

# ROSTA-Tensioner Devices

**Maintenance-free tensioner systems for belt and chain drives  
Easy to install – available in 7 standard sizes – wide range of  
accessories available**



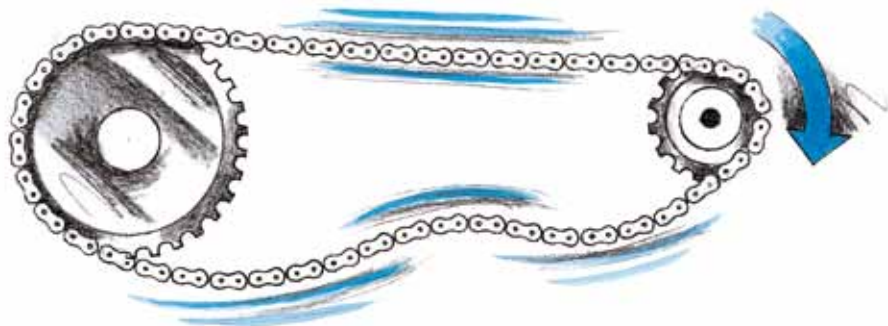
# Customer Benefits from using ROSTA



SE



- Guarantees the lowest possible maintenance outlay
- Is tensioned «for life» (belts)
- Transmits a constant torque
- Gentle belt handling – longer service life



- Prevents the polygon effect in the slack side
- Increases the chain contact arc
- Excludes any jumping of the chain links
- Causes the slack side to run tautly and almost silently

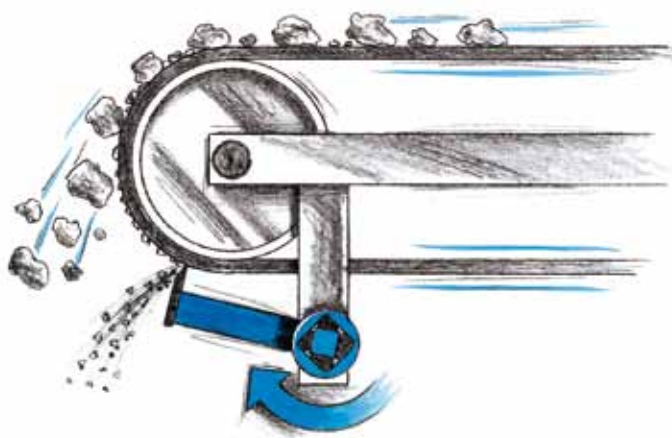


SE-F



SE-W

- Offers continuous contact pressure
- Compensates for wear on the scrapers
- Effectively dampens vibrations in the belt band
- Guarantee for clean conveyor belts



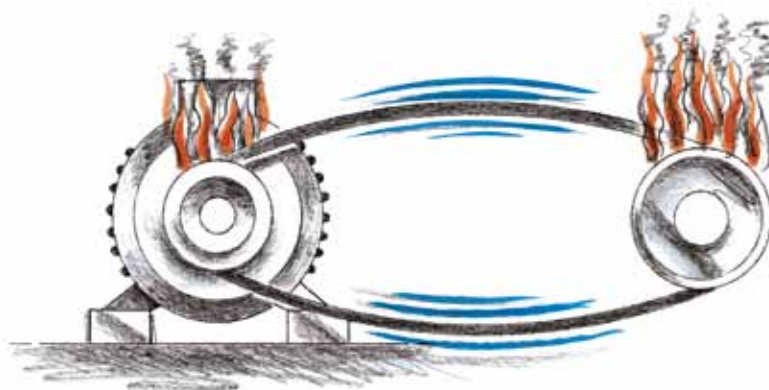
# TA Tensioners in Belt-and-Chain Drives



- Offers an extremely quiet chain run
- Reduces wear on rollers and bearings
- Effectively dissipates vibrations
- 3-fold slack compensation with «Boomerang®»



SE-B

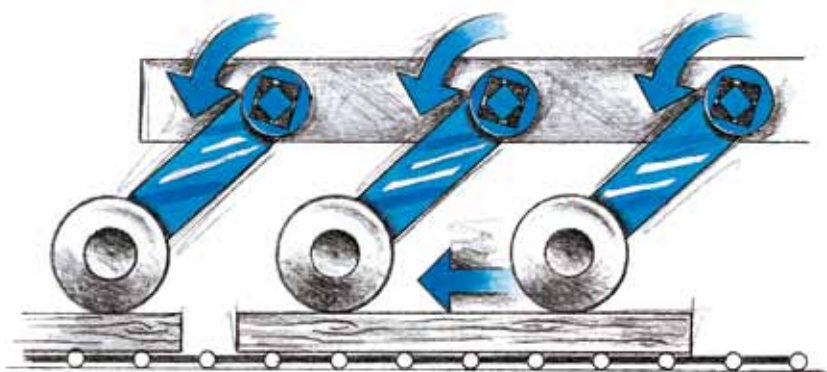


- Compensates for belt lengthening
- Prevents excessive slippage and over-heating
- Offers constant torque transfer
- Guarantees longer belt lifetimes



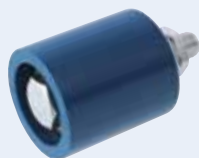
SE-I

- Offers an exactly defined contact pressure
- Accurately transports workpieces
- Maintenance-free and long lasting
- Is a cost-effective alternative to pressure cylinders



