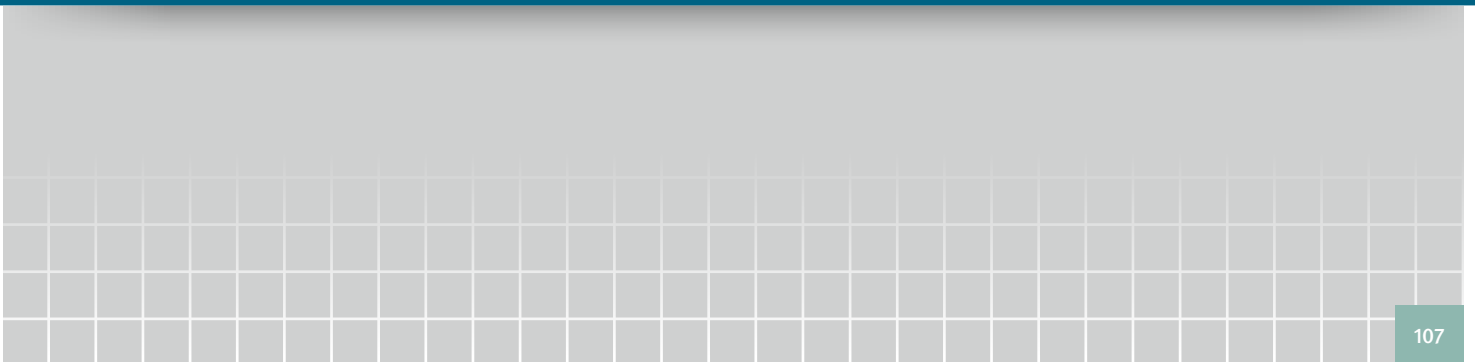


TENSIONING SYSTEMS



TENSIONING SYSTEMS – TABLE OF CONTENTS

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TENSIONING SYSTEMS

For chains and belts

Chains and belts are important wearing parts in many plants and machines. Since they are constantly moving, the stresses to which they are subjected are particularly high. Belts require pretensioning – chain links elongate and run increasingly less smoothly.

Murtfeldt tensioning systems keep chains and belts reliably tensioned, thus increasing their lifetime. They are tried-and-tested following decades of use around the world. Our experience with these systems enables us to provide you with optimum advice and to always offer the best possible solution for your needs.

Wide range – extensive inventory

Thanks to our variety of different tensioning systems, we are able to quickly and accurately meet practically any requirements. If you require an individual solution, our free-of-charge, non-binding consulting services are sure to help.

One more thing: We supply all tensioning systems with a declaration of installation in line with the Machinery Directive EC 2006/42/EC.

Advantages of our tensioning systems

- Smooth chain movement
- Reduction in wear on chain links and drive sprockets
- Reduction in working noise
- Automatic adjustment
- Compensation for chain and belt elongation
- Use as chain and belt monitors
- Direction change for chain and belt drives
- Small installation size
- Simple assembly
- Quick and safe recognition of need to adjust system thanks to optical control display



FUNCTION, PRINCIPLES, HANDLING

Our tensioning systems are free-running and resilient. As a result, they do not function as rigid deflectors when stressed. This avoids excessive contact pressure. Our systems aim to keep the overall force on the slack strand – resulting from the weight of the chain and the centrifugal force – under control. The ideal installation position is right behind the drive sprocket in order to keep the length of the slack strand that needs to be tensioned as short as possible.

Tried-and-tested quality

The stable design of the steel housing makes our tensioning systems resistant to high mechanical loads. Our housings and tensioning systems are galvanized, which provides protection against corrosion. A plastic lacquer makes the surface impact and scratch resistant. In addition, we offer a stainless steel range for particularly high corrosion resistance requirements. All slide profiles are made of Original Material "S"®.

Installation

Special holding mechanisms initially hold back the spring action. When these retainers are released following the installation, the tensioning pressure is released in a targeted manner.

Tension force regulation

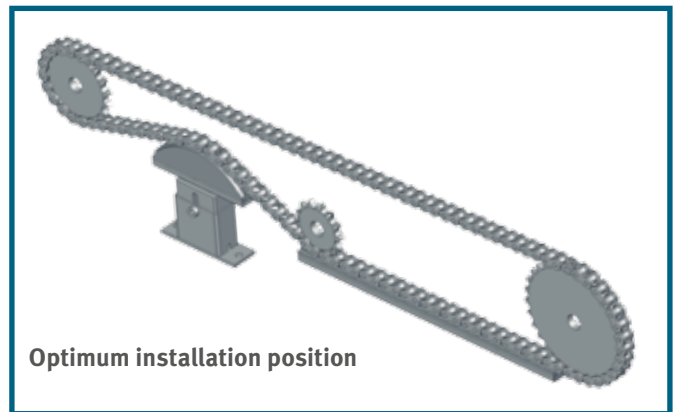
For all Murtfeldt tensioning systems, you can choose either light or heavy tensioning pressure. Depending on the type, the tensioners have one, two, or three springs. You decide how many springs you want to use. This enables the optimum application of pressure onto a chain or belt running on the profile.

Use at extreme temperatures

If you choose the correct material, you can also use our tensioning systems in otherwise problematic temperature ranges:

Normal steel springs: -10 to +170°C

Stainless steel springs: -40 to +200°C

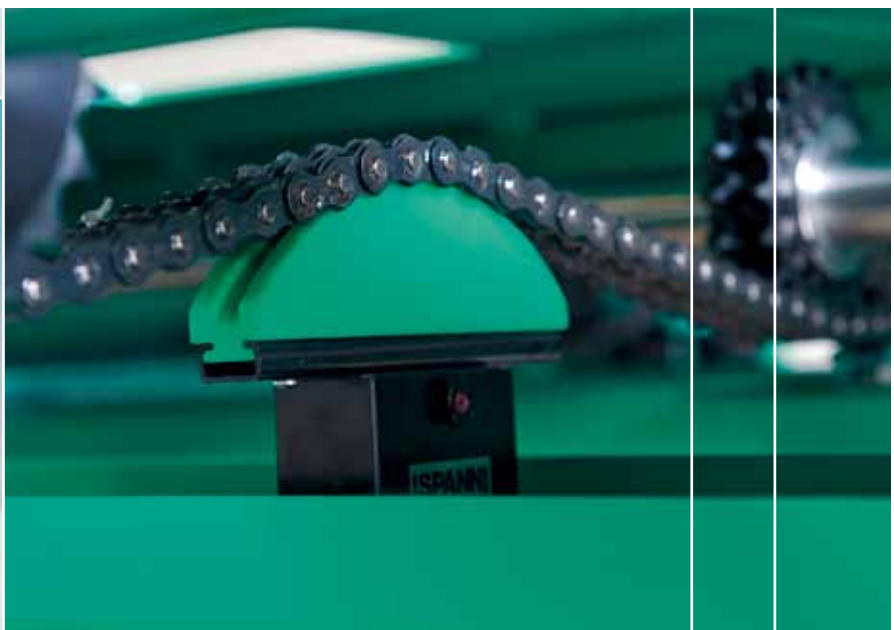


Optimum installation position

Employees from our application technology department are constantly available to make sure that we are able to provide the best product to meet your requirements.

The weight on the return side of the chain that is to be tensioned should not be greater than the force of a spring already 50% released.

The red dot on the Spann-Box® means "heavy tensioning force".



OPTICAL CONTROL DISPLAYS

Murtfeldt Spann-Box® systems generally have a coloured scale. This enables you to determine the tensioning state of the chain at a glance. The display is as easy to understand as possible:

■ Green

The chain tensioner is working in the “green range”. The tensioning force is providing an ideal, smooth running movement.

■ Yellow

The tensioning force is not ideal but is still sufficient.

■ Red

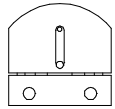
The chain tensioner needs to be adjusted. The tensioning force on the chain is too low for a smooth and reliable running movement.

The chain has to be replaced if it is not possible to sufficiently adjust the chain tensioner using any of the available adjustment options.

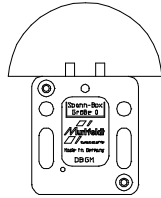


OVERVIEW OF SPANN-BOX® TYPES

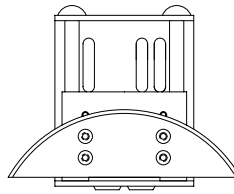
Chain tensioners



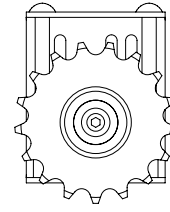
Mini-tensioner
page 121



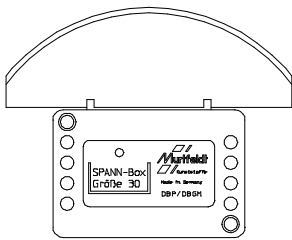
Spann-Box® size 0
page 124



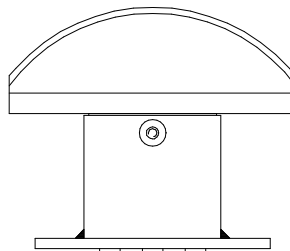
Spann-Boy® TS with arc
segment profile – page 122



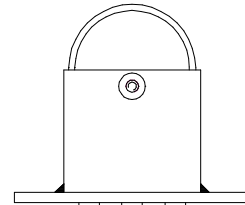
Spann-Boy® TS
with sprocket – page 123



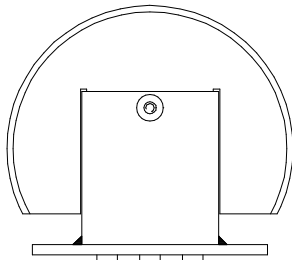
Spann-Box® size 30
page 125



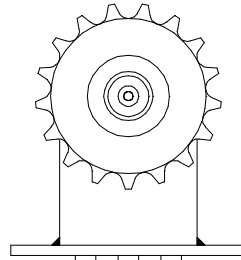
Spann-Box® size 1 with arc
segment profile – page 126



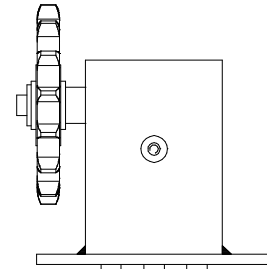
Spann-Box® size 1 with
semi-circular profile – page 127



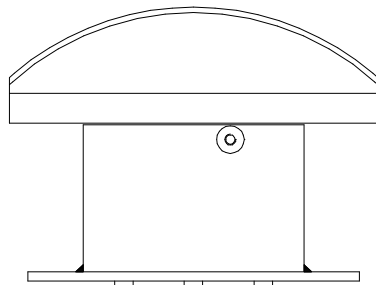
Spann-Box® size 1 with return
profile – page 128



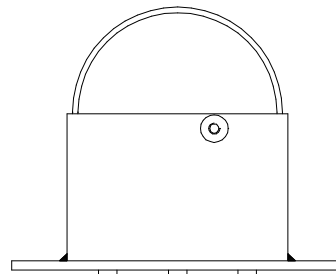
Spann-Box® size 1 with sprocket
Type K-L – page 129



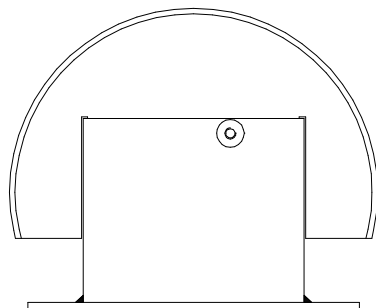
Spann-Box® size 1 with
sprocket Type K-S – page 129



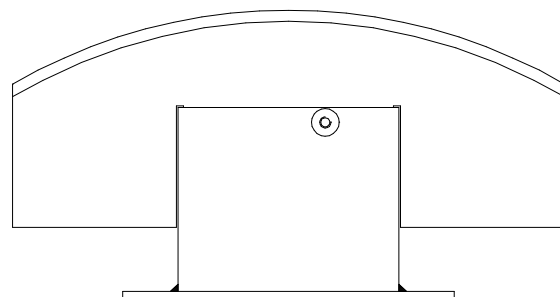
Spann-Box® size 2 with arc segment profile – page 130



Spann-Box® size 2 with semi-circular profile – page 131

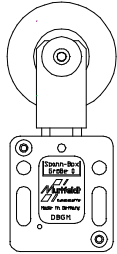


Spann-Box® size 2 with return profile – page 132

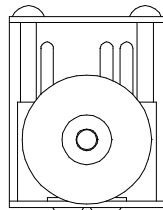


Spann-Box® size 2 with block profile – page 133

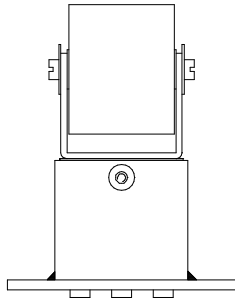
Belt tensioners



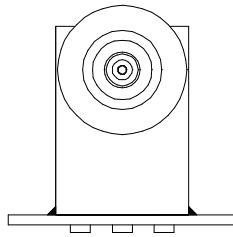
Spann-Box® size 0
page 136



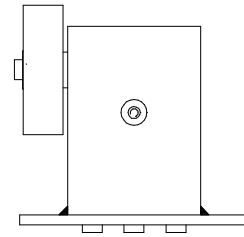
Spann-Boy® TS
tensioning roller – page 135



Spann-Box® size 1 belt tensioner with
tensioning roller at top – page 137



Spann-Box® size 1 with
tensioning roller type SR-L – page 138



Spann-Box® size 1 with
tensioning roller type SR-S – page 139

SIGNS AND SYMBOLS

Features and properties of tensioning systems



One pre-tensioned compression spring,
tension distance specification in mm



Two pre-tensioned compression springs,
tension distance specification in mm



Three pre-tensioned compression springs,
tension distance specification in mm



Further adjustment possible: Adjustment range in mm
once original tension distance has been used (value
for size 1 and size 2 if using mounting bracket)



Plastic housing



Steel housing (also stainless steel)



Track profile for all large chains



U profile for chains up to specified overall
width in mm

THE CORRECT CHOICE OF CHAIN TENSIONER

Smooth running is a decisive factor for the long lifetime of a chain. We therefore recommend the use of a chain tensioner with a slide profile. Advantage: Protects the chain links and provides a quieter, safer movement.

