



BG0089 Rev 07.3

Manual Weld Frame Scanner

# SAFETY WARNINGS / PRECAUTIONS

## **KEEP THIS MANUAL – DO NOT LOSE**

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



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



**WARNING!** Can be harmful to pacemaker and ICD wearers. Stay at least 25 cm (10 in) away.



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



**WARNING! HOT SURFACE.** The **STIX** may reach temperatures that may cause burns if contacted with bare skin. Wear heat resistant safety gloves when handling.





**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 43 for additional details*).

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# IDENTIFICATION

## 1.1. Product Brand

This user manual describes the proper safety precautions, setup and use of the **STIX** - Weld Scanner.

## 1.2. Manufacturer

Distributor:

Manufacturer:

Jireh Industries Ltd.

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

Phone: 780.922.4534

[jireh.com](http://jireh.com)

## PRODUCT SPECIFICATIONS

### 2.1. Intended Use

The **STIX** is a manual magnetic scanner with a spring-loaded encoder and magnetic wheels. It is designed to translate phased array and TOFD probes around ferrous piping and vessels.

#### 2.1.1. Operating Limits

	Minimum	Maximum
Pipe/Tube Range, Outer Diameter:	10.2 cm (4 in)	Flat
Pipe/Tube Range, Inner Diameter:	152.4 cm (60 in)	Flat
Radial Scanner Clearance:	13.1 cm (5.14 in)	

#### 2.1.2. Operating environment

The **STIX** is designed for use in industrial environments that are between -20°C (-4°F) and 50°C (122°F).

The **STIX** - High Temperature Kit is required for surface temperatures between 50°C - 350°C (122°F - 662°F).

### 2.2. Dimensions and Weight

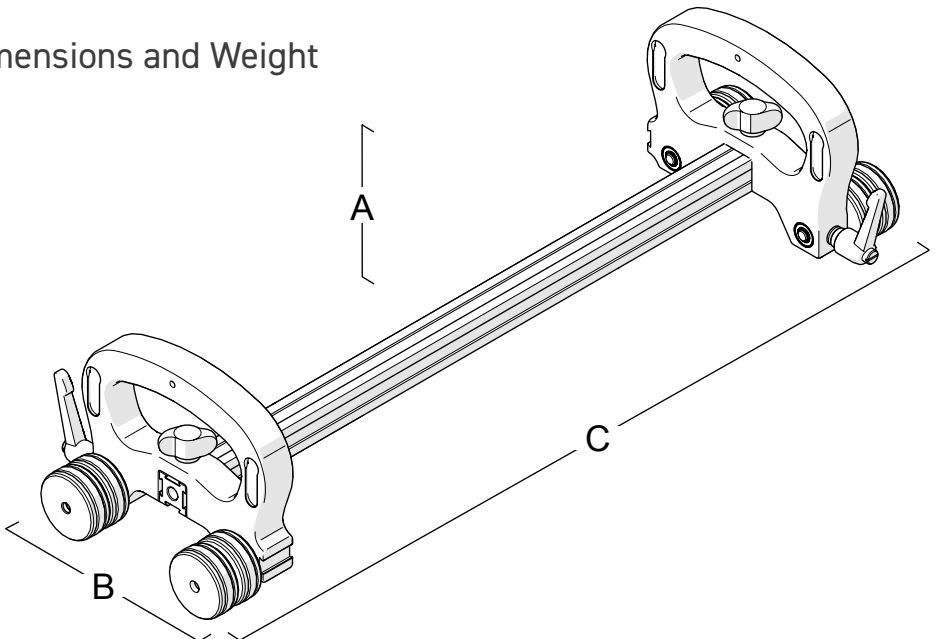


Fig. 1 - Frame dimensions



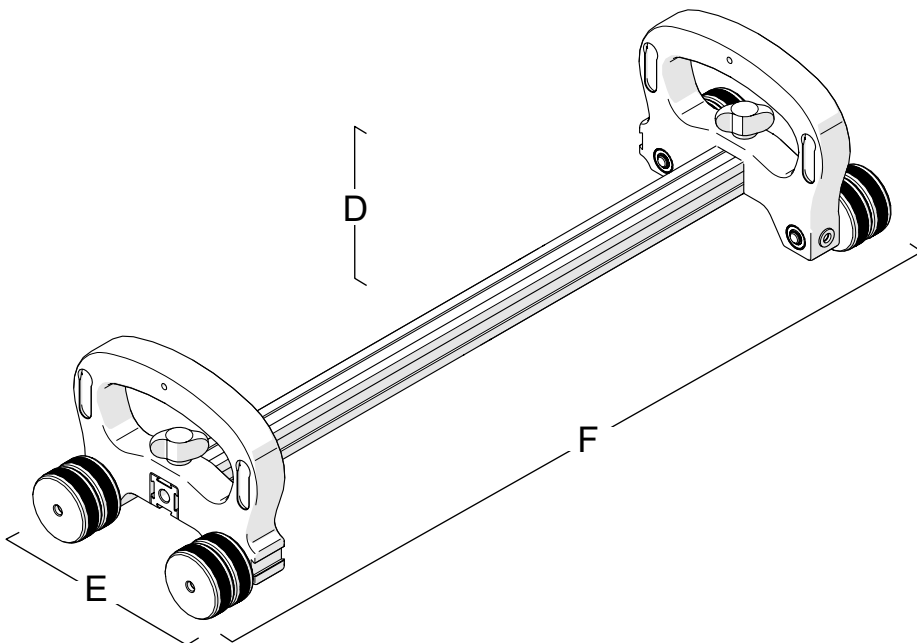


Fig. 2 - Frame dimensions

A	Frame height:	10.5 cm	4.1 in
B	Frame depth:	17.5 cm	6.9 in
C	Frame width:	45.4 cm	17.9 in
D	HT frame height:	10.5 cm	4.1 in
E	HT frame depth:	12.5 cm	4.9 in
F	HT frame width:	40.4	15.9 in
Frame Weight:		1.19 kg	2.6 lb
Encoder Cable Length ( <i>Standard Kit</i> ):		5 m	16.4 ft

## 2.3. Environmental Sealing

Watertight (*submersible*) (contact Jireh Industries Ltd. on page 1 for details).

## 2.4. Performance Specifications

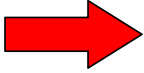
X-Axis Encoder Resolution:	9.05 counts/mm	230.0 counts/inch
High Temperature X-Axis encoder resolution:	4.28 counts/mm	108.7 counts/in

## DEFINITIONS

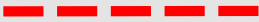
### 3.1. Definition of Symbols



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, can also indicate insertion or movement of parts.



Alerts user that the view has changed to a reverse angle.

## SYSTEM COMPONENTS

### 4.1. Base System Components

#### 4.1.1. STIX Frame BGA024

The STIX frame is the backbone of the scanner, providing a mounting point for probe holders, encoders and accessories. The magnetic wheels attach the scanner to ferrous materials.

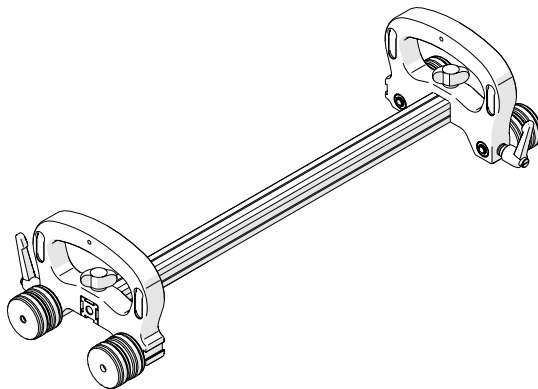


Fig. 3 - STIX Frame

#### 4.1.2. Slip Joint Probe Holder PHA012-

The low profile design of the slip joint probe holder requires minimal radial clearance. The slip joint probe holder is designed to carry many different types of probes and wedges. It is available with various types of yokes, arms and pivot buttons.

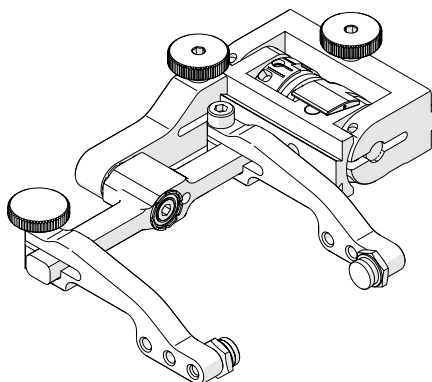


Fig. 4 - Slip joint probe holder

#### 4.1.3. Frame Bar BG0038-

Frame bars use dovetail grooves into which probe holders and accessories may be attached. Available in various lengths.

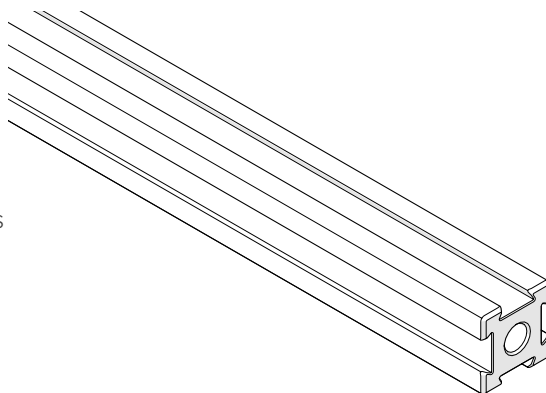


Fig. 5 - Frame bar

#### 4.1.4. Spring-Loaded Encoder BGS053-

The spring-loaded encoder mounts to any standard frame bar and provides encoded positional feedback to the user's instrument.

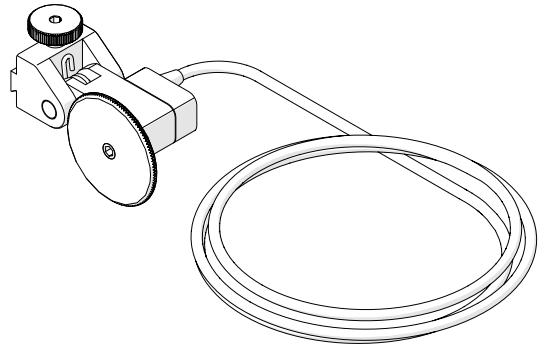


Fig. 6 - Spring-loaded encoder

#### 4.1.5. Irrigation Kit CMG007

The irrigation kit provides a variety of hoses, fittings, connectors and splitters commonly used during non-destructive inspection.

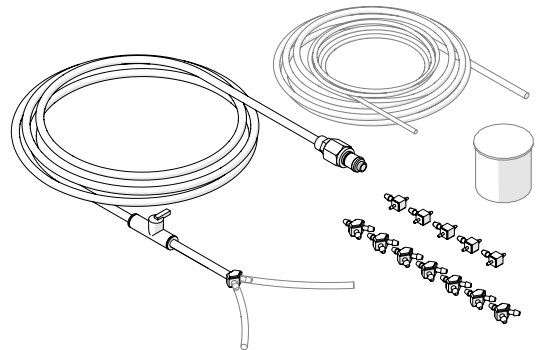


Fig. 7 - Irrigation kit

#### 4.1.6. Magnetic Wheel BTS031

Magnetic wheels allow the scanner to adhere to ferrous materials. Magnetic wheels can be added to the system to increase magnetic attraction.

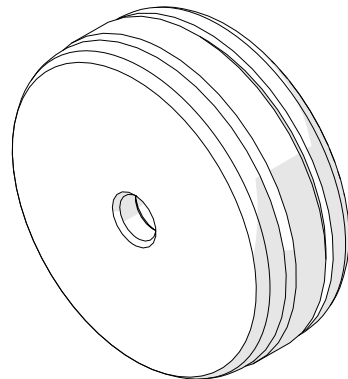


Fig. 8 - Magnetic wheel

#### 4.1.7. Tools

Several tools are included for various scanner and accessory adjustment.

#### 4.1.8. Case

The system is provided with a rugged carrying case.

## 4.2. Base High Temperature Components

### 4.2.1. STIX Frame BGA019-

The STIX frame is the backbone of the scanner, providing a mounting point for probe holders, encoders and accessories. The magnetic wheels attach the scanner to ferrous materials.

