}	35.8 {3650}
		Min. tensile strength	213 {22000}	348 {35500}	213 {22000}	348 {35500}	213 {22000}	348 {35500}

Note 1. Maximum allowable load values are guaranteed values of performance based on Tsubaki standards. When using a competitor chain with similar tensile strength, be aware that wear, fatigue, and other conditions may cause a large difference in actual chain life to arise.
2. Contact a Tsubaki representative regarding average tensile strength.

Ordering Large Size Conveyor Chain

To order large size conveyor chain, you need to specify chain size, series, length (number of links), attachment spacing, and formation. The following pages show general ordering examples and points to keep in mind. For custom-made chains, please contact a Tsubaki representative.

1. Basic Structure of Model Numbers

When ordering, be sure to order by model number to avoid any errors in the chain main unit, series, and number of links. Refer to the individual product pages for chain size and other details.

1. Chains

◆ Model numbering example

RF03075	R	–	AT	–	3L	A2	+	200L	–	PR	–	H	2	(H)
①	②		③		④	⑤		⑥		⑦		⑧	Quantity	Unit (chain)

Contact a Tsubaki representative for special attachments and customized specifications.

2. Individual parts, such as outer links

◆ Model numbering example: Outer link (individual connecting link)

RF03075	–	AT	–	A2	PL	1	(K)
①		③		⑤	⑨	Quantity	Unit (piece)

◆ Model numbering example: Inner link

RF03075	R	–	AT	–	A2	RL	1	(K)
①	②		③		⑤	⑨	Quantity	Unit (piece)

◆ Model numbering example: Screw Lock Link standard type (individual connecting link)

RF12200	–	AT	–	A2	LNJL	1	(K)
①		③		⑤	⑨	Quantity	Unit (piece)

◆ Model numbering example: Screw Lock Link short type (individual connecting link)

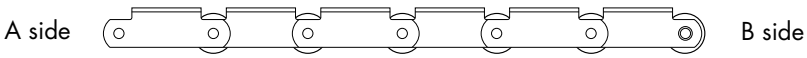
RF03075	–	AT	–	A2	LSJL	1	(K)
①		③		⑤	⑨	Quantity	Unit (piece)

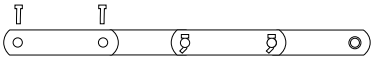
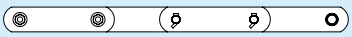
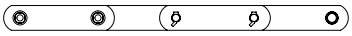
Refer to the individual product pages for Toughroller and other accessories.

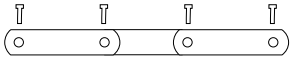
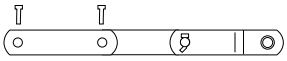
① Size	Indicates chain size. Under the metric system, RF03 is the size and 075 is the chain pitch (75mm). In inches, the numbers below RF indicate the chain configuration.	Refer to the product page
② Roller type	Indicates the type of roller.	See page 10
③ Series	Chain series code that combines material, heat treatment, and configuration.	Refer to the product page
④ Attachment spacing	Indicates the spacing between the attachments.	See page 14
⑤ Attachment type	Indicates the type of attachment. ■ Attachment position can be specified as an inner link or an outer link only when the attachment spacing is an even number of links. In general, attachment will be on an outer link. Examples: A2 when attaching an A2 attachment on outer links A2RL when attaching an A2 attachment on inner links	See page 12
⑥ Number of links	Specify the number of links. (Maximum 99,999 links)	
⑦ End link	Indicates the configuration of the chain ends.	See page 22
⑧ Options	Indicates options available for user requirements.	See page 22
⑨ Part name	Enter the code for the part.	

2. End Links

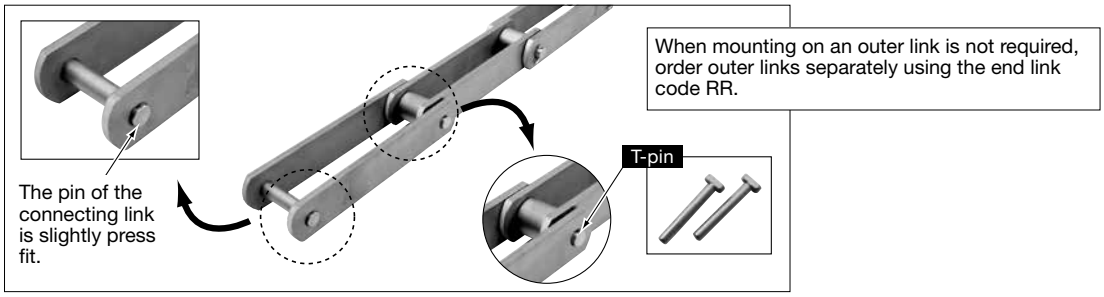
From the table below, select the specifications for both ends of the chain.



End Link Code	A	B
PR (previous code: PL-RL)		
LNJR (previous code: LNJL-RL)		
LSJR (previous code: LSJL-RL)		

End Link Code	A	B
PP (previous code: PL-PL)		
RR (previous code: RL-RL)		
POK (previous code: PL-OL)		

Standard lengths (3m) will feature an outer link on one end and an inner link on the other. Add additional chain lengths onto this standard length to create the desired length. Connecting links (PL) with the PR end link configuration are shipped slightly press fit to prevent their being lost. (See photo below.)



Note: Delivery of the chain may differ depending on chain and attachment shape.

3. Options

Option Code	Option Name	Description
H	Half assembled in mirror image	Attachments on a set of chains to be used in parallel are manufactured to be symmetrical. If you need mirror-image strands in pairs (half assembled in mirror image), you will need to indicate this on your order. However, you will need to indicate when the direction of T-pin bending needs to be symmetrical as well (additional fees apply; ask for a quote). Simply ordering two strands of chain (2H) does not mean that they will be in mirror image. Page 24 shows examples when half assembled in mirror image is applied and when not.
K	Minimal matched tolerance differences (Additional fees apply; ask for a quote)	Large size conveyor chain lengths will vary within standard tolerance. When it is desirable to minimize the relative difference in total chain length in a set of chains to be used in parallel, the chain is matched and tagged in pairs. Note: Total chain tolerance is ±0.25% per standard length. Chains half assembled in mirror image cannot be matched and tagged in pairs. When ordering minimal matched tolerance differences, the overall length of several sets of standard lengths (3m) is measured, and without performing the match and tag process we will assemble the chain randomly based on the results of statistical and technical data. If the results are not appropriate, we will measure the total length of all strands and assemble. When ordering matched and tagged to within XXmm (ask for a quote), total length of each standard length (3m) is measured and assembled within the relative difference specified. There are limits to precision depending on chain model and size. Contact a Tsubaki representative for more information. Delivery: Different colored tags are attached to the left and right sides at fixed intervals (3m). Connecting order for the chain is written on the tag.

Note: Large size conveyor chains are not coated with a rust-preventive oil when shipped. Consult a Tsubaki representative if you need rust-preventive oil. The option code differs depending on the type of rust-preventive oil; please ask for a quote.

Ordering Large Size Conveyor Chain

4. Ordering Special Assembly Chain

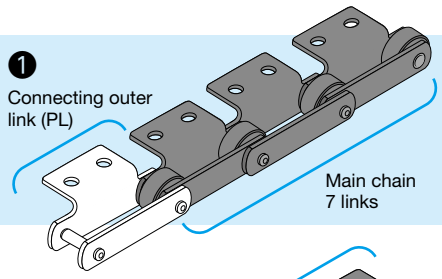
Unlike drive chains and small size conveyor chains, large size conveyor chains are ordered in links instead of units. A chain assembled to your specified chain length (number of links), end formation, attachment spacing, etc. is considered a special assembly.

1. Even number of links

➡ Ordering example

❶ Ordering 10 strands of 8-link, AT Series RF03075R chain with A2 attachments on each link

Model Number	Quantity
RF03075R–AT–1LA2+8L–PR	10H



2. Odd number of links

➡ Ordering example

❷ Ordering 20 strands of 9-link, AT Series RF03075R chain with A2 attachments on each link (inner link on both ends) (In this case, the chain cannot be made into a loop)

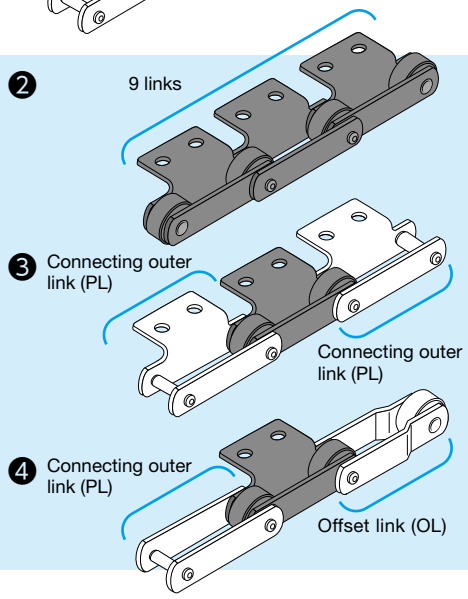
Model Number	Quantity
RF03075R–AT–1LA2+9L–RR	20H

❸ Ordering 20 strands of 9-link, AT Series RF03075R chain with A2 attachments on each link (outer link on both ends) (For partial chain replacement or as a spare, or when a jig is attached to both sides)

Model Number	Quantity
RF03075R–AT–1LA2+9L–PP	20H

❹ Ordering 20 strands of 9-link, AT Series RF03075R chain with A2 attachments on every inner link (outer link and offset link on each end) (Note: Attachments basically cannot be attached to offset links)

Model Number	Quantity
RF03075R–AT–2LA2RL+9L–POK	20H



3. Delivery

Large size conveyor chain will generally be shipped in standard lengths (3m) + extra parts based on the total number of links in your order. Depending on chain size/pitch and attachment spacing, the chain may not be sent in 3m lengths. Indicate if a certain shipping configuration is required.

1 Ordering **RF03100R–DT–1LA2+500L–PR x 1H**

Packing ➡30L(link)×16H(strand)+20L(link)×1H(strand) Total 500L(link)×1H(strand)

2 Ordering **RF03100R–DT–1LA2+250L–PR x 2H** (When 500L=250L×2H)

Packing ➡30L(link)×16H(strand)+10L(link)×2H(strand) Total 250L(link)×2H(strand)

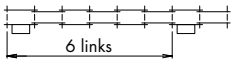
3 Ordering **RF03100R–DT–4LA2+280L–PR x 1H** (When not in standard length of 3m)

Packing ➡28L(link)×10H(strand) Total 280L(link)×1H(strand)

NOTE
- ◆ Standard lengths may vary depending on chain size/pitch and attachment spacing.
- ◆ Standard lengths are normally 3m.

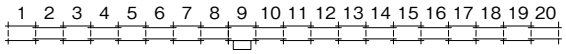
4 Ordering **RF03100R–DT–6LA2+38L–PR x 1H** (When quantity is indivisible due to attachment spacing)

Packing ➡30L(link)×1H(strand)+8L(link)×1H(strand) Attachments on 2 places (diagram) Total 38L(link)×1H(strand)



NOTE
- ◆ Attachments can also be on chain ends.
- ◆ Indicate when attachments are not required.
- ◆ Consider using an easily divisible attachment spacing.

5 Ordering **20-link RF03100R-DT,** with attachment on **9th link** (special formation)



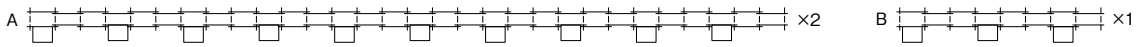
Order ➡Ask for a quote for 20-link RF03100R-DT-A2 (special formation: A2 attachment on 9th link)
Packing ➡20L(link)×1H(strand) A2 attachment will be attached on the 9th link from the PL part.

NOTE
◆ Links are numbered in order 1, 2, 3... starting from the left side.
◆ If you indicate the link number by counting from the right side, attachments will end up being attached in a position different from what is required.

4. Half assembled in mirror image

1 Ordering **RF03100R–DT–3LA2+68L–PR x 1H** (When half assembled in mirror image not specified)

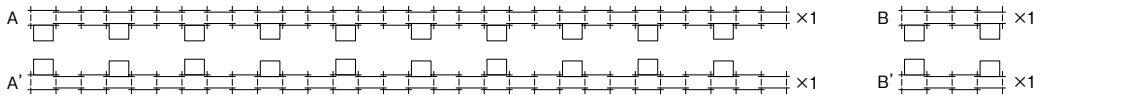
Packing ➡A : 30L(link)×2H(strand)　B : 8L×1H(attachments on 3 places)



NOTE
◆ We will assume that the chains will be used in single strands (and not in parallel).
◆ When using two or more strands, indicate the number of links for one of the strands by model number, and specify the number of chains by the quantity required.

2 Ordering **RF03100R–DT–3LA2+34L–PR–H x 2H** (When half assembled in mirror image is specified)

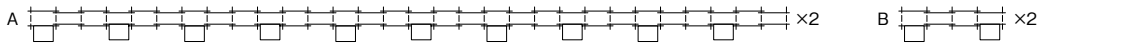
Packing ➡A : 30L(link)×1H(strand)　B : 4L×1H(attachments on 2 places) Per drawing
A′: 30L(link)×1H(strand)　B′: 4L×1H(attachments on 2 places) Mirror image of drawing



NOTE
◆ As shown above, the option code “H” is used to specify half assembled in mirror image.
◆ If the bending direction of T-pins need to be mirror image, contact a Tsubaki representative for a quote (additional fees apply).

3 Ordering **RF03100R–DT–3LA2+34L–PR x 2H** (When half assembled in mirror image not specified)

Packing ➡A : 30L(link)×2H(strand)　B : 4L×2H(attachments on 2 places)

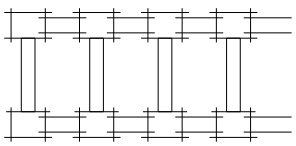


NOTE
◆ With this order, the chain will not be manufactured as half assembled in mirror image.
◆ Depending on the chain configuration, not manufacturing as half assembled in mirror image may result in problems.

5. Double row chains

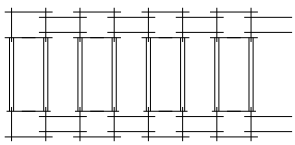
Double row chains (two strands of chain with scrapers, stay pins, etc. attached) are counted as a single unit.
One pitch of chain equals one link.

Example 1: Scraper every 2 links, 8 links = 8 links x 1 strand as shown in the figure below



Note: Indicate whether the scraper is to be shipped connected or separate.

Example 2: Stay pin (ST) every link, 8 links = 8 links x 1 strand as shown in the figure below

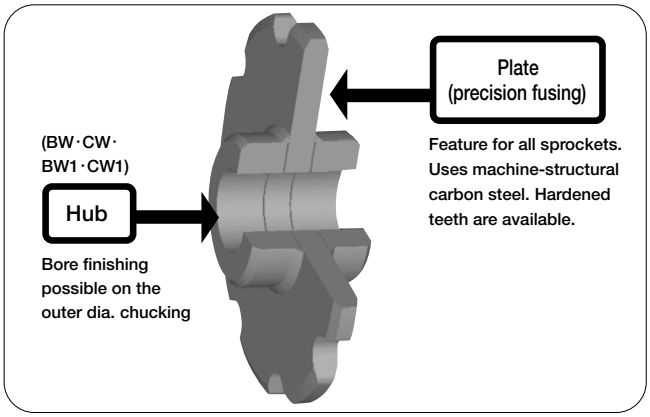


Note: Chains with stay pins (ST) are usually shipped with the stay pins separate.
Even when shipped disassembled, one pitch of double row chain is still one link.
Contact a Tsubaki representative regarding shipping the chain with stay pins connected.

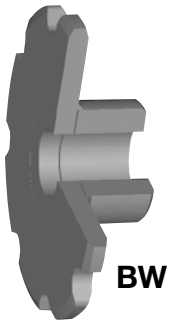
Sprocket Configuration

1. Basic Structure

The sprocket teeth are given induction hardening. This increases the wear resistance and transmission capacity of the sprocket.



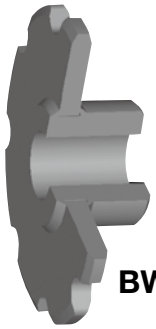
2. Hub Types



BW type

A hub is welded onto a single side of the sprocket plate.

For RF10 and below
RF205 and below



BW1 type

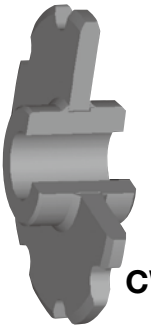
A hub is passed through the sprocket plate. While only protruding from one side, both sides are welded.

For RF12 and above
RF6205 and above

CW type

Hubs are welded to both sides of the sprocket plate.

For RF10 and below
RF205 and below



CW1 type

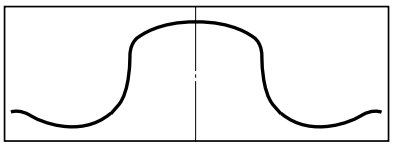
A hub is passed through the sprocket plate. Both sides of the hub protrude and are welded.

For RF12 and above
RF6205 and above

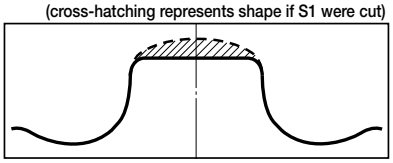
3. Teeth Profiles

1. Profiles

S1: Teeth are rounded



S2: Teeth are flat
(cross-hatching represents shape if S1 were cut)



Note: When using chains with K attachments, S2 type teeth are used instead of S1 type teeth if slats or other parts of the chain may interfere with the sprocket outer diameter. When using customized chains or top roller chains, contact a Tsubaki representative.

2. Specifications

◆ **Normal Series (Code: N)**
These non-heat treated specifications are suitable for low load, low wear applications.

◆ **Hardened Teeth Series (Code: Q)**
The teeth have been induction hardened. Suitable for when wear resistance is required, or under heavy load conditions.
The following chart shows the usage classification for both normal (N) and hardened teeth (Q) specifications.

Usage Classification for Normal and Hardened Teeth Series

Chain Series	Roller Type	Drive Side		Driven Side	
		Normal Conditions	Wear-Inducing Conditions	Normal Conditions	Wear-Inducing Conditions
DT/DTA Series	S	Q	Q	N	Q
	R	N	Q	N	N
	F	N	Q	N	N

Chain Series	Roller Type	Drive Side		Driven Side	
		Normal Conditions	Wear-Inducing Conditions	Normal Conditions	Wear-Inducing Conditions
AT/ATA Series	S	Q	Q	N	Q
	R	Q	Q	N	Q
	F	Q	Q	N	Q

The above classifications are based on standard usage conditions. Contact a Tsubaki representative regarding use in extremely wear-inducing, heavy load environments.

Ordering Sprockets

1. Basic Structure of Model Numbers

When ordering, be sure to order by model number to avoid any errors in sprocket specifications.
Refer to the individual product pages for sprocket size, processing, and other details.

1. Pilot bore sprocket

◆ Model numbering example: Standard pilot bore type

RF03075	R	6T	–	BW	N		2	(K)
①	②	③		④	⑤		Quantity	Unit (piece)

2. Finished bore sprocket

◆ Model numbering example: Fit Bore

RF17200	S	12T	–	BW1	Q	–	H 090 N-J 25 D3 M16-L2-E-H1		2	(K)
①	②	③		④	⑤		1		Quantity	Unit (piece)

3. Smart Series replaceable tooth insert sprockets

◆ Model numbering example: Split type

RF10150	S	10T	–	BW	Q	–	S TS	E	2	(K)
①	②	③		④	⑤		2	3	Quantity	Unit (piece)

◆ Model numbering example: Ring replaceable tooth type

RF26300	S	10T	–	BW1	Q	–	S RK	E	2	(K)
①	②	③		④	⑤		2	3	Quantity	Unit (piece)

Note: Model number of replaceable tooth (for replacement only)

RF26300	S	10T	–	RE Q - S RK	–	E	2	(K)
①	②	③		2		3	Quantity	Unit (piece)

◆ Model numbering example: Block replaceable tooth type

RF12200	S	12T	–	BW1	Q	–	S BK	E	2	(K)
①	②	③		④	⑤		2	3	Quantity	Unit (piece)

Note: Model number of replaceable tooth (for replacement only)

RF12200	S	12T	RE Q - S BK	–	E	2	(K)
①	②	③	2		3	Quantity	Unit (piece)

① Size	Indicates chain size.	
② Roller type	Indicates the type of roller.	
③ Number of teeth	Indicates the number of teeth.	
④ Hub type	Indicates the type of hub.	Refer to the product page.
⑤ Teeth hardening	Indicates whether teeth are hardened or not. N: Non-hardened; Q: Hardened	Refer to the product page.
1 Additional machining	Indicates the type of additional machining on the sprocket.	See pages 53 and 54.
2 Smart Series replaceable tooth insert sprockets	Indicates Smart Series replaceable tooth insert sprockets.	See pages 56, 57, and 58.
3 Indicator pins	E: Indicates indicator pins.	See page 55.

General Use, Heavy Duty, and Corrosion Resistant Large Size Conveyor Chain

DT/AT/GS/SS Basic Models and DTA/ATA/GSA/SSA Advanced Models

Model Numbering Example

RF03075	R	–	AT	–	1L	A2	+	400L	–	PR	–	H
①	②		③		④	⑤		⑥		⑦		⑧

Code		See page
① Size	Metric sizes are RF03 and above. Inch sizes are RF430 and above.	p.29– p.47–
② Roller type	R, F, S, M, N May or may not be available depending on the series and size.	p.10
③ Series	Basic models DT, AT, GS, SS Advanced models DTA, ATA, GSA, SSA	p.15
④ Attachment spacing	Installed on the number of links you specify, such as “each link (1L)”. There are restrictions due to the shape of the attachment.	p.14
⑤ Attachment type	Several attachment types are available, including standard A, K, or G types.	p.12
⑥ Number of links	Specify the number of links. (Maximum 99,999 links)	
⑦ End link	Standard end link configuration is PR.	p.22
⑧ Option	Select an option according to your chain configuration. OK to leave blank if you require no options.	p.22

Ordering Example

① Size	RF03100 (RF03 pitch 100 mm)
② Roller type	R roller
③ Series	AT Series
④ Attachment spacing	Attachment on every link
⑤ Attachment type	A2 (horizontal attachment; plate with two bolt holes, on one side)
⑥ Number of links	400 links (two strands of 200-link chain)
⑦ End link	Outer link (temporary assembly)–inner link
⑧ Option	Half assembled in mirror image

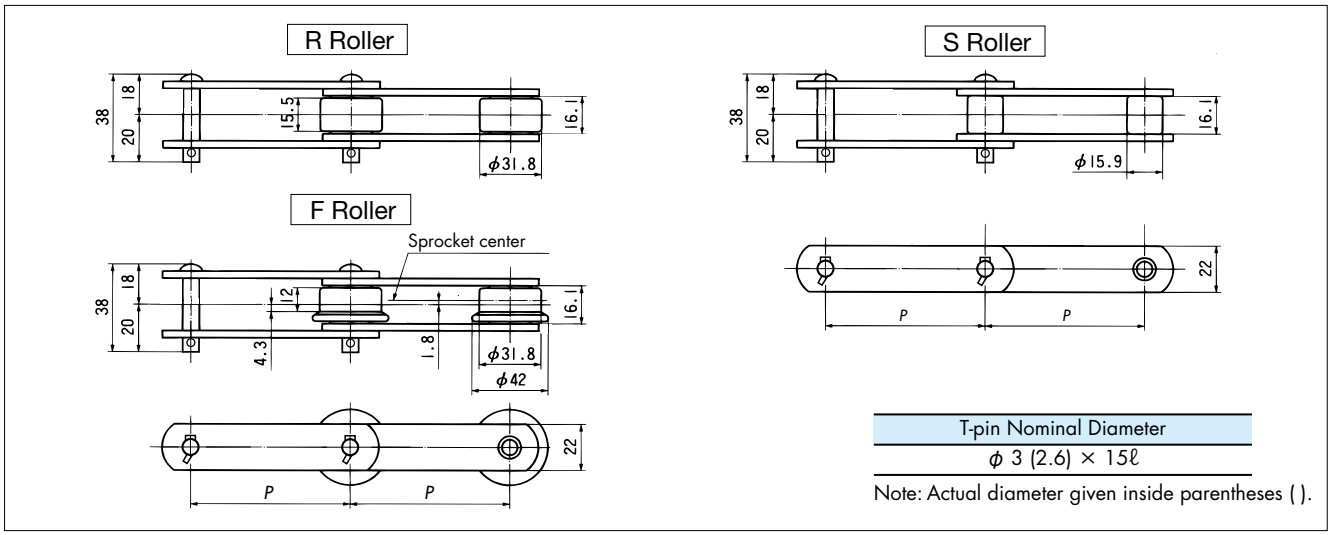
How to Order

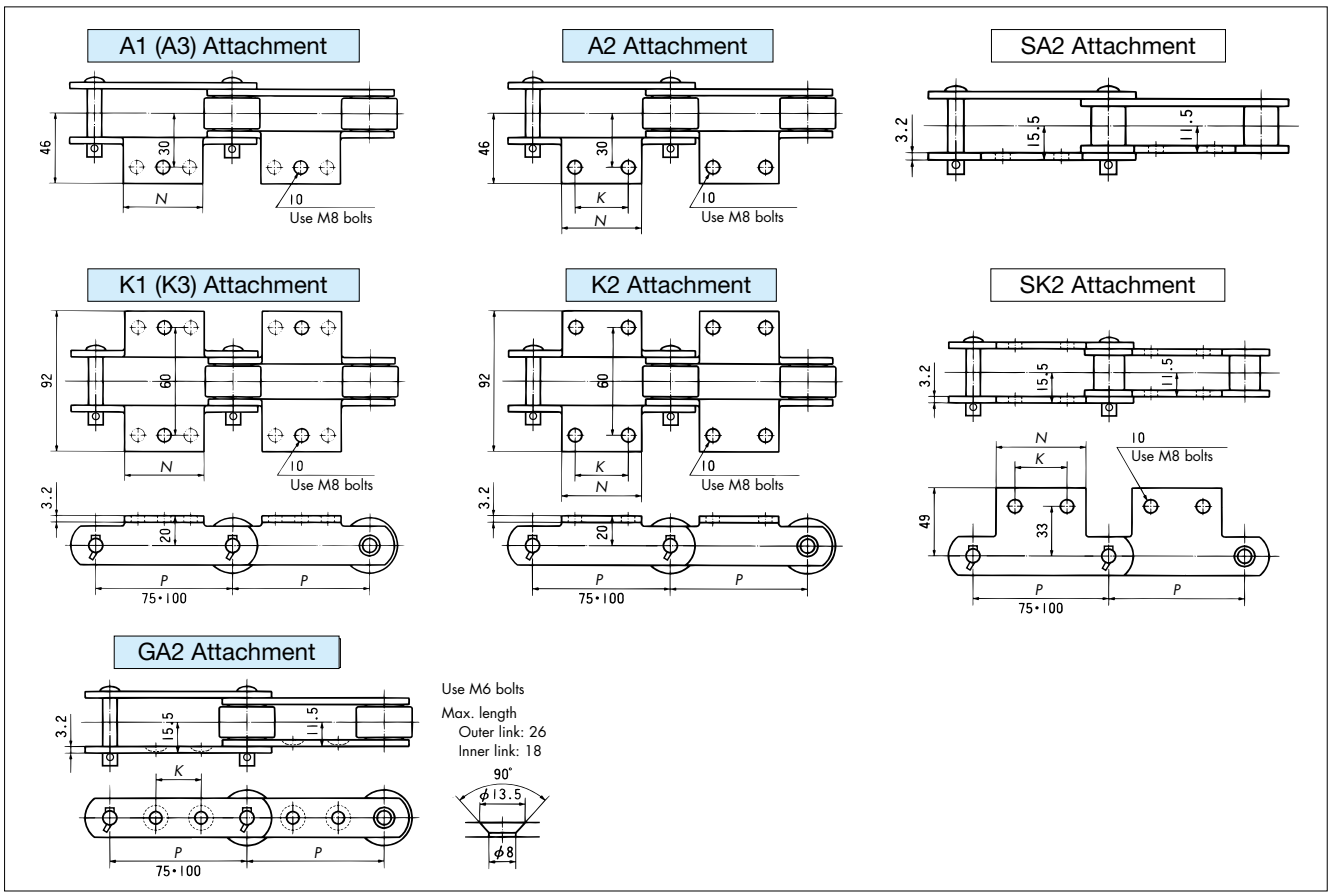
Model Number	Quantity
RF03100R–AT–1LA2+200L–PR–H	**2H**

REFERENCE: Previous ordering method

Model Number	Quantity	Configuration Specification
RF03100R–AT–1LA2	**400 links**	**200 links × 2 strands Both ends PL-RL Half assembled in mirror image**

Metric Pitches (Dimensions) RF03075 • RF03100





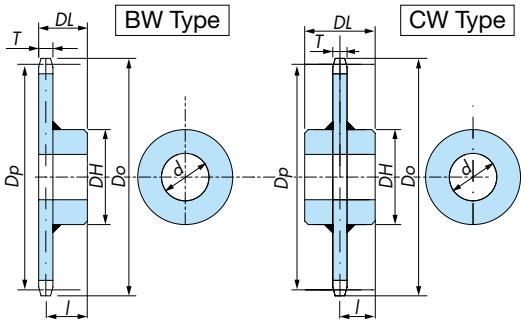
Size	Pitch P	Attachment A • K • SA • SK N	Attachment A • K • SA • SK K	Attachment GA2 K	Attachment and Roller Combinations A1 K1	A2 K2	SA2 SK2	GA2	Approximate Mass kg/m R Roller	F Roller	S Roller	A Attachment Mass kg/each
RF03075	75	55	30	30	R/F/S	R/F/S	R/S	R/S	2.8	2.9	1.8	0.06
RF03100	100	65	40	50	R/F/S	R/F/S	R/S	R/S	2.4	2.5	1.6	0.07

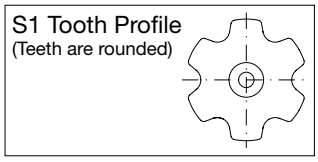
Size	Maximum Allowable Load kN{kgf} DT Series	DTA Series	AT Series	ATA Series	GS Series	GSA Series	SS Series	SSA Series
RF03075 **RF03100**	4.20{430}	4.20{430}	9.95{1010}	—	5.40{550}	7.02{720}	2.80{280}	2.80{280}

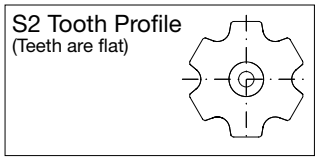
Note: 1. The mass of A attachments in the chart is the additional mass (kg) per attachment. For K attachments, multiply this number by two.
2. Contact a Tsubaki representative if using a guide on A or K attachment sides.
3. Attachments written in ▭ are standard attachments.
4. The dimensions given above are nominal dimensions and may differ from actual dimensions.

RF03075 R 6T—BW N

- Size: RF03075
- Roller type: R
- No. of teeth: 6T
- Hub type: BW·CW
- Tooth hardening: Hardened : Q, Normal : N







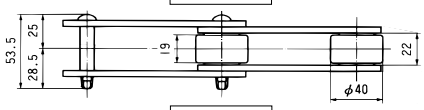
	Size and Roller Type	No. of Teeth N	Basic Sprocket Dimensions and Shape				Standard Series						Center Distance l	
			Pitch Circle Dia. Dp	Outer Dia. Do	Tooth Width T	Tooth Profile	Pilot Bore	Bore Dia. d Min.	Bore Dia. d Max.	Hub Dia. DH	Total Length DL	Approx. Weight kg	BW Type	CW Type
R Roller	RF03075R	6	150.0	158	11.9	S1	18	19	50	73	57	2.8	51.5	28.5
		8	196.0	209		S1	18	19	55	83	62	6.0	56.5	31.0
		10	242.7	259		S1	18	19	60	93	67	6.8	61.5	33.5
		12	289.8	308		S1	18	19	60	93	67	8.6	61.5	33.5
	RF03100R	6	200.0	208	11.9	S2	18	19	55	83	62	4.7	56.5	31.0
		8	261.3	273		S2	18	19	60	93	67	7.5	61.5	33.5
		10	323.6	336		S1	18	19	65	98	72	10.8	66.5	36.0
		12	386.4	401		S1	18	19	65	98	72	14.1	66.5	36.0
F Roller	RF03075F	6	150.0	158	8.9	S1	18	19	50	73	54	2.4	50.0	27.0
		8	196.0	209		S1	18	19	55	83	59	3.9	55.0	29.5
		10	242.7	259		S1	18	19	60	93	64	5.8	60.0	32.0
		12	289.8	308		S1	18	19	60	93	64	7.2	60.0	32.0
	RF03100F	6	200.0	208	8.9	S2	18	19	55	83	59	4.0	55.0	29.5
		8	261.3	273		S2	18	19	60	93	64	6.4	60.0	32.0
		10	323.6	336		S1	18	19	65	98	69	9.0	65.0	34.5
		12	386.4	401		S1	18	19	65	98	69	11.4	65.0	34.5
S Roller	RF03075S	6	150.0	158	11.9	S1	18	19	50	73	57	3.0	51.5	28.5
		8	196.0	206		S1	18	19	55	83	62	4.8	56.5	31.0
		10	242.7	252		S1	18	19	60	93	67	7.0	61.5	33.5
		12	289.8	299		S1	18	19	60	93	67	8.8	61.5	33.5
	RF03100S	6	200.0	212	11.9	S2	18	19	55	83	62	4.9	56.5	31.0
		8	261.3	269		S1	18	19	60	93	67	7.8	61.5	33.5
		10	323.6	333		S1	18	19	65	98	72	11.0	66.5	36.0
		12	386.4	396		S1	18	19	65	98	72	14.3	66.5	36.0

Note: The above dimensions are nominal dimensions and may differ from actual dimensions.

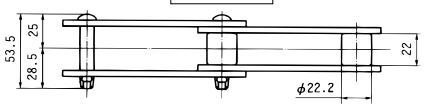
See p.53 for bore machining

Metric Pitches (Dimensions) RF05075 • RF05100 • RF05125 • RF05150

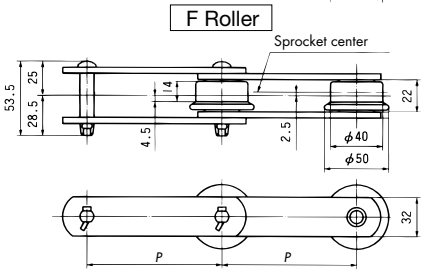
R Roller

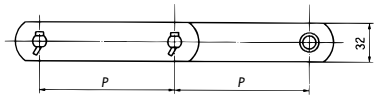


S Roller



F Roller

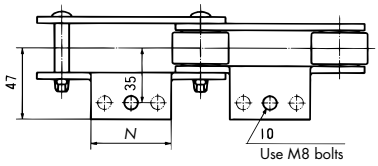




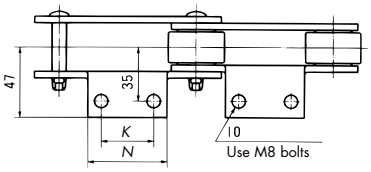
T-pin Nominal Diameter
φ 4 (3.6) × 20ℓ

Note: Actual diameter given inside parentheses ( ).

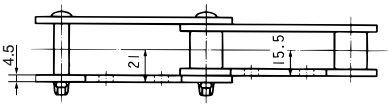
A1 (A3) Attachment



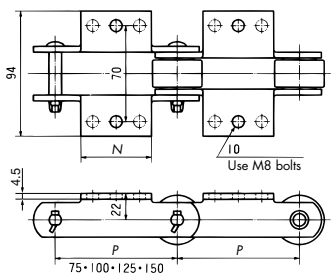
A2 Attachment



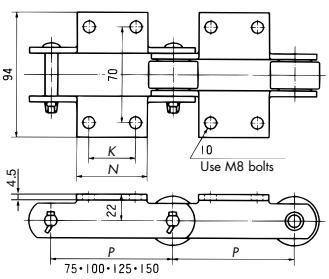
SA2 Attachment



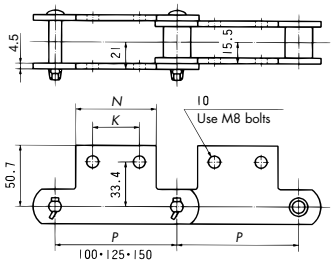
K1 (K3) Attachment



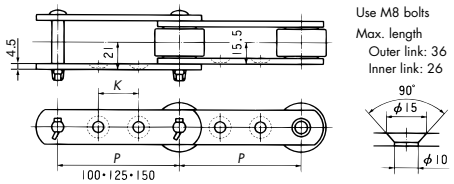
K2 Attachment



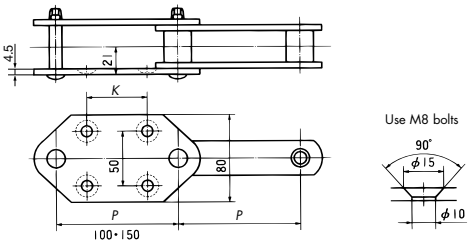
SK2 Attachment



GA2 Attachment



GA4 Attachment



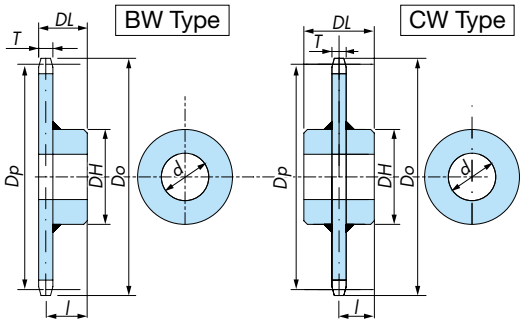
Size	Pitch P	Attachment				Attachment and Roller Combinations					Approximate Mass kg/m			A Attachment Mass kg/each	GA4 Attachment Mass kg/m
		A・K・SA・SK		GA2	GA4	A1 K1	A2 K2	SA2 SK2	GA2	GA4	R Roller	F Roller	S Roller		
		N	K	K	K										
RF05075	75	55	30	–	–	S	S	–	–	–	–	–	4.3	0.06	–
RF05100	100	65	40	40	50	R/F/S	R/F/S	R/S	R/S	S	5.2	5.4	3.8	0.07	4.6
RF05125	125	75	50	50	–	R/F/S	R/F/S	R/S	R/F/S	–	4.5	4.6	3.4	0.08	–
RF05150	150	85	60	60	70	R/F/S	R/F/S	R/S	R/F/S	S	4.2	4.4	3.3	0.10	4.1

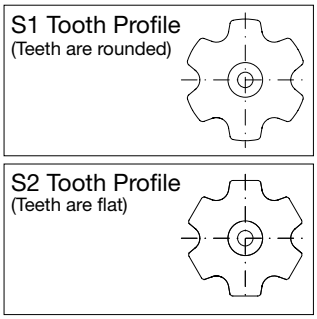
Size	Maximum Allowable Load kN{kgf}							
	DT Series	DTA Series	AT Series	ATA Series	GS Series	GSA Series	SS Series	SSA Series
RF05075	9.80{1000}	9.80{1000}	20.3{2070}	—	10.8{1100}	14.0{1450}	5.70{580}	5.70{580}
RF05100								
RF05125								
RF05150								

Note: 1. The mass of A attachments in the chart is the additional mass (kg) per attachment. For K attachments, multiply this number by two.
2. The mass of the GA4 attachment in the chart is the mass (kg/m) when S Rollers are attached every other link.
3. Contact a Tsubaki representative if using a guide on A or K attachment sides.
4. Attachments written in ☐ are standard attachments.
5. The dimensions given above are nominal dimensions and may differ from actual dimensions.

RF05100 R 6T—BW N

- Size
- No. of teeth
- Roller type
- Hub type: BW·CW
- Tooth hardening: Hardened : Q, Normal : N





	Size and Roller Type	No. of Teeth N	Basic Sprocket Dimensions and Shape				Standard Series						Center Distance l	
			Pitch Circle Dia. Dp	Outer Dia. Do	Tooth Width T	Tooth Profile	Pilot Bore	Bore Dia. d Min.	Bore Dia. d Max.	Hub Dia. DH	Total Length DL	Approx. Weight kg	BW Type	CW Type
R Roller	RF05100R	6	200.0	205	18	S1	28	29	75	107	86	8.1	77.0	43.0
		8	261.3	273		S1	28	29	75	107	86	11.2	77.0	43.0
		10	323.6	340		S1	33	34	80	117	94	16.6	85.0	47.0
		12	386.4	405		S1	33	34	85	127	104	23.5	95.0	52.0
	RF05125R	6	250.0	258	18	S2	28	29	75	107	86	10.5	77.0	43.0
		8	326.6	340		S2	33	34	80	117	94	16.8	85.0	47.0
		10	404.5	421		S2	33	34	85	127	104	25.5	95.0	52.0
		12	483.0	499		S1	33	34	95	137	116	35.5	107.0	58.0
	RF05150R	6	300.0	306	18	S2	33	34	80	117	94	14.7	85.0	47.0
		8	392.0	403		S2	33	34	85	127	104	23.9	95.0	52.0
		10	485.4	501		S2	33	34	95	137	116	35.5	107.0	58.0
		12	579.6	597		S2	33	34	95	137	116	46.7	107.0	58.0
F Roller	RF05100F	6	200.0	205	11.9	S1	28	29	75	107	80	6.9	74.0	40.0
		8	261.3	273		S1	28	29	75	107	80	9.0	74.0	40.0
		10	323.6	340		S1	33	34	80	117	88	13.0	82.0	44.0
		12	386.4	405		S1	33	34	85	127	98	18.3	92.0	49.0
	RF05125F	6	250.0	258	11.9	S2	28	29	75	107	80	8.5	74.0	40.0
		8	326.6	340		S2	33	34	80	117	88	13.2	82.0	44.0
		10	404.5	421		S2	33	34	85	127	98	18.7	92.0	49.0
		12	483.0	499		S1	33	34	95	137	110	27.2	104.0	55.0
	RF05150F	6	300.0	306	11.9	S2	33	34	80	117	88	11.8	82.0	44.0
		8	392.0	403		S2	33	34	85	127	98	18.7	92.0	49.0
		10	485.4	501		S2	33	34	95	137	110	27.2	104.0	55.0
		12	579.6	597		S2	33	34	95	137	110	34.6	104.0	55.0
S Roller	RF05075S	8	196.0	209	18	S1	28	29	75	107	86	8.5	77.0	43.0
		10	242.7	256		S1	28	29	75	107	86	10.5	77.0	43.0
		12	289.8	303		S1	33	34	80	117	94	14.6	85.0	47.0
	RF05100S	6	200.0	213	18	S2	28	29	75	107	86	8.7	77.0	43.0
		8	261.3	273		S1	28	29	75	107	86	11.8	77.0	43.0
		10	323.6	337		S1	33	34	80	117	94	17.1	85.0	47.0
		12	386.4	400		S1	33	34	85	127	104	24.0	95.0	52.0
	RF05125S	6	250.0	262	18	S2	28	29	75	107	86	11.1	77.0	43.0
		8	326.6	344		S2	33	34	80	117	94	17.6	85.0	47.0
		10	404.5	417		S1	33	34	85	127	104	25.6	95.0	52.0
		12	483.0	496		S1	33	34	95	137	116	35.7	107.0	58.0
	RF05150S	6	300.0	311	18	S2	33	34	80	117	94	15.3	85.0	47.0
		8	392.0	407		S2	33	34	85	127	104	24.7	95.0	52.0
		10	485.4	501		S2	33	34	95	137	116	36.0	107.0	58.0
		12	579.6	592		S1	33	34	95	137	116	47.1	107.0	58.0

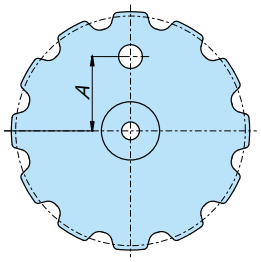
Note: The above dimensions are nominal dimensions and may differ from actual dimensions.

See p.53 for bore machining

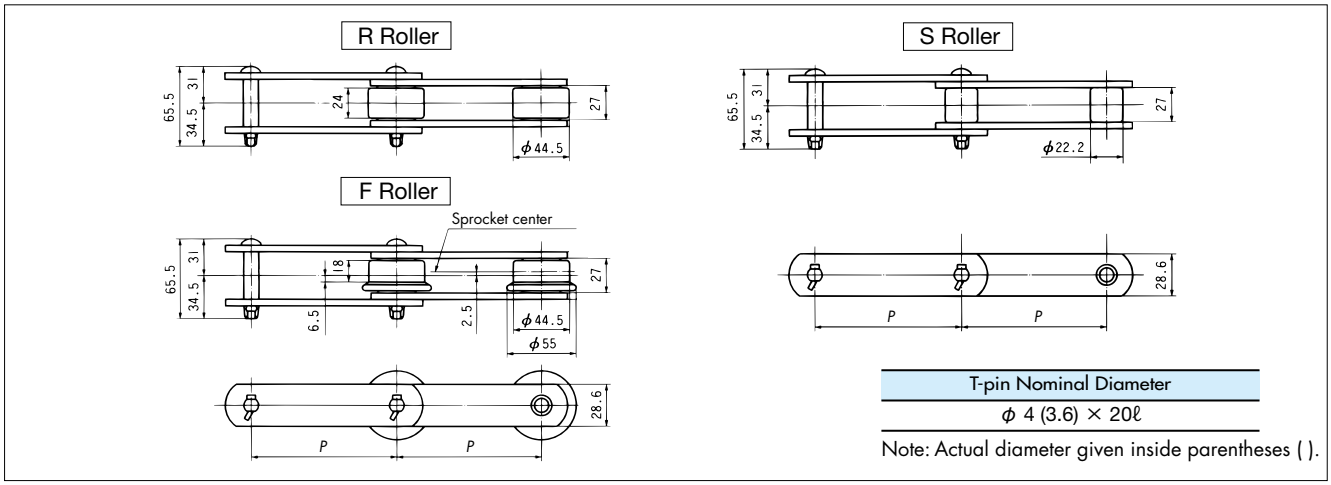
■ Hanging Hole Dimensions

Size	No. of Teeth	Hanging Hole Dim. A	No. of Hanging Holes
RF05125	12	155	1
RF05150	10	160	1
	12	190	1

Note: Hanging holes are not available on sprockets with numbers of teeth or chain numbers not listed.

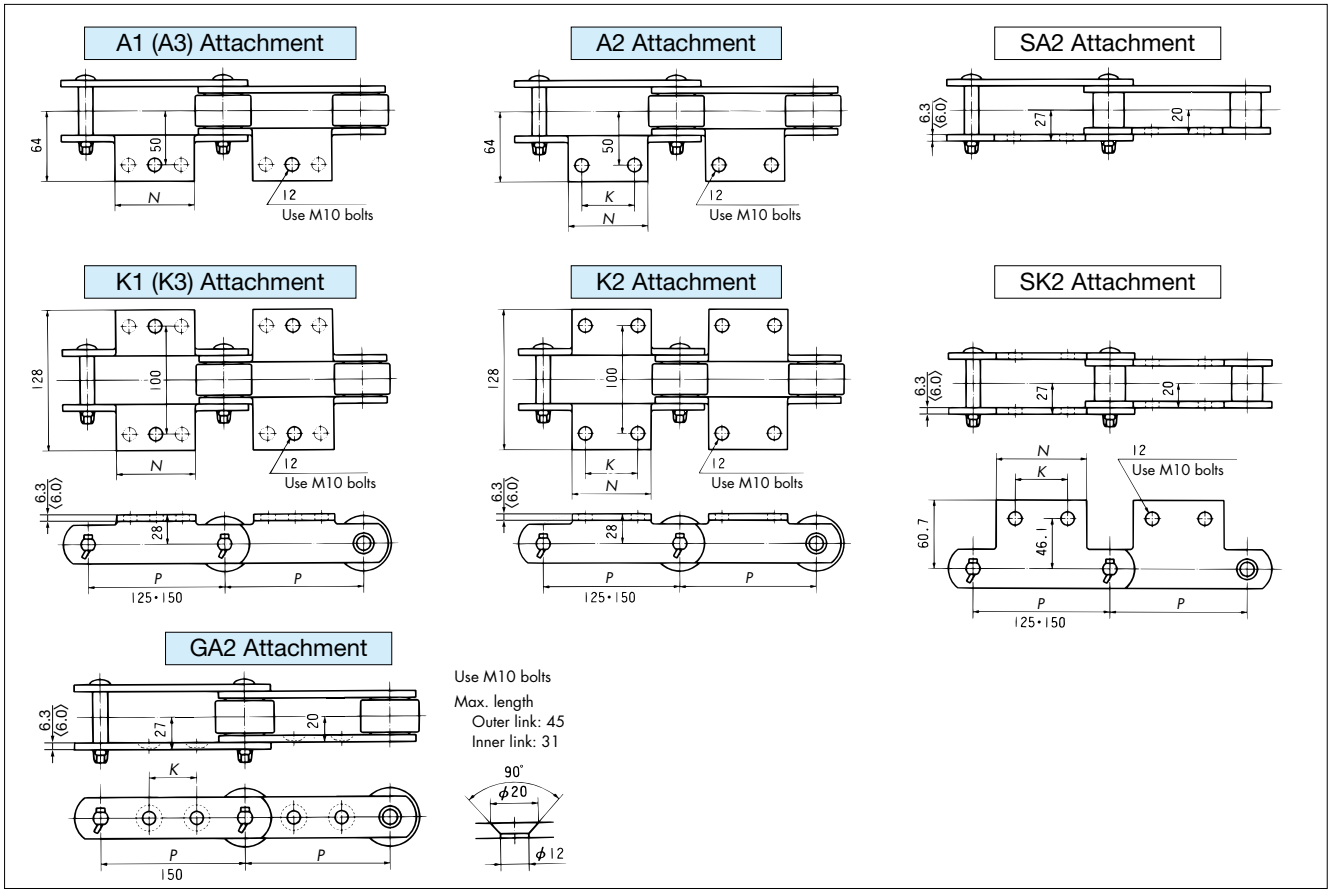


Metric Pitches (Dimensions) RF08125 • RF08150



T-pin Nominal Diameter
φ 4 (3.6) × 20ℓ

Note: Actual diameter given inside parentheses ( ).



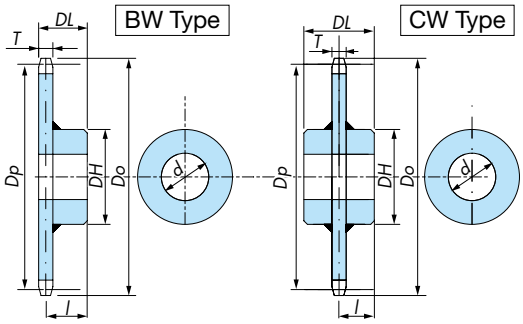
Size	Pitch P	Attachment A • K • SA • SK N	Attachment A • K • SA • SK K	Attachment GA2 K	Attachment and Roller Combinations A1 K1	A2 K2	SA2 SK2	GA2	Approximate Mass kg/m R Roller	F Roller	S Roller	A Attachment Mass kg/each
RF08125	125	80	50	–	R/F/S	R/F/S	R/S	–	5.9	6.2	4.2	0.19
RF08150	150	90	60	60	R/F/S	R/F/S	R/S	R/F/S	5.6	5.8	4.0	0.23

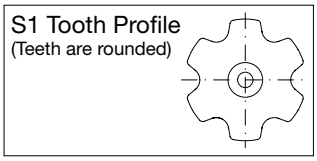
Size	Maximum Allowable Load kN{kgf} DT Series	DTA Series	AT Series	ATA Series	GS Series	GSA Series	SS Series	SSA Series
RF08125 **RF08150**	11.2{1140}	11.2{1140}	20.3{2070}	24.3{2480}	12.3{1250}	16.0{1650}	5.70{580}	5.70{580}

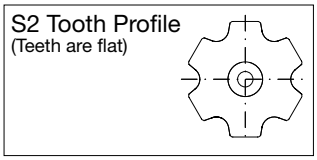
Note: 1. The mass of A attachments in the chart is the additional mass (kg) per attachment. For K attachments, multiply this number by two.
2. Values in < > are for SS and SSA Series.
3. Contact a Tsubaki representative if using a guide on A or K attachment sides.
4. Attachments written in ▭ are standard attachments.
5. The dimensions given above are nominal dimensions and may differ from actual dimensions.

RF08125 R 6T—BW N

- Size: RF08125
- Roller type: R
- No. of teeth: 6T
- Hub type: BW·CW
- Tooth hardening: Hardened : Q, Normal : N







	Size and Roller Type	No. of Teeth N	Basic Sprocket Dimensions and Shape				Standard Series						Center Distance l	
			Pitch Circle Dia. Dp	Outer Dia. Do	Tooth Width T	Tooth Profile	Pilot Bore	Bore Dia. d Min.	Bore Dia. d Max.	Hub Dia. DH	Total Length DL	Approx. Weight kg	BW Type	CW Type
R Roller	RF08125R	6	250.0	264	22	S2	28	29	75	107	90	11.9	79.0	45.0
		8	326.6	347		S2	33	34	80	117	98	19.4	87.0	49.0
		10	404.5	426		S1	33	34	85	127	108	29.0	97.0	54.0
		12	483.0	508		S1	33	34	95	137	120	40.8	109.0	60.0
	RF08150R	6	300.0	312	22	S2	33	34	80	117	98	16.8	87.0	49.0
		8	392.0	410		S2	33	34	85	127	108	27.7	97.0	54.0
		10	485.4	508		S2	33	34	95	137	120	41.2	109.0	60.0
		12	579.6	605		S2	33	34	95	137	120	54.9	109.0	60.0
F Roller	RF08125F	6	250.0	264	15	S2	28	29	75	107	83	9.7	75.5	41.5
		8	326.6	347		S2	33	34	80	117	91	15.2	83.5	45.5
		10	404.5	426		S1	33	34	85	127	101	22.5	93.5	50.5
		12	483.0	508		S1	33	34	95	137	113	31.7	105.5	56.5
	RF08150F	6	300.0	312	15	S2	33	34	80	117	91	13.5	83.5	45.5
		8	392.0	410		S2	33	34	85	127	101	21.6	93.5	50.5
		10	485.4	508		S2	33	34	95	137	113	31.7	105.5	56.5
		12	579.6	605		S2	33	34	95	137	113	41.1	105.5	56.5
S Roller	RF08125S	6	250.0	270	22	S2	28	29	75	107	90	12.8	79.0	45.0
		8	326.6	340		S1	33	34	80	117	98	20.2	87.0	49.0
		10	404.5	418		S1	33	34	85	127	108	29.6	97.0	54.0
		12	483.0	496		S1	33	34	95	137	120	41.3	109.0	60.0
	RF08150S	6	300.0	318	22	S2	33	34	80	117	98	17.8	87.0	49.0
		8	392.0	403		S1	33	34	85	127	108	28.5	97.0	54.0
		10	485.4	499		S1	33	34	95	137	120	41.7	109.0	60.0
		12	579.6	593		S1	33	34	95	137	120	55.2	109.0	60.0

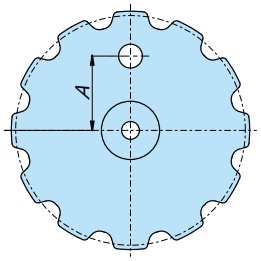
Note: The above dimensions are nominal dimensions and may differ from actual dimensions.

See p.53 for bore machining

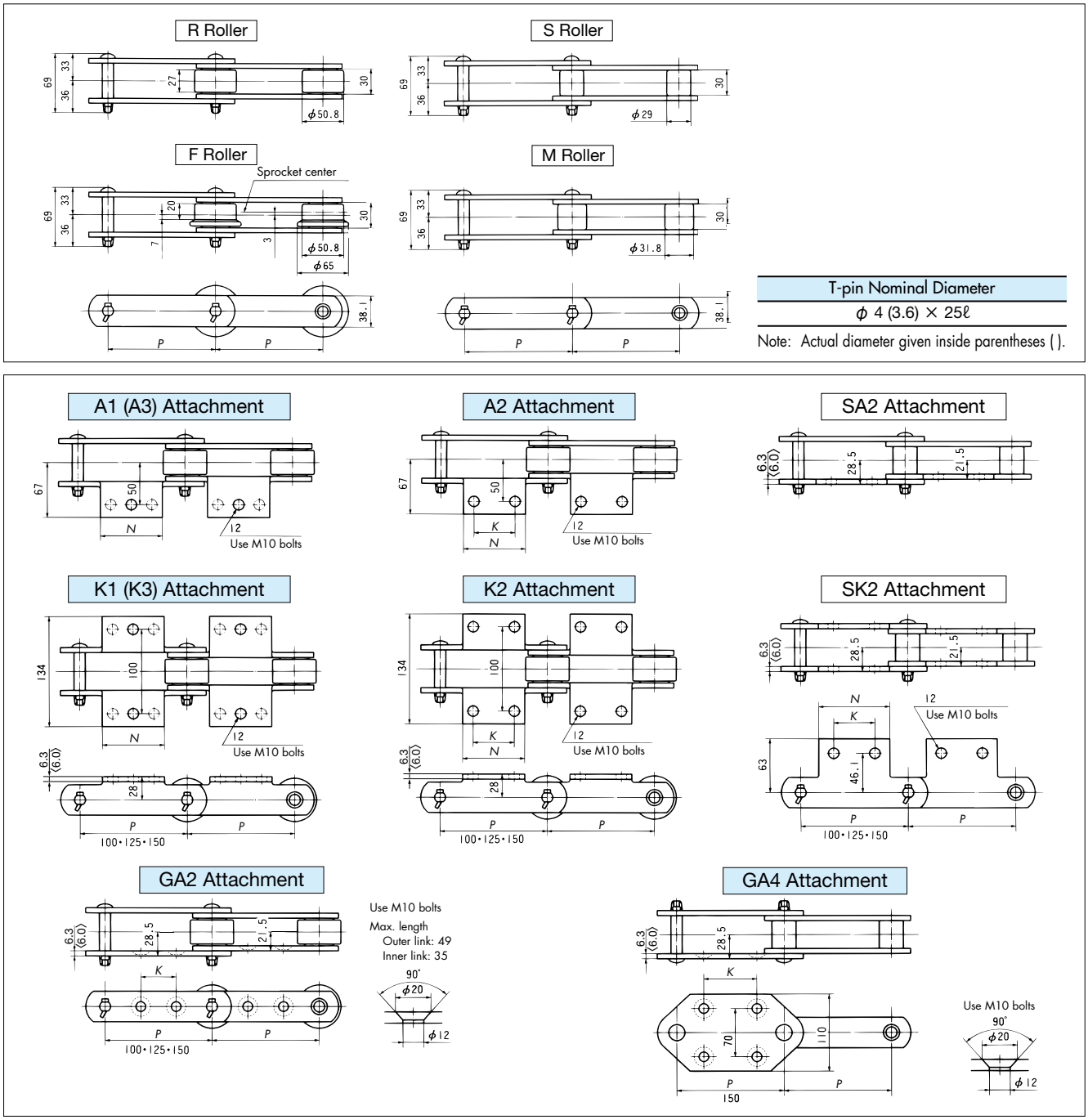
■ Hanging Hole Dimensions

Size	No. of Teeth	Hanging Hole Dim. A	No. of Hanging Holes
RF08125	12	155	1
RF08150	10	155	1
	12	190	1

Note: Hanging holes are not available on sprockets with numbers of teeth or chain numbers not listed.



Metric Pitches (Dimensions) RF10100 • RF10125 • RF10150



T-pin Nominal Diameter
ϕ 4 (3.6) × 25ℓ

Note: Actual diameter given inside parentheses ( ).

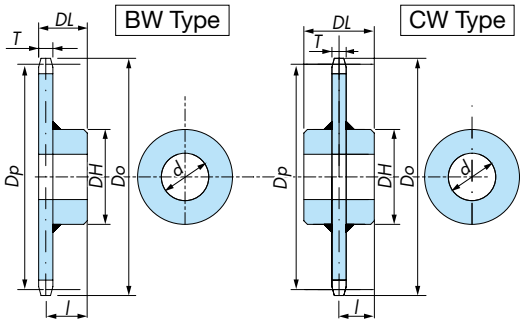
Size	Pitch P	Attachment A • K • SA • SK N	Attachment A • K • SA • SK K	Attachment GA2 K	Attachment GA4 K	Attachment and Roller Combinations A1 K1	A2 K2	SA2 SK2	GA2	GA4	Approximate Mass kg/m R Roller	F Roller	S Roller	M Roller	A Attachment Mass kg/each	GA4 Attachment Mass kg/m
RF10100	100	70	40	30	–	R/S/M	R/S/M	R/S/M	S/M	–	10	–	7.0	7.3	0.16	–
RF10125	125	80	50	40	–	R/F/S/M	R/F/S/M	R/S/M	R/S/M	–	8.7	9.0	6.3	6.5	0.18	–
RF10150	150	90	60	60	75	R/F/S/M	R/F/S/M	R/S/M	R/F/S/M	S/M	8.0	8.3	5.9	6.1	0.20	7.7(7.9)

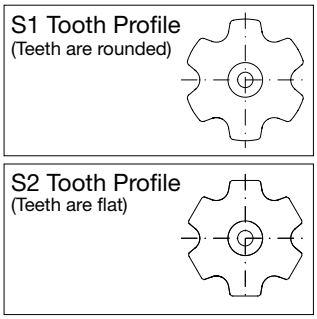
Size	Maximum Allowable Load kN{kgf} DT Series	DTA Series	AT Series	ATA Series	GS Series	GSA Series	SS Series	SSA Series
RF10100	17.6{1790}	17.6{1790}	32.3{3290}	38.7{3950}	17.7{1800}	23.0{2350}	9.00{920}	9.00{920}
RF10125								
RF10150								

Note: 1. The mass of A attachments in the chart is the additional mass (kg) per attachment. For K attachments, multiply this number by two.
2. The mass of the GA4 attachment in the chart is the mass (kg/m) when S Rollers are attached every other link. Values in parentheses ( ) are for M Rollers.
3. Values in < > are for SS and SSA Series.
4. Contact a Tsubaki representative if using a guide on A or K attachment sides.
5. Attachments written in ▭ are standard attachments.
6. The dimensions given above are nominal dimensions and may differ from actual dimensions.

RF10100 R 6T—BW N

- Size
- No. of teeth
- Roller type
- Hub type: BW·CW
- Tooth hardening: Hardened : Q, Normal : N





	Size and Roller Type	No. of Teeth N	Basic Sprocket Dimensions and Shape				Standard Series						Center Distance l	
			Pitch Circle Dia. Dp	Outer Dia. Do	Tooth Width T	Tooth Profile	Pilot Bore	Bore Dia. d Min.	Bore Dia. d Max.	Hub Dia. DH	Total Length DL	Approx. Weight kg	BW Type	CW Type
R Roller	**RF10100R**	6	200.0	214	22	S1	28	29	75	107	90	8.7	79.0	45.0
		8	261.3	282		S1	33	29	85	127	108	15.7	97.0	54.0
		10	323.6	349		S1	33	34	95	137	120	23.1	109.0	60.0
		12	386.4	414		S1	38	34	100	147	123	30.7	112.0	61.5
	RF10125R	6	250.0	263	22	S2	33	29	85	127	108	15.1	97.0	54.0
		8	326.6	343		S1	33	34	95	137	120	23.6	109.0	60.0
		10	404.5	426		S1	38	34	100	147	123	33.1	112.0	61.5
		12	483.0	508		S1	38	34	110	157	133	45.3	122.0	66.5
	RF10150R	6	300.0	310	22	S2	33	34	95	137	120	21.3	109.0	60.0
		8	392.0	409		S2	38	34	100	147	123	31.8	112.0	61.5
		10	485.4	507		S2	38	34	110	157	133	47.6	122.0	66.5
		12	579.6	601		S1	38	34	115	167	144	65.2	133.0	72.0
F Roller	**RF10125F**	6	250.0	263	15	S2	33	34	85	127	101	12.9	93.5	50.5
		8	326.6	343		S1	33	34	95	137	113	19.6	105.5	56.5
		10	404.5	426		S1	38	39	100	147	116	26.6	108.5	58.0
		12	483.0	508		S1	38	39	110	157	126	36.1	118.5	63.0
	RF10150F	6	300.0	310	15	S2	33	34	95	137	113	18.0	105.5	56.5
		8	392.0	409		S2	38	39	100	147	116	25.8	108.5	58.0
		10	485.4	507		S2	38	39	110	157	126	36.5	118.5	63.0
		12	579.6	601		S1	38	39	115	167	137	49.6	129.5	68.5
S Roller	**RF10100S**	6	200.0	219	22	S2	28	29	75	107	90	9.7	79.0	45.0
		8	261.3	279		S1	33	34	85	127	108	17.0	97.0	54.0
		10	323.6	341		S1	33	34	95	137	120	24.2	109.0	60.0
		12	386.4	404		S1	38	39	100	147	123	31.9	112.0	61.5
	RF10125S	6	250.0	267	22	S2	33	34	85	127	108	16.2	97.0	54.0
		8	326.6	343		S1	33	34	95	137	120	25.0	109.0	60.0
		10	404.5	422		S1	38	39	100	147	123	34.4	112.0	61.5
		12	483.0	500		S1	38	39	110	157	133	46.3	122.0	66.5
	RF10150S	6	300.0	315	22	S2	33	34	95	137	120	22.4	109.0	60.0
		8	392.0	413		S2	38	39	100	147	123	33.2	112.0	61.5
		10	485.4	503		S1	38	39	110	157	133	47.9	122.0	66.5
		12	579.6	597		S1	38	39	115	167	144	64.3	133.0	72.0

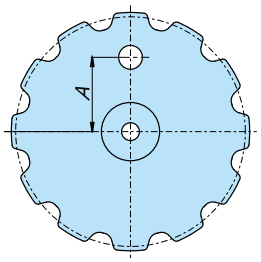
Note: The above dimensions are nominal dimensions and may differ from actual dimensions.

See p.53 for bore machining

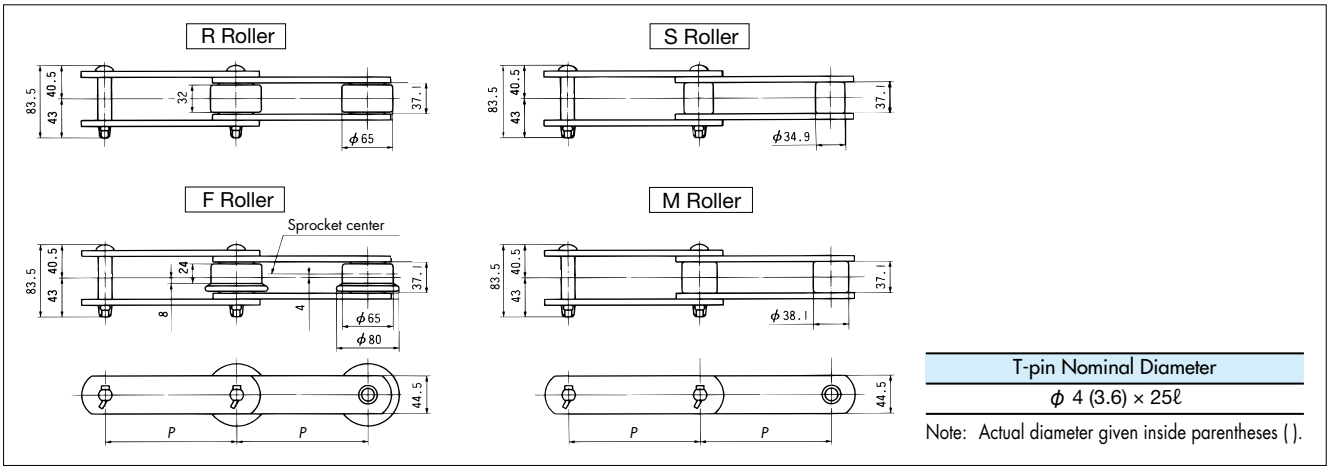
■ Hanging Hole Dimensions

Size	No. of Teeth	Hanging Hole Dim. A	No. of Hanging Holes
RF10125	12	155	1
RF10150	10	155	1
	12	185	1

Note: Hanging holes are not available on sprockets with numbers of teeth or chain numbers not listed.

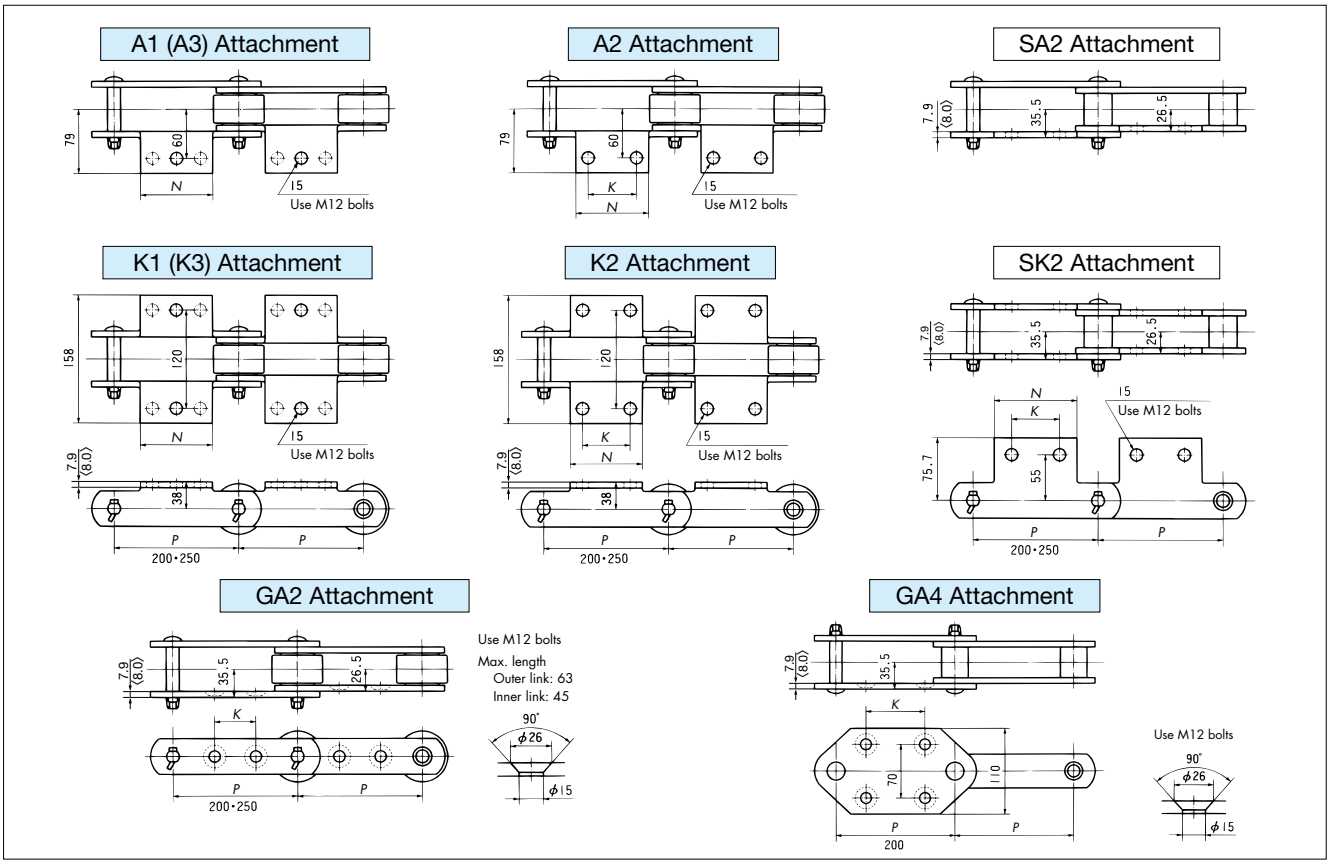


Metric Pitches (Dimensions) RF12200 • RF12250



T-pin Nominal Diameter
φ 4 (3.6) × 25ℓ

Note: Actual diameter given inside parentheses ( ).



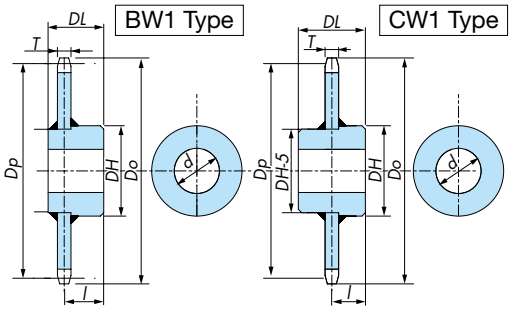
Size	Pitch P	Attachment A・K・SA・SK N	Attachment A・K・SA・SK K	Attachment GA2 K	Attachment GA4 K	Attachment and Roller Combinations A1 K1	A2 K2	SA2 SK2	GA2	GA4	Approximate Mass kg/m R Roller	F Roller	S Roller	M Roller	A Attachment Mass kg/each	GA4 Attachment Mass kg/m
RF12200	200	120	80	80	100	R/F/S/M	R/F/S/M	R/S/M	R/F/S/M	S/M	11.6	12.1	8.3	8.6	0.44	10.3(10.6)
RF12250	250	170	125	125	–	R/F/S/M	R/F/S/M	R/S/M	R/F/S/M	–	10.5	10.8	7.8	8.0	0.61	–

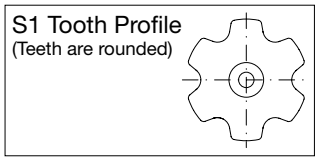
Size	Maximum Allowable Load kN{kgf} DT Series	DTA Series	AT Series	ATA Series	GS Series	GSA Series	SS Series	SSA Series
RF12200	26.6{2710}	26.6{2710}	39.9{4060}	47.8{4880}	26.5{2700}	34.5{3500}	11.0{1120}	11.0{1120}
RF12250								

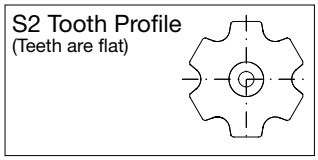
Note: 1. The mass of A attachments in the chart is the additional mass (kg) per attachment. For K attachments, multiply this number by two.
2. The mass of the GA4 attachment in the chart is the mass (kg/m) when S Rollers are attached every other link. Values in parentheses ( ) are for M Rollers.
3. Values in < > are for SS and SSA Series.
4. Contact a Tsubaki representative if using a guide on A or K attachment sides.
5. Attachments written in ▭ are standard attachments.
6. The dimensions given above are nominal dimensions and may differ from actual dimensions.

RF12200 R 6T—BW1 N

- Size: RF12200
- Roller type: R
- No. of teeth: 6T
- Hub type: BW1·CW1
- Tooth hardening: Hardened : Q, Normal : N







	Size and Roller Type	No. of Teeth N	Basic Sprocket Dimensions and Shape				Standard Series						Center Distance l	
			Pitch Circle Dia. Dp	Outer Dia. Do	Tooth Width T	Tooth Profile	Pilot Bore	Bore Dia. d Min.	Bore Dia. d Max.	Hub Dia. DH	Total Length DL	Approx. Weight kg	BW1 Type	CW1 Type
R Roller	RF12200R	6	400.0	419	28	S2	55	56	110	157	135	39.0	110.0	67.5
		8	522.6	551		S2	60	61	120	177	150	64.9	125.0	75.0
		10	647.2	682		S2	65	66	130	187	160	94.3	135.0	80.0
		12	772.7	811		S2	75	76	145	207	180	133.3	155.0	90.0
	RF12250R	6	500.0	516	28	S2	60	61	120	177	150	59.7	125.0	75.0
		8	653.3	680		S2	65	66	130	187	160	95.3	135.0	80.0
		10	809.0	841		S2	75	76	145	207	180	143.4	155.0	90.0
		12	965.9	1002		S2	80	81	160	227	200	204.7	175.0	100.0
F Roller	RF12200F	6	400.0	419	18	S2	55	56	110	157	135	31.6	115.0	67.5
		8	522.6	551		S2	60	61	120	177	150	51.1	130.0	75.0
		10	647.2	682		S2	65	66	130	187	160	71.7	140.0	80.0
		12	772.7	811		S2	75	76	145	207	180	100.7	160.0	90.0
	RF12250F	6	500.0	516	18	S2	60	61	120	177	150	47.6	130.0	75.0
		8	653.3	680		S2	65	66	130	187	160	72.3	140.0	80.0
		10	809.0	841		S2	75	76	145	207	180	107.2	160.0	90.0
		12	965.9	1002		S2	80	81	160	227	200	151.8	180.0	100.0
S Roller	RF12200S	6	400.0	427	28	S2	55	56	110	157	135	41.4	110.0	67.5
		8	522.6	544		S1	60	61	120	177	150	67.5	125.0	75.0
		10	647.2	668		S1	65	66	130	187	160	95.5	135.0	80.0
		12	772.7	794		S1	75	76	145	207	180	134.3	155.0	90.0
	RF12250S	6	500.0	522	28	S2	60	61	120	177	150	62.2	125.0	75.0
		8	653.3	688		S2	65	66	130	187	160	98.3	135.0	80.0
		10	809.0	830		S1	75	76	145	207	180	144.5	155.0	90.0
		12	965.9	987		S1	80	81	160	227	200	205.0	175.0	100.0

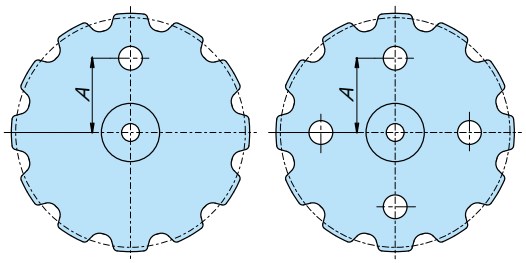
Note: The above dimensions are nominal dimensions and may differ from actual dimensions.

See p.53 for bore machining

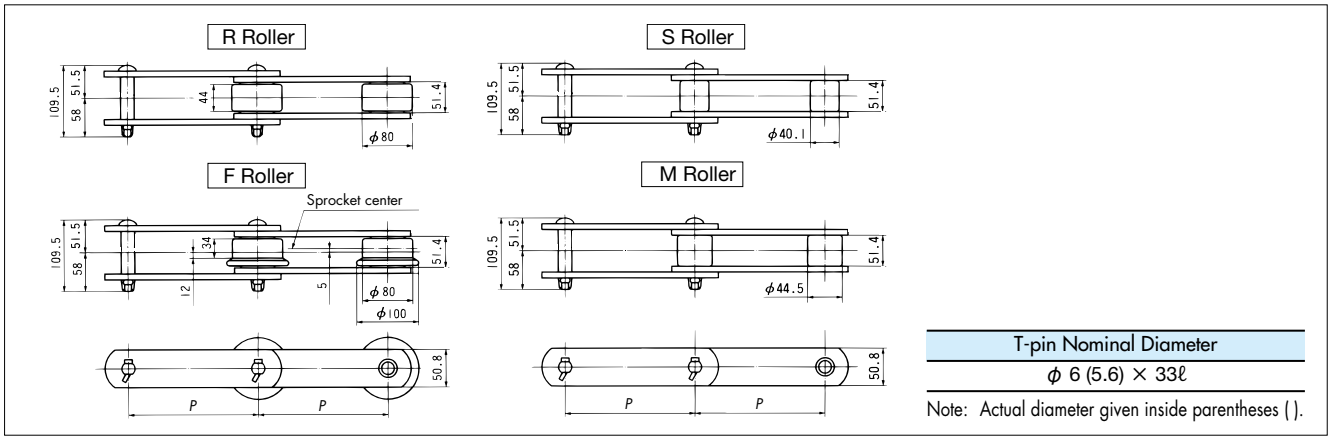
■ Hanging Hole Dimensions

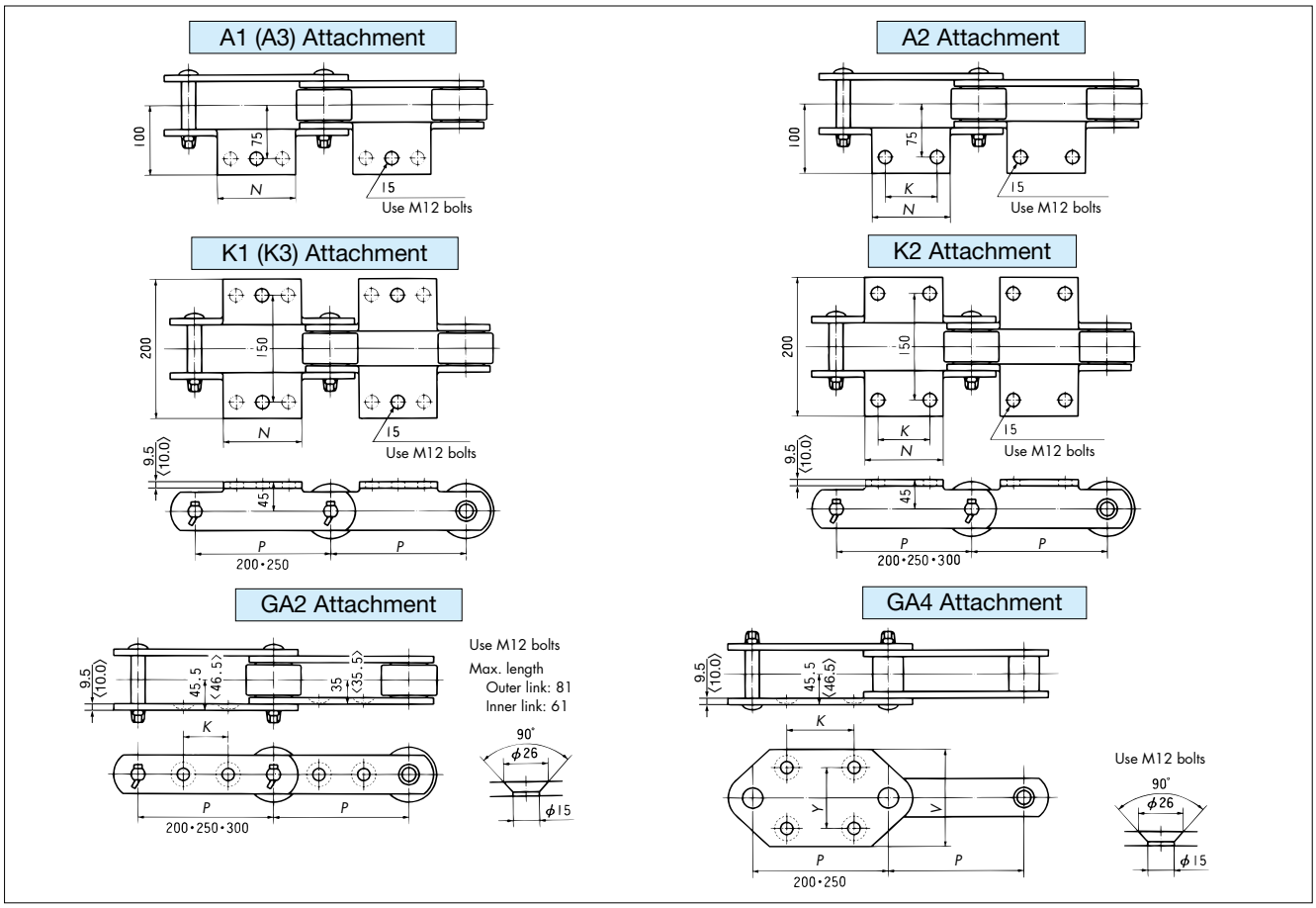
Size	No. of Teeth	Hanging Hole Dim. A	No. of Hanging Holes
RF12200	8	160	1
	10	205	1
	12	250	4
RF12250	6	155	1
	8	210	1
	10	260	4
	12	315	4

Note: Hanging holes are not available on sprockets with numbers of teeth or chain numbers not listed.



Metric Pitches (Dimensions) RF17200 • RF17250 • RF17300





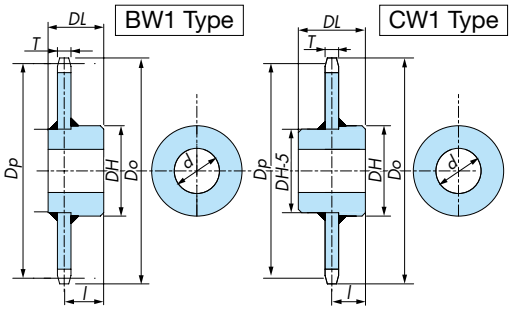
Size	Pitch P	Attachment						Attachment and Roller Combinations					Approximate Mass kg/m				A Attachment Mass kg/each	GA4 Attachment Mass kg/m
		A • K		GA2	GA4													
		N	K	K	K	V	Y	A1 K1	A2 K2	YA2 (welded)	GA2	GA4	R Roller	F Roller	S Roller	M Roller		
RF17200	200	120	80	70	100	120	80	R/F/S/M	R/F/S/M	–	R/F/S/M	S/M	20	21	12	13	0.64	14(15)
RF17250	250	170	125	110	140	150	100	R/F/S/M	R/F/S/M	–	R/F/S/M	S/M	17	18	11	12	0.88	15(16)
RF17300	300	220	180	150	–	–	–	–	R/F/S/M	–	R/F/S/M	–	16	16	11	11	1.26	–

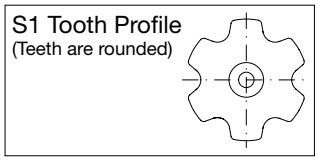
Size	Maximum Allowable Load kN{kgf}							
	DT Series	DTA Series	AT Series	ATA Series	GS Series	GSA Series	SS Series	SSA Series
RF17200	35.0{3570}	35.0{3570}	55.3{5640}	66.3{6770}	35.8{3650}	46.5{4750}	15.5{1580}	15.5{1580}
RF17250								
RF17300								

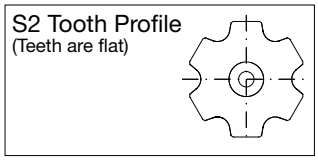
Note: 1. The mass of A attachments in the chart is the additional mass (kg) per attachment. For K attachments, multiply this number by two.
2. The mass of the GA4 attachment in the chart is the mass (kg/m) when S Rollers are attached every other link. Values in parentheses ( ) are for M Rollers.
3. Values in < > are for SS and SSA Series.
4. Contact a Tsubaki representative if using a guide on A or K attachment sides.
5. Attachments written in ▭ are standard attachments.
6. The dimensions given above are nominal dimensions and may differ from actual dimensions.

RF17200 R 6T—BW1 N

- Size
- Roller type
- No. of teeth
- Hub type: BW1·CW1
- Tooth hardening: Hardened : Q, Normal : N







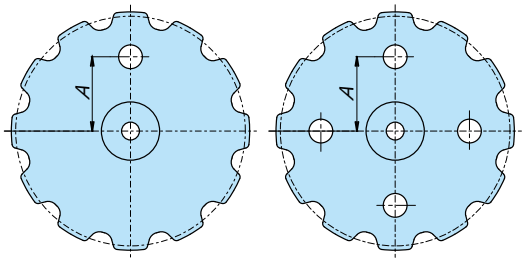
	Size and Roller Type	No. of Teeth N	Basic Sprocket Dimensions and Shape				Standard Series						Center Distance l	
			Pitch Circle Dia. Dp	Outer Dia. Do	Tooth Width T	Tooth Profile	Pilot Bore	Bore Dia. d Min.	Bore Dia. d Max.	Hub Dia. DH	Total Length DL	Approx. Weight kg	BW1 Type	CW1 Type
R Roller	RF17200R	6	400.0	428	40	S2	60	61	120	177	150	53.0	118.0	75.0
		8	522.6	561		S2	75	76	145	207	180	93.6	148.0	90.0
		10	647.2	691		S1	75	76	145	207	180	128.5	148.0	90.0
		12	772.7	821		S1	80	81	160	227	200	182.1	168.0	100.0
	RF17250R	6	500.0	524	40	S2	65	66	130	187	160	78.3	128.0	80.0
		8	653.3	689		S2	75	76	145	207	180	131.2	148.0	90.0
		10	809.0	851		S2	80	81	160	227	200	197.9	168.0	100.0
		12	965.9	1013		S2	80	81	160	227	220	272.6	188.0	110.0
	RF17300R	6	600.0	621	40	S2	75	76	145	207	180	112.3	148.0	90.0
		8	783.9	816		S2	80	81	160	227	200	187.0	168.0	100.0
		10	970.8	1010		S2	80	81	160	227	220	274.8	188.0	110.0
		12	1159.1	1204		S2	85	86	175	247	240	390.8	208.0	120.0
F Roller	RF17200F	6	400.0	428	28	S2	60	61	120	177	150	44.9	125.0	75.0
		8	522.6	561		S2	75	76	145	207	180	78.0	155.0	90.0
		10	647.2	691		S1	75	76	145	207	180	102.5	155.0	90.0
		12	772.7	821		S1	80	81	160	227	200	144.4	175.0	100.0
	RF17250F	6	500.0	524	28	S2	65	66	130	187	160	64.1	135.0	80.0
		8	653.3	689		S2	75	76	145	207	180	104.5	155.0	90.0
		10	809.0	851		S2	80	81	160	227	200	155.5	175.0	100.0
		12	965.9	1013		S2	80	81	160	227	220	209.5	195.0	110.0
	RF17300F	6	600.0	621	28	S2	75	76	145	207	180	91.2	155.0	90.0
		8	783.9	816		S2	80	81	160	227	200	147.9	175.0	100.0
		10	970.8	1010		S2	80	81	160	227	220	211.1	195.0	110.0
		12	1159.1	1204		S2	85	86	175	247	240	297.9	215.0	120.0
S Roller	RF17200S	6	400.0	438	40	S2	60	61	120	177	150	58.3	118.0	75.0
		8	522.6	547		S1	75	76	145	207	180	98.8	148.0	90.0
		10	647.2	671		S1	75	76	145	207	180	132.3	148.0	90.0
		12	772.7	797		S1	80	81	160	227	200	186.2	168.0	100.0
	RF17250S	6	500.0	535	40	S2	65	66	130	187	160	83.9	128.0	80.0
		8	653.3	677		S1	75	76	145	207	180	136.8	148.0	90.0
		10	809.0	833		S1	80	81	160	227	200	200.8	168.0	100.0
		12	965.9	990		S1	80	81	160	227	220	274.8	188.0	110.0
	RF17300S	6	600.0	633	40	S2	75	76	145	207	180	118.1	148.0	90.0
		8	783.9	827		S2	80	81	160	227	200	194.4	168.0	100.0
		10	970.8	995		S1	80	81	160	227	220	280.8	188.0	110.0
		12	1159.1	1183		S1	85	86	175	247	240	392.5	208.0	120.0

Note: The above dimensions are nominal dimensions and may differ from actual dimensions.

See p.53 for bore machining

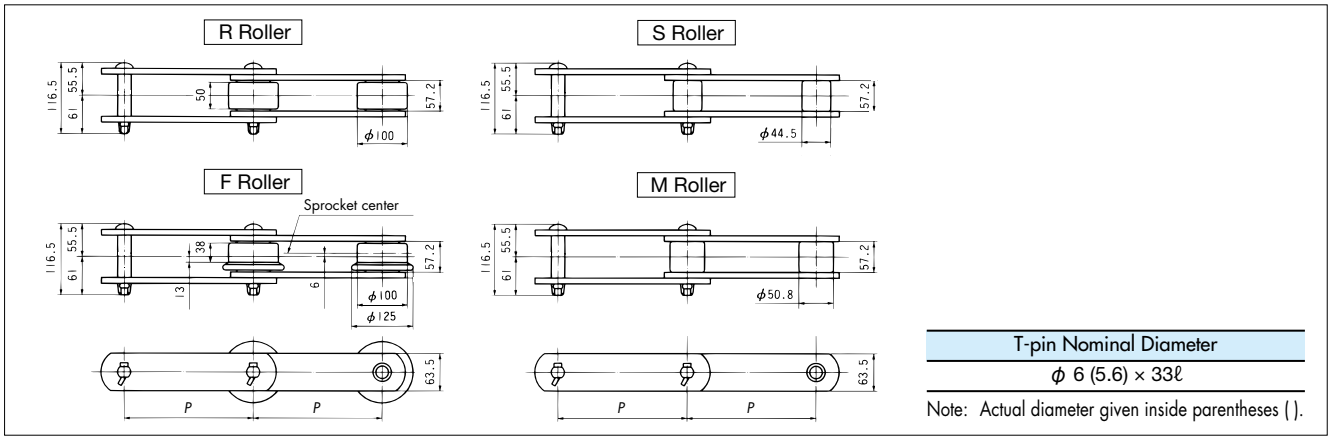
■ Hanging Hole Dimensions

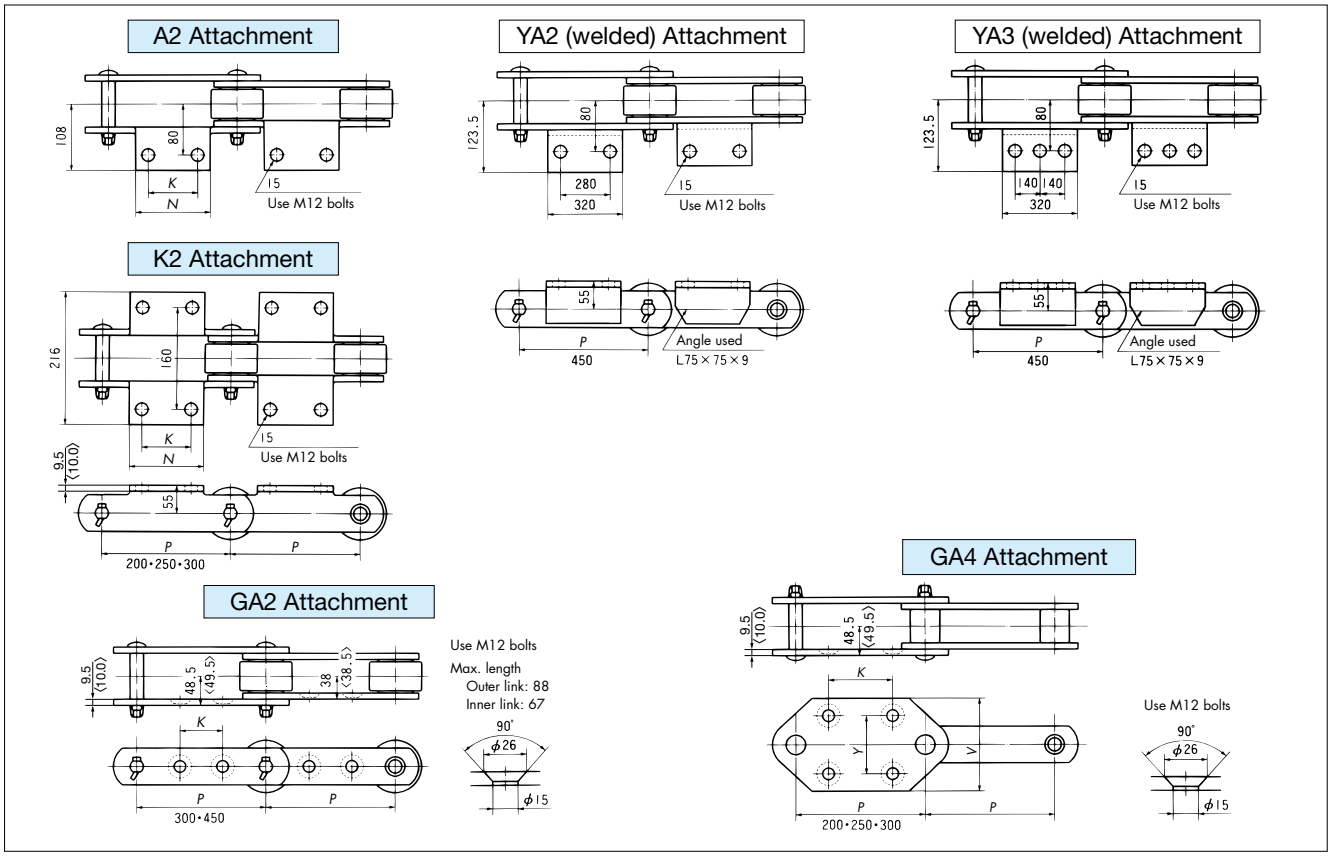
Size	No. of Teeth	Hanging Hole Dim. A	No. of Hanging Holes
RF17200	10	200	1
	12	245	4
RF17250	8	200	1
	10	255	4
	12	310	4
RF17300	6	185	1
	8	250	4
	10	315	4
	12	380	4



Note: Hanging holes are not available on sprockets with numbers of teeth or chain numbers not listed.

