

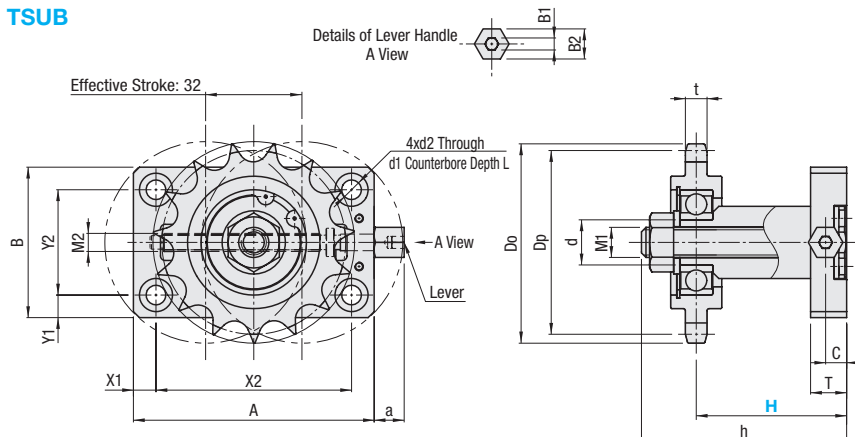
Tensioner Units with Idler

Height Configurable

■ **Features:** The following bidirectional tension adjustment is available: "Push" direction and "Pull" direction. This unit and idler are assembled in a set before delivery.



TSUB



Part Name	Material	Surface Treatment
Base Block	EN 1.0038 Equiv.	Black Oxide
Idler Shaft	EN 1.1191 Equiv.	
Adjustment Screw		
Nut		
Washer		
Idler Sprocket	EN 1.1181 Equiv. (Induction Hardened Teeth Tip)	

One Point

By using the adjustment screw coupled to the idler shaft machined with the tapped hole, tension can be adjusted bidirectionally: "Push" and "Pull."

Since the adjustment screw is structured with the dual support frame, it prevents the idler shaft from being inclined and facilitates tension adjustment.

Part Number		Number of Teeth	H 1mm Increment	h (Max.)	M1	M2	Travel per Handle Rotation (mm)	d	A	B	T	X1	X2	Y1	Y2	a	d1	d2	L	C	B1	B2	Unit Price
Type	No.																						
TSUB	35	16	25~45	59.2	8	6	1.0	12	80	50	12	7.5	65	7.5	35	10.5	11	6.5	6.5	7	4	10	
		18		63.2	10			15															
	40	13	30~50	64.2	8			12															
		15		68.2	10			15															
	50	13	35~55	73.2	10	8	1.25	15	90	60	16	10	70	10	40	15.5	14	8.5	8.5	8	5	13	
		15		76.2	12			17															
	60	11	40~60	79.2	14			20															
		14		84.2	14			20															

Idler Specifications

No.	Number of Teeth	Shaft Dia.	Dp	Do	t	Bearing Part No.
35	16	12	48.82	54	4.3	6001ZZ
	18	15	54.85	60		6202ZZ
40	13	12	53.07	59	7.2	6001ZZ
	15	15	61.08	67		6202ZZ
50	13	12	53.07	59	7.2	6001ZZ
	15	15	61.08	67		6202ZZ
60	11	15	67.62	76	11.7	6202ZZ
	14	20	85.61	95		6204ZZ

For details, see P.1550 on this catalog.

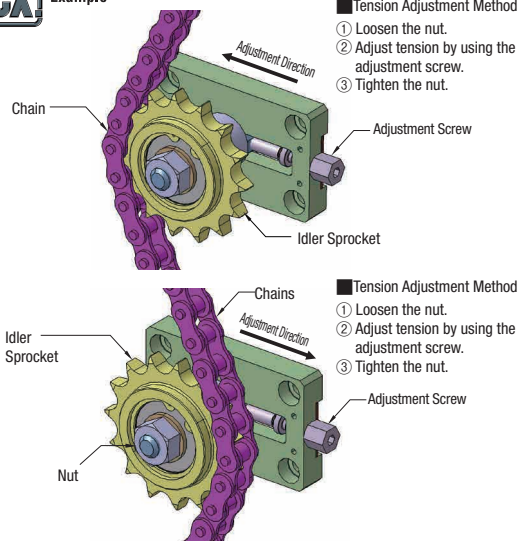


Ordering Example

Part Number - Number of Teeth - H
TSUB35 - 16 - 40



Example



Tension Adjustment Method

- ① Loosen the nut.
- ② Adjust tension by using the adjustment screw.
- ③ Tighten the nut.

