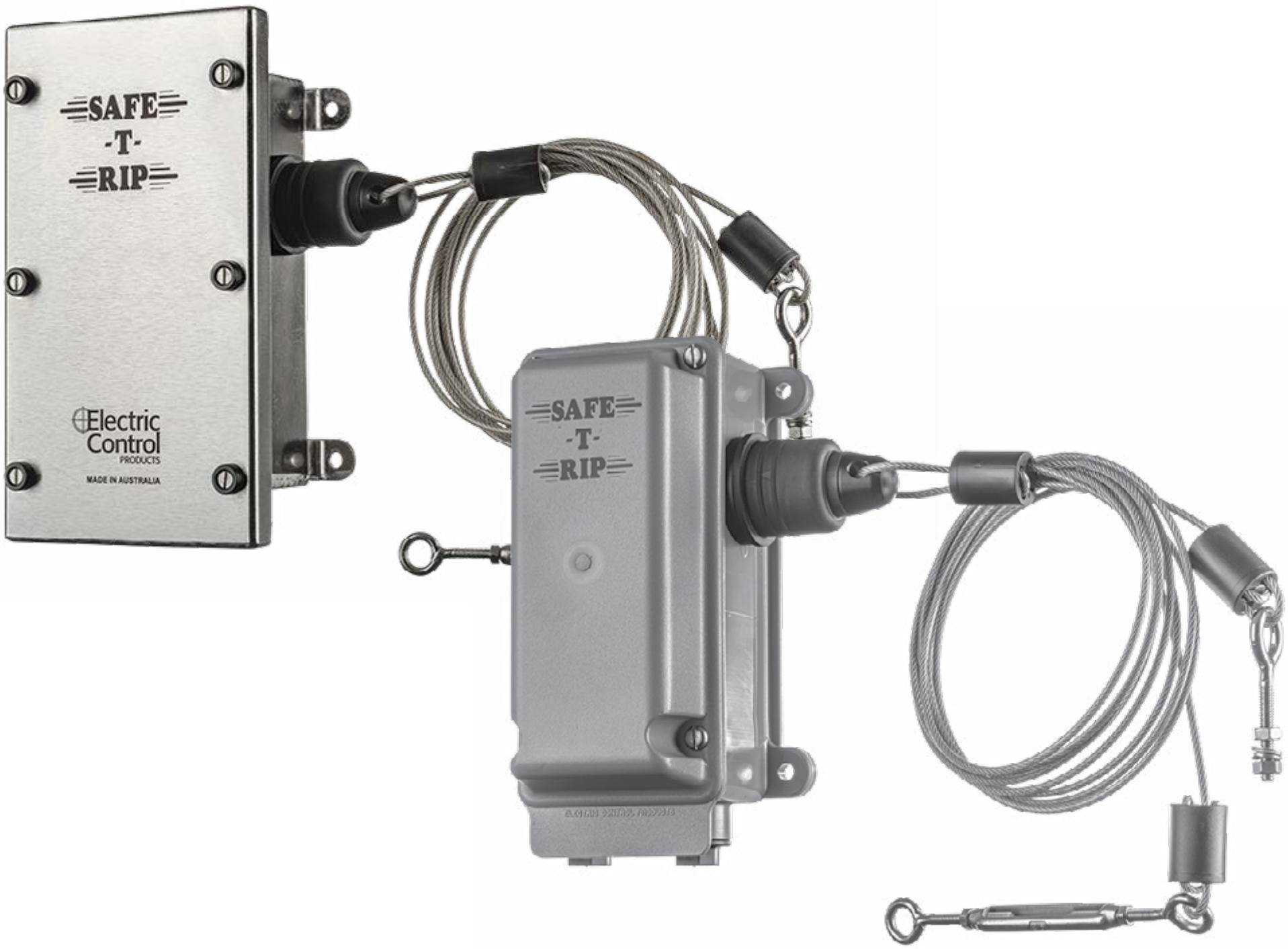
safe-t PRODUCTS

SAFE -T- RIP®

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

YouTube

FOR MORE INFORMATION

www.safe-t-products.com.au

COMPASS ASSURANCE SERVICES ISO 9001

DON'T FORGET TO RECYCLE ME

AUSTRALIAN Designed & Manufactured

PUB. No. TD_STR V1.3

SAFE -T- RIP®

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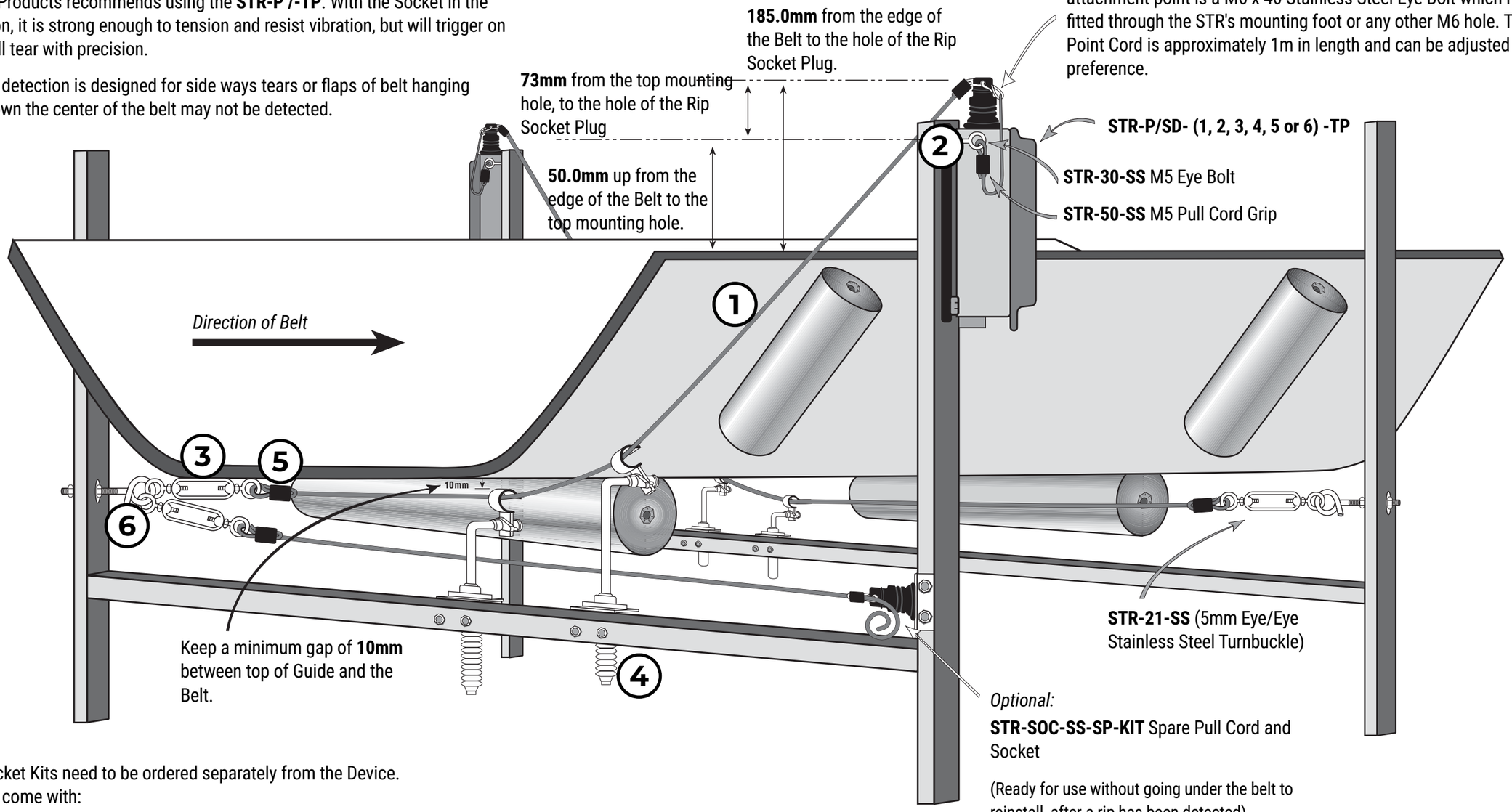
NOTE: The correct Belt Rip pick up detachment operation of the Rip Socket, is in a sideways motion to the attachment point. This means once the Socket is tensioned, the detachment becomes very sensitive to even a small tear in the belt. This is the reason Safe-T-Products recommends using the **STR-P /-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 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 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 overland conveyors, every 500metres or at any problem point.

