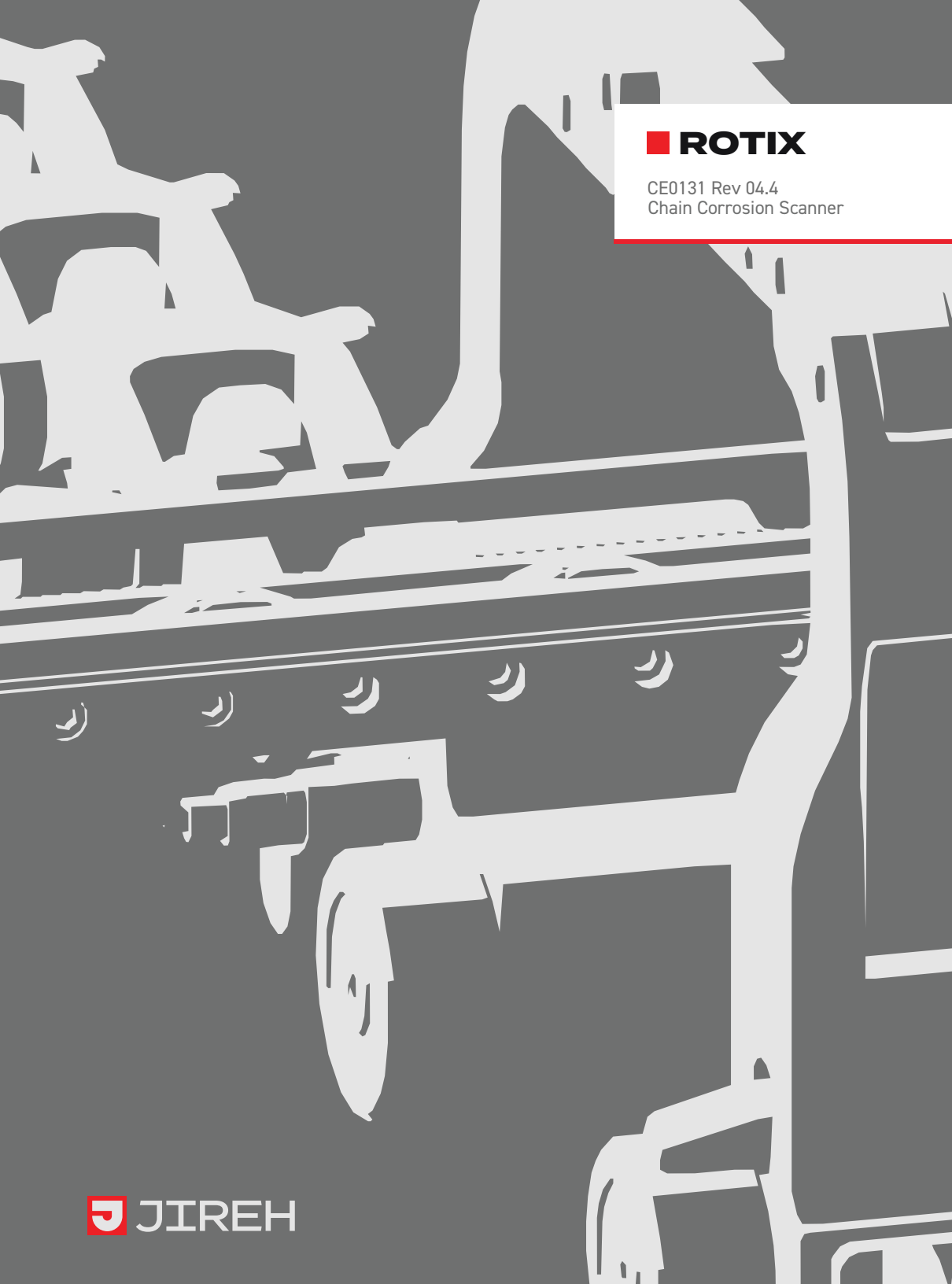


ROTIX

CE0131 Rev 04.4
Chain Corrosion Scanner

JIREH

SAFETY WARNINGS / PRECAUTIONS

KEEP THIS MANUAL – DO NOT LOSE

THIS MANUAL IS PART OF THE **ROTIX** AND MUST BE RETAINED FOR THE LIFE OF THE PRODUCT. PASS ON TO SUBSEQUENT OWNERS.
Ensure any amendments are incorporated with this document.

DANGER! The **ROTIX** is designed for a specific use. Using the **ROTIX** outside of its intended use could cause damage to the product. Read and understand this manual before using.

WARNING! Do **NOT** operate scanner in an explosive environment. Do **NOT** operate scanner in the presence of volatile substances.

WARNING! DO NOT DISASSEMBLE. No user-serviceable parts. Disassembling any of the components in this product, beyond the instructions in this user manual, could void the regulatory certifications and/or effect the safety of the product.

The **WEEE** symbol indicates that the product must not be disposed of as unsorted municipal waste, but should be collected separately.

(see Disposal on page 37)

TABLE OF CONTENTS

IDENTIFICATION

1.1. Product Brand

The **ROTIX** is a manually operated scanner which provides indexed corrosion scanning.

1.2. Manufacturer

Distributor:

Manufacturer:

Jireh Industries Ltd.

53158 Range Road 224
Ardrossan, Alberta, Canada
T8E 2K4

Phone: 780.922.4534

jireh.com

PRODUCT SPECIFICATIONS

2.1. Intended use

The **ROTIX** chain scanner is a manually operated scanner which provides indexed corrosion scanning.

2.1.1. Operating Limits

	Minimum	Maximum
Pipe/Tube Range, Outer Diameter:	10.2 cm *(4 in)*	96.5 cm *(38 in)*
Radial Scanner Clearance:	13.1 cm *(5.14 in)*	
Stroke Length:	61 cm *(24 in)*	

2.1.2. Operating environment

The **ROTIX** chain scanner is designed for use in an industrial environment that is between -20° C *(-4° F)* and 50° C *(122° F)*.

2.2. Dimensions and Weight

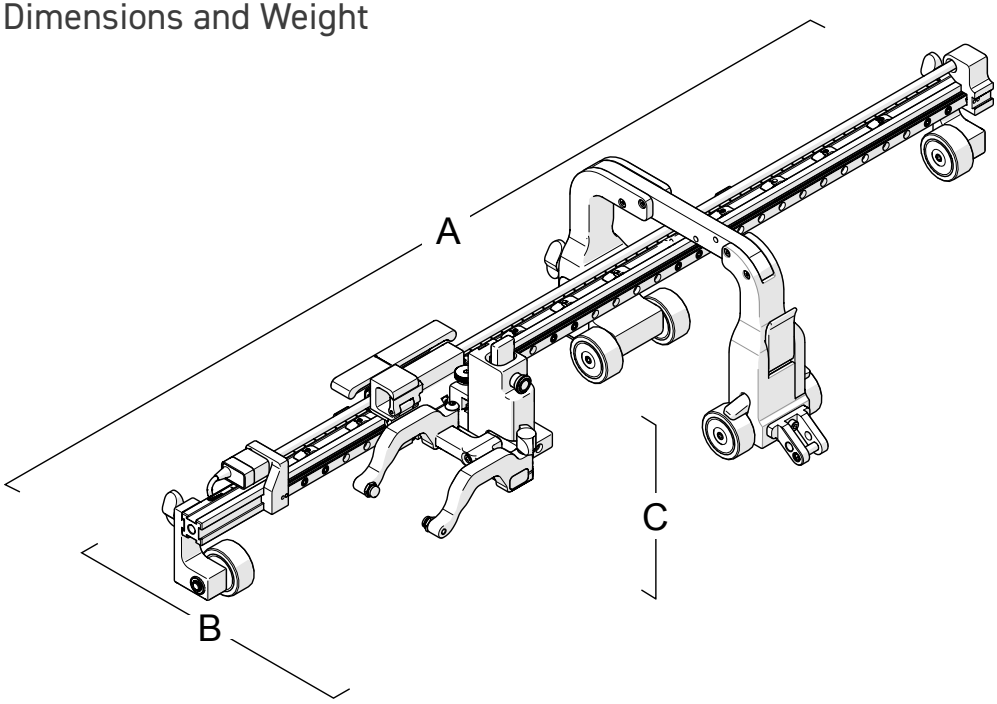


Fig. 1 - Dimensions

A:	75 cm	29.5 in
B:	24.3 cm	9.6 in
C:	15.1 cm	5.9 in

Frame Weight:	2.8 kg	6.2 lb
Encoder Cable Length:	7.5 m	24.6 ft

2.3. Environmental Sealing

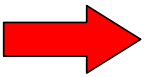
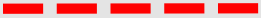
Dust-tight, watertight *(not submersible)*.

2.4. Performance Specifications

Scan encoder resolution	16.3 counts/mm *(414.5 counts/inch)*
Index encoder resolution	40.3 counts/mm *(1023.9 counts/inch)*

DEFINITIONS

3.1. Definition of Symbols

	Instructions to ‘look here’ or to ‘see this part.’
	Denotes movement. Instructing users to carry out an action in a specified direction.
	Indicates alignment axis.
	Alerts user that the view has changed to a reverse angle.

