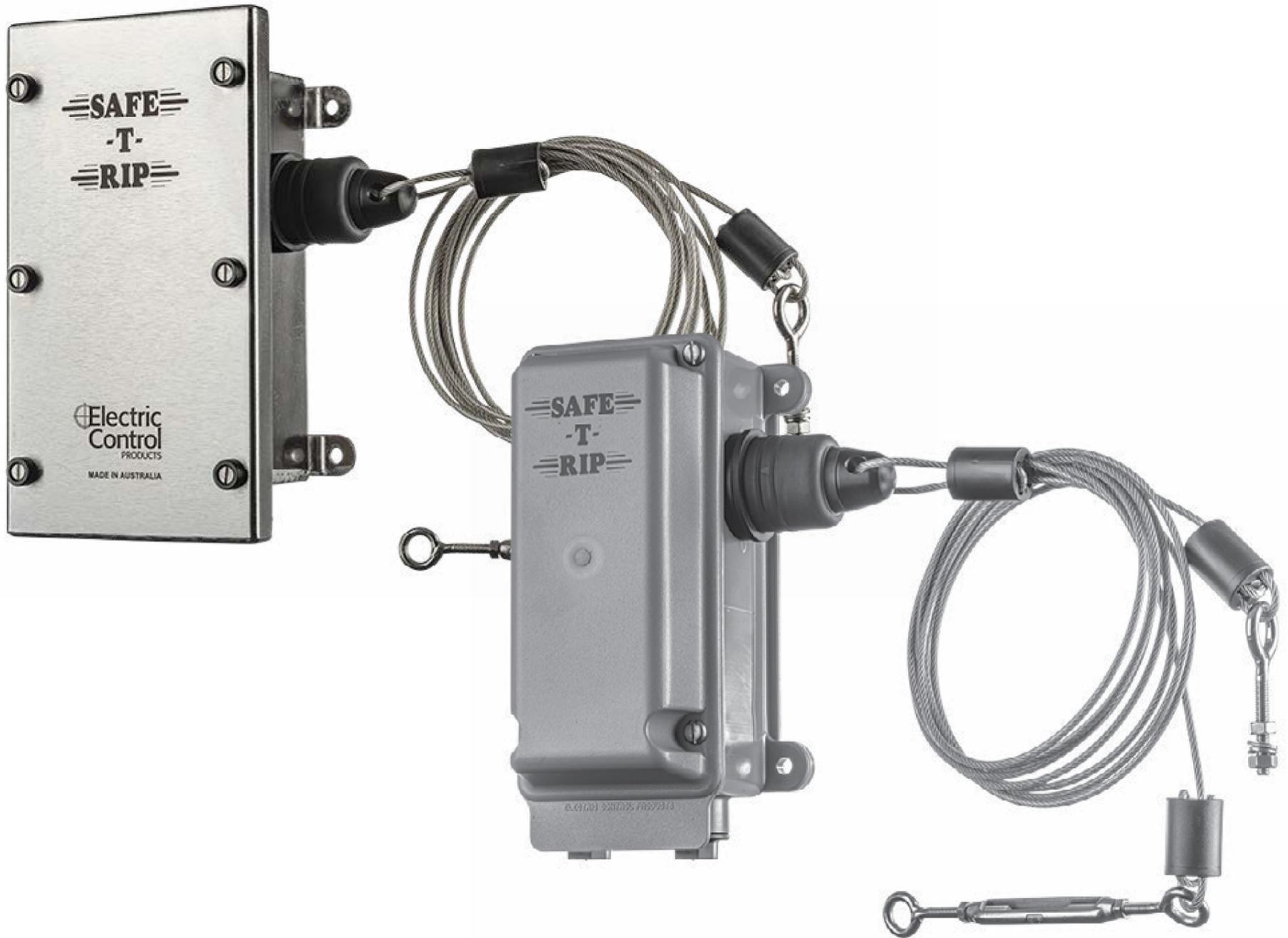


# PROTECTIVE STOP CONTROL CONVEYOR BELT RIP DETECTOR DEVICE



## TECHNICAL DOCUMENT

# INSTALLATION, DESIGN, TESTING, SETTING INSTRUCTION AND TECHNICAL DOCUMENTATION

PLEASE VISIT OUR YOUTUBE CHANEL OR WEBSITE  
FOR MORE INFORMATION



FOR MORE INFORMATION

[www.safe-t-products.com.au](http://www.safe-t-products.com.au)



