



# STIX

BG0089 Rev 04.6  
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.



**DANGER!** 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.



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 28 for additional details).

## DISTRIBUTOR:

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# INTRODUCTION

## 1.1. Product information

### 1.1.1. Intended use

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

### 1.1.2. Performance specifications

	Minimum	Maximum
Pipe/Tube Range Outer Diameter	10.2 cm (4 in)	Flat
Pipe/Tube Range Inner Diameter	152.4 cm (60 in)	Flat
Umbilical Length (Standard Kit)	5 m (16.4 in)	
X Axis Encoder Resolution	9.05 counts/mm (230.0 counts/inch)	

### 1.1.3. Operating environment

The **STIX** is designed for use in industrial environments that are between  $-20^{\circ}\text{C}$  ( $-4^{\circ}\text{F}$ ) and  $50^{\circ}\text{C}$  ( $122^{\circ}\text{F}$ ).

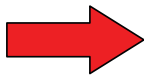
### 1.1.4. Environmental Sealing

Dust tight, water tight (*not submersible*).

## 1.2. Definition of symbols



Instructions to 'look here' or to 'see this part'.



Denotes movement. Instructing user to carry out action in a specified direction.



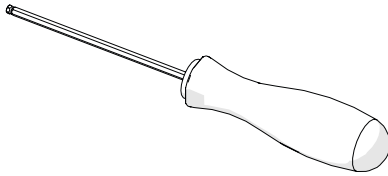
Indicates alignment axis, can also indicate insertion or movement of parts.



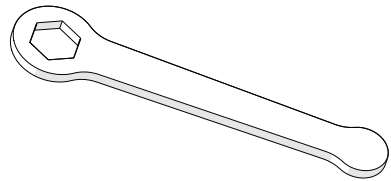
Alerts user that view has changed to a reverse angle.

## 1.3. Hardware

### 1.3.1. Included tools



**Fig. 1** - 3 mm hex driver

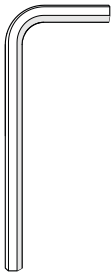


**Fig. 2** - 3/8 in wrench

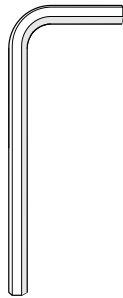
The 3 mm hex driver (*Fig. 1*) is sufficient for all typical operations and adjustments of the **STIX**. The 3/8 in wrench (*Fig. 2*) is used to remove and install buttons on the probe holders.

### 1.3.2. Optional tools

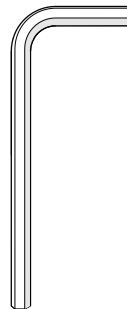
Some specialized adjustments require tools that are not included with this kit.



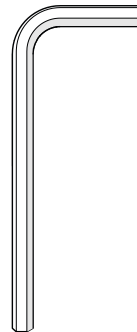
**Fig. 3** - 1.5 mm hex wrench



**Fig. 4** - 2 mm hex wrench



**Fig. 5** - 2.5 mm hex wrench



**Fig. 6** - 3 mm hex wrench

### 1.3.3. 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.

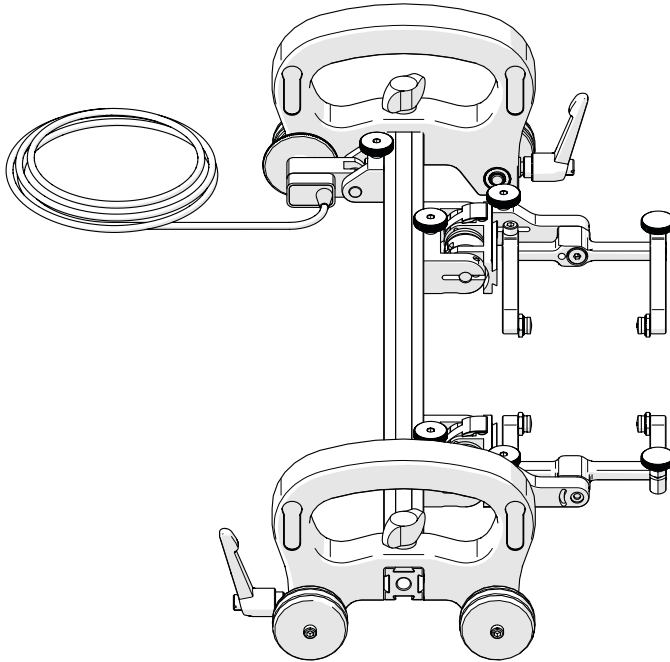
Before using the scanner, ensure all connectors are free of water and moisture.