Metric Pitches (Dimensions) RF26200 • RF26250 • RF26300 • RF26450





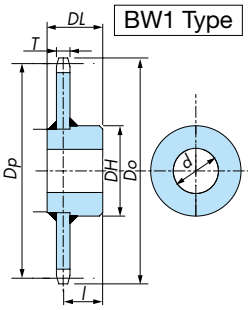
Size	Pitch P	Attachment						Attachment and Roller Combinations					Approximate Mass kg/m				A Attachment Mass kg/each	GA4 Attachment Mass kg/m
		A • K		GA2	GA4			A2 K2	YA2 (welded)	YA3 (welded)	GA2	GA4	R Roller	F Roller	S Roller	M Roller		
		N	K	K	K	V	Y											
RF26200	200	120	80	–	100	120	80	S/M	–	–	–	S/M	–	–	16	17	0.74	19(20)
RF26250	250	170	125	–	140	150	100	R/F/S/M	–	–	–	S/M	26	27	15	16	1.01	18(19)
RF26300	300	220	180	140	180	150	100	R/F/S/M	–	–	R/F/S/M	S/M	23	24	14	15	1.34	17(18)
RF26450	450	See dwg	See dwg	220	–	–	–	–	R/F/S/M	R/F/S/M	R/F/S/M	–	19	19	13	13	3.19	–

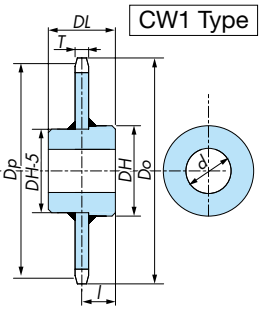
Size	Maximum Allowable Load kN{kgf}							
	DT Series	DTA Series	AT Series	ATA Series	GS Series	GSA Series	SS Series	SSA Series
RF26200	44.9{4570}	44.9{4570}	74.3{7580}	89.1{9090}	46.1{4700}	59.9{6100}	20.8{2120}	20.8{2120}
RF26250								
RF26300								
RF26450								

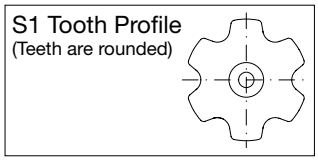
Note: 1. The mass of A attachments in the chart is the additional mass (kg) per attachment. For K attachments, multiply this number by two.
2. The mass of the GA4 attachment in the chart is the mass (kg/m) when S Rollers are attached every other link. Values in parentheses ( ) are for M Rollers.
3. Values in < > are for SS and SSA Series.
4. Contact a Tsubaki representative if using a guide on A or K attachment sides.
5. Attachments written in ☐ are standard attachments.
6. The dimensions given above are nominal dimensions and may differ from actual dimensions.

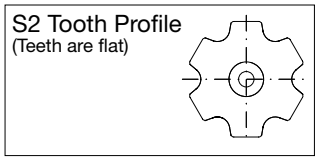
RF26200 R 6T—BW1 N

- Size
- Roller type
- No. of teeth
- Hub type: BW1·CW1
- Tooth hardening: Hardened : Q, Normal : N









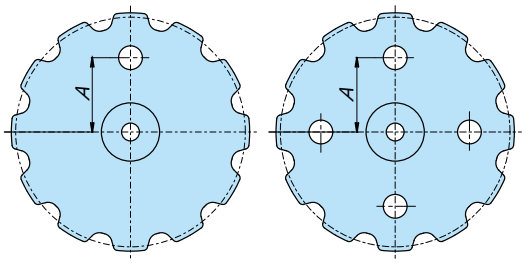
	Size and Roller Type	No. of Teeth N	Basic Sprocket Dimensions and Shape				Standard Series						Center Distance *l*	
			Pitch Circle Dia. *Dp*	Outer Dia. *Do*	Tooth Width T	Tooth Profile	Pilot Bore	Bore Dia. *d* Min.	Bore Dia. *d* Max.	Hub Dia. *DH*	Total Length *DL*	Approx. Weight kg	BW1 Type	CW1 Type
R Roller	**RF26250R**	6	500.0	536	45	S2	75	76	145	207	180	91.6	144.0	90.0
		8	653.3	703		S2	80	81	160	227	200	152.1	164.0	100.0
		10	809.0	864		S1	85	86	175	247	240	233.5	204.0	120.0
		12	965.9	1026		S1	85	86	175	247	240	309.7	204.0	120.0
	RF26300R	6	600.0	631	45	S2	80	81	160	227	220	138.0	184.0	110.0
		8	783.9	829		S2	85	86	175	247	240	223.0	204.0	120.0
		10	970.8	1025		S1	85	86	175	247	240	315.9	204.0	120.0
		12	1159.1	1219		S1	95	96	190	267	270	448.2	234.0	135.0
F Roller	**RF26250F**	6	500.0	536	30	S2	75	76	145	207	180	75.1	150.0	90.0
		8	653.3	703		S2	80	81	160	227	200	120.3	170.0	100.0
		10	809.0	864		S1	85	86	175	247	240	182.6	210.0	120.0
		12	965.9	1026		S1	85	86	175	247	240	233.6	210.0	120.0
	RF26300F	6	600.0	631	30	S2	80	81	160	227	220	112.7	190.0	110.0
		8	783.9	829		S2	85	86	175	247	240	175.9	210.0	120.0
		10	970.8	1025		S1	85	86	175	247	240	237.8	210.0	120.0
		12	1159.1	1219		S1	95	96	190	267	270	334.1	240.0	135.0
S Roller	**RF26200S**	6	400.0	427	45	S1	75	76	145	207	180	74.3	144.0	90.0
		8	522.6	547		S1	75	76	145	207	180	105.5	144.0	90.0
		10	647.2	674		S1	80	81	160	227	200	155.3	164.0	100.0
		12	772.7	800		S1	85	86	175	247	240	223.2	204.0	120.0
	RF26250S	6	500.0	527	45	S1	75	76	145	207	180	100.2	144.0	90.0
		8	653.3	680		S1	80	81	160	227	200	160.8	164.0	100.0
		10	809.0	836		S1	85	86	175	247	240	240.1	204.0	120.0
		12	965.9	993		S1	85	86	175	247	240	316.8	204.0	120.0
	RF26300S	6	600.0	648	45	S2	80	81	160	227	220	148.3	184.0	110.0
		8	783.9	811		S1	85	86	175	247	240	232.9	204.0	120.0
		10	970.8	998		S1	85	86	175	247	240	320.9	204.0	120.0
		12	1159.1	1186		S1	95	96	190	267	270	452.6	234.0	135.0

Note: The above dimensions are nominal dimensions and may differ from actual dimensions.

See p.53 for bore machining

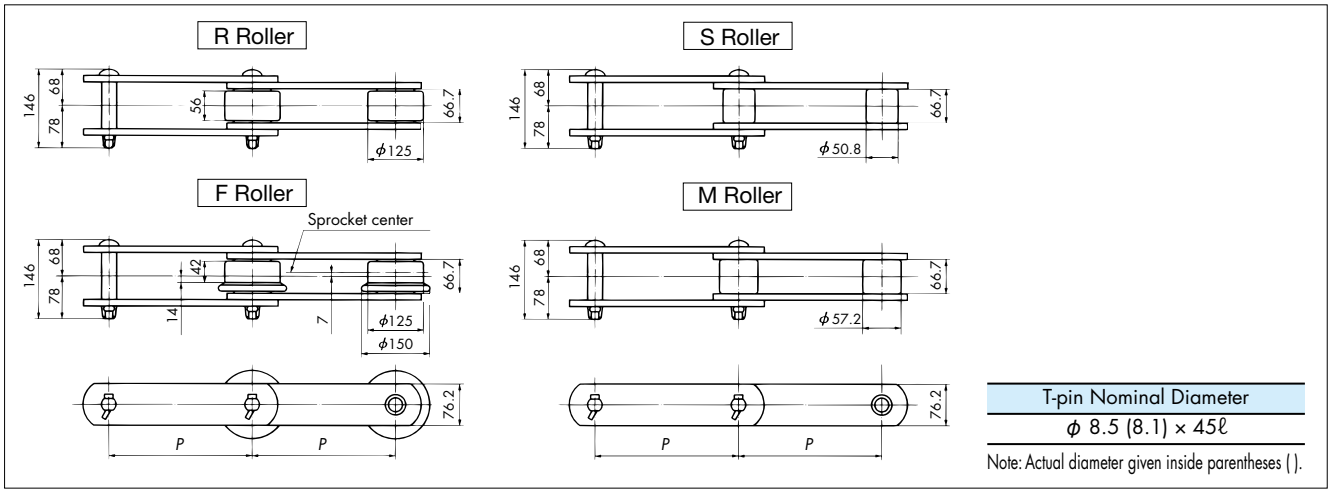
■ Hanging Hole Dimensions

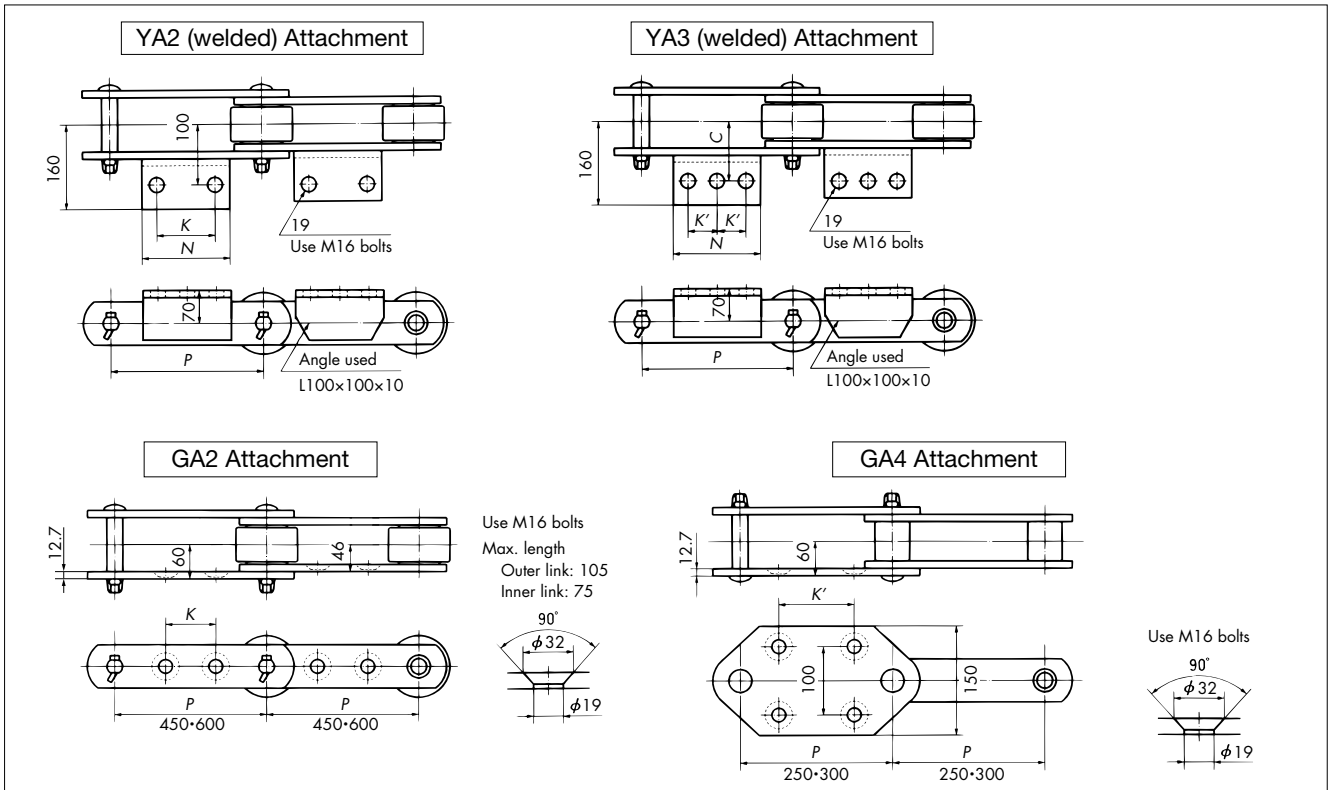
Size	No. of Teeth	Hanging Hole Dim. *A*	No. of Hanging Holes
RF26200	10	195	1
	12	235	4
RF26250	8	195	1
	10	250	4
	12	305	4
RF26300	6	175	1
	8	240	4
	10	305	4
	12	370	4



Note: Hanging holes are not available on sprockets with numbers of teeth or chain numbers not listed.

Metric Pitches (Dimensions) RF36250 • RF36300 • RF36450 • RF36600





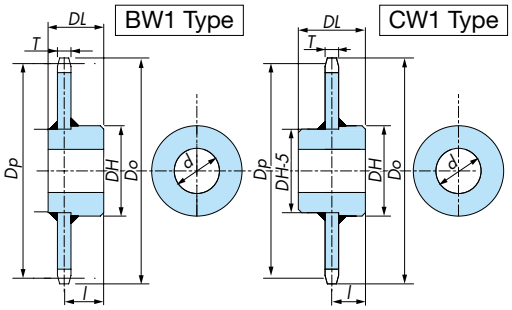
Size	Pitch P	Attachment						Attachment and Roller Combinations				Approximate Mass kg/m				YA Attachment Mass kg/each	GA4 Attachment Mass kg/m
		YA2		YA3		GA2	GA4										
		N	K	K	K′	K	K′	YA2 (welded)	YA3 (welded)	GA2	GA4	R Roller	F Roller	S Roller	M Roller		
RF36250	250	–	–	–	–	–	140	–	–	–	S/M	–	–	25	26	–	29 (30)
RF36300	300	160	100	–	–	–	180	R/F/S/M	–	–	S/M	40	42	23	24	2.4	27 (28)
RF36450	450	330	280	330	140	220	–	R/F/S/M	R/F/S/M	R/F/S/M	–	32	33	21	21	4.9	–
RF36600	600	410	360	410	180	300	–	R/F/S/M	R/F/S/M	R/F/S/M	–	28	29	19	20	6.1	–

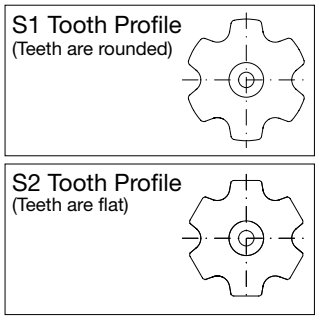
Size	Maximum Allowable Load kN{kgf}							
	DT Series	DTA Series	AT Series	ATA Series	GS Series	GSA Series	SS Series	SSA Series
RF36250	68.0{6930}	68.0{6930}	97.4{9930}	117{11900}	–	–	–	–
RF36300								
RF36450								
RF36600								

Note: 1. The mass of A attachments in the chart is the additional mass (kg) per attachment. For K attachments, multiply this number by two.
2. The mass of the GA4 attachment in the chart is the mass (kg/m) when S Rollers are attached every other link. Values in parentheses ( ) are for M Rollers.
3. Contact a Tsubaki representative if using a guide on A or K attachment sides.
4. The dimensions given above are nominal dimensions and may differ from actual dimensions.

RF36300 R 6T—BW1 N

- Size: RF36300
- Roller type: R
- No. of teeth: 6T
- Hub type: BW1·CW1
- Tooth hardening: Hardened : Q, Normal : N





	Size and Roller Type	No. of Teeth *N*	Basic Sprocket Dimensions and Shape				Standard Series						Center Distance *l*	
			Pitch Circle Dia. *Dp*	Outer Dia. *Do*	Tooth Width *T*	Tooth Profile	Pilot Bore	Bore Dia. *d* Min.	Bore Dia. *d* Max.	Hub Dia. *DH*	Total Length *DL*	Approx. Weight kg	BW1 Type	CW1 Type
R Roller	**RF36300R**	6	600.0	652	55	S2	85	86	175	247	220	161.9	178.0	110.0
		8	783.9	853		S2	95	96	190	267	240	260.5	198.0	120.0
		10	970.8	1046		S1	95	96	190	267	270	381.5	228.0	135.0
		12	1159.1	1234		S1	100	101	210	297	260	529.0	218.0	130.0
F Roller	**RF36300F**	6	600.0	652	33.7	S2	85	86	175	247	220	128.0	188.0	110.0
		8	783.9	853		S2	95	96	190	267	240	196.0	208.0	120.0
		10	970.8	1046		S1	95	96	190	267	270	274.8	238.0	135.0
		12	1159.1	1234		S1	100	101	210	297	260	373.6	228.0	130.0
S Roller	**RF36250S**	6	500.0	530	55	S2	80	81	160	227	200	124.4	158.0	100.0
		8	653.3	684		S1	85	86	175	247	240	204.8	198.0	120.0
		10	809.0	839		S1	95	96	190	267	240	283.9	198.0	120.0
		12	965.9	996		S1	95	96	190	267	270	389.1	228.0	135.0
	RF36300S	6	600.0	631	55	S1	85	86	175	247	220	177.2	178.0	110.0
		8	783.9	814		S1	95	96	190	267	240	276.1	198.0	120.0
		10	970.8	1001		S1	95	96	190	267	270	394.6	228.0	135.0
		12	1159.1	1190		S1	100	101	210	297	260	545.7	218.0	130.0

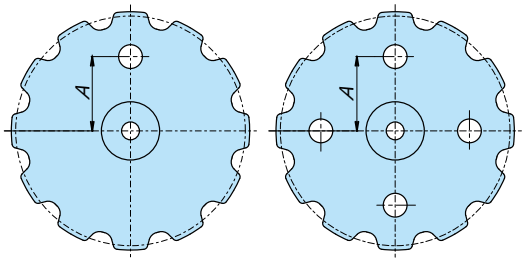
Note: The above dimensions are nominal dimensions and may differ from actual dimensions.

See p.53 for bore machining

■ Hanging Hole Dimensions

Size	No. of Teeth	Hanging Hole Dim. *A*	No. of Hanging Holes
RF36250	8	185	1
	10	240	4
	12	295	4
RF36300	8	230	4
	10	300	4
	12	365	4

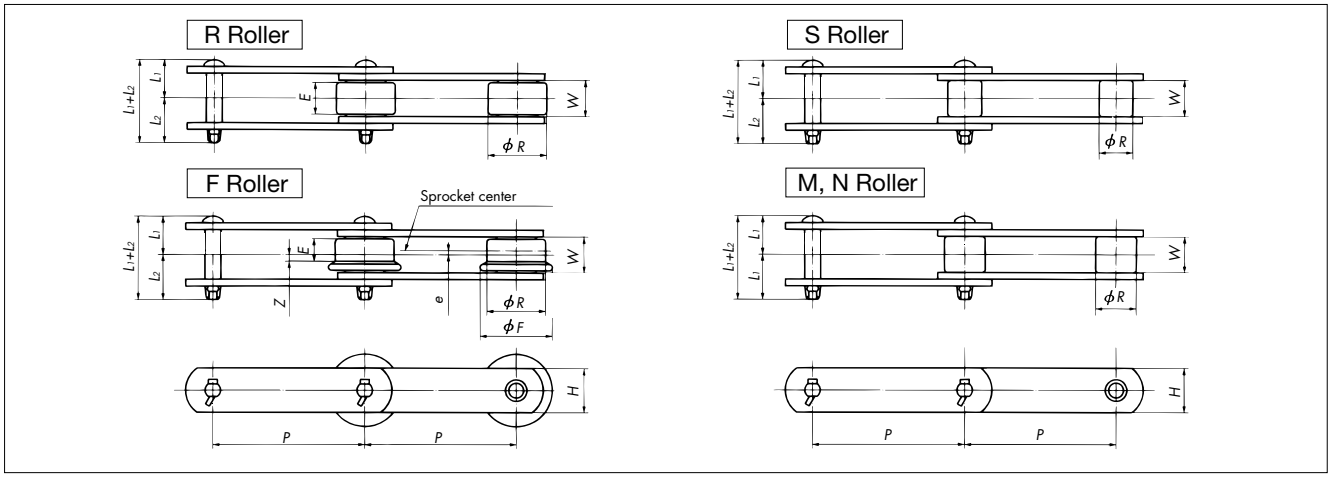
Note: Hanging holes are not available on sprockets with numbers of teeth or chain numbers not listed.



Metric Pitches (Dimensions) RF52 to RF440

T-pin Nominal Diameter			
RF52	ϕ 8.5 (8.1) × 50ℓ	**RF90**	ϕ 10 (9.7) × 65ℓ
RF60	ϕ 8.5 (8.1) × 55ℓ	**RF120**	ϕ 10 (9.7) × 70ℓ

Note: Actual diameter given inside parentheses ( ).



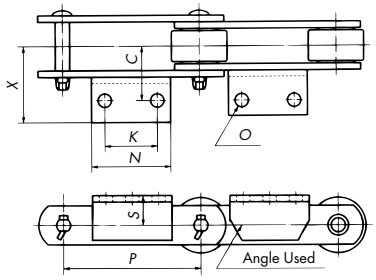
Size	Roller Type	Pitch *P*	Roller									Width between Inner Link Plates *W*
			R Roller		F Roller					S Roller Dia. *R*	M N Roller Dia. *R*	
			Dia. *R*	Contact Width *E*	Dia. *R*	Flange Dia. *F*	Contact Width *E*	Off-Center *e*	*Z*			
RF52300	R/F/S	300	140	65	140	170	49	8	16.5	57.2	–	77
RF52450	R/F/S	450										
RF52600	R/F/S	600										
RF60300	R/F/N	300	140	65	140	170	49	8	16.5	–	70	77
RF60350	R/F/N	350										
RF60400	R/F/N	400										
RF90350	N	350	–	–	–	–	–	–	–	–	85	88
RF90400	R/F/N	400	170	76	170	205	56	10	18			
RF90500	R/F/N	500										
RF120400	R/N	400	200	87	–	–	–	–	–	–	100	100
RF120600	R/F/N	600			200	240	64	11.5	20.5			
RF280400	N	400	–	–	–	–	–	–	–	–	120	120
RF280600	R/N	600	220	105								
RF360400	N	400	–	–	–	–	–	–	–	–	130	130
RF360600	R/N	600	230	115								
RF440400	N	400	–	–	–	–	–	–	–	–	145	145
RF440600	R/N	600	250	130								

Note: Sprockets for RF52 and above are made to order. Contact a Tsubaki representative for details.

Size	Plate Height *H*	Pin			Approximate Mass kg/m				Standard Attachment & Roller Combinations		
		L1+L2	*L1*	*L2*	R Roller	F Roller	S Roller	M NRoller	YA2 (welded)	YA3 (welded)	GA2
RF52300	76.2	172	82	90	55	58	30	–	R/F/S	–	–
RF52450					43	45	26	–	R/F/S	R/F	R/F/S
RF52600					37	38	25	–	R/F/S	R/F	R/F/S
RF60300	90	160.5	77	83.5	54	57	–	32	R/F/N	–	–
RF60350					49	51	–	30	R/F/N	R/F/N	–
RF60400					45	47	–	28	R/F/N	R/F/N	–
RF90350	110	185	89.5	95.5	–	–	–	49	N	–	–
RF90400					74	78	–	46	R/F/N	–	–
RF90500					65	68	–	42	R/F/N	R/F/N	–
RF120400	130	211.5	103.5	108	113	–	–	69	R/N	–	–
RF120600					88	92	–	59	R/F/N	R/F/N	–
RF280400	160 (135)	242	118.5	123.5	–	–	–	90	–	–	–
RF280600					112	–	–	75	–	–	–
RF360400	170 (160)	258	126.5	131.5	–	–	–	112	–	–	–
RF360600					135	–	–	92	–	–	–
RF440400	185 (170)	285	140	145	–	–	–	145	–	–	–
RF440600					175	–	–	120	–	–	–

Note: 1. R, F, S, M, and N indicate roller types for standard attachments.
2. For H dimensions with parentheses, the dimensions for the outer and inner links differ. The value in parentheses indicates outer link dimensions.
3. The above dimensions are nominal dimensions and may differ from actual dimensions.

YA2 (Welded) Attachment

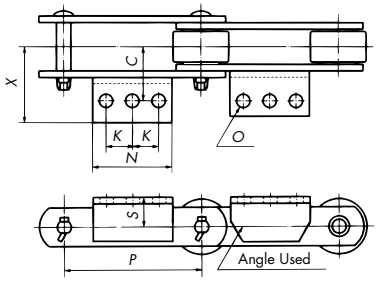


■ YA2 (Welded) Attachment Dimensions

Size	Roller Type	P	S	C	X	K	N	O	Angle Used	Bolt Used	Additional Mass/Each kg
RF52300	R/F/S	300	80	120	171.4	100	160	24	L100x100x13	M20	3.1
RF52450	R/F/S	450				280	330				6.3
RF52600	R/F/S	600				360	410				7.8
RF60300	R/F/N	300	90	115	165	110	170	24	L100x100x13	M20	3.2
RF60350	R/F/N	350				160	220				4.2
RF60400	R/F/N	400				200	260				5.0
RF90350	N	350	100	140	210	100	180	28	L130x130x15	M24	5.2
RF90400	R/F/N	400				150	230				6.6
RF90500	R/F/N	500				260	340				9.8
RF120400	R/N	400	120	150	220	120	200	28	L130x130x15	M24	5.8
RF120600	R/F/N	600				320	400				11.5

Note: 1. Angle dimensions are different for stainless steel series. Contact a Tsubaki representative for more information.
2. Contact a Tsubaki representative if using a guide on the attachment side.

YA3 (Welded) Attachment

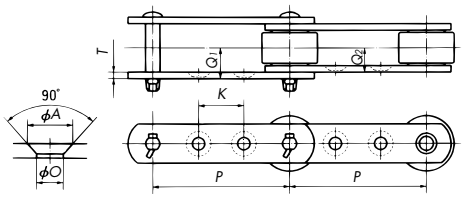


■ YA3 (Welded) Attachment Dimensions

Size	Roller Type	P	S	C	X	K	N	O	Angle Used	Bolt Used	Additional Mass/Each kg
RF52450	R/F/S	450	80	120	171.4	140	330	24	L100x100x13	M20	6.3
RF52600	R/F/S	600				180	410				7.8
RF60350	R/F/N	350	90	115	165	80	220	24	L100x100x13	M20	4.2
RF60400	R/F/N	400				100	260				5.0
RF90500	R/F/N	500	100	140	210	130	340	28	L130x130x15	M24	9.8
RF120600	R/F/N	600	220	150	220	160	400	28	L130x130x15	M24	11.5

Note: 1. Angle dimensions are different for stainless steel series. Contact a Tsubaki representative for more information.
2. Contact a Tsubaki representative if using a guide on the attachment side.

GA2 Attachment



■ GA2 Attachment Dimensions

Size	Roller Type	P	K	T	Q_1	Q_2	A	O	Max. Length of Attachment Bolt		Bolt Used
									Outer Link	Inner Link	
RF52450	R/F/S	450	200	16	72	54.5	38	24	125	90	M20
RF52600	R/F/S	600	300								

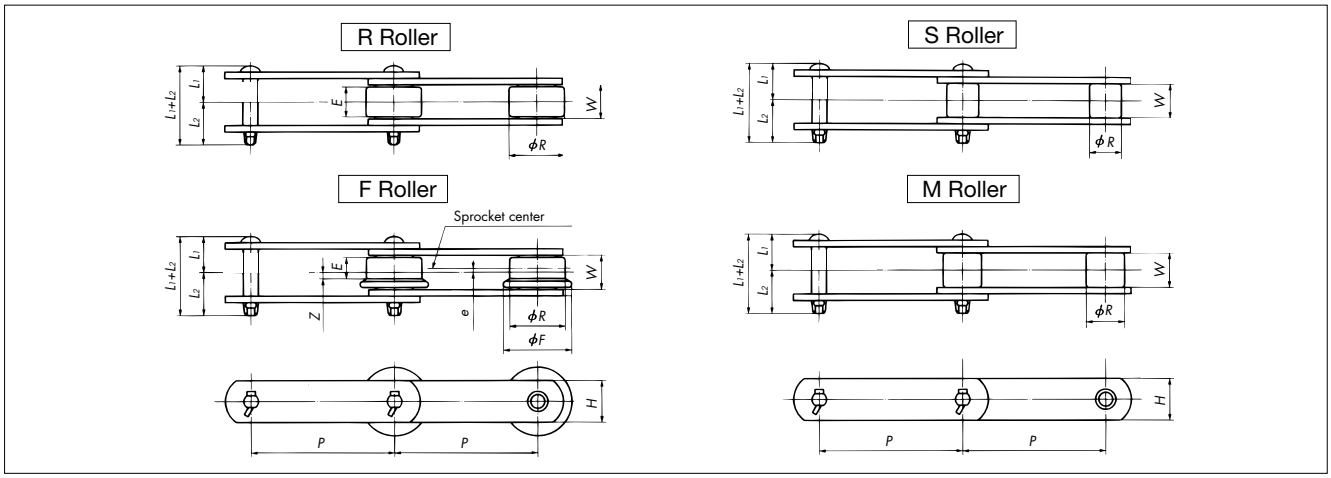
Note: The above dimensions are nominal dimensions and may differ from actual dimensions.

Size	Maximum Allowable Load kN{kgf}			
	DT Series	DTA Series	AT Series	ATA Series
RF52300	71.4{7280}	–	147{15000}	–
RF52450				
RF52600				
RF60300	71.4{7280}	–	149{15200}	–
RF60350				
RF60400				
RF90350	113{11500}	–	233{23700}	–
RF90400				
RF90500				
RF120400	159{16200}	–	316{32200}	–
RF120600				
RF280400	–	–	434{44300}	–
RF280600				
RF360400	–	–	519{52900}	–
RF360600				
RF440400	–	–	637{65000}	–
RF440600				

Imperial Pitch Chain Dimensions

T-pin Nominal Diameter			
RF430 **RF204** **RF450** **RF650**	ϕ 4 (3.6) × 20ℓ	**RF214** **RF205** **RF6205**	ϕ 4 (3.6) × 25ℓ
		RF212	ϕ 6 (5.6) × 33ℓ

Note: Actual diameter given inside parentheses ( ).



Size	Roller Type	Pitch P	Roller									Width between Inner Link Plates W
			R Roller		F Roller					S Roller Dia. R	M N Roller Dia. R	
			Dia. R	Contact Width E	Dia. R	Flange Dia. F	Contact Width E	Off-Center e	Z			
RF430	R/S	101.6	38.1	19	–	–	–	–	–	20.1	–	22.6
RF204	S	66.27	–	–	–	–	–	–	–	22.2	–	27
RF450	R/F/S	101.6	44.5	24	44.5	55	18	2.5	6.5	22.2	–	27
RF650	R/F/S/M	152.4	50.8	26	50.8	65	20	3	7	25.8	31.8	30.2
RF214	R/S/M	101.6	44.5	27	–	–	–	–	–	31.8	34.9	31.6
RF205	S	78.11	–	–	–	–	–	–	–	31.8	–	37.1
RF6205	R/F/S/M	152.4	57.2	32	57.2	70	25	3.5	9	34.9	38.1	37.1
RF212	R/S/M	152.4	69.9	32.5	–	–	–	–	–	40.1	44.5	37.1

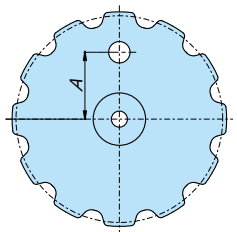
Size	Plate Height H	Pin			Approximate Mass kg/m				Standard Attachment & Roller Combinations				
		L1+L2	L1	L2	R Roller	F Roller	S Roller	M Roller	A1(A3) K1(K3)	A2 K2	SA2 SK2	GA2	GA4
RF430	25.4	55	25.5	29.5	4.4	–	3.0	–	R/S	R/S	R/S		
RF204	28.6	65.5	31	34.5	–	–	5.5	–	S	S			
RF450	28.6	65.5	31	34.5	6.9	7.2	4.6	4.8	R/F/S	R/F/S	R/S		
RF650	38.1	69	32.5	36.5	7.9	8.2	5.7	6.1	R/F/S/M	R/F/S/M	R/S/M	R/F/S/M	S/M
RF214	38.1	77.5	37.5	40	10.5	–	8.7	9.1	R/S/M	R/S/M	R/S/M		
RF205	38.1	83.5	40.5	43	–	–	10.3	–	S	S		–	
RF6205	44.5	83.5	40.5	43	12.2	12.6	9.2	9.5	R/F/S/M	R/F/S/M	R/S/M	R/F/S/M	S/M
RF212	50.8	95.5	44.5	51	18	–	13	13	R/S/M	R/S/M	R/S/M		

Note: The above dimensions are nominal dimensions and may differ from actual dimensions.

Size	Maximum Allowable Load kN{kgf}							
	DT Series	DTA Series	AT Series	ATA Series	GS Series	GSA Series	SS Series	SSA Series
RF430	7.70 {790}	7.70 {790}	14.0 {1430}	–	8.35 {850}	–	4.00 {410}	–
RF204	11.2 {1140}	–	20.3 {2070}	–	12.3 {1250}	–	5.70 {580}	–
RF450	11.2 {1140}	11.2 {1140}	20.3 {2070}	–	12.3 {1250}	–	5.70 {580}	–
RF650	16.1 {1650}	16.1 {1650}	20.3 {2070}	–	14.2 {1450}	–	5.70 {580}	–
RF214	18.1 {1850}	18.1 {1850}	34.3 {3500}	–	18.6 {1900}	–	10.3 {1050}	–
RF205	18.1 {1850}	–	34.3 {3500}	–	18.6 {1900}	–	10.3 {1050}	–
RF6205	26.6 {2710}	26.6 {2710}	39.9 {4060}	–	26.5 {2700}	–	11.0 {1120}	–
RF212	35.0 {3570}	35.0 {3570}	55.3 {5640}	–	35.8 {3650}	–	15.5 {1580}	–

■ Hanging Hole Dimensions

Size	No. of Teeth	Hanging Hole Dim. A	No. of Hanging Holes
RF650	10	155	1
	12	190	1
RF6205	10	155	1
	12	190	1
RF212	12	185	1



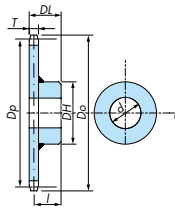
Note: Hanging holes are not available on sprockets with numbers of teeth or chain numbers not listed.

Dedicated Sprockets (BW/CW/BW1/CW1)

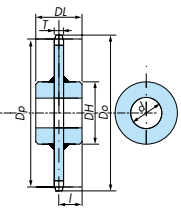
RF430 R 6T—BW N

- Size
- Roller type
- No. of teeth
- Hub type: BW·CW / BW1·CW1
- Tooth hardening: Hardened : Q / Normal : N

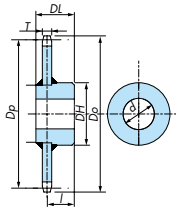
BW Type



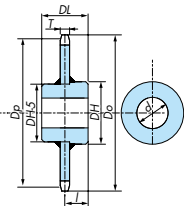
CW Type



BW1 Type



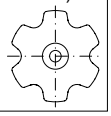
CW1 Type



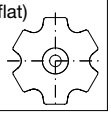
Available chain sizes: RF430 – RF214

Available chain sizes: RF6205 & RF212

S1 Tooth Profile (Teeth are rounded)



S2 Tooth Profile (Teeth are flat)

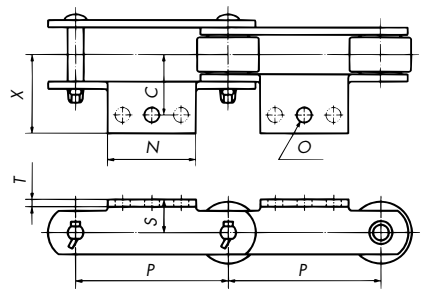


	Size and Roller Type (Chain Pitch)	No. of Teeth N	Basic Sprocket Dimensions and Shape				Standard Series							BW/BW1 Type	CW/CW1 Type
			Pitch Circle Dia. Dp	Outer Dia. Do	Tooth Width T	Tooth Profile	Pilot Bore	Bore Dia. d Min.	Bore Dia. d Max.	Hub Dia. DH	Total Length DL	Approx. Weight kg		Center Distance I	Center Distance I
R Roller	**RF430R** (101.6)	6	203.2	213	18	S2	18	19	60	93	73	6.8		64.0	36.5
		8	265.5	277		S1	18	19	65	98	78	10.5		69.0	39.0
		10	328.8	345		S1	28	29	75	107	86	15.7		77.0	43.0
		12	392.6	411		S1	28	29	75	107	86	20.7		77.0	43.0
	RF450R (101.6)	6	203.2	217	22	S1	28	29	75	107	90	9.1		79.0	45.0
		8	265.5	286		S1	28	29	75	107	90	13.0		79.0	45.0
		10	328.8	354		S1	33	34	80	117	98	19.4		87.0	49.0
		12	392.6	419		S1	33	34	85	127	108	27.5		97.0	54.0
	RF650R (152.4)	6	304.8	321	22	S2	33	34	80	117	98	17.2		87.0	49.0
		8	398.2	422		S2	33	34	85	127	108	28.3		97.0	54.0
		10	493.2	521		S2	33	34	95	137	120	42.2		109.0	60.0
		12	588.8	618		S1	33	34	95	137	120	56.2		109.0	60.0
	RF214R (101.6)	6	203.2	230	24	S1	28	29	75	107	92	9.9		80.0	46.0
		8	265.5	292		S1	33	34	95	137	122	20.2		110.0	61.0
		10	328.8	356		S1	33	34	95	137	122	25.5		110.0	61.0
		12	392.6	419		S1	38	39	100	147	125	33.9		113.0	62.5
	RF6205R (152.4)	6	304.8	330	28	S2	50	51	100	147	125	25.6		100.0	62.5
		8	398.2	432		S2	55	56	110	157	135	39.9		110.0	67.5
		10	493.2	528		S1	60	61	120	177	150	60.3		125.0	75.0
		12	588.8	623		S1	60	61	120	177	150	77.7		125.0	75.0
	RF212R (152.4)	6	304.8	339	28	S1	55	56	110	157	135	27.9		110.0	67.5
		8	398.2	440		S1	60	61	120	177	150	45.4		125.0	75.0
		10	493.2	535		S1	65	66	130	187	160	63.3		135.0	80.0
		12	588.8	631		S1	75	76	145	207	180	89.6		155.0	90.0
F Roller	**RF450F** (101.6)	6	203.2	217	15	S1	28	29	75	107	83	7.7		75.5	41.5
		8	265.5	286		S1	28	29	75	107	83	10.4		75.5	41.5
		10	328.8	354		S1	33	34	80	117	91	15.2		83.5	45.5
		12	392.6	419		S1	33	34	85	127	101	21.4		93.5	50.5
	RF650F (152.4)	6	304.8	321	18	S2	33	34	80	117	94	15.2		85.0	47.0
		8	398.2	422		S2	33	34	85	127	104	24.7		95.0	52.0
		10	493.2	521		S2	33	34	95	137	116	36.5		107.0	58.0
		12	588.8	618		S1	33	34	95	137	116	47.9		107.0	58.0
	RF6205F (152.4)	6	304.8	330	18	S2	50	51	100	147	125	21.8		105.0	62.5
		8	398.2	432		S2	55	56	110	157	135	32.2		115.0	67.5
		10	493.2	528		S1	60	61	120	177	150	48.0		130.0	75.0
		12	588.8	623		S1	60	61	120	177	150	59.3		130.0	75.0
S Roller	**RF430S** (101.6)	6	203.2	217	18	S2	18	19	60	93	73	7.3		64.0	36.5
		8	265.5	277		S1	18	19	65	98	78	11.2		69.0	39.0
		10	328.8	341		S1	28	29	75	107	86	16.2		77.0	43.0
		12	392.6	405		S1	28	29	75	107	86	21.2		77.0	43.0
	RF204S (66.27)	8	173.2	187	22	S1	18	19	65	98	82	7.2		71.0	41.0
		10	214.5	228		S1	28	29	75	107	90	10.2		79.0	45.0
		12	256.0	269		S1	28	29	75	107	90	12.7		79.0	45.0
	RF450S (101.6)	6	203.2	217	22	S1	28	29	75	107	90	9.9		79.0	45.0
		8	265.5	279		S1	28	29	75	107	90	13.9		79.0	45.0
		10	328.8	342		S1	33	34	80	117	98	20.1		87.0	49.0
		12	392.6	406		S1	33	34	85	127	108	28.3		97.0	54.0
	RF650S (152.4)	6	304.8	328	22	S2	33	34	80	117	98	18.4		87.0	49.0
		8	398.2	414		S1	33	34	85	127	108	29.5		97.0	51.5
		10	493.2	509		S1	33	34	95	137	120	42.8		109.0	59.5
		12	588.8	604		S1	33	34	95	137	120	56.7		109.0	59.5
	RF214S (101.6)	6	203.2	222	24	S1	28	29	75	107	92	10.4		80.0	46.0
		8	265.5	285		S1	33	34	95	137	122	20.8		110.0	61.0
		10	328.8	348		S1	33	34	95	137	122	25.8		110.0	61.0
		12	392.6	412		S1	38	39	100	147	125	34.3		113.0	62.5
	RF205S (78.11)	8	204.1	223	28	S1	33	34	80	117	104	12.4		90.0	52.0
		10	252.8	272		S1	33	34	85	127	114	17.7		100.0	54.5
		12	301.8	321		S1	33	34	95	137	126	24.8		112.0	62.5
	RF6205S (152.4)	6	304.8	325	28	S1	50	51	100	147	125	27.0		100.0	62.5
		8	398.2	419		S1	55	56	110	157	135	41.2		110.0	67.5
		10	493.2	514		S1	60	61	120	177	150	60.8		125.0	75.0
		12	588.8	610		S1	60	61	120	177	150	78.4		125.0	75.0
	RF212S (152.4)	6	304.8	329	28	S1	55	56	110	157	135	29.8		110.0	67.5
		8	398.2	422		S1	60	61	120	177	150	47.6		125.0	75.0
		10	493.2	517		S1	65	66	130	187	160	65.1		135.0	80.0
		12	588.8	613		S1	75	76	145	207	180	91.8		155.0	90.0

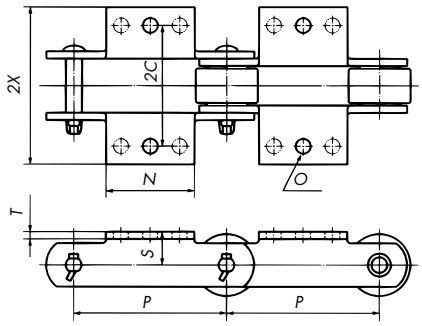
Note: The above dimensions are nominal dimensions and may differ from actual dimensions.

Imperial Pitch Attachment Dimensions

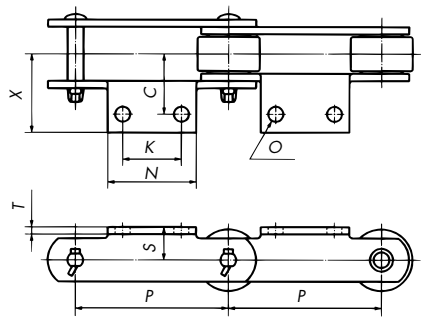
A1 (A3) Attachment



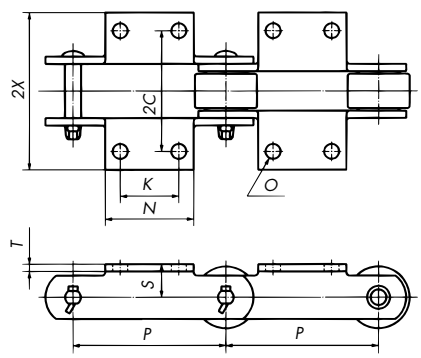
K1 (K3) Attachment



A2 Attachment



K2 Attachment



■ A1 (A3) Attachment

Size	Roller Type	P	S	C	X	N	T	O	Bolt Used	Additional Mass/Each kg
RF430	R/S	101.6	22	40	54	70	4.8〈5.0〉	12	M10	0.11
RF204	S	66.27	24	45	60	35	6.3〈6.0〉	12	M10	0.07
RF450	R/F/S	101.6	28	50	64	70	6.3〈6.0〉	12	M10	0.18
RF650	R/F/S/M	152.4	32	50	64	90	6.3〈6.0〉	12	M10	0.23
RF214	R/S/M	101.6	35	55	73	80	7.9〈8.0〉	15	M12	0.28
RF205	S	78.11	30	55	73	45	7.9〈8.0〉	12	M10	0.13
RF6205	R/F/S/M	152.4	38	60	79	100	7.9〈8.0〉	15	M12	0.37
RF212	R/S/M	152.4	45	65	83	100	9.5〈10.0〉	15	M12	0.47

■ K1 (K3) Attachment

Size	Roller Type	P	S	2C	2X	N	T	O	Bolt Used	Additional Mass/Each kg
RF430	R/S	101.6	22	80	108	70	4.8〈5.0〉	12	M10	0.22
RF204	S	66.27	24	90	120	35	6.3〈6.0〉	12	M10	0.14
RF450	R/F/S	101.6	28	100	128	70	6.3〈6.0〉	12	M10	0.36
RF650	R/F/S/M	152.4	32	100	128	90	6.3〈6.0〉	12	M10	0.44
RF214	R/S/M	101.6	35	110	146	80	7.9〈8.0〉	15	M12	0.56
RF205	S	78.11	30	110	146	45	7.9〈8.0〉	12	M10	0.26
RF6205	R/F/S/M	152.4	38	120	158	100	7.9〈8.0〉	15	M12	0.74
RF212	R/S/M	152.4	45	130	166	100	9.5〈10.0〉	15	M12	0.94

■ A2 Attachment

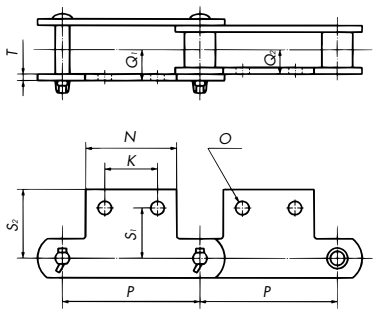
Size	Roller Type	P	S	C	X	K	N	T	O	Bolt Used	Additional Mass/Each kg
RF430	R/S	101.6	22	40	54	40	70	4.8〈5.0〉	12	M10	0.11
RF204	S	66.27	24	45	60	35	55	6.3〈6.0〉	12	M10	0.11
RF450	R/F/S	101.6	28	50	64	40	70	6.3〈6.0〉	12	M10	0.18
RF650	R/F/S/M	152.4	32	50	64	60	90	6.3〈6.0〉	12	M10	0.22
RF214	R/S/M	101.6	35	55	73	40	80	7.9〈8.0〉	15	M12	0.28
RF205	S	78.11	35	60	75	30	65	7.9〈8.0〉	12	M10	0.22
RF6205	R/F/S/M	152.4	38	60	79	60	100	7.9〈8.0〉	15	M12	0.37
RF212	R/S/M	152.4	45	65	83	60	100	9.5〈10.0〉	15	M12	0.47

■ K2 Attachment

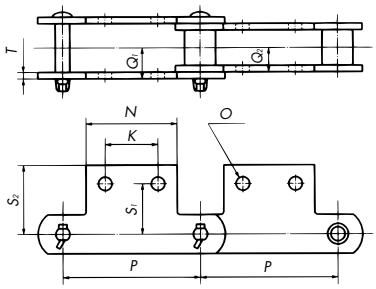
Size	Roller Type	P	S	2C	2X	K	N	T	O	Bolt Used	Additional Mass/Each kg
RF430	R/S	101.6	22	80	108	40	70	4.8〈5.0〉	12	M10	0.22
RF204	S	66.27	24	90	120	35	55	6.3〈6.0〉	12	M10	0.22
RF450	R/F/S	101.6	28	100	128	40	70	6.3〈6.0〉	12	M10	0.36
RF650	R/F/S/M	152.4	32	100	128	60	90	6.3〈6.0〉	12	M10	0.44
RF214	R/S/M	101.6	35	110	146	40	80	7.9〈8.0〉	15	M12	0.56
RF205	S	78.11	35	120	150	30	65	7.9〈8.0〉	12	M10	0.44
RF6205	R/F/S/M	152.4	38	120	158	60	100	7.9〈8.0〉	15	M12	0.74
RF212	R/S/M	152.4	45	130	166	60	100	9.5〈10.0〉	15	M12	0.94

Note: 1. Values in < > are for SS and SSA Series, while other values are the same for all series. The *T* dimension for RF430 size GS and GSA Series is 4.5.
2. X and 2X values for A and K attachments are approximate values. Contact a Tsubaki representative if using a guide on the A or K attachment sides.
3. Attachments written in ▭ are standard attachments.
4. A3/K3 attachments not available for RF204 and RF205.
5. The above dimensions are nominal dimensions and may differ from actual dimensions.

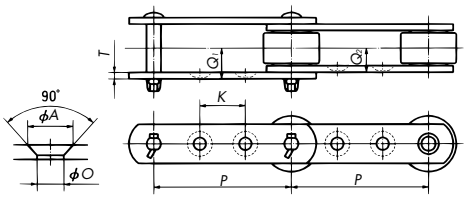
SA2 Attachment



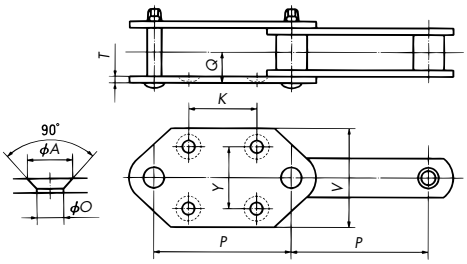
SK2 Attachment



GA2 Attachment



GA4 Attachment



■ SA2 Attachment

Size	Roller Type	*P*	*S*1	*S*2	*Q*1	*Q*2	*K*	*N*	*T*	*O*	Bolt Used	Additional Mass/Each kg
RF430	R/S	101.6	37.6	51.6	22	16	40	70	4.8〈5.0〉	12	M10	0.10
RF450	R/S	101.6	47.6	60.7	27	20	40	70	6.3〈6.0〉	12	M10	0.16
RF650	R/S/M	152.4	50	63	28.5	21.5	60	90	6.3〈6.0〉	12	M10	0.20
RF214	R/S/M	101.6	50	70	32.5	23.5	40	80	7.9〈8.0〉	15	M12	0.25
RF6205	R/S/M	152.4	55	75.7	35.5	26.5	60	100	7.9〈8.0〉	15	M12	0.33
RF212	R/S/M	152.4	60	83.6	38.5	28	60	100	9.5〈10.0〉	15	M12	0.43

■ SK2 Attachment

Size	Roller Type	*P*	*S*1	*S*2	*Q*1	*Q*2	*K*	*N*	*T*	*O*	Bolt Used	Additional Mass/Each kg
RF430	R/S	101.6	37.6	51.6	22	16	40	70	4.8〈5.0〉	12	M10	0.20
RF450	R/S	101.6	47.6	60.7	27	20	40	70	6.3〈6.0〉	12	M10	0.32
RF650	R/S/M	152.4	50	63	28.5	21.5	60	90	6.3〈6.0〉	12	M10	0.40
RF214	R/S/M	101.6	50	70	32.5	23.5	40	80	7.9〈8.0〉	15	M12	0.50
RF6205	R/S/M	152.4	55	75.7	35.5	26.5	60	100	7.9〈8.0〉	15	M12	0.66
RF212	R/S/M	152.4	60	83.6	38.5	28	60	100	9.5〈10.0〉	15	M12	0.86

■ GA2 Attachment

Size	Roller Type	*P*	*K*	*T*	*Q*1	*Q*2	*A*	*O*	Max. Length of Attachment Bolt		Bolt Used
									Outer Link	Inner Link	
RF650	R/S/M	152.4	60	6.3 〈6.0〉	28.5	21.5	20	12	49	35	M10
RF6205	R/S/M	152.4	50	7.9 〈8.0〉	35.5	26.5	26	15	63	45	M12

■ GA4 Attachment

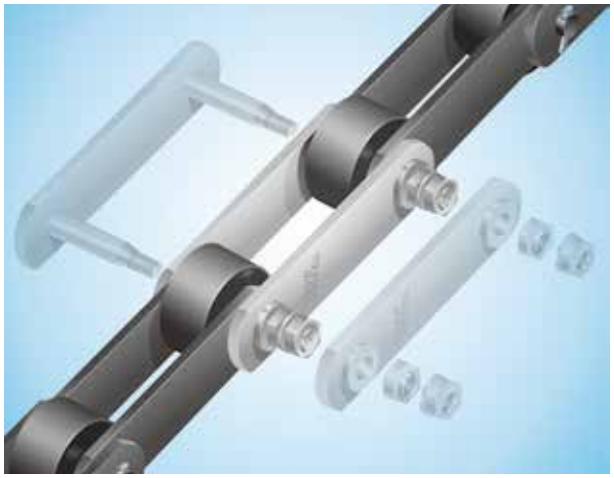
Size	Roller Type	*P*	*V*	*K*	*Y*	*T*	*Q*	*A*	*O*	Bolt Used	Mass for Attachment/2ℓ kg/m	
											S Roller	M Roller
RF650	S/M	152.4	110	75	70	6.3 〈6.0〉	28.5	20	12	M10	7.5	7.9
RF6205	S/M	152.4	110	75	70	7.9 〈8.0〉	35.5	26	15	M12	11.2	11.5

Note: 1. Values in < > are for SS and SSA Series, while other values are the same for all series. The *T* dimension for RF430 size GS and GSA Series is 4.5.
2. Attachments written in ▭ are standard attachments.
3. The above dimensions are nominal dimensions and may differ from actual dimensions.

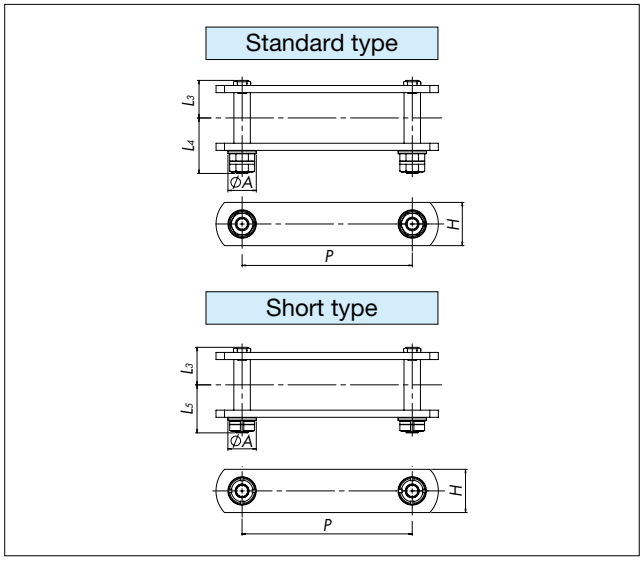
Connecting Links for Large Size Conveyor Chain

Screw Lock Link

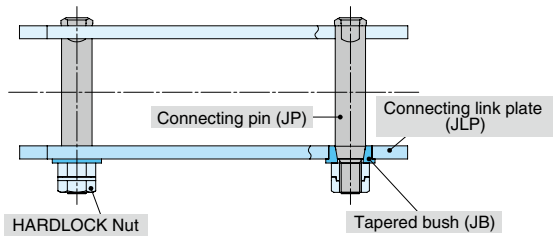
Screw Lock Link



Screw Lock Link is a connecting link that has the same maximum allowable load as the base chain links. The connecting link plate needs no press-fitting to the pin. Simply tighten the nut to secure the connecting link plate and the pin.
Two types of nuts are available: standard type and a short type with a minimized pin length.



Construction



■ Connecting Link Dimensions

Size	Max. Allowable Load		Min. Tensile Strength		Pitch P	Plate Height H	Pin			Nut Size		Connecting Bush Flange Dia.	Approx. Additional Mass (kg/each)	
							Connecting Pin							
	DT kN{kgf}	AT kN{kgf}	DT kN{kgf}	AT kN{kgf}			L3	Standard Type L4	Short Type L5	Standard Type	Short Type	A	Standard Type	Short Type
RF10100	17.6 {1790}	32.3 {3290}	107 {11000}	169 {17000}	100	38.1	33	48.5	42	M12	M12	25	0.13	0.08
RF10125					125									
RF10150					150									
RF12200	26.6 {2710}	39.9 {4060}	160 {16500}	249 {25500}	200	44.5	40.5	55.5	49	M12	M12	28	0.17	0.11
RF12250					250									
RF17200	35.0 {3570}	55.3 {5640}	213 {22000}	336 {34000}	200	50.8	51.5	69.5	61.5	M14	M15	32	0.25	0.14
RF17250					250									
RF17300					300									
RF26200	44.9 {4570}	74.3 {7580}	285 {29000}	448 {45500}	200	63.5	55.5	74	64	M16	M17	36	0.33	0.17
RF26250					250									
RF26300					300									
RF26450					450									
RF36250	68.0 {6930}	97.4 {9930}	457 {46500}	614 {62500}	250	76.2	66	91.5	78.5	M20	M20	42	0.55	0.26
RF36300					300									
RF36450					450									
RF36600					600									
RF52300	71.4 {7280}	147 {15000}	481 {49000}	953 {97000}	300	76.2	79	110	93.5	M24	M25	48	0.85	0.39
RF52450					450									
RF52600					600									
RF60300	71.4 {7280}	149 {15200}	479 {49000}	1010 {103000}	300	90	72.5	104	86.5	M27	M30	55	1.18	0.53
RF60350					350									
RF60400					400									
RF90350	113 {11500}	233 {23700}	754 {77000}	1600 {163000}	350	110	85.5	120.5	102	M30	M35	65	1.85	0.88
RF90400					400									
RF90500					500									

Note: 1. Operating temperature range is -20°C to 150°C. Contact a Tsubaki representative for use outside this range.
2. L4 and L5 are longer pin lengths than L2. Make sure there is no contact with equipment.
3. To tighten the short-type nut, use a hook spanner or socket wrench.
4. Sizes (e.g. in inches) and specifications (e.g. stainless steel) other than those in the table above may also be manufactured. Contact a Tsubaki representative.

Ordering Screw Lock Link (Made to Order)

Model numbering example

Connecting Link

RF12200 - DT - A2 - LNJL 8K

- RF12200: Size
- DT: Series
- A2: Attachment type
- LNJL: Part name (**LNJL** : Standard type, **LSJL** : Short type)
- 8K: Quantity/unit (piece)

Assembly Chain

RF12200 R - AT - 2LK2 + 140L - LNJR 2H

- RF12200: Size
- R: Roller type
- AT: Series
- 2LK2: Attachment spacing/type
- 140L: No. of links
- LNJR: End link
- 2H: Quantity/unit (strand)

Packing ▶ 14L (link) × 20H (strand) Total 140L (link) × 2H (strand)
Note: A Screw Lock Link is attached to one end of the 14th link.

End Links

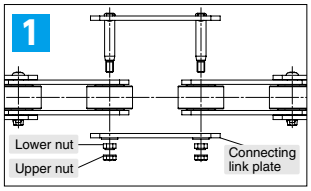
End Link Code		One End	Other End
LNJ	**R**	Screw Lock Link standard type	Inner link
LSJ	**R**	Screw Lock Link short type	Inner link
LNJ	**LNJ**	Screw Lock Link standard type	Screw Lock Link standard type
LSJ	**LSJ**	Screw Lock Link short type	Screw Lock Link short type

Note: The Screw Lock Link (connecting link) is shipped with its lower nut tightened at the prescribed torque and its upper nut lightly tightened to prevent it from getting lost.

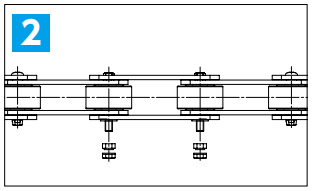
Screw Lock Link Handling Instructions

⚠ Caution Whether the conveyor is parallel, slanted, or vertical, always attach a chain block or piano wire to the area to be connected/disconnected to ensure there is no tension on the chain.

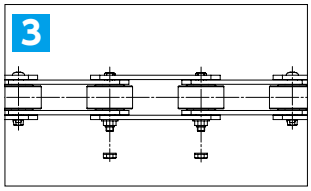
■ Connecting



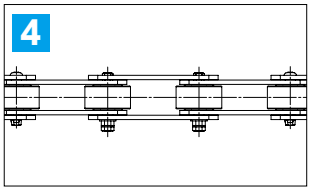
Remove the nuts and the connecting link plate.



Pull both ends of the chain together, insert the connecting link into the joints of the inner link, and place the connecting link plate over the pin ends.



Tighten the lower nut at the torque prescribed below. Before tightening the nut, remove oil and other substances from the screw threads using a cloth.



Tighten the upper nut at the torque prescribed below to complete connection.

■ Disconnecting

1 Remove the upper nut, then the lower nut.

2 Remove the connecting link plate, then remove the connecting link from the inner link.

Note: Nuts may be difficult to remove due to things like residue from conveyed items or corrosion.

Maintenance and Inspection

See page 171 for handling conveyor chain.

Nuts may come loose or fall off depending on usage environment and conditions. Periodically check for loosening of the nuts.
(Making matchmarks on the nuts makes it easier to check them.)

■ Nut Tightening Torque (N·m)*1

		RF10	RF12	RF17	RF26	RF36	RF52	RF60	RF90
Standard Type*2	Nut Size	M12×P1.75	M12×P1.75	M14×P2.0	M16×P2.0	M20×P2.5	M24×P3.0	M27×P3.0	M30×P3.5
	Lower Nut	27–32	28–33	46–55	72–82	120–130	218–228	250–260	367–377
	Upper Nut	27–32	28–33	46–55	72–82	120–130	218–228	250–260	367–377
Short Type*3	Nut Size	M12×P1.0	M12×P1.0	M15×P1.0	M17×P1.0	M20×P1.0	M25×P1.5	M30×P1.5	M35×P1.5
	Lower Nut	23–27	28–33	49–58	76–86	117–127	227–237	254–264	428–438
	Upper Nut	16–19	16–19	28–33	37–44	55–65	80–90	115–125	130–140

*1 The tightening torque in the above table is for steel nuts. Contact a Tsubaki representative regarding stainless steel nuts.
*2 For the standard type, we recommend the use of deep sockets because the bolts will protrude when the lower nuts are tightened.
*3 The short type is a 4-notched nut. Use a hook spanner or socket wrench.

Fit Bore

Fit Bore Model Number and Machining Designations

Chain model number					Shaft bore machining			Keyway/tap				Others (options)		
RF17200	S	12T	-BW1	Q	-H	090	N	-J	25	D3	M16	-L2	-E	-H1
❶	❷	❸	❹	❺	❻	❼	❽	❾	❿	⓫	⓬	⓭	⓮	⓯

Chain model number (available sizes)

❶ Size ❷ Roller type ❸ Number of teeth ❹ Hub type ❺ Teeth hardening

Q	Hardened
N	Non-hardened

Metric size ▶ RF03075 – RF17300

Inch size ▶ RF430 – RF205 RF6205 – RF212

Shaft bore machining

❻ Shaft bore tolerance

H H8

❼ Shaft bore diameter mm

Pilot bore dia. + 1 mm
– Max. shaft bore dia.

❽ Shaft bore chamfer

N	Tsubaki standard (see right table)
A	C1
B	C2
C	C3

Applicable shaft bore dia. (mm)	Chamfer
– 50	C0.6
51 – 80	C1
81 – 120	C1.6
121 – 175	C2

Keyway/tap

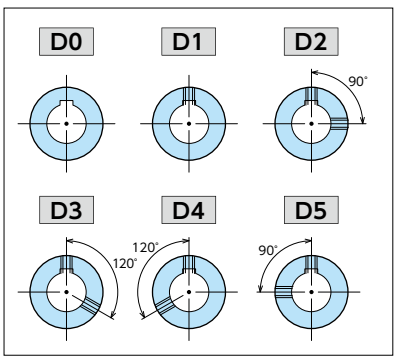
❾ Keyway width tolerance

J	Js9
P	P9
E	E9
W	No keyway

❿ Keyway width mm

Specify using a 2-digit integer.
(See "⓬Tapped hole size" table)
• For no keyway, specify W00.

⓫ Tapped hole
(number of taps and arrangement)



Note: When selecting H1 or H3 for parallel use, the tapped holes will be arranged half assembled in mirror image, so D4 and D5 cannot be selected. (Refer to ⓯ parallel codes.)

⓬ Tapped hole size

Specify using a 2-digit integer (standard size).
• Steel cup point set screw with hexagonal hole • For no taps, specify D0M00.
• Tapped hole sizes larger or smaller than Tsubaki standard size are available. However, for size M4 or larger, make sure not to exceed keyway width (details below).

■ For Js9/P9 (new JIS standards)

Applicable shaft bore dia. (mm)	Keyway width (mm)	Tapped hole size (Tsubaki standard)	Available sizes
19 – 22	6	M6	M5
22 – 30	8	M6	M5, M8
30 – 38	10	M8	M6, M10
38 – 44	12	M8	M6, M10
44 – 50	14	M8	M6, M10
50 – 58	16	M10	M8, M12
58 – 65	18	M10	M8, M12
65 – 75	20	M12	M10, M16
75 – 85	22	M12	M10, M16
85 – 95	25	M16	M12, M20
95 – 110	28	M16	M12, M20
110 – 130	32	M20	M16
130 – 150	36	M20	M16
150 – 170	40	M20	M16
170 – 175	45	M24	M20

■ For E9 (old JIS standards)

Applicable shaft bore dia. (mm)	Keyway width (mm)	Tapped hole size (Tsubaki standard)	Available sizes
19 – 20	5	M5	M4
21 – 30	7	M6	M5
31 – 40	10	M8	M6, M10
41 – 50	12	M8	M6, M10
51 – 60	15	M8	M6, M10
61 – 70	18	M10	M8, M12
71 – 80	20	M12	M10, M16
81 – 95	24	M12	M10, M16
96 – 110	28	M16	M12, M20
110 – 125	32	M20	M16
126 – 140	35	M20	M16
141 – 160	38	M20	M16
161 – 175	42	M20	M16

Others (options)

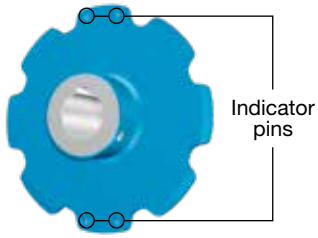
⓭ Coating code

L0	No coating (anti-rust oil)
L1	Lacquered (standard-product color)
L2	Lacquered (indicator pin color)

⓮ Indicator pins

E	Indicator pins
Blank	None

See p.55 for indicator pins



■ Embedded brass pin

■ Embedded in two places on both sides of the sprocket tooth at 0° and 180°. When keyways have been machined, indicator pins will be embedded in the tooth above the keyway.

⓯ Parallel codes
(two pieces as one set)

H1	Hub mounting direction: Inward–inward
H2	Hub mounting direction: Same direction
H3	Hub mounting direction: Outward–outward
Blank	None

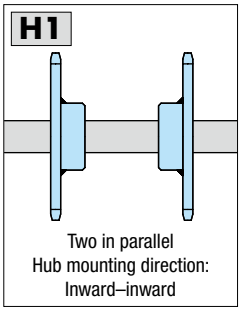
For parallel use, when two sprockets are used on the same axis, the keyway is aligned and machined according to the specified mounting direction. Select the hub mounting direction from the three options shown in the diagrams below.

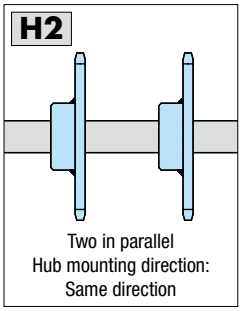
■ Parallel use and tooth center accuracy

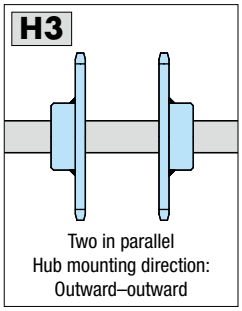
Outer dia. (mm)	Off-center (mm)
Up to 400	Max. 3.0
More than 400, up to 800	Max. 4.0
More than 800	Max. 6.0

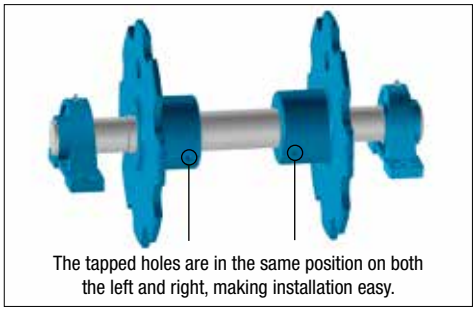
Can be used for parallel chain strands as is without changes. However, if higher accuracy is required, contact a Tsubaki representative.

■ Hub mounting directions









Note: If you wish to use three or more chain strands in parallel, we will respond on a made-to-order basis. If you select H1 or H3, the tapped holes will be arranged half assembled in mirror image.

Half assembled in mirror image

A set of sprockets used in parallel will have their tapped holes machined in a symmetrical position.

Example: □□□J25D3M16-L2-E-H1

One at D3 (above key and 120° right), another at D4 (above key and 120° left)

Applicable Products

■ Metric Pitches

Size	R Roller				F Roller				S Roller			
	Number of Teeth				Number of Teeth				Number of Teeth			
	6	8	10	12	6	8	10	12	6	8	10	12
RF03075	●	●	●	●	●	●	●	●	●	●	●	●
RF03100	●	●	●	●	●	●	●	●	●	●	●	●
RF05075	—	—	—	—	—	—	—	—	—	●	●	●
RF05100	●	●	●	●	●	●	●	●	●	●	●	●
RF05125	●	●	●	●	●	●	●	●	●	●	●	●
RF05150	●	●	●	●	●	●	●	●	●	●	●	●
RF08125	●	●	●	●	●	●	●	●	●	●	●	●
RF08150	●	●	●	●	●	●	●	●	●	●	●	●
RF10100	●	●	●	●	—	—	—	—	●	●	●	●
RF10125	●	●	●	●	●	●	●	●	●	●	●	●
RF10150	●	●	●	●	●	●	●	●	●	●	●	●
RF12200	●	●	●	●	●	●	●	●	●	●	●	●
RF12250	●	●	●	●	●	●	●	●	●	●	●	●
RF17200	●	●	●	●	●	●	●	●	●	●	●	●
RF17250	●	●	●	●	●	●	●	●	●	●	●	●
RF17300	●	●	●	●	●	●	●	●	●	●	●	●

■ Inch Pitches

Size	R Roller				F Roller				S Roller			
	Number of Teeth				Number of Teeth				Number of Teeth			
	6	8	10	12	6	8	10	12	6	8	10	12
RF430	●	●	●	●	—	—	—	—	●	●	●	●
RF204	—	—	—	—	—	—	—	—	—	●	●	●
RF450	●	●	●	●	●	●	●	●	●	●	●	●
RF650	●	●	●	●	●	●	●	●	●	●	●	●
RF214	●	●	●	●	—	—	—	—	●	●	●	●
RF205	—	—	—	—	—	—	—	—	—	●	●	●
RF6205	●	●	●	●	●	●	●	●	●	●	●	●
RF212	●	●	●	●	—	—	—	—	●	●	●	●

For sprocket dimensions see the pages for each size of sprocket.

Visit Our Website

3D CAD data can be found on the

Tsubaki Power Transmission Products Information Site.

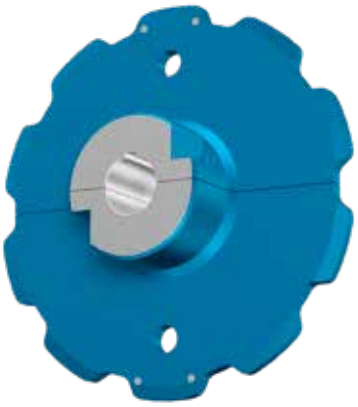
Home > Download drawings < Large size conveyor chain

https://tt-net.tsubakimoto.co.jp

Large Size Conveyor Chain Sprockets Smart Series Replaceable Tooth Insert Sprockets

Sprocket replacement takes a lot of time and labor, and sometimes requires the shaft to be cut. And work in high places is especially dangerous, and takes even more time. Tsubaki's Smart Series Replaceable Tooth Insert Series of sprockets is the solution to these problems.

Basic Structure

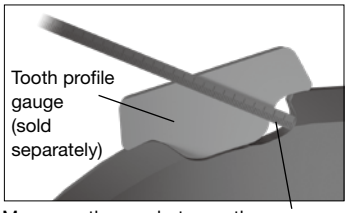
	Split Type	Ring Replaceable Tooth Type	Block Replaceable Tooth Type
Type			
Features	◆ Sprockets divided into halves without any gaps around the shaft bore ◆ Can be mounted by fastening hub bolts ◆ Split Sprockets can be replaced without having to remove other parts ◆ Available for all types of rollers	◆ Lock ring type replaceable teeth with bolts/nuts onto the mounting base ◆ Just the teeth can be replaced without having to remove the mounting base from the shaft ◆ Available for all types of rollers	◆ Lock block type replaceable teeth with bolts/nuts onto the mounting base ◆ Just the teeth can be replaced without having to remove the Block Replaceable Tooth from the shaft ◆ The lightest mass per replaceable tooth, with easy handling
Applicable Chain	RF03075 to RF10150	RF10150 to RF36300	RF10150 to RF26300
	RF205 to RF650 (imperial sizes)	RF6205 (imperial sizes)	–
Roller Type*	**S**、R、F	**S**、R、F	**S**
No. of Teeth	6、8、**10**、**12**	8、**10**、**12**	**10**、**12**
Tooth Material	Carbon steel for machine structural use		Alloy steel for machine structural use
Hub (Mounting Base) Material	Rolled steel for general structural use		
Coating	Lacquer coating (blue)		

Note: 1. *Items not in bold may not be available.
2. *M and N rollers are also available.
3. Other specifications are available. Contact a Tsubaki representative for more information.
4. If you wish to use the Smart Series sprockets in tension applications (such as lifting or pulling), additional technical evaluation is required. Be sure to provide us with the equipment layout and usage conditions when requesting a quote.

Indicator Pins

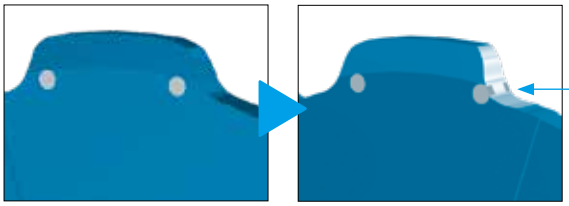
Indicator pins let you know when to replace your sprockets with just a glance.

Previous Inspections



Measures the gap between the worn tooth and the tooth profile gauge

Inspection Using Indicator Pins



The sprocket has reached its usage limit when tooth wear reaches the indicator pins

Prepare for replacement as wear gets closer

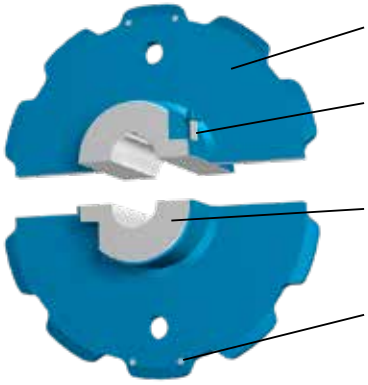
Specifications

Sprocket color : Blue lacquer
Indicator pin : Embedded brass pin
Location : Embedded in two places on both sides of the sprocket tooth at 0° and 180°.
When shaft holes are finished, indicator pins will be embedded in the tooth above the keyway.

Smart Series Split Type

Construction

- Sprockets are split in two through the tooth roots
- Halves can also be joined together with nuts and bolts

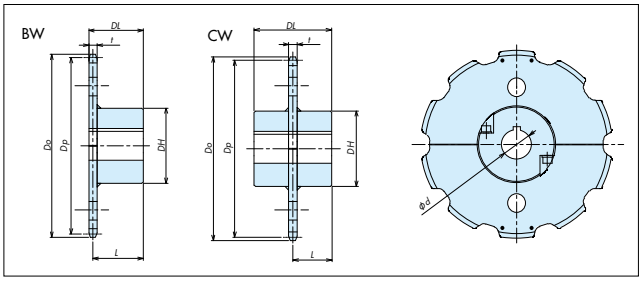


Model Numbering

RF10150S 10T – BW Q – S TS – E

- RF10150S: Applicable chain number
- 10T: No. of teeth
- BW: Hub type (BW : Welded one side, CW : Welded both sides)
- Q: Tooth hardening (N : Normal, Q : Hardened)
- S: Smart Series
- TS: Split type
- E: Indicator pins

Dimensions and Models



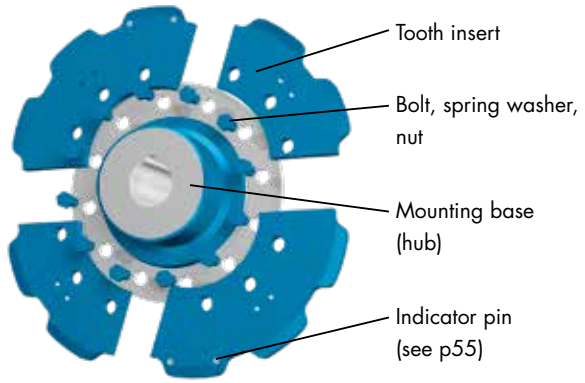
Model Number	No. of Teeth	Pitch Circle Dia. Dp	Outer Dia. Do		Bore Dia.		Tooth Width t		Hub Dia. DH	Total Length DL						Center Distance L						Sprocket Fastening Bolt Size	Approx. Mass kg	
										BW			CW			BW			CW					
			Roller Type		Min.	Max.	Roller Type			Roller Type			Roller Type			Roller Type			Roller Type					
			R•F	S	dmin.	dmax.	F	R•S		R	F	S	R	F	S	R	F	S	R	F	S		BW	CW
RF03075□ 8T-□□-STS-E	8	196	209	206	34	60	8.9	11.9	117	67	64	67	104	101	104	61	59.5	61	52	50.5	52	M10	7	9
RF03075□10T-□□-STS-E	10	242.7	259	252	34	60			117	67	64	67	104	101	104	61	59.5	61	52	50.5	52	M10	8	11
RF03075□12T-□□-STS-E	12	289.8	308	299	34	60			117	67	64	67	104	101	104	61	59.5	61	52	50.5	52	M10	10	13
RF03100□ 6T-□□-STS-E	6	200	208	212	34	60			117	67	64	67	104	101	104	61	59.5	61	52	50.5	52	M10	7	9
RF03100□ 8T-□□-STS-E	8	261.3	273	269	34	60			117	67	64	67	104	101	104	61	59.5	61	52	50.5	52	M10	9	12
RF03100□10T-□□-STS-E	10	323.6	336	333	39	80			147	88	85	88	124	121	124	82	80.5	82	62	60.5	62	M12	16	21
RF03100□12T-□□-STS-E	12	386.4	401	396	39	80			147	88	85	88	124	121	124	82	80.5	82	62	60.5	62	M12	20	24
RF05075□ 8T-□□-STS-E	8	196	–	209	34	60	11.9	18	117	–	–	73	–	–	110	–	–	64	–	–	55	M12	8	11
RF05075□10T-□□-STS-E	10	242.7	–	256	39	80			147	–	–	94	–	–	130	–	–	85	–	–	65	M12	15	19
RF05075□12T-□□-STS-E	12	289.8	–	303	39	80			147	–	–	94	–	–	130	–	–	85	–	–	65	M12	18	22
RF05100□ 8T-□□-STS-E	8	261.3	273	273	39	80			147	94	88	94	130	124	130	85	82	85	65	62	65	M12	16	20
RF05100□10T-□□-STS-E	10	323.6	340	337	39	80			147	94	88	94	130	124	130	85	82	85	65	62	65	M12	20	24
RF05100□12T-□□-STS-E	12	386.4	405	400	39	100			177	116	110	116	130	128	134	107	104	107	67	64	67	M12	33	36
RF05125□ 6T-□□-STS-E	6	250	256	262	39	80			147	94	88	94	130	124	130	85	82	85	65	62	65	M12	16	20
RF05125□ 8T-□□-STS-E	8	326.6	338	340	39	80			147	94	88	94	130	124	130	85	82	85	65	62	65	M12	20	25
RF05125□10T-□□-STS-E	10	404.5	421	417	39	100			177	116	110	116	134	128	134	107	104	107	67	64	67	M12	35	38
RF05125□12T-□□-STS-E	12	483	499	496	39	100			177	116	110	116	134	128	134	107	104	107	67	64	67	M12	43	46
RF05150□ 6T-□□-STS-E	6	300	306	311	39	80			147	94	88	94	130	124	130	85	104	85	65	62	65	M12	19	23
RF05150□ 8T-□□-STS-E	8	392	403	407	39	100			177	116	110	116	134	128	134	107	104	107	67	64	67	M12	34	37
RF05150□10T-□□-STS-E	10	485.4	501	501	39	100			177	116	110	116	134	128	134	107	104	107	67	64	67	M12	43	46
RF05150□12T-□□-STS-E	12	579.6	597	592	39	100			177	116	110	116	134	128	134	107	104	107	67	64	67	M12	54	57
RF10100□ 8T-□□-STS-E	8	261.3	282	279	39	80	15	22	147	98	91	98	134	127	134	87	83.5	87	67	63.5	67	M12	18	22
RF10100□10T-□□-STS-E	10	323.6	349	341	39	100			177	120	113	120	138	131	138	109	105.5	109	69	65.5	69	M12	31	34
RF10100□12T-□□-STS-E	12	386.4	414	404	39	115			207	144	137	144	154	147	154	133	129.5	133	77	73.5	77	M16	49	51
RF10125□ 6T-□□-STS-E	6	250	263	267	39	80			147	98	91	98	134	127	134	87	83.5	87	67	63.5	67	M12	17	21
RF10125□ 8T-□□-STS-E	8	326.6	343	343	39	100			177	120	113	120	138	131	138	109	105.5	109	69	65.5	69	M12	31	34
RF10125□10T-□□-STS-E	10	404.5	426	422	39	115			207	144	137	144	154	147	154	133	129.5	133	77	73.5	77	M16	51	53
RF10125□12T-□□-STS-E	12	483	508	500	39	115			207	144	137	144	154	147	154	133	129.5	133	77	73.5	77	M16	61	63
RF10150□ 6T-□□-STS-E	6	300	310	315	39	100			177	120	113	120	138	131	138	109	105.5	109	69	65.5	69	M12	29	32
RF10150□ 8T-□□-STS-E	8	392	409	413	39	115			207	144	137	144	154	147	154	133	129.5	133	77	73.5	77	M16	50	52
RF10150□10T-□□-STS-E	10	485.4	507	503	39	115			207	144	137	144	154	147	154	133	129.5	133	77	73.5	77	M16	61	63
RF10150□12T-□□-STS-E	12	579.6	601	597	39	115			207	144	137	144	154	147	154	133	129.5	133	77	73.5	77	M16	75	77
RF205□10T-□□-STS-E	10	252.8	–	272	39	80	–	28	147	–	–	104	–	–	140	–	–	90	–	–	70	M12	20	24
RF205□12T-□□-STS-E	12	301.8	–	321	39	100			177	–	–	126	–	–	144	–	–	112	–	–	72	M12	32	35
RF214□ 8T-□□-STS-E	8	265.5	292	285	39	100	–	24	177	122	–	122	140	–	140	110	–	110	70	–	70	M12	27	30
RF214□10T-□□-STS-E	10	328.8	356	348	39	100			177	122	–	122	140	–	140	110	–	110	70	–	70	M12	33	36
RF214□12T-□□-STS-E	12	392.6	419	412	39	115			207	146	–	146	156	–	156	134	–	134	78	–	78	M16	52	54
RF430□ 6T-□□-STS-E	6	203.2	213	217	39	60	–	18	117	73	–	73	110	–	110	64	–	85	55	–	55	M10	9	11
RF430□ 8T-□□-STS-E	8	265.5	277	277	39	80			147	94	–	94	130	–	130	85	–	64	65	–	65	M12	16	21
RF430□10T-□□-STS-E	10	328.8	345	341	39	80			147	94	–	94	130	–	130	85	–	85	65	–	65	M12	21	25
RF430□12T-□□-STS-E	12	392.6	411	405	39	80			147	94	–	94	130	–	130	85	–	85	65	–	65	M12	26	30
RF450□ 6T-□□-STS-E	6	203.2	217	217	34	60	15	22	117	77	70	77	114	107	114	66	62.5	66	57	53.5	57	M10	9	12
RF450□ 8T-□□-STS-E	8	265.6	286	279	39	80			147	98	91	98	134	127	134	87	83.5	87	67	63.5	67	M12	18	22
RF450□10T-□□-STS-E	10	328.8	354	342	39	80			147	98	91	98	134	127	134	87	83.5	87	67	63.5	67	M12	23	27
RF450□12T-□□-STS-E	12	392.6	419	406	39	100			177	120	113	120	138	131	138	109	105.5	109	69	65.5	69	M12	38	41
RF650□ 6T-□□-STS-E	6	304.8	321	328	39	80	18	22	147	98	94	98	134	130	134	87	85	87	67	65	67	M12	21	25
RF650□ 8T-□□-STS-E	8	398.2	422	414	39	100			177	120	116	120	138	134	138	109	107	109	69	67	69	M12	38	41
RF650□10T-□□-STS-E	10	493.2	521	509	39	100			177	120	116	120	138	134	138	109	107	109	69	67	69	M12	50	53
RF650□12T-□□-STS-E	12	588.8	618	604	39	100			177	120	116	120	138	134	138	109	107	109	69	67	69	M12	64	67

Note: 1. Numbers of teeth, hub diameters, and so on not shown in the table above are also available. Contact a Tsubaki representative for more information.
2. Check that there is no interference between the tooth outer diameters and buckets, aprons, etc. 3. There is a gap on the tooth mating surface.
4. Enter roller type (R/F/S), hub type (BW/CW), and tooth hardening (Q/N) in the blank boxes of the model numbers.
5. Items marked with a "—" are not available. 6. Bores can be mechanically finished. Please specify the finishing details.
7. Approximate masses shown are when used with S rollers. Contact a Tsubaki representative regarding approximate masses when using other rollers.

Smart Series Ring Replaceable Type

Construction

- Comprises tooth insert pieces and a mounting base
- Just the tooth inserts can be replaced without removing the mounting base from the shaft



Model Numbering

RF26300S 10T – BW1 Q – S RK – E

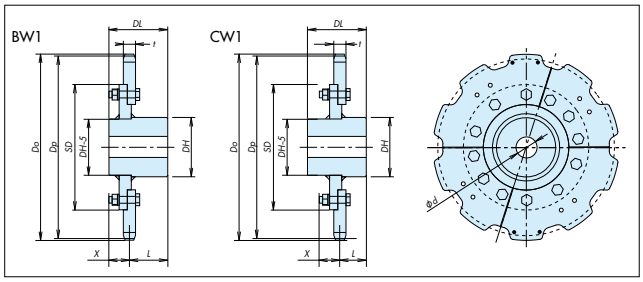
- RF26300S: Size and roller type
- 10T: No. of teeth
- BW1: Hub type — BW1 : Welded one side; CW1 : Welded both sides
- Q: Tooth hardening — N : Normal; Q : Hardened
- S: Smart Series
- RK: Ring type
- E: Indicator pins

Tooth insert model number (when replacing only tooth inserts)

RF26300S 10T – RE Q – S RK – E

- RE: Tooth insert

Dimensions and Models



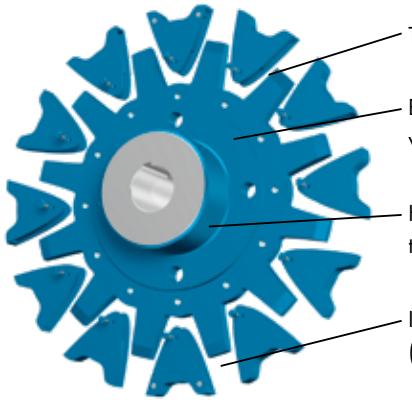
Model Number	No. of Teeth	Pitch Circle Dia. *Dp*	Outer Dia. *Do*		Bore Dia.		Tooth Width *t*			Hub Dia. *DH*	Total Length *DL*	Center Distance *L*	Mounting Base Outer Dia. *SD*	Mounting Bot Size	Bolt Protrusion *X*	No. of Tooth Inserts	Hanging Tap Size	Approx. Mass per Tooth Insert kg	Total Approx. Mass kg
			Roller Type		Pilot Bore *d*	Max. *dmax.*	Roller Type												
			R•F	S			R	F	S										
RF10150□10T-□□-SRK-E	10	485.4	507	503	38	110	22	16	22	157	158	122	305	M16	44	2	M8	12	54
RF10150□12T-□□-SRK-E	12	579.6	601	597	38	115	22	16	22	167	169	133	405	M16	44	3	M8	10	73
RF12200□8T-□□-SRK-E	8	522.6	551	544	60	120	28	19	28	177	175	125	330	M16	51	2	M8	17	75
RF12200□10T-□□-SRK-E	10	647.2	682	668	65	130	28	19	28	187	185	135	460	M16	51	2	M8	22	106
RF12200□12T-□□-SRK-E	12	772.7	811	794	75	145	28	19	28	207	205	155	590	M16	51	3	M10	18	148
RF12250□8T-□□-SRK-E	8	653.3	680	688	65	130	28	19	28	187	185	135	450	M16	51	2	M8	24	107
RF12250□10T-□□-SRK-E	10	809.0	841	830	75	145	28	19	28	207	205	155	615	M16	51	2	M10	30	159
RF12250□12T-□□-SRK-E	12	965.9	1002	987	80	160	28	19	28	227	225	175	780	M16	51	3	M10	24	222
RF17200□10T-□□-SRK-E	10	647.2	691	671	75	145	40	28	40	207	205	148	450	M20	65	2	M10	34	147
RF17200□12T-□□-SRK-E	12	772.7	821	797	80	160	40	28	40	227	225	168	580	M20	65	3	M10	28	207
RF17250□8T-□□-SRK-E	8	653.3	689	677	75	145	40	28	40	207	205	148	400	M20	65	2	M10	39	148
RF17250□10T-□□-SRK-E	10	809.0	851	833	80	160	40	28	40	227	225	168	565	M20	65	2	M10	51	220
RF17250□12T-□□-SRK-E	12	965.9	1013	990	80	160	40	28	40	227	245	188	730	M20	65	3	M12	41	297
RF17300□8T-□□-SRK-E	8	783.9	816	827	80	160	40	28	40	227	225	168	640	M20	65	2	M10	36	212
RF17300□10T-□□-SRK-E	10	970.8	1010	995	80	160	40	28	40	227	245	188	840	M20	65	2	M12	44	302
RF17300□12T-□□-SRK-E	12	1159.1	1204	1183	85	175	40	28	40	247	265	208	1035	M20	65	3	M16	35	421
RF26200□10T-□□-SRK-E	10	647.2	—	674	80	160	—	—	45	227	225	164	450	M24	72.5	2	M10	40	174
RF26200□12T-□□-SRK-E	12	772.7	—	800	85	175	—	—	45	247	265	204	580	M24	72.5	3	M12	33	250
RF26250□8T-□□-SRK-E	8	653.3	703	680	80	160	45	32	45	227	225	164	400	M24	72.5	2	M10	46	175
RF26250□10T-□□-SRK-E	10	809.0	864	836	85	175	45	32	45	247	265	204	565	M24	72.5	2	M12	60	265
RF26250□12T-□□-SRK-E	12	965.9	1026	993	85	175	45	32	45	247	265	204	730	M24	72.5	3	M16	49	346
RF26300□8T-□□-SRK-E	8	783.9	829	811	85	175	45	32	45	247	265	204	520	M24	72.5	2	M12	60	253
RF26300□10T-□□-SRK-E	10	970.8	1025	998	85	175	45	32	45	247	265	204	720	M24	72.5	4	M16	46	379
RF26300□12T-□□-SRK-E	12	1159.1	1219	1186	95	190	45	32	45	267	295	234	915	M24	72.5	4	M16	46	487
RF36250□10T-□□-SRK-E	10	809.0	—	839	95	190	—	—	55	267	265	198	565	M30	87.5	4	M16	45	348
RF36250□12T-□□-SRK-E	12	965.9	—	996	95	190	—	—	55	267	295	228	730	M30	87.5	4	M16	47	429
RF36300□8T-□□-SRK-E	8	783.9	853	814	95	190	55	36	55	267	265	198	520	M30	87.5	4	M12	38	302
RF36300□10T-□□-SRK-E	10	970.8	1046	1001	95	190	55	36	55	267	295	228	720	M30	87.5	4	M16	58	471
RF36300□12T-□□-SRK-E	12	1159.1	1234	1190	100	210	55	36	55	297	285	218	915	M30	87.5	4	M16	59	593
RF6205□10T-□□-SRK-E	10	493.2	528	514	60	120	28	19	28	167	175	125	315	M16	51	2	M8	15	67
RF6205□12T-□□-SRK-E	12	588.8	623	610	60	120	28	19	28	177	175	125	415	M16	51	3	M8	13	89

Note: 1. Numbers of teeth, hub diameters, and so on not shown in the table above are also available. Contact a Tsubaki representative for more information.
2. Check that there is no interference between the tooth outer diameters and buckets, aprons, etc.
3. Check for interference between the bolt protrusion and equipment.
4. There is a gap on the mating area of each replaceable tooth.
5. Enter roller type (R/F/S), hub type (BW1/CW1, or RE for tooth inserts only), and tooth hardening (Q/N) in the blank boxes of the model numbers.
6. L dimension is DL/2 on CW1 hubs. The table above shows values for BW1 hubs.
7. Items marked with a "—" are not available.
8. Approximate masses shown are when used with S rollers. Contact a Tsubaki representative regarding approximate masses when using other rollers.
9. There are two taps for hanging on each tooth insert (each piece). Use for attaching wire ropes or eye bolts.