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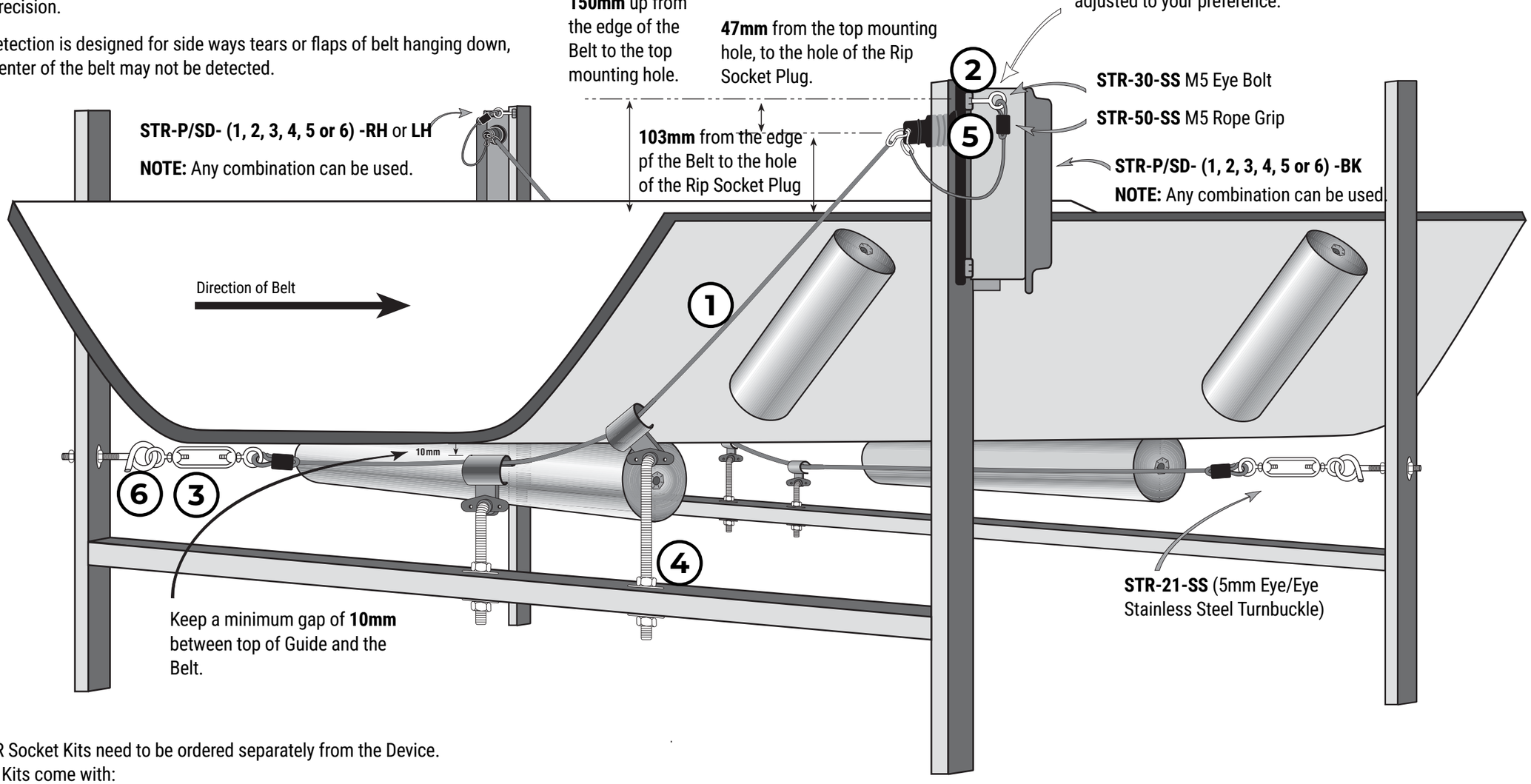