We are happy to provide detailed advice if you inform us of the required criteria. Our Web site at www.murtfeldt.com contains a design questionnaire that you can use to enter all required data.

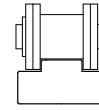
IMPORTANT CRITERIA WHEN SELECTING THE BEST CHAIN TENSIONER FOR YOUR NEEDS







































- Axis-centre distances of sprockets
- Chain design
- Constant/changing running direction
- Chain speed
- Chain lubrication
- Operating time and intensity
- Risk of contamination
- Environmental temperature
- Chemical influences

SELECTION TABLE FOR CHAIN TENSIONERS

- 1) It is possible to use several types of SPANN-BOX® alongside each other with duplex or triplex chains.
 2) Slide profile or return pulley with U-profile.

Simplex chain



| Chain | Pitch | inch | MINI-TENSIONER | SPANN-BOY®TS with arc segment profile | SPANN-BOY®TS with sprocket | SPANN-BOX® size 0 | SPANN-BOX® size 30 | SPANN-BOX® size 1 | SPANN-BOX® size 2 | MINI-TENSIONER |
|--|--------|-------|--|--|--|--|--|---|---|---|
| DIN ISO | mm | | | | | | | | | |
| Unspecified chains with a width of up to 15 mm ²⁾ | | |  2) |  2) |  2) |  2) | | | |  |
| 06B | 9,525 | 3/8 |  |  2) |  2) |  2) |  2) |  | |  |
| 08B | 12,7 | 1/2 |  |  |  |  |  |  | | |
| 10B | 15,875 | 5/8 | |  |  |  |  |  | | |
| 12B | 19,05 | 3/4 | |  |  |  |  |  |  | |
| 16B | 25,4 | 1 | | | | | |  |  | |
| 20B | 31,75 | 1 1/4 | | | | | |  |  | |
| 24B | 38,1 | 1 1/2 | | | | | | |  | |
| 28B | 44,45 | 1 3/4 | | | | | | |  | |
| 32B | 50,8 | 2 | | | | | | |  | |
| 40B | 63,5 | 2 1/2 | | | | | | |  | |
| 48B | 76,2 | 3 | | | | | | |  | |

EXPLANATION OF SYMBOLS

Profiles symbols for selection tables



Arc segment profile

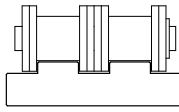
- Slide profile shape with optimum mechanical properties
- Simultaneous contact with several rollers
- Optimum chain protection



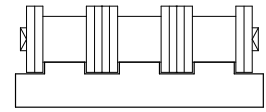
Return profile

- 180° change of direction
- The 180° change of direction permits the dual use of longer tension distances.

Duplex chain



Triplex chain



| SPANN-BOY®TS with arc segment profile | SPANN-BOY®TS with sprocket | SPANN-BOX® size 0 | SPANN-BOX® size 30 | SPANN-BOX® size 1 | SPANN-BOX® size 2 | SPANN-BOY®TS | SPANN-BOX® size 0 | SPANN-BOX® size 30 | SPANN-BOX® size 1 | SPANN-BOX® size 2 |
|---------------------------------------|----------------------------|-------------------|--------------------|-------------------|-------------------|--------------|-------------------|--------------------|-------------------|-------------------|
| 2) | 2) | 2) | 2) | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | 1) |
| | | | | | 1) | | | | | 1) |
| | | | | | 1) | | | | | 1) |
| | | | | | 1) | | | | | 1) |
| | | | | | 1) | | | | | 1) |



Block profile

- Suitable for particularly heavy chains and high mass forces
- Slide profile and tension core made from a single piece
- No screw connections
- Excellent stability
- 300 mm slide profile ensures support for many rollers with chains with large chain pitches



Semi-circular profile

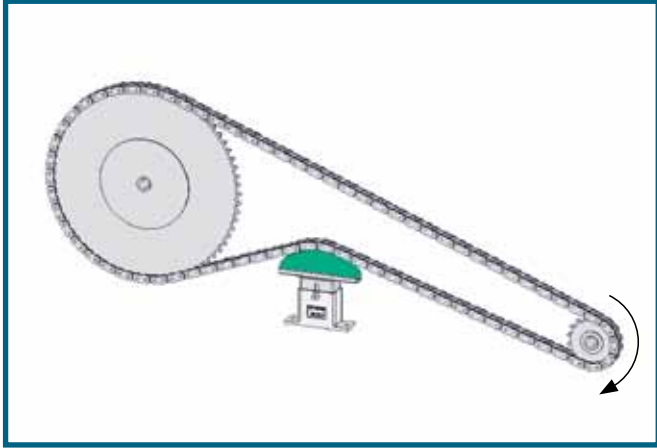
- For 90° deflection
- Contact with only very few chain rollers
- Recommended where space is at a premium



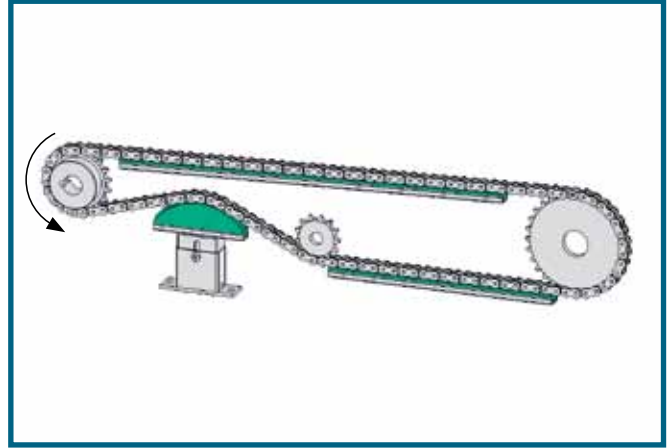
Roller/sprocket

- For small changes of direction
- For high chain speeds (>1 m/s)

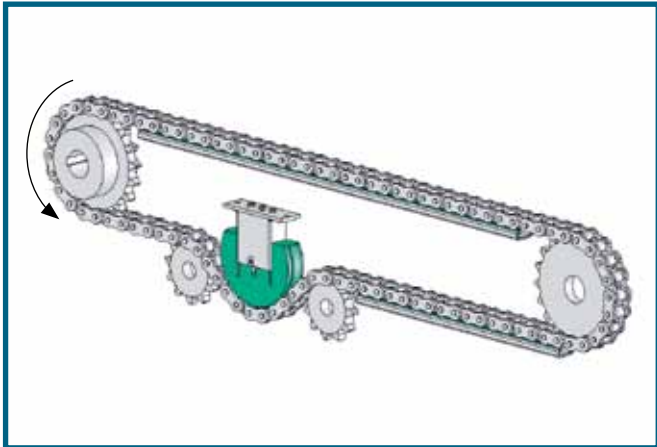
GRAPHICAL DEPICTION OF INSTALLATION EXAMPLES



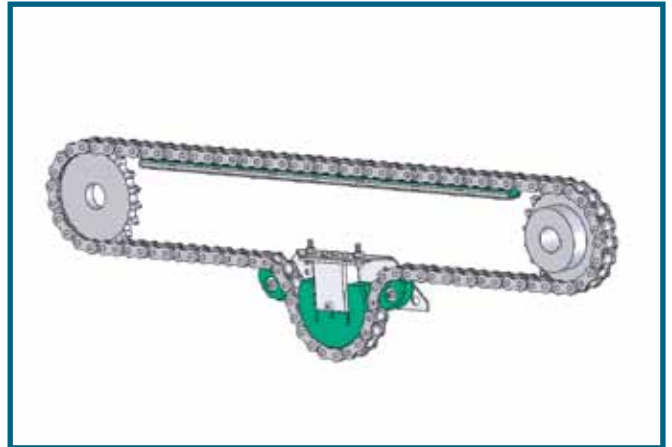
Popular but non-optimal arrangement, tension distance not used efficiently



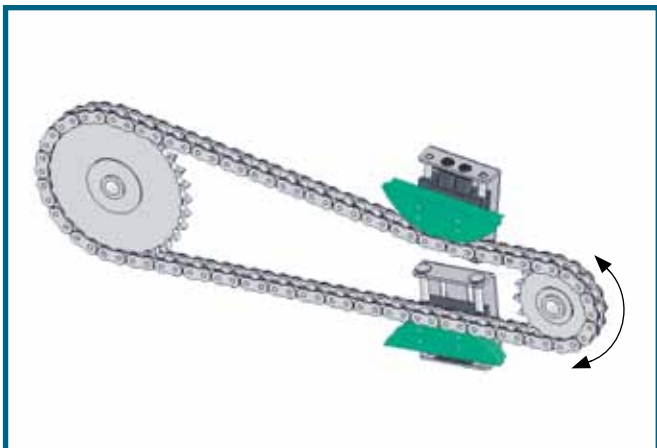
Optimum, extremely efficient chain support/tensioning



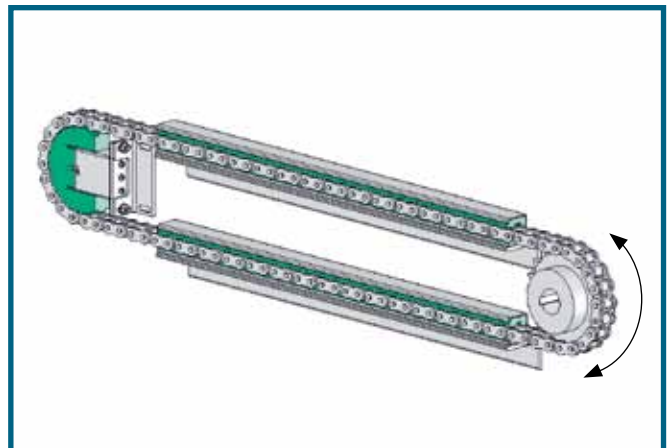
180° return profile. This arrangement allows a particularly long chain length to be accommodated.



Omega tensioning station – ready-to-install system



If the running direction changes, we recommend using two Spann-Box® units near to the drive.