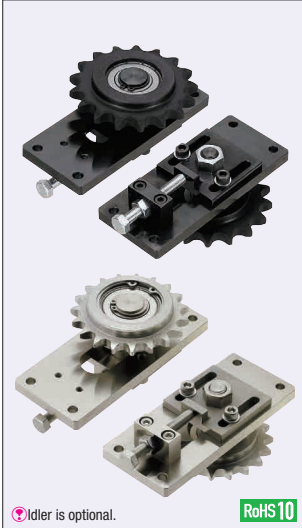
Tension Adjustment Method

- ① Loosen the nut.
- ② Adjust tension by using the adjustment screw.
- ③ Tighten the nut.

Tensioner Unit

Slotted Hole, Adjustment Screw Type

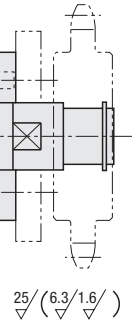
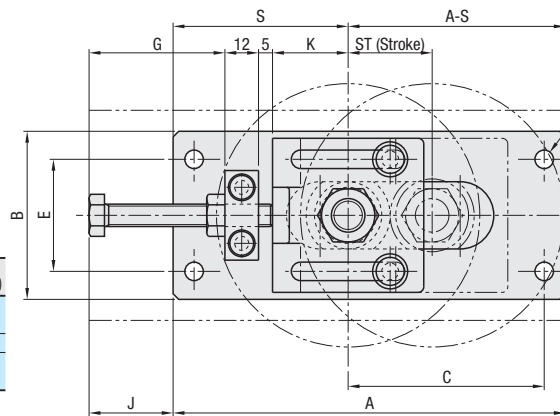
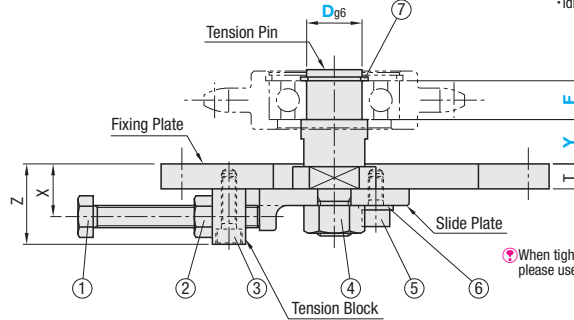
Features: Tensioner units applicable on both driven side and middle section. Can be used for chain or belt drive.



Type	Material				Surface Treatment
	Attachment Plate	Tension Pin	Slide Plate	Tension Block	
TNSR	EN 1.0038 Equiv.	EN 1.1191 Equiv.	EN 1.1191 Equiv. (Precision Casting)	EN 1.0038 Equiv.	Black Oxide
TNSN					Electroless Nickel Plating

<Applicable Idlers>

- Chain Idlers P1550, 1552
- Idlers with teeth for timing belts. P1445~1456
- Idlers for Timing Belts P1457
- Idlers for Flat Belts P1370



Tension Pin Dimension Details

Dg6	V	d	t	P	H	W	M (Coarse)
10	13	9.6	5	13	15	11	M8
12	15	11.5				13	
15	20	14.3		16	20	17	M10
17	22	16.2	8	17	24	19	
20	24	19			24	22	M12

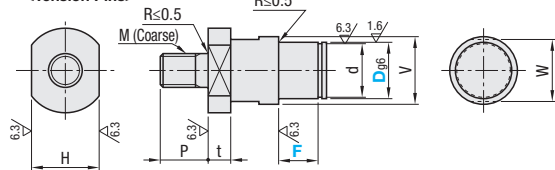
TNSR Accessory

Dg6	① Adjustment Screw	② Nut	③ (2 pcs.) Hex Socket Head Cap Screw	④ Nut	⑤ (2 pcs.) Hex Socket Head Cap Screw	⑥ (2 pcs.) Flat Washer	⑦ C Type Retaining Ring
10	M6x55	LBNR6	CB4-16	LBNR8	CB5-10	PWF5	STWN10
12							STWN12
15	M8x60	LBNR8	CB5-22	LBNR10	CB5-14		STWN15
17				LBNR12	CB6-16	PWF6	STWN17
20							STWN20

TNSN Accessory

Dg6	① Adjustment Screw	② Nut	③ (2 pcs.) Stainless Steel Hex Socket Head Cap Screw	④ Nut	⑤ (2 pcs.) Stainless Steel Hex Socket Head Cap Screw	⑥ (2 pcs.) Flat Washer	⑦ C Type Retaining Ring
10	M6x55	SLBNR6	M4x16	SLBNR8	M5x10	SPWF5	STWS10
12							STWS12
15	M8x60	SLBNR8	M5x22	SLBNR10	M5x14		STWS15
17				SLBNR12	M6x16	SPWF6	STWS17
20							STWS20

