

DOC0987 Cradle Assembly Instructions

www.keit.co.uk
support@keit.co.uk

DOC0987

07 February 2023, 16:23

Table of Contents

1. Introduction	3
1.1. Precautions.....	3
1.2. Competencies & Checks.....	3
1.3. Tooling & Consumables	3
1.4. Parts required	3
2. Build.....	4
2.1. Skid plate.....	4
2.2. Attaching the flange – if you have a ball valve.....	4
2.3. Attaching the flange – if you do not have a ball valve.....	5
3. Mounting IRmadillo	6

1. INTRODUCTION

These instructions provide information on assembly of the cradle for the IRmadillo.

These instructions apply to IRmadillo model nos. ASM0627-XX-X-X-X-X-**D2** and -**D3** only.

1.1. Precautions

Take care when lifting and handling the product. The IRmadillo weighs approximately 18 kg, and the cradle–IRmadillo assembly with ball valve exceeds 30 kg.

1.2. Competencies & Checks

Ensure you are competent in the use of your torque wrench.

Check that the torque wrench is calibrated and in date.

1.3. Tooling & Consumables

- 1.3.1. Torque wrench(es) suitable for 21.2 Nm and 180 Nm
- 1.3.2. Hex keys (Allen wrenches)
- 1.3.3. Suitable thread lubricant / anti-seize compound

1.4. Parts required

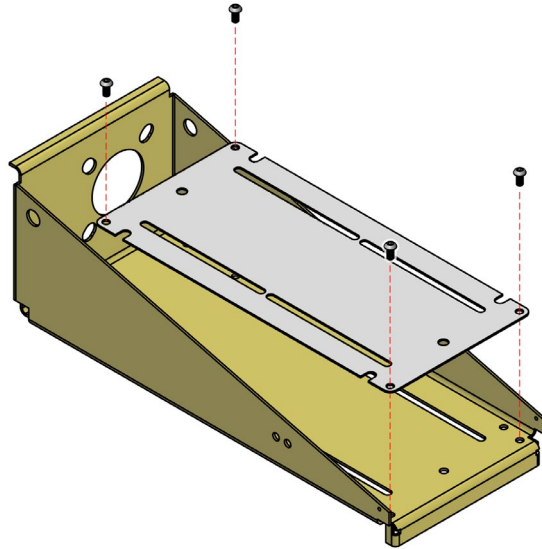
The parts required should come attached to or shipped with the cradle, and include (in order of use):

Keit Part No.	Description	Option	Qty
PRT1468	Spectrometer cradle		1
PRT1472	Cradle skid plate (2mm)		1
10816BUT	M8 x 16 button head socket (hex) screws, stainless steel		4
30119	Ball valve	Ball valve	1
30120	Gasket	Ball valve	1
PRT1485	Port tube and flange		1
11650HEX	M16 x 50 hex head screw, stainless steel		4
116AW	M16 plain washer, stainless steel		4
30118	O-ring		1
10818HEX	M8 x 18 cap head socket (hex) screw, stainless steel		4
PRT1270	Stop bars		4
30096	2-inch tri clamp		1
ASM1349	Tri clamp spacer		2

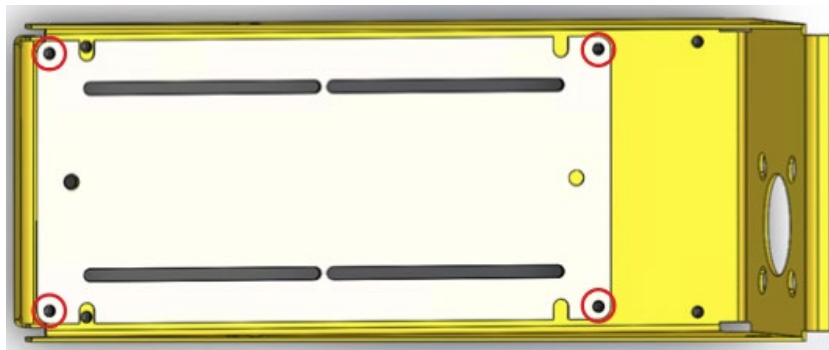
2. BUILD

2.1. Skid plate

2.1.1. Place the skid plate on the cradle, aligned with the two rear-most bolt holes.



2.1.2. Fix the plate to the base with four M8 x 16 button head socket screws in the locations circled below. Hand-tighten using a hex key, being careful not to deform the skid plate.



2.2. Attaching the flange – if you have a ball valve

(if you do not have a ball valve, skip ahead)

