



ROSTA Tensioner Devices

Tensioners				Accessories	
 <p>SE Standard</p>	 <p>SE-G Oil resistant</p>	 <p>SE-W Up to +120°C</p>	 <p>SE-R Reinforced</p>	 <p>Sprocket wheel N Sprocket wheel set</p>	 <p>Chain rider P Chain rider set</p>
 <p>SE-I Stainless steel</p>	 <p>SE-F Front mounting</p>	 <p>SE-FE Reinforced, Front mounting</p>	 <p>SE-B Boomerang®</p>	 <p>Roller R Tensioning roller</p>	 <p>Roller RL Tensioning roller light</p>

⚠ WARNING

- Read and follow all instructions carefully
- Disconnect and lock-out power before installation and maintenance
- Avoid contact with rotating parts
- Do not operate equipment without guards in place.
Exposed equipment can result in severe injury or death

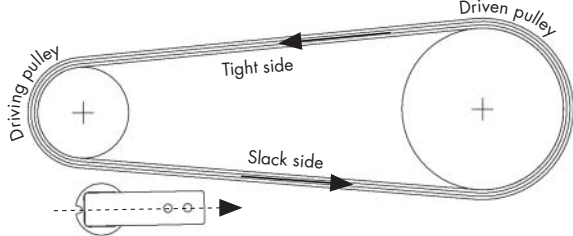
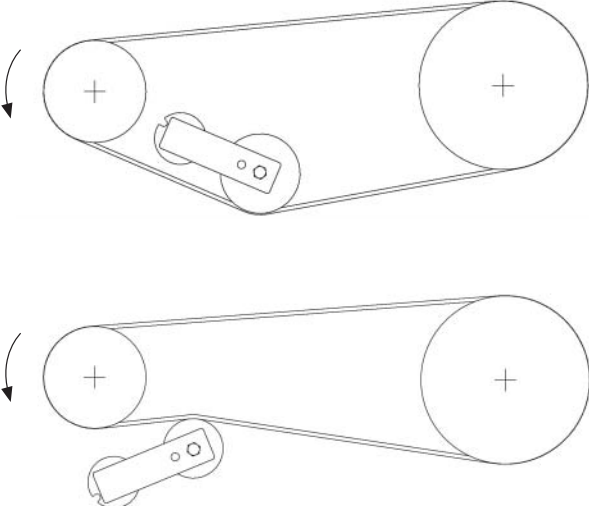
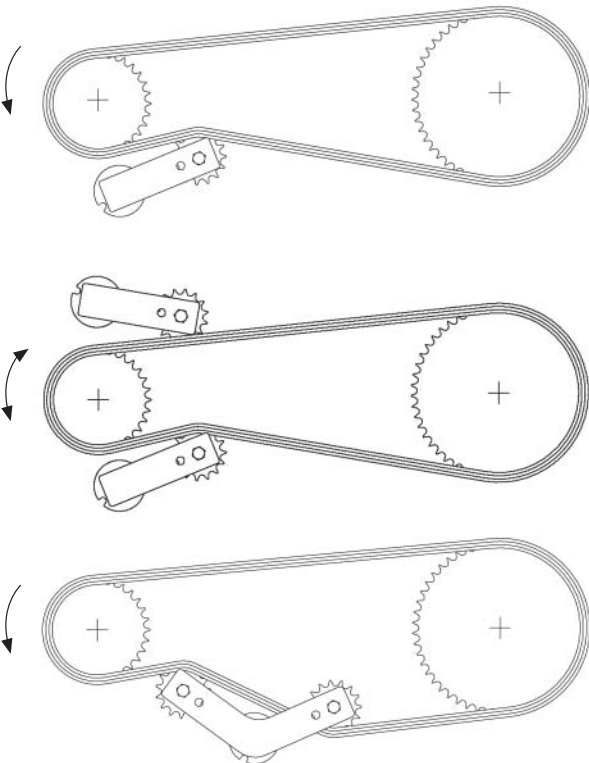
⚠ CAUTION

- Periodic inspections should be performed
- Missing proper maintenance can result in premature product failure and personal injury
- All work should be performed by qualified personnel and compliant with local and national safety regulations

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1. Determine of the ideal tensioning device position