## INDEX

### **1** PREFERRED SETUP INSTRUCTIONS

### **2** OPTIONAL SETUP

### **3** TECHNICAL SPECIFICATIONS

STR-1 ELECTRICAL CHARACTERISTICS FOR REED SWITCH

ENVIRONMENTAL CHARACTERISTICS REED SWITCH

STR-2 AND STR-3 ELECTRICAL CHARACTERISTICS FOR REED SWITCH

ENVIRONMENTAL CHARACTERISTICS

### **5** WIRING DIAGRAM

### **6** TAIL END RIP

### **7** STANDARD/POLICY

STANDARD

WORKSHOP TESTED

MODIFICATIONS OF DEVICE

RETURNS POLICY/RE-STOCKING

WARRANTY

PRODUCT LIFE EXPECTANCY

TECHNICAL SUPPORT

OBSOLETE PRODUCTS

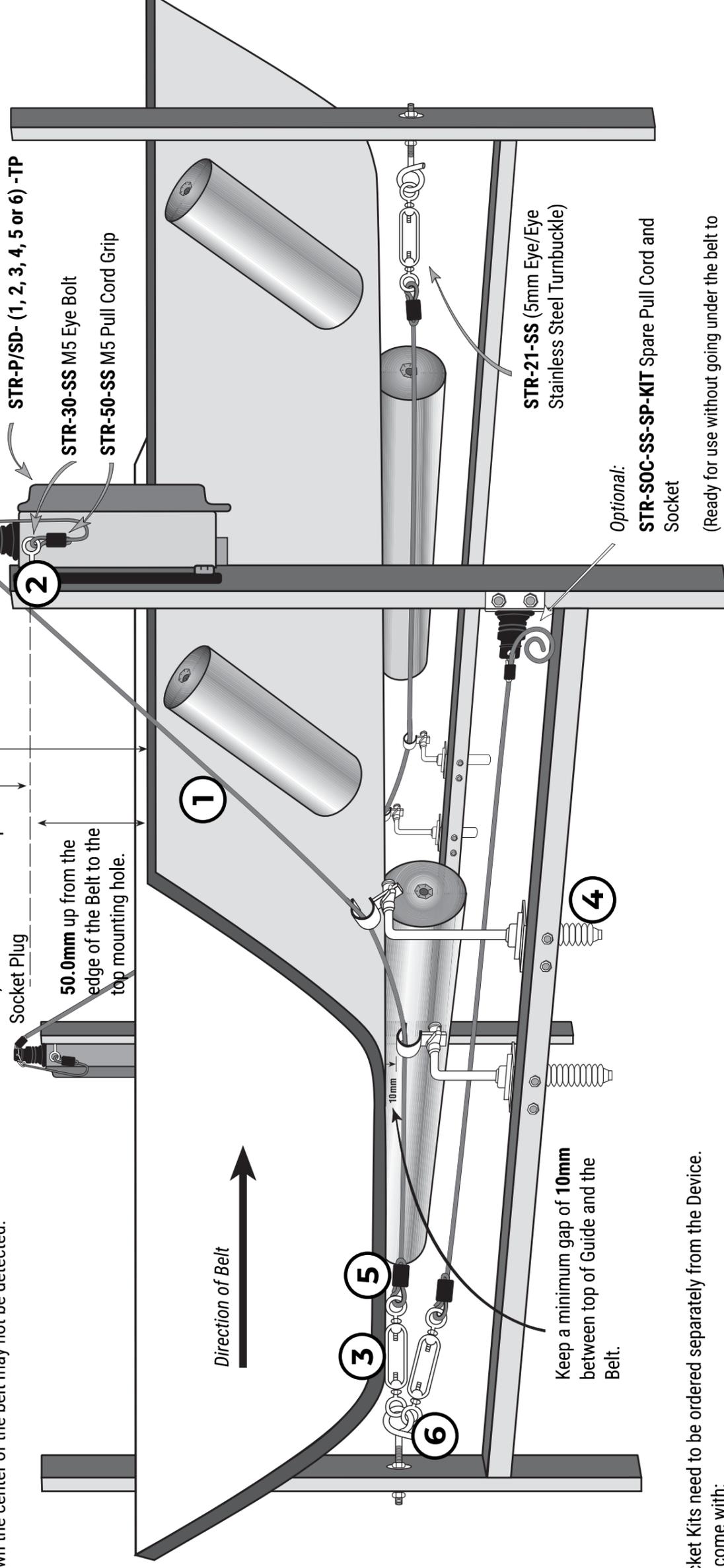
MAINTENANCE PROCEDURE

PRODUCT SURFACE TREATMENT

**NOTE:** The correct Belt Rip pick up detachment operation of the Rip Socket, is in a sideways motion to the attachment point. This means once the Socket is tensioned, the detachment becomes very sensitive to even a small tear in the belt. This is the reason Safe-T-Products recommends using the **STR-P /-TP**. With the Socket in the vertical position, it is strong enough to tension and resist vibration, but will trigger on a large or small tear with precision.

The Safe-T-Rip detection is designed for side ways tears or flaps of belt hanging down, tears down the center of the belt may not be detected.

If the Socket is disconnected from Rip Device Plug, the Tether Point Cord is used to retrieve Rip Cord easily to reset the Rip Device. The attachment point is a M6 x 40 Stainless Steel Eye Bolt which is fitted through the STR's mounting foot or any other M6 hole. The Tether Point Cord is approximately 1m in length and can be adjusted to your preference.



**NOTE:** STR Socket Kits need to be ordered separately from the Device. All Socket Kits come with:

1. Different lengths of 2.4mm ID x 3.2mm OD PVC coated Pull Cord.
2. M5 Eye Bolt.
3. M5 Turnbuckle.
4. Different versions of Rope Guides with each part number.
5. 3 x Pull Cord Grips.
6. Pigtail.

#### Belt Rip Device Installation Position:

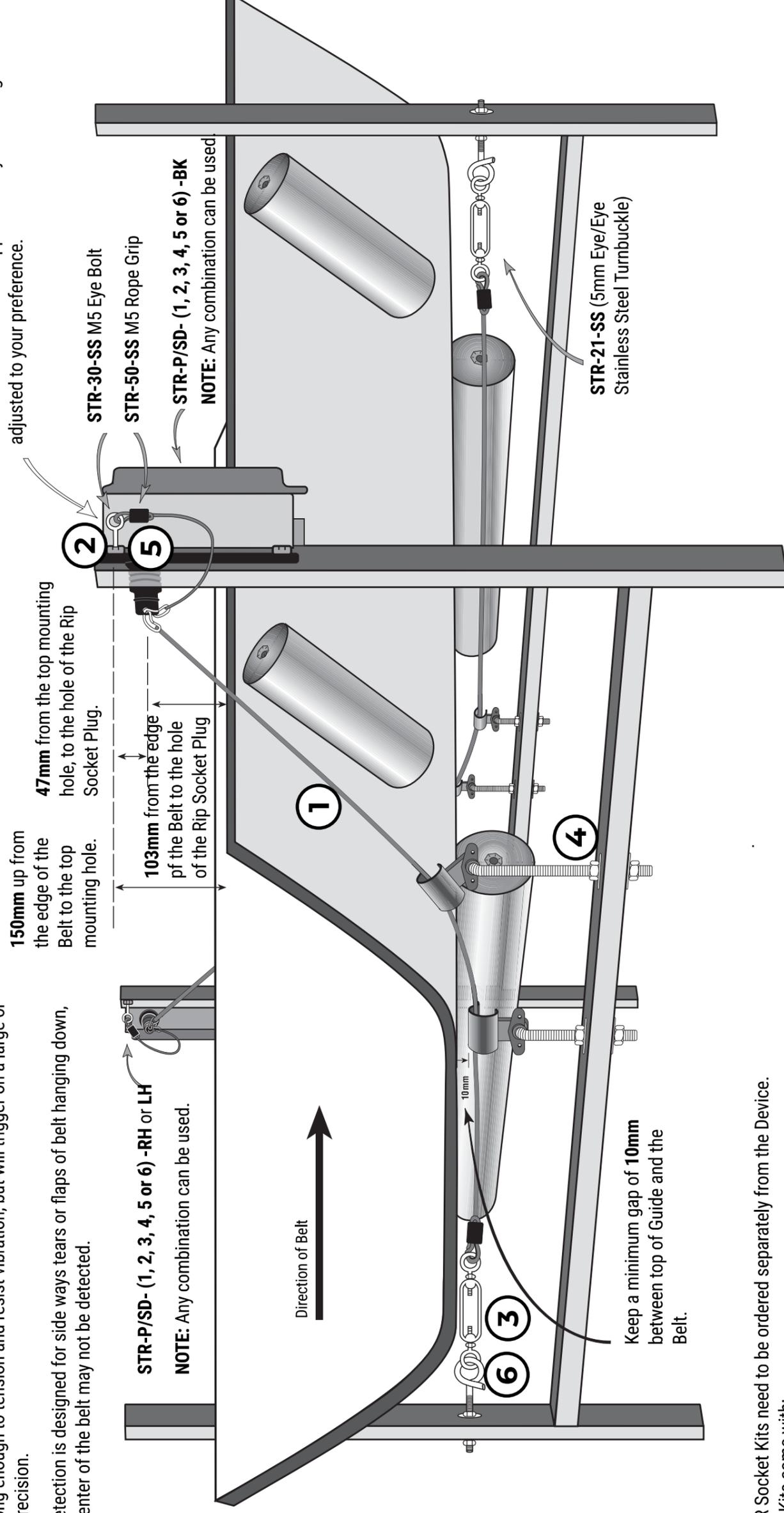
Every feed point; every end roller, and with overlaid conveyors, every 500metres or at any problem point.

(Ready for use without going under the belt to reinstall, after a rip has been detected).

**NOTE:** The correct Belt Rip pick up detachment operation of the Rip Socket, is in a sideways motion to the attachment point. This means once the Socket is tensioned, the detachment becomes very sensitive to even a small tear in the belt. This is the reason Safe-TProducts recommends using the **STR-P /-TP**. With the Socket in the vertical position, it is strong enough to tension and resist vibration, but will trigger on a large or small tear with precision.

The Safe-TRip detection is designed for side ways tears or flaps of belt hanging down, tears down the center of the belt may not be detected.

If the Socket is disconnected from Rip Device Plug, the Tether Point Cord is used to retrieve Rip Cord easily to reset the Rip Device. The attachment point is a M6 x 40 Stainless Steel Eye Bolt which may be fitted through the STR's mounting foot or any other M6 hole. The Tether Point Cord is approximately 1m in length and can be adjusted to your preference.