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

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

# CONFIGURATIONS

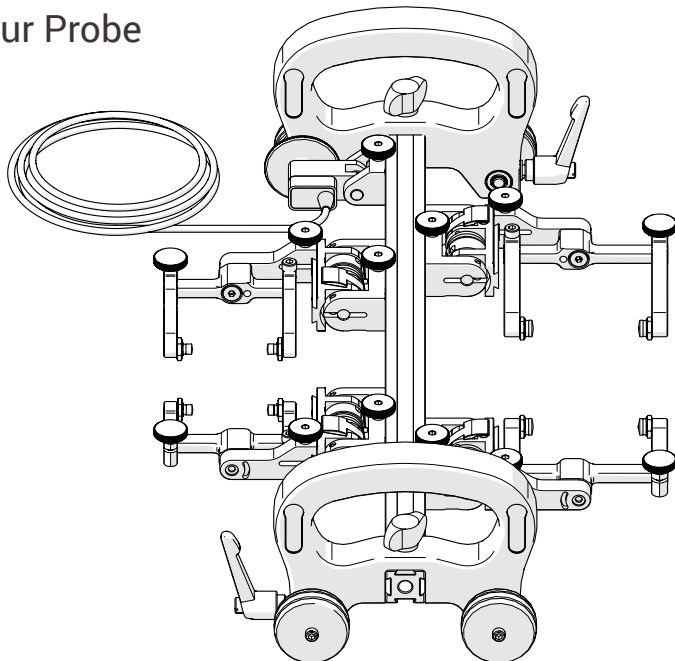
## 2.1. Two Probe Phased Array



**Fig. 7** - Two probe phased array configuration

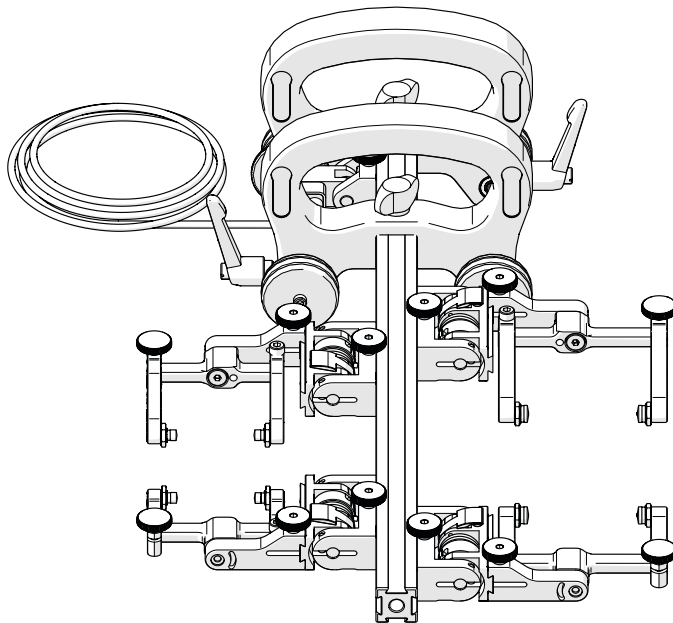


## 2.2. Four Probe



*Fig. 8* - Four probe configuration

## 2.3. Four Probe Cantilever



*Fig. 104* - Four probe cantilever configuration

# OPERATION

## 3.1. 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 11).

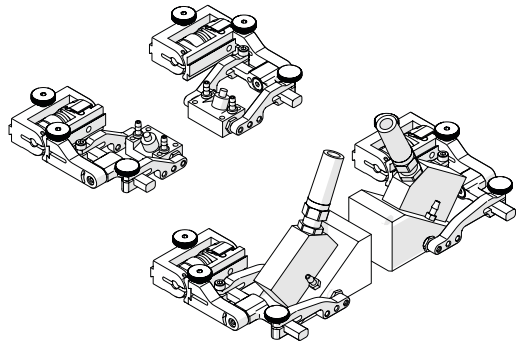


Fig. 9 - Mount wedges to probe holders

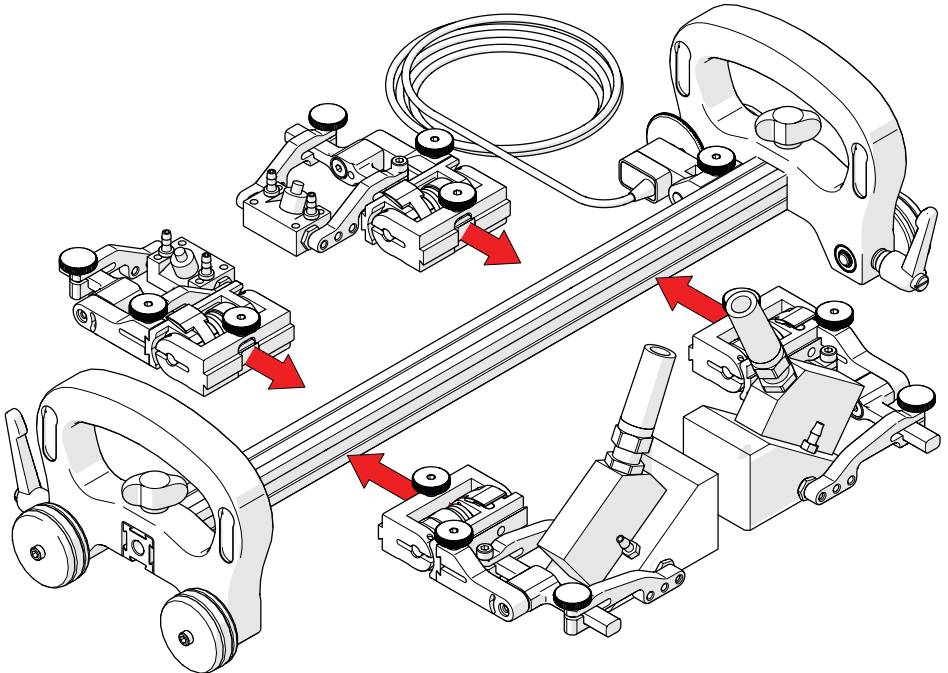


Fig. 10 - Attach probe holders to configuration

2. Assemble the appropriate configuration (Fig. 10). 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 7).

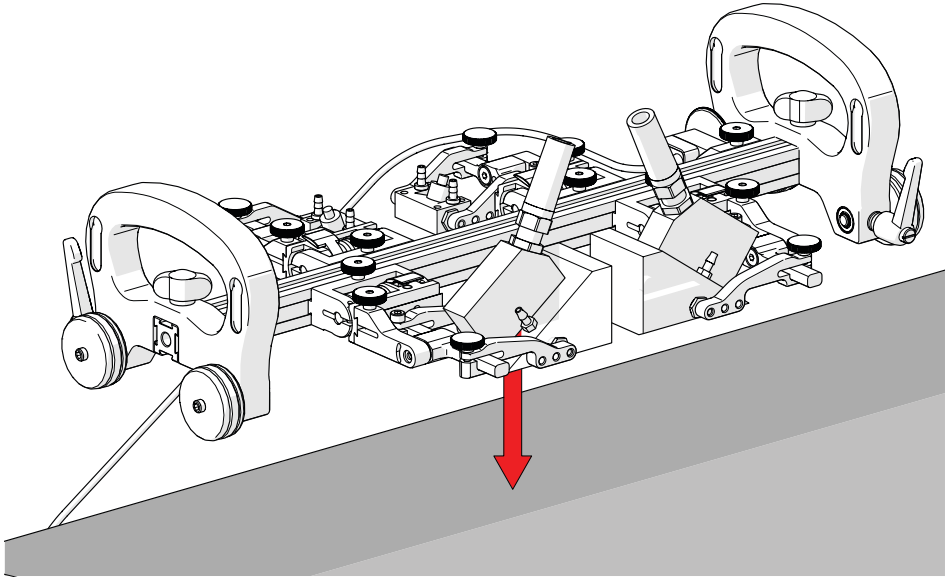


Fig. 11 - Place on scan surface

4. Place the configured **STIX** on the scan surface (Fig. 11).

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

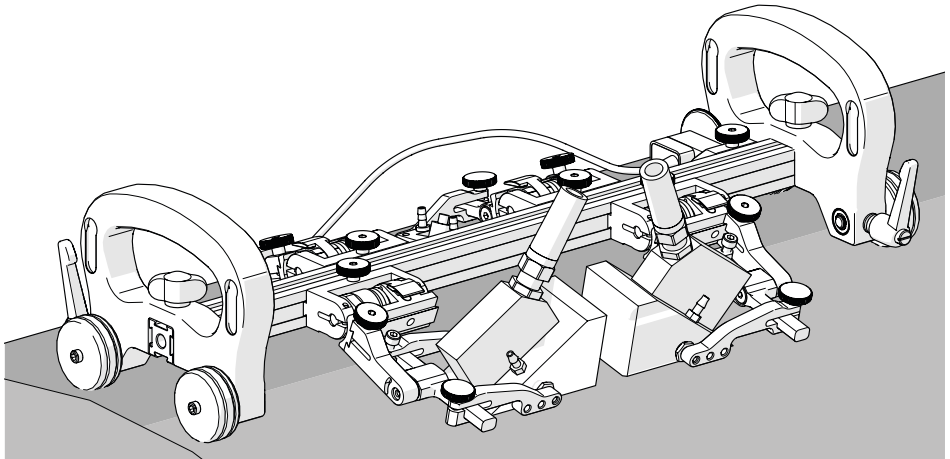


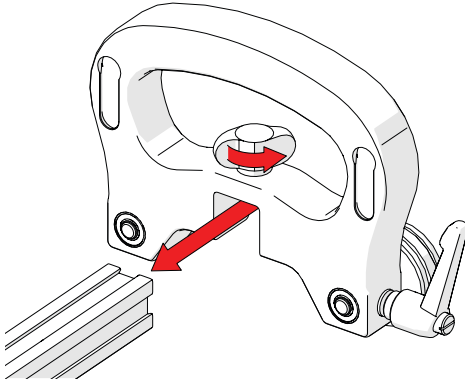
Fig. 12 - Prepared for scanning

5. Lower probe holders to the scan surface (see *Probe Holder Adjustment* on page 13), Release both brakes to begin scanning procedure.

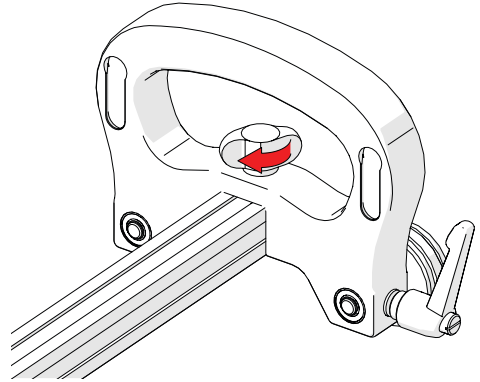
# COMPONENT OVERVIEW

## 4.1. Wheel Block with Handle

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



**Fig. 13** - Attach to a frame bar



**Fig. 14** - Tighten knob

The ratchet lever located on the wheel block operates a brake (see *Ratchet Lever* on page 8).

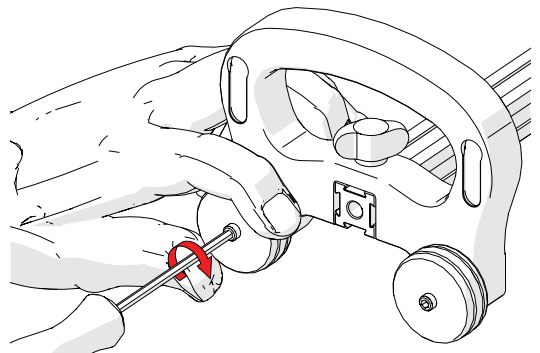
Four mounting points for cable management are located on the wheel block handle. (see *Vertical Probe Holder* on page 17)

Attach a wheel block by loosening the black wing knob and sliding the wheel block's dovetail nut onto a frame bar (Fig. 13). Tighten the black wing knob (Fig. 14).

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

### 4.1.1. Wheel Installation

1. Locate and position the threaded side of the magnetic wheel to the outside of the scanner.
2. Screw the magnetic wheel along the entire length of the axle.
3. Grip the magnetic wheel by hand and using the supplied 3 mm hex driver (Fig. 1), tighten the magnetic wheel to the axle (Fig. 15).



**Fig. 15** - Wheel installation

#### 4.1.2. Wheel Removal

1. Tightly grip the magnetic wheel to be removed. Using the 3 mm hex driver, loosen the magnetic wheel from the axle (Fig. 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.

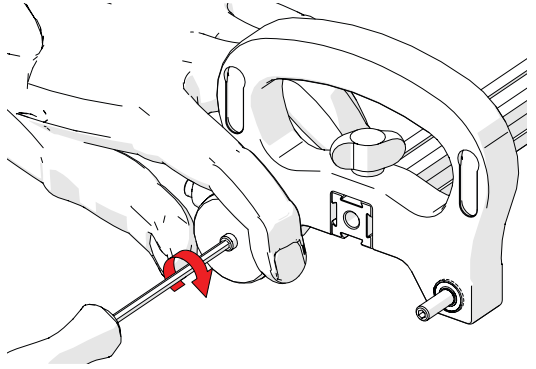


Fig. 16 - Wheel removal



**WARNING! MAGNETIC MATERIAL.** The stabilizer wheel uses a magnetic wheel. People with pacemakers or ICD's must stay at least 25 cm (10 in) away.

#### 4.1.3. 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:

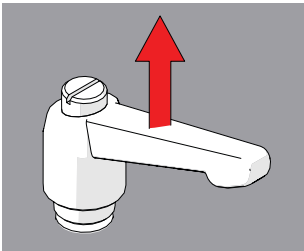


Fig. 17 - Pull ratchet handle

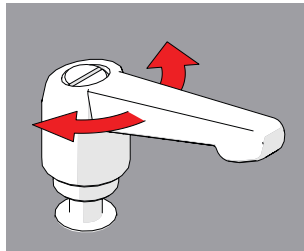


Fig. 18 - Rotate handle

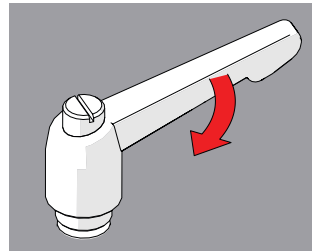


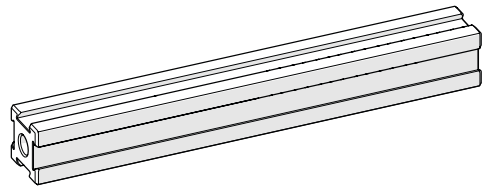
Fig. 19 - Tighten handle

1. Pull the ratchet lever away from the base of which it is connected (Fig. 17).
2. Continue to pull while rotating the lever in the appropriate direction (Fig. 18).
3. Release the lever and utilize the new tightening position (Fig. 19).

## 4.2. Frame Bar

Frame bars (*Fig. 20*) are used to mount probe holders, probe positioning systems and other accessories (see *Frame Bars on page 35*).

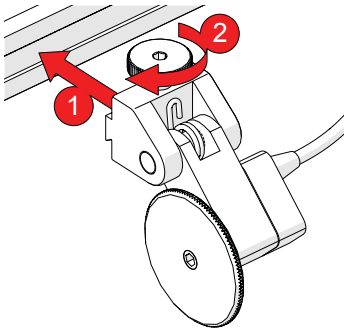
Frame bars are available in a variety of lengths.



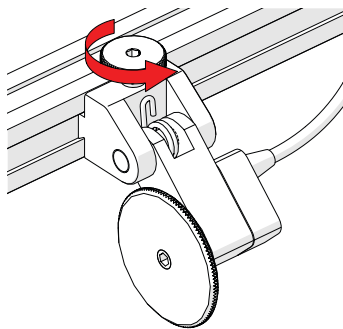
**Fig. 20** - Frame bar

## 4.3. Trailing Encoder

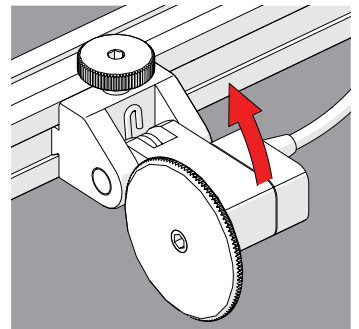
The spring loaded encoder wheel provides vertical travel while maintaining contact pressure to the scan surface. To install the encoder follow these steps:



**Fig. 21** - Attach to frame bar



**Fig. 22** - Tighten knob



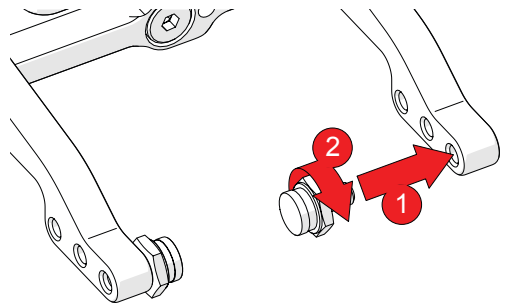
**Fig. 23** - Place on scan surface

1. Loosen the encoder's dovetail jaw and mount to the frame bar (*Fig. 21*).
2. Tighten the encoder knob (*Fig. 22*).
3. Spring tension maintains encoder contact with the scan surface (*Fig. 23*).

## 4.4. Pivot Buttons

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

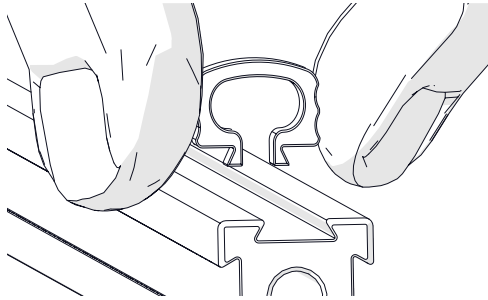
Use the supplied 3/8 in wrench (*Fig. 2*) to remove and install pivot buttons (*Fig. 24*).