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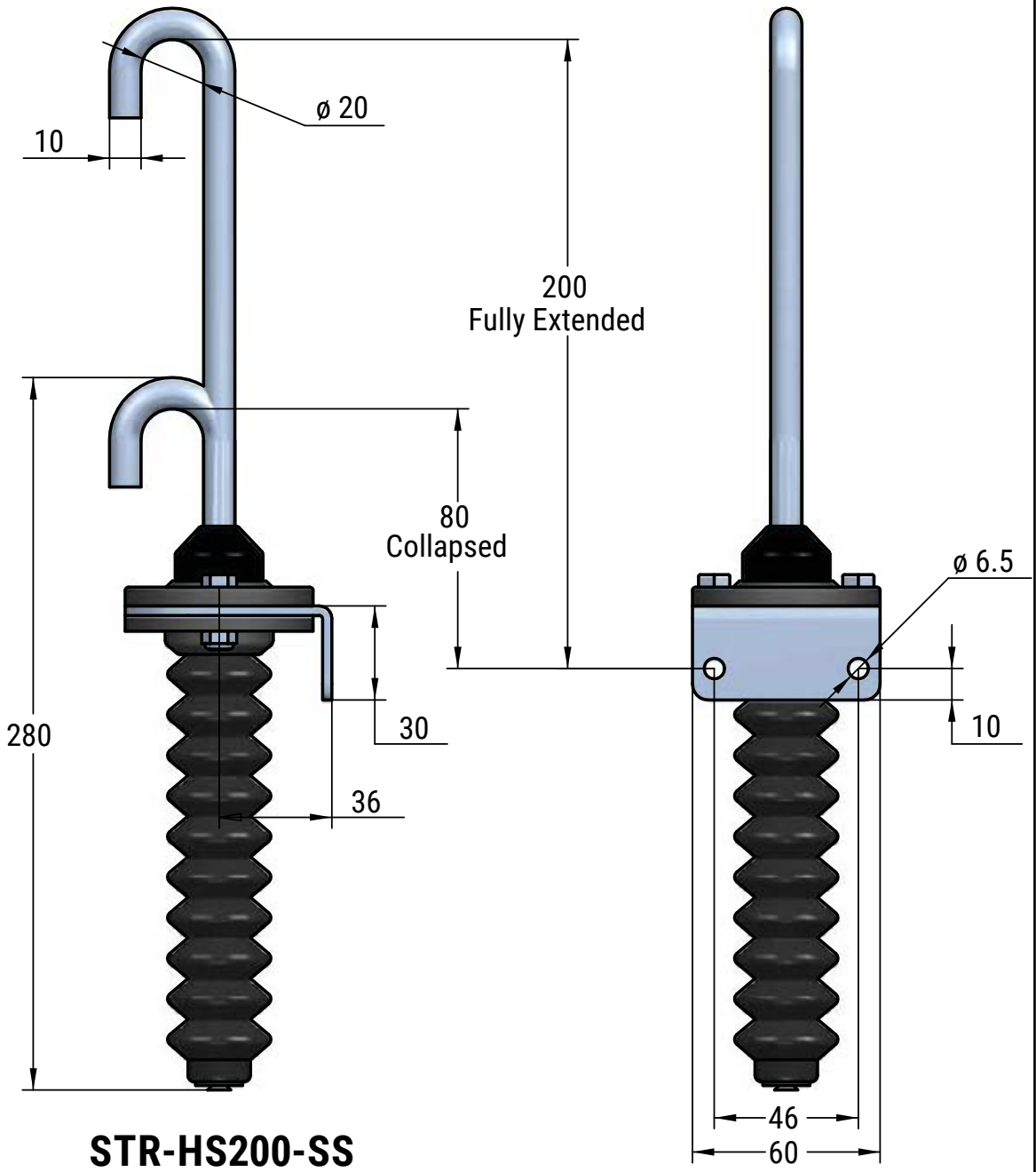
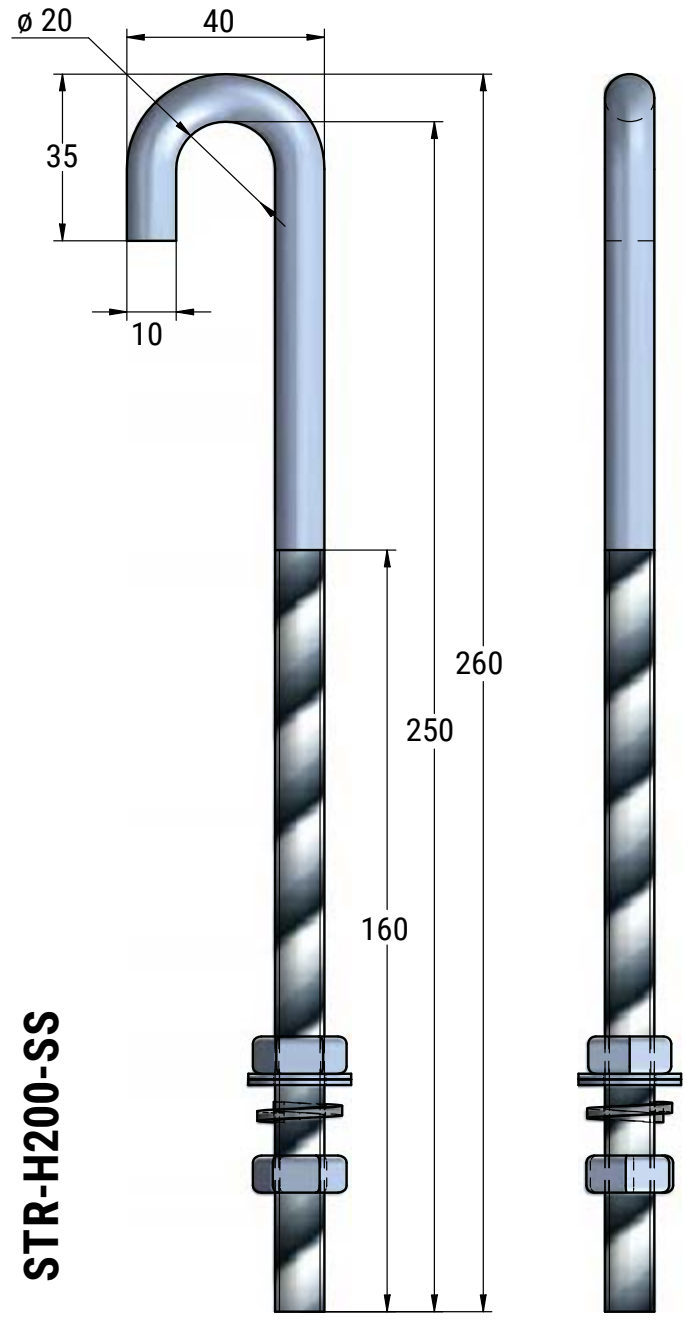
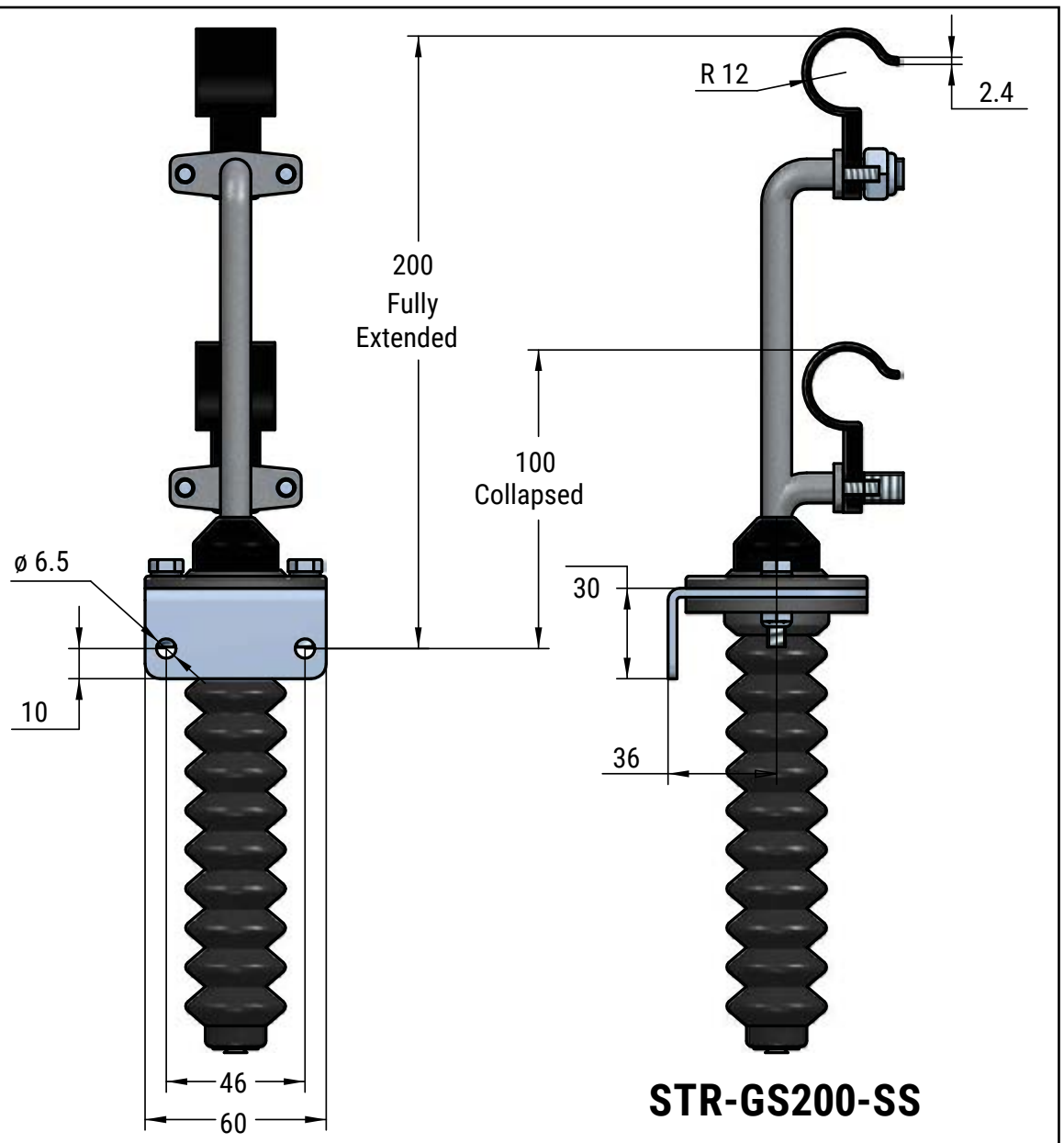
TECHNICAL SPECIFICATIONS



