STP SPROCKETS

TSUBAKIMOTO EUROPE B.V.

EU 0318

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This pricelist contains Tsubaki Gross Prices in Euro

COMPANY INTRODUCTION

LEADING PRODUCTS AND EXCELLENT SERVICE

At TSUBAKI we know that customers want the best. We are also aware that each and every one of our customers has unique requirements. Therefore, we take pride in our ability to deliver an extensive product line-up that satisfies these high expectations. We believe that in coming years there will be an increase in demand for quality in products as well as in services. With an eye on these future trends, we are committed to take on the challenge of technical innovation.

Our main products, along with automotive timing-drive systems, are industrial drive chains, attachment chains and large size conveyor chains. Related products such as cam clutches, sprockets, shaft couplings, safety devices, toothed belts & pulleys compliment the program. In the new and modern workshop in Dordrecht, standard attachment chains can be assembled as ready-to-use items, thus saving customers time and achieving highest quality. In case of special needs it is possible to manufacture chains completely to order.

For optimum performance and reliability, a chain has to be selected carefully. In respect of this customers can rely on our specialised sales people and our experienced field engineers for technical advice (including maintenance and chain inspection on site). To ensure a close customer contact and excellent service an extensive network of distribution points is strategically placed throughout Europe and other designated markets.

Tsubakimoto Europe B.V. serves the Pan-European market, Africa and the Middle East. Our head-quarters are located in Dordrecht, the Netherlands, serving Power Transmission customers. From the subsidiary office in Nottingham, Tsubaki UK serves the United Kingdom, Ireland and Iceland and from the office in Unterförhing, Germany customers in Germany, Austria and Switzerland are served.
Customers in Spain and Portugal are served by our office in Madrid, Spain.

The TSUBAKI Group includes 33 manufacturing locations and 77 group companies worldwide. Our production and sales networks are now more developed than ever.

INTRODUCTION TSUBAKI SPROCKETS

Tsubaki sprockets are built from top-grade, heat-treated carbon steel to offer long wear life, resist abrasion, and withstand heavy shock loads. For extra corrosion resistance and food-grade applications, alloy and stainless steel sprockets are also available. You get longer service life and reliable performance, turn after turn, time after time.

Sprocket performance

System performance highly depends on chain-sprocket interaction, which means your choice of sprockets can drive your operation's success. Make the right and easy choice with sprockets from Tsubaki. Tsubaki offers both chain and sprocket manufacturing capabilities. When chains and sprockets articulate perfectly, you get long service life and reliable performance. That means long-term savings and real value for your operation.

- Reduced downtime maintenance
- Increased productivity
- Lower replacement costs

We offer complete line of standard and customized sprockets! Tsubaki aims for precision manufacturing. Seamless excellence from concept to market.

Stock Line Up

In order to serve the majority of the sprocket market, Tsubakimoto Europe has stocked a fast range of sprockets.

- Carbon Steel sprockets acc. DIN 8187 standard (Simplex & Duplex)
- Stainless Steel sprockets acc. DIN 8187 standard (Simplex)
- Carbon Steel sprockets acc. ANSI standard (Simplex)
- Carbon Steel Taper Bore sprockets acc. DIN 8187 standard (Simplex & Duplex)

- Taper Bushes, metric series

To ensure maximum performance of your drive system, Tsubaki carbon steel sprockets are executed with **hardened teeth** as a standard to make a perfect match with the high quality Tsubaki chains.

Availability of special sprockets
To enjoy the advantage of the availability of customized sprockets acc. customer drawings, special agreements can be made to have stock available in our warehouse. This way you are able to reduce your stock and increase delivery performance as well as production efficiency. Please contact our Sales Department for further details.

Design Features

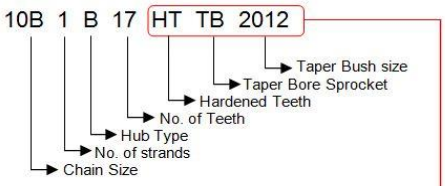
Tsubaki has selected specific design features to realize the maximum performance from your power transmission as well as your logistics handling system:

- Materials
  Our stock range sprockets are available in high quality steels:
  Carbon steel (single piece type: C45, welded hub type: C20/Q235)
  Stainless steel (AISI 304)
- Hardened teeth
  All stocked carbon steel sprockets are executed with induction hardened teeth to achieve maximum wear life of both sprockets and chain.
  Hardness range: 40 - 55 HRC
  Hardness depth: 0,5 - 1,5 mm
- Tsubaki Box
  To help you reduce your handling cost, all Tsubaki sprockets are packed in Tsubaki boxes. Boxed packaging make the handling and storage of sprockets more efficient.
- Bar coding
  Besides the use of a Tsubaki box, also bar coding is applied reducing your handling cost even more.
- Corrosion free delivery
  Each carbon steel sprocket is protected with a layer of rust preventive oil and is wrapped in a plastic cover inside the Tsubaki box.

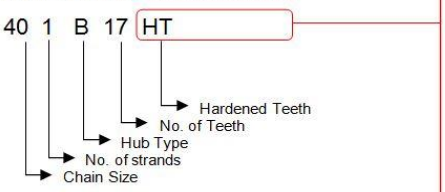
Sprocket Identification

On your order, indicate the Sprocket Identification Code or the Tsubaki part number. The Tsubaki part number can be found in this catalogue. The Sprocket Identification Code is composed of several parameters, an example is shown below. If you are unsure of your part number, our inside sales group can be of assistance.

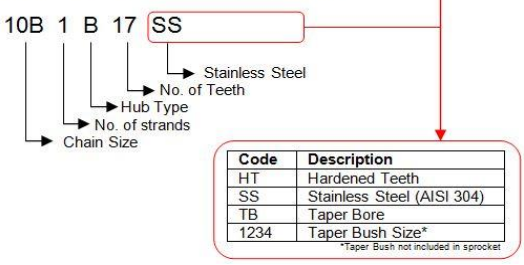
Example: Carbon Steel acc. DIN 8187 standard



Example: Carbon Steel acc. ANSI standard



Example: Stainless Steel acc. DIN 8187 standard



Code	Description
HT	Hardened Teeth
SS	Stainless Steel (AISI 304)
TB	Taper Bore
1234	Taper Bush Size*

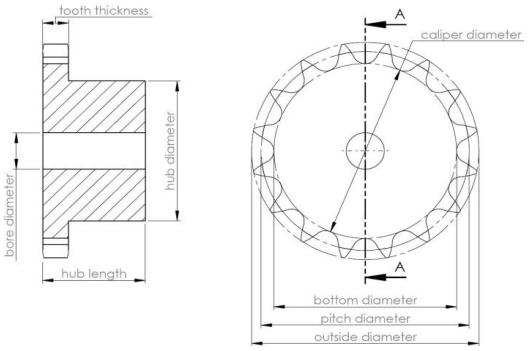
*Taper Bush not included in sprocket

INTRODUCTION TSUBAKI SPROCKETS

Sprocket Glossary

Chain Size indicates the type and size of chain that will run on the sprocket. For DIN roller chain the first two digits of the chain size denote the number of 1/16 inches in the pitch and the B stands for British standard. For ANSI roller chain, the first single digit of the chain number denotes the number of 1/8 inches in the pitch. The second digit stands for the roller/bush type (0 = roller type, 5 = bush type).

Chain Pitch (p) is the distance between the pin centerlines in a link of chain. This distance is used to make the tooth profile of a sprocket, but cannot easily be measured on a finished sprocket. If the pitch of a sprocket is incorrect, the chain will not sit properly when wrapped around the teeth.



Pitch Diameter (Dp) is the diameter of the theoretical circle that passes through the centers of the link pins when the chain is wrapped around the sprocket. This can't be measured on the sprocket itself, since it is a dimension used to design to tooth profile.

Bottom Diameter is the diameter of a circle tangent to the curve (called the seating curve) at the bottom of the tooth gaps. This dimension cannot be measured properly on odd-toothed sprockets, so the Caliper Diameter is used.

Caliper Diameter is the same as the bottom diameter for a sprocket with an even number of teeth. For a sprocket with an odd number of teeth, it is the distance from the bottom of one tooth gap to the bottom of the nearest opposite tooth gap.

Outside Diameter (Do) is the diameter over the tips of the sprocket teeth. To make ordering as easy as possible, the dimensional tables in this catalogue show the general information you need to provide.

Hub Type indicates the core of the sprocket. Each type is designed for a specific need.

- **Type A** does not have a hub as part of the sprocket wheel. The wheel must be mounted on a flange, hub, or other holding device.
- **Type B** has the hub extending on one side from the wheel. This type is usually found on small and intermediate size sprockets. All Tsubaki stocked sprockets are type B.
- **Type C** has a hub of equal length on both sides of the wheel. Type C is generally found on large-diameter or very heavy sprockets
- **Type C Offset** indicates a two-sided hub that is off center because the hub lengths are not equal.

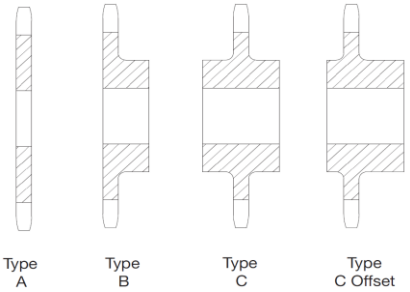


Illustration Hub Types

Hub Diameter (Dh) is the outside diameter of the hub, which cannot exceed the chain clearance circle.

Locking Device is an important consideration. Taper Bore (Taper Bore sprocket with a Taper Bush mounted) is the most common mounting method supplied by Tsubaki. Taper Bore bushings utilize a split through the taper and flange to provide a true clamp on the shaft that is equivalent to a shrink fit. This type of bushing is retained to the sprocket with a series of set screws on the outside diameter of the bushing running parallel to the shaft, or can be welded to the sprocket itself. With Taper Bore bushings, there is no need for a set screw over the drive shaft key. Taper Bore bushings offer flexibility in that they allow multiple sized bores for a single bushing size. Please note that when ordering a Taper Bore sprocket, the Taper Bush needs to be ordered separately. Other mountings or locking devices can be specified, including Finished Bore (keyway + 2 set screws on 90°angle), Tsubaki Power-Locks, bearing and bushing idlers, and more. Power-Lock keyless locking devices are recommended for extra holding power in higher torque conditions.

Illustration Taper Bore Sprocket

Bore Diameter (Db) ranges are indicated in the Sprocket tables. Tsubaki stocks a wide range of "pilot bore" sprockets, suitable for reboring. Other tolerances can be furnished on request.

Heat-Treatment options are available. All of Tsubaki stocked carbon steel sprockets come standard with hardened teeth. Tsubaki sprockets are hardened within a range of Rockwell C 40 to 55. Tighter ranges, or higher minimum hardness can be supplied at your request.

Hub length (H) is the length of the bore through the sprocket. The hub length must be long enough to allow for the proper length key to transmit the torque of the application. The hub length must also be long enough to ensure the stability of the sprocket on the shaft.

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Sprocket Technical Information

Sprocket Hardening and Materials

Tsubaki can manufacture sprockets to meet your specific needs. The results are sprockets designed to maximize the life of your chain. Chains and sprockets must work together, so buying them from the same source makes sense. When chains and sprockets articulate correctly, the life of the chain is extended. That means long term savings and real value for your application. Tsubaki sprockets can be made in a variety of grades of carbon, stainless, and alloy steels, as well as other metals.

Since chain loadings are distributed over all engaged sprocket teeth, tooth breakage or distortion is not normally a problem. It is seldom necessary to use special high strength material. Diameter, pitch and strands of the sprocket determine the specific grade of carbon steel used. Heat-treated carbon steel provides long wear life and resists abrasion. The hardening process of small diameter, small pitch sprockets is usually a one step procedure using electrical induction heat-treating. Large diameter, large pitch sprockets (conveyor chain) can be heat-treated using either induction hardening or direct flame hardening. These methods are used to provide high hardness at the wear areas of each tooth maintaining a ductile tooth core that is tough and resilient. The hubs and bore remain soft to permit reworking. Tsubaki stocked sprocket hardness is: Rockwell C Scale: 40-55 Tighter ranges, or higher minimum hardness can be supplied at your request.

Illustration Electrical Induction Hardening Process

Illustration Direct Flame Hardening Process

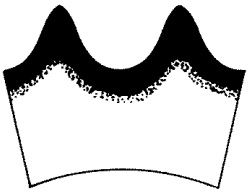

Illustration Teeth Hardening Area

Other Considerations

When determining whether you need replacement sprockets, consider the following important points:

Chain Interaction

The chain-sprocket interaction is the criterion upon which most users make their judgments about replacing sprockets. If the chain engages and disengages the sprocket smoothly without hanging up or snapping into place, most people will not replace it. If a chain does start to hang up on the sprocket, damaging chain overload conditions can develop rapidly. We suggest replacing sprockets before hang up develops.

Reversible

Almost all sprockets are reversible. The key to being able to reverse sprockets is symmetry. If the sprockets are symmetrical from side to side, then they can be reversed. Reversing is not suggested in most circumstances, especially with those applications that wear the sprocket bottom diameter.

New Chain

We suggest you order new sprockets when chain is replaced.New sprockets ensure proper chain interaction and also provide maximum wear performance.

Attachment Clearance

Any time an attachment is in the area between, above, or below the sidebars, make sure the attachment does not interfere with sprocket action.

Relief Pocket (Mud Relief)

In applications where material build up may be a problem, the bottom of the tooth pocket can be beveled on the side to allow the material to "squeeze" out. This reduction of contact area is not critical because the pressure on the bottom of the pocket is very light in horizontal conveyors. Other relief styles may be necessary for vertical conveyors.

Advantages of Using Larger Sprockets

Choose the largest sprocket that will fit your application. Small sprockets cause greater shock and consequently more wear on both chain and sprockets. There are several reasons for this.

1. To engage small sprockets, chain must flex more which causes increased rotation of the pin in the bushing. Since this is one of the major causes of chain wear, this flexing action should be minimized.
2. Small sprockets with fewer teeth wear out much faster than sprockets with more teeth. More teeth provide an opportunity to distribute the wearing action.
3. Larger sprockets cause smoother operation because the greater number of teeth will pick up the load more frequently.

Chordal Action

Chordal action is a very important concept in sprocket function. A sprocket is a collection of chords, or straight segments, that approximate a circle. The more teeth a sprocket has, the closer the chords are to a circle.

The problem with a chordal form is that the lineal output is not consistent. Since the sprocket is not a perfect circle, the distance from the shaft center to the chain center-line varies. As this distance varies, so does the lineal output (assuming a constant shaft rational speed). A hexagon inscribed by a circle represents the 6-tooth sprocket shown below. You can see that the distance from the center to the corner is different than from the center to the middle of the side. The corner would be the equivalent to the chain joint center, and the side is equivalent to the chain centerline at mid-pitch.

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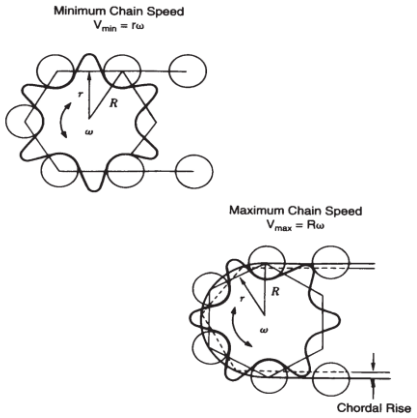

V2=(π x 2 x R x N)

R = Dp / 2
r = R x COS (180°/Z)

Where:
V1 = minimum chain speed in mm/min
V2 = maximum chain speed in mm/min
N = rotational speed in r.p.m.,
Dp = pitch diameter in mm.
R = pitch radius in mm
r = chordal radius in mm
Z = No of teeth of sprocket

Sprockets Keyed In Line

Key driving sprockets on a double-strand chain conveyor or elevator on the head shaft and with the teeth of one sprocket directly in line with teeth of the other. Order "keyed-in-line" and "matched in pairs" to obtain this feature. Key one foot shaft sprocket on its shaft so that the shaft will turn in its bearings. Allow the other sprocket to turn freely, holding it in position by means of set collars. The sprocket can then position itself automatically if uneven wear takes place in the chain strands.

Sprocket Size

Use the largest diameter sprocket that space and economics permit. This minimizes chain speed variations and pulsations and reduces wear to the chain and sprocket.

Sprocket Life

When sprockets are worn, the chain tends to cling to the sprockets or vibrate. The amount of allowable wear depends on the application type and chain size. Wear to a depth of 0,3 mm to 1,0 mm is usually a sign that the existing roller chain sprocket should be replaced.

When wear on the teeth reaches the value in the following table, lifespan of the sprockets has been reached. For a sprocket with induction hardened teeth, the lifespan is reached when the hardened layer has been removed.

If the sprocket teeth are worn, the alignment may be incorrect. Proper axial alignment of the sprockets will help reduce or even eliminate wear of sprocket teeth.