4.1. Component Identification

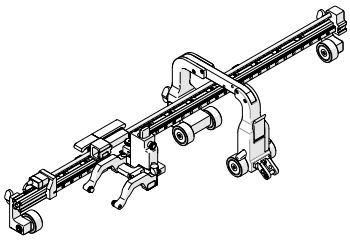


Fig. 2 - ROTIX Corrosion Chain Frame
CEA017-

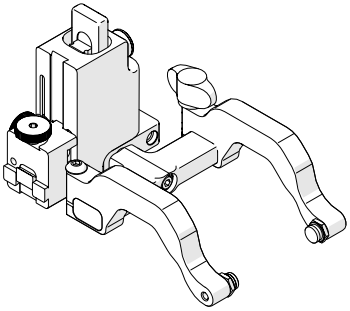


Fig. 3 - Heavy Duty Vertical Probe Holder
PHS043-

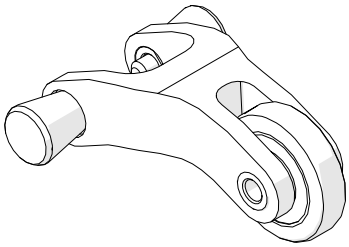


Fig. 4 - Short Link
CES002

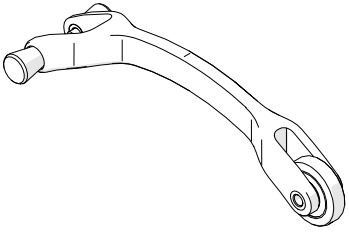


Fig. 5 - Long Link
CES009

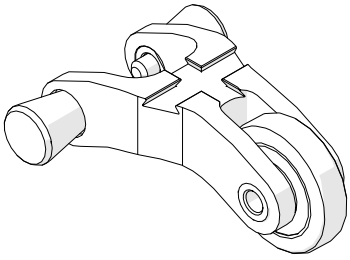


Fig. 6 - Short LInk with Dovetail
CES024

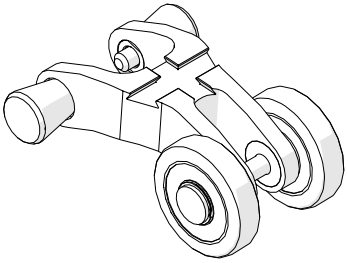


Fig. 7 - Catch Link
CES003

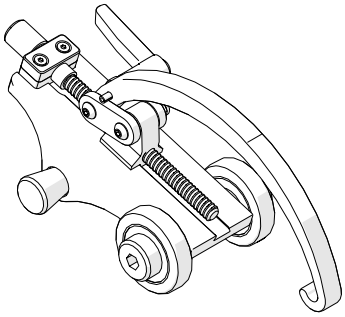


Fig. 8 - Buckle
CES005

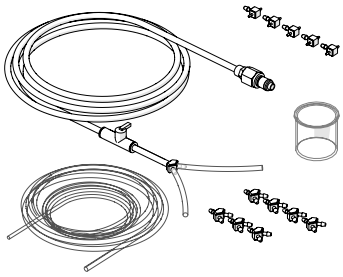


Fig. 9 - Irrigation Kit
CMG007

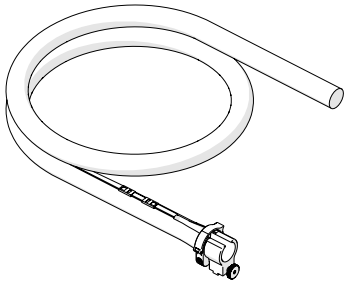


Fig. 10 - Cable Management - Dovetail Mount
CES044-

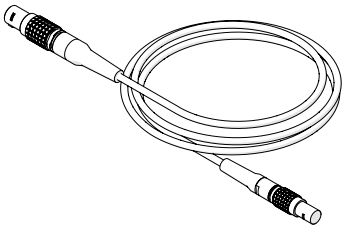


Fig. 13 - Encoder cable
UMA026-

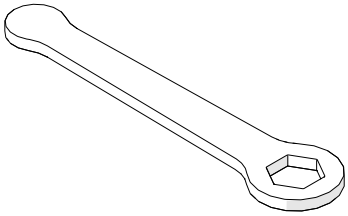


Fig. 12 - 3/8 in wrench
EA470

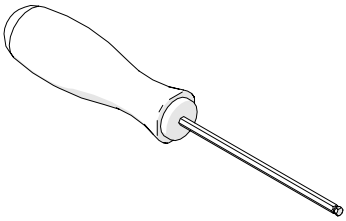


Fig. 11 - 3 mm hex driver
EA414

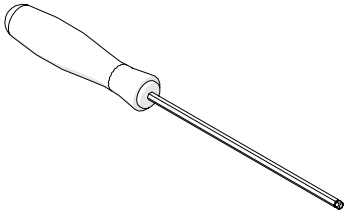


Fig. 14 - 2 mm hex driver
EA476

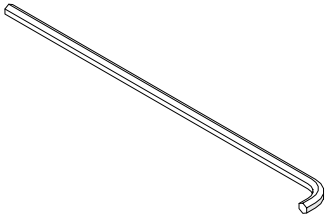


Fig. 15 - Short 2 mm hex wrench
CE0137

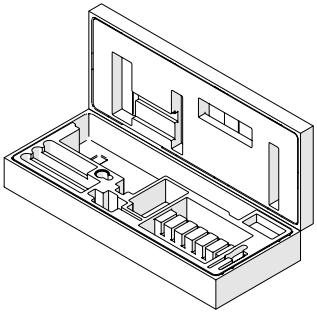


Fig. 16 - ROTIX corrosion case
CEA022

4.2. Tools

4.2.1. Included tools

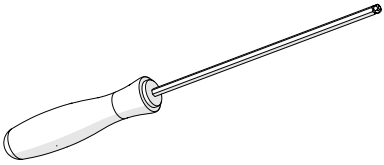


Fig. 17 - 2 mm hex driver

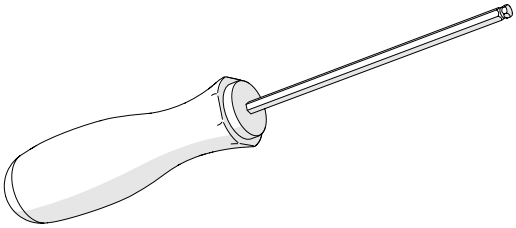


Fig. 18 - 3 mm hex driver

The 2 mm hex driver *(Fig. 17)* adjusts the index nuts.

The 3 mm hex driver *(Fig. 18)* is sufficient for all typical operations and adjustments of the **ROTIX**.

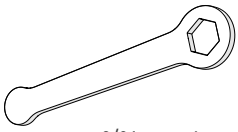


Fig. 19 - 3/8 in wrench

The 3/8 in wrench *(Fig. 19)* is used to remove and install pivot buttons on the probe holders.

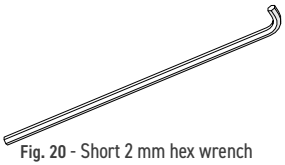


Fig. 20 - Short 2 mm hex wrench

The short 2 mm hex wrench *(Fig. 20)* may adjust the index nuts along the frame bar.

5.1. Corrosion Link

The corrosion link provides the system braking and an internal encoder connected to the wheels. A connection plug exists for index encoding.

A mounting point for a frame bar is also provided.

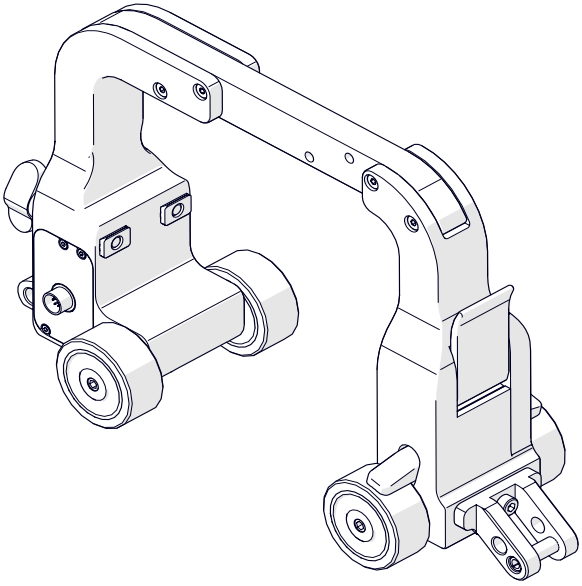


Fig. 21 - Corrosion link

5.1.1. Mounting a Frame Bar

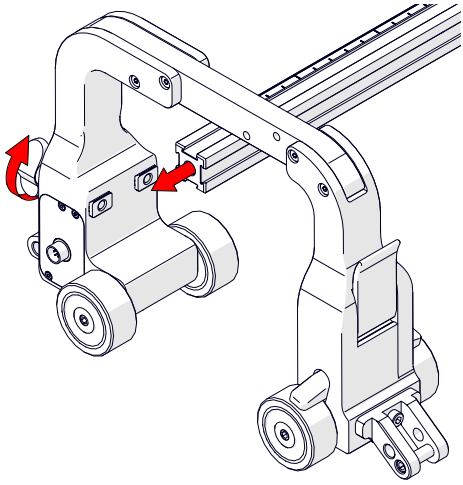


Fig. 22 - Loosen wing knobs

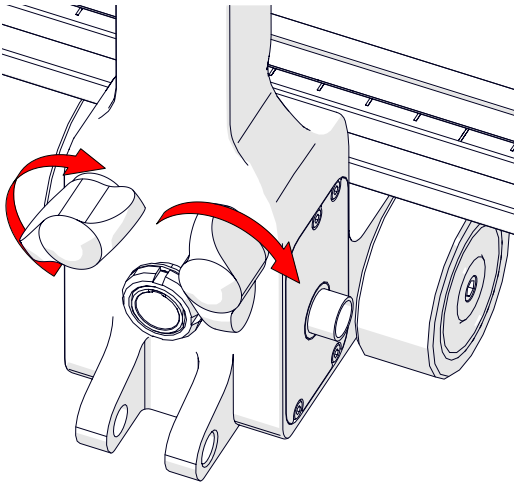


Fig. 23 - Tighten wing knobs

Loosen the two black wing knobs of the corrosion link *(Fig. 22)*. Slide the frame bar along the dovetail nuts of the corrosion link *(Fig. 22)*. When the frame bar is positioned where appropriate, tighten the two black wing knobs *(Fig. 23)*.

5.1.2. Index Encoder Connection

The index encoder connection *(Fig. 24)* is located along the side of the corrosion link. The cable from the index encoder *(see Index Encoder on page 18)* connects to this point.

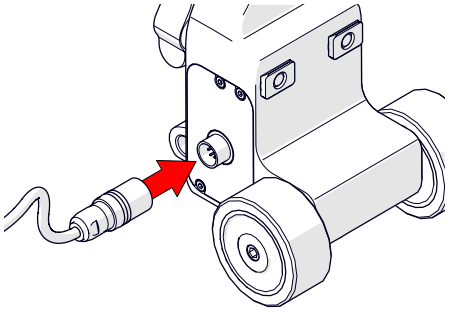


Fig. 24 - Index encoder connection

5.1.3. Encoder Connection

The encoder connection *(Fig. 25)* is located at the rear of the corrosion link. The encoder cable connects here. The opposite end of the encoder cable connects to the user's instrument.

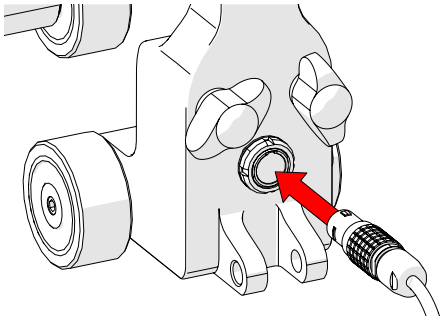


Fig. 25 - Encoder connection

5.1.4. Brake

The red brake lever *(Fig. 26)* located on the corrosion link provides braking to the system. Press the lever down to activate the brake.

> ***TIP:*** *When the brake is engaged, and the scanner is moved, this may loosen the wheels from the axle. Grip the wheel tightly and retighten the axle with the 3 mm hex driver.*

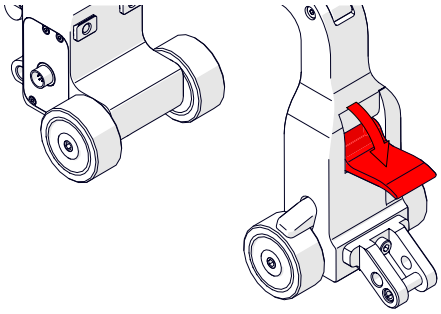


Fig. 26 - Brake

5.1.5. Wheel Removal/Installation

Tightly grip the wheel to be removed by hand. Using the supplied 3 mm hex driver *(Fig. 18)*, loosen the wheel from the axle *(Fig. 27)*.

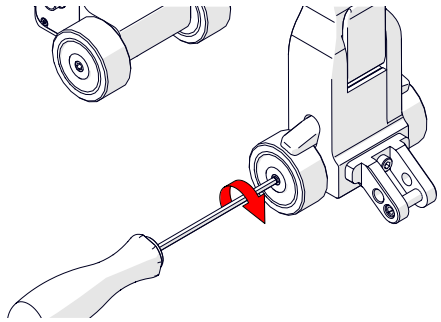


Fig. 27 - Wheel removal/installation

5.1.6. Tail

The tail *(Fig. 28)* is a mounting point for the buckle and chain links.

Use the supplied 3 mm hex driver to install or remove the tail.

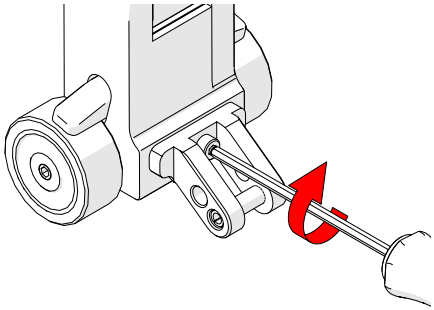


Fig. 28 - Tail

5.2. Carrier

With the use of a leadscrew, the carrier can move along the length of the frame bar.

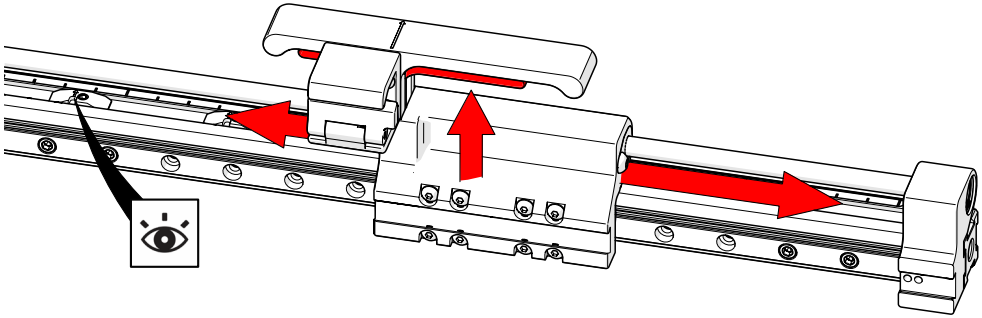


Fig. 29 - Carrier handle latch

1. Press the latch on the carrier handle to position the carrier to the next index location *(Fig. 29)*.

5.2.1. Carrier Cable Clip

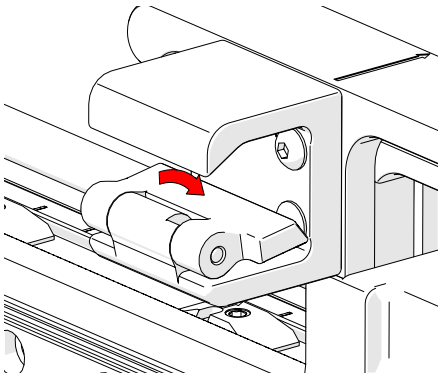


Fig. 30 - Carrier cable clip flap

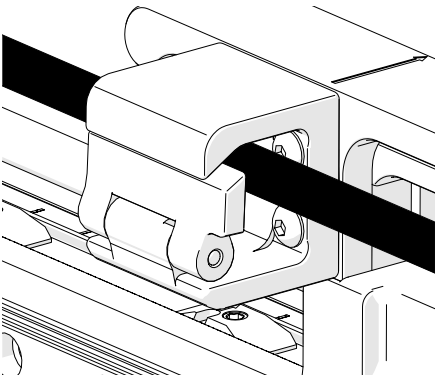


Fig. 31 - Carrier cable clip

1. Push the cable clip flap down *(Fig. 30)* and insert the cables and hoses *(Fig. 31)*.

5.2.2. Index Nuts

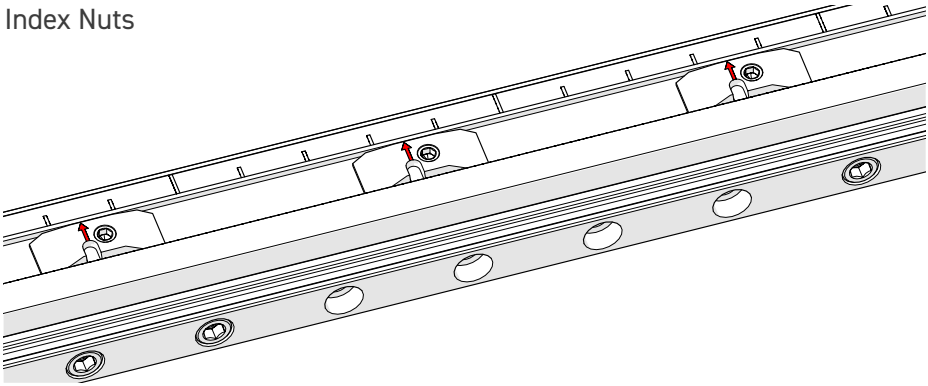


Fig. 32 - Index nuts

The index nuts *(Fig. 32),* located along the frame bar, offer index positions during scans. The arrow on each nut confirms alignment with the ruler on the frame bar.

