

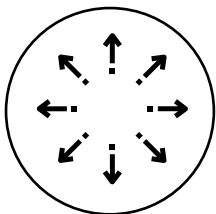


TENSIONER DEVICES

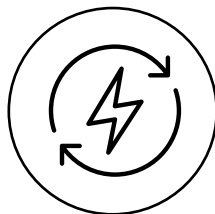
Optimum tension for chain and belt drives

- Quiet and smooth running
- Best possible transfer of power
- Automatic re-tensioning
- Compensation for belt elongation
- Pressing, guiding and vibration damping

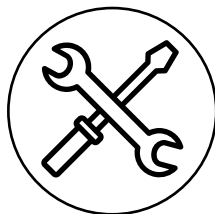
Product advantages:



wide range
of applications



energy-saving



minimal
maintenance costs

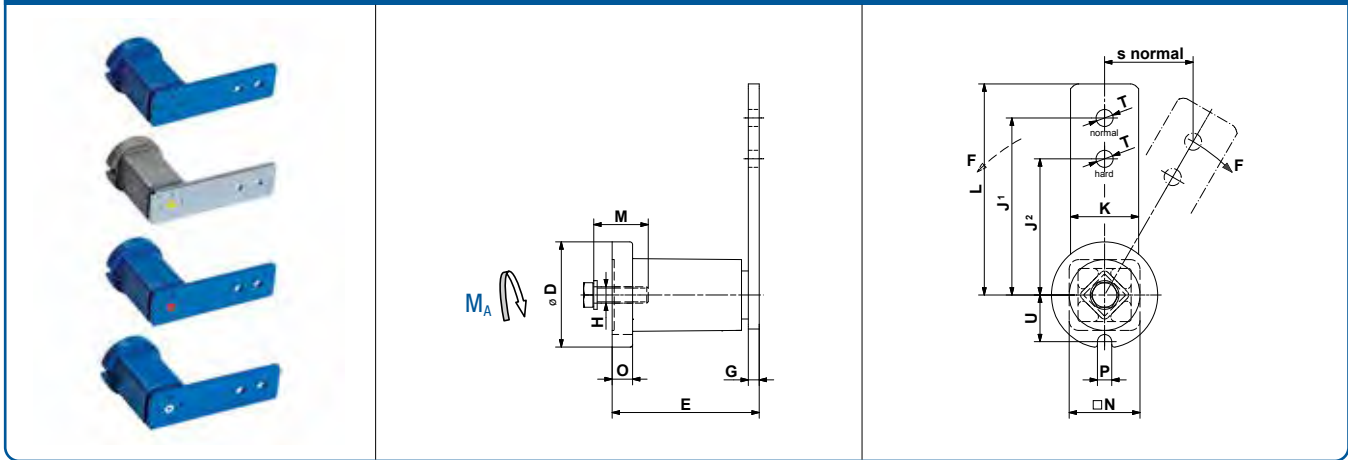
Selection table tensioner devices

	Illustration	Type	Description	Page
Standard tensioner devices		SE	Standard component. Housing and inner part made out of steel. Rubber quality Rubmix 10. Steel parts ROSTA blue painted. Working temperature: – 40 ° to + 80 °C.	5.3
		SE-G	Oil resistant. Housing and inner part made out of steel. Rubber quality Rubmix 20. Steel parts galvanized. Marked with yellow dot or printing R20. Working temperature: – 30 ° to + 90 °C.	
		SE-W	Heat resistant. Housing and inner part made out of steel. Rubber quality Rubmix 40. Steel parts ROSTA blue painted. Marked with red dot or printing R40. Tension force 40% less than SE. Working temperature: – 35 ° to + 120 °C.	
Additional tensioner devices		SE-R	Reinforced lever arm. Housing and inner part made out of steel. Rubber quality Rubmix 10. Arm and inner core especially welded for use on combustion engines and compressors. Steel parts ROSTA blue painted. Marked with white ring or printing SE-R. Working temperature: – 40 ° to + 80 °C.	5.3
		SE-I	Housing and inner part made out of stainless steel. Rubber quality Rubmix 10. For the use in food- and pharmaceutical industries. Material: GX5CrNi19-10. Working temperature: – 40 ° to + 80 °C.	5.4
		SE-B	Boomerang®. Housing and inner part made out of steel. Rubber quality Rubmix 10. For the tensioning of very long chain and belt drives (triple compensation). Steel parts ROSTA blue painted. Working temperature: – 40 ° to + 80 °C.	5.5
		SE-F	Front mounting device. Housing and inner part made out of steel. Rubber quality Rubmix 10. As example for installations on blind-hole frames (fixation from the front only). Steel parts ROSTA blue painted. Hex socket screw quality 12.9. Working temperature: – 40 ° to + 80 °C.	5.6
		SE-FE	Front mounting. For installations on blind-hole frames (fixation from the front only). Steel parts painted black. Hex socket screw quality 12.9. Especially designed for engine applications. Working temperature: see page 5.7.	5.7

Note about accessories on pages 5.8–5.17.

Tensioner Device

SE/SE-G/SE-W/SE-R



Part no.	Type	D	E	G	H	J ¹	J ²	K	L	M	N	O	P	T	U	Weight [kg]
06 011 001	SE 11	35	51 ⁺¹ _{-0.5}	5	M6	80	60	20	90	20	22	6	8	8.5	16.5	0.2
06 013 201	SE 11-G	35	51 ⁺¹ _{-0.5}	5	M6	80	60	20	90	20	22	6	8	8.5	16.5	0.2
06 011 002	SE 15	45	64 ⁺¹ _{-0.5}	5	M8	100	80	25	112.5	25	30	8	8.5	10.5	20.8	0.4
06 013 202	SE 15-G	45	64 ⁺¹ _{-0.5}	5	M8	100	80	25	112.5	25	30	8	8.5	10.5	20.8	0.4
06 015 002	SE 15-W	45	64 ⁺¹ _{-0.5}	5	M8	100	80	25	112.5	25	30	8	8.5	10.5	20.8	0.4
06 011 702	SE-R 15	45	64 ⁺¹ _{-0.5}	5	M8	100	80	25	112.5	25	30	8	8.5	10.5	20.8	0.4
06 011 003	SE 18	58	79 ⁺¹ _{-0.5}	7	M10	100	80	30	115	30	35	10.5	8.5	10.5	25.3	0.7
06 013 203	SE 18-G	58	79 ⁺¹ _{-0.5}	7	M10	100	80	30	115	30	35	10.5	8.5	10.5	25.3	0.7
06 015 003	SE 18-W	58	79 ⁺¹ _{-0.5}	7	M10	100	80	30	115	30	35	10.5	8.5	10.5	25.3	0.7
06 011 703	SE-R 18	58	79 ^{+1.5} _{-0.5}	7	M10	100	80	30	115	30	35	10.5	8.5	10.5	25.3	0.7
06 011 004	SE 27	78	108 ^{+1.5} _{-0.5}	8	M12	130	100	50	155	40	52	15	10.5	12.5	34.3	1.8
06 013 204	SE 27-G	78	108 ^{+1.5} _{-0.5}	8	M12	130	100	50	155	40	52	15	10.5	12.5	34.3	1.9
06 015 004	SE 27-W	78	108 ^{+1.5} _{-0.5}	8	M12	130	100	50	155	40	52	15	10.5	12.5	34.3	1.8
06 011 005	SE 38	95	140 ⁺² _{-0.5}	10	M16	175	140	60	205	40	66	15	12.5	20.5	42.0	3.3
06 013 205	SE 38-G	95	140 ⁺² _{-0.5}	10	M16	175	140	60	205	40	66	15	12.5	20.5	42.0	3.3
06 015 005	SE 38-W	95	140 ⁺² _{-0.5}	10	M16	175	140	60	205	40	66	15	12.5	20.5	42.0	3.3
06 011 006	SE 45	115	200 ⁺² ₋₁	12	M20	225	180	70	260	50	80	18	12.5	20.5	52.0	6.4
06 013 206	SE 45-G	115	200 ⁺² ₋₁	12	M20	225	180	70	260	50	80	18	12.5	20.5	52.0	6.5
06 015 006	SE 45-W	115	200 ⁺² ₋₁	12	M20	225	180	70	260	50	80	18	12.5	20.5	52.0	6.4
06 011 007	SE 50	130	210 ⁺³ ₋₁	20	M24	250	200	80	290	60	87	20	17	20.5	57.5	10.4
06 013 207	SE 50-G	130	210 ⁺³ ₋₁	20	M24	250	200	80	290	60	87	20	17	20.5	57.5	10.3
06 015 007	SE 50-W	130	210 ⁺³ ₋₁	20	M24	250	200	80	290	60	87	20	17	20.5	57.5	10.3

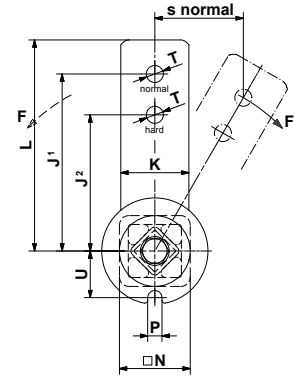
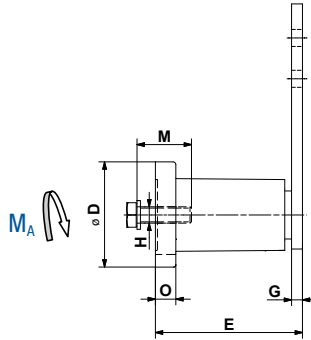
Further product and performance data in chapter 7 «Technology».