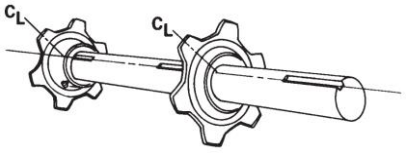

Illustration Sprockets keyed in line

Size of BS Roller Chain	Dimension B Normal / Pin-Gear	Size of ANSI Roller Chain	Dimension B	
			Normal	Pin-Gear
RS05B	1.6	RS 11	0.6	-
RF06B	1.6	RS 15	1.1	-
RS08B	2.1	RS 25	1.5	-
RS10B	2.9	RS 35	2.5	-
RS12B	3.6	RS 41	2.6	-
RS16B	5.0	RS 40	2.5	3.1
RS20B	6.8	RS 50	2.9	3.6
RS24B	7.2	RS 60	3.7	4.6
RS28B	8.6	RS 80	5.0	6.3
RS32B	11.9	RS100	6.9	8.6
RS40B	12.7	RS120	8.7	10.9
		RS140	10.6	13.3
		RS160	12.4	15.5
		RS180	11.3	14.1
		RS200	12.6	15.8
		RS240	15.1	18.9

Limit of usage (in mm) based on tooth thickness / Dimension B

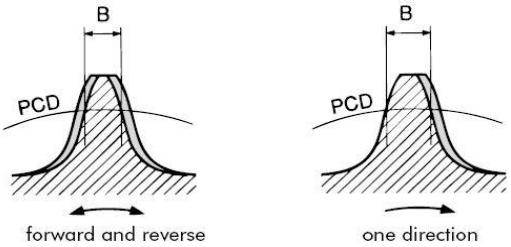

Illustration Sprocket Wear

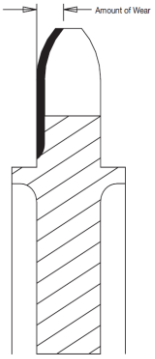

Illustration Sprocket Tooth Wear

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Sprocket Troubleshooting

Regardless of application, all chain systems should be inspected on a regularly scheduled basis for worn, damaged or broken parts, possible interference by other system components, and proper lubrication. Normal maintenance procedures can prevent most of the conditions described below. Carefully inspect roller chain drives on the same schedule as associated equipment.

• Sprocket Misalignment
Wear on the sides of sprocket teeth generally indicates improper installation of sprockets and/or shafts. If shafts are out of parallel or not in the same plane, non-symmetrical wear will appear on sprockets or chain rollers.
After proper alignment is made, retighten set screws in sprocket hubs.

• Chain Wear and Elongation
Normal wear will cause some increase in chain length. However, if a sudden increase in elongation occurs, look for severe wear on the tips of sprocket teeth. This may be caused by any of the following: excessive loading or shock loading, displacement and/or wear in bearings, displacement of take-ups, or under-designed drive. Elongation of 3% or more may be an indication that chain and/or sprockets should be replaced.
Before replacing chain or sprockets, recalculate initial drive design. Check chain for broken parts. Check chain tension if there is too much accumulated slack in the drive.

• Broken Chain Parts
Generally caused by an overload drive; extreme misalignment; excessive elongation causing chain to jump sprocket teeth; heavy shock; improper drive design geometry; foreign objects.
Recalculate initial drive design and make necessary corrections. Inspect sprockets and shafts for proper alignment or looseness.

• Link Plate Wear
Wear on edges of outer sides of link plate may be caused by chain contacting case or fixed object.
Remove or relocate fixed object. Readjust chain properly.

• Excessive Noise
Can be caused by broken links and chain rollers, extreme misalignment, elongation, chain jumping sprocket teeth, loose sprockets, broken teeth, accumulation of dirt packed into the chain or sprocket teeth, interference by foreign objects, contacting a fixed object.
Check for worn, broken or missing parts. Check alignment of shafts and/or sprockets.

• Excessive Vibration
Unbalanced rotating parts, broken or missing rollers, too much chain slack, loose or misaligned sprockets or shafts.
Inspect chain and drive equipment. Replace or readjust as needed.

• Improper Lubrication
Light or dark brown discolouration of pin-bushing joints and connecting link pins, or brown-red oxide colour in oil may indicate chain is not dipping into the oil reservoir, or drip lubricator or spray is plugged.
Carefully clean and dry chain, immerse in oil, and re-install. Change oil in chain case and flush case. Determine that oil supply is adequate or unimpeded.

• Removing Chain
Turn the drive until a connecting link is fully engaged with one of the sprockets so as to relieve the tension on the connecting link pin. The connecting link may then be removed.

• Cutting Riveted Chain
The two pins of a pin link must be driven out of the link plate. Strike the pins alternately to avoid distortion of the roller link plates as well as the plates of the adjacent links.

• Periodic Cleaning
Remove chain from sprockets and wash in kerosene. If chain is badly gummed, soak in kerosene and re-wash in fresh liquid. Drain off kerosene and soak in oil to restore lubrication. Drain off excessive lubrication by hanging chain. Carefully inspect entire chain before reinstalling. Sprockets should be washed in kerosene.

• Storing Chain
When roller chain is taken out of operation for a prolonged period,remove the chain and cover with heavy grease. Wrap in heavy grease resistant paper and store where the chain will not be exposed to abnormal moisture, temperature, abrasive or corrosive conditions.

Sprockets remaining on shafts should be covered with heavy grease. When the drive is put back in service, remove the grease and thoroughly clean sprockets and chain before re-installing.

• Heating and Welding
Do not use a cutting torch on chain. If cutting by torch is indicated, chain should be replaced. Welding should not be performed on any chain or chain components.

• Inserting New Links
Insert new links only on new roller chain. Pitch variance between a new link and those on an old chain, especially one which is elongated due to wear, will cause shock when the new link engages the sprocket.

• Installing New Chain
Chain and/or related parts should be visually inspected for damage which could have occurred during shipment prior to installation. Never install on badly worn sprockets as this will permanently damage the chain. As a temporary expedient, reverse a worn sprocket on the shaft to present a new set of working tooth surfaces; worn sprockets should be replaced as soon as practical to avoid permanent damage.

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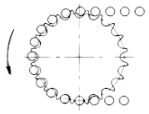
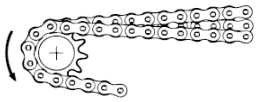
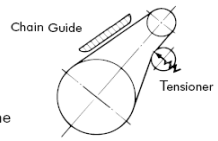
Roller Chain and Sprocket troubleshooting and problemsolving

Symptom	Possible Causes	Solution
 Chain rides up on the sprocket	Chain and sprocket do not match.	Replace the chain or sprocket with the correct size.
	Excessive load.	Reduce the load, add lubrication, or increase the number of strands or the size of the chain.
	Angle of chain wrap on the sprocket is insufficient.	Angle of chain wrap should be at least 120°.
	Elongation of the chain due to wear or excessively worn sprocket teeth.	Replace with new chain and sprockets.
Unusual noises	Improper installation of the sprocket or shaft.	Inspect and correct.
	Chain casing or bearings are loose.	Tighten all bolts and nuts.
	Excessive or insufficient slack in the chain.	Adjust the distance between the shafts to obtain the proper amount of slack or install a tensioner.
	Excessively worn chain or sprockets.	Replace with new chain or sprockets.
	Interference of casing with the chain or other moving parts.	Inspect and correct.
	Lack of or unsuitable lubrication.	Provide proper lubrication according to the operating conditions.
Excessive vibrations in chain	Chain is resonating with periodic external force. 	Change the chain's mode of vibration. 1. Preventing resonance. a. To change the natural frequency of the chain. - Alter the effective tension either by applying an initial tension or adjusting the existing one. - Install a tensioner to change the chain span. - Replace the chain. Choose a different quality and spring coefficient. b. Change the vibration frequency. - Change the speed of rotation of the sprocket. - Re-evaluate the device set-up. 2. Mechanically reducing the vibrations. - Install a guide shoe. - Install a self-adjusting tensioner on the slack side. 
	Load fluctuations are excessively large.	Reduce fluctuations with fluid coupling or similar technique.
Chain winds onto the sprocket (Poor separation from the sprocket teeth) 	Span between shafts is too large.	Install an idler.
	Excessive slack in chain.	Adjust the chain length or the distance between shafts. Or install a tensioner.
	Elongation of the chain due to chain wear or excessively worn sprocket teeth.	Replace with new chain and sprocket.

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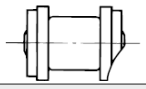
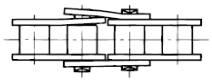
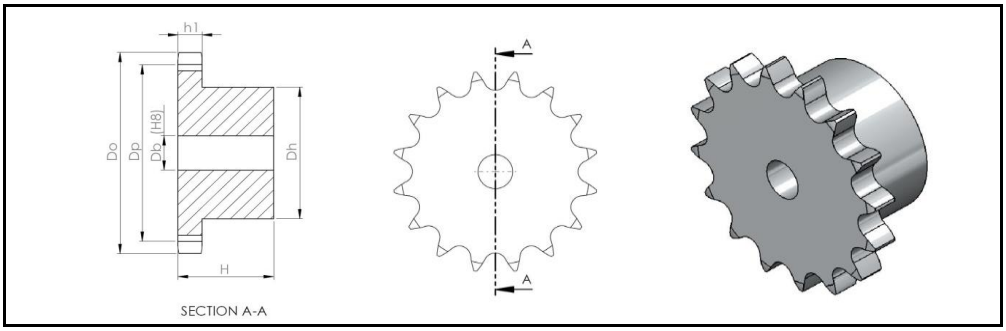
Symptom	Possible Causes	Solution
Rusting of the chain	Inappropriate selection of material.	Select a more suitable chain material.
	Improper lubrication or poor environment.	Replace chain and protect the chain from the environment by appropriate lubrication and/or a cover.
Excessive wear on the inside surface of the link plates and sides of the sprocket teeth	Improper installation 	Correct sprocket and shaft installation.
Excessive wear on the outside surface of the link plates and pin heads	Improper installation of guides, etc. 	Check the condition of the guides, and increase the gap between the guides and the chain.
 Poor articulation	Chain is not installed correctly.	Inspect installation and correct as necessary.
	Chain and sprocket do not match.	Replace chain or sprocket.
	Contamination from metal dust or dirt because of improper lubrication.	Remove the chain, wash it thoroughly, and provide proper lubrication.
	Excessive load (causing bent pin, or cracked bush)	Reduce the load, increase the number of chain strands or the size of the chain.
	Corrosion.	Install a chain casing to protect the chain. Select a suitable chain.
	Seizing of pin and bush. 	Select proper chain size. Provide adequate lubrication methode.
	Highspeed operation.	Reduce the speed or select a more suitable chain.
Spreading of link plates.	Uneven or excessive loading caused by improper installation. 	Replace with new chain and correct installation.

CARBON STEEL BS SPROCKETS

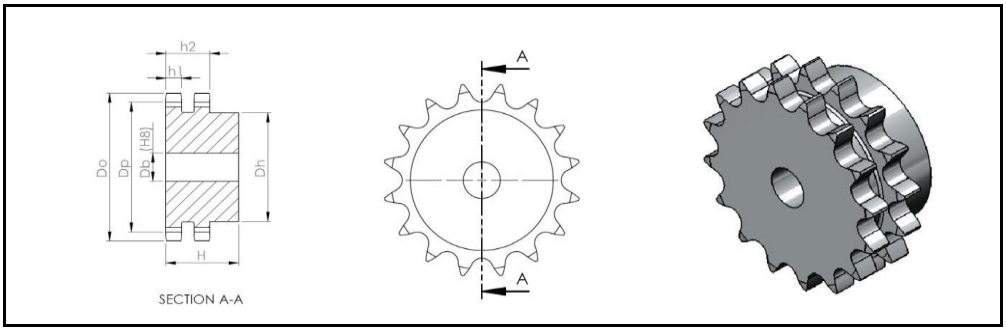


Dimensions in mm

06B-1							
Teeth	Bore		Hub		Pitch Diameter	Outer Diameter	Tsubaki part no.
Z	Db	max.	Dh	H	Dp	Do	
8	8	9	15	22	24,89	28,0	21706000001
9	8	12	18	22	27,85	31,0	21706000002
10	8	13	20	22	30,82	34,0	21706000003
11	8	14	22	25	33,80	37,0	21706000004
12	8	16	25	25	36,80	40,0	21706000005
13	10	18	28	25	39,80	43,0	21706000010
14	10	20	31	25	42,80	46,3	21706000020
15	10	22	34	25	45,81	49,3	21706000030
16	10	24	37	28	48,82	52,3	21706000040
17	10	26	40	28	51,83	55,3	21706000050
18	10	28	43	28	54,85	58,3	21706000060
19	10	30	45	28	57,87	61,3	21706000070
20	10	31	46	28	60,89	64,3	21706000080
21	12	32	48	28	63,91	68,0	21706000090
22	12	33	50	28	66,93	71,0	21706000100
23	12	34	52	28	69,95	73,5	21706000110
24	12	35	54	28	72,97	77,0	21706000120
25	12	37	57	28	76,00	80,0	21706000130
26	12	40	60	28	79,02	83,0	21706000129
27	12	40	60	28	82,04	86,0	21706000131
28	12	40	60	28	85,07	89,0	21706000132
29	12	40	60	28	88,09	92,0	21706000133
30	12	40	60	30	91,12	94,7	21706000140
31	14	44	65	30	94,15	98,3	21706000134
32	14	44	65	30	97,17	101,3	21706000141
33	14	44	65	30	100,20	104,3	21706000142
34	14	44	65	30	103,23	107,3	21706000143
35	14	44	65	30	106,26	110,4	21706000144
36	16	47	70	30	109,29	113,4	21706000145
37	16	47	70	30	112,32	116,4	21706000146
38	16	47	70	30	115,34	119,5	21706000147
39	16	47	70	30	118,37	122,5	21706000148
40	16	47	70	30	121,40	125,5	21706000149

	06B Simplex
Chain size	06B-1
Pitch	9,525
Inner Width	5,72
Roller Diameter	6,35
Single Tooth Width (h1)	5,30

CARBON STEEL BS SPROCKETS

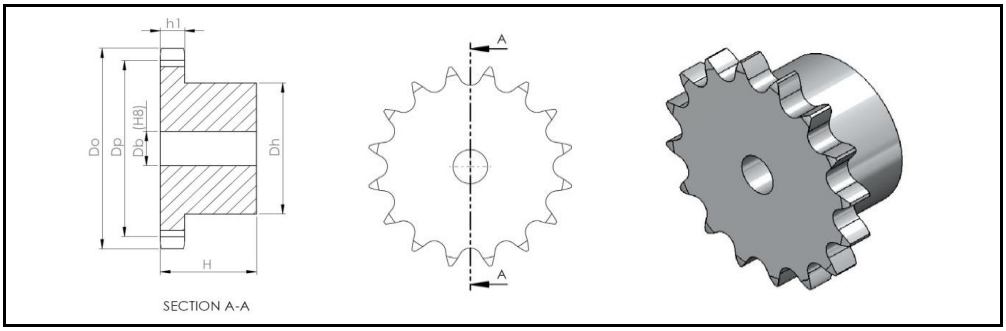


Dimensions in mm

06B-2							
Teeth	Bore		Hub		Pitch Diameter	Outer Diameter	Tsubaki part no.
Z	Db	max.	Dh	H	Dp	Do	
8	6	9	15	22	24,89	28,0	21706062008
9	8	12	18	22	27,85	31,0	21706062009
10	8	13	20	22	30,82	34,0	21706062010
11	10	14	22	25	33,80	37,0	21706062011
12	10	16	25	25	36,80	40,0	21706062012
13	10	18	28	25	39,80	43,0	21706062013
14	10	20	31	25	42,80	46,3	21706062014
15	10	22	34	25	45,81	49,3	21706062015
16	12	24	37	30	48,82	52,3	21706062016
17	12	26	40	30	51,83	55,3	21706062017
18	12	28	43	30	54,85	58,3	21706062018
19	12	31	46	30	57,87	61,3	21706062019
20	12	32	49	30	60,89	64,3	21706062020
21	12	34	52	30	63,91	68,0	21706062021
22	12	36	55	30	66,93	71,0	21706062022
23	12	38	58	30	69,95	73,5	21706062023
24	12	41	61	30	72,97	77,0	21706062024
25	12	43	64	30	76,00	80,0	21706062025
26	12	44	67	30	79,02	83,0	21706062026
27	12	47	70	30	82,04	86,0	21706062027
28	12	49	73	30	85,07	89,0	21706062028
29	12	50	76	30	88,09	92,0	21706062029
30	12	52	79	30	91,12	94,7	21706062030
31	16	53	80	30	94,15	98,3	21706062031
32	16	53	80	30	97,17	101,3	21706062032
33	16	53	80	30	100,20	104,3	21706062033
34	16	53	80	30	103,23	107,3	21706062034
35	16	53	80	30	106,26	110,4	21706062035
36	16	60	90	30	109,29	113,4	21706062036
37	16	60	90	30	112,32	116,4	21706062037
38	16	60	90	30	115,34	119,5	21706062038
39	16	60	90	30	118,37	122,5	21706062039
40	16	60	90	30	121,40	125,5	21706062040

	06B Duplex
Chain size	06B-2
Pitch	9,525
Inner Width	5,72
Roller Diameter	6,35
Single Tooth Width (h1)	5,30
Total Tooth Width (h2)	15,4