<Tension Pins>



Part Number		1mm Increment		ST (Stroke)	A	B	T	J	C	E	G	K	S	X	Z	N	Unit Price	
Type	Dg6	Y	F														TNSR	TNSN
TNSR TNSN	10	10~50	8~50	25	120	50	6	24	55	35	42.0	22.5	57.5	14	21	5.5		
	12			25	125	55		31	57.5			25.5	60					
	15	12~60	10~50				9			40	48.5							
	17			30	140	60		30	70			27	62.5	19	29	6.6		
	20																	

⚠ When D=10 or 12, Y+F≤80

⚠ When D=15 ~ 20, Y+F≤120

⚠ For the F dim., specify a value identical to the width of the bearing included with the current idler. (Tolerance of F dim.: 0~+0.1mm)



Ordering
Example

Part Number	-	Y	-	F
TNSR20	-	Y15	-	F12
TNSN15	-	Y20	-	F32

Tensioners / Slide Plates for Tension

Link Bar Type

■ **Features:** Tensioners for intermediate tensioning which can be easily mounted with holes on the side of plate. Can be installed in small spaces.

Tensioners - Link Bar Type



☞ Idler is optional.

RoHS10

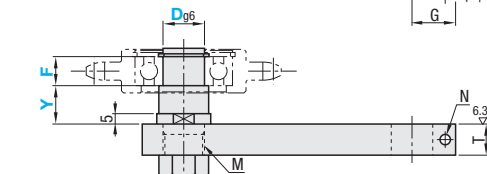
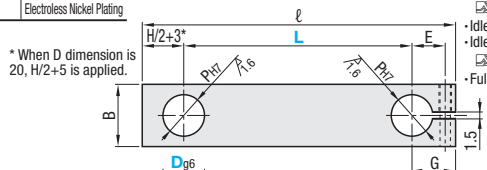
Tension Pin Dimension Details

Dg6	V	d	H	W	P	M (Coarse)
6	8	5	10	8	6	M6
8	10	7	12	10	8	M8
10	13	9.6	15	13	10	M10
12	15	11.5	17	14	12	M12
15	18	14.3	20	17	12	M12
17	20	16.2	23	20	16	M16
20	24	19	26	24	20	M20

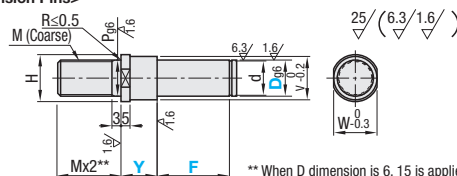
Accessory

Type	Accessory	Material
TNSRL	Retaining Ring C Type, Hex Socket	Steel
TNSNL	Head Cap Screw, Nut, Washer	Stainless Steel

Type	Material	Surface Treatment
TNSRL	EN 1.1191	Black Oxide
TNSNL	Equiv.	Electroless Nickel Plating



<Tension Pins>



** When D dimension is 6, 15 is applied.

<Applicable Idlers>

- Chain Idlers ☞ P1550, 1552
- Idlers with teeth for timing belts. ☞ P1445~1456
- Idlers for Timing Belts ☞ P1457
- Idlers for Flat Belts ☞ P1370
- Fulcrum Pins ☞ P923~925

Part Number	1mm Increment	ℓ	B	T	E	G	N	Included Screw	Unit Price
Type	Dg6	Y	F	L					TNSRL TNSNL
TNSRL TNSNL	6				L+20	25	10	7 12	
	8				L+23			8 14	
	10		6~75		L+25.5			9 15	
	12	7~50		30~200	L+27.5			10 16	
	15				L+31	30	12	12 18	
	17		10~75		L+34.5			14 20	
	20				L+40	35	15	15 22	
								9 M8x35	



Ordering Example

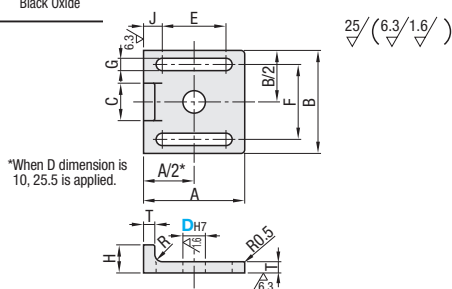
Part Number - Y - F - L
TNSRL15 - Y12 - F10 - L50

Slide Plates for Tension



RoHS10

Type	Material	Surface Treatment
SDPT	EN 1.1191 Equiv. (Precision Casting)	Black Oxide



*When D dimension is 10, 25.5 is applied.