	<p>General positioning</p> <p>The ROSTA tensioning devices should always be mounted on the slack side of the drive. In mounted position, the tensioner arm should stay close to parallel to the strand, in running direction. The mounting bracket and supporting framework must be correct aligned and rigid to prevent twisting under load.</p>
	<p>V-belt drive</p> <p>Inner grooved pulley</p> <p>The preferred location of a V-belt tensioner is on the inside of the belt drive. The V-Belt pulley can be mounted at any position along the strand. Make sure that the belts are maintaining sufficient contact arc on the pulleys. For drives with extremely long center distances and high level of vibration, it is recommendable to use pulleys with deep grooves.</p> <p>Outer idler roller</p> <p>Use outside idlers if the arc of contact on the pulleys is too low or to dampen vibrations on long and unsupported spans. The width of the tensioning roller should be at least 20% wider than the overall width of the belt set.</p>
	<p>Chain tensioner</p> <p>The ROSTA tensioning device with idler sprocket should always be positioned on the outside of the chain and close to the smaller sprocket wheel in order to enlarge its arc of contact. At least three idler sprocket teeth should engage the chain and at least four chain links should be between tensioner sprocket wheel to the next sprocket wheel in the chain. On long chain drives, it is recommendable to install several tensioners or a Boomerang in order to enlarge the slack compensation.</p> <p>Reversible chain drives</p> <p>The tensioning elements must be placed on both sides of the chain strand. Due to the reversible function, there is a much higher pressure on the load side than on the slack side of the chain. It is therefore advised to use oversized tensioning elements and a pretension angle of max. 20°.</p> <p>Boomerang® tensioner</p> <p>The double arm offers about a triple slack compensation for long chain or belt drives.</p>

2. Selection tables (reference value table) for V-belts

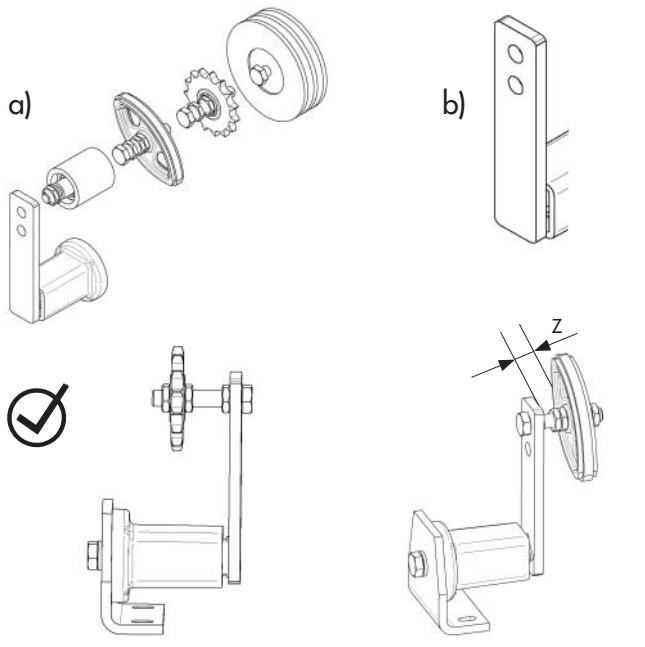
V-belt type	Diam. of smaller pulley [mm]	Size SE (without SE-W, SE-B and SE-FE)				
		1 belt	2 belts	3 belts	4 belts	5 belts
XPZ, SPZ	56-71	11	18	18	18	18
	75-90	11	18	18	18	27
	95-125	15	18	18	18	27
	≥ 125	15	18	18	27	27
XPA, SPA	80-100	15	18	18	27	27
	106-140	15	18	27	27	27
	150-200	18	18	27	27	27
	≥ 200	18	18	27	27	38
XPB, SPB	112-160	18	18	27	27	38
	170-224	18	27	27	38	38
	236-355	18	27	38	38	38
	≥ 355	18	27	38	38	38
XPC, SPC	224-250	18	27	38	38	38
	265-355	27	38	38	45	45
	≥ 375	27	38	38	45	45
Z	56-100	11	11	11	15	15
A	80-140	11	15	18	18	18
B	125-200	15	18	18	27	27
C	200-400	18	27	27	38	38
D	355-600	18	27	38	38	45

