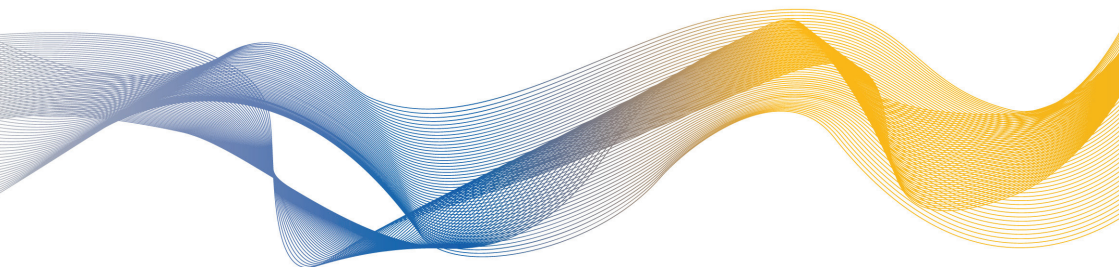
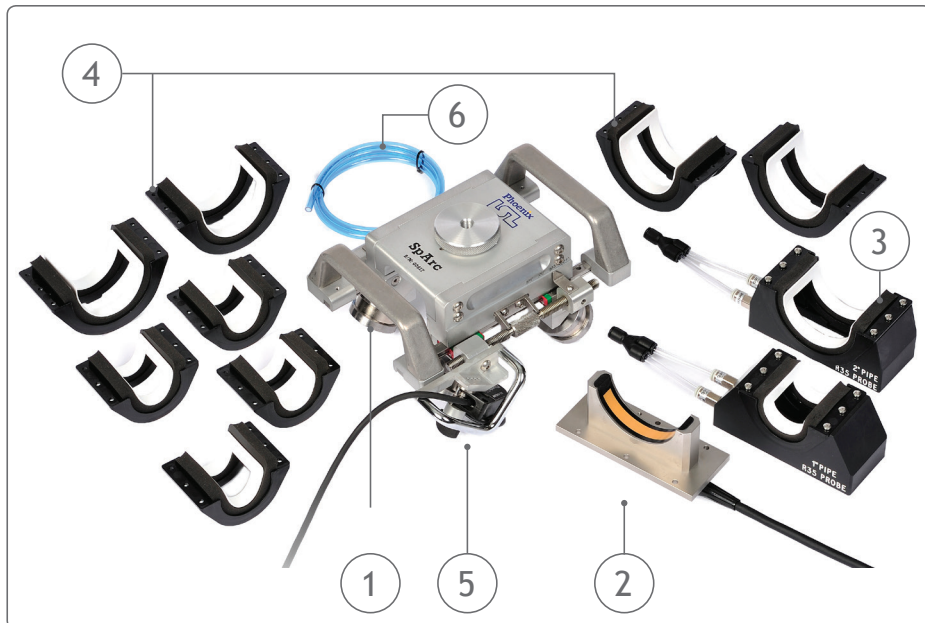


**Sp-Arc**  
**User Manual**



## Sp-Arc Kit



1. 1 x Magnetic wheeled buggy (1" - 4")
2. Curved ultrasonic phased array probe(s) as required
3. 1 x Water box per pipe size ordered (1", 2", 3", or 4")
4. 4 x Spare foam seals per water box
5. 1 x Waterproof wheel encoder, mounted to buggy with 5m cable (optional termination)
6. 1 x Water tube, OD6mm, 5m length

## Spares: Re-order Information

### Foam Seals

To order replacement foam seals, email your order requirements, including the relevant part code(s) detailed below to: [sales@phoenixisl.com](mailto:sales@phoenixisl.com)

- AEP-SPARC-SEAL1 (1" pipe)
- AEP-SPARC-SEAL2 (2" pipe)
- AEP-SPARC-SEAL3 (3" pipe)
- AEP-SPARC-SEAL4 (4" pipe)

## 1. Water box assembly

1.1



Select the water box to suit the pipe size to be tested, check the foam seal is in good working condition and that it is mounted securely to the water box.

1.2



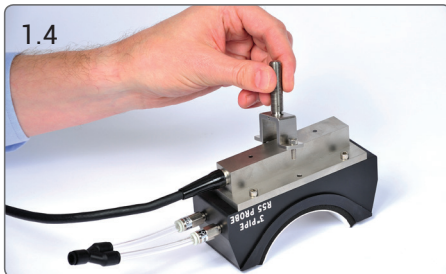
Ensure an O-ring seal is present on the clamping face of the water box.

1.3



Select the appropriate probe and attach to the water box, securing into place with the corner screws.

1.4



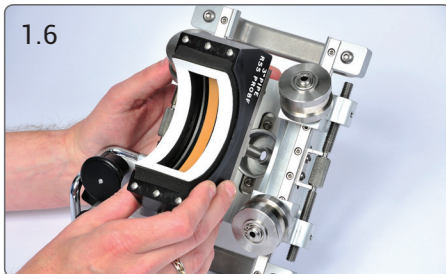
Position the probe mounting saddle over the centre of the probe.