CARBON STEEL BS SPROCKETS

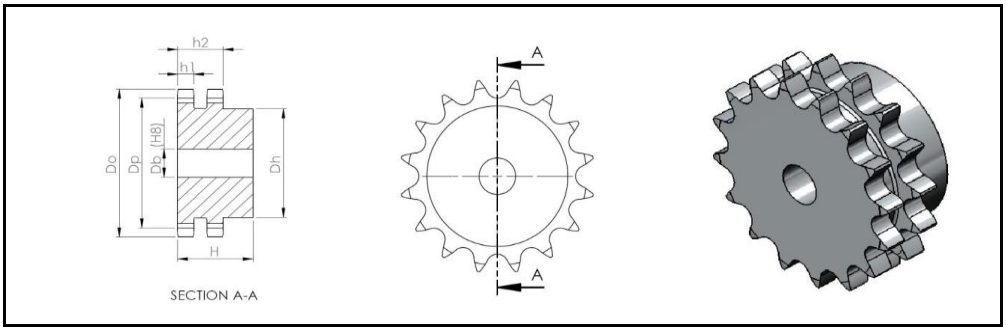


Dimensions in mm

08B-1							
Teeth	Bore		Hub		Pitch Diameter	Outer Diameter	Tsubaki part no.
Z	Db	max.	Dh	H	Dp	Do	
8	10	13	20	25	33,18	37,2	21706000151
9	10	15	24	25	37,13	41,0	21706000152
10	10	17	26	25	41,10	45,2	21706000153
11	10	19	29	25	45,07	48,7	21706000154
12	10	21	33	28	49,07	53,0	21706000150
13	10	24	37	28	53,06	57,4	21706000160
14	10	27	41	28	57,07	61,8	21706000170
15	10	30	45	28	61,09	65,5	21706000180
16	12	33	50	28	65,10	69,5	21706000190
17	12	34	52	28	69,11	73,6	21706000200
18	12	37	56	28	73,14	77,8	21706000210
19	12	40	60	28	77,16	81,7	21706000220
20	12	43	64	28	81,19	85,8	21706000230
21	12	45	68	28	85,22	89,7	21706000240
22	12	47	70	28	89,24	93,8	21706000250
23	14	47	70	28	93,27	98,2	21706000260
24	14	47	70	28	97,29	101,8	21706000270
25	14	47	70	28	101,33	105,8	21706000280
26	16	47	70	30	105,36	110,0	21706000281
27	16	47	70	30	109,40	114,0	21706000282
28	16	47	70	30	113,42	118,0	21706000283
29	16	53	80	30	117,46	122,0	21706000284
30	16	53	80	30	121,50	126,1	21706000290
31	16	60	90	30	125,54	130,2	21706000289
32	16	60	90	30	129,56	134,3	21706000291
33	16	60	90	30	133,60	138,4	21706000292
34	16	60	90	30	137,64	142,6	21706000293
35	16	60	90	30	141,68	146,7	21706000294
36	16	60	90	35	145,72	151,0	21706000295
37	16	60	90	35	149,76	154,6	21706000296
38	16	60	90	35	153,80	158,6	21706000297
39	16	60	90	35	157,83	162,7	21706000298
40	16	60	90	35	161,87	166,8	21706000299

	08B Simplex
Chain size	08B-1
Pitch	12,7
Inner Width	7,75
Roller Diameter	8,51
Single Tooth Width (h1)	7,20

CARBON STEEL BS SPROCKETS

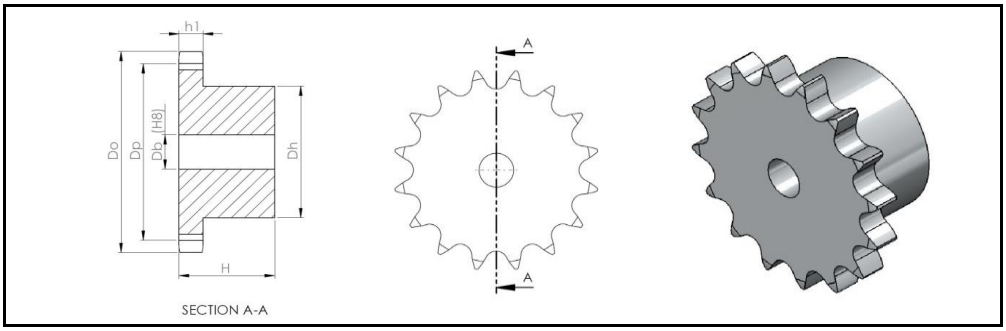


Dimensions in mm

08B-2							
Teeth	Bore		Hub		Pitch Diameter	Outer Diameter	Tsubaki part no.
Z	Db	max.	Dh	H	Dp	Do	
8	10	13	20	32	33,18	37,2	21706082008
9	10	15	24	32	37,13	41,0	21706082009
10	10	18	28	32	41,10	45,2	21706082010
11	12	21	32	35	45,07	48,7	21706082011
12	12	23	35	35	49,07	53,0	21706082012
13	12	25	38	35	53,06	57,4	21706082013
14	12	27	42	35	57,07	61,8	21706082014
15	12	31	46	35	61,09	65,5	21706082015
16	14	33	50	35	65,10	69,5	21706082016
17	14	35	54	35	69,11	73,6	21706082017
18	14	38	58	35	73,14	77,8	21706082018
19	14	41	62	35	77,16	81,7	21706082019
20	14	44	66	35	81,19	85,8	21706082020
21	16	47	70	40	85,22	89,7	21706082021
22	16	47	70	40	89,24	93,8	21706082022
23	16	47	70	40	93,27	98,2	21706082023
24	16	50	75	40	97,29	101,8	21706082024
25	16	53	80	40	101,33	105,8	21706082025
26	20	56	85	40	105,36	110,0	21706082026
27	20	56	85	40	109,40	114,0	21706082027
28	20	60	90	40	113,42	118,0	21706082028
29	20	63	95	40	117,46	122,0	21706082029
30	20	66	100	40	121,50	126,1	21706082030
31	20	66	100	40	125,54	130,2	21706082031
32	20	66	100	40	129,56	134,3	21706082032
33	20	66	100	40	133,60	138,4	21706082033
34	20	66	100	40	137,64	142,6	21706082034
35	20	66	100	40	141,68	146,7	21706082035
36	20	66	110	40	145,72	151,0	21706082036
37	20	66	110	40	149,76	154,6	21706082037
38	20	66	110	40	153,80	158,6	21706082038
39	20	66	110	40	157,83	162,7	21706082039
40	20	66	110	40	161,87	166,8	21706082040

	08B Duplex
Chain size	08B-2
Pitch	12,7
Inner Width	7,75
Roller Diameter	8,51
Single Tooth Width (h1)	7,20
Total Tooth Width (h2)	21

CARBON STEEL BS SPROCKETS

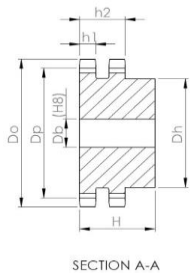


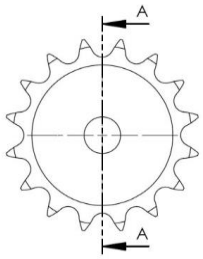
Dimensions in mm

10B-1							
Teeth	Bore		Hub		Pitch Diameter	Outer Diameter	Tsubaki part no.
Z	Db	max.	Dh	H	Dp	Do	
8	10	16	25	25	41,48	47,0	21706000301
9	10	19	30	25	46,42	52,6	21706000302
10	10	23	35	25	51,37	57,5	21706000303
11	12	24	37	30	56,34	63,0	21706000304
12	12	27	42	30	61,34	68,0	21706000300
13	12	31	47	30	66,32	73,0	21706000310
14	12	34	52	30	71,34	78,0	21706000320
15	12	37	57	30	76,36	83,0	21706000330
16	12	40	60	30	81,37	88,0	21706000340
17	12	43	60	30	86,39	93,0	21706000350
18	14	47	70	30	91,42	98,3	21706000360
19	14	50	70	30	96,45	103,3	21706000370
20	14	50	75	30	101,49	108,4	21706000380
21	16	50	75	30	106,52	113,4	21706000390
22	16	53	80	30	111,55	118,0	21706000400
23	16	53	80	30	116,58	123,4	21706000410
24	16	53	80	30	121,62	128,3	21706000420
25	16	53	80	30	126,66	134,0	21706000430
26	20	56	85	35	131,70	139,0	21706000431
27	20	56	85	35	136,75	144,0	21706000432
28	20	60	90	35	141,78	148,7	21706000433
29	20	60	90	35	146,83	153,8	21706000434
30	20	60	90	35	151,87	158,8	21706000440
31	20	63	95	35	156,92	163,9	21706000439
32	20	63	95	35	161,95	168,9	21706000441
33	20	63	95	35	167,00	174,5	21706000442
34	20	63	95	35	172,05	179,0	21706000443
35	20	63	95	35	177,10	184,1	21706000444
36	20	66	100	35	182,15	189,1	21706000445
37	20	66	100	35	187,20	194,2	21706000446
38	20	66	100	35	192,24	199,2	21706000447
39	20	66	100	35	197,29	204,2	21706000448
40	20	66	100	35	202,34	209,3	21706000449

	10B Simplex
Chain size	10B-1
Pitch	15,875
Inner Width	9,65
Roller Diameter	10,16
Single Tooth Width (h1)	9,10

CARBON STEEL BS SPROCKETS



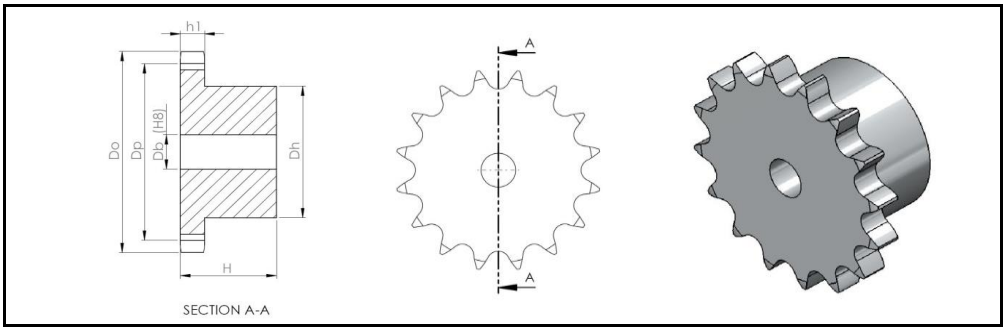


Dimensions in mm

10B-2							
Teeth	Bore		Hub		Pitch Diameter	Outer Diameter	Tsubaki part no.
Z	Db	max.	Dh	H	Dp	Do	
8	12	16	25	40	41,48	47,0	21706102008
9	12	19	30	40	46,42	52,6	21706102009
10	12	23	35	40	51,37	57,5	21706102010
11	14	26	39	40	56,34	63,0	21706102011
12	14	29	44	40	61,34	68,0	21706102012
13	14	32	49	40	66,32	73,0	21706102013
14	14	35	54	40	71,34	78,0	21706102014
15	14	39	59	40	76,36	83,0	21706102015
16	16	43	64	45	81,37	88,0	21706102016
17	16	46	69	45	86,39	93,0	21706102017
18	16	49	74	45	91,42	98,3	21706102018
19	16	52	79	45	96,45	103,3	21706102019
20	16	55	84	45	101,49	108,4	21706102020
21	16	56	85	45	106,52	113,4	21706102021
22	16	60	90	45	111,55	118,0	21706102022
23	16	63	95	45	116,58	123,4	21706102023
24	16	66	100	45	121,62	128,3	21706102024
25	16	70	105	45	126,66	134,0	21706102025
26	20	73	110	45	131,70	139,0	21706102026
27	20	73	110	45	136,75	144,0	21706102027
28	20	76	115	45	141,78	148,7	21706102028
29	20	76	115	45	146,83	153,8	21706102029
30	20	80	120	45	151,87	158,8	21706102030
31	20	80	120	45	156,92	163,9	21706102031
32	20	80	120	45	161,95	168,9	21706102032
33	20	80	120	45	167,00	174,5	21706102033
34	20	80	120	45	172,05	179,0	21706102034
35	20	80	120	45	177,10	184,1	21706102035
36	20	80	120	45	182,15	189,1	21706102036
37	20	80	120	45	187,20	194,2	21706102037
38	20	80	120	45	192,24	199,2	21706102038
39	20	80	120	45	197,29	204,2	21706102039
40	20	80	120	45	202,34	209,3	21706102040

	10B Duplex
Chain size	10B-2
Pitch	15,875
Inner Width	9,65
Roller Diameter	10,16
Single Tooth Width (h1)	9,10
Total Tooth Width (h2)	25,5

CARBON STEEL BS SPROCKETS

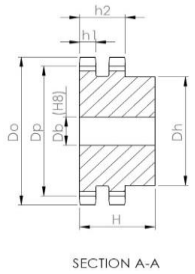


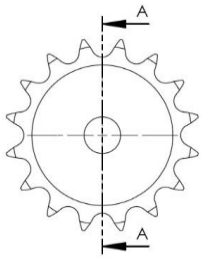
Dimensions in mm

12B-1							
Teeth	Bore		Hub		Pitch Diameter	Outer Diameter	Tsubaki part no.
Z	Db	max.	Dh	H	Dp	Do	
8	12	20	31	30	49,78	57,6	21706000451
9	12	24	37	30	55,70	62,0	21706000452
10	12	27	42	30	61,64	69,0	21706000453
11	14	31	46	35	67,61	75,0	21706000454
12	14	34	52	35	73,60	81,5	21706000450
13	14	38	58	35	79,59	87,5	21706000460
14	14	43	64	35	85,61	93,6	21706000470
15	14	47	70	35	91,63	99,8	21706000480
16	16	50	75	35	97,65	105,5	21706000490
17	16	53	80	35	103,67	111,5	21706000500
18	16	53	80	35	109,71	118,0	21706000510
19	16	53	80	35	115,75	124,2	21706000520
20	16	53	80	35	121,78	129,7	21706000530
21	20	60	90	40	127,82	136,0	21706000540
22	20	60	90	40	133,86	141,8	21706000550
23	20	60	90	40	139,90	149,0	21706000560
24	20	60	90	40	145,94	153,9	21706000570
25	20	60	90	40	152,00	160,0	21706000580
26	20	63	95	40	158,04	165,9	21706000581
27	20	63	95	40	164,09	172,3	21706000582
28	20	63	95	40	170,13	178,0	21706000583
29	20	63	95	40	176,19	184,1	21706000584
30	20	63	95	40	182,25	190,5	21706000590
31	20	66	100	40	188,31	196,3	21706000589
32	20	66	100	40	194,35	203,3	21706000591
33	20	66	100	40	200,40	209,3	21706000592
34	20	66	100	40	206,46	214,6	21706000593
35	20	66	100	40	212,52	221,0	21706000594
36	20	66	100	40	218,58	226,8	21706000595
37	20	66	100	40	224,64	232,9	21706000596
38	20	66	100	40	230,69	239,0	21706000597
39	20	66	100	40	236,75	245,1	21706000598
40	20	66	100	40	242,81	251,3	21706000599

	12B Simplex
Chain size	12B-1
Pitch	19,05
Inner Width	11,68
Roller Diameter	12,07
Single Tooth Width (h1)	11,10

CARBON STEEL BS SPROCKETS



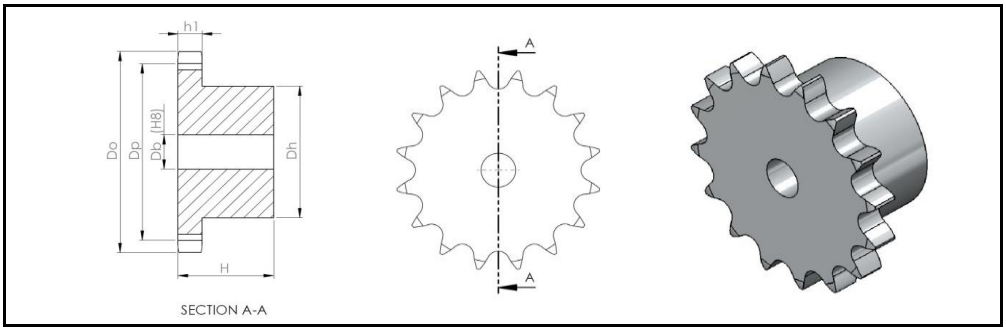


Dimensions in mm

12B-2							
Teeth	Bore		Hub		Pitch Diameter	Outer Diameter	Tsubaki part no.
Z	Db	max.	Dh	H	Dp	Do	
8	12	20	31	45	49,78	57,6	21706122008
9	12	24	37	45	55,70	62,0	21706122009
10	12	27	42	45	61,64	69,0	21706122010
11	16	31	47	50	67,61	75,0	21706122011
12	16	35	53	50	73,60	81,5	21706122012
13	16	39	59	50	79,59	87,5	21706122013
14	16	43	65	50	85,61	93,6	21706122014
15	16	47	71	50	91,63	99,8	21706122015
16	20	51	77	50	97,65	105,5	21706122016
17	20	55	83	50	103,67	111,5	21706122017
18	20	60	89	50	109,71	118,0	21706122018
19	20	63	95	50	115,75	124,2	21706122019
20	20	66	100	50	121,78	129,7	21706122020
21	20	66	100	50	127,82	136,0	21706122021
22	20	66	100	50	133,86	141,8	21706122022
23	20	73	110	50	139,90	149,0	21706122023
24	20	73	110	50	145,94	153,9	21706122024
25	20	80	120	50	152,00	160,0	21706122025
26	20	80	120	50	158,04	165,9	21706122026
27	20	80	120	50	164,09	172,3	21706122027
28	20	80	120	50	170,13	178,0	21706122028
29	20	80	120	50	176,19	184,1	21706122029
30	20	80	120	50	182,25	190,5	21706122030
31	20	80	130	50	188,31	196,3	21706122031
32	20	80	130	50	194,35	203,3	21706122032
33	20	80	130	50	200,40	209,3	21706122033
34	20	80	130	50	206,46	214,6	21706122034
35	20	80	130	50	212,52	221,0	21706122035
36	25	80	130	50	218,58	226,8	21706122036
37	25	80	130	50	224,64	232,9	21706122037
38	25	80	130	50	230,69	239,0	21706122038
39	25	80	130	50	236,75	245,1	21706122039
40	25	80	130	50	242,81	251,3	21706122040