Smart Series Block Replaceable Type

Construction

- Comprises individual tooth inserts and a mounting base
- Just the tooth inserts can be replaced without removing the mounting base from the shaft
- Tooth inserts use alloy steel for high wear resistance
- Lightest tooth inserts among the Smart Series



Model Numbering

RF12200S 12T – BW1 Q – S BK – E

- RF12200S: Size and roller type
- 12T: No. of teeth
- BW1: Hub type — BW1 : Welded one side; CW1 : Welded both sides
- Q: Tooth hardening — Q : Hardened
- S: Smart Series
- BK: Block type
- E: Indicator pins

Tooth insert model number (when replacing only tooth inserts)

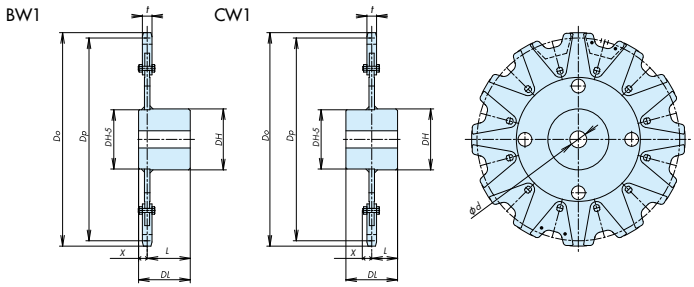
RF12200S 12T – RE Q – S BK – E

- RE: Tooth insert

Thermally Sprayed Block Tooth Inserts

Tsubaki can also apply a special hardening treatment to block tooth inserts to give them significantly greater wear resistance. See page 111 for more information.

Dimensions and Models



Model Number	No. of Teeth	Pitch Circle Dia. *Dp*	Outer Dia. *Do*	Bore Dia. Pilot Bore *d*	Bore Dia. Max. *dmax.*	Tooth Width *t*	Hub Dia. *DH*	Total Length *DL*	Center Distance *L* BW	Center Distance *L* CW	Mounting Bolt Size	Bolt Protrusion *X*	Approx. Mass per Tooth Insert kg	Total Approx. Mass kg
RF10150S10T-□Q-SBK-E	10	485.4	512	80	160	22	227	200	175	100	10	19	0.9	75
RF10150S12T-□Q-SBK-E	12	579.6	608	85	175	22	247	220	195	110	10	19	0.9	100
RF6205S10T-□Q-SBK-E	10	493.2	527	85	160	28	227	200	170	100	12	26	1.2	78
RF6205S12T-□Q-SBK-E	12	588.8	620	85	175	28	247	220	190	110	12	26	1.2	111
RF12200S10T-□Q-SBK-E	10	647.2	678	95	190	28	267	240	210	120	12	26	1.2	135
RF12200S12T-□Q-SBK-E	12	772.7	804	100	210	28	297	240	210	120	12	26	1.2	177
RF17200S10T-□Q-SBK-E	10	647.2	680	95	190	40	267	270	235	135	14	24.5	1.7	163
RF17200S12T-□Q-SBK-E	12	772.7	806	100	210	40	297	260	225	130	14	24.5	1.7	207
RF17250S10T-□Q-SBK-E	10	809.0	840	100	210	40	297	260	225	130	14	24.5	1.7	214
RF17250S12T-□Q-SBK-E	12	965.9	996	100	210	40	297	260	225	130	14	24.5	1.7	254
RF26200S10T-□Q-SBK-E	10	647.2	686	100	210	45	297	260	225	130	14	28	2.4	191
RF26200S12T-□Q-SBK-E	12	772.7	810	110	225	45	317	270	235	130	14	28	2.4	240
RF26250S10T-□Q-SBK-E	10	809.0	846	110	225	45	317	270	235	135	14	28	2.4	248
RF26250S12T-□Q-SBK-E	12	965.9	1002	110	225	45	317	270	235	135	14	28	2.4	292
RF26300S10T-□Q-SBK-E	10	970.8	1007	110	225	45	317	270	235	135	14	28	2.4	292
RF26300S12T-□Q-SBK-E	12	1159.1	1195	120	235	45	337	280	245	140	14	28	2.4	379

Note: 1. Numbers of teeth, hub diameters, and so on not shown in the table above are also available. Contact a Tsubaki representative for more information.
2. Contact a Tsubaki representative when your chain uses M or N rollers.
3. Check that there is no interference between the tooth outer diameters and buckets, aprons, etc.
4. Check for interference between the bolt protrusion and equipment.
5. Enter hub type (BW1/CW1, or RE for tooth inserts only) in the blank boxes of the model numbers.
6. All models have hardened teeth.

Smart Series Handling

Before Mounting and Removing

1. Points of caution

- There is a risk of extreme danger if, while replacing the sprocket or tooth inserts, gravitational balance is lost and leads to the shaft rotating or the sprocket/teeth falling off. Always securely support or anchor the sprocket and teeth before starting work. Also, ensure the work location is safe and that there is a sufficient number of people to assist.
- When removing ring and block type tooth insert sprockets, when using a torch to cut or otherwise remove stubborn bolts that will not budge due to the presence of conveyed material or sprocket corrosion, use a file or grinder to remove scratches, conveyed material, etc. from the mounting base seat. Place a patch (rod) with a diameter smaller than the bolt against the bolt and strike with a hammer to loosen the bolt.
- For especially heavy sprockets and tooth inserts, use the hanging hole and eyebolt taps provided. Firmly secure any slings or wires used.
- Thoroughly clean where the sprocket will be mounted on the shaft and the split pieces/mounting base of the sprocket. Use a file or grinder to remove any scratches, corrosion, conveyed material, etc. and give it a smooth finish.

2. Mounting bolts

- When finally tightening the bolts and nuts, tighten little by little over several turns to ensure a uniform tightening. Finally, securely tighten the bolts and use a torque wrench to confirm tightness.

Bolt Size	M10	M12	M16	M20	M24	M30
Tightening Torque [N·m]	68	118	289	568	980	1960

Note: Use bolts and nuts having a strength grade of 12.9.

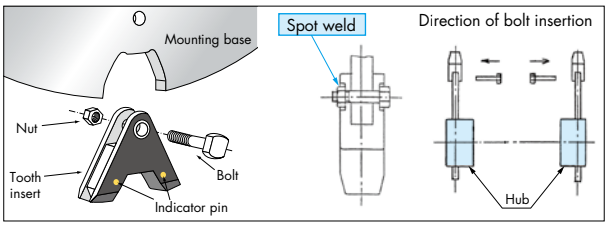
3 . Block tooth inserts

Mounting

1. Use a spatula to apply a coat of special adhesive to the entire surface where the tooth insert will be mounted.
2. When attaching the tooth insert to the mounting base, ensure that the bottom of the mounting base and the tooth insert touch.
3. Tighten the accompanying nuts and bolts once you are sure they are touching.

Note: When using block tooth insert sprockets with bucket elevators, attach bolts from the inner side of the conveyor to the outer side.

4. Use spot welding on all nuts to prevent loosening.
5. Leave for 24 hours to allow the adhesive to dry.



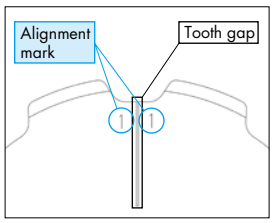
Removing

1. When removing tooth inserts, use a grinder to remove the spot welds.
2. Remove the bolts to remove the tooth inserts. When using a torch to cut or otherwise remove stubborn nuts that will not budge due to the presence of conveyed material or sprocket corrosion, use a file or grinder to remove scratches, conveyed material, etc. from the mounting base seat.
3. Remove the bolts to remove the tooth inserts. Be careful when doing so that the tooth insert does not suddenly come off and fall.

Steps for Mounting and Removing

1. Split type

Mounting

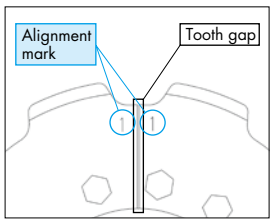


1. Match the split sprocket to where it is to be mounted on the shaft. When doing so, ensure the alignment marks on the teeth are aligned.
2. When matching the split sprocket, there is no gap in the hub assembly surface but there is a gap in the tooth assembly surface. There will be no problems due to this when the chain engages the sprocket.
3. Use the accompanying spring washers and a torque wrench to ensure a secure, uniform tightening.
4. Ensure there is no misalignment of the split sprocket faces when mounting to the shaft.

Note: The split sprocket will not loosen in normal environments as long as the appropriate torque has been used. In situations where heavy vibrations may cause the sprocket to fall and cause injury, use a thread locking fluid or take other measures to prevent loosening.

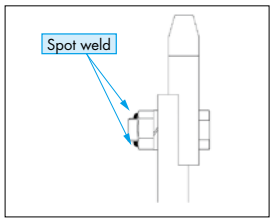
2 . Ring tooth inserts

Mounting



1. Ensure the alignment marks on the tooth inserts are aligned and temporarily tighten the bolts, spring washers, and nuts.
2. Adjust the inserts so that the mounting gap is uniform. The gap should be between 1–3 mm. There will be no problems due to this when the chain engages the sprocket.
3. Adjust so that the heights of the tooth insert bottoms are uniform with the heights of adjacent tooth inserts.
4. Spot weld all nuts in two places to prevent loosening. The sprocket is designed for use in harsh environments with vibration, impact, and corrosion. Securely prevent this loosening by spot welding all nuts.

Removing



1. When removing tooth inserts, use a grinder to remove the spot welds.
2. Remove the bolts to remove the tooth inserts. When using a torch to cut or otherwise remove stubborn nuts that will not budge due to the presence of conveyed material or sprocket corrosion, use a file or grinder to remove scratches, conveyed material, etc. from the mounting base seat.

Inspecting Indicator Pins

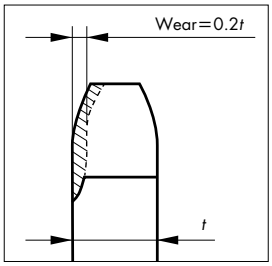
Indicator Pins are a handy option that lets you know when to replace your sprockets with just a glance. See page 71 for details. Follow the inspection steps below.

1. Inspection steps

1. Remove any material attached to the sprocket profile so that you can check the indicator pins.
2. The sprocket has reached its usage limit when wear reaches the indicator pins.
   - There are two indicator pins (at roughly 0° and 180°) embedded into the teeth of each sprocket.
   - The position of the indicator pins will vary by model (available chain size, sprocket no. of teeth, type). With finished bores, there will be one indicator pin located on the tooth nearest to the top of the keyway.

2. Points of caution

- Wear will rapidly accelerate if the sprocket continues to be used after wear has reached the indicator pins. This will also adversely impact the chain. We recommend immediate replacement.
- Replace your sprocket if wear exceeds 20% of tooth width t before reaching the indicator pins. Review your sprocket's alignment before wear exceeds 20%.



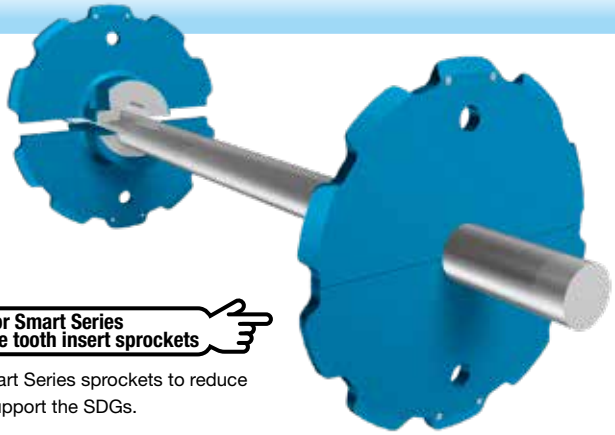
Tooth profile wear

Special Sprockets

Sprockets with Shaft

Tsubaki manufactures the shafts and delivers them assembled together with the sprocket.

- No need to mount the sprocket to the shaft, reducing equipment mounting labor.
- We can also assemble bearings and drive sprockets of your choice.



How to Order

- Please consult with a Tsubaki representative on shaft shape and material, sprocket installation locations, and other items. If you can show us a drawing of your equipment, and/or specify chain model numbers and specifications, we can provide you with a more accurate estimate.

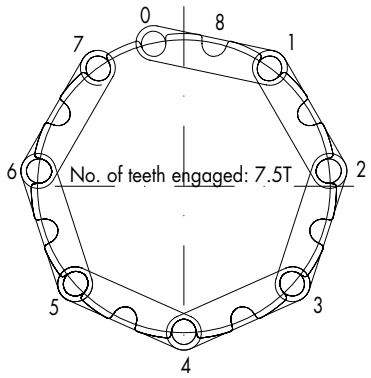
See p.55 for Smart Series replaceable tooth insert sprockets

Use with Smart Series sprockets to reduce waste and support the SDGs.

Hunting Tooth (Double Duty) Sprockets

These sprockets have an odd number of teeth (7.5T, 12.5T, etc.) and are half the pitch of the chain. Every time the sprocket makes one revolution, the chain engages with one set of teeth, ahead of the previously engaged set. Ideal for when there are severe wear conditions acting on the teeth. The hubs are made to order. Please contact a Tsubaki representative.

Hunting Tooth Sprocket Teeth Engagement



Effectively doubles the number of teeth.

Lock Sprockets for Large Size Conveyor Chain

These sprockets allow keyless tightening.

- The inner diameter of the sprocket and the outer diameter of the lock sleeve are tapered. A wedge action will generate frictional force, which will tightly secure the sprocket and shaft.

Applicable Size

RF03/RF05 size
R/F/S rollers

How to Order

- Availability depends on sprocket shape, shaft diameter, and material. Please contact a Tsubaki representative.

■ Hunting Tooth Sprocket Number of Teeth and Plate Dimensions

Unit: mm

Size and Roller Type	No. of Engaging Teeth	Pitch Circle Dia. *Dp*	Outer Dia. (*Do*)	Tooth Width *T*
RF03075S	7.5	184.4	194	11.9
	12.5	301.6	311	
RF03100S	7.5	245.9	253	
	12.5	402.1	412	
RF05100S	7.5	245.9	257	18
	12.5	402.1	416	
RF05125S	7.5	307.3	313	
	12.5	502.6	516	
RF05150S	7.5	368.8	369	
	12.5	603.2	616	
RF08125S	7.5	307.3	321	22
	12.5	502.6	516	
RF08150S	7.5	368.8	378	
	12.5	603.2	617	
RF10125S	7.5	307.3	322	
	12.5	502.6	520	
RF10150S	7.5	368.8	378	
	12.5	603.2	621	

Unit: mm

Size and Roller Type	No. of Engaging Teeth	Pitch Circle Dia. *Dp*	Outer Dia. (*Do*)	Tooth Width *T*
RF430S	7.5	249.8	260	18
	12.5	408.5	421	
RF450S	7.5	249.8	263	22
	12.5	408.5	422	
RF650S	7.5	374.7	390	22
	12.5	612.8	628	
RF12200S	7.5	491.7	510	28
	12.5	804.2	825	
RF12250S	7.5	614.6	623	
	12.5	1005.3	1026	
RF17200S	7.5	491.7	516	40
	12.5	804.2	828	
RF17250S	7.5	614.6	637	
	12.5	1005.3	1029	
RF17300S	7.5	737.6	749	
	12.5	1206.3	1230	
RF6205S	7.5	374.7	396	22
	12.5	612.8	634	

Note: The above dimensions are nominal dimensions and may differ from actual dimensions.

Function Specific Products

We offer material combinations and specifications to match customer needs.

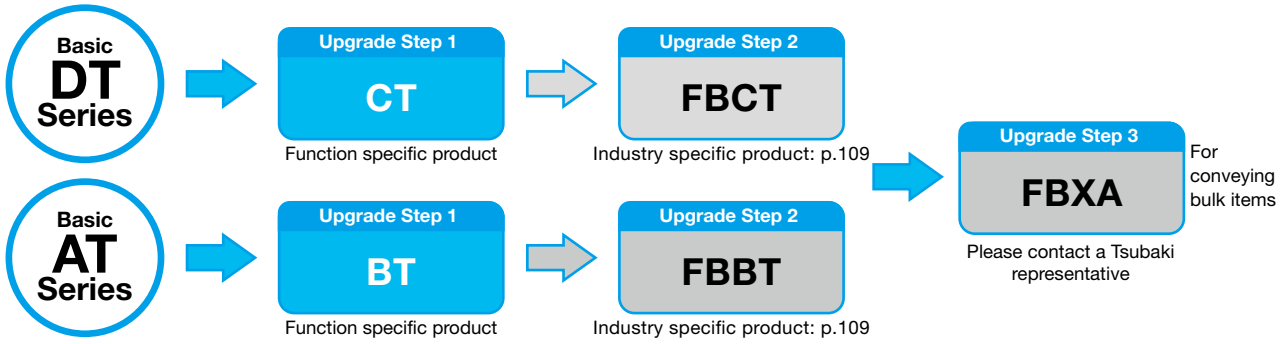
Model Numbering Example

RF12200	BR	–	AT	–	1L	A2	+	200L	–	PR	–	H
①	②		③		④	⑤		⑥		⑦		⑧

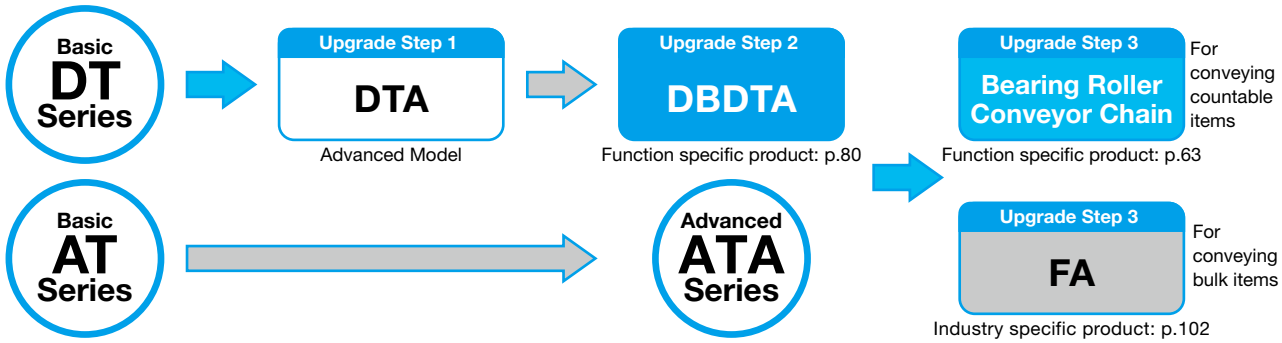
Code		See page
① Size	Metric sizes are RF03 and above. Inch sizes are RF430 and above.	Product pages
② Roller type	Standard roller types: R, F, S, M, N BR/BF : Standard Bearing Roller Conveyor Chain DBR/DBF : Anti-Dust Bearing Roller Conveyor Chain EBR/EBF : Standard Lube-Free Bearing Roller Conveyor Chain WEBR/WEBF : Water Resistant Lube-Free Bearing Roller Conveyor Chain AEBR/AEBF : Completely Lube-Free Bearing Roller Conveyor Chain RP/FP : Lambda Plastic Roller Conveyor Chain	p.10
③ Series	DT/AT/GS/SS : Basic Models CT/BT : Countermeasure against wear elongation MT/VT : Countermeasure against corrosion and wear elongation RT/YT : Countermeasure against corrosion, wear elongation, and bush-roller corrosion wear DB □ : Shoulder Bush Conveyor Chain Enter base chain series in the □. NB : Bearing Bush Conveyor Chain LMC : Lambda Plastic Roller Conveyor Chain	p.62 p.80 p.77 p.79
④ Attachment spacing	Installed on the number of links you specify, such as “each link (1L)”. There are restrictions due to the shape of the attachment.	p.14
⑤ Attachment type	Several attachment types are available, including standard A, K, or G types.	p.12
⑥ Number of links	Specify the number of links. (Maximum 99,999 links)	
⑦ End link	Standard end link configuration is PR.	p.22
⑧ Option	Select an option according to your chain configuration. OK to leave blank if you require no options.	p.22

Tsubaki can provide chain functions that meet the needs of customers based on usage conditions.
The table below shows examples of chain series designed to handle specific usage conditions.

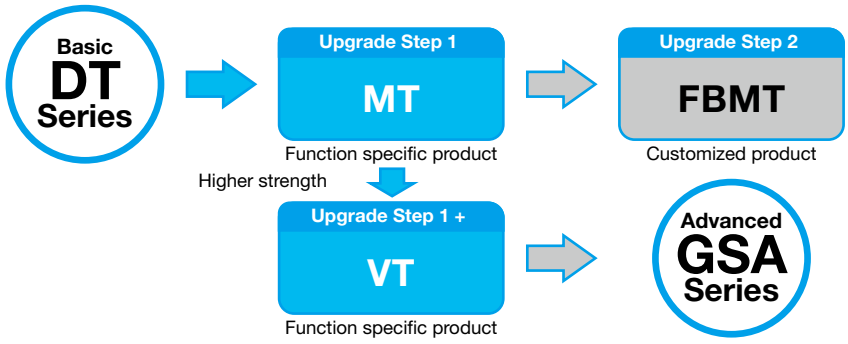
Countermeasure against Wear Elongation



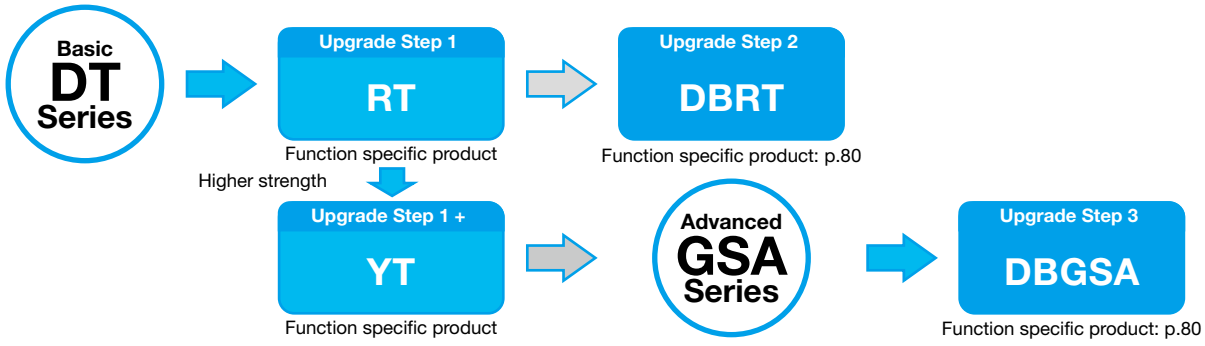
Countermeasure against Wear between Bush and Roller



Countermeasure against Corrosion and Wear Elongation

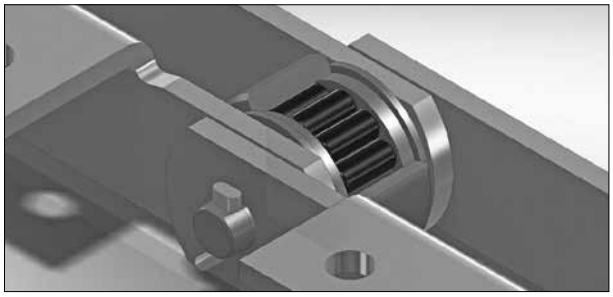


Countermeasure against Corrosion and Wear between Bush and Roller



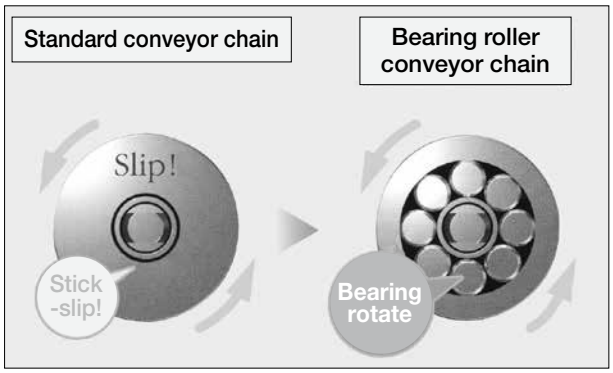
Function Specific Products Bearing Roller Conveyor Chain

Bearing Roller Conveyor Chain



Tsubaki's Bearing Roller Conveyor Chain, with its unique cylindrical bearings within the rollers, is able to provide the high efficiency, reduced costs, suppression of stick-slip phenomenon, and longer roller/rail life that existing chains cannot.

◆ Functions and Benefits of Bearing Rollers



Bearing Roller Functions

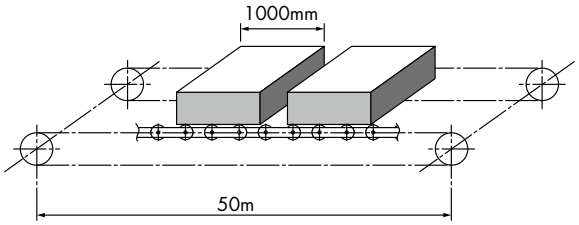
1. Reduces chain running resistance (1/3 of standard conveyor chain)
2. Greatly increases roller allowable load

Bearing Roller Benefits

1. Reduces chain tension and required motor capacity
2. Prevents stick-slip phenomenon during long-length/low-speed conveyance
3. Reduces rail wear and stops poor roller rotation
4. Increases wear life (bush-roller)
5. Reduces CO_2 output

◆ Cost Comparison with Standard Conveyor Chains

Selection Example



Conveyor length : 50 m
Chain speed : 10 m/min
Chain pitch : 250 mm
Conveyed material : 2,000 kgf x 40 pcs
No. of strands : 2
Chain configuration : F roller A2 attachment

When selecting using the conditions above

For New Installations

Standard conveyor chain		Bearing roller conveyor chain
Chain tensile strength		
RF26250F	2 sizes down Chain size	RF12250BF
0.08 (when lubed)	1/3 Coefficient of friction	0.03
31.4 kN {3200 kgf}	1/3 Chain tensile strength	11.8 kN {1200 kgf}
13.5 kW	1/2.5 Motor capacity	5.1 kW

Smaller chain design, energy savings

When Replacing Existing Installations

Standard conveyor chain		Bearing roller conveyor chain
Chain tensile strength		
RF26250F	No change in size Chain size	RF26250BF
0.08 (when lubed)	1/3 Coefficient of friction	0.03
31.4 kN {3200 kgf}	1/3 Chain tensile strength	11.8 kN {1200 kgf}
13.5 kW	1/2.5 Motor capacity	5.1 kW
1	Replacement costs 1/3 less Wear life	More than 3x

Greatly increases chain life, allowing for less conveyor maintenance work and lower costs

■ Specification Details

				Standard Specs		Anti-Dust Specs		Standard Lube-Free Specs		Completely Lube-Free Specs		Water Resistant Lube-Free Specs	
Roller Type				BR BF		DBR DBF		EBR EBF		AEBR AEBF		WEBR WEBF	
Operating Environment				Room temperature, away from water and dust		Dust may be present (cannot be used when chain will be buried in dust)		Room temperature, away from water and dust		Room temperature, away from water and dust		Room temperature, in contact with water (cannot be used in dusty environments)	
Roller Lubrication				Requires regular lube		Requires regular lube		Can be used without lubricating between bush and roller		Packaged and shipped lubed, no further lubing necessary		Packaged and shipped lubed, no further lubing necessary	
Operating Temperature Range °C				–20 to 80 (can be manufactured to withstand up to 150°C)		–10 to 80		–20 to 50		–20 to 50		0 to 50	
Roller Allowable Load	R Roller	Size	RF03	1.96kN	{ 200kgf}	–	–	1.96kN	{ 200kgf}	–	–	1.37kN	{ 140kgf}
			RF05	3.04kN	{ 310kgf}	–	–	3.04kN	{ 310kgf}	3.04kN	{ 310kgf}	2.13kN	{ 220kgf}
			RF08	4.12kN	{ 420kgf}	–	–	4.12kN	{ 420kgf}	4.12kN	{ 420kgf}	2.88kN	{ 290kgf}
			RF10	5.49kN	{ 560kgf}	5.49kN	{ 560kgf}	5.49kN	{ 560kgf}	5.49kN	{ 560kgf}	3.84kN	{ 390kgf}
			RF12	8.34kN	{ 850kgf}	8.34kN	{ 850kgf}	8.34kN	{ 850kgf}	8.34kN	{ 850kgf}	5.84kN	{ 600kgf}
			RF17	14.1 kN	{1440kgf}	14.1 kN	{1440kgf}	14.1 kN	{1440kgf}	14.1 kN	{1440kgf}	9.87kN	{1010kgf}
			RF26	19.6 kN	{2000kgf}	19.6 kN	{2000kgf}	19.6 kN	{2000kgf}	19.6 kN	{2000kgf}	13.7 kN	{1400kgf}
			RF36	27.5 kN	{2800kgf}	27.5 kN	{2800kgf}	27.5 kN	{2800kgf}	27.5 kN	{2800kgf}	19.3 kN	{1970kgf}
	F Roller		RF03	1.27kN	{ 130kgf}	–	–	1.27kN	{ 130kgf}	–	–	0.89kN	{ 90kgf}
			RF05	1.96kN	{ 200kgf}	–	–	1.96kN	{ 200kgf}	1.96kN	{ 200kgf}	1.37kN	{ 140kgf}
			RF08	2.65kN	{ 270kgf}	–	–	2.65kN	{ 270kgf}	2.65kN	{ 270kgf}	1.86kN	{ 190kgf}
			RF10	3.43kN	{ 350kgf}	3.43kN	{ 350kgf}	3.43kN	{ 350kgf}	3.43kN	{ 350kgf}	2.40kN	{ 240kgf}
			RF12	5.49kN	{ 560kgf}	5.49kN	{ 560kgf}	5.49kN	{ 560kgf}	5.49kN	{ 560kgf}	3.84kN	{ 390kgf}
			RF17	9.81kN	{1000kgf}	9.81kN	{1000kgf}	9.81kN	{1000kgf}	9.81kN	{1000kgf}	6.87kN	{ 700kgf}
			RF26	13.7 kN	{1400kgf}	13.7 kN	{1400kgf}	13.7 kN	{1400kgf}	13.7 kN	{1400kgf}	9.59kN	{ 980kgf}
			RF36	18.6 kN	{1900kgf}	18.6 kN	{1900kgf}	18.6 kN	{1900kgf}	18.6 kN	{1900kgf}	13.0 kN	{1330kgf}
Coefficient of Roller Rotation Friction				0.03		0.05*		0.03		0.03		0.03	
Chain Allowable Speed	Sprocket No. of Teeth		6	15m/min		15m/min		–		–		–	
			8	25m/min		25m/min		15m/min		15m/min		15m/min	
			10	30m/min		30m/min		20m/min		20m/min		20m/min	
			12	30m/min		30m/min		25m/min		25m/min		25m/min	

*As Anti-Dust Specs are designed for use in dusty environments, their coefficient of friction is slightly higher.

◆ Allowable Load for Standard A Attachments

Allowable vertical load for A type attachments is as per pages 171 and 172. Where the load works with the roller, allowable roller load should be compared to that of the attachment, and the smaller value used.
If the maximum allowable load of the attachment is insufficient to meet requirements, Tsubaki can also manufacture attachments with reinforcing ribs (for example, A2R).

Note: Values for K Attachments are double those of A Attachments.

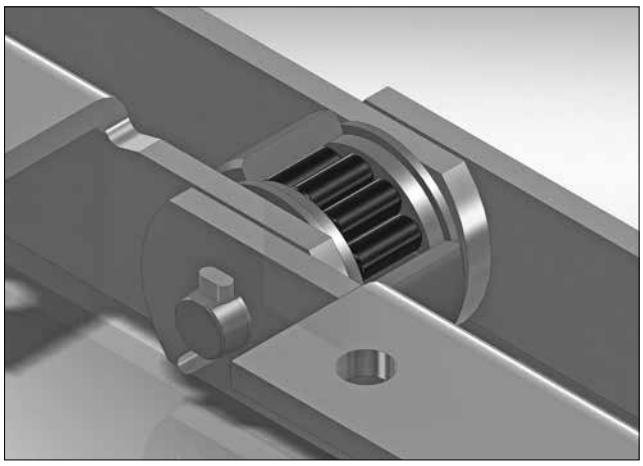
Function Specific Products Bearing Roller Conveyor Chain

Bearing Roller Conveyor Chain Standard Series

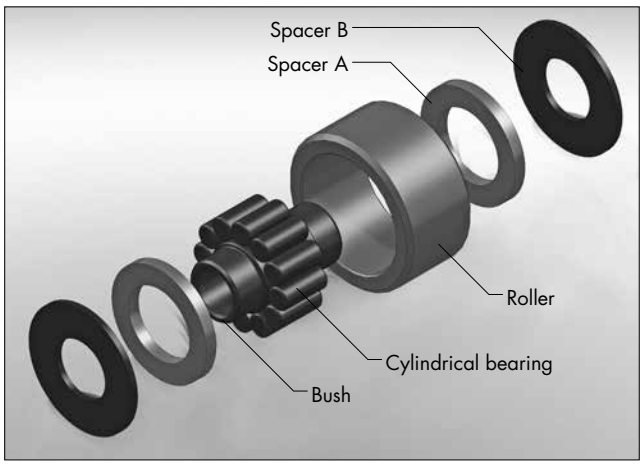
Roller Type: BR/BF

Standard Series Bearing Roller Conveyor Chain features a unique construction of cylindrical bearings between rollers and bushes. (Patented)
These rollers have the same dimensions as R and F Rollers on standard RF conveyor chain.

■ Roller Cross-Sectional View

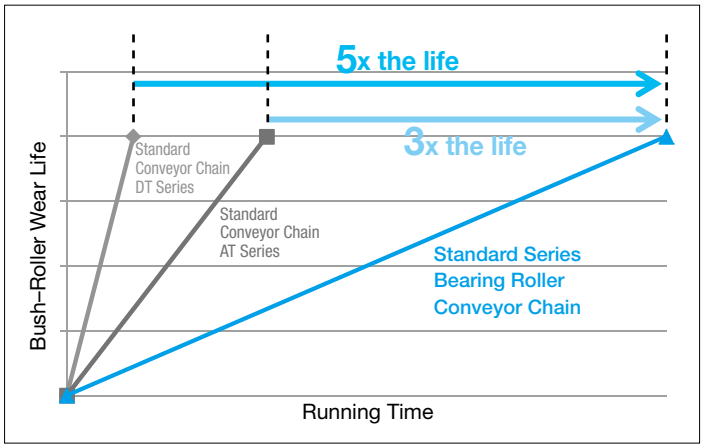


■ Construction



Features

■ In-House Test Comparison (No Additional Lubrication)



5x the wear life of DT Series and 3x the wear life of AT Series without additional lubrication.

Ordering Standard Series Bearing Roller Conveyor Chain

Model Numbering Example

RF03075 BR-DT-1L A2+400L-PR

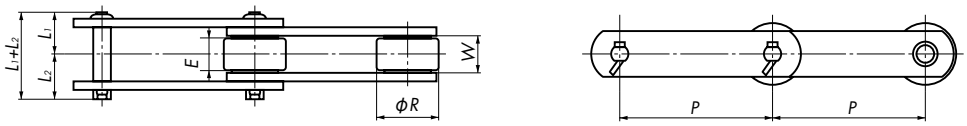
- RF03075: Size
- BR: Roller Type (BR: Standard Series R roller; BR: Standard Series F roller)
- DT: Series (DT: DT Series; AT: AT Series)
- 1L: Attachment Spacing
- A2: Attachment Type
- 400L: No. of Links
- PR: End Link

Ordering Example

Size: RF03 Pitch: 75mm Roller Type: BR Roller
Series: DT Series Attachment Spacing/Type: A2 every link
Quantity: 400 links

Chain Number	Quantity	Unit
RF03075BR-DT-1LA2+400L-PR	1	H

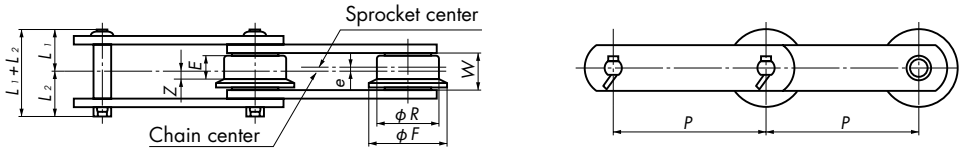
BR Roller



Size	Pitch P	Inner Link Inner Width W	Pin			R Roller		Roller Allowable Load kN{kgf}/pc	Approx. Mass kg/m	Max. Allowable Load	
			L1+L2	L1	L2	Diameter R	Contact Width E			DT Series kN{kgf}	AT Series kN{kgf}
RF03075	75	16.1	38.0	18.0	20.0	31.8	14.0	1.96{200}	2.8	4.20 {430}	7.85{800}
RF03100	100								2.4		
RF05100	100	22.0	53.5	25.0	28.5	40.0	19.0	3.04{310}	5.2	9.80{1000}	14.7{1500}
RF05125	125								4.5		
RF05150	150								4.2		
RF08125	125	27.0	65.5	31.0	34.5	44.5	24.0	4.12{420}	5.9	11.2 {1140}	14.7{1500}
RF08150	150								5.6		
RF10100	100	30.0	69.0	33.0	36.0	50.8	26.0	5.49{560}	10.0	17.6 {1790}	23.5{2400}
RF10125	125								8.7		
RF10150	150								8.0		
RF12200	200	37.1	83.5	40.5	43.0	65.0	32.0	8.34{850}	11.6	26.6 {2710}	36.3{3700}
RF12250	250								10.4		
RF17200	200	51.4	109.5	51.5	58.0	80.0	44.0	14.1{1440}	20.0	35.0 {3570}	54.9{5600}
RF17250	250								17.0		
RF17300	300								16.0		
RF26250	250	57.2	116.5	55.5	61.0	100.0	50.0	19.6{2000}	26.0	44.9 {4570}	72.6{7400}
RF26300	300								23.0		
RF26450	450								19.0		
RF36300	300	66.7	146.0	68.0	78.0	125.0	56.0	27.5{2800}	40.0	68.0 {6930}	97.1{9900}
RF36450	450								32.0		
RF36600	600								28.0		

Note: 1. Contact a Tsubaki representative for inch pitch size.
2. The above dimensions are nominal dimensions and may differ from actual dimensions.

BF Roller



Size	Pitch P	Inner Link Inner Width W	Pin			F Roller					Roller Allowable Load kN{kgf}/pc	Approx. Mass kg/m	Max. Allowable Load	
			L1+L2	L1	L2	Diameter R	Flange Diameter F	Contact Width E	Off-Center e	Z			DT Series kN{kgf}	AT Series kN{kgf}
RF03075	75	16.1	38.0	18.0	20.0	31.8	42.0	11.0	1.5	4.3	1.27{130}	2.9	4.20 {430}	7.85{800}
RF03100	100											2.5		
RF05100	100	22.0	53.5	25.0	28.5	40.0	50.0	14.0	2.5	4.5	1.96{200}	5.4	9.80{1000}	14.7{1500}
RF05125	125											4.6		
RF05150	150											4.4		
RF08125	125	27.0	65.5	31.0	34.5	44.5	55.0	18.0	2.5	6.5	2.65{270}	6.2	11.2{1140}	14.7{1500}
RF08150	150											5.8		
RF10125	125	30.0	69.0	33.0	36.0	50.8	65.0	20.0	3.0	7.0	3.43{350}	9.0	17.6{1790}	23.5{2400}
RF10150	150											8.3		
RF12200	200	37.1	83.5	40.5	43.0	65.0	80.0	24.0	4.0	8.0	5.49{560}	12.1	26.6{2710}	36.3{3700}
RF12250	250											10.8		
RF17200	200	51.4	109.5	51.5	58.0	80.0	100.0	34.0	5.0	12.0	9.81{1000}	21.0	35.0{3570}	54.9{5600}
RF17250	250											18.0		
RF17300	300											16.0		
RF26250	250	57.2	116.5	55.5	61.0	100.0	125.0	38.0	6.0	13.0	13.7{1400}	27.0	44.9{4570}	72.6{7400}
RF26300	300											24.0		
RF26450	450											19.0		
RF36300	300	66.7	146.0	68.0	78.0	125.0	150.0	42.0	7.0	14.0	18.6{1900}	42.0	68.0{6930}	97.1{9900}
RF36450	450											33.0		
RF36600	600											29.0		

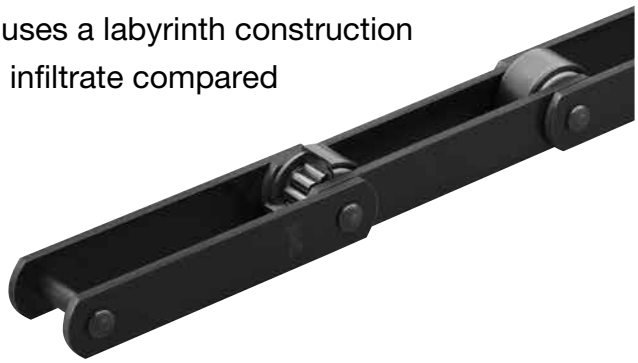
Note: 1. Contact a Tsubaki representative for inch pitch size.
2. The above dimensions are nominal dimensions and may differ from actual dimensions.

Function Specific Products Bearing Roller Conveyor Chain

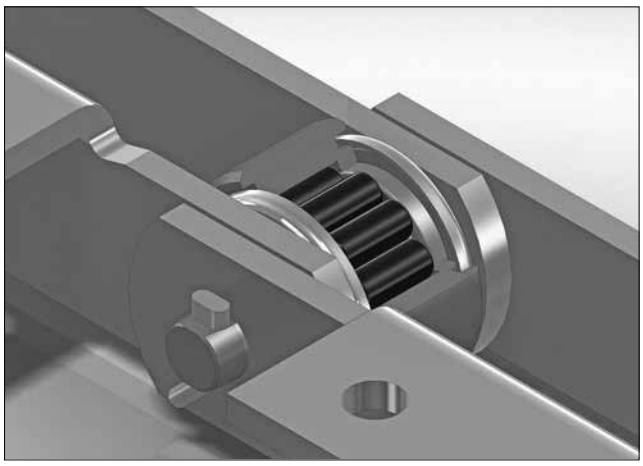
Bearing Roller Conveyor Chain Anti-Dust Series

Roller Type: DBR/DBF

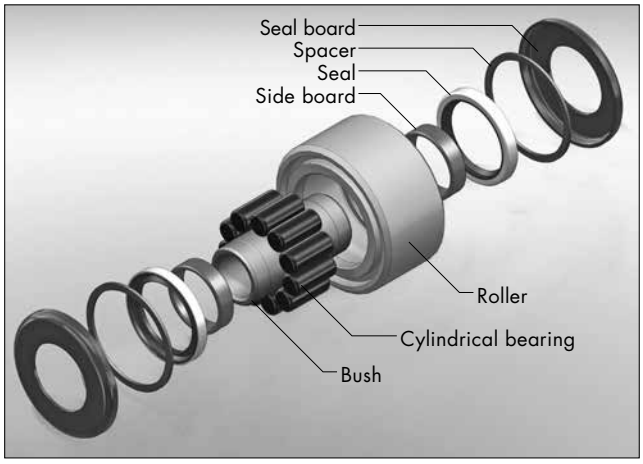
Anti-Dust Series Bearing Roller Conveyor Chain uses a labyrinth construction and seal to make it harder for dust and debris to infiltrate compared to our Standard Series. (Patented)
These rollers have the same dimensions as R and F Rollers on standard RF conveyor chain.



■ Roller Cross-Sectional View

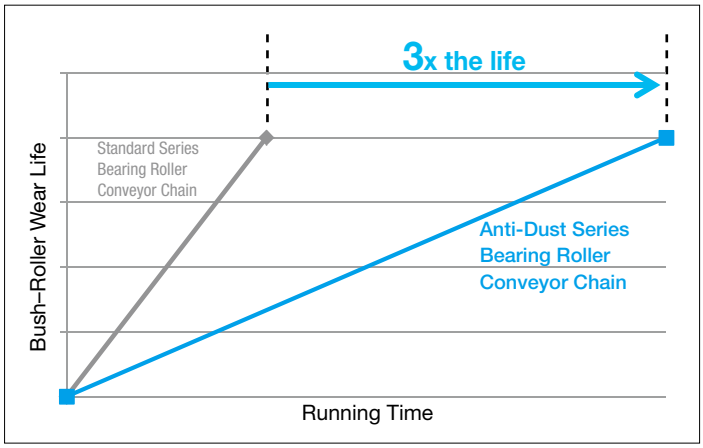


■ Construction



Features

■ In-House Test Comparison (No Additional Lubrication)



3x the wear life of Standard Series bearing roller conveyor chain in dusty environments.

Ordering Anti-Dust Series Bearing Roller Conveyor Chain

Model Numbering Example

RF10150 DBR-DT-1L A2+400L-PR

- RF10150: Size
- DBR: Roller Type (DBR: Anti-Dust Series R roller; DBF: Anti-Dust Series F roller)
- DT: Series (DT: DT Series; AT: AT Series)
- 1L: Attachment Type
- A2: Attachment Spacing
- 400L: No. of Links
- PR: End Link

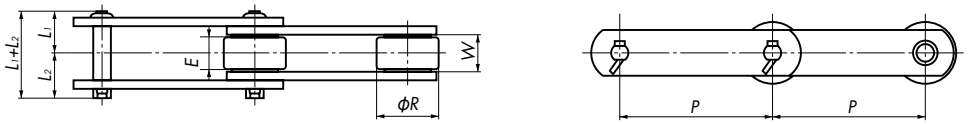
Ordering Example

Size: RF10 Pitch: 150mm Roller Type: DBR Roller
Series: DT Series Attachment Spacing/Type: A2 every link
Quantity: 400 links

Chain Number	Quantity	Unit
RF10150DBR-DT-1LA2+400L-PR	1	H

Note: Specify the model number and contact a Tsubaki representative for a quote.

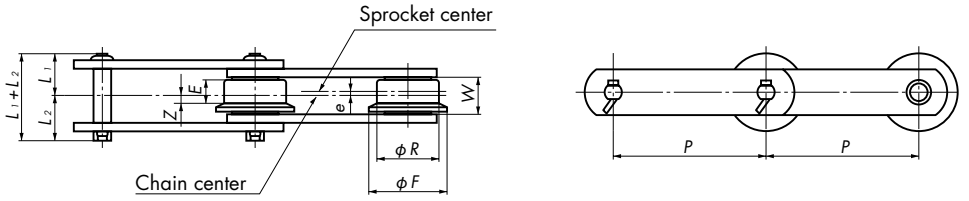
DBR Roller



Size	Pitch P	Inner Link Inner Width W	Pin			R Roller		Roller Allowable Load kN{kgf}/pc	Approx. Mass kg/m	Max. Allowable Load	
			L1+L2	L1	L2	Diameter R	Contact Width E			DT Series kN{kgf}	AT Series kN{kgf}
RF10100	100	30.0	69.0	33.0	36.0	50.8	26.0	5.49{560}	10.0	17.6{1790}	23.5{2400}
RF10125	125								8.7		
RF10150	150								8.0		
RF12200	200	37.1	83.5	40.5	43.0	65.0	32.0	8.34{850}	11.6	26.6{2710}	36.3{3700}
RF12250	250								10.4		
RF17200	200	51.4	109.5	51.5	58.0	80.0	44.0	14.1{1440}	20.0	35.0{3570}	54.9{5600}
RF17250	250								17.0		
RF17300	300								16.0		
RF26250	250	57.2	116.5	55.5	61.0	100.0	50.0	19.6{2000}	26.0	44.9{4570}	72.6{7400}
RF26300	300								23.0		
RF26450	450								19.0		
RF36300	300	66.7	146.0	68.0	78.0	125.0	56.0	27.5{2800}	40.0	68.0{6930}	97.1{9900}
RF36450	450								32.0		
RF36600	600								28.0		

Note: 1. Chain cannot be used for conveyance in environments where it will be fully covered in dust.
2. Periodically lubricate the base chain using the grease nipple on the pin head.
3. Base chain is compatible with General Use Conveyor Chains and can use current sprockets.
4. Do not use in corrosive environments (exposed to or submersed in water, etc.).
5. The above dimensions are nominal dimensions and may differ from actual dimensions.

DBF Roller



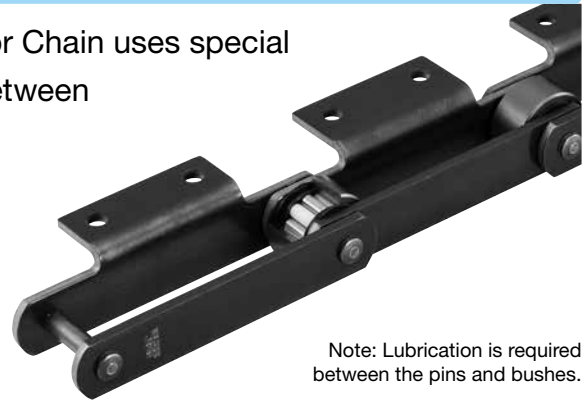
Size	Pitch P	Inner Link Inner Width W	Pin			F Roller					Roller Allowable Load kN{kgf}/pc	Approx. Mass kg/m	Max. Allowable Load	
			L1+L2	L1	L2	Diameter R	Flange Diameter F	Contact Width E	Off-Center e	Z			DT Series kN{kgf}	AT Series kN{kgf}
RF10125	125	30.0	69.0	33.0	36.0	50.8	65.0	20.0	3.0	7.0	3.43{350}	9.0	17.6{1790}	23.5{2400}
RF10150	150											8.3		
RF12200	200	37.1	83.5	40.5	43.0	65.0	80.0	24.0	4.0	8.0	5.49{560}	12.1	26.6{2710}	36.3{3700}
RF12250	250											10.8		
RF17200	200	51.4	109.5	51.5	58.0	80.0	100.0	34.0	5.0	12.0	9.81{1000}	21.0	35.0{3570}	54.9{5600}
RF17250	250											18.0		
RF17300	300											16.0		
RF26250	250	57.2	116.5	55.5	61.0	100.0	125.0	38.0	6.0	13.0	13.7{1400}	27.0	44.9{4570}	72.6{7400}
RF26300	300											24.0		
RF26450	450											19.0		
RF36300	300	66.7	146.0	68.0	78.0	125.0	150.0	42.0	7.0	14.0	18.6{1900}	42.0	68.0{6930}	97.1{9900}
RF36450	450											33.0		
RF36600	600											29.0		

Note: 1. Chain cannot be used for conveyance in environments where it will be fully covered in dust.
2. Periodically lubricate the base chain using the grease nipple on the pin head.
3. Base chain is compatible with General Use Conveyor Chains and can use current sprockets.
4. Do not use in corrosive environments (exposed to or submersed in water, etc.).
5. The above dimensions are nominal dimensions and may differ from actual dimensions.

Function Specific Products Bearing Roller Conveyor Chain

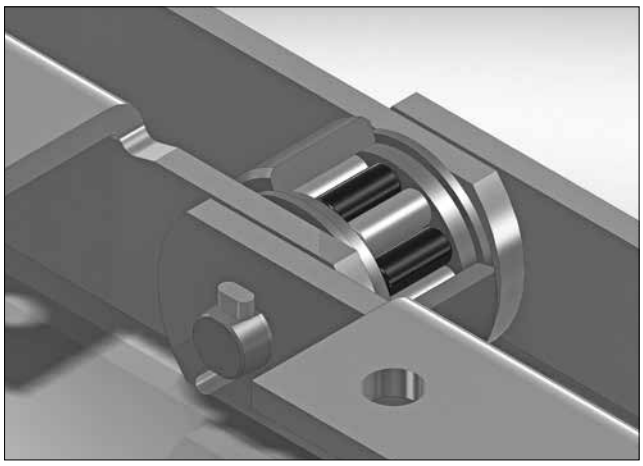
Bearing Roller Conveyor Chain Lube-Free Series (Standard Specs) Roller Type: EBR/EBF

Lube-Free Series (Standard) Bearing Roller Conveyor Chain uses special cylindrical bearings with self-lubricating functions between the bushes and rollers. The rollers can be used without additional lubrication.
These rollers have the same dimensions as R and F Rollers on standard RF conveyor chain.

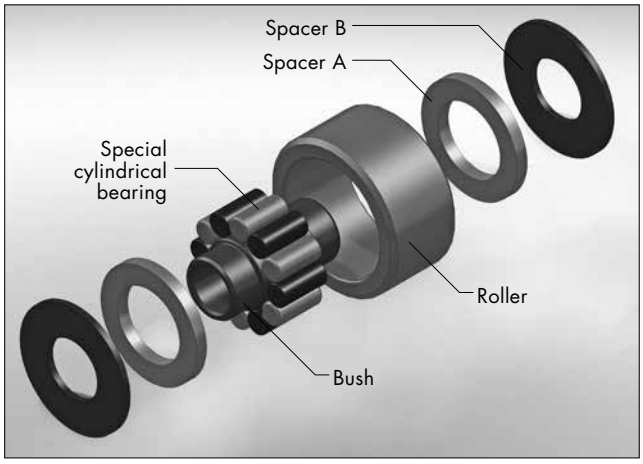


Note: Lubrication is required between the pins and bushes.

■ Roller Cross-Sectional View

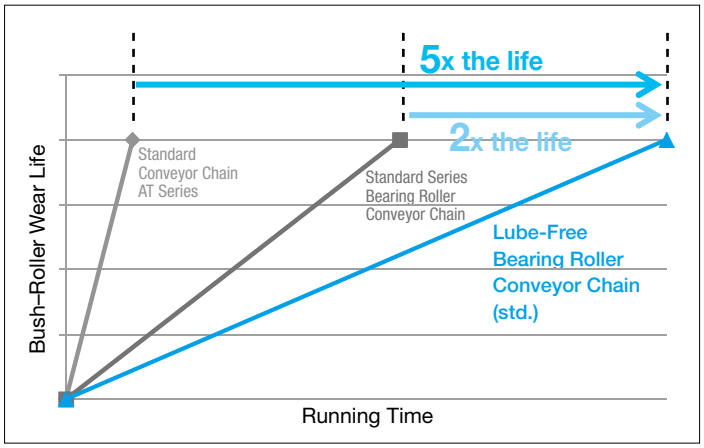


■ Construction



Features

■ In-House Test Comparison (No Additional Lubrication)



5x the wear life of AT Series standard conveyor chain and 2x the wear life of Standard Series bearing roller conveyor chain without additional lubrication.

Ordering Lube-Free Series (Standard) Bearing Roller Conveyor Chain

Model Numbering Example

RF03075 EBR-DT-1L A2+400L–PR

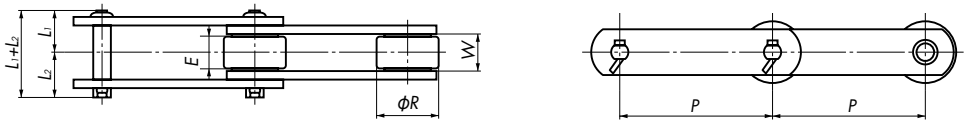
- RF03075: Size
- EBR: Roller Type (EBR: Lube-Free Series (Standard) R roller; EBF: Lube-Free Series (Standard) F roller)
- DT: Series (DT: DT Series; AT: AT Series)
- 1L: Attachment Spacing
- A2: Attachment Type
- 400L: No. of Links
- PR: End Link

Ordering Example

Size: RF03 Pitch: 75mm Roller Type: EBR Roller
Series: DT Series Attachment Spacing/Type: A2 every link
Quantity: 400 links

Chain Number	Quantity	Unit
RF03075EBR-DT-1LA2+400L-PR	1	H

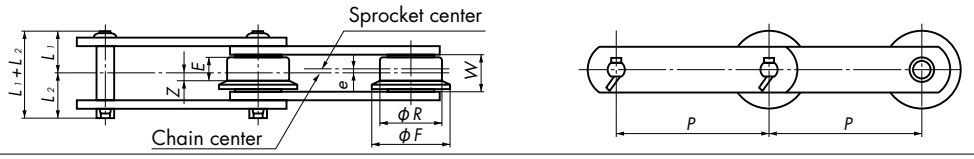
EBR Roller



Size	Pitch P	Inner Link Inner Width W	Pin			R Roller		Roller Allowable Load kN{kgf}/pc	Approx. Mass kg/m	Max. Allowable Load	
			L1+L2	L1	L2	Diameter R	Contact Width E			DT Series kN{kgf}	AT Series kN{kgf}
RF03075	75	16.1	38.0	18.0	20.0	31.8	14.0	1.96{200}	2.8	2.94{300}	5.50{560}
RF03100	100								2.4		
RF05100	100	22.0	53.5	25.0	28.5	40.0	19.0	3.04{310}	5.2	6.86{700}	10.3{1050}
RF05125	125								4.5		
RF05150	150								4.2		
RF08125	125	27.0	65.5	31.0	34.5	44.5	24.0	4.12{420}	5.9	7.84{800}	10.3{1050}
RF08150	150								5.6		
RF10100	100	30.0	69.0	33.0	36.0	50.8	26.0	5.49{560}	10.0	11.3{1150}	16.5{1680}
RF10125	125								8.7		
RF10150	150								8.0		
RF12200	200	37.1	83.5	40.5	43.0	65.0	32.0	8.34{850}	11.6	18.6{1900}	25.4{2590}
RF12250	250								10.4		
RF17200	200	51.4	109.5	51.5	58.0	80.0	44.0	14.1{1440}	20.0	24.5{2500}	38.4{3920}
RF17250	250								17.0		
RF17300	300								16.0		
RF26250	250	57.2	116.5	55.5	61.0	100.0	50.0	19.6{2000}	26.0	31.4{3200}	50.8{5180}
RF26300	300								23.0		
RF26450	450								19.0		
RF36300	300	66.7	146.0	68.0	78.0	125.0	56.0	27.5{2800}	40.0	47.6{4850}	68.0{6930}
RF36450	450								32.0		
RF36600	600								28.0		

Note: 1. Contact a Tsubaki representative for inch pitch size.
2. The above dimensions are nominal dimensions and may differ from actual dimensions.

EBF Roller



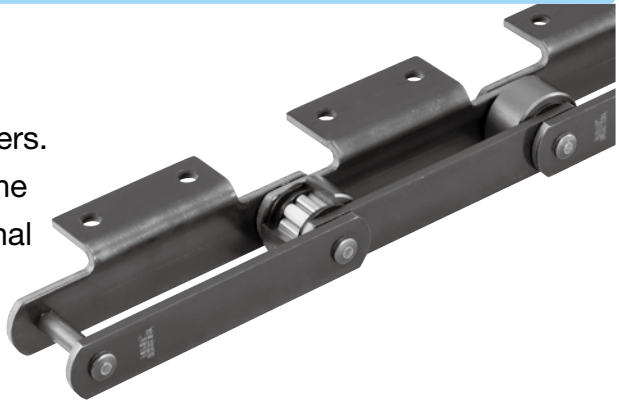
Size	Pitch P	Inner Link Inner Width W	Pin			F Roller					Roller Allowable Load kN{kgf}/pc	Approx. Mass kg/m	Max. Allowable Load	
			L1+L2	L1	L2	Diameter R	Flange Diameter F	Contact Width E	Off-Center e	Z			DT Series kN{kgf}	AT Series kN{kgf}
RF03075	75	16.1	38.0	18.0	20.0	31.8	42.0	11.0	1.5	4.3	1.27 {130}	2.9	2.94{300}	5.50{560}
RF03100	100											2.5		
RF05100	100	22.0	53.5	25.0	28.5	40.0	50.0	14.0	2.5	4.5	1.96 {200}	5.4	6.86{700}	10.3{1050}
RF05125	125											4.6		
RF05150	150											4.4		
RF08125	125	27.0	65.5	31.0	34.5	44.5	55.0	18.0	2.5	6.5	2.65 {270}	6.2	7.84{800}	10.3{1050}
RF08150	150											5.8		
RF10125	125	30.0	69.0	33.0	36.0	50.8	65.0	20.0	3.0	7.0	3.43 {350}	9.0	11.3{1150}	16.5{1680}
RF10150	150											8.3		
RF12200	200	37.1	83.5	40.5	43.0	65.0	80.0	24.0	4.0	8.0	5.49 {560}	12.1	18.6{1900}	25.4{2590}
RF12250	250											10.8		
RF17200	200	51.4	109.5	51.5	58.0	80.0	100.0	34.0	5.0	12.0	9.81{1000}	21.0	24.5{2500}	38.4{3920}
RF17250	250											18.0		
RF17300	300											16.0		
RF26250	250	57.2	116.5	55.5	61.0	100.0	125.0	38.0	6.0	13.0	13.7 {1400}	27.0	31.4{3200}	50.8{5180}
RF26300	300											24.0		
RF26450	450											19.0		
RF36300	300	66.7	146.0	68.0	78.0	125.0	150.0	42.0	7.0	14.0	18.6 {1900}	42.0	47.6{4850}	68.0{6930}
RF36450	450											33.0		
RF36600	600											29.0		

Note: 1. Contact a Tsubaki representative for inch pitch size.
2. The above dimensions are nominal dimensions and may differ from actual dimensions.

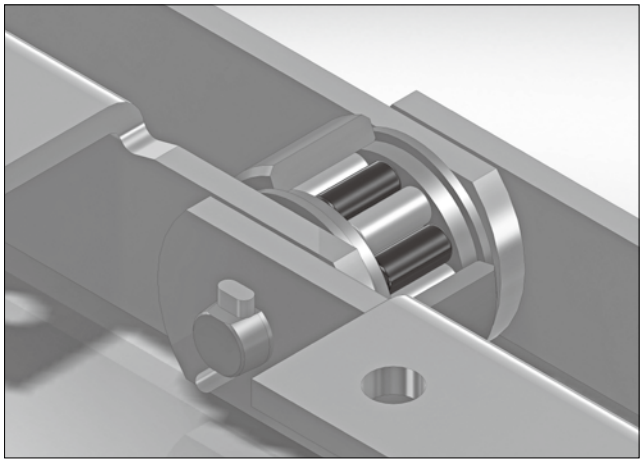
Function Specific Products Bearing Roller Conveyor Chain

Bearing Roller Conveyor Chain Lube-Free Series (Completely Lube-Free Specs) Roller Type: AEBR/AEBF

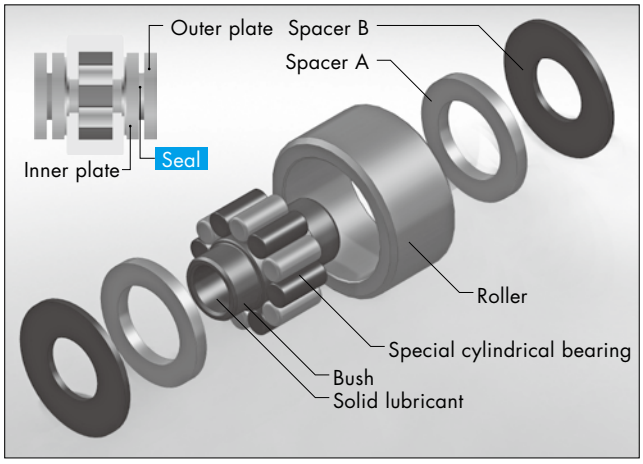
Completely Lube-Free Bearing Roller Conveyor Chain uses special cylindrical bearings with self-lubricating functions between the bushes and rollers. And it further includes a solid lubricant between the pins and bushes to eliminate the need for additional lubrication.



■ Roller Cross-Sectional View

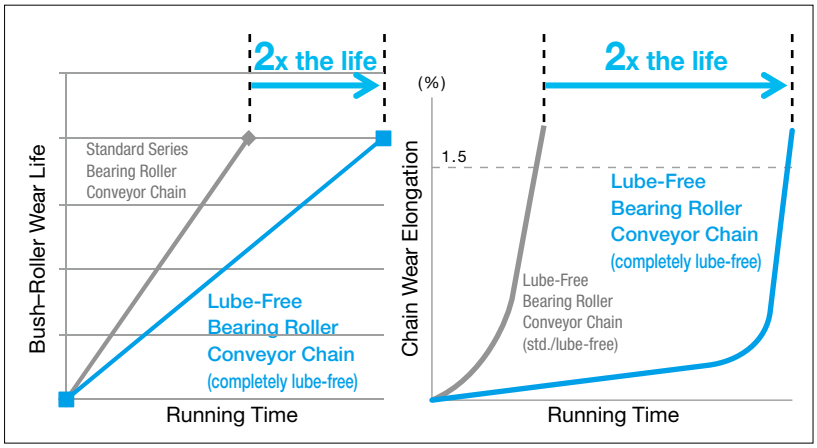


■ Construction



Features

■ In-House Test Comparison (No Additional Lubrication)



- **Bush–roller**
  2x the wear life of Standard Series bearing roller conveyor chain without additional lubrication.
- **Pin–bush**
  2x the wear life of Lube-Free Series bearing roller conveyor chain (standard) without additional lubrication.

Ordering Completely Lube-Free Series Bearing Roller Conveyor Chain

Model Numbering Example

RF10150 AEBR-DT-1L A2+400L-PR

- RF10150: Size
- AEBR: Roller Type — AEBR: Lube-Free Series (Completely Lube-Free) R roller; AEBF: Lube-Free Series (Completely Lube-Free) F roller
- DT-1L: Series — DT: DT Series; AT: AT Series
- A2+400L: Attachment Spacing
- A2: Attachment Type
- 400L: No. of Links
- PR: End Link

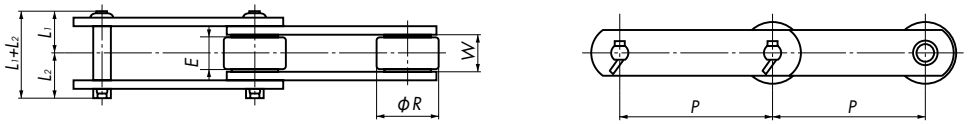
Ordering Example

Size: RF10 Pitch: 150mm Roller Type: AEBR Roller
Series: DT Series Attachment Spacing/Type: A2 every link
Quantity: 400 links

Chain Number	Quantity Unit
RF10150AEBR-DT-1LA2+400L-PR	1 H

Note: Specify the model number and contact a Tsubaki representative for a quote.

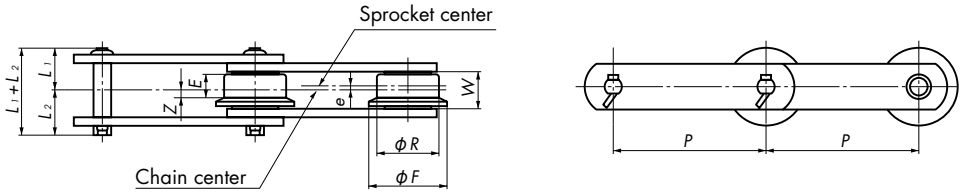
AEBR Roller



Size	Pitch P	Inner Link Inner Width W	Pin			R Roller		Roller Allowable Load kN{kgf}/pc	Approx. Mass kg/m	Max. Allowable Load	
			L1+L2	L1	L2	Diameter R	Contact Width E			DT Series kN{kgf}	AT Series kN{kgf}
RF05100	100	23.0	58.0	27.0	31.0	40.0	19.0	3.04{310}	5.2	6.86{700}	10.3{1050}
RF05125	125								4.5		
RF05150	150								4.2		
RF08125	125	28.5	70.5	33.5	37.0	44.5	24.0	4.12{420}	5.9	7.84{800}	10.3{1050}
RF08150	150								5.6		
RF10100	100	31.5	74.0	35.5	38.5	50.8	26.0	5.49{560}	10.0	11.3{1150}	16.5{1680}
RF10125	125								8.7		
RF10150	150								8.0		
RF12200	200	37.5	87.0	42.0	45.0	65.0	32.0	8.34{850}	11.6	18.6{1900}	25.4{2590}
RF12250	250								10.4		
RF17200	200	51.5	113.0	53.5	59.5	80.0	44.0	14.1{1440}	20.0	24.5{2500}	38.4{3920}
RF17250	250								17.0		
RF17300	300								16.0		
RF26250	250	57.5	120.0	57.5	62.5	100.0	50.0	19.6{2000}	26.0	31.4{3200}	50.8{5180}
RF26300	300								23.0		

Note: 1. This chain is interchangeable with standard large size conveyor chain and can use the existing sprocket. However, the $L_1 + L_2$ dimension is different.
2. The above dimensions are nominal dimensions and may differ from actual dimensions.

AEBF Roller



Size	Pitch P	Inner Link Inner Width W	Pin			F Roller					Roller Allowable Load kN{kgf}/pc	Approx. Mass kg/m	Max. Allowable Load	
			L1+L2	L1	L2	Diameter R	Flange Diameter F	Contact Width E	Off-Center e	Z			DT Series kN{kgf}	AT Series kN{kgf}
RF05100	100	23.0	58.0	27.0	31.0	40.0	50.0	14.0	2.5	4.5	1.96 {200}	5.4	6.86{700}	10.3{1050}
RF05125	125											4.6		
RF05150	150											4.4		
RF08125	125	28.5	70.5	33.5	37.0	44.5	55.0	18.0	2.5	6.5	2.65 {270}	6.2	7.84{800}	10.3{1050}
RF08150	150											5.8		
RF10125	125	31.5	74.0	35.5	38.5	50.8	65.0	20.0	3.0	7.0	3.43 {350}	9.0	11.3{1150}	16.5{1680}
RF10150	150											8.3		
RF12200	200	37.5	87.0	42.0	45.0	65.0	80.0	24.0	4.0	8.0	5.49 {560}	12.1	18.6{1900}	25.4{2590}
RF12250	250											10.8		
RF17200	200	51.5	113.0	53.5	59.5	80.0	100.0	34.0	5.0	12.0	9.81{1000}	21.0	24.5{2500}	38.4{3920}
RF17250	250											18.0		
RF17300	300											16.0		
RF26250	250	57.5	120.0	57.5	62.5	100.0	125.0	38.0	6.0	13.0	13.7 {1400}	27.0	31.4{3200}	50.8{5180}
RF26300	300											24.0		

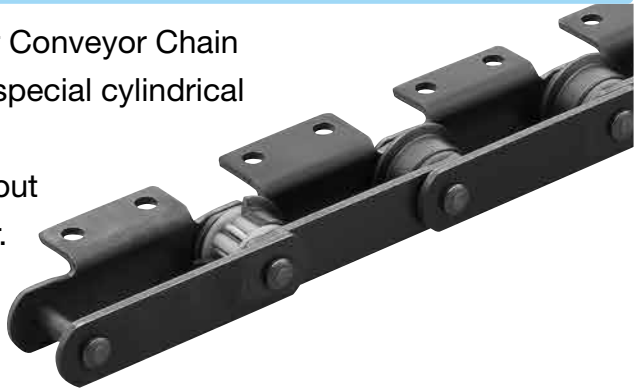
Note: 1. This chain is interchangeable with standard large size conveyor chain and can use the existing sprocket. However, the $L_1 + L_2$ dimension is different.
2. The above dimensions are nominal dimensions and may differ from actual dimensions.

Function Specific Products Bearing Roller Conveyor Chain

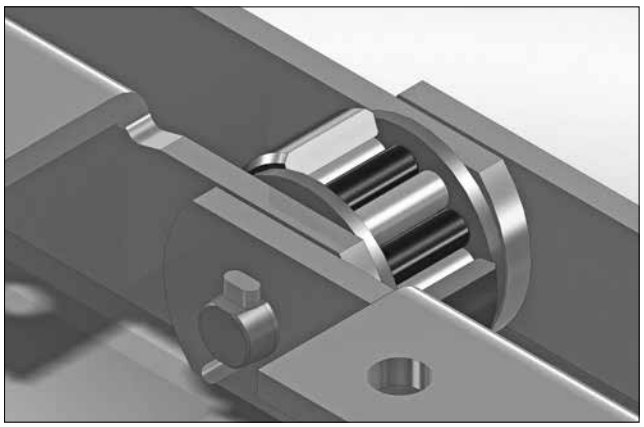
Bearing Roller Conveyor Chain Lube-Free Series (Water Resistant Specs)

Roller Type: WEBR/WEBF

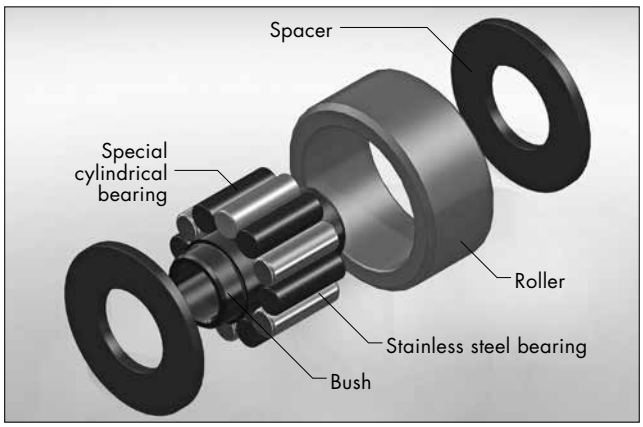
Lube-Free Series Water Resistant Bearing Roller Conveyor Chain features stainless steel cylindrical bearings and special cylindrical bearings with self-lubricating functions between bushes and rollers. The rollers can be used without additional lubrication, even in contact with water.



■ Roller Cross-Sectional View

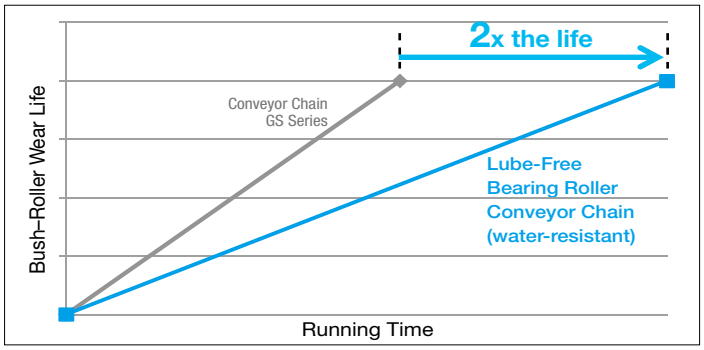


■ Construction



Features

■ In-House Test Comparison (No Additional Lubrication)



2x the wear life of GS Series without additional lubrication.

Ordering Lube-Free Water-Resistant Series Bearing Roller Conveyor Chain

Model Numbering Example

RF03075 WEBR-GS-1L A2+400L-PR

- RF03075: Size
- WEBR: Roller Type — WEBR: Lube-Free Series (Water Resistant) R roller; WEBF: Lube-Free Series (Water Resistant) F roller
- GS: Series: GS Series
- 1L: Attachment Spacing
- A2: Attachment Type
- 400L: No. of Links
- PR: End Link

Ordering Example

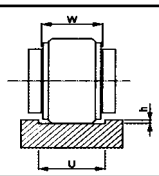
Size: RF03 Pitch: 75mm Roller Type: WEBR Roller
Series: GS Series Attachment Spacing/Type: A2 every link
Quantity: 400 links

Chain Number	Quantity	Unit
RF03075EBR-GS-1LA2+400L-PR	1	H

Note: Chains can also be manufactured with steel link plates. Special surface treatment on steel link plates is also available for corrosion resistance.

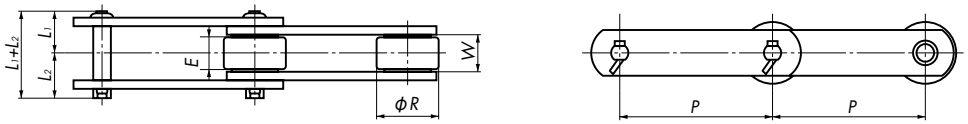
Rail Mounting

When using Lube-Free Water-Resistant Series chain, be sure to use a grooved rail. There is little difference in roller and spacer diameters, so the groove width (U) needs to be larger than the inner link inner width (W). Recommended rail groove depth can be found in the table on the right.



Size	Rail Groove Depth h	Size	Rail Groove Depth h
RF03	1.6	RF12	2.1
RF05	1.6	RF17	2.1
RF08	1.6	RF26	2.1
RF10	2.1	RF36	2.6

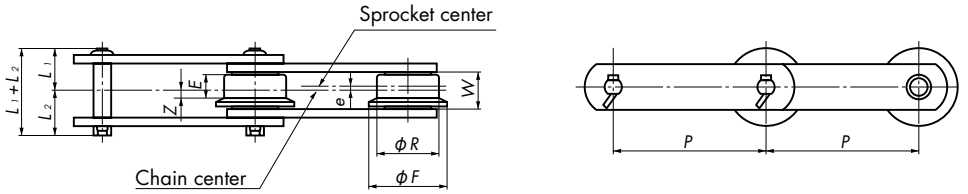
WEBR Roller



Size	Pitch P	Inner Link Inner Width W	Pin			R Roller		Roller Allowable Load kN{kgf}/pc	Approx. Mass kg/m	Max. Allowable Load kN{kgf}
			L1+L2	L1	L2	Diameter R	Contact Width E			
RF03075	75	16.1	38.0	18.0	20.0	31.8	12.3	1.37 {140}	2.8	2.94{300}
RF03100	100								2.4	
RF05100	100	22.0	53.5	25.0	28.5	40.0	17.0	2.13 {220}	5.2	6.86{700}
RF05125	125								4.5	
RF05150	150								4.2	
RF08125	125	27.0	65.5	31.0	34.5	44.5	21.0	2.88 {290}	5.9	7.84{800}
RF08150	150								5.6	
RF10100	100	30.0	69.0	33.0	36.0	50.8	23.0	3.84 {390}	10.0	11.3{1150}
RF10125	125								8.7	
RF10150	150								8.0	
RF12200	200	37.1	83.5	40.5	43.0	65.0	28.0	5.84 {600}	11.6	18.6{1900}
RF12250	250								10.4	
RF17200	200	51.4	109.5	51.5	58.0	80.0	40.0	9.87{1010}	20.0	24.5{2500}
RF17250	250								17.0	
RF17300	300								16.0	
RF26250	250	57.2	116.5	55.5	61.0	100.0	46.0	13.7{1400}	26.0	31.4{3200}
RF26300	300								23.0	
RF36300	300	66.7	146.0	68.0	78.0	125.0	55.0	19.3{1970}	40.0	47.6{4850}

Note: 1. Contact a Tsubaki representative for inch pitch size.
2. The above dimensions are nominal dimensions and may differ from actual dimensions.

WEBF Roller

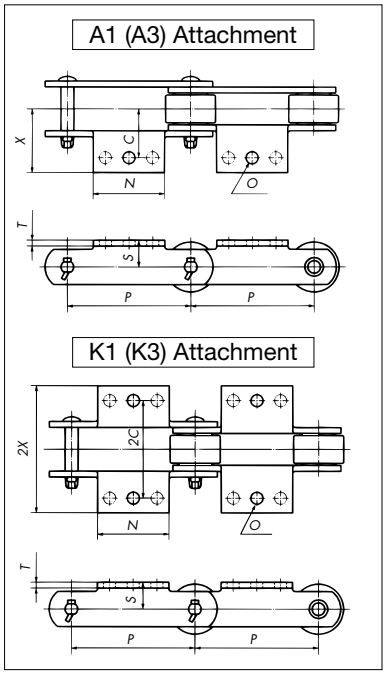


Size	Pitch P	Inner Link Inner Width W	Pin			F Roller					Roller Allowable Load kN{kgf}/pc	Approx. Mass kg/m	Max. Allowable Load kN{kgf}
			L1+L2	L1	L2	Diameter R	Flange Diameter F	Contact Width E	Off-Center e	Z			
RF03075	75	16.1	38.0	18.0	20.0	31.8	42.0	9.1	1.6	3.0	0.89 {90}	2.9	2.94{300}
RF03100	100											2.5	
RF05100	100	22.0	53.5	25.0	28.5	40.0	50.0	13.0	2.0	4.5	1.37{140}	5.4	6.86{700}
RF05125	125											4.6	
RF05150	150											4.4	
RF08125	125	27.0	65.5	31.0	34.5	44.5	55.0	17.0	2.0	6.5	1.86{190}	6.2	7.84{800}
RF08150	150											5.8	
RF10125	125	30.0	69.0	33.0	36.0	50.8	65.0	18.5	2.3	7.0	2.40{240}	9.0	11.3{1150}
RF10150	150											8.3	
RF12200	200	37.1	83.5	40.5	43.0	65.0	80.0	22.0	3.0	8.0	3.84{390}	12.1	18.6{1900}
RF12250	250											10.8	
RF17200	200	51.4	109.5	51.5	58.0	80.0	100.0	32.0	4.0	12.0	6.87{700}	21.0	24.5{2500}
RF17250	250											18.0	
RF17300	300											16.0	
RF26250	250	57.2	116.5	55.5	61.0	100.0	125.0	36.0	5.0	13.0	9.59{980}	27.0	31.4{3200}
RF26300	300											24.0	
RF36300	300	66.7	146.0	68.0	78.0	125.0	150.0	43.0	6.0	15.5	13.0{1330}	42.0	47.6{4850}

Note: 1. Contact a Tsubaki representative for inch pitch size.
2. The above dimensions are nominal dimensions and may differ from actual dimensions.

Bearing Roller Conveyor Chain

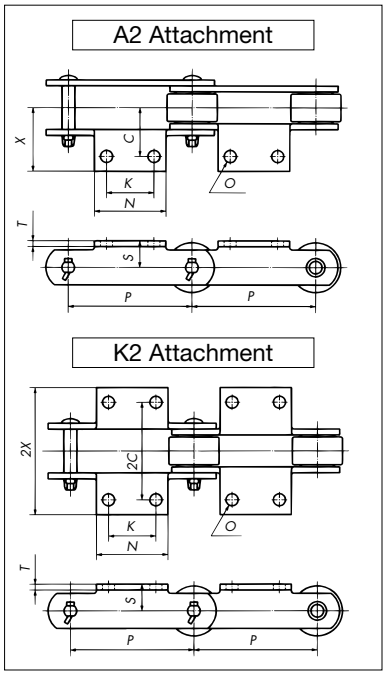
A1/K1 Attachments



Size	Bearing Roller Type		Pitch P	S	C	2C	X	2X	N	T	O	Bolt Used	Additional Mass/Each kg
	R Roller	F Roller											
RF03075	○	○	75	20	30	60	46	92	55	3.2	10	M8	0.06
RF03100	○	○	100						65				0.07
RF05100	○	○	100	22	35	70	47	94	65	4.5	10	M8	0.07
RF05125	○	○	125						75				0.08
RF05150	○	○	150						85				0.10
RF08125	○	○	125	28	50	100	64	128	80	6.3	12	M10	0.19
RF08150	○	○	150						90				0.23
RF10100	○	–	100	28	50	100	67	134	70	6.3	12	M10	0.16
RF10125	○	○	125						80				0.18
RF10150	○	○	150						90				0.20
RF12200	○	○	200	38	60	120	79	158	120	7.9	15	M12	0.44
RF12250	○	○	250						170				0.61
RF17200	○	○	200	45	75	150	100	200	120	9.5	15	M12	0.64
RF17250	○	○	250						170				0.88
RF17300	○	○	300						220				1.26
RF26250	○	○	250	55	80	160	108	216	170	9.5	15	M12	1.01
RF26300	○	○	300						220				1.34

Note: 1. The weight of the A attachment in the table is the additional weight per attachment. This value should be double for K attachments.
2. In some cases, the center hole of an A3 attachment may be used.
3. Contact a Tsubaki representative if the A or K attachment side face requires a guide.
4. When attaching a slat or the like between two strands of chain, the slats should be attached to either outer link–outer link or inner link–inner link.
5. Inch sizes available upon request.
6. The above dimensions are nominal dimensions and may differ from actual dimensions.

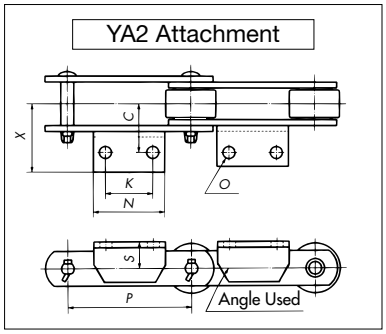
A2/K2 Attachments



Size	Bearing Roller Type		Pitch P	S	C	2C	X	2X	N	K	T	O	Bolt Used	Additional Mass/Each kg
	R Roller	F Roller												
RF03075	○	○	75	20	30	60	46	92	55	30	3.2	10	M8	0.06
RF03100	○	○	100						65	40				0.07
RF05100	○	○	100	22	35	70	47	94	65	40	4.5	10	M8	0.07
RF05125	○	○	125						75	50				0.08
RF05150	○	○	150						85	60				0.10
RF08125	○	○	125	28	50	100	64	128	80	50	6.3	12	M10	0.19
RF08150	○	○	150						90	60				0.23
RF10100	○	–	100	28	50	100	67	134	70	40	6.3	12	M10	0.16
RF10125	○	○	125						80	50				0.18
RF10150	○	○	150						90	60				0.20
RF12200	○	○	200	38	60	120	79	158	120	80	7.9	15	M12	0.44
RF12250	○	○	250						170	125				0.61
RF17200	○	○	200	45	75	150	100	200	120	80	9.5	15	M12	0.64
RF17250	○	○	250						170	125				0.88
RF17300	○	○	300						220	180				1.26
RF26250	○	○	250	55	80	160	108	216	170	125	9.5	15	M12	1.01
RF26300	○	○	300						220	180				1.34

Note: 1. The weight of the A attachment in the table is the additional weight per attachment. This value should be double for K attachments.
2. Contact a Tsubaki representative if the A or K attachment side face requires a guide.
3. When attaching a slat or the like between two strands of chain, the slats should be attached to either outer link–outer link or inner link–inner link.
4. Inch sizes available upon request.
5. The above dimensions are nominal dimensions and may differ from actual dimensions.

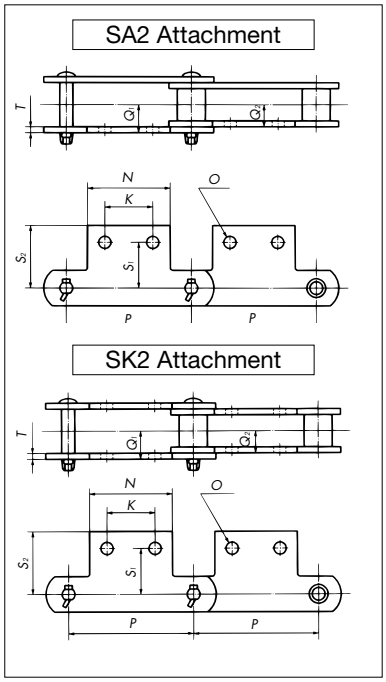
YA2 (Welded) Attachments



Size	Bearing Roller Type		Pitch P	S	C	2C	X	2X	N	K	O	Angle Used	Bolt Used	Additional Mass/Each kg
	R Roller	F Roller												
RF26450	○	○	450	55	80	160	123.5	247	320	280	15	L75x75x9	M12	3.19
RF36300	○	○	300	70	100	200	160	320	160	100	19	L100x100x 10	M16	2.40
RF36450	○	○	450						330	280				4.90
RF36600	○	○	600						410	360				6.10

Note: 1. When attaching a slat or the like between two strands of chain, the slats should be attached to either outer link–outer link or inner link–inner link.
2. Inch sizes available upon request.
3. The above dimensions are nominal dimensions and may differ from actual dimensions.

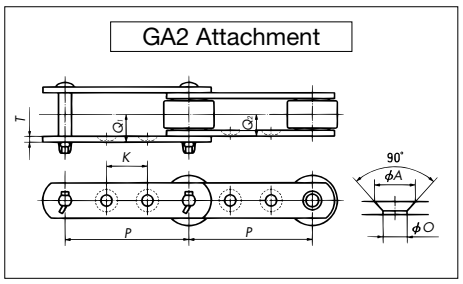
SA2/SK2 Attachments



Size	Bearing Roller Type		Pitch P	S1	S2	Q1	Q2	N	K	T	O	Bolt Used	Additional Mass/Each kg
	R Roller	F Roller											
RF03075	○	–	75	33	49	15.5	11.5	55	30	3.2	10	M8	0.06
RF03100	○	–	100					65	40				0.07
RF05100	○	–	100	33.4	50.7	21	15.5	65	40	4.5	10	M8	0.07
RF05125	○	–	125					75	50				0.08
RF05150	○	–	150					85	60				0.10
RF08125	○	–	125	46.1	60.7	27	20	80	50	6.3	12	M10	0.19
RF08150	○	–	150					90	60				0.23
RF10100	○	–	100	46.1	63	28.5	21.5	70	40	6.3	12	M10	0.16
RF10125	○	–	125					80	50				0.18
RF10150	○	–	150					90	60				0.20
RF12200	○	–	200	55	75.7	35.5	26.5	120	80	7.9	15	M12	0.44
RF12250	○	–	250					170	125				0.61

Note: 1. When attaching a slat or the like between two strands of chain, the slats should be attached to either outer link–outer link or inner link–inner link.
2. Inch sizes available upon request.
3. The above dimensions are nominal dimensions and may differ from actual dimensions.

GA2 Attachments



Size	Bearing Roller Type		Pitch P	K	T	Q1	Q2	A	O	Max. Length of Attached Bolt		Bolt Used
	R Roller	F Roller								Outer Link	Inner Link	
RF03075	○	–	75	30	3.2	15.5	11.5	13.5	8	26	19	M6
RF03100	○	–	100	50								
RF05100	○	–	100	40	4.5	21	15.5	15	10	36	26	M8
RF05125	○	○	125	50								
RF05150	○	○	150	60								
RF08150	○	○	150	60	6.3	27	20	20	12	45	31	M10
RF10125	○	–	125	40	6.3	28.5	21.5	20	12	49	35	M10
RF10150	○	○	150	60								
RF12200	○	○	200	80	7.9	35.5	26.5	26	15	63	45	M12
RF12250	○	○	250	125								
RF17200	○	○	200	70	9.5	45.5	35	26	15	81	61	M12
RF17250	○	○	250	110								
RF17300	○	○	300	150								
RF26300	○	○	300	140	9.5	48.5	38	26	15	88	67	M12
RF26450	○	○	450	220								
RF36450	○	○	450	220	12.7	60	46	32	19	105	75	M16
RF36600	○	○	600	300								

Note: 1. The weight of a GA2 attachment is the same as the weight of the base chain.
2. When attaching a slat or the like between two strands of chain, the slats should be attached to either outer link–outer link or inner link–inner link.
3. Inch sizes available upon request.
4. The above dimensions are nominal dimensions and may differ from actual dimensions.

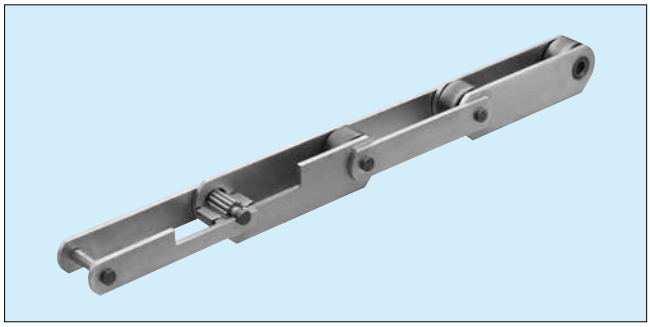
Contact a Tsubaki representative regarding attachments for Completely Lube-Free Bearing Roller Conveyor Chain.

Bearing Bush Conveyor Chain

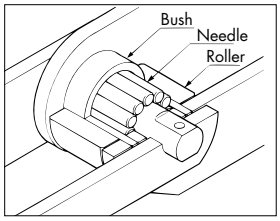
Chain No. p.21 p.17 p.156

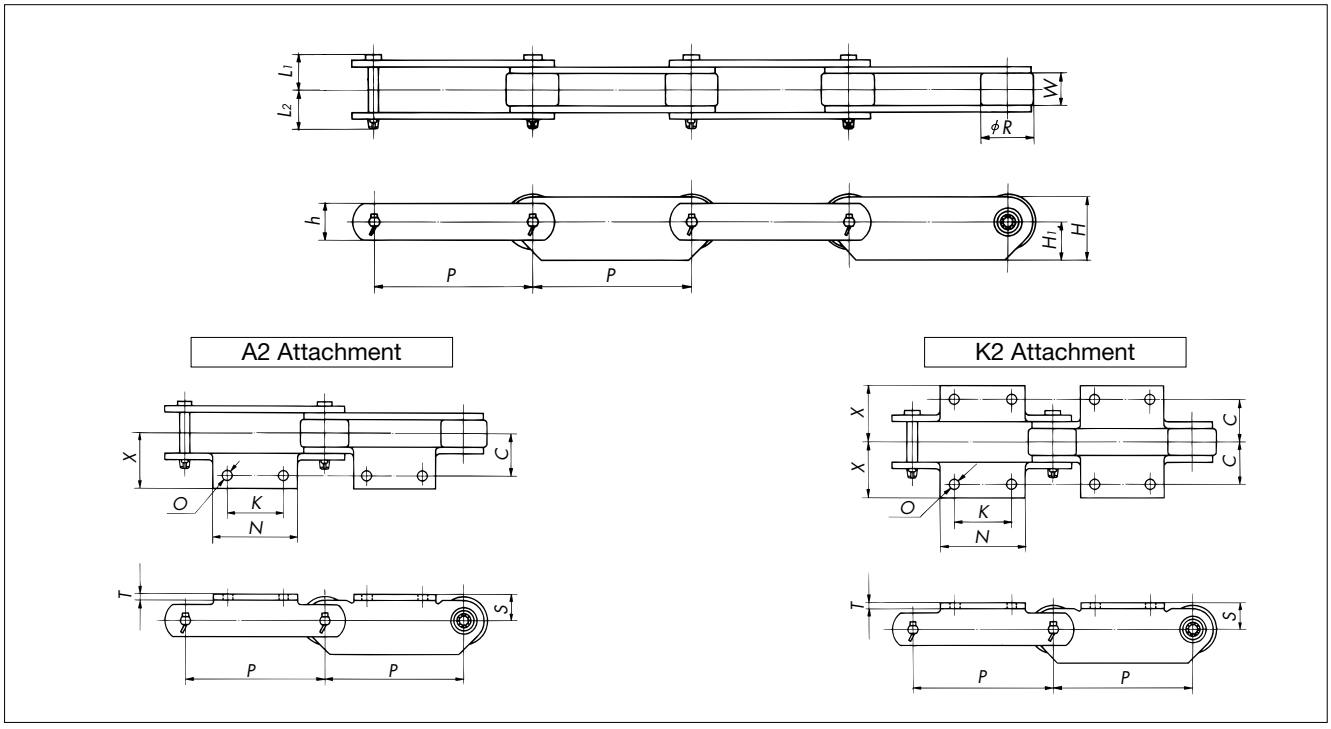
Bearing Bush Conveyor Chain

Series: NB



Features needle bearings between the pin and bush.
Reduces wear elongation to the absolute minimum possible.
Suitable for index positioning and tact conveyance.