for chains

Sprocket wheel	Roller chain		Type	Size SE
	ANSI	DIN 8187		
Simplex "S"	35	ISO 06 B-1	N3/8"-10 S	15/18
	40	ISO 08 B-1	N1/2"-10 S	18
	50	ISO 10 B-1	N5/8"-12 S	27
	60	ISO 12 B-1	N3/4"-12 S	27
	60	ISO 12 B-1	N3/4"-20 S	38
	80	ISO 16 B-1	N1"-20 S	38
	100	ISO 20 B-1	N1 1/4"-20 S	45/50
120	ISO 24 B-1	N1 1/2"-20 S	45/50	
Duplex "D"	35	ISO 06 B-2	N3/8"-10 D	15/18
	40	ISO 08 B-2	N1/2"-10 D	18
	50	ISO 10 B-2	N5/8"-12 D	27
	60	ISO 12 B-2	N3/4"-12 D	27
	60	ISO 12 B-2	N3/4"-20 D	38
	80	ISO 16 B-2	N1"-20 D	38
	100	ISO 20 B-2	N1 1/4"-20 D	45/50
120	ISO 24 B-2	N1 1/2"-20 D	45/50	
Triplex "T"	35	ISO 06 B-3	N3/8"-10 T	18
	40	ISO 08 B-3	N1/2"-12 T	27
	50	ISO 10 B-3	N5/8"-12 T	27
	50	ISO 10 B-3	N5/8"-20 T	38
	60	ISO 12 B-3	N3/4"-20 T	38
	80	ISO 16 B-3	N1"-20 T	45
	100	ISO 20 B-3	N1 1/4"-20 T	45/50
120	ISO 24 B-3	N1 1/2"-20 T	45/50	

Chain rider	Roller chain		Type	Size SE
	ANSI	DIN 8187		
Simplex "S"	35	ISO 06 B-1	P3/8"- 8 S	11
	40	ISO 08 B-1	P1/2"-10 S	15/18
	50	ISO 10 B-1	P5/8"-10 S	18
	60	ISO 12 B-1	P3/4"-12 S	27
Duplex "D"	35	ISO 06 B-2	P3/8"- 8 D	11
	40	ISO 08 B-2	P1/2"-10 D	15/18
	50	ISO 10 B-2	P5/8"-10 D	18
	60	ISO 12 B-2	P3/4"-12 D	27

3. Initial installation



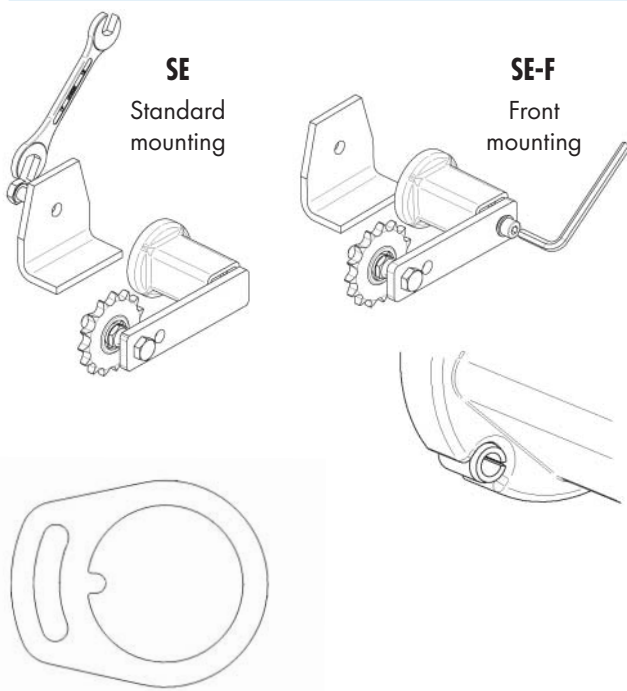
Accessories installation

- a) ROSTA offers various accessories ready to use. However, any other device can be used with the ROSTA tensioners. Tighten the accessories slightly.
- b) The swinging arm includes two mounting holes. Using the outer hole, the operating lever arm and the stroke are long. Using the inner hole, the operating lever arm and the stroke are shorter and offer an approx. 25% higher force.

Please consult the ROSTA catalogue for further information.

Z-configuration

It is preferable to install accessories on the inner side of the tensioner arm. If a Z-configuration is needed, keep the offset distance "Z" as little as possible. To avoid misalignment, it is advised to oversize the tensioner. The max. tensioning force with Z-configuration is 50% and max. angle is 20°.