SE-R: Tensioning element with strengthened tensioning arm

If no other units are specified, the numbers given are in mm.

Tensioner Device

SE-I



Part no.	Type	D	E	G	H	J ¹	J ²	K	L	M	N	O	P	T	U	Weight [kg]
06 071 111	SE-I 15	45	64 ⁺¹ _{-0.5}	5	M8	100	80	25	112.5	25	30	8	8.5	10.5	20.8	0.4
06 071 112	SE-I 18	58	79 ^{+1.5} _{-0.5}	7	M10	100	80	30	115	30	35	10.5	8.5	10.5	25.3	0.8
06 071 113	SE-I 27	78	108 ⁺² _{-0.5}	8	M12	130	100	50	155	40	52	15	10.5	12.5	34.3	2.3
06 071 114	SE-I 38	95	140 ⁺² _{-0.5}	10	M16	175	140	60	205	40	66	15	12.5	20.5	42.0	4.1

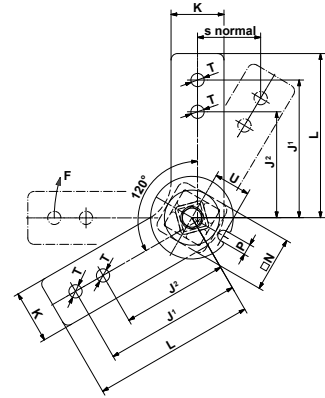
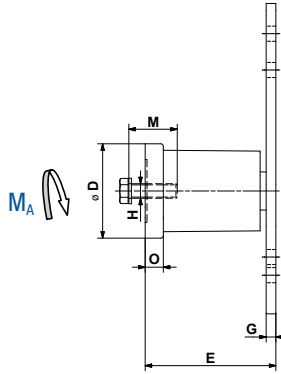
Further product and performance data in chapter 7 «Technology».

Tensioning element made out of stainless steel, INOX

If no other units are specified, the numbers given are in mm.

Tensioner Device

SE-B Boomerang®

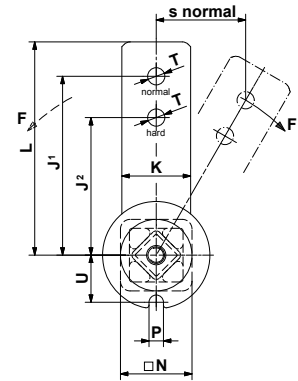
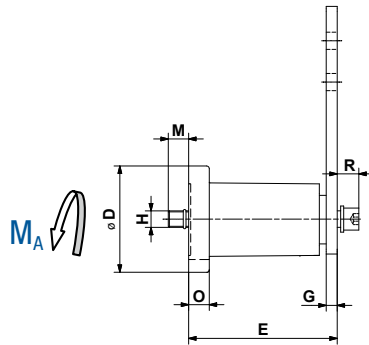


Part no.	Type	D	E	G	H	J ¹	J ²	K	L	M	N	O	P	T	U	Weight [kg]
06 021 003	SE-B 18	58	78 ^{+1.5} _{-0.5}	6	M10	100	80	30	115	30	35	10.5	8.5	10.5	25.3	0.8
06 021 004	SE-B 27	78	108 ⁺² _{-0.5}	8	M12	130	100	50	155	40	52	15	10.5	12.5	34.3	2.2

Further product and performance data in chapter 7 «Technology».
If no other units are specified, the numbers given are in mm.

Tensioner Device

SE-F



Part no.	Type	D	E	G	H	J ¹	J ²	K	L	M	N	O	P	R	T	U	Weight [kg]
06 061 002	SE-F 15	45	64 ⁺¹ _{-0.5}	5	M6	100	80	25	112.5	12	30	8	8.5	10	10.5	20.8	0.4
06 061 003	SE-F 18	58	79 ^{+1.5} _{-0.5}	7	M8	100	80	30	115	18	35	10.5	8.5	11	10.5	25.3	0.7
06 061 004	SE-F 27	78	108 ⁺² _{-0.5}	8	M10	130	100	50	155	17	52	15	10.5	15	12.5	34.3	1.9
06 061 005	SE-F 38	95	140 ⁺² _{-0.5}	10	M12	175	140	60	205	16	66	15	12.5	17	20.5	42.0	3.5
06 061 006	SE-F 45	115	200 ⁺³ ₋₁	12	M16	225	180	70	260	32	80	18	12.5	24	20.5	52.0	7.2
06 061 007	SE-F 50	130	210 ⁺³ ₋₁	20	M20	250	200	80	290	23	87	20	17	27	20.5	57.5	11.6

Further product and performance data in chapter 7 «Technology».

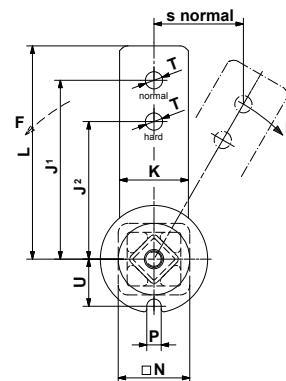
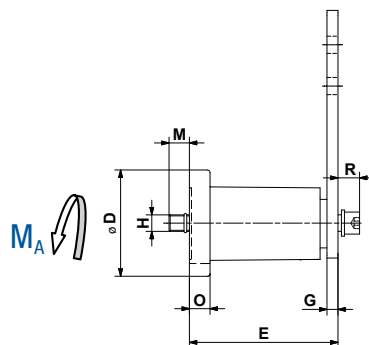
Tensioning element with front mounting.

Screw quality 12.9

If no other units are specified, the numbers given are in mm.

Tensioner Device

SE-FE



Part no.	Type	D	E	G	H	J ¹	J ²	K	L	M	N	O	P	R	T	U	Weight [kg]
06 093 904	SE-FE 27	78	110 ⁺² _{-0.5}	10	M10	130	100	50	155	16	52	15	10.5	15	12.5	34.3	2.1
06 095 905	SE-FE 38	95	120 ⁺² _{-0.5}	10	M12	145	110	60	175	35	66	15	12.5	17	22.0	42.0	3.1

Part no.	Type	Rubber Type	Working temperature	Marked with	Pre-tension $\leq 10^\circ$ (J ¹)		Pre-tension $\leq 20^\circ$ (J ¹)		Pre-tension $\leq 30^\circ$ (J ¹)		Coating
					F [N]	s [mm]	F [N]	s [mm]	F [N]	s [mm]	
06 093 904	SE-FE 27	Rubmix 20	- 30° to + 90°C	yellow dot or R20	150	23	380	44	810	65	RAL 9005 (black)
06 095 905	SE-FE 38	Rubmix 40	- 35° to + 120°C	red dot or R40	170	25	425	50	870	73	RAL 9005 (black)

Further product and performance data in chapter 7 «Technology».