Return/tensioning station

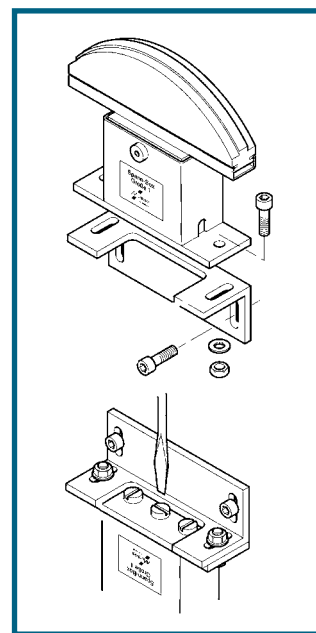
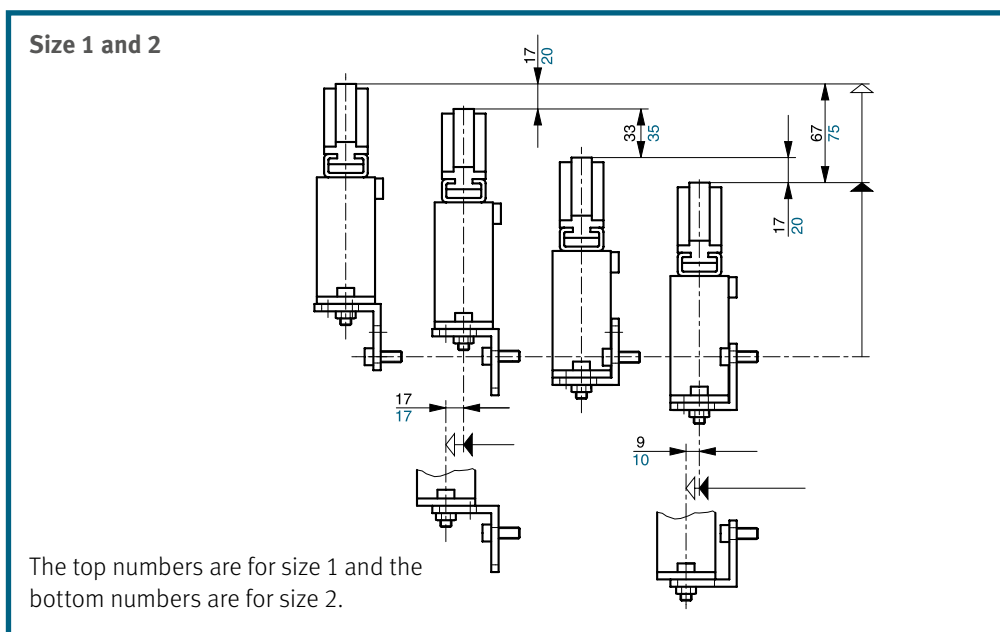
MOUNTING BRACKETS FOR SPANN-BOX® SYSTEMS

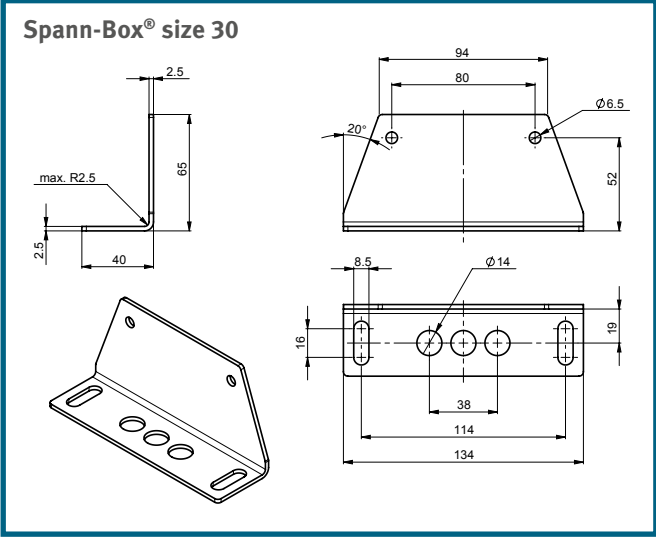
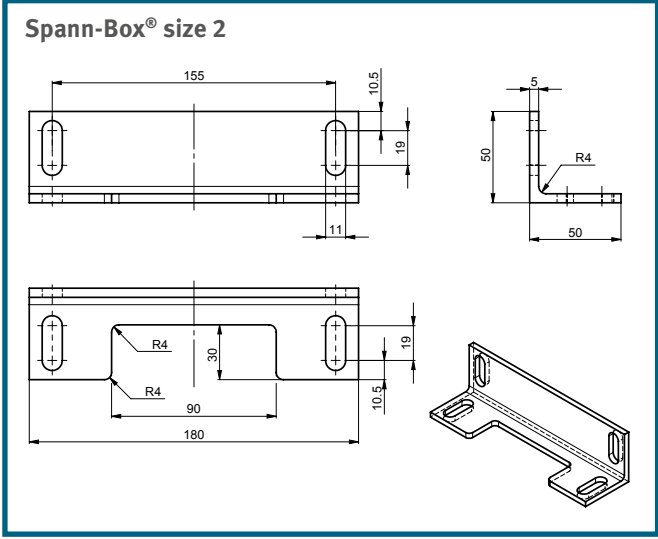
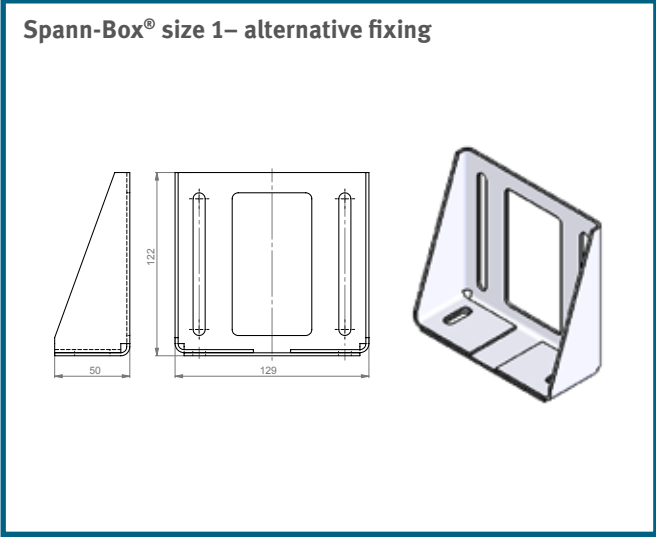
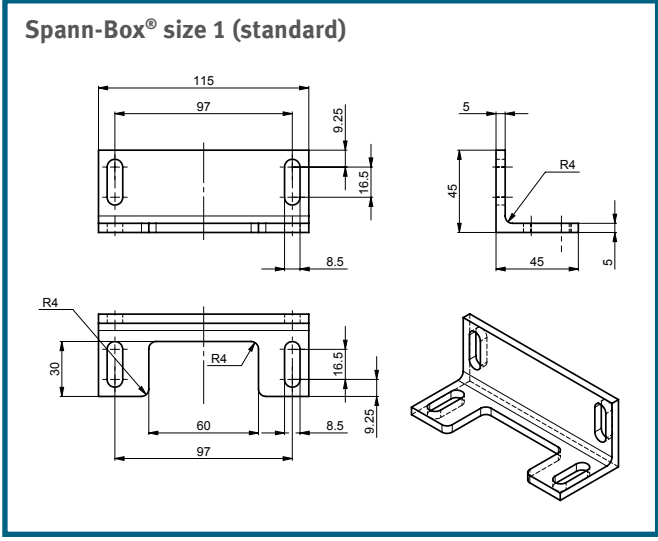
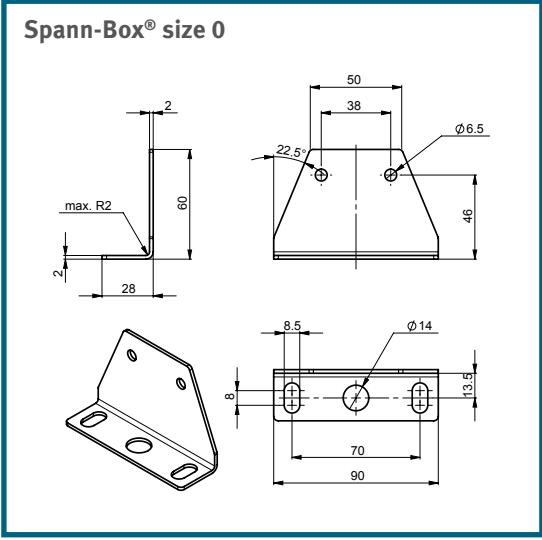
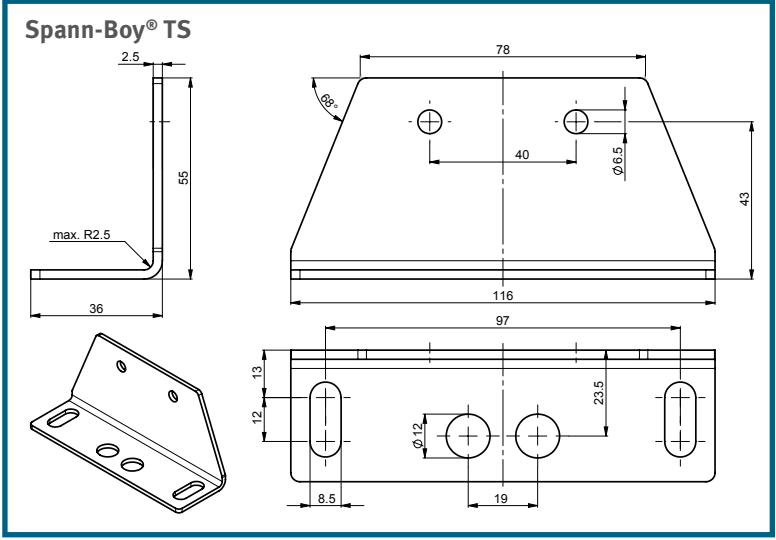
The ideal assembly aid

We offer various mounting brackets to make assembly more easy. They provide additional modification/adjustment flexibility. Elongated mounting holes allow easy adjustment if the normal tension distance has already been used up. Alignment errors can be corrected by side movement.

We are happy to provide detailed assembly instructions for all our systems. Simply contact us or see our website at www.murtfeldt.com.

| Corresponding size | Adjustment range | Material | Article no. |
|--------------------|------------------|---------------------------|-------------|
| 1 | 67 mm | St 37 powder-coated | 281 090 001 |
| 2 | 75 mm | St 37 powder-coated | 281 090 002 |
| 1 | 67 mm | 1.4301 (V2A) | 281 090 029 |
| 2 | 75 mm | 1.4301 (V2A) | 281 090 030 |
| 0 | – | 1.4301 (V2A) incl. screws | 281 090 087 |
| 30 | – | 1.4301 (V2A) incl. screws | 281 090 088 |





CHAIN AND BELT MONITORS

If a chain has excessive elongation or a break, critical damage can occur. Our chain and belt monitors track the production process and trigger the automatic shutdown of the machine if malfunctions occur. For this purpose, a mechanical limit switch or contact-free inductive switch is integrated into your chain or belt tensioner.

Both individual and reliable

Switch design requirements can vary greatly. Please contact us for more information. We will design the best solution for your requirements.

Inductive switches for Spann-Box®






Alternatively, a contact-free inductive switch can be used. This makes sense if there is a risk of explosion or contamination. Concerns about wear might also result in the use of an inductive switch. Inductive switches can be used for Spann-Box® size 1 and 2. Special models and designs in stainless steel are available on request.



Chain tensioners for roller chains per DIN 8187

MINI-TENSIONER

The smallest automatic chain tensioner in our range, the mini-tensioner is targeted for use with smaller chains with a chain pitch of up to 1/2".

| DIN 8187 chain no. | Pitch in mm | Pitch in inch | simplex | duplex | triplex |
|--------------------|-------------|---------------|---|---|-----------|
| ≤ 06B | – | – |  |  | |
| 06B | 9,525 | 3/8 |  |  | |
| 08B | 12,7 | 1/2 |  | | |
| Tension force | | | | Light | Heavy |
| | | | 2 springs | 19 – 13 N | 85 – 58 N |
| | | | Tension distance | 16 mm | 16 mm |