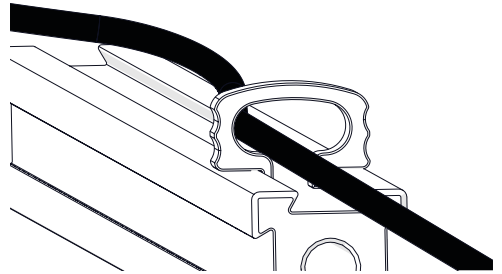
**Fig. 24** - Pivot buttons

## 4.5. Cable Clips

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



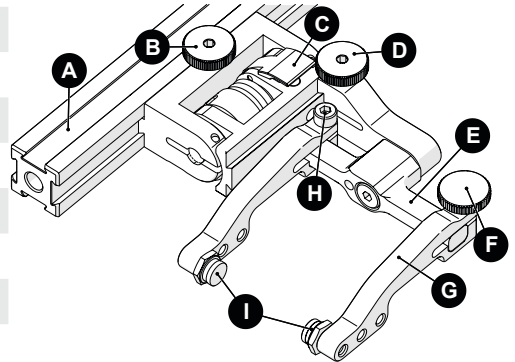
*Fig. 25 - Pinch clip*



*Fig. 26 - Route cables*

## 4.6. Slip Joint Probe Holder

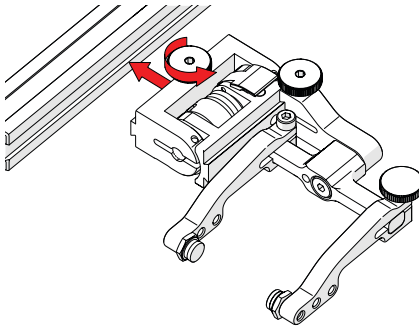
- A** Frame Bar
- B** Probe Holder Adjustment Knob
- C** Latch
- D** Swing Arm Knob
- E** Yoke
- F** Probe Holder Arm Adjustment Knob
- G** Probe Holder Arm
- H** Arm Clamp Screw
- I** Pivot Buttons



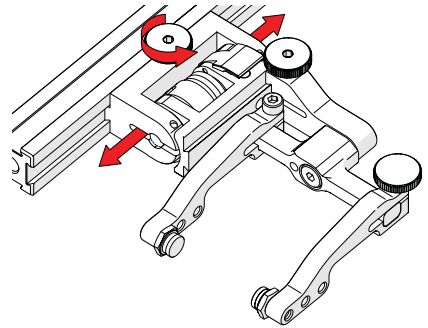
**Fig. 27** - Slip Joint Probe Holder

### 4.6.1. Probe Holder Setup

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

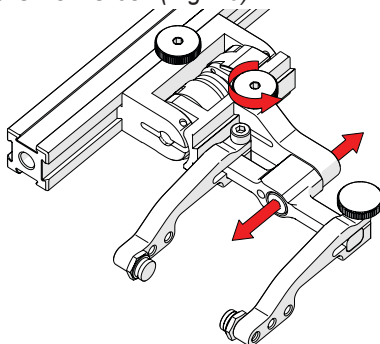


**Fig. 28** - Attach to frame bar

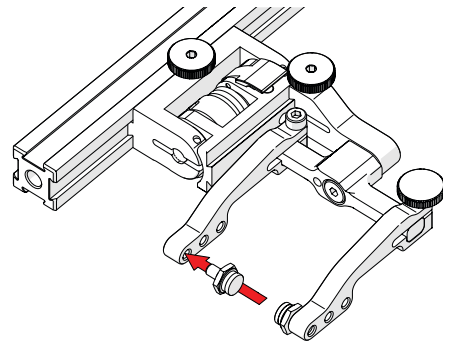


**Fig. 29** - Adjust on frame bar

- 1.** Rotate the probe holder adjustment knob and attach probe holder to a frame bar (*Fig. 28*).
- 2.** Use the probe holder adjustment knob to position the probe holder along the frame bar (*Fig. 29*).



**Fig. 30** - Adjust swing arm



**Fig. 31** - Place pivot buttons



3. Use swing arm knob to position the swing arm (Fig. 30).

**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. 30).

4. Using the supplied 3/8 in wrench (Fig. 2), place the pivot buttons as required (Fig. 31).

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

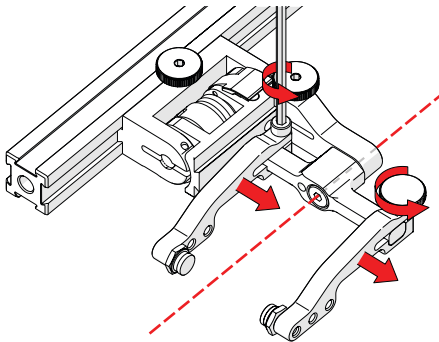


Fig. 32 - Adjust probe holder arms

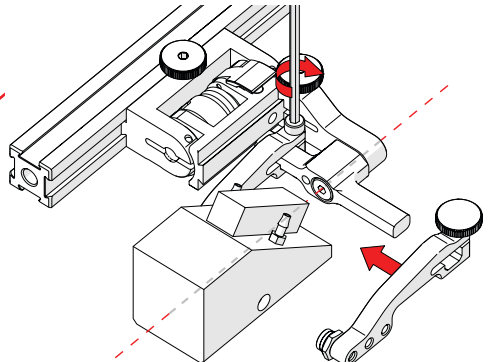


Fig. 33 - Place wedge

5. Loosen the probe holder arm adjustment knob (Fig. 32) and remove outer probe holder arm from yoke.
6. Adjust inner probe holder arm as required to best centre the probe on the yoke's pivot axis (Fig. 32).

**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. 32).

7. Position the wedge on the inner probe holder arm (Fig. 33).
8. Slide outer probe holder arm along the yoke pinching the wedge in place.
9. Tighten probe holder arm adjustment knob (Fig. 34).

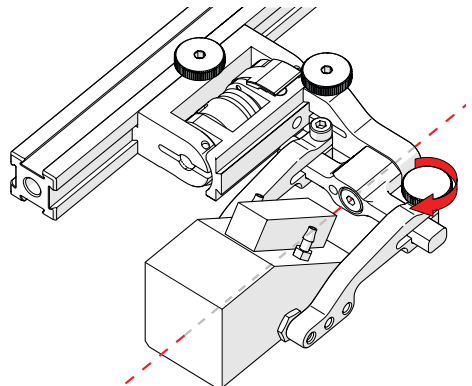


Fig. 34 - Pinch wedge with arm

## 4.6.2. Probe Holder Adjustment

To adjust the probe holder, follow these steps:

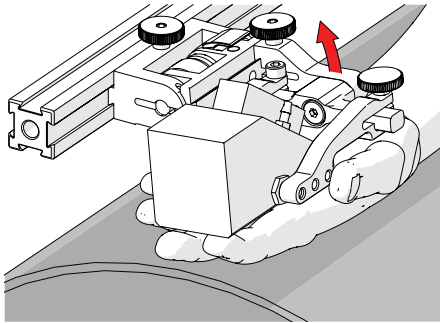


Fig. 35 - Lift to Latched position

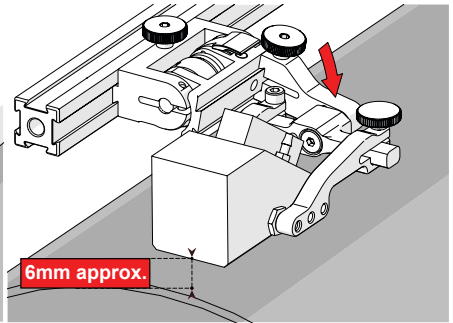


Fig. 36 - Lower to scanning surface

1. Ensure probe holder is in latched, upper position (Fig. 35). 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 inspection surface until the wedge is approximately 6 mm ( $\frac{1}{4}$  in) above the inspection surface (Fig. 36).

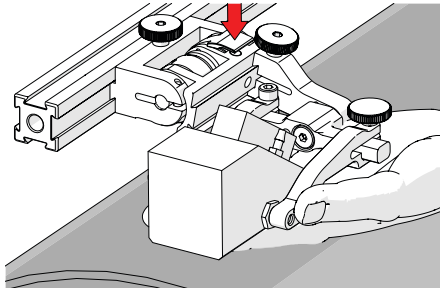


Fig. 37 - Lift and press latch button

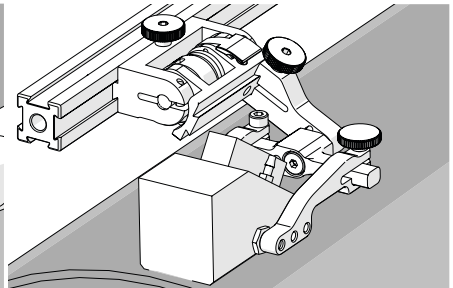


Fig. 38 - Spring loaded scan position

3. Lift probe slightly and press latch button (Fig. 37) to apply spring pressure to the wedge.
4. Gently lower probe holder and wedge to the scanning surface (Fig. 38).

## 4.6.3. Probe Holder Force Adjustment

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

**NOTE:** To perform this operation the 2 mm hex wrench (Fig. 4) and 3 mm hex wrench (Fig. 6) is required.

<b>Light</b>	1 kg	2 lb	When configured correctly, these settings exert the indicated spring force on the Probe.
<b>Medium</b>	2 kg	4 lb	
<b>Heavy</b>	3 kg	6 lb	

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

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

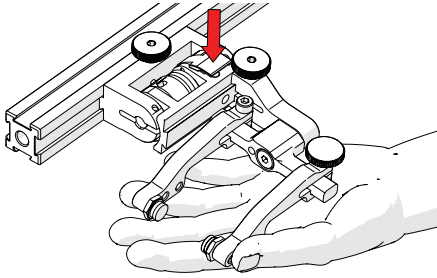


Fig. 39 - Lift slightly and press Latch

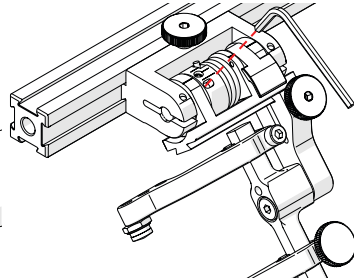


Fig. 40 - Unlatched position

1. Ensure the probe holder is in the upright latched position (Fig. 35).
2. Lift probe holder slightly and press the latch button (Fig. 39) 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. 40).

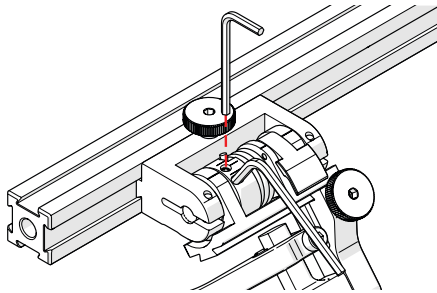


Fig. 41 - Insert hex wrenches

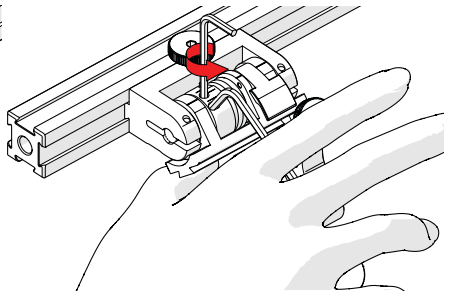


Fig. 42 - Press 3 mm hex wrench down

4. Place the 2 mm hex wrench into the force adjustment screw (Fig. 41).
5. Lightly press the long leg of the 3 mm hex wrench down. Using the 2 mm hex wrench, loosen the force adjustment screw but do not remove it (Fig. 42).
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. 43).