SE-G

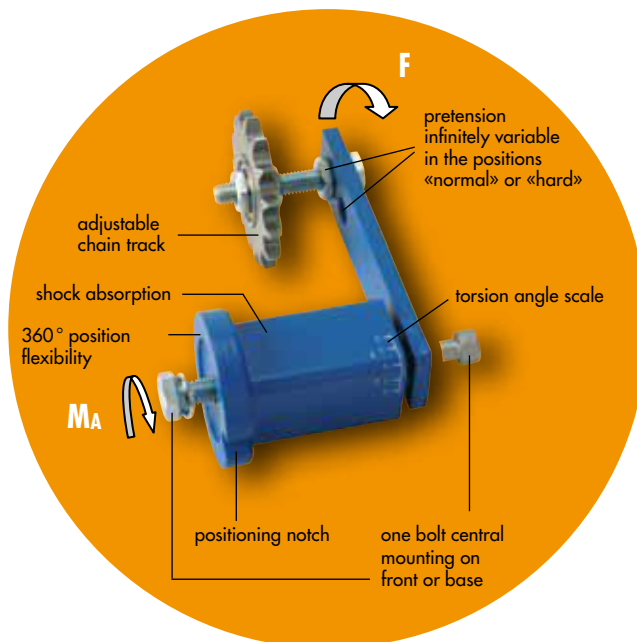
# Selection table

|                              | Identification                    | Characteristics                                                                                                                                     |                                                              | Working temperature  | Details                                                                               | Illustration                                                                          |
|------------------------------|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|----------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Standard tensioner devices   | <b>SE</b> Standard component      | Steel parts with blue lacquering.<br>Rubber quality Rubmix 10.                                                                                      | Housing and inner core made out of steel.                    | –40° to +80° C       | Page 6                                                                                |    |
|                              | <b>SE-G</b> Oil resistant         | Steel parts galvanized.<br>Rubber quality Rubmix 20.<br>Marked with yellow dot.                                                                     |                                                              | –30° to +90° C       | Page 6                                                                                |    |
|                              | <b>SE-W</b> Heat resistant        | Steel parts with blue lacquering.<br>Rubber quality Rubmix 40.<br>Marked with red dot.<br>Tension force 40% less than SE.                           |                                                              | +80° to +120° C max. | Page 6                                                                                |    |
| Additional tensioner devices | <b>SE-R</b> Reinforced lever arm  | Arm and inner core especially welded for use on combustion engines and compressors.<br>Steel parts with blue lacquering.<br>Marked with white ring. | Housing and inner core made out of steel, inserts Rubmix 10. | –40° to +80° C       | Page 6                                                                                |    |
|                              | <b>SE-I</b> Stainless steel       | For the use in food- and pharmaceutic industries.<br>Material: GX5CrNi19-10.<br>Exception: SE-I 40 made out of X5CrNi18-10.                         |                                                              |                      | Page 6                                                                                |    |
|                              | <b>SE-F</b> Front mounting-device | For installations on blind-hole frames (fixation from the front only).<br>Steel parts with blue lacquering.<br>Hex socket screw quality 12.9.       |                                                              |                      | Page 7                                                                                |  |
|                              | <b>SE-B</b> Boomerang®            | For the tensioning of very long chain- and belt-drives (triple compensation).<br>Steel parts with blue lacquering.                                  |                                                              |                      | Page 7                                                                                |  |
| Accessories chain drives     | <b>Sprocket wheel set N</b>       | Allows accurate positioning of relevant chain track.<br>Ball-bearings 2Z/C3, permanently lubricated.                                                | –40° to +100° C                                              | Page 8               |  |                                                                                       |
|                              | <b>Sprocket wheel N</b>           |                                                                                                                                                     |                                                              |                      |                                                                                       |                                                                                       |
|                              | <b>Chain rider set P</b>          | For double sided use.<br>Max. allowed chain speed 1.5 m/sec.<br>Material: POM-H.                                                                    | –40° to +100° C                                              | Page 9               |  |                                                                                       |
|                              | <b>Chain rider P</b>              |                                                                                                                                                     |                                                              |                      |                                                                                       |                                                                                       |
| Accessories belt drives      | <b>Tensioning roller R</b>        | Material: PA 6.<br>Ball-bearings 2Z/C3, permanently lubricated.                                                                                     | –35° to +100° C                                              | Page 10              |  |                                                                                       |

For additional information about accessories, consult pages 12–14.

# General technology

The ROSTA-tensioners should be installed on a stiff, even and clean machine part by means of the central bolt. The frictional connection on flange is usually fully sufficient for final positioning. The positioning notch on flange can be used to assure the tensioner additionally on uneven and dirty surfaces by setting a roller-pin.



## Tensioning force F

The tensioning force can be continuously adjusted. The max. pre-tensioning angle is +30° out of neutral position. Tensioning force table for types **SE / SE-G / SE-R / SE-F / SE-I** by using **hole-position «normal»** for sprocket-, rider- and roller fixation.

| 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] |
| <b>11</b> | 15                          | 14     | 40                          | 28     | 80                          | 40     |
| <b>15</b> | 25                          | 17     | 65                          | 34     | 135                         | 50     |
| <b>18</b> | 75                          | 17     | 180                         | 34     | 350                         | 50     |
| <b>27</b> | 150                         | 22     | 380                         | 44     | 800                         | 65     |
| <b>38</b> | 290                         | 30     | 730                         | 60     | 1500                        | 87     |
| <b>45</b> | 500                         | 39     | 1300                        | 78     | 2600                        | 112    |
| <b>50</b> | 750                         | 43     | 2150                        | 86     | 4200                        | 125    |

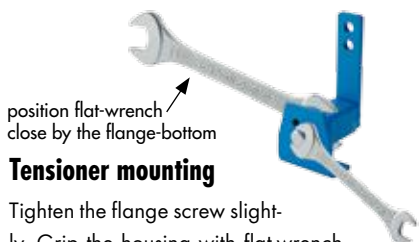
**SE-I 40** same tensioning force like SE 38.

**SE-W:** 40% lower tensioning force than standard versions (Rubmix 40 inserts).

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

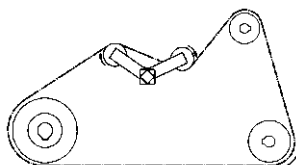
## Mounting instructions

For further mounting instructions please consult the pages 9–11.



## Tensioner mounting

Tighten the flange screw slightly. Grip the housing with flat-wrench and set needful pre-tension by rotating the housing in the required direction. Tighten the central screw according to the above mentioned tightening moment  $M_A$ .



## 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.

## Tightening moment M<sub>A</sub> for attachment screw

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

|     | Quality 8.8 | Quality 12.9 only with <b>SE-F</b> |
|-----|-------------|------------------------------------|
| 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      |                                    |



## Z-configuration of sprockets or riders

If there is the need to install sprockets, riders or rollers on the outer arm-side of the tensioner, then the distance «Z» should be as little as possible to avoid a misalignment in element parallelism. Furthermore the pre-tension force should not exceed 50% of the capacity = max. pre-tension angle of ~20°.