	12B Duplex
Chain size	12B-2
Pitch	19,05
Inner Width	11,68
Roller Diameter	12,07
Single Tooth Width (h1)	11,10
Total Tooth Width (h2)	30,3

CARBON STEEL BS SPROCKETS



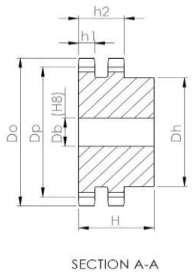
Dimensions in mm

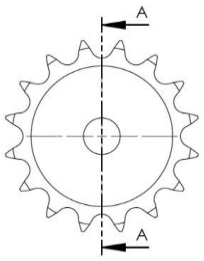
16B-1							
Teeth	Bore		Hub		Pitch Diameter	Outer Diameter	Tsubaki part no.
Z	Db	max.	Dh	H	Dp	Do	
8	16	27	42	35	66,37	77,0	21706000601
9	16	33	50	35	74,27	85,0	21706000602
10	16	36	55	35	82,19	93,0	21706000603
11	16	41	61	40	90,14	99,5	21706000604
12	16	46	69	40	98,14	109,0	21706000600
13	16	52	78	40	106,12	117,0	21706000610
14	16	55	84	40	114,15	125,0	21706000620
15	16	61	92	40	122,17	133,0	21706000630
16	20	66	100	45	130,20	141,0	21706000640
17	20	66	100	45	138,22	149,0	21706000650
18	20	66	100	45	146,28	157,0	21706000660
19	20	66	100	45	154,33	165,2	21706000670
20	20	66	100	45	162,38	173,2	21706000680
21	20	73	110	50	170,43	181,2	21706000690
22	20	73	110	50	178,48	189,3	21706000700
23	20	73	110	50	186,53	197,5	21706000710
24	20	73	110	50	194,59	205,5	21706000720
25	20	73	110	50	202,66	213,5	21706000730
26	20	80	120	50	210,72	221,6	21706000731
27	20	80	120	50	218,79	229,6	21706000732
28	20	80	120	50	226,85	237,7	21706000733
29	20	80	120	50	234,92	245,8	21706000734
30	20	80	120	50	243,00	254,0	21706000740
31	25	80	*120	50	251,08	262,0	21706000738
32	25	80	*120	50	259,13	270,0	21706000739
33	25	80	*120	50	267,21	278,5	21706000742
34	25	80	*120	50	275,28	287,0	21706000743
35	25	80	*120	50	283,36	296,2	21706000744
36	25	80	*120	50	291,44	304,6	21706000745
37	25	80	*120	50	299,51	312,6	21706000746
38	25	80	*120	50	307,59	320,7	21706000747
39	25	80	*120	50	315,67	328,8	21706000748
40	25	80	*120	50	323,73	336,9	21706000749

* Executed as welded hub sprocket.

	16B Simplex
Chain size	16B-1
Pitch	25,4
Inner Width	17,02
Roller Diameter	15,88
Single Tooth Width (h1)	16,20

CARBON STEEL BS SPROCKETS





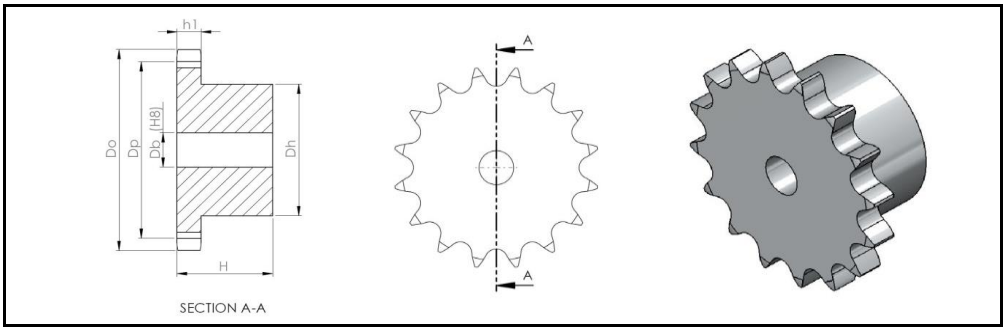
Dimensions in mm

16B-2							
Teeth	Bore		Hub		Pitch Diameter	Outer Diameter	Tsubaki part no.
Z	Db	max.	Dh	H	Dp	Do	
8	16	27	42	65	66,37	77,0	21706162008
9	16	33	50	65	74,27	85,0	21706162009
10	16	37	56	65	82,19	93,0	21706162010
11	20	43	64	70	90,14	99,5	21706162011
12	20	48	72	70	98,14	109,0	21706162012
13	20	53	80	70	106,12	117,0	21706162013
14	20	59	88	70	114,15	125,0	21706162014
15	20	64	96	70	122,17	133,0	21706162015
16	20	69	104	70	130,20	141,0	21706162016
17	20	74	112	70	138,22	149,0	21706162017
18	20	80	120	70	146,28	157,0	21706162018
19	20	85	128	70	154,33	165,2	21706162019
20	20	86	130	70	162,38	173,2	21706162020
21	25	86	130	70	170,43	181,2	21706162021
22	25	86	*130	70	178,48	189,3	21706162022
23	25	86	*130	70	186,53	197,5	21706162023
24	25	86	*130	70	194,59	205,5	21706162024
25	25	86	*130	70	202,66	213,5	21706162025
26	25	86	*130	70	210,72	221,6	21706162026
27	25	86	*130	70	218,79	229,6	21706162027
28	25	86	*130	70	226,85	237,7	21706162028
29	25	86	*130	70	234,92	245,8	21706162029
30	25	86	*130	70	243,00	254,0	21706162030
31	25	93	*140	70	251,08	262,0	21706162031
32	25	93	*140	70	259,13	270,0	21706162032
33	25	93	*140	70	267,21	278,5	21706162033
34	25	93	*140	70	275,28	287,0	21706162034
35	25	93	*140	70	283,36	296,2	21706162035
36	25	93	*140	70	291,44	304,6	21706162036
37	25	93	*140	70	299,51	312,6	21706162037
38	25	93	*140	70	307,59	320,7	21706162038
39	25	93	*140	70	315,67	328,8	21706162039
40	25	93	*140	70	323,73	336,9	21706162040

* Executed as welded hub sprocket.

	16B Duplex
Chain size	16B-2
Pitch	25,4
Inner Width	17,02
Roller Diameter	15,88
Single Tooth Width (h1)	16,20
Total Tooth Width (h2)	47,7

CARBON STEEL BS SPROCKETS



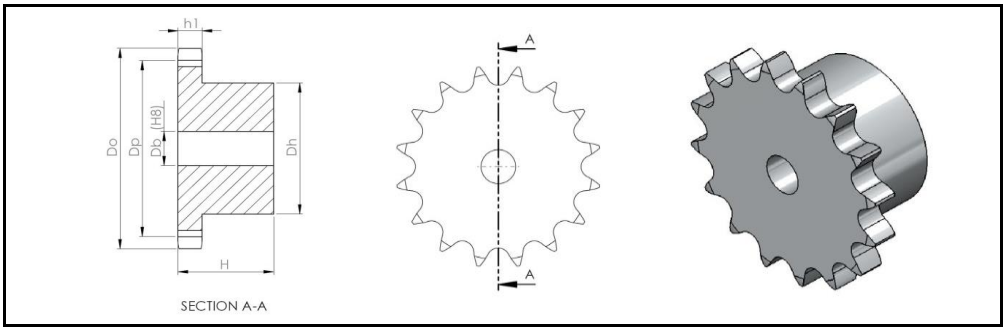
Dimensions in mm

20B-1							
Teeth	Bore		Hub		Pitch Diameter	Outer Diameter	Tsubaki part no.
Z	Db	max.	Dh	H	Dp	Do	
10	20	47	70	40	102,74	117,9	21706003000
11	20	51	77	45	112,68	127,8	21706003010
12	20	59	88	45	122,68	137,8	21706003020
13	20	65	98	45	132,65	147,8	21706003030
14	20	72	108	45	142,68	157,8	21706003040
15	20	78	118	45	152,72	167,9	21706003050
16	25	80	120	50	162,75	177,9	21706003060
17	25	80	120	50	172,78	187,9	21706003070
18	25	80	120	50	182,85	198,0	21706003080
19	25	80	120	50	192,91	208,1	21706003090
20	25	80	120	50	202,98	218,1	21706003100
21	25	93	140	55	213,04	228,2	21706003110
22	25	93	140	55	223,11	238,3	21706003120
23	25	93	140	55	233,17	248,3	21706003130
24	25	93	140	55	243,23	258,4	21706003140
25	25	93	140	55	253,33	268,5	21706003150
27	25	99	*150	55	273,48	288,6	21706003160
30	25	99	*150	55	303,75	318,9	21706003170

* Executed as welded hub sprocket.

	20B Simplex
Chain size	20B-1
Pitch	31,75
Inner Width	19,56
Roller Diameter	19,05
Single Tooth Width (h1)	18,50

CARBON STEEL BS SPROCKETS



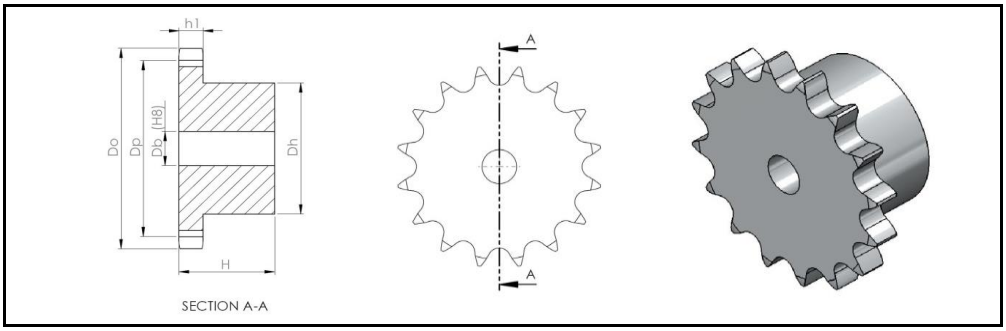
Dimensions in mm

24B-1							
Teeth	Bore		Hub		Pitch Diameter	Outer Diameter	Tsubaki part no.
Z	Db	max.	Dh	H	Dp	Do	
10	20	53	80	45	123,29	138,0	21706003180
11	25	60	90	50	135,21	150,0	21706003190
12	25	67	102	50	147,22	162,0	21706003200
13	25	75	114	50	159,18	174,2	21706003210
14	25	85	128	50	171,22	186,2	21706003220
15	25	93	140	50	183,26	198,2	21706003230
16	25	93	*140	55	195,30	210,3	21706003240
17	25	93	*140	55	207,34	222,3	21706003250
18	25	93	*140	55	219,42	234,3	21706003260
19	25	93	*140	55	231,49	246,5	21706003270
20	25	93	*140	55	243,57	258,6	21706003280
21	25	99	*150	60	255,65	270,6	21706003290
22	25	99	*150	60	267,73	282,7	21706003300
23	25	99	*150	60	279,80	294,8	21706003310
24	25	99	*150	60	291,88	306,8	21706003320
25	25	99	*150	60	304,00	319,0	21706003330
27	30	99	*160	60	328,19	343,2	21706003340
30	30	99	*160	60	364,50	379,5	21706003350

* Executed as welded hub sprocket.

	24B Simplex
Chain size	24B-1
Pitch	38,1
Inner Width	25,40
Roller Diameter	25,40
Single Tooth Width (h1)	24,10

STAINLESS STEEL BS SPROCKETS



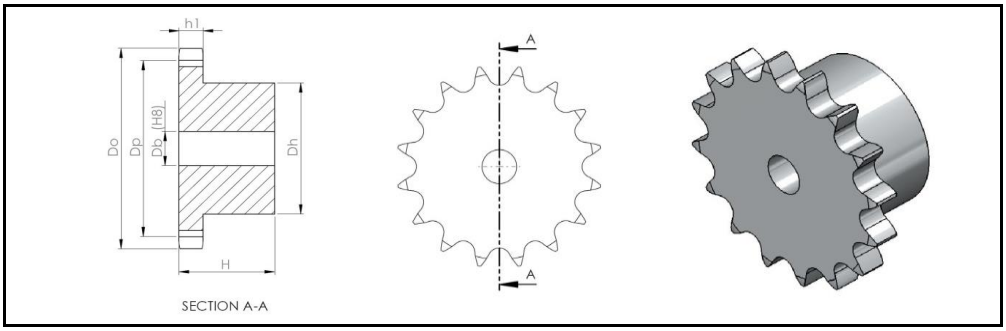
Dimensions in mm

06B-1 STAINLESS STEEL						
Teeth	Bore	Hub		Pitch Diameter	Outer Diameter	Tsubaki part no.
Z	Db	Dh	H	Dp	Do	
10	8	20	22	30,82	34,0	21704000002
11	8	22	25	33,80	37,0	21704000003
12	8	25	25	36,80	40,0	21704000004
13	10	28	25	39,80	43,0	21704000010
14	10	31	25	42,80	46,3	21704000016
15	10	34	25	45,81	49,3	21704000020
16	10	37	28	48,82	52,3	21704000030
17	10	40	28	51,83	55,3	21704000040
18	10	43	28	54,85	58,3	21704000050
19	10	45	28	57,85	61,3	21704000060
20	10	46	28	60,89	64,3	21704000070
21	12	48	28	63,91	68,0	21704000080
22	12	50	28	66,93	71,0	21704000085
23	12	52	28	69,95	73,5	21704000090
24	12	54	28	72,97	77,0	21704000095
25	12	57	28	76,00	80,0	21704000100
26	12	60	28	79,02	83,0	21704000102
27	12	60	28	82,04	86,0	21704000103
30	12	60	28	91,12	94,7	21704000110

08B-1 STAINLESS STEEL						
Teeth	Bore	Hub		Pitch Diameter	Outer Diameter	Tsubaki part no.
Z	Db	Dh	H	Dp	Do	
10	10	26	25	41,10	45,2	21704000118
11	10	29	25	45,07	48,7	21704000119
12	10	33	28	49,03	53,0	21704000120
13	10	37	28	53,06	57,4	21704000130
14	10	41	28	57,07	61,8	21704000135
15	10	45	28	61,09	65,5	21704000140
16	12	50	28	65,10	69,5	21704000150
17	12	52	28	69,11	73,6	21704000160
18	12	56	28	73,14	77,8	21704000170
19	12	60	28	77,16	81,7	21704000180
20	12	64	28	81,19	85,8	21704000190
21	14	68	28	85,22	89,7	21704000200
22	14	70	28	89,24	93,8	21704000205
23	14	70	28	93,27	98,2	21704000210
24	14	70	28	97,29	101,8	21704000215
25	14	70	28	101,33	105,8	21704000220
26	16	70	30	105,36	110,0	21704000227
27	16	70	30	109,40	114,0	21704000229
30	16	80	30	121,50	126,1	21704000230

	06B Simplex	08B Simplex
Chain size	06B-1	08B-1
Pitch	9,525	12,7
Inner Width	5,72	7,75
Roller Diameter	6,35	8,51
Single Tooth Width (h1)	5,30	7,20