Size, Roller Type, Series	Max. Allowable Tension		Roller Allowable Load		Pitch *P*	Roller Dia. *R*	Inner Link Inner Width *W*	Plate			Pin		Approx. Mass kg/m
	kN	{kgf}	kN	{kgf}				Height *h*	Height *h*	Height *H1*	*L1*	*L2*	
RF03075R-NB	2.45	{250}	0.54	{ 55}	75	31.8	16.1	22	35	20	18	20	3.0
RF05100R-NB	4.90	{500}	1.03	{105}	100	40	22	32	47	26	25	28.5	5.8
RF10150R-NB	7.85	{800}	1.77	{180}	150	50.8	30	38.1	61	35	33	36	8.7
RF12200R-NB	9.81	{1000}	2.50	{255}	200	65	37.1	44.5	71	40	40.5	43	13.0
RF17200R-NB	12.7	{1300}	4.02	{410}	200	80	51.4	50.8	85	51	51.5	58	21.5
RF26250R-NB	19.6	{2000}	5.30	{540}	250	100	57.2	63.5	105	64	55.5	61	28.5
RF36300R-NB	24.5	{2500}	7.45	{760}	300	125	66.7	76.2	125	75	68	78	41.5

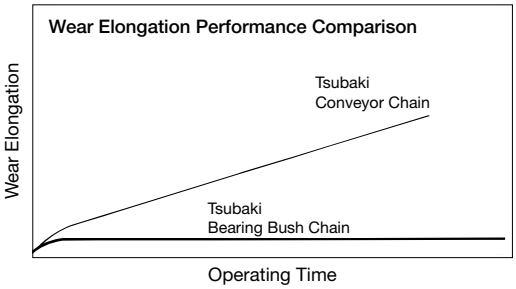
Size, Roller Type, Series	Pitch *P*	Attachment							Load Mass Per Attachment kg	
		S	*C*	*X*	*K*	*N*	*T*	*O*	*A2*	*K2*
RF03075R-NB	75	20	30	46	30	55	3.2	10	0.05	0.10
RF05100R-NB	100	22	35	47	40	65	4.5	10	0.08	0.16
RF10150R-NB	150	28	50	67	60	90	6.3	12	0.20	0.40
RF12200R-NB	200	38	60	79	80	120	7.9	15	0.45	0.90
RF17200R-NB	200	45	75	100	80	120	9.5	15	0.66	1.32
RF26250R-NB	250	55	80	108	125	170	9.5	15	1.07	2.14
RF36300R-NB	300	70	100	135*	150*	220*	12.7	19	1.8	3.6

Note: 1. Attachment dimensions marked with * differ from the attachment dimensions of RF Conveyor Chain.
2. Roller allowable load values given are for lubricated chain.
3. The above dimensions are nominal dimensions and may differ from actual dimensions.

Bearing Bush Conveyor Chain Selection

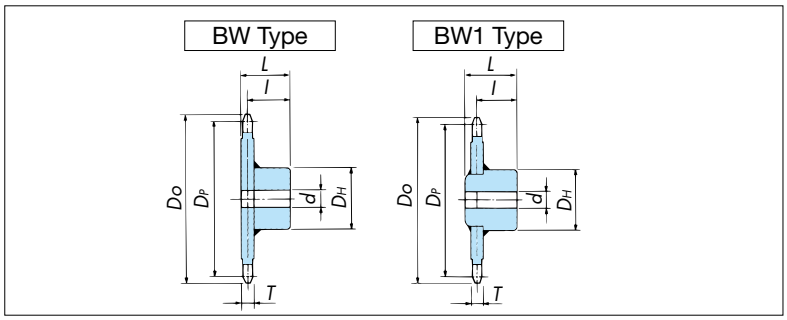
1. R roller rotational coefficient of friction: 0.21
2. Chain speed: max. 30m/min
3. Operating temperature: -10°C to 60°C
4. Needles in the bearing area may fall out when pin is extracted during chain connection or other operations. Follow handling instructions carefully.

- ◆ The basic three dimensions (chain pitch, R roller diameter, inner link inner width) are the same as standard conveyor chain.
- ◆ Space between pin and bush have already been lubricated.
- ◆ Plates are nickel plated.
- ◆ Not for use in dusty environments.
- ◆ Consult a Tsubaki representative for specifications with a simple seal along the needle area.



Sprockets for Bearing Bush Conveyor Chain

Sprocket teeth are precision machined to maximize performance of the chain. Teeth are machined for minimum clearance with the roller.



◆ Sprocket Hole Processing

Tsubaki will process shaft holes and keyways upon request. Please include the following information in your request.

1. Shaft hole diameter and clearance:
   Hole dimensions and processing precision.
2. Keyway dimensions:
   New JIS (JISB1901-1976) or old JIS (JISB1901-1959) parallel or tapered keys, processing clearance (normal or precise).
3. Used parallel in strands:
   Specify number of strands for parallel use.
4. Standard processing specifications for Bearing Bush Conveyor Chain sprockets are H7 holes and new JIS key. Customers wishing to perform their own hole processing should use the sprocket outer circumference as a base.

Size, Roller Type, Series	No. of Teeth	Series	Pitch Diameter *Dp*	Outer Diameter *Do*	Tooth Width T	Shaft Diameter d		Hub Diameter D_H	Hub Length *L*	Center Distance to Shaft *l*	Approx. Mass kg	Material
						Pilot Hole	Max.					
RF03075R-NB	8	BW	196.0	209	11.9	18	55	83	62	56	4.8	Machine structural carbon steel
RF03075R-NB	10		242.7	259		18	60	93	67	61	7.1	
RF03075R-NB	12		289.8	308		18	60	93	67	61	9.0	
RF05100R-NB	8	BW	261.3	272	18.0	28	75	107	86	77	12.0	
RF05100R-NB	10		323.6	340		33	80	117	94	85	17.4	
RF05100R-NB	12		386.4	405		33	85	127	104	95	24.4	
RF10150R-NB	8	BW	392.0	408	22	38	100	147	123	112	33.2	
RF10150R-NB	10		485.4	506		38	110	157	133	122	47.6	
RF10150R-NB	12		579.6	601		38	115	167	144	133	65.2	
RF12200R-NB	8	BW1	522.6	551	28	60	120	177	150	125	67.4	
RF12200R-NB	10		647.2	682		65	130	187	160	135	96.6	
RF12200R-NB	12		772.7	810		75	145	207	180	155	136.9	
RF17200R-NB	8	BW1	522.6	562	40	75	145	207	180	148	98.1	
RF17200R-NB	10		647.2	691		75	145	207	180	148	134.0	
RF17200R-NB	12		772.7	821		80	160	227	200	168	190.1	
RF26250R-NB	8	BW1	653.3	703	45	80	160	227	200	164	159.7	
RF26250R-NB	10		809.0	864		85	175	247	240	204	244.1	
RF26250R-NB	12		965.9	1026		85	175	247	240	204	321.4	
RF36300R-NB	8	BW1	783.9	853	55	95	190	267	240	198	276.2	
RF36300R-NB	10		970.8	1046		95	190	267	270	228	398.9	
RF36300R-NB	12		1159.1	1234		100	210	297	260	218	550.8	

Note: 1. Tsubaki also manufactures other sprockets with hardened tooth tips besides those listed here.
2. Sprockets with a mass over 30kg may be drilled with a hanging hole near the teeth.
3. The above dimensions are nominal dimensions and may differ from actual dimensions.

Ordering Bearing Bush Conveyor Chain (Made to Order)

Model Numbering Example

RF05100R-NB-1LA2+400L-PR

- RF05100R: Size
- Roller Type (For R rollers only)
- NB: Series — Bearing Bush Conveyor Chain
- 1LA2: Attachment Spacing
- +: Attachment Type
- 400L: No. of Links
- PR: End Link

Ordering Example

Chain Size: RF05 Pitch: 100mm Roller Type: R Roller
Series: Bearing Bush Conveyor Chain (NB)
Attachment Spacing/Type: A2 every link
Quantity: 400 links

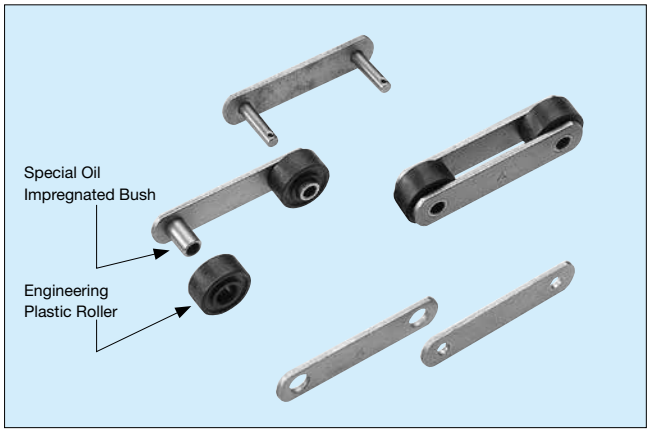
Chain Number	Quantity	Unit
RF05100R-NB-1LA2+400L-PR	1	H

Note: Specify the model number and contact a Tsubaki representative for a quote.

Lambda Plastic Roller Conveyor Chain

Lambda Plastic Roller Conveyor Chain

Series: LMC



1. **Lube-free, long life**
   Wear life between pin-bush and bush-roller is seven times that of DT Series while being lube-free.
2. **Low noise**
   5-7db quieter than steel rollers. No grating sound when rollers rotate.
3. **Low running resistance**
   55% lower than steel rollers. (Unlubricated)
4. **Clean**
   Suppresses generation of metal wear dust.
5. **Lightweight**
   30% lighter than steel rollers.
6. **Compatible**
   Dimensionally compatible with conveyor chains.
   Users can switch to Lambda Plastic Roller Conveyor Chain with no additional changes.
   (It is necessary to check strength and other factors.)

■ Specifications

Material			Usage Temp.	Roller Rotational Coefficient of Friction	Chain Speed	Sprocket
Roller	Bush	Other Parts				
Engineering Plastic	Special Oil Impregnated Bush	Steel	0°C to 50°C	0.07 (lube-free)	25m/min or less	RF Standard Sprocket

Note: 1. Link plates are black-coated carbon steel.
2. Roller coefficient of friction values assume a low dust, room temperature, indoor environment.

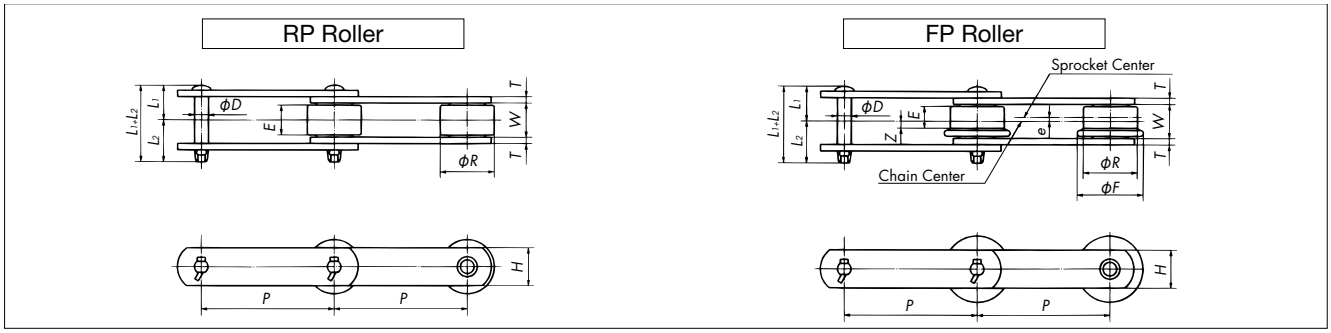
■ Max. Allowable Load

Unit: kN{kgf}

Chain Size \ Sprocket Teeth No.	6		7		8		9		10	
	kN	{kgf}	kN	{kgf}	kN	{kgf}	kN	{kgf}	kN	{kgf}
RF03075-LMC	1.47	{150}	1.86	{190}	1.96	{200}	1.96	{200}	1.96	{200}
RF03100-LMC	1.86	{190}	1.96	{200}						
RF05100-LMC	2.65	{270}	3.33	{340}	4.21	{430}	5.20	{530}	5.20	{530}
RF05125-LMC	3.74	{380}	4.71	{480}	5.20	{530}				
RF05150-LMC	4.90	{500}	5.20	{530}						

Note: 1. R roller max. allowable tension values shown above are for chain speeds under 25m/min.
2. F rollers have 70% of the above values.
3. Refer to selection pages for chain tension calculations.

■ Dimensions Base chain and attachments are the same as RF Conveyor Chain.



Size	Pitch P	RP Roller		FP Roller					Inner Link Inner Width W	Plate Height H	Pin			Roller Allowable Load (each)		Approx. Mass kg/m	Attachment Type
		Dia. R	Contact Width E	Dia. R	Flange Dia. F	Flange Dia. F	Off-center e	Z			L1+L2	L1	L2	kN	{kgf}		
RF03075-LMC	75	31.8	15.5	31.8	42	12	1.8	4.3	16.1	22	38	18	20	0.49	{50}	1.9	A
RF03100-LMC	100															1.7	K
RF05100-LMC	100	40	19	40	50	14	2.5	4.5	22	32	53.5	25	28.5	0.83	{85}	3.6	SA
RF05125-LMC	125															3.4	SK
RF05150-LMC	150															3.2	G

Note: The above dimensions are nominal dimensions and may differ from actual dimensions.

Ordering Lambda Plastic Roller Conveyor Chain (Made to Order)

Model Numbering Example

RF03100RP-LMC-1LK2+400L-PR

- Size
- Roller Type — RP: Engineering Plastic R Roller; FP: Engineering Plastic F Roller
- Chain Series — LMC: Lambda Plastic Roller Conveyor Chain
- Attachment Spacing
- Attachment Type
- No. of Links
- End Link

Ordering Example

Chain Size: RF03 Pitch: 100mm
Roller Type: Engineering plastic R roller
Quantity: 400 links

Chain Number	Quantity	Unit
RF03100RP-LMC+400L-PR	1	H

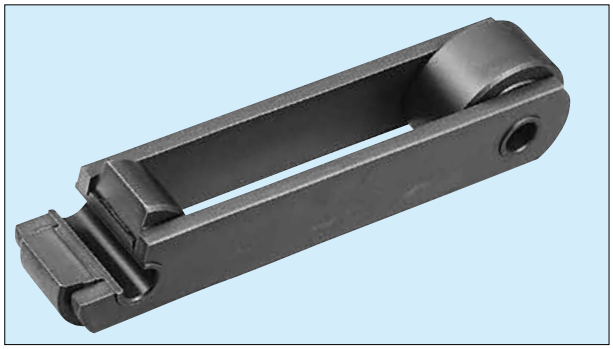
Note: Specify the model number and contact a Tsubaki representative for a quote.

Shoulder Bush Conveyor Chain

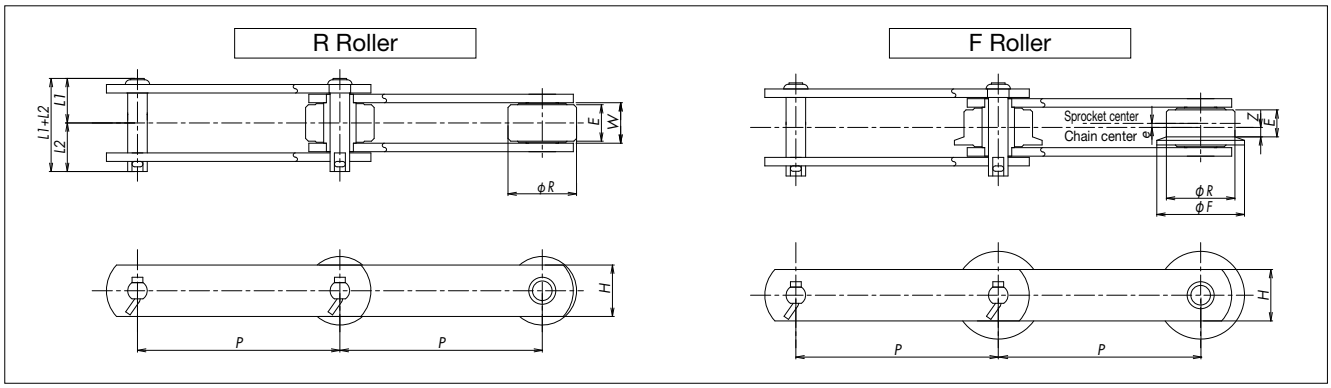
Chain No. p.21 | p.36–44 | p.17 | p.156

Shoulder Bush Conveyor Chain

Series: DB



This chain has the same base outer dimensions as a standard conveyor chain, but the larger bush diameter increases the roller allowable load, allowing for conveyance of heavier objects. The bush also serves as a measure against outer diameter wear. The chain's coefficient of running friction is 0.10 (lubricated) or 0.18 (unlubricated).



Size	Roller Type	Pitch P	Roller							Inner Link Inner Width W	Plate Width H	Pin			Roller Allowable Load kN{kgf}	Approx. Mass	
			R Roller		F Roller												
			Dia. R	Contact Width E	Dia. R	Flange Dia. F	Contact Width E	Off-Center e	Z			L1+L2	L1	L2	DTA Series	R Roller	F Roller
RF10100	R	100	50.8	27	50.8	65	20	3	7	30	38.1	69	33	36	3.38 {345}	10	–
RF10150	R/F	150														8	8.3
RF6205	R/F	152.4	57.2	32	57.2	70	25	3.5	9	37.1	44.5	83.5	40.5	43	5.00 {510}	12.2	12.6
RF12200	R/F	200	65	32	65	80	24	4	8	37.1	44.5	83.5	40.5	43	5.00 {510}	11.6	12.1
RF12250	R/F	250														10.4	10.8
RF17200	R/F	200	80	44	80	100	34	5	12	51.4	50.8	109.5	51.5	58	8.04 {820}	20	21
RF17250	R/F	250														17	18
RF17300	R/F	300														16	16
RF26250	R/F	250	100	50	100	125	38	6	13	57.2	63.5	116.5	55.5	61	10.6 {1080}	26	27
RF26300	R/F	300														23	24
RF26450	R/F	450														19	19
RF36300	R/F	300	125	56	125	150	42	7	14	66.7	76.2	146	68	78	14.4 {1470}	40	42
RF36450	R/F	450														32	33
RF36600	R/F	600														28	29

Note: 1. Roller allowable load shows values under lubricated conditions.
2. Basic chain and attachment specifications are the same as RF Conveyor Chain.
3. Confirm attachment allowable load when selecting chain.
4. The above dimensions are nominal dimensions and may differ from actual dimensions.

Ordering Shoulder Bush Conveyor Chain (Made to Order)

Model Numbering Example

RF12200 F-DBDTA-1L A2+400L-PR

- RF12200: Size
- F: Roller Type
- DBDTA: Series: Shoulder Bush DTA Series
- 1L: Attachment Spacing
- A2: Attachment Type
- 400L: No. of Links
- PR: End Link

Ordering Example

Size: RF12 Pitch: 200mm Roller Type: F Roller
Series: Shoulder Bush DTA Series
Attachment Spacing/Type: A2 every link Quantity: 400 links

Chain Number	Quantity Unit
RF12200F-DBDTA-1LA2+400L-PR	1 H

Industry Specific Products

Tsubaki offers a line-up of industry specific products that have a proven track record in conveyors in a variety of industries. Contact a Tsubaki representative about how you can put these specifications to work in other industries as well.

Model Numbering Example

RF12200	S	–	FBBT	–	2L	GA4	+	400L	–	PR	–	H
①	②		③		④	⑤		⑥		⑦		⑧

See page 21 for ④⑥⑦⑧.

Code			See page
① Size	Indicates the basic shape of the chain. Enter chain size in the □.		
	RF□	Basic conveyor chain shape	
	B□	Bucket elevator conveyor chain	p.107
	WD□	Drag chain	p.106
	NF□	Block chain	p.113
	NFX□	Block chain for flow conveyors	p.114
	CT□	Coil transfer conveyor chain	p.112
② Roller type	May or may not be available depending on the series and size.		
	M N	Better wear resistance than S rollers Added strength between pin–bush (RF26 and larger)	p.10
	VR	Double Plus conveyor chain	p.92
	WDR/WDF	Shower tester and final inspection line	p.96


See p.83
Automotive Industry


See p.85
Biomass Power Generation


See p.87
Cement Industry


See p.89
Steel Industry (super heavy load conveyance)


See p.91
Food Industry

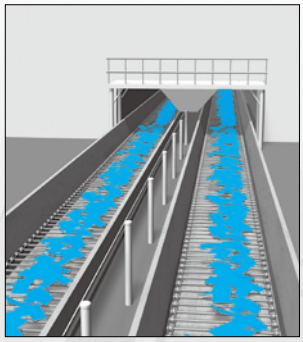

See p.97
Waste Disposal Facilities

Code			See page
③ Series	Enter the series of the base chain in the □.		
	FA	FA Series	p.102
	FB□	FB Series	p.109
	DL□	Deep Link conveyor chain	p.95
	KG•KA	Intake/feed conveyor	p.97
	AG•AA/AM•AP	Ash conveyor	p.97
	FG/FP	Fly ash conveyor	p.97
	YP	Molten slag conveyor	p.97
⑤ Attachment type	L■•KL■• W■•BM■• BK■, etc.	Flow attachment (horizontal) Enter case inner width in the ■.	p.99
	UM■	Flow attachment (inclined) Enter case inner width in the ■.	p.101
	C•K	With cleaner and sweeping board	p.105
	CA2	For pan conveyors	p.116
	SR	Outboard rollers	p.93
	TR	Top rollers	p.94

Conveyor chains that satisfy needs for wear resistance, countering stick-slip (surging), and long length conveyors

Press

Cutting, casting, forging, sheet metal presses, plastic molding, etc.



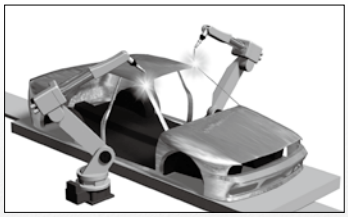
- Impact on conveyor
- Heavy wear on bush-roller interface

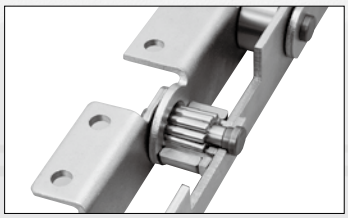
Advanced ATA Series

- Better bush-roller wear resistance
- Longer wear life

See p.15

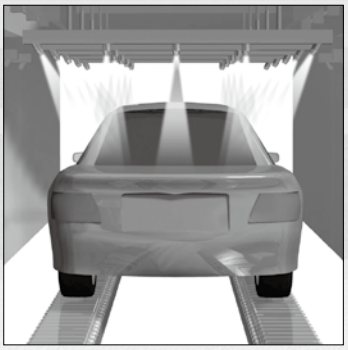
Body Welding





Inspection

Shower testers and final inspection wiping line (optional)



Shower tester/washer line

Constantly showered with water
→ Poor roller rotation
→ Abnormal bush-roller wear
→ Rusting

Bearing Roller Conveyor Chain Water Resistant Specs

- Long life in contact with water

Final inspection wiping line (optional)

Heavy loads, long conveyor
→ Poor roller rotation
→ Abnormal bush-roller wear

Bearing Roller Conveyor Chain

- Minimizes wear and stick-slipping

See p.63

Shower testers and final inspection lines Roller type: WDR/WDF

Can be used without lubrication in both wet and dry conditions

See p.96

	Roller type WDR/WDF	Bearing Roller Conveyor Chain		Reference: RT Series (base chain)
		Lube-free/water resistant series	Standard series	
Shower tester	○	◎	×	△
Inspection line	◎	△ (Requires water lubrication)	◎ (Not exposed to water)	△ (Requires lubrication)
Rolling friction coefficient	0.12	0.03	0.03	0.15
Note	Capable of wet and dry usage without lubrication	Optimal for shower tester applications	Not suitable for applications with exposure to water	SUS corrosion resistant chain

◎ : Excellent ○ : Can be used △ : Can be used under certain conditions × : Cannot be used

Welding and assembly of roofs and body panels

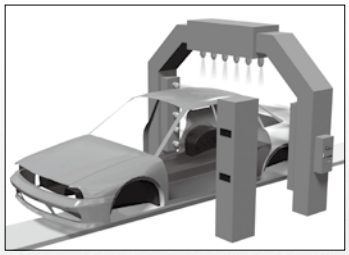
◆Accurate indexing conveyance is required

Bearing Bush Conveyor Chain

◆Features needle bearings between the pin and bush

See p.77

Coating

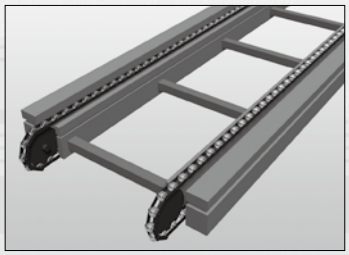


Coating of bodies, doors, and other components

◆Cart traction conveyance

Conveyor chains for towing (with dogs)

See p.121



◆Conveyor chains for pallet stacking (Accumulation)

Free Flow Conveyor Chain

◆Double Plus Conveyor Chain

See p.92

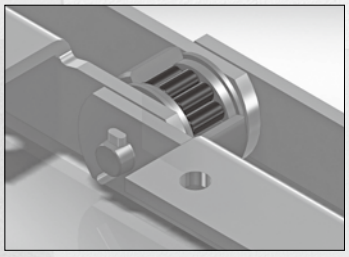
◆Outboard Roller Conveyor Chain

See p.93

◆Top Roller Conveyor Chain

See p.94

Assembly



Vehicle conveyance, manconveyors

◆Heavy localized loads
◆Long conveyor
→ Heavy bush-roller wear

◆Stick-slipping → Low productivity

Bearing Roller Conveyor Chain

◆Uses cylindrical bearings between bushes and rollers

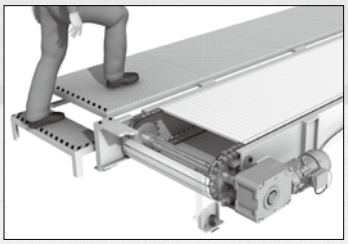
◆Better bush-roller wear resistance

◆Stable thanks to 1/3 the coefficient of rolling friction for saving energy when conveying heavy loads

See p.63

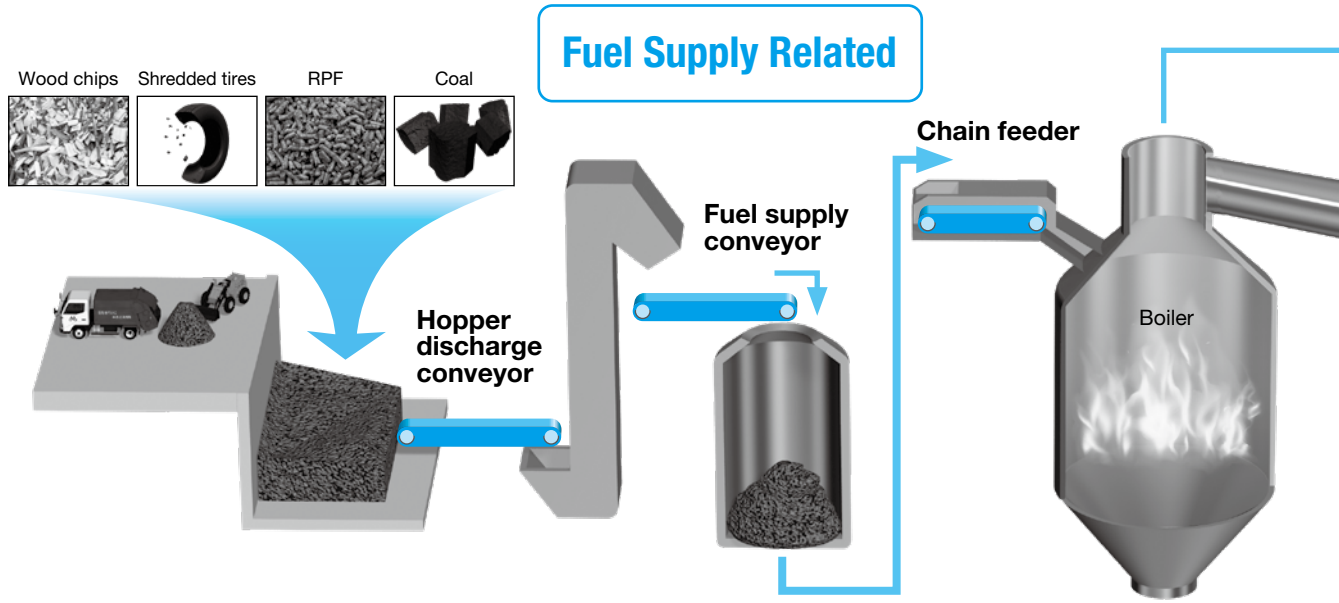
Low-floor (less than 300mm) conveyor chains for long conveyors and heavy loads are also available.

Contact a Tsubaki representative.



Industry Specific Products Biomass Power Generation

Conveyor chains for even the harshest biomass power generation processes



Fuel Supply Conveyor

Basic DT Series AT Series

DT Series
Most versatile chain

AT Series
Higher allowable load and roller wear resistance

Corrosive environment

◆ **Premature chain elongation**

For better pin-bush corrosion resistance **MT Series***

See p.62

*Tsubaki offers an MT Series with an optimal clearance to combat poor articulation.

◆ **Heavy bush-roller wear**

For better bush-roller corrosion resistance **RT Series***

See p.62

*Tsubaki offers an RT Series with an optimal clearance to combat poor roller rotation.

◆ **Rust corrosion**

Basic **GS Series**

Infiltration of material

◆ **Premature chain elongation**

For better pin-bush corrosion resistance **CT/BT Series***

See p.62

*Tsubaki offers specs with an optimal clearance to combat poor articulation.

◆ **Heavy bush-roller wear***

Advanced **DTA Series** — For short conveyors

Basic **AT Series** — For long conveyors

*Tsubaki offers an AT Series with an optimal clearance to combat poor roller rotation.

◆ For better wear resistance

For better corrosion and wear resistance
Advanced **GSA Series**

◆ For better wear resistance

Over twice the wear life of CT/BT Series
Conveyor chain **FB Series**

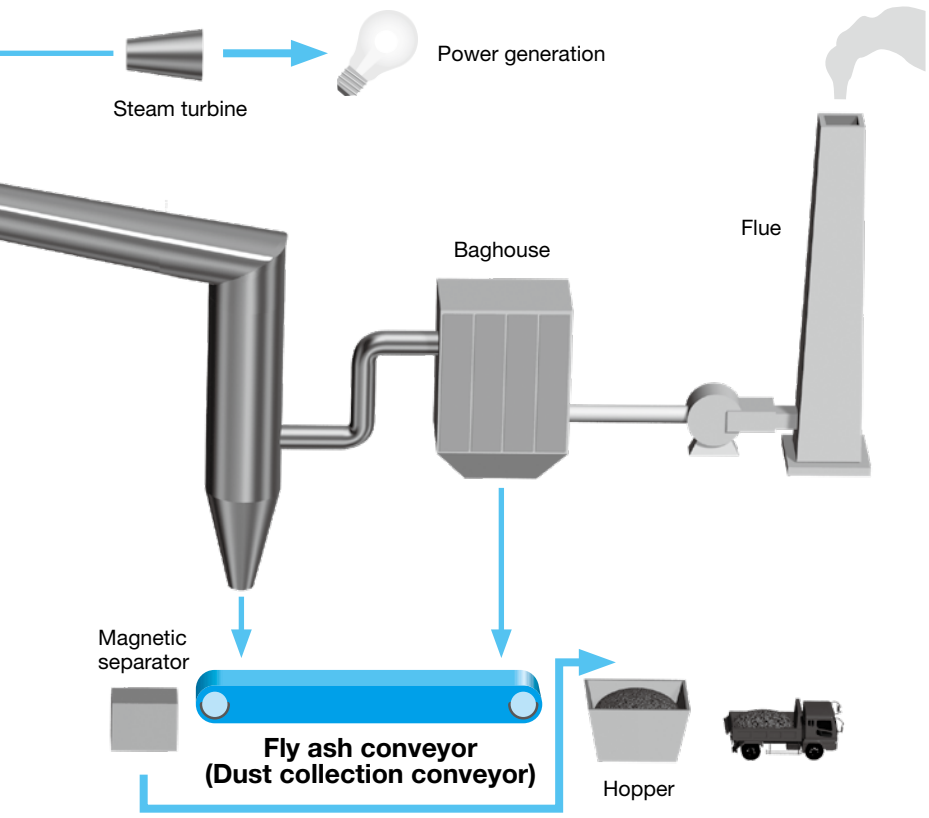
See p.109

Twice the roller wear resistance of AT Series
Advanced **ATA Series**

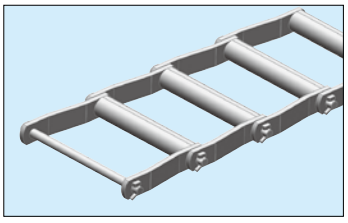
◆ For extremely harsh environments

Triple the roller wear resistance of AT Series
Conveyor chain **FA Series**

See p.102



Wood Chip Conveyance



◆ **WD Series Drag Chain**

Conveys by pushing material with the leading face of the bush. Very effective in wood chip conveyance. Chains with better corrosion and wear resistance through a combination of materials and heat treatment are also available. Contact a Tsubaki representative for details.

See p.106

Ash Conveyors

Wet Ash Conveyance

◆ **Premature chain elongation**

For better pin-bush corrosion resistance **MT Series***

See p.62

*Tsubaki offers an MT Series with an optimal clearance to combat poor articulation.

→ ◆ For better wear resistance

Conveyor Chain FBMT Series

- Material with corrosion resistance
- Uses optimal clearance

◆ **Heavy bush-roller wear**

For better bush-roller corrosion resistance **RT Series***

See p.62

*Tsubaki offers an RT Series with an optimal clearance to combat poor roller rotation.

→ **Conveyor Chain AM/AP Series**

See p.97

- Material with corrosion resistance
- Uses optimal clearance

Dry Ash Conveyance

◆ **Premature chain elongation**

For better pin-bush corrosion resistance **CT/BT Series***

See p.62

*Tsubaki offers specs with an optimal clearance to combat poor articulation.

→ **Conveyor Chain FG Series**

See p.97

- Uses optimal clearance
- Effective against poor articulation and poor roller rotation

→ **Conveyor Chain FB Series**

See p.109

- Over twice the wear life of BT Series

◆ **Heavy bush-roller wear***

Advanced **ATA*** Series

- Offers twice the bush-roller wear resistanc of AT Series

*Tsubaki offers AT/ATA Series with an optimal clearance to combat poor roller rotation.

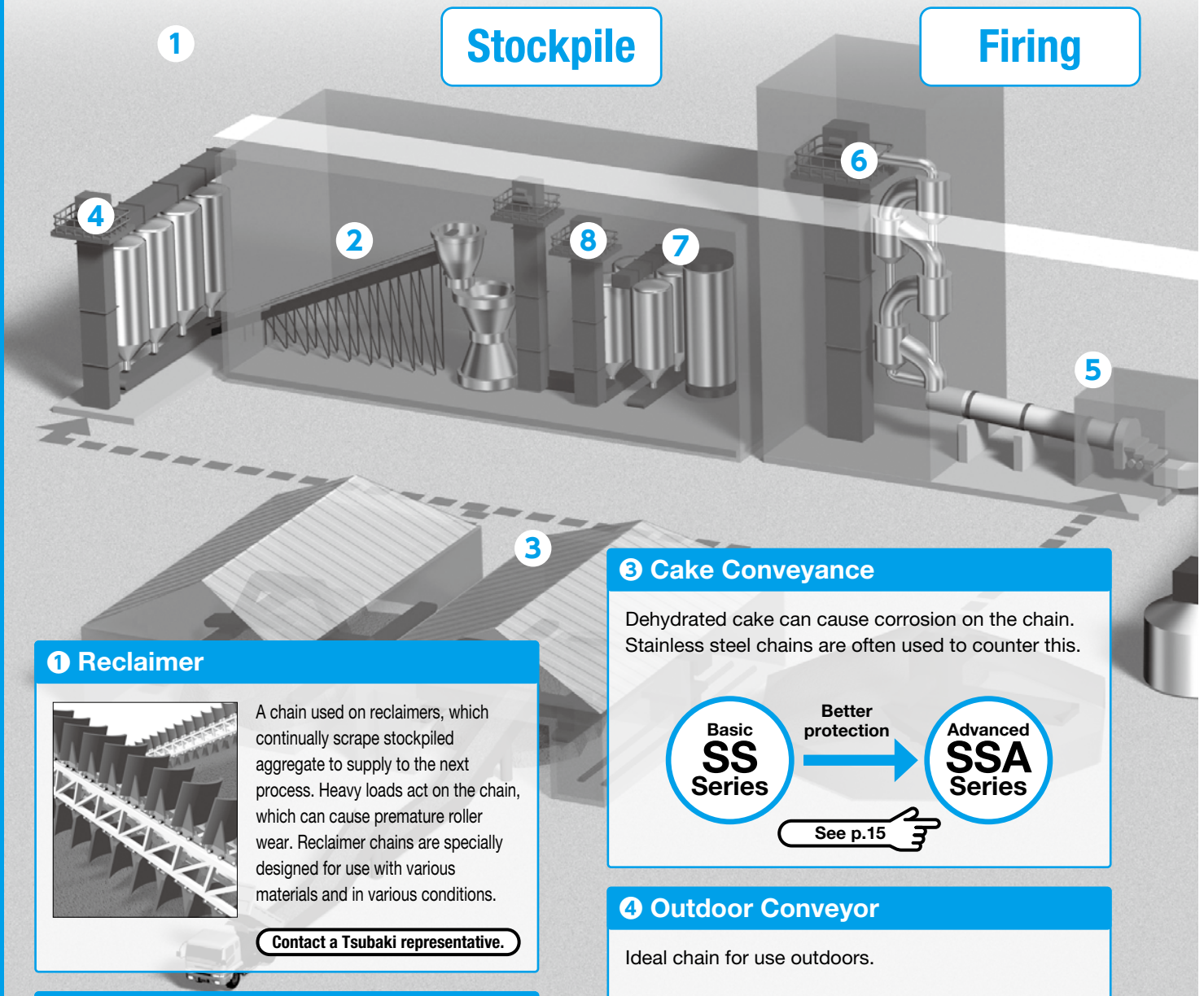
→ **Conveyor Chain AA/AG Series**

See p.97

- Uses optimal clearance
- Effective against poor articulation and poor roller rotation

Industry Specific Products Cement Industry

Conveyor chains specially designed for the stockpile, firing, and finishing processes

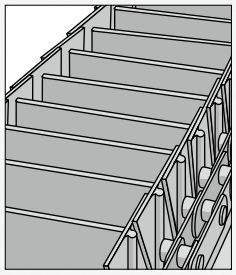


❶ Reclaimer

A chain used on reclaimers, which continually scrape stockpiled aggregate to supply to the next process. Heavy loads act on the chain, which can cause premature roller wear. Reclaimer chains are specially designed for use with various materials and in various conditions.

Contact a Tsubaki representative.

❷ Apron Conveyor



A chain used on conveyors that convey raw material and fuel on an apron. Dust can have a huge influence on roller wear.

	Basic Model	Advanced Model
Short conveyors	DT Series	DTA Series
Long conveyors	AT Series	ATA Series

When even longer life is needed…

Bearing Roller Conveyor Chain Anti-Dust Specifications

See p.67

❸ Cake Conveyance

Dehydrated cake can cause corrosion on the chain. Stainless steel chains are often used to counter this.

Basic **SS Series** → Better protection → Advanced **SSA Series**

See p.15

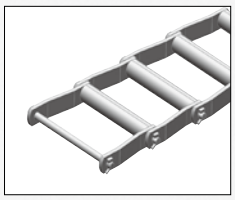
❹ Outdoor Conveyor

Ideal chain for use outdoors.

Basic **GS Series** → Better protection → Advanced **GSA Series**

See p.15

❺ Clinker Conveyor (Drag Conveyor)



A drag chain for conveying clinker. Conveys by pushing the conveyed material with the leading face of the bush.

◆ **WD Series Drag Conveyor Chain**

See p.106

⑥ Fuel Conveyance

A chain that conveys fuel such as coal, coal dust, and other highly abrasive material.

Basic GS Series → Better protection → Advanced GSA Series

◆ **Y Series: Coal dust conveyance**

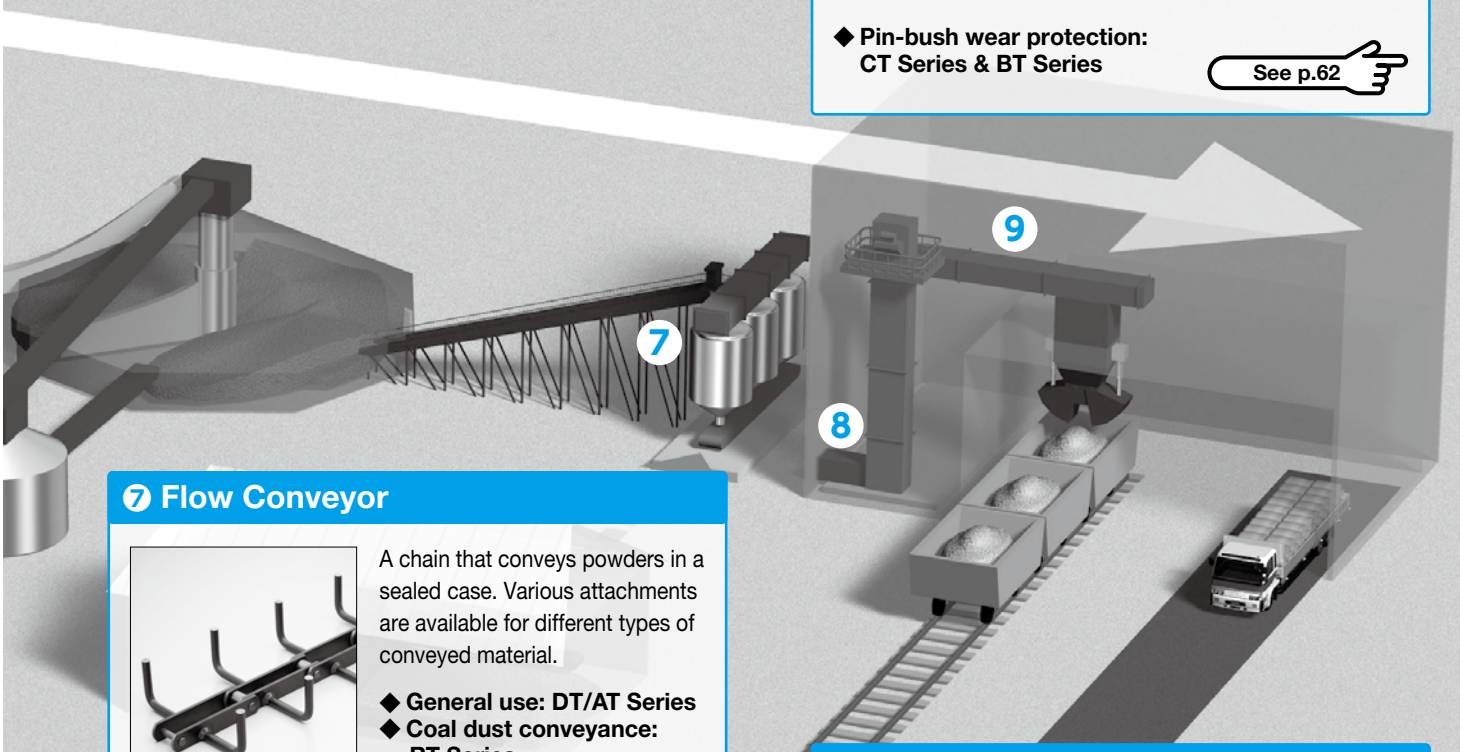
Finishing

⑨ Product Conveyance

A chain that conveys cement products. Cement products can infiltrate chain joints, so protection against wear is necessary.

◆ **Pin-bush wear protection: CT Series & BT Series**

See p.62



⑦ Flow Conveyor

A chain that conveys powders in a sealed case. Various attachments are available for different types of conveyed material.

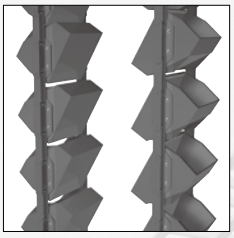
◆ **General use: DT/AT Series**
◆ **Coal dust conveyance: RT Series**

See p.99

◆ **Fly ash conveyance: FA Series**

See p.102

⑧ Bucket Elevator



A chain that lifts up and conveys powders in a sealed case. The focus is on wear protection and fatigue strength.

◆ **General use: CT/BT Series**
◆ **Coal dust conveyance: RT/YT Series**

See p.107

◆ **Fly ash conveyance: FB Series**

See p.109

Dust Collector Conveyor

A conveyor chain that collects dust generated in various processes.

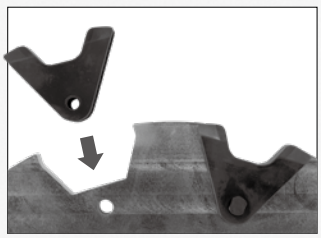
◆ **General use: CT/BT Series**
◆ **For corrosive environments**
Poor articulation protection: MT Series
Poor roller rotation protection: RT Series

See p.62

Tsubaki offers the ideal clearance for any material.

Contact a Tsubaki representative.

Special Block Tooth Insert Sprockets



Special sprockets used in highly wear inducing environments or when sprocket replacement is difficult.

See p.111

Industry Specific Products Steel Industry

Conveyor chains that can handle massive items, heavy loads, high speeds, and high temperatures

❶ ❷ Stockyard

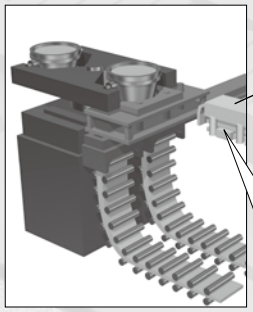
❸ Sintering Plant

❹ Pig Iron Plant

Blast Furnace

❺ Hot Strip Mill

❹ Continuous Casting



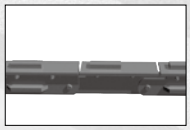
Tsubaki offers chains that fit the shape of dummy bars.

Dummy bar

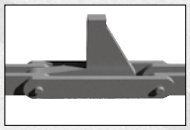
Dummy Receiver Chain

Contact a Tsubaki representative.

❺ Hot Rolling



Slab conveyance



Billet conveyance

Chains designed for the shape, temperature, and conveyance environment of the conveyed material.

Direct conveyance

Deep Link Conveyor Chain

See p.95

Block Chain

See p.113

High Temp. Material (steel mill/hot strip)

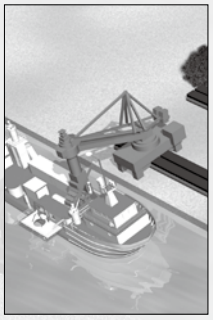
Conveyed material exceeds 400°C

Tsubaki offers special conveyor chains for high temperatures using optimal clearances and material to match the conveyed material or temperature.

Contact a Tsubaki representative.

Cold Mill

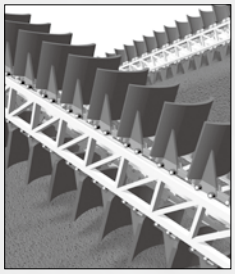
❶ Continuous Unloader Chains



A continuous unloader continuously unloads loose material from a ship using a chain with buckets attached. High unloading speeds mean heavy wear, so they use Tsubaki Unloader Chains to minimize wear elongation.

Contact a Tsubaki representative.

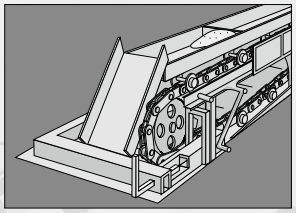
❷ Scraper Reclaimers



A chain used on reclaimers, which continually scrape stockpiled aggregate to supply to the next process. Heavy loads act on the chain, which can cause premature roller wear. Reclaimer chains are specially designed for use with various materials and in various conditions.

Contact a Tsubaki representative.

❸ Sintered Ore Pan Conveyors



A large, specially shaped conveyor chain used to convey high temperature materials. Available in various types to meet the needs of conveyed materials or corrosive environments.

Contact a Tsubaki representative.

Coking Plant

❻ Product Yard

Ambient Temperature
(Steelmaking, hot strip mill)

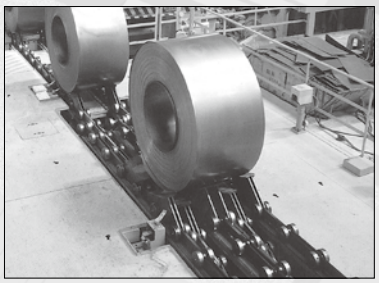
Conveying billets, coils, and other heavy loads

Bearing Roller Conveyor Chain See p.63

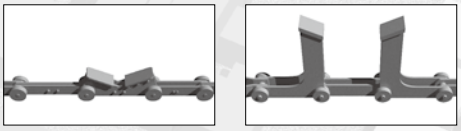
Premature roller wear from billet and steel rod onveyance

- **Advanced DTA Series** — Short conveyors
- **Basic ATA Series** — Heavy loads/ long lengths

❻ Coil Transfer



Uses cylindrical bearings between rollers and bushes to minimize running resistance. This allows it to convey heavy loads.



Saddles designed to fit the shape of the conveyed material.

Coil Transfer Conveyor Chain See p.112

Food Industry

Conveyor chains that satisfy various food industry needs

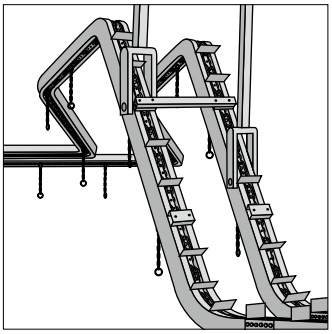
Grains and Feed

Flow Conveyor Chain for Grains

Flow Conveyor Chains are designed not to crush the grains during conveyance or to leave any grains behind in the case.

See p.105

Meat

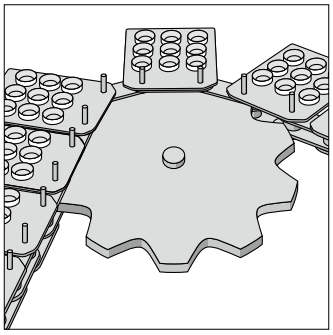


3D Overhead Conveyor Chain for Meat

Specially designed chain to accommodate 3D layouts. Driven by sprockets with special tooth profiles.

Contact a Tsubaki representative.

Frozen Treats / Ice Cream

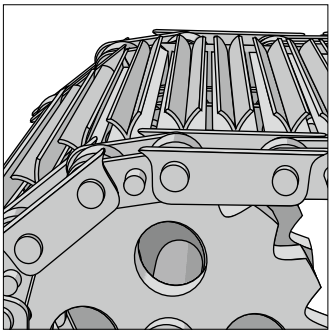


Cold Resistant Chain

Chain designed to minimize wear elongation down to -30°C. Circulates in freezers in a spiral fashion.

Contact a Tsubaki representative.

Food



Sterilizer Chain

Chain designed to resist stress corrosion cracking and wear elongation in steam, cold water, and harsh atmospheres on long length conveyors. They have minimal differences when used in parallel as a set.

Contact a Tsubaki representative.

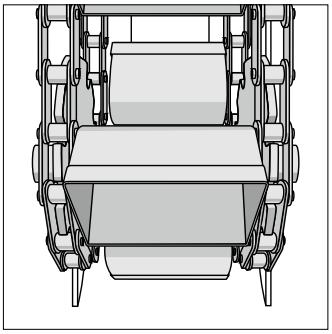
Bread Making

Tunnel Oven Conveyor Chain

Chain with excellent wear performance between bushes and rollers for use on long length, low speed conveyors at 200°C.

Contact a Tsubaki representative.

Sugar Refining

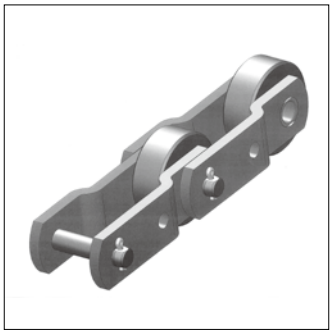


Bucket Elevator Chain for Refined Sugar Conveyance

Bucket Elevator Conveyor Chain that minimizes rusting and metallic debris from wear. Uses clean specifications to minimize chain grime.

Contact a Tsubaki representative.

Beverages



Conveyor Chain for Bottle Washers

Chain designed to minimize wear from detergents and contact with water. Customers have praised our combination of materials and heat treatments to match their usage environment.

Contact a Tsubaki representative.

Food Packaging

Lambda Plastic Roller Conveyor Chain for Food Packaging Conveyors

Conveyor chain that can be used without additional lubrication. Helps maintain a clean work environment.

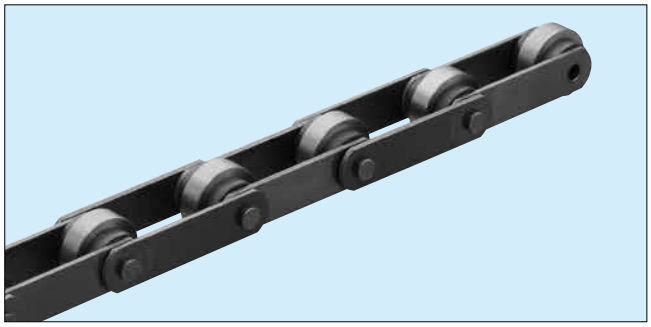
See p.79

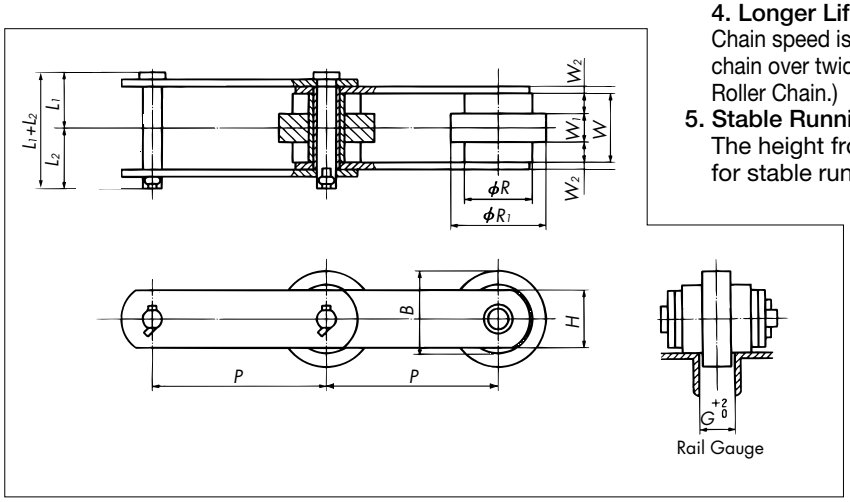
Double Plus Conveyor Chain

Chain No. p.21 | p.17 | p.156

Double Plus Conveyor Chain

Roller Type: VR





1. **Conveying**
   The frictional force between the large and small diameter rollers cause them to rotate in unison, and the difference in the roller diameters allow for items to be conveyed at 2.3 times the speed of the base chain.
2. **Accumulating**
   As there is a braking force acting on the large diameter roller, slip occurs between the large and small diameter rollers, allowing for free flow conveyance.
3. **Energy Savings/Lower Costs**
   The small coefficient of friction means low required energy, reducing necessary chain size and costs.
4. **Longer Life**
   Chain speed is 1/2.3 with a large roller allowable load, giving the chain over twice the life of standard chains. (Compared to Top Roller Chain.)
5. **Stable Running**
   The height from rail to conveyed goods is low, allowing for stable running.

◆ Cannot use standard sprockets. Use Double Plus Conveyor Chain Sprockets. Contact a Tsubaki representative for more information.

Size and Roller Type	Pitch P	Roller		Width			Plate Width H	Pin			B	G	Max. Allowable Load kN{kgf}	Roller Allowable Load kN{kgf/each}	Approx. Mass (kg/m)
		R_1	R	W_1	W_2	W		L_1+L_2	L_1	L_2					
RF03075VR	75	42.0	31.8	12	8.5	30	22	51.5	24.5	27	36.9	14.5	4.20 {430}	1.27 {130}	4.7
RF03100VR	100														4
RF05100VR	100	53.0	40.0	16	11	39	32	70.5	33.5	37	46.5	18.5	9.80{1000}	2.35 {240}	8
RF05125VR	125														7
RF05150VR	150														6
RF10125VR	125	67.0	50.8	20	14	54	38.1	93	45	48	58.9	25	17.6 {1790}	3.43 {350}	14
RF10150VR	150														12
RF6205VR	152.4	75.5	57.2	22	16	62	44.5	108.5	53	55.5	66.3	28	26.6 {2710}	4.90 {500}	18
RF12200VR	200														15
RF17200VR	200	86.0	65.0	25	18	69	50.8	127	60.5	66.5	75.5	31	35.0 {3570}	6.08 {620}	20

Note: Contact a Tsubaki representative regarding delivery. The above dimensions are nominal dimensions and may differ from actual dimensions.

Ordering Double Plus Conveyor Chain (Made to Order)

Model Numbering Example

RF05100VR+400L-PR

- RF05 — Size
- 100VR — Roller Type (VR: Double Plus Conveyor Chain)
- 400L — No. of Links
- PR — End Link

Ordering Example

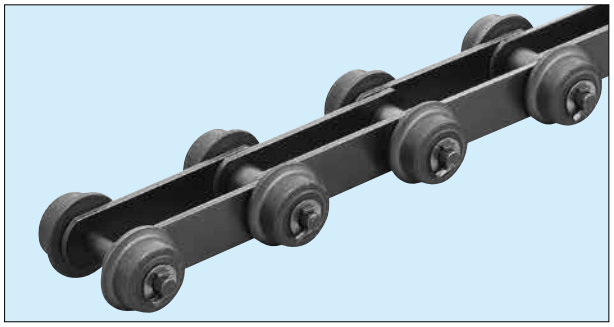
Size: RF05 Pitch: 100mm
Roller Type: Double Plus Conveyor Chain
Quantity: 400 links

Chain Number	Quantity	Unit
RF05100VR+400L-PR	1	H

Note: Specify the model number and contact a Tsubaki representative for a quote.

Outboard Roller Conveyor Chain (Free Flow Conveyance)

Attachment Type: SR



This chain features an outboard roller on the S roller of a base conveyor chain. The sprocket engages the center S rollers, while the outboard rollers handle running. Tsubaki can manufacture outboard rollers for any chain series.

Applications

1. For special attachments to the plate. (Fig. 1)
2. For when supporting loads on the center S roller is difficult.
3. For when having a guide on the chain's return side is difficult.
4. For giving double speed and accumulation capabilities to R roller outboard rollers. (Fig. 2)

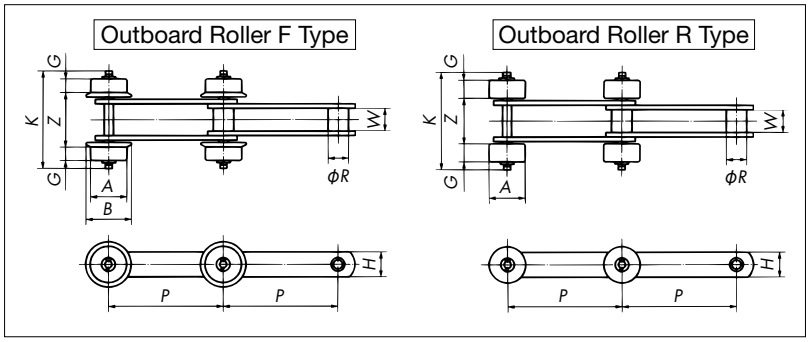


Fig.1 With Special Attachment

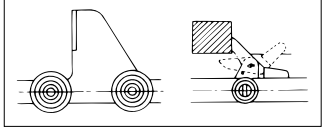
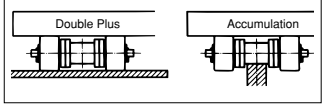
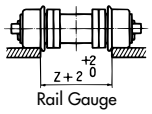


Fig.2 Double Plus/Accumulation



Chain Guide Method



Rail Gauge

Size and Roller Type	Pitch P	Roller Dia. R	Inner Link Inner Width W	Plate Height H	Total Width K	Outboard Roller F Type				Outboard Roller R Type			Additional Mass of Outboard Rollers (both sides) kg	Outboard Roller Allowable Load (both sides) kN{kgf}	
						A	B	G	Z	A	G	Z		Outboard Rollers Non-heat Treated	Outboard Rollers Hardened
RF03075S	75	15.9	16.1	22	76	31.8	42	12	38	31.8	15.5	31	0.3	0.69 {70}	1.08{110}
RF03100S	100														
RF430S	101.6	20.1	22.6	25.4	104	38.1	50	15	56.5	38.1	20	46.5	0.5	0.98{100}	1.57{160}
RF05075S	75	22.2	22	32	102	40	50	14	55	40	19	45	0.5	1.17{120}	1.96{200}
RF05100S	100														
RF05125S	125														
RF05150S	150														
RF450S	101.6	22.2	27	28.6	130	44.5	55	20	70.5	44.5	26	58.5	0.7	1.67{170}	2.35{240}
RF10100S	100	29	30	38.1	136	50.8	65	20	73	50.8	26	61	1.0	1.96{200}	3.24{330}
RF10125S	125														
RF10150S	150														
RF6205S	152.4	34.9	37.1	44.5	167	57.2	70	25	90.5	57.2	32	76.5	1.3	2.75{280}	4.61{470}
RF12200S	200	34.9	37.1	44.5	167	65	80	24	92.5	65	32	76.5	1.8	2.75{280}	4.61{470}
RF12250S	250														
RF17200S	200	40.1	51.4	50.8	189	65	80	24	112.5	65	32	96.5	1.8	3.14{320}	5.30{540}
RF17250S	250														
RF17300S	300														
RF26200S	200	44.5	57.2	63.5	230	80	100	34	124.5	80	44	104.5	3.8	4.90{500}	8.43{860}
RF26250S	250														
RF26300S	300														
RF36250S	250	50.8	66.7	76.2	268	100	125	38	150.5	100	50	126.5	6.9	6.57{670}	11.1{1130}
RF36300S	300														
RF36450S	450														

Note: 1. Outboard rollers allowable load values indicated are under lubricated conditions.
2. Basic chain specifications are the same as RF Conveyor Chain.
3. The above dimensions are nominal dimensions and may differ from actual dimensions.

Ordering Outboard Roller Conveyor Chain (Made to Order)

Model Numbering Example

RF03075S-DT-1LSRFH+400L-PR

- Size
- Roller Type
- Series
- Attachment Spacing
- Outboard Roller Type
  - SRFN: Outboard Roller Non-heat Treated F Type
  - SRFH: Outboard Roller Hardened F Type
  - SRRN: Outboard Roller Non-heat Treated R Type
  - SRRH: Outboard Roller Hardened R Type
- No. of Links
- End Link

Ordering Example

Please indicate the following when ordering:
1. Chain size and base specifications
2. Outboard roller specifications (hardened/ unhardened)
3. Outboard roller attachment spacing

Chain Size: RF17 Pitch: 200mm Roller Type: S Roller
Series: AT Series Attachment Spacing: Every link
Outboard Roller Type: Hardened F Type Outboard Roller
Quantity: 400 links

Chain Number	Quantity	Unit
RF17200S-AT-1LSRFH+400L-PR	1	H

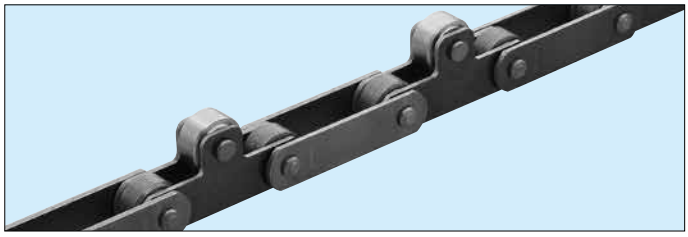
Note: Specify the model number and contact a Tsubaki representative for a quote.

Top Roller Conveyor Chain

Chain No. p.21 | p.17 | p.156

Top Roller Conveyor Chain (Free Flow Conveyance)

Attachment Type: TR



Top rollers are attached to a base conveyor chain between pitches, allowing for direct support of conveyed items. Tsubaki can manufacture top rollers for any chain series.

- Tsubaki can manufacture engineering plastic and bearing roller top rollers.
- We can also manufacture attachments to prevent toppling. (Fig. 3)
- Standard sprockets cannot be used as their teeth contact the top rollers. Use only top roller sprockets.

Applications

1. Chain can be run continuously, and conveyed items can be accumulated or temporarily stopped on top of the conveyor through the use of dogs. (Fig. 1)
2. Conveying and stopping can be performed simultaneously on top of the same chain. (Fig. 1)
3. Alleviates shock impact during operation. (Fig. 2)

Fig. 1 Conveyed item stopped on conveyor

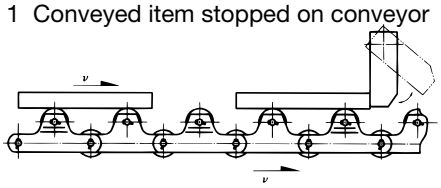


Fig. 2 Alleviates shock impact during transfer

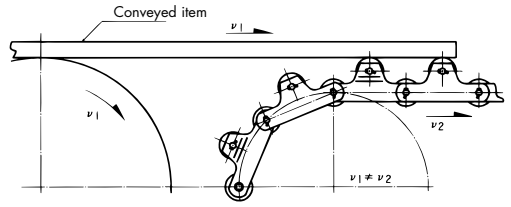
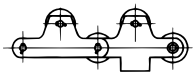
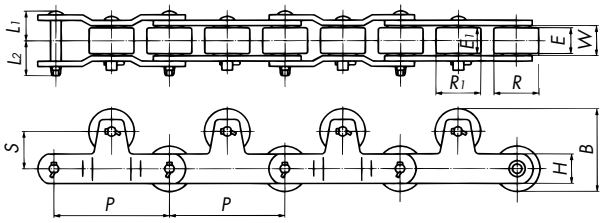


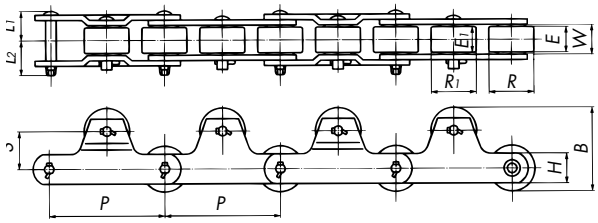
Fig. 3 Example of attachment to prevent toppling



(RF05–RF12)



(RF17)



Size and Roller Type	Pitch P	Roller		Inner Link Inner Width W	Plate Height H	Pin		S	Top Roller		B	Chain Approx. Mass kg/m	Additional Mass per Top Roller kg	Top Roller Allowable Load kN{kgf/each}	
		Dia. R	Contact Width E			L1	L2		R1	E1				Non-heat Treated	Hardened
*RF03075R-TR	75	31.8	15.5	16.1	22	18	20	23.1	40	PL:20 RL:13	59	2.7	0.18	0.34 {35}	0.59 {60}
*RF03100R-TR	100											2.3			
RF05100R-TR	100	40	19	22	32	25	28.5	30	40	19	70	5.0	0.26	0.64 {65}	1.03{105}
RF05150R-TR	150											4.1			
RF08150R-TR	150	44.5	24	27	28.6	31	34.5	30	40	23	72.2	5.5	0.35	0.78 {80}	1.27{130}
RF10150R-TR	150	50.8	27	30	38.1	33	36	30	50.8	27	80.8	7.9	0.56	1.13{115}	1.91{195}
RF6205R-TR	152.4	57.2	32	37.1	44.5	40.5	43	37.8	57.2	32	95	12.1	0.91	1.47{150}	2.50{255}
RF12200R-TR	200	65	32	37.1	44.5	40.5	43	45	65	32	110	11.4	1.15	1.47{150}	2.50{255}
RF17200R-TR	200	80	44	51.4	50.8	51.5	58	65	80	44	145	19	2.58	2.45{250}	4.12{420}

Note: 1. Sizes marked with * have flat plates. E1 dimensions are PL: 20 (width of roller attached to outer link), PL: 13 (width of roller attached to inner link).
2. Top roller allowable load shows values under lubricated conditions.
3. MoS_2 grease is applied between top roller and top roller pin when shipped.
4. The above dimensions are nominal dimensions and may differ from actual dimensions.

Ordering Top Roller Conveyor Chain (Made to Order)

Please indicate the following when ordering:
1. Chain size and base specifications
2. Top roller specifications (hardened/unhardened)
3. Top roller attachment spacing

Model Numbering Example

RF17200R-AT-2LTRH+400L-PR

- Size
- Roller Type (R roller only)
- Series
- Top Roller Type
  - TRN: Top Roller Non-heat Treated
  - TRH: Top Roller Hardened
- Attachment Spacing
- End Link
- No. of Links

Ordering Example

Size: RF17 Pitch: 200mm Roller Type: R Roller
Series: AT Series
Attachment Spacing: Every 2nd link
Attachment Type: Hardened Top Roller Quantity: 400 links

Chain Number	Quantity	Unit
RF17200R-AT-2LTRH+400L-PR	1	H

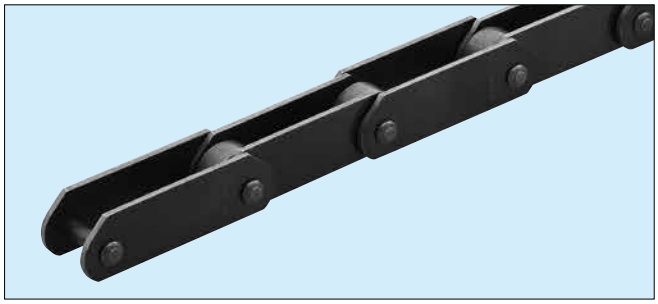
Note: Specify the model number and contact a Tsubaki representative for a quote.

Deep Link Conveyor Chain

Chain No. p.21 | p.30–48 | p.17 | p.156

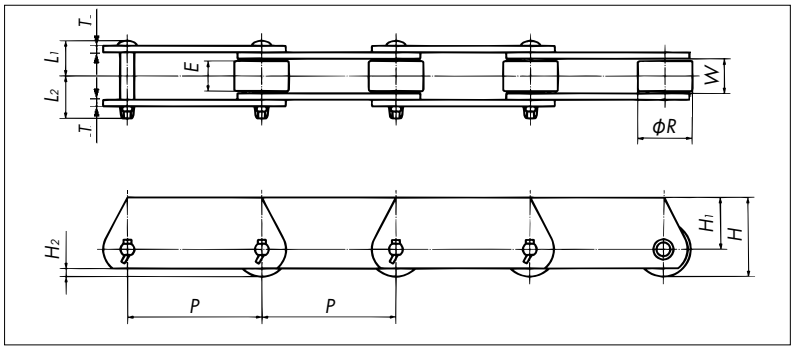
Deep Link Conveyor Chain (Direct Conveyance)

Series: DL□



Wide link plates and R rollers with low frictional resistance are added to a base conveyor chain to allow for direct conveyance on the chain links.

1. Tsubaki also manufactures Deep Link Conveyor Chain with R rollers from Bearing Roller Conveyor Chains. These rollers will give the chain a low coefficient of friction and a higher roller allowable load, allowing users to go down two chain sizes. (It will be necessary to check allowable tension.)
2. Tsubaki can also manufacture Deep Link Conveyor Chains with top plates.
3. Tsubaki can manufacture Deep Link Chains to any specification.



Applications

1. Sheet or shaped steel conveyor lines at steelworks.
2. Automotive assembly lines, container assembly lines, etc.

Size, Roller Type, Series	Pitch P	Roller		Inner Link Inner Width W	Chain Height H	Plate			Pin		Approx. Mass kg/m	Roller Allowable Load kN{kgf}/each			Max Allowable Load kN{kgf}	
		Dia. R	Contact Width E			H1	H2	Thickness T	L1	L2		DT Series	AT Series	Bearing Roller	DT Series	AT** Series
RF03075R-DL□	75	31.8	15.5	16.1	36.9	21	4.9	3.2	18	20	3.2	0.54{55}	0.88{90}	1.96{200}	4.20{430}	9.95{1010}
RF03100R-DL□	100										2.8					
RF05100R-DL□	100	40	19	22	44	24	4	4.5	25	28.5	5.9	1.03{105}	1.72{175}	3.04{310}	9.80{1000}	20.3{2070}
RF05150R-DL□	150										4.9					
RF08150R-DL□	150	44.5	24	27	50.3	28	8	6.3	31	34.5	7.0	1.27{130}	2.11{215}	4.12{420}	11.2{1110}	20.3{2070}
RF10150R-DL□	150	50.8	27	30	57.4	32	6.4	6.3	33	36	9.7	1.77{180}	2.94{300}	5.49{560}	17.6{1790}	32.3{3290}
RF10200R-DL□	200										8.5					
RF6205R-DL□	152.4	57.2	32	37.1	63.6	35	6.1	7.9	40.5	43	14.0	2.50{255}	4.17{425}	–	26.6{2710}	39.9{4060}
RF12200R-DL□	200	65	32	37.1	73.5	41	10	7.9	40.5	43	14.9	2.50{255}	4.17{425}	8.34{850}	26.6{2710}	39.9{4060}
RF12250R-DL□	250										13.5					
RF17250R-DL□	250	80	44	51.4	90	50	13.8	9.5	51.5	58	22.5	4.02{410}	6.67{680}	14.1{1440}	35.0{3570}	55.3{5640}
RF17300R-DL□	300										21.5					
RF26300R-DL□	300	85*	50	57.2	95.5	53	10.5	9.5	55.5	61	24.3	5.30{540}	8.83{900}	16.7{1700}	44.9{4570}	74.3{7580}
RF36300R-DL□	300	100*	56	66.7	112	62	12	12.7	68	78	39.0	7.45{760}	12.4{1260}	22.0{2240}	68.0{6930}	97.4{9930}
RF36400R-DL□	400										34.2					
RF52450R-DL□	450	110*	65	77	125	70	17	16	82	90	46.0	9.81{1000}	16.6{1690}	–	71.4{7280}	147{15000}

Note: 1. Enter conveyor chain series in the blank □. Contact a Tsubaki representative regarding delivery.
2. Roller diameters marked with* are different from RF conveyor chain diameters and require a special sprocket.
3. Refer to page 66 for the maximum allowable loads of AT Series bearing roller conveyor chain (marked with ** above).
4. The above dimensions are nominal dimensions and may differ from actual dimensions.

Ordering Deep Link Conveyor Chain (Made to Order)

Model Numbering Example

RF12200R-DLDT+400L–PR

- RF12: Roller Type
- 200R: Size
- DLDT: Chain Specs
- 400L: No. of Links
- PR: End Link

Chain Specs
DLDT : Deep Link DT Series
DLAT : Deep Link AT Series
DLDTA : Deep Link DTA Series
DLATA : Deep Link ATA Series

Ordering Example

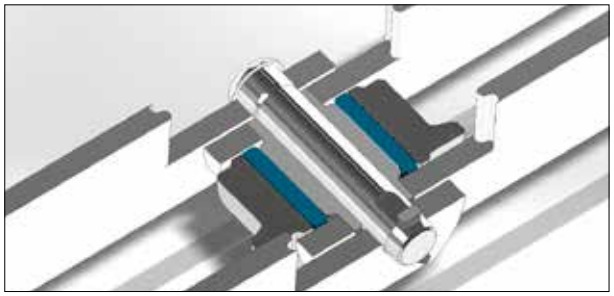
Size: RF12 Pitch: 200mm Roller Type: R Roller
Chain Specs: Deep Link conveyor chain (base chain DT Series)
Quantity: 400 links

Chain Number	Quantity	Unit
RF12200R-DLDT+400L-PR	1	H

Note: Specify the model number and contact a Tsubaki representative for a quote.

Conveyor Chain for Shower Testers and Final Inspection Lines

Roller Type: WDR/WDF

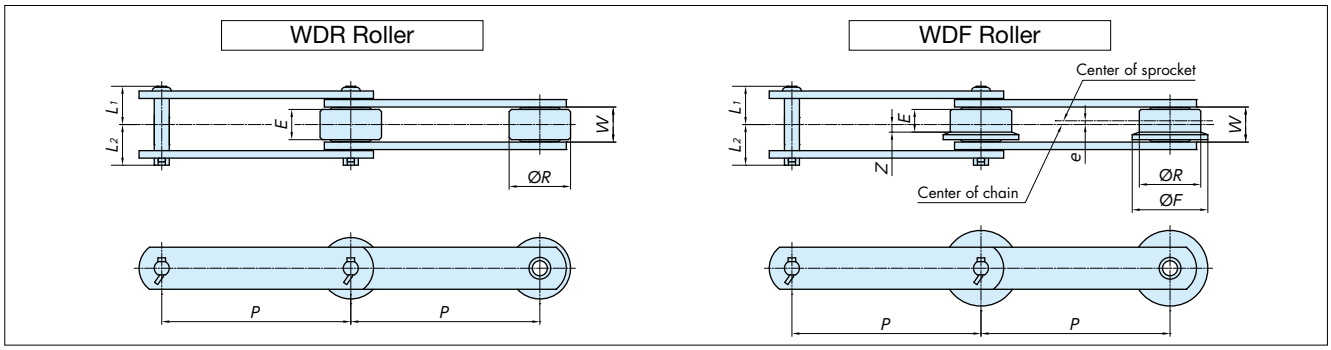


Long-life chain that uses a special plastic on the inner circumference of the rollers, enabling operation without lubrication both under water showers or in the dry state. Allows combining a shower tester line and inspection line into a single unit, as well as providing a countermeasure against corrosion and wear in the final inspection line.

Features

◎ : Excellent ○ : Can be used
△ : Can be used under certain conditions × : Cannot be used

	Roller type WDR/WDF	Bearing Roller Conveyor Chain		Reference: RT Series (base chain)
		Lube-free/water resistant series	Standard series	
Shower tester	○	◎	×	△
Inspection line	◎	△ (Requires water lubrication)	◎ (Not exposed to water)	△ (Requires lubrication)
Rolling friction coefficient	0.12	0.03	0.03	0.15
Note	Capable of wet and dry usage without lubrication	Optimal for shower tester applications	Not suitable for applications with exposure to water	SUS corrosion resistant chain



Size	Roller Type	Pitch P	R Roller		F Roller					Inner Link Inner Width W	Plate Height H	Pin			Approx. Mass kg/m		Roller Allowable Load kN{kgf/each}
			R Roller Dia. R	R Roller Contact Width E	F Roller Dia. R	F Roller Flange Dia. F	F Roller Contact Width E	F Roller Off-center e	Z			L1+L2	L1	L2	R Roller	F Roller	
RF10125	WDR/WDF	125	50.8	27	50.8	65	20	3	7	30.0	38.1	69	33	36	8.7	9.0	0.98 {100}
RF10150		150													8.0	8.3	
RF10200		200													6.8	7.1	
RF12200	WDR/WDF	200	65	32	65	80	24	4	8	37.1	44.5	83.5	40.5	43	11.6	12.1	1.47 {150}
RF12250		250													10.5	10.8	
RF12300		300													9.6	9.9	
RF17250	WDR/WDF	250	80	44	80	100	34	5	12	51.4	50.8	109.5	51.5	58	17	18	2.45 {250}
RF17300		300													16	16	
RF26250	WDR/WDF	250	100	50	100	125	38	6	13	57.2	63.5	116.5	55.5	61	26	27	3.19 {325}
RF26300		300													23	24	

Note: 1. The base chain can be selected from RT, GS, or other chain series. Refer to the base chain's strength for maximum allowable load.
2. We can also manufacture chain with outboard rollers. Contact a Tsubaki representative for details.
3. Plate width, pin length, and attachment dimensions are the same as RF conveyor chain.
The above dimensions are nominal dimensions and may differ from actual dimensions.

Ordering Conveyor Chain for Shower Testers and Final Inspection Lines (Made to Order)

Model Numbering Example

RF12200WDF-GS-1L A2+400L-PR

- RF12200WDF: Size / Roller Type
- GS: Series
- 1L: Attachment Spacing
- A2: Attachment Type
- 400L: No. of Links
- PR: End Link

Ordering Example

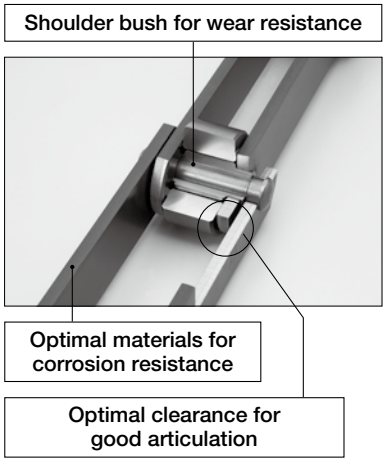
Size: RF12 Pitch: 200mm Roller Type: WDF Roller
Series: GS Series
Attachment Spacing/Type: A2 every link
Quantity: 400 links x 2 strands in parallel

Chain Number	Quantity	Unit
RF12200WDF-GS-1LA2+400L-PR	2	H

Note: Specify the model number and contact a Tsubaki representative for a quote.

Industry Specific Products Waste Disposal Facilities

Conveyor Chain for Waste Incineration

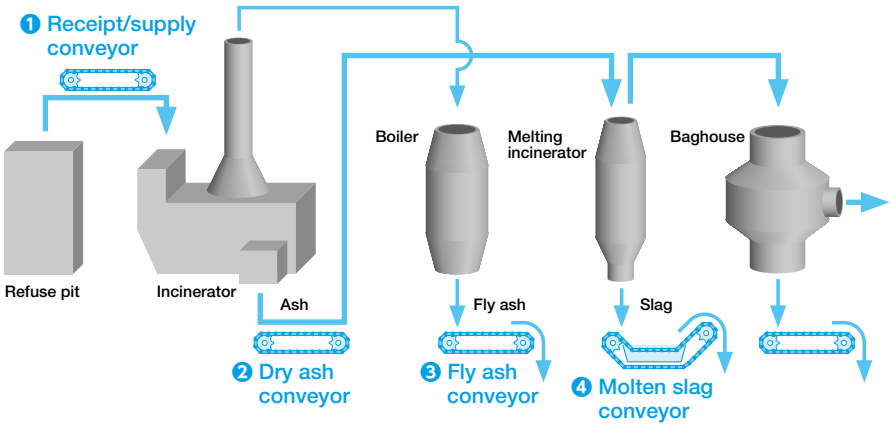


The optimal conveyor chain for the harsh conditions facing each process

■ Waste Treatment Chain Series

Conveyor Type		Chain Series		Features Required for Each Process: Wear Resistance	Corrosion Resistance	Good Articulation	Good Roller Rotation
Intake/feed conveyor		KG	KA	◎		○	○
Bottom ash conveyor	Dry	AG	AA	○		○	○
	Wet	AM			○	○	○
		AP			◎	○	○
Fly ash conveyor	Normal	FG		○		◎	○
	Corrosive	FP			◎	◎	○
Slag conveyor		YP		◎	◎	○	○

Legend ◎:Ideal ○:Suitable
- Each series has features suited to the different waste treatment processes.
- KA and AA Series are stronger versions of the KG, AG, and AM Series.



❶ Receipt/Supply Conveyor

The first line to convey the collected waste. The received waste can cause impacts and high loads on the chain here.

For receipt/supply conveyors

KG/KA series

◆ Conveyed material: Collected waste

❷ Ash Conveyor

This line conveys ash from the incinerator. In some instances, ash that has been cooled by being dropped in water is also onveyed.

For dry ash conveyance

AG/AA series

◆ Conveyed material: Incinerator ash

For wet ash conveyance

AM/AP series

◆ Conveyed material: Incinerator ash (wet)

❸ Fly Ash Conveyor

This line conveys the fly ash that has been created by the incinerator, boiler, etc. The chain is completely enveloped in fly ash here. Chemically treated fly ash is also sometimes conveyed here.

For general fly ash conveyors

FG series

◆ Conveyed material: Fly ash

For corrosive fly ash conveyance

FP series

◆ Conveyed material: Fly ash directly after treatment

❹ Molten Slag Conveyor

This line conveys the slag produced by the melting incinerator. The slag will sometimes turn the cooling water into a strong alkaline or acid.

For molten slag conveyors

YP series

◆ Conveyed material: Molten slag

Ordering Waste Treatment Conveyor Chain (Made to Order)

Model Numbering Example

RF12250F-KG-1LCA2+200L-PR-H

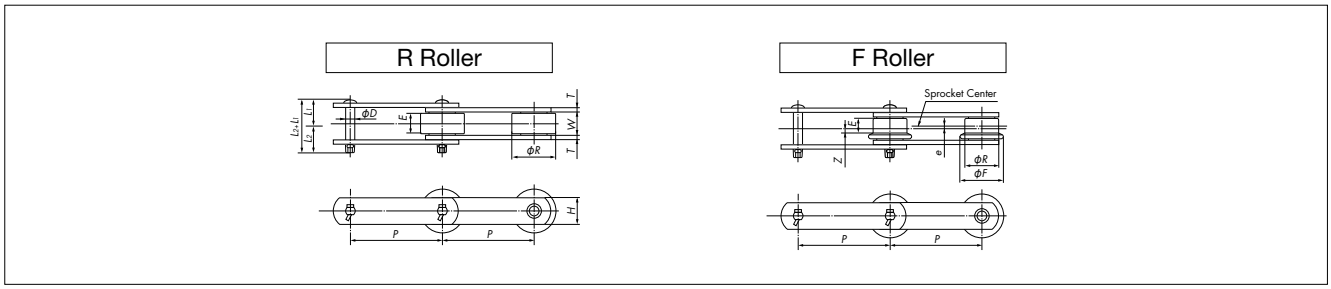
- Size: RF12
- Roller Type: F
- Series: KG
- Attachment Spacing: 1LCA2
- Attachment Type: 200L
- No. of Links: PR
- End Link: H
- Option

Ordering Example

Size: RF12 Pitch: 250mm Roller Type: F Roller
Chain Specs: KG Series Attachment Type/Spacing: A2 every link
Quantity: 400 links (200 links x 2 parallel strands, half assembled in mirror image

Chain Number	Quantity	Unit
RF12250F-KG-1LCA2+200L-PR-H	2	H

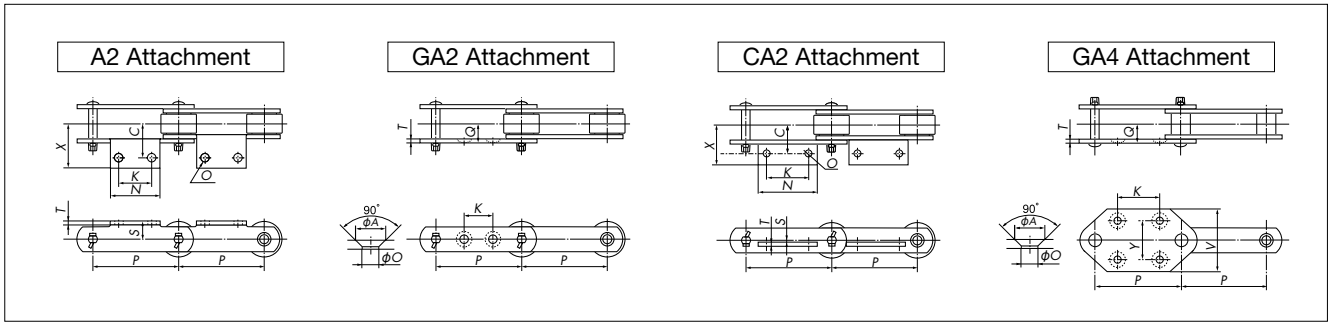
Note: Specify the model number and contact a Tsubaki representative for a quote.



■ Chain Dimensions

Size	Roller Type	Pitch P	Roller Type							Inner Width W	Plate Width H	Pin			Max. Allowable Load KN{kgf}				
			R Roller		F Roller										KG	FG	AM	KA	AP	YP
			R	E	R	F	E	e	Z			L1+L2	L1	L2	AG			AA	FP	
RF03075	R/F	75	31.8	14.5	31.8	42	11	1.8	3.8	15.1	22	38	18	20	4.20 {430}	4.20 {430}	4.20 {430}	9.55 {1010}	5.40 {550}	
RF03100	R/F	100																		
RF05100	R/F	100	40	19	40	50	14	2.5	4.5	21	32	53.5	25	28.5	9.80 {1000}	9.80 {1000}	9.80 {1000}	20.3 {2070}	10.8 {1100}	
RF05125	R/F	125																		
RF05150	R/F	150																		
RF10100	R	100	50.8	25	50.8	65	19	3	6.5	28	38.1	69	33	36	17.6 {1790}	17.6 {1790}	17.6 {1790}	32.3 {3290}	17.7 {1800}	
RF10125	R/F	125																		
RF10150	R/F	150																		
RF12200	R/F	200	65	32	65	80	24	4	8	35.1	44.5	83.5	40.5	43	26.6 {2710}	26.5 {2700}	26.5 {2700}	39.9 {4060}	26.5 {2700}	
RF12250	R/F	250																		
RF17200	R/F	200	80	44	80	100	34	5	12	49.4	50.8	109.5	51.5	58	35.0 {3570}	35.0 {3570}	35.0 {3570}	55.3 {5640}	35.8 {3650}	
RF17250	R/F	250																		
RF26250	R/F	250	100	50	100	125	38	6	13	55.2	63.5	116.5	55.5	61	44.9 {4570}	44.9 {4570}	44.9 {4570}	74.3 {7580}	46.1 {4700}	
RF26300	R/F	300																		

Note: The above dimensions are nominal dimensions and may differ from actual dimensions.

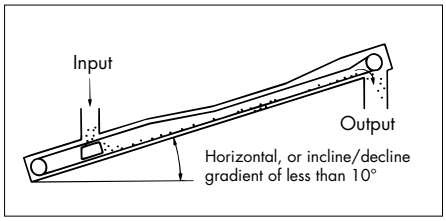


■ Attachment Dimensions

Size	Roller Type	Attachment Thickness	A2 Attachment					CA2 Attachment					A2 CA2	GA2	GA4 Attachment			GA2 GA4		
		T	C	X	K	N	S	C	X	K	N	S	O	K	V	Y	K	A	O	Q
RF03075	R/F	3.2	30	46	30	55	20	35	46	30	55	0	10	30	—	—	—	13.5	8	15.5
RF03100	R/F				40	65				40	65			50	—	—	—			
RF05100	R/F	4.5	35	47	40	65	22	40	52	40	65	3	10	40	—	—	—	15	10	21
RF05125	R/F				50	75				50	75			50	—	—	—			
RF05150	R/F				60	85				60	85			60	—	—	—			
RF10100	R	6.3	50	67	40	70	28	50	65	40	70	4	12	30	—	—	—	20	12	28.5
RF10125	R/F				50	80				50	80			40	—	—	—			
RF10150	R/F				60	90				60	90			60	110	70	75			
RF12200	R/F	7.9	60	79	80	120	38	60	79	80	120	5	15	80	110	70	100	26	15	35.5
RF12250	R/F				125	170				125	165			125	—	—	—			
RF17200	R/F	9.5	75	100	80	120	45	75	98	80	120	6	15	70	120	80	100	26	15	45.5
RF17250	R/F				125	170				125	165			110	150	100	140			
RF26250	R/F	9.5	80	108	125	170	55	80	105	125	165	6	15	—	150	100	140	26	15	48.5
RF26300	R/F				180	220				180	220			140	150	100	180			

Note: The above dimensions are nominal dimensions and may differ from actual dimensions.

Flow Conveyor Chain



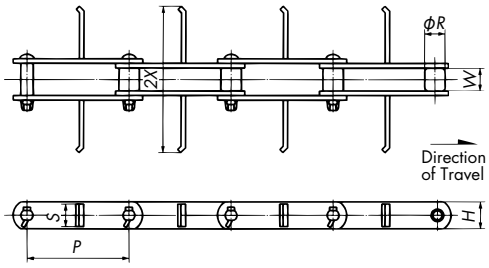
■ Horizontal Flow Conveyor Chain

Flow Conveyor Chain conveys powders in a sealed case, which prevents dispersal, making it optimal for conveying loose materials safely.

This attachment chain is designed just for flow conveyors, and boasts Tsubaki's advanced technology and numerous examples of success. Tsubaki offers different attachment types to match any application requirement.
Carbon steel attachments are standard, but stainless steel attachments can be manufactured upon request.
The base chain is either standard conveyor chain or reinforced AT Series, but users can select other specifications to match the nature of the conveyed material.

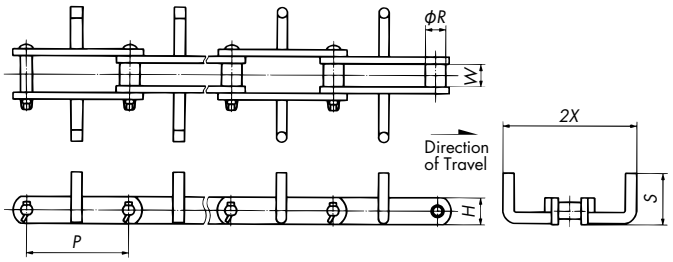
- **Consider replaceable tooth sprockets (p51) as well.**
- **Coal Dust Chain:** Tsubaki recommends the RT Series for conveying corrosive coal dust.
- **In terms of price and delivery, W attachments are recommended over U2V and U2VN attachments.**

L Attachment

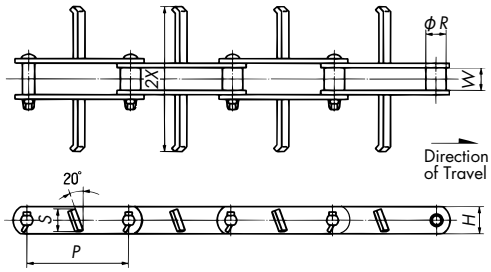


BK (Square) Attachment
Wing Width (2X) over 500

BM (Round) Attachment
Wing Width (2X) less than 500

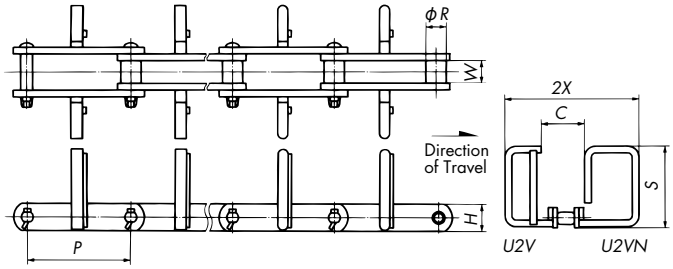


KL Attachment



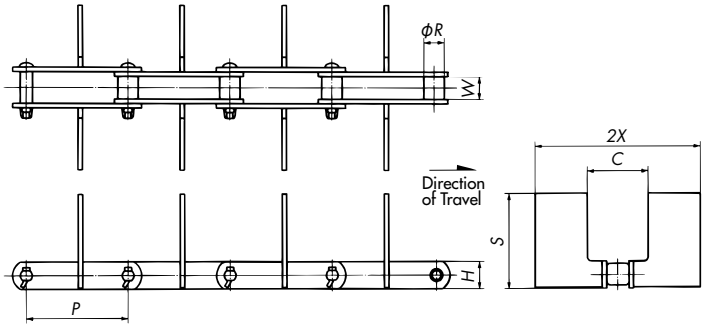
U2VK (Square) Attachment
U2VNK (Square) Attachment
Wing Width (2X) over 500

U2VM (Round) Attachment
U2VN (Round) Attachment
Wing Width (2X) under 500



Note that U2V attachments are for RF450WM and RF08125WM chains, while U2VN attachments are for RF10125M chains and above.