> ***NOTE:*** *The index nuts can be repositioned. Placement of the index nuts works in conjunction with common probe specifications. Adjustment of the index nuts is not recommended.*

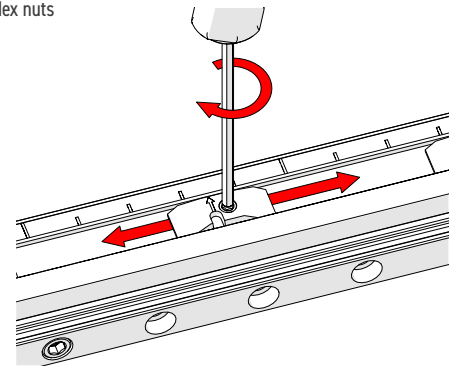


Fig. 33 - Position index nuts

The manufacturer configures the index nuts with a spacing of 58 mm *(2.28 in)*. The spacing at the end of the scanner's final position is 48 mm *(1.89 in)*.

5.3. Heavy Duty Vertical Probe Holder

A	Latch
B	Probe Holder Arm Adjustment Knob
C	Yoke
D	Probe Holder Arms
E	Pivot Buttons
F	Arm Clamp Screw
G	Probe Holder Adjustment Knob
H	Vertical Adjustment Knob

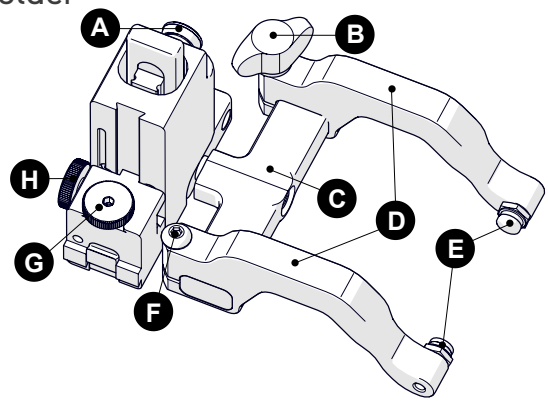


Fig. 34 - Heavy duty vertical probe holder

5.3.1. Probe Holder Setup

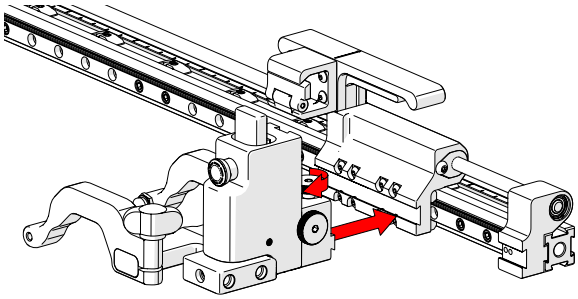


Fig. 35 - Mount probe holder to carrier

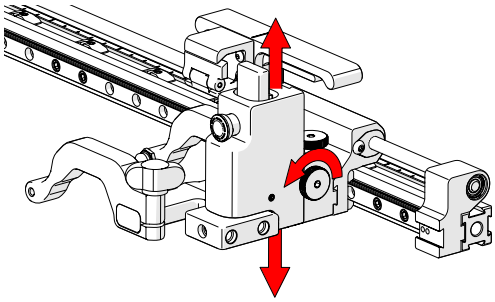


Fig. 36 - Vertical adjustment

1. Loosen the probe holder adjustment knob *(Fig. 35)* and mount the heavy duty vertical probe holder's dovetail jaw to the carrier.
2. The vertical adjustment knob *(Fig. 36)* allows height adjustment of the heavy duty vertical probe holder. This adjustment also controls the probe holder's spring tension.

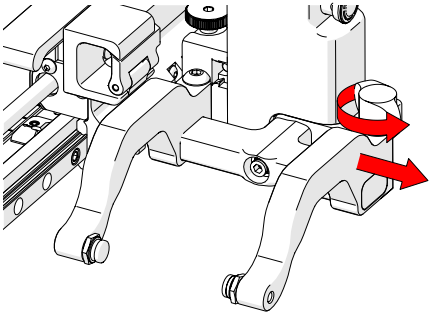


Fig. 37 - Remove outer arm

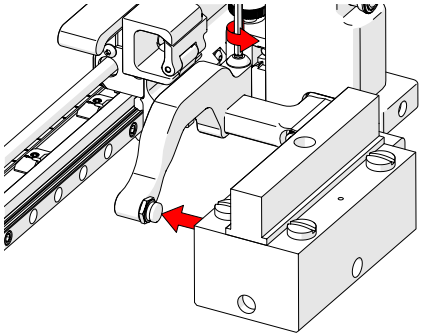


Fig. 38 - Adjust inner arm

3. Loosen the probe holder adjustment knob and remove the outer probe holder arm *(Fig. 37)*.
4. Loosen the arm clamp screw *(Fig. 38)*.
5. Place the wedge on the pivot button of the inner probe holder arm *(Fig. 38)*.

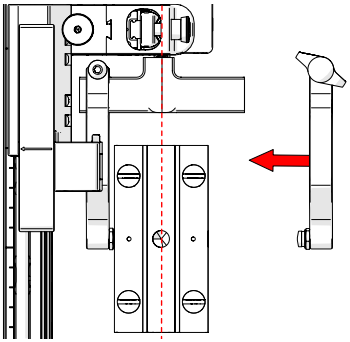


Fig. 39 - Remove outer arm

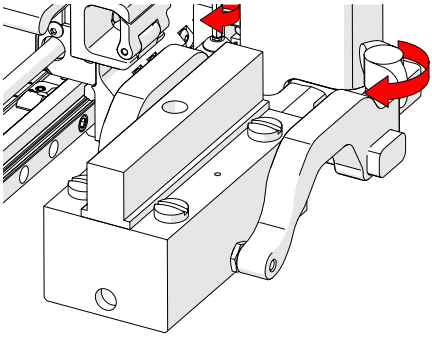


Fig. 40 - Pivot buttons

6. Align the middle of the wedge with the centre of the yoke *(Fig. 39)*.
7. Tighten the probe holder adjustment knob and the arm clamp screw *(Fig. 40)* while ensuring the wedge remains centred with the yoke.

5.3.2. Probe Holder Vertical Adjustment

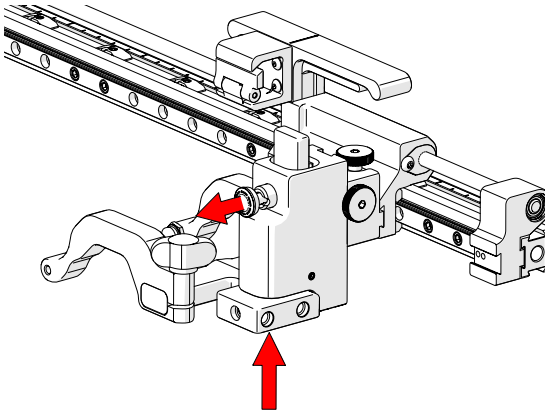


Fig. 41 - Press up and pull latch

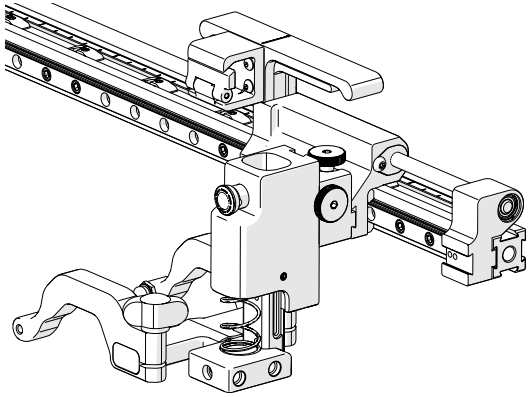


Fig. 42 - Lowered toward scan surface

1. Gently lift the heavy duty vertical probe holder and simultaneously pull the latch *(Fig. 41)*. This action will unlock the probe holder. Slowly lower the probe holder towards the scan surface *(Fig. 42)*.

5.3.3. Probe Holder Left/Right Conversion

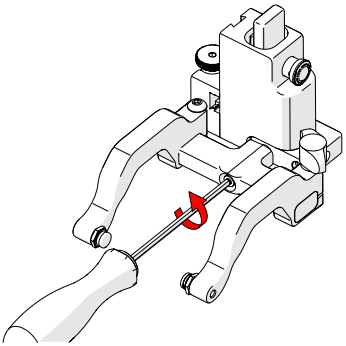


Fig. 43 - Remove yoke

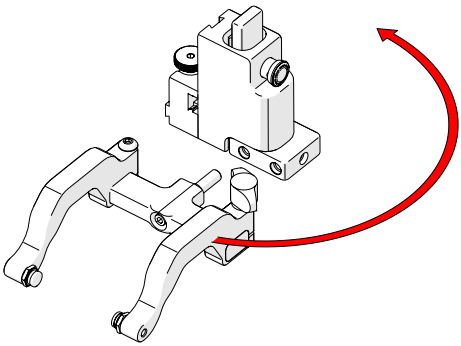


Fig. 44 - Orient to opposite side

1. Using the supplied 3 mm driver, unscrew the yoke *(Fig. 43)*.
2. Position the yoke and arms to the opposite side of the probe holder *(Fig. 44)*.

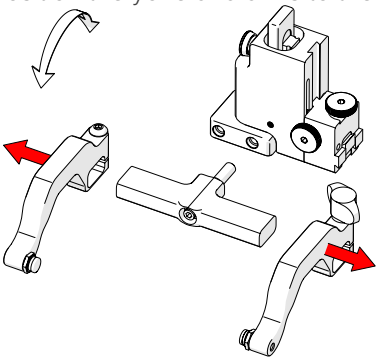


Fig. 45 - Remove probe holder arms

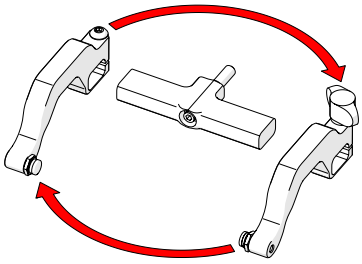


Fig. 46 - Reverse position around yoke

3. Loosen the arm clamp screw and the probe holder arm adjustment knob allowing the removal of the probe holder arms *(Fig. 45)*.
4. Position the removed arms to the opposite sides of the yoke *(Fig. 46)*.

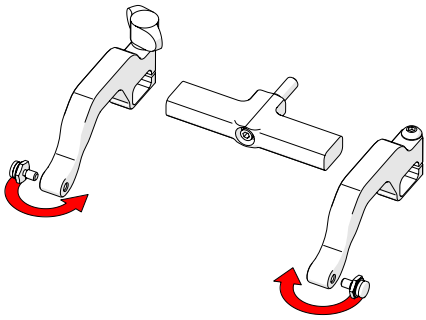


Fig. 47 - Position pivot buttons

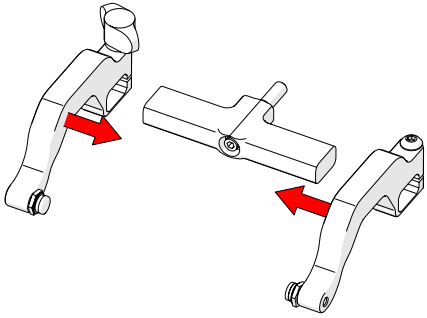


Fig. 48 - Place arms back onto yoke

5. Position the pivot buttons to the inside of the probe holder arms *(Fig. 47)*.
6. Place the probe holder arms on the yoke and tighten the arm clamp screw and probe holder adjustment knob *(Fig. 48)*.
7. Screw the yoke to the probe holder *(Fig. 49)*.