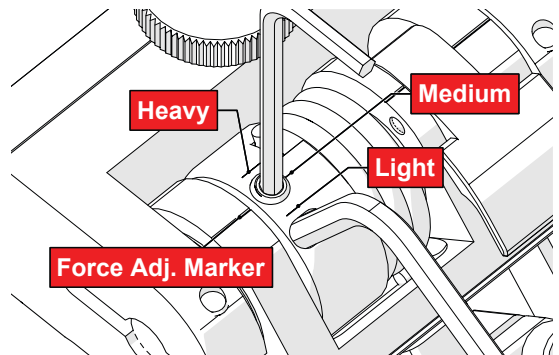
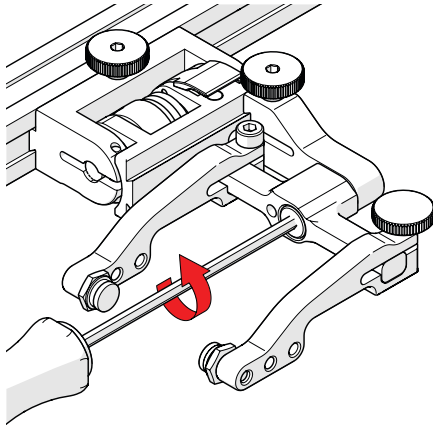


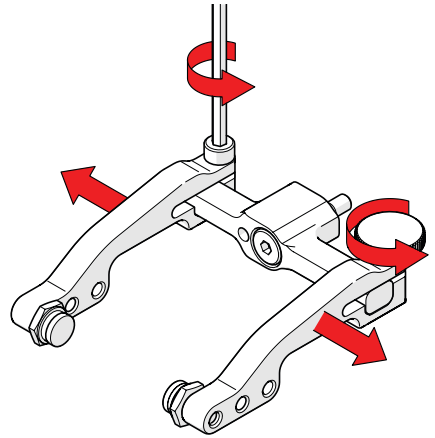
Fig. 43 - Choose desired tension

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

To reverse the probe holder, follow these steps:

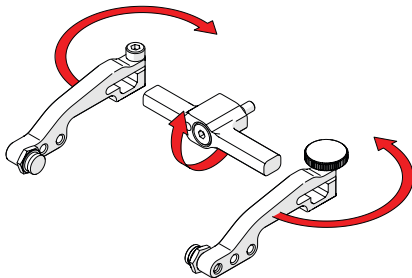


**Fig. 44** - Unscrew yoke pivot screw

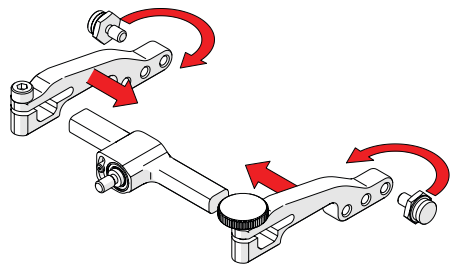


**Fig. 45** - Remove arms

1. Unscrew the yoke from the swing arm (*Fig. 44*).
2. Loosen the probe holder arm adjustment knob and arm clamp screw. Slide the arms from the yoke (*Fig. 45*).

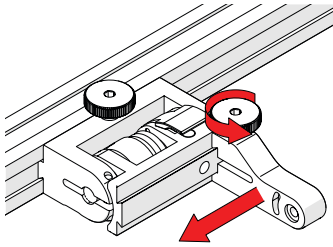


**Fig. 46** - Flip yoke and reverse arms

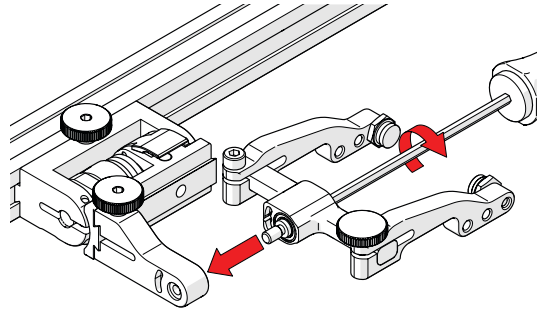


**Fig. 47** - Attach arms and move buttons

3. Flip the yoke 180° and reverse the probe holder arms (*Fig. 46*).
4. Place the pivot buttons on the inside of the probe holder arms (*Fig. 47*) using a 3/8 in wrench (*Fig. 2*). Slide the arms onto the yoke and tighten the probe holder arm adjustment knob and the arm clamp screw.

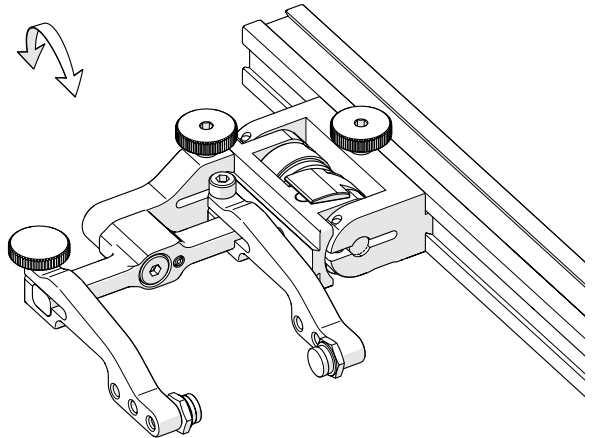


**Fig. 48** - Position swing arm



**Fig. 49** - 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. 48*) or preferred position. Tighten 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. 49*). Ensure the yoke is level to avoid issues with the plunger/set screw.



**Fig. 50** - Reversed probe holder

## 4.7. Vertical Probe Holder

- A** Latch
- B** Probe Holder Adjustment Knob
- C** Vertical Adjustment Knob
- D** Pivot Buttons
- E** Probe Holder Arms
- F** Yoke
- G** Probe Holder Arm Adjustment Knob
- H** Transverse Adjustment Screw
- I** Frame Bar

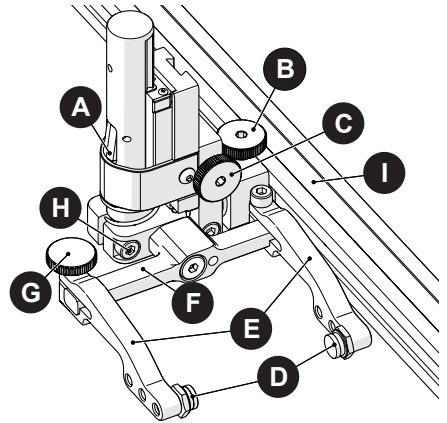


Fig. 51 - Vertical probe holder

### 4.7.1. Probe Holder Setup

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

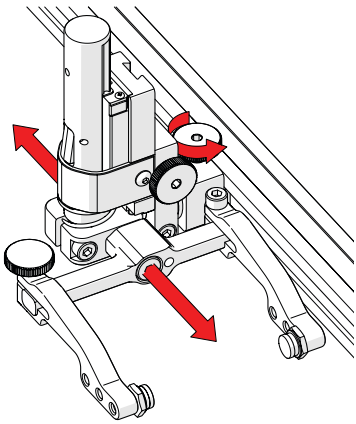


Fig. 52 - Adjust on frame bar

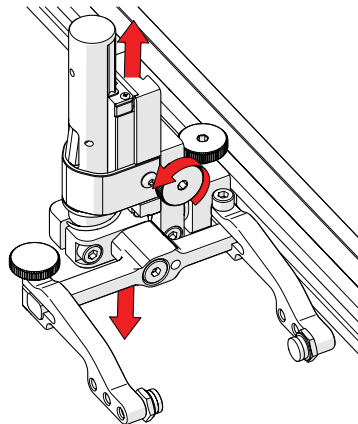


Fig. 53 - Vertical adjustment

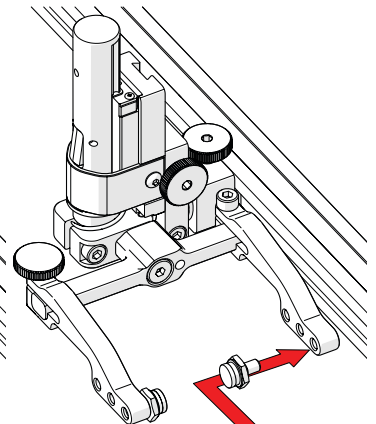


Fig. 54 - Place buttons

1. The probe holder adjustment knob allows the probe holder to be attached to a frame bar, as well as horizontal positioning on a frame bar (Fig. 52).
2. Vertical adjustment knob allows the vertical probe holder height adjustment (Fig. 53).
3. Position the pivot buttons where necessary. When a narrow scanning footprint is required, use the pivot button holes closest to the yoke (Fig. 54).

**TIP:** Probe pivoting may be impeded when closer to the yoke.

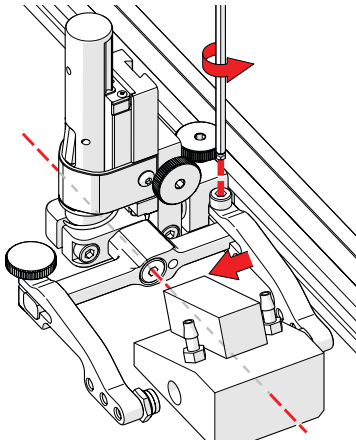


Fig. 55 - Adjust inner arm

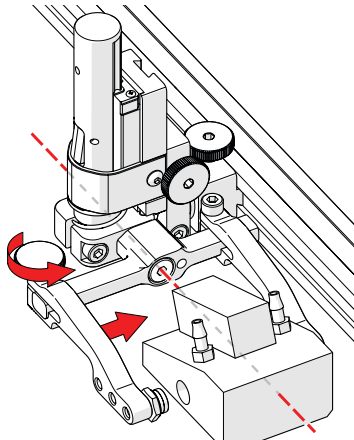


Fig. 56 - Adjust outer arm

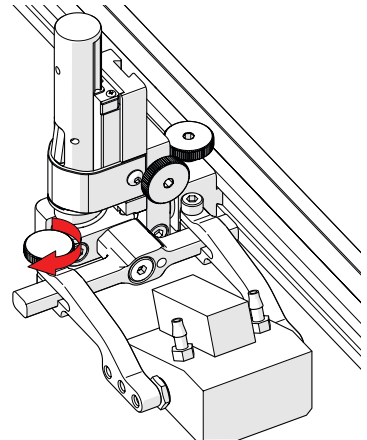


Fig. 57 - Tighten arm knob

4. Position the wedge on the inner probe holder arm (Fig. 55).

**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. This can reduce wedge tipping when scanning. Position the inner probe holder arm accordingly (Fig. 55) using the supplied 3 mm hex driver (Fig. 1).

5. Loosen the probe holder arm adjustment knob (Fig. 56) and slide the probe holder arm along the yoke pinching the wedge in place.
6. Tighten the probe holder arm adjustment knob (Fig. 57).