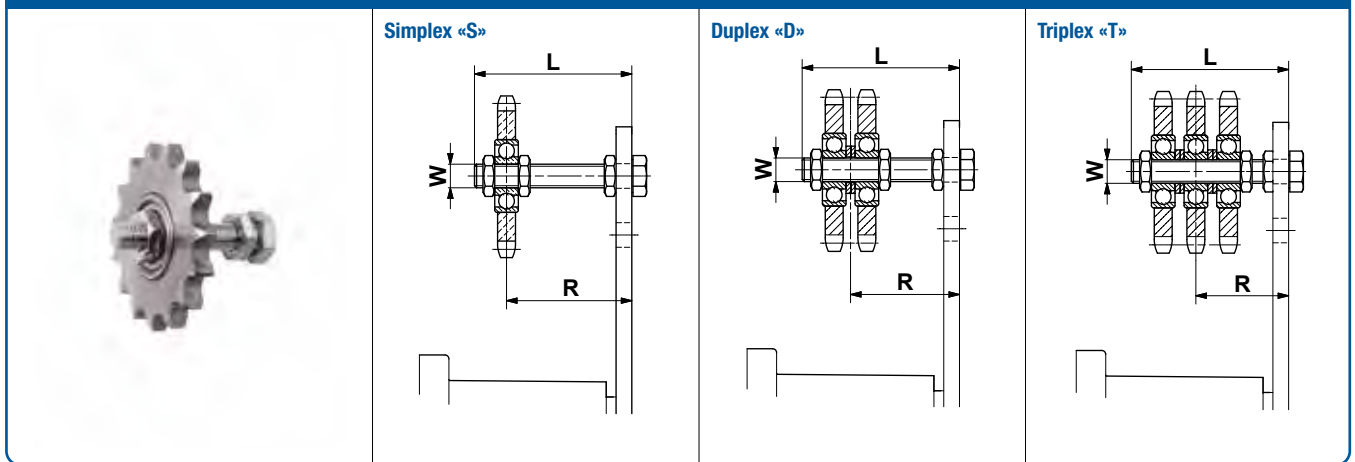
Tensioning element with front mounting in special design.

Screw quality 12.9

If no other units are specified, the numbers given are in mm.

Tensioner Device

Sprocket wheel set N

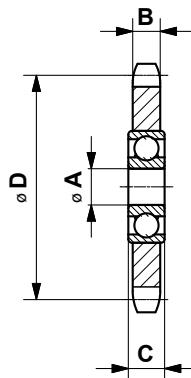


Part no.	Type	Roller chain		Number of teeth	W	L	Torque hex nut 0.5 d [Nm]	suitable for size SE	Adjusting range R with SE	Weight [kg]
		ANSI	DIN 8187							
Simplex «S»										
06 510 001	N $\frac{3}{8}$ " – 10 S	35	ISO 06 B-1	15	M10	55	20	15/18	22–43/23–43	0.15
06 510 002	N $\frac{1}{2}$ " – 10 S	40	ISO 08 B-1	15	M10	55	20	18	23–44	0.20
06 510 003	N $\frac{5}{8}$ " – 12 S	50	ISO 10 B-1	15	M12	80	35	27	27–65	0.35
06 510 004	N $\frac{3}{4}$ " – 12 S	60	ISO 12 B-1	15	M12	80	35	27	27–65	0.55
06 510 005	N $\frac{3}{4}$ " – 20 S	60	ISO 12 B-1	15	M20	100	165	38	40–80	0.85
06 510 006	N1" – 20 S	80	ISO 16 B-1	13	M20	100	165	38	40–80	1.25
06 510 007	N1 $\frac{1}{4}$ " – 20 S	100	ISO 20 B-1	13	M20	100	165	45/50	40–80/48–80	2.00
06 510 008	N1 $\frac{1}{2}$ " – 20 S	120	ISO 24 B-1	11	M20	140	165	45/50	40–120/48–120	2.35
Duplex «D»										
06 520 001	N $\frac{3}{8}$ " – 10 D	35	ISO 06 B-2	15	M10	55	20	15/18	27–39/28–39	2.00
06 520 002	N $\frac{1}{2}$ " – 10 D	40	ISO 08 B-2	15	M10	55	20	18	30–37	0.35
06 520 003	N $\frac{5}{8}$ " – 12 D	50	ISO 10 B-2	15	M12	80	35	27	36–57	0.60
06 520 004	N $\frac{3}{4}$ " – 12 D	60	ISO 12 B-2	15	M12	80	35	27	37–56	1.05
06 520 005	N $\frac{3}{4}$ " – 20 D	60	ISO 12 B-2	15	M20	120	165	38	50–90	1.35
06 520 006	N1" – 20 D	80	ISO 16 B-2	13	M20	120	165	38	55–84	2.10
06 520 007	N1 $\frac{1}{4}$ " – 20 D	100	ISO 20 B-2	13	M20	140	165	45/50	60–102/68–102	3.60
06 520 008	N1 $\frac{1}{2}$ " – 20 D	120	ISO 24 B-2	11	M20	140	165	45/50	65–97/73–97	4.25
Triplex «T»										
06 530 001	N $\frac{3}{8}$ " – 10 T	35	ISO 06 B-3	15	M10	70	20	18	33–48	0.25
06 530 002	N $\frac{1}{2}$ " – 12 T	40	ISO 08 B-3	15	M12	80	35	27	41–51	0.50
06 530 003	N $\frac{5}{8}$ " – 12 T	50	ISO 10 B-3	15	M12	80	35	27	43–50	0.95
06 530 004	N $\frac{5}{8}$ " – 20 T	50	ISO 10 B-3	15	M20	120	165	38	56–84	1.25
06 530 005	N $\frac{3}{4}$ " – 20 T	60	ISO 12 B-3	15	M20	120	165	38	59–80	1.50
06 530 006	N1" – 20 T	80	ISO 16 B-3	13	M20	160	165	45	74–108	2.90
06 530 007	N1 $\frac{1}{4}$ " – 20 T	100	ISO 20 B-3	13	M20	160	165	45/50	78–105/86–105	5.20
06 530 008	N1 $\frac{1}{2}$ " – 20 T	120	ISO 24 B-3	11	M20	180	165	45/50	90–111/98–111	6.20

Allows accurate positioning of relevant chain track.
 Ball-bearings 2Z/C3, permanently lubricated.
 Working temperature: –40° to +100°C.
 If no other units are specified, the numbers given are in mm.

Tensioner Device

Sprocket wheel N



Part no.	Type	Roller chain		Number of teeth	A	B	C	D	Weight [kg]
		ANSI	DIN 8187						
06 500 001	N$\frac{3}{8}$"-10	35	ISO 06 B	15	10	5.3	9	45.81	0.06
06 500 002	N$\frac{1}{2}$"-10	40	ISO 08 B	15	10	7.2	9	61.08	0.15
06 500 003	N$\frac{1}{2}$"-12	40	ISO 08 B	15	12	7.2	12	61.08	0.15
06 500 004	N$\frac{5}{8}$"-12	50	ISO 10 B	15	12	9.1	12	76.36	0.27
06 500 005	N$\frac{5}{8}$"-20	50	ISO 10 B	15	20	9.1	15	76.36	0.29
06 500 006	N$\frac{3}{4}$"-12	60	ISO 12 B	15	12	11.1	12	91.63	0.47
06 500 007	N$\frac{3}{4}$"-20	60	ISO 12 B	15	20	11.1	15	91.63	0.47
06 500 008	N1"-20	80	ISO 16 B	13	20	16.1	15	106.14	0.88
06 500 009	N1$\frac{1}{4}$"-20	100	ISO 20 B	13	20	18.5	15	132.67	1.60
06 500 010	N1$\frac{1}{2}$"-20	120	ISO 24 B	11	20	24.1	15	135.23	1.93

Allows accurate positioning of relevant chain track.