> ***TIP:*** *Position the yoke in the threaded hole closest to the frame bar when using a standard yoke length. Position the yoke in the threaded hole furthest from the frame bar when using a wide yoke length.*

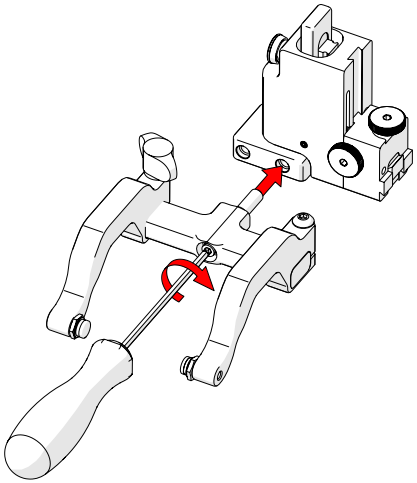


Fig. 49 - Screw into threaded hole

5.3.4. Probe Holder 90° Adjustment

1. Remove the yoke using the supplied 3 mm hex driver *(Fig. 43)*.
2. Orient the yoke to the front of the probe holder and screw the yoke into the threaded hole provided *(Fig. 50)*.

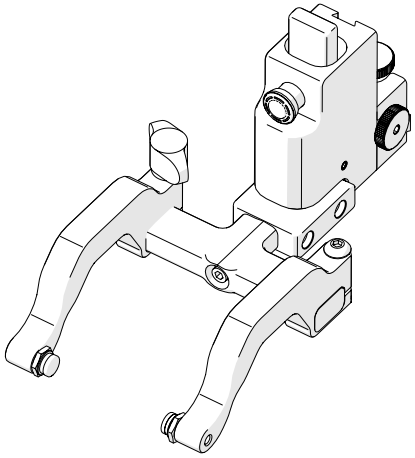


Fig. 50 - 90° probe holder positioning

5.4. Frame Bar with Ruler

Frame bars *(Fig. 51)* are used to mount probe holders, probe positioning systems and other accessories. The frame bar includes a ruler with 1 mm measurements. The ruler can be used to assist with the positioning of index nuts.

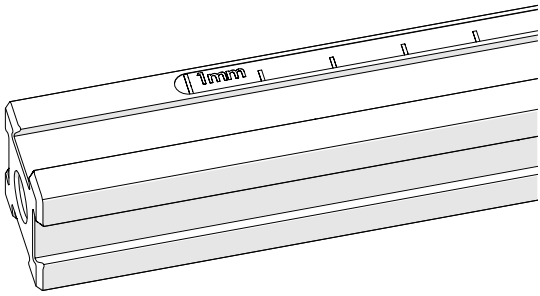


Fig. 51 - Frame bar

5.5. Pivot Buttons

Available in a variety of shapes and sizes, fitting various wedge dimensions.

Use the supplied 3/8 in wrench *(Fig. 19)* to remove and install pivot buttons *(Fig. 52)*.

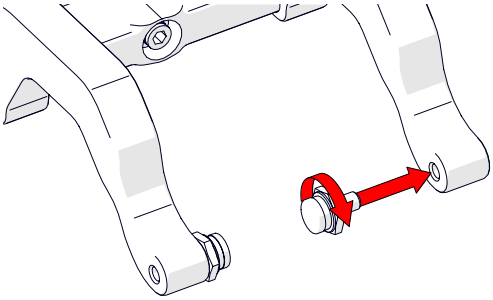


Fig. 52 - Pivot buttons

5.6. Chain Components

The chain components fasten a scanning cart circumferentially around a pipe or tubing.

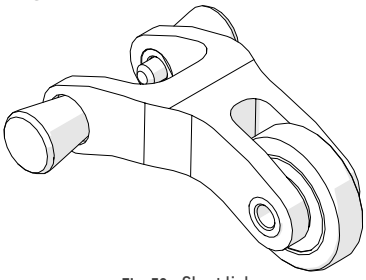


Fig. 53 - Short link

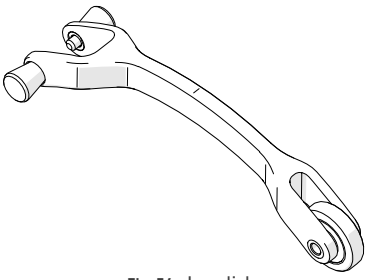


Fig. 54 - Long link

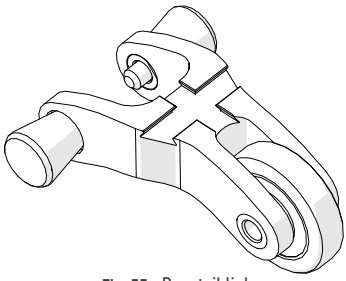


Fig. 55 - Dovetail link

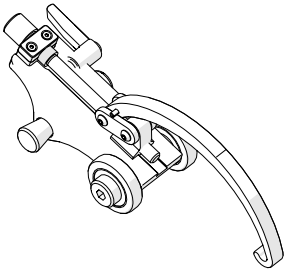


Fig. 56 - Buckle

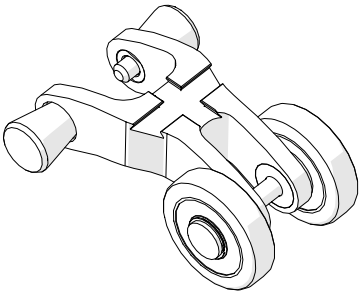


Fig. 57 - Catch link

5.6.1. Chain Connection

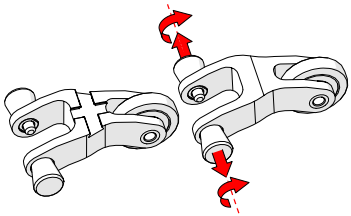


Fig. 58 - Pull out and twist pins

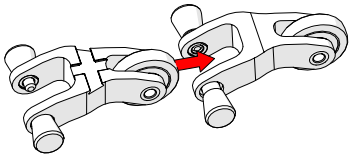


Fig. 59 - Align mounting holes

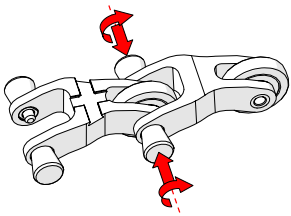


Fig. 60 - Release pins

To connect chain components, see the following steps:

1. Pull the pins out from the wheels, twist a quarter turn latching the pins in a retracted state *(Fig. 58)*.
2. Align the pins with the mounting holes of the component to be connected *(Fig. 59)*.
3. Twist the pins until they unlatch and extend into the hole of the connected component *(Fig. 60)*.

5.6.2. Ratchet Lever

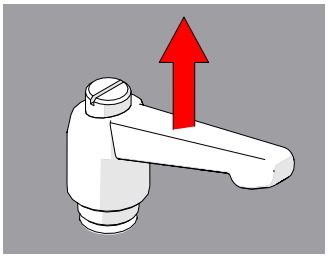


Fig. 61 - Pull ratchet handle

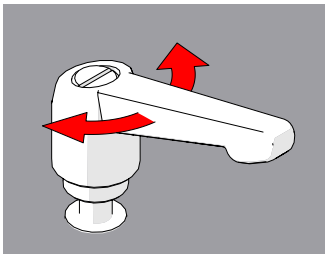


Fig. 62 - Rotate handle

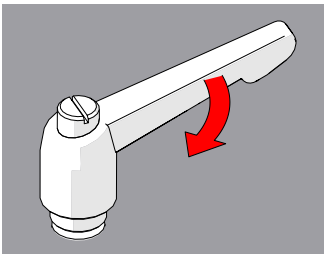


Fig. 63 - Tighten handle

The rachet lever is used with the buckle of the **ROTIX** system. Occasionally, movement of the lever locking position is required. The lever placement can be adjusted by following these steps:

1. Pull the ratchet lever away from the base to which it is connected *(Fig. 61)*.
2. Continue to pull while rotating the lever in the appropriate direction *(Fig. 62)*.
3. Release the lever and utilize the new tightening position *(Fig. 63)*.

5.7. Index Encoder

The index encoder provides positional feedback perpendicular to the scan direction of travel.

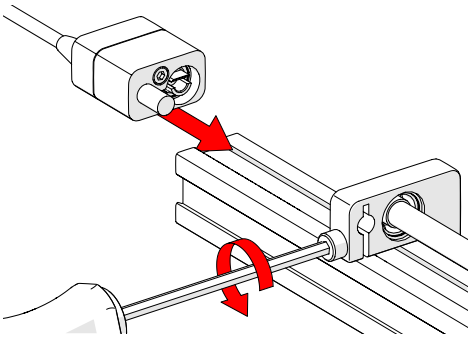


Fig. 64 - Loosen and slide post in place

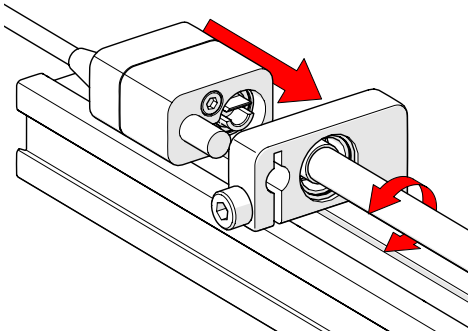


Fig. 65 - Align and mount post

1. To install the index encoder, loosen the clamp screw on the encoder with the supplied 3 mm hex driver *(Fig. 64)*.
2. Insert the encoder post in the index encoder support bracket while aligning the leadscrew shaft with the encoder socket *(Fig. 65)*.

> ***TIP:*** *You can rotate the leadscrew by hand to assist in the alignment of the encoder socket.*

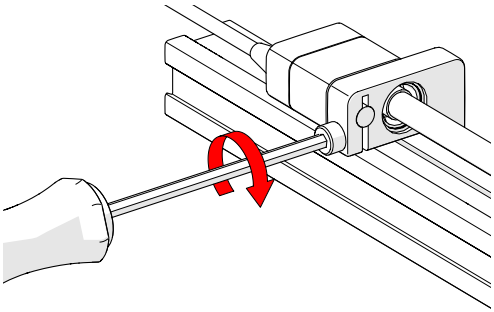


Fig. 66 - Tighten clamp screw

3. Tightening the 3 mm clamp screw on the index encoder support bracket *(Fig. 66)*.
4. Route the cable along the frame bar using the cable clips. Plug the encoder end to the index encoder connection on the side of the corrosion link *(Fig. 67)*.

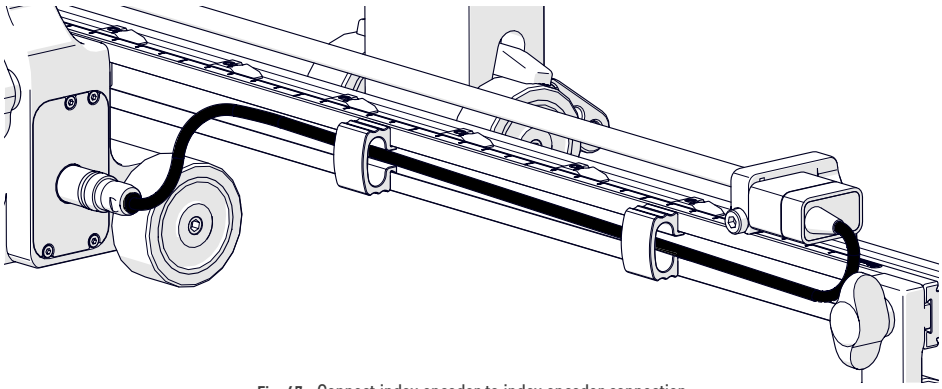


Fig. 67 - Connect index encoder to index encoder connection

5.8. Cable Clips

Clips have been provided to assist with cable management. Pinch the clip and press it into the dovetail groove of the frame bar.