- Adjustment Screw ☞ P1712
- Screw Stopper Block ☞ P1715

Part Number	A	B	H	F	E	G	T	C	J	Unit Price
Type	DH7									
SDPT	8	45	44	12	30	28	5.5	5	15	8.5
	10	50	50	15	35	29	5.5	6	20	11
	12	54	55	15	40	34	6.6	6	20	10

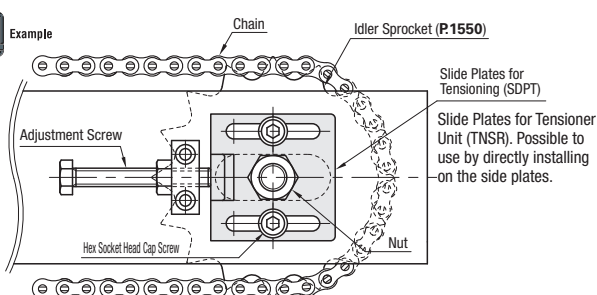


Ordering Example

Part Number
SDPT8



Example



Can be directly installed on side plates.

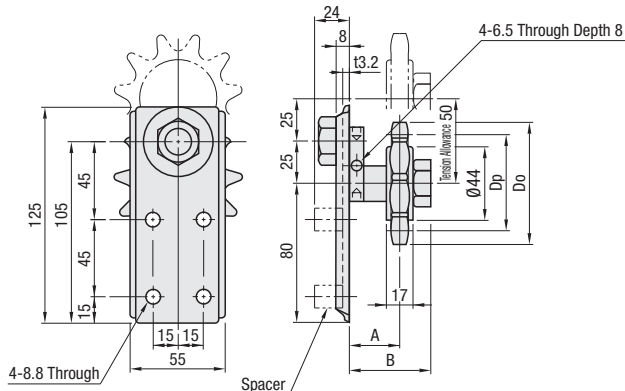
Idler Set Type

Features: Tensioners for intermediate tensioning which allows tension to be adjusted just by rotating the shaft.



RoHS10

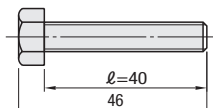
THBS



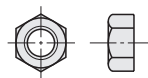
- **Spacer** (4 pcs.)



- **M8 Screw** (4 pcs.)



- **M8 Nut (4 pcs.)**



Type	M Material	S Surface Treatment
Idler Sprockets	EN 1.1181 Equiv. (Tooth Surface: Induction Hardened)	Black Oxide
Base Plate	EN 1.0718 Equiv.	
Spacer		

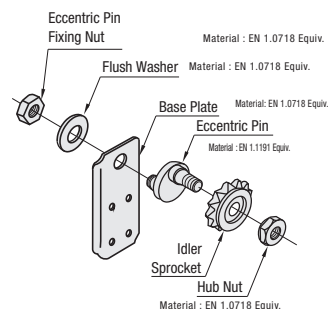
Part Number		Applicable Roller Chain	Idler Sprockets				A	B	Mass (kg)	Unit Price
Type	No.		Part No.	Number of Teeth	Do	Dp				
THBS	35	JIS35	DRC35-18	18	60	54.85	26	47	0.89	
	40	JIS40	DRC40-15	15	67	61.08			0.92	
	50	JIS50	DRC50-13	13	74	66.34			0.96	
	60	JIS60	DRC60-11	11	76	67.62			1.00	
	80	JIS80	DRC80-9	9	85	74.26			1.11	



Ordering Example

Part Number
THBS35

When adjusting tension at the non-drive side, see  **P1555**.



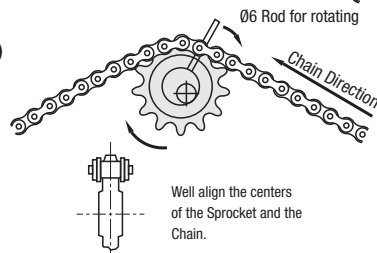
■ Tension Adjustment Method

Tension Adjustment Method
By inserting a $\varnothing 6$ rod in a hole of the eccentric pin and rotating, tension adjustment of max. 50mm can be obtained. Fix base plate so that idler and chain engage each other at a position of max. tension tolerance (Fig. 1), and tighten the eccentric pin nut in chain driving direction.

(Fig. 1)

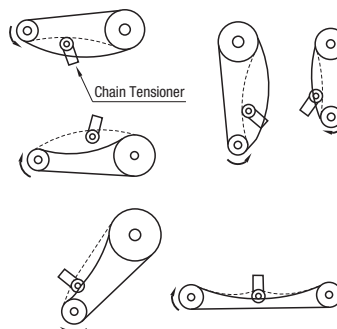


(Fig. 2)



■ Chain Tensioner Position

Install a chain tensioner on the loose side as shown in the figure below.