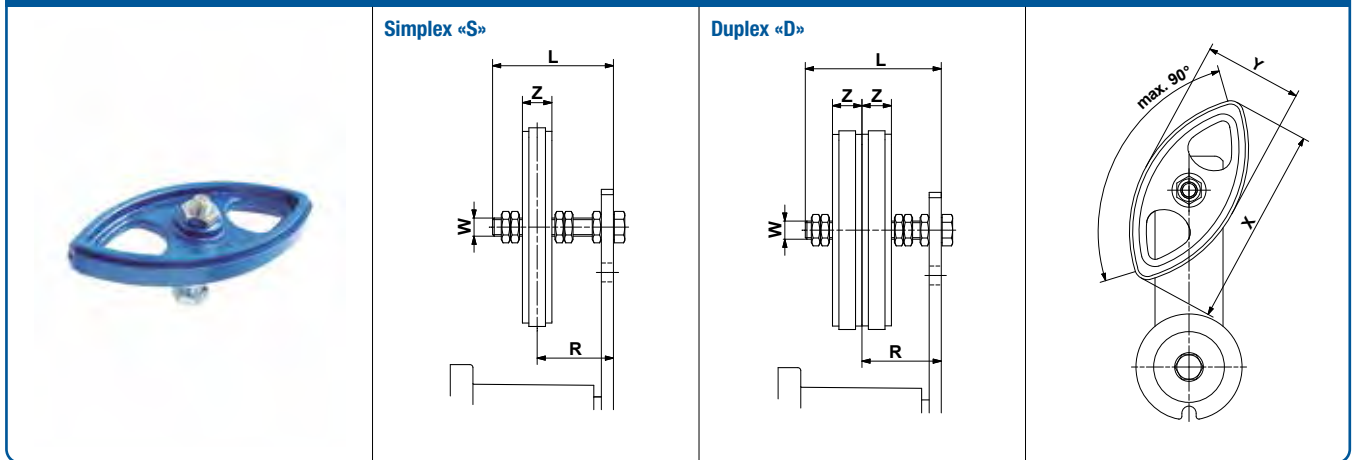
Ball-bearings 2Z/C3, permanently lubricated.

Working temperature: -40° to $+100^{\circ}\text{C}$.

If no other units are specified, the numbers given are in mm.

Tensioner Device

Chain rider set P



Part no.	Type	Roller chain		W	L	X	Y	Z	Torque hex nut 0.5 d [Nm]	suitable for size SE	Adjusting range R with SE	Weight [kg]
		ANSI	DIN 8187									
Simplex «S»												
06 550 001	P$\frac{3}{8}$"-8 S	35	ISO 06 B-1	M8	45	74	37	10.2	11	11	19-34	0.05
06 550 002	P$\frac{1}{2}$"-10 S	40	ISO 08 B-1	M10	55	96	48	13.9	20	15/18	23-41	0.10
06 550 003	P$\frac{5}{8}$"-10 S	50	ISO 10 B-1	M10	55	126	63	16.6	20	18	24-39	0.12
06 550 004	P$\frac{3}{4}$"-12 S	60	ISO 12 B-1	M12	80	148	72	19.5	35	27	30-61	0.18
Duplex «D»												
06 560 001	P$\frac{3}{8}$"-8 D	35	ISO 06 B-2	M8	45	74	37	10.2	11	11	25-30	0.07
06 560 002	P$\frac{1}{2}$"-10 D	40	ISO 08 B-2	M10	55	96	48	13.9	20	15/18	30-34	0.12
06 560 003	P$\frac{5}{8}$"-10 D	50	ISO 10 B-2	M10	70	126	63	16.6	20	18	34-46	0.17
06 560 004	P$\frac{3}{4}$"-12 D	60	ISO 12 B-2	M12	80	148	72	19.5	35	27	40-52	0.26

For double sided use. Max. allowed chain speed 1.5 m/sec.

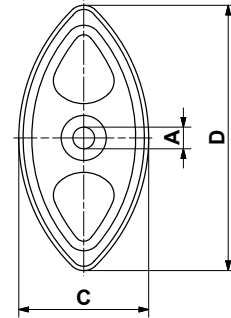
Material: POM-H.

Working temperature: -40 ° to +100 °C.

If no other units are specified, the numbers given are in mm.

Tensioner Device

Chain rider P



Part no.	Type	Roller chain		A	B	C	D	Weight [kg]
		ANSI	DIN 8187					
06 540 001	P $\frac{3}{8}$ "	35	ISO 06 B	8 $^{+0.2}_0$	10.2	37	74	0.02
06 540 002	P $\frac{1}{2}$ "	40	ISO 08 B	10 $^{+0.2}_0$	13.9	48	96	0.03
06 540 003	P $\frac{5}{8}$ "	50	ISO 10 B	10 $^{+0.2}_0$	16.6	63	126	0.05
06 540 004	P $\frac{3}{4}$ "	60	ISO 12 B	12 $^{+0.2}_0$	19.5	72	148	0.07

For double sided use. Max. allowed chain speed 1.5 m/sec.

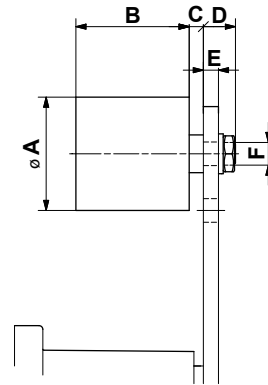
Material: POM-H.

Working temperature: -40° to $+100^{\circ}\text{C}$.

If no other units are specified, the numbers given are in mm.

Tensioner Device

Tensioning roller standard R



Part no.	Type	Max. speed [rpm]	Max. belt width	A	B	C	D	E	F	Torque hex nut 0.5 d [Nm]	suitable for size SE	Weight [kg]
06 580 001	R 11	8000	30	30	35	2	14	≤5	M8	25	11	0.08
06 580 002	R 15/18	8000	40	40	45	6	16	≤7	M10	20	15/18	0.17
06 580 003	R 27	6000	55	60	60	8	17	≤8	M12	35	27	0.40
06 580 004	R 38	5000	85	80	90	8	25	≤10	M20	165	38	1.15
06 580 005	R 45	4500	130	90	135	10	27	≤12	M20	165	45	1.75

Customer-specific $\varnothing A$ or outer contours on request.

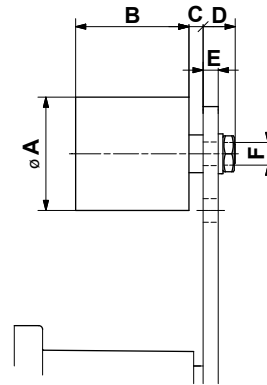
Material: PA 6. Ball-bearings 2Z/C3, permanently lubricated.

Working temperature: -35° to $+100^{\circ}$ C.

If no other units are specified, the numbers given are in mm.

Tensioner Device

Tensioning roller light RL



Part no.	Type	Max. speed [rpm]	Max. belt width	A	B	C	D	E	F	Torque hex nut 0.5 d [Nm]	suitable for size SE	Weight [kg]
06 580 901	RL 11	6 000	30	30	35	3	19	≤10	M8	25	11	0.08
06 580 902	RL 15/18	6 000	40	40	45	6	21	≤9	M10	49	15/18	0.17
06 580 903	RL 27	4 500	55	60	60	8	22	≤8	M12	86	27	0.50

Designed for light belt drive loads.

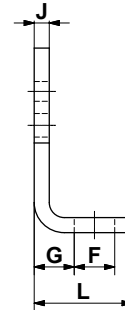
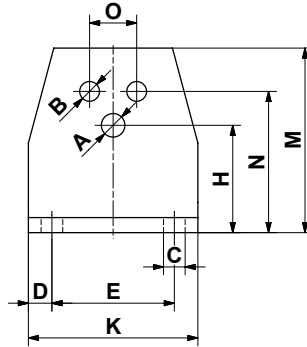
Material: PA 6. Ball-bearings 2Z/C3, permanently lubricated.

Working temperature: -35 ° to +80 °C.

If no other units are specified, the numbers given are in mm.