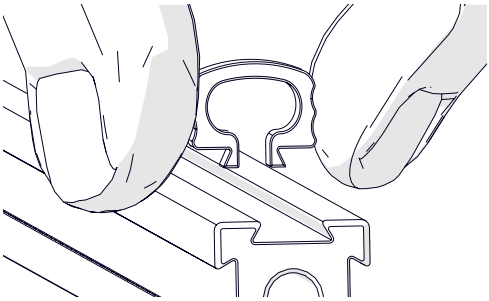


Fig. 68 - Pinch clip

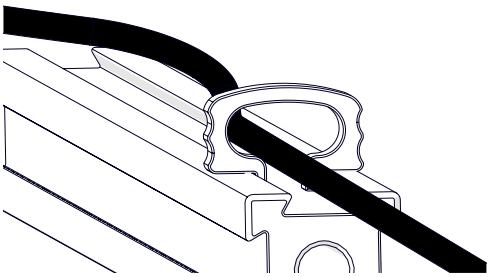


Fig. 69 - Route cables

5.9. Cable Management System

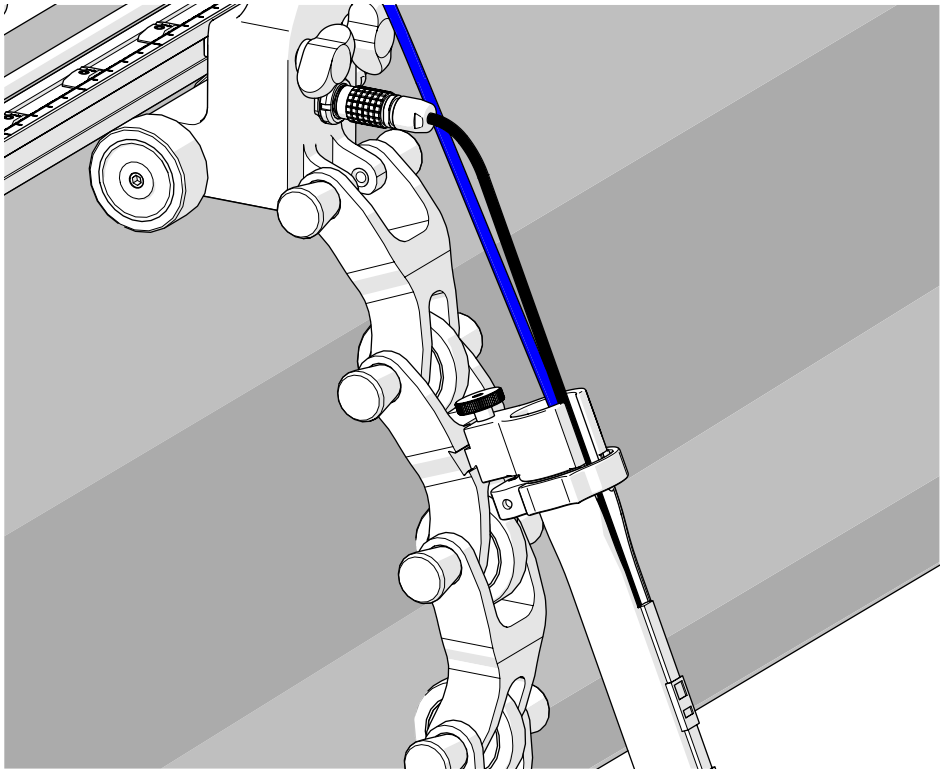


Fig. 70 - Cable management

> ***TIP:*** *When using cable management, ensure the dovetail link is placed 2nd in the chain behind the overhead adjustable link.*

5.9.1. Cable Management Dovetail Mount

To attach the cable management, follow these steps:

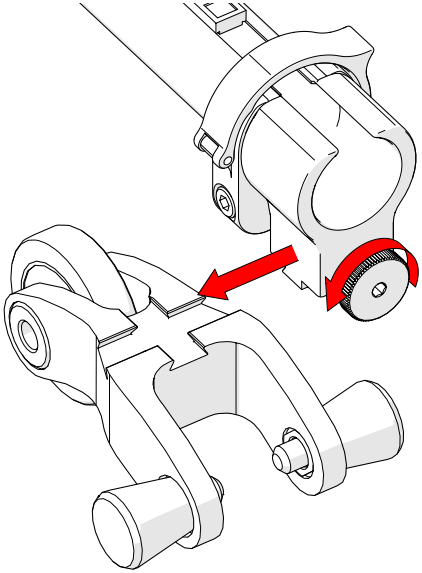


Fig. 71 - Loosen and slide on

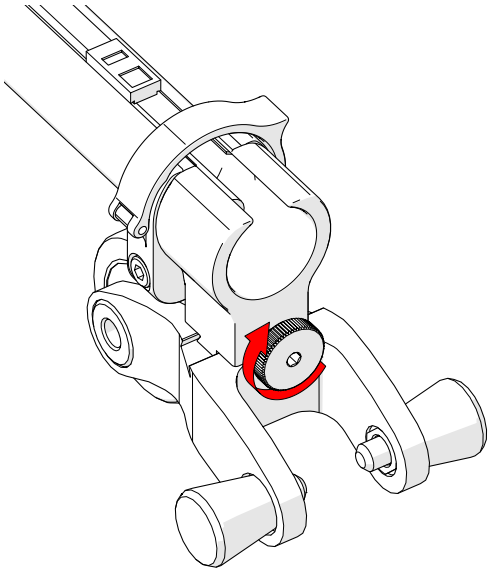


Fig. 72 - Tighten knob

1. Loosen the knob on the cable management dovetail mount. Slide the mount onto the dovetail link *(Fig. 71)*.
2. Once centred on the dovetail link, tighten the cable management's dovetail mount knob *(Fig. 72)*.

5.9.2. Cable Management Setup

The cable management is offered in a variety of lengths and provides a means of bundling and protecting cables and hoses that run to the scanner.

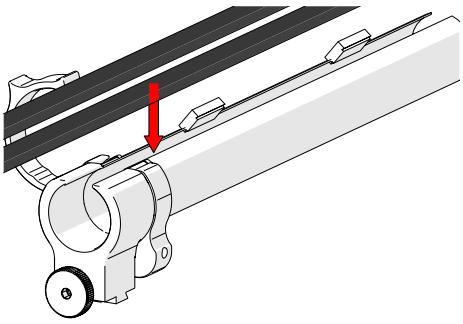


Fig. 73 - Insert cables and hoses

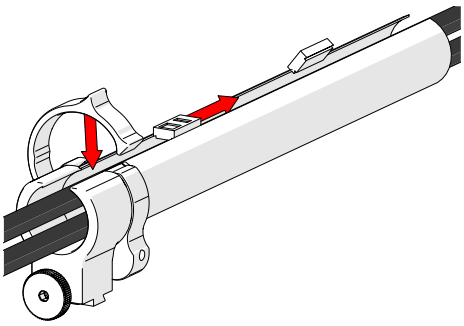


Fig. 74 - Zip up to close

1. Open the cable management and cable latch. Begin at the tube's dovetail mount and place the cabling in the tube *(Fig. 73)*.

2. Follow the cable placement, zipping the tube closed and closing the cable management's cable clip *(Fig. 74)*.

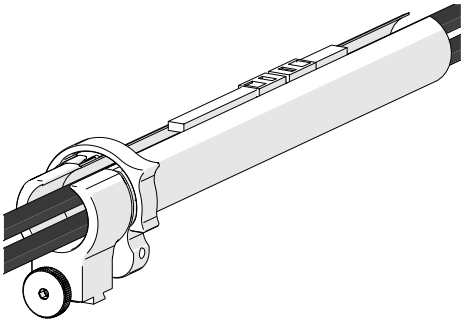


Fig. 75 - Zip opposite end

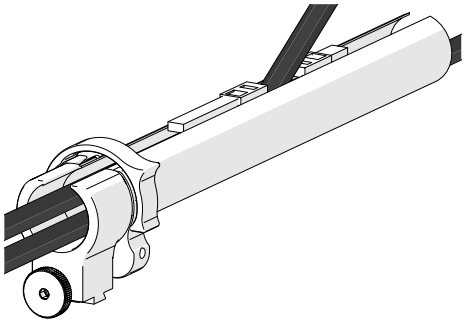


Fig. 76 - Flexibility

3. Once the cable is placed the entire length of the tube, bring the zipper from the tube's opposite end, meeting at any point in the middle *(Fig. 75)*.
4. When necessary, the two zippers may be opened to allow cables to exit the tube anywhere between the ends *(Fig. 76)*.

5.9.3. Clamp Setup

If the tube becomes disconnected from the cable management dovetail mount, follow these instructions to re-attach the tube and dovetail mount.

1. Loosen the clamp screw using the supplied 3 mm hex driver.
2. Slide the clamp around the tube first and then slide the tube around the outside of the cable management dovetail mount *(Fig. 77)*. Align the zipper opening and the cable management dovetail mount opening.
3. Slide the clamp over the tube and cable management dovetail mount, pinching the tube in between *(Fig. 78)*.
4. Tighten the clamp screw *(Fig. 79)*.