W Attachment



When a flow attachment is installed on every other link, it is normally mounted on an inner link. In this case, append the suffix RL to the end of the model number (example: 2LKL45RL).

Size and Roller Type	Former Chain Number	Case Inner Width	Pitch *P*	Roller Diameter *R*	Inner Link Inner Width *W*	Plate Height *H*	DT Series		AT Series	
							Max. Allowable Load kN{kgf}	Min. Tensile Strength kN{kgf}	Max. Allowable Load kN{kgf}	Min. Tensile Strength kN{kgf}
RF450WM	F4•FW4	150	101.6	25.4	27	31.8	15.4{1570}	93.5{9500}	20.3{2070}	127{13000}
RF08125WM		200	125	25.4	27	31.8	15.4{1570}	93.5{9500}	20.3{2070}	127{13000}
RF10125M		200	125	31.8	30	38.1	17.6{1790}	107{11000}	32.3{3290}	200{20500}
RF10150M		270	150							
RF6205M	F6•FA6	270	152.4	38.1	37.1	44.5	26.6{2710}	160{16500}	39.9{4060}	249{25500}
RF12200M		350	200	38.1	37.1	44.5	26.6{2710}	160{16500}	39.9{4060}	249{25500}
RF17200M		350	200	44.5	51.4	50.8	35.0{3570}	213{22000}	55.3{5640}	336{34500}
RF17250M		450	250							
RF26200M	F8•FA8	410	200	50.8	57.2	63.5	44.9{4580}	285{29000}	74.3{7580}	448{45500}
RF26250N		450	250				–	–	80.6{8220}	551{56000}
RF26300N		580	300							
RF36300M	F12•FA12	580	300	57.2	66.7	76.2	68.0{6930}	457{46500}	97.4{9440}	614{62500}
RF36300N							–	–	124{12600}	777{79000}

Size and Roller Type	Wing Width *2X*	L Attachment		KL Attachment		B Attachment		U2V (U2VN) Attachment			W Attachment		
		Height *S*	Mass kg/m	Height *S*	Mass kg/m	Height *S*	Mass kg/m	Height *S*	*C*	Mass kg/m	Height *S*	*C*	Mass kg/m
RF450WM	135	28.6	6.5	28.6	6.5	55	7.4	80	60	9.1	80	80	8.1
RF08125WM	185	28.6	6.5	28.6	6.5	80	8.2	115	85	10.1	115	85	10.3
RF10125M	185	31.8	8.1	31.8	8.1	80	8.9	115	85	10.1	115	85	11.3
RF10150M	250					100	9.8	140	105	12	140	105	13.0
RF6205M	250	38.1	12	38.1	12	100	14.4	140	105	18.5	140	105	17.2
RF12200M	330	40	12	40	12	125	16.3	185	130	20	185	130	22.6
RF17200M	330	46	17	46	17	125	18.7	185	130	23	185	130	26.3
RF17250M	430					160	19.3	230	135	23.7	230	135	31.5
RF26200M	390	58	28	58	28	150	25	233	100	33.4	233	100	41.7
RF26250N	430		23		23	160	25	230	135	29	230	135	35.7
RF26300N	560		23		23	200	27	290	160	30.6	290	160	53.0
RF36300M	560	70	34	70	34	200	27	290	160	40	290	160	61.3
RF36300N													

Note: The above dimensions are nominal dimensions and may differ from actual dimensions.

■ Attachment Types and Applications

Attachment Type	Application
L	Conveying grain or cement
KL	Conveying adhesive powder
W	Conveying powder that flashes easily
BM (Round)	Conveying loose material like flour or cement with higher conveying efficiency than L attachments
BK (Square)	Conveying massive, loose, or adhesive materials that are hard to convey with B (Round) attachments
U2VM (Round), U2VNM (Round)	For use on larger or inclined conveyors
U2VK (Square), U2VNK (Square)	Conveying massive, loose, or adhesive materials that are hard to convey with U2V(U2VN)M attachments

Ordering Horizontal Flow Conveyor Chain (Made to Order)

Model Numbering Example

RF17250M-DT-1L KL45+400L-PR

- RF17250 — Size
- M — Roller Type
- DT — Series
- 1L — Attachment Spacing
- KL45 — Attachment Type
- 400 — No. of Links
- L — End Link
- PR

Ordering Example

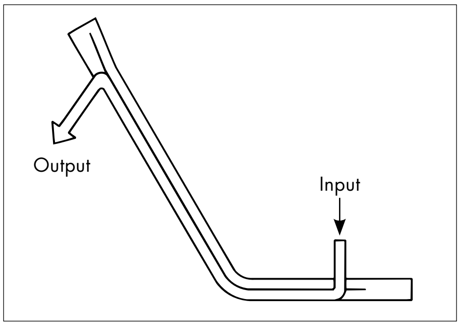
Size: RF17 Pitch: 250mm Roller Type: M Roller
Product: Standard DT Series
Attachment Spacing/Type: KL every link
Case Inner Width: 450mm
Quantity: 400 links per chain

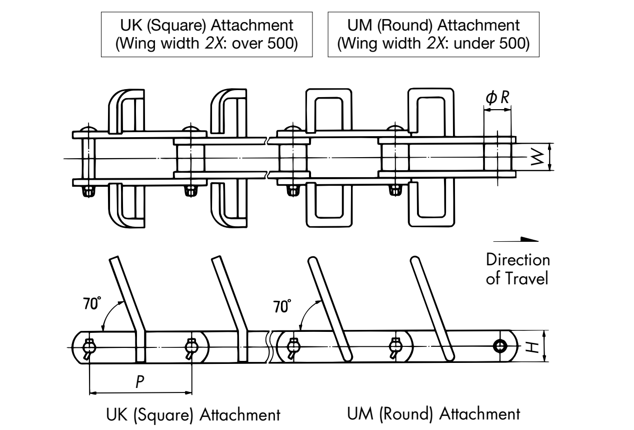
Chain Number	Quantity	Unit
RF17250M-DT-1LKL45+400L-PR	1	H

Note: Specify the model number and contact a Tsubaki representative for a quote.

Flow Conveyor Chain

■ Inclined Flow Conveyor Chain

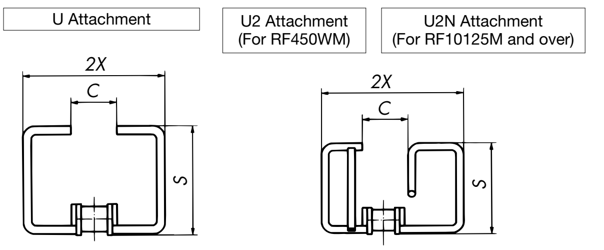




When a flow attachment is installed on every other link, it is normally mounted on an inner link. In this case, append the suffix RL to the end of the model number (example: 2LUM32RL).

■ Attachment Types and Applications

Attachment Type	Application
UM (Round)	Conveying general loose materials
UK (Square)	Conveying massive, loose, or adhesive materials
U2M (Round), U2NM (Round)	Conveying materials at a higher efficiency than UM
U2K (Square), U2NK (Square)	Conveying materials at a higher efficiency than UK



Size and Roller Type	Case Inner Width	Pitch *P*	Roller Dia. *R*	Inner Link Inner Width *W*	Plate Height *H*	Wing Width *2X*	U Attachment			U2(U2N) Attachment			DT Series		AT Series	
							Height *S*	*C*	Mass kg/m	Height *S*	*C*	Mass kg/m	Max. Allowable Load kN{kgf}	Min. Tensile Strength kN{kgf}	Max. Allowable Load kN{kgf}	Min. Tensile Strength kN{kgf}
RF450WM	160	101.6	25.4	27	31.8	145	110	50	10.1	110	50	10.9	15.4{1570}	93.5{9500}	20.3{2070}	127{13000}
RF10125M	240	125	31.8	30	38.1	225	140	65	14.3	140	65	15.7	17.6{1790}	107{11000}	32.3{3290}	200{20500}
RF6205M	320	152.4	38.1	37.1	44.5	300	175	80	20.1	175	80	21.7	26.6{2710}	160{16500}	39.9{4060}	249{25500}
RF17200M	410	200	44.5	51.4	50.8	390	220	100	27.9	220	100	30.3	35.0{3570}	213{22000}	55.3{5640}	336{34500}
RF26200M	410	200	50.8	57.2	63.5	390	220	100	30.9	220	100	33.3	44.9{4570}	285{29000}	74.3{7580}	448{45500}
RF26200N													–	–	80.6{8220}	551{56000}
RF36300M	500	300	57.2	66.7	76.2	480	260	120	42.5	260	120	44.8	68.0{6930}	457{46500}	97.4{9940}	614{62500}
	600					580	305	140	47	305	140	48.1				
RF36300N	500	300	57.2	66.7	76.2	480	260	120	42.5	260	120	44.8	–	–	124{12600}	777{79000}
	600					580	305	140	47	305	140	48.1				

Note: The above dimensions are nominal dimensions and may differ from actual dimensions.

Ordering Inclined Flow Conveyor Chain (Made to Order)

Model Numbering Example

RF6205M-DT-1LUM32+400L-PR

- Size
- Roller Type
- Series
- Attachment Spacing
- End Link
- No. of Links
- Case Inner Width
- Attachment Type

Ordering Example

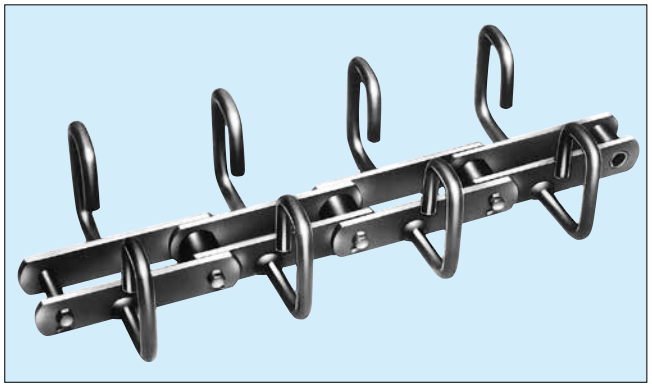
Size: RF6205 Pitch: 152.4mm Roller Type: M Roller
Product: Standard DT Series
Attachment Spacing/Type: UM every link
Case Inner Width: 320mm
Quantity: 400 links per chain

Chain Number	Quantity	Unit
RF6205M-DT-1LUM32+400L-PR	1	H

Note: Specify the model number and contact a Tsubaki representative for a quote.

FA Series Fly Ash Conveyor Chain

Series: FA



When Wear Is a Problem

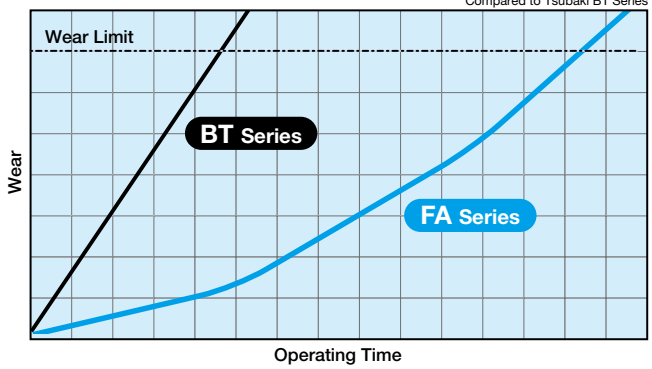
Coal fly ash, a highly abrasive constituent of cement, has seen increasing use in recent years. In order to extend the wear life of our Fly Ash Conveyor Chain, we further improved our popular Anti-Wear Series and implemented a special hardening treatment that gives remarkable strength to the rollers' anti-wear properties, greatly increasing wear life.

Optimal for Fly Ash Conveyance

3x the chain life

■ Chain Life Comparison (Bushing/Roller Wear)

Compared to Tsubaki BT Series



◆ Bush Wear Comparison after Use

BT Series

Fly ash has infiltrated between bush and roller, causing abrasive wear on the bush outer diameter.

FA Series

Fly ash has infiltrated between bush and roller, but the special hardening on the bush outer diameter has greatly reduced wear.

Applications

Fly ash conveyor lines in cement tankers and cement factories, and on other extremely abrasive conveyor lines.

Application Example

This Flow Chain with W attachments is finding use in this fly ash conveyor line.

Note: 1. Sprocket teeth must be hardened steel.
2. Take measures to prevent wear on rails.

Ordering Fly Ash Flow Conveyor Chain (Made to Order)

Model Numbering Example

RF36300N-FA-1LU2M60+400L-PR

- RF36 — Size
- 300N — Roller Type
- FA — Series
- 1LU2M60 — Attachment Spacing
- 400 — Case Inner Width
- L — Attachment Type
- PR — End Link
- + — No. of Links

Ordering Example

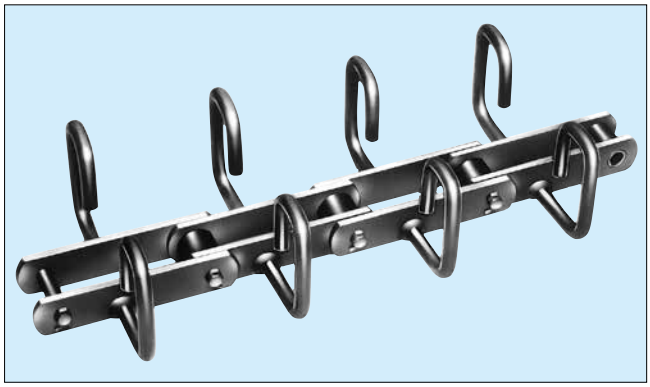
Size: RF36 Pitch: 300mm Roller Type: N Roller
Product: FA Series
Attachment Spacing/Type: U2M every link
Case Inner Width: 600mm
Quantity: 400 links per chain

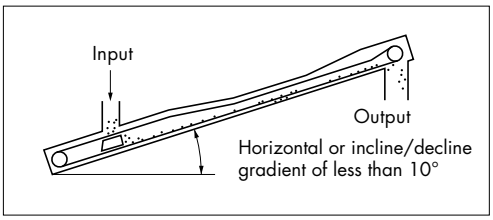
Chain Number	Quantity	Unit
RF36300N-FA-1LU2M60+400L-PR	1	H

Note: Please consult a Tsubaki representative.

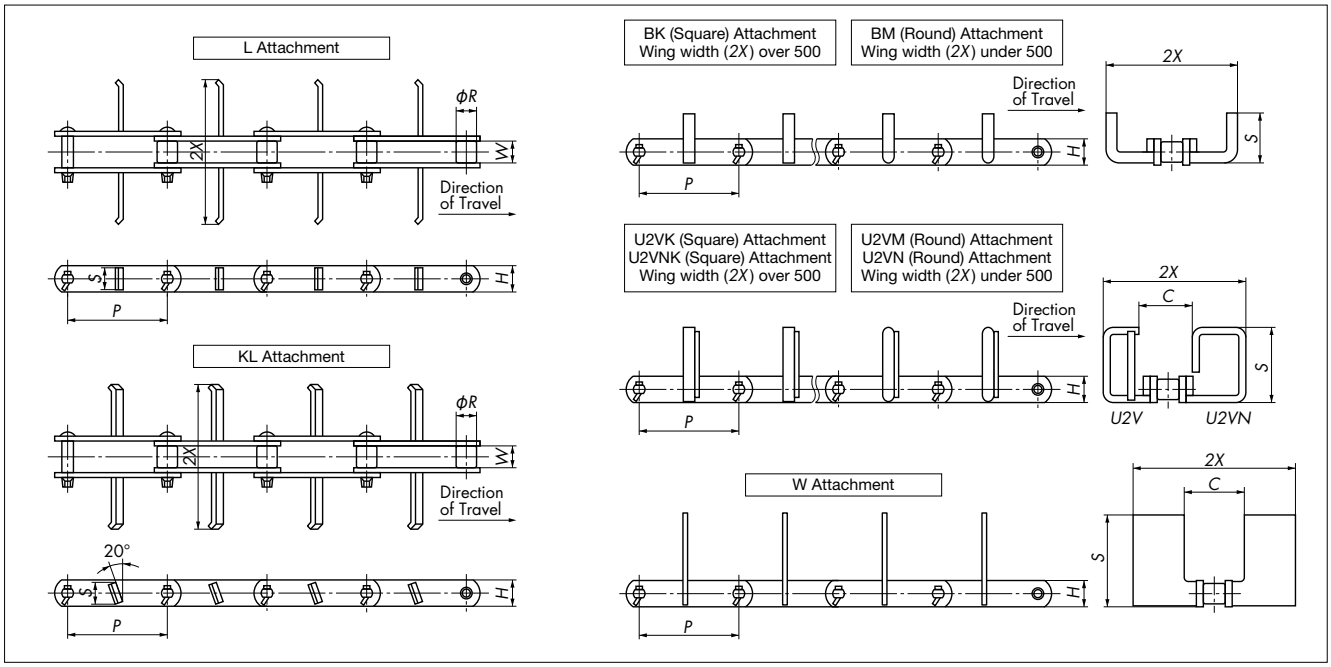
FA Series Fly Ash Conveyor Chain (Horizontal Conveyance)

Series: FA





When a flow attachment is installed on every other link, it is normally mounted on an inner link. In this case, append the suffix RL to the end of the model number (example: 2LKL45RL).



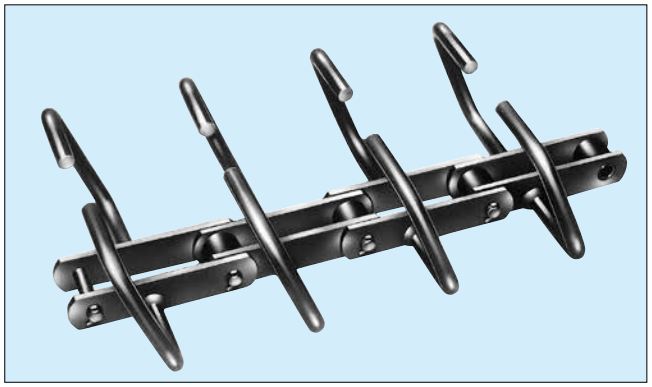
Size and Roller Type	Nominal Size	Case Inner Width	Pitch *P*	Roller Diameter *R*	Inner Link Inner Width *W*	Plate Height *H*	FA Series	
							Max. Allowable Load kN{kgf}	Min. Tensile Strength kN{kgf}
RF17200M	35	350	200	44.5	51.4	50.8	55.3{5640}	348{35500}
RF17250M	45	450	250					
RF26200M	41	410	200	50.8	57.2	63.5	74.3{7580}	464{47500}
RF26250N	45	450	250				80.6{8220}	551{56000}
RF26300N	58	580	300					
RF36300N	58	580	300	57.2	66.7	76.2	124{12500}	777{79000}
RF36350N	75	750	350					
RF60350N	75	750	350	70	77	90	149{15000}	1010{103000}

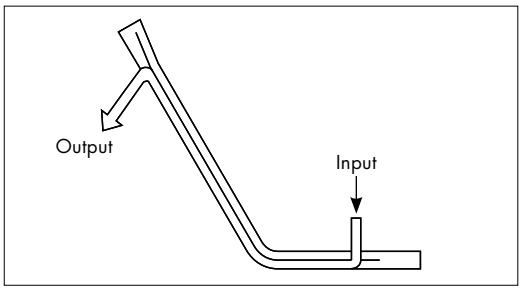
Size and Roller Type	Wing Width *2X*	L Attachment		KL Attachment		B Attachment		U2V(U2VN) Attachment			W Attachment		
		Height *S*	Mass kg/m	Height *S*	Mass kg/m	Height *S*	Mass kg/m	Height *S*	*C*	Mass kg/m	Height *S*	*C*	Mass kg/m
RF17200M	330	46	17	46	17	125	18.7	185	130	23	185	130	26.3
RF17250M	430					160	19.3	230	135	23.7	230	135	31.5
RF26200M	390	58	28	58	28	150	25	233	100	33.4	233	100	41.7
RF26250N	430		23		23	160		230	135	29	230	135	35.7
RF26300N	560					200	27	290	160	30.6	290	160	53.0
RF36300N	560	70	34	70	34	200	37	290	160	40	290	160	61.3
RF36350N	720		36		36	240	47	350	180	67	350	180	76.3
RF60350N	720	84	46	84	46	240	54	350	180	75	350	180	85

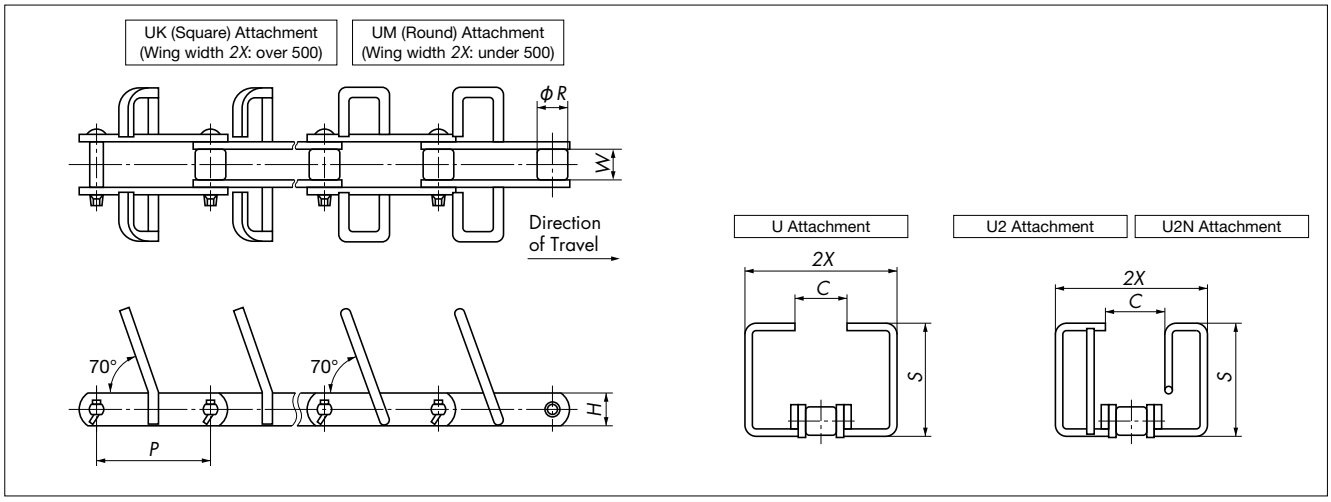
Note: The above dimensions are nominal dimensions and may differ from actual dimensions.

FA Series Fly Ash Conveyor Chain (Inclined Conveyance)

Series: FA







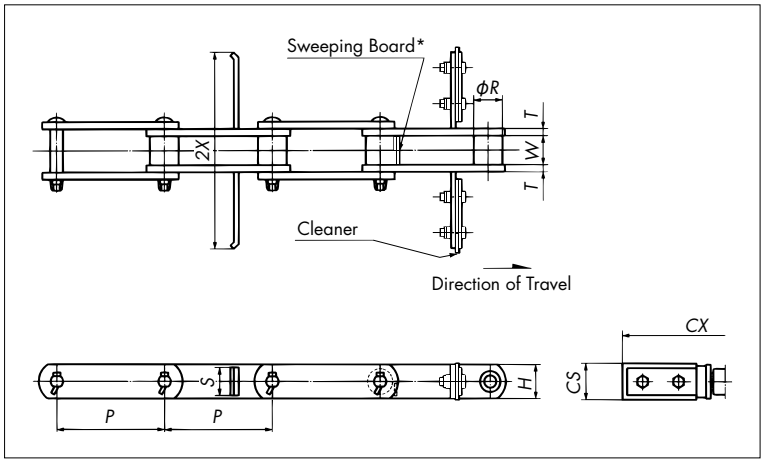
Size and Roller Type	Nominal Size	Case Inner Width	Pitch *P*	Roller Diameter *R*	Inner Link Inner Width *W*	Plate Height *H*	Wing Width *2X*	U Attachment			U2(U2N) Attachment			FA Series	
								Height *S*	*C*	Mass kg/m	Height S	*C*	Mass kg/m	Max. Allowable Load kN{kgf}	Min. Tensile Strength kN{kgf}
RF17200M	41	410	200	44.5	51.4	50.8	390	220	100	27.9	220	100	30.3	55.3{5640}	348{35500}
RF26200M	41	410	200	50.8	57.2	63.5	390	220	100	30.9	220	100	33.3	74.3{7580}	464{47500}
RF26200N														80.6{8220}	551{56000}
RF36300N	50	500	300	57.2	66.7	76.2	480	260	120	42.5	260	120	44.8	124{12600}	777{103000}
	60	600					580	305	140	47	305	140	48.1		

Note: The above dimensions are nominal dimensions and may differ from actual dimensions.

Flow Conveyor Chain

p.30–48 p.156

Flow Conveyor Chain for Grain



These chains are specially designed for grain conveying horizontal flow conveyors (incline/decline gradient less than 10°).

The sweeping board prevents material on the rail from being crushed, while the cleaner prevents grain from remaining in the case.
Cleaner attachment spacing is every 6m.
Attachments are normally spaced every two links.

* Sweeping boards are not attached for forward and reverse operation.

Size and Roller Type	Case Inner Width	Pitch *P*	Roller Diameter *R*	Inner Link Inner Width *W*	Plate Height *H*	Attachment		Cleaner		Approx. Mass kg/m	DT Series	
						Wing Width *2X*	Height *S*	Width *CX*	Height *CS*		Max. Allowable Load kN{kgf}	Min. Tensile Strength kN{kgf}
RF03075S	110	75	15.9	16.1	22.0	95	20	105	28	2.1	4.20{430}	32.4{3300}
RF430S	150	101.6	20.1	22.6	25.4	135	22	145	32	3.4	7.70{790}	49.7{5100}
RF450S	150	101.6	22.2	27.0	28.6	135	25	145	34	5.0	11.2{1140}	74.6{7600}
RF08125S	200	125	22.2	27.0	28.6	185	25	195	34	5.0	11.2{1140}	74.6{7600}}
RF10125S	200	125	29	30.0	38.1	185	31.8	195	47	6.8	17.6{1790}	107{11000}
	240					225		235		7.3		
RF10150S	270	150				250		265		6.9		
	320					300		315		7.2		
RF6205S	270	152.4	34.9	37.1	44.5	250	38.1	265	53	10.5	26.6{2710}	160{16500}
RF12200S	350	200	34.9	37.1	44.5	330	40	345	53	10.3	26.6{2710}	160{16500}
RF17200S	350	200	40.1	51.4	50.8	330	46	345	58	14.0	35.0{3570}	213{22000}
	450					430		445		16.0		
RF26200S	450	200	44.5	57.2	63.5	430	58	445	68	21.0	44.9{4570}	285{29000}

Note: The above dimensions are nominal dimensions and may differ from actual dimensions.

Ordering Flow Conveyor Chain for Grain (Made to Order)

Model Numbering Example

RF12200S-DT-L35RL*-CK-TK+400L-PR

- Size
- Roller Type
- Series
- Attachment Type
- Cleaner/Sweeping Board
- No. of Links
- End Link

*Attachment spacing: L35 every 2nd link, CK every link

Ordering Example

Size: RF12 Pitch: 200mm Roller Type: S Roller
Chain Specs: Standard DT Series
Attachment Spacing/Type: L every 2nd link, Cleaner/sweeping board every 20 link
Case Inner Width: 350mm Quantity: 400 links

Chain Number	Quantity	Unit
RF12200S-DT-L35RL-CK-TK+400L-PR	1	H

L attachment every 2nd link, CK attachment every link

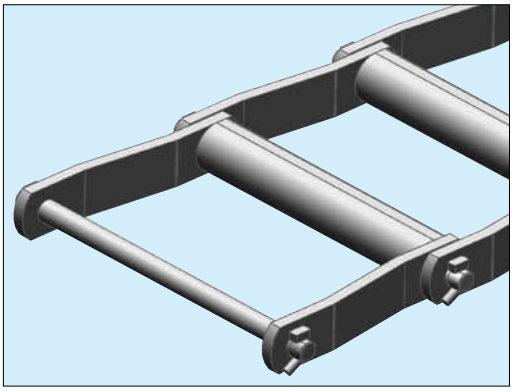
Note: 1. When two different types of attachments will be installed, specify the attachment spacing for each.
2. Specify the model number and contact a Tsubaki representative for a quote.

WD Series Drag Chain

Chain No. p.21 | p.17 | p.156

WD Series Drag Chain

Drag chains are solid steel chains with plates and bushes welded together. The leading face of the bush is flat so it can push conveyed material, while the trailing face of the bush is round so it can smoothly engage with the sprocket. It has superior tensile strength, wear resistance, and impact resistance compared to cast iron chains, while the chain pitch is set so as to accurately and reliably engage the sprocket.



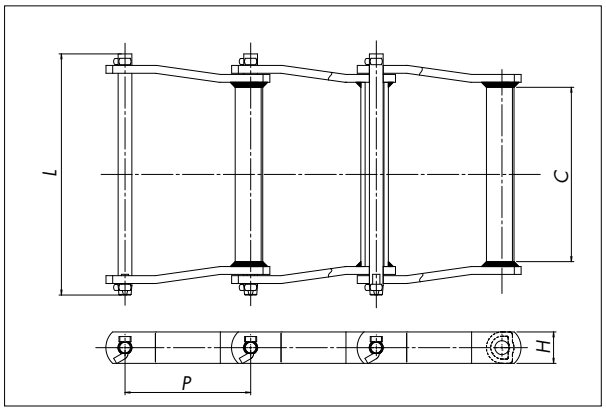
Applications

Cement industry:	Clinker conveyance
Papermaking industry:	Wood chip conveyance
Power generation industry:	Biomass fuel conveyance, withdrawing coal from silos

◆ Features

1. Both ends of the cotter pin are secured with a T-pin for a simple construction.
2. Heavy Duty specs with a higher tensile strength and corrosion resistant specs also available.
3. Unique attachments also available (MTO item).

Base Chain



Size	Pitch P	C	H	Average Tensile Strength kN{kgf}	Pin L_1	Approx. Mass kg/m
WD480	203.2	274	50.8	353 {36000}	390	30
WD122	203.2	212.5			328.5	28
WD120	152.4	212.5			328.5	33
WD110	152.4	227	38.1	167 {17000}	312	18
WD102	127	160			245	16.4

Note: 1. Contact a Tsubaki representative regarding sprockets.
2. The above dimensions are nominal dimensions and may differ from actual dimensions.

Attachments

Scrapers

Better ability to scrape up conveyed material. Also useful in preventing chain floating.

Attachment type: SCR

Guide shoes

Minimizes wear from adjacent chains and guide rails.

Attachment type: GS ☐

Note: Consult a Tsubaki representative when mounting attachments.

Ordering WD Series Drag Chain (Made to Order)

Ordering Example

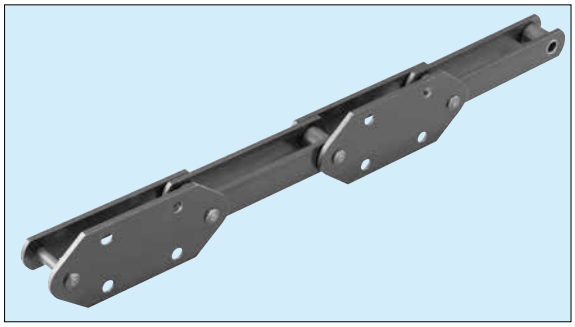
Size: WD480
Quantity: 400 links

Chain Number	Quantity	Unit
WD480+400L	1	H

Note: Specify the model number and contact a Tsubaki representative for a quote.

Bucket Elevator Conveyor Chain

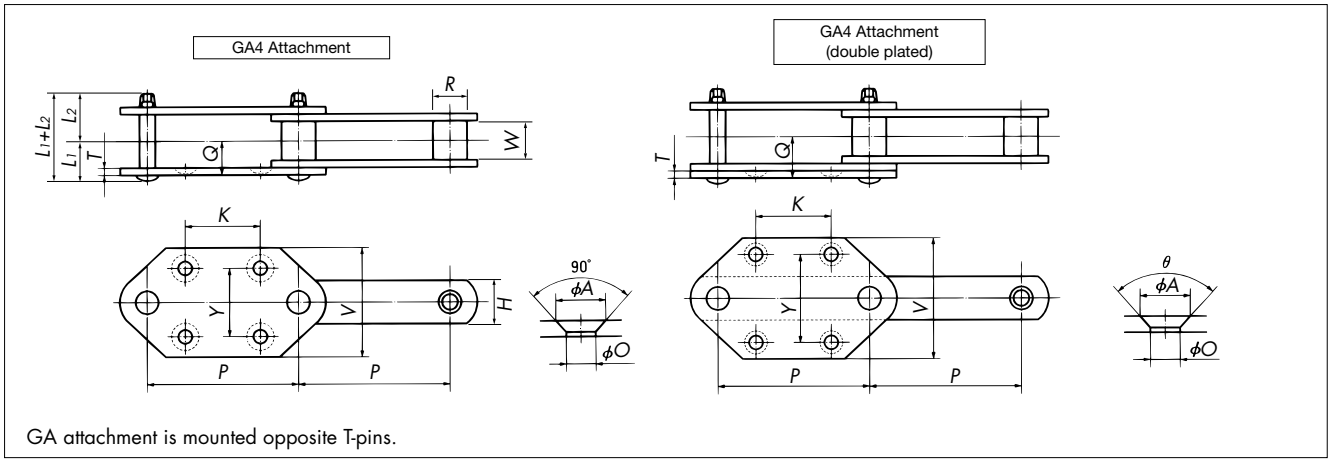
Bucket Elevator Conveyor Chain



Specialty chain with high wear resistance and fatigue strength.

◆ **Standard Wear Resistant Series**·····**CT or BT Series**
This chain focuses on highly wear inducing cement, with optimal part material, hardness, and spacing for cement conveyance.

◆ **Coal Dust Series**·····**RT or Y Series**
Specially designed chain for conveying corrosive coal dust.
Y Series: Offers both strength and toughness.



GA attachment is mounted opposite T-pins.

Size	Pitch P	Roller Diameter R	Inner Link Inner Width W	Plate Height H	Pin			Max. Allowable Load							
					L1+L2	L1	L2	CT Series		BT Series		RT Series		Y Series	
								kN	{kgf}	kN	{kgf}	kN	{kgf}	kN	{kgf}
B10150S	150	29	30	38.1	69	33	36	17.6	{1790}	32.3	{3290}	17.6	{1790}	17.7	{1800}
B12006S **B12200S**	152.4	34.9	37.1	44.5	83.5	40.5	43	26.6	{2710}	39.9	{4060}	26.5	{2700}	26.5	{2700}
	200														
B17200S **B17250S**	200	40.1	51.4	50.8	109.5	51.5	58	35.0	{3570}	55.3	{5640}	35.0	{3570}	35.8	{3650}
	250														
B26200N **B26250N** **B26300N**	200	50.8	57.2	63.5	117	56	61	42.7	{4350}	80.6	{8220}	42.7	{4350}	43.6	{4450}
	250														
	300				129.5*	68.5*									
B36250N **B36300N** **B36350N**	250	57.2	66.7	76.2	147	69	78	64.4	{6570}	127	{13000}	–	–	72.6	{7400}
	300				159*	81*									
	350														
B60300N **B60350N** **B60400N**	300	70	77	90	172*	88*	84	–	–	149	{15200}	–	–	79.9	{8150}
	350														
	400				177*	93*									
B90350N **B90400N**	350	85	88	110	197.5*	102*	95.5	–	–	233	{23700}	–	–	125	{12750}
	400				201.5*	106*									
B120400N	400	100	100	130	227.5*	119.5*	108	–	–	316	{32200}	–	–	179	{18250}

Note: *indicates GA4 attachment (double plated) dimensions. The above dimensions are nominal dimensions and may differ from actual dimensions.

■ GA4 Attachment

Size and Roller Type	P	V	K	Y	T	Q	A	O	θ	Bolt Used	Mass with Attachment Every 2 Links kg/m
B10150S	150	110	75	70	6.3	28.5	26	15	90°	M12	7.5
B12006S	152.4	110	75	70	7.9	35.5	26	15	90°	M12	11
B12200S	200	120	100	80						M14	10
B17200S	200	120	100	80	9.5	45.5	26	15	90°	M14	14
B17250S	250	150	140	100			32	19		M16	15
B26200N	200	120	100	80	9.5	48.5	26	15	90°	M14	20
B26250N	250	150	140	100			32	19		M16	19
B36250N	250	150	140	100	12.7	60	32	19	90°	M16	30

■ GA4 Attachment (Double Plated)

Size and Roller Type	P	V	K	Y	T	Q	A	O	θ	Bolt Used	Mass with Attachment Every 2 Links kg/m
B26300N	300	200	170	140	12	60	38	24	90°	M20	24
B36300N	300	200	170	140	12	72	38	24	90°	M20	33
B36350N	350	240	200	170	12	72	40	28	60°	M24	34
B60300N	300	200	170	140	12	77	38	24	90°	M20	41
B60350N	350	240	200	170	12	77	40	28	60°	M24	43
B60400N	400	280	230	200	16	81	50	35	60°	M30	46
B90350N	350	240	200	170	12	89.5	40	28	60°	M24	60
B90400N	400	280	230	200	16	93.5	50	35	60°	M30	64
B120400N	400	280	230	200	16	105.5	50	35	60°	M30	85

Note: The above dimensions are nominal dimensions and may differ from actual dimensions.

Ordering Bucket Elevator Conveyor Chain (Made to Order)

Model Numbering Example

B12200S-CT-2LGA4+200L-PR-H

- Size
- Roller Type
- Series
- Attachment Spacing
- Attachment Type
- No. of Links
- End Link
- Option

Ordering Example

Size: B12 Pitch: 200mm Roller Type: S Roller
Product: CT Series
Attachment Spacing/Type: GA4 every 2nd link
Quantity: 200 links x 2 parallel strands, half assembled in mirror image

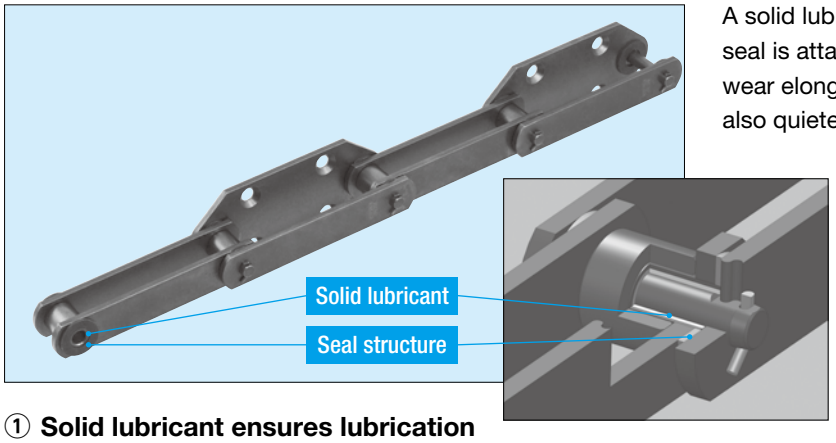
Chain Number	Quantity	Unit
B12200S-CT-2LGA4+200L-PR-H	2	H

Note: Specify the model number and contact a Tsubaki representative for a quote.

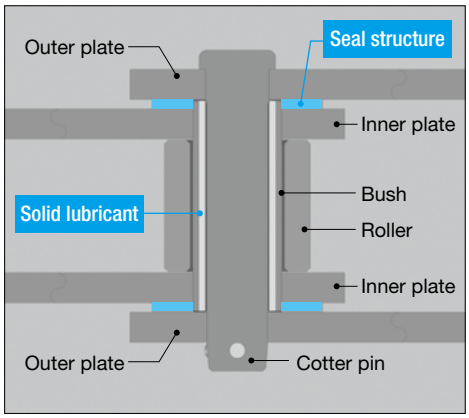
Industry Specific Products FB/FBXA Series Conveyor Chain

FB Series Conveyor Chain

Series: FB□



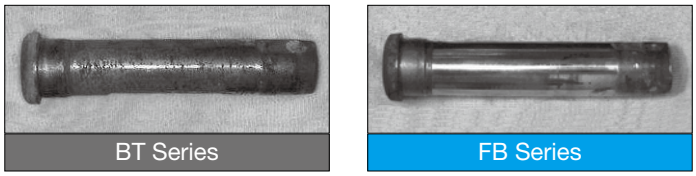
A solid lubricant is bonded between pin and bush, and a seal is attached between links to provide over twice the wear elongation life of previous BT Series chain. It is also quieter (-2dB(A)).



① Solid lubricant ensures lubrication
② Seal structure shuts conveyed material out
③ Seal structure retains solid lubricant

2x the life
of BT Series
In-house test comparison

◆ Comparison of Pins after Testing

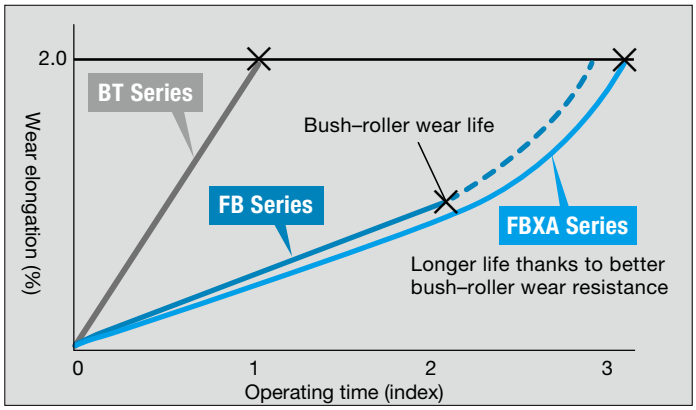


FBXA Series Conveyor Chain

Series: FBXA

- **The FBXA Series has FB Series specifications plus a unique roller mechanism that improves the wear resistance between the pin, bush, and roller**
- **Specifically for bucket elevators**

3x the life
of BT Series
In-house test comparison



In-house test comparison. May vary depending on operating conditions.

Ordering FB Series Conveyor Chain (Made to Order)

Model Numbering Example

RF12200S-FBBT-2LGA4+200L-PR-H

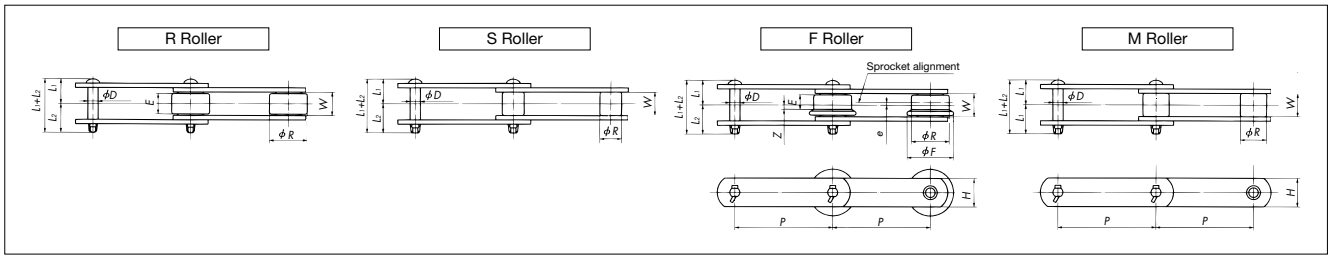
- Size: RF12
- Roller Type: S
- Series: FBBT
- Attachment spacing: GA4
- No. of links: 200L
- Attachment type: PR
- Option: H
- End link

Ordering Example

Size: RF12 Pitch: 200mm Roller type: S Roller
Product: FB Series (base chain BT Series)
Attachment type/spacing: GA4 every 2nd link
Quantity: 200 links x 2 parallel strands, half assembled in mirror image

Chain Number	Quantity	Unit
RF12200S-FBBT-2LGA4+200L-PR-H	2	H

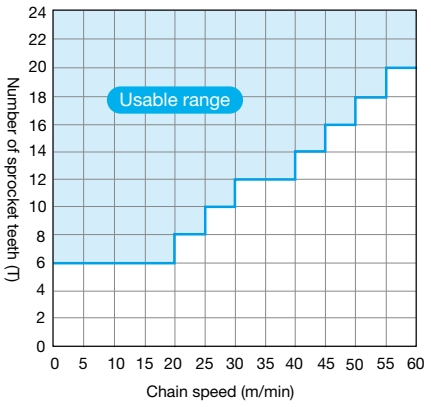
Note: Specify the model number and contact a Tsubaki representative for a quote.



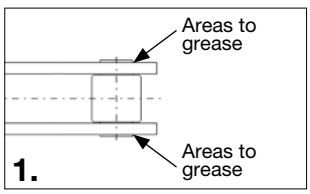
■ Base Chain Dimensions

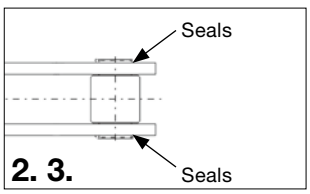
Size	Roller Type		Average Tensile Strength		Pitch	Inner Link Inner Width		Plate	Pin			Roller								
												R Roller		F Roller					S Roller	M Roller
	FB Series	FBXA Series	FBCT	FBBT FBXA		FB Series	FBXA Series													
			kN{kgf}	kN{kgf}								Dia.	Contact Face Width	Dia.	Flange Dia.	Contact Face Width	Offset		Dia.	Dia.
					P	W		H	L_1+L_2	L_1	L_2	R	E	R	F	E	e	Z	R	R
RF08125	R/S	–	11.2 {1140}	14.0 {1430}	125	24.6	–	28.6	65.5	31.0	34.5	44.5	22	–					22.2	–
RF08150		–			150															
RF10100	R/F/S/M	M	17.6 {1790}	32.3 {3290}	100	27.6	24.8	38.1	69.0	33.0	36.0	50.8	24	50.8	65.0	19.0	3.0	6.5	29.0	31.8
RF10125	R/F/S/M				125															
RF10150					150															
RF12200	R/S/M	S/M	26.6 {2710}	39.9 {4060}	200	34.8		44.5	83.5	40.5	43.0	65.0	31	65.0	80.0	23.0	4.0	7.5	34.9	38.1
RF12250					250															
RF17200	R/F/S/M	S/M	35.0 {3570}	55.3 {5640}	200	49.2		50.8	109.5	51.5	58.0	80.0	43	80.0	100.0	34.0	5.0	12.0	40.1	44.5
RF17250					250															
RF17300					300															
RF26200	R/S/M	S/M	44.9 {4570}	74.3 {7580}	200	54.9	51.7	63.5	116.5	55.5	61.0	100.0	49	100.0	125.0	37.0	6.0	12.5	44.5	50.8
RF26250	R/F/S/M				250															
RF26300					300															
RF26450					450															

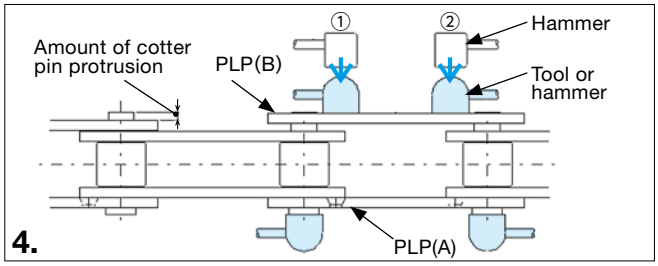
Note: 1. The W dimension on FB Series and FBXA Series differs from other large size conveyor chains. With the exception of some sprockets, RF conveyor chain sprockets can be used as is, but be sure that the plates do not contact the sprocket teeth.
The FBXA Series' RF10 and RF26 sizes require dedicated sprockets. Also, contact a Tsubaki representative regarding connecting FB Series and FBXA Series with other companies' chains.
2. Refer to the Tsubaki *Large Size Conveyor Chains and Sprockets* catalog for more information on attachment types and chain selection/handling.
When using GA2 or GA4 attachments on FBXA Series chain, the flat-head bolts may slightly protrude from the plate.
3. Sizes other than those shown above available (including inch pitches). Contact a Tsubaki representative for more information.
4. Be aware that thrust loads on the chain may cause the seal to break and promote wear.
5. Contact a Tsubaki representative regarding use in a corrosive environment or when the operating temperature range is greater than 80°C.
6. The FBXA Series has allowable chain speed. Refer to the graph at right. Contact a Tsubaki representative regarding use at speeds of 60 m/min or higher.
7. The FBXA Series will reach the end of its life when the roller thickness has worn down by 40% or more. For other usage limits, refer to the Tsubaki *Large Size Conveyor Chain & Sprockets* catalog.



Chain Connection







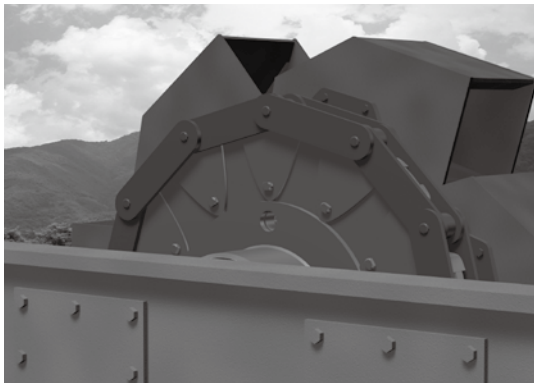
1. Lightly grease around the ends of the bushes (both sides) protruding from the end of the inner link plate on each chain formation.
*Be careful that grease does not get into the inner diameters of the bushes.
2. Attach a seal to the protruding areas of the bushes (both sides).
3. Insert the inner link into the outer link of the chain you want to connect, taking care that the seal does not fall off or shift.
4. Set a tool or hammer against the cotter pin on the T-pin side as shown in the diagram below. Fix the hammer securely on the head of the cotter pin and tap the hammer or tool on the T-pin side with the hammer to press fit the cotter pin into the link pin. Alternate tapping cotter pins (1) and (2) on both sides of the link. Tap the cotter pins so that they protrude an amount specified in the chart below.
*Contact a Tsubaki representative regarding our selection of chain connection tools.
5. Insert a T-pin and use a T-pin bending tool to bend the T-pin so that it does not fall out.
*A monkey wrench can be used in place of a T-pin bending tool.

Size	Amount of Cotter Pin Protrusion on the T-pin Side mm
RF08 / RF10 / RF12	7.5
RF17 / RF26	12.0

Industry Specific Products

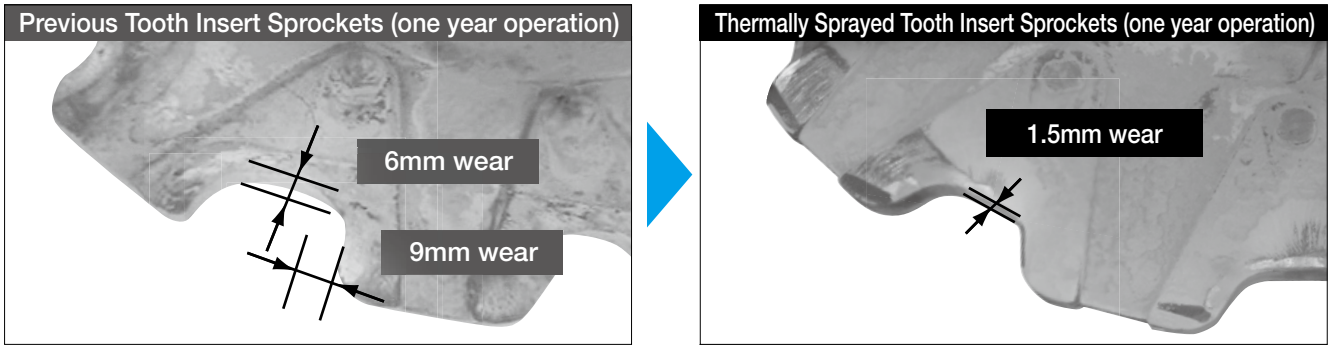
Thermally Sprayed Replaceable Tooth Insert Sprockets

Smart Series Thermally Sprayed Replaceable Tooth Insert Sprockets



Ideal for sprockets used in conveying powders that are subject to severe wear

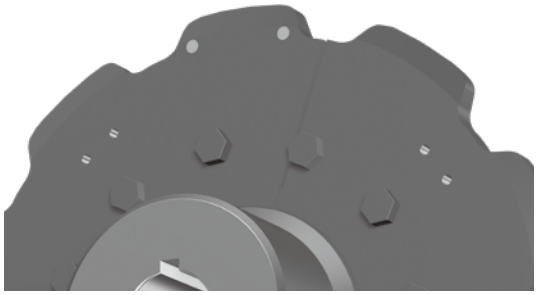
Thermally sprayed replaceable tooth insert sprockets undergo a special hardening treatment that imparts outstanding wear resistance, thereby dramatically extending wear life. When combined with the FB Series, the service life of bucket elevator chains and sprockets is significantly lengthened.



While normal replaceable tooth insert sprockets suffered on average 6.0 to 9.0mm of wear in one year of operation, thermally sprayed tooth insert sprockets suffered only 1.5mm of wear.

See p.55 for Smart Series

Indicator Pins



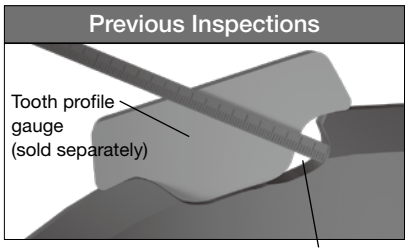
Sprocket tooth wear is usually difficult to judge, but Indicator Pins let you know when to replace your sprockets with just a glance. (Patented)

Ordering Indicator Pins

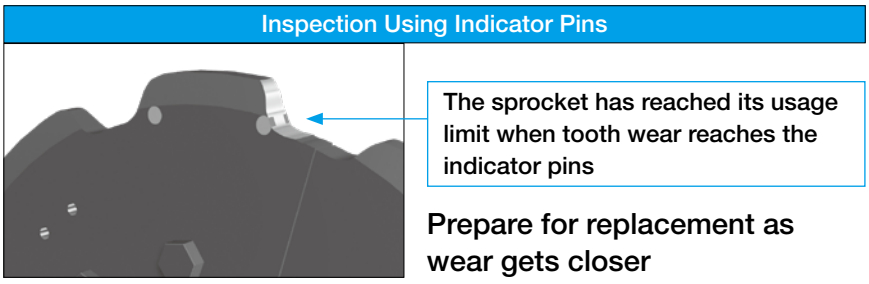
Ordering Example

RF12250S12T-BW1Q-SRK-E

E: Indicator pins



Measures the gap between the worn tooth and the tooth profile gauge



The sprocket has reached its usage limit when tooth wear reaches the indicator pins

Prepare for replacement as wear gets closer

Features

Lets you know when to replace your sprockets with just a glance

- Greatly reduces inspection time and labor
- Inspections can be done safely
- No need for tooth profile gauges or other specialty tools

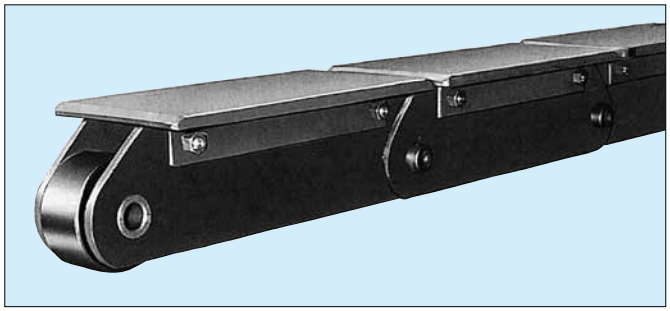
Specifications

Sprocket color : Blue lacquer
Indicator pin : Embedded brass pin
Location : Embedded in two places on both sides of the sprocket tooth at 0° and 180°. When shaft holes are finished, indicator pins will be embedded in the tooth above the keyway.

Coil Transfer Conveyor Chain

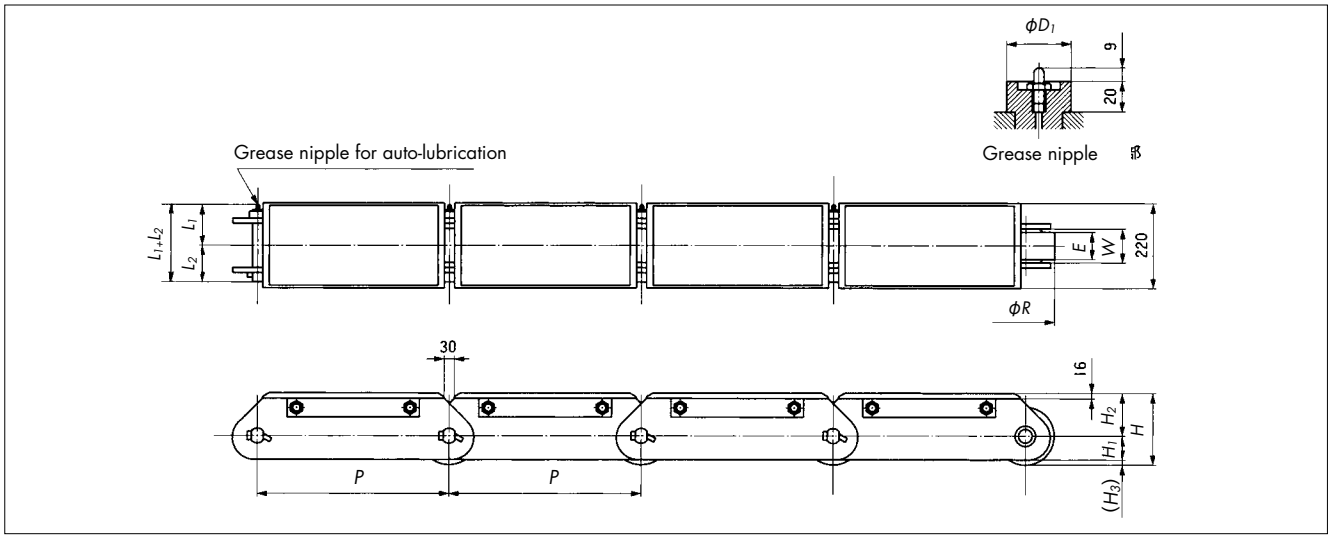
Chain No. p.21 | p.17 | p.156

Coil Transfer Conveyor Chain (For Low Friction/Heavy Load Applications)



This extremely rigid reinforced chain is used for conveying especially heavy objects, such as containers, steel structures, and cold/hot coils and slabs at steelworks.

1. Uses Tsubaki's unique bearing system of cylindrical bearings between the roller and bush.
2. This solid chain has low running resistance (coefficient of friction: 0.03) , and the top plate can be easily attached or removed, making maintenance a snap.
3. Rollers are designed with extremely high fracture resistance.



Size	Pitch P	Roller Dia. R	Roller Contact Width E	Inner Link Inner Width W	Chain Height H	Chain Height H1	Chain Height H2	Chain Height H3	Pin Head Dia. D1	Pin L1+L2	Pin L1	Pin L2	Approx. Mass (kg/m)	Max. Allowable Load Tension kN{kgf}	Roller Allowable Load kN{kgf/each}
CT60300	300	125	60	65	171	42.5	108.5	20	36	165	88	77	90	83.3 {8500}	29.4 {3000}
CT60400	400												82		
CT60500	500												78		
CT90300	300	135	65	79	182.5	54	115	13.5	36	179	95	84	99	126 {12800}	35.3 {3600}
CT90400	400												91		
CT90500	500												87		
CT130300	300	150	70	84	195	61	120	14	46	197	104	93	123	181 {18500}	42.2 {4300}
CT130400	400												112		
CT130500	500												105		
CT160400	400	175	80	91	227	69	139.5	18.5	46	205	108	97	135	224 {22800}	55.9 {5700}
CT160500	500												126		
CT160600	600												118		
CT200600	600	180	90	102.6	225	76	135	14	50	229	119	110	141	279 {28500}	64.7 {6600}

Note: 1. Contact a Tsubaki representative regarding delivery.
2. Roller allowable load values are when rail tensile strength is 400N/mm²{41kgf/mm²}.
3. Top plate widths over 220 available upon request. Contact a Tsubaki representative for more information.
4. The above dimensions are nominal dimensions and may differ from actual dimensions.

Ordering Coil Transfer Conveyor Chain (Made to Order)

Model Numbering Example

CT90300+400L-PR

Size | Pitch | No. of Links | End Link

Ordering Example

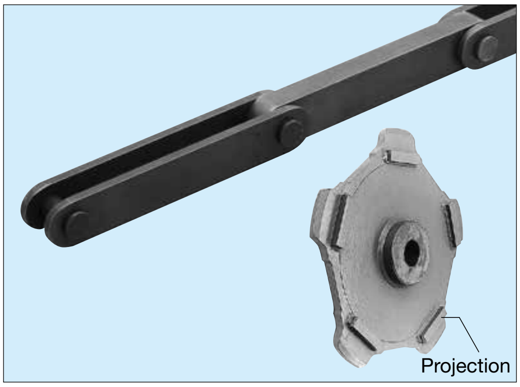
Size: CT90 Pitch: 300mm
Quantity: 400 links

Chain Number	Quantity	Unit
CT90300+400L-PR	1	H

Note: Specify the model number and contact a Tsubaki representative for a quote.

Industry Specific Products Block Chain

Block Chain



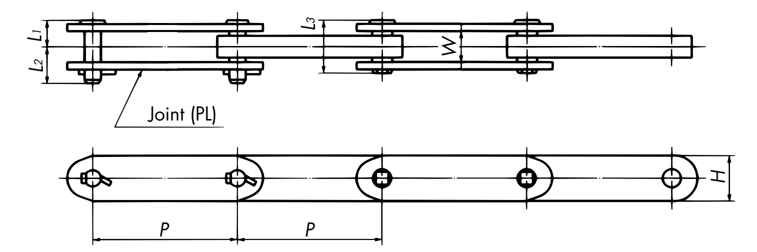
Simple, Yet Tough

This chain, consisting of two outer plates, one or two inner plates, and pins, offers structurally superior rigidity with the largest tensile strength by chain mass for toughness. The main parts use tempered steel for outstanding wear and heat resistance. Dogs are attached as per the diagrams below.

Applications

1. Shuttle traction
2. Conveying high temperature items (loaded directly on chain)
3. Draw benches

◆ Please use an outer plate support to reduce inner chain tension on the sprocket.

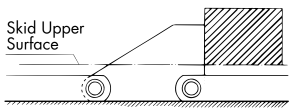


Size	Pitch P	Link Height H	Pin L_1	Pin L_2	Pin L_3	Outer Link Inner Width W	Approx. Mass kg/m	Min. Tensile Strength kN	Min. Tensile Strength {kgf}
NF30150	150	38.1	24.5	32	49	23.3	7.0	263	{27000}
NF30200	200						6.6		
NF40150	150	44.5	25.5	33.5	52	26.5	9.0	337	{34500}
NF40200	200						8.5		
NF56200	200	54	29.5	40.5	60	29.5	12.3	471	{48000}
NF56250	250						12.0		
NF63200	200	57	30.5	41.5	62	31.5	13.7	525	{53500}
NF63250	250						13.0		
NF70200	200	63.5	31.5	42.5	64	33.5	16.2	613	{62500}
NF70250	250						15.5		
NF90200	200	72	34.5	45.5	70	38	21.0	771	{78500}
NF90250	250						20.0		
NF115250	250	76.2	38	49	77	40	25.0	952	{97000}
NF115300	300						24.0		
NF140250	250	85	44	54	88	47.5	32.0	1190	{121500}
NF140300	300						31.0		
NF180300	300	95	48.5	58.5	97	52.5	39.0	1480	{151000}
NF180350	350						37.8		
NF210300	300	110	51.5	61.5	103	59	50.0	1830	{186500}
NF210350	350						48.3		
NF250300	300	112	58.5	68.5	117	66	58.8	2070	{211000}
NF250350	350						56.7		
NF280300	300	122	58.5	68.5	117	67	66.0	2310	{235000}
NF280350	350						62.3		

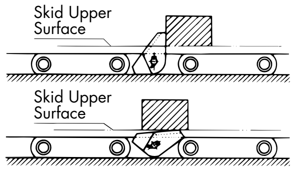
Note: 1. Contact a Tsubaki representative regarding delivery.
2. The above dimensions are nominal dimensions and may differ from actual dimensions.

There are many types of dogs, but the following outlines some of the most common ones.

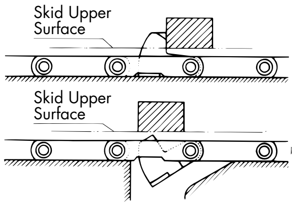
1. Fixed Dog
The inner or outer plate is heightened to push conveyed items.



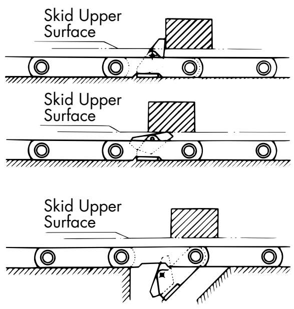
2. Tilting Dog
Conveyed items in front are pushed along as with the fixed dog, but when items come from behind the dog tilts forward to allow the item to pass by. Once the item has passed, the dog automatically returns to its former position.



3. Ducking Dog
This dog conveys items traveling on the guide rail, but when there is a break in the guide rail the dog ducks and the conveyed item is lowered as is.



4. Tilting Ducking Dog
This dog combines both the functions of tilting and ducking dogs. Conveyed items running on the guide rail are pushed along, while items coming from behind are allowed to pass. When there is a break in the guide rail the conveyed item is lowered as is.



Ordering Block Chain (Made to Order)

Model Numbering Example

NF56200+400L-PR

Size — Pitch — No. of Links — End Link

Ordering Example

Size: NF56 Pitch: 200mm
Quantity: 400 links

Chain Number	Quantity	Unit
NF56200+400L-PR	1	H

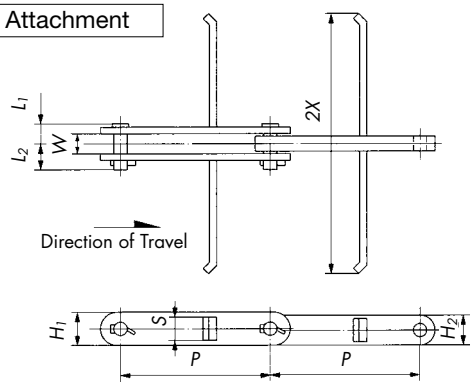
Note: Specify the model number and contact a Tsubaki representative for a quote.

Block Chain for Flow Conveyors

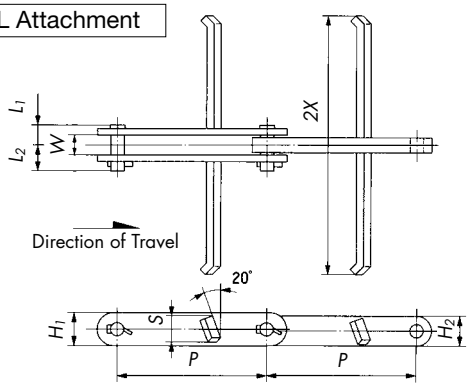
Block Chain for Flow Conveyors consists of two outer plates, one inner plate, and pins, with one of various attachments for flow conveyors added. Special alloy steel gives the chain toughness, and its high allowable wear makes it perfect for conveying highly abrasive items, relatively damp items, and high temperature items.

◆ Please use an outer plate support to reduce inner chain tension on the sprocket.

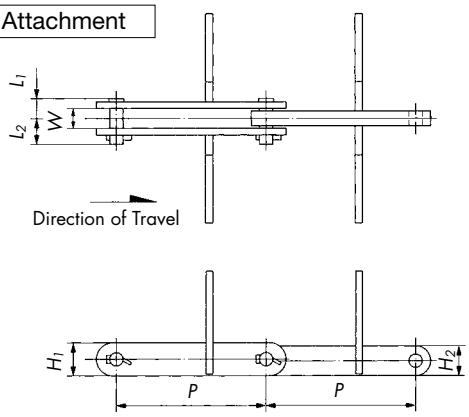
L Attachment

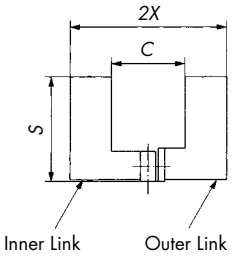


KL Attachment



W Attachment





When a flow attachment is installed on every other link, it is normally mounted on an inner link. In this case, append the suffix RL to the end of the model number (example: 2LKL15RL).

Size	Pitch P	Link Height H1	Link Height H2	Pin Length L1	Pin Length L2	Outer Plate Inner Width W	Approx. Mass {kg/m}	Min. Tensile Strength kN{kgf}	Wing Width 2X	L Attachment Height S	L Attachment Additional Mass/Each (kg)	KL Attachment Height S	KL Attachment Additional Mass/Each (kg)	W Attachment Height S	W Attachment C	W Attachment Additional Mass/Each (kg)	Case Inner Width (mm)
NFX30150	150	44.5	38.1	24.5	32	23.3	7.9	263{27000}	135	Contact a Tsubaki representative	0.18	Contact a Tsubaki representative	0.18	80	60	0.33	150
									185		0.26		0.26	115	85	0.68	200
									250		0.36		0.36	140	105	1.12	270
NFX30200	200						7.6		330		0.74		0.74	185	130	2.94	350
									430		0.98		0.98	230	135	5.14	450
NFX56200	200	63.5	54.0	29.5	40.5	29.5	14.7	471{48000}	390		1.3		1.3	233	100	5.0	410
NFX56250	250						14.5		430		1.44		1.44	230	135	5.2	450
									560		1.92		1.92	290	160	8.6	580

Note: The above dimensions are nominal dimensions and may differ from actual dimensions.

Ordering Block Chain for Flow Conveyors (Made to Order)

Model Numbering Example

NFX30150-1LKL15+400L-PR

- NFX30150 — Size / Pitch
- 1 — Attachment Spacing
- LKL — Attachment Type
- 15 — Case Inner Width
- 400 — No. of Links
- L — End Link
- PR

Ordering Example

Size: NFX30 Pitch: 150mm
Attachment Spacing/Type: KL every Link
Case Inner Width: 150mm Quantity: 400 links

Chain Number	Quantity	Unit
NFX30150-1LKL15+400L-PR	1	H

Note: Specify the model number and contact a Tsubaki representative for a quote.

Special Attachment Conveyor Chain

Model Numbering Example

RF10150F–DT–1L CA2+400L–PR–H

- Size
- Roller Type
- Series
- Attachment Spacing
- Attachment Type
- Number of Links
- End Link
- Option

■ Special Attachment List

CA2	p.116	TP1 (TP2)	p.119
AA3		TRO	
A2R		OR	
MG2	p.117	GSA (GSK)	p.120
AS2		GR	
AF2		KD1 (KD2)	p.121
WSA0	p.118	RD	
EP1 (EP2/EP3)		CD	p.122
ST		RCD	
		DD	

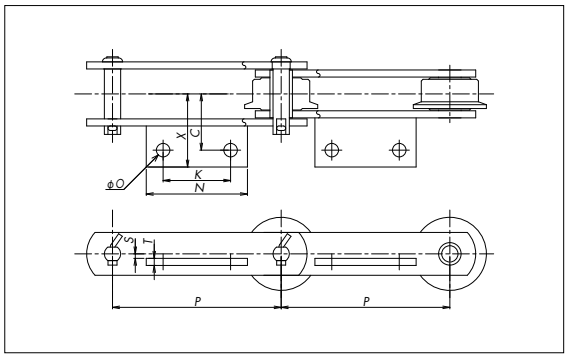
Note: Be sure to specify "half assembled in mirror image (option code H)" when using two strands of special attachment conveyor chain in parallel. In addition, be sure to specify "half assembled in mirror image (incl. T-pin)" when the direction of the T-pins on the two strands of chain need to face the same direction.

Special Attachment Conveyor Chain

Chain No. p.21

CA2 Attachment (CA2)

This attachment is for mounting a wire mesh or other endless belt to an inelastic chain.
Contact a Tsubaki representative about changes to the S dimension and diagonal attachments.



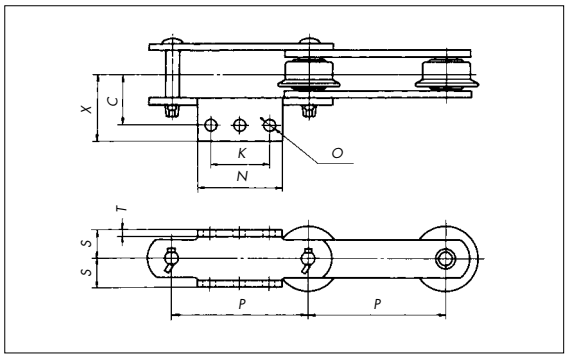
Size	Pitch P	C	X	N	K	T	O	S
RF05100	100	40	52	65	40	4.5	10	3
RF05150	150			85	60			
RF450	101.6	50	64	70	40	6.3	12	4
RF10100	100	50	65	70	40	6.3	12	4
RF10150	150			90	60			
RF6205	152.4	60	79	100	60	7.9	15	5
RF12200	200	60	79	120	80	7.9	15	5
RF12250	250			165	125			
RF17200	200	75	98	120	80	9.5	15	6
RF17250	250			165	125			
RF26200	200	80	105	120	80	9.5	15	6
RF26250	250			165	125			
RF36300	300	100	125	180	120	12	19	8

Note: If CA attachment positioning is below chain center, T-pin insertion will be opposite. (Basically, CA attachments are attached below chain center. Separate instructions are needed for attaching above chain center. The base chain is equivalent to a conveyor chain.)

◆ Suitable Roller Types : R / F / S
◆ Attachment Type : CA2

AA3 Attachment (AA3)

This bracket-shaped attachment allows for mounting both above and below the chain. Perfect for times when slight phase differences from scrapers, etc. cause a variable load on the chain (use the center hole), or when a strong moment of inertia is applied to the scraper.

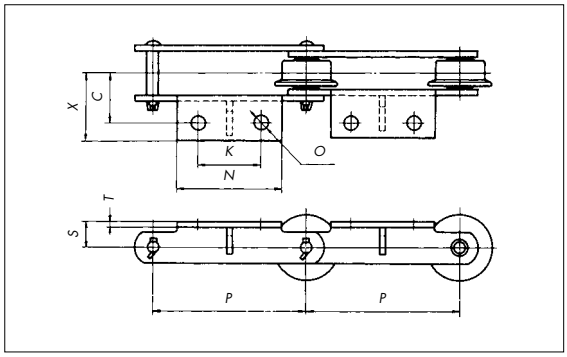


Size	Pitch P	S	C	X	N	K	T	O
RF05100	100	22	35	52	65	40	4.5	10
RF05150	150				85	60		
RF10100	100	28	50	65	70	40	6.3	12
RF10150	150				90	60		
RF6205	152.4	38	60	79	100	60	7.9	15
RF12200	200	38	60	79	120	80	7.9	15
RF12250	250				165	125		

◆ Suitable Roller Types : R / F / S
◆ Attachment Type : AA3

A2R Attachment (A2R)

This attachment features a reinforcing rib on an A2 attachment for at least 2 times the bending strength.



Size	Pitch P	S	C	X	N	K	T	O	Bolt Used
RF05100	100	22	35	47	65	40	4.5	10	M 8
RF05150	150				85	60			
RF10100	100	28	50	67	70	40	6.3	12	M10
RF10150	150				90	60			
RF6205	152.4	38	60	79	100	60	7.9	15	M12
RF12200	200	38	60	79	120	80	7.9	15	M12
RF12250	250				170	125			
RF17200	200	45	75	100	120	80	9.5	15	M12
RF17250	250				170	125			

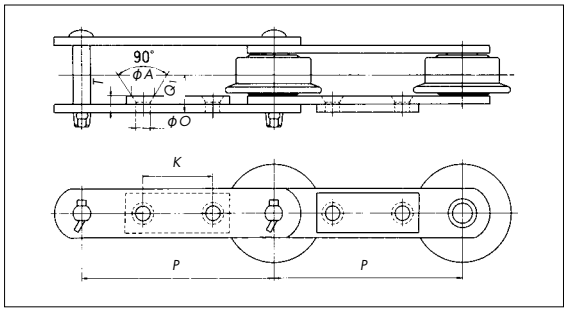
◆ Suitable Roller Types : R / F / S
◆ Attachment Type : A2R

Note: The above dimensions are nominal dimensions and may differ from actual dimensions.

Special Attachment Conveyor Chain

MG2 Attachment (MG2)

The mounting face is flush, so only one type of attachment is needed (pan, apron, bolt).

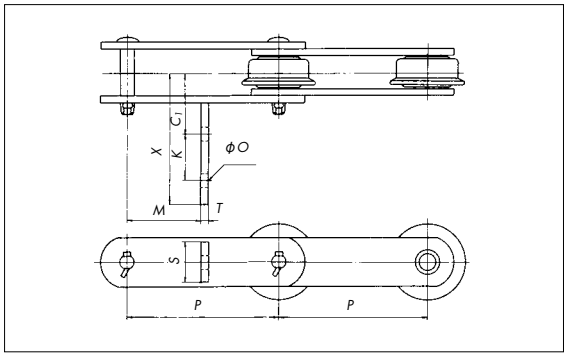


Size	Roller Type	Pitch P	K	T	Q1	A	O	Max. Length of Att. Bolt		Bolt Used
								Outer Link	Inner Link	
RF05100	R/S	100	40	9	21	15	10	31	26	M8
RF05150	R/F/S	150	60							
RF10150	R/F/S	150	60	12.6	28.5	20	12	43	35	M10
RF6205	R/F/S	152.4	50	15.8	35.5	26	15	55	45	M12
RF12200	R/F/S	200	80	15.8	35.5	26	15	55	45	M12
RF12250	R/F/S	250	125							
RF17200	R/F/S	200	70	19	45.5	26	15	71	61	M12
RF17250	R/F/S	250	110							
RF17300	R/F/S	300	150							
RF26300	R/F/S	300	140	19	48	26	15	78	67	M12
RF26450	R/F/S	450	220							
RF36450	R/F/S	450	220	25.4	59.5	32	19	92	75	M16
RF36600	R/F/S	600	300							

◆ Attachment Type : MG2

AS2 Attachment (AS2)

The perfect shape for mounting scrapers and other attachments. Can be attached to both sides of the chain (KS2).

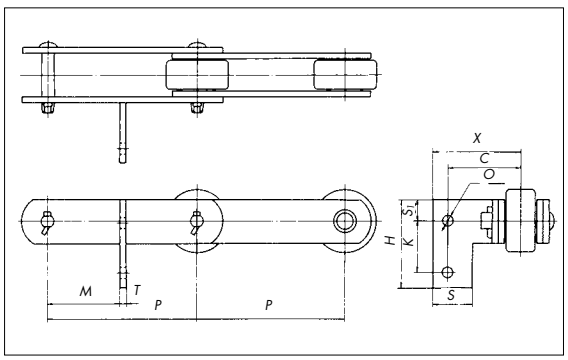


Size	Pitch P	C1	K	X	O	S	M	T
RF03075	75	28.3	20	61	9	20	36	3.2
RF03100	100							
RF05100	100	38.8	20	72	9	28	37	4.5
RF05150	150							
RF450	101.6	46.6	25	85	11	25	37	6
RF10100	100	54.6	30	100	11	34	47	6
RF10150	150							
RF6205	152.4	63.9	50	132	14	40	57	6
RF12200	200	63.9	50	132	14	40	57	6
RF12250	250							
RF17200	200	80.8	70	175	14	46	66	9
RF17250	250							
RF17300	300							
RF26200	200	91.7	100	215	14	58	75	9
RF26250	250							
RF26300	300							
RF26450	450							
RF36300	300	110	120	260	18	70	84	12
RF36450	450							

◆ Suitable Roller Types : R / F / S
◆ Attachment Type : AS2

AF2 Attachment (AF2)

The perfect shape for mounting scrapers and other attachments. Especially ideal for deep scrapers. Can also be attached to both sides of the chain (KS2).



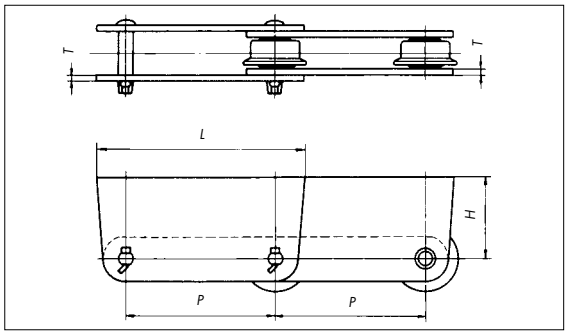
Size	Pitch P	C	X	K	S1	H	S	O	M	T
RF03075	75	31.3	48	20	10	40	32	9	36	3.2
RF03100	100									
RF05100	100	36.9	53	25	14	53	32	9	37	4.5
RF05150	150									
RF450	101.6	46.1	65	25	12.5	50	38	11	37	6
RF10100	100	47.6	67	30	17	64	38	11	47	6
RF10150	150									
RF6205	152.4	57.4	80	50	20	90	44	14	57	6
RF12200	200	57.4	80	50	20	90	44	14	57	6
RF12250	250									
RF17200	200	70.8	96	70	23	116	50	14	70	9
RF17250	250									
RF17300	300									
RF26200	200	73.7	99	100	29	158	50	14	80	9
RF26250	250									
RF26300	300									
RF26450	450									
RF36300	300	92.4	125	120	35	190	65	18	90	12
RF36450	450									

◆ Suitable Roller Types : R / F / S
◆ Attachment Type : AF2

Note: The above dimensions are nominal dimensions and may differ from actual dimensions.

WSA0 Attachment (WSA0)

One side of the plate is made taller to prevent conveyed items from spilling over. Normally used with CA attachments. (See page 116.)

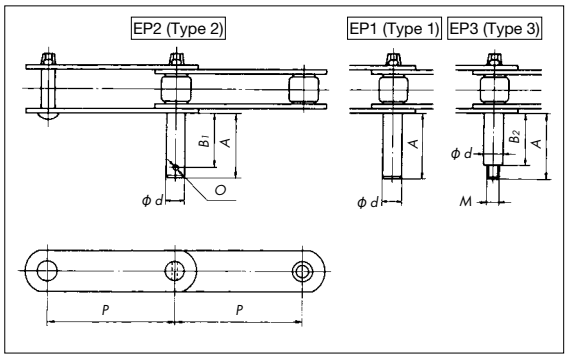


Size	Pitch P	H	L	T
RF03100	100	60	160	3.2
RF05100	100	70	170	4.5
RF10100	100	80	180	6.3
RF10150	150		230	
RF6205	152.4	100	250	7.9
RF12200	200	100	300	7.9
RF12250	250		350	
RF17200	200	120	320	9.5
RF17250	250		370	

◆ Suitable Roller Types : R / F / S
◆ Attachment Type : WSA0

Extended Pin (EP□)

One side of the pin is extended. There are three different types, depending on pin shape.
See page 14 for attachment spacing.

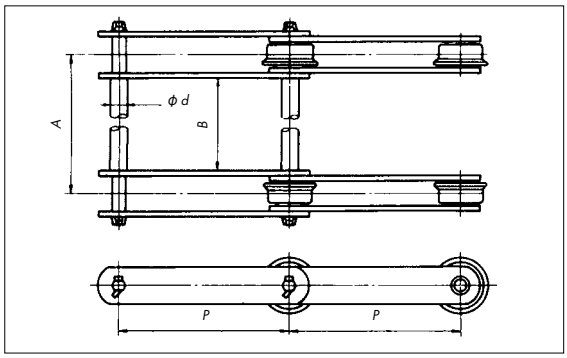


Size	Pitch P	φd	A	B_1	B_2	O	M
RF03100	100	11	40	34	27	4	M10
RF05100	100	15	50	42	34	5	M12
RF05150	150						
RF450	101.6	15	50	42	34	5	M12
RF10100	100	18	60	51	40	6	M16
RF10150	150						
RF6205	152.4	20	70	61	50	6	M16
RF12200	200	20	70	61	50	6	M16
RF12250	250						
RF17200	200	22	80	71	56	6	M20
RF17250	250						
RF17300	300						
RF26250	250	28	90	78	61	8	M24
RF26300	300						
RF26450	450						
RF36300	300	30	100	85	71	10	M24
RF36450	450						

Note: Contact a Tsubaki representative if the chain must be fitted with extended pins.
◆ Suitable Roller Types : R / F / S
◆ Attachment Type : EP□ □ 1: Type 1 2: Type 2 3: Type 3

Stay Pin (ST)

Two strands of chain are connected by one pin. Items can be carried on top of the pin, or nets, aprons, etc. can be mounted using a CA2 attachment.



Size	Pitch P	φd	A MAX	B	DT Series Avg. Tensile Strength kN{kgf}
RF03100	100	11	500	A-31	37.2{3800}
RF05100	100	15	700	A-42	77.8{7900}
RF05150	150				
RF450	101.6	15	800	A-55	85.8{8750}
RF10100	100	18	1000	A-58	123{12500}
RF10150	150				
RF6205	152.4	20	1100	A-71	183{18500}
RF12200	200	20	1100	A-71	183{18500}
RF12250	250				
RF17200	200	22	1300	A-92	245{25000}
RF17250	250				
RF17300	300				
RF26250	250	28	1500	A-98	327{33500}
RF26300	300				
RF26450	450				
RF36300	300	30	1500	A-120	526{53500}
RF36450	450				

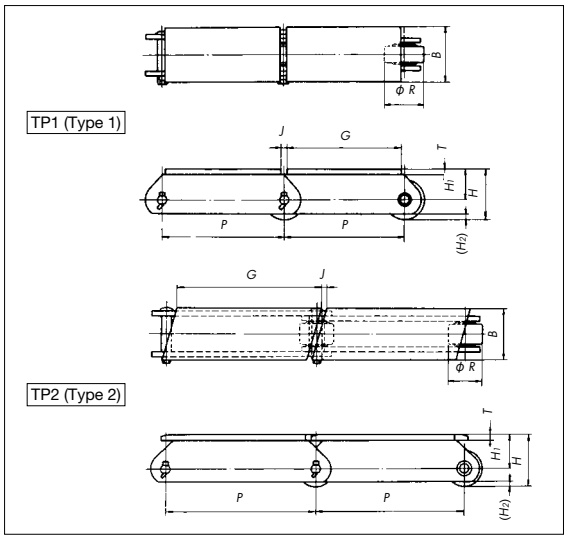
Note: Chain quantity is not in individual strands. One pitch of multiple strands of chain is considered one link. See p.22 for details.
◆ Suitable Roller Types : R / F / S
◆ Attachment Type : ST

Note: The above dimensions are nominal dimensions and may differ from actual dimensions.

Special Attachment Conveyor Chain

Top Plate (TP□)

Top Plates are welded onto Deep Link Conveyor Chain so as not to damage items placed directly on the chain. There are two different plate types. Type 2 prevents round objects from falling into the chain. (Can also be manufactured as Bearing Roller Conveyor Chain.)



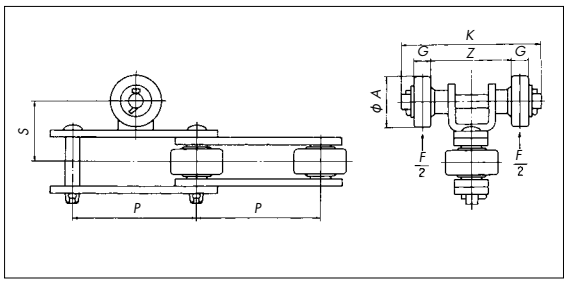
Size and Roller Type	Pitch *P*	Roller Dia. *R*	*G*	*J*	*B*	*H*	*H*1	Ref. (*H*2)	*T*
RF03100R	100	31.8	95	5	50	41.4	25.5	4.9	4.5
RF05100R	100	40	95	5	65	50	30	4	6
RF05150R	150		145						
RF10150R	150	50.8	145	5	75	66.4	41	6.3	9
RF6205R	152.4	57.2	147.5	5	90	72.6	44	6.3	9
RF12200R	200	65	195	5	90	82.5	50	10	9
RF12250R	250		245						
RF17250R	250	80	240	10	125	102	62	14.6	12
RF17300R	300		290						
RF26300R	300	85	290	10	125	107.5	65	10.7	12
RF36300R	300	100	290	10	150	128	78	11.9	16
RF36450R	450		440						

Note: Contact a Tsubaki representative when using a Bearing Roller Conveyor Chain. It will be necessary to change the roller (spacer) material.

◆ **Suitable Roller Types : R**
◆ **Attachment Type : TP□ □ 1: Type 1 2: Type 2**

Trolley Roller (TRO)

The roller supports the chain and heavy loads on horizontal revolving conveyors.



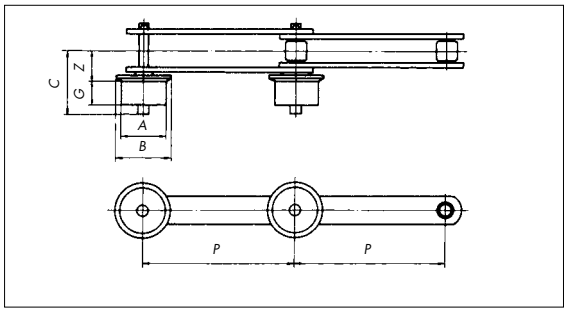
Note: The sprocket hub may interfere with the chain. Contact a Tsubaki representative.

Size and Roller Type	Pitch *P*	*S*	*A*	*G*	*Z*	*K*	Trolley Roller Allowable Load *F* (Total for both sides) kN{kgf}
RF03075R	75	35	31.8	12	50	88	0.69 {70}
RF03100R	100						
RF05100R	100	45	40	14	60	107	1.18{120}
RF05150R	150						
RF10100R	100	60	50.8	20	75	138	1.96{200}
RF10150R	150						
RF6205R	152.4	70	57.2	25	85	173	2.75{280}
RF12200R	200	70	57.2	25	90	178	2.75{280}
RF12250R	250						
RF17200R	200	85	65	25	105	185	3.14{320}
RF17250R	250						

◆ **Suitable Roller Types : R**
◆ **Attachment Type : TRO**

Outboard Roller (OR)

An outboard roller is attached to one side of this chain to support heavy loads without damaging the pin. Bearing, anti-dust bearing, and bearing roller types are available to match your application needs.



Size and Roller Type	Pitch *P*	*A*	*B*	*G*	*Z*	Max. Dim. *C*	Allowable Load per Roller kN{kgf}
RF10150S	150	50.8	65	20	37	72	1.77{180}
RF12200S	200	65	80	24	46	87	1.96{200}
RF12250S	250						
RF17200S	200	80	100	34	60	116	2.26{230}
RF17250S	250						
RF26250S	250	100	125	38	65	125	3.53{360}
RF26300S	300						
RF36300S	300	100	125	38	76	137	5.00{510}
RF36450S	450						

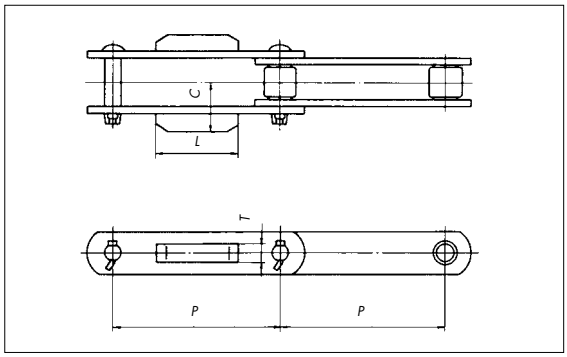
Note: Roller allowable load is for when attachments are added to the outboard roller side.

◆ **Suitable Roller Types : S**
◆ **Attachment Type : OR**

Note: The above dimensions are nominal dimensions and may differ from actual dimensions.

Guide Shoe (GS□)

Guide shoes are used to prevent chain meandering. Contact a Tsubaki representative if the shoe needs tempering.

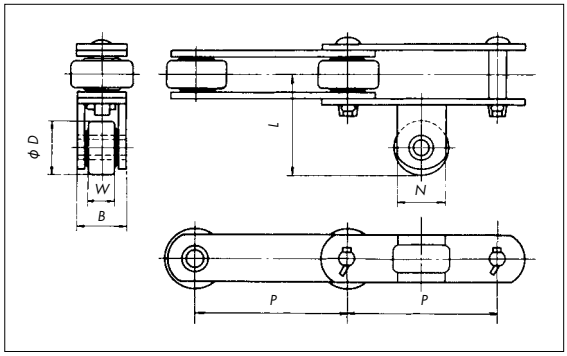


Size	Pitch P	L	T	C
RF03075	75	50	9.5	25
RF03100	100			
RF430	101.6	60	13	35
RF05100	100	60	13	34
RF05150	150			
RF450	101.6	60	13	40
RF08150	150	60	13	40
RF10100	100	60	16	45
RF10150	150			
RF214	101.6	60	16	49
RF6205	152.4	100	19	52
RF12200	200	100	19	52
RF12250	250			
RF17200	200	130	22	68
RF17250	250			
RF17300	300			
RF26200	200	130	28	77
RF26250	250			
RF26300	300			
RF26450	450			
RF36250	250	150	32	92
RF36300	300			
RF36450	450			
RF36600	600			

◆ Suitable Roller Types : R / S
◆ Attachment Type : GS□ □ A: One side K: Both sides

Guide Roller (GR)

Guide rollers can be used to prevent meandering and as a running roller with horizontal revolving conveyors.
The roller can be made from various materials, and heat treatment allows it to be used together with A, SA, G, and other attachments and pushers.



Size and Roller Type	Pitch P	D	W	B	N	L	Standard Guide Roller Allowable Load kN{kgf}
RF03075R	75	31.8	15.5	22.6	22	53	0.54 {55}
RF03100R	100						
RF430R	101.6	31.8	15.5	22.6	22	60	0.54 {55}
RF05100R	100	31.8	15.5	22.6	22	59	0.54 {55}
RF05150R	150						
RF450R	101.6	31.8	15.5	22.6	22	65	0.54 {55}
RF10100R	100	40	19	31.0	32	76	1.03{105}
RF10150R	150						
RF214R	101.6	40	19	31.0	32	80	1.03{105}
RF6205R	152.4	40	19	31.0	32	83	1.03{105}
RF12200R	200	40	19	31.0	32	83	1.03{105}
RF12250R	250						
RF17200R	200	44.5	23	39.6	28.6	100	1.27{130}
RF17250R	250						
RF17300R	300						

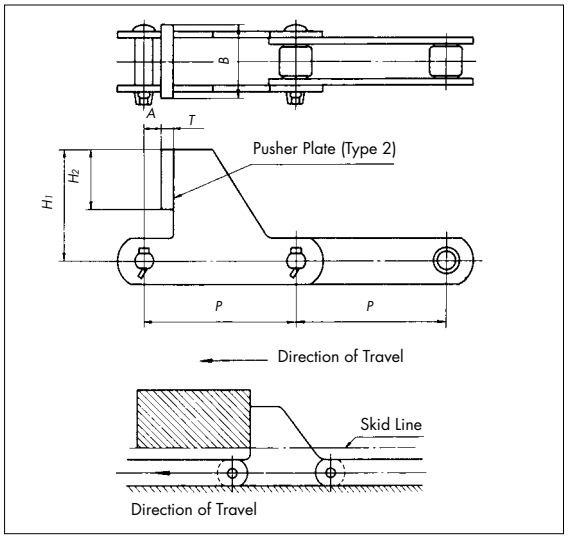
◆ Suitable Roller Types : R
◆ Attachment Type : GR

Note: The above dimensions are nominal dimensions and may differ from actual dimensions.