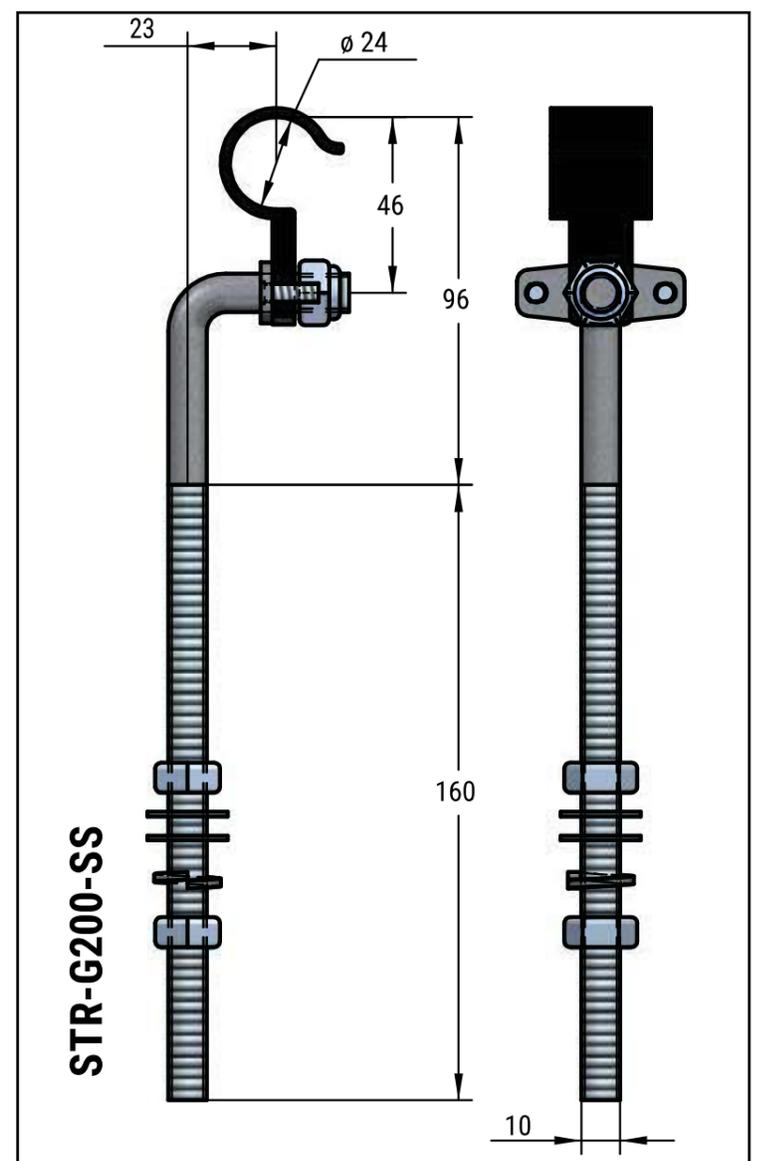
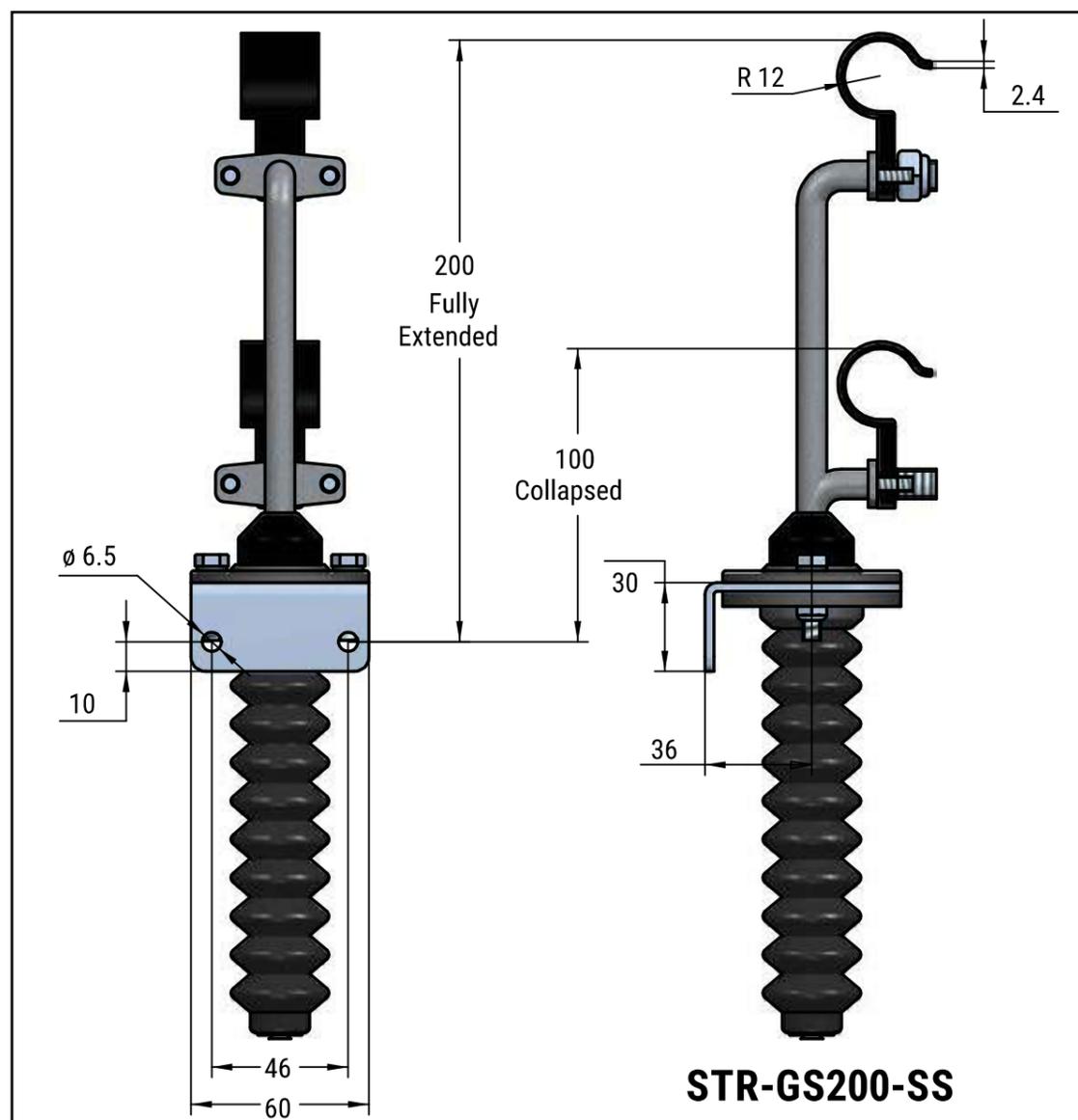
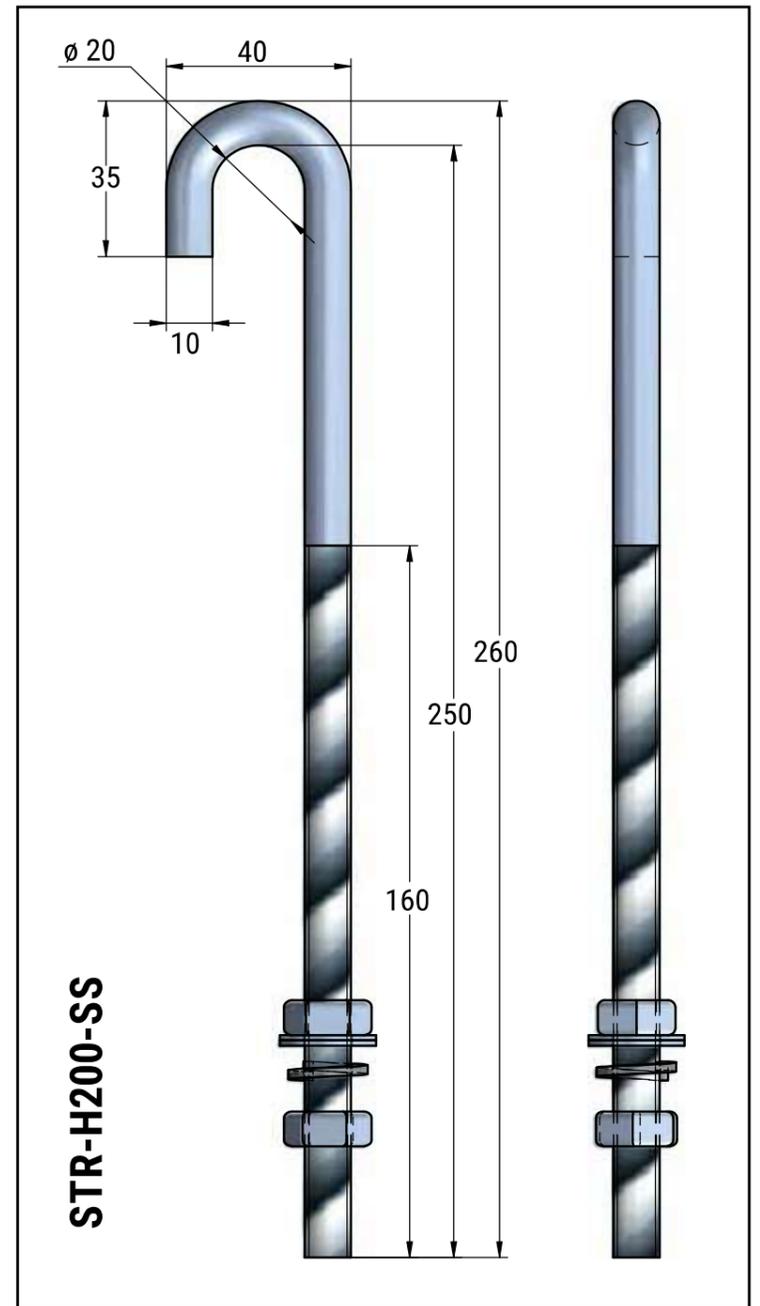
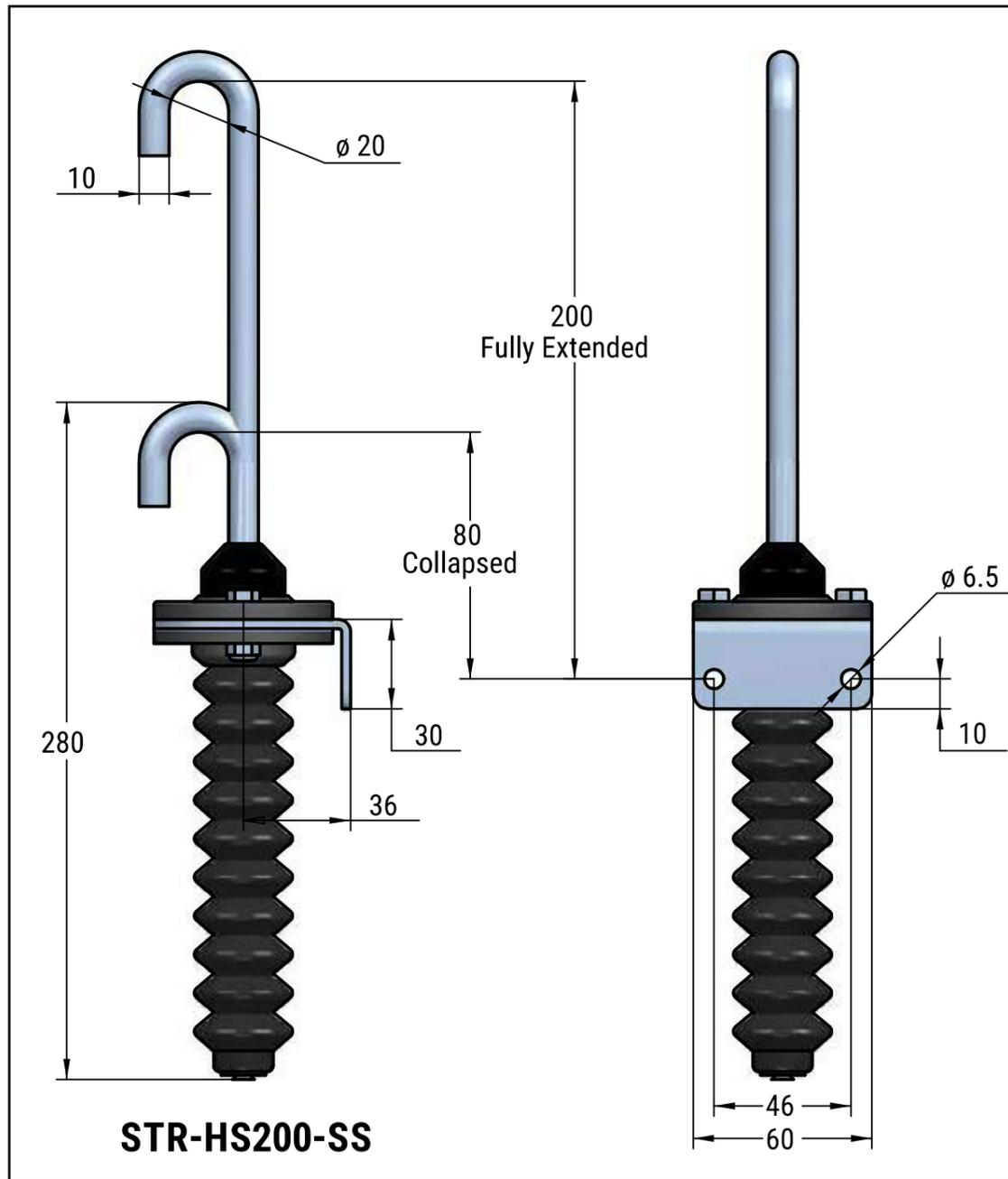
**NOTE:** STR Socket Kits need to be ordered separately from the Device. All Socket Kits come with:

1. Different lengths of 2.4mm ID x 3.2mm OD PVC coated Pull Cord.
2. M5 Eye Bolt.
3. M5 Turnbuckle.
4. Different versions of Pull Cord Guides with each part number.
5. 3 x Pull Cord Grips.
6. Pigtail.

### Belt Rip Device Installation Position:

Every feed point; every end roller, and with overlaid conveyors, every 500metres or at any problem point.

## TECHNICAL SPECIFICATIONS



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### STR-1 ELECTRICAL CHARACTERISTICS FOR REED SWITCH

Contact Form		A
Contact Material		Ru
Contact rating max	W/VA	10
Switching voltage max	VDC	200
	VAC	140
Switching current max	A	1
Carrying current max	A	1.2
Breakdown voltage min	VDC	240
Contact resistance max (Initial)	mΩ	100
Insulation resistance min	Ω	10 <sup>10</sup>

### ENVIRONMENTAL CHARACTERISTICS REED SWITCH

Operating temperature	°C	-60 to +155
Vibration (50-2000 Hz)	g	20
Shock (1/2 sin 11 ms)	g	100

### STR-2 AND STR-3 ELECTRICAL CHARACTERISTICS FOR REED SWITCH

Contact Form		c
Contact Material		Rh
Contact rating max	W/VA	5
Switching Voltage max	VDC	175
	VAC	120
Switching current max	A	0.25
Carrying current max	A	1.5
Breakdown voltage min	VDC	200
Contact resistance max (Initial)	mΩ	100
Insulation resistance min	Ω	10 <sup>10</sup>