Tensioner Device

Bracket WS

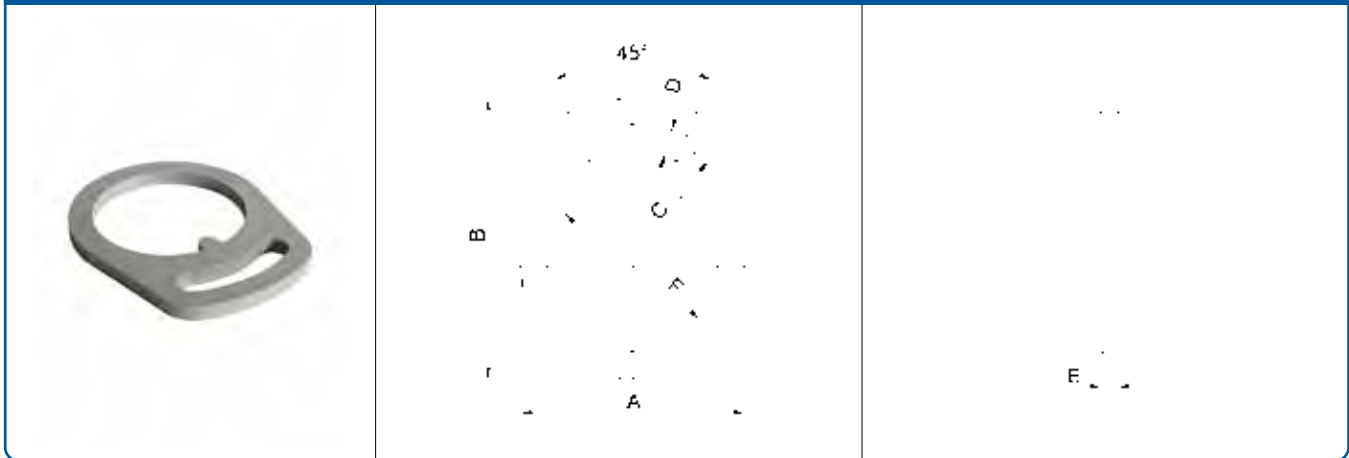


Part no.	Type	A	B	C	D	E	F	G	H	J	K	L	M	N	O	suitable for size SE	Weight [kg]
06 590 001	WS 11	6.5	5.5	7	7.5	30	13	11.5	27	4	45	30	46	35	10	11	0.08
06 590 002	WS 15	8.5	6.5	7	7.5	40	13	13.5	34	5	55	32	58	44	12	15	0.15
06 590 003	WS 18	10.5	8.5	9.5	10	50	15.5	16.5	43	6	70	38	74	55	20	18	0.28
06 590 004	WS 27	12.5	10.5	11.5	12.5	65	21.5	21	57	8	90	52	98	75	25	27	0.70
06 590 005	WS 38	16.5	12.5	14	15	80	24	21	66	8	110	55	116	85	35	38	0.90
06 590 006	WS 45	20.5	12.5	18	20	100	30	26	80	10	140	66	140	110	40	45	1.80

For the easy mounting of tensioners on the standard support (except SE 50).
If no other units are specified, the numbers given are in mm.

Tensioner Device

Safety Sockets

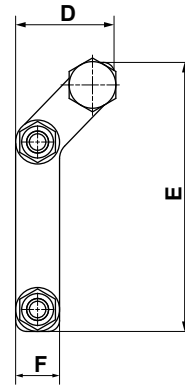
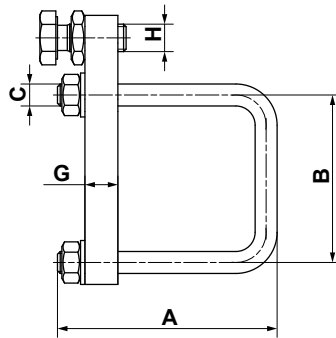


Part no.	Type	A	B	C	D	E	F	suitable for size SE	Weight [kg]
06 618 400	SS 27	104	130	60	13	8	79	27	0.35
06 618 394	SS 38	128	161	75	17	10	96.5	38	0.65

In case of uneven surfaces or coatings that give inadequate frictional locking, additional tensioning can be made with this safety clamp. If no other units are specified, the numbers given are in mm.

Tensioner Device

Tension bracket VS

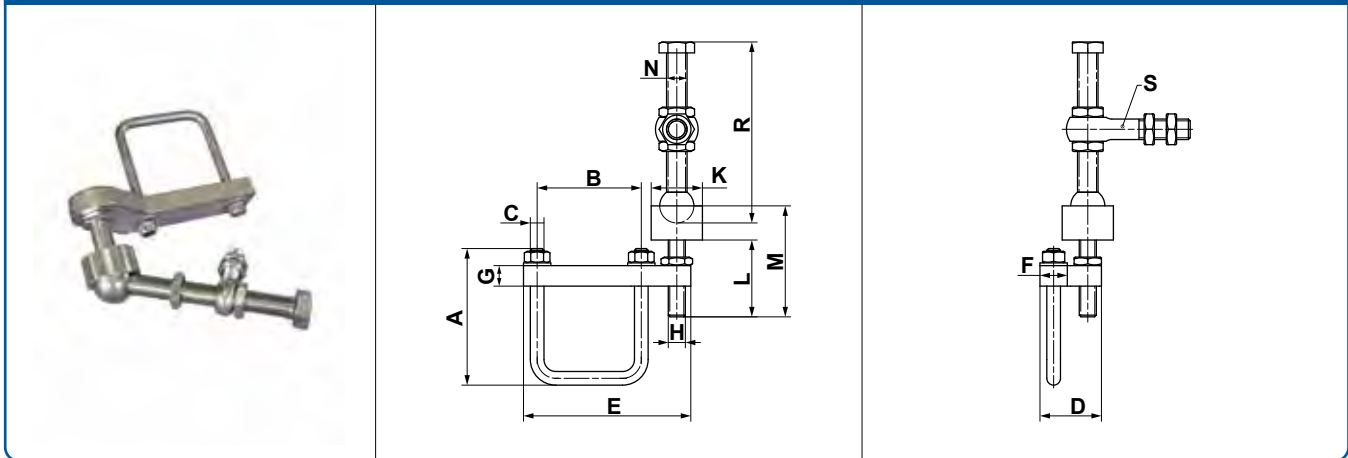


Part no.	Type	A	B	C	D	E	F	G	H	suitable for size SE	Weight [kg]
06 600 203	VS 15/18	54/59	36/42	M6	32	74	15	10	M8	15/18	0.16
06 600 204	VS 27	85	61	M8	36	98	16	12	M10	27	0.28
06 600 205	VS 38	112	79	M10	62	167	30	20	M10	38	1.00
06 600 206	VS 45	124	93	M10	97	205	50	20	M20	45	2.05
06 600 207	VS 50	139	102	M10	97	205	50	20	M20	50	2.15

The Tension bracket VS 15/18 is supplied with brackets fitting both SE 15 and SE 18 Tensioners.
 The maximum pre-tensioning angle is 15°.
 If no other units are specified, the numbers given are in mm.

Tensioner Device

Fast tension device SV



Part no.	Type	A	B	C	D	E	F	G	H	K
06 600 305	SV 15/18	54/59	36/42	M6	32	74	15	10	M8	24
06 600 301	SV 27	85	61	M8	36	98	16	12	M10	30
06 600 302	SV 38	112	79	M10	62	167	30	20	M10	30
06 600 303	SV 45	124	93	M10	97	205	50	20	M20	50
06 600 304	SV 50	139	102	M10	97	205	50	20	M20	50

Part no.	Type	L	M	N	R	S eyebolt	suitable for size SE	Weight [kg]
06 600 305	SV 15/18	22	39	M10 × 70	79	DIN4444 LAM 8 × 60	15/18	0.33
06 600 301	SV 27	45	60	M12 × 100	112	DIN4444 LAM 10 × 60	27	0.60
06 600 302	SV 38	45	60	M12 × 100	112	DIN4444 LAM 10 × 60	38	1.45
06 600 303	SV 45	60	86	M20 × 170	184	DIN4444 LAM 16 × 80	45	3.10
06 600 304	SV 50	60	86	M20 × 170	184	DIN4444 LAM 16 × 80	50	3.20

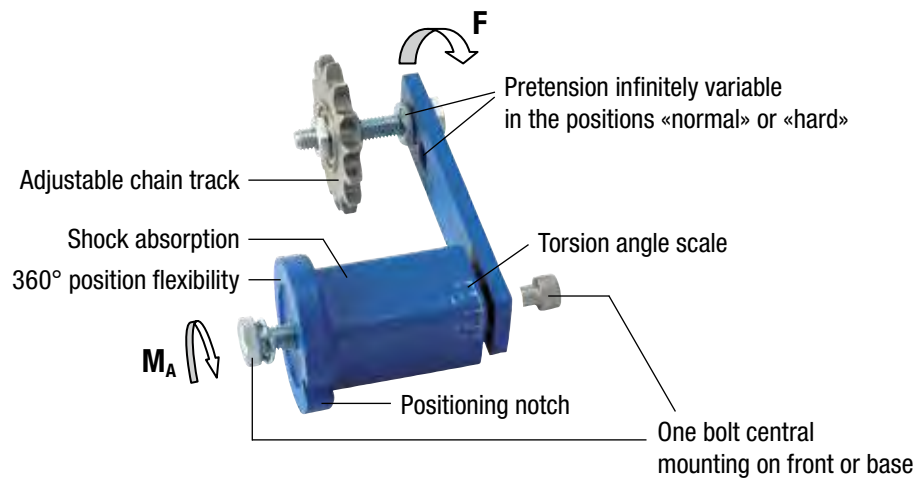
Installation guidelines SV in chapter 7 «Technology».
If no other units are specified, the numbers given are in mm.