MINI-TENSIONER

with arc segment profile



Tensioning pressure

- Choice of light or heavy spring force

Chain guide

- Track profile for 06B-1, 08B-1 and duplex chains

Attachment

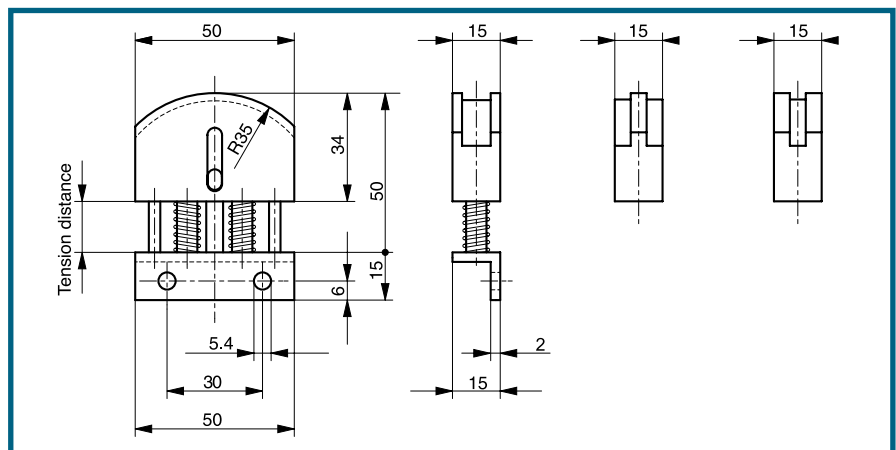
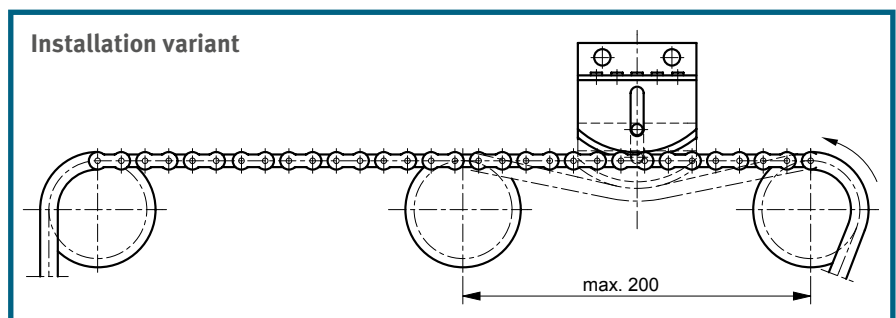
- Screws on bracket base

Axis-centre distance

- Max. 200mm recommended

| DIN 8187 chain no. | Light tension force Article no. | Heavy tension force Article no. |
|--------------------|---------------------------------|---------------------------------|
| <06B-1 (U-Profil) | 281 050 001 | 281 050 002 |
| 06B-1 | 281 050 003 | 281 050 004 |
| 08B-1 | 281 050 009 | 281 050 010 |
| 10B-1 | – | 281 050 011 |
| 05B-2 | 281 050 005 | 281 050 006 |
| 06B-2 | 281 050 007 | 281 050 008 |

Special and stainless steel designs on request



SPANN-BOY® TS

Three tension pressure settings

If the space beneath the chain is not large enough for a traditional tensioning system, Spann-Boy® TS can be used. They are installed near to the chain and thus require considerably less space.

Design

Our Spann-Boy® TS models are made from robust steel. The focus is on achieving a long lifetime and reliability. There are two different variants: With an arc segment profile or with a sprocket. Spann-Boy® TS has two pre-tensioned

springs. They can be released separately and provide three different tension pressure settings. The bore holes in the housing make assembly easier and provide more scope for adjustment once the original tension distance has been used up.

| | | Light | Heavy |
|-----------------------------|--------------------|--------------------------|------------|
| Tension force Spann-Boy® TS | 1 released spring | 58 – 32 N | 132 – 60 N |
| | 2 released springs | 190 – 96 N (extra heavy) | |
| | Tension distance | 40 mm | 40 mm |

SPANN-BOY® TS with arc segment profile



Applications

- For applications with restricted free space beneath the chain. 40mm are sufficient.

Tensioning pressure

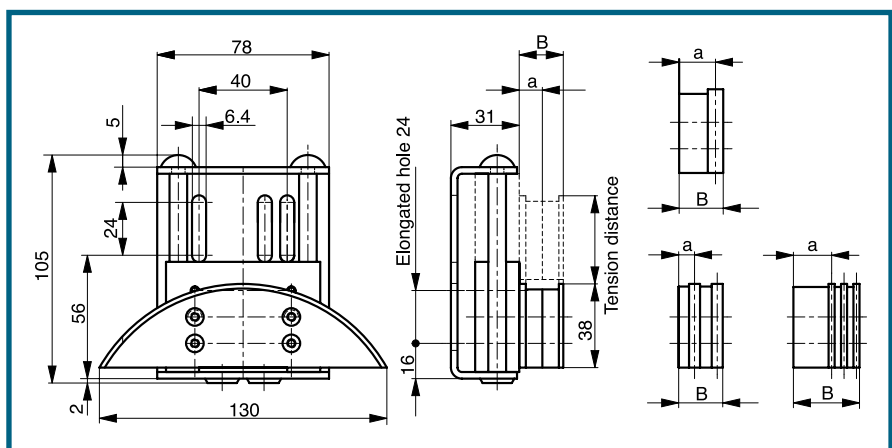
- Spann-Boy® TS has one light and one heavy pressure spring that can be released together or separately depending on the required tension pressure.

Attachment

- Installed next to the chain
- Bore holes in the housing (for matching fastening brackets refer to pages 118 - 119)

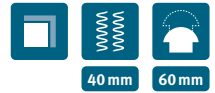
| DIN 8187 chain no. | B | a | Article no. Standard design | Article no. Stainless steel |
|--------------------|----|------|-----------------------------|-----------------------------|
| ≤06B-1 (U-Profile) | 20 | 10,0 | 281 060 001 | 282 060 002 |
| 08B-1 | 20 | 16,5 | 281 060 003 | 282 060 004 |
| 10B-1 | 20 | 15,6 | 281 060 005 | 282 060 006 |
| 12B-1 | 20 | 14,8 | 281 060 007 | 282 060 008 |
| 06B-2 | 20 | 7,5 | 281 060 009 | 282 060 010 |
| 08B-2 | 32 | 15,2 | 281 060 011 | 282 060 012 |
| 10B-2 | 32 | 11,3 | 281 060 013 | 282 060 014 |
| 05B-3 | 20 | 7,4 | 281 060 015 | 282 060 016 |
| 06B-3 | 32 | 9,4 | 281 060 017 | 282 060 018 |

Special designs on request



SPANN-BOY® TS

with sprocket



Applications

- For applications with restricted free space beneath the chain
- High chain speeds (>1m/s)
- Small return radii

Tensioning pressure

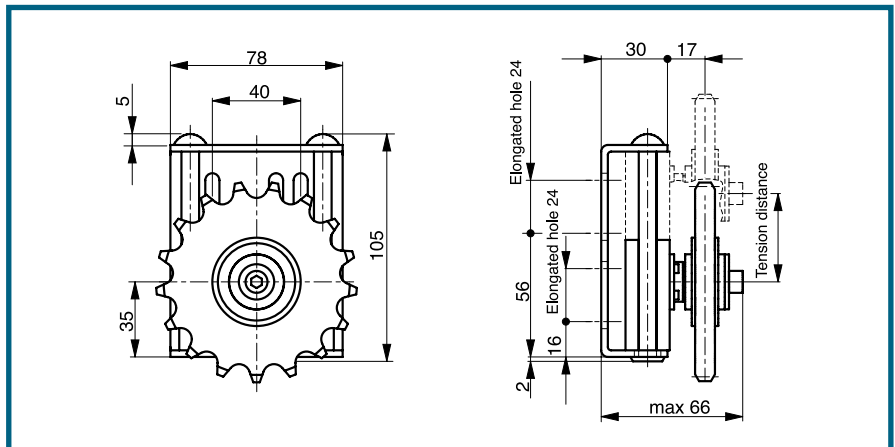
- Spann-Boy® TS has one light and one heavy pressure spring that can be released together or separately depending on the required tension pressure.

Attachment

- Installed next to the chain
- Bore holes in the housing (for matching fastening brackets refer to pages 118 - 119)

| DIN 8187 chain no. | Number of teeth | Article no. Standard design |
|--------------------|-----------------|--------------------------------|
| 06B-1 | 20 | 281 260 002 |
| 06B-1 | 21 | 281 260 003 |
| 06B-1 | 23 | 281 260 004 |
| 08B-1 | 16 | 281 260 005 |
| 08B-1 | 17 | 281 260 006 |
| 08B-1 | 18 | 281 260 007 |
| 10B-1 | 14 | 281 260 008 |
| 10B-1 | 15 | 281 260 009 |
| 10B-1 | 16 | 281 260 010 |
| 10B-1 | 17 | 281 260 011 |
| 12B-1 | 13 | 281 260 012 |
| 12B-1 | 15 | 281 260 013 |
| 12B-1 | 16 | 281 260 014 |
| 12B-1 | 17 | 281 260 015 |

Special and stainless steel designs on request



SPANN-BOX® SIZE 0

The Spann-Box® size 0 is the smallest in our range. It is used where installation spaces are very restricted. The plastic housing means there is no risk of corrosion.

| | | Light | Heavy |
|---------------|------------------|-----------|------------|
| Tension force | 1 spring | 58 – 32 N | 132 – 60 N |
| | Tension distance | 40 mm | 40 mm |

SPANN-BOX® SIZE 0 with semi-circular profile

Stainless steel screws and springs



Applications

- Restricted installation space
- Environments with a risk of corrosion
- Chain drives with a pitch of up to 3/4"

Tensioning pressure

- Choice of light or heavy spring force
- Lock pin in base of housing

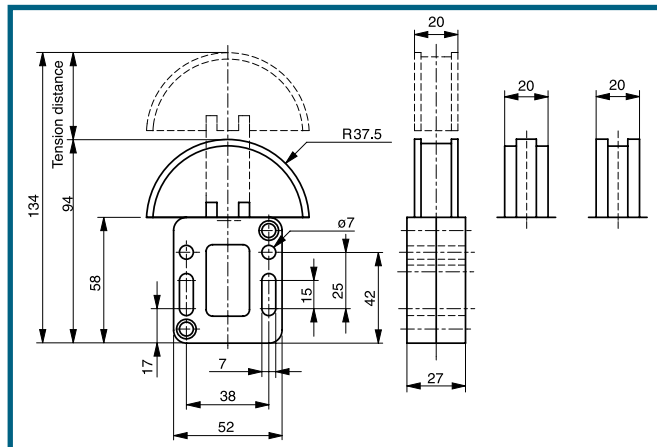
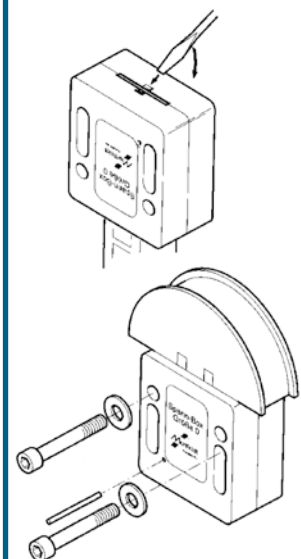
| DIN 8187 chain no. | Light tension force Article no. | Heavy tension force Article no. |
|--------------------|---------------------------------|---------------------------------|
| ≤06B-1 (U-Profile) | 281 000 001 | 281 000 002 |
| 08B-1 | 281 000 003 | 281 000 004 |
| 10B-1 | 281 000 003 | 281 000 004 |
| 12B-1 | 281 000 005 | 281 000 006 |
| 06B-2 | 281 000 007 | 281 000 008 |
| 08B-2 | 281 000 009 | 281 000 010 |
| 10B-2 | 281 000 011 | 281 000 012 |

Special designs on request

Attachment

- Installed underneath the chain
- Bore holes in the housing (for matching fastening brackets refer to pages 118-119)

Attachment



SPANN-BOX® SIZE 30

Three tension pressure settings

Spann-Box® size 30 provides high quality at the same time as being economically priced. The robust plastic housing gives high resistance to corrosion.

| | | | |
|---------------|--------------------|------------|-------------|
| | | Light | Heavy |
| Tension force | 1 released spring | 58 – 32 N | 132 – 60 N |
| | 2 released springs | 116 – 64 N | 264 – 120 N |
| | 3 released springs | 174 – 96 N | 396 – 180 N |
| | Tension distance | 40 mm | 40 mm |

SPANN-BOX® SIZE 30 with arc segment profile

Stainless steel screws and springs



Applications

- Environments with a risk of corrosion
- No high mechanical stresses

Tensioning pressure

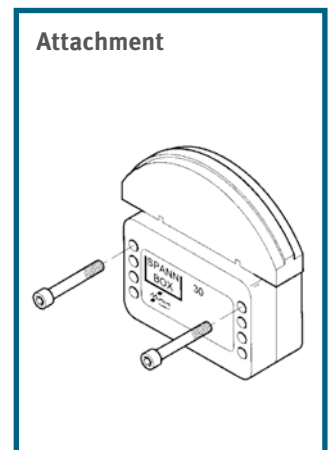
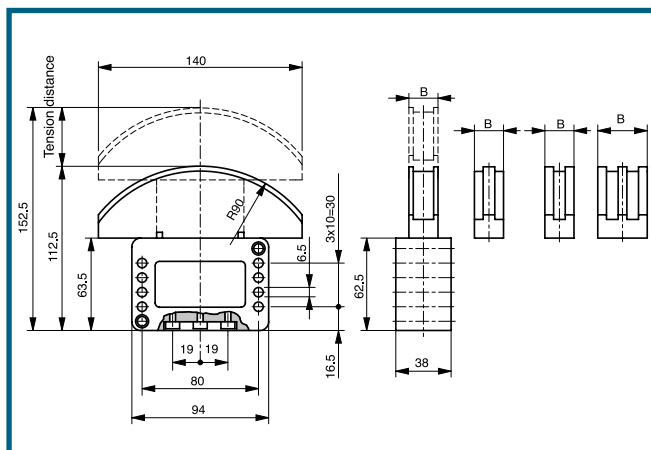
- Choice of light or heavy spring force