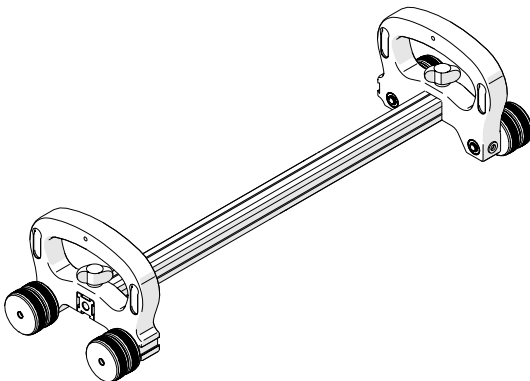


Fig. 9 -High temperature STIX Frame

### 4.2.2. Slip Joint Probe Holder PHA012-

The low profile design of the slip joint probe holder requires minimal radial clearance. The slip joint probe holder is designed to carry many different types of probes and wedges. It is available with various types of yokes, arms and pivot buttons.

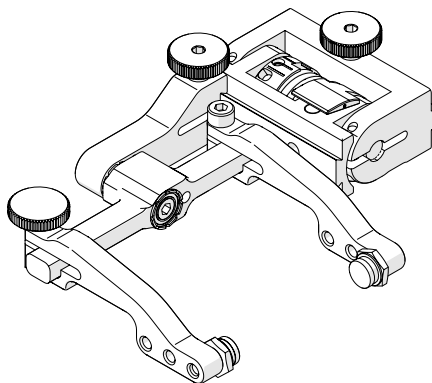


Fig. 10 - Slip joint probe holder

### 4.2.3. Frame Bar BG0038-

Frame bars use dovetail grooves into which probe holders and accessories may be attached. Available in various lengths.

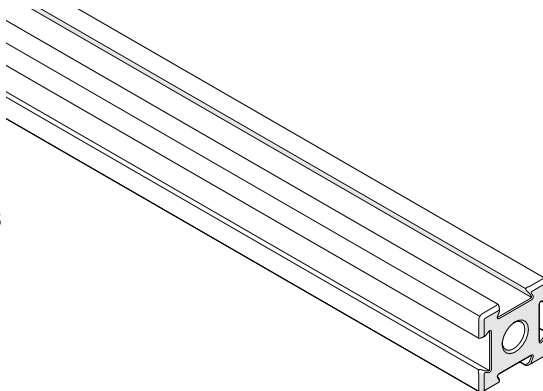


Fig. 11 - Frame bar

#### 4.2.4. High Temperature Spring-Loaded Encoder BGS071-

The high temperature spring-loaded encoder mounts to any standard frame bar and provides encoded positional feedback to the user's instrument.

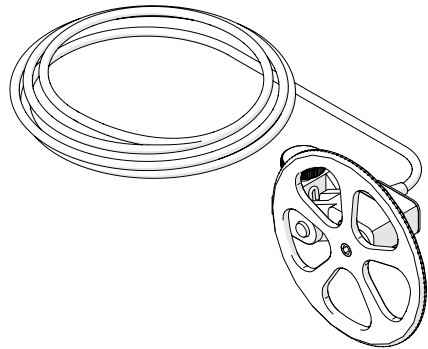


Fig. 12 - High temperature spring-loaded encoder

#### 4.2.5. Irrigation Kit CMG007

The irrigation kit provides a variety of hoses, fittings, connectors and splitters commonly used during non-destructive inspection.

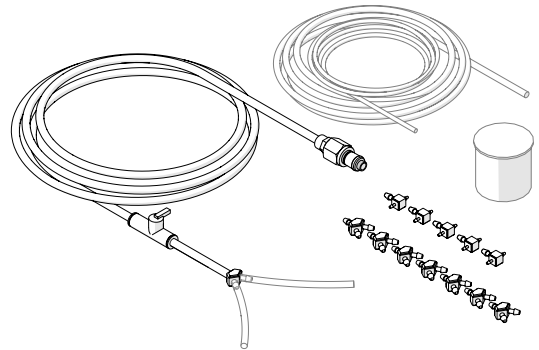


Fig. 13 - Irrigation kit

#### 4.2.6. High Temperature Magnetic Wheel BTS052

HighMagnetic wheels allow the scanner to adhear to ferrous materials. Magnetic wheels can be added to the system to increase magnetic attraction.

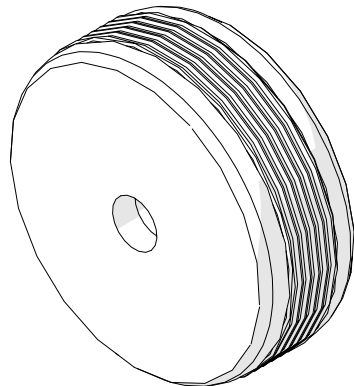


Fig. 14 - Magnetic wheel

#### 4.2.7. High Temperature Cable Management CES089-

The high temperature cable management provides a means of protecting and organizing cables, tubes and hoses during high temperature inspection.

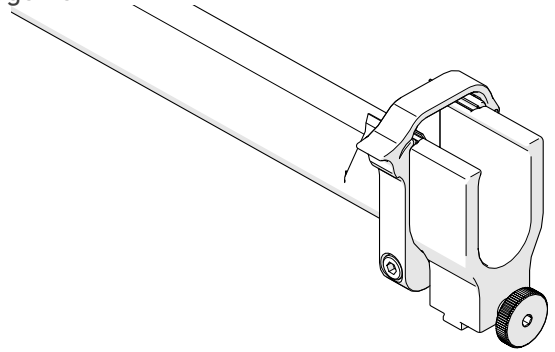


Fig. 15 - High temperature cable management

#### 4.2.8. Tools

Several tools are included for various scanner and accessory adjustment.

#### 4.2.9. Case

The system is provided with a rugged carrying case.

### 4.3. Compatible Components

#### 4.3.1. Cable Management CES044-

The cable management provides a means of protecting and organizing cables, tubes and hoses.

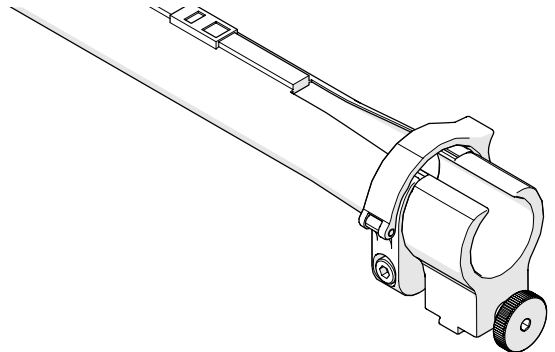


Fig. 16 - Cable management

#### 4.3.2. Encoder Adapter UMA010-

Adapt a scanner's existing encoder connector to a different encoder style.

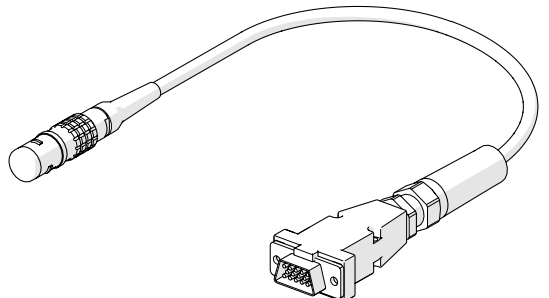


Fig. 17 - Encoder adapter

#### 4.3.3. Preamp Bracket CES029-

A bracket that mounts to a scanner to hold various preamps.

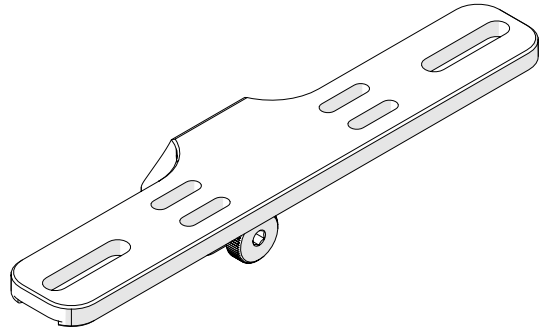


Fig. 18 - Preamp bracket

### 4.4. Tools

#### 4.4.1. Included Tools

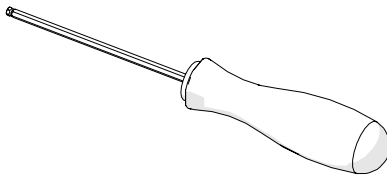


Fig. 19 - 3 mm hex driver

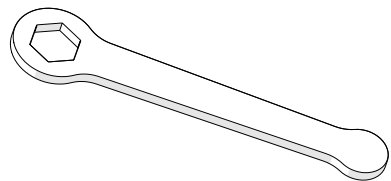


Fig. 20 - 3/8 in wrench

The 3 mm hex driver (*Fig. 19*) is sufficient for all typical operations and adjustments of the **STIX**.

The 3/8 in wrench (*Fig. 20*) removes and installs buttons on the probe holders.

#### 4.4.2. Optional Tools

Some specialized adjustments require tools that are not included in this kit.