### ENVIRONMENTAL CHARACTERISTICS

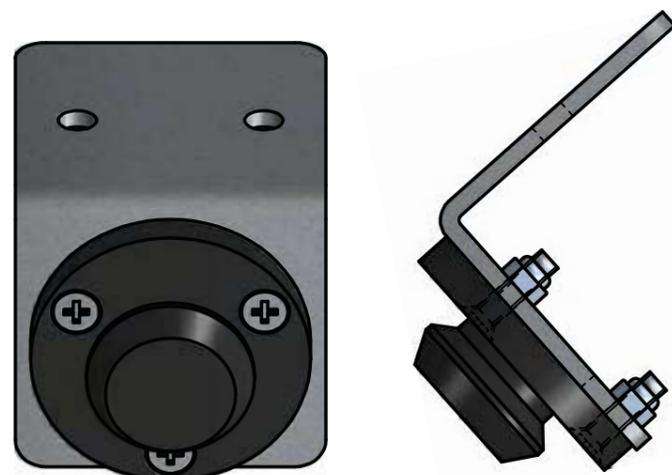
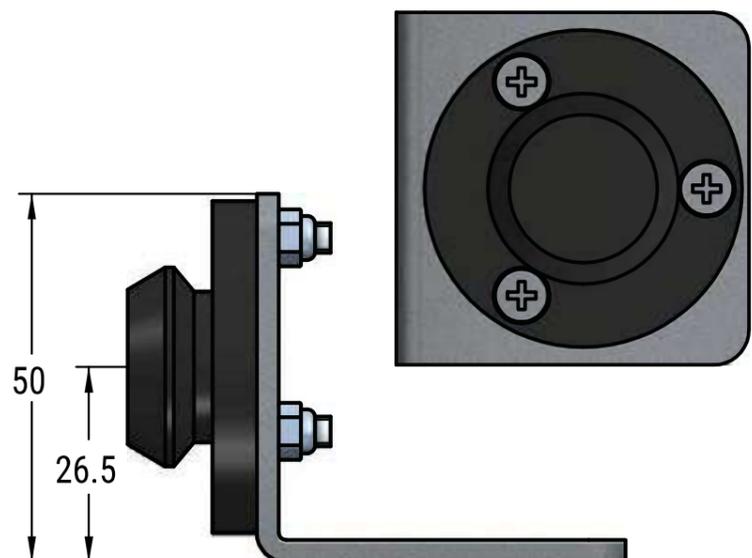
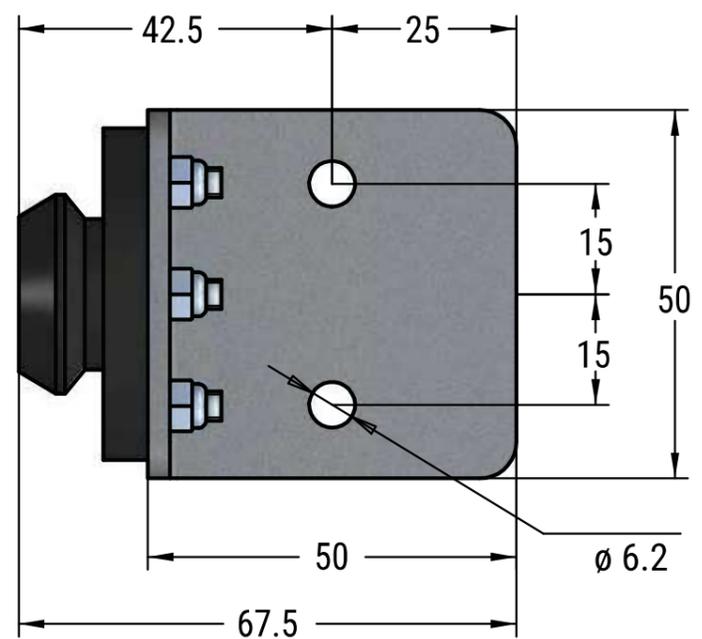
Operating temperature	°C	-40 to +125
Vibration (50-2000 Hz)	g	30
Shock (1/2 sin 11 ms)	g	50

### STR-4,5,6 Safety Micro Switch with Direct Opening Action Specifications

IEC 60947-5-1 Annex K classification	<input type="checkbox"/> Type 1 <input checked="" type="checkbox"/> Type 2 Direct Opening
Change-over contact element	<input checked="" type="checkbox"/> C <input type="checkbox"/> Za <input type="checkbox"/> Zb
Contact material	Ag-Ni
Utilization category	AC-15 DC-13
Operational voltage	250 V 60 V DC
Operational current	1,5 A 0.5 Amp DC
Frequency	50/60 Hz --
Number of electrical cycles	6050 (6 min-1)
Number of mechanical cycles	6050 (6 min-1)
Conventional free air thermal current	10A
Conventional enclosed thermal current	--
IP Rating	67
Service Temperature	-30° C No Icing +80° C

### Specifications (short-circuit with standability)

Rated conditional short-circuit current	3 00 A	1 000 A
Short circuit protective device	Fuse 6 A gG (IEC 60269-2)	Fuse 6 A gR (IEC 60269-4)



## STR-SOC-SS-SP

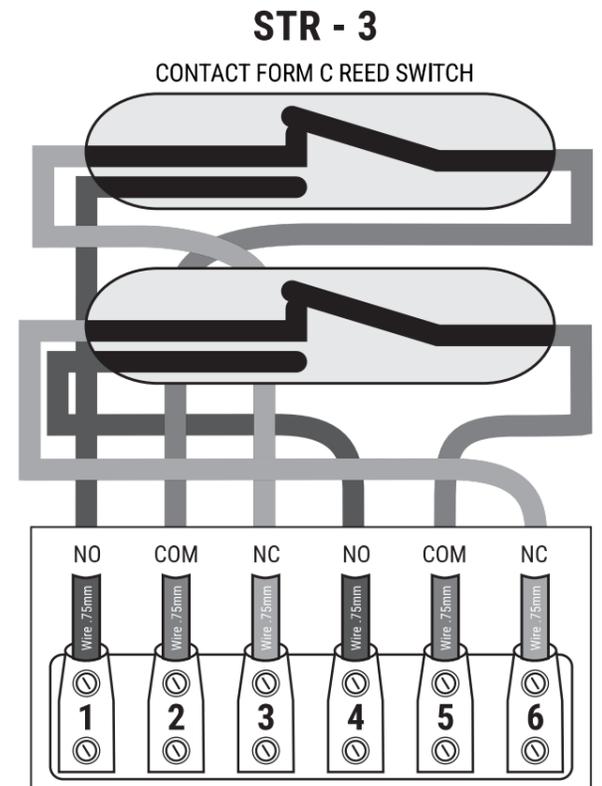
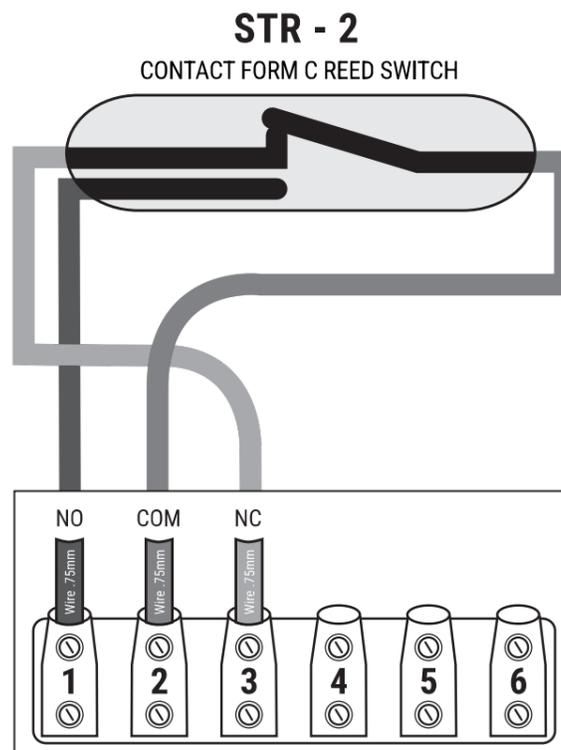
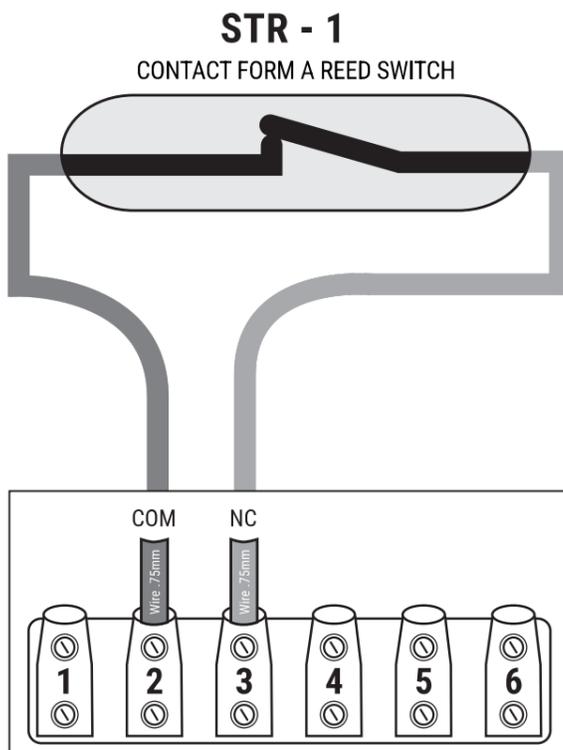
### IMPORTANT NOTICE:

IEC 60947-5-1 2016  
AS 60947-5-1 2015  
Clause K.7.1.4.6.1  
Form C or Form Za

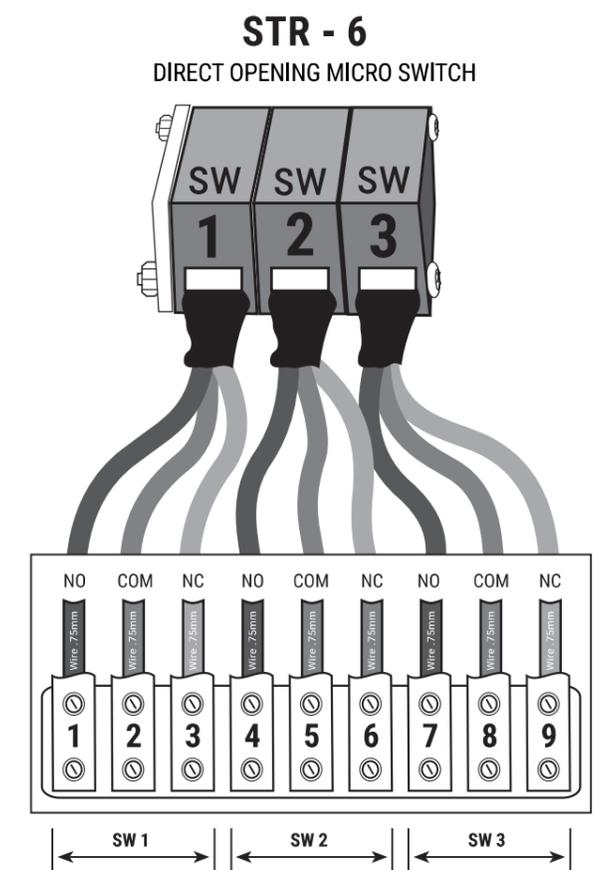
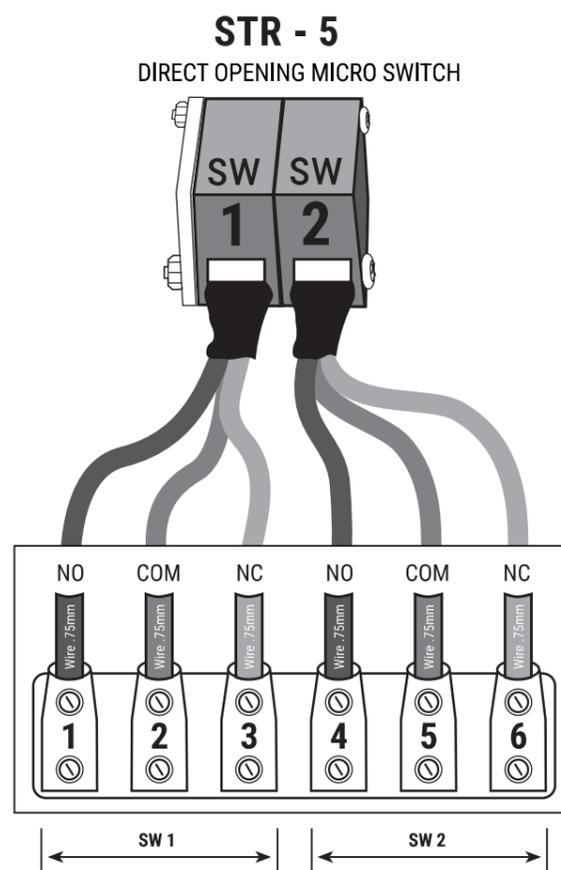
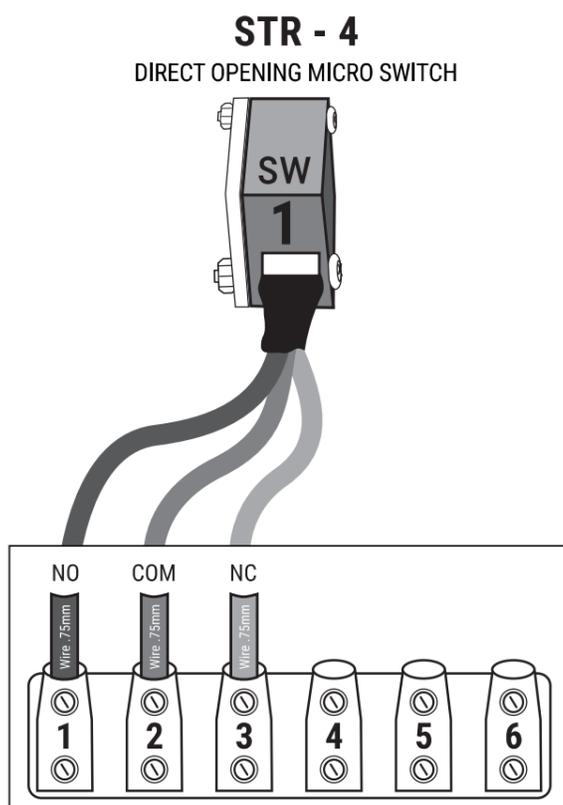
Form C or Form Za change over contact elements. Only one contact element (Make or Break) in each switch shall be used.

## WIRING DIAGRAM

### SWITCHES SHOWN WITH SOCKET ATTACHED



### SWITCHES SHOWN WITH SOCKET ATTACHED



#### STR-P-? (TUNNEL TYPE TERMINALS)

Terminals made of polyamide with undetachable nickel plated brass screws.

Terminal Hole Diameter 4.2 mm

Voltage Rating 150 -300 V

Current 50 Amps

Cable Size 20 – 8 AWG 0.75 mm<sup>2</sup> – 10 mm<sup>2</sup>

Tightening torque 0.8 Nm

Temperature Rating -40°C to +100°C

#### STR-P-?-K (RAIL TYPE TERMINALS)

Terminals made of PA66 with undetachable screws.