Attachment

- Installed underneath the chain
- Bore holes in the housing (for matching fastening brackets refer to pages 118 - 119)

| DIN 8187 chain no. | B mm | Light tension force Article no. | Heavy tension force Article no. |
|--------------------|------|---------------------------------|---------------------------------|
| ≤06B-1 (U-Profile) | 20 | 281 030 001 | 281 030 002 |
| 08B-1 | 20 | 281 030 003 | 281 030 004 |
| 10B-1 | 20 | 281 030 005 | 281 030 006 |
| 12B-1 | 20 | 281 030 007 | 281 030 008 |
| 16B-1 | 20 | 281 030 009 | 281 030 010 |
| 05B-2 | 20 | 281 030 011 | 281 030 012 |
| 06B-2 | 20 | 281 030 013 | 281 030 014 |
| 08B-2 | 20 | 281 030 015 | 281 030 016 |
| 10B-2 | 25 | 281 030 017 | 281 030 018 |
| 12B-2 | 30 | 281 030 019 | 281 030 020 |
| 05B-3 | 20 | 281 030 021 | 281 030 022 |
| 06B-3 | 25 | 281 030 023 | 281 030 024 |
| 08B-3 | 30 | 281 030 025 | 281 030 026 |
| 10B-3 | 40 | 281 030 027 | 281 030 028 |
| 12B-3 | 45 | 281 030 029 | 281 030 030 |

Special designs on request



SPANN-BOX® SIZE 1

Three tension pressure settings

Spann-Box® size 1 is available in several variants. The robust design with its steel housing guarantees durability and reliable operation.

We offer a total of five different designs to meet individual requirements.

Reverse operation

If the running direction changes, we recommend using the appropriate Spann-Box® size with a long housing. We deliver this variant with heavy tension force.

| | Light | Heavy | |
|---------------------|--------------------|------------|-------------|
| Tension force | 1 released spring | 58 – 32 N | 132 – 60 N |
| | 2 released springs | 116 – 64 N | 264 – 120 N |
| | 3 released springs | 174 – 96 N | 396 – 180 N |
| Tensioning distance | 40 mm | 40 mm | |

SPANN-BOX® SIZE 1 with arc segment profile



Tensioning pressure

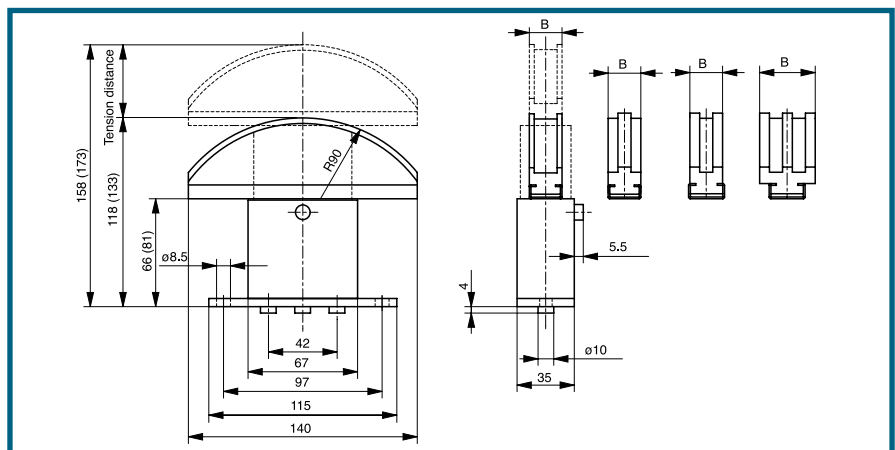
- Choice of light or heavy spring force

Attachment

- Installed underneath the chain
- Bore holes in the housing (for matching fastening brackets refer to pages 118-119)

| DIN 8187 chain no. | B mm | Short housing, light tension force article no. | Short housing, heavy tension force article no. | Long housing, heavy tension force article no. | Stainless steel, heavy tension force, short housing article no. | Stainless steel, heavy tension force, long housing article no. |
|--------------------|------|--|--|---|---|--|
| ≤06B-1 (U-Profile) | 20 | 281 010 001 | 281 010 002 | 281 010 202 | 282 010 002 | 282 010 202 |
| 08B-1 | 20 | 281 010 003 | 281 010 004 | 281 010 204 | 282 010 004 | 282 010 204 |
| 10B-1 | 20 | 281 010 005 | 281 010 006 | 281 010 206 | 282 010 006 | 282 010 206 |
| 12B-1 | 20 | 281 010 007 | 281 010 008 | 281 010 208 | 282 010 008 | 282 010 208 |
| 16B-1 | 20 | 281 010 009 | 281 010 010 | 281 010 210 | 282 010 010 | 282 010 210 |
| 20B-1 | 20 | 281 010 011 | 281 010 012 | 281 010 212 | 282 010 012 | 282 010 212 |
| 06B-2 | 20 | 281 010 013 | 281 010 014 | 281 010 214 | 282 010 014 | 282 010 214 |
| 08B-2 | 20 | 281 010 015 | 281 010 016 | 281 010 216 | 282 010 016 | 282 010 216 |
| 10B-2 | 25 | 281 010 017 | 281 010 018 | 281 010 218 | 282 010 018 | 282 010 218 |
| 12B-2 | 30 | 281 010 019 | 281 010 020 | 281 010 220 | 282 010 020 | 282 010 220 |
| 16B-2 | 45 | 281 010 021 | 281 010 022 | 281 010 222 | 282 010 022 | 282 010 222 |
| 06B-3 | 25 | 281 010 023 | 281 010 024 | 281 010 224 | 282 010 024 | 282 010 224 |
| 08B-3 | 30 | 281 010 025 | 281 010 026 | 281 010 226 | 282 010 026 | 282 010 226 |
| 10B-3 | 40 | 281 010 027 | 281 010 028 | 281 010 228 | 282 010 028 | 282 010 228 |
| 12B-3 | 45 | 281 010 029 | 281 010 030 | 281 010 230 | 282 010 030 | 282 010 230 |

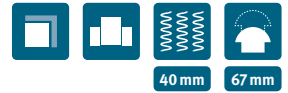
Special designs on request



Clamp dimensions (...) for long housing

SPANN-BOX® SIZE 1

with semi-circular profile



Applications

- For restricted installation spaces

Tensioning pressure

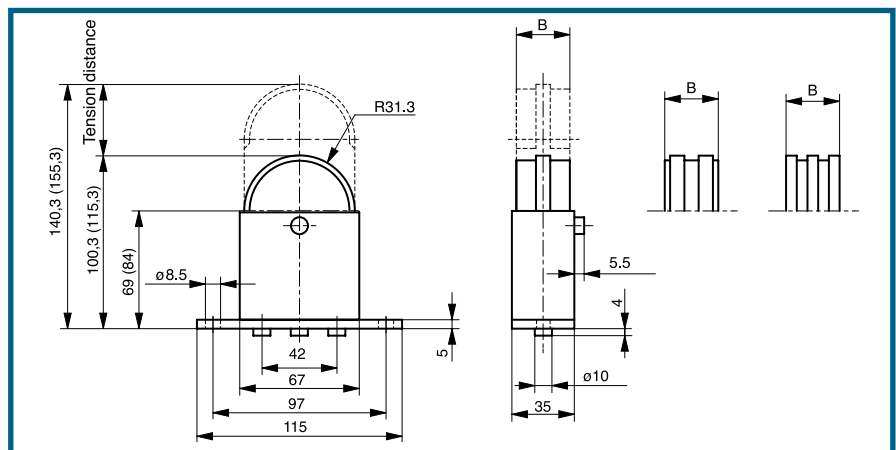
- Choice of light or heavy spring force

Attachment

- Easier assembly thanks to mounting bracket
- Bore holes in the housing (for matching fastening brackets refer to pages 118-119)

| DIN 8187 chain no. | B mm | Short housing, light tension force article no. | Short housing, heavy tension force article no. | Long housing, heavy tension force article no. | Stainless steel, heavy tension force, short housing article no. | Stainless steel, heavy tension force, long housing article no. |
|--------------------|------|--|--|---|---|--|
| 06B-1 | 30 | 281 010 031 | 281 010 032 | 281 010 232 | 282 010 032 | 282 010 232 |
| 08B-1 | 30 | 281 010 033 | 281 010 034 | 281 010 234 | 282 010 034 | 282 010 234 |
| 10B-1 | 30 | 281 010 035 | 281 010 036 | 281 010 236 | 282 010 036 | 282 010 236 |
| 12B-1 | 30 | 281 010 037 | 281 010 038 | 281 010 238 | 282 010 038 | 282 010 238 |
| 06B-2 | 30 | 281 010 039 | 281 010 040 | 281 010 240 | 282 010 040 | 282 010 240 |
| 08B-2 | 30 | 281 010 041 | 281 010 042 | 281 010 242 | 282 010 042 | 282 010 242 |
| 10B-2 | 30 | 281 010 043 | 281 010 044 | 281 010 244 | 282 010 044 | 282 010 244 |
| 12B-2 | 30 | 281 010 045 | 281 010 046 | 281 010 246 | 282 010 046 | 282 010 246 |
| 06B-3 | 30 | 281 010 047 | 281 010 048 | 281 010 248 | 282 010 048 | 282 010 248 |
| 08B-3 | 30 | 281 010 049 | 281 010 050 | 281 010 250 | 282 010 050 | 282 010 250 |

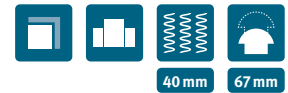
Special designs on request



Clamp dimensions (...) for long housing

SPANN-BOX® SIZE 1

with 180° return profile



If the Spann-Box has been properly fitted, the double length of the Spann-Box's tension distance can be used to compensate for chain extension. For more examples see page 117.

Tensioning pressure

- Heavy spring force

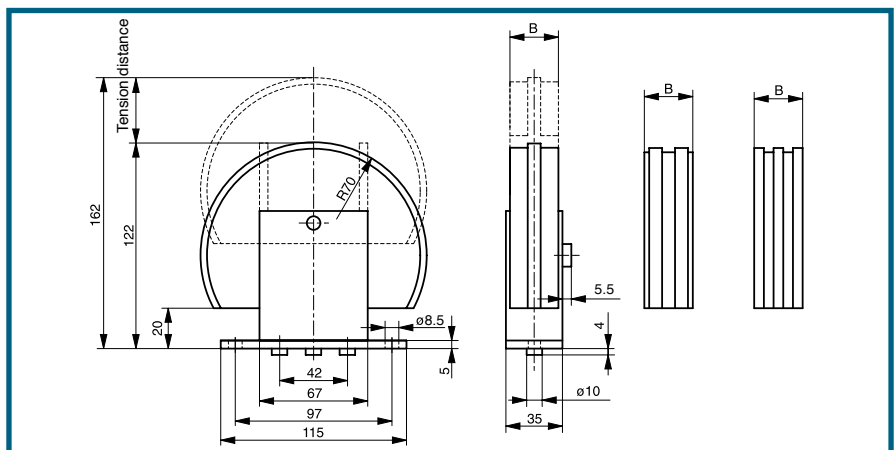
Attachment

- Easier assembly thanks to fastening bracket
- Bore holes in the housing (for matching fastening brackets refer to pages 118-119)



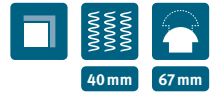
| DIN 8187 chain no. | B mm | Long housing, heavy tension force article no. | Stainless steel, long housing, heavy tension force article no. |
|--------------------|------|---|--|
| 06B-1 | 30 | 281 010 051 | 282 010 051 |
| 08B-1 | 30 | 281 010 052 | 282 010 052 |
| 10B-1 | 30 | 281 010 053 | 282 010 053 |
| 12B-1 | 30 | 281 010 054 | 282 010 054 |
| 16B-1 | 30 | 281 010 055 | 282 010 055 |
| 06B-2 | 30 | 281 010 056 | 282 010 256 |
| 08B-2 | 30 | 281 010 057 | 282 010 257 |
| 10B-2 | 30 | 281 010 058 | 282 010 258 |
| 12B-2 | 30 | 281 010 059 | 282 010 259 |
| 06B-3 | 30 | 281 010 060 | 282 010 260 |
| 08B-3 | 30 | 281 010 061 | 282 010 261 |

Special designs on request



SPANN-BOX® SIZE 1

with sprocket wheel type K-L / Type K-S



Spann-Box® size 1 with sprocket is used where space is restricted or there are high chain speeds ($> 1\text{ m/s}$).