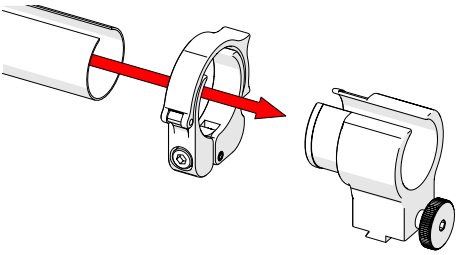


Fig. 77 - Slide tube around mount

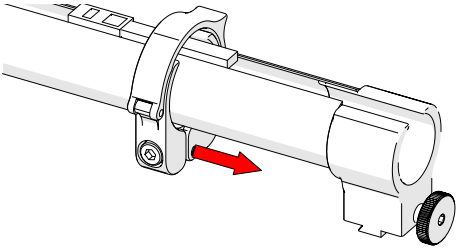


Fig. 78 - Slide clamp onto mount

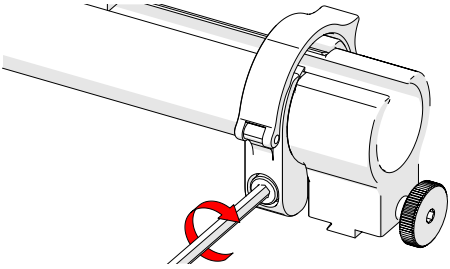


Fig. 79 - Tighten clamp screw

6.1. Centre Chain Configuration

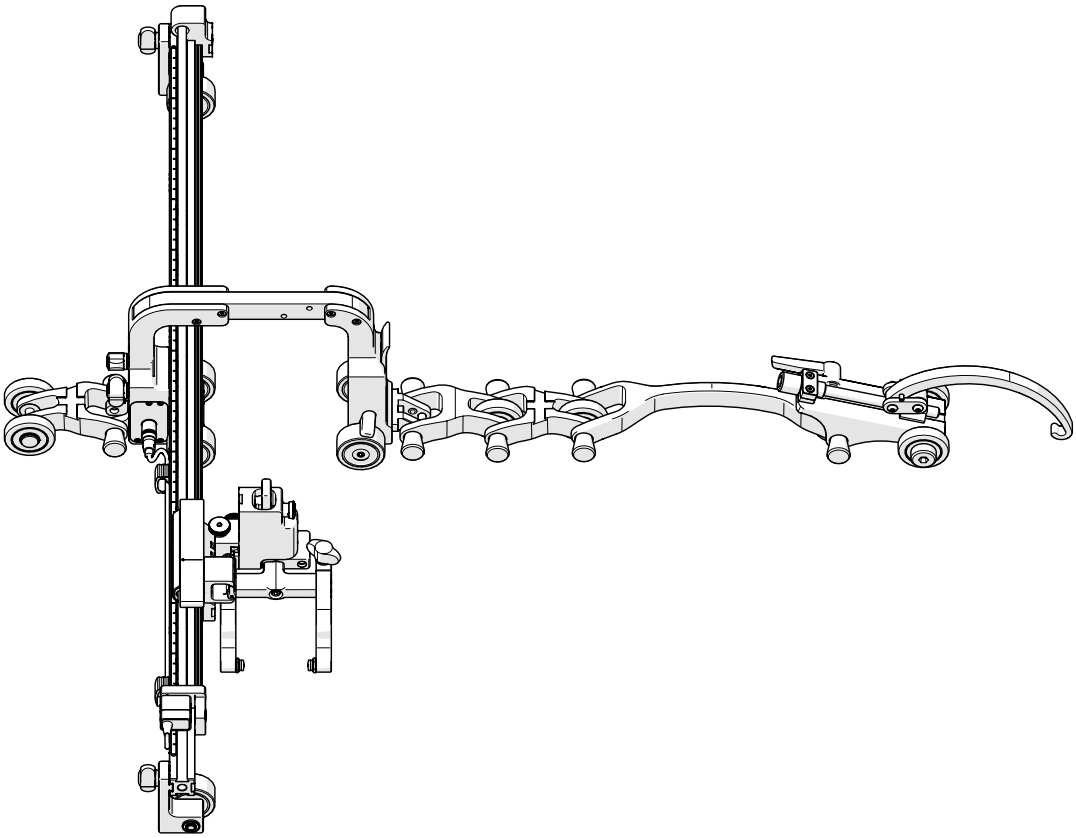


Fig. 80 - Centre chain configuration

6.2. Cantilever Chain Configuration

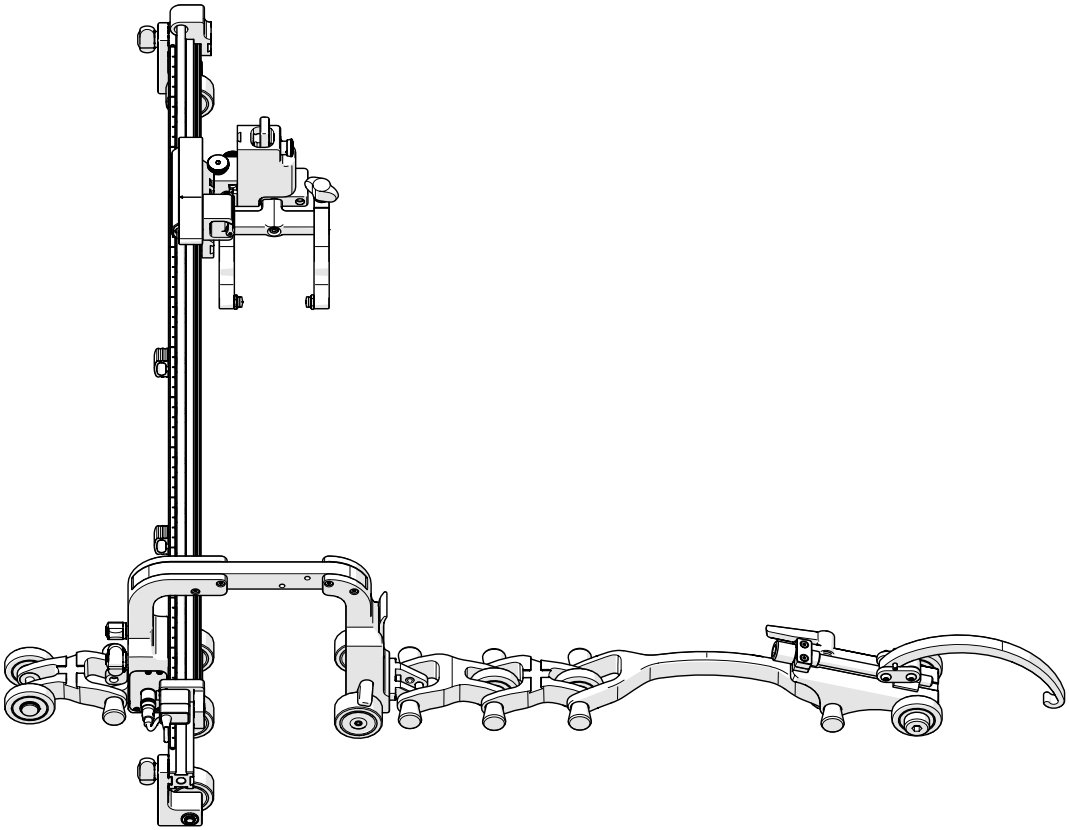


Fig. 81 - Cantilever chain configuration

7.1. ROTIX Chain Setup on a Scan Surface

1. Determine the diameter of the pipe or tube to be scanned. The **ROTIX** kit and this manual include a setup chart *(see Chain Configuration Setup Chart on page 40)*. This chart indicates the number of links required based on the diameter of the pipe or tubing *(Fig. 82)*.

   TIP: *The following example is a configuration for a 26.6 cm (10.5 in) pipe diameter.*

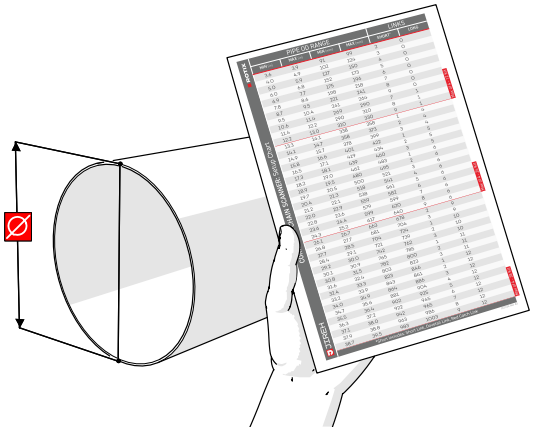


Fig. 82 - Refer to setup chart

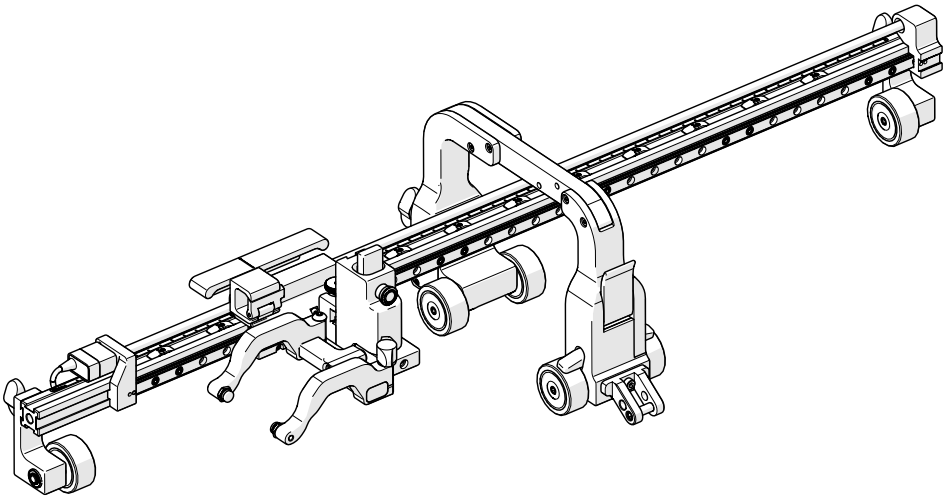


Fig. 83 - Assemble configuration

2. Ensure the appropriate configuration is set up *(Fig. 83)*. Install the wedge to be used in the probe holder *(see Probe Holder Setup on page 12)*.

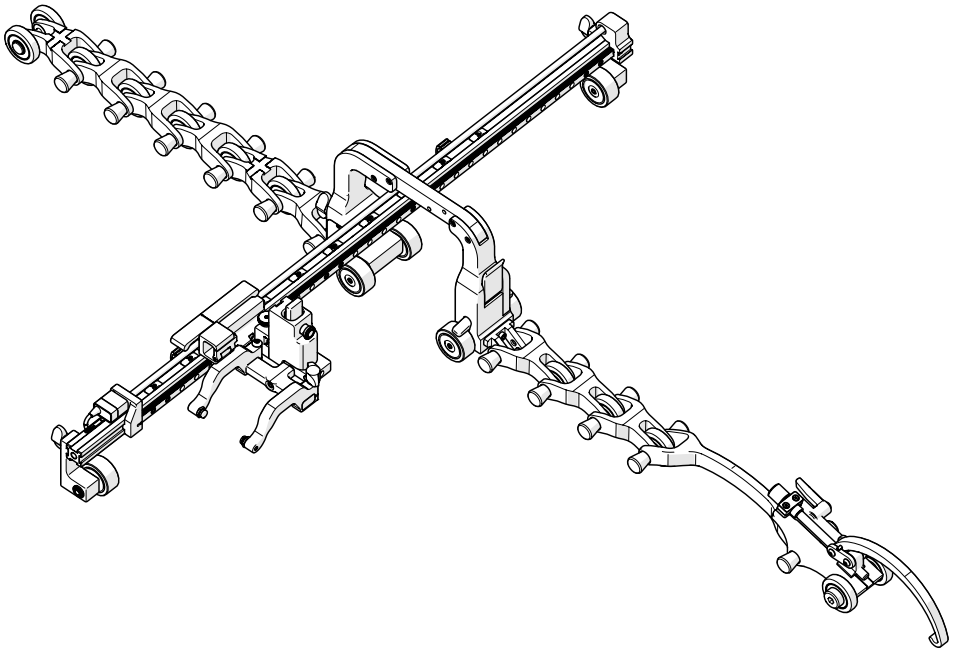


Fig. 84 - Assemble configuration

3. On a flat surface, connect the appropriate number of links *(see Chain Connection on page 17)* as indicated on the **ROTIX** setup chart. Arrange the link setup with the buckle and catch link 180° opposite the corrosion link *(Fig. 84)*.

> ***TIP:*** *Place the dovetail link 2nd in the chain (Fig. 85-2) after the corrosion link.*

4. Ensure the brake *(Fig. 85-1)* is activated *(see Brake on page 9)*.
5. Drape the configured assembly around the pipe/tube to be inspected *(Fig. 85)*.

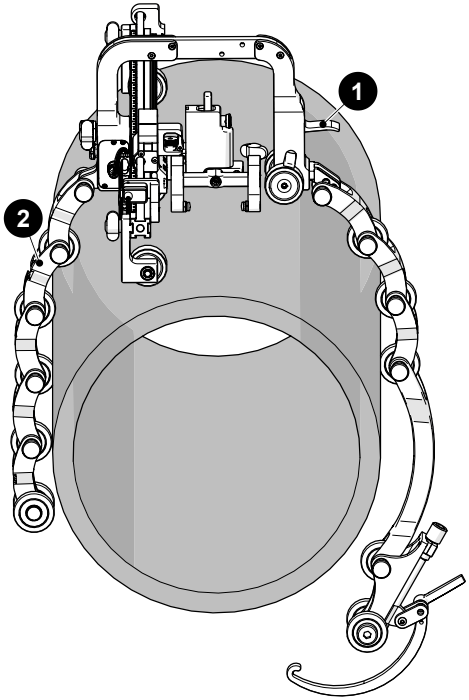


Fig. 85 - Place on pipe

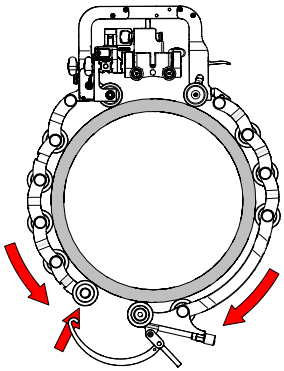


Fig. 86 - Hook buckle to catch link

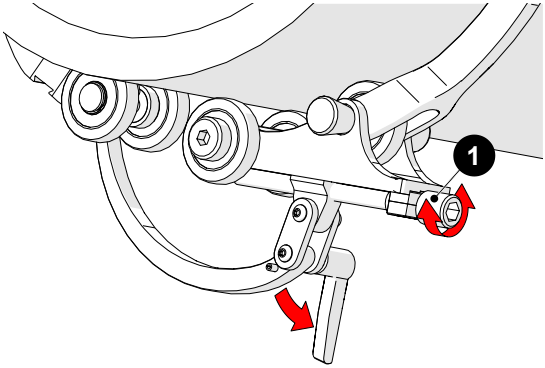


Fig. 87 - Adjust pressure of buckle

6. Bring the buckle arm towards the catch link. Hook the buckle's arm to the middle axle of the catch link *(Fig. 86)*. The buckle adjustment knob *(Fig. 87-1)* may have to be loosened to allow the arm to reach the catch link *(Fig. 87)*.

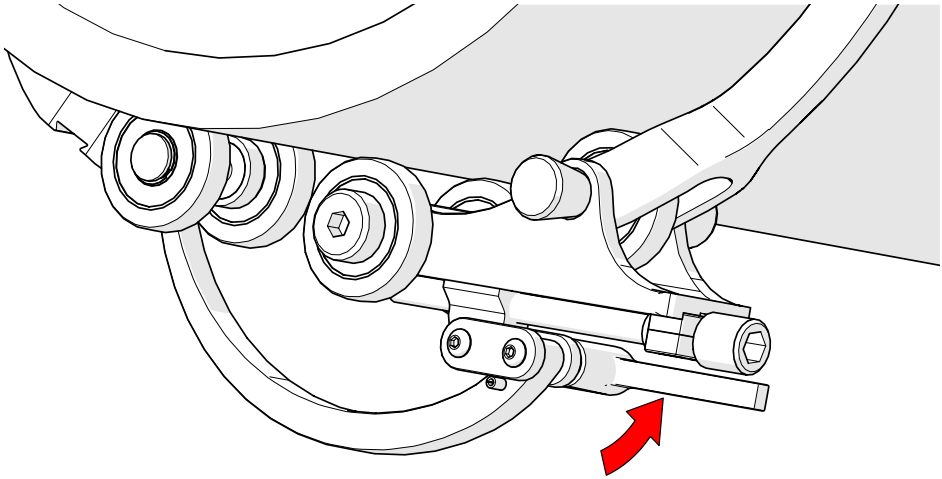


Fig. 88 - Press down to lock

7. Rotate the buckle adjustment knob until the buckle's lever can be pushed down, locking the buckle in place *(Fig. 88)*. The tightness of the **ROTIX** on the pipe can be adjusted using the buckle adjustment knob *(Fig. 87-1)*.

> ***TIP:*** *If additional clearance is required, the buckle's ratchet lever can be pulled out and rotated to various positions (see Ratchet Lever on page 17 for additional details).*

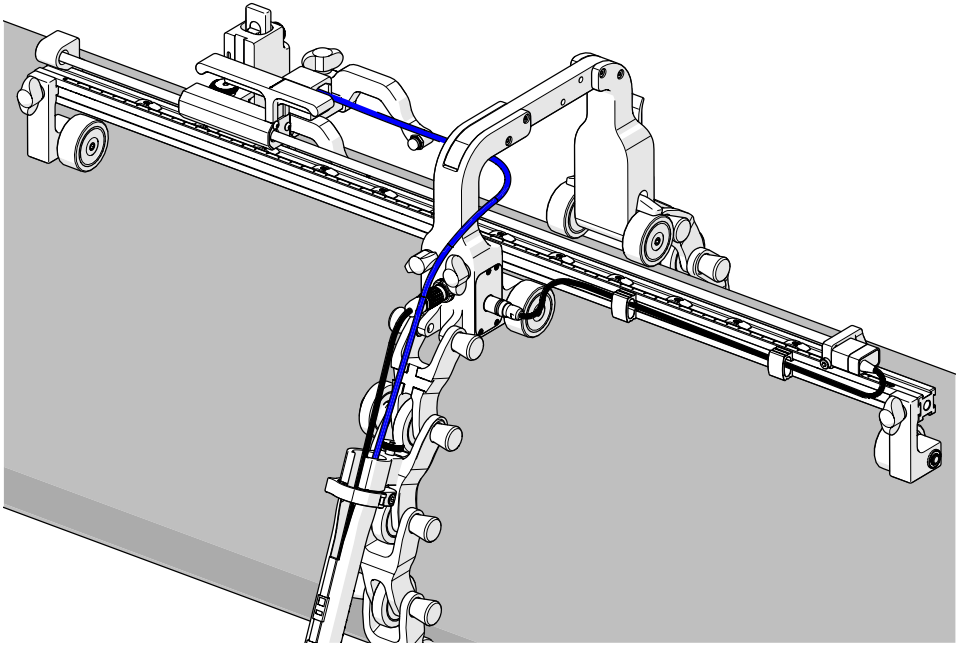


Fig. 89 - Cable and irrigation setup

8. Route all cabling and hoses *(Encoder cable and sample irrigation tube shown)* to the cable management *(see Cable Management System on page 19)*.
9. Lower probe holders to the scan surface *(see Probe Holder Setup on page 12)*.
10. Release the brake to commence scanning *(see Brake on page 9)*.