Voltage Rating 400 V

Current 24 Amps

Cable Size 24 – 12 AWG 0.2 mm – 4 mm Sqm

Tightening torque 0.6 Nm

Temperature Rating -40°C to +100°C

2 Conductors with the same cross section, stranded, twin ferrule with plastic sleeve (min-max) 0.5 – 1.5 mm<sup>2</sup>

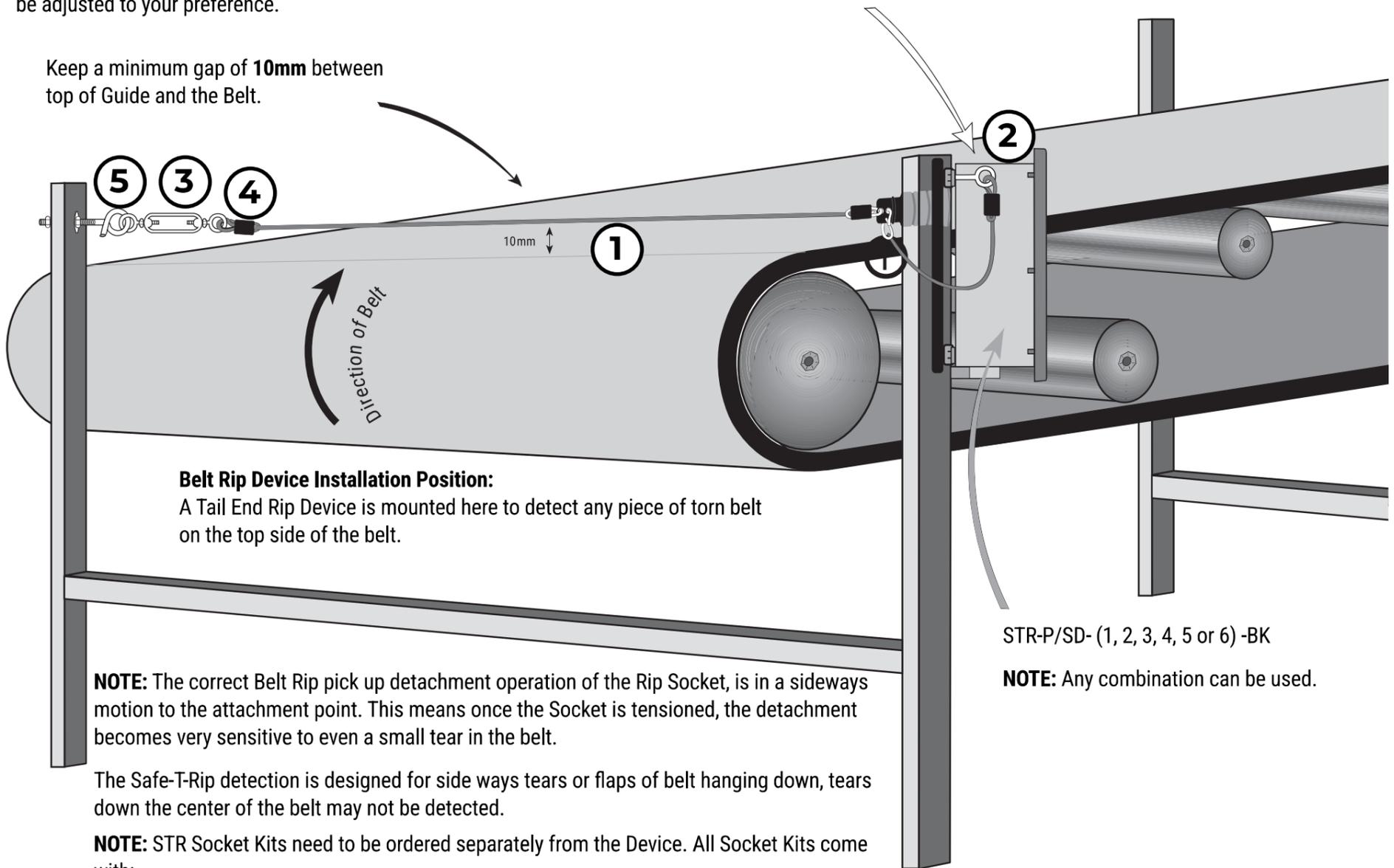
#### NUMBER OF CLAMPED CONDUCTORS

5	3	2	1
AWG 16 / 1.5 mm <sup>2</sup>	AWG 14 / 2.5 mm <sup>2</sup>	AWG 12 / 4 mm <sup>2</sup>	AWG 10 / 6 mm <sup>2</sup>

## TAIL END RIP

If the Socket is disconnected from Rip Device Plug, the Tether Point Cord is used to retrieve Rip Cord easily to reset the Rip Device. The attachment point is a M6 x 40 Stainless Steel Eye Bolt which may be fitted through the STR's mounting foot or any other M6 hole. The Tether Point Cord is approximately 1m in length and can be adjusted to your preference.

Keep a minimum gap of **10mm** between top of Guide and the Belt.



### Belt Rip Device Installation Position:

A Tail End Rip Device is mounted here to detect any piece of torn belt on the top side of the belt.

**NOTE:** The correct Belt Rip pick up detachment operation of the Rip Socket, is in a sideways motion to the attachment point. This means once the Socket is tensioned, the detachment becomes very sensitive to even a small tear in the belt.

The Safe-T-Rip detection is designed for side ways tears or flaps of belt hanging down, tears down the center of the belt may not be detected.

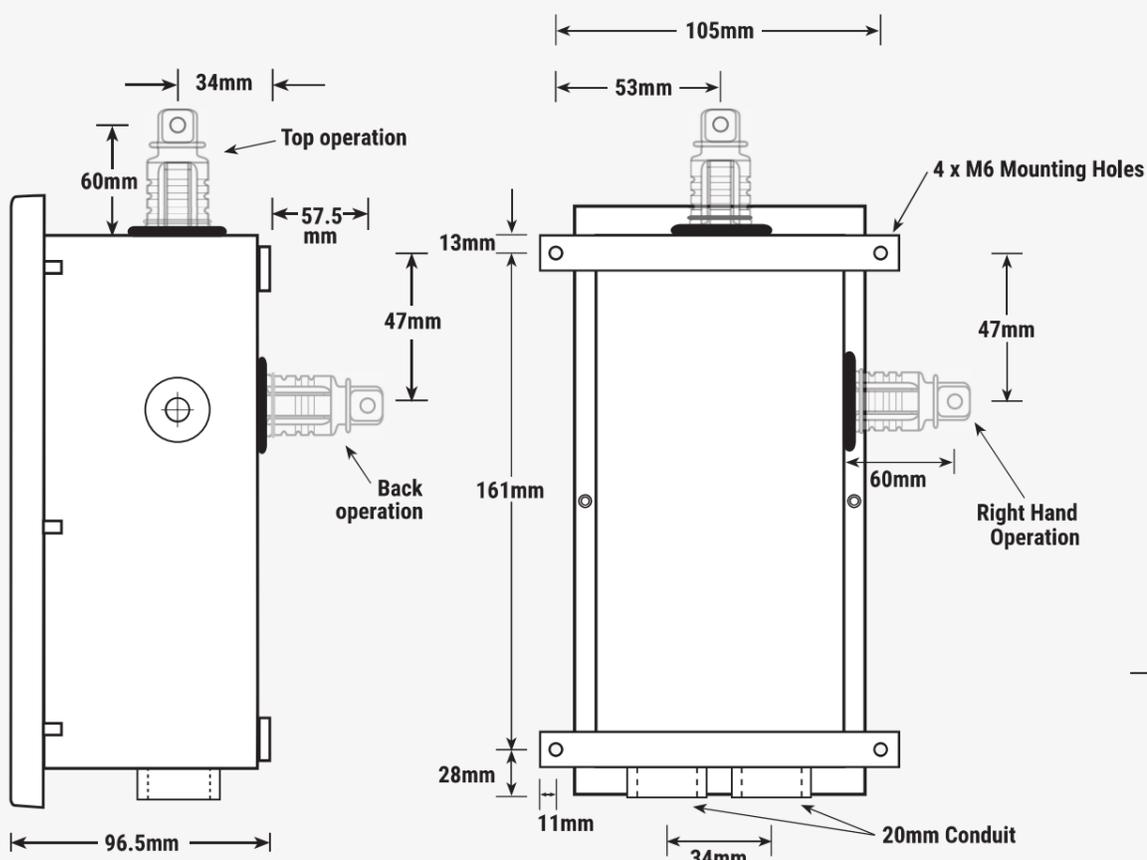
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1. Different lengths of 2.4 mm ID x 3.2 mm OD PVC coated Pull Cord.
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3. M5 Turnbuckle.
4. 3 x Pull Cord Grips.
5. Pigtail