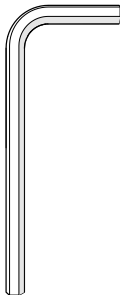


Fig. 21 - 2 mm  
hex wrench

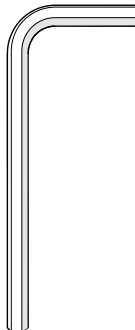


Fig. 22 - 3 mm  
hex wrench



## PREPARATION FOR USE

### 5.1. Configurations

#### 5.1.1. Two Probe Phased Array

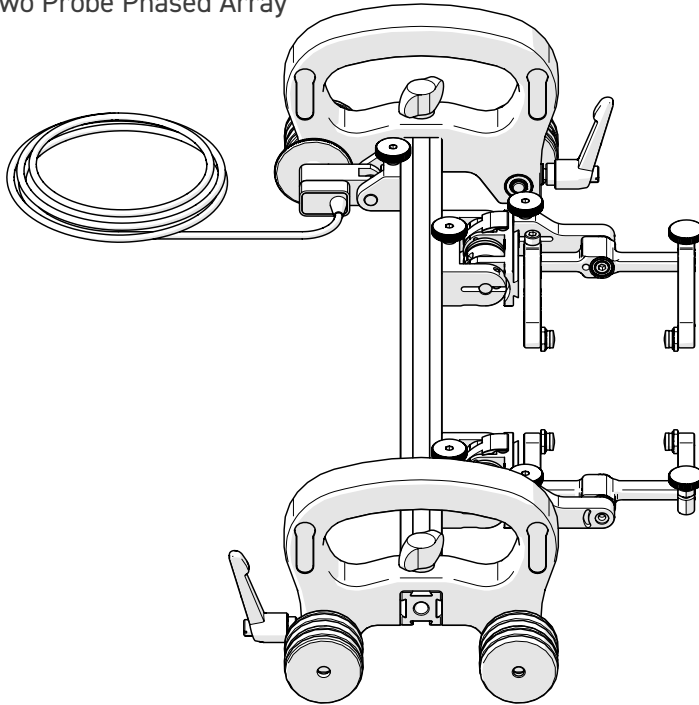


Fig. 23 - Two probe phased array configuration

### 5.1.2. Four Probe

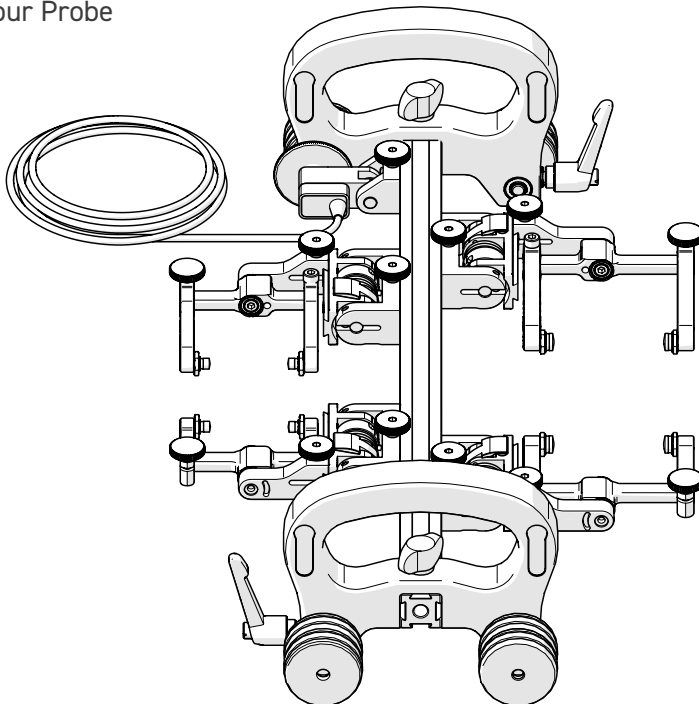


Fig. 24 - Four probe configuration

### 5.1.3. Four Probe Cantilever

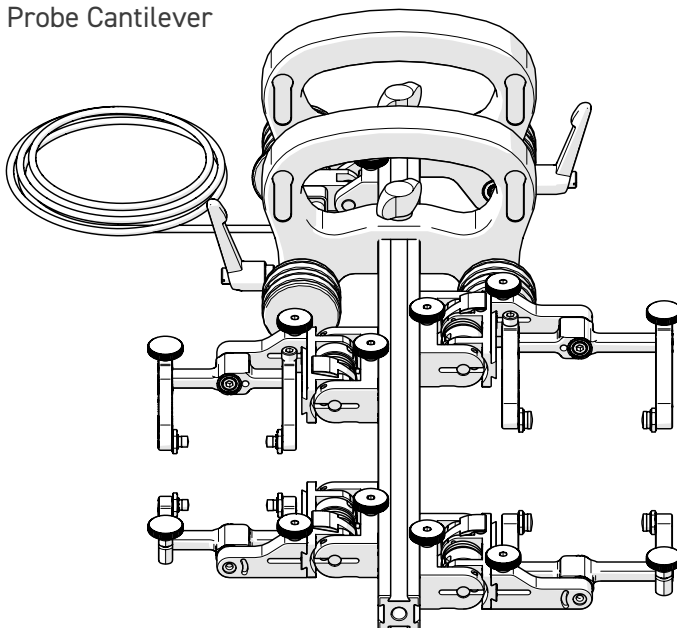


Fig. 25 - Four probe cantilever configuration

#### 5.1.4. Two Probe High Temperature

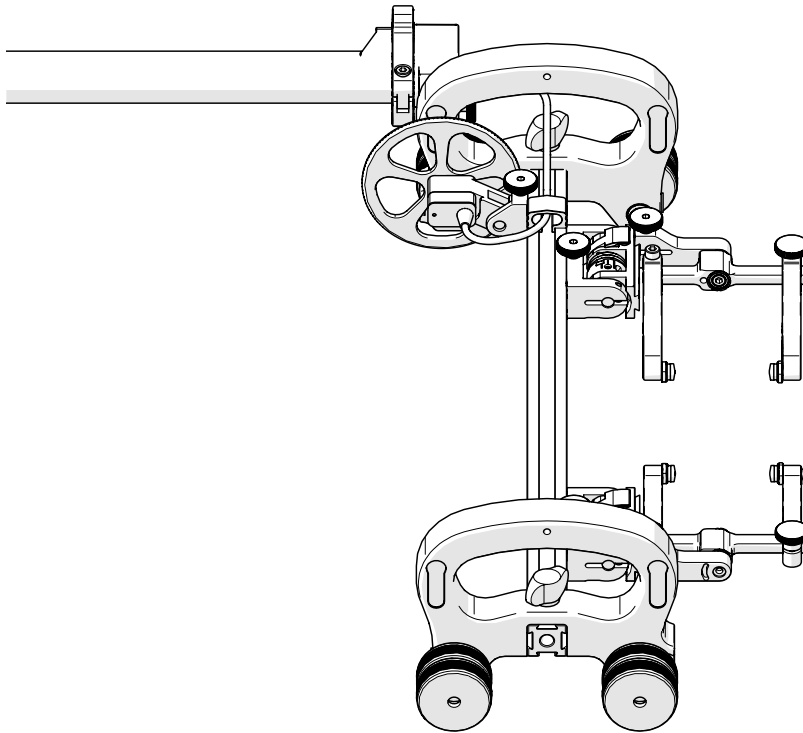


Fig. 26 - Two probe high temperature configuration

## 5.2. Wheel Block with Handle

The wheel block with handle provides stability and braking to the **STIX** system.

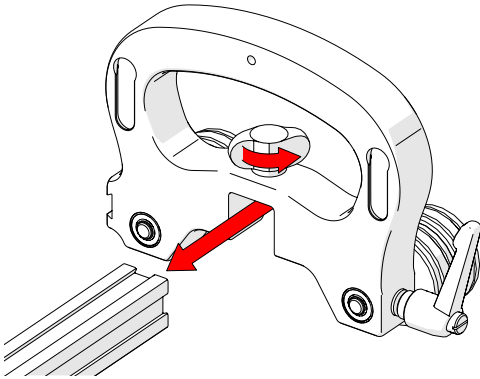


Fig. 27 - Attach to a frame bar

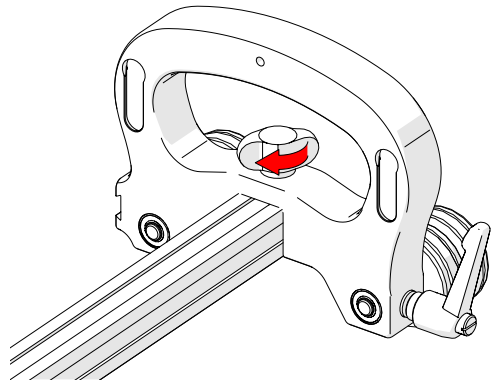


Fig. 28 - Tighten knob

The ratchet lever on the wheel block operates a brake (see *Ratchet Lever* on page 16).

Four mounting points for cable management are located on the wheel block handle. (see *Cable Management Dovetail Mount* on page 25)

Attach a wheel block by loosening the black wing knob and sliding the wheel block's dovetail nut onto a frame bar (Fig. 27). Tighten the black wing knob (Fig. 28).

### 5.2.1. Brakes

The brakes for the system are located on each wheel block with handle.

Rotate the ratchet lever clockwise to engage the brakes. Rotate counterclockwise to release the brakes.

Adjustment of the ratchet lever is possible (see *Ratchet Lever* on page 16).

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

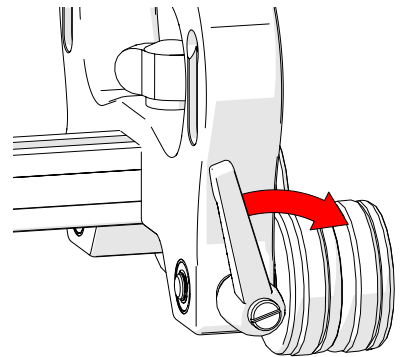


Fig. 29 - Activate brake

## 5.2.2. Wheel Installation



**WARNING! MAGNETIC MATERIAL.** The magnetic wheels produce a magnetic field which may cause failure or permanent damage to items such as watches, memory devices, CRT monitors, medical devices or other electronics. People with pacemakers or ICD's must stay at least 25 cm (10 in) away

1. Ensure the brake of the wheel block with handle is **NOT** activated.
2. Locate and position the threaded side of the magnetic wheel away from the scanner.
3. Screw the magnetic wheel along the entire length of the axle.
4. Tightly grip the magnetic wheel by hand and, using the supplied 3 mm hex driver (Fig. 19), tighten the magnetic wheel to the axle (Fig. 30).
5. Perform the preceding steps with any remaining wheels to be installed.
6. To install a second magnetic wheel, locate the threaded side of the magnetic wheel, and orient the threaded side towards the scanner. Overcome the magnetic resistance to screw the additional wheel to the axle of the wheel block with handle (Fig. 31).
7. Tightly grip the magnetic wheel by hand, and using the 3 mm hex driver, tighten the magnetic wheel to the axle.

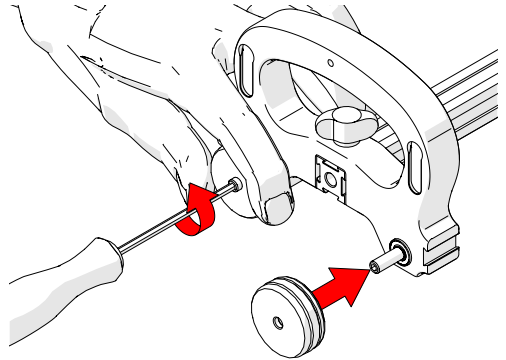


Fig. 30 - Wheel installation

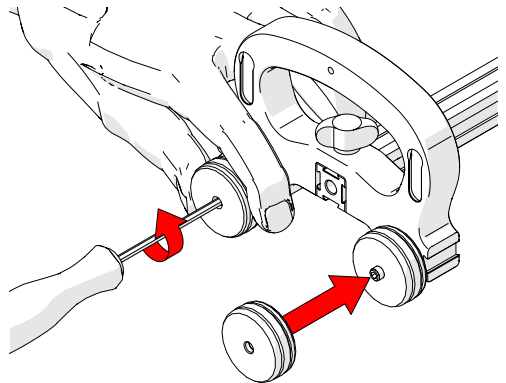


Fig. 31 - Wheel installation

**TIP:** To remove magnetic wheels, reverse these preceding steps.

**NOTE:** Magnetic wheels may lose their magnetic properties if heated above 175°F (80°C).

### 5.2.3. Ratchet Lever

The ratchet levers lock the brakes of the **STIX** system. Occasionally, movement of the lever's locking position is required. The lever placement can be adjusted by following these steps:

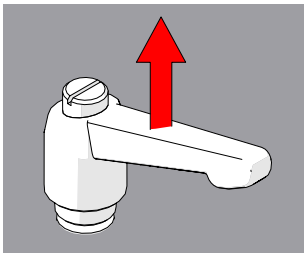


Fig. 32 - Pull ratchet handle

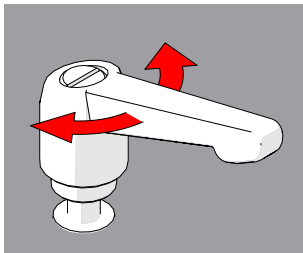


Fig. 33 - Rotate handle

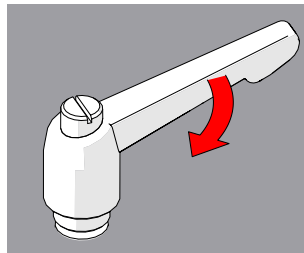


Fig. 34 - Tighten handle

1. Pull the ratchet lever away from the base to which it is connected (*Fig. 32*).
2. Continue to pull while rotating the lever in the appropriate direction (*Fig. 33*).
3. Release the lever and utilize the new tightening position (*Fig. 34*).

### 5.3. Frame Bar

Frame bars (*Fig. 35*) provide a mounting point for probe holders, probe positioning systems and other accessories.

Frame bars are available in various lengths (*see Frame Bars on page 42*).

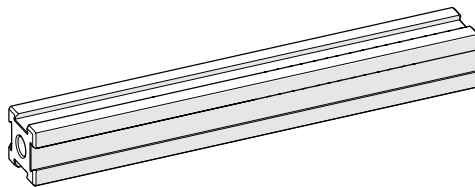


Fig. 35 - Frame bar

## 5.4. Spring-Loaded Encoder

The spring-loaded encoder wheel provides vertical travel while maintaining contact pressure to the scan surface. To install the encoder, follow these steps:

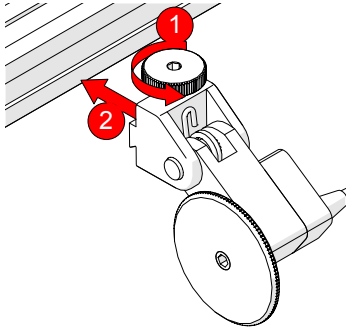


Fig. 36 - Attach to frame bar

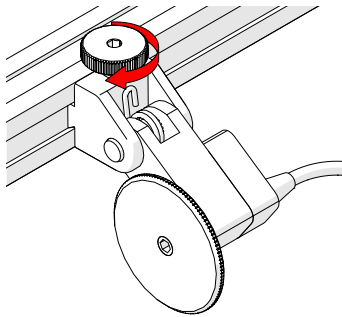


Fig. 37 - Tighten knob

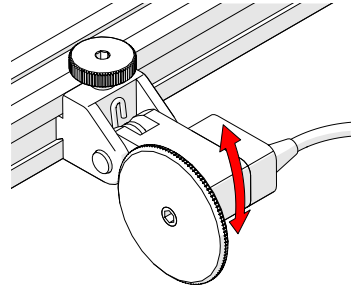


Fig. 38 - Place on scan surface

1. Loosen the encoder's dovetail jaw and mount it to the frame bar (*Fig. 36*).
2. Tighten the encoder knob (*Fig. 37*).
3. Spring tension maintains encoder contact with the scan surface (*Fig. 38*).