Special Attachment Conveyor Chain

Fixed Dog (KD□)

This attachment chain is used for conveying items on skids and pushing carts.

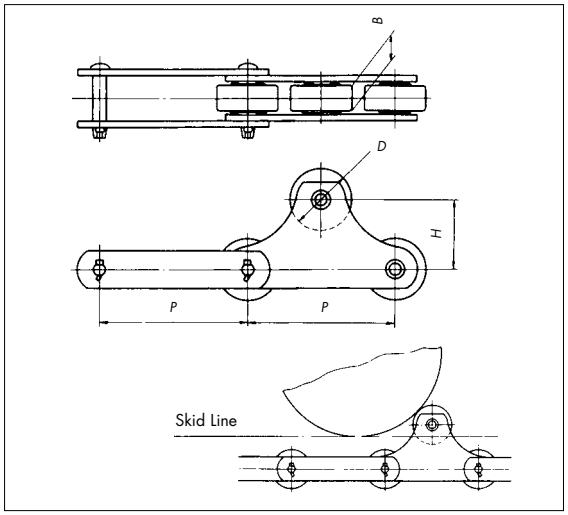


Size	Pitch P	With Pusher Plate (Type 2)					Without Pusher Plate (Type 1)	
		H_1	H_2	A	T	B	H_1	A
RF03075	75	70	50	20	4.5	40	50	24.5
RF03100	100							
RF05100	100	100	75	25	6.0	50	70	31
RF05150	150							
RF10100	100	130	100	30	9	65	90	39
RF10150	150							
RF6205	152.4	150	110	40	9	90	100	49
RF12200	200	150	110	40	9	90	100	49
RF12250	250							
RF17200	200	180	125	50	12	100	120	62
RF17250	250							
RF26200	200	210	150	60	12	110	–	–
RF26250	200							
RF26300	250							
RF36250	250	240	170	70	16	150	–	–
RF36300	300							
RF36450	450							

◆ Suitable Roller Types : R / S
◆ Attachment Type : KD1: Type 1, without pusher plate attached
KD2: Type 2, with pusher plate attached

Dog Roller (RD)

This attachment chain is used to prevent damage on the push side when cylindrical items are being conveyed by rolling, and to reduce rolling resistance.



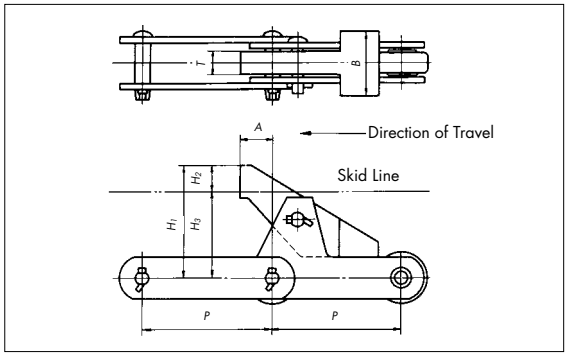
Size	Pitch P	H	D	B
RF03075	75	50	31.8	15.5
RF03100	100			
RF05100	100	60	40	19
RF05150	150			
RF10100	100	70	50.8	27
RF10150	150			
RF6205	152.4	80	57.2	32
RF12200	200	80	65	32
RF12250	250			
RF17200	200	120	85	50
RF17250	250			
RF26250	250	120	85	50
RF26300	300			
RF36300	300	150	100	56
RF36450	450			

◆ Suitable Roller Types : R / S
◆ Attachment Type : RD

Note: The above dimensions are nominal dimensions and may differ from actual dimensions.

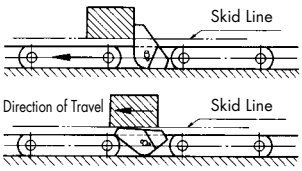
Tilting Dog (CD)

A tilting dog can push items in front of it, but when items come from behind the dog tilts forward to allow the conveyed items to pass by. Once the conveyed items have passed by, the dog automatically returns to its original position.
A side roller can also be used as the return side, or to prevent the dog from rising during conveyance.



Note: Sprocket teeth may interfere with the chain. This configuration is made to order; please contact a Tsubaki representative.

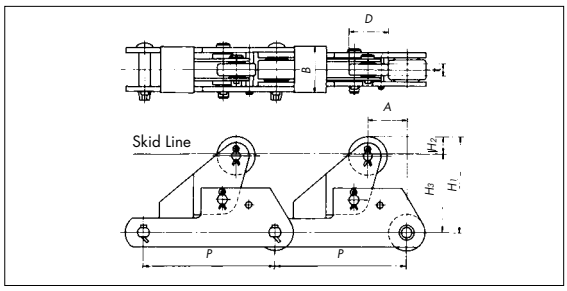
Size and Roller Type	Pitch P	H_1	H_2	H_3	A	T	B
RF03100R	100	70	15	55	10	15	22
RF05100R	100	90	20	70	13	21	32
RF05150R	150						
RF10100R	100	95	20	75	22	28	45
RF10150R	150						
RF6205R	152.4	130	30	100	30	35	55
RF12200R	200	130	30	100	30	35	55
RF12250R	250						
RF17200R	200	160	40	120	30	50	70
RF17250R	250						
RF26250R	250	195	50	145	30	55	75
RF26300R	300						
RF36300R	300	265	70	195	55	65	90
RF36450R	450						



◆ **Suitable Roller Types : R**
◆ **Attachment Type : CD**
Note: Contact a Tsubaki representative regarding dog allowable push strength.

Roller Tilting Dog (RCD)

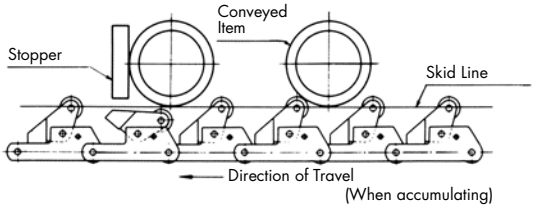
Allows for rolling conveyance of cylindrical items. It prevents items from escaping on downgrades. When there are conveyed items in front, the dog tilts, allowing for accumulation.



Note: Sprocket teeth may interfere with the chain. This configuration is made to order; please contact a Tsubaki representative.

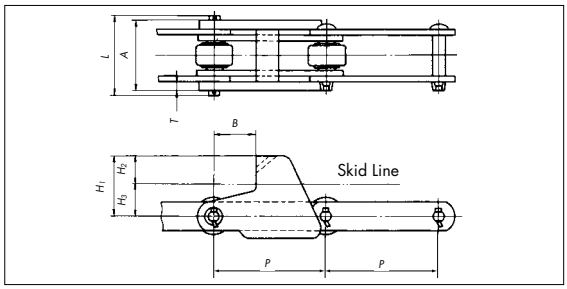
Size and Roller Type	Pitch P	H_1	H_2	H_3	A	D	t	B
RF10150R	150	120	20	100	35	44.5	15	55
RF12200R	200	150	30	120	50	57.2	20	75
RF17250R	250	200	50	150	60	70	33	150

◆ **Suitable Roller Types : R**
◆ **Attachment Type : RCD**
Note: Contact a Tsubaki representative regarding tilting dog allowable push strength.
Rollers can also be manufactured from plastic or lined with urethane rubber. Contact a Tsubaki representative for details.



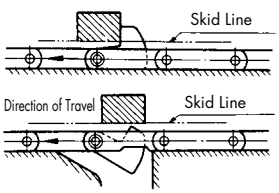
Ducking Dog (DD)

The dog conveys items on the guide rail, but when there is a break in the guide rail the dog ducks, letting conveyed items pass below.



Note: Sprocket teeth may interfere with the chain. This configuration is made to order; please contact a Tsubaki representative.

Size and Roller Type	Pitch P	H_1	H_2	H_3	A	B	L	T
RF03100R	100	45	15	30	43	60	65	6
RF05100R	100	55	20	35	60	50	83	9
RF10100R	100	60	20	40	82	40	110	12
RF10150R	150							
RF6205R	152.4	85	30	55	103	70	134	16
RF12200R	200	85	30	55	103	70	134	16
RF12250R	250							
RF17200R	200	100	40	60	131	100	168	19
RF17250R	250							



◆ **Suitable Roller Types : R**
◆ **Attachment Type : DD**
Note: Contact a Tsubaki representative regarding dog allowable push strength.

Note: The above dimensions are nominal dimensions and may differ from actual dimensions.

Chain and Sprockets for Water Treatment Plants

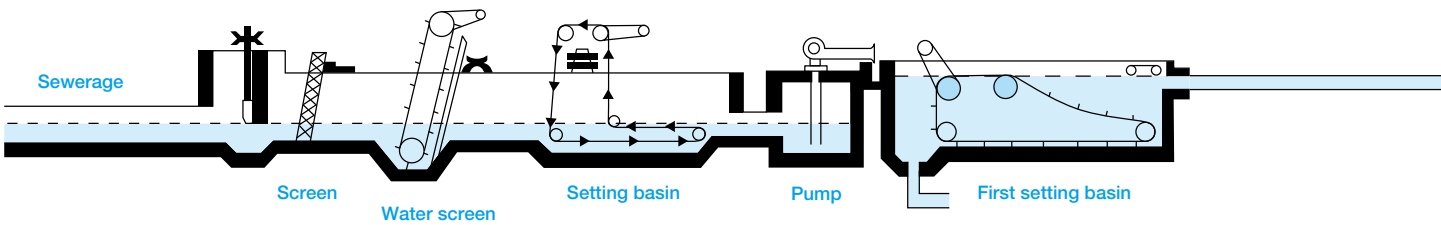
Model Numbering Example

ACS13078W	–	20L	SF4	+	400L	–	PR
①		④	⑤		⑥		⑦

See page 21 for ④⑥⑦.

Diagram of Water Treatment Facility

Water screen	Sediment collector	Collector	Scum skimmer
JAC Chain	ACS Chain	ACS Chain ACR Chain ACP Chain	Power Cylinder



Code			See page
① Size	Indicates the basic shape of the chain. Enter chain size in the □.		
	ACP□	Collector (plastic)	p.127
	ACR8□	Collector (steel)	p.128
	ACS□	Sediment collector, conveyor	p.129
	JAC□	Screening equipment	p.131
	WAC□	Water screen	p.135
② Roller type	May or may not be available depending on the series and size.		
	R/F/S	Standard roller types	p.10
	FP	SJW Series with plastic F rollers	p.131
③ Series	See page 125		
⑤ Attachment type	SF4	Flight attachment for collectors	p.129
	LA1/ LONGPIN	Bucket attachment for sediment collector	p.129
	Y	Rotating-rake water screens	p.133
	A2T1	Fixed-rake water screens	p.133
	A2T2	Sediment conveyors	p.133

Drive chains

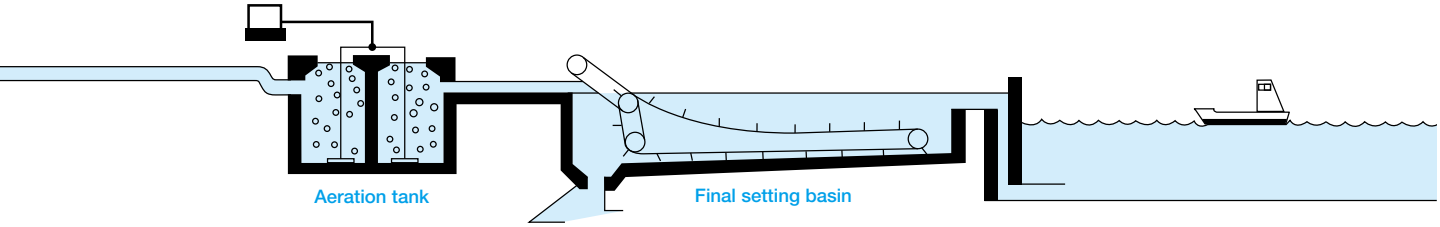
RS Roller Chain
BF Chain
ACRD Chain
EPCD Chain

Collector chains

ACS Chain
ACR Chain
ACP Chain

Power actuators

Miter Gear Boxes for underwater use
Shock Relays
Shock Monitors



Water Treatment Plants

Water Treatment Conveyor Chain

Application	Chain Type	Series	Material	Size	Attachment Type	Avg. Tensile Strength kN{kgf} (avg. fracture strength)	Min. Tensile Strength kN{kgf} (guaranteed fracture strength)
Collector	ACP	—	Engineering plastic	ACP04152	SF4 ◆ Attachment hole-related dimensions can be changed.	39.2 { 4000}	35.3 { 3600}
				ACP04152P		29.4 { 3000}	24.5 { 2500}
	ACP (with rollers)	—	SUS400 series	ACR810		98.1 {10000}	88.3 { 9000}
				ACR815		147 {15000}	132 {13500}
				ACR816		157 {16000}	142 {14500}
				ACR819		186 {19000}	172 {17500}
		SS	SUS300 series	ACR810SS		58.8 { 6000}	52.9 { 5400}
Sediment collectors and conveyors	ACS (bushed)	—	SUS400 series	ACS13078W	SF4 LA1 Extended pin ◆ LA1 uses alloy steel.	132 {13500}	123 {12500}
				ACS13103W			
				ACS13152W			
				ACS15152W		147 {15000}	137 {14000}
				ACS19152W		186 {19000}	172 {17500}
				ACS19152WT		186 {19000}	172 {17500}
				ACS25152W		245 {25000}	226 {23000}
				ACS35152W		343 {35000}	314 {32000}
Water screens	JAC (with rollers)	NVJ	Pin/bush: SUS400 series Roller/plate: Alloy steel	JAC08152□-NVJ	Y A2T1 (type 1) A2T2 (type 2) Attachments can be alloy steel or SUS400/300 stainless steel.	147 {15000}	127 {13000}
				JAC10152□-NVJ		216 {22000}	196 {20000}
				JAC6205□-NVJ		275 {28000}	250 {25500}
				JAC21152□-NVJ		382 {39000}	343 {35000}
				JAC26152□-NVJ		510 {52000}	461 {47000}
		PJ (PJH)	SUS400 series	JAC08152□-PJ		142 {14500}	132 {13500}
				JAC10152□-PJ		167 {17000}	152 {15500}
				JAC10152□-PJH		186 {19000}	172 {17500}
				JAC6205□-PJ		235 {24000}	216 {22000}
				JAC6205□-PJH		265 {27000}	245 {25000}
				JAC21152□-PJ		353 {36000}	324 {33000}
				JAC26152□-PJ		490 {50000}	451 {46000}
		PJW (PJWH)	SUS400 series	JAC10152F-PJW		167 {17000}	152 {15500}
				JAC10152F-PJWH		186 {19000}	172 {17500}
				JAC6205F-PJW		235 {24000}	216 {22000}
				JAC6205F-PJWH		265 {27000}	245 {25000}
		SJ	SUS300 series	JAC08152□-SJ		68.6 { 7000}	58.8 { 6000}
				JAC10152□-SJ		108 {11000}	93.2 { 9500}
				JAC6205□-SJ		132 {13500}	113 {11500}
				JAC21152□-SJ		186 {19000}	157 {16000}
				JAC26152□-SJ		250 {25500}	211 {21500}
		NSJ	Pin/roller/plate: SUS300 series Bush: Special stainless steel	JAC08152□-NSJ		68.6 { 7000}	58.8 { 6000}
				JAC10152□-NSJ		108 {11000}	93.2 { 9500}
				JAC6205□-NSJ		132 {13500}	113 {11500}
				JAC21152□-NSJ		186 {19000}	157 {16000}
				JAC26152□-NSJ		250 {25500}	211 {21500}
		SJW	SUS300 series	JAC10152F-SJW		108 {11000}	93.2 { 9500}
				JAC6205F-SJW		132 {13500}	113 {11500}
				JAC21152F-SJW		186 {19000}	157 {16000}
				JAC26152F-SJW		250 {25500}	211 {21500}
		NSJW	Pin/roller/plate: SUS300 series Bush: Special stainless steel	JAC10152F-NSJW		108 {11000}	93.2 { 9500}
				JAC6205F-NSJW		132 {13500}	113 {11500}
				JAC21152F-NSJW		186 {19000}	157 {16000}
				JAC26152F-NSJW		250 {25500}	211 {21500}
		SJW	F roller: Plastic Pin/bush/plate: SUS300 series	JAC10152FP-SJW		108 {11000}	93.2 { 9500}
				JAC6205FP-SJW		132 {13500}	113 {11500}
				JAC21152FP-SJW		186 {19000}	157 {16000}
Drive	ACRD (with rollers)	—	SUS400 series	ACRD08		142 {14500}	132 {13500}
				ACRD10		186 {19000}	172 {17500}
				ACRD12		235 {24000}	216 {22000}
				ACRD17		353 {36000}	324 {33000}
	BF (bushed)	—	SUS400 series	BF120N		108 {11000}	99.0 {10100}
				BF140		137 {14000}	127 {13000}
				BF140E		147 {15000}	132 {13500}
				BF160		181 {18500}	167 {17000}
				BF160E		233 {23800}	196 {20000}
				BF200		309 {31500}	284 {29000}
				BF200E		353 {36000}	324 {33000}
				BF240		392 {40000}	363 {37000}
				ACS4124		186 {19000}	167 {17000}
				BF2120		147 {15000}	137 {14000}
	EPCD	—	Engineering plastic	EPC78D		19.6 { 2000}	17.7 { 1800}
				EPC90D		37.3 { 3800}	32.4 { 3300}

	Features	Coating*
	Rolling contact is made possible through chains with rollers and block tooth sprockets, increasing wear resistance. Lightening the chain will also result in cost savings by reducing the necessary drive power.	–
	Using together with a plastic sprocket will result in superior wear and corrosion resistance. And as plastic chains are lighter than steel chains, the lower power requirement will result in lower costs.	○
		–
	This chain was the first in the industry to use tempered stainless steel for increased wear and corrosion resistance. Also available in SUS300 series stainless steel. ACS19152WT uses Tokyo Specifications with a bush diameter of ϕ30.	○
		○
		○
	The right combination of material will give you the right chain for any application. NVJ Series: Most economical chain, has high strength PJ Series: Provides excellent wear resistance SJ Series: Provides superb corrosion resistance NSJ Series: 1.5 times the bush–roller wear resistance of SJ Series PJW Series: Same as the PJ Series but with alternating flanges SJW Series: Same as the SJ Series but with alternating flanges NSJW Series: 1.5 times the bush–roller wear resistance of SJW Series ◆ PJW and SJW are wider than standard chains. Low Noise Series: Less running noise due to plastic F Roller ◆ The rollers on attachment links are steel. ◆ Uses special sprockets. Be sure to indicate chain specifications. ◆ Insert the roller type code in the □ area. ◆ NVJ Series is equivalent to VJ Series with different material for some components. ◆ Chain size –H indicates heavy duty specifications.	○ – – – –
	Rolling contact is made possible through chain with rollers and sprockets to increase wear resistance.	○
	Uses stainless steel for increased wear and corrosion resistance. ◆ Also available in SUS300 series	○
	This special plastic drive chain for collectors combines engineering plastic and SUS300 series stainless steel.	–

Water Treatment Sprockets

Tsubaki provides sprockets that can satisfy the type, material, or dimensional requirements of any main or drive chain.

■ Collector Parts

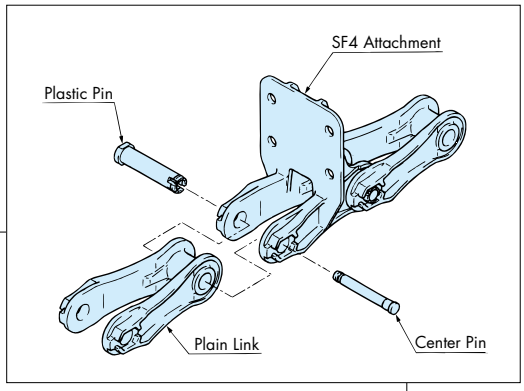
See p.136

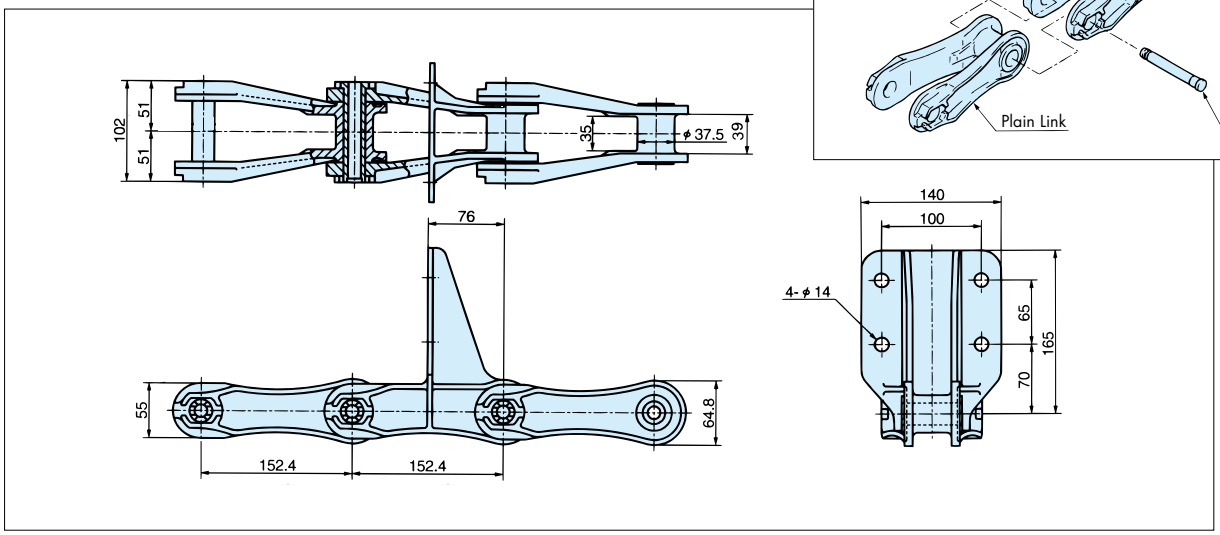
Part Name	Material
Flight	FRP
Shoe	Plastic, FCD, SCS
Distance spacer	Plastic

Note: Coatings
Chains designated with this mark ○ are manufactured with a coating of epoxy resin paint as standard. Contact a Tsubaki representative if a different coating is required.

ACP Sediment Collector Chain

ACP Chains do not suffer corrosion wear, and in combination with ultrahigh molecular polyethylene sprockets they offer unsurpassed wear resistance. They are also lighter than steel chains (chain: 1/4–1/2 lighter, sprocket: 1/3 lighter), making them easy to handle.





Note: The above dimensions are nominal dimensions and may differ from actual dimensions.

Size	Avg. Tensile Strength kN{kgf}	Min. Tensile Strength kN{kgf}	Chain Mass kg/m	Attachment Mass kg/each set	Specific Gravity
ACP04152-SF4	39.2{4000}	35.3{3600}	2.9	0.25	1.75
ACP04152P-SF4	29.4{3000}	24.5{2500}	2.4	0.25	1.45

Model Numbering Example (Made to Order)

Chain: **ACP04152 P-20LSF4+400L**
- Size
- P: Plastic Center Pin / No code: SUS Center Pin
- Attachment Spacing
- Attachment Type
- No. of Links

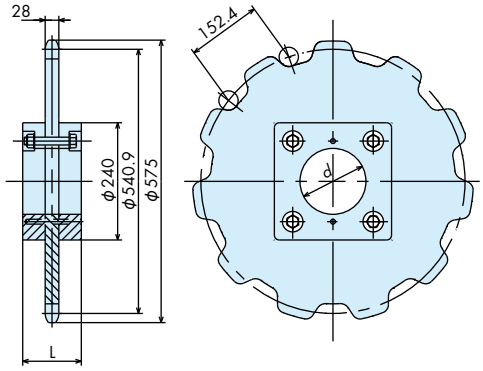
Link: **ACP04152P-OL**
ACP04152P-SF4-OL

Sprocket: **ACP04152-1C□T-□**
- Type
- No. of Teeth
- No code: Solid (Square hub assembly)
- RK: Ring Replaceable Teeth (D-split)

Note: Specify the model number and contact a Tsubaki representative for a quote.

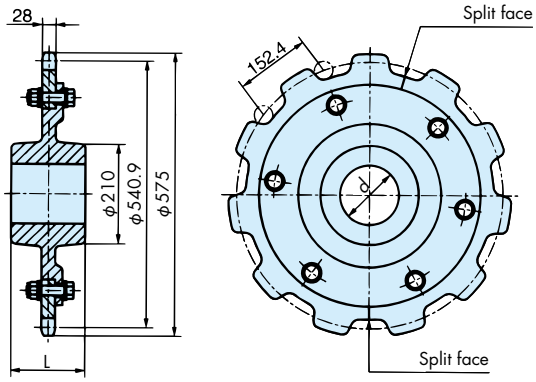
ACP Sprockets for Sediment Collector Chain

Solid (Square Hub Assembly)



Driven shaft

Ring Replaceable Teeth (D-split/Teeth: Plastic Hub: FCD600)



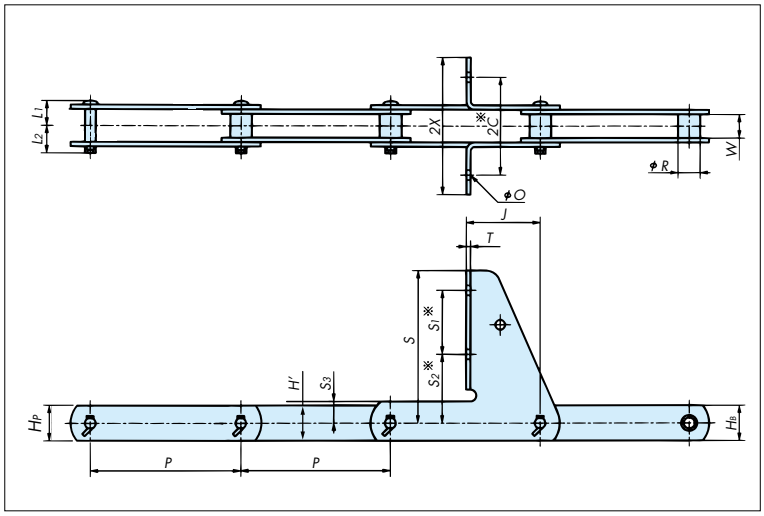
Drive shaft

Applicable Size	Chain Pitch	No. of Teeth	Outer Dia.	Pitch Dia.	Tooth Width	Hub Dim.		Pilot Bore Dia. *d*	Max. Shaft Dia	Type/Material	Approx. Mass kg
						Dia. *DH*	Length *L*				
ACP04152	152.4	11	575	540.9	28	240	140	—	—	Square hub assembly	—
ACP04152P		11	575	540.9	28	210	140	90	130	Ring replaceable teeth (plastic)	64

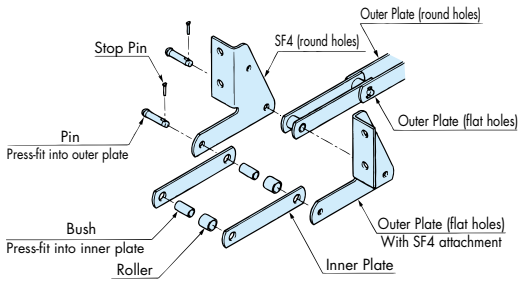
Note: 1. Indicate drive shaft diameter and key dimensions, driven shaft sleeve outer diameter, and hub dimensions when ordering.
2. Standard number of teeth is listed. Tsubaki can manufacture sprockets with teeth numbers other than listed above. Contact a Tsubaki representative for more details.
3. ▭ Shaded items are for reference and not standard dimensions. Indicate dimensions and number of teeth on your inquiry, or attach a drawing.
4. Please indicate finished bores on square hub assembly sets. Finished bores available up to 160mm.
5. The above dimensions are nominal dimensions and may differ from actual dimensions.

ACR Sediment Collector Chain

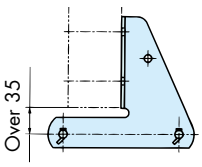
The Japan Sewage Works Corporation Examination for Privately Developed Technology (Certificate No. 109)



Flights that do not have standard attachment dimensions (※) can be made to order.



Ensure that flights do not interfere with sprockets when designing.



Size	Avg. Tensile Strength kN{kgf}	Min. Tensile Strength kN{kgf}	Pitch P	Roller Dia R	Inner Link Inner Width W	Pin L1	Pin L2	Inner Plate Width HB	Outer Plate Width HP	Mass kg/m
ACR810	98.1 {10000}	88.3 {9000}	152.4	22.2	22	25	28.5	33	33	3.2
ACR815	147 {15000}	132 {13500}	152.4	22.2	27.6	31	34.5	38	38	5
ACR816	157 {16000}	142 {14500}	152.4	25	26	30	34	38	38	5
ACR819	186 {19000}	172 {17500}	152.4	29	30.6	33	36	44	38	6
ACR810SS	58.8 {6000}	52.9 {5400}	152.4	22.2	22	25	29	29	25	2.9

Size	Attachment Dimensions 2C	2X	J	S	S1	S2	S3	O	T	Mass kg/each
ACR810-SF4	100	140	76	155	65	70	22	14	4.5	1.0
ACR815-SF4	100	140	76	157	65	70	22	14	6	1.4
ACR816-SF4	100	138	76	157	65	70	22	14	6	1.4
ACR819-SF4	100	142.5	76	157	65	70	22	14	6	1.4
ACR810SS-SF4	100	140	76	155	65	70	22	14	4.5	1.0

Note: The above dimensions are nominal dimensions and may differ from actual dimensions.

Model Numbering Example (Made to Order)

Chain: **ACR810-SS-20LSF4+400L-PR**

- Size: ACR810
- Series: SS: SUS300 series; No code: SUS400 series
- Attachment Spacing: 20L
- Attachment Type: SF4
- No. of Links: 400
- End Link: PR

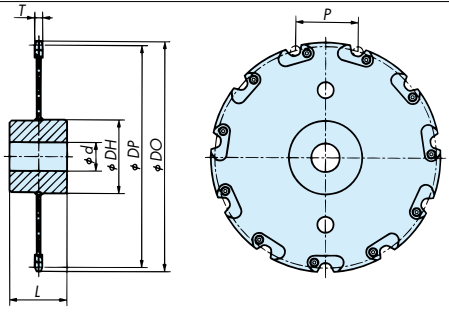
Sprocket: **ACR810-1C□TQ-□**

- Type: 1C
- No. of Teeth: □
- Hardened Teeth: TQ
- BK: Block Replaceable Teeth (Block teeth)
- No code: Solid
- RK: Ring Replaceable Teeth (D-split)

Note: Specify the model number and contact a Tsubaki representative for a quote.

ACR Sprockets for Sediment Collector Chain

Block Replaceable Teeth (Block Teeth)



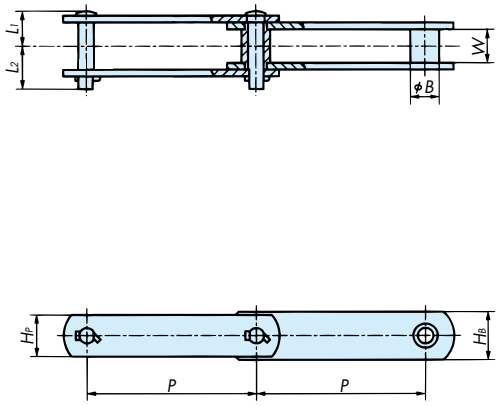
Applicable Size	Chain Pitch	No. of Teeth	Outer Dia.	Pitch Dia.	Tooth Width	Hub Dim. Dia. DH	Hub Dim. Length L	Pilot Bore Dia. d	Max. Shaft Dia	Type/Material	Approx. Mass kg
ACR810	152.4	11	565	540.9	18	210	140	90	130	Block replaceable teeth: SS400 or FCD600 (arm, hub), SCS2 (teeth) Solid: SCS2 or SCS13	47
ACR815		11	567	540.9	22	210	140	90	130		53
ACR816		11	566	540.9	22	210	140	90	130		53
ACR819		11	570	540.9	22	210	140	90	130		53
ACR810SS		11	565	540.9	18	200	130	80	125		55

Note: 1. Indicate drive shaft diameter and key dimensions, driven shaft sleeve outer diameter, and hub dimensions when ordering.
2. Standard number of teeth is listed. Tsubaki can manufacture sprockets with teeth numbers other than listed above. Contact a Tsubaki representative for more details.
3. Chains using SUS300 Series stainless steel rollers require special sprockets.
4. Shaded items are for reference and not standard dimensions. Indicate dimensions and number of teeth on your inquiry, or attach a drawing.
5. The above dimensions are nominal dimensions and may differ from actual dimensions.

Water Treatment Plants

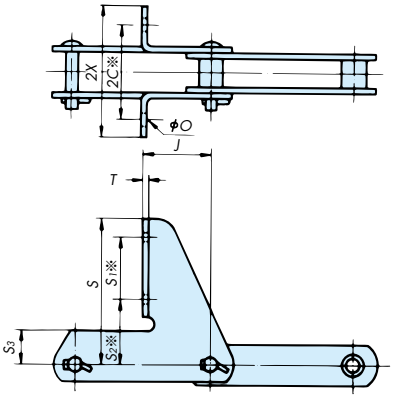
ACS Heavy Duty Collector Chain

Main Chain



SF4 Attachment

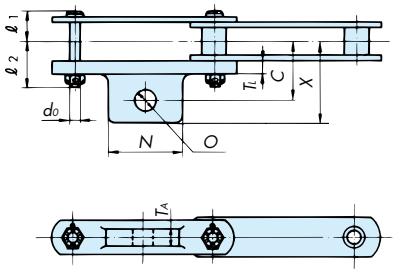
Flight attachment for grit and sediment collectors.



Flight dimensions marked with ※ available in other non-standard dimensions.

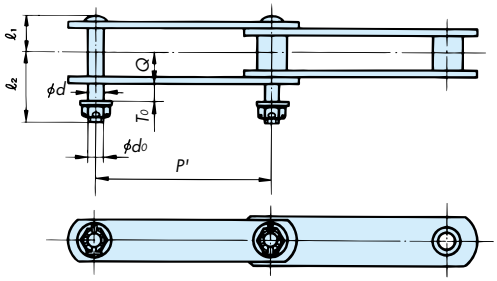
LA1 Attachment

Bucket attachment for sediment collector.
Buckets attach easily.



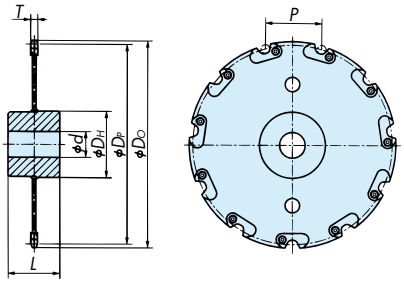
Long Pin Attachment

Bucket attachment for sediment collector.
Buckets attach easily.

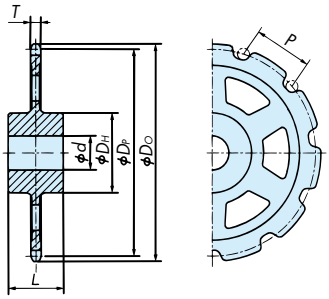


ACS Sprockets for Heavy Duty Collector Chain

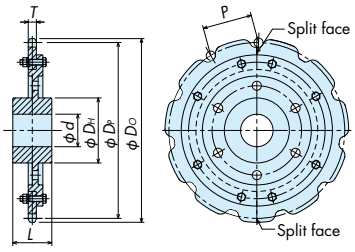
Block Replaceable Teeth (1C)



Solid (C)



Ring Replaceable Teeth (D-split)



Model Numbering Example **(Made to Order)**

Chain **ACS13078W-20LSF4+400L-PR**

- Size
- Attachment Spacing
- Attachment Type
  - SF4 : SF4 Attachment
  - LA1 : LA1 Attachment
  - LONGPIN : Longpin Attachment
- End Link
- No. of Links

Sprocket **ACS13078W-1C□TQ-□**

- Type
- No. of Teeth
- Hardened Teeth
- No code: Solid
- BK: Block Replaceable Teeth (Block teeth)
- RK: Ring Replaceable Teeth (D-split)

Note: Specify the model number and contact a Tsubaki representative for a quote.

■ ACS Main Chain

Size	Avg. Tensile Strength kN{kgf}	Min. Tensile Strength kN{kgf}	Pitch *P*	Bush Dia. *B*	Inner Link Inner Width *W*	Pin		Outer Plate Width H_P	Inner Plate Width H_B	Approx. Mass kg/m
						L_1	L_2			
ACS13078W	132{13500}	123{12500}	78.11	23	26	28	32	33	36	5.2
ACS13103W			103.2							4.6
ACS13152W			152.4							3.6
ACS15152W	147{15000}	137{14000}	152.4	24	26	29	33	36	38	4.8
ACS19152W	186{19000}	172{17500}	152.4	26	30	32	39.5	38	44	5.8
ACS19152WT*			152.4	30						6.8
ACS25152W	245{25000}	226{23000}	152.4	29	30	35	41	44	54	7.9
ACS35152W	343{35000}	314{32000}	152.4	35	38	41	46	54	60	10.9

Note: 1. Offset links available.
2. * Indicates Tokyo specifications.
3. All sizes also available in SUS300 series stainless steel.

■ SF4 Attachment for ACS Chain

Size		Attachment Dimensions									Additional Mass per Set kg
		2C	*2X*	*J*	*S*	S_1	S_2	S_3	*O*	*T*	
ACS13078W-SF4	78.11	90	131.5	38	110	35	55	28	14	5	0.6
ACS13103W-SF4	103.2			52							0.7
ACS13152W-SF4	152.4			76							1.0
ACS15152W-SF4	152.4	100	143.5	76	155	65	70	35	14	5	1.2
ACS19152W-SF4	152.4	100	141.5	76	157	65	70	38	14	6	1.4
ACS19152WT-SF4											
ACS25152W-SF4	152.4	100	143.5	76	154	65	70	38	14	6	1.4
ACS35152W-SF4	152.4	110	152.0	76	160	65	75	40	14	7.9	1.6

■ LA1 Attachment for ACS Chain

Size		Attachment Dimensions									Additional Mass per Set kg
		d_0	ℓ_1	ℓ_2	*C*	*X*	*N*	*O*	*TA*	*TL*	
ACS13078W-LA1	78.11	M10	29.5	41.5	55	77	40	19	16	12	0.4
ACS13103W-LA1	103.2						56				0.6
ACS15152W-LA1	152.4	M12	30.5	44.5	55	77	68	19	16	12	0.8
ACS19152W-LA1	152.4	M12	33.5	51.5	65	90	80	24	20	16	1.2
ACS25152W-LA1	152.4	M14	36.5	53.5	65	90	80	24	20	16	1.4
ACS35152W-LA1	152.4	M16	42.5	61.5	75	102	80	26	24	19	2.0

■ Long Pin Attachment for ACS Chain

Size	Attachment Dimensions								Additional Mass per Set kg
	P	*P'*	*d*	d_0	ℓ_1	ℓ_2	*Q*	T_0	
ACS13078W-LONGPIN	78.11	77.7	12	M10	28	49	24	12	0.06
ACS13103W-LONGPIN	103.2	102.8							
ACS15152W-LONGPIN	152.4	152.0	13	M12	29	51	25	12	0.10
ACS19152W-LONGPIN	152.4	151.9	14	M12	32	59	28	16	0.11
ACS25152W-LONGPIN	152.4	151.9	15.5	M14	35	62	29	16	0.14
ACS35152W-LONGPIN	152.4	151.8	18.5	M16	41	72	34.2	19	0.20

Note: P: Nominal dimensions P': Actual dimensions

■ ACS Sprockets

Applicable Size	Chain Pitch	No. of Teeth	Outer Dia.	Pitch Dia.	Tooth Width	Hub Dim.		Pilot Bore Dia. *d*	Max. Shaft Dia	Type/Material	Approx. Mass kg
						Dia. D_H	Length *L*				
ACS13078W	78.11	11	300	277.3	22	140	110	60	85	C, C-split: FCD600 or SCS2 D-split: FCD600 (hub, arm) SCS2 (teeth) 1C (block teeth): SS400 or FCD600 (hub, arm) SCS2 (teeth)	15
ACS13103W	103.2		390	366.3		150	110	50	90		22
ACS13152W	152.4		565	540.9		150	130	60	90		36
ACS15152W	152.4	11	565	540.9	22	170	130	60	105		44
ACS19152W	152.4	11	565	540.9	25	210	140	80	130		51
ACS25152W	152.4	11	570	540.9	25	210	140	80	130		51
ACS35152W	152.4	11	570	540.9	32	210	140	80	130		62

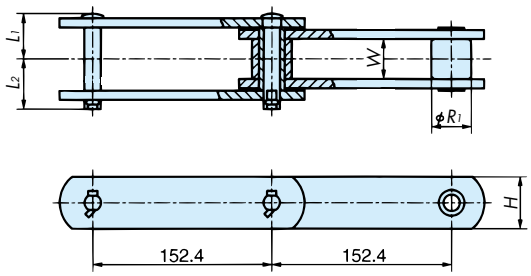
Note: 1. Standard number of teeth is listed. Tsubaki can manufacture sprockets with teeth numbers other than listed above. Contact a Tsubaki representative for more details.
2. Shaded items are for reference and not standard dimensions. Indicate dimensions and number of teeth on your inquiry, or attach a drawing.
3. The above dimensions are nominal dimensions and may differ from actual dimensions.

JAC Water Screen Chain

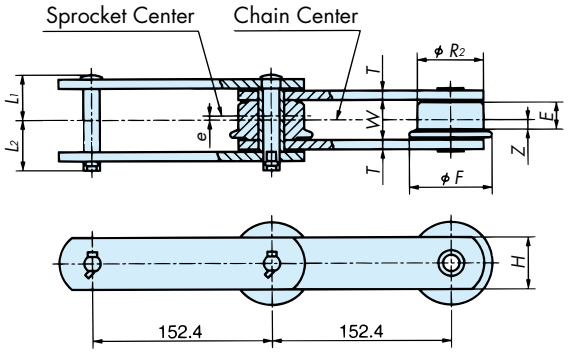
NVJ Series	Tsubaki's most economical chain. Highly durable and wear resistant.
PJ (PJH) Series	Offers superb wear and corrosion resistance.
SJ Series	Our most corrosion resistant chain.
NSJ Series	1.5 times the bush–roller wear resistance of SJ Series.
PJW (PJWH) Series	A PJ Series chain with alternating flanges, preventing chain from falling off of guide rail.
SJW Series	An SJ Series chain with alternating flanges, preventing chain from falling off of guide rail.
NSJW Series	1.5 times the bush–roller wear resistance of SJW Series.
FP-SJW Series (Low Noise Series)	Reduced running noise thanks to engineering plastic F rollers.

PJH and PJWH are heavy duty versions of PJ and PJW, respectively.

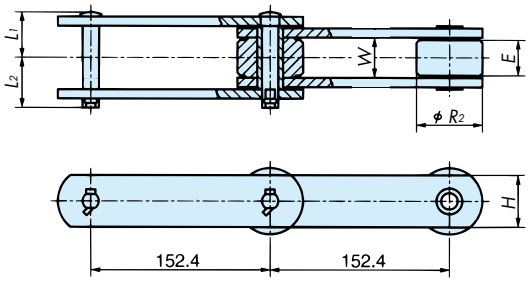
S Roller



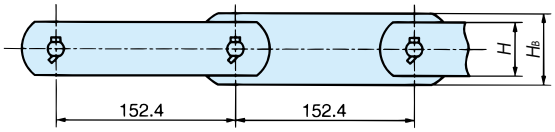
F Roller



R Roller

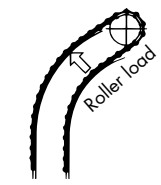


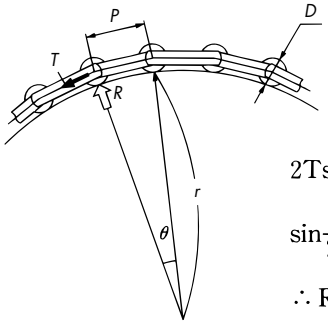
Heavy Duty Specs (Same for S, R, and F Rollers)



Note: Has a wider inner plate for more strength.

Note: The following needs to be considered for FP-SJW Series (low noise type).
Use the following formula to calculate the rail reactive force R generated by chain tension T on the corner rail area.





$$2T\sin\frac{\theta}{2}=R$$

$$\sin\frac{\theta}{2}=\frac{P/2}{r+D/2}$$

$$\therefore R=2T\times\frac{P}{2r+D}$$

Model Numbering Example

JAC10152F-PJH
Mounting one A2 (type 1) attachment somewhere along the 100 links

1 **JAC10152F-PJH-20LA2T1+20L-PR**

2 **JAC10152F-PJH+80L-PR**

Note: You can also specify chain configuration using a diagram.

Next, use the following formula to calculate the Hertz stress Q (contact compression stress) from the rail reactive force.

$Q=0.591\sqrt{R/L\times[E_1+E_2/(E_1+E_2)\times(r-d)/(r\times d)]}$

$Q\leqq 49$ [N/mm²]

d: Roller radius (D/2) [mm]

L: Rail width [mm]

E_1: Roller Young modulus (plastic: 3.43 x 10^3N/mm²) E_2: Rail Young modulus (SUS304: 1.89 x 10^5N/mm²)

■ Water Screen Chain Dimensional Chart

Series	Material	Size	Avg. Tensile Strength kN{kgf}	Min. Tensile Strength kN{kgf}	Roller Type	Inner Link Inner Width W	S Roller Dia. R_1	R Roller Dia. R_2	R Roller Contact Width E	F Roller Dia. R_2	F Roller Flange Dia. F	F Roller Contact Width E	F Roller Contact Width E_2	F Roller Off-center e	F Roller Z	Pin L_1	Pin L_2	Plate H	Plate H_B	Approx. Mass kg/m S Roller	Approx. Mass kg/m F Roller	Approx. Mass kg/m R Roller
NVJ	*1	JAC08152□-NVJ	147 {15000}	127 {13000}	S	26.2	22.2	–	–	–	–	–	–	–	–	31	34.5	28.6	–	3.9	–	–
		JAC10152□-NVJ	216 {22000}	196 {20000}	S/R/F	29.0	29.0	50.8	26	50.8	65	20	–	3	7	33	36	38.1	–	5.9	8.0	7.6
		JAC6205□-NVJ	275 {28000}	250 {25500}	S/R/F	35.9	34.9	65	32	65	85	24	–	4	8	40.5	43	44.5	–	9.3	14.5	13.5
		JAC21152□-NVJ	382 {39000}	343 {35000}	S/R/F	35.7	40.1	70	32	70	90	24	–	4	8	44.5	51	50.8	–	12.6	18.1	17.1
		JAC26152□-NVJ	510 {52000}	461 {47000}	S/R/F	55.6	44.5	80	52	80	95	40	–	5	15	55.5	61	63.5	–	17.8	29.3	28.0
PJ (PJH)	SUS400 series	JAC08152□-PJ	142 {14500}	132 {13500}	S	27	22.2	–	–	–	–	–	–	–	–	31	34.5	38	–	5.0	–	–
		JAC10152□-PJ	167 {17000}	152 {15500}	S/R/F	30	29	50.8	26	50.8	65	20	–	3	7	33	36	38	–	5.6	7.9	7.5
		JAC10152□-PJH	186 {19000}	172 {17500}	S/R/F													38	44	6.0	8.3	7.9
		JAC6205□-PJ	235 {24000}	216 {22000}	S/R/F	37.1	34.9	65	32	65	85	24	–	4	8	39.5	42	44.5	–	8.2	13.3	12.3
		JAC6205□-PJH	265 {27000}	245 {25000}	S/R/F													44.5	54	8.9	14	13
		JAC21152□-PJ	353 {36000}	324 {33000}	S/R/F	37.1	40.1	70	32	70	90	24	–	4	8	44	50	54	–	12.8	19.0	18.1
		JAC26152□-PJ	490 {50000}	451 {46000}	S/R/F	55.2	44.5	80	52	80	95	40	–	5	15	56	61.5	63.5	–	18.6	30.0	28.7
PJW (PJWH)	SUS400 series	JAC10152F-PJW	167 {17000}	152 {15500}	F	36.2	–	–	–	50.8	65	26	20	–	10	36.5	39.5	38	–	–	8.3	–
		JAC10152F-PJWH	186 {19000}	172 {17500}	F			–	–										44	–	8.7	–
		JAC6205F-PJW	235 {24000}	216 {22000}	F	44.5	–	–	–	65	85	32	24	–	12	43	45.5	44.5	–	–	14.4	–
		JAC6205F-PJWH	265 {27000}	245 {25000}	F			–	–										54	–	15.1	–
SJ NSJ	*2	JAC08152□-SJ/NSJ	68.6 { 7000}	58.8 { 6000}	S	27	22.2	–	–	–	–	–	–	–	–	31	34.5	28.6	–	3.8	–	–
		JAC10152□-SJ/NSJ	108 {11000}	93.2 { 9500}	S/R/F	30	29	50.8	26	50.8	65	20	–	3	7	33	36	38.1	–	5.6	7.9	7.5
		JAC6205□-SJ/NSJ	132 {13500}	113 {11500}	S/R/F	37.1	34.9	65	32	65	85	24	–	4	8	40.5	43	44.5	–	9.1	14.2	13.2
		JAC21152□-SJ/NSJ	186 {19000}	157 {16000}	S/R/F	37.1	40.1	70	32	70	90	24	–	4	8	44.5	52	50.8	–	13.3	18.2	17.2
		JAC26152□-SJ/NSJ	250 {25500}	211 {21500}	S/R/F	57.2	44.5	80	52	80	95	40	–	5	15	55.5	62	63.5	–	18.8	30.0	28.7
SJW NSJW	*3	JAC10152F-SJW/NSJW	108 {11000}	93.2 { 9500}	F	36.0	–	–	–	50.8	65	26	20	–	10	36	39	38.1	–	–	8.3	–
		JAC6205F-SJW/NSJW	132 {13500}	113 {11500}	F	44.5	–	–	–	65	85	32	24	–	12	44.5	46.5	44.5	–	–	15.3	–
		JAC21152F-SJW/NSJW	186 {19000}	157 {16000}	F	44.5	–	–	–	70	90	32	24	–	12	49	55.5	50.8	–	–	19.1	–
		JAC26152F-SJW/NSJW	250 {25500}	211 {21500}	F	57.2	–	–	–	80	95	38	26	–	13	56.5	62	50.8	63.5	–	28.6	–
FP-SJW	*4	JAC10152FP-SJW	108 {11000}	93.2 { 9500}	F	36	–	–	–	50.8	65	26	20	–	10	36	39	38.1	–	–	6.0	–
		JAC6205FP-SJW	132 {13500}	113 {11500}	F	44.5	–	–	–	65	85	32	24	–	12	44.5	46.5	44.5	–	–	9.5	–
		JAC21152FP-SJW	186 {19000}	157 {16000}	F	44.5	–	–	–	70	90	32	24	–	12	49	55.5	50.8	–	–	12.2	–

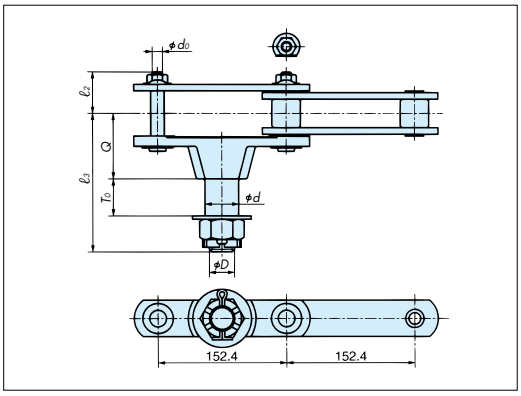
*1: NVJ Series material: Pin/bush use SUS400 series stainless steel, while roller/link plate use alloy steel. (NVJ Series is equivalent to the VJ Series using different material for some parts.)
*2: SJ Series material: SUS300 series stainless steel.
NSJ Series material: Pin/roller/plate use SUS300 series stainless steel, while bush uses special stainless steel.
*3: SJW Series material: SUS300 series stainless steel.
NSJW Series material: Pin/roller/plate use SUS300 series stainless steel, while bush uses special stainless steel.
*4: FP-SJW Plastic Series material: F roller uses plastic, while pin/bush/link plate use SUS300 series stainless steel.
The rollers on the attachments on engineering plastic F roller chains (low noise chains) are stainless steel.

Note: 1. Offset link available.
2. Contact a Tsubaki representative regarding tensile strengths, chain pitches, and so on not shown above.
3. Enter roller type in the □ box.
4. The E dimension is the rolling contact width. E2 is the length of the roller (real rolling contact width) when there are alternating flanges (SJW, PJW).
5. The above dimensions are nominal dimensions and may differ from actual dimensions.

Y Attachment for JAC Chain

◆ For rotating-rake water screens

Attachment type: Y

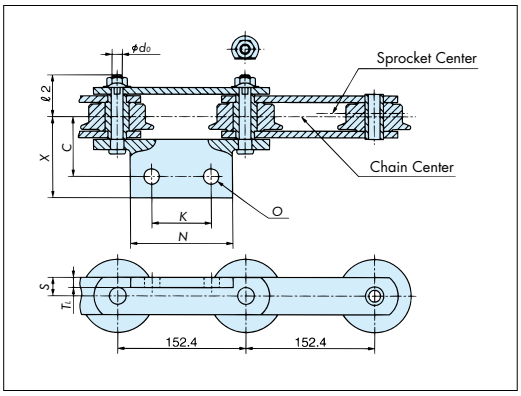


Series	Size	Roller Type	d	d₀	D	ℓ₂	ℓ₃	Q	T₀	Add. Mass per Set kg/set
NVJ/PJ	JAC08152	S	25	M10	M20	38	120	60	30	1.1
	JAC10152	R/S	35	M12	M27	42	148.5	70	40	1.9
	JAC6205	R/S	40	M12	M30	49	164.5	78	44	2.7
	JAC21152	S	45	M16	M36	55	174	78	46	3.2
	JAC26152	S	50	M16	M45	65	204	95	50	5.1

A2 Attachment (Type 1) for JAC Chain

◆ For fixed-rake water screens

Attachment type: A2T1

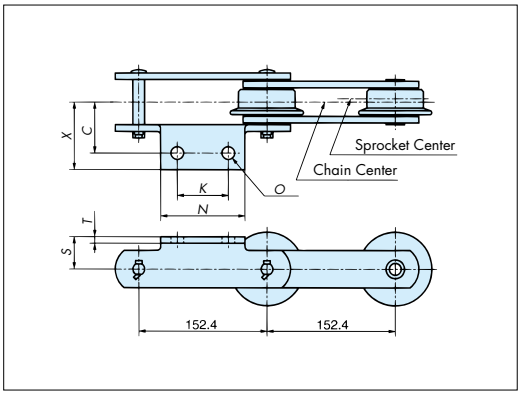


Series	Size	Roller Type	d₀	ℓ₂	C	X	K	N	S	O	T	Add. Mass per Set kg/set
NVJ/PJ/ SJ/NSJ/PJH	JAC10152	R/F	M12	42	60	80	65	110	19.0	15	9.5	0.6
	JAC6205	R/F	M12	49	70	95	70	120	22.2	18	12	0.9

A2 Attachment (Type 2) for JAC Chain

◆ For sediment conveyors

Attachment type: A2T2



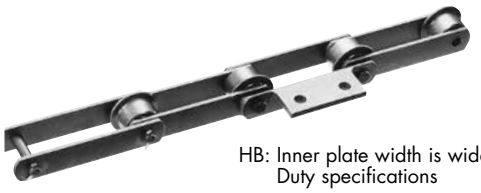
Series	Size	Roller Type	C	X	K	N	S	O	T			Add. Mass per Set kg/set
									NVJ Series	PJ Series	SJ Series	
NVJ/PJ/ SJ/NSJ/PJH	JAC10152	R/F	50	65	60	90	32	12	6.3	6	6	0.20
	JAC6205	R/F	60	79	60	100	38	15	7.9	7	8	0.37

Note: The above dimensions are nominal dimensions and may differ from actual dimensions.

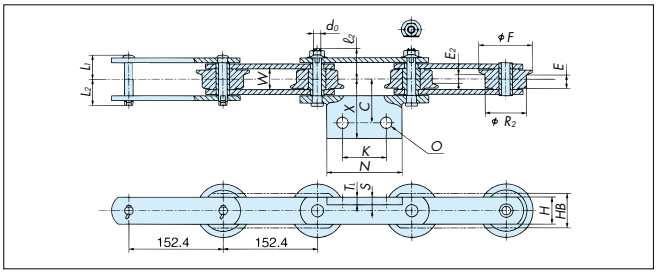
PJW/SJW/NSJW Series A2 Attachment (Type 1) for JAC Chain

◆ For fixed-rake water screens

Attachment type: A2T1



HB: Inner plate width is wider on Heavy Duty specifications



■ PJW Series

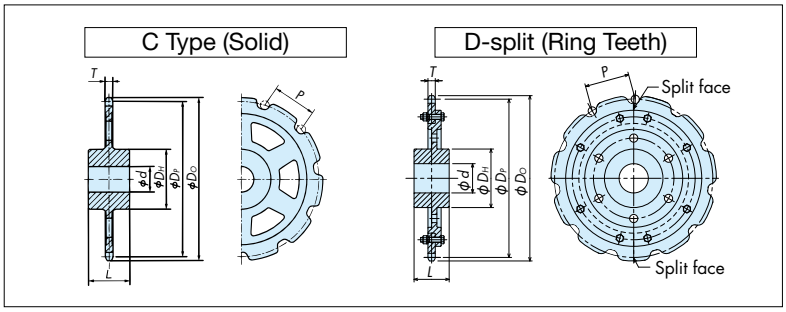
Size and Roller Type	Attachment Dimensions									Contact Width		Add. Mass per Set kg/set
	d_0	ℓ_2	C	X	K	N	S	O	T_L	E	E_2	
JAC10152F	M12	45	63	83	65	110	19.0	15	9.5	26	20	0.6
JAC6205F	M12	51.5	74	99	70	120	22.2	18	12	32	24	0.9

■ SJW/NSJW Series

Size and Roller Type	Attachment Dimensions									Contact Width		Add. Mass per Set kg/set
	d_0	ℓ_2	C	X	K	N	S	O	T_L	E	E_2	
JAC10152F	M12	45	63	83	65	110	19.0	15	9.5	26	20	0.6
JAC6205F	M12	53	74	99	70	120	22.2	18	12	32	24	0.9
JAC21152F	M16	61	80	105	70	120	25.4	23	12	32	24	1.4
JAC26152F	M16	66	90	120	70	120	31.75	23	16	38	26	1.7

Note: 1. Attachment dimensions are the same with plastic F rollers.
2. E dimension is the contact width. E2 dimension is roller length (actual contact width) when two flanges alternate (SJW, PJW).
3. The above dimensions are nominal dimensions and may differ from actual dimensions.

JAC Sprockets (Water Screen)



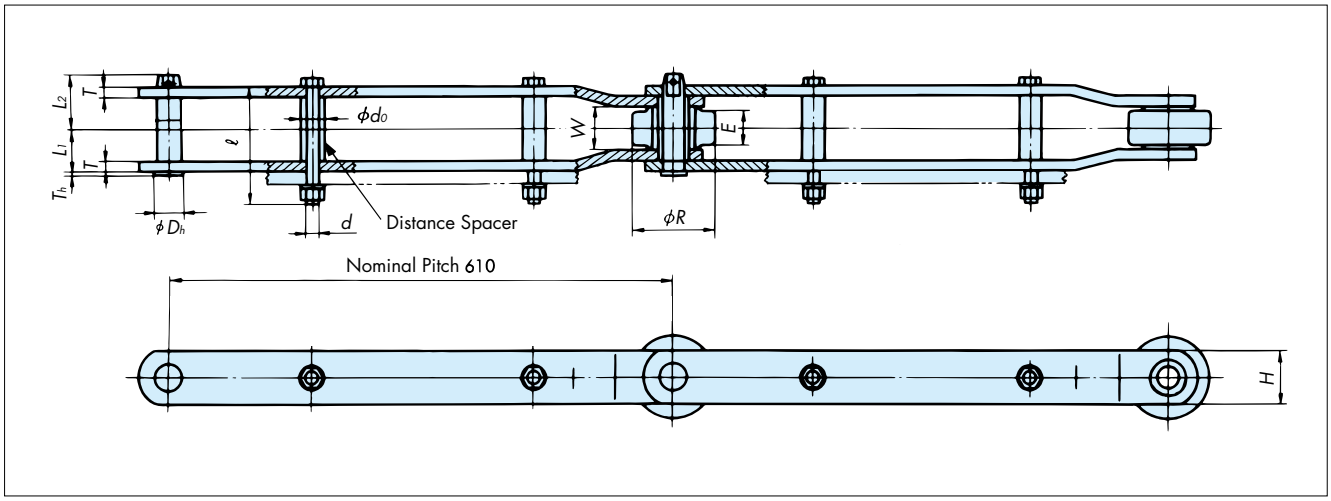
Size and Roller Type	Pitch	No. of Teeth	Outer Dia.	Pitch Dia.	Tooth Width	Boss Dim. Dia. D_H	Boss Dim. Length L	Pilot Bore Dia. d	Max. Shaft Dia	Type/Material	Approx. Mass kg
JAC08152S	152.4	11	556	540.9	21	180	130	90	110	C: SCS13, FCD600, or SCS2 Note: Indicate sprocket specs when ordering, if chain rollers are SUS300 series stainless steel or plastic.	51
JAC10152S	152.4	11	561	540.9	24	190	130	90	115		45
JAC10152F	152.4	10	528	493.2	16	170	120	80	105		36
		11	576	540.9		180	130	90	110		46
JAC6205S	152.4	11	565	540.9	30	220	170	110	135		80
JAC6205F	152.4	10	539	493.2	21	180	130	90	110		47
		11	586	540.9		220	160	110	135		65
JAC21152S	152.4	11	569	540.9	30	230	170	110	140		78
JAC21152F	152.4	10	542	493.2	21	170	120	80	105		41
		11	590	540.9		230	170	110	140		68
JAC26152S	152.4	11	572	540.9	48	260	190	120	160		110
JAC26152F	152.4	10	549	493.2	24	230	170	110	140		68
		11	597	540.9		260	190	120	160		98
JAC10152F-PJW	152.4	10	528	493.2	16	170	120	80	105		35
		11	576	540.9		180	130	90	110		42
JAC6205F-PJW	152.4	10	539	493.2	21	180	130	90	110		43
		11	586	540.9		220	160	110	135		62
JAC10152F-SJW JAC6205FP-SJW (Plastic roller)	152.4	10	528	493.2	16	170	120	80	105		35
		11	576	540.9		180	130	90	110		42
JAC6205F-SJW JAC6205FP-SJW (Plastic roller)	152.4	10	539	493.2	21	180	130	90	110		43
		11	586	540.9		220	160	110	135		62
JAC21152F-SJW JAC21152FP-SJW (Plastic roller)	152.4	10	542	493.2	21	180	120	80	110		41
		11	590	540.9		220	160	110	135		68

Note: 1. Indicate drive shaft diameter and key dimensions, driven shaft sleeve outer diameter, and hub dimensions when ordering.
2. Standard number of teeth is listed. Tsubaki can manufacture sprockets with teeth numbers other than listed above. Contact a Tsubaki representative for more details.
3. Sprockets must be made to order if chain rollers are SUS300 series stainless steel or plastic.
4. ▭ Shaded items are for reference and not standard dimensions. Indicate dimensions and number of teeth on your inquiry, or attach a drawing.
5. The above dimensions are nominal dimensions and may differ from actual dimensions.

Water Treatment Plants

WAC Chain for Water Screens

WAC Chain for water screens is used for automatic water screens, such as those found in water intakes at thermal power plants. The pins, bushes, and rollers use tempered SUS400 series stainless steel, giving them the corrosion and wear resistance necessary to operate continuously in both seawater and air. There are special plastic bearings in the roller inner diameter, allowing for lube-free operation in seawater for easy maintenance.



Size	Avg. Tensile Strength kN{kgf}	Min. Tensile Strength kN{kgf}	Roller		Inner Width W	Plate		Pin				Distance Spacer			Approx. Mass kg/m
			Dia. R	E		T	H	L1	L2	Th	Dh	d0	d	R	
WAC25610	245 {25000}	216 {22000}	100	41	50	9.5	63.5	45.0	57.0	4	28	27.2	M16	130	17.0
WAC32610	314 {32000}	275 {28000}	100	41	50	12.7	63.5	51.5	65.5	4	32	27.2	M16	140	20.5
WAC45610	441 {45000}	382 {39000}	100	41	50	12.7	76.2	51.5	65.5	4	32	27.2	M16	145	23.8
WAC55610	539 {55000}	461 {47000}	100	41	50	12.7	76.2	51.5	65.5	4	32	27.2	M16	140	23.8
WAC65610	637 {65000}	549 {56000}	110	41	50	16	76.2	58.7	76.3	4	38	27.2	M20	165	30.0
WAC75610	735 {75000}	628 {64000}	110	58	66.7	16	80	67.0	84.0	4	38	27.2	M20	180	34.0
WAC100610	981{100000}	834 {85000}	130	58	66.7	22	100	79.0	98.5	8	40	34	M22	210	53.1
WAC120610	1180{120000}	1000{102000}	150	62	70	22	115	80.7	100	8	46	34	M22	210	64.5

Note: Please indicate plate coating. Dimensions are for reference only. Specify dimensions in a drawing when making your inquiry.
The above dimensions are nominal dimensions and may differ from actual dimensions.

Model Numbering Example **(Made to Order)**

Base Chain: **WAC25610+400L 1 H**
- WAC25610 — Size
- 400L — No. of Links
- 1 — Quantity
- H — Unit (strand)

Link: **WAC25610+OL 1 K**
- WAC25610 — Size
- OL — Part
- 1 — Quantity
- K — Unit (piece)

Note: Specify the model number and contact a Tsubaki representative for a quote.

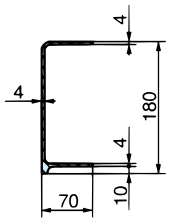
Accessories for Collection Tank Chains

■ F Type Flight

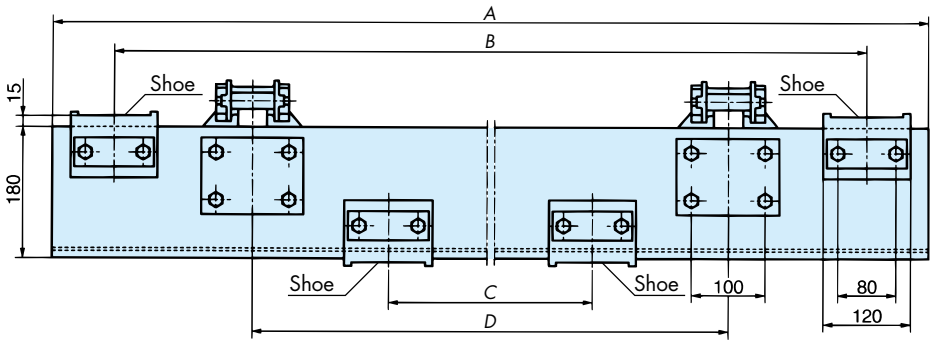
Specific Gravity: 1.9
Mass: 2.4kg/m
Material: FRP
Color: Blue

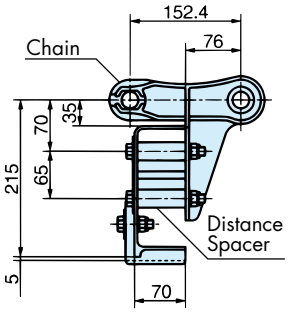
Model Numbering Example

AC-FL (A dimensions)-(B dimensions)-(C dimensions)-(D dimensions)



Flight Cross-section





Note: 1. Add A, B, C, D dimensions (unit: mm) to the model number when ordering flights, and ask a Tsubaki representative for a quote.
Attach the SF4 attachment, distance spacer, flight, and retainer plate, or flight and shoe, with SUS300 bolts, nuts, washers, spring washers, etc. (Flights do not include shoes or distance spacers.)
2. Contact a Tsubaki representative when minimum order quantity is under 100m.

■ Shoe

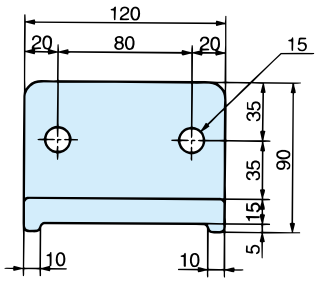
Dual Collars

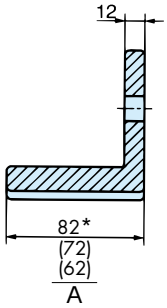
Specific Gravity: 1.14
Mass: 260g (when width is 70mm)
Material: Plastic
Color: Black

Model Numbering Example

AC-FL-SHD82

Shoe
Dual Collars
A Dimension





* Flights in 50 & 60mm widths available.
Other dimensions are the same as above.

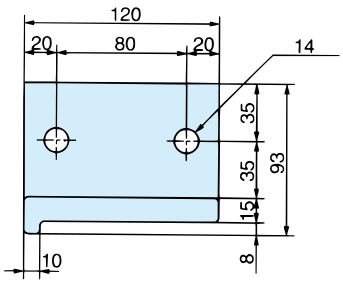
Single Collar

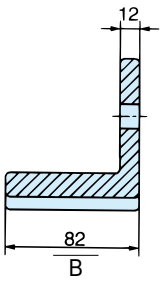
Specific Gravity: 1.17
Mass: 290g
Material: Polyurethane
Color: Black

Model Numbering Example

AC-FL-SHS82

Shoe
Single Collar
B Dimension





Note: Tsubaki can custom make shoes in other dimensions.
Contact a Tsubaki representative for further details.

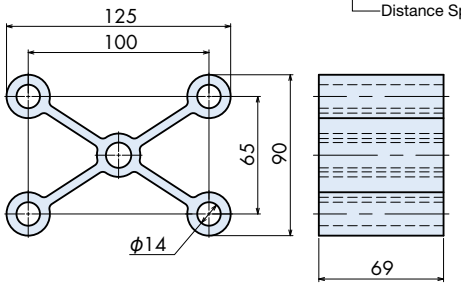
■ Distance Spacer

Specific Gravity: 1.4
Material: Plastic
Mass: 240g
Color: Black

Model Numbering Example

AC-FL-DIS

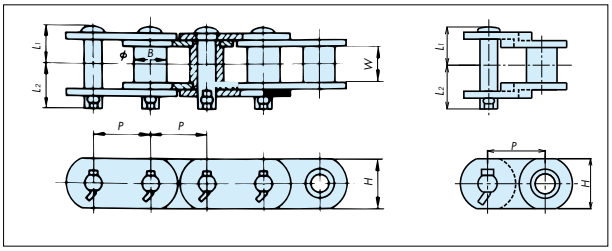
Distance Spacer



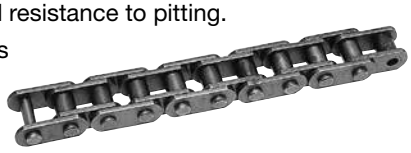
Note: The above dimensions are nominal dimensions and may differ from actual dimensions.

Water Treatment Plants

BF Drive Chain



All parts use tempered SUS400 series stainless steel, giving BF chains high strength and resistance to pitting.
JIS roller chain sprockets can be used as is.

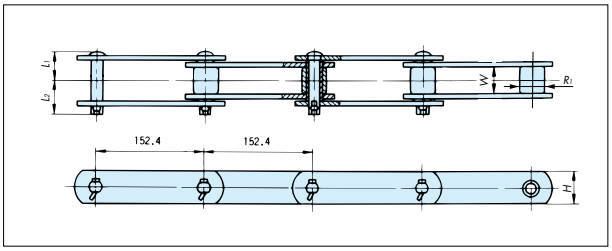


Model Numbering Example **BF140E+100L-PR**

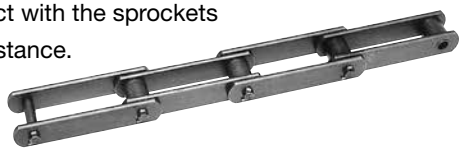
Size	Avg. Tensile Strength kN{kgf}	Min. Tensile Strength kN{kgf}	Pitch *P*	Bush Dia. *B*	Inner Link Inner Width *W*	Plate Height *H*	Pin		Approx. Mass kg/m
							*L*1	*L*2	
BF120N*	108 {11000}	99 {10100}	38.1	22.23	25.4	33.0	27.5	31.5	6.8
BF140*	137 {14000}	127 {13000}	44.45	25.40	25.4	38.0	29.5	37.0	9.5
BF140E	147 {15000}	132 {13500}				44.0			10.6
BF160*	181 {18500}	167 {17000}	50.8	28.58	31.7	44.0	34.5	40.5	10.9
BF160E	233 {23800}	196 {20000}				44.5	35.5	38.5	12.5
BF200	309 {31500}	284 {29000}	63.5	39.69	38.1	54.0	45.5	50.5	20.7
BF200E	353 {36000}	324 {33000}					44.0		20.9
BF240	392 {40000}	363 {37000}	76.2	47.62	47.6	63.5	53.5	57.5	27.8
ACS4124	186 {19000}	167 {17000}	103.2	43.7	37.0	44.0	37.0	39.5	10.5
BF2120*	147 {15000}	137 {14000}	76.2	22.23	26.0	38.0(36.0)	29.0	33.0	5.9

Note: Values in parentheses ( ) are outer plate dimensions. The above dimensions are nominal dimensions and may differ from actual dimensions.
* BF120N, BF140, BF160, and BF2120 links resemble offset links and look different from the above.

ACRD Drive Chain



A chain with rollers made of tempered SUS400 series stainless steel. Rolling contact with the sprockets increases wear resistance.

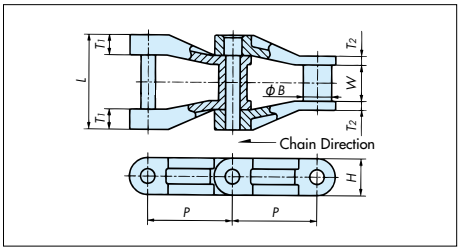


Model Numbering Example **ACRD10+100L-PR**

Size	Pitch *P*	Avg. Tensile Strength kN{kgf}	Min. Tensile Strength kN{kgf}	Inner Width *W*	Rollew Dia. *R*1	Pin		Plate Height *H*	Approx. Mass kg/m
						*L*1	*L*2		
ACRD08	101.6	142 {14500}	132 {13500}	27.6	22.2	31	34.5	38	6
ACRD10	127	186 {19000}	172 {17500}	30.6	29	33	36	44(38)	6.4
ACRD12	152.4	235 {24000}	216 {22000}	38.9	34.9	39.4	42	44.5	8.2
ACRD17	152.4	353 {36000}	324 {33000}	38.1	40.1	44	50	54	12.8

Note: Values in parentheses ( ) are outer plate dimensions. The above dimensions are nominal dimensions and may differ from actual dimensions.

EPCD Drive Chain



A plastic drive chain for collectors.

Model Numbering Example

Base Chain	**EPC78D+100L**
Link	**EPC78D-OL**

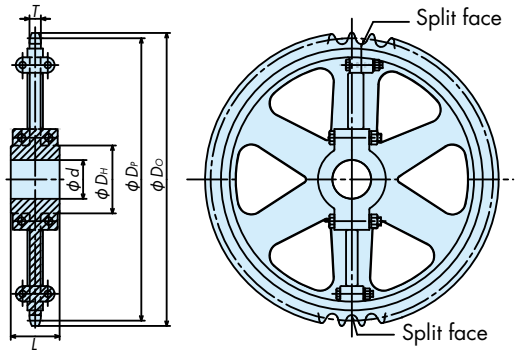
Note: This model differs from EPC chain.

Size	Avg. Tensile Strength kN{kgf}	Min. Tensile Strength kN{kgf}	Pitch *P*	Barrel Dia. *B*	Link Inner Width *W*	Outer Width *L*	Plate Height *H*	Approx. Mass kg/m
EPC78D	19.6 {2000}	17.7 {1800}	66.27	22.2	27.4	74.3	28.6	2.3
EPC90D	37.3 {3800}	32.4 {3300}	90	35	30	82.9	40.0	2.9

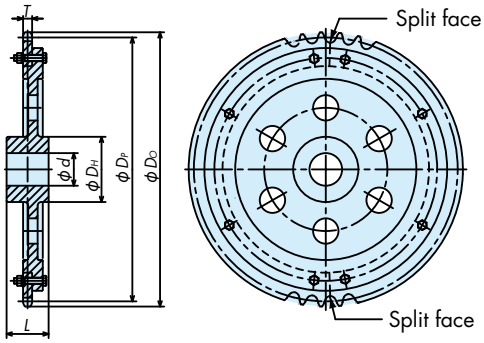
Note: 1. Plastic links are black and highly corrosion resistant.
2. The above dimensions are nominal dimensions and may differ from actual dimensions.

Drive Sprockets

C-split (Split Solid)



D-split (Ring Teeth)



Applicable Size	Pitch	No. of Teeth	Outer Dia.	Pitch Circle Dia.	Tooth Width	Hub Dim.		Pilot Bore Dia. *d*	Max. Shaft Dia.	Type/Material	Approx. Mass kg
						Dia. D_H	Length *L*				
ACRD08	101.6	12	419	392.6	22	140	115	50	85	1C (block teeth): SS400 (hub) SCS2 (teeth)	26
		24	561	778.4		160	135	60	95		77
ACRD10	127	10	528	411	25	150	125	50	90		29
		18	576	731.4		180	150	70	110		74
ACRD12	152.4	9	565	445.6	30	160	135	60	95		40
		15	539	733		190	160	80	115		90
ACRD17	152.4	9	542	445.6	30	180	150	70	110		45
		15	590	733		230	200	100	140		110

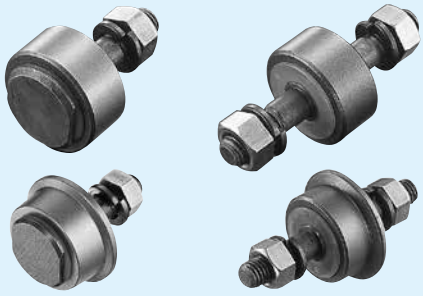
Applicable Size	Pitch	No. of Teeth	Outer Dia.	Pitch Circle Dia.	Tooth Width	Hub Dim.		Pilot Bore Dia. *d*	Max. Shaft Dia.	Type/Material	Approx. Mass kg
						Dia. D_H	Length *L*				
BF120N	38.10	15	202	183.25	24	110	100	55	65	C, C-split: SCS2 D-split : FCD600 (hub) SCS2 (teeth) Only C Type is available with 25 or fewer teeth.	9
		23	300	279.8		120	100	55	75		17
		40	507	485.6		170	130	80	105		49
		45	568	546.19		170	130	75	105		50
BF140 BF140E	44.45	11	178	157.78	24	100	100	40	60		8
		17	350	326.44		120	100	55	70		21
		35	521	495.88		150	100	50	90		45
		40	591	566.54		170	110	60	105		60
		45	662	637.22		170	110	60	105		73
		50	733	707.91		170	110	60	105		87
BF160 BF160E	50.80	11	204	180.31	30	115	120	40	70		12
		17	302	276.46		130	120	65	80		18
		23	400	373.07		130	120	55	80		29
		25	433	405.32		190	170	80	115		55
		30	514	485.99		170	110	60	105		55
		35	595	566.71		170	110	60	105		71
		40	676	647.47		200	130	70	125		98
		45	757	728.25		200	130	70	125		119
		50	838	809.04		200	130	70	125		142
BF200 BF200E	63.50	11	254	225.39	36	145	120	50	85		21
		24	520	486.49		160	110	70	95		61
		35	744	708.39		250	160	90	155		150
		40	845	809.34		250	160	90	155		185
		45	946	910.31		280	180	100	175		242
BF240	76.20	11	305	270.47	45	150	120	50	90		29
		37	941	898.52		250	150	125	155		250
		40	1014	971.21		250	160	125	155		293

Note: 1. Standard number of teeth is listed. Tsubaki can manufacture sprockets with teeth numbers other than listed above. Contact a Tsubaki representative for more details.
2. ▭ Shaded items are for reference and not standard dimensions. Indicate dimensions and number of teeth on your inquiry, or attach a drawing.
3. The above dimensions are nominal dimensions and may differ from actual dimensions.

Large Size Conveyor Chain Related Products

Toughroller ・・・・・・・・・・・・ p.140

Axle Bearing Rollers,
Attachment Bearing Rollers ・・・ p.146

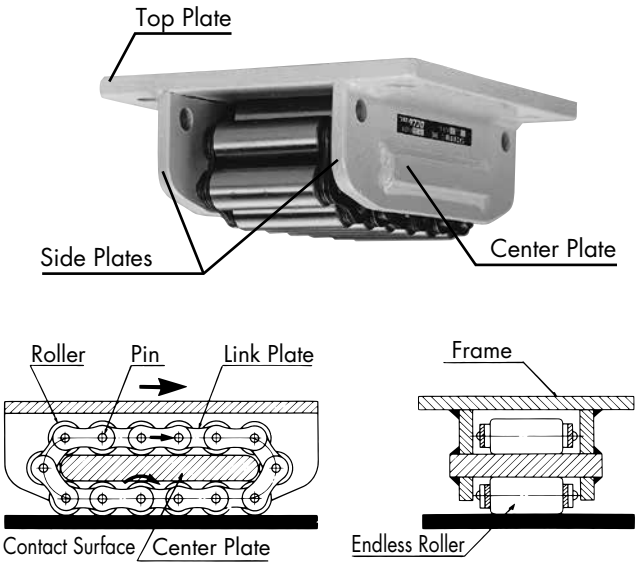


Toughroller (Endless Rollers)

Outstanding performance when conveying, transferring, or moving heavy items

Consisting of a frame and endless rollers, the endless rollers (roller, pin, and link plates) wrap around a center plate on the frame. In contrast to a standard bearing, the operating principle behind Toughroller's operation is that the center plate is the inner ring, the rollers are the balls, the link plates and pins are the ball cage, and the contact surface is the outer ring.

Construction



Applications

1. Transferring/conveying heavy items.
2. When items are conveyed only infrequently and do not warrant conveyor use.
3. When efficient use of space is important.
4. As a slide guide for long items.

◆ Steel Roller Type

Basic Load Allowance: 14.7kN (1500kgf) – 1961kN (200,000kgf)

The steel roller Toughroller is a compact device with a high load allowance made from a tempered center plate and rollers.

◆ Plastic Roller Type

Basic Load Allowance: 2.94kN (300kgf) – 34.3kN (3500kgf)

Plastic Toughroller uses engineering plastic for its rollers, which gives it increased functionality over the basic features of steel rollers. And Tsubaki's Plastic Toughroller Jr. is an economical, lightweight, simple design for easy use.

Selection

The allowable load (vertical load) for one Toughroller varies with rail material, hardness, and usage frequency.
Use the following formula to select the appropriate size.

$$\frac{\text{Working load per Toughroller}}{\text{Rail coefficient} \times \text{Frequency coefficient}} \leqq \text{Basic load capacity}$$

■ Rail Coefficient Chart

Rail Material		Rail Coefficient	
		Steel Rollers	Plastic Rollers
Steel	SS400{SS41}	1.0	1.0
	780N{80kgf} class high tensile rail	1.5	
Concrete		–	1.0
Linoleum/vinyl tiles		–	0.3

Note: Do not use TUF-J on 780N{80kgf} class high tensile steel rails.

■ Rail Frequency Coefficient Chart

Usage Conditions		Frequency Coefficient
A)	When operated 1–2 times/day, rail is replaceable	1.0
B)	Between A) and C)	0.5
C)	When operated 10 times/day and rail needs to be protected or rail cannot be replaced	0.2
D)	When using plastic rollers	1.0

◆ Loading Position

Position the Toughroller so that the weight of the conveyed items is distributed evenly, and load so that left/right and front/back are balanced.

◆ Working Load

Calculate the working load for each Toughroller with consideration for center of gravity and rail surface unevenness.

■ Selection Example

Conditions

Rail material: SS400
Rail replaceable
Operational frequency: 4–5 times/day
Working load per unit: 5000kgf (max.)

Formula

$$\frac{5{,}000}{1.0 \times 0.5} \times G/1000 = 98.1\text{kN}\{10{,}000\text{kgf}\}$$

1.0: Rail coefficient; 0.5: Frequency coefficient

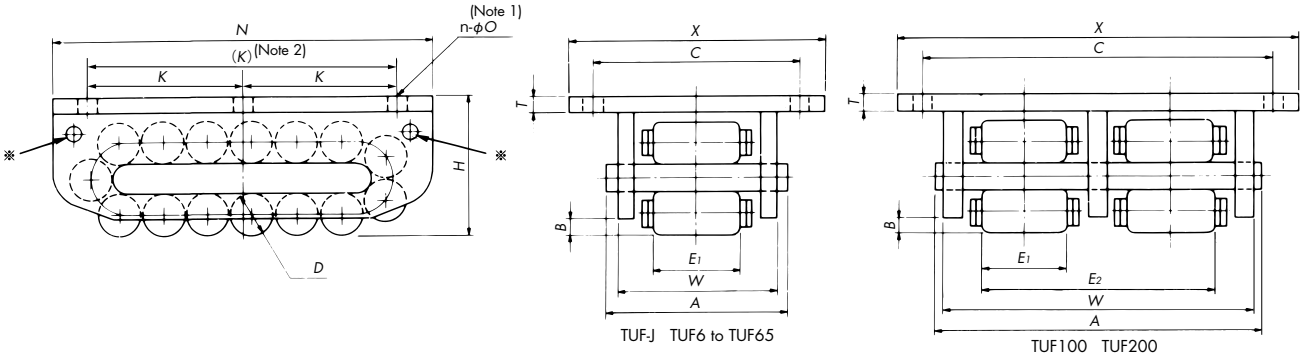
Result

TUF12 (basic load capacity 118kN) is chosen.

Large Size Conveyor Chain Related Products

Toughroller (Endless Rollers)

◆ Steel Roller Type

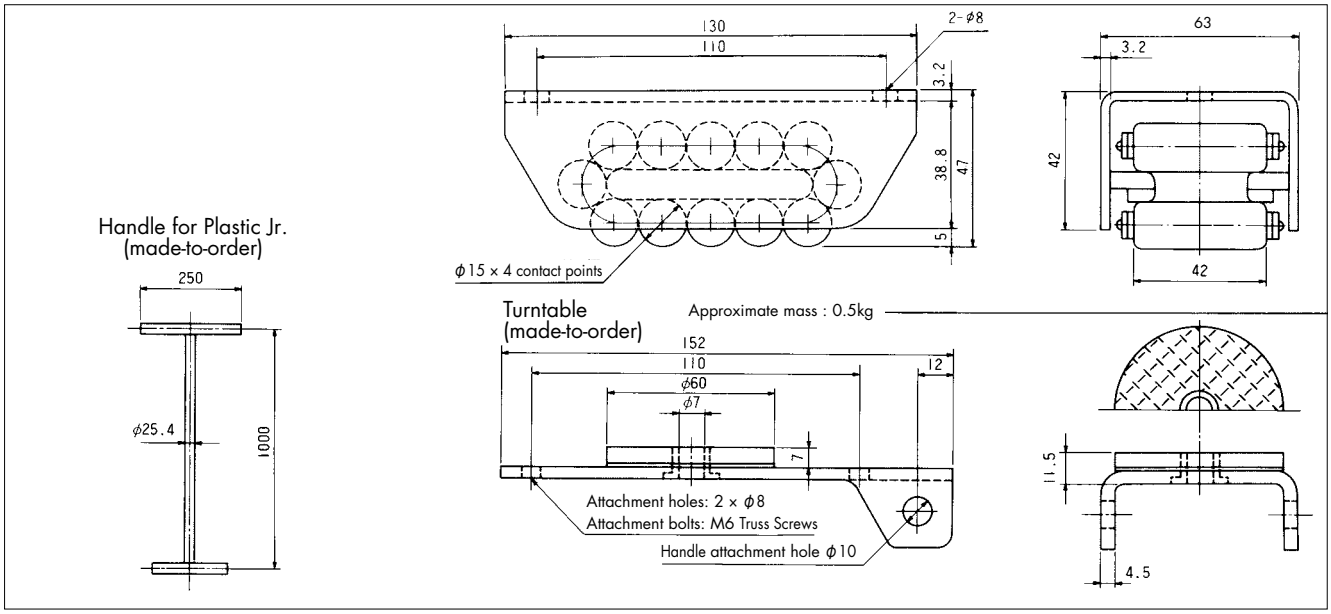


Note: 1. The holes marked ※ are not for attaching a handle. Handle attachments are restricted to extended side plate types.
2. K: TUF-J to TUF25 have 4 bolt holes (K); TUF40 to TUF100 have 6 bolt holes; TUF200 has 8 bolt holes.

Model Number	Basic Load Capacity		Frame						Top Plate				Roller				Approx. Mass kg
	kN	{Tons}	Width X	Length N	Height H	Side Plate Width W	Center Plate Width A	Space B	C	K	n-φO	T	D	E1	E2	Rollers in Contact w/Ground	
TUF-J	14.7	1.5	135	120	51.1	72.6	85.5	5	105	90	4-10	8	15	42	–	4	2.5
TUF6	58.8	6	150	160	66	92	105	6	120	120	4-12	9	18	50	–	5	5
TUF12	118	12	200	210	85	120	133	9.5	160	160	4-15	12	24	70	–	5	11
TUF25	245	25	250	300	130	162	183	14	210	240	4-18	16	36	90	–	5	31
TUF40	392	40	300	440	164	186	210	20	240	180	6-22	19	50	100	–	5	70
TUF65	637	65	300	600	167	192	215	20	240	250	6-22	22	50	100	–	8	105
TUF100	980	100	500	500	167	362	385	20	420	200	6-26	22	50	100	268	12	160
TUF200	1961	200	730	700	240	544	574	20	640	200	8-33	28	72	150	410	12	500

Note: The above dimensions are nominal dimensions and may differ from actual dimensions.

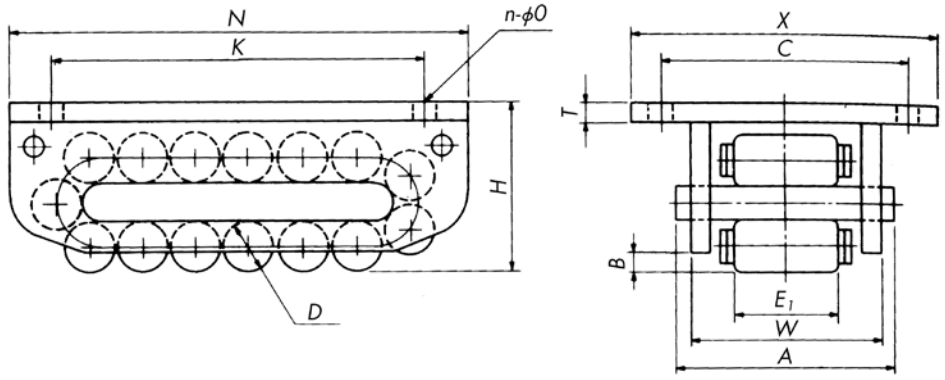
◆ Plastic Toughroller Jr.



Model Number	Basic Load Capacity		Roller Type	Approximate Mass kg
	kN	{Tons}		
TUF-JP	2.94	0.3	Plastic roller	0.9

Note: The above dimensions are nominal dimensions and may differ from actual dimensions.

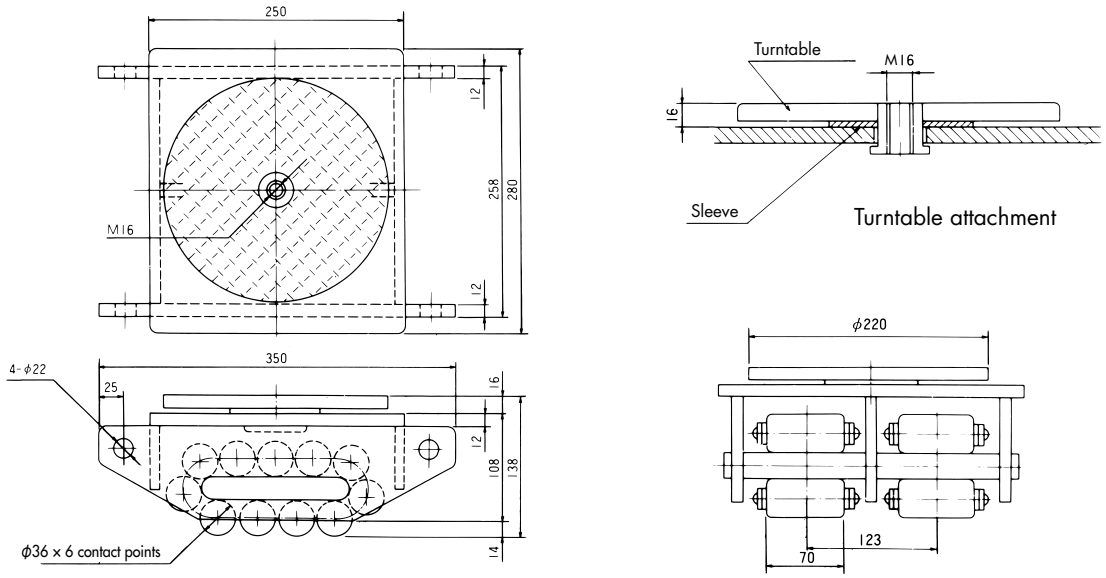
◆ Plastic Roller Type



Model Number	Basic Load Capacity		Frame						Top Plate				Roller			Approx. Mass kg
	kN	{Tons}	Width X	Length N	Height H	Side Plate Width W	Center Plate Width A	Space B	C	K	n-φO	T	D	E1	Rollers in Contact w/Ground	
TUF 1P	9.8	1	150	160	61	81	90	5	120	120	4-12	4.5	18	50	5	2.2
TUF 2P	19.6	2	200	210	79	112	120	9.5	160	160	4-15	6	24	70	5	5
TUF 4P	34.3	3.5	250	300	122	146	160	14	210	240	4-18	8	36	90	5	17

Note: The above dimensions are nominal dimensions and may differ from actual dimensions.

◆ Double Roller Type



Model Number (main unit + attachment + option)	Basic Load Capacity		Roller Type	Approximate Mass kg
	kN	{Tons}		
TUF 25W-ESP-TTB	245	25	Steel roller	42
TUF 4WP-ESP-TTB	34.3	3.5	Plastic roller	32

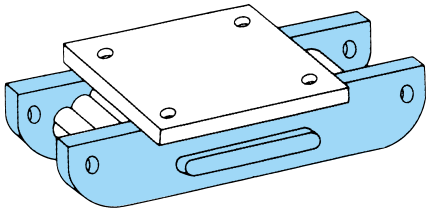
Note: 1. The double roller type comes standard with extended side plates and turntable.
2. All models are made-to-order.
3. The above dimensions are nominal dimensions and may differ from actual dimensions.