#### 4.7.2. Probe Holder Vertical Adjustment

To adjust the probe holder vertically, follow these steps:

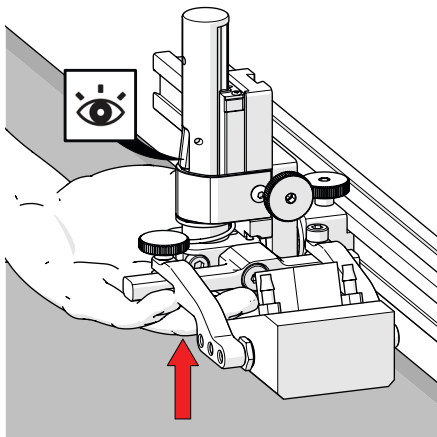


Fig. 58 - Latch probe holder

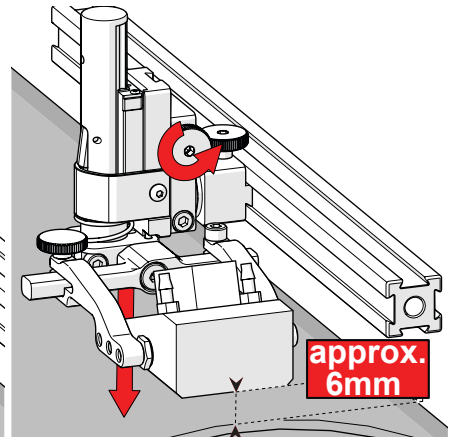


Fig. 59 - Lower toward scan surface

1. Ensure the probe holder is in the latched, upper position. Lift the probe holder until the latch is fully exposed and snaps out to lock (Fig. 58).

2. Loosen the vertical adjustment knob and slide the probe holder down until the wedge is approximately 6 mm ( $\frac{1}{4}$  in) above inspection surface (Fig. 59).
3. Tighten the vertical adjustment knob (Fig. 59).

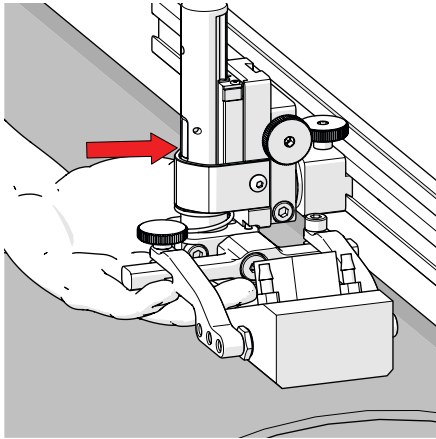


Fig. 60 - Press latch button

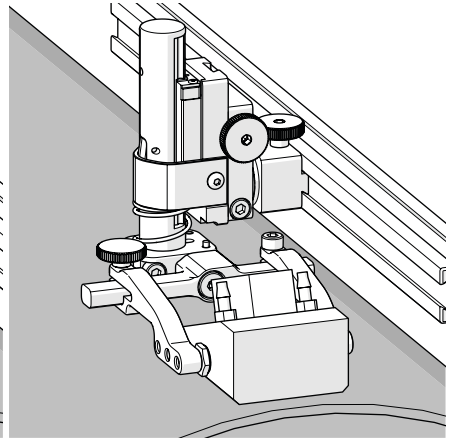


Fig. 61 - Lower toward scan surface

4. Lift the yoke slightly and press the latch button (Fig. 60), then slowly lower towards scanning surface to apply spring pressure to the wedge (Fig. 61).

**TIP:** If less spring force is desired, refer to step 2 and place the wedge approximately 20 mm ( $\frac{3}{4}$  in) above inspection surface.

#### 4.7.3. Probe Holder Transverse Adjustment

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

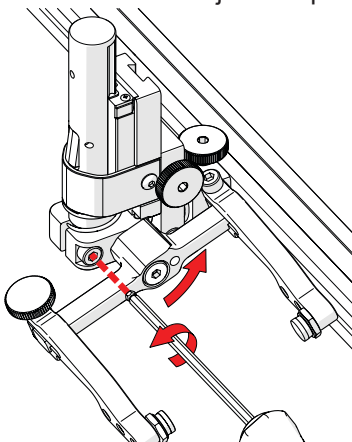


Fig. 62 - Loosen 3 mm screw

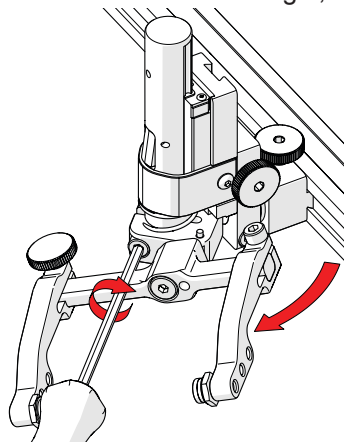


Fig. 63 - Rotate and tighten

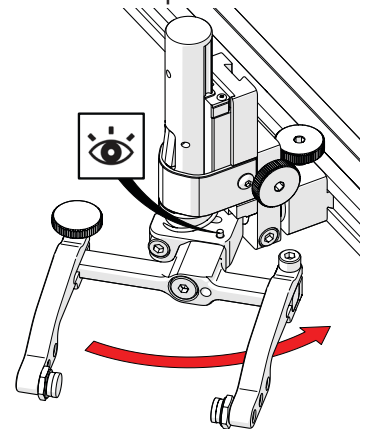


Fig. 64 - Stop post locates 90°

1. Ensure the probe holder is in latched, upper position (Fig. 58).

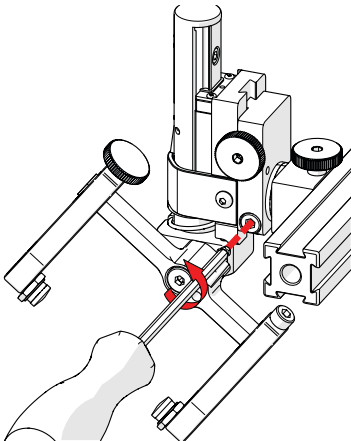


2. Using the supplied 3 mm hex driver loosen the transverse adjustment screw (*Fig. 62*) and rotate the yoke about the vertical shaft achieving the desired angle.
3. Tighten the transverse adjustment screw (*Fig. 63*).

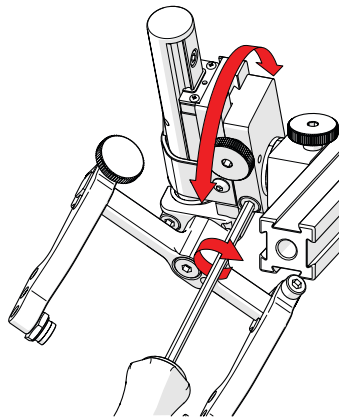
To return the transverse adjustment to neutral (90°). The probe holder must be in the latched, upper position (*Fig. 58*). Rotate the yoke until the stop post contacts the base of the probe holder (*Fig. 64*). Then tighten the transverse adjustment screw.

#### 4.7.4. Probe Holder Longitudinal Adjustment

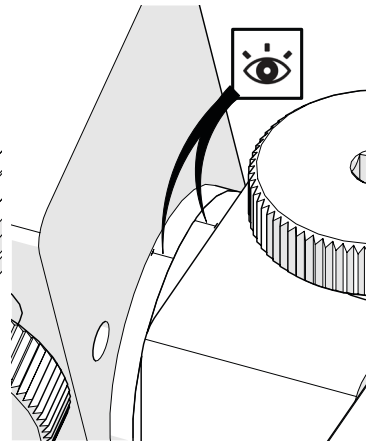
To adjust the probe holder's vertical angle for longitudinal scanning, follow these steps:



**Fig. 65** - Loosen 3 mm screw



**Fig. 66** - Rotate to position



**Fig. 67** - Line up markers

1. Ensure the probe holder is in latched, upper position (*Fig. 58*).
2. Using the supplied 3 mm hex driver (*Fig. 1*), loosen the longitudinal adjustment screw (*Fig. 65*).
3. Rotate the main body of the probe holder until it is at the desired angle (*Fig. 66*).
4. Tighten the longitudinal adjustment screw (*Fig. 66*).

To return the longitudinal adjustment to neutral (90°). Line up the longitudinal adjustment indicator markers (*Fig. 67*).

#### 4.7.5. Probe Holder Left/Right Conversion

To reverse the probe holder, follow these steps:

**NOTE:** To perform this operation the 1.5 mm hex wrench (Fig. 3) is required.

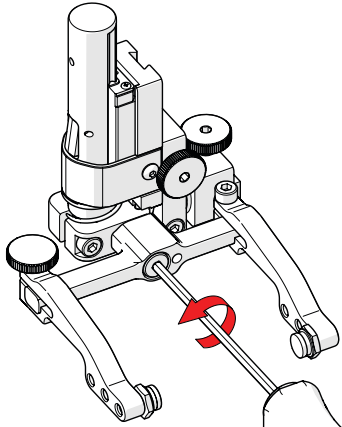


Fig. 68 - Unscrew yoke pivot screw

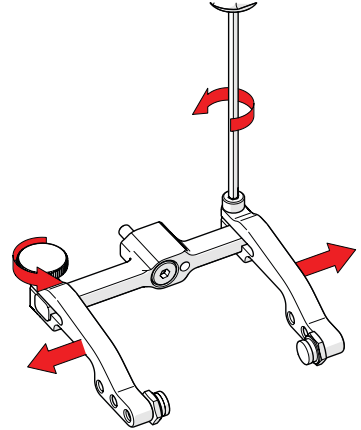


Fig. 69 - Remove probe holder arms

1. Ensure the probe holder is in latched, upper position (Fig. 58).
2. Using the supplied 3 mm hex driver (Fig. 1), unscrew the yoke pivot screw and remove yoke (Fig. 68).
3. Loosen the probe holder arm adjustment knob and the arm clamp screw. Slide the probe holder arms off the yoke (Fig. 69).

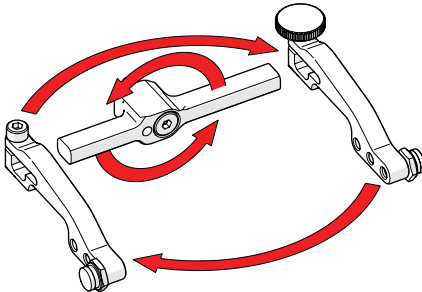


Fig. 70 - Flip yoke and reverse arms

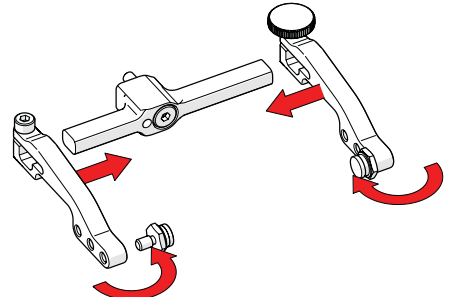


Fig. 71 - Attach arms & move buttons

4. Flip the yoke 180° and reverse the probe holder arms (Fig. 70).
5. Place the pivot buttons on the inside of the probe holder arms (Fig. 71) using a 3/8 in wrench (Fig. 2).