## 5.5. 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.

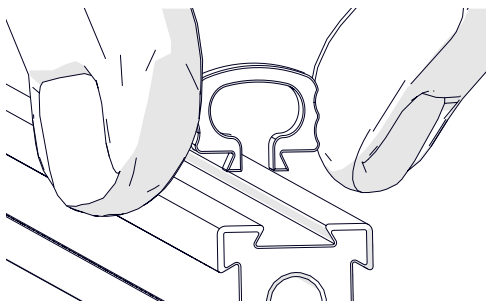


Fig. 39 - Pinch clip

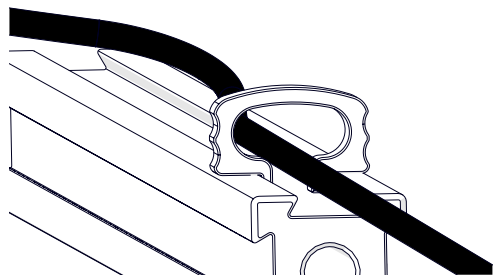


Fig. 40 - Route cables

## 5.6. Slip Joint Probe Holder

- |   |                                  |
|---|----------------------------------|
| A | Frame Bar                        |
| B | Probe Holder Adjustment Knob     |
| C | Latch                            |
| D | Swing Arm Knob                   |
| E | Yoke                             |
| F | Probe Holder Arm Adjustment Knob |
| G | Probe Holder Arm                 |
| H | Arm Clamp Screw                  |
| I | Pivot Buttons                    |

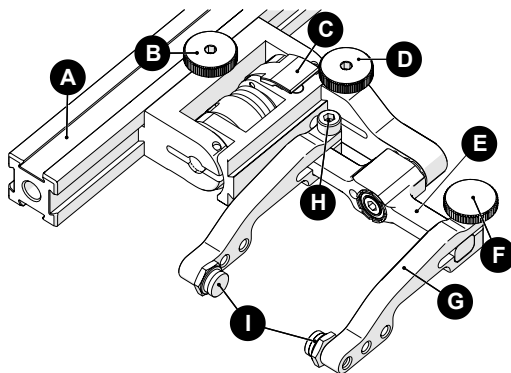


Fig. 41 - Slip Joint Probe Holder

### 5.6.1. Probe Holder Setup

To mount a UT wedge in the probe holder, follow these steps:

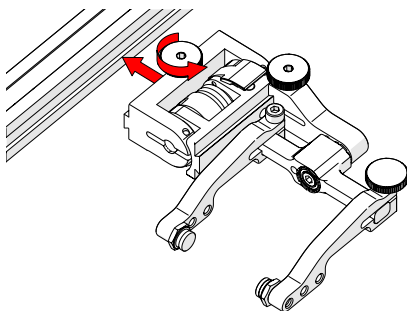


Fig. 42 - Attach to frame bar

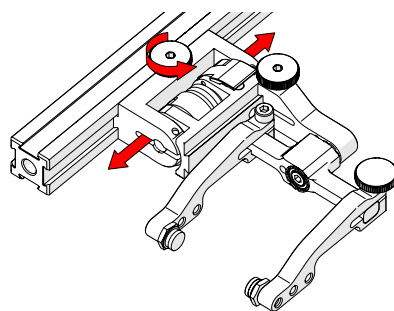


Fig. 43 - Adjust on frame bar

1. Rotate the probe holder adjustment knob and attach the probe holder to a frame bar (Fig. 42).
2. Use the probe holder adjustment knob to position the probe holder along the frame bar (Fig. 43).

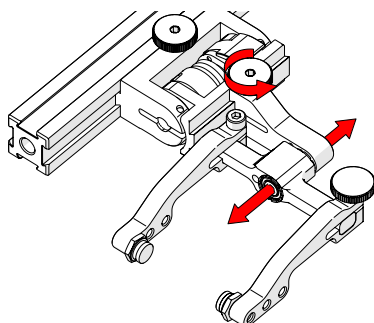


Fig. 44 - Adjust swing arm

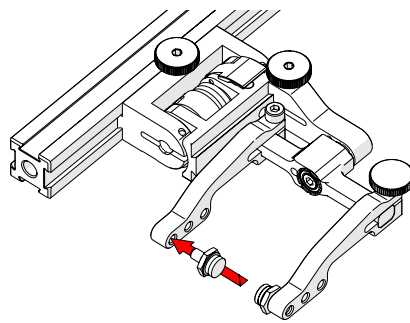


Fig. 45 - Place pivot buttons



3. Use the swing arm knob to position the swing arm (Fig. 44).

**TIP:** The swing arm is typically used to adjust TOFD center-to-center distance relative to the phased array probes on a four probe configuration (Fig. 44).

4. Using the supplied 3/8 in wrench (Fig. 20), place the pivot buttons as required (Fig. 45).

**TIP:** If a narrow scanning footprint is required, use pivot button holes closest to the yoke. Wedge pivoting may be impeded when closer to the yoke.

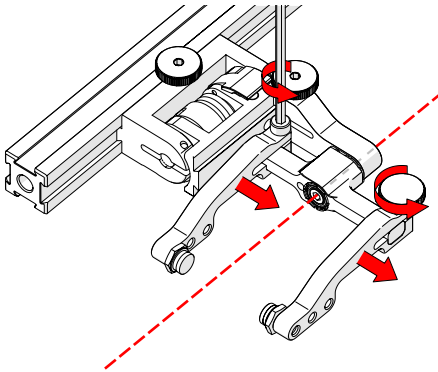


Fig. 46 - Adjust probe holder arms

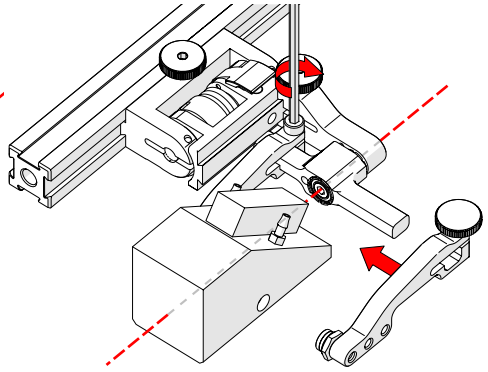


Fig. 47 - Place wedge

5. Loosen the probe holder arm adjustment knob (Fig. 46) and remove the outer probe holder arm from the yoke.
6. Adjust the inner probe holder arm as required to best centre the probe on the yoke's pivot axis (Fig. 46).

**TIP:** The probe holder yoke can accommodate many different probe and wedge sizes of varying widths. It is best to centre the wedge with the yoke's pivot axis to reduce wedge tipping when scanning. Position the inner probe holder arm accordingly with the centre of the yoke (Fig. 46).

7. Position the wedge on the inner probe holder arm (Fig. 47).
8. Slide the outer probe holder arm along the yoke pinching the wedge in place.
9. Tighten the probe holder arm adjustment knob (Fig. 48).

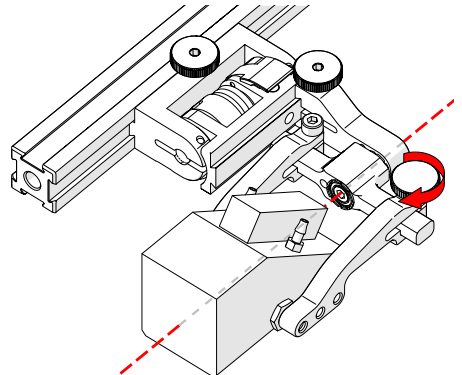


Fig. 48 - Pinch wedge with arm

### 5.6.2. Probe Holder Adjustment

To adjust the probe holder, follow these steps:

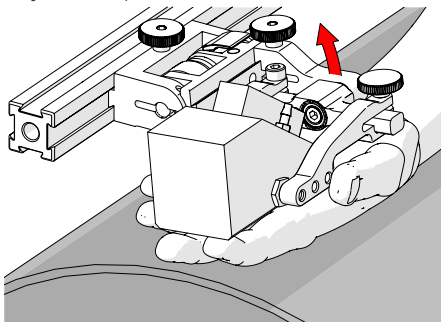


Fig. 49 - Lift to Latched position

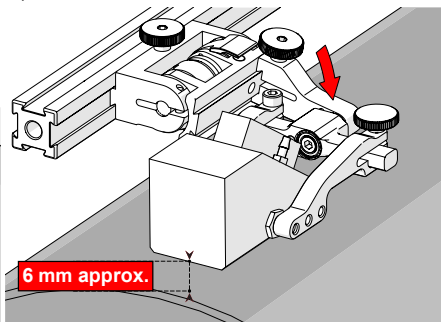


Fig. 50 - Lower to scanning surface

1. Ensure the probe holder is in latched, upper position (Fig. 49). If the probe holder is already latched, it will only move within the slip joint adjustment range and have no spring tension.
2. Push the probe holder yoke down toward the inspection surface until the wedge is approximately 6 mm (1/4 in) above the inspection surface (Fig. 50).

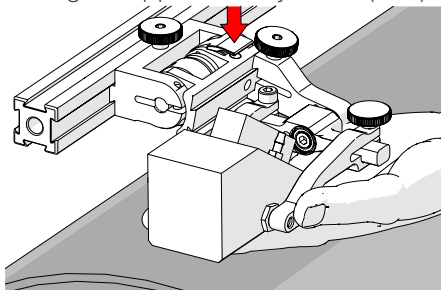


Fig. 51 - Lift and press latch button

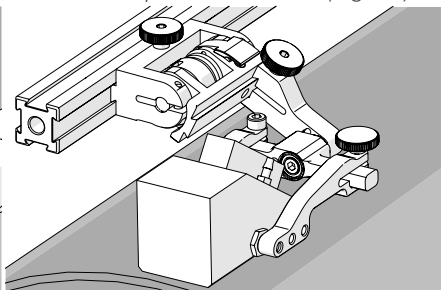


Fig. 52 - Spring loaded scan position

3. Lift the probe slightly and press the latch button (Fig. 51) to apply spring pressure to the wedge.
4. Gently lower the probe holder and wedge to the scanning surface (Fig. 52).

### 5.6.3. Probe Holder Force Adjustment

It is possible to adjust the tension of the probe holder spring.

**NOTE:** The 2 mm hex wrench (Fig. 21) and 3 mm hex wrench (Fig. 22) are required to perform this operation.

Light	1 kg	2 lb
Medium	2 kg	4 lb
Heavy	3 kg	6 lb

When configured correctly, these settings exert the indicated spring force on the probe.

To adjust the probe holder's force, follow these steps:

**NOTE:** Do not perform this operation on a scanning surface.

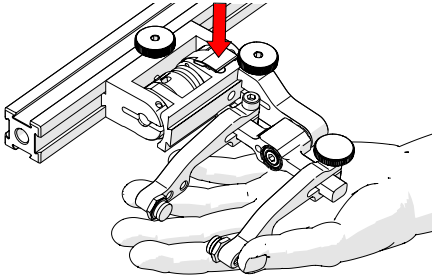


Fig. 53 - Lift slightly and press latch

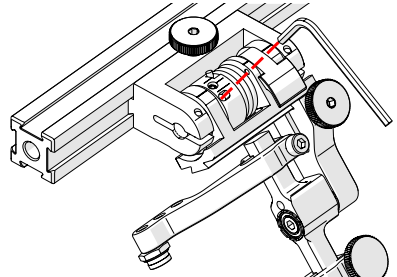


Fig. 54 - Unlatched position

1. Ensure the probe holder is in the upright latched position (Fig. 49).
2. Lift the probe holder slightly and press the latch button (Fig. 53) to release the probe holder the full 45° degrees.
3. Insert the short arm of a 3 mm hex wrench into the 3 mm slot (Fig. 54).

