

An Introduction to Tsubaki Idler Sprockets



Tsubaki offers a variety of different types of idler sprockets to fit a variety of applications, including the following standard types:

- Ball Bearing Idlers
- Needle Bearing Idlers
- Bronze Bushed Idlers (Oilite, Bronze, Brass)
- Non-Metallic Idlers (Nylon/Nyloil, Derlin and other bushed idlers using custom materials)
- Set Screw Locking Type Idlers

Tsubaki can offer idler sprockets for use with Roller Chain or Engineering Class Chain. Large or small, Tsubaki can supply almost any idler sprocket, including custom make-to-order. Tsubaki uses only quality bearing units when creating the idler sprockets.

Adjustable Idler Sprockets Are Used To:

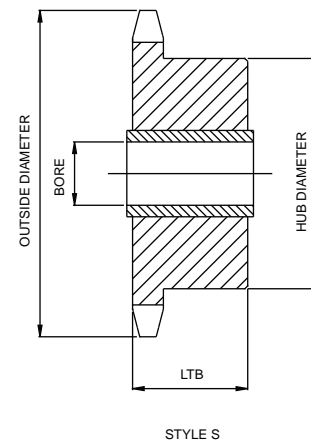
- Obtain proper chain tension when neither driving nor driven shaft is adjustable.
- Guide chain around an obstruction.
- Prevent whipping action in the slack span of chain transmitting an uneven load.
- Bring about greater chain wrap around a small sprocket, particularly if it is the lower sprocket in a vertical drive.
- Take up slack chain caused by normal chain wear.
- Provide for reversed direction of rotation of a sprocket in contact with the outside of the chain.

Idler sprockets should not rotate at greater speeds than are allowable for drive sprockets of the same size. They should be mounted in contact with the "slack" span of chain, whenever possible. Mount them on the outside of the chain when the arc of chain wrap on the smaller sprocket would otherwise be less than 120°. It is advisable that idler sprockets have at least three teeth in mesh with the chain. Inside mounted idlers usually account for quieter operation, especially if centers are short and speed is moderately high.

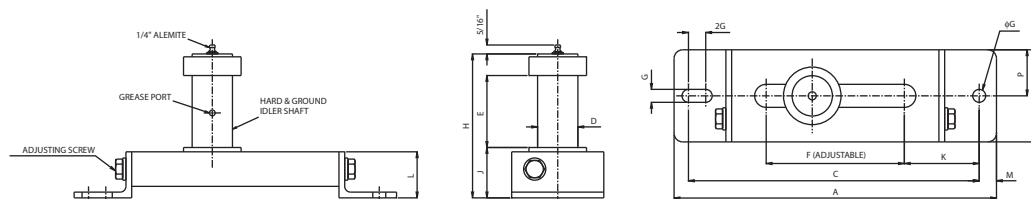
Bronze Bushed Sprocket Idlers For Use With All Steel Tighteners

All dimensions in inches unless otherwise stated.

No. of Teeth	Outside Diameter	Catalogue Number	Suggested Tightener	Chain Number	Hub Diameter	LTB	Bushed Bore Diameter	Weight (lbs.)
15	1.990	35B15T	0	35	1 ³ / ₈	1 ⁵ / ₁₆	1/2	.32
13	2.329	41B13T	0	41	1 ⁹ / ₁₆	1 ⁵ / ₁₆	1/2	.52
13	2.329	40B13T	0	40	1 ⁹ / ₁₆	1 ⁵ / ₁₆	1/2	.52
13	2.911	50B13T	0	50	2	1 ⁵ / ₁₆	1/2	.97
21	2.713	35B21T	1	35	2 ¹ / ₈	1 ¹ / ₁₆	7/8	.82
19	3.296	41B19T	1	41	2 ⁷ / ₁₆	1 ¹ / ₁₆	7/8	1.30
19	3.296	40B19T	1	40	2 ⁷ / ₁₆	1 ¹ / ₁₆	7/8	1.50
17	3.719	50B17T	1	50	2 ³ / ₈	1 ¹ / ₁₆	7/8	1.80
15	3.979	60B15T	1	60	2 ¹¹ / ₁₆	1 ¹ / ₁₆	7/8	2.50
17	4.462	60B17T	2	60	2 ³ / ₈	1 ⁹ / ₁₆	1 ¹ / ₈	3.30
15	5.305	80B15T	2	80	3 ¹ / ₂	1 ⁹ / ₁₆	1 ¹ / ₈	5.60
13	5.821	100B13T	2	100	4	1 ⁹ / ₁₆	1 ¹ / ₈	5.70
13	6.986	120B13T	2	120	4 ¹ / ₂	1 ⁹ / ₁₆	1 ¹ / ₈	13.00
15	9.283	140B15T	3	140	5 ³ / ₄	2 ¹ / ₂	1 ³ / ₄	27.30
13	9.318	160B13T	3	160	5 ³ / ₄	2 ¹ / ₂	1 ³ / ₄	26.40
13	11.642	200B13T	3	200	5 ³ / ₄	2 ¹ / ₂	1 ³ / ₄	58.00