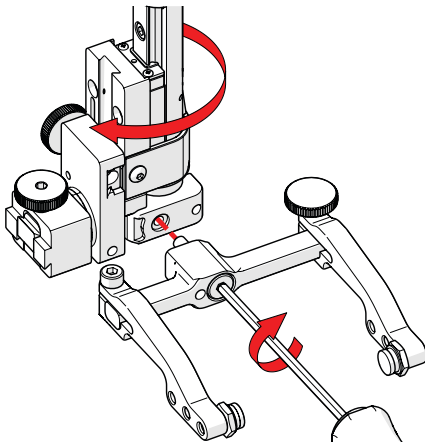


Fig. 72 - Screw yoke to opposite side

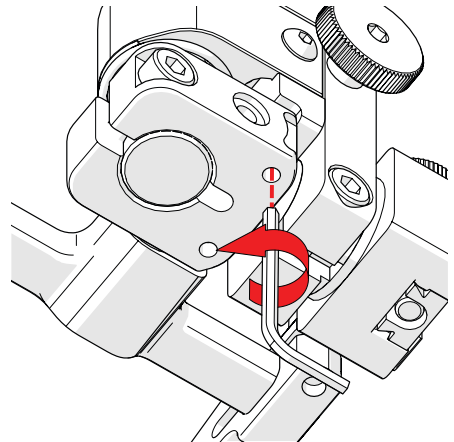


Fig. 73 - Lower 90° stop post

6. Mount the yoke to the opposite side of the base using the supplied 3 mm hex driver (Fig. 72).

**TIP:** Keep the yoke level with the base as to ensure no conflicts with the plunger/set screw attached to the yoke.

7. Locate the recessed M3 screw (stop post) on the bottom of the probe holder. Unscrew the stop post using a 1.5 mm hex wrench until it has cleared all obstructions. Do not remove stop post (Fig. 73).

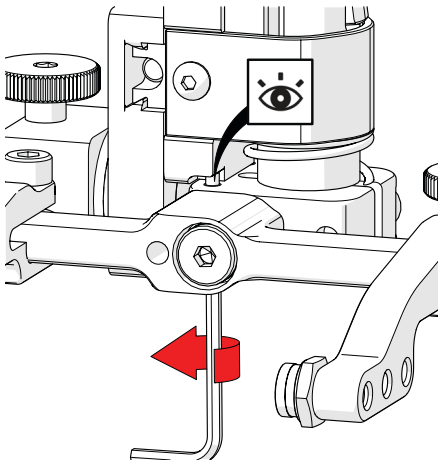


Fig. 74 - Raise opposite 90° stop post

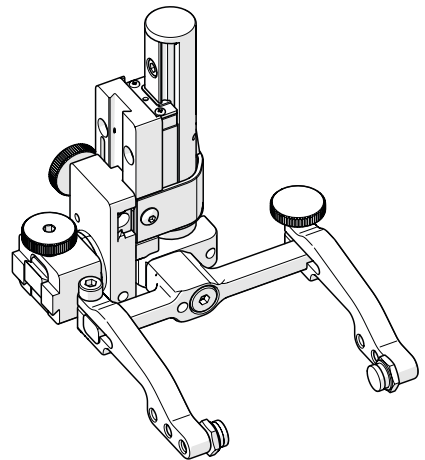
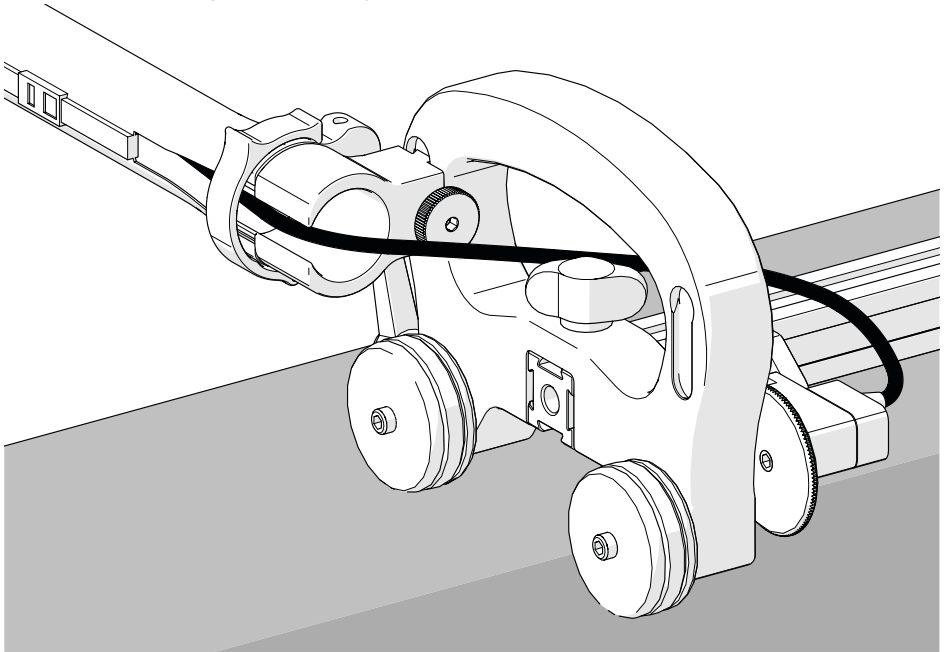


Fig. 75 - Reversed probe holder

8. Raise the stop post on the opposite side until the side of the post clearly contacts the 90° stop point on the probe holder's base (Fig. 74).

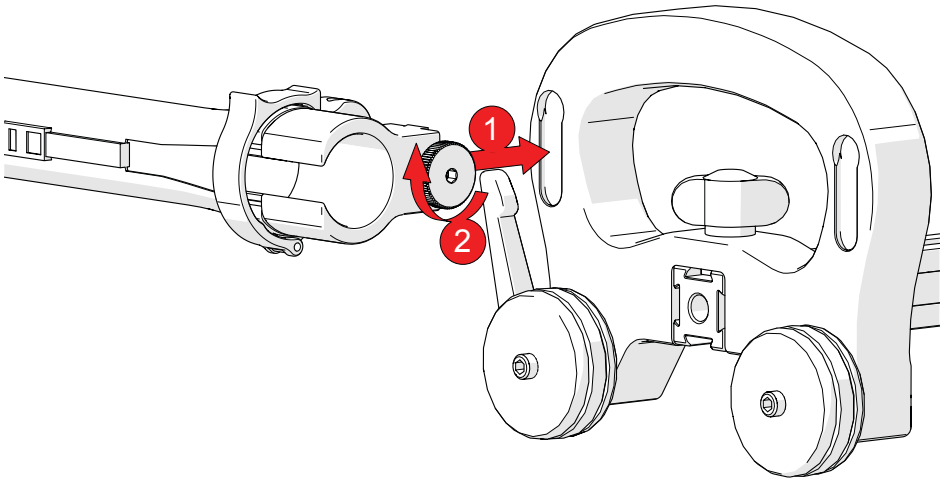
## 4.8. Cable Management System



**Fig. 76** - Cable management

### 4.8.1. Zipper Tube Dovetail Mount

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

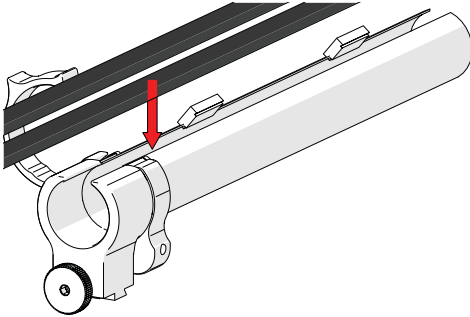


**Fig. 77** - Cable management

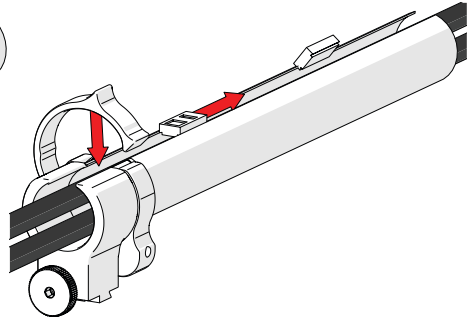
1. Loosen the knob on the zipper tube dovetail mount. Attach the mount onto the dovetail link (*Fig. 77-1*).
2. Once centred on the dovetail link, tighten the zipper tube's knob (*Fig. 77-2*).

#### 4.8.2. Zipper Tube Setup

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

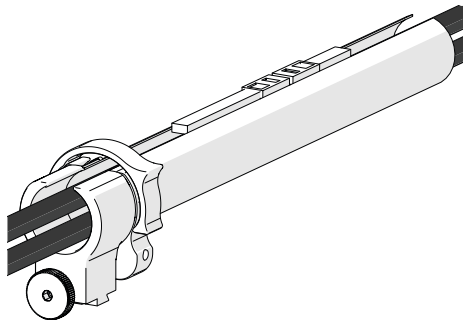


*Fig. 78* - Insert cables and hoses

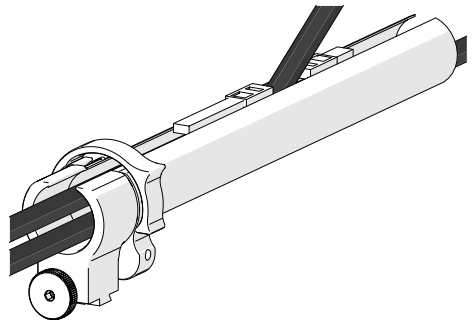


*Fig. 79* - Zip up to close

1. Open the zipper tube. Begin at the tube's dovetail mount and place the cabling in the tube (*Fig. 78*).
2. Follow the cable placement zipping the tube closed (*Fig. 79*).



*Fig. 80* - Zip opposite end



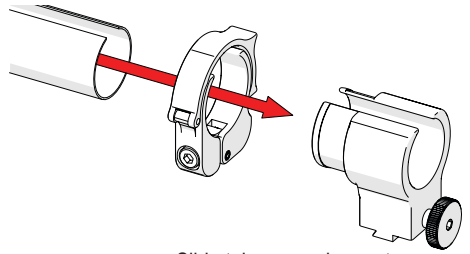
*Fig. 81* - Flexibility

3. Once the cable is placed the entire length of tube, bring the zipper from the tubes opposite end, meeting at any point in the middle (*Fig. 80*).
4. When necessary, the two zippers may be opened to allow any cables to exit the tube anywhere between the ends (*Fig. 81*).

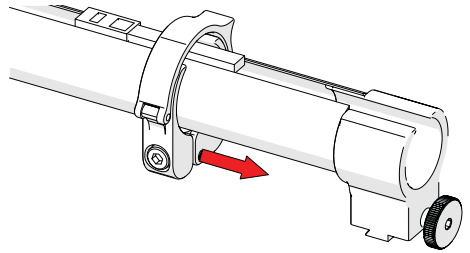
### 4.8.3. Clamp Setup

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

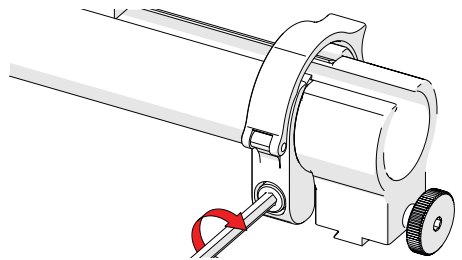
1. Loosen the clamp screw using the supplied 3 mm hex driver.
2. Slide the clamp around the tube first and then slide the tube around the outside of the zipper tube dovetail mount (*Fig. 82*). Align the zipper opening and the zipper tube dovetail mount opening.
3. Slide the clamp over the tube and zipper tube dovetail mount pinching the tube in between (*Fig. 83*).
4. Tighten the clamp screw (*Fig. 84*).