STR-P/SD- (1, 2, 3, 4, 5 or 6) -BK

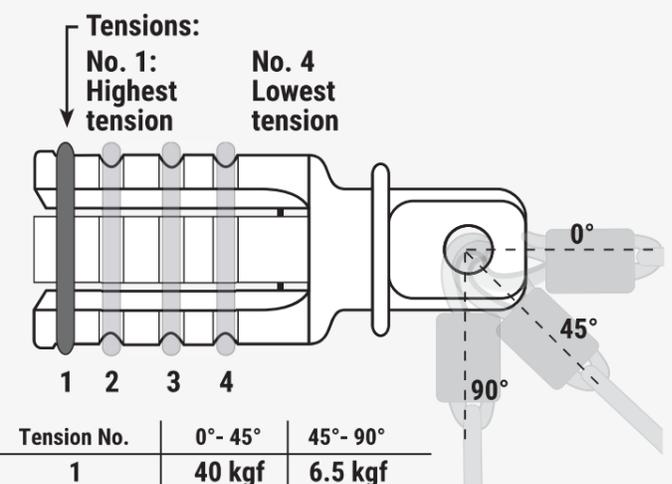
**NOTE:** Any combination can be used.

## DIMENSION AND TORQUE PARAMETERS



### Move stainless steel spring clip for Socket detachment tensions.

The kilograms of force (kgf) to disconnect the socket will vary due to installation type. The information listed below is using a constant force applied and is only a guide.



Tension No.	0° - 45°	45° - 90°
1	40 kgf	6.5 kgf
2	16 kgf	4 kgf
3	16 kgf	3 kgf
4	8 kgf	2.5 kgf

## STR-P STR-SD

### STANDARD

The SAFE-T-RIP complies with the relevant parts of these Standards

IEC 60947-5-1 Ed 3.1	Control circuit devices & switching elements
AS/NZS IEC 60947-5-1:2015	Control circuit devices & switching elements

#### Ce Conformity to:

2006/42/EC	Machinery Directive
2014/35/EU	Low Voltage Directive

### WORKSHOP TESTED

All Devices are either hand or robotically tested by trained technicians before leaving Safe-T-Products and have a date and name label of manufacture inside them. The Devices are then packed insuring full working order to our stringent test parameters. A certification certificate is available on request for full compliance to the relevant standards.

### MODIFICATIONS OF DEVICE

Any modifications are only to be made by Safe-T-Products or one of their registered repairers. Any unauthorised modifications may not comply with the relevant standards and may diminish the integrity and workings of the device and the warranty will become void.

Safe-T-Products and their registered repairers or distributors will not be responsible for any damage caused to the altered device or any item in, on, related or near the device, nor any injury incurred, nor actions resulting from the unauthorised alterations.

### RETURNS POLICY/RE-STOCKING

Please return any defective device to place of purchase for assessment. If they are deemed to be warranty repairs or not. Return warranty devices as per warranty clause. Restocking returns will only be accepted if received by Safe-T-Products in their original condition and within thirty (30) days of delivery date stated on delivery documentation. A restocking fee applies (contact place of purchase for costs).

### WARRANTY

Safe-T-Products of Perth Western Australia contact [info@safe-t-products.com.au](mailto:info@safe-t-products.com.au) warranty period is Twenty Four (24) months from date of purchase or longer if indicated by Safe-T-Products. For warranty to be valid the goods must be received by Safe-T-Products before the end of the Twenty Four (24) month period. Safe-T-Products warrants that if any product is defective, it will, at its option, replace or repair the product. **This warranty shall not apply to any defect which arises from improper use, failure to follow the products instruction, or any repair or modification made without the consent of Safe-T-Products.**

The customer must contact the Distributor of the product or Safe-T-Products of Perth Western Australia via Email [info@safe-t-products.com.au](mailto:info@safe-t-products.com.au) before returning the faulty product. If returned they must be suitably packaged and, where relevant, returned in accordance with any particular instructions which Safe-T-Products or one of its distributors may have notified the customer at the time of contact for warranty. **Returned products must be accompanied by an advice note stating the nature of any defect being claimed.** Any products or parts which are replaced by Safe-T-Products or one of its distributors shall become the property of Safe-T-Products. **Title to replacement products shall pass to the customer on delivery, and the period of the warranty shall be calculated from the date of the defective product.**

All warranty returns to Safe-T-Products will be sent by the customer's freight at their cost. All benefits under this warranty are in addition to other rights and remedies of the consumer under a law in relation to the goods or services to which the warranty relates. Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

### PRODUCT LIFE EXPECTANCY

Safe-T-Products estimate the product life expectancy to 10-15 years. Products should be changed after a maximum of 10 year life.

**NOTE:** Color fading is not necessarily product failure but a natural progression of any materials through it's life span. This is also dependent on the environment the product is installed in. A shorter or longer product life maybe experienced due to environmental situations. Safe-T-Products can't give a written life expectancy on any of it's products due to the different situations the products are used.

## STR-P STR-SD

### TECHNICAL SUPPORT

Technical advice will be given at any time by Safe-T-Products or Distributor on any of the Safe-T-Product range. Contact Safe-T-Products or your local Distributor for this service.

### OBSOLETE PRODUCTS

Notification will be given to Distributors only for the products becoming obsolete and a time frame of when this will occur. Please contact Distributors for this information.

The Obsolete product range will have spare parts for 12 months after becoming obsolete or until they run out, complete products will be available for a short time after it has become obsolete.

### MAINTENANCE PROCEDURE

All Safe-T-Rip Devices require minimal maintenance but as in AS/NZS 4024.1:2014 a maintenance procedure must be carried out.

#### Recommended 6 Month Maintenance

1. Visual inspection of enclosure to ensure IP67 rating and correctly operating device. ie. Damaged enclosure, etc.
2. Inspect the Safe-T-Rip Guide which is under the belt for damage or wear and replace if necessary.
3. Activate the Safe-T-Rip by pulling the socket off then clean the inside & reattach.
4. Inspect rip cord for wear or deterioration and replace if necessary.
5. Check the rip cord is free from obstructions and is held in the pull cord guides.
6. After inspection, check the set position of the Device as per installation instructions.

#### Full Safety Maintenance every 12 Months

Remove cover & check for corrosion or water ingress. Replace if necessary.

Check electrical connections for security and corrosion.

Clean lid seal and replace cover & torque down lid screws as per reed switch wiring diagram.

Clean lid seal and replace cover & torque down lid screws as per dimensions and torque parameters section.

### PRODUCT SURFACE TREATMENT

#### STAINLESS STEEL ELECTRO POLISHING

Safe-T-Products' electro-polishing of its 316 stainless steel enclosures ensures product longevity in harsh conditions. By effectively removing all contaminants and iron from the surface of the stainless steel and drawing the chromium to the surface, this process creates a clean, non-rusting, and sterile surface. This level of precision and attention to detail in the treatment process ensures that stainless steel components remain corrosion-resistant and maintain their functionality and appearance over time.

#### POWDER COATED ALUMINIUM

The powder coat used on the aluminum products is a halogen-free, low-smoke, orange or yellow polyester coating. This coating improves the longevity of the aluminum surface and resists corrosion in harsh environments.