Applications

- High chain speeds
- Small return radii
- Compensation for high chain elongation

Tensioning pressure

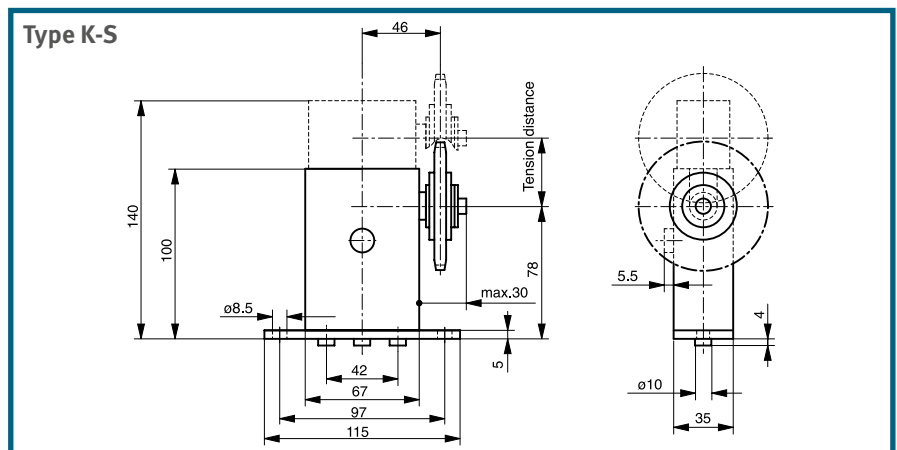
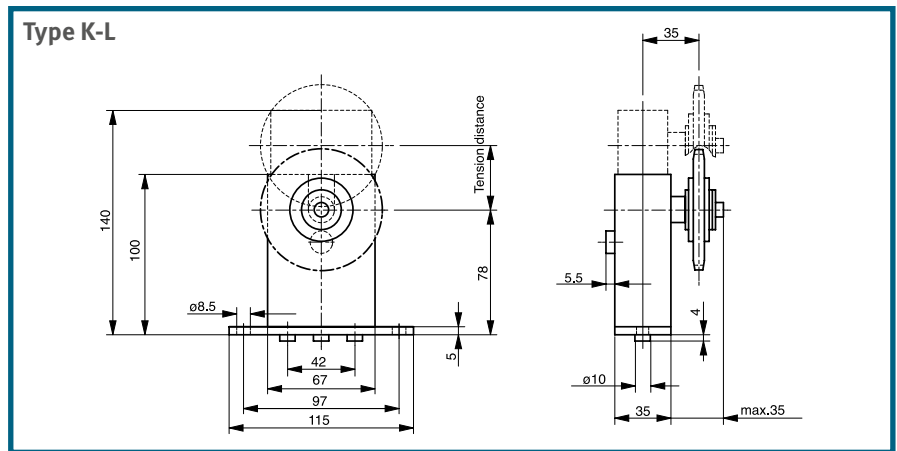
- Heavy spring force

Attachment

- Easier assembly thanks to mounting bracket
- Bore holes in the housing (for matching fastening brackets refer to pages 118-119)

| DIN 8187 chain no. | No. of teeth | Type K-L heavy tension force article no. | Type K-S heavy tension force article no. |
|--------------------|--------------|--|--|
| 06B-1 | 20 | 281 210 005 | 281 210 001 |
| 06B-1 | 21 | 281 210 011 | 281 210 022 |
| 06B-1 | 23 | 281 210 012 | 281 210 023 |
| 08B-1 | 16 | 281 210 014 | 281 210 024 |
| 08B-1 | 17 | 281 210 006 | 281 210 025 |
| 08B-1 | 18 | 281 210 015 | 281 210 002 |
| 10B-1 | 14 | 281 210 016 | 281 210 026 |
| 10B-1 | 15 | 281 210 017 | 281 210 027 |
| 10B-1 | 16 | 281 210 007 | 281 210 028 |
| 10B-1 | 17 | 281 210 018 | 281 210 003 |
| 12B-1 | 13 | 281 210 033 | 281 210 029 |
| 12B-1 | 14 | 281 210 019 | 281 210 030 |
| 12B-1 | 15 | 281 210 008 | 281 210 004 |
| 12B-1 | 16 | 281 210 020 | 281 210 031 |
| 12B-1 | 17 | 281 210 021 | 281 210 032 |

Special and stainless steel designs on request



SPANN-BOX® SIZE 2

Three tension pressure settings

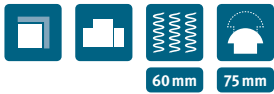
Like Spann-Box® size 1, Spann-Box® size 2 is available in different variants. The steel housing guarantees durability and reliability.

Reverse operation

If the running direction changes, we recommend using the appropriate Spann-Box® size with a long housing. We deliver this variant with heavy tension force.

| | | Light | Heavy |
|---------------|--------------------|-------------|-------------|
| Tension force | 1 released spring | 148 – 82 N | 262 – 118 N |
| | 2 released springs | 296 – 164 N | 524 – 236 N |
| | 3 released springs | 444 – 246 N | 786 – 354 N |
| | Tension distance | 60 mm | 60 mm |

SPANN-BOX® SIZE 2 with arc segment profile



Tensioning pressure

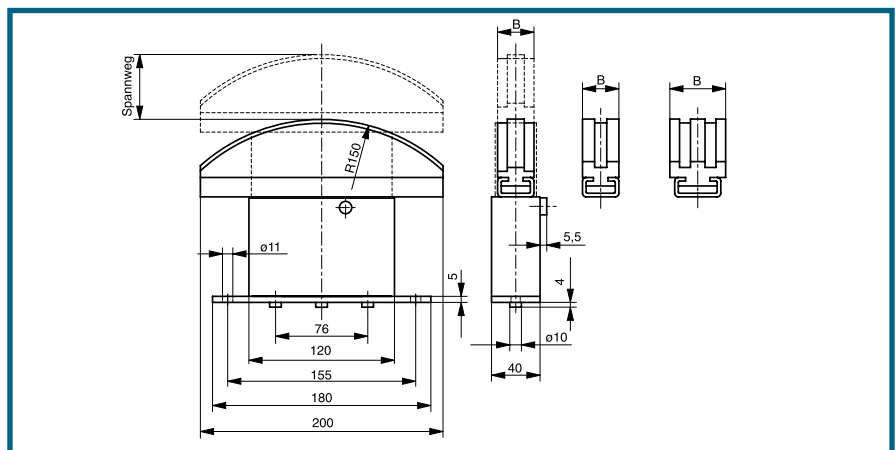
- Choice of light or heavy spring force

Attachment

- Easier assembly thanks to mounting bracket
- Bore holes in the housing (for matching fastening brackets refer to pages 118 - 119)

| DIN 8187 chain no. | B mm | Long housing, light tension force, Article no. | Stainless steel, long housing, heavy tension force Article no. | Long housing, heavy tension force Article no. |
|--------------------|------|--|--|---|
| 12B-1 | 25 | 281 020 001 | 282 020 202 | 281 020 202 |
| 16B-1 | 25 | 281 020 003 | 282 020 204 | 281 020 204 |
| 20B-1 | 25 | 281 020 005 | 282 020 206 | 281 020 206 |
| 24B-1 | 30 | 281 020 007 | 282 020 208 | 281 020 208 |
| 08B-2 | 25 | 281 020 009 | 282 020 210 | 281 020 210 |
| 10B-2 | 25 | 281 020 011 | 282 020 212 | 281 020 212 |
| 12B-2 | 30 | 281 020 013 | 282 020 214 | 281 020 214 |
| 16B-2 | 45 | 281 020 015 | 282 020 216 | 281 020 216 |
| 20B-2 | 55 | 281 020 017 | 282 020 218 | 281 020 218 |
| 24B-2 | 70 | 281 020 019 | 282 020 220 | 281 020 220 |
| 08B-3 | 30 | 281 020 021 | 282 020 222 | 281 020 222 |
| 10B-3 | 40 | 281 020 023 | 282 020 224 | 281 020 224 |
| 12B-3 | 45 | 281 020 025 | 282 020 226 | 281 020 226 |
| 16B-3 | 75 | 281 020 027 | 282 020 228 | 281 020 228 |
| 20B-3 | 90 | 281 020 029 | 282 020 230 | 281 020 230 |

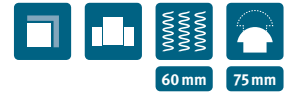
Special designs on request



Clamp dimensions (...) for long housing

SPANN-BOX® SIZE 2

with semi-circular profile



Applications

- For restricted installation spaces

Tensioning pressure

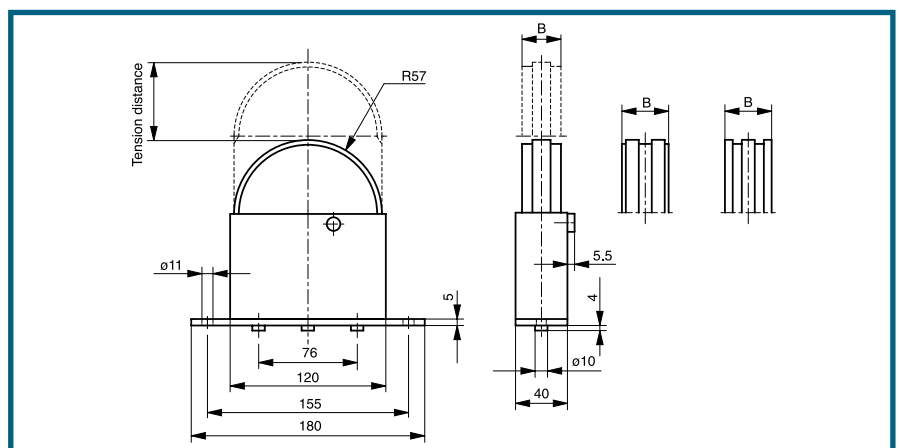
- Choice of light or heavy spring force

Attachment

- Easier assembly thanks to mounting bracket
- Bore holes in the housing (for matching fastening brackets refer to pages 118-119)

| DIN 8187 chain no. | B mm | Long housing, light tension force, Article no. | Long housing, heavy tension force, Article no. | Stainless steel, long housing, heavy tension force, Article no. |
|--------------------|------|--|--|---|
| 12B-1 | 33 | 281 020 032 | 281 020 232 | 282 020 232 |
| 16B-1 | 33 | 281 020 034 | 281 020 234 | 282 020 234 |
| 08B-2 | 33 | 281 020 036 | 281 020 236 | 282 020 236 |
| 10B-2 | 33 | 281 020 038 | 281 020 238 | 282 020 238 |
| 12B-2 | 33 | 281 020 040 | 281 020 240 | 282 020 240 |
| 08B-3 | 33 | 281 020 042 | 281 020 242 | 282 020 242 |
| 10B-3 | 40 | 281 020 044 | 281 020 244 | 282 020 244 |

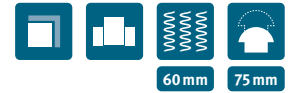
Special designs on request



Clamp dimensions (...) for long housing

SPANN-BOX® SIZE 2

with 180° return profile



With the appropriate installation, the double tension distance length can be used for chain elongation. Further installation examples see page 117.