**Fig. 82** - Slide tube around mount



**Fig. 83** - Slide clamp onto mount



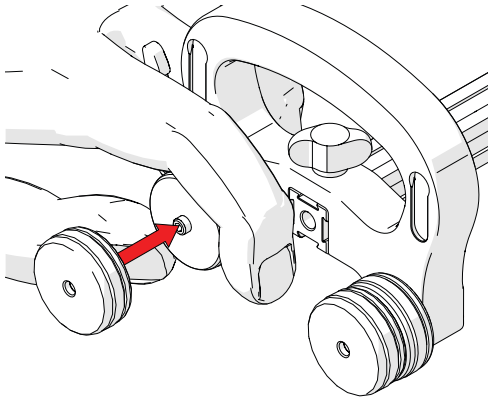
**Fig. 84** - Tighten clamp screw

## 4.9. Magnetic Wheel Kit

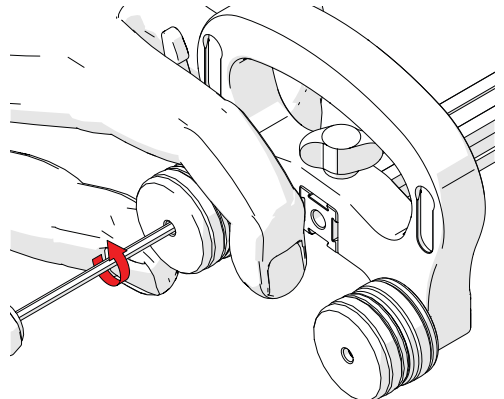
Two sets of the magnetic wheels can be used with the **STIX**, thus doubling the magnetic force.

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

To install additional magnetic wheels, follow these steps:



**Fig. 85** - Screw on additional magnetic wheel



**Fig. 86** - Tighten with 3mm hex driver

1. Ensure the four existing wheels are tight (see *Wheel Installation on page 7*)
2. On the magnetic wheel to be attached, locate the threaded side of the magnetic wheel, orient the threaded side towards the scanner.
3. By hand, grip the wheel already attached to the wheel block. Overcome the magnetic resistance to screw the additional wheel to the axle of the wheel block (Fig. 85).
4. Steadily hold the newly added magnetic wheel, insert the 3 mm hex driver into the axle and tighten the additional wheel (Fig. 86).

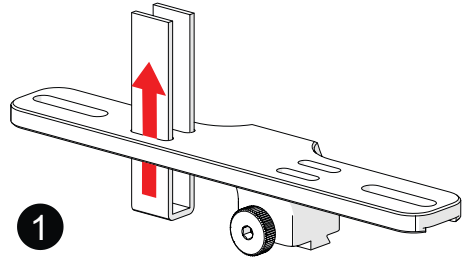
**TIP:** To remove additional wheels, reverse these steps.



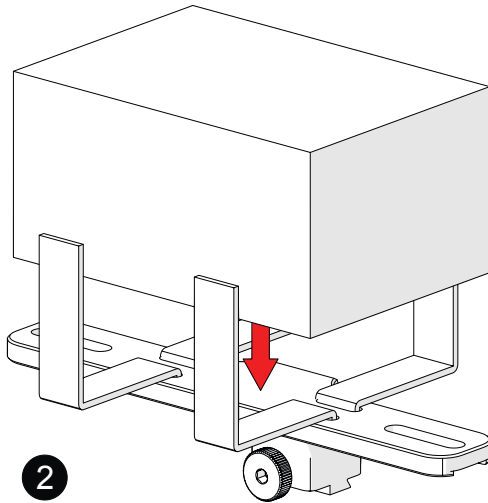
**WARNING! MAGNETIC MATERIAL.** The magnetic wheel kit produce a magnetic field which may cause failure or permanent damage to items such as watches, memory devices, CRT monitors, medical devices or other electronics. People with pacemakers or ICD's must stay at least 25 cm (10 in) away.

## 4.10. Pre-Amp Bracket

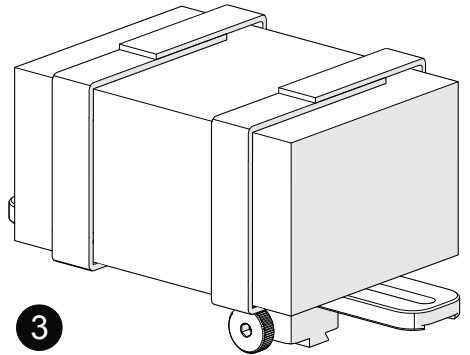
The pre-amp bracket mounts to any dovetail groove to hold a pre-amp. Compatible with most standard pre-amps, use the adjustable screw mounting channel on the bottom of the bracket to attach a pre-amp. The pre-amp bracket may also be ordered with velcro straps which are used to hold the pre-amp.



**Fig. 87** - Insert velcro straps



**Fig. 88** - Place pre-amp and wrap velcro



**Fig. 89** - Mount bracket on a frame bar



## 5.1. Troubleshooting

Problem	Possible Cause	Solution
<b>Encoder not functioning.</b>	Instrument not properly setup.	Refer to instrument's documentation regarding proper setup.
	Issue with encoder.	Contact Jireh Industries for repair ( <i>see Jireh Industries Ltd. on page i</i> ).
<b>Insufficient probe contact.</b>	Scanner not set properly.	Reconfigure the scanner as per instructions ( <i>see Probe Holder Adjustment on page 13</i> ).
<b>Magnetic wheels become loose.</b>	Brakes are engaged.	Ensure the brakes are unlocked when using the scanner ( <i>see Wheel Block with Handle on page 7</i> ).

## 5.2. Technical Support

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

## 5.3. Disposal

WEEE Directive

In accordance with European Directive on Waste Electrical and Electronic Equipment (WEEE), this symbol indicated 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.



# SPARE PARTS

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

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

## 6.1. STIX Kit Components

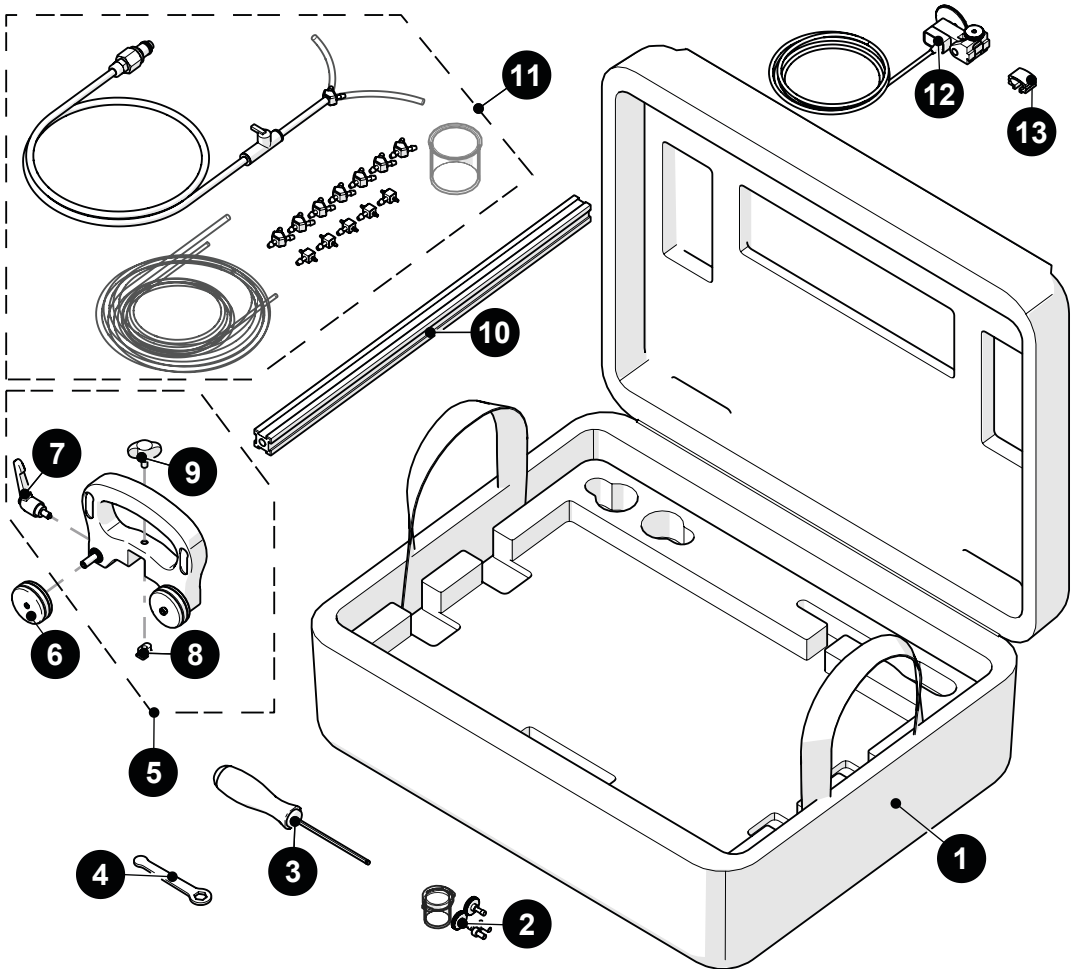


Fig. 90 - STIX kit components

BOM ID	Part #	Description
1	BGA005	Stix Case
2	PHG014	2 Probe Spare Parts Kit
3	EA414	3 mm Hex Driver
4	EA470	3/8 in Wrench
5	BGS058	Wheel Block with Handle
6	BTS031	Magnetic Wheel
7	BTS018	Brake Handle
8	BT0172	Dovetail Nut
9	EA079	Knob
10	BG0038-40	Frame Bar, 40 cm (see Frame Bars)
11	CMG007	Irrigation Kit, 2-4 Probe
12	BGS053-X-05	Trailing Encoder (see Encoder Connector Type)
13	BG0091	Cable Clip

Fig. 91 - STIX kit components (cont.)

### 6.1.1. Encoder Connector Type

Connector Type	Company/Instrument	Connector Type	Company/Instrument
<b>B</b>	Olympus - OmniScan MX / Zetec - ZIRCON, TOPAZ	<b>G</b>	Sonotron - Isonic
<b>C</b>	Olympus - Focus LT / Zetec Z-Scan	<b>M</b>	GE - USM Vision
<b>D</b>	Olympus - OmniScan MX2, OmniScan SX	<b>U</b>	Sonatest - VEO, PRISMA
<b>F</b>	TD - Focus Scan, Handy Scan, Pocket Scan	<b>V</b>	Pragma PAUT 16/128, PragmaLite / Pragma UT400