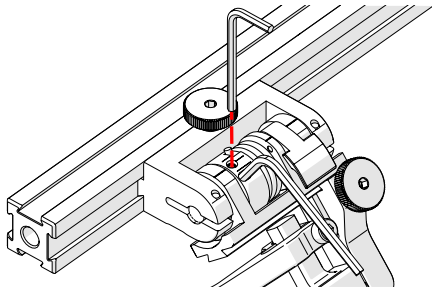


Fig. 55 - Insert hex wrenches

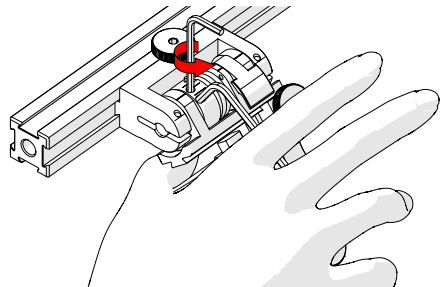


Fig. 56 - Press 3 mm hex wrench down

4. Place the 2 mm hex wrench into the force adjustment screw (Fig. 55).
5. Lightly press the long arm of the 3 mm hex wrench down. Using the 2 mm hex wrench, loosen the force adjustment screw but do not remove it (Fig. 56).
6. Gently apply pressure on the long leg of the 3 mm hex wrench until the force adjustment marker lines up with the desired spring tension. While keeping the markers in line, tighten the force adjustment screw (Fig. 57).

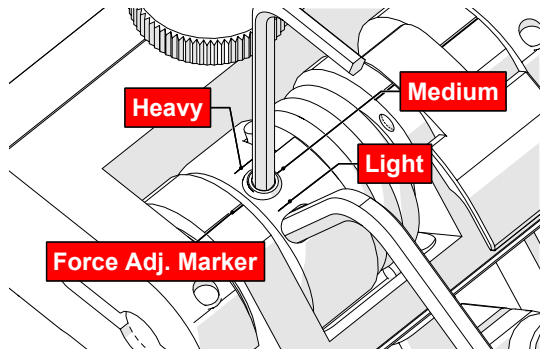


Fig. 57 - Choose desired tension

#### 5.6.4. Slip Joint Probe Holder Left/Right Conversion

To reverse the probe holder, follow these steps:

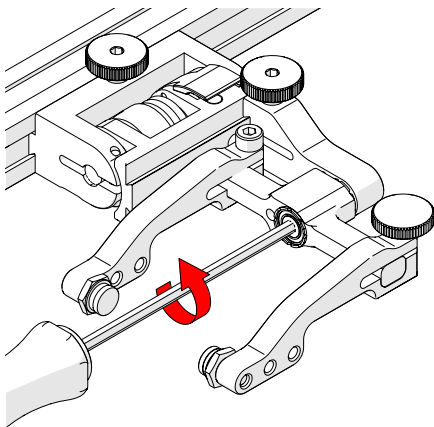


Fig. 58 - Unscrew yoke pivot screw

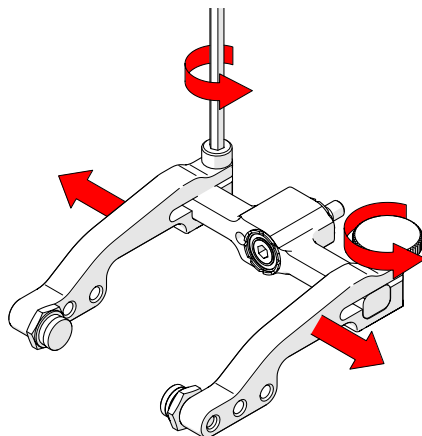


Fig. 59 - Remove arms

1. Unscrew the yoke from the swing arm (Fig. 58).
2. Loosen the probe holder arm adjustment knob and arm clamp screw. Slide the arms from the yoke (Fig. 59).

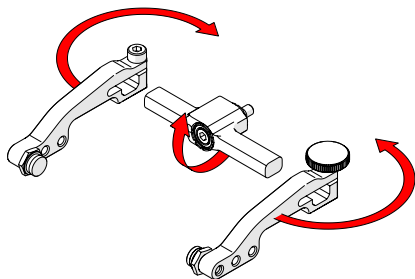


Fig. 60 - Flip yoke and reverse arms

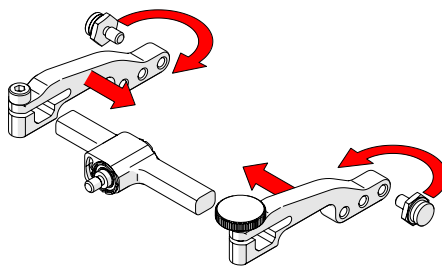


Fig. 61 - Attach arms and move buttons

3. Flip the yoke 180° and reverse the probe holder arms (Fig. 60).
4. Place the pivot buttons on the inside of the probe holder arms (Fig. 61) using a 3/8 in wrench (Fig. 20). Slide the arms onto the yoke and tighten the probe holder arm adjustment knob and the arm clamp screw.

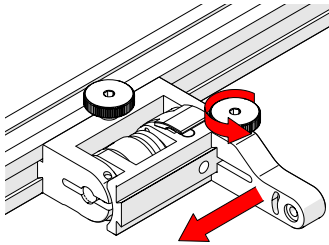


Fig. 62 - Position swing arm

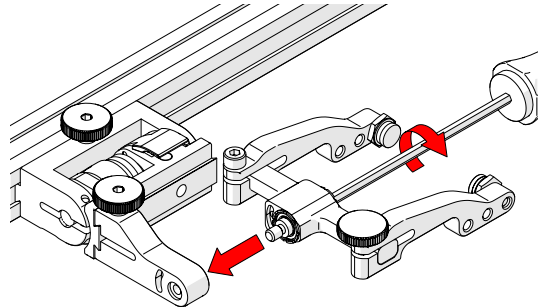


Fig. 63 - Install yoke to swing arm

5. Loosen the swing arm knob and slide the swing arm to the opposite end of the probe holder bracket (*Fig. 62*) or the preferred position. Tighten the swing arm knob.
6. Using the 3 mm hex driver, screw the yoke pivot screw into the opposite side of the probe holder swing arm (*Fig. 63*). Ensure the yoke is level to avoid issues with the plunger/set screw.

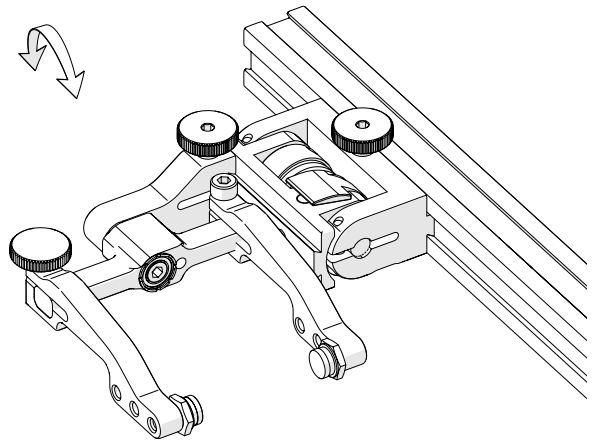


Fig. 64 - Reversed probe holder

#### 5.6.5. Pivot Buttons

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

Use the supplied 3/8 in wrench (*Fig. 20*) to remove and install pivot buttons (*Fig. 65*).

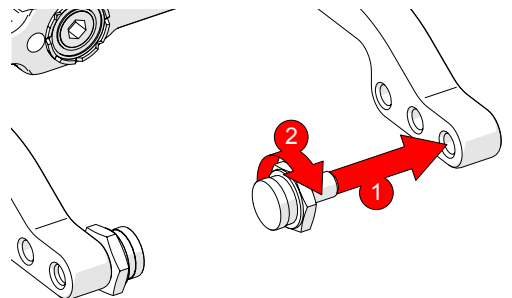


Fig. 65 - Pivot buttons

## 5.7. High Temperature Weld Frame Scanner



**WARNING! EXTREME HEAT.** Use high temperature gloves capable of protection up to 350°C (662°F). Take all precautions to protect hands and body from hot inspection surface.

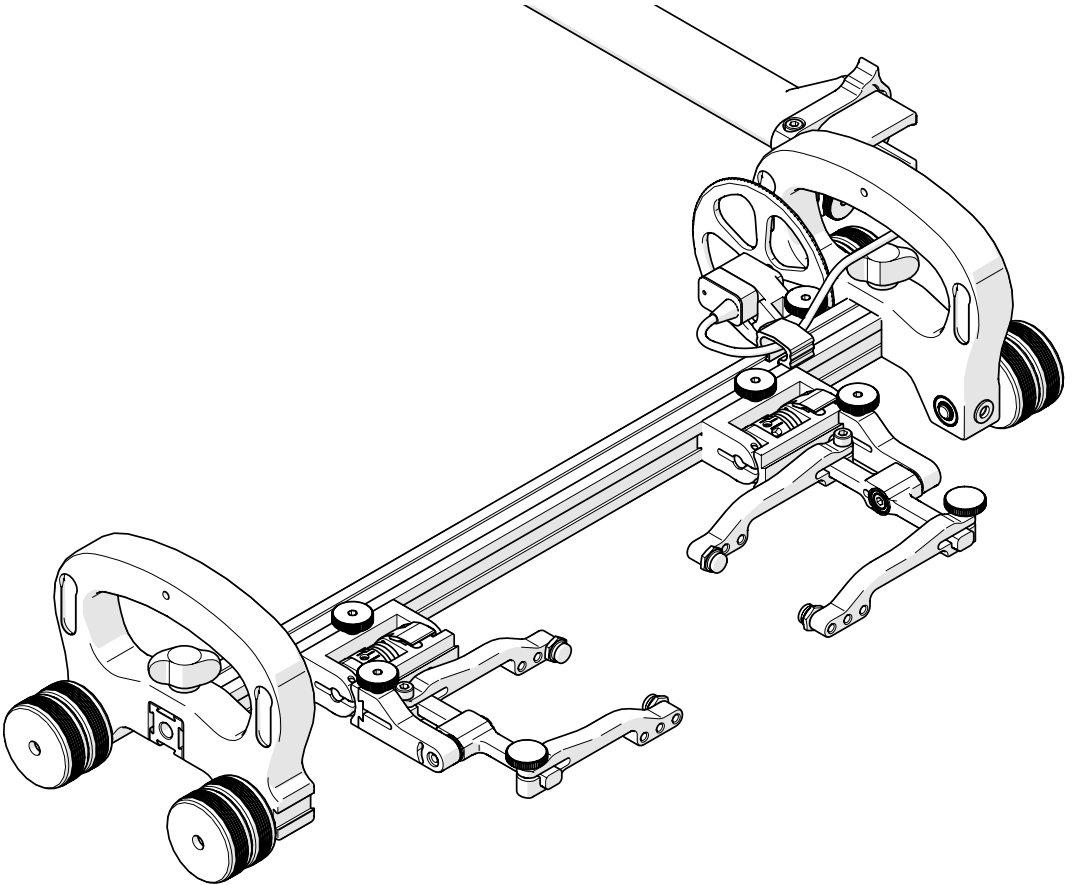


Fig. 66 - ROTIX - High Temperature Weld Frame Scanner

The high temperature weld frame scanner can be used on surfaces with a temperature of up to 350°C (662°F). The components of the high temperature scanner are similar to those of the standard weld frame scanner. As such, the instructions for using the high temperature kit are the same as those found in this user manual.

**NOTE:** Do **NOT** substitute or use any components, wheel blocks, encoder or cable management of the standard weld frame with the high temperature scanner.