TENSIONER DEVICES



Tensioner devices

Tensioner device



Tensioning force F

Tensioning forces for lever position «normal» for SE/SE-G/SE-R/SE-F/SE-I

Size SE	Pre-tension $\leq 10^\circ$		Pre-tension $\leq 20^\circ$		Pre-tension $\leq 30^\circ$	
	F [N]	s [mm]	F [N]	s [mm]	F [N]	s [mm]
11	18	14	48	27	96	40
15	25	17	65	34	135	50
18	75	17	185	34	350	50
27	150	23	380	44	810	65
38	280	30	720	60	1500	88
45	520	39	1350	77	2650	113
50	740	43	2150	86	4200	125

The tensioning force can be continuously adjusted. The max. pre-tensioning angle is 30° out of neutral position.

When fixing the sprockets, riders and rollers in arm-position «hard», tensioning force will increase on about 25%.

SE-W: 40% lower tensioning force than standard versions (Rubmix 40).
SE-FE: see SE-FE in chapter 5.

Tightening torque M_A

	Quality 8.8	Quality 12.9 for SE-F/SE-FE
M6	10 Nm	17 Nm
M8	25 Nm	41 Nm
M10	49 Nm	83 Nm
M12	86 Nm	145 Nm
M16	210 Nm	355 Nm
M20	410 Nm	690 Nm
M24	750 Nm	

Table mentioning the tightening torque for the central screw (included in scope of delivery).

Tensioner devices

Installation guidelines

«Z» layout

If chain tensioning wheels/chain sliders or tension rollers are mounted on the outer lever side, the distance «Z» should be as low as possible. The maximum pre-tensioning force F should not exceed 50% (~20° pre-tensioning).



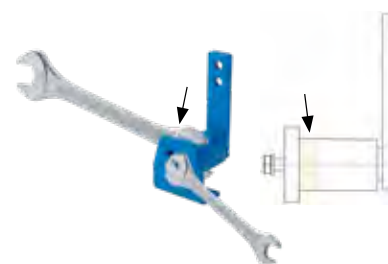
Use of SE-B Boomerang® tensioners

In very long chain and belt drives it was recommendable to install on the slack-side several tensioners, in order to compensate occurring elongation. The «Boomerang» with its bent double-arm equipped with two chain sprockets or a combination of grooved pulley and flat-roller (belt-drives) offers a triple-compensation of chain and belt elongations, due to S-shape contact-arc.



Assembly

The central screw is tightened slightly. The tensioner housing is set with a wrench and tightened in the desired direction. Then tighten the screw with the appropriate M_A tightening torque. Position the wrench near the flange bottom.



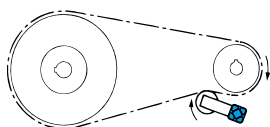
Chain or belt drives

Further assembly instructions specific for chain or belt drives on the following pages.

Installation guidelines for chain drives

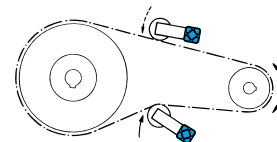
Standard positioning

The ROSTA tensioning device should be placed on the slack-side of the chain drive, close by the smaller sprocket wheel in order to enlarge its contact-arc, therefore contact application from outer side of drive. In mounted position the tensioner-arm should stay close to parallel to the chain run, in drain direction. By extremely long chain drives it is recommendable to install several tensioners or the type «Boomerang®» in order to enlarge the slack compensation.



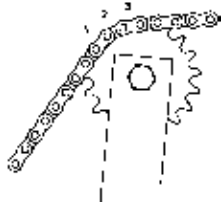
Reversible chain drive

On reversing chain drives, we recommend installing two chain tensioners, one per chain strand. Due to the constantly alternating slackening, depending on the direction of travel of the drive, both tensioners should only be pre-tensioned to a maximum of 20° to retain a free return angle of 10° when changing from the «slack section» to the «working section».



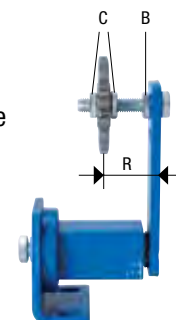
Sprocket teeth engaged

When tightening for the first time, at least 3 teeth of the sprocket must be engaged with the chain. The free length of the chain between tensioning wheel and the next sprocket should be at least 4 sections.



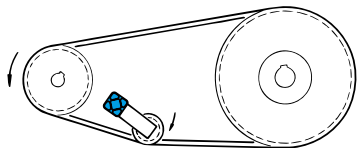
Chain track

The tensioner sprocket and the chain sliders should be positioned on the track between 2 nuts «C». The chain track can be precisely set by adjusting the setting range R . The lock nut «B» is always tight.



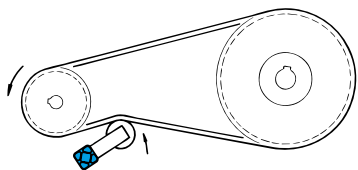
Installation guidelines for belt drives

1. Layout in belt drives



Tensioning from inside the belt drive with a V-belt pulley

- When installing in the slack section, both belt pulleys must have sufficient wrap angles (driver and driven).
- For vibration-intensive drives with very long centre distances, it is recommended use deep-grooved pulleys.



Tensioning with flat roller on the back of the belt

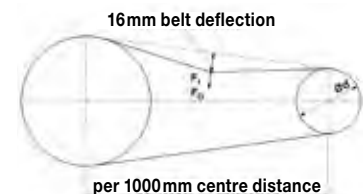
- Roll diameter should be at least 2/3 of the diameter of the smallest pulley.
- Roll width approx. 20% bigger than the overall width of the belt unit.
- When installing in the slack section, both belt pulleys must have sufficient wrap angles (driver and driven).

V-belt type	Diameter d of the smaller pulley [mm]	Initial operation test-force F_i^* [N]	1 belt	2 belts	3 belts	4 belts	5 belts	6 belts	7 belts	8 belts
SPZ/XPZ 3V/3VX	< 71	20	11	18	18	18	27	27	27	27
	71–90	22	11	18	18	18	27	27	27	27
	91–125	25	15	18	18	27	27	27	27	38
	> 125	28	15	18	18	27	27	27	38	38
SPA/XPA	< 101	28	15	18	18	27	27	27	38	38
	101–140	38	18	18	27	27	27	38	38	38
	141–200	45	18	18	27	27	38	38	38	38
	> 200	50	18	27	27	38	38	38	38	45
SPB/XPB 5V/5VX	< 161	50	27	27	27	38	38	38	38	45
	161–250	70	27	27	38	38	38	45	45	45
	251–355	80	27	27	38	38	45	45	45	45
SPC/XPC	> 355	90	27	27	38	38	45	45	45	50
	< 251	87	18	27	38	38	45	45	45	50
	251–355	115	27	38	38	45	45	50	50	50
	356–560	128	27	38	45	45	45	50	50	50
8V	> 560	145	27	38	45	45	50	50	50	**
	< 356	155	27	38	45	45	50	50	**	**
	356–450	190	27	45	45	50	50	**	**	**
	451–560	220	38	45	45	50	**	**	**	**
Z/ZX	> 560	230	38	45	50	50	**	**	**	**
	< 51	11	11	11	18	18	18	18	18	18
	51–70	12	11	11	18	18	18	18	18	27
	71–100	14	11	15	18	18	18	18	27	27
A/AX	> 100	17	11	18	18	18	18	27	27	27
	< 113	20	11	18	18	18	27	27	27	27
	113–200	22	11	18	18	18	27	27	27	27
	201–300	25	15	18	18	18	27	27	27	38
B/BX	> 300	28	15	18	18	27	27	27	38	38
	< 161	28	15	18	18	27	27	27	38	38
	161–250	30	15	18	18	27	27	27	38	38
	251–355	33	18	18	27	27	27	38	38	38
C/CX	> 355	40	18	18	27	27	38	38	38	38
	< 213	50	18	27	27	38	38	38	38	45
	213–280	55	18	27	27	38	38	38	45	45
	281–475	60	18	27	27	38	38	38	45	45
D	> 475	65	18	27	38	38	38	45	45	45
	< 356	80	18	27	38	38	45	45	45	45
	356–450	95	27	27	38	45	45	45	45	50
	451–560	110	27	38	38	45	45	45	50	50
	> 560	120	27	38	38	45	45	50	50	50

2. Selection of the ROSTA tensioner device

Reference values for the most common types of V-belts

* Required test-force for belt deflection of 16 mm per 1 000 mm of center distance. The relevant deflection by shorter or longer center distance is proportional to 16 mm/m. The values may vary depending on the belt supplier.



$$F = F_i \cdot z \cdot 2$$

F Resulting tensioning force by a SE pre-tension angle of 20° (see table «Tension force F»)

F_i Initial operation test-force

z Quantity of belts in drive

2 Multiplier e.g. to compensate for belt slip and/or of centrifugal force generated on the drive belts.

The operational test-force F_0 (after belt elongation) is around 20% lower than the initial test-force F_i . Therefore, we recommend to inspect the belt tension after a few days of operation.