MAINTENANCE

General cleaning of components is important to keep your system working well. All components that have no wiring or cables are completely waterproof. Components can be washed with warm water, dish soap and a medium bristle brush.

After washing your system, use a light oil to lubricate the slide and the adjustment screw on the buckle component *(Fig. 56)*. Before using the scanner, ensure all connectors are free of water and moisture.

> ***NOTE:*** *All components with wiring, cables or electrical connections are splashproof. However, these components are* ***NOT*** *submersible.*

> ***NOTE:*** *Never use strong solvents or abrasive materials to clean your scanner components.*

TROUBLESHOOTING

Problem	Possible Cause	Solution
The chain is too loose/tight	Incorrect number or combination of links for proper scanner configuration.	Refer to the **ROTIX** setup chart *(see Chain Configuration Setup Chart on page 40)* for the required number of links for the diameter of the pipe/tube to be scanned. Ensure the correct outer diameter measurement of the pipe/tube. Reset the scanner with the correct number of links.
	The buckle needs to be correctly set up.	Adjust the tightness of the buckle *(see page 26)*
Insufficient probe contact.	The scanner is not set properly.	Reconfigure the scanner as per instructions *(see ROTIX Chain Setup on a Scan Surface on page 24)*

9.1. Technical Support

For technical support, contact Jireh Industries *(see "Jireh Industries Ltd." on page 1).*

SERVICE AND REPAIR

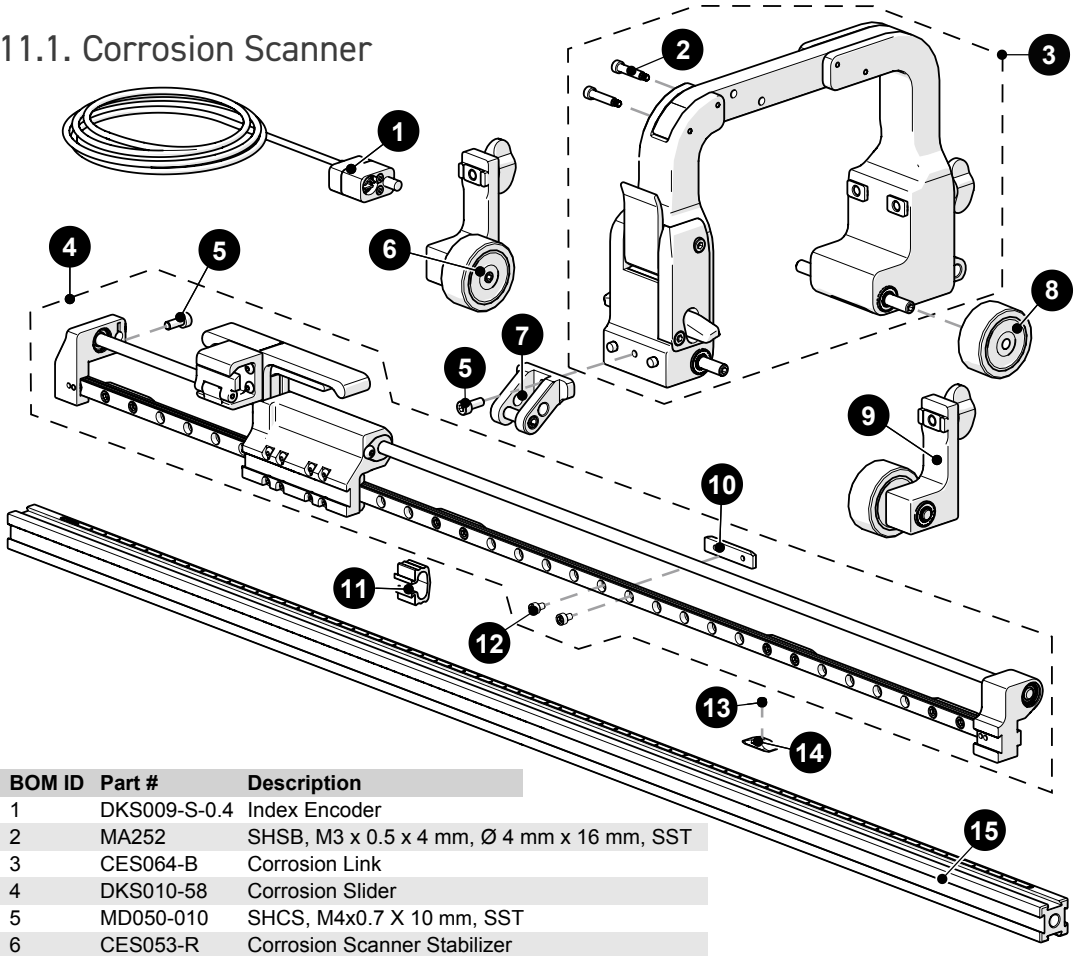
WARNING! DO NOT DISASSEMBLE. No user-serviceable parts. Disassembling any of the components in this product, beyond the instructions in this user manual, could void the regulatory certifications and/or effect the safety of the product.

SPARE PARTS

To order accessories or replacement parts for your **ROTIX** system.
(contact Jireh Industries Ltd. on page 1)

> ***NOTE:*** *These drawings are for parts order. This is not a list of kit contents.*

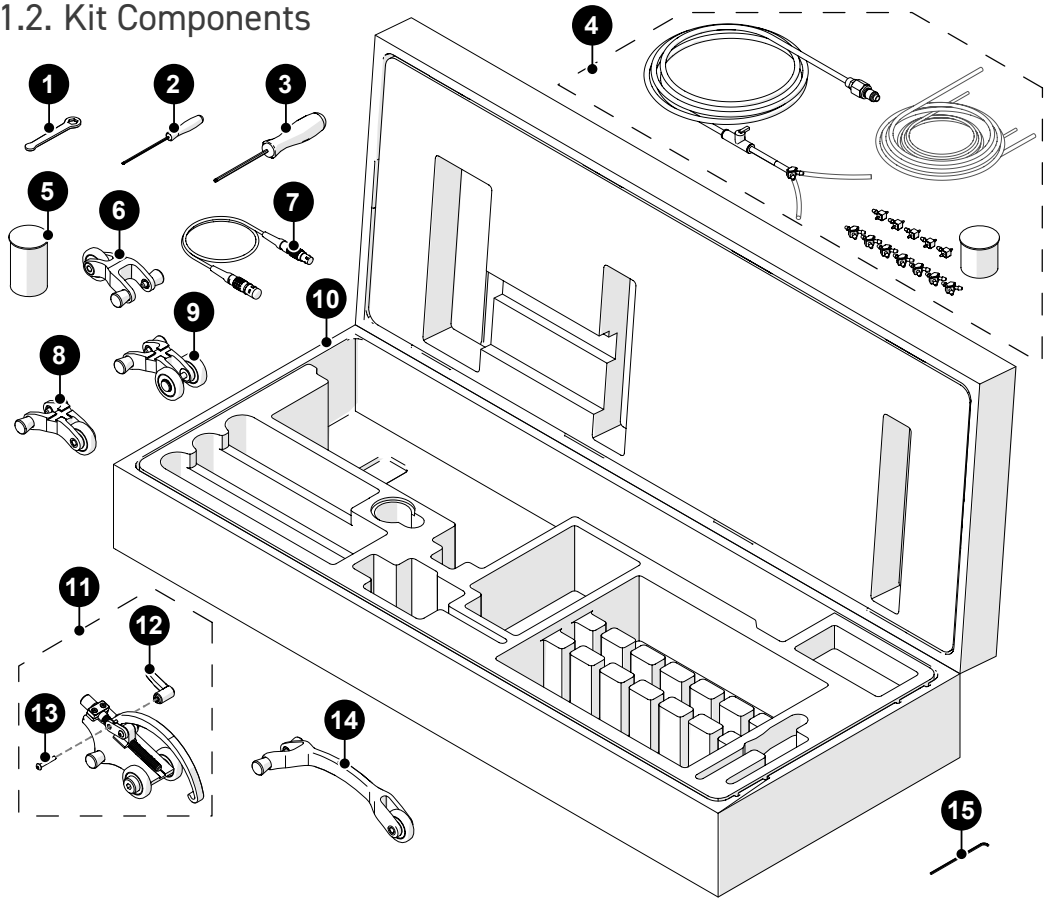
11.1. Corrosion Scanner



BOM ID	Part #	Description
1	DKS009-S-0.4	Index Encoder
2	MA252	SHSB, M3 x 0.5 x 4 mm, Ø 4 mm x 16 mm, SST
3	CES064-B	Corrosion Link
4	DKS010-58	Corrosion Slider
5	MD050-010	SHCS, M4x0.7 X 10 mm, SST
6	CES053-R	Corrosion Scanner Stabilizer
7	CES013	Tail
8	CES012	Urethane Wheel
9	CES053-L	Corrosion Scanner Stabilizer
10	DK0020	Dovetail Nut
11	BG0091	Cable Clip
12	DK0019	SHCS, M3 x 0.5 x 4.5 mm, 3 mm hex, SST
13	MA254	SHSS, M4 x 0.7 x 3 mm, flat point, SST
14	CE0116	Index Nut
15	BG0090-75	Frame Bar with Ruler, 75 cm

Fig. 90 - ROTIX corrosion scanner parts

11.2. Kit Components



BOM ID	Part #	Description
1	EA470	3/8 in Wrench
2	EA476	Hex Driver: 2 mm *(0.0078 in)*
3	EA414	Hex Driver: 3 mm *(0.118 in)*
4	CMG007	Irrigation Kit, 2-4 probe
5	CEG029	Corrosion Scanner Spare Parts Kit
6	CES002	Short Link: single wheel
7	UMA026-X-05	J100 Encoder Cable *(see Encoder Connector Type)*
8	CES024	Short Link with Dovetail: single wheel
9	CES003	Catch Link *(Red):* single wheel
10	CEA022	ROTIX Corrosion Case
11	CES005	Buckle: single wheel
12	CE0015	Ratchet Lever
13	MD073-025	BHCS, M4x0.7 X 25 mm, SST
14	CES009	Long Link: single wheel
15	CE0137	Short 2 mm Hex Wrench

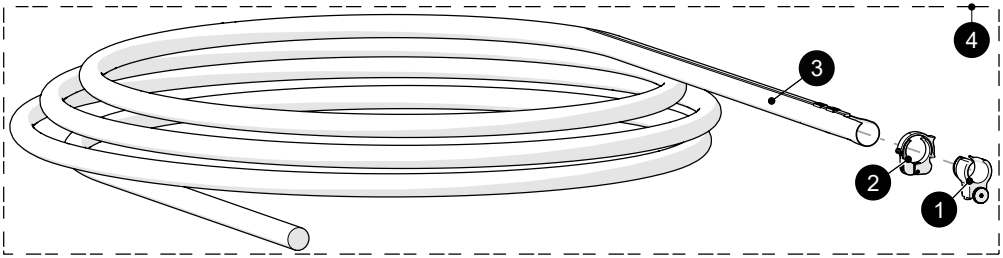
Fig. 91 - ROTIX corrosion scanner parts

11.2.1. Encoder Connector Type

Connector Type	Company/Instrument	Connector Type	Company/Instrument
B	Olympus OmniScan MX Zetec Topaz	G	Sonotron Isonic 25xx
C	Olympus Focus LT Zetec Z-Scan Eddyfi Ectane 2	U	Sonatest Veo / Prisma
E	Olympus OmniScan SX/MX2/X3 M2M MANTIS/GEKKO LEMO	V	Pragma PAUT
F	TD *(Technology Design)*	AD	Sonatest Veo / Prisma - Single Axis

> ***NOTE:*** *Additional encoder connector styles are available.*
> *(contact Jireh Industries Ltd. on page 1)*

11.2.2. Cable Management, Dovetail Mount



BOM ID	Part #	Description
1	CES067	Cable Management Mount, Dovetail Mount
2	CES066	Cable Management Clamp, Dovetail Mount
3	*See Cable Management Sleeving*	
4	CES044-	Cable Management: Dovetail *(see cable management sleeving)*