## 5.8. Cable Management System

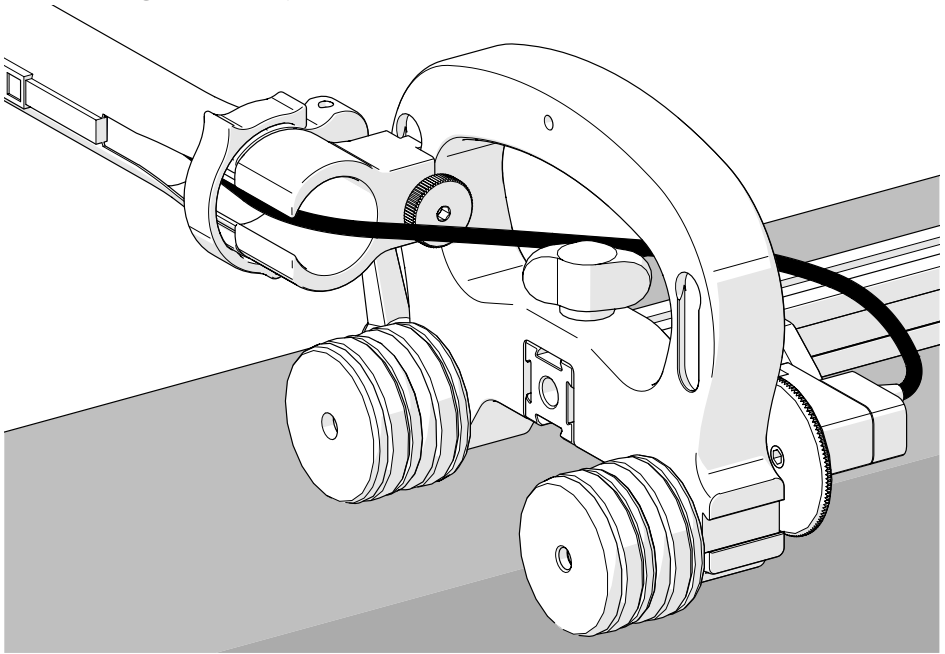


Fig. 67 - Cable management

### 5.8.1. Cable Management Dovetail Mount

Multiple dovetail mount locations are available on the wheel block handles. To attach the cable management, follow these steps:

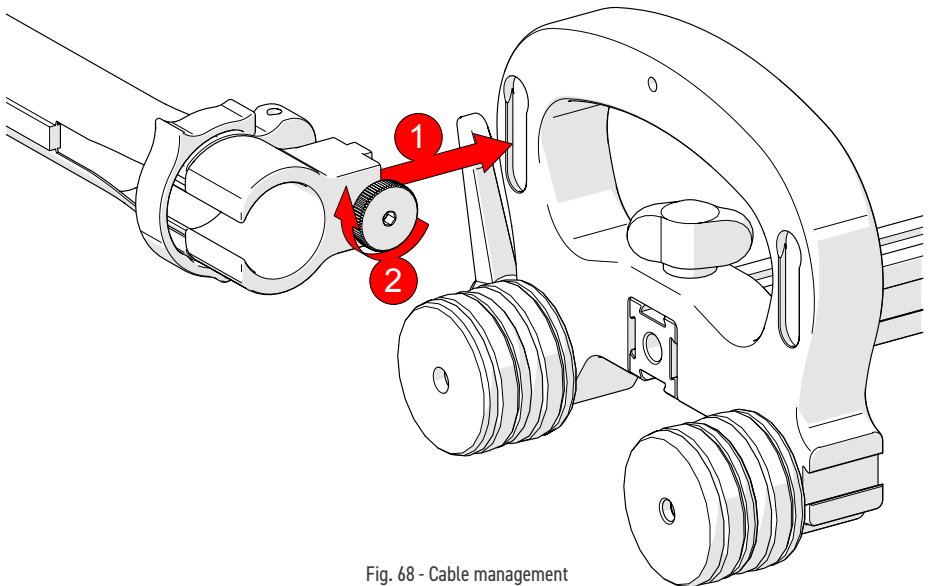


Fig. 68 - Cable management

1. Loosen the knob on the cable management dovetail mount. Attach the mount to the dovetail link (Fig. 68-1).
2. Once centred on the dovetail link, tighten the cable management knob (Fig. 68-2).

### 5.8.2. Cable management Setup

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

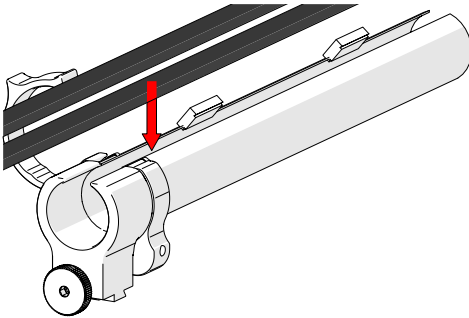


Fig. 69 - Insert cables and hoses

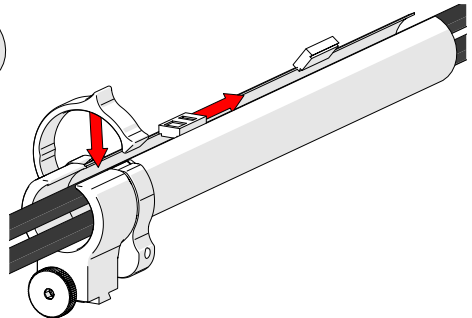


Fig. 70 - Zip up to close

1. Open the zipper of the cable management. Begin at the tube's dovetail mount and place the cabling in the tube (Fig. 69).
2. Follow the cable placement, zipping the tube closed (Fig. 70).

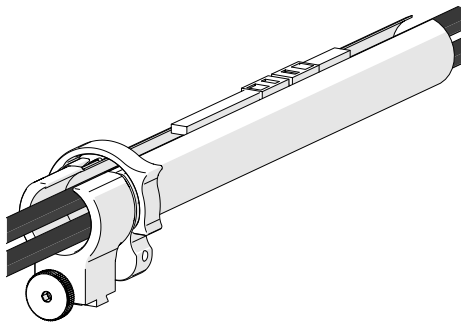


Fig. 71 - Zip opposite end

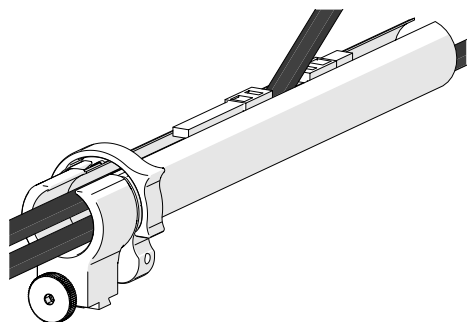


Fig. 72 - Flexibility

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. 71).
4. When necessary, the two zippers may be opened to allow cables to exit the tube anywhere between the ends (Fig. 72).



### 5.8.3. Clamp Setup

If the tube becomes disconnected from the cable management's 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. 73*). 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. 74*).
4. Tighten the clamp screw (*Fig. 75*).

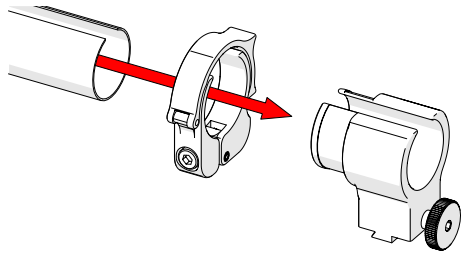


Fig. 73 - Slide tube around mount

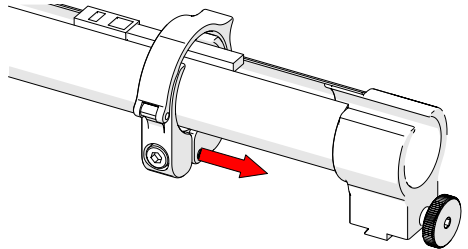


Fig. 74 - Slide clamp onto mount

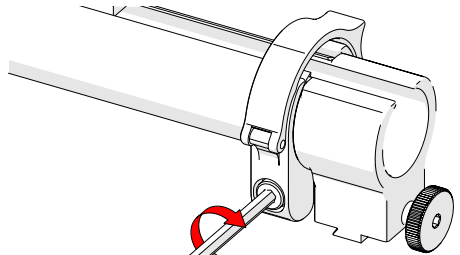


Fig. 75 - Tighten clamp screw

## 5.9. Preamp Bracket

Compatible with most standard preamps, use screws or the optional velcro straps to attach a preamp to the preamp bracket.

Intended Use:

- ▶ The preamp bracket is intended to mount objects (*e.g. preamps, splitters, etc.*) that:
- ▶ have a maximum weight of 1.36 kg (3 lb)
- ▶ are attached to the with a lanyard or probe cables strong enough to prevent the object from falling
- ▶ have smooth edges so as not to cut the preamp velcro strap

### 5.9.1. Mounting Preamp Bracket

The preamp bracket mounts to any dovetail groove.

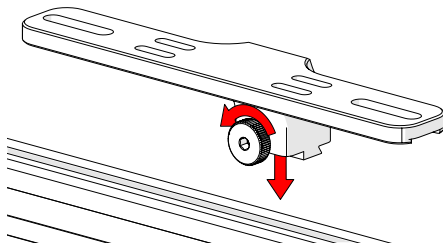


Fig. 76 - Loosen knob and mount to dovetail groove

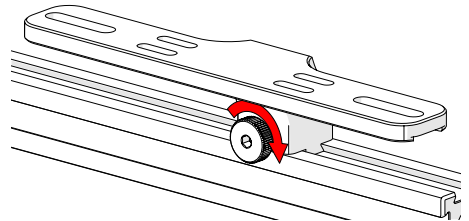


Fig. 77 - Tighten knob

1. Loosen the knob and align with the dovetail groove (*Fig. 76*).
2. Tighten the knob to lock the preamp bracket in place (*Fig. 77*).

### 5.9.2. Attaching Preamp with Screws

Use the adjustable screw mounting channel on the bottom of the bracket to attach a preamp (*screws not included*).

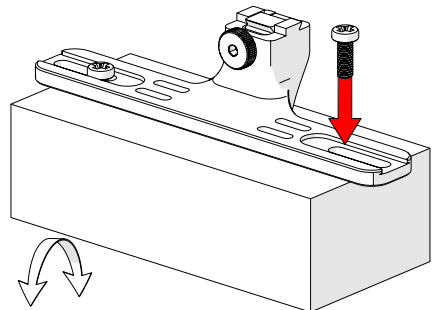


Fig. 78 - Attach preamp with screws

### 5.9.3. Attaching Preamp with Velcro Strap

To attach the preamp to the bracket using velcro straps (*sold separately*), follow these steps:

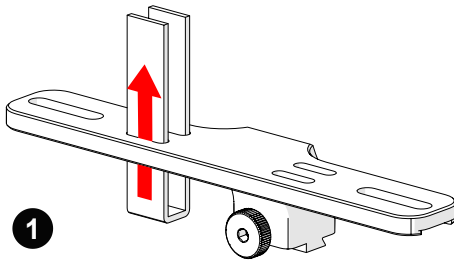


Fig. 79 - Insert velcro straps

1. Slide the velcro strap through the bracket's holes (Fig. 79).
2. Centre and place the preamp on the bracket wrapping the velcro around the preamp (Fig. 80).
3. Secure the preamp to the bracket attaching each side of the velcro (Fig. 81).