** Please contact ROSTA

Tensioner devices

Installation guidelines for fast tension device SV

An additional drill hole (see drill hole specifications) is required for the swivel joint of the quick tensioning unit. The installation guidelines for the ROSTA tensioning element (e.g. position of the lever arm in relation to the chain or belt) must be observed. The quick pre-tensioning unit is to be attached to the tensioning element as deep as possible. Position the axis of rotation in the hole with the two nuts, but do not tighten it. Turn the pre-tensioning screw further until the ball is seated in the joint socket, which has been turned up to the stop in the pretensioning lever. The ball must be greased beforehand with a commercially available, graphitized or MoS₂-containing multipurpose grease. After the tensioning element has been pre-tensioned, the fastening screw of the tensioning element must be tightened.

The type SV quick tensioning unit can also be attached mirror-inverted or rotated by 90°.



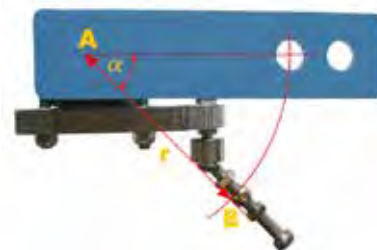
Untensioned



approx. 20° pre-tensioned

Drill hole specification for the Fast tension device SV

Type	B	r	α
SV 15/18	Ø 8.5 mm	93 mm	50°
SV 27	Ø 10.5 mm	110 mm	50°
SV 38	Ø 10.5 mm	150 mm	40°
SV 45	Ø 17.0 mm	190 mm	45°
SV 50	Ø 17.0 mm	190 mm	45°



A = mounting hole or thread for the SE tensioner

B = hole for the eyebolt

Important

The ball socket should be screwed in as far as it will go in the pre-tensioning lever.



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

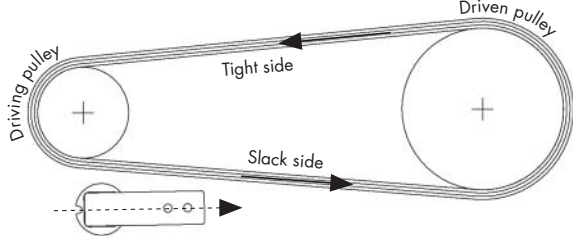
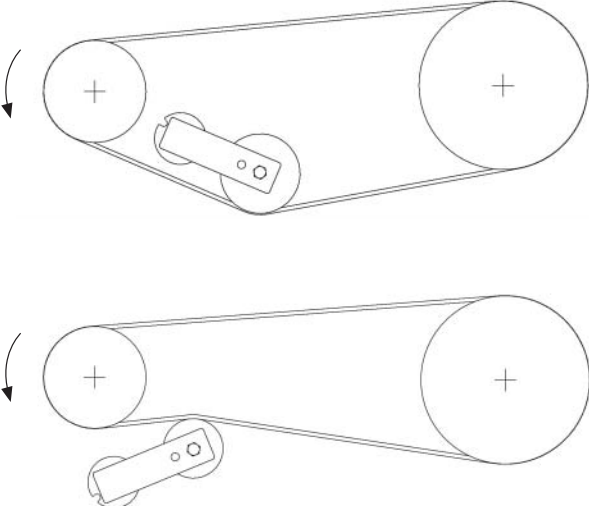
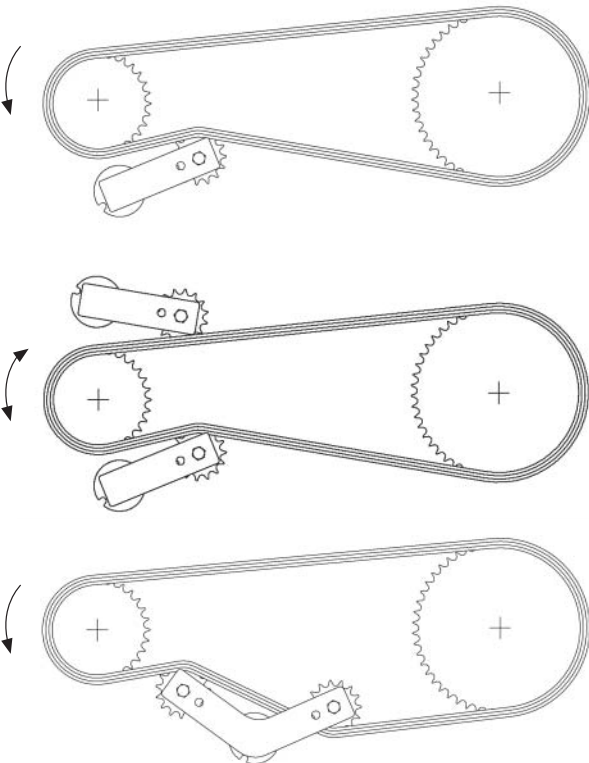
⚠ CAUTION

- 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

Contents

1. Determine of the ideal tensioning device position	3
General positioning	
V-belt drive	
Chain tensioner	
Reversible chain drives	
Boomerang® tensioner	
2. Selection tables	4
for V-belts	
for chains	
3. Initial installation	5
Accessories installation	
Z-configuration	
Tensioner mounting	
Positioning notch	
Safety sockets	
Alignment	
4. Tensioning	6
Tension V-belt drives	
Tension chain drives	
5. Tightening	6
Standard tensioners	
Tensioners with front mounting	
Angle scale	
Recheck	
Standard tightening moment MA for attachment screw	
6. Retension and replacement	7

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

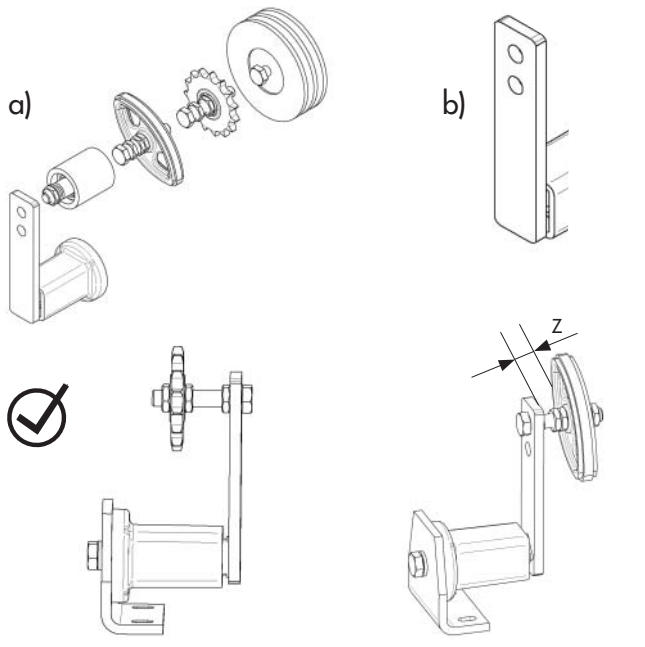
V-belt type	Diam. of smaller pulley [mm]	Size SE (without SE-W, SE-B and SE-FE)				
		1 belt	2 belts	3 belts	4 belts	5 belts
XPZ, SPZ	56-71	11	18	18	18	18
	75-90	11	18	18	18	27
	95-125	15	18	18	18	27
	≥ 125	15	18	18	27	27
XPA, SPA	80-100	15	18	18	27	27
	106-140	15	18	27	27	27
	150-200	18	18	27	27	27
	≥ 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