Tensioning pressure

- Heavy spring force

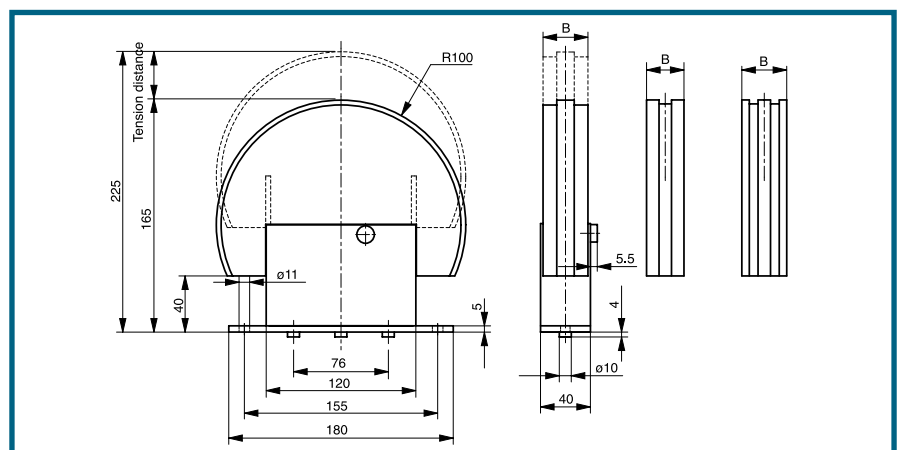
Attachment

- Easier assembly thanks to mounting bracket
- Bore holes in the housing (for matching fastening brackets refer to pages 118 - 119)



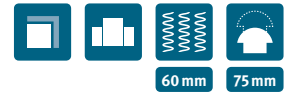
| DIN 8187 chain no. | B mm | Long housing, heavy tension force Article no. | Stainless steel, long housing, heavy tension force Article no. |
|--------------------|------|---|--|
| 12B-1 | 33 | 281 020 045 | 282 020 045 |
| 16B-1 | 33 | 281 020 046 | 282 020 046 |
| 20B-1 | 33 | 281 020 047 | 282 020 047 |
| 08B-2 | 33 | 281 020 048 | 282 020 048 |
| 10B-2 | 33 | 281 020 049 | 282 020 049 |
| 12B-2 | 33 | 281 020 050 | 282 020 050 |
| 08B-3 | 33 | 281 020 051 | 282 020 051 |
| 10B-3 | 40 | 281 020 052 | 282 020 052 |
| 12B-3 | 45 | 281 020 053 | 282 020 053 |

Special designs on request



SPANN-BOX® SIZE 2

with block profile



This design is ideally suited for heavy loads. It is intended for use with high dynamic forces.

Design

- Slide profile and tension core made from a single piece

Tensioning pressure

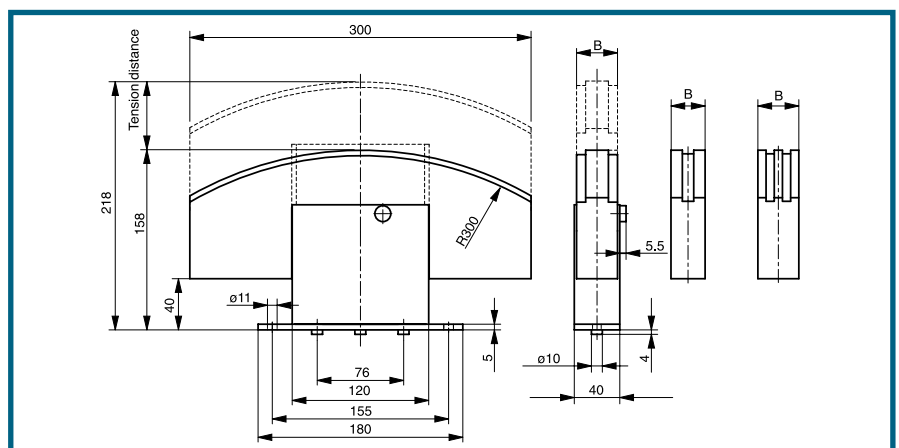
- Heavy spring force

Attachment

- Easier assembly thanks to mounting bracket
- Bore holes in the housing (for matching fastening brackets refer to pages 118 - 119)

| DIN 8187 chain no. | B mm | Long housing, heavy tension force Article no. | Stainless steel, long housing, heavy tension force Article no. |
|--------------------|------|---|--|
| 24B-1 | 33 | 281 020 054 | 282 020 054 |
| 28B-1 | 33 | 281 020 055 | 282 020 055 |
| 32B-1 | 33 | 281 020 056 | 282 020 056 |
| 40B-1 | 40 | 281 020 057 | 282 020 057 |
| 48B-1 | 45 | 281 020 058 | 282 020 058 |
| 16B-2 | 45 | 281 020 059 | 282 020 059 |
| 20B-2 | 55 | 281 020 060 | 282 020 060 |
| 24B-2 | 70 | 281 020 061 | 282 020 061 |
| 16B-3 | 75 | 281 020 062 | 282 020 062 |
| 20B-3 | 90 | 281 020 063 | 282 020 063 |

Special designs on request



AUTOMATIC BELT TENSIONERS

Round belts, V-belts as per DIN 2215, or flat belts – they all require different pre-tensioning. The following Spann-Box®/ Spann-Boy® types are available as belt tensioners

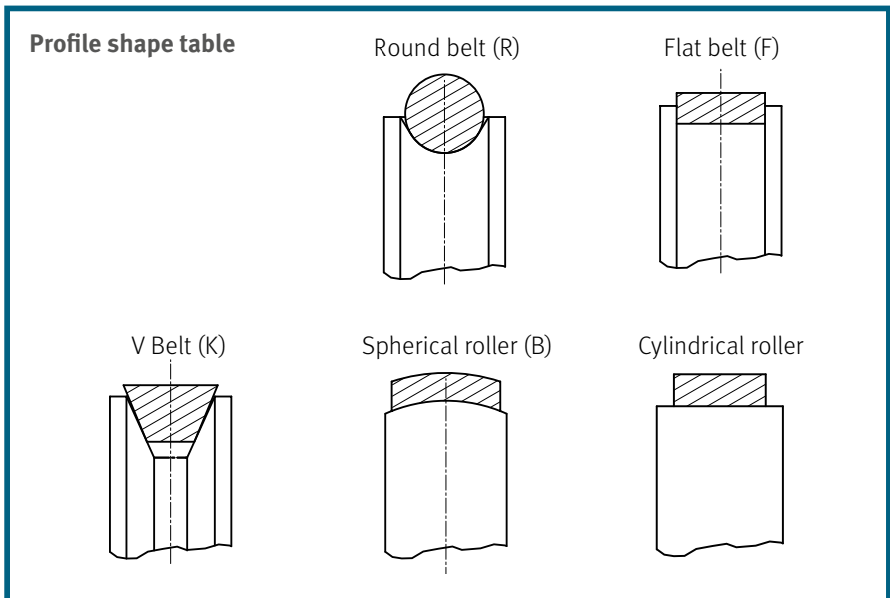
- Spann-Boy®
- Spann-Boy®TS
- Spann-Box® size 0
- Spann-Box® size 1

Material

We use our tried-and-tested Original Material "S"® Black Antistatic for the ball-bearing supported tensioning roller that is attached to the housing. It is characterized by its excellent wear resistance, ideal slide properties, and very good resistance to chemicals.

Design

Our tensioning rollers come with a cylindrical surface or a profile of your choice. Use the profile shape table to specify the required profile along with the belt type used when you make your order.

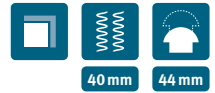


| | | Light tension force | Heavy tension force | Tension distance |
|---|--------------------|---------------------|---------------------|------------------|
| Spann-Box® size 0 with roller | 1 released spring | 58 – 32 N | 132 – 60 N | 40 mm |
| Spann-Boy® TS with roller | 1 released spring | 58 – 32 N | 132 – 60 N | 40 mm |
| | 2 released springs | 190 – 96 N | | 40 mm |
| Spann-Box® size 1 Type SR-0 tensioning roller on top Type SR-L tensioning roller on long side Type SR-S tensioning roller on front | 1 released spring | 58 – 32 N | 132 – 60 N | 40 mm |
| | 2 released springs | 116 – 64 N | 264 – 120 N | 40 mm |
| | 3 released springs | 174 – 96 N | 396 – 180 N | 40 mm |



SPANN-BOY® TS AS BELT TENSIONER

with roller



Three tension pressure settings

Tension pressure

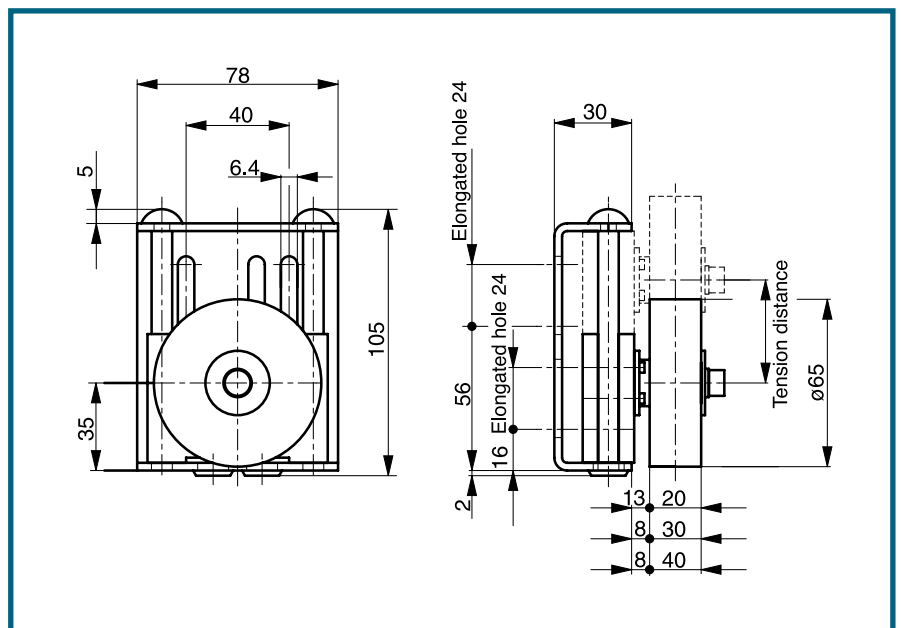
- Spann-Boy® TS has one light and one heavy pressure spring that can be released together or separately depending on the required tension pressure.

Attachment

- Bore holes in the housing (for matching fastening brackets refer to pages 118 - 119)

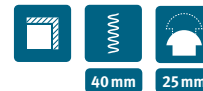
| Roller width mm | Profile shape | Article no. |
|-----------------|---------------|-------------|
| 20 | Cylindrical | 281 160 001 |
| | Spherical | 281 160 004 |
| | Flat belt | 281 160 007 |
| | V-belt | 281 160 010 |
| | Round belt | 281 160 013 |
| 30 | Cylindrical | 281 160 002 |
| | Spherical | 281 160 005 |
| | Flat belt | 281 160 008 |
| | V-belt | 281 160 011 |
| | Round belt | 281 160 014 |
| 40 | Cylindrical | 281 160 003 |
| | Spherical | 281 160 006 |
| | Flat belt | 281 160 009 |
| | V-belt | 281 160 012 |
| | Round belt | 281 160 015 |

Special and stainless steel designs on request



SPANN-BOX® SIZE 0 AS BELT TENSIONER

with roller



Design

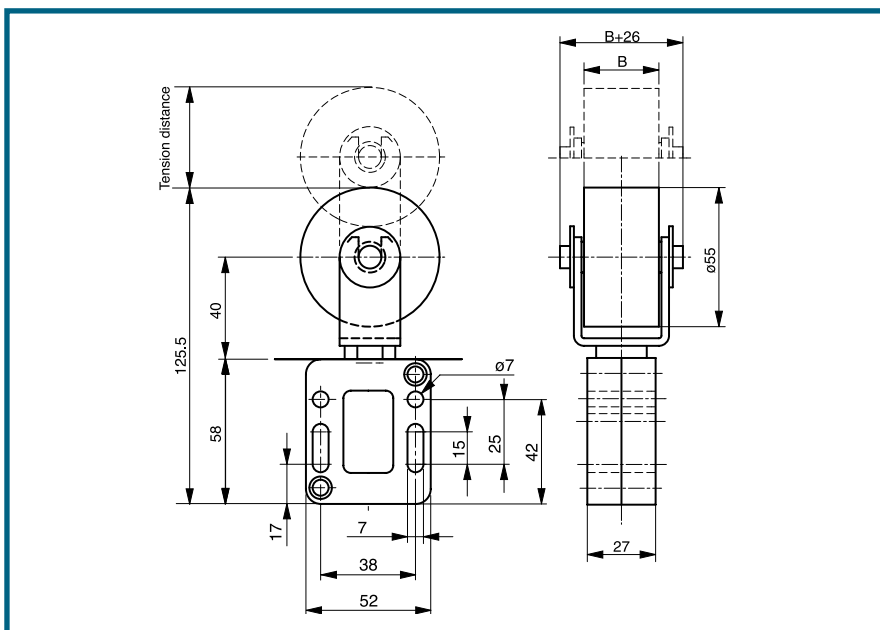
- Corrosion-proof housing

Tensioning pressure

- Choice of light or heavy spring force

| Roller width mm | Profile shape | Light tension force Article no. | Heavy tension force Article no. |
|-----------------|---------------|---------------------------------|---------------------------------|
| 20 | Cylindrical | 281 100 001 | 281 100 002 |
| | Spherical | 281 100 007 | 281 100 008 |
| | Flat belt | 281 100 013 | 281 100 014 |
| | V-belt | 281 100 019 | 281 100 020 |
| | Round belt | 281 100 025 | 281 100 026 |
| 30 | Cylindrical | 281 100 003 | 281 100 004 |
| | Spherical | 281 100 009 | 281 100 010 |
| | Flat belt | 281 100 015 | 281 100 016 |
| | V-belt | 281 100 021 | 281 100 022 |
| | Round belt | 281 100 027 | 281 100 028 |
| 40 | Cylindrical | 281 100 005 | 281 100 006 |
| | Spherical | 281 100 011 | 281 100 012 |
| | Flat belt | 281 100 017 | 281 100 018 |
| | V-belt | 281 100 023 | 281 100 024 |
| | Round belt | 281 100 029 | 281 100 030 |

Special and stainless steel designs on request



SPANN-BOX® SIZE 1 AS BELT TENSIONER

Our tried-and-tested Spann-Box® is ideally suited for use as a belt tensioner. We offer different designs for different scenarios. The variants differ primarily in the mounting of the tensioning roller. The basic design is identical for all variants.