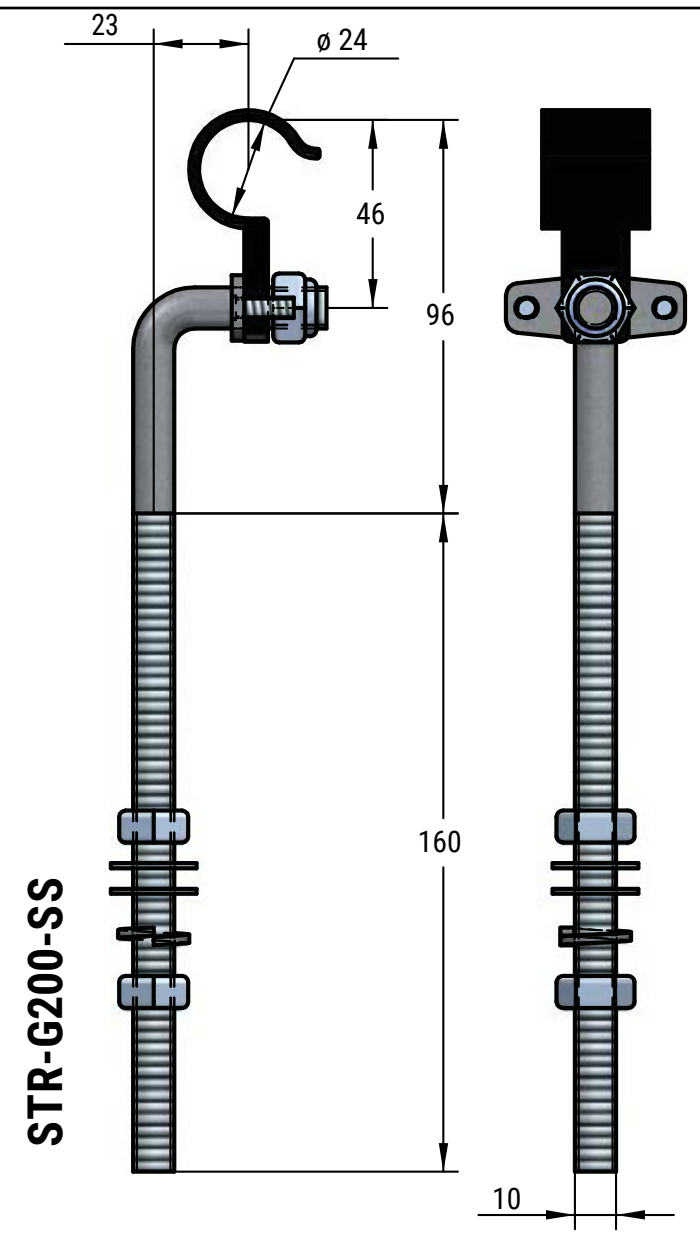
STR-HS200-SS



STR-H200-SS



STR-GS200-SS



STR-G200-SS

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CE Conformity

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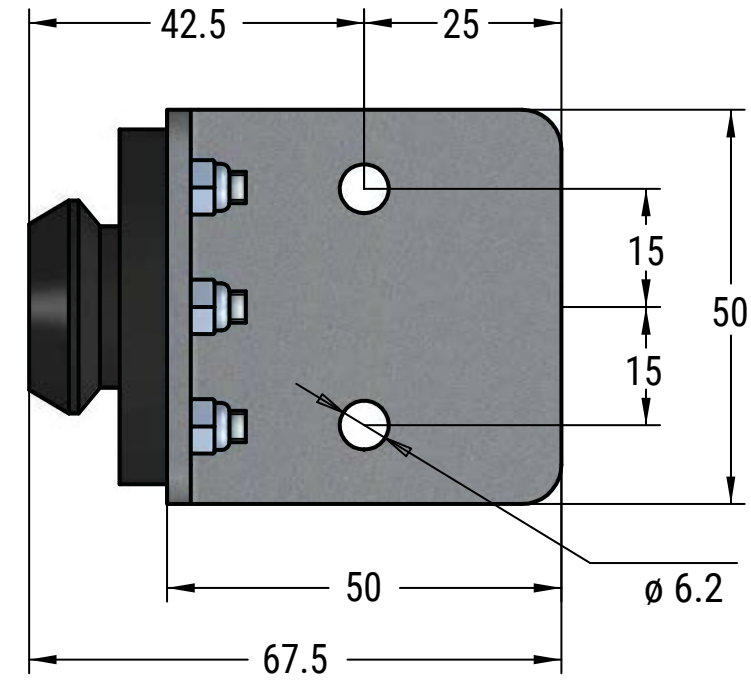
TECHNICAL SPECIFICATIONS

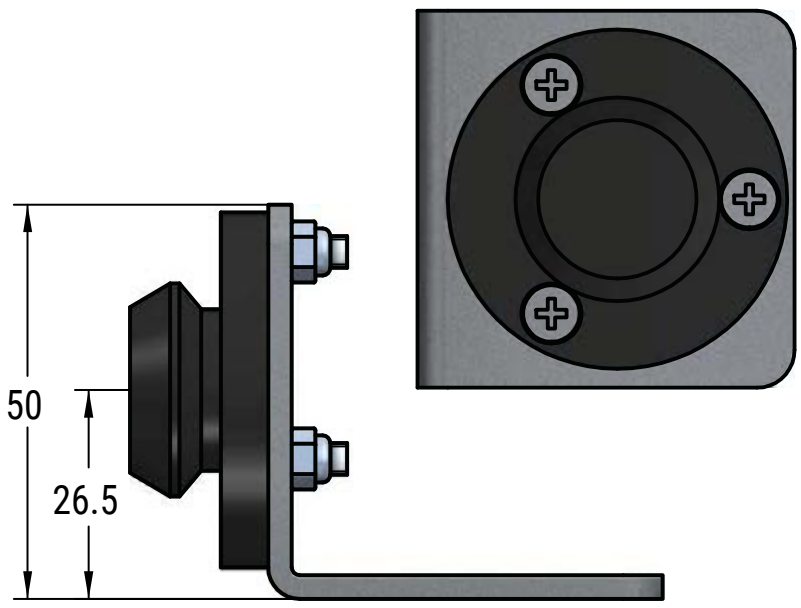
STR-1 ELECTRICAL CHARACTERISTICS FOR REED SWITCH		
Contact Form		A
Contact Material		Ru
Contact rating max	W/VA	10
Switching voltage max	VDC	200
	VAC	140
Switching current max	A	1
Carrying current max	A	1.2
Breakdown voltage min	VDC	240
Contact resistance max (Initial)	mΩ	100
Insulation resistance min	Ω	10^{10}
ENVIRONMENTAL CHARACTERISTICS REED SWITCH		
Operating temperature	°C	-60 to +155
Vibration (50-2000 Hz)	g	20
Shock (1/2 sin 11 ms)	g	100

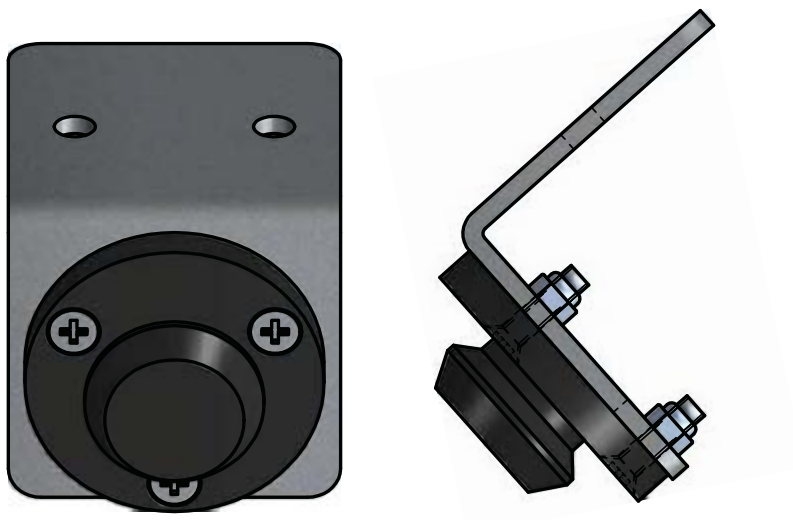
STR-2 AND STR-3 ELECTRICAL CHARACTERISTICS FOR REED SWITCH		
Contact Form		c
Contact Material		Rh
Contact rating max	W/VA	5
Switching Voltage max	VDC	175
	VAC	120
Switching current max	A	0.25
Carrying current max	A	1.5
Breakdown voltage min	VDC	200
Contact resistance max (Initial)	mΩ	100
Insulation resistance min	Ω	10^{10}
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	☐ Type 1 ☒ Type 2 Direct Opening	
Change-over contact element	☒ C ☐ Za ☐ 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.