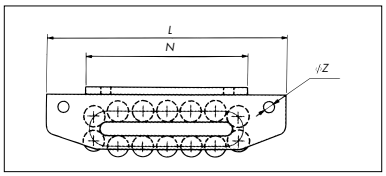
Large Size Conveyor Chain Related Products

Toughroller Attachments

1. Extended Side Plates (Attachment type: ESP)

For hand pulling or connection with other Toughrollers.





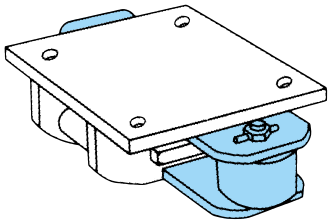
■ Attachment Dimensions

Model No.	L	Z	Approx. Mass kg
TUF-J	170	17	3
TUF 6	230	17	6
TUF12	300	17	12
TUF25	400	22	33
TUF1P	230	17	2.4
TUF2P	300	17	6
TUF4P	400	22	19

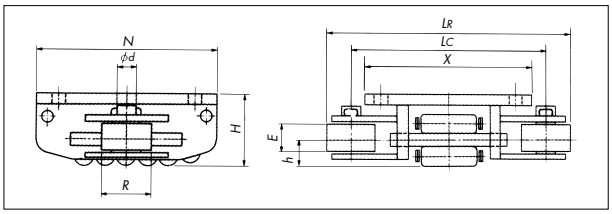
Note: Made-to-order.

2. Side Guide Roller (Attachment type: One side SGR-1, both sides SGR-2)

For preventing lateral vibration and for when there are lateral forces.



Side guide rollers can be installed on one or both sides.



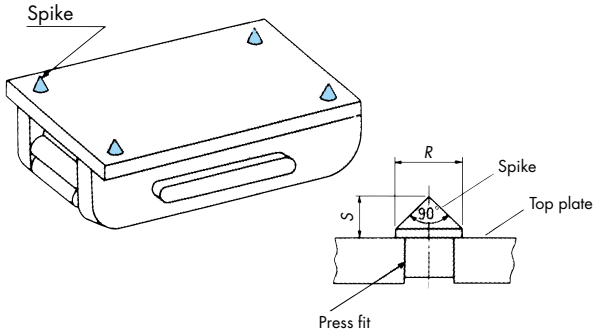
■ Attachment Dimensions

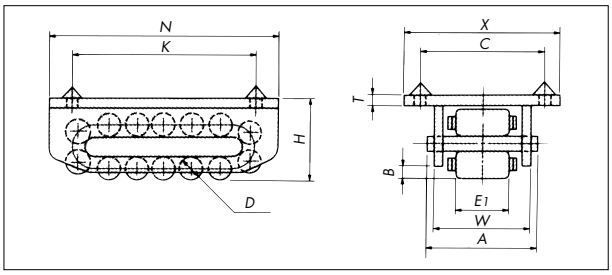
Model No.	N	X	H	R	E	d	h	L_C	L_R
TUF-J	120	135	51.1	38	16	14.5	20	142	180
TUF6	160	150	66	44.5	23	22	27	174	218
TUF12	210	200	85	60	38	22	40	220	280
TUF25	300	250	130	75	62	31.5	60	285	360

Note: Made-to-order.

3. Spikes (Attachment type: SPK)

For use with wooden pallets.





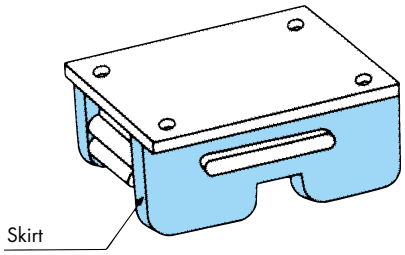
■ Attachment Dimensions

Model No.	R	S
TUF-J	12	7
TUF6	14	8
TUF12	19	10.5

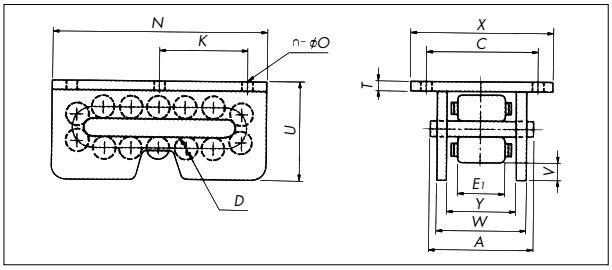
Note: Dimensions not listed here are the same as Toughroller dimensions. Made-to-order.

4. Skirt (Attachment type: SKT)

For preventing lateral vibration and when there are lateral forces.



Skirts can be attached to one or both sides. Skirts are normally attached to one side.



■ Attachment Dimensions

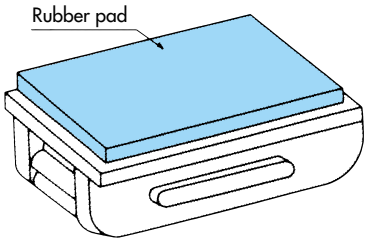
Model No.	U	V	Y	Approx. Mass kg (skirts on both sides)
TUF-J	65	14.0	56.5	3
TUF6	85	19.2	72	6.3
TUF12	112	27.0	100	14.5
TUF25	166	36.0	130	37.8

Note: Dimensions not listed here are the same as Toughroller dimensions. Skirts are welded on and cannot be attached later. Made-to-order.

Note: The above dimensions are nominal dimensions and may differ from actual dimensions.

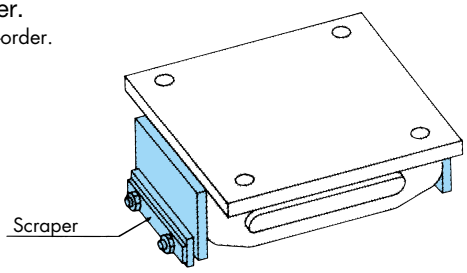
5. Rubber Pad (Attachment type: GPD)

Perfect for equally divided loads, uneven surfaces, and preventing slippage. For use with wooden pallets.
Note: Made-to-order.



6. Scraper (Attachment type: SCR)

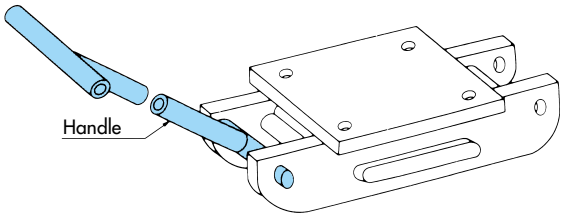
For use when material accumulates on rail. Scrapers are welded on and cannot be attached later.
Note: Made-to-order.

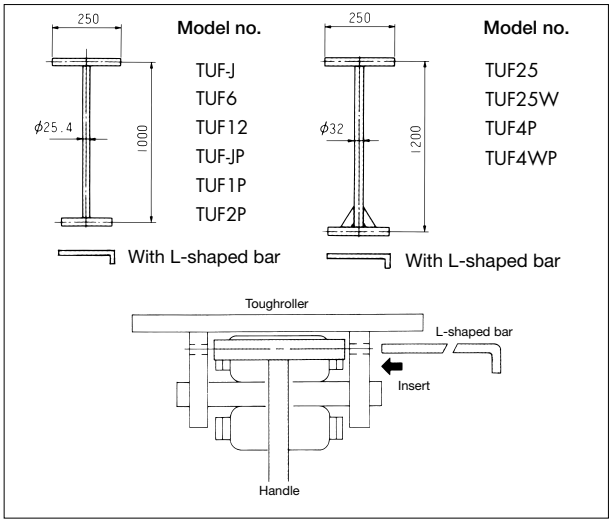


Toughroller Options

1. Handle (Option model no.: HDL)

For hand pulling.
Handles can only be attached to Toughrollers with extended side plates.

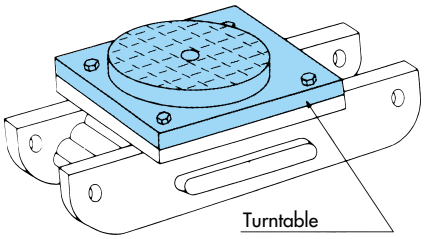


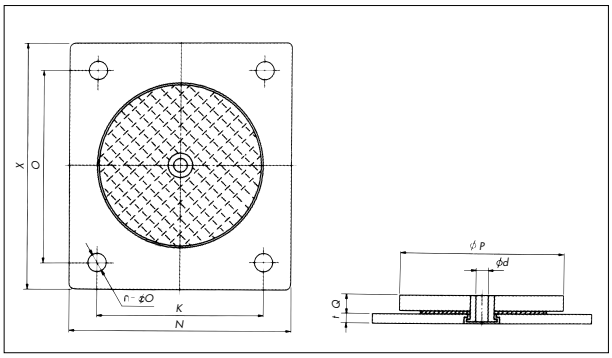


Note: Made-to-order.

2. Turntable (Option model no.: TTB)

For directional travel.





■ Dimensions

Model No.	φP	φd	Q	t	Mounting Bolt	Approx. Mass kg
TUF-J	90	7	10	6	M8	1.3
TUF1P TUF6	120	10	13	6	M10	2.4
TUF2P TUF12	160	14	13	9	M12	5.3
TUF4P TUF25	200	17.5	17	12	M16	12.1

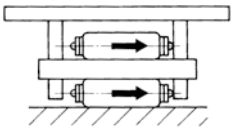
Note: The turntable is attached to the top plate of the Toughroller by bolts. Dimensions not listed above are the same as Toughroller dimensions. Made-to-order.

Note: The above dimensions are nominal dimensions and may differ from actual dimensions.

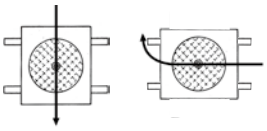
Large Size Conveyor Chain Related Products

Notes on Handling Toughroller

1. Standard Toughrollers cannot take thrust loads along the roller axis. If thrust loads are present, consider using the optional side guide roller and skirt, or have a rail bear the thrust load.



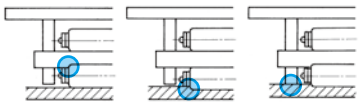
2. Except for double roller types, do not change directions while Toughroller is in motion, as this will cause a thrust load as described in 1. above. Jack up the Toughroller or use other means to change direction.



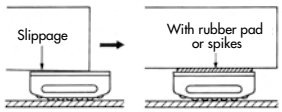
3. When using in corrosive environments (outdoors, in the rain, etc.) wash the unit and lubricate the entire chain with SAE30–40 oil each time. Tsubaki offers stainless steel specifications for use in extremely corrosive environments. Use in high temperatures will accelerate lube deterioration. Always lube regularly.

4. Usage limits are when any of the following begins to occur:

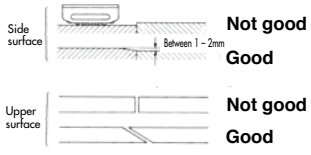
1) Center plates touch link plates
2) Link plates touch rails
3) Side plates touch rails



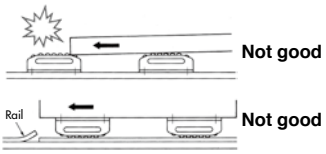
5. Ensure there is no slippage between conveyed material and the Toughroller. Tsubaki offers Toughrollers with rubber pads and spikes for this purpose. See 5. and 6. on pages 143 and 144.



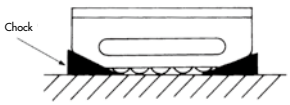
6. Ensure a gradient of less than 1.0–2.0mm when there is a step in rail connections. The rail seams should be smooth or like as shown on the right.



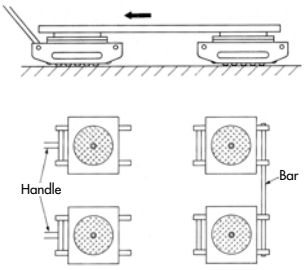
Ensure there are no severe impacts on the rollers.



7. Toughrollers do not have a stopping mechanism Consider installing one on the equipment side. When leaving a Toughroller in a stopped position, insert chocks between the side plates and rail.



8. When using a Toughroller with a turntable, the manner shown in the drawing on the right is ideal. Attaching a bar between two rear Toughrollers will allow for smooth travel.



9. After use, remove dust and the like with a brush and apply a coat of lube or grease before storing.

Toughroller Ordering Example

Model Numbering Example

TUF25-ESP

Main Unit
TUF□□ : □ : Basic load capacity
TUF-J : Jr.
TUF-JP : Plastic roller Jr.
TUF□P : Plastic roller
TUF25W : Double rollers
TUF4WP : Plastic double rollers

Attachment Type
ESP : Extended side plate
SGR1 : Side guide roller (one side)
SGR2 : Side guide roller (both sides)
SPK : Spikes
SKT : Skirt
GPD : Rubber pad
SCR : Scraper

TUF25-TTB

Main Unit

Option
HDL : Handle
TTB : Turntable

Ordering Example

Main Unit: TUF25
Attachment Spacing: ESP
(extended side plate)
Option: HDL (handle)
Quantity: 1

Model Number	Quantity	Unit
TUF25-ESP	1	K
TUF25-HDL	1	K

Note: 1. Refer to individual product pages for possible model (size/roller type) and attachment assemblies.
2. Contact a Tsubaki representative regarding installing attachments before shipping.
3. The double roller type comes standard with extended side plates (-ESP) and turntable (-TTB).

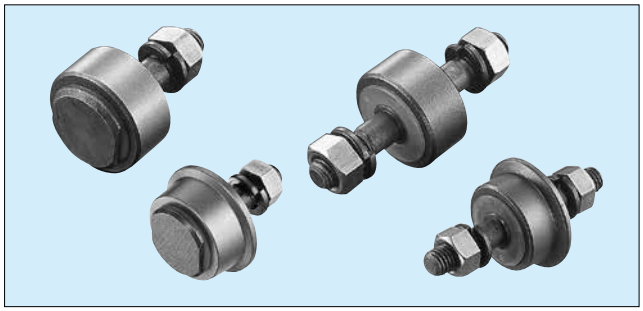
Overview of Axle Bearing Rollers and Attachment Bearing Rollers

Bearing Specification / Roller Specification		Lubed Specifications	Lube-free Specifications	Water Resistant Specifications	Heat Resistant Specifications
		1. Coefficient of Friction: 0.03 2. Operating Temp: -20 to 80°C 3. Lubed	1. Coefficient of Friction: 0.03 2. Operating Temp: -20 to 50°C 3. Non-lubed (Anti-rust oil is applied before shipment)	1. Coefficient of Friction: 0.03 2. Operating Temp: 0 to 50°C 3. Non-lubed (Anti-rust oil is applied before shipment)	1. Coefficient of Friction: 0.03 2. Operating Temp: -20 to 150°C 3. Heat Resistant Lube (Includes grease nipple)
Usage Environment		Ambient temperatures away from water and dust	Ambient temperatures away from water and dust	Ambient temperatures in contact with water at all times (away from dust)	High temperatures away from water and dust
Axle Bearing Rollers	 JBR	Roller Diameter: ϕ31.8 to ϕ125 Allowable Load: 1.96 to 15.7kN	Roller Diameter: ϕ31.8 to ϕ125 Allowable Load: 1.96 to 15.7kN	Roller Diameter: ϕ31.8 to ϕ125 Allowable Load: 1.27 to 11.0kN	Roller Diameter: ϕ31.8 to ϕ125 Allowable Load: 1.96 to 15.7kN
	 JBF	Roller Diameter: ϕ31.8 to ϕ125 Allowable Load: 1.27 to 9.81kN	Roller Diameter: ϕ31.8 to ϕ125 Allowable Load: 1.27 to 9.81kN	Roller Diameter: ϕ31.8 to ϕ125 Allowable Load: 1.27 to 9.81kN	Roller Diameter: ϕ31.8 to ϕ125 Allowable Load: 1.27 to 9.81kN
	 JBFF	Roller Diameter: ϕ31.8 to ϕ80 Allowable Load: 1.27 to 6.86kN	Roller Diameter: ϕ31.8 to ϕ80 Allowable Load: 1.27 to 6.86kN	Roller Diameter: ϕ31.8 to ϕ80 Allowable Load: 1.27 to 6.86kN	Roller Diameter: ϕ31.8 to ϕ80 Allowable Load: 1.27 to 6.86kN
	 JBTF	Roller Diameter: ϕ31.8 to ϕ80 Allowable Load: 1.27 to 6.86kN	Roller Diameter: ϕ31.8 to ϕ80 Allowable Load: 1.27 to 6.86kN	Roller Diameter: ϕ31.8 to ϕ80 Allowable Load: 1.27 to 6.86kN	Roller Diameter: ϕ31.8 to ϕ80 Allowable Load: 1.27 to 6.86kN
	 JBUR	Roller Diameter: ϕ40 to ϕ100 Allowable Load: 0.29 to 2.94kN Operating Temperature: 0 to 50°C	Roller Diameter: ϕ40 to ϕ100 Allowable Load: 0.29 to 2.94kN Operating Temperature: 0 to 50°C		
Bearing Rollers with Attachments	 ABR	Roller Diameter: ϕ31.8 to ϕ125 Allowable Load: 1.96 to 27.5kN	Roller Diameter: ϕ31.8 to ϕ125 Allowable Load: 1.96 to 27.5kN	Roller Diameter: ϕ31.8 to ϕ125 Allowable Load: 1.27 to 19.3kN	Roller Diameter: ϕ40.0 to ϕ125 Allowable Load: 3.04 to 27.5kN
	 ABF	Roller Diameter: ϕ31.8 to ϕ125 Allowable Load: 1.27 to 18.6kN	Roller Diameter: ϕ31.8 to ϕ125 Allowable Load: 1.27 to 18.6kN	Roller Diameter: ϕ31.8 to ϕ125 Allowable Load: 1.27 to 18.6kN	Roller Diameter: ϕ40.0 to ϕ125 Allowable Load: 3.04 to 18.6kN
	 ABFF	Roller Diameter: ϕ31.8 to ϕ80 Allowable Load: 1.27 to 6.86kN	Roller Diameter: ϕ31.8 to ϕ80 Allowable Load: 1.27 to 6.86kN	Roller Diameter: ϕ31.8 to ϕ80 Allowable Load: 1.27 to 6.86kN	Roller Diameter: ϕ40.0 to ϕ80 Allowable Load: 3.04 to 6.86kN
	 ABUR	Roller Diameter: ϕ40 to ϕ100 Allowable Load: 0.29 to 2.94kN Operating Temperature: 0 to 50°C	Roller Diameter: ϕ40 to ϕ100 Allowable Load: 0.29 to 2.94kN Operating Temperature: 0 to 50°C		

Note: 1. Tsubaki can manufacture roller diameters not listed above.
2. Allowable load may differ for Type 2. Heat resistant specifications may not be available for all models. See specification pages for details.
3. Lube-free and water resistant specifications use plastic cylindrical bearings. You will need to take impact loads into account. Contact a Tsubaki representative for more information.

Large Size Conveyor Chain Related Products

Standard Axle Bearing Roller



Model Numbering Example

JBR□□□-□

- Axle
- Bearing
- Roller Type (R roller, F roller)
- Size
- Axle Type (1: Type 1, 2: Type 2)
- Available Specs
  - Lubed : No code
  - Lube-free : N
  - Water Resistant: W
  - Heat Resistant : H

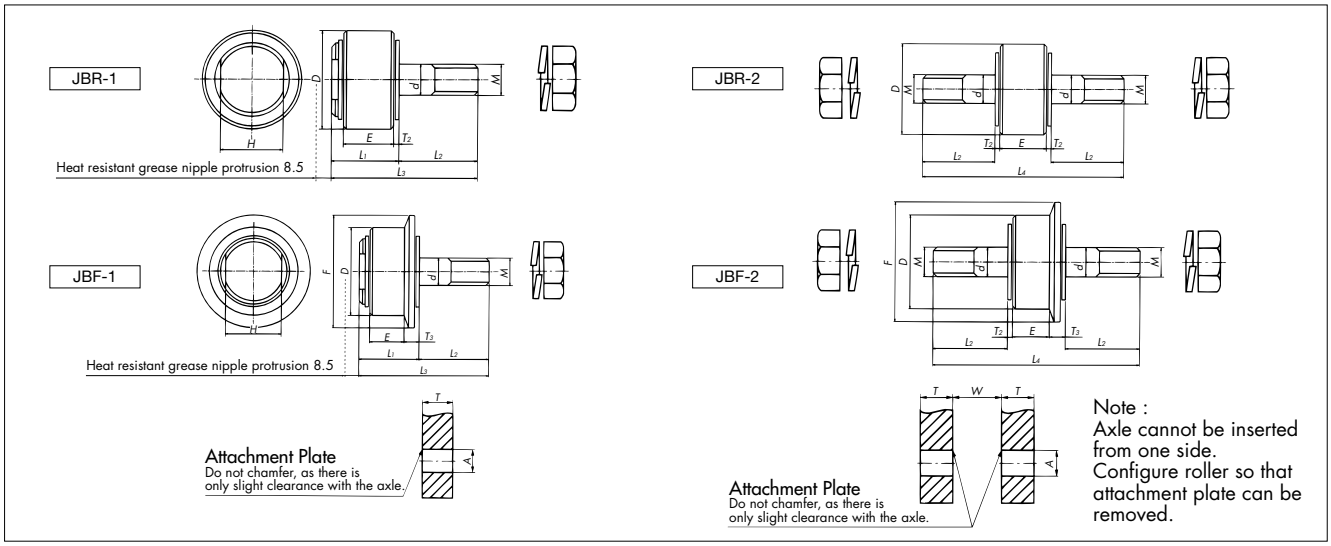
■ Available Specifications

Lubed | Lube-free | Water Resistant | Heat Resistant

Note: Check allowable load

Size	Available Bolt Length
03	14mm
05	20mm
10	22mm
12	25mm

Size	Available Bolt Length
17	32mm
26	38mm
36	44.5mm



Roller Specification, Size, Axle Type				Allowable Load kN	Allowable Load {kgf}	Allowable Rotation Speed r/min	Max. Bolt Tightening Torque N•m	Max. Bolt Tightening Torque {kgf•m}	Axle Dia. d	Outer Dia. D	Flange Dia. F	H	Bolt Dia. M	E	T2	T3	L1	L2	L3	L4	Approx. Mass kg Type 1	Approx. Mass kg Type 2	Attachment Plate A	Attachment Plate T	Attachment Plate W
R Roller	JBR03	Type 1	Type 2	1.96	200	180 (120)	11.8	1.2	10	31.8	–	19 (16)	M10	14	2 (4.5)	–	20 (25)	24.5	44.5 (49.5)	67 (72)	0.14	0.14	10.2	10–13	18 (23)
	JBR05	Type 1	Type 2	3.04	310	185 (120)	58.8	6	12	40	–	27 (21)	M12	19	2.5 (4.5)	–	26.5 (31)	35.5	62 (66.5)	95 (99)	0.28	0.30	12.2	15–20	24 (28)
	JBR10	Type 1	Type 2	5.49	560	190 (120)	78.4	8	16	50.8	–	32 (24)	M16	26	3 (6)	–	35 (41.5)	40	75 (81.5)	112 (118)	0.59	0.69	16.2	17–21	32 (38)
	JBR12	Type 1	Type 2	8.34	850	150 (100)	78.4	8	20	65	–	38 (27)	M20	32	3 (7.5)	–	41.5 (51)	48.5	90 (99.5)	135 (144)	1.15	1.23	20.2	21–25	38 (47)
	JBR17	Type 1	Type 2	9.81 (14.1)	1000 (1440)	120 (80)	162	16.5	24	80	–	48 (30)	M24	44	4 (10.5)	–	56.5 (70)	62.5	119 (132.5)	177 (190)	2.47	2.60	24.2	28–34	52 (65)
	JBR26	Type 1	Type 2	12.7 (19.6)	1300 (1000)	95 (60)	245	25	27	100	–	55 (34)	M27	50	4 (10.5)	–	63.5 (77)	73.5	137 (150.5)	205 (218)	3.60	3.80	27.2	32–39	58 (71)
	JBR36	Type 1	Type 2	15.7 (27.5)	1600 (2800)	75 (50)	529	54	30	125	–	70 (45)	M30	56	5.5 (12.5)	–	73.5 (90)	86.5	160 (176.5)	240 (254)	6.50	6.70	30.2	39–47	67 (81)
F Roller	JBF03	Type 1	Type 2	1.27	130	180 (120)	11.8	1.2	10	31.8	42	19 (16)	M10	11	2 (4.5)	5 (7.5)	20 (25)	24.5	44.5 (49.5)	67 (72)	0.15	0.15	10.2	10–13	18 (23)
	JBF05	Type 1	Type 2	1.96	200	185 (120)	58.8	6	12	40	50	27 (21)	M12	14	2.5 (4.5)	7.5 (9.5)	26.5 (31)	35.5	62 (66.5)	95 (99)	0.31	0.33	12.2	15–20	24 (28)
	JBF10	Type 1	Type 2	3.43	350	190 (120)	78.4	8	16	50.8	65	32 (24)	M16	20	3 (6)	9 (12)	35 (41.5)	40	75 (81.5)	112 (118)	0.66	0.76	16.2	17–21	32 (38)
	JBF12	Type 1	Type 2	5.49	560	150 (100)	78.4	8	20	65	80	38 (27)	M20	24	3 (7.5)	11 (15.5)	41.5 (51)	48.5	90 (99.5)	135 (144)	1.24	1.32	20.2	21–25	38 (47)
	JBF17	Type 1	Type 2	6.86 (9.81)	700 (1000)	120 (80)	162	16.5	24	80	100	48 (30)	M24	34	4 (10.5)	14 (20.5)	56.5 (70)	62.5	119 (132.5)	177 (190)	2.72	2.85	24.2	28–34	52 (65)
	JBF26	Type 1	Type 2	8.83 (13.7)	900 (1400)	95 (60)	245	25	27	100	125	55 (34)	M27	38	4 (10.5)	16 (22.5)	63.5 (77)	73.5	137 (150.5)	205 (218)	3.90	4.10	27.2	32–39	58 (71)
	JBF36	Type 1	Type 2	9.81 (18.6)	1000 (1900)	75 (50)	529	54	30	125	150	70 (45)	M30	42	5.5 (12.5)	19.5 (26.5)	73.5 (90)	86.5	160 (176.5)	240 (254)	7.0	7.20	30.2	39–47	67 (81)

Note: 1. Allowable loads shown in ( ) are for Type 2. No ( ) indicates the same values for both Type 1 and 2.
2. Allowable rotation speeds and dimensions shown in ( ) are for lube-free and water resistant specifications. No ( ) indicates no difference between specifications.
3. 03 and 05 sizes for Type 2 heat resistant specifications are unavailable.
4. For water resistant specifications, multiple the above allowable load values by a coefficient of 0.7.
5. Heat resistant specifications use a solid pin.
6. The above dimensions are nominal dimensions and may differ from actual dimensions.

Dual-Flange-Roller Axle Bearing Roller

Model Numbering Example

JBFF○○○-○

- Axle
- Bearing
- Dual Flange
- Size
- Available Specs
  - Lubed : No code
  - Lube-free : N
  - Water Resistant : W
  - Heat Resistant : H
- Axle Type (1: Type 1, 2: Type 2)

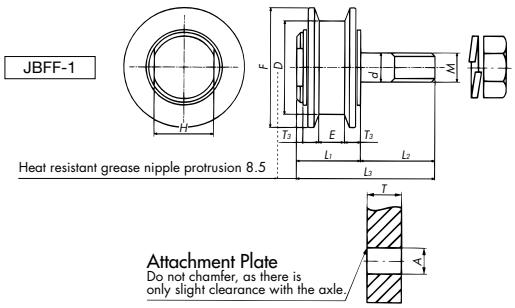
■ Available Specifications

Lubed | Lube-free | Water Resistant | Heat Resistant

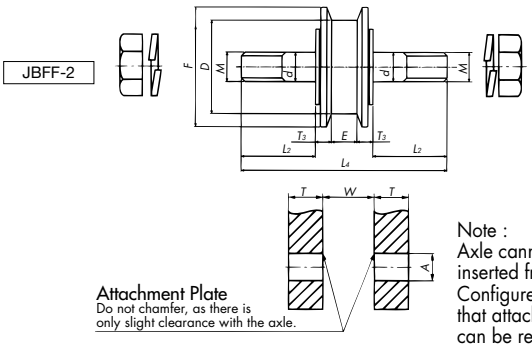
Size	Available Bolt Length
03	14mm
05	20mm
10	22mm

Size	Available Bolt Length
12	25mm
17	32mm

JBFF-1



JBFF-2



Note :
Axle cannot be inserted from one side. Configure roller so that attachment plate can be removed.

Roller Specification, Size, Axle Type			Allowable Load kN	Allowable Load {kgf}	Allowable Rotation Speed r/min	Max. Bolt Tightening Torque N·m	Max. Bolt Tightening Torque {kgf·m}	Axle Dia. d	Outer Dia. D	Flange Dia. F	H	Bolt Dia. M	E	T3	L1	L2	L3	L4	Approx. Mass kg Type 1	Approx. Mass kg Type 2	Attachment Plate A	Attachment Plate T	Attachment Plate W
JBFF03	Type 1	Type 2	1.27	130	180 (120)	11.8	1.2	10	31.8	42	19 (16)	M10	12	5 (7.5)	24.5 (29.5)	24.5	49 (54)	71 (76)	0.19	0.19	10.2	10–13	22.5 (27)
JBFF05	Type 1	Type 2	1.67	170	185 (120)	58.8	6	12	40	50	27 (21)	M12	12	7.5 (9.5)	29.5 (34)	35.5	65 (69.5)	98 (102)	0.37	0.39	12.2	15–20	27 (31)
JBFF10	Type 1	Type 2	2.75	280	190 (120)	78.4	8	16	50.8	65	32 (24)	M16	16	9 (12)	37 (43.5)	40	77 (83.5)	114 (120)	0.75	0.85	16.2	17–21	34 (40)
JBFF12	Type 1	Type 2	3.63	370	150 (100)	78.4	8	20	65	80	38 (27)	M20	16	11 (15.5)	41.5 (51)	48.5	90 (99.5)	135 (144)	1.30	1.40	20.2	21–25	38 (47)
JBFF17	Type 1	Type 2	6.86	700	120 (80)	162	16.5	24	80	100	48 (30)	M24	24	14 (20.5)	56.5 (70)	62.5	119 (132.5)	177 (190)	3.0	3.10	24.2	28–34	52 (65)

Note: 1. Allowable rotation speeds and dimensions shown in ( ) are for lube-free and water resistant specifications. No ( ) indicates no difference between specifications.
2. 03 and 05 sizes for Type 2 heat resistant specifications are unavailable.
3. For water resistant specifications, multiple the above allowable load values by a coefficient of 0.7.
4. Heat resistant specifications use a solid pin.
5. Made-to-order.
6. The above dimensions are nominal dimensions and may differ from actual dimensions.

Large Size Conveyor Chain Related Products

Tapered-Roller Axle Bearing Roller

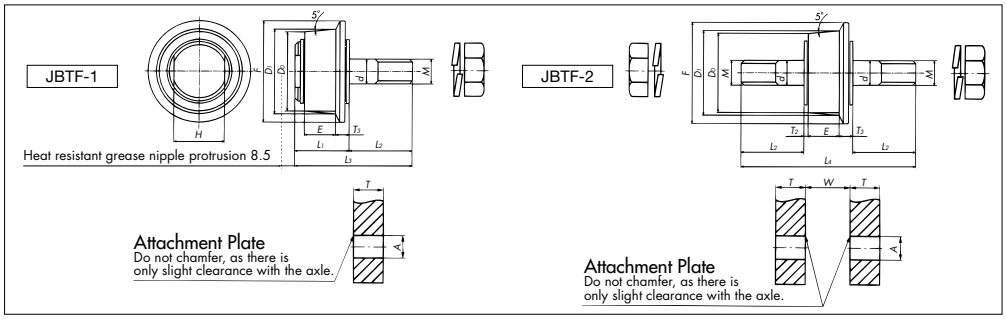
■ Available Specifications

Lubed | Lube-free | Water Resistant | Heat Resistant

Model Numbering Example

JBTF□□□-□

- JBTF: Axle / Bearing / Tapered Roller
- □□□: Size
- □: Axle Type (1: Type 1, 2: Type 2)
- Available Specs: Lubed : No code; Lube-free : N; Water Resistant : W; Heat Resistant : H



Size	Available Bolt Length
03	14mm
05	20mm
10	22mm
12	25mm
17	32mm

Note: Axle cannot be inserted from one side. Configure roller so that attachment plate can be removed.

Roller Specification, Size, Axle Type				Allowable Load kN	Allowable Load {kgf}	Allowable Rotation Speed r/min	Max. Bolt Tightening Torque N·m	Max. Bolt Tightening Torque {kgf·m}	Axle Dia. d	Outer Dia. Do	Outer Dia. D1	Flange Dia. F	H	Bolt Dia. M	E	T2	T3	L1	L2	L3	L4	Approx. Mass kg Type1	Approx. Mass kg Type2	Attachment Plate A	Attachment Plate T	Attachment Plate W
F Roller	JBTF03	Type 1	Type 2	1.27	130	180 (120)	11.8	1.2	10	31.8	33.7	42	19 (16)	M10	11	2 (4.5)	5 (7.5)	20 (25)	24.5	44.5 (49.5)	67 (72)	0.15	0.15	10.2	10–13	18 (23)
	JBTF05	Type 1	Type 2	1.96	200	185 (120)	58.8	6	12	40	42.5	50	27 (21)	M12	14	2.5 (4.5)	7.5 (9.5)	26.5 (31)	35.5	62 (66.5)	95 (99)	0.31	0.33	12.2	15–20	24 (28)
	JBTF10	Type 1	Type 2	3.43	350	190 (120)	78.4	8	16	50.8	54.3	65	32 (24)	M16	20	3 (6)	9 (12)	35 (41.5)	40	75 (81.5)	112 (118)	0.66	0.76	16.2	17–21	32 (38)
	JBTF12	Type 1	Type 2	5.49	560	150 (100)	78.4	8	20	65	69.2	80	38 (27)	M20	24	3 (7.5)	11 (15.5)	41.5 (51)	48.5	90 (99.5)	135 (144)	1.24	1.32	20.2	21–25	38 (47.4)
	JBTF17	Type 1	Type 2	6.86 (9.81)	700 (1000)	120 (80)	162	16.5	24	80	86.0	100	48 (30)	M24	34	4 (10.5)	14 (20.5)	56.5 (70)	62.5	119 (132.5)	177 (190)	2.72	2.85	24.2	28–34	52 (65)

Note: 1. Allowable loads shown in ( ) are for Type 2. No ( ) indicates the same values for both Type 1 and 2.
2. Allowable rotation speeds and dimensions shown in ( ) are for lube-free and water resistant specifications. No ( ) indicates no difference between specifications. 3. 03 and 05 sizes for Type 2 heat resistant specifications are unavailable.
4. For water resistant specifications, multiple the above allowable load values by a coefficient of 0.7. 5. Heat resistant specifications use a solid pin.
6. Made-to-order. 7. The above dimensions are nominal dimensions and may differ from actual dimensions.

Urethane-Lined-Roller Axle Bearing Roller

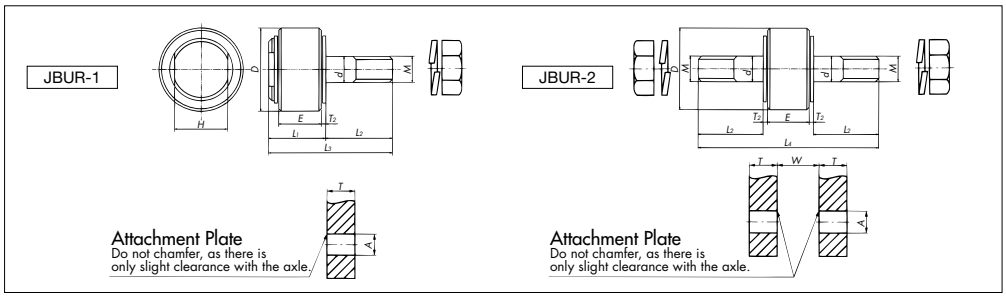
■ Available Specifications

Lubed | Lube-free

Model Numbering Example

JBUR□□□-□

- JBUR: Axle / Bearing / Urethane-lined
- □□□: Size
- □: Axle Type (1: Type 1, 2: Type 2)
- Available Specs: Lubed : No code; Lube-free : N



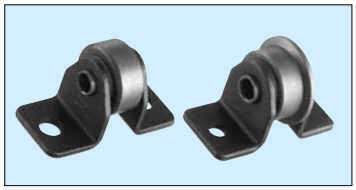
Size	Available Bolt Length
03	14mm
05	20mm
10	22mm
12	25mm
17	32mm

Note: Axle cannot be inserted from one side. Configure roller so that attachment plate can be removed.

Roller Specification, Size, Axle Type				Allowable Load kN	Allowable Load {kgf}	Allowable Rotation Speed r/min	Max. Bolt Tightening Torque N·m	Max. Bolt Tightening Torque {kgf·m}	Axle Dia. d	Outer Dia. D	H	Bolt Dia. M	E	T2	L1	L2	L3	L4	Approx. Mass kg Type1	Approx. Mass kg Type2	Attachment Plate A	Attachment Plate T	Attachment Plate W
R Roller	JBUR03	Type 1	Type 2	0.29	30	180 (120)	11.8	1.2	10	40	19 (16)	M10	14	2 (4.5)	20 (25)	24.5	44.5 (49.5)	67 (72)	0.14	0.14	10.2	10–13	18
	JBUR05	Type 1	Type 2	0.59	60	185 (120)	58.8	6	12	50	27 (21)	M12	19	2.5 (4.5)	26.5 (31)	35.5	62 (66.5)	95 (99)	0.28	0.30	12.2	15–20	24
	JBUR10	Type 1	Type 2	0.98	100	190 (120)	78.4	8	16	60	32 (24)	M16	26	3 (6)	35 (41.5)	40	75 (81.5)	112 (118)	0.59	0.69	16.2	17–21	32
	JBUR12	Type 1	Type 2	1.47	150	150 (100)	78.4	8	20	80	38 (27)	M20	32	3 (7.5)	41.5 (51)	48.5	90 (99.5)	135 (144)	1.15	1.23	20.2	21–25	38
	JBUR17	Type 1	Type 2	2.94	300	120 (80)	162	16.5	24	100	48 (30)	M24	44	4 (10.5)	56.5 (70)	62.5	119 (132.5)	177 (190)	2.47	2.60	24.2	28–34	52

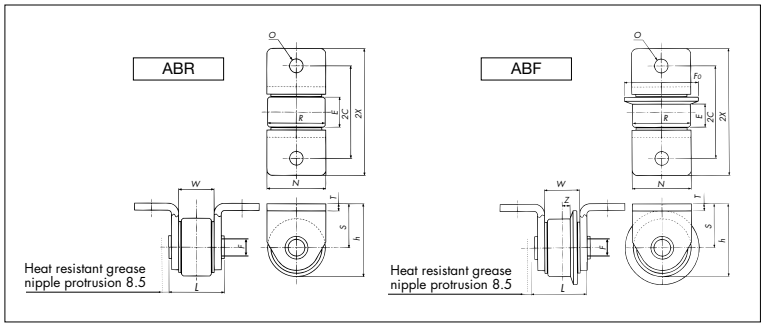
Note: 1. Allowable rotation speeds and dimensions shown in ( ) are for lube-free specifications. No ( ) indicates no difference between specifications.
2. Made-to-order. 3. The above dimensions are nominal dimensions and may differ from actual dimensions.

Standard Attachment Bearing Roller



■ Available Specifications

Lubed | Lube-free | Water Resistant | Heat Resistant



Model Numbering Example

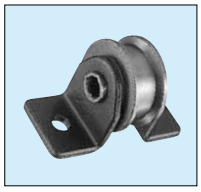
ABR□□□

- Attachment
- Bearing
- Roller Type (R roller, F roller)
- Size
- Available Specs
  - Lubed : No code
  - Lube-free : N
  - Water Resistant : W
  - Heat Resistant : H

Roller Specification, Size		Allowable Load kN	Allowable Load {kgf}	Allowable Running Speed m/min	R	E	L	h	S	T	2C	2X	N	O	W	F	F0	Z	Approx. Mass kg
R Roller	ABR03	1.96	200	18(12)	31.8	14	28	40	24.1	3.2	50	70	32	10	17.2	7.6	–	–	0.15
	ABR05	3.04	310	23(15)	40	19	36.8	50	30	4.5	60	84	40	10	23	11	–	–	0.33
	ABR10	5.49	560	30(20)	50.8	26	48.8	64	38.6	6.3	80	110	52	12	31	14	–	–	0.74
	ABR12	8.34	850	30(20)	65	32	58.4	80	47.5	7.9	90	130	70	15	37.4	15.5	–	–	1.48
	ABR17	14.1	1440	30(20)	80	44	76.4	100	60	9.5	130	180	80	18	51.4	18	–	–	2.94
	ABR26	19.6	2000	30(20)	100	50	82.6	120	70	9.5	140	200	100	21	57.6	22	–	–	5.20
	ABR36	27.5	2800	30(20)	125	56	98.5	145	82.5	12.7	180	240	125	24	67	25	–	–	9.80
F Roller	ABF03	1.27	130	18(12)	31.8	11	28	40	24.1	3.2	50	70	32	10	17.2	7.6	42	4.3	0.16
	ABF05	1.96	200	23(15)	40	14	36.8	50	30	4.5	60	84	40	10	23	11	50	4.5	0.35
	ABF10	3.43	350	30(20)	50.8	20	48.8	64	38.6	6.3	80	110	52	12	31	14	65	7	0.78
	ABF12	5.49	560	30(20)	65	24	58.4	80	47.5	7.9	90	130	70	15	37.4	15.5	80	8	1.60
	ABF17	9.81	1000	30(20)	80	34	76.4	100	60	9.5	130	180	89	18	51.4	18	100	12	3.10
	ABF26	13.7	1400	30(20)	100	38	82.6	120	70	9.5	140	200	100	21	57.6	22	125	13	5.50
	ABF36	18.6	1900	30(20)	125	42	98.5	145	82.5	12.7	180	240	125	24	67	25	150	14	10.3

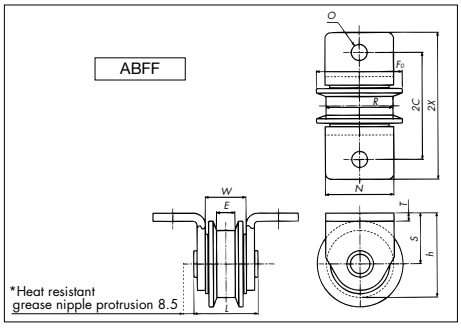
Note: 1. Allowable running speeds shown in ( ) are for lube-free and water resistant specifications. No ( ) indicates no difference between specifications.
2. 03 size for heat resistant specifications are unavailable.
3. For water resistant specifications, multiple the above allowable load values by a coefficient of 0.7.
4. Heat resistant specifications use a solid pin.
5. The above dimensions are nominal dimensions and may differ from actual dimensions.

Dual-Flange-Roller Attachment Bearing Roller



■ Available Specifications

Lubed | Lube-free | Water Resistant | Heat Resistant



Model Numbering Example

ABFF□□□

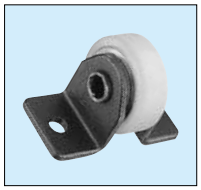
- Attachment
- Bearing
- Dual Flange
- Size
- Available Specs
  - Lubed : No code
  - Lube-free : N
  - Water Resistant : W
  - Heat Resistant : H

Roller Specification, Size	Allowable Load kN	Allowable Load {kgf}	Allowable Running Speed m/min	R	E	L	h	S	T	2C	2X	N	O	W	F0	Approx. Mass kg
ABFF03	1.27	130	18(12)	31.8	12	32	40	24.1	3.2	50	74	32	10	21.7	42	0.20
ABFF05	1.67	170	23(15)	40	12	39.8	50	30	4.5	60	87	40	10	26	50	0.42
ABFF10	2.75	280	30(20)	50.8	16	50.8	64	38.6	6.3	80	112	52	12	33	65	0.90
ABFF12	3.63	370	30(20)	65	16	58.4	80	47.5	7.9	90	130	70	15	37.4	80	1.65
ABFF17	6.86	700	30(20)	80	24	76.4	100	60	9.5	130	180	80	18	51.4	100	3.45

Note: 1. Allowable running speeds shown in ( ) are for lube-free and water resistant specifications. No ( ) indicates no difference between specifications.
2. 03 size for heat resistant specifications are unavailable.
3. For water resistant specifications, multiple the above allowable load values by a coefficient of 0.7.
4. Heat resistant specifications use a solid pin. 5. Made-to-order.
6. The above dimensions are nominal dimensions and may differ from actual dimensions.

Large Size Conveyor Chain Related Products

Urethane-Lined-Roller Attachment Bearing Roller



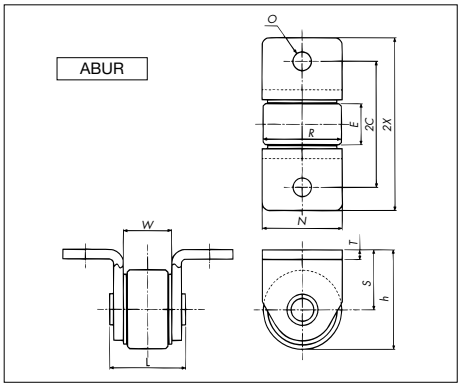
■ Available Specifications

Lubed | Lube-free

Model Numbering Example

ABUR○○○

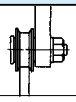
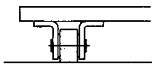
- Attachment: Bearing
- Urethane-lined
- Size
- Available Specs: Lubed : No code; Lube-free : N



Roller Specification, Size		Allowable Load kN	Allowable Load {kgf}	Allowable Running Speed m/min	R	E	L	h	S	T	2C	2X	N	O	W	Approx. Mass kg
R Roller	ABUR03	1.27	30	18(12)	40	14	28	44.1	24.1	3.2	50	70	32	10	17.2	0.15
	ABUR05	0.59	60	23(15)	50	19	36.8	55	30	4.5	60	84	40	10	23	0.33
	ABUR10	0.98	100	30(20)	60	26	48.8	68.6	38.6	6.3	80	110	52	12	31	0.74
	ABUR12	1.47	150	30(20)	80	32	58.4	87.5	47.5	7.9	90	130	70	15	37.4	1.48
	ABUR17	2.94	300	30(20)	100	44	76.4	110	60	9.5	130	180	80	18	51.4	2.94

Note: 1. Allowable running speeds shown in ( ) are for lube-free specifications. No ( ) indicates no difference between specifications.
2. Made-to-order. 3. The above dimensions are nominal dimensions and may differ from actual dimensions.

Axle and Attachment Bearing Roller Applications

Name	Model	Features	Sample Applications
Dual Flange Roller	JBFF ABFF	Flanges are attached to both sides of the F roller to prevent meandering.	 Rail running
Tapered Roller	JBTF	Roller has a 5° taper so that the channel taper can be used as a rail.	 Channel running
Urethane-lined Roller	JBUR ABUR	Roller outer periphery is urethane lined. Low noise. Will not damage rail.	 Concrete floors

Notes on Using Axle and Attachment Bearing Rollers

1. Allowable load values are determined by roller-rail wheel contact pressure or bearing rotation strength. Use rails with SS400 or stronger material. Do not use bearing rollers with curved rails.
2. For lubed specifications, lack of lubrication will cause poor rotation. Use water resistant specifications in environments where bearing roller may come in contact with water.
3. Be aware that precision is much coarser than with cam followers.
4. Do not use in acidic or alkaline environments.
   Water resistant specifications (SUS400 series parts) may rust in certain usage environments.
5. Due to the small clearance between axle and hole, do not chamfer the attachment hole for Axle Bearing Rollers.
   Be sure not to exceed the maximum screw tightening torque when attaching the nut.
6. Do not allow roller to come into contact with severe shock
7. This product does not come equipped with a brake. Consider installing one on the equipment side.
8. When re-lubricating lubed specifications, be sure to drip a few drops at a time between the roller and spacer on either side. Once lubrication has degraded, lube every 1 to 3 months with ISO VG100–150 {SAE30–40} oil.
9. Rotational resistance of bearings and spacers will increase if worn. Be sure to replace as necessary. Use the following to determine usage limit.
   · Over 0.5mm of play between roller and bearing.
   · When resin spacer has worn away.
10. All parts are coated with an anti-rust agent before shipment.

Accessories

Accessories Automatic Conveyor Chain Lubricator

TCL Automatic Conveyor Chain Lubricator

The TCL lubricator is designed for use with conveyor chains. The chain roller pushes up the checker arm on the lubricator pump, activating the pump and causing an appropriate amount of lubrication to discharge from the nozzle. Thus, no electric or other power source is required, making installation easy and exact, and stable lubrication possible.

◆ No Power Source Required

The lubricator pump is activated when the chain runs, making electric, air, or other power sources unnecessary. Installation and maintenance are a snap!

◆ Correct Lubrication

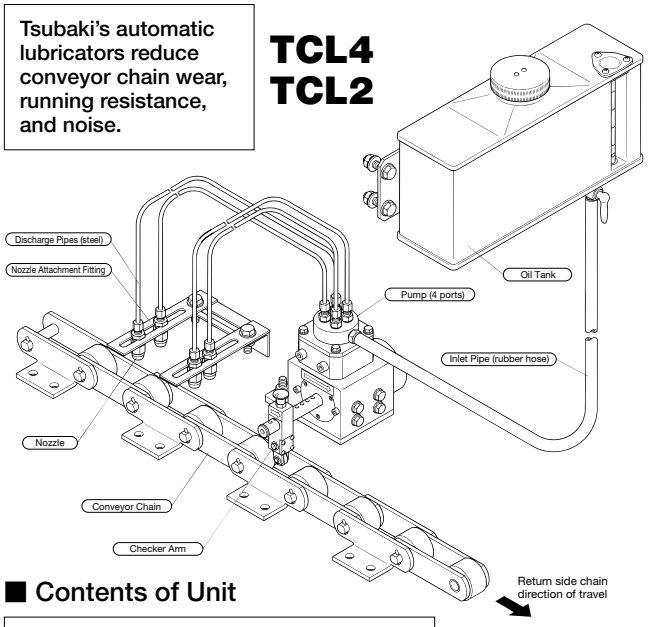
Lubrication is in tandem with chain operation for correct, stable lubrication every time.

◆ Compact, Low Price

Lighter and more compact than existing conveyor chain lubricators, making it easy to handle and cost effective.

Tsubaki's automatic lubricators reduce conveyor chain wear, running resistance, and noise.

TCL4
TCL2



■ Lubricator Performance

Type	TCL4	TCL2
Nozzle	4 ports	2 ports
Number of Operations	Max. 3 times/sec. Refer to page 153 for allowable chain pitch and speed.	
Discharge Amount	Fixed: 0.05cc/shot/nozzle	
Timing Sensor	Checker arm sensor	
ON/OFF	Replace checker arm manually after stopping the conveyor.	
Oil Tank	5 liters	
Operational Temperature	-10°C to 120°C	

Note: Operational temperature is the temperature at which the nozzle tip can function. The operational temperature of the actual unit is -10°C to 60°C.

■ Contents of Unit

1. Pump	: 1
2. Oil Tank (5 liters)	: 1
3. Rubber Hose (2m)	: 1
4. Steel Pipe (2m)	: TCL2 : 2 TCL4 : 4
5. Nozzle	: TCL2 : 2 : TCL4 : 4
6. Nozzle Attachment Fitting [Angle material : 1 / Nozzle attachment board : 2]	: TCL2 : 1 set TCL4 : 2 sets

Ordering Automatic Conveyor Chain Lubricator

Model Numbering Example

TCL4-R

- TCL4: Lubricator for Conveyor Chain
- 4: No. of Nozzles — 2: 2 nozzles; 4: 4 nozzles
- R: Chain Direction of Travel — R: Right when looking at chain from checker arm side; L: Left when looking at chain from checker arm side

Ordering Example

Type: TCL4
Chain Direction of Travel: R
Quantity: 1

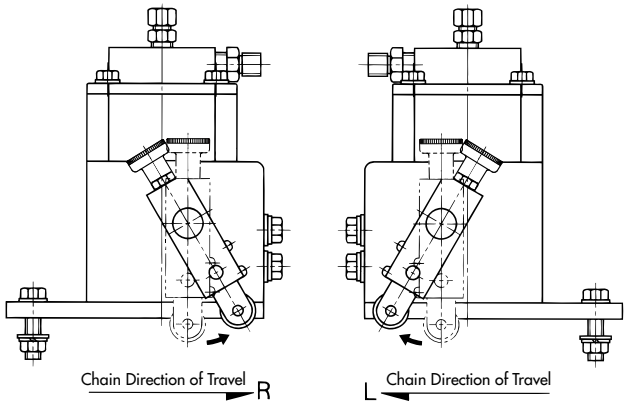
Model Number	Quantity	Unit
TCL4-R	1	S

Accessories Automatic Conveyor Chain Lubricator

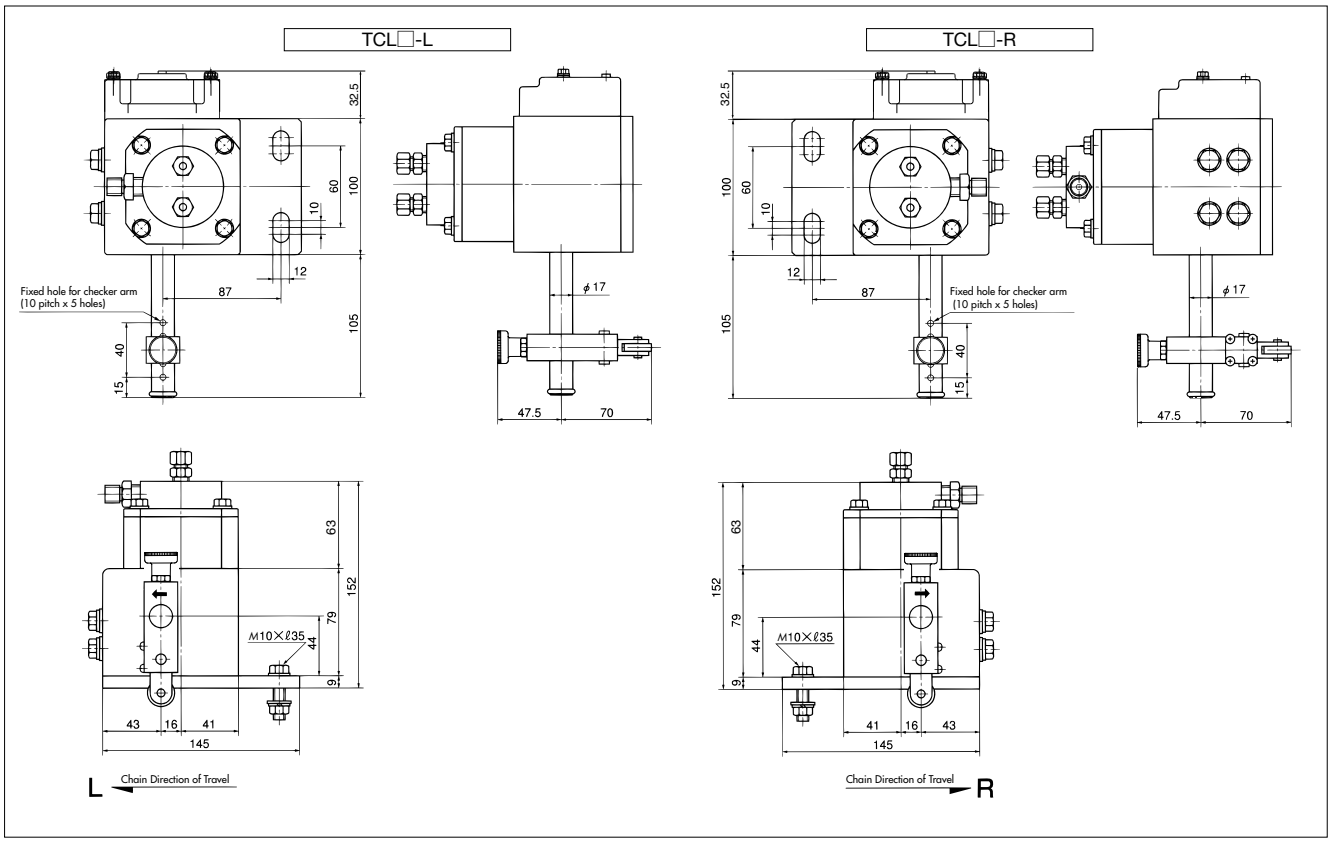
■ Allowable Chain Pitch and Speed

Chain Pitch mm \ Chain Speed m/min	5	10	15	20	25	30
75	○	×	×	×	×	×
100	○	○	*S	×	×	×
150	○	○	○	○	○	*S
200	○	○	○	○	○	*S
250~600	○	○	○	○	○	○

Note: 1. Boxes marked with *S mean only S rollers can be used.
2. Cannot be used with RF03 S rollers, as the chain inner width interferes with the checker arm.



Pump



Note: The above dimensions are nominal dimensions and may differ from actual dimensions.
Contact a Tsubaki representative regarding replacement parts.

■ Pump

Type	TCL4-R TCL4-L	TCL2-R TCL2-L
Nozzle	4 nozzles	2 nozzles
Discharge Amount	0.05cc/shot/nozzle	
Number of Operations	Max. 3 times/sec	
Discharge Pressure	0.196Pa {2kg/cm²}	
Color	Cream	
Mass	5.3kg	
Accessories	Bolt (M10 × 35L), nuts (2)	

Pipe (Nuts fitted at both ends)

Pipe	Discharge Pipe	Inlet Pipe
Material	Copper	Rubber hose (black)
Diameter	Outer dia. ϕ5	Outer dia. ϕ16
	Inner dia. ϕ3	Inner dia. ϕ8.5
Length	2000mm	2000mm

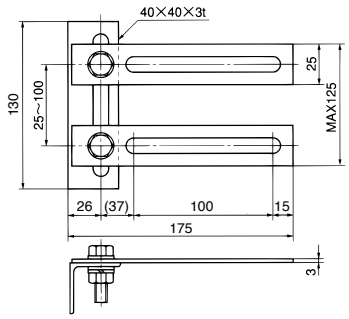
Lubricant

Lubricants with a viscosity index of ISO VG32–100 can be used.

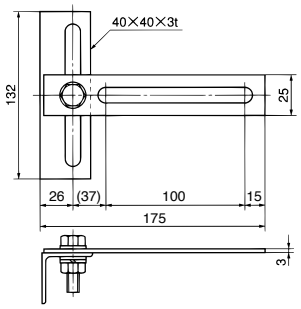
Note: Lubricants with additives such as MoS_2 (molybdenum disulfide) may clog nozzles. Do not use.

Nozzle Attachment Plates

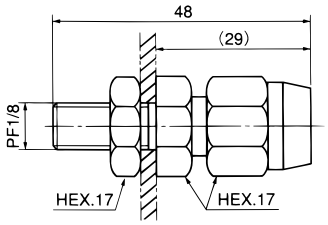
When two nozzle attachment plates are attached to the angle bar



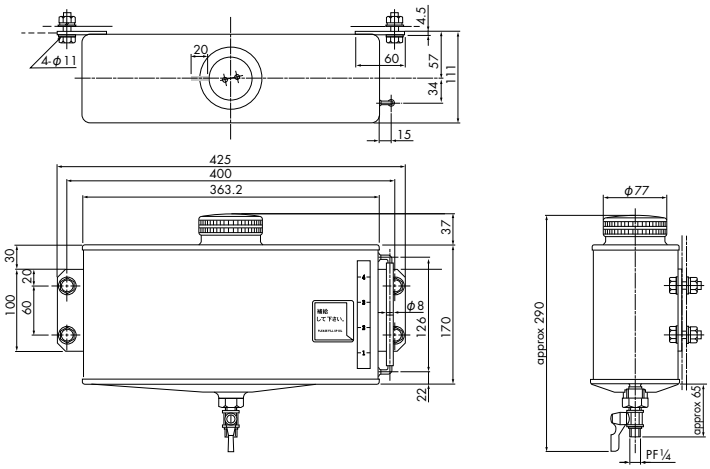
When one nozzle attachment plate is attached to the angle bar



Nozzle



Oil Tank



■ Oil Tank

Capacity	5 liters
Filter	50 mesh filters
Color	Blue
Mass	5.3kg
Fittings	Bolt (M10 x 30L), nuts (4)

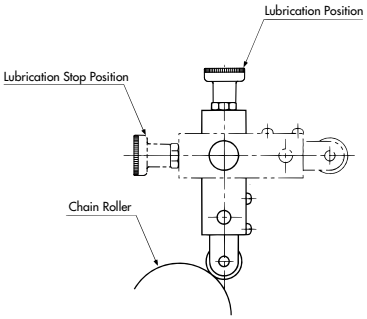
Note: The above dimensions are nominal dimensions and may differ from actual dimensions.

Notes on Usage

1. It is necessary to switch the checker arm ON to operate. Please install in a safe working area for this purpose.
2. The pump should be installed where there is minimal lateral chain vibration or vertical movement, where it will be easy to install, and where it will be parallel to the ground.
3. Attach pump (nozzle) on the chain's return side (slack side) near the sprocket to ensure maximum penetration of lubricant between pin and bush, and bush and roller. (See diagram on right.)
4. Install the oil tank parallel to the ground and 300mm or higher than the pump.
5. The copper discharge pipe should be less than 3 meters long.
6. Pump will not operate if chain is run backwards. This is done so that the checker arm does not suffer any damage. (See diagram on right.)
7. Amount of required lubricant depends on chain size and usage conditions. 2–3 shots per spot is normal. Stop lubrication once the necessary amount of lubricant has been applied. (See diagram on right.) Continuous operation will drastically hasten checker arm roller wear damage.
8. Stopping lubrication using the oil tank plug while the pump is still in operation will drastically hasten wear damage on the pump and checker arm. Always stop lubrication with the checker arm. (See diagram on right.)
9. Be sure that the oil tank does not run out of lubrication. Operating the lubricator with no lubricant will drastically hasten wear damage on the pump. Once lubrication runs out air will enter the pump, requiring the air to be pumped out before lubrication can begin again.
10. Lubrication will reduce wear on chain parts and reduce necessary power. Lubrication should generally take place more than once a week. Clean the chain first for effective lubrication.
11. Pump piston may lock when not in use for extended periods. Start lubricator up once a month to prevent locking.

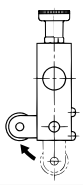
Stopping Lubrication

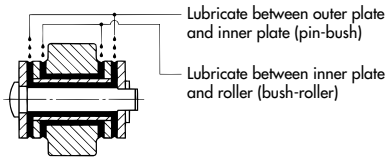
When stopping lubrication, always stop the conveyor first. Pull the knob on top of the checker arm, and tilt the arm 90° until it locks into the anchor hole. Once you are sure that it is not touching the conveyor chain, stop pump operation.



Safety Feature for Reverse Chain Running

The roller of the checker arm will spring up when chain is run in reverse. (The spring will also automatically return it to position.)





Accessories

Cutting Tools

All items are made-to-order. Refer to the Selection and Handling section for more details.

◆ T-Pin Bending Tool

■ T-Pin Bending Tool and Applicable T-Pins

T-Pin Bending Tool Model Number	Applicable T-Pin Model Number	T-Pin Nominal Diameter	Applicable Chain Size
RF-TPMK3	TP3-15	ϕ3(2.6)×15ℓ	RF03
RF-TPMK4	TP4-20	ϕ4(3.6)×20ℓ	RF05·RF08·RF430·RF204·RF450·RF650
	TP4-25	ϕ4(3.6)×25ℓ	RF10·RF12·RF205·RF6205·RF214
RF-TPMK6	TP6-33	ϕ6(5.6)×33ℓ	RF17·RF212·RF26·RF26N
RF-TPMK8.5	TP8.5-45	ϕ8.5(8.1)×45ℓ	RF36
	TP8.5-50	ϕ8.5(8.1)×50ℓ	RF36N·RF52
	TP8.5-55	ϕ8.5(8.1)×55ℓ	RF60N
RF-TPMK10	TP10-65	ϕ10(9.7)×65ℓ	RF90N
	TP10-70	ϕ10(9.7)×70ℓ	RF120N

Note: 1. Bending tools for T-pin with diameters not listed above are also available.
2. The ( ) next to the nominal diameter indicates actual diameter.
3. Applicable chain sizes in the table above indicates the ~~~ part of, for example, RF03100S.
4. N is for N rollers.
5. For stainless steel T-pins, append the suffix "SUS" to the model number above (example: TP3-15-SUS).

◆ Holding Tool

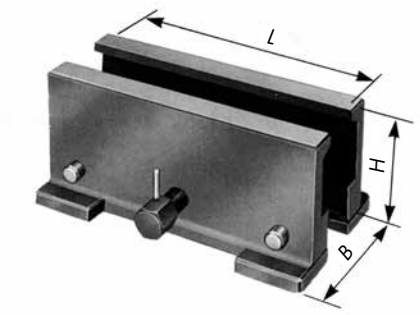
Holding Tool Model Number	Applicable Chain Size
RF-AK5-14	RF03
RF-AK7.5-18	RF05·RF08
	RF430·RF204·RF450·RF650
RF-AK7.5-22	RF10·RF12
	RF214·RF205·RF6205
RF-AK12-30	RF17·RF26·RF26N
	RF212
RF-AK18-40	RF36·RF36N·RF52
RF-AK18-45	RF60·RF90
RF-AK18-60	RF120

Note: 1. Applicable chain sizes in the table above indicates the ~~~ part of, for example, RF03100S.
2. Tsubaki can also provide holding tools for chain sizes other than those shown above. Contact a Tsubaki representative for details.

◆ Hydraulic Pin Extractor

A hydraulic pin extractor/insertion tool is also available.
Verify the model number of the chain being used, or the size, roller type, and attachment type, and contact a Tsubaki representative.

◆ Chain Vice



Model Number	Applicable Chain Size	Dimensions		
		L	*H*	*B*
CV-4	RF03 to RF17	300	135	120 to 180

Note: The above dimensions are nominal dimensions and may differ from actual dimensions.

Selection and Handling

The conveyor chain selection method has changed.

We have switched from the previous safety factor selection method (based on average tensile strength) to an allowable load selection method based on maximum allowable load, which is established by fatigue limit and allowable surface pressure.

■ Conveyor Chain Selection and Steps

1.Determine conveyance conditions ・・・157
2. Decide conveyor type ・・・・・・・・・158
3. Decide chain type・・・・・・・・・・・・159
4. Decide roller type・・・・・・・・・・・・159
5. Basic conveyor chain layout ・・・・・・159
6. Choose a chain series for conveying bulk materials・・161
7. Decide chain pitch and number of sprocket teeth ・・161
8. Decide attachment type ・・・・・・・・162
9. Calculate chain load ・・・・・・・・・・162
10. Chain selection examples ・・・・・・・166
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12. Roller allowable load under lubricated conditions ・・169
13. Allowable load for standard A attachments ・・171
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15. Clean specifications ・・・・・・・・・・174
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■ Handling Conveyor Chain

1. Installation ・・・・・・・・・・・・・175
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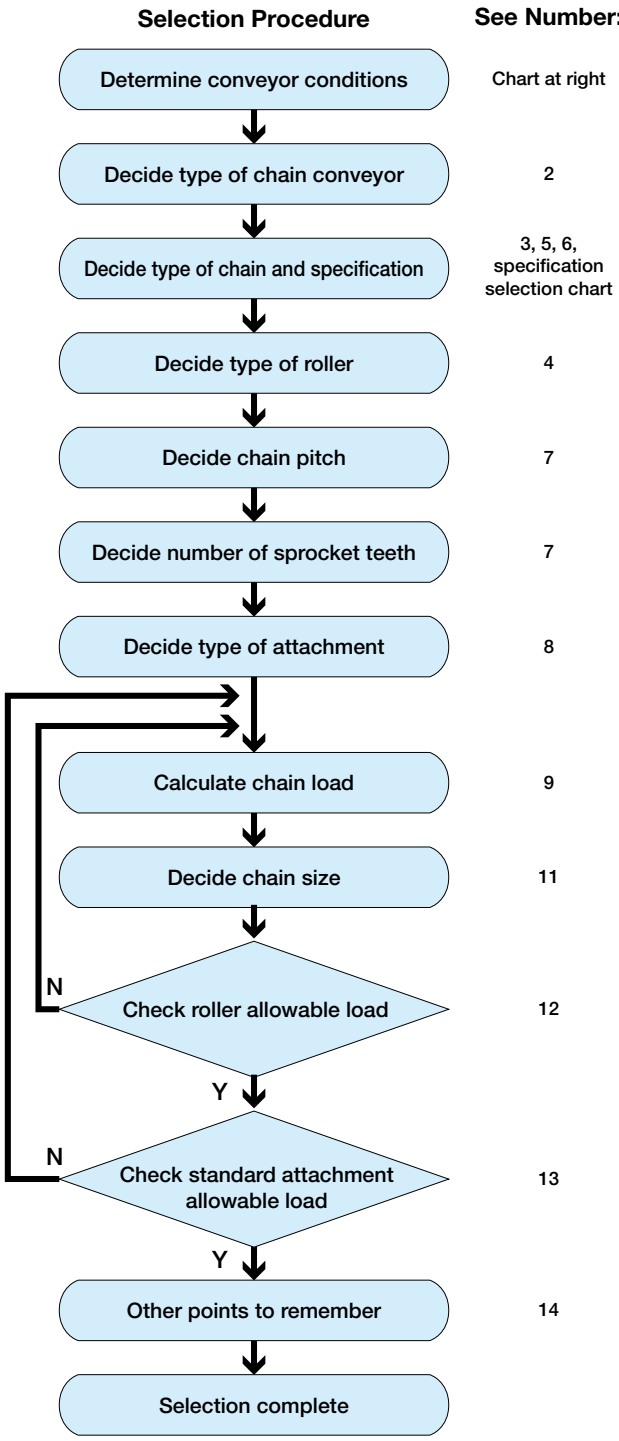
4. Adjust chain tension ・・・・・・・・・177
5. Lubrication ・・・・・・・・・・・・・178
6. Storage ・・・・・・・・・・・・・・178
7. Limits of conveyor chain use ・・・・178
8. Maintenance and inspection ・・・・179
9. Troubleshooting・・・・・・・・・・・180
10. Repair parts ・・・・・・・・・・・・183

Conveyor Chain Selection and Steps

Selecting conveyor chains for chain conveyors requires comprehensive knowledge and experience. However, the following are general points for selecting the optimum chain for your application.

1. Determine Conveyance Conditions

Determine the conveyance conditions of the conveyor chain.

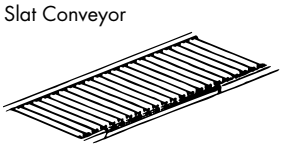
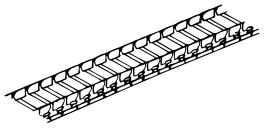
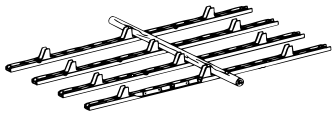
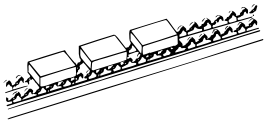
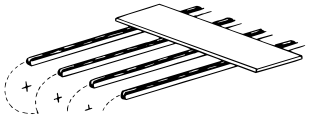
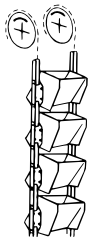
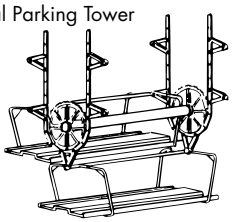
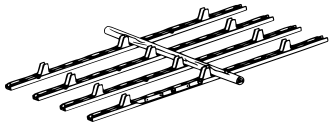
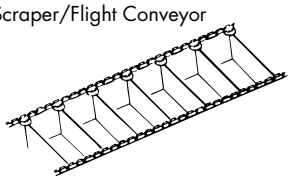
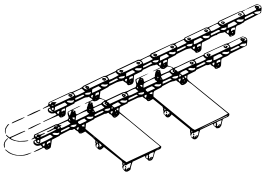
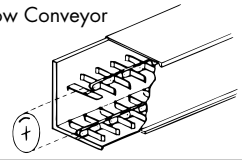


■ Determining Conveyor Chain Conveyance Conditions

Machine	:	
Conveyed Material	:	
Corrosion	:	
Wear	:	
Temp. of Material Conveyed	:	Room Temp. °C
Dimensions of Conveyed Items	:	
Mass of Material Conveyed	:	MAX kg/each
Conveyed Amount (Bulk Materials)	:	MAX t/h
Conveyed Amount (Countable Item)	:	MAX kg/conveyor
Conveyor Length	:	m
Lift	:	m
Number of Chain Strands	:	(spaced m apart)
Chain Speed	:	m/min
Max. Allowable Load	:	kN{kgf}
Chain Pitch	:	mm
Attachment Type and Spacing	:	att. every link
Conveyance Method	:	Pushed by dog, direct conveyance, other
Operating Time	:	h/d
Lubrication	:	Yes / No
Motor	:	AC/DC kW, r/min, unit(s)
Number of Sprocket Teeth	:	NT (PCD mm)
Sprocket Bore Diameter	:	ϕ H8 / H7
Boss	:	Type ϕ × L
Keyway	:	Unnecessary, JIS b xt Parallel/beveled
Sprocket Tooth Finishing	:	Precision Welded, Machine Cut, Induction Hardened

1. We recommend using standard chain from a cost/delivery perspective.
2. When unable to choose between a standard or specialty chain, the materials and attachments make it a special chain with special specifications. See sections regarding conveyor chain category and type.

2. Decide Conveyor Type

Basic Conveyor Types	Conveyed Items					
	Solid Conveyance	Chain Type	See Page	Bulk Material	Chain Type	See Page
Top Loading Conveyance	◆ Slat Conveyor 	RF-[BR/BF] RF-(NB) RF RF-[DBR/DBF]	63 77 29 96	◆ Apron/Pan Conveyor 	RF RF-(KG/KA)	29 97
	◆ Push Conveyor, Tow Conveyor, Roller Coaster 	RF RF-(NB) NF RF-<SR>	29 77 113 93			
	◆ Free Flow Conveyor 	RF-[VR] RF-<SR> RF-<TR>	92 93 94			
	◆ Standard Chain Conveyor 	RF NF RF-(DL)	29 113 95			
Suspension Conveyance	◆ Trolley Conveyor	RF RF-<TRO>	29 119	◆ Bucket Elevator 	RF B	29 107
	◆ Tray Elevator 	RF NF	29 113	◆ Fly Ash Bucket Conveyor	RF-(FB)	109
	◆ Vertical Parking Tower 	RF Specialty Chain	29	◆ Bucket Type Continuous Unloader	Special Chain	
Push Conveyance, Frictional Conveyance	◆ Push Conveyor 	RF NF RF-(NB)	29 113 77	◆ Scraper/Flight Conveyor 	RF RF-(AM/AP) RF-(FG/FP)	29 97 97
	◆ Horizontal Revolving Conveyor 	RF RF-(NB) RF-<GR>	29 77 120	◆ Flow Conveyor 	RF NFX	29 (99) 114
				◆ Drag Chain Conveyor	WD	106

Note: 1. See page 161, Table 1 regarding item wear and corrosion properties.
2. ( ) indicates series, [ ] roller type, and < > dedicated attachment types.

Conveyor Chain Selection and Steps

3. Decide Chain Type

When selecting conveyor chain type, it is necessary to identify the physical properties of the materials conveyed. Method of conveyance and chain conveyor type should then be determined, keeping cost performance in mind. Three basic types of conveyor are shown on page 158, which can be used for determining conveyor chain type.

Key Points in Determining Conveyor Chain Type

- Adopt a loading type conveyor to reduce the running resistance of the conveyor chain when conveying materials, which will lead to energy savings. Bearing Roller Conveyor Conveyor Chain and Coil Transfer Chain are ideal.
- Design layout so that powdery or liquid materials, or materials that will promote chain wear, are prevented from directly contacting the conveyor chain.
- Use a sealed conveyor, such as a flow conveyor, to prevent loose material from flying during conveyance.
- When using conveyor chains to convey very corrosive material, or in corrosive environments, select a conveyor chain with suitable specifications. (See page 174, Table 14.)

4. Decide Roller Type

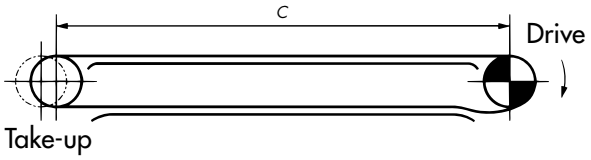
Refer to “Roller Types” in the pages detailing large size conveyor chain construction.

5. Basic Conveyor Chain Layout

5.1 Horizontal Conveyor

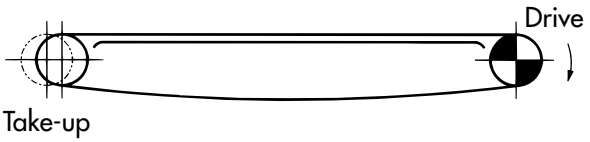
Partial or full support by catenary on the return side (see lower part of figure below) can absorb chain elongation/shrinkage from heat or other factors. This arrangement can be used when chain speed is comparatively slow. Catenary sag should be about 10% of the free span. This is not recommended for reverse drives.

1) Making a catenary on the drive sprocket side



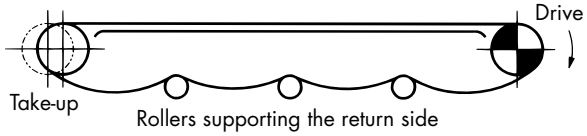
① Catenary tension makes chain-sprocket engagement smooth.
② Lubrication at the catenary is most effective.

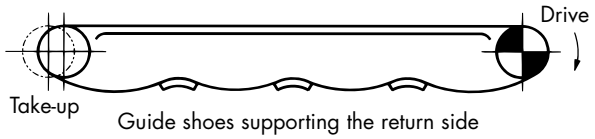
2) No guide on the return side



For short center distance and slow chain speed.
The mass of the chain on the return side may cause vibration, affecting chain operation.

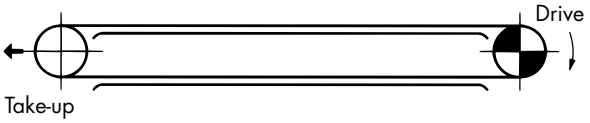
3) Supporting the chain on the return side with guides or rollers





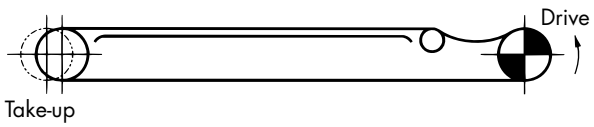
Contact between chain and guide or roller may hasten chain wear or damage chain as it articulates at the roller or guide. This may also cause vibration, affecting chain operation. With a long center distance, it is practical to divide the return side into several catenaries.

4) Supporting the entire return side



The return side is entirely supported by rails, which are fixed on the take-up of the driven sprocket. This method absorbs all chain sag, and can also be used in reverse operation. However, there is no catenary on the drive sprocket lower side, making it necessary to regularly adjust chain elongation through take-up.
Caution: Excessive tension from take-up will hasten chain wear.

5) Return side on top

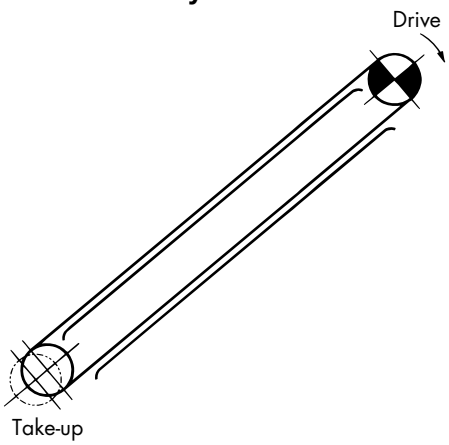


5.2 Vertical Conveyors

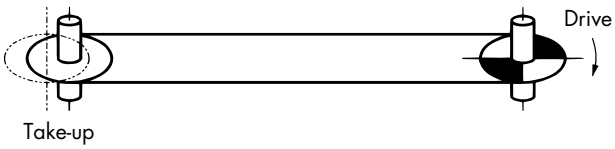
If the conveyor will be stopped while loaded, it will be necessary to install a brake or Tsubaki Back Stop Cam Clutch to prevent reverse operation.

Caution: Excessive tension from take-up will hasten chain wear.

5.3 Inclined Conveyors



5.4 Vertical Shaft Conveyors



Installing a guide roller will help the chain run smoother.

Key Points in Using Conveyor Chains

- Lubricate chain to prevent elongation during use. Use a lubricant with an equivalent viscosity of ISO VG100–150 (SAE30–40).

  Use a drip or brush method and ensure lubricant penetrates between pins, bushes, rollers, and other areas to prevent metal-on-metal contact. (See page 178.)
- Ensure that sprocket shafts are parallel.
- At least three sprocket teeth need to engage the chain.
- Use take-up to adjust chain elongation.
- When using chains in parallel, be sure that sprocket teeth on both sides are aligned when engaging.
- New chain will prematurely wear if connected to a sprocket whose teeth have severely worn.

Conveyor Chain Selection and Steps

6. Choose a Chain Series for Conveying Bulk Materials

The following table lists the chain conveyor types and chain series used in conveying typical bulk materials, as well as our recommendations.
Depending on the conveyed items, the same items listed in Table 1 may differ in condition or quality. Determine conveyor type and chain series based on consideration of past performance and careful investigation.

Table 1: Material and Chain Specifications

Material			Type of Conveyor				Recommended Chain Series	Notes
Name	Abrasiveness	Corrosiveness	Scraper	Flow	Apron	Bucket		
Activated Charcoal	B	C	○	△		△	DT	
Alumina	B	E		△		△	CT	
Bagasse	C	C	○				DTA	
Barley	C	C	○	○		○	DT	
Carbide	B		○	○	○	○	DT	
Carbon	B	C	○	△		△	BT	
Cement Clinker	A	E	○	△	○	△	CT	
Cement Products	B	E		○		○	CT	
Clinker Dust	A	E		△			BT	
Coal	B	B	○		○		CT	
Coke	A	C			○	△	BT	
Coke Dust	A	C		△			BT	
Corn	C	C	○	○		○	DT	
Dolomite	B	D	○	△	○	△	DT	DTA on Apron Conveyors
Dry Ammonium Chloride	C	C	○	△		△	DT	
Dry Ammonium Sulfate	B	B	○	△		△	DT	
Dry Clay	B	C		△		△	BT	
Dry Incinerated Garbage (Room Temperature)	C	D	○				DTA	
Dry Limestone	B	D	○	△	○	△	DT	DTA on Apron Conveyors
Dry Sawdust	C	D	○	△			DT	
Dry Slaked Lime	C	E	○	△		△	DT	
Dry Unslaked Lime	B	E	○	△		△	DT	
Dry Urea Powder	C	C	○	△		△	DT	
Dry Wood Chips	C	D	○	△			DT	
Foundry Sand	A	C	○		△		BT	
Garbage	B		△		○		RT	
Glauber's Salt	B	B		△			GS	
Mixed Feed	C	B	○	△		△	DT	
Polyethylene	B	C	○	△		△	DT	
Rice	C	C	○	○		○	DT	
Rock Salt	C	C	○	△		△	DT	
Scale	B	C	○	△		△	BT	
Soda Ash	B	E	○	△		△	DT	
Soybean	C	C	○	○		○	DT	
Starch	C	C	○	△		△	DT	
Sugar	C	C	○	○		○	SS	See Note 3
Sugar Cane	C	C	○		○		DTA	
Synthetic Detergent	B	C	○	△		△	DT	
Vinyl Chloride Powder	B			△		△	MT	
Wet Coal Dust	B	B		△			BT	
Wet Gypsum	B	A	○	○		○	GS, RT	
Wet Incinerated Garbage	C	D	○				RT	
Wet Urea Powder	B	E	○	△		△	GS	
Wheat	C	C	○	○		○	DT	
Wheat Flour	C	C	○	○		○	DT	

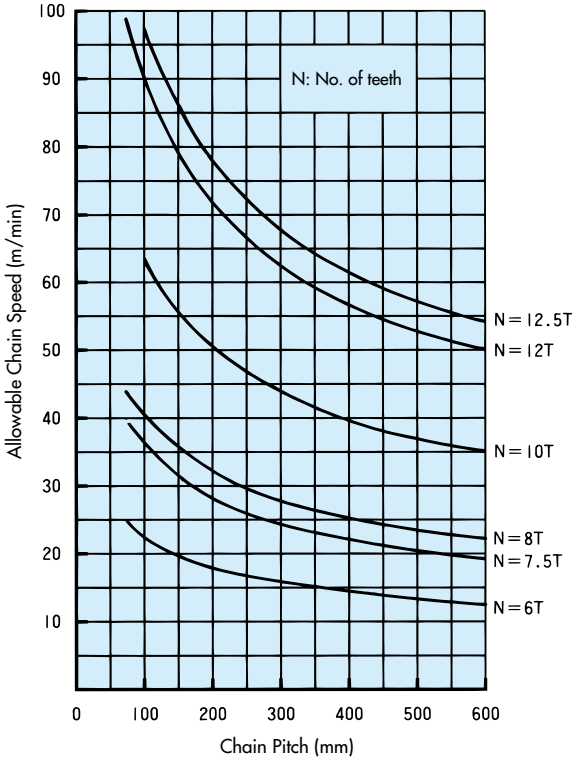
Note: 1. Abrasiveness: A → B → C
2. Corrosiveness: A (strong acid), B (moderate acid), C (neutral), D (moderate alkali), E (strong alkali)
3. See p.174 for clean specifications.

○ : Resistant
△ : Resistant depending upon conditions

7. Decide Chain Pitch and Number of Sprocket Teeth

1. Smoother chain operation can be expected as the number of sprocket teeth increases. This means that for a sprocket with the same outer diameter, a shorter pitch chain can operate more smoothly due to less articulating angle of chain on the sprocket. This also results in less wear between pin and bush and thus longer chain life.
2. Longer pitch chain, though more expensive per link, would be cheaper for a unit length of chain in general. Chain pitch for Unit Conveyors is determined by unit size or attachment spacing.
(Example) Attachment spacing = 2m
   - Chain pitch = 100, 200, 250
   - Chain pitch can be selected by dividing attachment spacing by an even number.
3. The chain pitch for Bulk Conveyors is determined not only by material itself, but also by conveyor capacity. Conveyor capacity is determined by sizes of bucket, apron, scraper, etc. Chain pitch is in turn determined by these sizes.
4. Space limitations may determine sprocket pitch circle diameter and consequently determine chain pitch.
5. Chain pitch relates to the number of sprocket teeth and chain speed shown in Table 2.

Table 2: Chain Pitch and Allowable Chain Speed



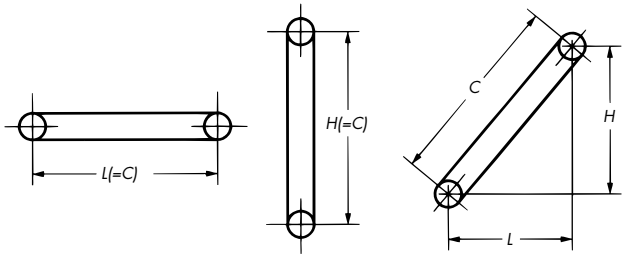
Note: When mounting large jigs on the chain, for example, for a bucket elevator, take into account past experience and provide a sufficient margin for allowable speed with regard to the number of sprocket teeth.

8. Decide Attachment Type

See the pages concerning “Attachment Types” for more information.

9. Calculate Chain Load

Maximum static load to chain, T_{MAX}, during operation can be calculated using the formulae in Table 3. The formulae are based on mass M (weight W) × coefficient of friction. Inertial forces are extremely large when suddenly starting or stopping high speed conveyors or when rapidly conveying items using push conveyors or other such systems. Bear these inertial forces in mind when calculating the load and required kW.
Calculations are listed in both SI units and gravimetric units.
When calculating tension T in gravimetric units, the mass value (kgf) is the same as the mass value for SI units (kg).



9.1 Terms

		SI Units	Gravimetric Units
T_{MAX}	: Maximum static load on chain	kN	{kgf}
T'_{MAX}	: Design chain load	kN	{kgf}
T	: Static load on chain	kN	{kgf}
Q	: Maximum conveying quantity	t/h	{tf/h}
V	: Chain speed	m/min	m/min
H	: Center distance between sprockets (vertical)	m	m
L	: Center distance between sprockets (horizontal)	m	m
C	: Center distance between sprockets (inclined)	m	m
M	: Mass {weight} of conveying device (Chain × strands, buckets, aprons, etc.)	kg/m	{kgf/m}
f_1	: Coefficient of friction between chain and guide rail (Tables 5 and 6)		
f_2	: Coefficient of friction between material conveyed and casing (Table 7)		
f	: Material loaded directly on chain: f=1 Material scraped: $F=\frac{f_2}{f_1}$		
g	: Acceleration of gravity: 9.80665m/s²		
W	: Mass Conveyed Item {Weight}	kg/m	{kgf/m}
	Bulk $W=16.7^{*}\times\frac{Q}{V}$		$\{W=16.7\times\frac{Q}{V}\}$
	Solid $W=\frac{\text{Mass of Item(kg/each)}}{\text{Load Spacing(m)}}$		$\{W=\frac{\text{Mass of Item(kg/each)}}{\text{Load Spacing(m)}}\}$

*: The coefficient for calculating the mass (weight) per meter of item conveyance is 16.7=1000/60.

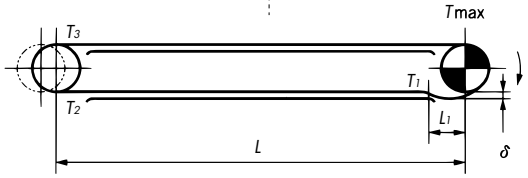
Note: If frequent forward and reverse operation is required, take-up is necessary to remove chain slack, so the following calculation does not apply. When removing slack in a chain by take-up, please refer to the Q&A available on the webpage below.
Tsubaki Power Transmission Products Information Site <https://tt-net.tsubakimoto.co.jp> Home > Q&A > Large size conveyor chain > Q6

9.2 Calculate Chain Load (Table 3)

SI Units

{ Gravimetric Units }

Horizontal Conveyor



$T_1=1.35^{*1}\times M\times L1\times\frac{g}{1000}\cdots\cdots kN$

$T_2=(L-L_1)\times M\times f1\times\frac{g}{1000}+T1\cdots\cdots kN$

$T_3=1.1^{*2}\times T_2\cdots\cdots kN$

$T_{MAX}=(W\times f+M)\times L\times f_1\times\frac{g}{1000}+T_3\cdots\cdots kN$

$T_1=1.35\times M\times L_1\cdots\cdots\{kgf\}$

$T_2=(L-L1)\times M\times f_1+T_1\cdots\cdots\{kgf\}$

$T_3=1.1\times T_2\cdots\cdots\{kgf\}$

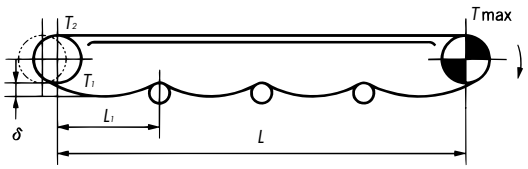
$T_{MAX}=(W\times f+M)\times L\times f_1+T_3\cdots\cdots\{kgf\}$

*1: Refer to Table 4, p.165.
*2: 1.1 is for increased load at the driven sprocket.

Conveyor Chain Selection and Steps

SI Units	{ Gravimetric Units }

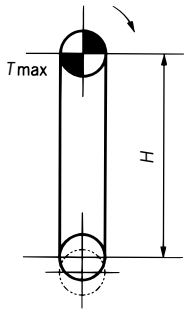
Horizontal Conveyor



SI Units	{ Gravimetric Units }
$T_1=1.35\times M\times L_1\times \frac{g}{1000}+0.1^*\times M\times L\times \frac{g}{1000}$ …… kN	$T_1=1.35\times M\times L_1+0.1^*\times M\times L$ ……{kgf}
$T_2=1.1\times T_1$ …… kN	$T_2=1.1\times T_1$ ……{kgf}
$T_{MAX}=(W\times f+M)\times L\times f_1\times \frac{g}{1000}+T_2$ …… kN	$T_{MAX}=(W\times f+M)\times L\times f_1+T_2$ ……{kgf}

* 0.1 is the coefficient of roller resistance at return side.

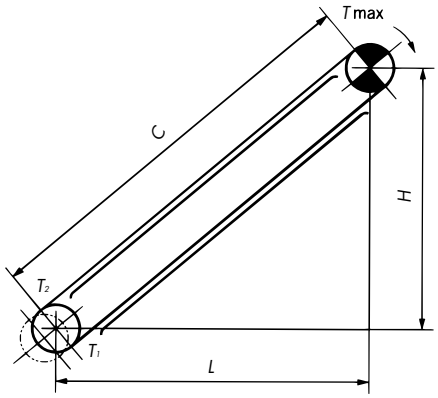
Vertical Conveyor



Note: In bucket elevators, 1m is added to center distance (H) to account for shock load when loading.
WT: Take-up load. Due to the pulley working principle, 1/2 of the take-up load is applied per chain.