Fig. 92 - Encoder connector type

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

## 6.2. Accessories

### 6.2.1. Magnetic Wheel Kit

Part #	Description
BTG014	Magnetic Wheel Kit

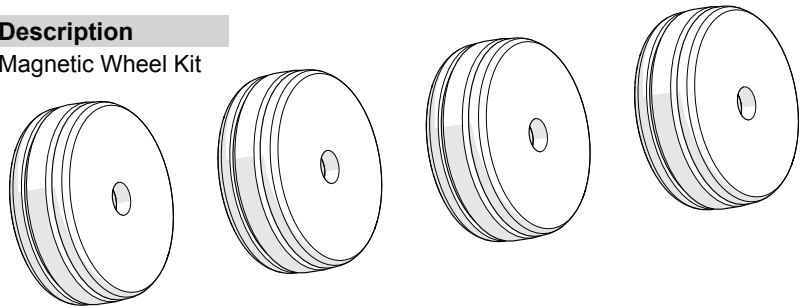


Fig. 93 - Magnetic wheel kit

## 6.2.2. Pre-Amp Bracket

Part #	Description
CES029	Pre-Amp Bracket
CES029-V	Pre-Amp Bracket with Velcro

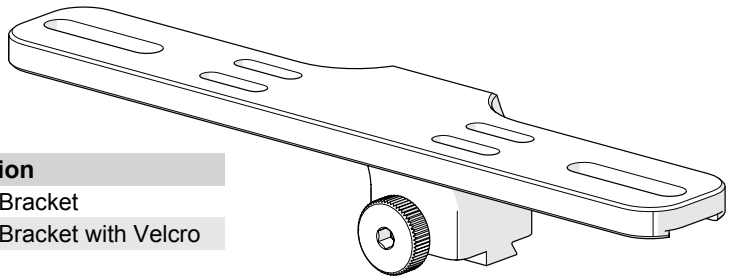
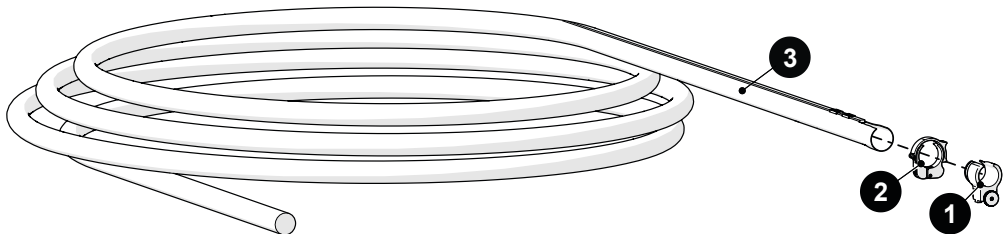


Fig. 94 - Pre-amp bracket

## 6.2.3. Zipper Tube



BOM ID	Part #	Description
1	CES067	Zipper Tube Mount
2	CES066	Zipper Tube Clamp
3		(see Zipper Tube Length)

Fig. 95 - Zipper tube

### 6.2.3.1 Zipper Tube Length

Part #	Length
CX0141	4.5 m (14.7 ft)
CX0145	9.5 m (31.1 ft)

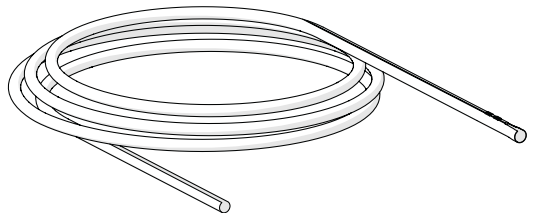
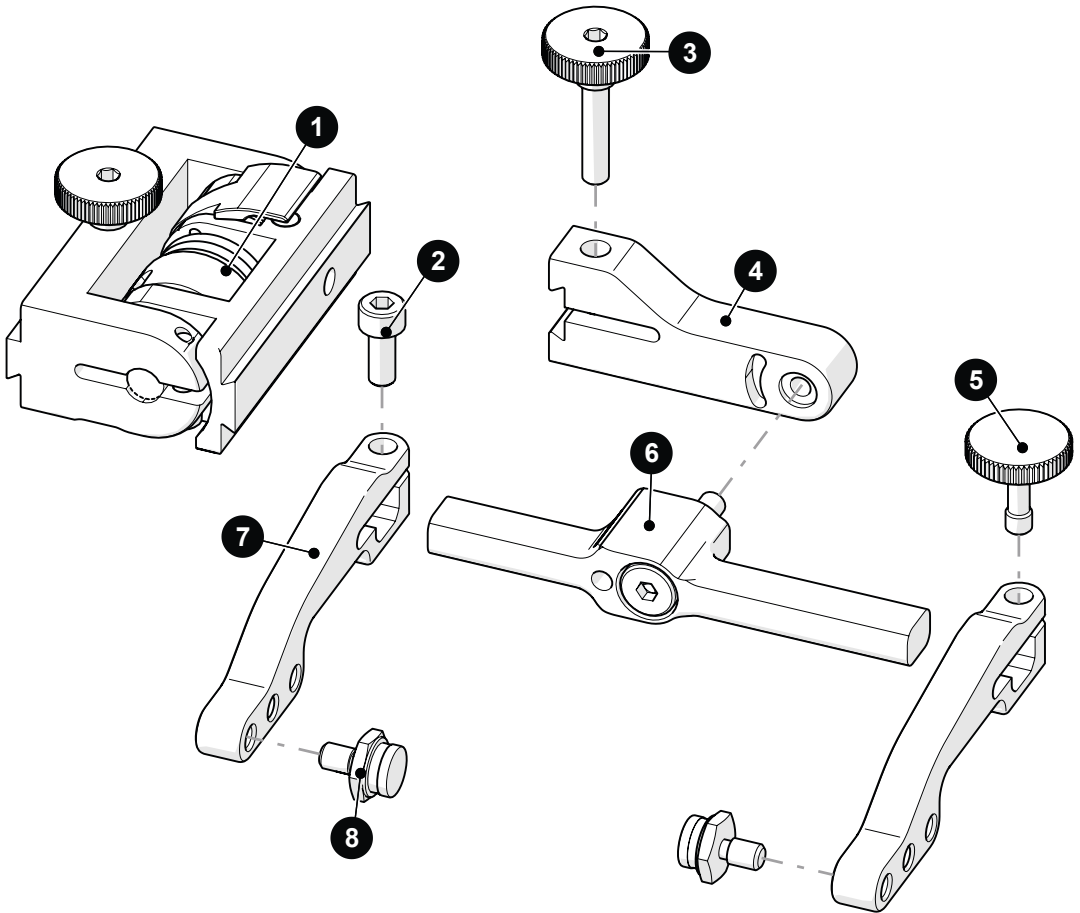


Fig. 96 - Zipper tube length

## 6.3. Probe Holders

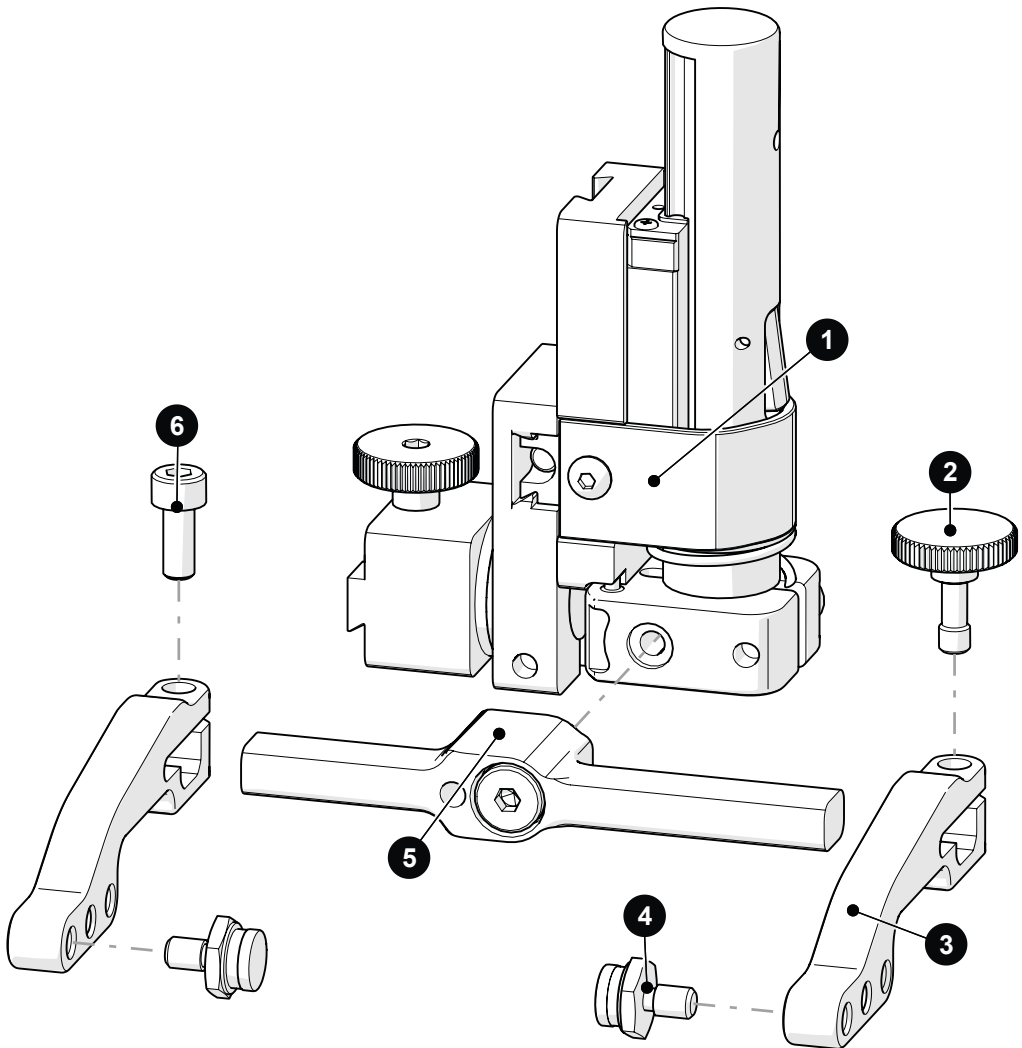
### 6.3.1. Slip Joint Probe Holder Parts



BOM ID	Part #	Description
1	PHS022	Slip Joint Probe Holder Subassembly
2	MD050-010	SHCS, M4 x 0.7 x 10 mm, SST
3	PH0104	Swing Arm Knob
4	PH0100	(see Swing Arm Style)
5	PH0082	Probe Holder Arm Adjustment Knob
6	See Yoke Style	
7	See Arm Style	
8	PH0011-X	Pivot Button Style (See Pivot Button Style)

Fig. 97 - Slip joint probe holder parts

### 6.3.2. Vertical Probe Holder Parts



BOM ID	Part #	Description
1	PHS028	Vertical Probe Holder Subassembly
2	PH0082	Probe Holder Arm Adjustment Knob
3	<i>See Arm Style</i>	
4	PH0011-X	Pivot Button Style ( <i>See Pivot Button Style</i> )
5	<i>See Yoke Style</i>	
6	MD050-010	SHCS, M4 x 0.7 x 10 mm, SST

**Fig. 98** - Vertical probe holder

## 6.4. Probe Holder Components

### 6.4.1. 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. 99 - Probe holder arm selection

### 6.4.2. Yoke Style

Yoke Style	Part #	Length		Yoke Style	Part #	Length	
<b>S</b> Standard	PHS017	6.3 cm (2.47 in)		<b>W</b> Wide	PHS027	7.9 cm (3.06 in)	

Fig. 100 - Probe holder yoke selection

### 6.4.3. 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. 101 - Pivot button selection

### 6.4.4. Pivot Button Style




















Pivot Hole Size	Wedge Type		Pivot Hole Size	Wedge Type	
<b>01</b> 8.0 mm (0.32 in)	Olympus PA		<b>02</b> 5.0 mm (0.20 in)	Olympus TOFD	
<b>03</b> 2.7 mm (0.11 in)	Sonatest DAAH PA		<b>04</b> 9.5 mm (0.38 in)	-	
<b>06</b> 3.0 mm (0.12 in)	-		<b>07</b> 2.3 mm (0.09 in)	-	
<b>08</b> Conical Head	-		<b>09</b> 5 mm (0.20 in) Internal	Zetec PA/TOFD	

Fig. 102 - Pivot button selection

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

## 6.5. Variable Components

### 6.5.1. 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. 103** - Frame bar selection



# 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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SCANNING TECHNOLOGY FOR NDT

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