Fig. 92 - Cable management

11.2.2.1 Cable Management Sleeving

Part #	Length
CX0141	4.5 m *(14.7 ft)*
CX0145	9.5 m *(31.2 ft)*

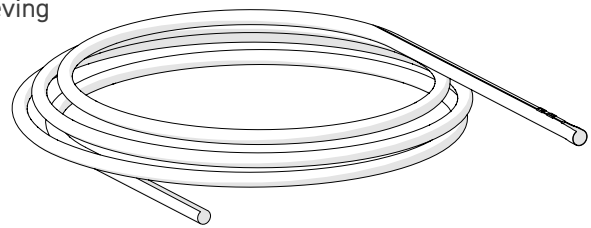


Fig. 93 - Cable management sleeving

11.3. Accessories

11.3.1. Preamp Bracket

Part #	Description
CES029	Preamp Bracket
CES029-V	Preamp Bracket with Velcro

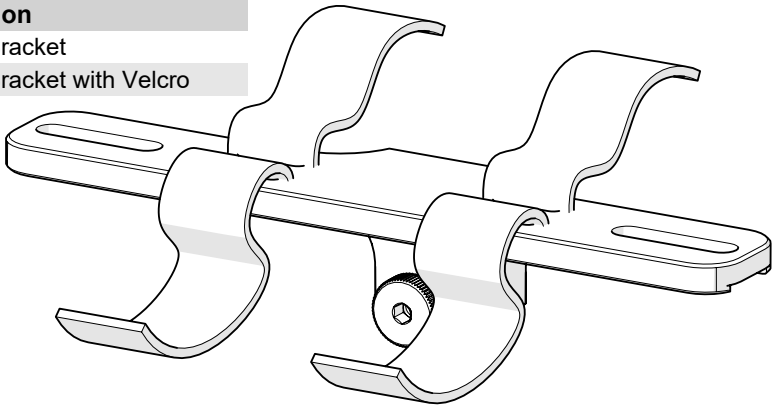


Fig. 94 - Preamp bracket

11.3.2. HydroFORM™ Cart

BOM ID	Part #	Description
1	CA119	Urethane Molded Wheel Bearing

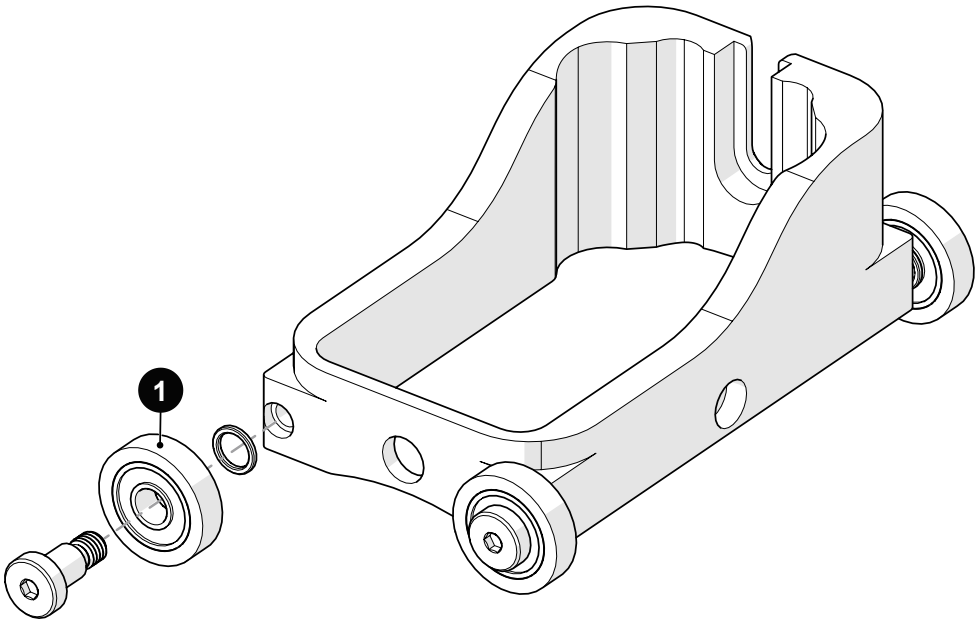
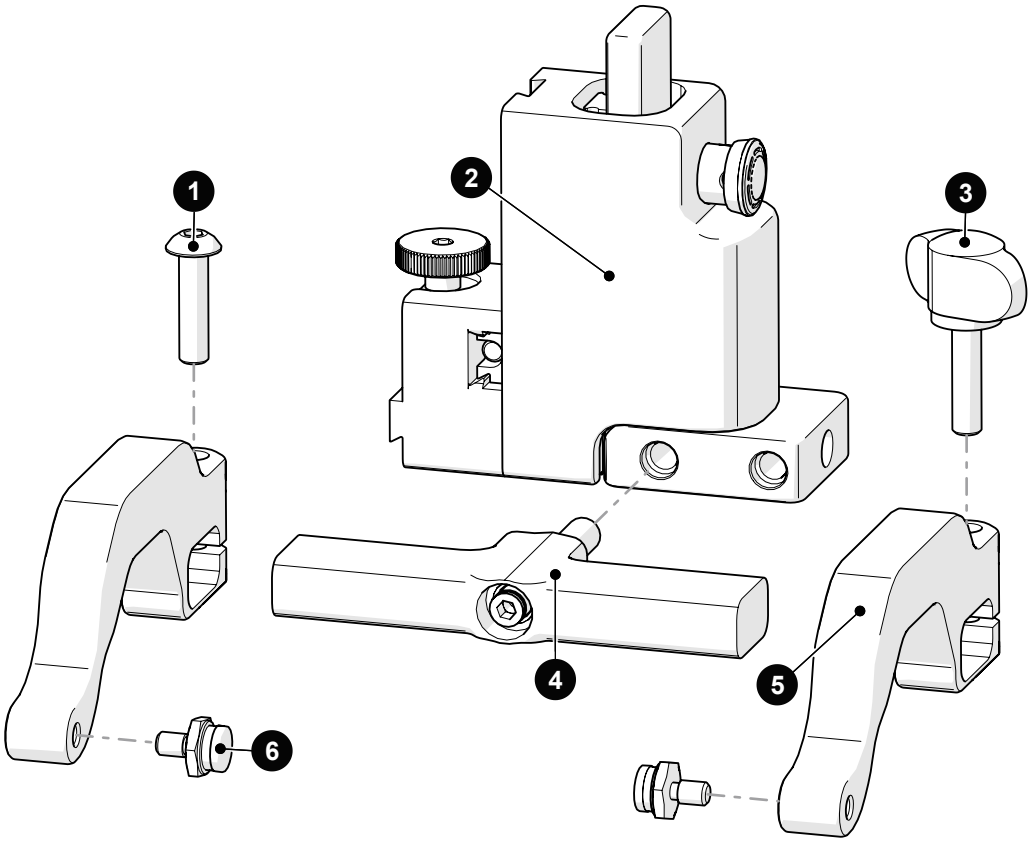


Fig. 95 - HydroFORM™ wheel replacement

11.4. Heavy Duty Vertical Probe Holder



BOM ID	Part #	Description
1	MD074-020	BHCS, M5 x 0.8 x 20 mm, SST
2	PHS049	Heavy Duty Probe Holder Subassembly
3	EA154	Probe Holder Arm Adjustment Knob
4	*See Heavy Duty Yoke Style*	
5	PH0165	Heavy Duty Probe Holder Arm, Standard, Drop
6	PH0011-X	Pivot Button Style *(See Pivot Button Style)*

Fig. 96 - Heavy duty vertical probe holder

11.5. Probe Holder Components

11.5.1. Heavy Duty Yoke Style

	Yoke Style	Part #	Length			Yoke Style	Part #	Length	
S	Standard	PHS048	8.3 cm *(3.26 in)*		**W**	Wide	PHS047	12.2 cm *(4.79 in)*	

Fig. 97 - Heavy duty probe holder yoke selection

11.5.2. Pivot Button Style

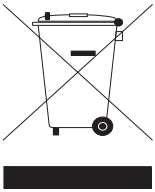
	Pivot Hole Size	Wedge Type			Pivot Hole Size	Wedge Type	
01	8.0 mm *(0.315 in)*	Olympus PA		**02**	5.0 mm *(0.197 in)*	Olympus TOFD	
03	2.7 mm *(0.106 in)*	Sonatest DAAH PA		**04**	9.5 mm *(0.375 in)*	-	
06	3.0 mm *(0.118 in)*	-		**07**	2.3 mm *(0.09 in)*	-	
08	Conical Head	-		**09**	5 mm *(0.197 in)* Internal	Zetec PA/TOFD	

Fig. 98 - Pivot button selection

> ***NOTE:*** *Additional probe holder pivot button types are available. (contact Jireh Industries Ltd. on page 1)*

DISPOSAL

WEEE Directive



In accordance with European Directive on Waste Electrical and Electronic Equipment *(WEEE)*, this symbol indicates that the product must not be disposed of as unsorted municipal waste, but should be collected separately. Refer to Jireh Industries for return and/or collection systems available in your country.

LIMITED WARRANTY

WARRANTY COVERAGE

Jireh Industries warranty obligations are limited to the terms set forth below: Jireh Industries Ltd. (“Jireh”) warrants this hardware product against defects in materials and workmanship for a period of THREE (3) YEARS from the original date of purchase. If a defect exists, at its option Jireh will (1) repair the product at no charge, using new or refurbished replacement parts, (2) exchange the product with a product that is new or which has been manufactured from new or serviceable used parts and is at least functionally equivalent to the original product, or (3) refund the purchase price of the product. A replacement product/part assumes the remaining warranty of the original product or ninety (90) days from the date of replacement or repair, whichever provides longer coverage for you. When a product or part is exchanged, any replacement item becomes your property and the replaced item becomes Jireh’s property. When a refund is given, your product becomes Jireh’s property.

OBTAINING WARRANTY SERVICE

To utilize Jireh’s warranty service you must ship the product, at your expense, to and from Jireh Industries. Before you deliver your product for warranty service you must phone Jireh and obtain an RMA number. This number will be used to process and track your product. Jireh is not responsible for any damage incurred during transit.

EXCLUSIONS AND LIMITATIONS

This Limited Warranty applies only to hardware products manufactured by or for Jireh Industries. This warranty does not apply: (a) to damage caused by accident, abuse, misuse, misapplication, or non-Jireh products; (b) to damage caused by service (including upgrades and expansions) performed by anyone who is not a Jireh Authorized Service Provider; (c) to a product or a part that has been modified without the written permission of Jireh.

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jireh.com

HydroFORM™ is a trademark of Olympus.

All brands are trademarks or registered trademarks of their respective owners and third-party entities.

Changes or modifications to this unit or accessories not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

All specifications are subject to change without notice.

APPENDIX

14.1. Chain Configuration Setup Chart

PIPE OD RANGE				LINKS		
MIN (in)	MAX (in)	MIN (mm)	MAX (mm)	SHORT*	LONG	
3.6	3.9	91	99	2	0	
4.0	4.9	102	124	3	0	
5.0	5.9	127	150	4	0	
6.0	6.8	152	173	5	0	
6.9	7.7	175	196	6	0	
7.8	8.6	198	218	7	0	
8.7	9.5	221	241	8	0	
9.5	10.4	241	264	9	0	
10.6	11.4	269	290	7	1	
11.4	12.2	290	310	8	1	
12.2	13.0	310	330	9	1	Max of 4 - 12 Kit
13.3	14.1	338	358	1	4	
14.1	14.7	358	373	2	4	
14.9	15.7	378	399	3	4	
15.8	16.6	401	422	1	5	
16.5	17.1	419	434	2	5	
17.3	18.1	439	460	3	5	
18.2	19.0	462	483	1	6	
18.9	19.5	480	495	2	6	
19.7	20.5	500	521	3	6	
20.4	21.3	518	541	4	6	
21.2	22.1	538	561	5	6	
22.0	22.9	559	582	6	6	
22.8	23.6	579	599	7	6	
23.6	24.4	599	620	8	6	
24.3	25.2	617	640	9	6	Max of 4 - 24 Kit
26.1	26.7	663	678	2	9	
26.8	27.7	681	704	3	9	
27.7	28.5	704	724	1	10	
28.4	29.1	721	739	2	10	
29.2	30.0	742	762	3	10	
30.1	30.9	765	785	1	11	
30.8	31.5	782	800	2	11	
31.6	32.4	803	823	3	11	
32.4	33.3	823	846	1	12	
33.2	33.9	843	861	2	12	
34.0	34.9	864	886	3	12	
34.7	35.6	881	904	4	12	
35.5	36.4	902	925	5	12	
36.3	37.2	922	945	6	12	
37.1	38.0	942	965	7	12	
37.9	38.8	963	986	8	12	
38.7	39.5	983	1003	9	12	Max of 4 - 38 Kit

*Short includes: Short Link, Dovetail Link, Red Catch Link

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