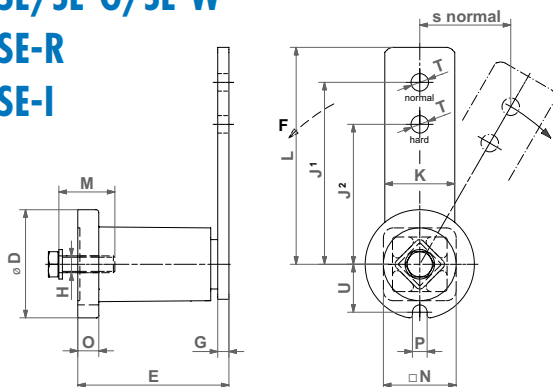


## Tensioner Device

Type SE/SE-G/SE-W

Type SE-R

Type SE-I



### Standard Tensioner Device Types SE / SE-G / SE-W

| Type                               | Art.-No.                                      | D   | E                                  | G  | H   | J <sup>1</sup> | J <sup>2</sup> | K  | L     | M  | N  | O    | P    | T    | U    | Weight [kg] |
|------------------------------------|-----------------------------------------------|-----|------------------------------------|----|-----|----------------|----------------|----|-------|----|----|------|------|------|------|-------------|
| <b>SE 11</b><br>SE 11-G            | <b>06 011 001</b><br>06 013 201               | 35  | 51 <sup>+1</sup> <sub>-0.5</sub>   | 5  | M6  | 80             | 60             | 20 | 90    | 20 | 22 | 6    | 8    | 8.5  | 16.5 | 0.2         |
| <b>SE 15</b><br>SE 15-G<br>SE 15-W | <b>06 011 002</b><br>06 013 202<br>06 015 002 | 45  | 64 <sup>+1</sup> <sub>-0.5</sub>   | 5  | M8  | 100            | 80             | 25 | 112.5 | 25 | 30 | 8    | 8.5  | 10.5 | 20.8 | 0.4         |
| <b>SE 18</b><br>SE 18-G<br>SE 18-W | <b>06 011 003</b><br>06 013 203<br>06 015 003 | 58  | 79 <sup>+1.5</sup> <sub>-0.5</sub> | 7  | M10 | 100            | 80             | 30 | 115   | 30 | 35 | 10.5 | 8.5  | 10.5 | 25.3 | 0.6         |
| <b>SE 27</b><br>SE 27-G<br>SE 27-W | <b>06 011 004</b><br>06 013 204<br>06 015 004 | 78  | 108 <sup>+2</sup> <sub>-0.5</sub>  | 8  | M12 | 130            | 100            | 50 | 155   | 40 | 52 | 15   | 10.5 | 12.5 | 34.3 | 1.7         |
| <b>SE 38</b><br>SE 38-G<br>SE 38-W | <b>06 011 005</b><br>06 013 205<br>06 015 005 | 95  | 140 <sup>+2</sup> <sub>-0.5</sub>  | 10 | M16 | 175            | 140            | 60 | 205   | 40 | 66 | 15   | 12.5 | 20.5 | 42.0 | 3.6         |
| <b>SE 45</b><br>SE 45-G<br>SE 45-W | <b>06 011 006</b><br>06 013 206<br>06 015 006 | 115 | 200 <sup>+3</sup> <sub>-1</sub>    | 12 | M20 | 225            | 180            | 70 | 260   | 50 | 80 | 18   | 12.5 | 20.5 | 52.0 | 6.4         |
| <b>SE 50</b><br>SE 50-G<br>SE 50-W | <b>06 011 007</b><br>06 013 207<br>06 015 007 | 130 | 210 <sup>+3</sup> <sub>-1</sub>    | 20 | M24 | 250            | 200            | 80 | 290   | 60 | 87 | 20   | 17   | 20.5 | 57.5 | 9.0         |

### SE-R Tensioning element with strengthened tensioning arm

| Type    | Art.-No.   | D  | E                                  | G | H   | J <sup>1</sup> | J <sup>2</sup> | K  | L     | M  | N  | O    | P   | T    | U    | Weight [kg] |
|---------|------------|----|------------------------------------|---|-----|----------------|----------------|----|-------|----|----|------|-----|------|------|-------------|
| SE-R 15 | 06 011 702 | 45 | 64 <sup>+1</sup> <sub>-0,5</sub>   | 5 | M8  | 100            | 80             | 25 | 112.5 | 25 | 30 | 8    | 8.5 | 10.5 | 20.8 | 0.4         |
| SE-R 18 | 06 011 703 | 58 | 79 <sup>+1.5</sup> <sub>-0.5</sub> | 7 | M10 | 100            | 80             | 30 | 115   | 30 | 35 | 10.5 | 8.5 | 10.5 | 25.3 | 0.6         |

### SE-I Tensioning element made out of stainless steel, INOX

| Type    | Art.-No.   | D   | E                                  | G  | H   | J <sup>1</sup> | J <sup>2</sup> | K  | L     | M  | N  | O    | P    | T    | U    | Weight [kg] |
|---------|------------|-----|------------------------------------|----|-----|----------------|----------------|----|-------|----|----|------|------|------|------|-------------|
| SE-I 15 | 06 071 111 | 45  | 64 <sup>+1</sup> <sub>-0.5</sub>   | 5  | M8  | 100            | 80             | 25 | 112.5 | 25 | 30 | 8    | 8.5  | 10.5 | 20.8 | 0.4         |
| SE-I 18 | 06 071 112 | 58  | 79 <sup>+1.5</sup> <sub>-0.5</sub> | 7  | M10 | 100            | 80             | 30 | 115   | 30 | 35 | 10.5 | 8.5  | 10.5 | 25.3 | 0.7         |
| SE-I 27 | 06 071 113 | 78  | 108 <sup>+2</sup> <sub>-0.5</sub>  | 8  | M12 | 130            | 100            | 50 | 155   | 40 | 52 | 15   | 10.5 | 12.5 | 34.3 | 2.1         |
| SE-I 40 | 06 071 104 | 100 | 140 <sup>+2</sup> <sub>-0.5</sub>  | 10 | M16 | 175            | 140            | 70 | 205   | 40 | 70 | 15   | 12   | 20.5 | 41.5 | 3.8         |

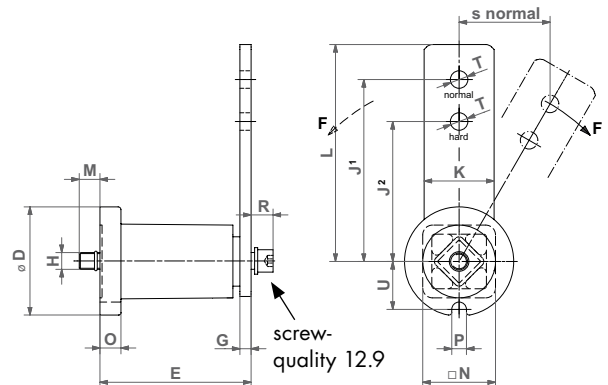
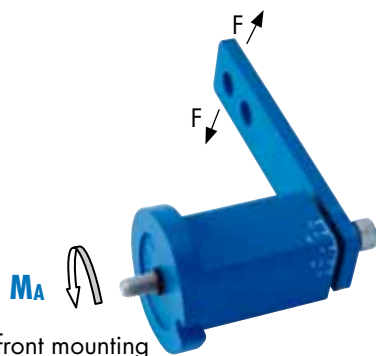
Further product and performance datas on pages 4–5.

# Tensioner Device

Type SE-F

Type SE-B

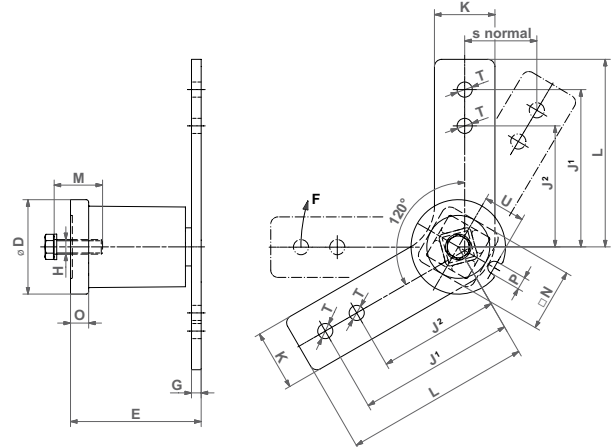
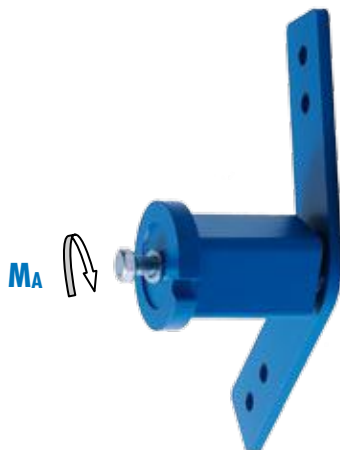
SE-F