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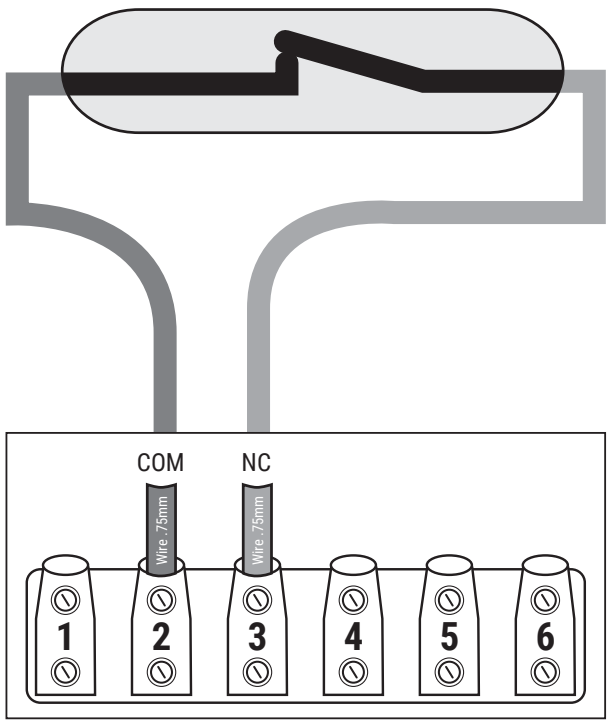
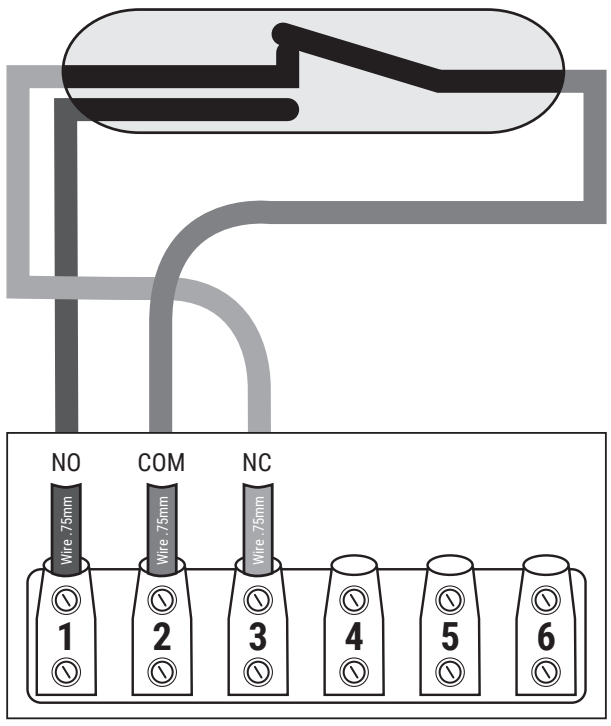
WIRING DIAGRAM