Tensioner mounting

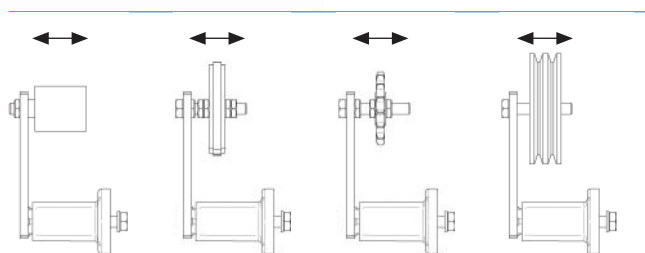
The ROSTA tensioners should be installed on a stiff, even and clean machine part surface by means of the central screw. Tighten the screw slightly.

Positioning notch

The positioning notch on the flange can be used to assure the tensioner additionally on uneven surfaces and/or by paint coatings by use of a bolt or roller-pin.

Safety sockets

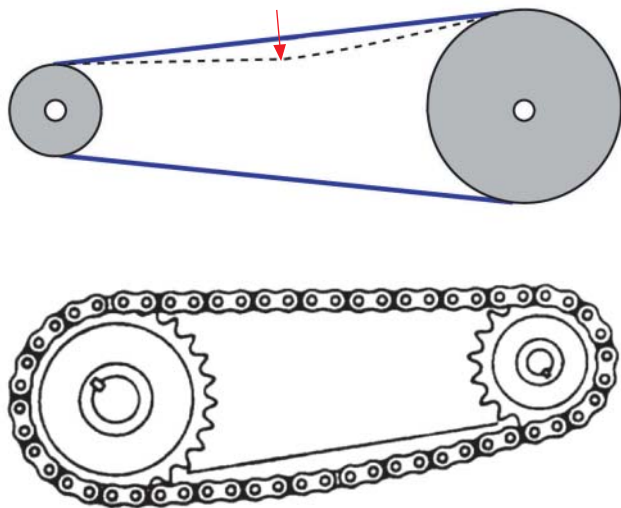
The positioning and further re-tensioning can be made with standardized ROSTA safety sockets.



Alignment

Check horizontal, vertical and parallel angular according manufacturers given tolerances. Use straight edge or laser alignment tools. Tighten the accessory.

4. Tensioning



Tension V-belt drives

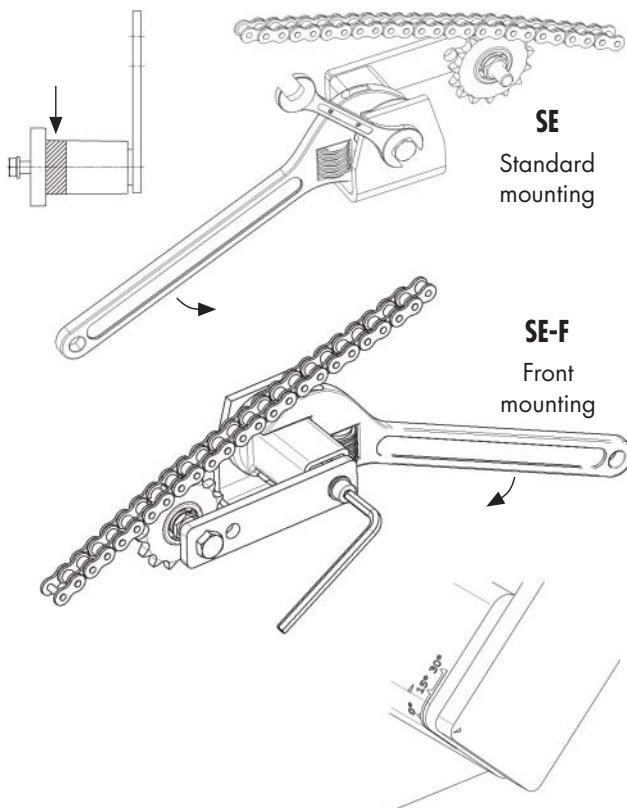
V-belts must operate under proper tension. A well-established rule of thumb is that the best tension for a V-belt drive is the LEAST tension at which the drive will not slip under peak load. Several tools and methods are available to insure proper tensioning. Follow the belt manufacturer guidelines.

Run the drive to become seated and do a final tension inspection. Any misalignment must be corrected.

Tension chain drives

For most applications, chain should be installed with a sag depth of 2%–4% of the sprocket center distance. ROSTA tensioner will minimize chain vibration and chain fatigue. The adjustment of the tensioner is based on the chains behavior. If excessive vibration are noticed, increase or decrease the tension until the vibration disappears.