Tensioning element with front mounting

| Type    | Art.-No.   | D   | E                           | G  | H   | J <sup>1</sup> | J <sup>2</sup> | K  | L     | M<br>ca. | N  | O    | P    | R  | T    | U    | Weight<br>[kg] |
|---------|------------|-----|-----------------------------|----|-----|----------------|----------------|----|-------|----------|----|------|------|----|------|------|----------------|
| SE-F 15 | 06 061 002 | 45  | 64 <sup>+1<br/>-0.5</sup>   | 5  | M6  | 100            | 80             | 25 | 112.5 | 12       | 30 | 8    | 8.5  | 10 | 10.5 | 20.8 | 0.4            |
| SE-F 18 | 06 061 003 | 58  | 79 <sup>+1.5<br/>-0.5</sup> | 7  | M8  | 100            | 80             | 30 | 115   | 18       | 35 | 10.5 | 8.5  | 11 | 10.5 | 25.3 | 0.7            |
| SE-F 27 | 06 061 004 | 78  | 108 <sup>+2<br/>-0.5</sup>  | 8  | M10 | 130            | 100            | 50 | 155   | 17       | 52 | 15   | 10.5 | 15 | 12.5 | 34.3 | 1.9            |
| SE-F 38 | 06 061 005 | 95  | 140 <sup>+2<br/>-0.5</sup>  | 10 | M12 | 175            | 140            | 60 | 205   | 16       | 66 | 15   | 12.5 | 17 | 20.5 | 42.0 | 3.7            |
| SE-F 45 | 06 061 006 | 115 | 200 <sup>+3<br/>-1</sup>    | 12 | M16 | 225            | 180            | 70 | 260   | 32       | 80 | 18   | 12.5 | 24 | 20.5 | 52.0 | 6.9            |
| SE-F 50 | 06 061 007 | 130 | 210 <sup>+3<br/>-1</sup>    | 20 | M20 | 250            | 200            | 80 | 290   | 23       | 87 | 20   | 17   | 27 | 20.5 | 57.5 | 10.1           |

SE-B  
Boomerang®



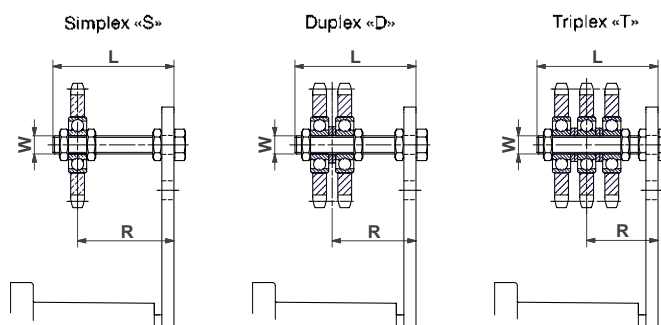
| Type    | Art.-No.   | D  | E                           | G | H   | J <sup>1</sup> | J <sup>2</sup> | K  | L   | M  | N  | O    | P    | T    | U    | Weight<br>[kg] |
|---------|------------|----|-----------------------------|---|-----|----------------|----------------|----|-----|----|----|------|------|------|------|----------------|
| SE-B 18 | 06 021 003 | 58 | 78 <sup>+1.5<br/>-0.5</sup> | 6 | M10 | 100            | 80             | 30 | 115 | 30 | 35 | 10.5 | 8.5  | 10.5 | 25.3 | 0.8            |
| SE-B 27 | 06 021 004 | 78 | 108 <sup>+2<br/>-0.5</sup>  | 8 | M12 | 130            | 100            | 50 | 155 | 40 | 52 | 15   | 10.5 | 12.5 | 34.3 | 2.1            |

Further product and performance datas on pages 4–5.



## Sprocket wheel set type N

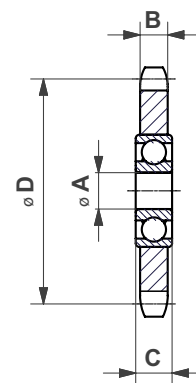
## Sprocket wheel set type N



| Rollerchain<br>ANSI   DIN 8187 |            | Type         | Art.-No.   | Number<br>of teeth | W   | L   | Torque<br>hex nut 0.5 d<br>[Nm] | Adjusting<br>range track<br>R | Size<br>SE | Weight<br>[kg] |
|--------------------------------|------------|--------------|------------|--------------------|-----|-----|---------------------------------|-------------------------------|------------|----------------|
| <b>Simplex «S»</b>             |            |              |            |                    |     |     |                                 |                               |            |                |
| 35                             | ISO 06 B-1 | N3/8"-10 S   | 06 510 001 | 15                 | M10 | 55  | 20                              | 22-43 / 23-43                 | 15/18      | 0.15           |
| 40                             | ISO 08 B-1 | N1/2"-10 S   | 06 510 002 | 15                 | M10 | 55  | 20                              | 23-44                         | 18         | 0.20           |
| 50                             | ISO 10 B-1 | N5/8"-12 S   | 06 510 003 | 15                 | M12 | 80  | 35                              | 27-65                         | 27         | 0.35           |
| 60                             | ISO 12 B-1 | N3/4"-12 S   | 06 510 004 | 15                 | M12 | 80  | 35                              | 27-65                         | 27         | 0.55           |
| 60                             | ISO 12 B-1 | N3/4"-20 S   | 06 510 005 | 15                 | M20 | 100 | 172                             | 40-80                         | 38         | 0.85           |
| 80                             | ISO 16 B-1 | N1"-20 S     | 06 510 006 | 13                 | M20 | 100 | 172                             | 40-80                         | 38         | 1.25           |
| 100                            | ISO 20 B-1 | N1 1/4"-20 S | 06 510 007 | 13                 | M20 | 100 | 172                             | 40-80 / 48-80                 | 45 / 50    | 2.00           |
| 120                            | ISO 24 B-1 | N1 1/2"-20 S | 06 510 008 | 11                 | M20 | 140 | 172                             | 40-120 / 48-120               | 45 / 50    | 2.35           |
| <b>Duplex «D»</b>              |            |              |            |                    |     |     |                                 |                               |            |                |
| 35                             | ISO 06 B-2 | N3/8"-10 D   | 06 520 001 | 15                 | M10 | 55  | 20                              | 27-39 / 28-39                 | 15/18      | 2.00           |
| 40                             | ISO 08 B-2 | N1/2"-10 D   | 06 520 002 | 15                 | M10 | 55  | 20                              | 30-37                         | 18         | 0.35           |
| 50                             | ISO 10 B-2 | N5/8"-12 D   | 06 520 003 | 15                 | M12 | 80  | 35                              | 36-57                         | 27         | 0.60           |
| 60                             | ISO 12 B-2 | N3/4"-12 D   | 06 520 004 | 15                 | M12 | 80  | 35                              | 37-56                         | 27         | 1.05           |
| 60                             | ISO 12 B-2 | N3/4"-20 D   | 06 520 005 | 15                 | M20 | 120 | 172                             | 50-90                         | 38         | 1.35           |
| 80                             | ISO 16 B-2 | N1"-20 D     | 06 520 006 | 13                 | M20 | 120 | 172                             | 55-84                         | 38         | 2.10           |
| 100                            | ISO 20 B-2 | N1 1/4"-20 D | 06 520 007 | 13                 | M20 | 140 | 172                             | 60-102 / 68-102               | 45 / 50    | 3.60           |
| 120                            | ISO 24 B-2 | N1 1/2"-20 D | 06 520 008 | 11                 | M20 | 140 | 172                             | 65-97 / 73-97                 | 45 / 50    | 4.25           |
| <b>Triplex «T»</b>             |            |              |            |                    |     |     |                                 |                               |            |                |
| 35                             | ISO 06 B-3 | N3/8"-10 T   | 06 530 001 | 15                 | M10 | 70  | 20                              | 33-48                         | 18         | 0.25           |
| 40                             | ISO 08 B-3 | N1/2"-12 T   | 06 530 002 | 15                 | M12 | 80  | 35                              | 41-51                         | 27         | 0.50           |
| 50                             | ISO 10 B-3 | N5/8"-12 T   | 06 530 003 | 15                 | M12 | 80  | 35                              | 43-50                         | 27         | 0.95           |
| 50                             | ISO 10 B-3 | N5/8"-20 T   | 06 530 004 | 15                 | M20 | 120 | 172                             | 56-84                         | 38         | 1.25           |
| 60                             | ISO 12 B-3 | N3/4"-20 T   | 06 530 005 | 15                 | M20 | 120 | 172                             | 59-80                         | 38         | 1.50           |
| 80                             | ISO 16 B-3 | N1"-20 T     | 06 530 006 | 13                 | M20 | 160 | 172                             | 74-108                        | 45         | 2.90           |
| 100                            | ISO 20 B-3 | N1 1/4"-20 T | 06 530 007 | 13                 | M20 | 160 | 172                             | 78-105 / 86-105               | 45 / 50    | 5.20           |
| 120                            | ISO 24 B-3 | N1 1/2"-20 T | 06 530 008 | 11                 | M20 | 180 | 172                             | 90-111 / 98-111               | 45 / 50    | 6.20           |