SI Units	{ Gravimetric Units }
$T_{MAX}=(W+M)\times H\times \frac{g}{1000}+\frac{W_T}{2}\times \frac{g}{1000}$ …… kN	$T_{MAX}=(W+M)\times H+\frac{W_T}{2}$ ……{kgf}

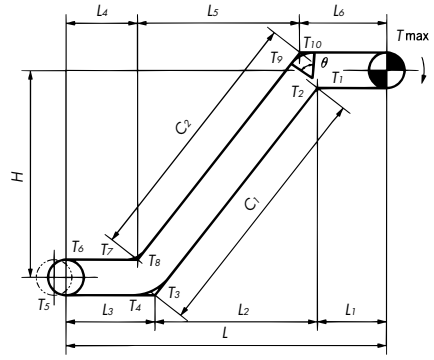
Inclined Conveyor



SI Units	{ Gravimetric Units }
$T_1=M(Lf_1-H)\times \frac{g}{1000}$ (kN)	$T_1=M(Lf_1-H)$ {kgf}
When $T_1<0$, $T_2=0$	When $T_1<0$, $T_2=0$
$T_2=1.1\times T_1$(kN)	$T_2=1.1\times T_1$ {kgf}
$T_{MAX}=W(Lf_1\times f+H)\times \frac{g}{1000}+M(Lf_1+H)\times \frac{g}{1000}+T_2$ …… (kN)	$T_{MAX}=W(Lf_1\times f+H)+M(Lf_1+H)+T_2$…… {kgf}

SI Units

Practical Example



$T_1=M\times L_1\times f_1\times \frac{g}{1000}$ ····· kN

$T_2=T_1\times Kc_1\ \frac{g}{1000}$ ····· kN

$T_3=M(L_2f_1-H)\times \frac{g}{1000}+T_2$ ····· kN

$T_4=T_3\times Kc_2$ ····· kN

When $T_3<0$, $T_4=0$

$T_5=M\times L_3\times f_1\times \frac{g}{1000}+T_4$ ····· kN

$T_6=1.1\times T_5$ ····· kN

$T_7=(M+W\times f)\times L_4\times f_1\times \frac{g}{1000}+T_6$ ····· kN

$T_8=T_7\times Kc_3$ ····· kN

$T_9=W(L_5f_1\times f+H)\times \frac{g}{1000}+M(L_5f_1+H)\times \frac{g}{1000}+T_8$ ····· kN

$T_{10}=T_9\times Kc_4$ ····· kN

$T_{MAX}=(M+W\times f)\times L_6\times f_1\times \frac{g}{1000}+T_{10}$ ····· kN

{ Gravimetric Units }

Corner Factor (Kc)

f_1 \ Angle	30°	60°	90°	120°	180°
0.03	1.02	1.03	1.05	1.06	1.10
0.10	1.05	1.11	1.17	1.23	1.37
0.15	1.08	1.17	1.27	1.37	1.60
0.20	1.11	1.23	1.37	1.52	1.87
0.24	1.13	1.29	1.46	1.65	2.13
0.30	1.17	1.37	1.60	1.87	2.57
0.40	1.23	1.52	1.87	2.31	3.51

$T_1=M\times L_1\times f_1$ {kgf}

$T_2=T_1\times Kc_1$ {kgf}

$T_3=M(L_2f_1-H)+T_2$ {kgf}

$T_4=T_3\times Kc_2$ {kgf}

When $T_3<0$, $T_4=0$

$T_5=M\times L_3\times f_1+T_4$ {kgf}

$T_6=1.1\times T_5$ {kgf}

$T_7=(M+W\times f)\times L_4\times f_1+T_6$ {kgf}

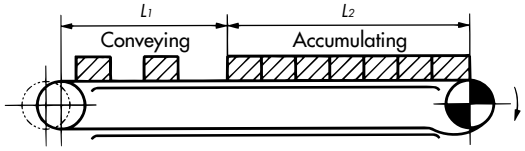
$T_8=T_7\times Kc_3$ {kgf}

$T_9=W(L_5f_1\times f+H)+M(L_5f_1+H)+T_8$ {kgf}

$T_{10}=T_9\times Kc_4$ {kgf}

$T_{MAX}=(M+W\times f)\times L_6\times f_1+T_{10}$ {kgf}

Example using Double Plus Chain



$T_{MAX}=2.1M(L_1+L_2)f_1\times\frac{g}{1000}+(W\times L_1\times f_1)\times\frac{g}{1000}+(W_1\times L_2\times f_3\times\frac{g}{1000})$ ····· kN

$T_{MAX}=2.1M(L_1+L_2)f_1+(W\times L_1\times f_1)+(W_1\times L_2\times f_3)$ ·····{kgf}

L_1 : Length of conveying section (m)
L_2 : Length of accumulating section
W_1 : Mass of conveyed items accumulating (kg/m) {mass kgf/m}
f_1 : Coefficient of friction between chain and rail at conveying material = 0.05
f_3 : Coefficient of friction during accumulation = 0.2

Chain load T for calculating required power can be obtained from the following formulae:

Horizontal $T=T_{MAX}-T_1$

Vertical $T=T_{MAX}-MH\times\frac{g}{1000}$

Inclined $T=T_{MAX}-M(H-Lf_1)\times\frac{g}{1000}$

$T=T_{MAX}-MH$

$T=T_{MAX}-M(H-Lf_1)$

When $H-Lf_1<0$, $T=T_{MAX}$

■ **Calculating Required Power**

$1kW=1kN\cdot m/s$

$kW=\frac{T\times V}{60}$

$1kW=102kgf\cdot m/s$

$kW=\frac{T\times V}{102\times 60}$

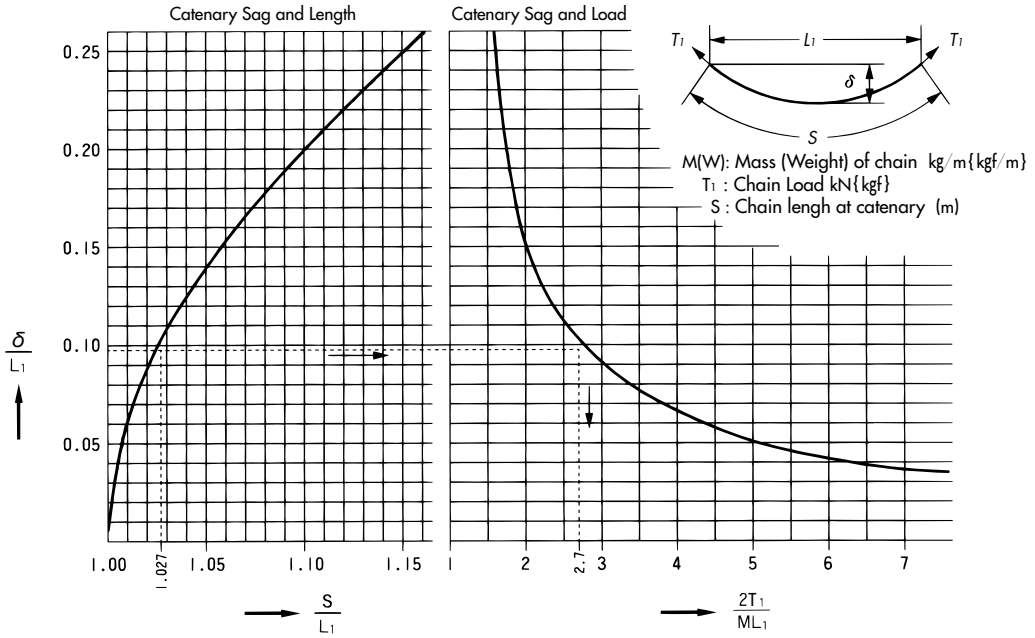
Assuming that the power loss from chain–sprocket engagement and sprocket rotational friction resistance to be 10% (1/0.9=1.1), When the power transmission ratio of the drive section is η ,

$kW=\frac{T\times V}{60}\times 1.1\times\frac{1}{\eta}$

$kW=\frac{T\times V}{102\times 60}\times 1.1\times\frac{1}{\eta}$

Conveyor Chain Selection and Steps

Table 4: Catenary Load Graph



■ Catenary Load

$T_1 = 1.35 \times M \times L_1 \times \frac{g}{1000}$ ····· kN

1.35 factor in the above formula is worked out as follows:

When catenary sag is 10%, $\delta = 0.1L_1$

Then from the graph

$\frac{\delta}{L_1} = 0.10 \longrightarrow \frac{2T_1}{ML_1} = 2.7 \quad T_1 = 1.35 \times M \times L_1 \times \frac{g}{1000}$

■ Chain Length at Catenary

$\frac{\delta}{L_1} = 0.10 \longrightarrow \frac{S}{L_1} = 1.027$

$S = 1.027L_1$

Table 5: Rolling Friction Factor f1 Between Chain and Rail

Roller Diameter (mm)	Lubricated		Dry	
	R, F	S, M, N	R, F	S, M, N
D<65	0.08	0.16	0.15	0.24
65 ≦ D<100	0.08	0.15	0.14	0.23
100 ≦ D	0.08	0.14	0.13	0.22
RF 214(exception)	0.12	0.15	0.18	0.22

Note: 1. Lubricant ISO VG100–150 (SAE30–40)
2. Conditions: Clean and room temperature
3. The friction factor f1 between top roller and material conveyed is the same as that of R roller in the above.

Series	f1	
Plastic Roller Series		0.08 (dry)
Bearing Roller Series	0.03 (lubricated)	
Bearing Bush Series	0.14 (lubricated)	0.21 (dry)
EPC78	0.1 (lubricated), 0.2 (water-lubricated), 0.25 (dry)	

Table 6: Sliding Coefficient of Friction f1 Between Chain and Rail

Temperature of Conveyed Material (°C)	Lubricated	Dry
Room temperature~400	0.20	0.30
400 ~ 600	0.30	0.35
600 ~ 800	0.35	0.40
800 ~1000	—	0.45

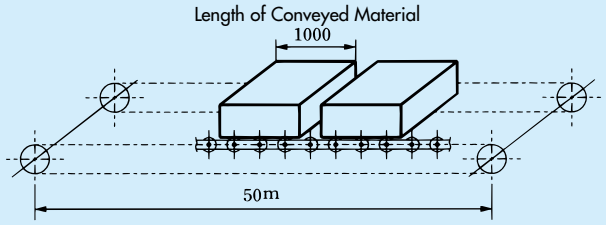
Table 7: Coefficient of Friction f2 Between Material Conveyed and Casing

Material	f2	Apparent Specific Gravity (g/cc)	Material	f2	Apparent Specific Gravity (g/cc)
Alum	0.63	1.01	Phosphate rock	0.42	1.51
Alumina	0.55	0.83	Pitch	0.41	0.70
Ammonium chloride	0.79	0.67	Polyethylene	0.52	0.34
Asbestos	0.58	0.19	Pyrites	0.58	1.54
Barley	0.71	0.39	Quartz powder	0.55	1.24
Calcium carbonate	0.49	0.88	Quicklime	0.46	1.53
Calcium chloride	0.43	0.68	Red iron ore	0.47	2.99
Carbon	0.53	0.30	Rice	0.4	0.77
Cement	0.54	0.60–0.75	Rock salt	0.57	1.09
Cement clinker	0.46	1.30	Rubber powder	0.53	0.39
Charcoal	0.41	0.44	Scale	0.67	1.54
Chrome powder	0.51	1.14	Scrap	0.73	0.54
Clay	0.63	0.77	Slag	0.48	0.90
Coal		0.30–0.70	Slaked lime	0.63	0.69
Coke		0.35–0.70	Soap material	0.27	0.65
Corn	0.4	0.71	Soda ash	0.45	0.52
Dolomite	0.55	1.62	Soybean	0.41	0.68
Feldspar	0.55	1.36	Starch	0.57	0.71
Foundry sand	0.41	1.59	Sugar	0.47	0.68
Gypsum	0.64	0.77	Sulphurated calcium	0.64	1.01
Lead ore powder	0.77	3.26	Urea	0.63	0.64
Limestone	0.47	0.35–0.55	Wheat	0.43	0.73
Magnesia	0.84	1.48	Wood chips	0.74	0.36
Mixed feed	0.5	0.55	Zinc ore powder	0.79	1.93
Nickel ore powder	0.45	0.92			

Note: The above values may change depending on dryness and humidity.

10. Chain Selection Examples

10.1 Bearing Roller Conveyor Chain



Conveyor Length : 50m Conveyed Material : 2000kg/pc × 40pcs
Chain Speed : 10m/min No. of Strands : 2
Chain Pitch : 250, F roller, A2 attachment

We will see selection examples for Bearing Roller Conveyor Chain and Standard DT Series Conveyor Chain.

1) No. of links: n

$$n = \left(\frac{50000}{250} \times 2 + 12\right) \times 2 = 412 \times 2 = 824 \text{ links}$$

2) Confirm roller load

$$\text{No. of rollers} = \frac{\text{Length of material}}{\text{Chain pitch}} = \frac{1000}{250} = 4$$

4 rollers × 2 strands = 8 rollers
However, as there is an uneven load only four rollers will receive the load.

$$\text{Roller load} = 2000 \times \frac{g}{1000} \times \frac{1}{4} = 4.9\text{kN}\{500\text{kgf}\}/\text{roller}$$

From Table 11, we can select the following Bearing Roller Conveyor Chain:
RF12250BF-1LA2, allowable load 5.49kN{560kgf}
or the following RF Conveyor Chain:
RF26250F-DT-1LA2, allowable load 5.30kN{540kgf}.

3) Check allowable loading mass on conveyor

Due to simplified selection, load of conveyor weight and starting impact will not considered in the following procedure.
2000kg × 40pcs/2 strands = 40,000kg/strand
From the table on the right, RF10 ton size Bearing Roller Conveyor Chain (53300kg) and RF17 ton size RF Conveyor Chain (44600kg) can be selected.
When comparing roller allowable load and allowable loading mass, roller allowable load should be the first consideration in selection.

Bearing Roller Conveyor Chain (f1 = 0.03)

$$T = 2000\text{kg} \times \frac{g}{1000} \times 40 \times 0.03 = 23.5\text{kN}\{2400\text{kgf}\}$$

Standard Conveyor Chain (f = 0.08)

$$T = 2000\text{kg} \times \frac{g}{1000} \times 40 \times 0.08 = 62.8\text{kN}\{6400\text{kgf}\}$$

◆ Bearing Roller Conveyor Chain

Chain Number Quantity Unit
RF12250BF-DT-1LA2+412L-PR 2 H

◆ Standard Conveyor Chain

Chain Number Quantity Unit
RF26250F-DT-1LA2+412L-PR 2 H

4) Select motor size

$$\text{Motor kW} = \frac{T \times V}{60} \times 1.1 \times \frac{1}{\eta} \quad (\eta = 0.85)$$

◆ Bearing Roller Conveyor Chain Required Power

$$\text{kW} = \frac{23.5 \times 10}{60} \times 1.1 \times \frac{1}{0.85} = 5.1\text{kW}$$

◆ Conveyor Chain Required Power

$$\text{kW} = \frac{62.8 \times 10}{60} \times 1.1 \times \frac{1}{0.85} = 13.5\text{kW}$$

■ Simplified Allowable Loading Mass Chart Unit: kg/per strand

Chain Size	DT Series Allowable Loading Mass kg	Bearing Roller DT Series Allowable Loading Mass kg
RF03	5400	14000
RF05	12500	33300
RF08, 450	14300	36700
RF10	20500	53300
RF12	33900	90000
RF17	44600	116700
RF26	57100	150000
RF36	86600	230000
RF60	91100	—
RF90	143800	—
RF120	201800	—

Note: Coefficient of friction on horizontal conveyor
Standard conveyor chain: 0.08
Bearing roller conveyor chain: 0.03

10.2 Conveyor Type: Horizontal Slat Conveyor

Conveyed Material : Cardboard boxes
Slat Mass : 10kg/each Conveyor Length : 30m
No. of Strands : 2 Loading Spacing : 1 box/m
Sprocket : 12T Box Mass : 100kg/box
Lubrication : Lubricated Chain Speed : 15m/min
Chain: Pitch = 100, F Roller chain w/A2 attachment every link
Operating Time : 8hrs/da Operating Enviroment : Ambient temp.

1) No. of links: n

$$n = \left(\frac{30000}{100} \times 2 + 12\right) \times 2 = 612 \times 2 = 1224 \text{ links}$$

2) Chain size

30 cardboard boxes will be carried on the conveyor. Thus, conveyor total loading mass is 100×30 = 3000kg, and the coefficient of friction under lubricated conditions from Table 5 is 0.08.

Required power T_1 to convey the cardboard boxes only is

$$T_1 = 3000 \times \frac{g}{1000} \times 0.08 = 2.35\text{kN}$$
$$\{T_1 = 3000 \times 0.08 = 240\text{kgf}\}$$

Next, with each slat having a mass of 10kg,
pitch at 100, slat mass = $10 \times \frac{1000}{100} = 100\text{kg/m}$

Required power T_2 to convey slats only

$$T_2 = 2.1 \times 100 \times 30 \times \frac{g}{1000} \times 0.08 = 4.94\text{kN}$$
$$\{T_2 = 2.1 \times 100 \times 30 \times 0.08 = 504\text{kgf}\}$$
$$T_1 + T_2 = 2.35 + 4.94 = 7.29\text{kN}$$
$$\{T_1 + T_2 = 240 + 504 = 744\text{kgf}\}$$

Maximum allowable load of RF03100F-DT (2 strands) is 4.20kN × 2 strands = 8.40kN{860kgf} and so can be used.

Conveyor Chain Selection and Steps

With RF03100F-DT-1LA2, the required power T_3 to move the chain only is

Chain mass / Mass from att. / 2 strands

$$T_3=2.1\times(2.4\times2+\frac{0.06}{100/1000}\times2)\times30\times\frac{g}{1000}\times0.08=0.30\text{kN}$$

2 strands / Pitch 100 / Convert to m

$$\{T_3=2.1\times(2.4\times2+\frac{0.06}{100/1000}\times2)\times30\times0.08=30.2\text{kgf}\}$$

$$T_{MAX}=T1+T2+T3=2.35+4.94+0.30=7.59\text{kN}$$

$$\{T_{MAX}=T1+T2+T3=240+504+30.2=774\text{kgf}\}$$

Assuming the load acting on both strands is the same, then corrected chain load T'MAX for one strand

$$T'_{MAX}=7.59/2\text{ strands}\times K_V\times K_T\times K_S=7.59/2\times1.0\times1.0\times1.0=3.80\text{kN}$$

Maximum allowable load for one strand of RF03100F–1LA2 is 4.20kN, so

$$T'_{MAX}=3.80\text{kN}<4.20\text{kN}$$

Both roller allowable load and attachment allowable load satisfy the values in Tables 11 and 12.

Chain Number: **RF03100F-DT-1LA2+612L-PR** Quantity Unit: **2 H**

3) Drive sprocket torque: Tr

The pitch circle diameter of a sprocket with pitch=100, N = 12T is ϕ386.4

$$Tr=7.59\times386.4\times\frac{1}{2}\times\frac{1}{1000}=1.47\text{kN·m}$$

$$\{Tr=774\times386.4\times\frac{1}{2}\times\frac{1}{1000}=149.5\text{kgf·m}\}$$

4) Required kW

$$kW=\frac{7.95\times15}{60}\times1.1\times\frac{1}{0.85}=2.46\text{kW}$$

$$\{kW=\frac{774}{102}\times\frac{15}{60}\times1.1\times\frac{1}{0.85}=2.46\text{kW}\}$$

10.3 Conveyor Type: Continuous Vertical Bucket Elevator

Lift Distance : 30m
Chain : Pitch = 250, GA4 attachment every 2 links
(S roller bucket elevators)
Conveyor Capacity : 90t/h **Chain Speed** : 28m/min
Bucket Mass : 25kg/each
Sprocket : N = 12T **Lubrication** : None
Operating Environment : Ambient temperature
Operating Time : 8 hrs/day
Configuration: Half assembled in mirror image

1) Required number of links: n

$$n=(\frac{30000}{250}\times2+12)\times2=252\times2=504\text{ links}$$

2) Chain size

① Load T_1 of conveyed material only

$$T_1=16.7\times\frac{90}{28}\times(30\underset{\sim}{+1})\times\frac{g}{1000}=16.3\text{kN}$$

$$\{T_1=16.7\times\frac{90}{28}\times(30\underset{\sim}{+1})=1664\text{kgf}\}$$

~~ part: 1 m is added to sprocket center distance to account for shock load when loading (see page 163).

② Load T_2 of bucket only

With a chain pitch of 250 and buckets attached every two links, bucket mass is 25kg×2=50kg/m.

$$T_2=50\times\frac{g}{1000}\times(30+1)=15.2\text{kN}$$

$$\{T_2=50\times(30+1)=1550\text{kgf}\}$$

③ $T_1+T_2=16.3+15.2=31.5\text{kN}$

$$\{T_1+T_2=1664+1550=3214\text{kgf}\}$$

We tentatively select B17250S (maximum allowable load: 35kN) as a chain that can satisfy the maximum allowable load requirements with two strands. The mass of B17250S with a GA4 attachment every two links is 15kg/m.

2 strands

$$T_3=15\times\underset{\downarrow}{2}\times(30+1)\times\frac{g}{1000}=9.12\text{kN}$$

$$\{T_3=15\times2\times(30+1)=930\text{kgf}\}$$

④ Assuming the offset load of conveyed material on the right and left hand chains is 6:4, chain load T_{MAX} for one strand of chain is

$$16.3\times0.6+\frac{15.2}{2}+\frac{9.12}{2}=21.9\text{kN}$$

$$\{1664\times0.6+\frac{1550}{2}+\frac{930}{2}=2238\text{kgf}\}$$

We include a 1.5 leeway in light of wear life in unlubricated conditions.

Corrected chain load $T'_{MAX}=21.9\times K_V\times K_T\times K_S\times1.5$

$$=21.9\times1.05\times1.0\times1.0\times1.5=34.5\text{kN}$$

$$\{T'_{MAX}=2238\times1.05\times1.0\times1.0\times1.5=3524\text{kgf}\}$$

From the above, B17250S–CT–2LGA4 can be used.

Chain Number: **B17250S-CT-2LGA4+252L-PR-H** Quantity Unit: **2 H**

Note: The offset load between two strands of chain differs depending on conveyance conditions. Use a value that corresponds to actual usage conditions.

3) Drive sprocket torque: Tr

With a vertical bucket elevator, the mass of the chain and bucket are counterbalanced. Thus, load related to torque and kW is only load T1 from the conveyed material.

Pitch circle diameter when pitch=250, N=12T is ϕ965.9, so

$$Tr=18.1\times965.9\times\frac{1}{2}\times\frac{1}{1000}=8.74\text{kN·m}$$

$$\{Tr=1849\times965.9\times\frac{1}{2}\times\frac{1}{1000}=893\text{kgf·m}\}$$

4) Required kW

$$kW=\frac{18.1\times28}{60}\times1.1\times\frac{1}{0.85}=10.9\text{kW}$$

$$\{kW=\frac{1849\times28}{102\times60}\times1.1\times\frac{1}{0.85}=10.9\text{kW}\}$$

11. Decide Chain Size

Divide the load (T_{MAX}) acting on the chain as found in Table 3 by the number of strands, multiply this by the chain speed and temperature factors and the operating time factor to find correct chain load T'_{MAX}. Select a chain with a maximum allowable load that satisfies this value. (Maximum allowable load value is a chain's strength as calculated from Tsubaki design standards.)

$$\text{Chain Load } T_{MAX}\text{: kN(kgf)} \times \frac{1}{\text{No. of Strands}} \times \text{Speed Factor } (K_V) \text{ (Table 8)} \times \text{Temp. Factor } (K_T) \text{ (Table 9)} \times \text{Operating Time Factor } (K_S) \text{ (Table 10)} \leqq \text{Max. Allowable Load kN(kgf)}$$

1) When there are any regulations, guidelines, etc. affecting chain selection, select using that method and the allowable load selection method and choose the chain with more leeway.

2) When a conveyor consists of multiple strands of chain, correct the number of strands in the above formula to allow for uneven loading of the chain.

3) In the following applications, chain life will be greatly reduced. Determine the chain referring to page 173.
   1. Short distance conveyance of heavy loads
   2. Exposure of chain to abrasive, adhesive, and corrosive material
   3. High temperature/humidity environments
   4. No lubrication

4) Of the above considerations, when using a chain without lubrication be sure to include a leeway of 1.3 to 1.5 in light of wearlife.

Table 8: Chain Speed Factor Kv

Chain Speed m/min	Speed Factor Kv
20 (inclusive)	1.00
20 to 30 (incl.)	1.05
30 to 40 (incl.)	1.15
40 to 50 (incl.)	1.30
50 to 60 (incl.)	1.45

Note: Your criteria should be suitable operating conditions (clean with good lubrication).

Table 9: Chain Temperature Factor KT

Chain Temperature °C	Temperature Factor K_T		
	DT, DTA	AT, ATA	GS, GSA SS, SSA
100 (inclusive)	1.00	1.00	1.00
100 to 200 (incl.)	1.25	1.20	1.00
200 to 300 (incl.)	–	1.35*	1.10
300 to 400 (incl.)	–	1.50*	1.15*

- ◆ Chain life will remarkably shorten when using chain in high temperatures at high speeds. (Marked with * in Table 9.)
- ◆ Contact a Tsubaki representative when using outside these parameters.
- ◆ Contact a Tsubaki representative when Kv x KT is 1.5x DT, DTA, AT, and ATA values.
- ◆ Contact a Tsubaki representative when Kv x KT is 1.2x GS, GSA, SS, SSA values.
- ◆ See page 17 for chain operating temperature.

Table 10: Operating Time Factor Ks

Operating Time h/day	Ks
Less than 10 hours	1.0
10 to 24 hours	1.2

Conveyor Chain Selection and Steps

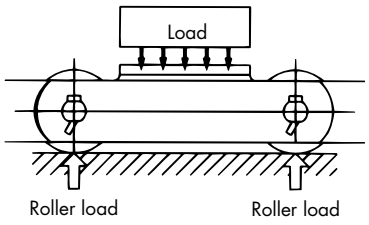
12. Roller Allowable Load under Lubricated Conditions

Allowable load per roller under lubricated conditions in loading type conveyors is as per Table 11. When using A attachments, the smaller allowable load should be used. You will need a guide rail with a tensile strength of at least 400Nmm{41kgf/mm²}. Check the roller load when corner rails are used as well. Service life will drop appreciably when the chain is used without lubrication.

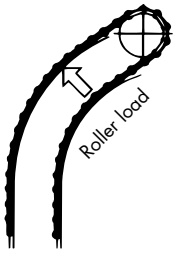
Table 11: Roller Allowable Load When Lubricated

Unit: kN{kgf}/each

Chain Size	DT	DTA	AT	ATA	GS	GSA	SS	SSA	Bearing Bush
	R and F Rollers								R Roller
RF03	0.54 {55.0}	0.88 {90.0}	0.88 {90.0}	—	0.54 {55.0}	0.70 {70.0}	0.27 {30.0}	0.35 {35.0}	0.54 {55.0}
RF05	1.03 {105}	1.72 {175}	1.72 {175}	—	1.03 {105}	1.34 {135}	0.52 {55.0}	0.67 {70.0}	1.03 {105}
RF08	1.27 {130}	2.11 {215}	2.11 {215}	2.53 {260}	1.27 {130}	1.65 {170}	0.64 {65.0}	0.83 {85.0}	—
RF10	1.77 {180}	2.94 {300}	2.94 {300}	3.53 {360}	1.77 {180}	2.30 {235}	0.89 {90.0}	1.15 {115}	1.77 {180}
RF12	2.50 {255}	4.17 {425}	4.17 {425}	5.00 {510}	2.50 {255}	3.25 {330}	1.25 {125}	1.63 {165}	2.50 {255}
RF17	4.02 {410}	6.67 {680}	6.67 {680}	8.04 {820}	4.02 {410}	5.23 {535}	2.01 {205}	2.61 {265}	4.02 {410}
RF26	5.30 {540}	8.83 {900}	8.83 {900}	10.6 {1080}	5.30 {540}	6.89 {705}	2.65 {270}	3.45 {350}	5.30 {540}
RF36	7.45 {760}	12.4 {1260}	12.4 {1260}	14.9 {1520}	—	—	—	—	7.54 {760}
RF52	9.81 {1000}	—	16.6 {1690}	—	—	—	—	—	—
RF60	10.8 {1100}	—	18.1 {1850}	—	—	—	—	—	—
RF90	15.2 {1550}	—	25.5 {2600}	—	—	—	—	—	—
RF120	19.6 {2000}	—	33.3 {3400}	—	—	—	—	—	—
RF430	0.93 {95.0}	1.57 {160}	1.57 {160}	—	0.93 {95.0}	—	0.47 {45.0}	—	—
RF204	—	—	—	—	—	—	—	—	—
RF450	1.27 {130}	2.11 {215}	2.11 {215}	—	1.27 {130}	—	0.64 {65.0}	—	—
RF650	1.42 {145}	2.35 {240}	2.35 {240}	—	1.42 {145}	—	0.71 {72.0}	—	—
RF214	2.11 {215}	3.58 {356}	3.58 {356}	—	2.11 {215}	—	1.06 {110}	—	—
RF205	—	—	—	—	—	—	—	—	—
RF6025	2.50 {255}	4.17 {425}	4.17 {425}	—	2.50 {255}	—	1.25 {125}	—	—
RF212	2.89 {295}	4.85 {495}	4.85 {495}	—	2.89 {295}	—	1.45 {145}	—	—

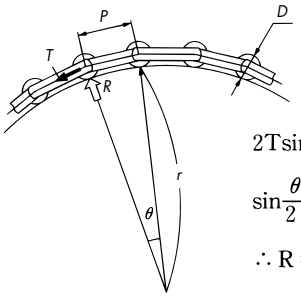


Roller allowable load



Corner rail

Reaction Force of Rail (R)



$$2T\sin\frac{\theta}{2}=R$$

$$\sin\frac{\theta}{2}=\frac{P/2}{r+D/2}$$

$$\therefore R=2T\times\frac{P}{2r+D}$$

Table 11: Roller Allowable Load When Lubricated

Unit: kN{kgf}/each

Chain Size	Bearing Roller Conveyor Chain (standard, anti-dust, lube-free, completely lube-free)		Bearing Roller Conveyor Chain (lube-free water-resistant)		DT	AT	GS	GSA	SS	SSA
	R Roller	F Roller	R Roller	F Roller	S, M, and N Rollers					
RF03	1.96 {200}	1.27 {130}	1.37 {140}	0.89 {90}	0.54 {55.0}	0.54 {55.0}	0.32 {35.0}	0.32 {35.0}	0.16 {17.0}	0.16 {17.0}
RF05	3.04 {310}	1.96 {200}	2.13 {220}	1.37 {140}	1.03 {105}	1.03 {105}	0.62 {65.0}	0.62 {65.0}	0.31 {32.0}	0.31 {32.0}
RF08	4.12 {420}	2.65 {270}	2.88 {290}	1.86 {190}	1.27 {130}	1.27 {130}	0.76 {80.0}	0.76 {80.0}	0.38 {40.0}	0.38 {40.0}
RF10	5.49 {560}	3.43 {350}	3.84 {390}	2.40 {240}	1.77 {180}	1.77 {180}	1.06 {110}	1.06 {110}	0.53 {55.0}	0.53 {55.0}
RF12	8.34 {850}	5.49 {560}	5.84 {600}	3.84 {390}	2.50 {255}	2.50 {255}	1.50 {155}	1.50 {155}	0.75 {75.0}	0.75 {75.0}
RF17	14.1 {1440}	9.81 {1000}	9.87 {1010}	6.87 {700}	4.02 {410}	4.02 {410}	2.41 {245}	2.41 {245}	1.21 {125}	1.21 {125}
RF26	19.6 {2000}	13.7 {1400}	13.7 {1400}	9.59 {980}	5.30 {540}	5.30 {540}	3.81 {325}	3.81 {325}	1.59 {160}	1.59 {160}
RF36	27.5 {2800}	18.6 {1900}	19.3 {1970}	13.0 {1330}	7.45 {760}	7.45 {760}	–	–	–	–
RF52	–	–	–	–	9.81 {1000}	9.81 {1000}	–	–	–	–
RF60	–	–	–	–	10.8 {1100}	10.8 {1100}	–	–	–	–
RF90	–	–	–	–	15.2 {1550}	15.2 {1550}	–	–	–	–
RF120	–	–	–	–	19.6 {2000}	19.6 {2000}	–	–	–	–
RF430	–	–	–	–	0.93 {95.0}	0.93 {95.0}	0.56 {60.0}	–	0.28 {30.0}	–
RF204	–	–	–	–	1.27 {130}	1.27 {130}	0.76 {80.0}	–	0.38 {40.0}	–
RF450	–	–	–	–	1.27 {130}	1.27 {130}	0.76 {80.0}	–	0.38 {40.0}	–
RF650	–	–	–	–	1.42 {145}	1.42 {145}	0.85 {85.0}	–	0.43 {45.0}	–
RF214	–	–	–	–	2.11 {215}	2.11 {215}	1.27 {130}	–	0.63 {65.0}	–
RF205	–	–	–	–	2.50 {255}	2.50 {255}	1.50 {155}	–	0.75 {75.0}	–
RF6025	–	–	–	–	2.50 {255}	2.50 {255}	1.50 {155}	–	0.75 {75.0}	–
RF212	–	–	–	–	2.89 {295}	2.89 {295}	1.73 {175}	–	0.87 {90.0}	–

Conveyor Chain Selection and Steps

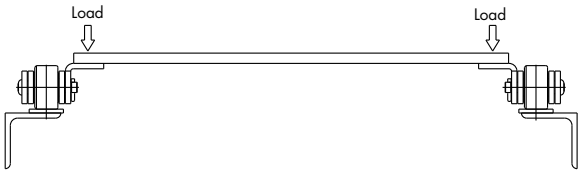
13. Allowable Load for Standard A Attachments

Allowable vertical load (generated by conveyed items or slat mass) for A attachments is as per Table 12. Where the load works with the roller, allowable roller load should be contrasted to that of the attachment, and the smaller value used.
Note: K attachments have twice the allowable load of A attachments.

Table 12: A Attachment Allowable Load

Unit: kN{kgf}/each

Chain Size	Pitch	R, S, M and N Rollers															
		DT		DTA		AT		ATA		GS		GSA		SS		SSA	
RF03	75	0.89	{90.0}	0.89	{90.0}	1.39	{140}			1.36	{140}	1.36	{140}	0.93	{95.0}	0.93	{95.0}
	100	1.05	{105}	1.05	{105}	1.65	{170}			1.61	{165}	1.61	{165}	1.10	{105}	1.10	{105}
RF05	75	1.19	{120}	1.19	{120}	1.87	{190}			1.83	{185}	1.83	{185}	1.26	{130}	1.26	{130}
	100	1.41	{145}	1.41	{145}	2.21	{225}	—		2.16	{220}	2.16	{220}	1.48	{150}	1.48	{150}
	125	1.62	{165}	1.62	{165}	2.55	{260}			2.49	{255}	2.49	{255}	1.71	{175}	1.71	{175}
	150	1.84	{185}	1.84	{185}	2.89	{295}			2.83	{290}	2.83	{290}	1.94	{200}	1.94	{200}
RF08	125	2.68	{275}	2.68	{275}	4.23	{430}	6.05	{615}	4.13	{420}	4.13	{420}	2.60	{265}	2.60	{265}
	150	3.02	{310}	3.02	{310}	4.75	{485}	6.80	{695}	4.64	{475}	4.64	{475}	2.92	{300}	2.92	{300}
RF10	100	2.21	{225}	2.21	{225}	3.48	{355}	4.98	{510}	3.40	{350}	3.40	{350}	2.14	{220}	2.14	{220}
	125	2.53	{260}	2.53	{260}	3.98	{405}	5.69	{580}	3.88	{395}	3.88	{395}	2.45	{250}	2.45	{250}
	150	2.84	{290}	2.84	{290}	4.47	{455}	6.40	{655}	4.37	{445}	4.37	{445}	2.75	{280}	2.75	{280}
RF12	200	4.54	{465}	4.54	{465}	7.14	{730}	10.2	{1040}	6.98	{715}	6.98	{715}	4.89	{500}	4.89	{500}
	250	6.43	{655}	6.43	{655}	10.1	{1030}	14.5	{1480}	9.88	{1010}	9.88	{1010}	6.93	{705}	6.93	{705}
RF17	200	5.18	{530}	5.18	{530}	8.16	{830}	11.7	{1190}	7.97	{815}	7.97	{815}	5.98	{610}	5.98	{610}
	250	7.34	{750}	7.34	{750}	11.6	{1180}	16.5	{1690}	11.3	{1120}	11.3	{1120}	8.47	{865}	8.47	{865}
	300	9.50	{970}	9.50	{970}	15.0	{1530}	21.4	{2180}	14.6	{1490}	14.6	{1490}	11.0	{1120}	11.0	{1120}
RF26	200	4.85	{495}	4.85	{495}	7.63	{780}	10.9	{1110}	7.45	{760}	7.45	{760}	5.59	{570}	5.59	{570}
	250	6.87	{700}	6.87	{700}	10.8	{1100}	15.5	{1580}	10.6	{1080}	10.6	{1080}	7.92	{805}	7.92	{805}
	300	8.89	{905}	8.89	{905}	14.0	{1430}	20.0	{2040}	13.7	{1400}	13.7	{1400}	10.2	{1040}	10.2	{1040}
	450	8.34	{850}	8.34	{850}	8.34	{850}	8.34	{850}	—		—		—		—	
RF36	300	4.22	{430}	4.22	{430}	4.22	{430}	4.22	{430}	—		—		—		—	
	450	8.70	{885}	8.70	{885}	8.70	{885}	8.70	{885}	—		—		—		—	
	600	10.8	{1100}	10.8	{1100}	10.8	{1100}	10.8	{1100}	—		—		—		—	
RF52	300	5.89	{600}	—		5.89	{600}	—		—		—		—		—	
	450	12.1	{1240}	—		12.1	{1240}	—		—		—		—		—	
	600	15.1	{1540}	—		15.1	{1540}	—		—		—		—		—	
RF60	300	6.86	{700}	—		6.86	{700}	—		—		—		—		—	
	350	8.88	{905}	—		8.88	{905}	—		—		—		—		—	
	400	10.5	{1070}	—		10.5	{1070}	—		—		—		—		—	
RF90	350	8.14	{830}	—		8.14	{830}	—		—		—		—		—	
	400	10.4	{1060}	—		10.4	{1060}	—		—		—		—		—	
	500	15.4	{1570}	—		15.4	{1570}	—		—		—		—		—	
RF120	400	7.91	{805}	—		7.91	{805}	—		—		—		—		—	
	600	15.8	{1610}	—		15.8	{1610}	—		—		—		—		—	
RF430		1.62	{165}	1.62	{165}	2.55	{260}	—		2.49	{255}	2.49	{255}	1.71	{175}	1.71	{175}
RF204	A1	1.17	{120}	—		1.85	{185}	—		1.81	{185}	1.81	{185}	1.14	{115}	1.14	{115}
	A2	1.85	{190}	—		2.91	{295}	—		2.84	{290}	2.84	{290}	1.79	{180}	1.79	{180}
RF450		2.35	{240}	2.35	{240}	3.70	{375}	—		3.61	{370}	3.61	{370}	2.27	{230}	2.27	{230}
RF650		2.83	{290}	2.83	{290}	4.46	{455}	—		4.35	{445}	4.35	{445}	2.74	{280}	2.74	{280}
RF214		3.58	{365}	3.58	{365}	5.63	{575}	—		5.50	{565}	5.50	{565}	3.86	{395}	3.86	{395}
RF205		2.65	{270}	—		4.17	{425}	—		4.07	{415}	4.07	{415}	2.86	{290}	2.86	{290}
RF6205		4.07	{415}	4.07	{415}	6.41	{655}	—		6.26	{640}	6.26	{640}	4.40	{450}	4.40	{450}
RF212		5.23	{535}	5.23	{535}	8.23	{840}	—		8.04	{825}	8.04	{825}	6.03	{615}	6.03	{615}



Unit: kN{kgf}/each

Chain Size	Pitch	F Roller							
		DT	DTA	AT	ATA	GS	GSA	SS	SSA
RF03	75	0.75 {75.0}	0.75 {75.0}	1.19 {120}		1.16 {120}	1.16 {120}	0.80 {80.0}	0.80 {80.0}
	100	0.89 {90.0}	0.89 {90.0}	1.40 {145}		1.37 {140}	1.37 {140}	0.94 {95.0}	0.94 {95.0}
RF05	75	1.02 {105}	1.02 {105}	1.61 {165}		1.58 {160}	1.58 {160}	1.08 {110}	1.08 {110}
	100	1.21 {125}	1.21 {125}	1.91 {195}		1.86 {190}	1.86 {190}	1.28 {130}	1.28 {130}
	125	1.40 {145}	1.40 {145}	2.20 {225}	—	2.15 {220}	2.15 {220}	1.48 {150}	1.48 {150}
	150	1.58 {160}	1.58 {160}	2.49 {255}		2.43 {250}	2.43 {250}	1.67 {170}	1.67 {170}
RF08	125	2.40 {245}	2.40 {245}	3.78 {385}	5.41 {550}	3.69 {380}	3.69 {380}	2.33 {235}	2.33 {235}
	150	2.70 {275}	2.70 {275}	4.26 {435}	6.09 {620}	4.16 {425}	4.16 {425}	2.62 {265}	2.62 {265}
RF10	100	1.95 {200}	1.95 {200}	3.07 {315}	4.39 {450}	3.00 {305}	3.00 {305}	1.89 {190}	1.89 {190}
	125	2.23 {225}	2.23 {225}	3.51 {360}	5.02 {510}	3.43 {350}	3.43 {350}	2.16 {220}	2.16 {220}
	150	2.51 {255}	2.51 {255}	3.95 {405}	5.65 {575}	3.85 {395}	3.85 {395}	2.43 {245}	2.43 {245}
RF12	200	4.04 {410}	4.04 {410}	6.36 {650}	9.09 {925}	6.21 {635}	6.21 {635}	4.35 {445}	4.35 {445}
	250	5.72 {580}	5.72 {580}	9.00 {920}	12.9 {1310}	8.79 {900}	8.79 {900}	6.17 {630}	6.17 {630}
RF17	200	4.74 {485}	4.74 {485}	7.47 {760}	10.7 {1090}	7.29 {745}	7.29 {745}	5.47 {560}	5.47 {560}
	250	6.72 {685}	6.72 {685}	10.6 {1080}	15.1 {1540}	10.3 {1060}	10.3 {1060}	7.75 {790}	7.75 {790}
	300	8.70 {885}	8.70 {885}	13.7 {1400}	19.6 {2000}	13.4 {1370}	13.4 {1370}	10.0 {1020}	10.0 {1020}
RF26	200	4.35 {445}	4.35 {445}	6.84 {700}	9.80 {1000}	6.68 {685}	6.68 {685}	5.01 {510}	5.01 {510}
	250	6.16 {630}	6.16 {630}	9.69 {990}	13.9 {1410}	9.46 {970}	9.46 {970}	7.10 {725}	7.10 {725}
	300	7.97 {815}	7.97 {815}	12.5 {1280}	17.9 {1830}	12.2 {1250}	12.2 {1250}	9.19 {935}	9.19 {935}
	450	7.61 {775}	7.61 {775}	7.61 {775}	7.61 {775}	—	—	—	—
RF36	300	3.95 {405}	3.95 {405}	3.95 {405}	3.95 {405}	—	—	—	—
	450	8.15 {830}	8.15 {830}	8.15 {830}	8.15 {830}	—	—	—	—
	600	10.1 {1030}	10.1 {1030}	10.1 {1030}	10.1 {1030}	—	—	—	—
RF52	300	5.49 {560}	—	5.49 {560}	—	—	—	—	—
	450	11.3 {1155}	—	11.3 {1155}	—	—	—	—	—
	600	14.1 {1430}	—	14.1 {1430}	—	—	—	—	—
RF60	300	6.39 {650}	—	6.39 {650}	—	—	—	—	—
	350	8.28 {845}	—	8.28 {845}	—	—	—	—	—
	400	9.78 {995}	—	9.78 {995}	—	—	—	—	—
RF90	350	7.44 {760}	—	7.44 {760}	—	—	—	—	—
	400	9.51 {970}	—	9.51 {970}	—	—	—	—	—
	500	14.1 {1430}	—	14.1 {1430}	—	—	—	—	—
RF120	400	7.23 {735}	—	7.23 {735}	—	—	—	—	—
	600	14.5 {1470}	—	14.5 {1470}	—	—	—	—	—
RF430		—	—	—	—	—	—	—	—
RF204	A1	—	—	—	—	—	—	—	—
	A2	—	—	—	—	—	—	—	—
RF450		2.06 {210}	2.06 {210}	3.25 {325}	—	3.17 {325}	3.17 {325}	2.00 {205}	2.00 {205}
RF650		2.47 {250}	2.47 {250}	3.89 {390}	—	3.80 {390}	3.80 {390}	2.39 {245}	2.39 {245}
RF214		—	—	—	—	—	—	—	—
RF205		—	—	—	—	—	—	—	—
RF6205		3.68 {375}	3.68 {375}	5.79 {580}	—	5.65 {580}	5.65 {580}	3.97 {405}	3.97 {405}
RF212		—	—	—	—	—	—	—	—

Conveyor Chain Selection and Steps

14. Considerations for Special Environments

"Special environments" are anything but ambient temperatures and clean conditions: e.g. low/high temperatures, humidity, dust, and chemical reactive environments. Conveyor chains are often used in these types of complex conditions, so it is vital that chains with just the right combination of part materials are selected to ensure a long service life.

14.1 Low Temperatures

When chain is used in freezers and cold regions, the following should be considered.

1) Low Temperature Brittleness of Material

In general materials become brittle at low temperatures, and their impact strength drops. The amount of drop varies with the material. Usage limits with this in mind can be found in Table 13 below.

Table 13: Applicable Lowest Temperature

Conveyor Chain	Lowest Temperature (°C)
DT, DTA, and ATA Series	–20
AT Series	–60
GS and GSA Series	–70
SS and SSA Series	–100

Note: Contact a Tsubaki representative regarding use under –20°C.

2) Poor Articulation and Poor Roller Rotation from Freezing

Using chain at low temperatures will allow water to infiltrate between pin-bush, plate-plate, and roller-bush to freeze, or for condensation to form, resulting in poor chain articulation, poor roller rotation, and chain-rail freezing. This will put an excessive load on the chain and drive equipment. Freezing should be avoided by generally filling gaps between parts with a lube that will not freeze at the operating temperature. A silicone grease is recommended for this purpose.

14.2 High Temperatures (Over 400°C)

The strength of the chain decreases as the temperature of the chain increases from the heat of the material conveyed or the environment. Usage limits for each chain are determined by the temperature of the chain and material.

1) Points Concerning Hot Chain

① Friction factor increases more than usual.

② There is a possibility of heat fatigue when different materials have been welded, due to the difference in heat expansion coefficients.

③ In environments over 400°C, heat expansion and clearance must be considered.

④ Creep breakage

⑤ High temperature brittleness

⑥ Carbide precipitation brittleness

⑦ Repeated thermal shock (cooling and expansion)

2) Lubricants

Silicone-based and fluorine-based greases containing graphite and MoS_2 have excellent heat resistance.

14.3 Abrasiveness

Points concerning abrasive conditions

① Select a conveyor that will not allow highly abrasive material to fall onto the chain. Install a cover.

② Slow down chain speed as much as possible.

③ Increase the chain size to reduce pin-bush bearing pressure.

④ Lubricate using a grease nipple.

14.4 Corrosiveness

When chain is exposed to corrosive material:

① Chain parts get thinner.

② Wear from corrosion accelerates wear in general.

③ Rust will cause chain bending failures and roller rotation failures.

④ In environments such as acid or alkaline atmospheres, problems may occur such as stress corrosion and intergranular corrosion that will require particular attention.

Refer to Table 14 for the corrosion resistance of chain material to various kinds of solvents. GS and GSA Series (SUS400 Series) parts can rust depending on conditions. Specifications against stress corrosion are available. Please inform your Tsubaki representative of the material used for accessories and related equipment (e.g. rails, tanks, etc.).

⚠**Caution** Contact a Tsubaki representative regarding whether a product contains substances restricted for use in specific industries and applications.

Table 14: Corrosion Resistance to Various Kinds of Solvent

When selecting your chain, please check whether or not the material is fully corrosion resistant by referring to this table. This table shows properties of material at 20°C and is only to be taken as a guide. To determine final specifications of the chain, please consider all conditions together.

○ : Resistant × : Not resistant
△ : Resistant depending upon conditions − : Unknown

Solvent	DT/DTA/AT/ATA Series, etc.	GS/GSA Series	SS/SSA Series
Acetic Acid 10%	×	○	○
Acetone	–	○	○
Alcohol (Methyl-, Ethyl-, Propyl-, Butyl)	○	○	○
Ammonia Gas (Cold)	–	–	–
Ammonia Gas (Hot)	–	–	–
Ammonia Water	△	○	○
Beer	×	○	○
Benzene	○	○	○
Boric Acid 5%	×	○	○
Butyric Acid 20°C	–	○	○
Calcium Hydroxide 20% Boil	–	○	○
Calcium Hypochlorite	×	×	○
Carbolic (Phenol) 20°C	–	○	○
Carbon Tetrachloride (Dry) 20°C	–	○	○
Carbon Tetrachloride (Water Cont. 1%) Boil	–	–	–
Carbonated Water	×	○	○
Caustic Soda 25%	–	○	○
Chlorine Gas (Wet) 20°C	×	×	×
Citric Acid 50%	×	○	○
Formic Acid Aldehyde	○	○	○
Formic Acid 50%	×	○	○
Gasoline	○	○	○
Glycerin 20°C	○	○	○
Hydrogen Peroxide 30%	–	△	○
Hydrochloric Acid (2%)	×	×	×
Iodine	–	–	–
Kerosene	○	○	○
Lactic Acid 10% 20°C	×	△	○
Milk	×	○	○
Nitric Acid 5%	×	△	○
Oil (Vegetable, Mineral)	○	○	○
Oxalic Acid 10% 20°C	×	△	○
Paraffin	○	○	○
Petroleum 20°C	○	○	○
Phosphoric Acid 10%	×	△	△
Potassium Permanganate (Saturation) 20%	–	○	○
Sea Water	×	×	△
Soap Solution	×	○	○
Sodium Bicarbonate 20°C	–	○	○
Sodium Carbonate (Saturation) Boiling Point	–	○	○
Sodium Chloride	×	△	○
Sodium Hypochlorite 10%	×	×	×
Sodium Sulfate Saturation 20°C	–	○	○
Soft Drinks	×	○	○
Sulphuric Acid 5%	×	×	×
Sulphurous Acid Gas (Dry) 20°C	–	–	–
Sulphurous Acid Gas (Wet) 20°C	×	×	○
Tartaric Acid 10% 20°C	×	○	○
Vegetable Juice	×	○	○
Vinegar	×	×	△
Water	×	○	○
Whiskey	×	○	○
Wine	×	○	○

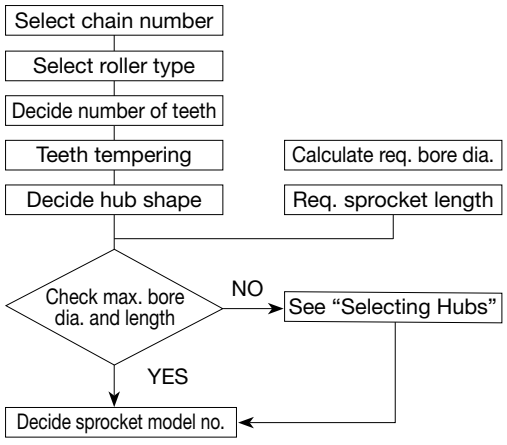
15. Clean Specifications

Class	For	Cleanliness	Application	Anti-rust Oil	Packaging
Class 1	All stainless steel parts (SS Series)	No extraneous matter (oil, grime, scale) or burrs, wiped with a clean cloth to remove dirt.	Pharmaceuticals or other materials come in direct contact with chain	No	Wrapped in a sheet, boxed in heavy duty paper and plastic
Class 2	All stainless steel parts (GS Series, or a combination of GS and SS Series)	No extraneous matter (oil, grime, scale) or burrs.			Anti-atmospheric rust agent added to packaging. Boxed in heavy duty paper and plastic. *1
Class 3	Some or all parts regular steel	After assembly, chain is wiped of oil and cleaned to remove oil and grime. Scale still remains.			

Note: *1: Oil may be present on the chain from the manufacturing process. Contact a Tsubaki representative regarding other clean specifications not shown above.
2: Material surfaces are generally black (oxide film), but some reddish scale may be evident on some chain models. Contact a Tsubaki representative regarding long-term storage.

16. Sprocket Selection

Select a sprocket model using the following steps. The maximum bore diameter and length of standard sprockets strike the proper strength balance with AT Series chain, and are set to efficient dimensions. Please contact a Tsubaki representative should a larger or smaller hub be required.



Ref: Formula for Sprocket Dimensions

● Pitch circle diameter

$Dp = P/\sin(180°/N)$

P : Chain pitch (mm)

N : Sprocket number of teeth

● Outer diameter (rough)

Precision welded teeth : $Do = Dp + 0.6R$

Machine cut teeth : $Do = Dp + 0.4R$

R : Chain roller diameter (mm)

Handling Conveyor Chain

1. Installation

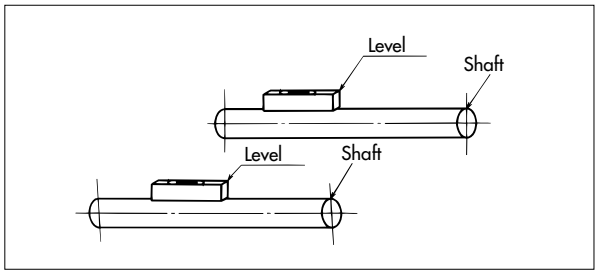
Proper installation of the sprocket has a major influence on smooth conveyance and will affect chain life as well. Follow the instructions below for proper sprocket installation.

1.1 Installation Accuracy of the Shafts

1.1.1 Check the levelness of the shaft using a level.

Adjust to within a tolerance of ±1/300.

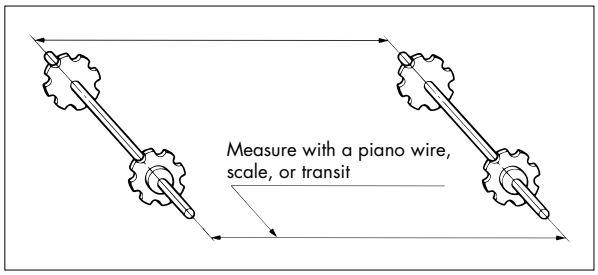
Fig. 1 Measuring shaft levelness



1.1.2 Check the parallelism of the shaft.

Use a scale to adjust the parallelism of the shaft to ±1mm.

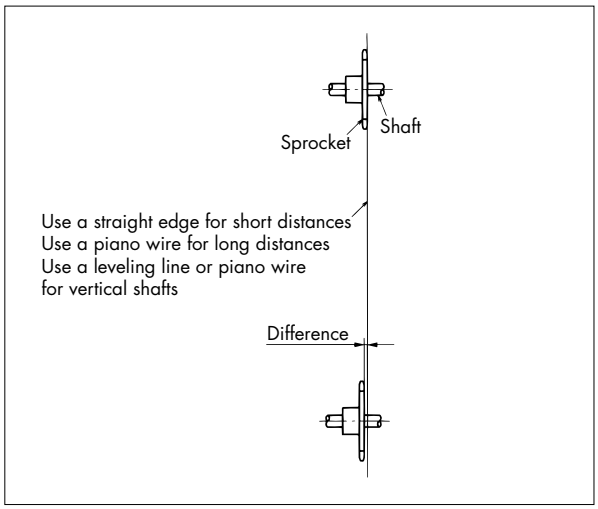
Fig. 2 Measuring shaft parallelism



1.1.3 Align the sprocket axis to match.

- Distance between shafts up to 1m: ±1mm or less
- Distance between shafts from 1m–10m: $\pm \frac{\text{Distance between shafts (mm)}}{1000}$ or less
- Distance between shafts over 10m: ± 10mm or less

Fig. 3 Measuring sprocket misalignment



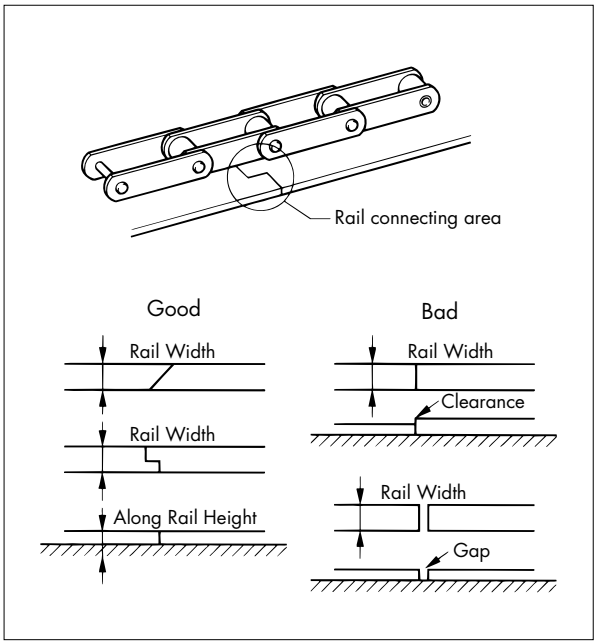
1.1.4 Lock the sprockets.

Lock the properly installed sprocket to the shaft with a key. Sprockets used in parallel strands should be fixed so that two teeth above the shaft center are in phase. Tsubaki can also supply keyless locking sprockets.

1.2 Rails for Conveyor Chains

1) Rail connecting areas should be smooth and free of any edges, clearances, or gaps. (See figure below.)
2) Remove any welding spatter or scales.
3) Test operation with a lubed chain with no load, and check condition of chain and rail.

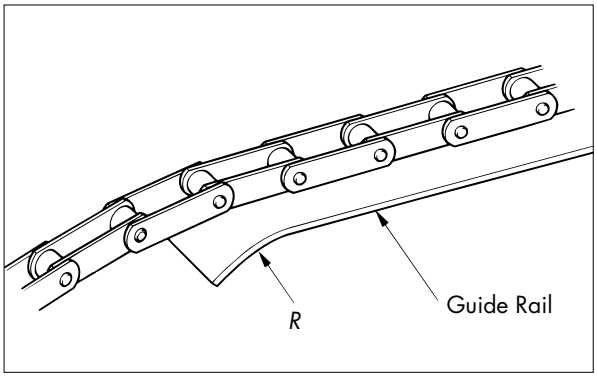
Rail connecting area



4) Chain enter/exit point

Ensure there is a curve to the guide rail for smooth chain running.

Guide rail where chain enters/exits conveyor



2. Connection/Disconnection

(1) When connecting or disconnecting the chain, always begin by attaching or removing the outer plate on the T-pin side.

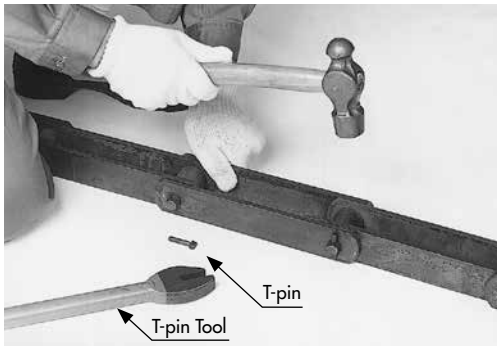
(2) Loosen the take-up so that there is no tension on the chain.

> ⚠Caution Whether the conveyor is parallel, slanted, or vertical, always attach a chain block or piano wire to the area to be connected/ disconnected to ensure there is no tension on the chain.

2.1 Disconnecting Chain

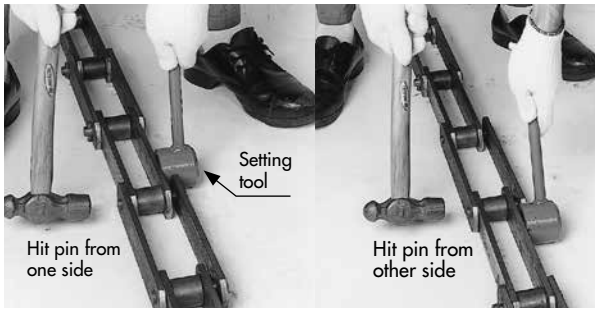
1) Remove the T-pin

Use a T-pin tool or monkey wrench to bend the T-pin straight before removal. Always use a new T-pin. Never reuse straightened T-pins.



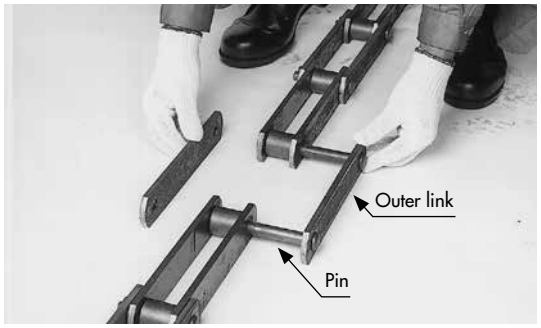
2) Alternate Hitting Two Pins

Place a holding tool against the inner link and hit the pin with a hammer to remove as shown in the photo below.



3) Remove the Outer Link

Remove the outer plate along with the two pins as shown in the photo below.



4) Specialty Tools

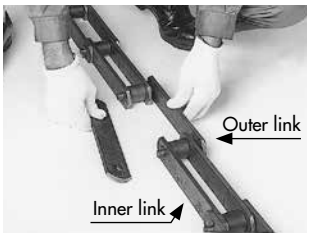
Pins can be safely and quickly inserted and removed without affecting chain performance by using a cutting tool (see page 155). The photo below shows a chain being disconnected using a chain vice.

2.2 Connecting Chain

1) Preparation

With a new chain, remove the outer plate on the outer link on the T-pin side. Refer to the previous section for pin removal.

> ⚠Caution Widening the plate holes or narrowing the pin diameter to make pin insertion or removal easier will lead to dramatic loss of chain performance and accidents.



2) Connecting Two Strands of Chain

Draw the two ends together and connect with outer plates.

3) Pin Insertion

Hold the concave portion of a pin tool against the pin on the T-pin side. Hit pin head with a hammer until the pin pokes out through the T-pin hole on the outer plate. The pin can be inserted easily by using a chain breaker. Check the chain at this point to ensure that it articulates smoothly.

4) Bend the T-pin

Insert the T-pin into the pin and bend the tip 30 degrees or more with a T-pin tool or monkey wrench so that it will not come out. Once a T-pin is used, bending it back will result in cracking. Do not reuse T-pins.

Handling Conveyor Chain

3. Test Operation

Perform a test operation after attaching the chain and before actual operation. Use the following checkpoints as a guide.

3.1 Before Beginning Test Operation

1. Is the T-pin on the connecting link properly attached?
2. Does the chain have the proper amount of catenary?
3. Does the chain have the proper amount of lubrication?
4. Does the chain hit the case or cover?
5. Have all the bolts and nuts been tightened?

3.2 Test Operation

1. Are there any abnormal noises?
2. Does the chain vibrate?
3. Does the chain ride up on the sprocket?
4. Does the chain wind up on the sprocket?
5. Are the rail(s) and sprocket(s) properly installed?
6. Are the rollers rotating smoothly?
7. Does the entire chain articulate smoothly?
8. Does the chain list or snake when viewed from above?

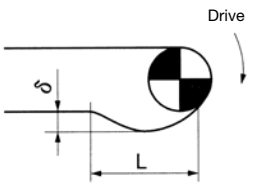
⚠Caution
1. Test operation after installation should consist of repeatedly starting and stopping the conveyor with no load, followed by continuous operation with no load. Lubricate chain before test operation so that parts wear in.
2. Even if lubrication cannot be done, do a run-in.
3. When slats or apron buckets are installed on chain attachments, do a test run with bolts and nuts provisionally tightened. Then, prior to the actual start of operation, fully tighten all bolts and nuts.

4. Adjust Chain Tension

Take-up the chain to ensure proper operation of the conveyor. As a guide, chain should be adjusted 1.5–2 pitches.
The correct amount of slack is essential. Wear will advance on chains with too much tension, while chains with too much slack will ride up on the sprocket, causing accidents.

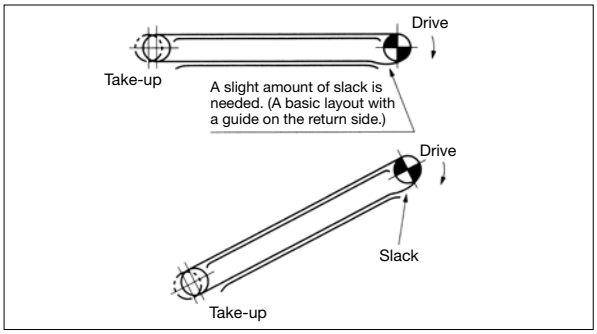
4.1 Chain Slack

In a basic layout, a small amount of slack (δ) is needed on the return side as shown in the figure below. Too much tension will promote chain wear, and too much slack will cause the chain to ride up on the sprocket teeth and cause damage.



Chain slack (δ) ≒ 0.1L

Chain slack



4.2 Frequency of Adjustment

The chain will undergo initial elongation when first used, as well as elongation resulting from wear between pin and bush after operation. Therefore, it is necessary to regularly adjust the chain through take-up to ensure proper chain tension. A chain operated for eight hours per day should be checked and adjusted as per the following chart. It becomes easier to neglect take-ups the longer the chain is used, which leads to chain catenary and accidents. Thus, performing regular checks is essential.

Within one week after initial operation	Once/day
Within one month after initial operation	Twice/week
Over one month after initial operation	Twice/month

Shorten interval between checks if chain speed is fast or chain operating time per day is over eight hours.

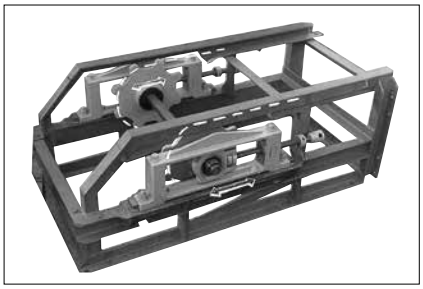
4.3 Adjustment Frequency

4.3.1. When Chain Cannot Be Adjusted by Take-up Alone

If there is still some slack in the chain, despite taking up the chain as much as possible, remove two (2) links from the chain and shorten the overall length. See our guide to connecting and disconnecting chain.

4.3.2 Even Adjustment of Take-up on Both Sides

When two parallel chains are adjusted by two independently operated take-ups, care must be taken to ensure even stroke on both the left and right sides. For this, we will assume that the length of the left and right chains is roughly equal. Therefore, it may be necessary to insert chain lengths at times to align the two lengths. (This is unnecessary with continuous or balance take-up.) An uneven adjustment will cause the link plate and the side of the sprocket teeth to interfere with each other and result in an overload condition.



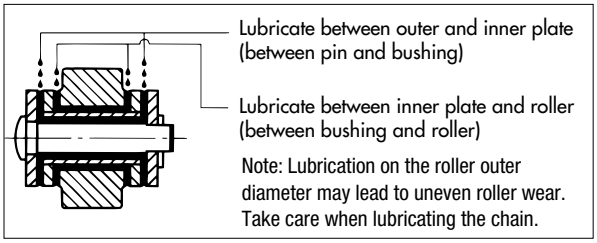
5. Lubrication

Lubrication is essential to ensure long life for your chain.

5.1 Lubricating

Lubricating your chain will reduce the wear on all chain parts as well as reduce required drive. Generally, lubricate once per week with ISO VG100–VG150 (SAE30–40) oil by drip method or brush. Lubrication points are indicated by the figure below. Ensure that chain is clean for maximum lubrication effectiveness.

Lubrication points



5.2 When to Avoid Lubrication

- When chain is buried within the items conveyed (bulk material conveyance).
- When conveying powders in pan conveyors, apron conveyors, etc, or when powders may adhere to the chain and cause problems during lubrication.
- When the chain is used in high temperature environments.

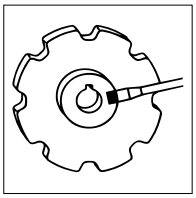
5.3 Commercially Available Lubricants

Manufacturer	Lubricant		
	ISOVG100(SAE30)	ISOVG150(SAE40)	ISOVG220(SAE50)
Idemitsu Kosan	Daphne Super Mechanic Oil 100	Daphne Super Mechanic Oil 150	Daphne Super Mechanic Oil 220
ExxonMobil Japan	Mobil DTE Oil Named Series Mobil DTE Heavy	Mobil Vacuoline 500 Series 528	Mobil Vacuoline 500 Series 533
ENEOS	Super Mulpus DX100	Super Mulpus DX150	Super Mulpus DX220
	FBK Oil RO100	FBK Oil RO150	FBK Oil RO220

6. Storage

Do not store chains or sprockets in areas where they will be exposed to, or risk exposure to, dust or water. Carefully brush lubrication on the edge face of the boss and sprocket holes especially to prevent rusting.
Chains are not treated with an anti-rust treatment when delivered. Apply an anti-rust treatment when storing and check periodically.

Sprocket anti-rust treatment



7. Limits of Conveyor Chain Use

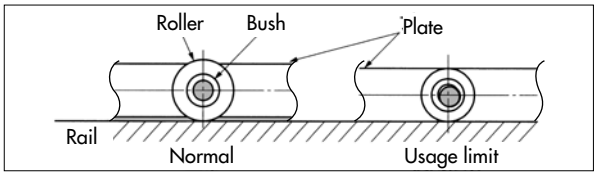
As usage limits for each component of the conveyor chain are noted below, check the degree of wear of each component on a regular basis. These usage limits are values determined based on the performance of the conveyor chain itself. If there is a usage limit for the conveyor body, use this as the base value.
Replace the chain and sprockets at the same time.

7.1 Part Usage Limit

7.1.1 R Roller, F Roller

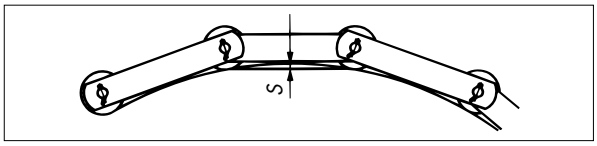
The plate has reached its limit when the bottom of the plate begins to touch the rail due to wear on the contact surface or the sliding area with the bush.

R and F roller limits



If there is a curve in the rail then there will be less wear allowance for the corresponding S dimension only as per the figure below. Special care is needed compared to flat conveyance.

Less wear allowance



7.1.2 S, M, and N Rollers

When roller thickness wears to 40%.

7.1.3 Bush

When bush thickness wears to 40%.

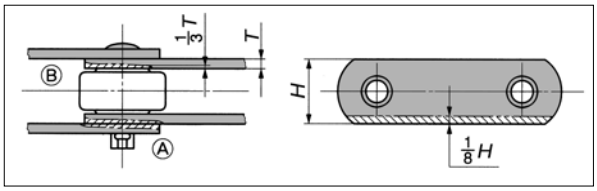
7.1.4 C-Pins

When wear has reduced the pin diameter to 85% of original value (cannot be visually inspected).

7.1.5 Measuring Plate Thickness or Height Wear

Wear will develop from abrasion between plates and roller and plate contact at (A) and (B) below. Chain strength will be insufficient when wear exceeds 1/3 of the plate's normal thickness. If items are conveyed directly on the plate as with flow conveyors, or if they slide on top of steel plates, then chain life will have been reached when plate height is worn by 1/8 as per the figure below.

Plate wear

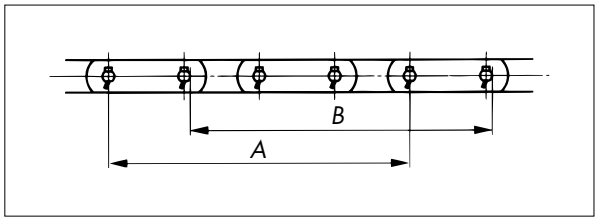


7.1.6 Measuring Chain Wear Elongation

A chain articulates when it engages the sprocket or along the curved portion of a rail, at which time a chain will elongate due to sliding wear between the bush and pin. The chain elongation limit is 2% (2mm of elongation on one link if pitch is 100mm) of a standard basic length (pitch × no. of links).

1) Measuring chain length (measured dimensions)

Measuring dimensions



Measure as many links as possible (at least four links) as per the figure above. Measure from:
(A) center of pin to center of pin
(B) end of pin to end of pin

2) Chain elongation (%)

Measure chain using one of the above methods, compare to standard length, and determine chain elongation (%).

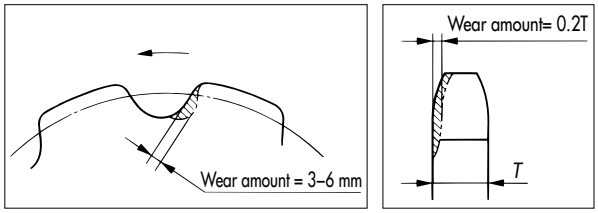
$$\text{Chain Elongation} = \frac{\text{Measuring dimension} - \text{Standard length}}{\text{Standard length}} \times 100(\%)$$

7.1.7 Wear on Sprocket Teeth Face or Sides

Worn sprocket teeth may accelerate chain wear during engagement. Regularly inspect both sprockets and chains.

1) Wear limits for sprocket teeth surfaces are roughly shown in the figure below.

Tooth surface wear **Tooth side surface wear**



2) Tsubaki recommends replacing the sprocket when teeth are worn. Avoid flipping the sprocket over and continuing to use sprockets with worn teeth bottoms.

8. Maintenance and Inspection

1. Conveyor Downtime

Always remove load from conveyors before stopping. Starting with load may cause overloading. Inspect chain before starting a conveyor that has been stopped for extended periods.

2. Lubrication

Always regularly lubricate the chain.

3. Fixing Parts

The nuts of buckets, aprons, slats, and other items that are bolted to the chain can come loose and fall off due to chain vibration during operation. Spot weld them or take other action to ensure they do not loosen.

4. Amount of Chain Slack

Regularly inspect and adjust chain slack.

5. Temperature and Condensation

When there are temperature differences such as between daytime and nighttime during winter, or if a case conveyor intermittently conveys items that are at a higher temperature than the ambient temperature, there is a risk of condensation forming, causing water to accumulate in the conveyor. This may lead to corrosion of the chain, shortening its life. If the conveyor is used for wet items or materials, or if water accumulates in the conveyor, remove any water, reapply lubricant, and perform an inspection.

6. Storing Extra Chain

Tsubaki recommends having extra chain on hand in the event of chain failure. Store extra chain indoors where there is low humidity. Apply an anti-rust oil when storing for extended periods.
It may be convenient to attach a tag to the chain with the chain name, drawing number, date of purchase, equipment name, and other pertinent information.

7. Preventative Maintenance for the Conveyor

In addition to the above maintenance and inspection, create a conveyor history log and periodically record conveyor capacity, conveyor speed, main shaft rotation speed, current, voltage, power, actual operating time, actual conveyance load, inspection/ lubrication days, accidents, etc. This can help prevent unexpected accidents and facilitate repairs.

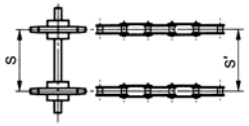
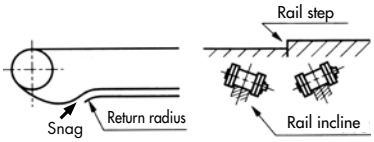
8. Cleaning

Periodically clean chain and rail if in contact with foreign matter or conveyed items.

9. Troubleshooting

Refer to the table below if you experience problems with your conveyor chain or sprocket, which should be replaced with new products as necessary.

9.1 Chain and Sprocket

Problem	Possible Cause	Solution
Chain rides up on sprocket 	Chain and sprocket do not match.	Replace chain or sprocket with the correct size.
	Total arc of contact with the chain on the sprocket is insufficient.	Have total arc of contact be at least three teeth on the sprocket. Install a tensioner.
	Excessive load.	Reduce the load (e.g. install a shock absorber).
	Inadequate back tension.	Adjust the catenary of take-up idler, or install a tensioner.
	Excessive chain elongation due to wear.	Replace with a new chain.
	Distance between the center of the chain and sprocket do not match S≠S'.	Inspect and correct.
Chain winds on sprocket	Too much slack in chain.	Adjust the chain length or distance between axles, or install a tensioner.
	Excessively worn sprocket, or chain and sprocket do not match.	Replace chain and/or sprocket with the correct sized part.
Unusual noises	Inadequate lubrication to the contacting portions of the pin and bush.	Provide sufficient lubrication.
	Inadequate lubrication to the contacting portions of the bushing and roller.	Provide sufficient lubrication. Use a bearing roller or plastic roller.
	Winding or riding on the sprocket.	See above.
	Loose chain casing or axle bearing.	Tighten all nuts and bolts.
	Interference of the casing with the chain or other moving part.	Inspect and correct.
	Excessive wear in the chain or sprocket.	Replace the chain or sprocket (replace all connect chains).
	Improper setting of the guide rail. 	Inspect and correct.
Excessive wear at the inside of the chain's link plates or the teeth surfaces 	Improper centering of the sprocket.	Remove the chain and correct the centering of the drive and driven sprockets.
	Chain is being pushed to the side.	Remove the cause of the push and/or install a guide roller.
	Vibration caused by the inaccurate finishing of the sprocket's shaft hole.	Check and correct the faulty locations and replace the sprocket with a new part.
Excessive wear of the sprocket teeth valleys and drive sides	Excessively worn chain.	Replace both the chain and the sprocket.
	Insufficient number of teeth.	Increase the number of teeth.
	BF Chain being used (no rollers).	Change to an RF Chain (w/rollers).
	Tooth hardness is insufficient with respect to the load and conveyed materials or foreign particles.	Use a sprocket with hardened or block replaceable teeth.
	Chain and sprocket do not match.	Replace chain or sprocket with correct sized parts.
Poor articulation	Rusting or corrosion.	◆ Install a partition to protect the chain. ◆ Select a suitable chain (e.g. GS Series).
	Particles of conveyed material have contaminated the pins, rollers, or bushes, or contamination from foreign particles.	◆ Install a partition to protect the chain. ◆ Select a chain with large clearance between pin, bush, and roller. ◆ Remove particles or contamination, or apply penetrating oil.
	Deformation of the chain from improper installation.	Inspect and correct installation of the sprockets and shafts.
	Inadequate lubrication.	Inspect the lubrication or look into wear resistant chain (e.g. CT/BT Series).
	Operation in extremely high temperatures (over 400°C).	Provide adequate clearance.
	Seizure from excessive loads.	Reduce load. Lubricate regularly (e.g. install a lubricator).
	Pin bending due to excessively high loading.	Reduce load. Lubricate regularly (e.g. install a lubricator).

Handling Conveyor Chain

Problem	Possible Cause	Solution
The chain sticks and slips (This can be caused by a combination of many problems; therefore, the listed remedies may not solve the problem.)	Change the rolling friction coefficient of the chain.	◆ Clean and lubricate moving parts with Tsubaki oil. (Contact a Tsubaki representative.) ◆ Replace sprocket. ◆ Switch to Bearing Roller Conveyor Chain.
	The conveyor speed is too slow.	Increase conveyor speed.
	Insufficient rigidity in the frame. The conveyor chain is small compared to the device.	◆ Increase the frame rigidity; increase the chain model number. ◆ Decrease the slack in the drive roller chain.
	The force of friction is excessively large.	◆ Lubricate between the guide rail and chain. ◆ Switch to Bearing Roller Conveyor Chain.
	The machine is too long.	Divide the conveyor system into sections to decrease the length.
	Inconsistent speeds due to movement along a polygonal path.	Use a 12 or more toothed drive sprocket, or reinforce the sprocket.
Excessive wear on the inside link and pin on one side of an NF Block Chain or BF Chain (no roller)	Increased internal tension when engaging the sprocket.	◆ Attach a supporting block to the sprocket. ◆ Reduce load, and lubricate the chain and sprocket. 
Chain is rusting	Inappropriate selection of material.	Select a more suitable chain material. Protect the chain from the environment. Apply a rust inhibitor (lubrication, cover).
	Condensation	Eliminate the temperature difference between the inside and outside of the conveyor (e.g. using insulation). Install a drain to remove water.
Excessive wear caused by the conveyed material 	The chain is contaminated with especially abrasive materials, such as mineral powders, etc., and the chain surface is being worn away.	◆ Prevent material from falling onto the chain. ◆ Use a wear-resistant chain. → Contact a Tsubaki representative.
Excessive wear from corrosion 	The chain is exposed to acidic or alkaline substances and therefore becomes more susceptible to machine wear, which then progresses much faster.	◆ Use a chemical-resistant material. ◆ Use a wear-resistant material for the machine-worn parts. → Contact a Tsubaki representative.
Excessive wear from electro-chemical corrosion 	When the chain is covered with water or passes through a solvent, the portions in contact suffer galvanic corrosion.	◆ Use a chemical-resistant material. ◆ Use a wear-resistant material for the machine-worn parts. → Contact a Tsubaki representative.

9.2 Plate

Problem	Possible Cause	Solution
Sudden fracture of link plate	Excessive load, too much tension on take-up.	◆ Eliminate the cause of overloading. ◆ Install a safety device (e.g. a Tsubaki Shock Relay). ◆ Increase chain size.
	Weakening of chain caused by excessive wear or corrosion.	◆ Replace with a new part. Install a cover to protect the chain. ◆ Lubricate regularly. ◆ Select a chain with the proper specs for the application.
	The link plates are pressed outward by the sprocket. 	◆ Check and correct the installation ◆ Check for excessively worn chain or sprocket, and replace as necessary. ◆ Check if the chain and sprocket match, and correct as necessary.
Deformed link plate holes and pin rotation (The pin is shifted from its normal position) 	Excessive load.	◆ Eliminate the cause of overloading. ◆ Replace chain with a larger size.
	Improper installation of the connecting link.	Replace connecting link with a new one.
	Excessive load and inadequate lubrication.	Replace with a new chain and improve the lubrication and loading conditions.
	Seizure of the pin and bush, poor articulation.	◆ Replace chain with a larger size. ◆ Use a chain with a larger clearance between pin and bush. ◆ Lubricate between the pins and bushes with penetrating oil.

Problem	Possible Cause	Solution
Crack in the link plate 1. Fatigue breakage 	Excessive load, or excessive take-up tension. Excessively large repetitive load.	Eliminate overloading or large repetitive loads.
	Load greater than maximum allowable load on the chain.	◆ Increase the size or specs of the chain to raise maximum allowable load. ◆ Replace with a new chain.
	Repetitive load on attachment.	◆ Eliminate overloading or large repetitive loads. ◆ Increase the chain size to increase the allowable load of the attachment.
2. Corrosion stress crack  (Bow-shaped crack in heat treated metal plates)	The chain is being used in an acidic or alkaline environment. (Crack not caused by a repetitive load.)	◆ Install a cover to protect the chain from the environment. Replace with a new part. ◆ Use a chain with a high resistance to corrosion stress cracks
Red pattern found on plates	There is scale on the base plate material.	◆ Can continue to be used as is (DT, DTA, AT, etc.).

9.3 Pin

Problem	Possible Cause	Solution
1. Pin fatigue fracture 	The factor of safety used for calculation of the peak load versus the breakage load was too small. The peak load acted like a repetitive load on the chain.	◆ Recheck the size of the peak load and eliminate its cause. ◆ Replace the chain with a larger size (larger pin diameter).
2. Pin corrosive fatigue	The pin was subjected to a tensile load at the side of the fracture origin, from whence the break then progresses. Chain is especially susceptible to this when the pin surface is corroded and weak against bending stresses.	◆ Install a cover on the chain. (See 9.2 Plate ▶ Crack in the link plate ▶ 2. Corrosion stress crack) ◆ Use a pin made of an anti-corrosion material (e.g. MT).
3. Pin brittle fracture	Poor environment.	◆ Switch to anti-corrosive pins.
4. Pin sudden fracture	Excessive load.	◆ Replace chain with a larger size.

9.4 Roller, Bush

Problem	Possible Cause	Solution
Improper roller rotation and uneven roller wear	Excessive load on roller.	Provide sufficient lubrication between the bushes and rollers. Consider bearing roller or DTA Series.
	Particles of conveyed material, or other foreign particles, have gotten between bush and roller.	Clean regularly, and install a partition to protect the chain.
	Particles of conveyed material, or other foreign particles, have built up on the rail.	Clean regularly and install a partition to minimize buildup.
	Lubricant is falling on the roller surface and rail without entering between the bush and roller or between roller and link plate.	Select an appropriate lubricant and lubrication method.
	Roller/bush rust.	Select an appropriate specification (e.g. RT).
	Inner plate is moving sidewards.	Replace with a new chain. Re-inspect the installation and load conditions.
	Bush is cracked.	Reduce the load and lower the speed of rotation.
	The side surface of the roller is contacting the side of the link plate due to a thrust load.	Eliminate the cause of the thrust load.
	The chain and sprocket do not match, or excessively worn teeth.	Check for tooth deformation.
Roller is opening up	Excessive load.	Reduce the load, provide adequate lubrication, and remove any large steps in the rail. Loosen take-up.
Roller or bush is split (falling off)	Excessive load.	Reduce the load and provide adequate lubrication. Loosen take-up.
	Too few teeth with respect to conveyor speed.	Increase the number of teeth or decrease the speed.
The roller is becoming hourglass-shaped	Excessive load or inadequate lubrication.	Increase the lubrication, improve the loading conditions, and replace the chain with a new one.
	Excessively worn rail.	Correct or replace the rail.

Handling Conveyor Chain

10. Repair Parts

Indicate the following when inquiring about or ordering repair parts.

10.1 Conveyor Chain

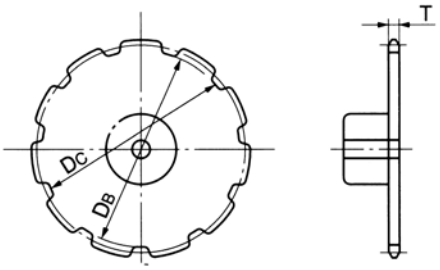
1) Chain size (e.g. RF03075R)
2) Attachment type and spacing (e.g. A2 attachment every 2 links)
3) Total chain length (e.g. 250 links× 2 strands)
4) Specification name for Standard, Heavy Duty, or Corrosion Resistant chain (e.g. AT Series large size conveyor chain)
5) Once the above are indicated, the chain can be referred to as below.
   Model number: RF03075R-AT-2LA2+250L-PR 2H
6) Indicate differences from standard chain for special specifications.
   Provide the Tsubaki drawing number when known.
7) If chain size or chain drawing number are unknown, please provide the following information.
   ① Chain pitch
   ② Roller diameter and type
   ③ Inner link inner width
   ④ Plate width and height
   ⑤ Pin type
   ⑥ Attachment type and dimensions
   ⑦ Material and hardness if used in special applications

9.1 Sprocket

1) Size (e.g. RF03075R)
2) Roller type and dimensions (e.g. R roller, ϕ31.8 diameter, 15.5 contact width)
3) Number of sprocket teeth (e.g. 6)
4) Type (BW, CW, BW1, CW1)
5) Hub type and dimensions
6) Tooth hardening (N: no tooth hardening, Q: hardened)
7) Shaft hole diameter and key dimensions (e.g. ϕ40H8, Js9)
8) Used in parallel or not (or parallel specs)
9) Once the above are indicated, the sprocket can be referred to as below.
   RF03075R6T-BWQ
   Parallel use, ϕ40H8, JS9
10) Indicate differences from standard sprockets for special specifications.
11) Provide the Tsubaki drawing number when known.

When chain size is unknown

In addition to information 2) to 10) above, indicate tooth width (T), radius of tooth valley (DB), and distance between tooth valleys (DC) if there are an odd number of teeth.



MEMO

Large Size Conveyor Chain Inquiry Sheet

Specify the following when ordering Large Size Conveyor Chain.

Conveyor Name			**Max. Allowable Load**	kN{kgf}	If you are entering tensile strength, be sure to let us know that you are doing so.
Items Conveyed			**Chain Pitch**	mm	
Corrosion Resistance			**Attachment**	every link	
Wear Resistance			**Conveyance Method**	Pushed by Dog Direct Conveyance Other	
Temp. of Items	Temp.	°C	**Operating Time**	h/d	
Dimensions of Items			**Running Method**	Continuous, Intermittent, Reverse (yes/no)	
Mass of Items	MAX	kg/each	**Lubrication**	Can/cannot use	
Amt. Conveyed	MAX	t/h (bulk items) kg/conveyor (countable items)	**Motor**	AC/DC kW × r/min × motor(s)	
			Sprocket No. of Teeth	NT (PCD mm)	
Conveyor Length		m	**Sprocket Shaft Hole Dia.**	ϕ H8・H7	
Lifting Height		m	**Hub**	Type( ) ϕ × L	
No. of Strands		strands (spacing m)	**Keyway**	No( )JIS・b × t parallel	
Chain Speed		m/min	**Tooth Finishing**	Precision fused Machine cut Induction hardened	

Simple diagram of conveyor and chain: Include conveyor configuration, intake, discharge methods, rail configuration, return side uptake, etc.

Co. Name:	**Division or Department:**
Name:	**Tel:**
Date:	**Fax:**

For Safe Use

Warning

Observe the following points to prevent hazardous situations.

- Do not use chains or accessories (peripheral devices and parts) for anything other than their original purpose.
- Never perform additional work on the chain.
  - Do not anneal the various parts of the chain.
  - Do not clean the chain with acids or alkalis, as they may cause cracking.
  - Never electroplate the chain or its parts, as this may cause cracking due to hydrogen embrittlement.
  - Do not weld the chain, as the heat may cause cracking or a reduction in strength.
  - When heating or cutting the chain with a torch, remove the links immediately adjacent and do not use them again.
- When there is a need to replace a damaged (fractured) portion of a chain, always replace the whole chain with a new product rather than replacing only the damaged or fractured portion.
- When using a chain and sprocket on suspension equipment, establish a safety fence and strictly prevent entry to the area directly below the suspended object.
- Always install hazard protection devices (safety covers, etc.) for the chain and sprocket.
- Immediately stop using the chain if it comes into contact with a substance that can cause embrittlement cracking (acid, strong alkali, battery fluid, etc.) and replace with a new chain.
- When installing, removing, inspecting, maintaining, and lubricating the chain:
  - Perform the work according to the instruction manual or this catalog.
  - Always turn off the power switch to the equipment beforehand and make sure that it cannot be turned on accidentally.
  - Secure the chain and sprocket so that they cannot move freely.
  - Use a press or other special tool to cut and connect chain, and cut and connect using the proper procedures.
  - Wear clothing and protective gear (safety glasses, gloves, safety shoes, etc.) that are appropriate for the work.
  - Only experienced personnel should replace chains and sprockets.
- Install hazard protection devices (safety equipment, etc.) on suspension equipment using Leaf Chain to prevent hazard or injury in the event of chain failure.
- Install protection equipment for safety on the equipment side when using chain on personnel transport devices or lifting equipment.

Caution

Observe the following points to prevent accidents.

- Only handle chains and sprockets after thoroughly understanding their structure and specifications.
- When installing chains and sprockets, inspect them in advance to confirm that they have not been damaged in transport.
- Always regularly inspect and maintain your chains and sprockets.
- Chain strength varies according to manufacturer. When selecting a chain based on a Tsubaki catalog always use the corresponding Tsubaki product.
- Minimum tensile strength refers to the failure point when a load is applied to the chain once and does not refer to the allowable operational load.
- Lubricate connecting links (CL/OL) before assembling onto the base chain.
- Always ensure that the final customer receives the instruction manual.
  - If you do not have the instruction manual, contact a Tsubaki representative with the product name, series name, and chain/model number to receive the appropriate manual.
- The product information given in this catalog is mainly for selection purposes. Thoroughly read the instruction manual before actually using this product, and use the product properly.

Warranty

1. Warranty Period

Products manufactured by Tsubakimoto Chain Co. (“Products”) are warranted against defects in materials and workmanship for eighteen (18) months from the date of shipment from the factory or twelve (12) months from the date the Products are first placed into operation (calculated from the date the Products have been installed on the customer’s equipment), whichever comes first.

2. Scope of Warranty

During the warranty period, if defects arise in the Products when installed, used, and maintained correctly in accordance to Tsubakimoto Chain’s catalogs, installation manuals (including any documents specially prepared and provided to the customer) and the like, Tsubakimoto Chain will repair or replace such defective Products thereof free of charge upon confirmation of said defect by Tsubakimoto Chain. This warranty shall only apply to Products received, and Tsubakimoto Chain shall not be liable for the following costs and/or damages (including installation manuals or other documents specially prepared and provided to the customer):

(1) Costs required for removing the defective Products from or re-installing the replacement Products on the customer’s equipment for replacement or repair of the defective Product, as well as any associated installation costs.
(2) Costs required to transport the customer’s equipment, if needed, to a repair shop or the like.
(3) Any consequential or indirect damages or loss of profits or benefits the customer may incur due to the defects or repair of the Products.

3. Out of Warranty Service and Repair

Regardless of the warranty period, Tsubakimoto Chain will provide investigation, repair, and/or manufacture of the Products for a fee should the Products experience problems or anomalies under the following situations.

(1) Placement, installation (including connecting and disconnecting), lubrication, or maintenance of the Products not in accordance with Tsubakimoto Chain’s catalogs, installation manuals (including documents specially prepared and provided to the customer), or the like.
(2) Use of the Products (including operating conditions, environment, and allowances) not in accordance with Tsubakimoto Chain’s catalogs, installation manuals (including documents specially prepared and provided to the customer), or the like.
(3) Inappropriate disassembly, modification, or processing of the Products by the customer.
(4) Use of the Products with damaged or worn products. (Example: Use of the Products with a worn sprocket, drum, rail, or the like.)
(5) When the operating conditions exceed the performance of the Products as selected using the Tsubakimoto Chain selection method.
(6) Use of the Products in conditions other than what have been discussed.
(7) When consumables such as bearings, oil seals, and lubricant in the Products deplete, wear, or degrade.
(8) When secondary damage occurs to the Products due to initial or primary damage or failure to the customer’s equipment.
(9) Damage or failure of the Products due to forces majeure such as natural disasters.
(10) Damage or failure of the Products due to unlawful conduct by third parties.
(11) Damage or failure of the Products due to causes not attributable to Tsubakimoto Chain

TSUBAKIMOTO CHAIN CO.

Japan	Tsubakimoto Chain Co.	https://tsubakimoto.com/

Global Group Companies

AMERICAS

United States	U.S. Tsubaki Power Transmission, LLC	https://www.ustsubaki.com/
Brazil	Tsubaki Brasil Equipamentos Industriais Ltda.	https://tsubaki.ind.br/
Canada	Tsubaki of Canada Limited	https://tsubaki.ca/

EUROPE

Netherlands	Tsubakimoto Europe B.V.	https://tsubaki.eu/
France	Kabelschlepp France S.A.R.L.	https://tsubaki-kabelschlepp.com/fr-fr/
Germany	Tsubaki Deutschland GmbH	https://tsubaki.de/
	Tsubaki Kabelschlepp GmbH	https://tsubaki-kabelschlepp.com/de-de/
Italy	Kabelschlepp Italia S.R.L.	https://tsubaki-kabelschlepp.com/it-it/
Spain	Tsubaki Ibérica Power Transmission S.L.	https://tsubaki.es/
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Slovakia	Kabelschlepp-Systemtechnik, spol. s.r.o.	https://tsubaki-kabelschlepp.com/sk-sk/
Poland	Kabelschlepp Sp. z o.o.	https://kabelschlepp.pl/

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Singapore	Tsubakimoto Singapore Pte. Ltd.	https://tsubaki.sg/
Australia	Tsubaki Australia Pty. Limited	https://tsubaki.com.au/
India	Tsubaki India Power Transmission Private Limited	https://en.tsubaki.in/
Indonesia	PT. Tsubaki Indonesia Trading	https://tsubaki.id/
Malaysia	Tsubaki Power Transmission (Malaysia) Sdn. Bhd.	https://en.tsubaki.my/
New Zealand	Tsubaki Australia Pty. Limited - New Zealand Branch	https://tsubaki.com.au/
Philippines	Tsubakimoto Philippines Corporation	https://en.tsubaki.ph/
Thailand	Tsubakimoto (Thailand) Co., Ltd.	https://tsubaki.co.th/
Vietnam	Tsubakimoto Vietnam Co., Ltd.	https://tsubaki.net.vn/

EAST ASIA

Republic of Korea	Tsubakimoto Korea Co., Ltd.	https://tsubakimoto-tck.co.kr/
Taiwan	Taiwan Tsubakimoto Trading Co., Ltd.	https://tsubakimoto.tw/

CHINA

China	Tsubakimoto Chain (Shanghai) Co., Ltd.	https://www.tsubaki-sh.cn/

The Tsubaki Eco Link logo is used only on products that satisfy the standards for environmental friendliness set by the Tsubaki Group.

Catalog No. ME2506