STAINLESS STEEL BS SPROCKETS



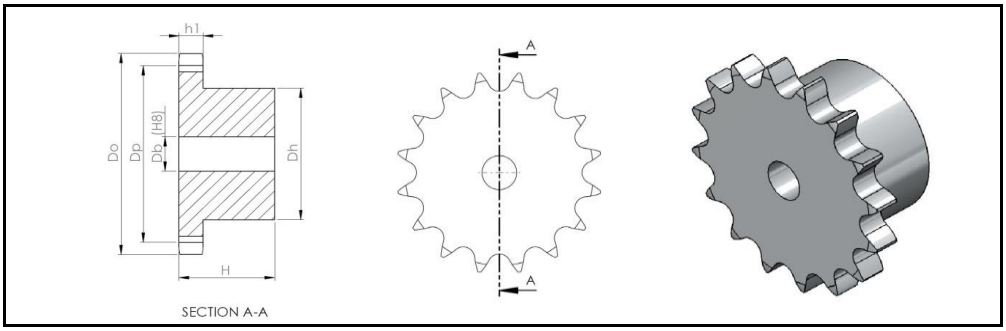
Dimensions in mm

10B-1 STAINLESS STEEL						
Teeth	Bore	Hub		Pitch Diameter	Outer Diameter	Tsubaki part no.
Z	Db	Dh	H	Dp	Do	
10	10	35	25	51,37	57,5	21704000233
11	12	37	30	56,34	63,0	21704000234
12	12	42	30	61,34	68,0	21704000235
13	12	47	30	66,32	73,0	21704000240
14	12	52	30	71,34	78,0	21704000245
15	12	57	30	76,36	83,0	21704000250
16	14	60	30	81,37	88,0	21704000260
17	14	60	30	86,39	93,0	21704000270
18	14	70	30	91,42	98,3	21704000280
19	14	70	30	96,45	103,3	21704000290
20	14	75	30	101,49	108,4	21704000300
21	16	75	30	106,52	113,4	21704000310
22	16	80	30	111,55	118,0	21704000315
23	16	80	30	116,58	123,4	21704000320
24	16	80	30	121,62	128,3	21704000325
25	16	80	30	126,66	134,0	21704000330
26	20	85	35	131,70	139,0	21704000331
27	20	85	35	136,75	144,0	21704000332
30	20	90	35	151,87	158,8	21704000340

12B-1 STAINLESS STEEL						
Teeth	Bore	Hub		Pitch diameter	Outer diameter	Tsubaki part no.
Z	Db	Dh	H	Dp	Do	
10	12	42	30	61,64	69,0	21704000342
11	14	46	35	67,61	75,0	21704000343
12	14	52	35	73,60	81,5	21704000345
13	14	58	35	79,59	87,5	21704000350
14	14	64	35	85,61	93,6	21704000355
15	14	70	35	91,63	99,8	21704000360
16	16	75	35	97,65	105,5	21704000370
17	16	80	35	103,67	111,5	21704000380
18	16	80	35	109,71	118,0	21704000390
19	16	80	35	115,75	124,2	21704000400
20	16	80	35	121,78	129,7	21704000410
21	20	90	40	127,82	136,0	21704000420
22	20	90	40	133,86	141,8	21704000425
23	20	90	40	139,90	149,0	21704000430
24	20	90	40	145,94	153,9	21704000435
25	20	90	40	152,00	160,0	21704000440
26	20	95	40	158,04	165,9	21704000443
27	20	95	40	164,09	172,3	21704000444
30	20	95	40	182,25	190,5	21704000445

	10B Simplex	**12B Simplex**
Chain size	10B-1	12B-1
Pitch	15,875	19,05
Inner Width	9,65	11,68
Roller Diameter	10,16	12,07
Single Tooth Width (h1)	9,10	11,10

STAINLESS STEEL BS SPROCKETS

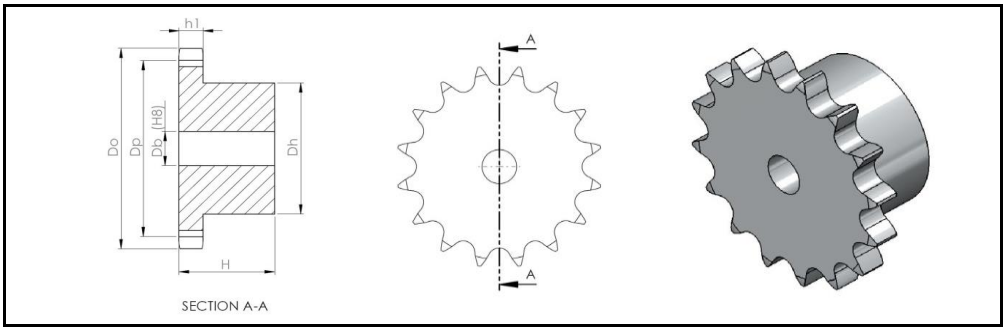


Dimensions in mm

16B-1 STAINLESS STEEL						
Teeth	Bore	Hub		Pitch Diameter	Outer Diameter	Tsubaki part no.
Z	Db	Dh	H	Dp	Do	
10	16	55	35	82,19	93,0	21704000447
11	16	61	40	90,14	99,5	21704000448
12	16	69	40	98,14	109,0	21704000449
13	16	78	40	106,12	117,0	21704000450
14	16	84	40	114,15	125,0	21704000455
15	16	92	40	122,17	133,0	21704000460
16	20	100	45	130,20	141,0	21704000470
17	20	100	45	138,22	149,0	21704000480
18	20	100	45	146,28	157,0	21704000490
19	20	100	45	154,33	165,2	21704000500
20	20	100	45	162,38	173,2	21704000510
21	20	110	50	170,43	181,2	21704000520
22	20	110	50	178,48	189,3	21704000522
23	20	110	50	186,53	197,5	21704000523
24	20	110	50	194,59	205,5	21704000524
25	20	110	50	202,66	213,5	21704000525
26	20	120	50	210,72	221,6	21704000526
27	20	120	50	218,79	229,6	21704000527
30	20	120	50	243,00	254,0	21704000529

	16B Simplex
Chain size	16B-1
Pitch	25,4
Inner Width	17,02
Roller Diameter	15,88
Single Tooth Width (h1)	16,20

CARBON STEEL ANSI SPROCKETS

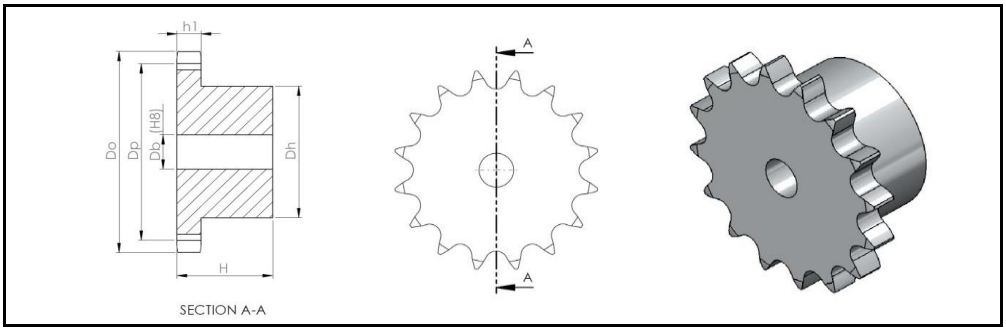


Dimensions in mm

35-1 ANSI						
Teeth	Bore	Hub		Pitch Diameter	Outer Diameter	Tsubaki part no.
Z	Db	Dh	H	Dp	Do	
8	8	15	22	24,89	28,0	21712007460
9	8	18	22	27,85	31,0	21712000345
10	8	20	22	30,82	35,7	21712000350
11	8	22	25	33,80	38,7	21712000360
12	8	25	25	36,80	41,7	21712000370
13	10	28	25	39,80	44,7	21712000380
14	10	31	25	42,80	47,7	21712000390
15	10	34	25	45,81	50,7	21712000400
16	10	38	28	48,82	53,7	21712000410
17	10	38	28	51,83	56,7	21712000420
18	10	38	28	54,85	59,7	21712000430
19	10	46	28	57,87	62,8	21712000440
20	10	46	28	60,89	65,8	21712000450
21	10	46	28	63,91	68,8	21712000460
22	12	52	28	66,93	71,8	21712000470
23	12	52	28	69,95	74,8	21712000480
24	12	52	28	72,97	77,9	21712000490
25	12	58	28	76,00	80,9	21712000500
27	12	58	28	82,04	86,9	21712000520
30	12	60	28	91,12	96,0	21712000540

	35 Simplex
Chain size	35-1
Pitch	9,525
Inner Width	4,78
Roller Diameter	5,08
Single Tooth Width (h1)	4,40

CARBON STEEL ANSI SPROCKETS

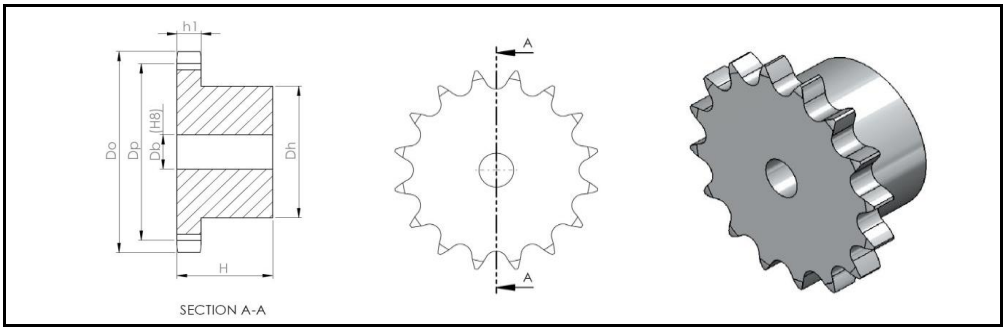


Dimensions in mm

40-1 ANSI						
Teeth	Bore	Hub		Pitch Diameter	Outer Diameter	Tsubaki part no.
Z	Db	Dh	H	Dp	Do	
8	10	20	25	33,18	37,2	21712001128
9	10	24	25	37,13	41,0	21712001129
10	10	26	25	41,10	47,7	21712001130
11	10	29	25	45,08	51,6	21712001140
12	10	35	28	49,07	55,6	21712001150
13	10	35	28	53,07	59,6	21712001160
14	10	35	28	57,07	63,6	21712001170
15	10	48	28	61,08	67,6	21712001180
16	10	48	28	65,10	71,7	21712001190
17	10	48	28	69,12	75,7	21712001200
18	12	60	28	73,14	79,7	21712001210
19	12	60	28	77,16	83,7	21712001220
20	12	60	28	81,18	87,7	21712001230
21	12	65	28	85,21	91,8	21712001240
22	12	65	28	89,24	95,8	21712001250
23	12	65	28	93,27	99,8	21712001260
24	14	70	28	97,30	103,9	21712001270
25	14	70	28	101,33	107,9	21712001280
27	16	70	30	109,40	116,0	21712001305
30	16	80	30	121,50	128,1	21712001330

	40 Simplex
Chain size	40-1
Pitch	12,7
Inner Width	7,95
Roller Diameter	7,92
Single Tooth Width (h1)	7,40

CARBON STEEL ANSI SPROCKETS

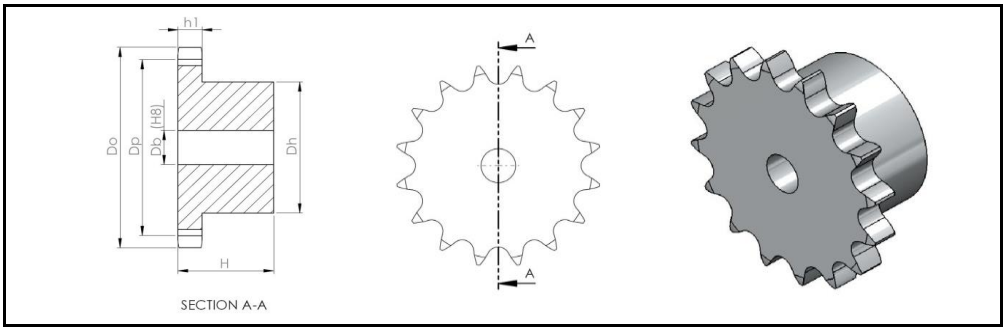


Dimensions in mm

50-1 ANSI						
Teeth	Bore	Hub		Pitch Diameter	Outer Diameter	Tsubaki part no.
Z	Db	Dh	H	Dp	Do	
8	10	25	25	41,48	47,0	21712001870
9	10	30	25	46,42	52,6	21712001880
10	10	35	25	51,37	57,5	21712001890
11	12	37	30	56,34	63,0	21712001900
12	12	42	30	61,34	68,0	21712001910
13	12	47	30	66,32	73,0	21712001920
14	12	52	30	71,34	78,0	21712001930
15	12	57	30	76,36	83,0	21712001940
16	12	60	30	81,37	88,0	21712001950
17	12	60	30	86,39	93,0	21712001960
18	14	70	30	91,42	98,3	21712001970
19	14	70	30	96,45	103,3	21712001980
20	14	75	30	101,49	108,4	21712001990
21	16	75	30	106,52	113,4	21712002000
22	16	80	30	111,55	118,0	21712002010
23	16	80	30	116,58	123,4	21712002020
24	16	80	30	121,62	128,3	21712002030
25	16	80	30	126,66	134,4	21712002040
27	20	85	35	136,75	144,0	21712002061
30	20	90	35	151,87	158,8	21712002081

	50 Simplex
Chain size	50-1
Pitch	15,875
Inner Width	9,53
Roller Diameter	10,16
Single Tooth Width (h1)	9,00

CARBON STEEL ANSI SPROCKETS

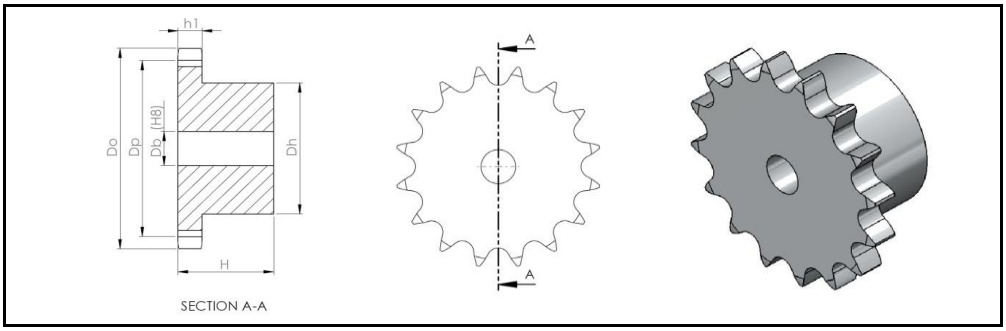


Dimensions in mm

60-1 ANSI						
Teeth	Bore	Hub		Pitch Diameter	Outer Diameter	Tsubaki part no.
Z	Db	Dh	H	Dp	Do	
8	12	31	30	49,78	57,6	21712003110
9	12	37	30	55,70	62,0	21712003120
10	12	42	30	61,64	71,5	21712002750
11	12	45	30	67,61	77,5	21712002760
12	12	45	30	73,61	83,5	21712002770
13	14	60	35	79,59	89,5	21712002780
14	14	60	35	85,61	95,5	21712002790
15	14	60	35	91,63	101,5	21712002800
16	16	75	35	97,65	107,5	21712002810
17	16	75	35	103,67	113,6	21712002820
18	16	75	35	109,71	119,6	21712002830
19	16	80	35	115,75	125,6	21712002840
20	16	80	35	121,78	131,7	21712002850
21	16	80	35	127,82	137,7	21712002860
22	20	90	40	133,86	143,8	21712002870
23	20	90	40	139,90	149,8	21712002880
24	20	90	40	145,94	155,8	21712002890
25	20	90	40	152,00	161,9	21712002900
27	20	90	40	164,09	174,0	21712002921
30	20	95	40	182,25	192,1	21712002951

	60 Simplex
Chain size	60-1
Pitch	19,05
Inner Width	12,70
Roller Diameter	11,91
Single Tooth Width (h1)	12,00

CARBON STEEL ANSI SPROCKETS



Dimensions in mm

80-1 ANSI						
Teeth	Bore	Hub		Pitch Diameter	Outer Diameter	Tsubaki part no.
Z	Db	Dh	H	Dp	Do	
8	16	42	35	66,37	79,5	21712003990
9	16	50	35	74,27	87,4	21712004000
10	16	55	35	82,19	95,3	21712003670
11	16	61	40	90,14	103,3	21712003680
12	16	69	40	98,14	111,3	21712003690
13	16	78	40	106,12	119,3	21712003700
14	16	84	40	114,15	127,3	21712003710
15	16	92	40	122,17	135,3	21712003720
16	20	100	45	130,20	143,3	21712003730
17	20	100	45	138,22	151,4	21712003740
18	20	100	45	146,28	159,4	21712003750
19	20	100	45	154,33	167,4	21712003760
20	20	100	45	162,38	175,5	21712003770
21	20	110	50	170,43	183,5	21712003780
22	20	110	50	178,48	191,6	21712003790
23	20	110	50	186,53	199,7	21712003800
24	20	110	50	194,59	207,7	21712003810
25	20	110	50	202,66	215,8	21712003820
27	20	120	50	218,79	231,9	21712003841
30	20	120	50	243,00	256,1	21712003861

	80 Simplex
Chain size	80-1
Pitch	25,4
Inner Width	15,88
Roller Diameter	15,88
Single Tooth Width (h1)	15,00

TAPER BORE SPROCKETS

Taper Bore (Taper Bore sprocket with a Taper Bush mounted) is the most common mounting method supplied by Tsubaki. Taper Bore bushings offer flexibility in that they allow multiple sized bores for a single bushing size.