## Sprocket wheel type N

| Roller chain<br>ANSI   DIN 8187 |          | Type       | Art.-No.   | Number<br>of teeth | A  | B    | C  | D      | Weight<br>[kg] |
|---------------------------------|----------|------------|------------|--------------------|----|------|----|--------|----------------|
| 35                              | ISO 06 B | N3/8"-10   | 06 500 001 | 15                 | 10 | 5.3  | 9  | 45.81  | 0.06           |
| 40                              | ISO 08 B | N1/2"-10   | 06 500 002 | 15                 | 10 | 7.2  | 9  | 61.08  | 0.15           |
| 40                              | ISO 08 B | N1/2"-12   | 06 500 003 | 15                 | 12 | 7.2  | 12 | 61.08  | 0.15           |
| 50                              | ISO 10 B | N5/8"-12   | 06 500 004 | 15                 | 12 | 9.1  | 12 | 76.36  | 0.27           |
| 50                              | ISO 10 B | N5/8"-20   | 06 500 005 | 15                 | 20 | 9.1  | 15 | 76.36  | 0.29           |
| 60                              | ISO 12 B | N3/4"-12   | 06 500 006 | 15                 | 12 | 11.1 | 12 | 91.63  | 0.47           |
| 60                              | ISO 12 B | N3/4"-20   | 06 500 007 | 15                 | 20 | 11.1 | 15 | 91.63  | 0.47           |
| 80                              | ISO 16 B | N1"-20     | 06 500 008 | 13                 | 20 | 16.1 | 15 | 106.14 | 0.88           |
| 100                             | ISO 20 B | N1 1/4"-20 | 06 500 009 | 13                 | 20 | 18.5 | 15 | 132.67 | 1.60           |
| 120                             | ISO 24 B | N1 1/2"-20 | 06 500 010 | 11                 | 20 | 24.1 | 15 | 135.23 | 1.93           |

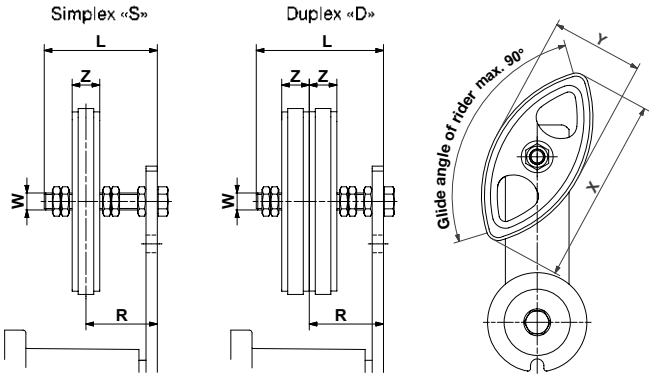


# Chain Drives

## Chain rider set type P Chain rider type P

For an ideal positioning of the chain rider/s on the threaded rod we do recommend to position them on each side by means of two nuts, secured against each other, with some play for swivelling into working position.

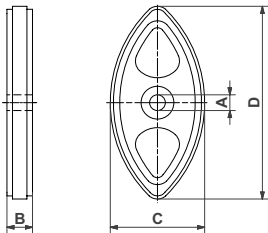
## Chain rider set type P



| Roller chain<br>ANSI   DIN 8187 |            | Type       | Art.-No.   | W   | L  | X   | Y  | Z    | Torque<br>hex nut 0.5 d<br>[Nm] | Adjusting<br>range track<br>R | Size<br>SE | Weight<br>[kg] |
|---------------------------------|------------|------------|------------|-----|----|-----|----|------|---------------------------------|-------------------------------|------------|----------------|
| <b>Simplex «S»</b>              |            |            |            |     |    |     |    |      |                                 |                               |            |                |
| 35                              | ISO 06 B-1 | P3/8"- 8 S | 06 550 001 | M8  | 45 | 74  | 37 | 10.2 | 11                              | 19-34                         | 11         | 0.05           |
| 40                              | ISO 08 B-1 | P1/2"-10 S | 06 550 002 | M10 | 55 | 96  | 48 | 13.9 | 20                              | 23-41                         | 15/18      | 0.10           |
| 50                              | ISO 10 B-1 | P5/8"-10 S | 06 550 003 | M10 | 55 | 126 | 63 | 16.6 | 20                              | 24-39                         | 18         | 0.12           |
| 60                              | ISO 12 B-1 | P3/4"-12 S | 06 550 004 | M12 | 80 | 148 | 72 | 19.5 | 35                              | 30-61                         | 27         | 0.18           |
| <b>Duplex «D»</b>               |            |            |            |     |    |     |    |      |                                 |                               |            |                |
| 35                              | ISO 06 B-2 | P3/8"- 8 D | 06 560 001 | M8  | 45 | 74  | 37 | 10.2 | 11                              | 25-30                         | 11         | 0.07           |
| 40                              | ISO 08 B-2 | P1/2"-10 D | 06 560 002 | M10 | 55 | 96  | 48 | 13.9 | 20                              | 30-34                         | 15/18      | 0.12           |
| 50                              | ISO 10 B-2 | P5/8"-10 D | 06 560 003 | M10 | 70 | 126 | 63 | 16.6 | 20                              | 34-46                         | 18         | 0.17           |
| 60                              | ISO 12 B-2 | P3/4"-12 D | 06 560 004 | M12 | 80 | 148 | 72 | 19.5 | 35                              | 40-52                         | 27         | 0.26           |