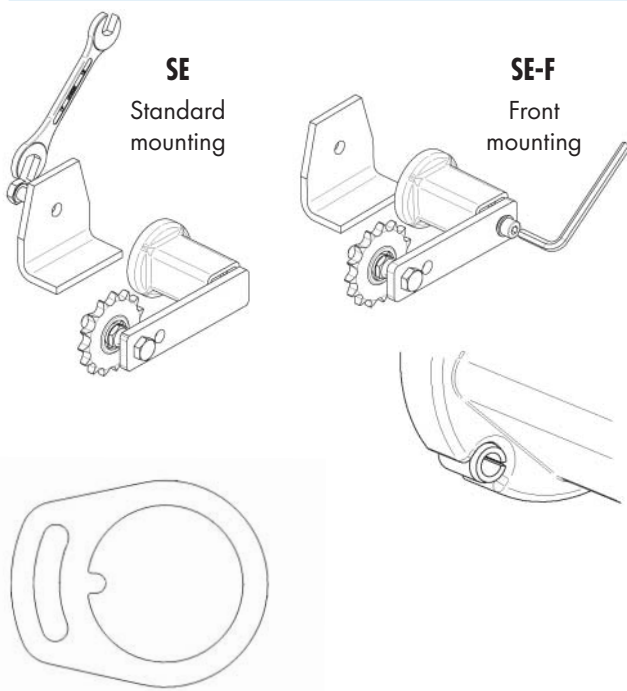
Accessories installation

- 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

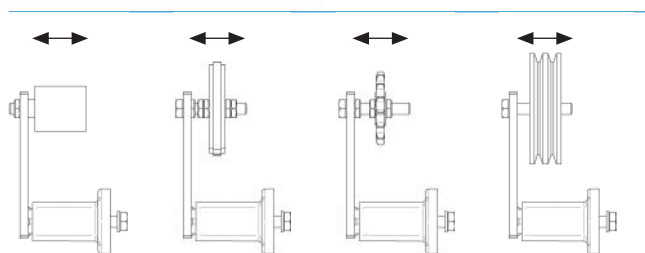
The ROSTA tensioners should be installed on a stiff, even and clean machine part surface by means of the central screw. Tighten the screw slightly.

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

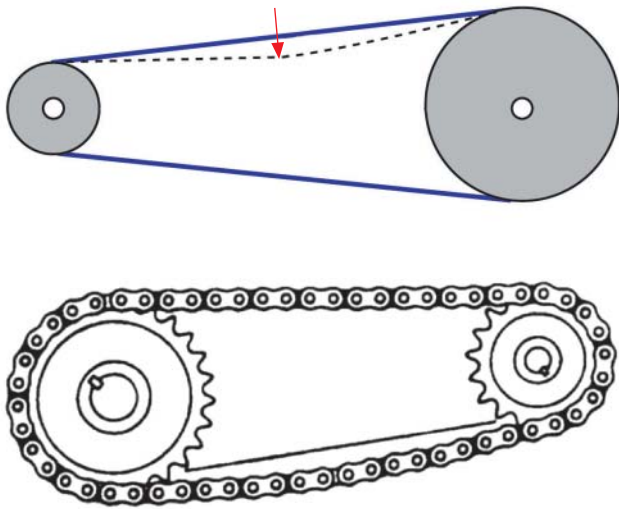
The positioning and further re-tensioning can be made with standardized ROSTA safety sockets.



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

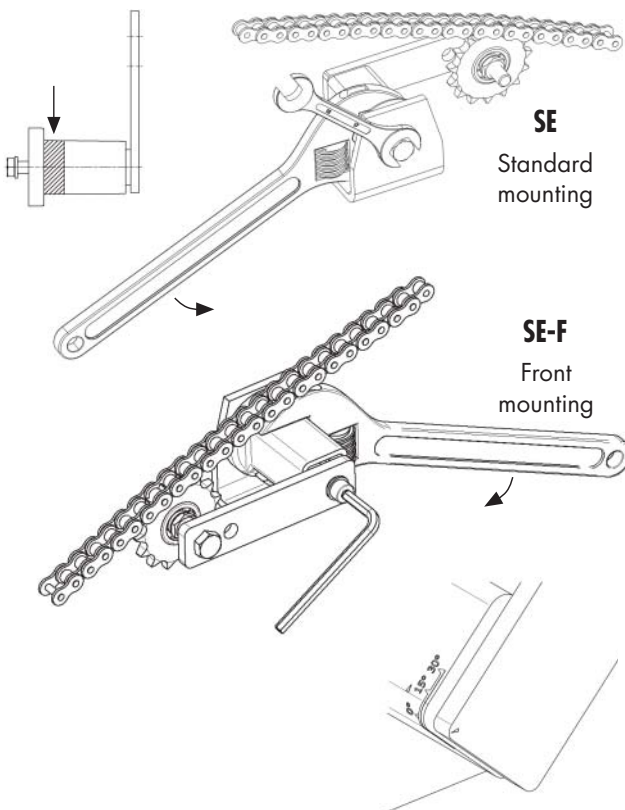
V-belts must operate under proper tension. A well-established rule of thumb is that the best tension for a V-belt drive is the LEAST tension at which the drive will not slip under peak load. Several tools and methods are available to insure proper tensioning. Follow the belt manufacturer guidelines.

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

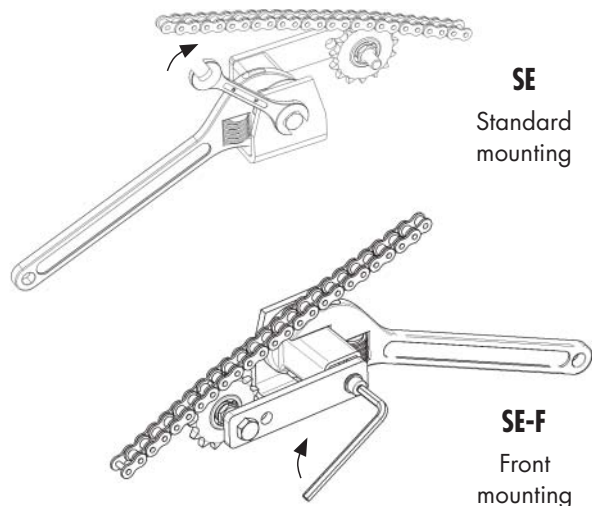
Same tensioning procedure as standard tensioners. Tighten the central screw with the standard tightening moment on the front of the tensioner.

Angle scale

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

Recheck

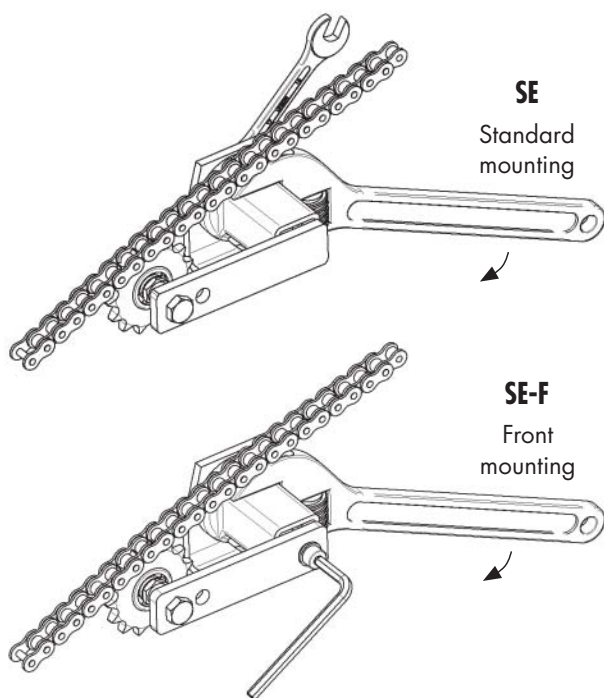
Before starting the drive, recheck drive alignment and all mounting fasteners for tightness.



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



All rights in connection with the present document and its content are reserved by our company. Reproduction, use or disclosure to third parties without express authority is strictly forbidden. © ROSTA 2017



ROSTA AG
Hauptstrasse 58
CH-5502 Hunzenschwil
Phone +41-62-889 04 00
Fax +41-62-889 04 99
E-Mail info.ch@rosta.com
Internet www.rosta.com