SWITCHES SHOWN WITH SOCKET ATTACHED

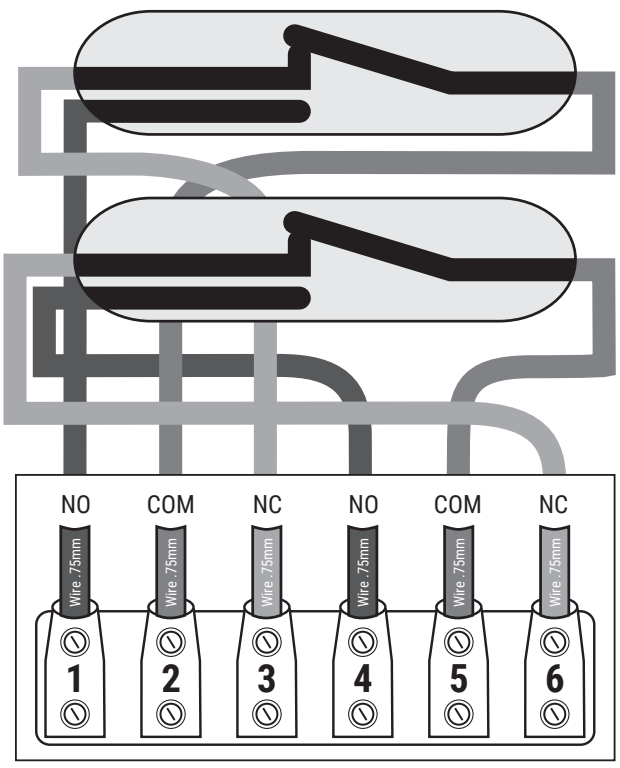
STR - 1
CONTACT FORM A REED SWITCH



STR - 2
CONTACT FORM C REED SWITCH

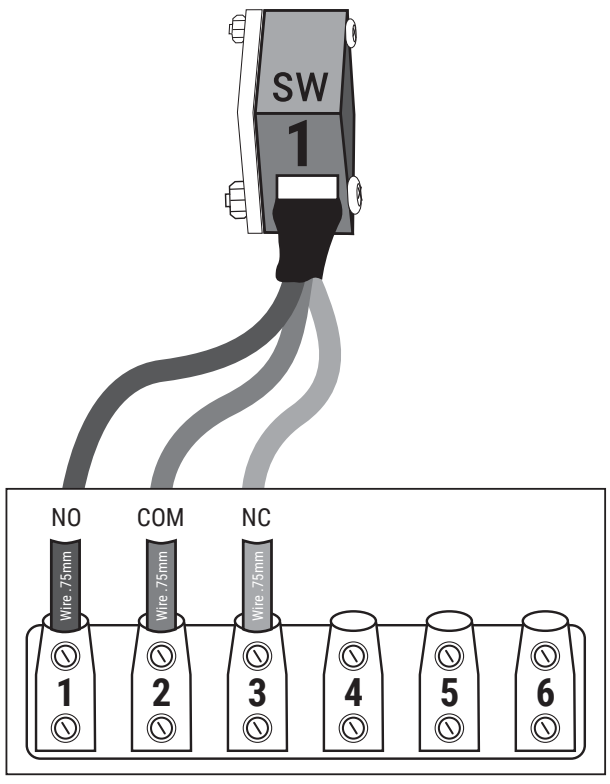


STR - 3
CONTACT FORM C REED SWITCH

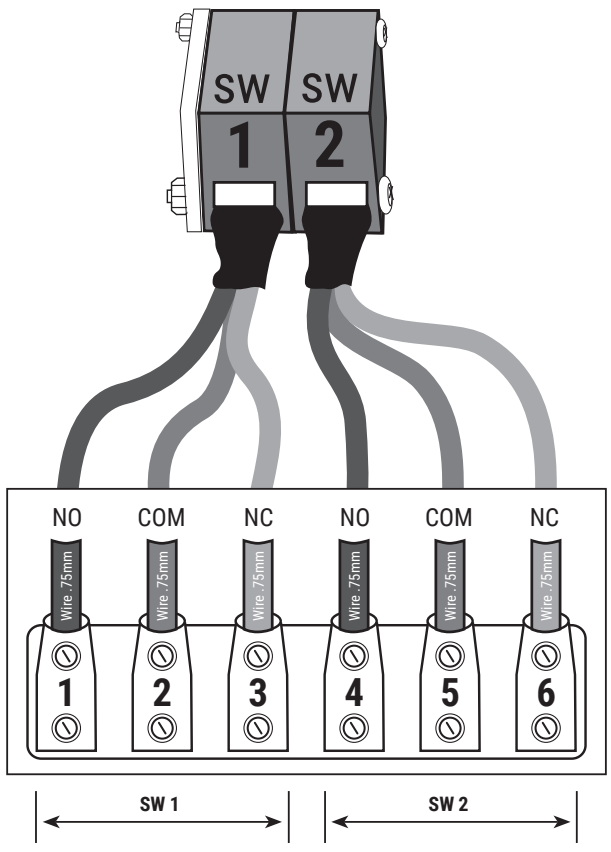


SWITCHES SHOWN WITH SOCKET ATTACHED

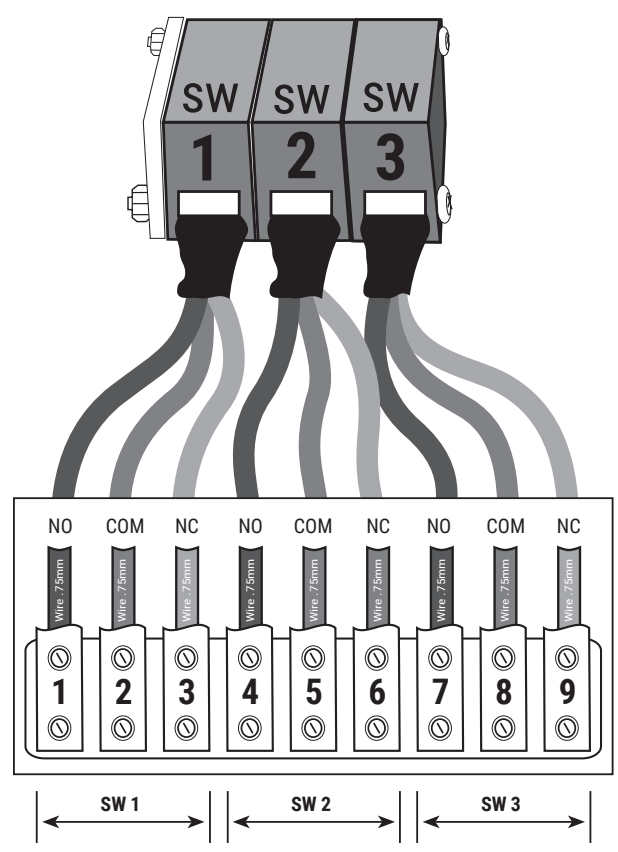
STR - 4
DIRECT OPENING MICRO SWITCH



STR - 5
DIRECT OPENING MICRO SWITCH



STR - 6