## Chain rider type P

| Roller chain<br>ANSI   DIN 8187 |          | Type  | Art.-No.   | A <sup>+0.2</sup> <sub>0</sub> | B    | C  | D   | Weight<br>[kg] |
|---------------------------------|----------|-------|------------|--------------------------------|------|----|-----|----------------|
| 35                              | ISO 06 B | P3/8" | 06 540 001 | 8                              | 10.2 | 37 | 74  | 0.02           |
| 40                              | ISO 08 B | P1/2" | 06 540 002 | 10                             | 13.9 | 48 | 96  | 0.03           |
| 50                              | ISO 10 B | P5/8" | 06 540 003 | 10                             | 16.6 | 63 | 126 | 0.05           |
| 60                              | ISO 12 B | P3/4" | 06 540 004 | 12                             | 19.5 | 72 | 148 | 0.07           |

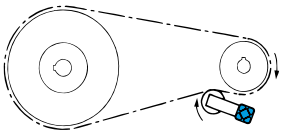


## Mounting instructions for Chain Drives

See also complementary mounting instructions on page 5.

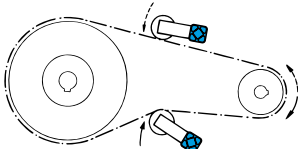
### Standard positioning

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.



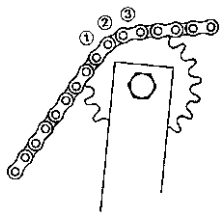
### Reversible chain drive

By reversible chain transmissions it is recommendable to install a tensioner on each side of the chain-strands. Due to the alternate occurring of the slack, both tensioners should only be pre-tensioned up to max. 20°, in order to retain a reset-path of 10°, when strains are changing from slack span on working span in reversible applications.



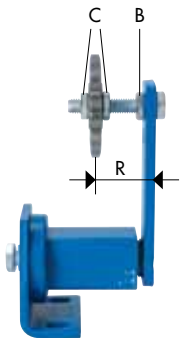
### Sprocket teeth in mesh

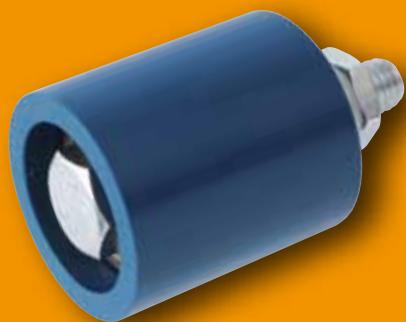
By the initial tensioning of the chain at least three teeth of the tensioner sprocket wheel should be in mesh with the rollers. The min. distance between sprocket wheel of the tensioner to the next sprocket wheel in the chain drive should be at least four chain-pitches.



### Adjustment of chain-track

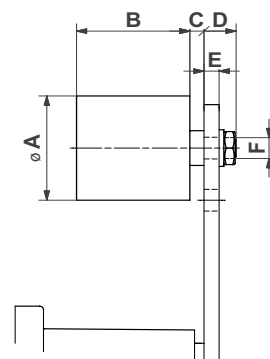
The wheel of the sprocket wheel set is adjustable according to the position of the chain drive track. The wheel is positioned between two nuts on the threaded shaft. In changing the adjustment band «R», the track of the tensioner wheel can be set according to relevant strand course. After positioning of sprocket, re-tighten the two nuts on the side. The counter-nut «B» remains always tightened.





## Accessories belt drives

### Tensioning roller type R



| Type    | Art.-No.   | Max. speed [rpm] | Max. belt width | A  | B   | C  | D  | E max. | F   | Torque hex nut [Nm] | Size SE | Weight [kg] |
|---------|------------|------------------|-----------------|----|-----|----|----|--------|-----|---------------------|---------|-------------|
| R 11    | 06 580 001 | 8000             | 30              | 30 | 35  | 2  | 14 | 5      | M8  | 20                  | 11      | 0.08        |
| R 15/18 | 06 580 002 | 8000             | 40              | 40 | 45  | 6  | 16 | 7      | M10 | 20                  | 15/18   | 0.17        |
| R 27    | 06 580 003 | 6000             | 55              | 60 | 60  | 8  | 17 | 8      | M12 | 35                  | 27      | 0.40        |
| R 38    | 06 580 004 | 5000             | 85              | 80 | 90  | 8  | 25 | 10     | M20 | 160                 | 38      | 1.15        |
| R 45    | 06 580 005 | 4500             | 130             | 90 | 135 | 10 | 27 | 12     | M20 | 160                 | 45      | 1.75        |

## Instructions for belt drives

### a) Selection of the adequate ROSTA-Tensioner size

Selection table mentioning the most conventional V-belt types.

| V-belt type | Width [mm] | Height [mm] | Diam. of smaller pulley [mm] | Initial operation test-force $F_i^{**}$ [N] | Operational test-force $F_o^{**}$ [N] | Size SE* (without SE-W and SE-B) |         |         |         |         |
|-------------|------------|-------------|------------------------------|---------------------------------------------|---------------------------------------|----------------------------------|---------|---------|---------|---------|
|             |            |             |                              |                                             |                                       | 1 belt                           | 2 belts | 3 belts | 4 belts | 5 belts |
| XPZ, SPZ    | 10         | 8           | 56-71                        | 20                                          | 16                                    | 11                               | 18      | 18      | 18      | 18      |
|             |            |             | 75-90                        | 22                                          | 18                                    | 11                               | 18      | 18      | 18      | 27      |
|             |            |             | 95-125                       | 25                                          | 20                                    | 15                               | 18      | 18      | 18      | 27      |
|             |            |             | ≥ 125                        | 28                                          | 22                                    | 15                               | 18      | 18      | 27      | 27      |
| XPA, SPA    | 13         | 10          | 80-100                       | 28                                          | 22                                    | 15                               | 18      | 18      | 27      | 27      |
|             |            |             | 106-140                      | 38                                          | 30                                    | 15                               | 18      | 27      | 27      | 27      |
|             |            |             | 150-200                      | 45                                          | 36                                    | 18                               | 18      | 27      | 27      | 27      |
|             |            |             | ≥ 200                        | 50                                          | 40                                    | 18                               | 18      | 27      | 27      | 38      |
| XPB, SPB    | 16         | 13          | 112-160                      | 50                                          | 40                                    | 18                               | 18      | 27      | 27      | 38      |
|             |            |             | 170-224                      | 62                                          | 50                                    | 18                               | 27      | 27      | 38      | 38      |
|             |            |             | 236-355                      | 77                                          | 62                                    | 18                               | 27      | 38      | 38      | 38      |
|             |            |             | ≥ 355                        | 81                                          | 65                                    | 18                               | 27      | 38      | 38      | 38      |
| XPC, SPC    | 22         | 18          | 224-250                      | 87                                          | 70                                    | 18                               | 27      | 38      | 38      | 38      |
|             |            |             | 265-355                      | 115                                         | 92                                    | 27                               | 38      | 38      | 45      | 45      |
|             |            |             | ≥ 375                        | 144                                         | 115                                   | 27                               | 38      | 38      | 45      | 45      |
|             |            |             |                              |                                             |                                       |                                  |         |         |         |         |
| Z           | 10         | 6           | 56-100                       | 5-7.5                                       |                                       | 11                               | 11      | 11      | 15      | 15      |
| A           | 13         | 8           | 80-140                       | 10-15                                       |                                       | 11                               | 15      | 18      | 18      | 18      |
| B           | 17         | 10          | 125-200                      | 20-30                                       |                                       | 15                               | 18      | 18      | 27      | 27      |
| C           | 22         | 12          | 200-400                      | 40-60                                       |                                       | 18                               | 27      | 27      | 38      | 38      |
| D           | 32         | 19          | 355-600                      | 70-105                                      |                                       | 18                               | 27      | 38      | 38      | 45      |