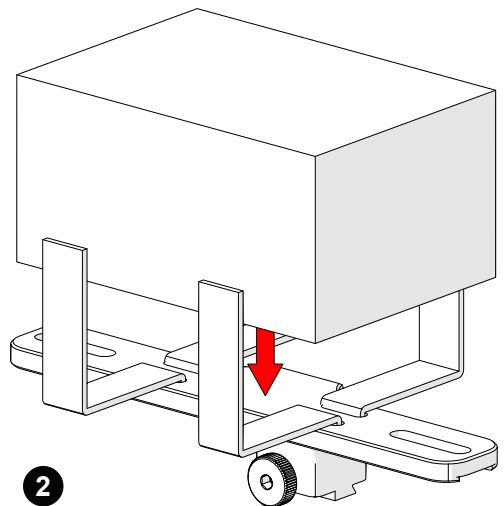


Fig. 80 - Place preamp and wrap velcro

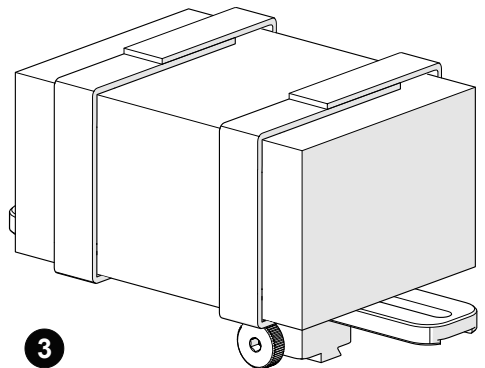


Fig. 81 - Mount bracket on a frame bar

## OPERATION

### 6.1. STIX setup on a scan surface

1. Mount the appropriate phased array and TOFD wedges to the probe holders (see *Slip Joint Probe Holder* on page 18).

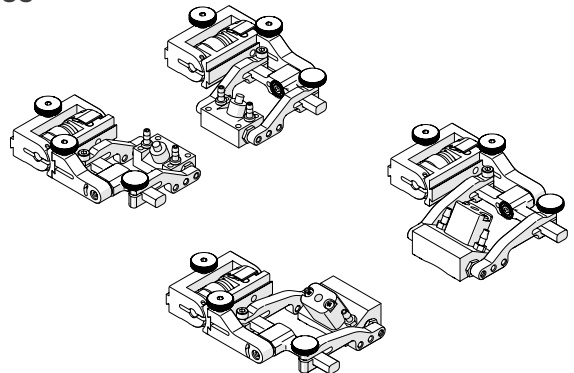


Fig. 82 - Mount wedges to probe holders

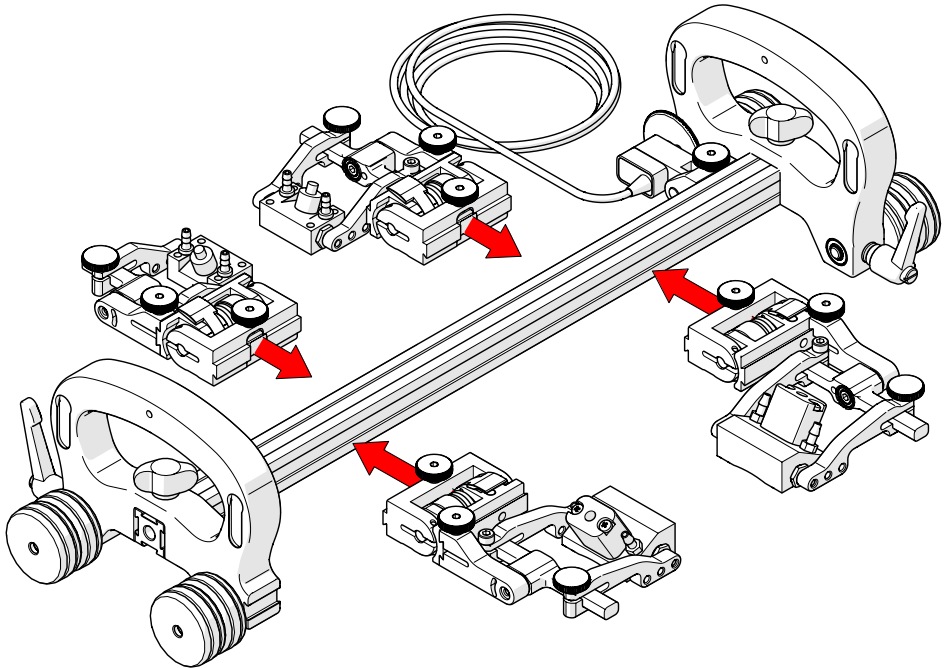


Fig. 83 - Attach probe holders to configuration

2. Assemble the appropriate configuration (Fig. 83). Attach the slip joint probe holders to the frame bar where appropriate.
3. Ensure the brakes are locked on the wheel blocks (see *Wheel Block with Handle* on page 14).

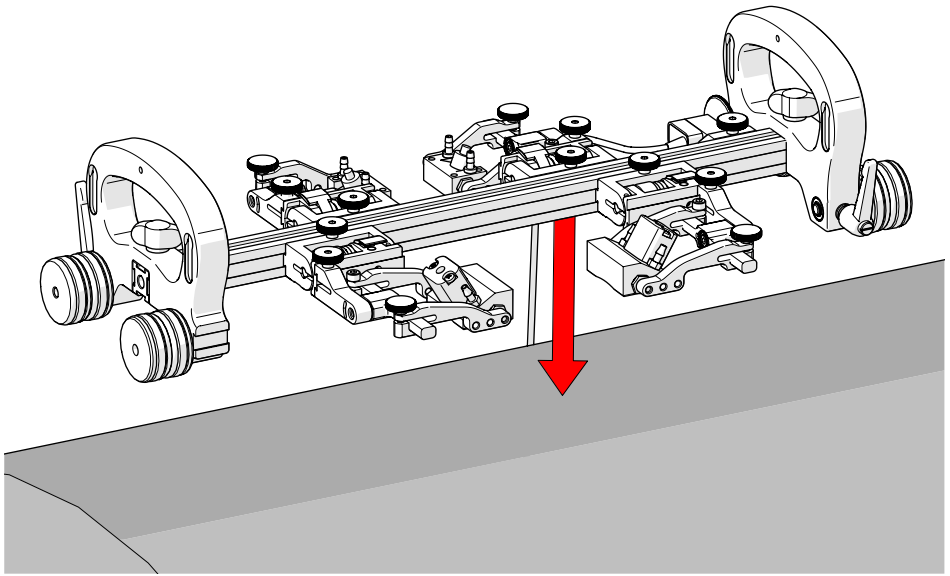


Fig. 84 - Place on scan surface

4. Place the configured **STIX** on the scan surface (Fig. 84).

**TIP:** Use caution when placing equipment on the scan surface. The magnetized wheels can cause the assembly to lurch towards the metal suddenly.

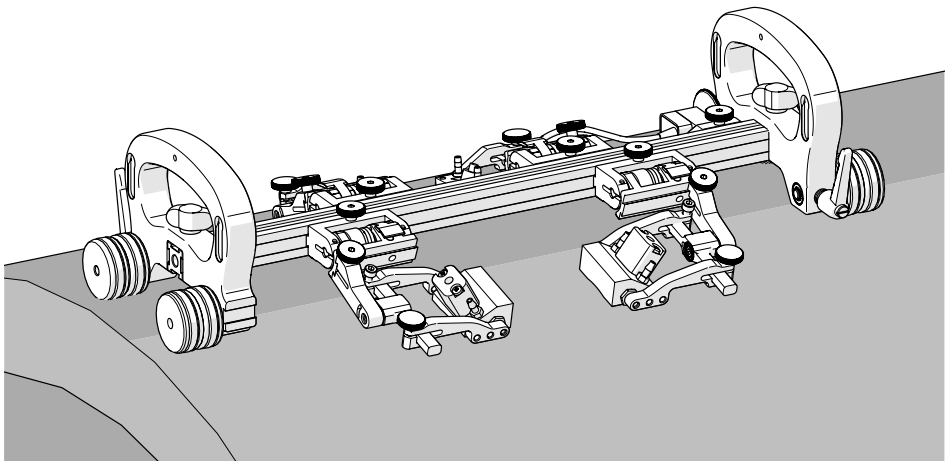


Fig. 85 - Prepared for scanning

5. Lower probe holders to the scan surface (see *Probe Holder Adjustment* on page 20). Release both brakes (see *Brakes* on page 14) to begin the scanning procedure.

## 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.

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 encoder is not functioning.	The instrument is not correctly set up.	Refer to the instrument's documentation regarding proper setup.
	An issue with the encoder.	Contact Jireh Industries for repair ( <i>contact Jireh Industries Ltd. on page 1</i> ).
Insufficient probe contact.	The scanner is not set correctly.	Reconfigure the scanner per instructions (see <i>Probe Holder Adjustment on page 20</i> ).
Magnetic wheels become loose.	Brakes are engaged.	Ensure the brakes are unlocked when using the scanner (see <i>Wheel Block with Handle on page 14</i> ).

### 8.1. Technical Support

For technical support, contact Jireh Industries (*contact 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 **STIX** system.  
(contact Jireh Industries Ltd. on page 1)

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

### 10.1. STIX Kit Components

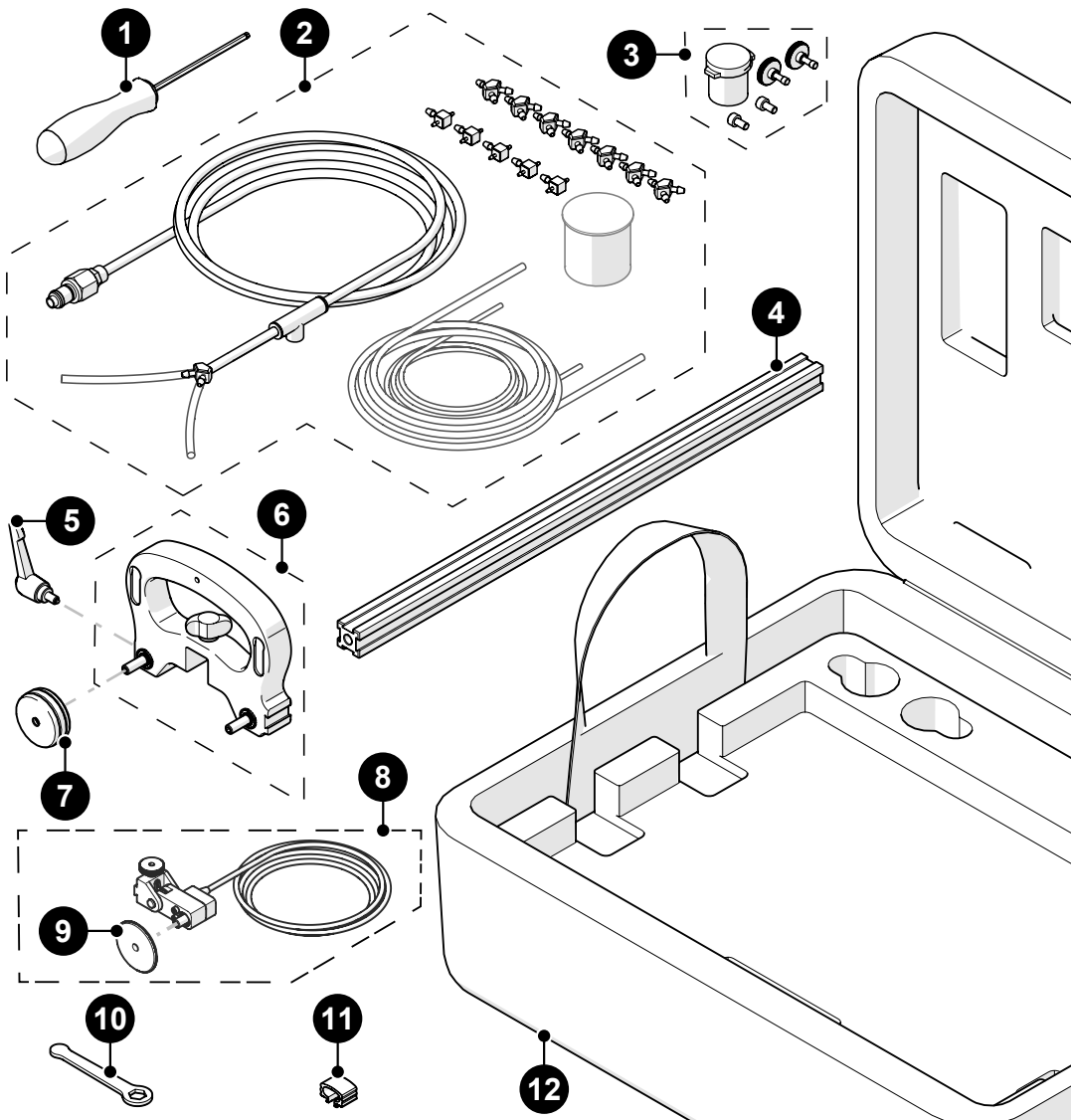


Fig. 86 - STIX kit components

BOM ID	Part #	Description
1	EA414	3 mm hex driver
2	CMG007	Irrigation kit, 2-4 probe
3	PHG014	2 probe spare parts kit
4	BG0038-40	Frame bar, 40 cm (15.7 in) (see frame bars)
5	BTS018	Brake handle
6	BGS058	Wheel block without brake handle (magnetic wheels not included)
7	BTS031	Magnetic wheel
8	BGS053-X-05	Spring-loaded encoder (see Encoder Connector Type)
9	BG0069	Encoder wheel, for spring-loaded encoder
10	EA470	3/8 in wrench
11	BG0091	Cable clip
12	BGA005	STIX case