DIRECT OPENING MICRO SWITCH



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 mm² – 10 mm²
Tightening torque	0.8 Nm
Temperature Rating	- 40°C to + 100°C

NUMBER OF CLAMPED CONDUCTORS			
5	**3**	**2**	**1**
AWG 16 / 1.5 mm²	AWG 14 / 2.5 mm²	AWG 12 / 4 mm²	AWG 10 / 6 mm²

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 mm²

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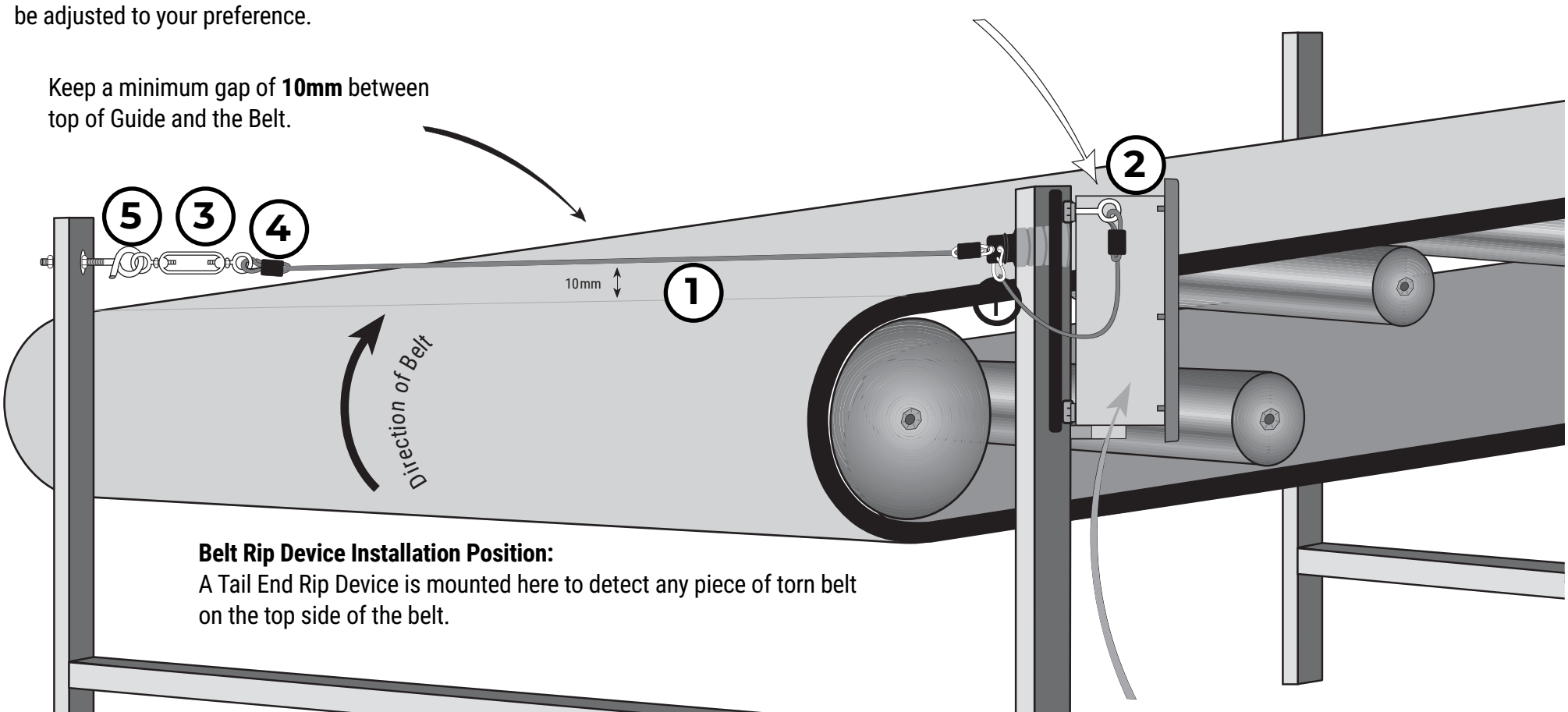
TAIL END RIP