\* General basic selection criteria:

F resulting tensioning force by a pre-tension angle of 20° (see table page 5)

$F_i$  initial operation test-force according guidelines of the belt manufacturer

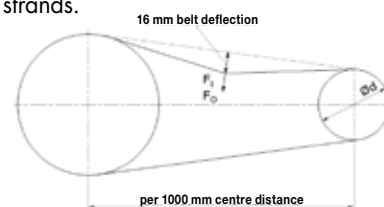
z quantity of belts in drive

2 multiplier for the compensation of belt-slippage and/or of centrifugal force generated on belt strands.

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

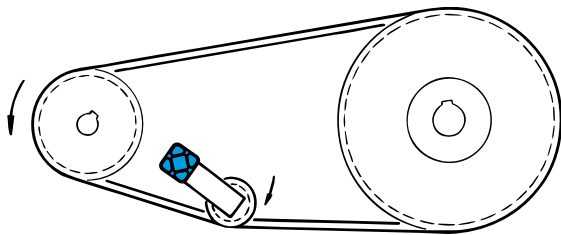
\*\* required test-force for belt deflection of 16 mm per 1000 mm of centre distance.

The relevant deflection by shorter or longer centre distance has to be interpolated accordingly.



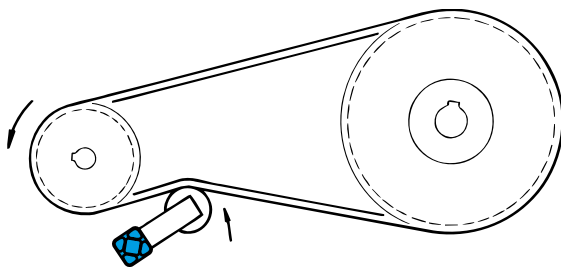
## b) Modalities of tensioning

See also complementary mounting instructions on page 5.



### Tensioning from «inside» of the belt drive with grooved pulley

- Installation in slack span of the belt drive, make sure that the belts are maintaining sufficient contact-arc on the driver- and driven-pulley.
- By extremely long centre distances between driver- and driven-pulley it is recommendable to use on the tensioner a deep-grooved pulley to avoid excessive slack beating.



### Tensioning with flat roller on belt back

- The diameter of the flat tensioning roller should at least measure  $\frac{2}{3}$  of the diameter of the smallest pulley in the drive.
- The width of the tensioning roller should be at least 20% wider than the overall width of the belt set.
- Installation on the belt back in the slack span, make sure that the belts are maintaining sufficient contact-arc on the driver- and driven pulley.

## c) Control procedure for checking belt tension

Proceed according to the mentioned guidelines on page 5 and 10–11.

There are several instruments for checking with the adequate test-force the right tension on your frictional V-belt drive. **Don't make it with your thumb, you will make an estimation mistake and your belts will wear out prematurely!**



Optikrik-tester from **Optibelt**



Spring scale tester from **Gates**



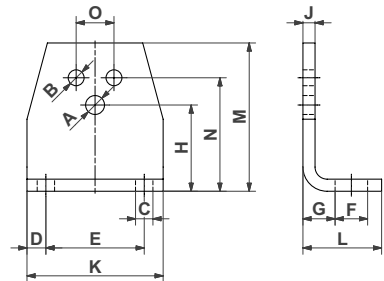
Infrared-frequency tester

Re-tension of belts: Generally, there is no re-tension maintenance service required, however we would recommend to check the test-force after some days of running-in with the required operational test-force (see table page 10).

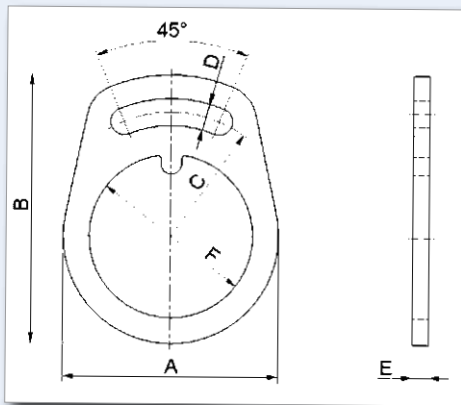
## ROSTA-Tensioning devices and accessories to meet individual customer requirements

### Support bracket type WS

For the easy mounting of all standardized ROSTA-Tensioners (except SE 50).



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

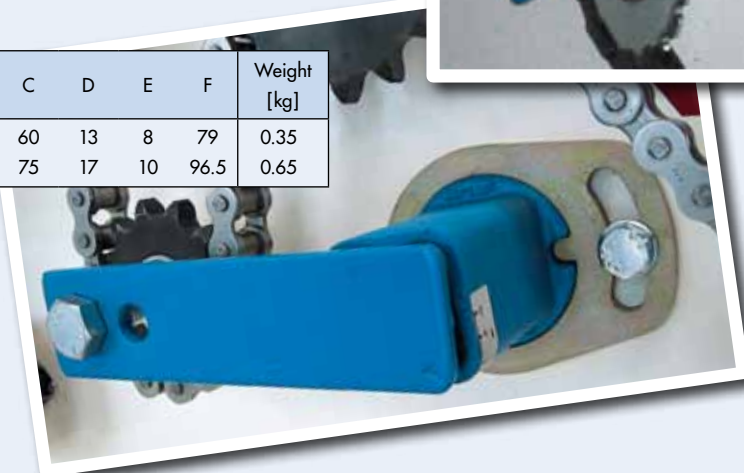


### Safety Sockets SS 27 and SS 38

By uneven surfaces and/or by paint coatings, which are giving insufficient friction locking, the positioning and further re-tensioning can be made with these standardized Safety Sockets.