NOTE: Idlers other than stock furnished on a made-to-order basis.
Idler rpm should not exceed 2500 and radial loading should be less than 50 pounds.



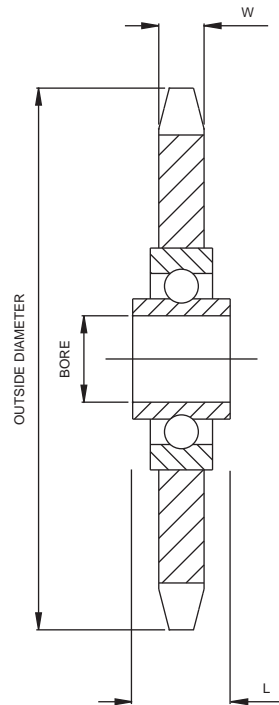
If the sprocket needed is not listed above, please contact Tsubaki for made-to-order custom sprockets.

Chain Tensioners

All dimensions in inches unless otherwise stated.

Size	A	B	C	D	E	F	G	2G	H	J	K	L	M	P	Weight (lbs.)	*Suggested Chain
#0-B	5 ⁷ / ₈	1 ¹ / ₂	5 ¹ / ₄	.500	1	2 ¹ / ₂	9/32	3/8	2 ¹³ / ₁₆	1 ¹ / ₁₆	1 ³ / ₈	1 ¹ / ₄	3/8	3/4	1.0	#35,40,41
#1-B	9	2	8 ¹ / ₈	.875	1 ³ / ₄	4 ¹ / ₂	1 ¹ / ₃₂	1/2	4	1 ⁵ / ₈	1 ³ / ₄	1 ¹ / ₂	1/2	1	2.5	#40,50,60
#2-B	13	3	11 ⁷ / ₈	1.125	2 ⁷ / ₈	6	9/16	3/4	5 ¹¹ / ₁₆	2 ⁵ / ₃₂	2 ⁷ / ₈	2	5/8	1 ¹ / ₂	6.0	#80,100,120
#3-B	14	4	12 ⁵ / ₈	1.750	3 ¹ / ₈	6	9/16	3/4	6 ¹ / ₄	2 ³ / ₁₆	3 ¹ / ₄	2	3/4	2	12.0	#140,160,200

* Single-strand chain. For multiple-strand chain, use larger tensioner.



High Speed Idler Hardened Tooth Sprockets

All dimensions in inches unless otherwise stated.

No. of Teeth	Catalogue Number	Chain Size	Outside Diameter	Bore	L	W	Weight (lbs.)
20	35BB20H	35	2.60	.638	.72	.168	0.38
17	40BB17H	40	2.97	.638	.72	.284	0.52
18	40BB18H	40	3.14	.638	.72	.284	0.53
15	50BB15H	50	3.32	.638	.72	.343	0.75
17	50BB17H	50	3.72	.638	.72	.343	0.78
13	60BB13H	60	3.51	.638	.72	.459	0.76
15	60BB15H	60	3.98	.638	.72	.459	1.06
12	80BB12H	80	4.36	.750	.61	.575	1.50

NOTE: Idlers other than stock furnished on a made-to-order basis.
Idler rpm should not exceed 2500 and radial loading should be less than 50 pounds.

Radial Load Capacity at Various Speeds (Outer Race Rotating)

All values in pounds.

Description	R.P.M.	50	100	300	500	750	1000	1200	1500	1800	2400	2600	3000	3600	4000	4500	5000
35BB20-60BB13		650	515	357	300	265	240	225	208	195	179	173	155	156	151	143	140
80BB12		1630	1290	895	755	665	600	565	523	493	447	434	415	-	-	-	-

Ratings shown above are based on an average bearing life of 2500 hours.



If the sprocket needed is not listed above, please contact Tsubaki for made-to-order custom sprockets.