(Note) Do not use the Chain Tensioner under the conditions where it is located on the side of adjusting tensions, such as forward reverse rotary drive.

Chain Guide Tensioners

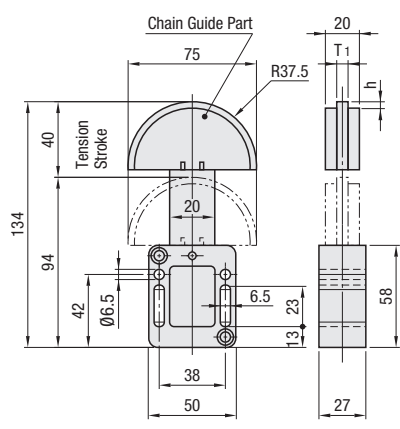
■ **Features:** Automatically adjusts tension in response to chain elongation and thus, reduces the time and trouble of doing maintenance for chain tension.

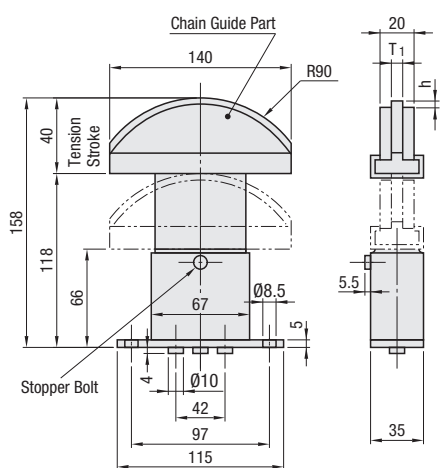


TSBXA (Standard)



TSBxB (Tension Adjusting Type)





Operating Temperature: -10 ~ 60°C
 ⚠ Never remove the stopper screw.

Type	Material	
	Chain Guide	Main Body
TSBXA	Ultra High-Molecular-Weight Polyethylene (Green)	Plastic
TSBxB		Steel

Part Number			T ₁	h	Applicable Chain	Unit Price
Type	No.	Load Type (Refer to Fig. 1)				
TSBXA (Standard)	35	L	4	2.6	CHE35	
	35	H				
	40	L				
	40	H	7	2.6	CHE40/CHE50	
	60	H				
TSBxB (Tension Adjusting Type)	40	L	11	3.5	CHE60	
	40	H				
	50	L	6.3	2.6	CHE40	
	40	H				
	50	L				
	50	H	8	2.6	CHE50	


Ordering Example

Part Number
TSBXA40H
TSBxB50L

■ Features

Ultra High-Molecular-Weight Polyethylene with excellent abrasion resistance is used for the guide part of the Chain Guide Tensioner. Force of built-in spring constantly maintains appropriate tension automatically, and enhances the performance and extends life without maintenance.

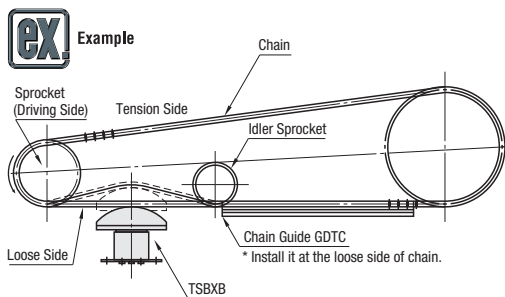
■ How to Install

Install by putting the guide onto the chain, firmly push until reaching a location where the tension stroke does not exceed 50% of that during empty load (40mm).
 If necessary, adjust location by using shims or spacers.

■ Tension Adjusting Method (TSBxB)

For TSBxB, it is possible to adjust tension load in 3 stages by loosening the spring retention screw. During shipment, all 3 pieces of springs are not released. Loosen the center screw when required to release only one maintaining screw, loosen screws on both sides when 2 springs need to be released. Provide enough free space below the retention screw to allow access for tension adjustments after installation.
 The springs can be returned to retained state by turning the retention screws while pressing the guide down.

* There is no spring retention screw in TSBXA.



• Example of installation with Bracket (Bracket is not included.)

Table 1 : Load Type

Type	Loosening Retaining Screw Qty.	Tension Load (N)			
		Load Type L		Load Type H	
		min.	max.	min.	max.
TSBXA	(Not provided)	37	64	64	137
	1 pc.	37	64	64	137
TSBxB	2 pcs.	75	127	127	274
	3 pcs.	112	191	191	412