5. Tightening



Standard tensioners SE

Position the wrench close to the flange-bottom and rotate the housing, bringing the accessories into mesh. Set the pre-tension to approx. 15° initially, which is an average setting. Tighten the central screw with the standard tightening moment on the back of the tensioner.

Tensioners with front mounting SE-F

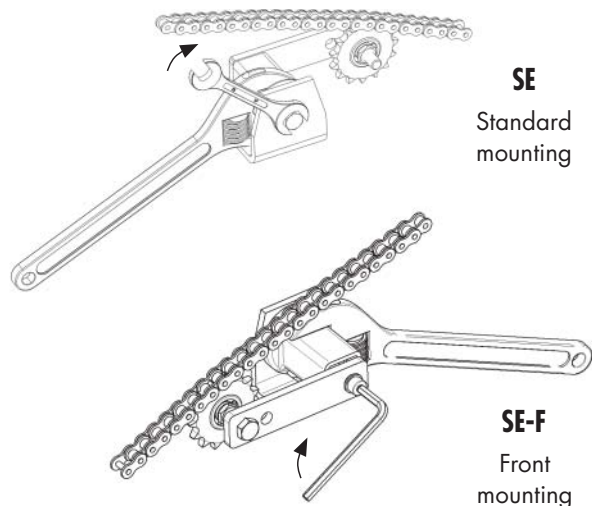
Same tensioning procedure as standard tensioners. Tighten the central screw with the standard tightening moment on the front of the tensioner.

Angle scale

Use tensioning angle up to max. 30°. Typically, 15°–25° is recommended.

Recheck

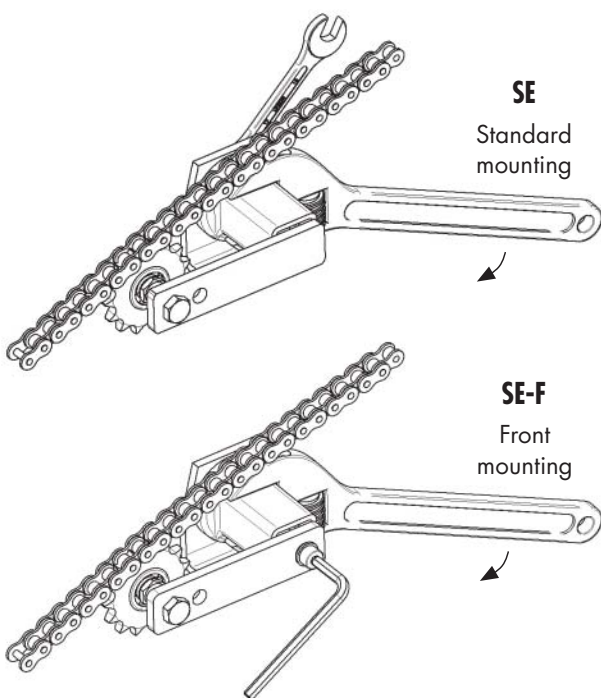
Before starting the drive, recheck drive alignment and all mounting fasteners for tightness.



Standard tightening moment M_A for attached screw

Max. permissible bolt tightening moment			
Type	Screw	Grade	Torque
SE 11	M 6	8.8	10 Nm / 7.4 lb ft
SE 15	M 8	8.8	25 Nm / 18.4 lb ft
SE-F 15	M 6	12.9	17 Nm / 12.5 lb ft
SE 18	M 10	8.8	49 Nm / 36.1 lb ft
SE-F 18	M 8	12.9	41 Nm / 30.2 lb ft
SE 27	M 12	8.8	86 Nm / 63.4 lb ft
SE-F / SE-FE 27	M 10	12.9	83 Nm / 61.2 lb ft
SE 38	M 16	8.8	210 Nm / 154.9 lb ft
SE-F / SE-FE 38	M 12	12.9	145 Nm / 106.9 lb ft
SE 45	M 20	8.8	410 Nm / 302.4 lb ft
SE-F 45	M 16	12.9	355 Nm / 261.8 lb ft
SE 50	M 24	8.8	750 Nm / 553.2 lb ft
SE-F 50	M 20	12.9	690 Nm / 508.9 lb ft

6. Retension and replacement



The self-tensioning ROSTA tensioner requires only check during regular service intervals.

Procedure to retension or change the drive components

1. Position the wrench close to the flange-bottom and loose the central screw
2. Rotate the housing to loose tension
3. If needed, change drive components
4. Rotate the housing back, bring the drive to the recommended tension
5. Tighten the central screw with tightening moment



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