Taper Bore bushings utilize a split through the taper and flange to provide a true clamp on the shaft that is equivalent to a shrink fit. This type of bushing is retained to the sprocket with a series of set screws on the outside diameter of the bushing running parallel to the shaft, or can be welded to the sprocket itself. With Taper Bore bushings, there is no need for a set screw over the drive shaft key. Please note that when ordering a Taper Bore sprocket, the Taper Bush needs to be ordered separately. Other mountings or locking devices can be specified, including Finished Bore (keyway + 2 set screws on 90° angle), Tsubaki Power-Locks, bearing and bushing idlers, and more. Power-Lock keyless locking devices are recommended for extra holding power in higher torque conditions.

Taper Bore - Bushing Installation and Removal

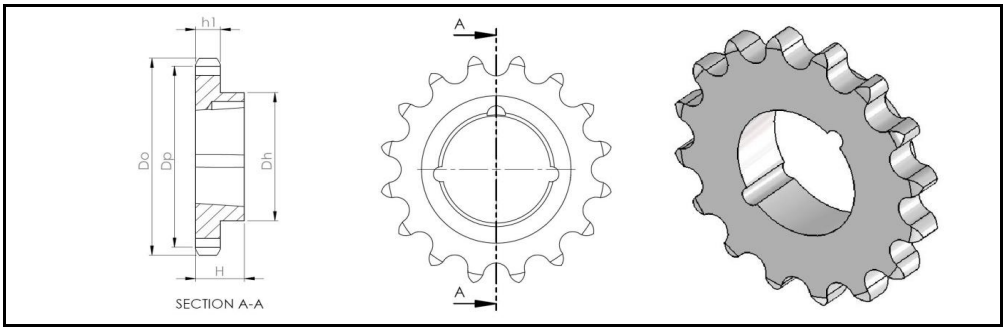
Taper Bore Bushing Installation

1. Clean and degrease the bore and tapered surface of the bushing and the tapered bore of the pulley/hub/sprocket.
2. Insert the bushing into the pulley/hub/sprocket bore and line up the holes (Half threaded holes must line up the half straight non-threaded holes).
3. Lightly oil the locking screws and insert but do not tighten yet.
4. When using a key, it should be fitted to the shaft keyway. There should be a top clearance between the key and the keyway in the mating bushing.
5. Clean and degrease the shaft. Fit pulley/hub/sprocket onto the shaft and locate in the desired position.
6. Using a hexagon socket wrench, gradually tighten the locking screws in accordance with the required tightening torque.
7. When the drive has been operating under load for a short period, approximately 30 to 60 minutes, stop the equipment and check that the screws remain at the required tightening torque. Adjust if necessary.
8. To avoid the ingress of dirt, fill all empty holes with grease.

Taper Bore Bushing Removal

1. Remove any loading to the equipment to enable a safe removal of components.
2. Slacken and remove all locking screws.
3. Add lubricant to the previously removed screws and insert into jack-out hole/holes in the bushing.
4. Tighten the screws uniformly and alternately until the bushing is loose and the pulley/hub/sprocket can be moved freely on the shaft.
5. Remove the bushing/pulley/hub/sprocket assembly from the shaft.

CARBON STEEL BS TAPER BORE SPROCKETS

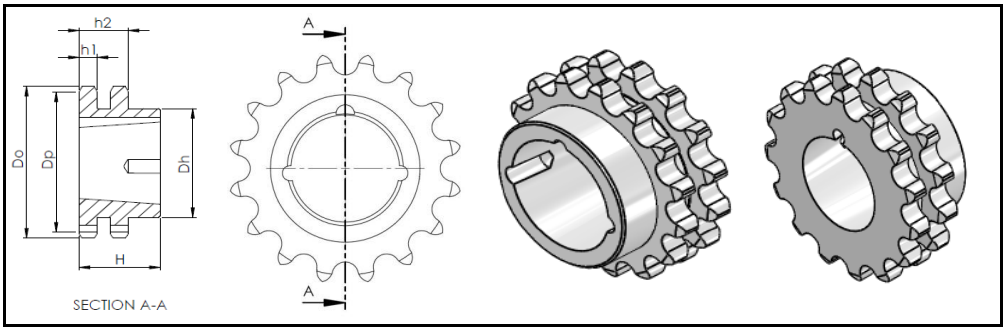


Dimensions in mm

Taper Bore Sprocket 06B-1						
Teeth	Taper Bush	Hub		Pitch Diameter	Outer Diameter	Tsubaki part no.
Z	Ref.nr.	Dh	H	Dp	Do	
17	1008	45	22	51,83	55,3	21723000010
18	1008	45	22	54,85	58,3	21723000015
19	1008	45	22	57,87	61,3	21723000020
20	1008	46	22	60,89	64,3	21723000025
21	1008	46	22	63,91	68,0	21723000030
22	1108	50	22	66,93	71,0	21723000035
23	1210	63	25	69,95	73,5	21723000040
24	1210	63	25	72,97	77,0	21723000045
25	1210	63	25	76,02	80,0	21723000050
26	1210	63	25	79,02	83,0	21723000055
27	1210	63	25	82,02	86,0	21723000060
28	1210	63	25	85,07	89,0	21723000061
30	1210	63	25	91,12	94,7	21723000070
38	1210	70	25	115,35	119,5	21723000071
45	1210	70	25	136,55	140,7	21723000072
57	1210	70	25	172,91	176,9	21723000073

	06B Simplex
Chain size	06B-1
Pitch	9,525
Inner Width	5,72
Roller Diameter	6,35
Single Tooth Width (h1)	5,30

CARBON STEEL BS TAPER BORE SPROCKETS

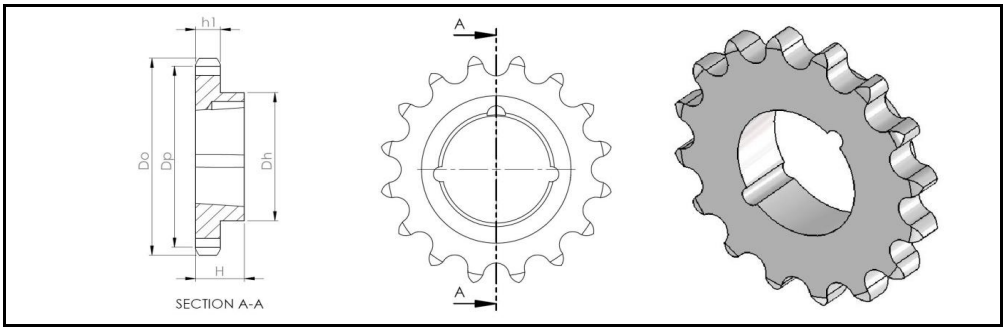


Dimensions in mm

Taper Bore Sprocket 06B-2						
Teeth	Taper Bush	Hub		Pitch Diameter	Outer Diameter	Tsubaki part no.
Z	Ref.nr.	Dh	H	Dp	Do	
17	1008	42	22	51,83	55,3	21723000600
18	1008	43	22	54,85	58,3	21723000610
19	1008	46	22	57,87	61,3	21723000620
20	1008	48	22	60,89	64,3	21723000630
21	1008	49	22	63,91	68,0	21723000640
22	1108	52	22	66,93	71,0	21723000650
23	1210	59	25	69,95	73,5	21723000660
24	1210	61	25	72,97	77,0	21723000670
25	1210	64	25	76,02	80,0	21723000680
26	1210	65	25	79,02	83,0	21723000690
27	1210	70	25	82,02	86,0	21723000700
28	1210	70	25	85,07	89,0	21723000710
30	1210	75	25	91,12	94,7	21723000720
38	1610	80	25	115,35	119,5	21723000730
45	1610	80	25	136,55	140,7	21723000740
57	1610	80	25	172,91	176,9	21723000750

	06B Duplex
Chain size	06B-2
Pitch	9,525
Inner Width	5,72
Roller Diameter	6,35
Single Tooth Width (h1)	5,30
Total Tooth Width (h2)	15,4

CARBON STEEL BS TAPER BORE SPROCKETS

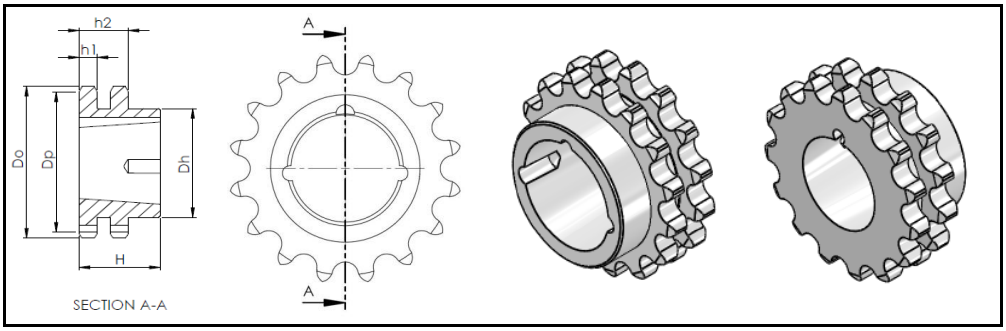


Dimensions in mm

Taper Bore Sprocket 08B-1						
Teeth	Taper Bush	Hub		Pitch Diameter	Outer Diameter	Tsubaki part no.
Z	Ref.nr.	Dh	H	Dp	Do	
15	1008	45	22	61,90	65,5	21723000080
16	1108	50	22	65,10	69,5	21723000486
17	1210	60	25	69,11	73,6	21723000090
18	1210	60	25	73,14	77,8	21723000488
19	1210	63	25	77,16	81,7	21723000100
20	1610	71	25	81,19	85,8	21723000490
21	1610	71	25	85,22	89,7	21723000110
22	1610	71	25	89,24	93,8	21723000492
23	1610	76	25	93,27	98,2	21723000120
24	1610	76	25	97,29	101,8	21723000494
25	1610	76	25	101,33	105,8	21723000130
26	1610	76	25	105,36	110,0	21723000496
27	1610	76	25	109,40	114,4	21723000140
28	1610	90	32	113,42	118,0	21723000498
30	2012	90	32	121,50	126,1	21723000150
38	2012	90	32	153,80	158,6	21723000155
45	2012	100	32	182,07	188,0	21723000158
57	2012	100	32	230,54	236,4	21723000159

	08B Simplex
Chain size	08B-1
Pitch	12,7
Inner Width	7,75
Roller Diameter	8,51
Single Tooth Width (h1)	7,20

CARBON STEEL BS TAPER BORE SPROCKETS

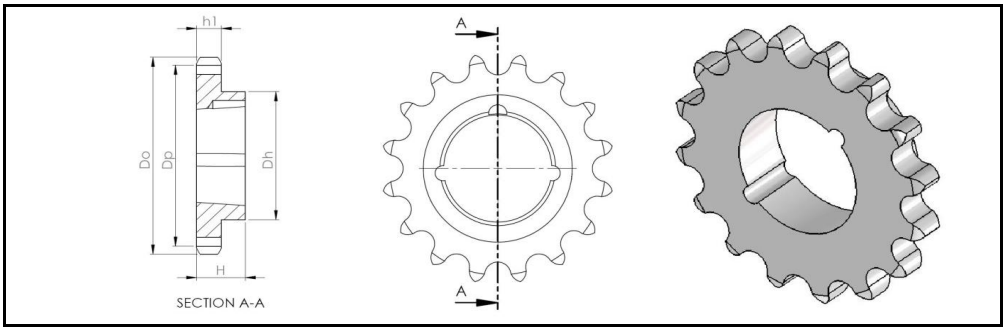


Dimensions in mm

Taper Bore Sprocket 08B-2						
Teeth	Taper Bush	Hub		Pitch Diameter	Outer Diameter	Tsubaki part no.
Z	Ref.nr.	Dh	H	Dp	Do	
15	1008	46	22	61,90	65,5	21723000760
16	1108	50	22	65,10	69,5	21723000770
17	1210	56	25	69,11	73,6	21723000780
18	1210	60	25	73,14	77,8	21723000790
19	1210	62	25	77,16	81,7	21723000800
20	1610	66	25	81,19	85,8	21723000810
21	1610	70	25	85,22	89,7	21723000820
22	1610	76	25	89,24	93,8	21723000830
23	1610	79	25	93,27	98,2	21723000840
24	1610	84	25	97,29	101,8	21723000850
25	2012	87	32	101,33	105,8	21723000860
26	2012	87	32	105,36	110,0	21723000870
27	2012	87	32	109,40	114,4	21723000880
28	2012	87	32	113,42	118,0	21723000890
30	2012	87	32	121,50	126,1	21723000900
38	2012	100	32	153,80	158,6	21723000910
45	2012	100	32	182,07	188,0	21723000920
57	2012	100	32	230,54	236,4	21723000930

	08B Duplex
Chain size	08B-2
Pitch	12,7
Inner Width	7,75
Roller Diameter	8,51
Single Tooth Width (h1)	7,20
Total Tooth Width (h2)	21

CARBON STEEL BS TAPER BORE SPROCKETS

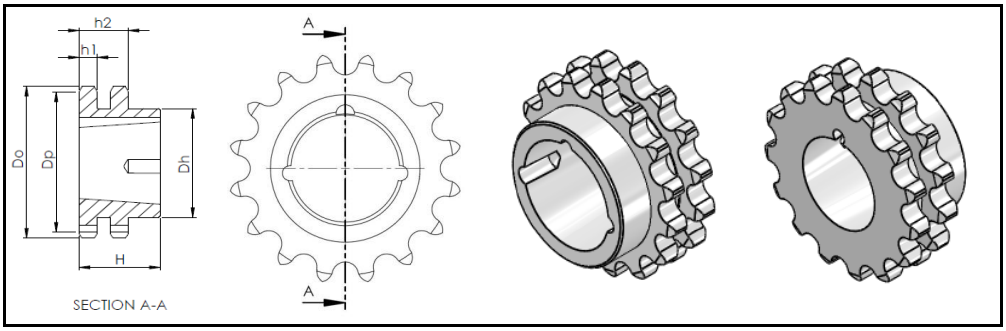


Dimensions in mm

Taper Bore Sprocket 10B-1						
Teeth	Taper Bush	Hub		Pitch Diameter	Outer Diameter	Tsubaki part no.
Z	Ref.nr.	Dh	H	Dp	Do	
13	1008	47	22	66,32	73,0	21723000160
14	1108	52	22	71,34	78,0	21723000503
15	1210	60	25	76,36	83,0	21723000170
16	1210	70	25	81,37	88,0	21723000505
17	1610	71	25	86,36	93,0	21723000180
18	1610	75	25	91,42	98,3	21723000507
19	1610	75	25	96,45	103,3	21723000190
20	1610	75	25	101,49	108,4	21723000509
21	1610	76	25	106,52	113,4	21723000200
22	1610	76	25	111,55	118,0	21723000511
23	1610	76	25	116,58	123,4	21723000210
24	2012	90	32	121,62	128,3	21723000513
25	2012	90	32	126,66	134,0	21723000220
26	2012	90	32	131,70	139,0	21723000515
27	2012	90	32	136,75	144,0	21723000230
28	2012	90	32	141,78	148,7	21723000517
30	2012	90	32	151,87	158,8	21723000240
38	2012	100	32	192,24	199,2	21723000242
45	2012	100	32	227,58	235,0	21723000245
57	2012	100	32	288,18	296,0	21723000246

	10B Simplex
Chain size	10B-1
Pitch	15,875
Inner Width	9,65
Roller Diameter	10,16
Single Tooth Width (h1)	9,10

CARBON STEEL BS TAPER BORE SPROCKETS

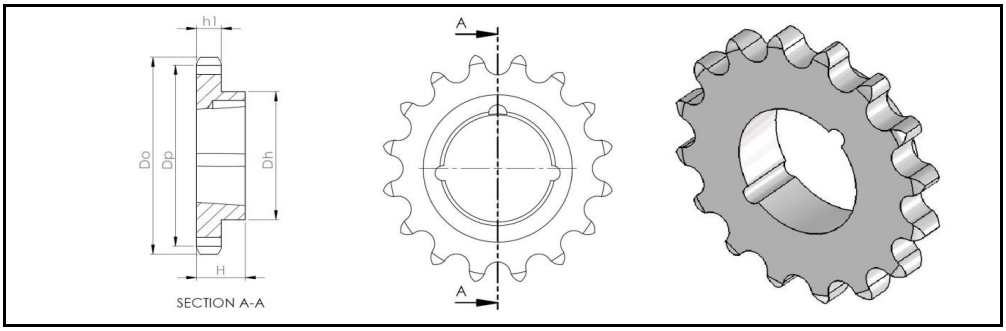


Dimensions in mm

Taper Bore Sprocket 10B-2						
Teeth	Taper Bush	Hub		Pitch Diameter	Outer Diameter	Tsubaki part no.
Z	Ref.nr.	Dh	H	Dp	Do	
13	1108	-	25,5	66,32	73,0	21723000950
14	1108	-	25,5	71,34	78,0	21723000960
15	1210	-	25,5	76,36	83,0	21723000970
16	1610	-	25,5	81,37	88,0	21723000980
17	1610	-	25,5	86,36	93,0	21723000990
18	1610	-	25,5	91,42	98,3	21723001000
19	1610	-	25,5	96,45	103,3	21723001010
20	1610	-	25,5	101,49	108,4	21723001020
21	1610	-	25,5	106,52	113,4	21723001030
22	1610	-	25,5	111,55	118,0	21723001040
23	1610	-	25,5	116,58	123,4	21723001050
24	2012	90	32	121,62	128,3	21723001060
25	2012	90	32	126,66	134,0	21723001070
26	2012	90	32	131,70	139,0	21723001080
27	2012	90	32	136,75	144,0	21723001090
28	2012	90	32	141,78	148,7	21723001100
30	2012	90	32	151,87	158,8	21723001110
38	2517	108	45	192,24	199,2	21723001120
45	2517	110	45	227,58	235,0	21723001130
57	2517	124	45	288,18	296,0	21723001140