1.5



Fit screws through the saddle, the probe and into the water box securing all components together.

1.6



Fit the central screw post of the water box through the buggy and attach the large thumb screw to the post on top of the buggy.

# Sp-Arc

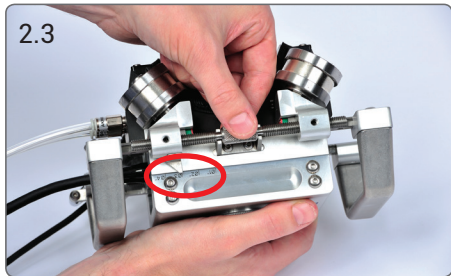
## 2. Mounting Sp-Arc



Adjust the probe height by winding the central screw of the water box in as far as possible using the large thumb screw. Ensure the water box is fully retracted in the buggy.



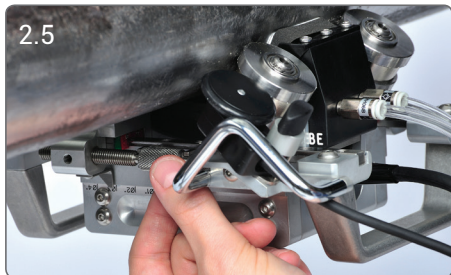
Check all the cables and tubing are connected to the scanner and that they are suitably grouped and tethered to prevent accidental damage.



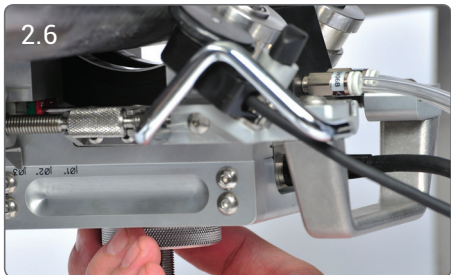
Adjust the separation of both sets of wheels to the correct pipe size to be tested using the graticules marked on the scanner.



Attach the magnetic wheels on the buggy to the pipe.



Fine tune the wheel separation if necessary so that all four wheels are centred to run on a radial line.



Wind the water box towards the pipe until all of the seal is in contact and concentric to the pipe.

### 3. Collecting data with Sp-Arc



Turn on the water supply to flood the water box and use the ultrasonic display to fine tune the adjustment of the probe height until it is concentric (flat B-scan on perfectly round pipe).



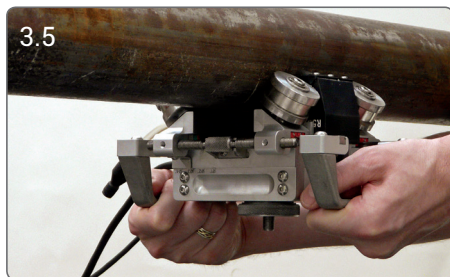
Reduce the flow rate of the water supply until it is just sufficient to maintain the water box coupling. If a good seal is achieved then it should be possible to stop the feed completely.



Check the encoder is seated correctly and rotates with scanner movement, recording positional data. Adjust the spring rate via the encoder mounting thumb screw if required.



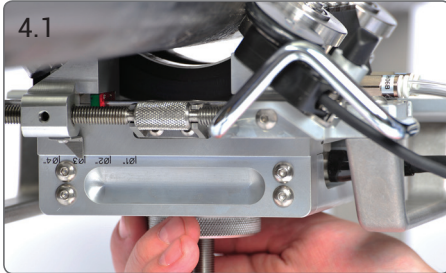
Set the encoder resolution to 33 steps/mm (quadrature). Move the scanner to the start position and set the position on the acquisition unit to zero. X = 0mm



Start the acquisition unit collecting data, then pull the scanner along the pipe using the Sp-Arc handles.

# Sp-Arc

## 4. Removing Sp-Arc

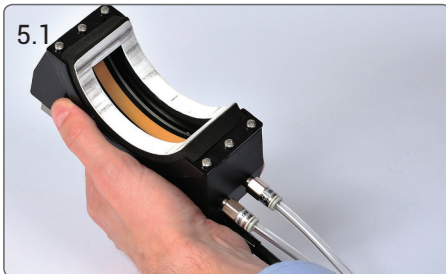


Lower the probe height until the water box is fully retracted in the buggy using the large thumb screw.



Holding the two handles, twist the scanner to break the magnetic attachment and pull the Sp-Arc away from the pipe.

## 5. Replacing a seal



Check that the low friction layer of the seal is in good working order. If the water box leaks excessively or the seal looks worn then it is time to replace it.



Undo the screws on either side of the seal to remove the worn seal unit.



Replace with a new seal from the supplied items. The seal should comprise; plastic holder, compliant foam layer and low-friction wear resistant layer.

# Sp-Arc



**Scan**

For more information and video



Or visit [www.phoenixisl.com/sp-arc](http://www.phoenixisl.com/sp-arc)

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