Tensioning pressure

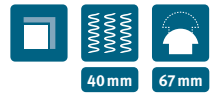
- Choice of light or heavy spring force

Attachment

- Bore holes in the housing (for matching fastening brackets refer to pages 118 - 119)

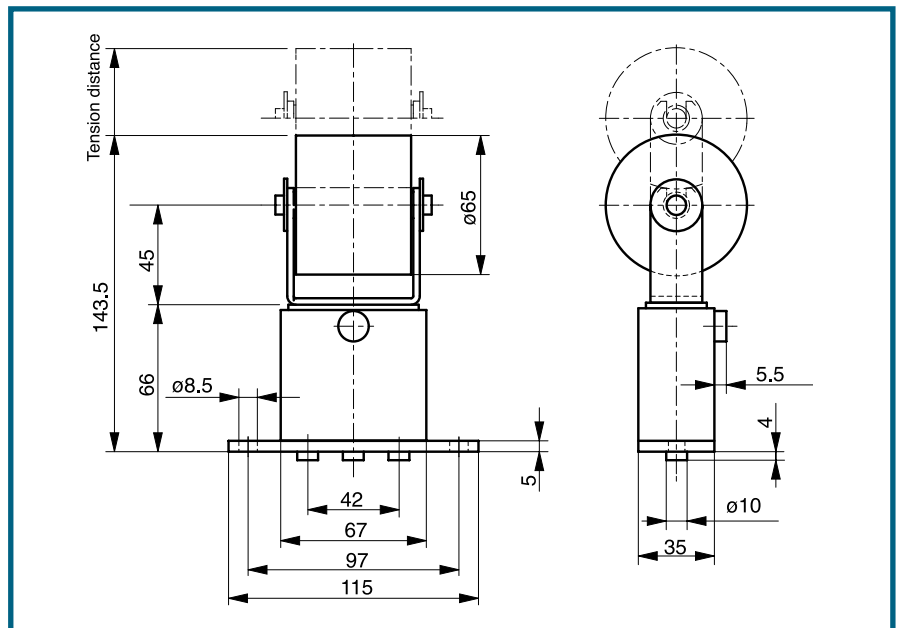
SPANN-BOX® SIZE 1

as belt tensioner with roller



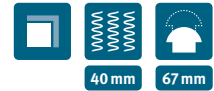
| Roller width mm | Profile shape | Light tension force Article no. | Heavy tension force Article no. |
|-----------------|---------------|---------------------------------|---------------------------------|
| 53 | Cylindrical | 281 110 001 | 281 110 002 |
| | Spherical | 281 110 003 | 281 110 004 |
| | Flat belt | 281 110 005 | 281 110 006 |
| | V-belt | 281 110 007 | 281 110 008 |
| | Round belt | 281 110 009 | 281 110 010 |

Special and stainless steel designs on request



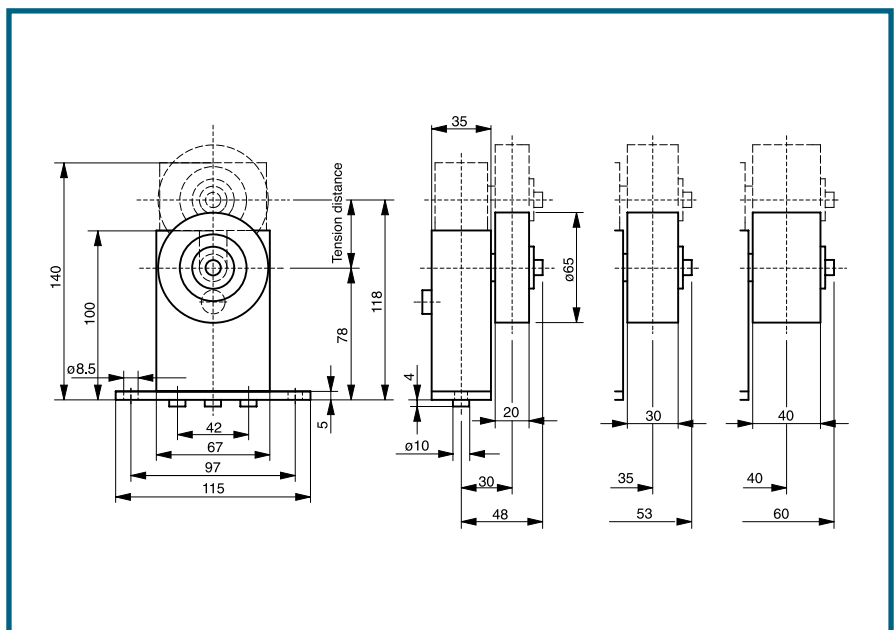
SPANN-BOX® SIZE 1 / TYPE SR-L

Tensioning roller on long side



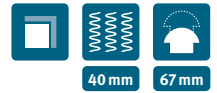
| Roller width mm | Profile shape | Light tension force Article no. | Heavy tension force Article no. |
|-----------------|---------------|---------------------------------|---------------------------------|
| 20 | Cylindrical | 281 110 011 | 281 110 012 |
| | Spherical | 281 110 017 | 281 110 018 |
| | Flat belt | 281 110 023 | 281 110 024 |
| | V-belt | 281 110 029 | 281 110 030 |
| | Round belt | 281 110 035 | 281 110 036 |
| 30 | Cylindrical | 281 110 013 | 281 110 014 |
| | Spherical | 281 110 019 | 281 110 020 |
| | Flat belt | 281 110 025 | 281 110 026 |
| | V-belt | 281 110 031 | 281 110 032 |
| | Round belt | 281 110 037 | 281 110 038 |
| 40 | Cylindrical | 281 110 015 | 281 110 016 |
| | Spherical | 281 110 021 | 281 110 022 |
| | Flat belt | 281 110 027 | 281 110 028 |
| | V-belt | 281 110 033 | 281 110 034 |
| | Round belt | 281 110 039 | 281 110 040 |

Special and stainless steel designs on request



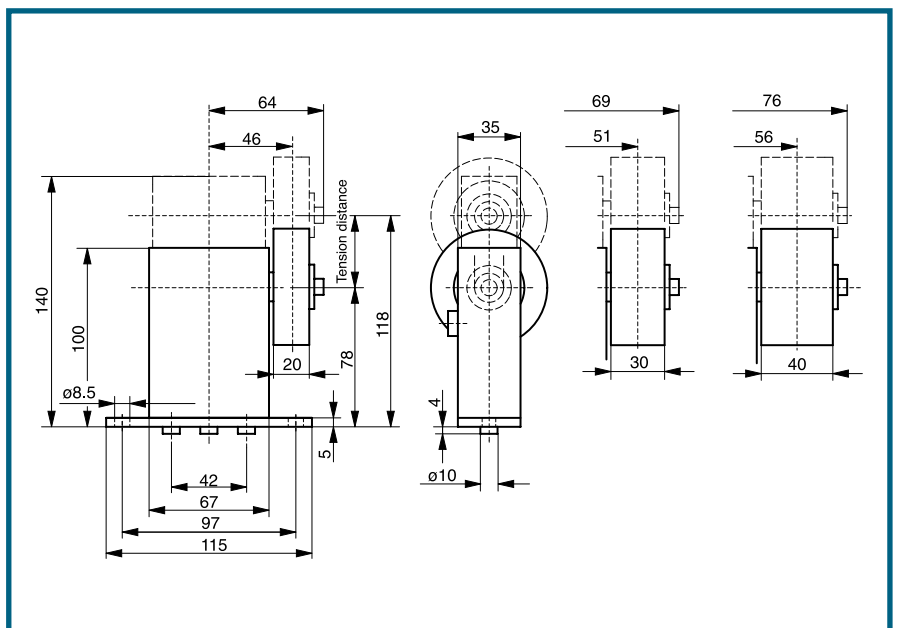
SPANN-BOX® SIZE 1 / TYPE SR-S

Tensioning roller on front



| Roller width mm | Profile shape | Light tension force Article no. | Heavy tension force Article no. |
|-----------------|---------------|---------------------------------|---------------------------------|
| 20 | Cylindrical | 281 110 041 | 281 110 042 |
| | Spherical | 281 110 047 | 281 110 048 |
| | Flat belt | 281 110 053 | 281 110 054 |
| | V-belt | 281 110 059 | 281 110 060 |
| | Round belt | 281 110 065 | 281 110 066 |
| 30 | Cylindrical | 281 110 043 | 281 110 044 |
| | Spherical | 281 110 049 | 281 110 050 |
| | Flat belt | 281 110 055 | 281 110 056 |
| | V-belt | 281 110 061 | 281 110 062 |
| | Round belt | 281 110 067 | 281 110 068 |
| 40 | Cylindrical | 281 110 045 | 281 110 046 |
| | Spherical | 281 110 051 | 281 110 052 |
| | Flat belt | 281 110 057 | 281 110 058 |
| | V-belt | 281 110 063 | 281 110 064 |
| | Round belt | 281 110 069 | 281 110 070 |

Special and stainless steel designs on request



SPECIAL TENSIONERS

The requirements of our customers are diverse. No pool of machinery is the same as another, so the enquiries we receive are often extremely individual. We will do everything possible to meet your demands with our special models. Correct advice is absolutely vital here – it's what makes our components reliable.

A variety of influences

The work conditions must be known in detail in order for the best tensioning

system for your machines to be determined. A host of factors can restrict functionality, such as force effects, chain speed, chain pressure, contamination, and temperature. The use of machinery in problematic temperature ranges can often result in a high risk of malfunction or damage.

This makes it vital for you to receive the best possible advice on the correct choice of material. Please contact our

application technology department. We will be glad to work with you to find a custom solution.

technik@murtfeldt.de

Feel free to use also our design questionnaire at www.murtfeldt.de.



Spann-Box® size 2 for use at temperatures of up to 200°C



Spann-Box® size 1 for use at temperatures of up to 150°C



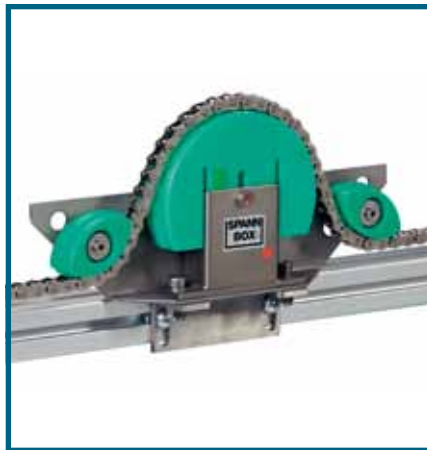
Spann-Box® size 30, with mechanical limit switch



The double-tensioner for chain drives with reverse operation. Thanks to the „floating“ suspension of the clamping elements, the tension is always applied just where it's needed: On the slack strand.



Spann-Box® size 1 with return profile made of Murinit® SP in accordance with customer's requirements



Ω-tension station for compensation of extensive chain lengthening



Size 1 tension station with roller



Spann-Box® size 1 with arc segment made from Original Material "S"® plus+OIL for an accumulator chain



Spann-Box® size 1 or size 2, tandem tensioner for tensioning chains with extremely large chain pitches



Spann-Box® designs with locking devices; they prevent the slide profile from being compressed when the direction of rotation changes, for example.