	10B Duplex
Chain size	10B-2
Pitch	15,875
Inner Width	9,65
Roller Diameter	10,16
Single Tooth Width (h1)	9,10
Total Tooth Width (h2)	25,5

CARBON STEEL BS TAPER BORE SPROCKETS

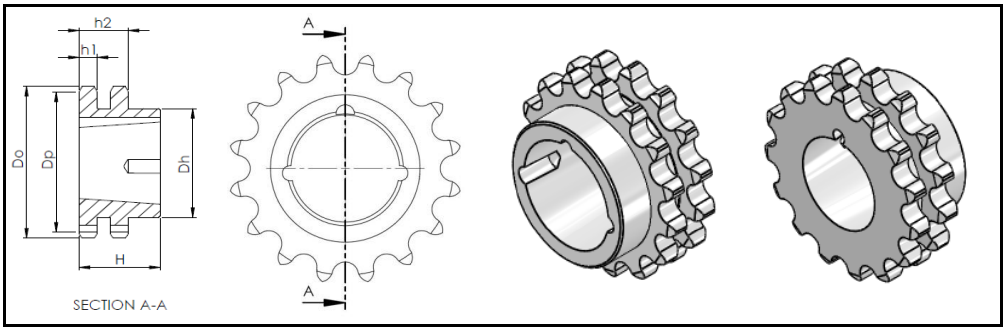


Dimensions in mm

Taper Bore Sprocket 12B-1						
Teeth	Taper Bush	Hub		Pitch Diameter	Outer Diameter	Tsubaki part no.
Z	Ref.nr.	Dh	H	Dp	Do	
13	1210	60	25	79,59	87,5	21723000250
14	1610	70	25	85,61	93,6	21723000251
15	1610	70	25	91,63	99,8	21723000260
16	1610	75	25	97,65	105,5	21723000265
17	1610	76	25	103,67	111,5	21723000270
18	2012	90	32	109,71	118,0	21723000254
19	2012	90	32	115,75	124,2	21723000280
20	2012	90	32	121,78	129,7	21723000285
21	2517	102	45	127,82	136,0	21723000290
22	2517	102	45	133,86	141,8	21723000256
23	2517	108	45	139,90	149,0	21723000300
24	2517	108	45	145,94	153,9	21723000305
25	2517	108	45	152,00	160,0	21723000310
26	2517	108	45	158,04	165,9	21723000315
27	2517	108	45	164,00	172,3	21723000320
28	2517	108	45	170,13	178,0	21723000325
30	2517	108	45	182,25	190,5	21723000330
38	2517	108	45	230,69	239,0	21723000331
45	2517	108	45	273,10	282,5	21723000332
57	2517	108	45	345,81	355,4	21723000329

	12B Simplex
Chain size	12B-1
Pitch	19,05
Inner Width	11,68
Roller Diameter	12,07
Single Tooth Width (h1)	11,10

CARBON STEEL BS TAPER BORE SPROCKETS

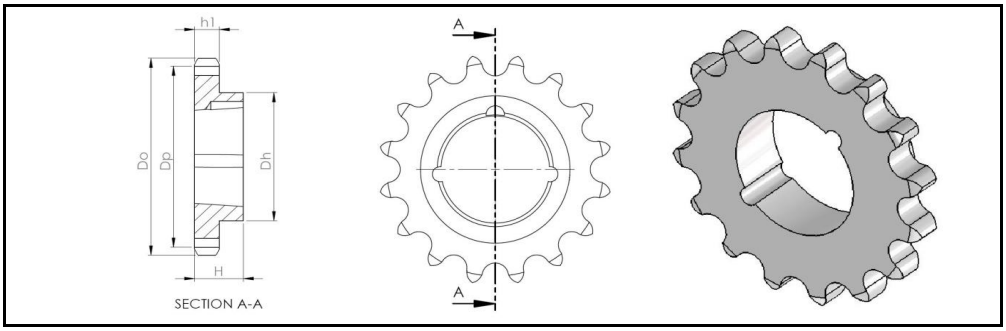


Dimensions in mm

Taper Bore Sprocket 12B-2						
Teeth	Taper Bush	Hub		Pitch Diameter	Outer Diameter	Tsubaki part no.
Z	Ref.nr.	Dh	H	Dp	Do	
13	1210	-	30,3	79,59	87,5	21723001150
14	1610	-	30,3	85,61	93,6	21723001160
15	1610	-	30,3	91,63	99,8	21723001170
16	1610	-	30,3	97,65	105,5	21723001180
17	1610	-	30,3	103,67	111,5	21723001190
18	2012	90	32	109,71	118,0	21723001200
19	2012	90	32	115,75	124,2	21723001210
20	2517	108	45	121,78	129,7	21723001220
21	2517	108	45	127,82	136,0	21723001230
22	2517	108	45	133,86	141,8	21723001240
23	2517	108	45	139,90	149,0	21723001250
24	2517	108	45	145,94	153,9	21723001260
25	2517	108	45	152,00	160,0	21723001270
26	2517	108	45	158,04	165,9	21723001280
27	2517	108	45	164,00	172,3	21723001290
28	2517	108	45	170,13	178,0	21723001300
30	2517	108	45	182,25	190,5	21723001310
38	3020	140	51	230,69	239,0	21723001320
45	3020	140	51	273,10	282,5	21723001330
57	3020	140	51	345,81	355,4	21723001340

	12B Duplex
Chain size	12B-2
Pitch	19,05
Inner Width	11,68
Roller Diameter	12,07
Single Tooth Width (h1)	11,10
Total Tooth Width (h2)	30,3

CARBON STEEL BS TAPER BORE SPROCKETS

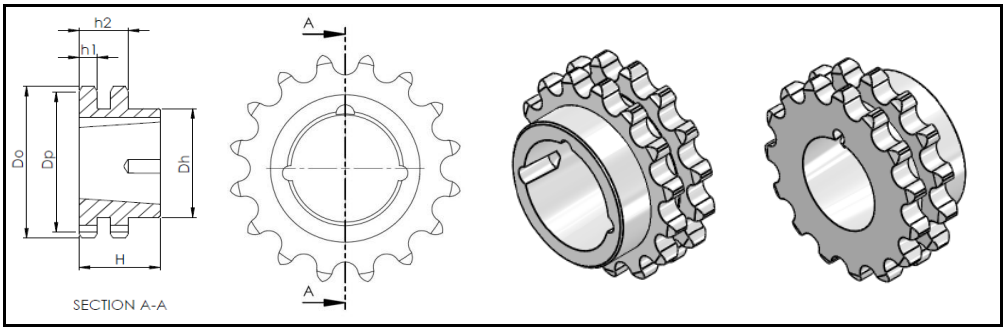


Dimensions in mm

Taper Bore Sprocket 16B-1						
Teeth	Taper Bush	Hub		Pitch Diameter	Outer Diameter	Tsubaki part no.
Z	Ref.nr.	Dh	H	Dp	Do	
13	1615	73	38	106,12	117,0	21723000335
14	1615	76	38	114,15	125,0	21723000336
15	1615	76	38	122,17	133,0	21723000340
16	2012	90	32	130,20	141,0	21723000345
17	2012	90	32	138,22	149,0	21723000350
18	2517	108	45	146,28	157,0	21723000355
19	2517	108	45	154,33	165,2	21723000360
20	2517	108	45	162,38	173,2	21723000365
21	2517	110	45	170,43	181,2	21723000370
22	2517	110	45	178,48	189,3	21723000367
23	2517	110	45	186,53	197,5	21723000380
24	2517	110	45	194,59	205,5	21723000368
25	2517	110	45	202,66	213,5	21723000390
26	2517	110	45	210,72	221,6	21723000369
27	2517	110	45	218,79	229,6	21723000400
28	2517	110	45	226,85	237,7	21723000405
30	2517	140	51	243,00	254,0	21723000410
38	3020	140	51	307,59	320,7	21723000412
45	3020	140	51	364,13	377,1	21723000415
57	3020	140	51	461,07	474,0	21723000416

	16B Simplex
Chain size	16B-1
Pitch	25,4
Inner Width	17,02
Roller Diameter	15,88
Single Tooth Width (h1)	16,20

CARBON STEEL BS TAPER BORE SPROCKETS

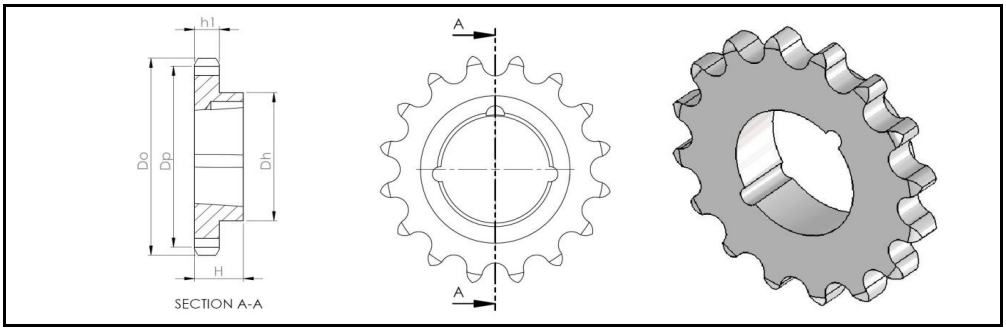


Dimensions in mm

Taper Bore Sprocket 16B-2						
Teeth	Taper Bush	Hub		Pitch Diameter	Outer Diameter	Tsubaki part no.
Z	Ref.nr.	Dh	H	Dp	Do	
13	2012	-	47,7	106,12	117,0	21723001370
14	2012	-	47,7	114,15	125,0	21723001380
15	2012	-	47,7	122,17	133,0	21723001390
16	2012	-	47,7	130,20	141,0	21723001400
17	2517	-	47,7	138,22	149,0	21723001410
18	2517	-	47,7	146,28	157,0	21723001420
19	2517	-	47,7	154,33	165,2	21723001430
20	2517	-	47,7	162,38	173,2	21723001440
21	3020	140	51	170,43	181,2	21723001450
22	3020	140	51	178,48	189,3	21723001460
23	3020	140	51	186,53	197,5	21723001470
24	3020	140	51	194,59	205,5	21723001480
25	3020	140	51	202,66	213,5	21723001490
26	3020	140	51	210,72	221,6	21723001500
27	3020	140	51	218,79	229,6	21723001510
28	3020	140	51	226,85	237,7	21723001520
30	3020	140	51	243,00	254,0	21723001530
38	3020	140	51	307,59	320,7	21723001540
45	3020	140	51	364,13	377,1	21723001550
57	3535	175	89	461,07	474,0	21723001560

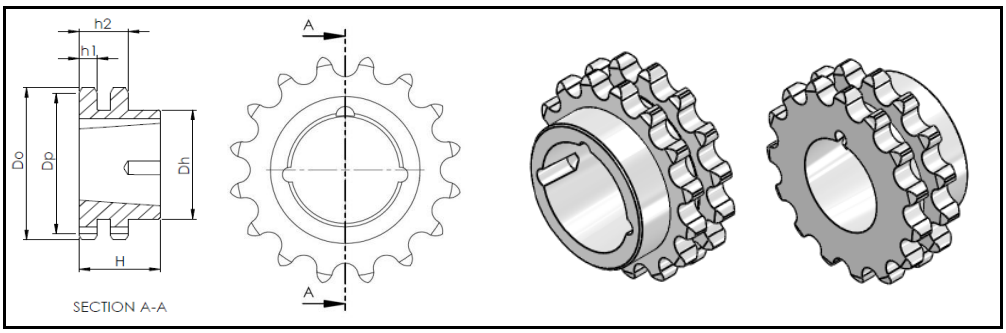
	16B Duplex
Chain size	16B-2
Pitch	25,4
Inner Width	17,02
Roller Diameter	15,88
Single Tooth Width (h1)	16,20
Total Tooth Width (h2)	47,7

CARBON STEEL BS TAPER BORE SPROCKETS



Dimensions in mm

Taper Bore Sprocket 20B-1						
Teeth	Taper Bush	Hub		Pitch Diameter	Outer Diameter	Tsubaki part no.
Z	Ref.nr.	Dh	H	Dp	Do	
15	2517	108	45	152,72	167,9	21723001600
17	2517	108	45	172,78	187,9	21723001610
19	2517	108	45	192,91	208,1	21723001620
21	2517	108	45	213,04	228,2	21723001630
23	2517	108	45	233,17	248,3	21723001640
25	2517	108	45	253,33	268,5	21723001650
30	3020	150	51	303,75	318,9	21723001660
38	3020	160	51	384,49	399,6	21723001670
57	3020	160	51	576,36	591,5	21723001680

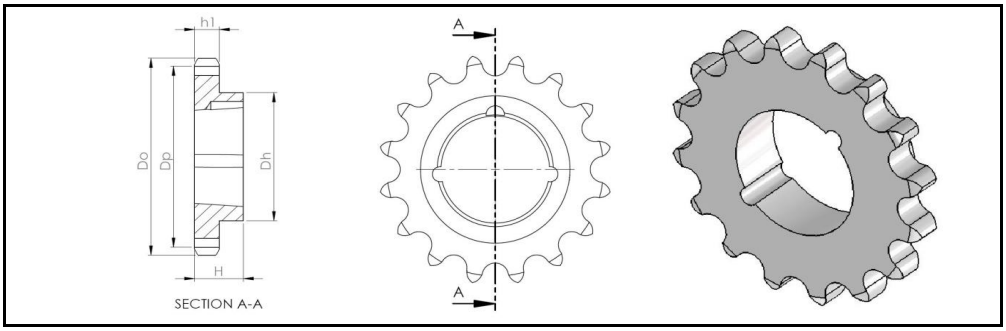


Dimensions in mm

Taper Bore Sprocket 20B-2						
Teeth	Taper Bush	Hub		Pitch Diameter	Outer Diameter	Tsubaki part no.
Z	Ref.nr.	Dh	H	Dp	Do	
15	2517	-	54,6	152,72	167,9	21723001691
17	2517	-	54,6	172,78	187,9	21723001701
19	3030	160	79,6	192,91	208,1	21723001710
21	3030	160	79,6	213,04	228,2	21723001720
23	3030	160	79,6	233,17	248,3	21723001730
25	3030	160	79,6	253,33	268,5	21723001740
30	3030	160	79,6	303,75	318,9	21723001750

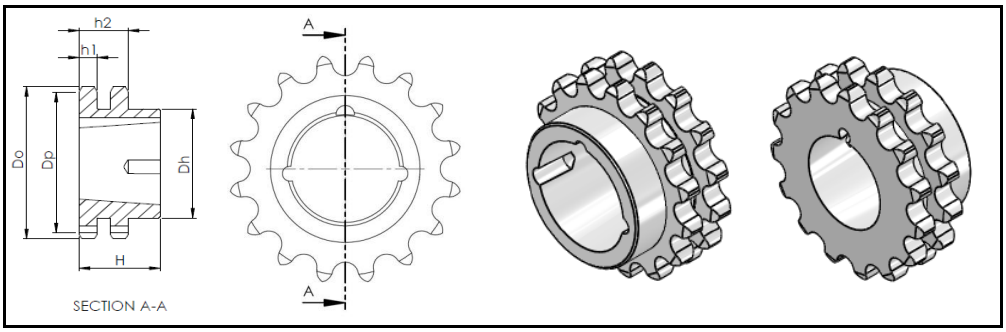
	20B Simplex	20B Duplex
Chain size	20B-1	20B-2
Pitch	31,75	31,75
Inner Width	19,56	19,56
Roller Diameter	19,05	19,05
Single Tooth Width (h1)	18,50	18,50
Total Tooth Width (h2)	-	54,60

CARBON STEEL BS TAPER BORE SPROCKETS



Dimensions in mm

Taper Bore Sprocket 24B-1						
Teeth	Taper Bush	Hub		Pitch Diameter	Outer Diameter	Tsubaki part no.
Z	Ref.nr.	Dh	H	Dp	Do	
15	3020	130	51	183,26	198,2	21723001770
17	3535	160	89	207,34	222,3	21723001780
19	3535	175	89	231,49	246,5	21723001790
21	3535	175	89	255,65	270,6	21723001800
23	3535	175	89	279,80	294,8	21723001810
25	3535	175	89	304,00	319,0	21723001820
30	4040	215	102	364,50	379,5	21723001830
38	4545	260	114	461,39	476,2	21723001840