#### 10.1.1. 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 for details)

# 10.2. High Temperature Kit Components

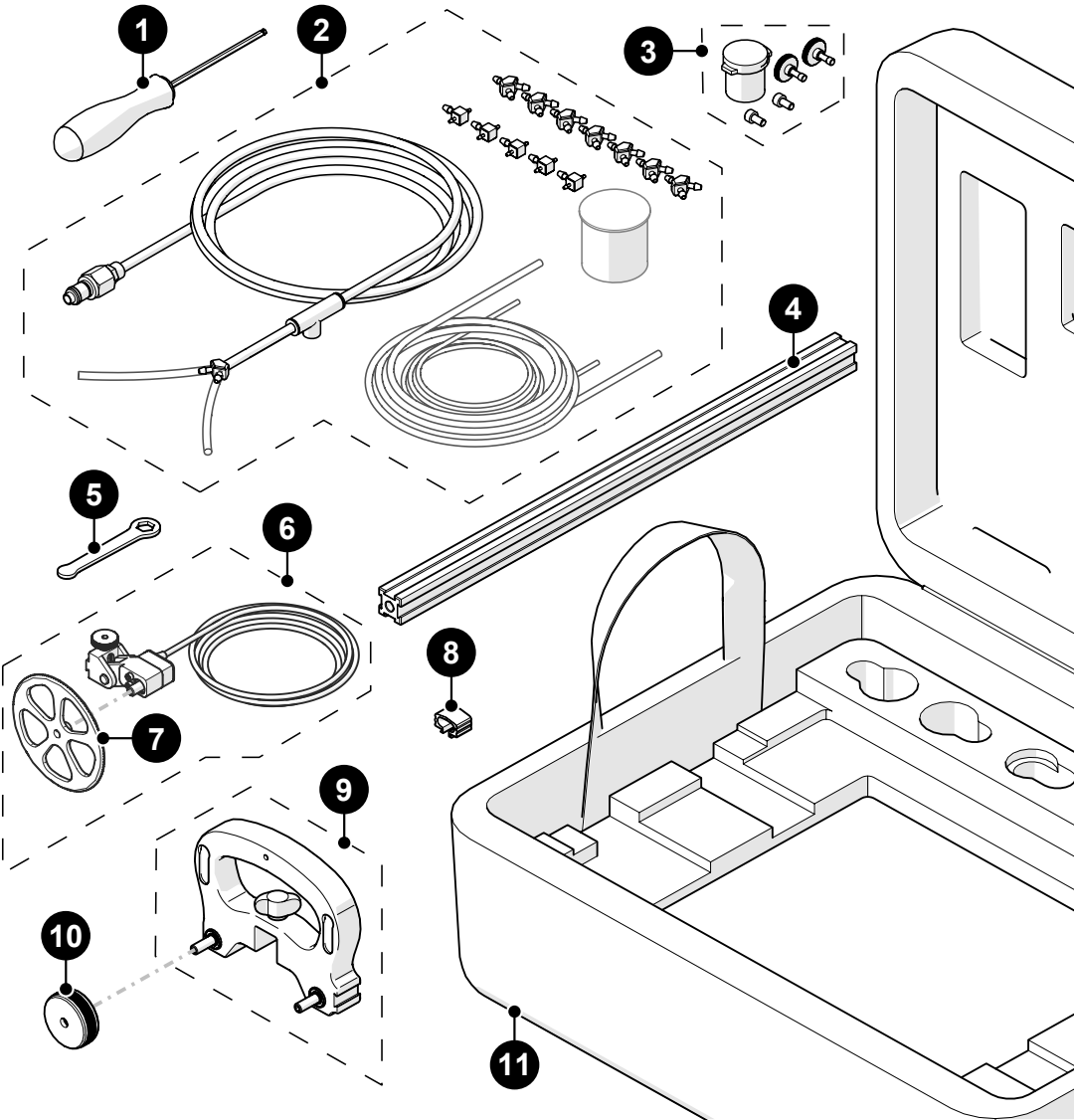


Fig. 87 - High temperature STIX kit components

BOM ID	Part #	Description
1	EA414	3 mm hex driver
2	CMG007	Irrigation kit, 2-4 probe
3	PHG014	2 probe spare parts kit
4	BG0038-40	Frame bar, 40 cm ( <i>see frame bars</i> )
5	EA470	3/8 in wrench
6	BGS071-	High temperature spring-loaded encoder ( <i>see Encoder Connector Type</i> )
7	BG0108	High temperature encoder wheel, for high temperature spring-loaded encoder
8	BG0091	Cable clip
9	BGS058	Wheel block with handle ( <i>HT magnetic wheels not included</i> )
10	BTS052	High temperature magnetic wheel
11	BGA005	STIX case

## 10.3. Accessories

### 10.3.1. Preamp Bracket

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

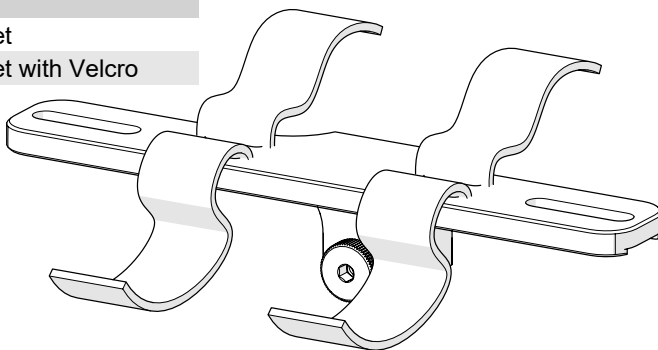
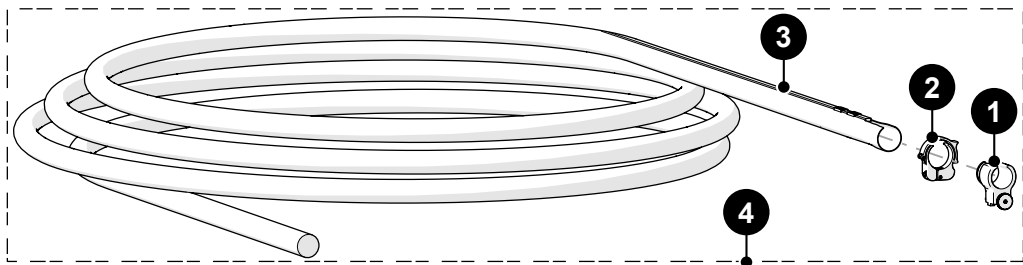


Fig. 88 - Preamp bracket

10.3.2. Cable Management



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. 89 - Cable management

10.3.2.1 Cable Management Length

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

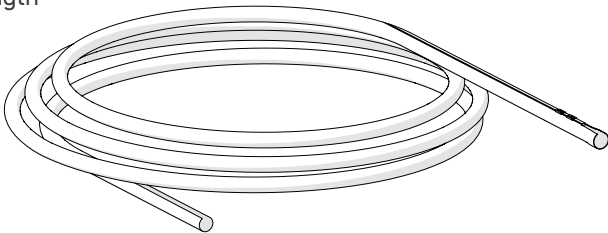
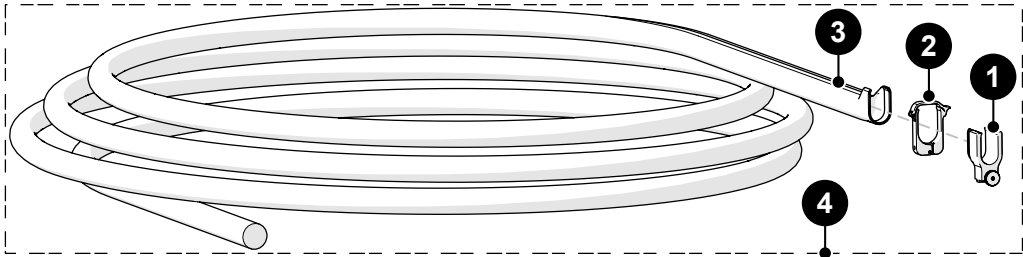


Fig. 90 - Cable management length

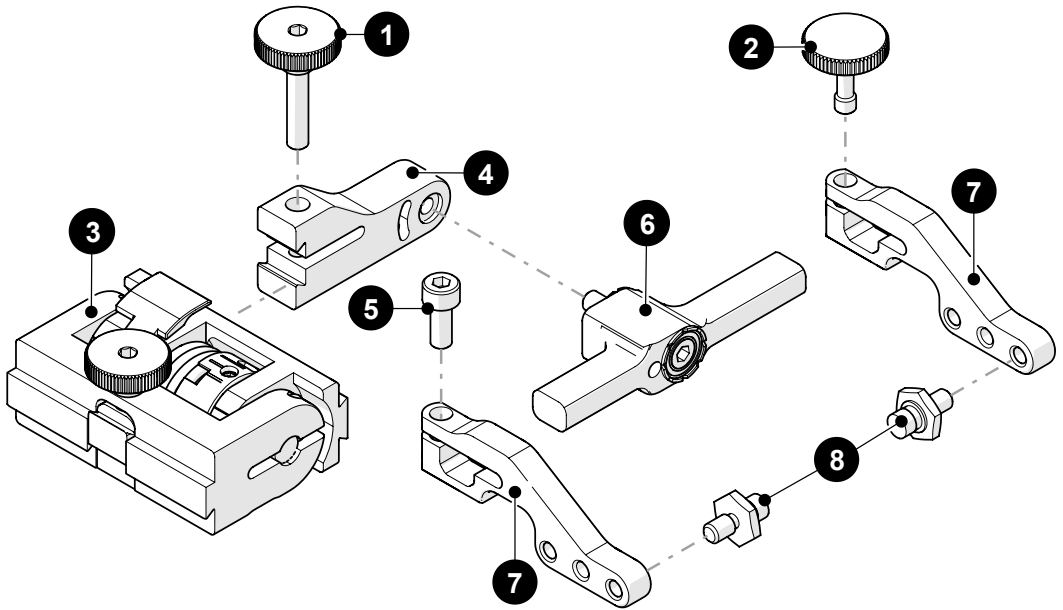
10.3.3. High Temperature Cable Management, Dovetail Mount



BOM ID	Part #	Description
1	CES090	High Temperature Cable Management Mount
2	CXS114	High Temperature Cable Management Clamp
3	CX0537-04.5	High Temperature Cable Management Sleeving, 4.5 m (14.8 ft)
4	CES089-04.5	High Temperature Cable Management, 4.5 m (14.8 ft)

Fig. 91 - High temperature cable management

## 10.4. Slip Joint Probe Holder



BOM ID	Part #	Description
1	PH0104	Knurled Knob, M4 x 0.7 x 18 mm, 4 mm stand off, SST
2	PH0082	Knurled Knob, M4 x 0.7 x 10 mm, 3 mm stand off, SST
3	PHS022	Slip Joint Probe Holder Subassembly
4	see <i>Swing Arm Style</i>	
5	MD050-010	SHCS, M4 x 0.7 x 10 mm, SST
6	see <i>Yoke Style</i>	
7	see <i>Arm Style</i>	
8	PH0011-__	Pivot Button Style (see <i>Pivot Button Style</i> )

Fig. 92 - Slip joint probe holder parts

## 10.5. Probe Holder Components

### 10.5.1. Arm Style



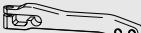







Arm Style	Part #		Arm Style	Part #	
<b>A</b> Standard, Flat	PH0090		<b>B</b> Short, Flat	PH0089	
<b>C</b> Long, Flat	PH0099		<b>D</b> Standard, Drop	PH0093	
<b>E</b> Short, Drop	PH0092		<b>F</b> Long, Drop	PH0094	
<b>G</b> Standard, Extra-Drop	PH0096		<b>H</b> Short, Extra-Drop	PH0095	
<b>I</b> Extra-Short, Flat	PH0159		<b>J</b> Extra-Short, Drop	PH0161	

Fig. 93 - Probe holder arm selection

### 10.5.2. Yoke Style

Yoke Style	Part #	Length		Yoke Style	Part #	Length	
<b>S</b> Standard	PHS052	6.3 cm (2.47 in)		<b>W</b> Wide	PHS063	7.9 cm (3.06 in)	

Fig. 94 - Probe holder yoke selection

### 10.5.3. Swing Arm Style

Swing Arm Style	Part #	Length		Swing Arm Style	Part #	Length	
Short	PH0069	4.1 cm (1.61 in)		Long	PH0100	4.6 cm (1.81 in)	

Fig. 95 - Swing arm selection

**NOTE:** Short swing arm only compatible with standard yoke style.

### 10.5.4. Pivot Button Style









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

Fig. 96 - Pivot button selection

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

# 10.6. Variable Components

## 10.6.1. Frame Bars












Part #	Length		Part #	Length	
BG0038-05	5 cm (1.97 in)		BG0038-10	10 cm (3.94 in)	
BG0038-15	15 cm (5.91 in)		BG0038-20	20 cm (7.87 in)	
BG0038-25	25 cm (9.84 in)		BG0038-30	30 cm (11.81 in)	
BG0038-35	35 cm (13.78 in)		BG0038-40	40 cm (15.75 in)	
BG0038-45	45 cm (17.72 in)		BG0038-50	50 cm (19.69 in)	
BG0038-55	55 cm (21.65 in)				

Fig. 97 - Frame bar selection



## 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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