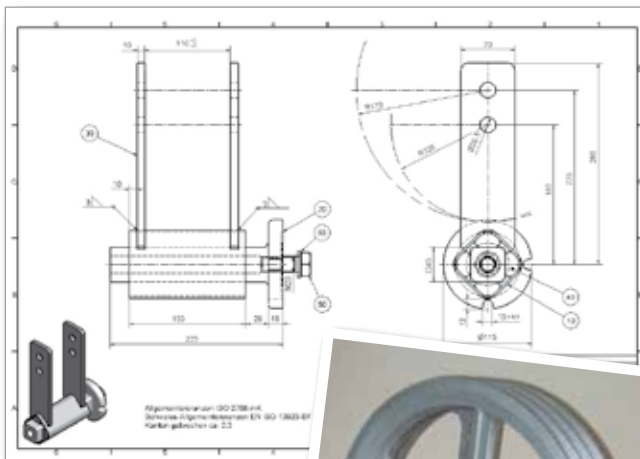
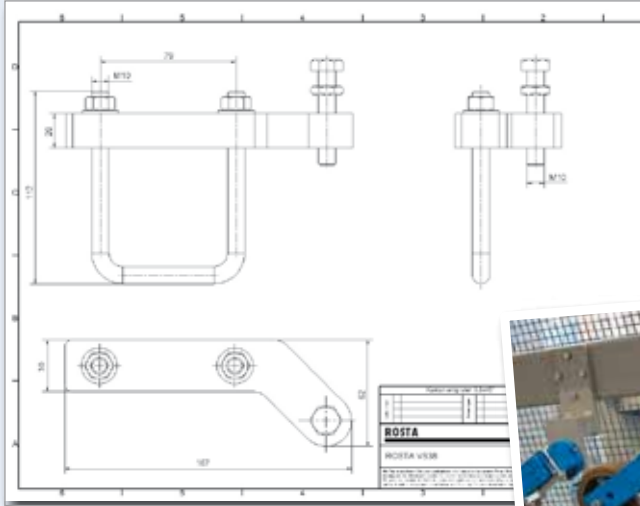


| Type  | Art.-No.   | suitable to Size SE | A   | B   | C  | D  | E  | F    | Weight [kg] |
|-------|------------|---------------------|-----|-----|----|----|----|------|-------------|
| SS 27 | 06 618 400 | 27                  | 104 | 130 | 60 | 13 | 8  | 79   | 0.35        |
| SS 38 | 06 618 394 | 38                  | 128 | 161 | 75 | 17 | 10 | 96.5 | 0.65        |



## Guide roller suspensions with tensioners SE and pre-tensioning devices VS

For the accurate definition of the required pre-tension and limitation of the roller travel we do recommend the use of our pre-tensioning clamp VS allowing angle adjustments from 0–15° (for all SE-sizes available).



## DAT (Double Arm Tensioner)

For the transfer of very high tension-forces we do recommend to use this double arm tensioner, avoiding any misalignment or fault of parallelism between tensioner housing and inner square-core-generating belt eating angular off-set of the tensioning pulley.

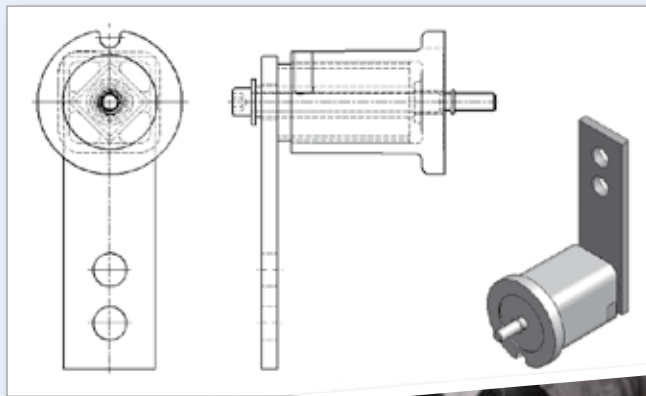
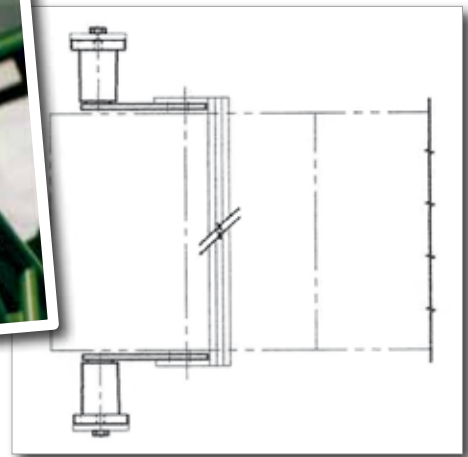
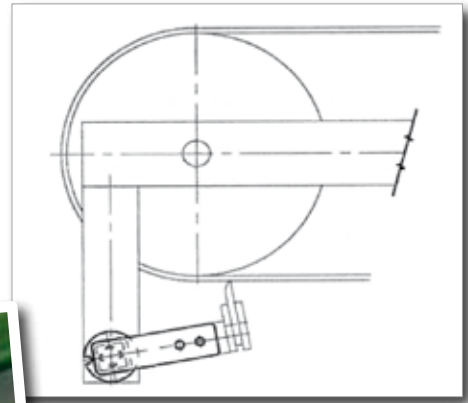


### Elastic suspension of conveyor belt scrapers with tensioners SE

The ROSTA-suspension is offering continuous and wear compensating cleaning pressure on conveyor belt scrapers to abrade small particle sizes.

For belt widths:

- 400–600 mm = 2 units [SE 18](#)
- 600–800 mm = 2 units [SE 27](#)
- 800–1000 mm = 2 units [SE 38](#)
- 1000–1300 mm = 2 units [SE 45](#)



### ROSTA Tensioning Device type SE-F (W) 38 for the Bus Industries

Today, nearly all busses for passenger transport are equipped with an air-conditioning system.

The Diesel engine of the bus serves thereby as energy source of the cooling compressor. The piston- or rotation compressors are driven via V- or Poly-V belts from the spur wheel of the main engine. This belt transmission requires a slippage-free power train to ensure the full capacity of the cooling compressors.

ROSTA AG designed for this specific application a heat resistant tensioner – powerful, compact with a long compensation travel.

Different versions available. Please do not hesitate to contact ROSTA directly.



### Packaging units for Distribution and large-scale Consumers

Please select the protecting, stackable and discount-priced packaging units for the ROSTA-standard-tensioners type SE.

|                   |              |   |           |
|-------------------|--------------|---|-----------|
| Quantity per box: | <b>SE 11</b> | = | 30 pieces |
|                   | <b>SE 15</b> | = | 20 pieces |
|                   | <b>SE 18</b> | = | 15 pieces |
|                   | <b>SE 27</b> | = | 10 pieces |



## ROSTA chain and belt tensioners ... ... a success story!

In the year 1961, a foreman at ROSTA AG became annoyed about the tedious and ever recurring re-tensioning of the belt on a large ventilator. Without a moment's hesitation, he sawed an old ROSTA rubber suspension axle in two and fitted a tension roller onto the lever arm – the automatic belt tensioner was born. People at ROSTA AG were very happy about this «invention» by the foreman – but it took a full 2 years before the owner of the company had the idea of commercialising this application, and of offering standardized chain and belt tensioners worldwide.

These simple, maintenance-free and automatic re-tensioning ROSTA machine components very quickly became established in general machinery and system construction, and, thanks to good marketing, demand from all over the world increased rapidly. Even today, several hundred thousand of these **blue** tensioning elements are being manufactured at ROSTA AG and by two licensees every year.

**Original ROSTA chain and belt tensioners – often copied but never matched!**



# Strained Applications!

A few examples:



**ROSTA**   
*swinging solutions*

ROSTA AG  
CH-5502 Hunzenschwil  
Phone +41 62 897 24 21  
Fax +41 62 897 15 10  
E-Mail [info@rosta.ch](mailto:info@rosta.ch)  
Internet [www.rosta.ch](http://www.rosta.ch)

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