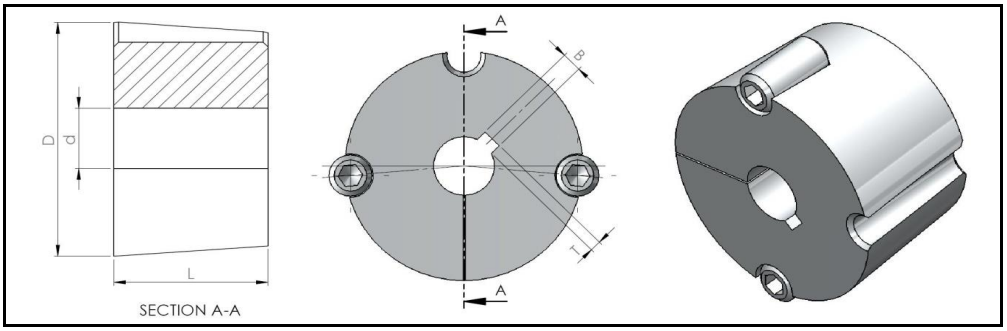


Dimensions in mm

Taper Bore Sprocket 24B-2						
Teeth	Taper Bush	Hub		Pitch Diameter	Outer Diameter	Tsubaki part no.
Z	Ref.nr.	Dh	H	Dp	Do	
15	3020	-	72	183,26	198,2	21723001850
17	3535	165	89	207,34	222,3	21723001860
19	3535	175	89	231,49	246,5	21723001870
21	3535	175	89	255,65	270,6	21723001880
23	3535	175	89	279,80	294,8	21723001890
25	4040	102	216	304,00	319,0	21723001900
30	4040	215	102	364,50	379,5	21723001910

	24B Simplex	24B Duplex
Chain size	24B-1	24B-2
Pitch	38,1	38,1
Inner Width	25,40	25,40
Roller Diameter	25,40	25,40
Single Tooth Width (h1)	24,10	24,10
Total Tooth Width (h2)	-	72,00

TAPER BUSHES



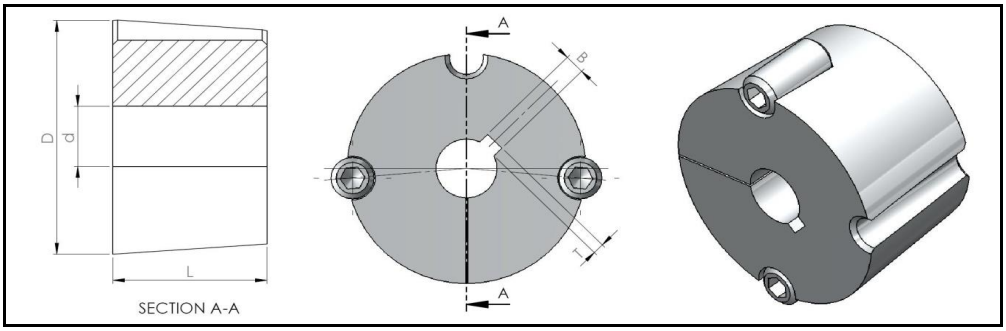
Dimensions in mm

Taper Bush 1008				
Maximum diameter (D) = 35 mm			Screw size BSW = 1/4"	
Bush Length (L) = 22,3 mm			Screw tightening torque = 5,6 Nm	
Bore	Keyway		Weight Kg	Tsubaki part no.
d	B	T		
11	4	1,8	0,13	21762000060
12	4	1,8	0,12	21762000070
14	5	2,3	0,12	21762000080
15	5	2,3	0,11	21762000090
16	5	2,3	0,11	21762000100
18	6	2,8	0,10	21762000110
19	6	2,8	0,10	21762000120
20	6	2,8	0,09	21762000130
22	6	2,8	0,08	21762000140
24	8	1,3	0,07	21762000150
25	8	1,3	0,07	21762000160

Taper Bush 1108				
Maximum diameter (D) = 38 mm			Screw size BSW = 1/4"	
Bush Length (L) = 22,3 mm			Screw tightening torque = 5,6 Nm	
Bore	Keyway		Weight Kg	Tsubaki part no.
d	B	T		
11	4	1,8	0,16	21762000260
12	4	1,8	0,15	21762000270
14	5	2,3	0,02	21762000280
15	5	2,3	0,14	21762000290
16	5	2,3	0,14	21762000300
18	6	2,8	0,13	21762000320
19	6	2,8	0,13	21762000330
20	6	2,8	0,12	21762000340
22	6	2,8	0,11	21762000350
24	8	3,3	0,01	21762000360
25	8	3,3	0,09	21762000370
28	8	1,3	0,07	21762000380

Note: Taper Bush is not delivered in a Tsubaki box

TAPER BUSHES



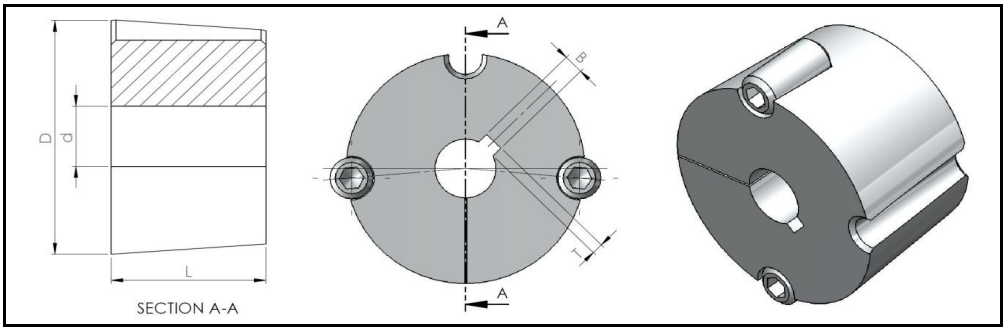
Dimensions in mm

Taper Bush 1210				
Maximum diameter (D) = 47 mm			Screw size BSW = 3/8"	
Bush Length (L) = 25,4 mm			Screw tightening torque = 20 Nm	
Bore	Keyway		Weight Kg	Tsubaki part no.
d	B	T		
11	4	1,8	0,28	21762000510
12	4	1,8	0,28	21762000520
14	5	2,3	0,27	21762000530
15	5	2,3	0,26	21762000540
16	5	2,3	0,26	21762000550
18	6	2,8	0,25	21762000560
19	6	2,8	0,24	21762000570
20	6	2,8	0,24	21762000580
22	6	2,8	0,22	21762000590
24	8	3,3	0,21	21762000600
25	8	3,3	0,21	21762000610
28	8	3,3	0,18	21762000620
30	8	3,3	0,17	21762000640
32	10	3,3	0,15	21762000650

Taper Bush 1610				
Maximum diameter (D) = 57 mm			Screw size BSW = 3/8"	
Bush Length (L) = 25,4 mm			Screw tightening torque = 20 Nm	
Bore	Keyway		Weight Kg	Tsubaki part no.
d	B	T		
12	4	1,8	0,41	21762000945
14	5	2,3	0,41	21762000950
15	5	2,3	0,40	21762000960
16	5	2,3	0,40	21762000970
18	6	2,8	0,39	21762000980
19	6	2,8	0,38	21762000990
20	6	2,8	0,38	21762001000
22	6	2,8	0,37	21762001010
24	8	3,3	0,36	21762001020
25	8	3,3	0,35	21762001030
28	8	3,3	0,32	21762001040
30	8	3,3	0,30	21762001060
32	10	3,3	0,29	21762001070
35	10	3,3	0,26	21762001080
38	10	3,3	0,23	21762001090
40	12	3,3	0,21	21762001100
42	12	3,3	0,19	21762001110

Note: Taper Bush is not delivered in a Tsubaki box

TAPER BUSHES



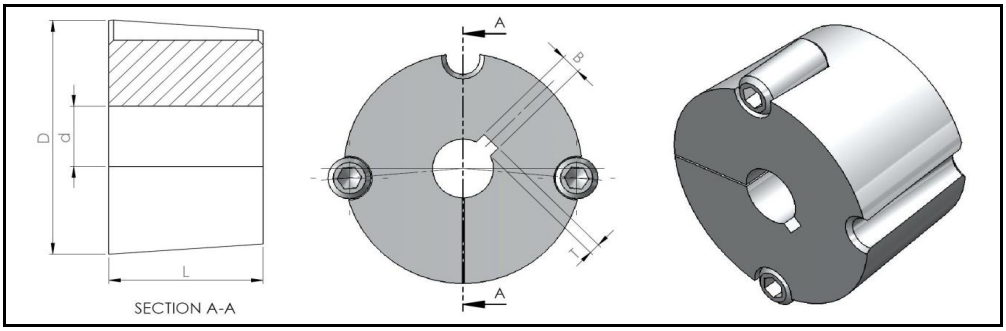
Dimensions in mm

Taper Bush 1615				
Maximum diameter (D) = 57 mm			Screw size BSW = 3/8"	
Bush Length (L) = 38,1 mm			Screw tightening torque = 20 Nm	
Bore	Keyway		Weight Kg	Tsubaki part no.
d	B	T		
14	5	2,3	0,58	21762001210
16	5	2,3	0,58	21762001220
18	6	2,8	0,56	21762001230
19	6	2,8	0,55	21762001240
20	6	2,8	0,55	21762001250
22	6	2,8	0,53	21762001260
24	8	3,3	0,50	21762001270
25	8	3,3	0,49	21762001280
28	8	3,3	0,47	21762001290
30	8	3,3	0,45	21762001310
32	10	3,3	0,41	21762001320
35	10	3,3	0,38	21762001330
38	10	3,3	0,32	21762001340
40	12	3,3	0,29	21762001350
42	12	2,2	0,26	21762001360

Taper Bush 2012				
Maximum diameter (D) = 70 mm			Screw size BSW = 7/16"	
Bush Length (L) = 31,8 mm			Screw tightening torque = 31 Nm	
Bore	Keyway		Weight Kg	Tsubaki part no.
d	B	T		
15	5	2,3	0,78	21762001489
16	5	2,3	0,78	21762001490
18	6	2,8	0,76	21762001500
19	6	2,8	0,76	21762001510
20	6	2,8	0,75	21762001520
22	6	2,8	0,74	21762001530
24	8	3,3	0,72	21762001540
25	8	3,3	0,71	21762001550
28	8	3,3	0,68	21762001560
30	8	3,3	0,66	21762001580
32	10	3,3	0,64	21762001590
35	10	3,3	0,60	21762001600
38	10	3,3	0,57	21762001610
40	12	3,3	0,54	21762001620
42	12	3,3	0,51	21762001630
45	14	3,8	0,46	21762001640
48	14	3,8	0,40	21762001650
50	14	3,8	0,37	21762001660

Note: Taper Bush is not delivered in a Tsubaki box

TAPER BUSHES



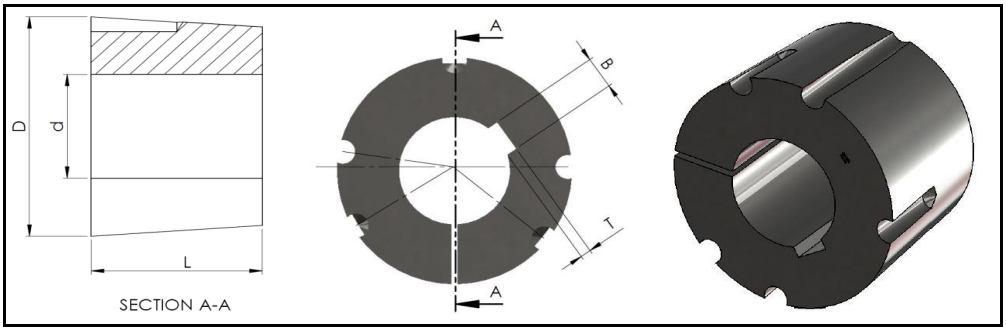
Dimensions in mm

Taper Bush 2517				
Maximum diameter (D) = 85 mm			Screw size BSW = 1/2"	
Bush Length (L) = 44,5 mm			Screw tightening torque = 48 Nm	
Bore	Keyway		Weight Kg	Tsubaki part no.
d	B	T		
19	6	2,8	1,62	21762001780
20	6	2,8	1,60	21762001840
22	6	2,8	1,57	21762001850
24	8	3,3	1,57	21762001860
25	8	3,3	1,56	21762001870
28	8	3,3	1,52	21762001880
30	8	3,3	1,49	21762001900
32	10	3,3	1,45	21762001910
35	10	3,3	1,40	21762001920
38	10	3,3	1,40	21762001930
40	12	3,3	1,35	21762001940
42	12	3,3	1,27	21762001950
45	14	3,8	1,20	21762001960
48	14	3,8	1,13	21762001970
50	14	3,8	1,08	21762001980
55	16	4,3	0,96	21762001990
60	18	4,4	0,81	21762002000
65	18	4,4	0,65	21762002010

Taper Bush 3020				
Maximum diameter (D) = 108 mm			Screw size BSW = 5/8"	
Bush Length (L) = 50,8 mm			Screw tightening torque = 90 Nm	
Bore	Keyway		Weight Kg	Tsubaki part no.
d	B	T		
25	8	3,3	2,91	21762002180
28	8	3,3	2,79	21762002190
30	8	3,3	2,84	21762002210
32	10	3,3	2,80	21762002220
35	10	3,3	2,75	21762002230
38	10	3,3	2,67	21762002240
40	12	3,3	2,64	21762002250
42	12	3,3	2,59	21762002260
45	14	3,8	2,52	21762002270
48	14	3,8	2,43	21762002280
50	14	3,8	2,37	21762002290
55	16	4,3	2,23	21762002300
60	18	4,4	2,07	21762002310
65	18	4,4	1,89	21762002320
70	20	4,9	1,69	21762002330
75	20	4,9	1,49	21762002340

Note: Taper Bush is not delivered in a Tsubaki box

TAPER BUSHES



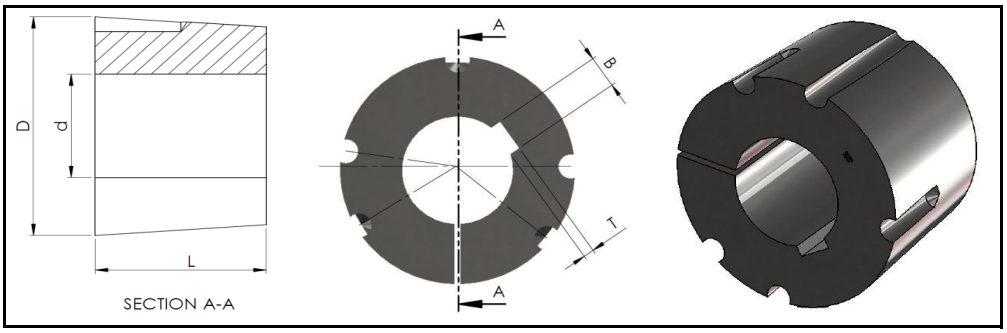
Dimensions in mm

Taper Bush 3535				
Maximum diameter (D) = 127 mm			Screw size BSW = 1/2"	
Bush Length (L) = 88,9 mm			Screw tightening torque = 112 Nm	
Bore	Keyway		Weight Kg	Tsubaki part no.
d	B	T		
35	10	3,3	6,70	21762002800
38	10	3,3	6,53	21762002810
40	12	3,3	6,48	21762002820
42	12	3,3	6,40	21762002830
45	14	3,8	6,25	21762002840
48	14	3,8	6,17	21762002850
50	14	3,8	6,05	21762002860
55	16	4,3	5,81	21762002870
60	18	4,4	5,50	21762002880
65	18	4,4	5,20	21762002890
70	20	4,9	4,88	21762002900
75	20	4,9	4,46	21762002910
80	22	5,4	4,08	21762002920
85	22	5,4	3,67	21762002930
90	25	5,4	3,21	21762002940

Taper Bush 4040				
Maximum diameter (D) = 146 mm			Screw size BSW = 5/8"	
Bush Length (L) = 101,8 mm			Screw tightening torque = 170 Nm	
Bore	Keyway		Weight Kg	Tsubaki part no.
d	B	T		
45	14	3,8	9,86	21762003150
48	14	3,8	9,66	21762003160
50	14	3,8	9,48	21762003170
55	16	4,3	9,27	21762003180
60	18	4,4	8,93	21762003190
65	18	4,4	8,65	21762003200
70	20	4,9	8,17	21762003210
75	20	4,9	7,78	21762003220
80	22	5,4	7,35	21762003230
85	22	5,4	6,89	21762003240
90	25	5,4	6,36	21762003250
95	25	5,4	5,94	21762003260
100	28	6,4	5,27	21762002970

Note: Taper Bush is not delivered in a Tsubaki box

TAPER BUSHES



Taper Bush 4545				
Maximum diameter (D) = 162 mm			Screw size BSW = 3/4"	
Bush Length (L) = 114,3 mm			Screw tightening torque = 192 Nm	
Bore	Keyway		Weight Kg	Tsubaki part no.
d	B	T		
55	16	4,3	13,15	21762003450
60	18	4,4	12,76	21762003460
65	18	4,4	12,38	21762003470
70	20	4,9	12,02	21762003480
75	20	4,9	11,57	21762003490
80	22	5,4	11,05	21762003500
85	22	5,4	10,46	21762003510
90	25	5,4	9,99	21762003520
95	25	5,4	9,42	21762003530
100	28	6,4	8,63	21762003270
110	28	6,4	7,37	21762003290

Note: Taper Bush is not delivered in a Tsubaki box

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