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.



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.

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

NOTE: Any combination can be used.

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.

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

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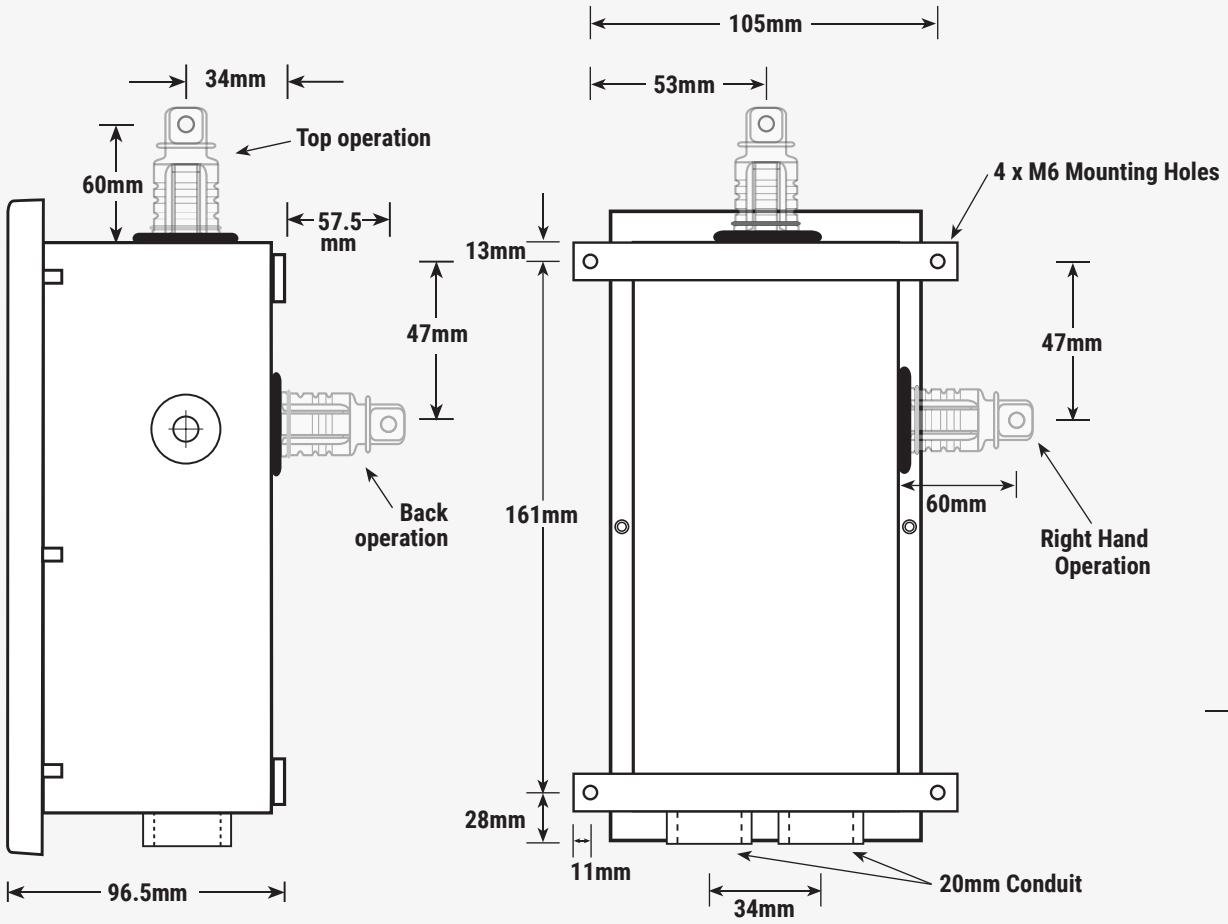
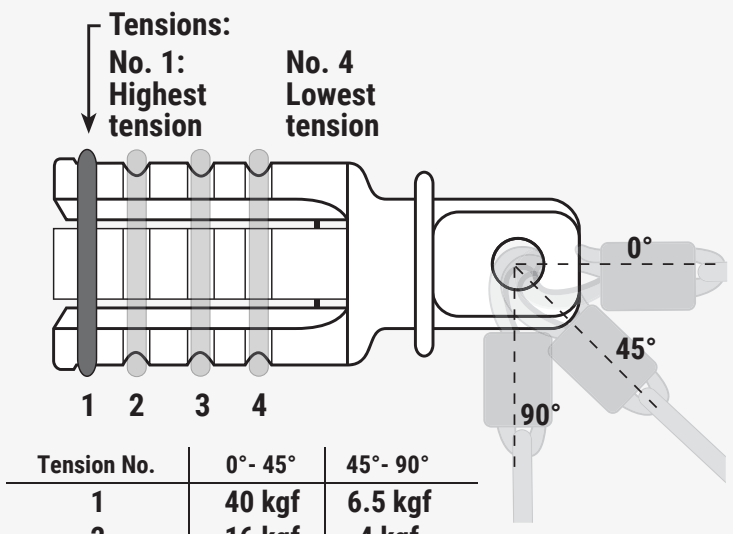
4. 3 x Pull Cord Grips.
5. Pigtail

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

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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 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 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.

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.