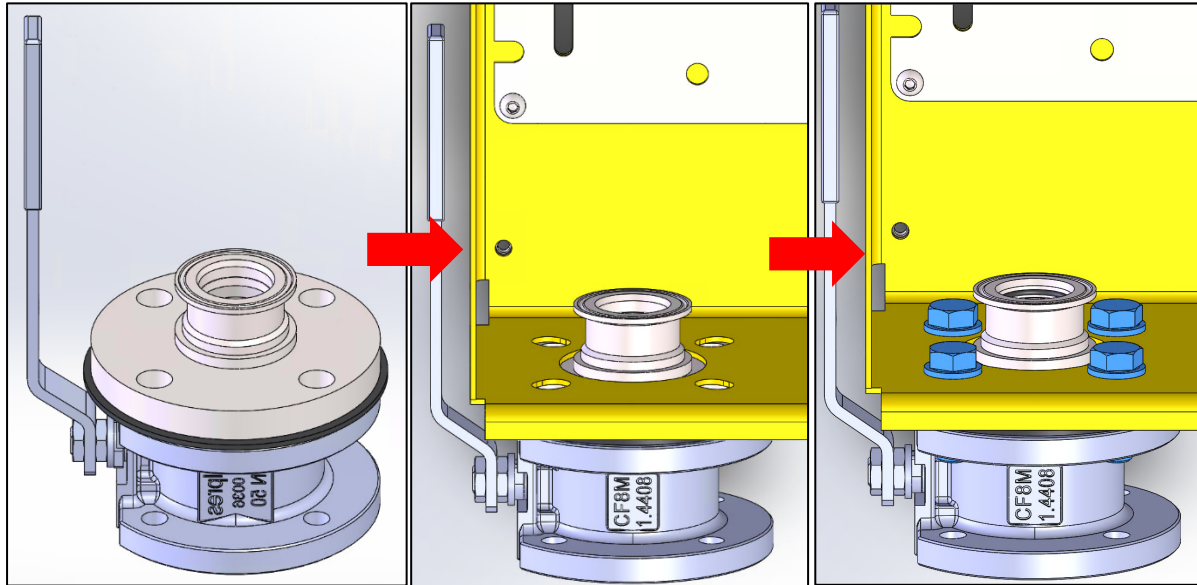
2.2.1. Align the threads of the ball valve with the flange, fitting the gasket between the two. Place the mating face of the ball valve down onto a stable surface, with the port tube extrusion facing up (see *below, left*).

2.2.2. Locate the cradle assembly vertically on top of the valve–flange assembly, with the port tube extrusion extending into the cradle (see *below, centre*). The respective bolt holes should line up.

2.2.3. Place M16 washers onto the four M16 x 50 mm hex head screws, then apply suitable lubricant or anti-seize compound to their threads.

Screw the bolts into the ball valve threads (see *below, right*). Wipe away excess lubricant/anti-seize.

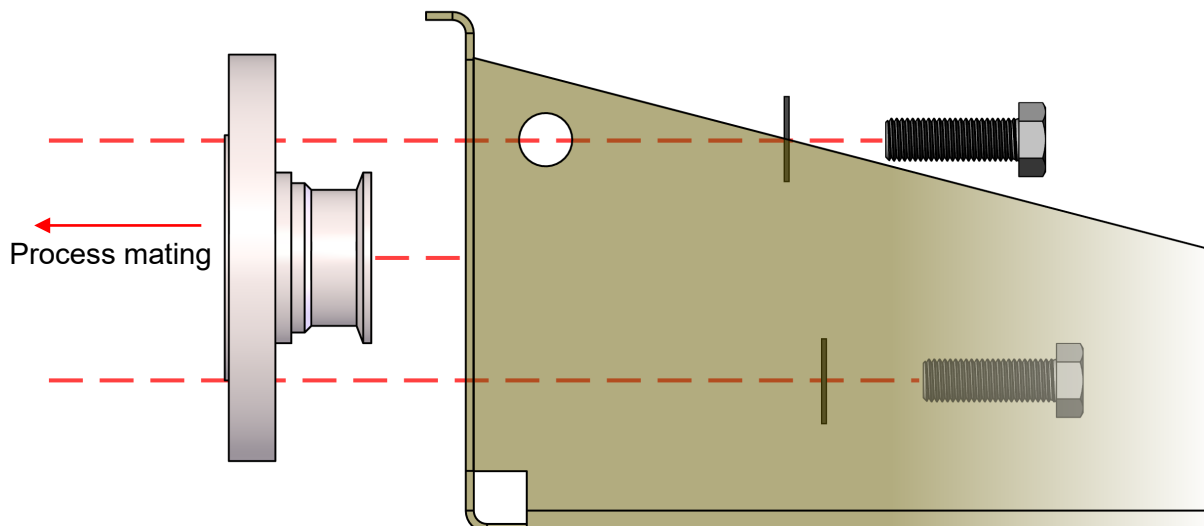
- 2.2.4. Double-check that the ball valve is oriented such that the handle is actuated on the side of the cradle (see *below*)
- 2.2.5. Tighten the four hex head screws, working diametrically.



2.3. Attaching the flange – if you do not have a ball valve

(if you do have a ball valve, ensure the previous section is complete and then skip ahead)

- 2.3.1. Locate the port flange on the cradle with the tube extrusion extending into the cradle.

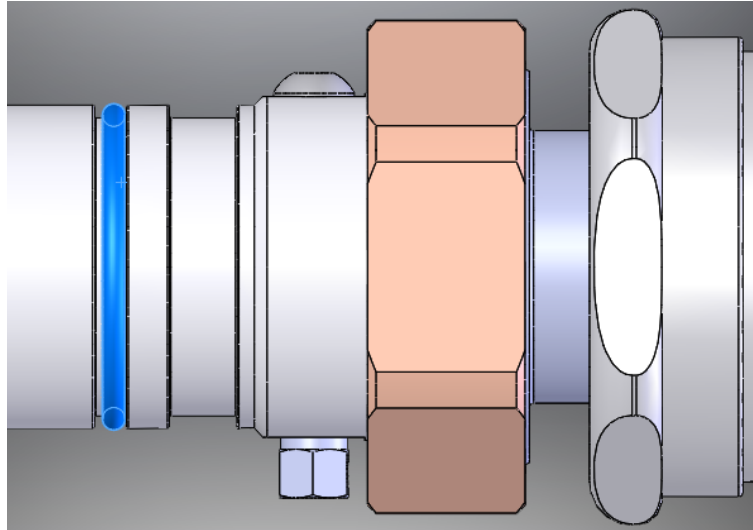


- 2.3.2. Place M16 washers onto four M16 hex head screws. We supply screws of length 50mm, but you should use fasteners appropriate to your installation method.

Pass the bolts through the cradle and flange and secure appropriately.

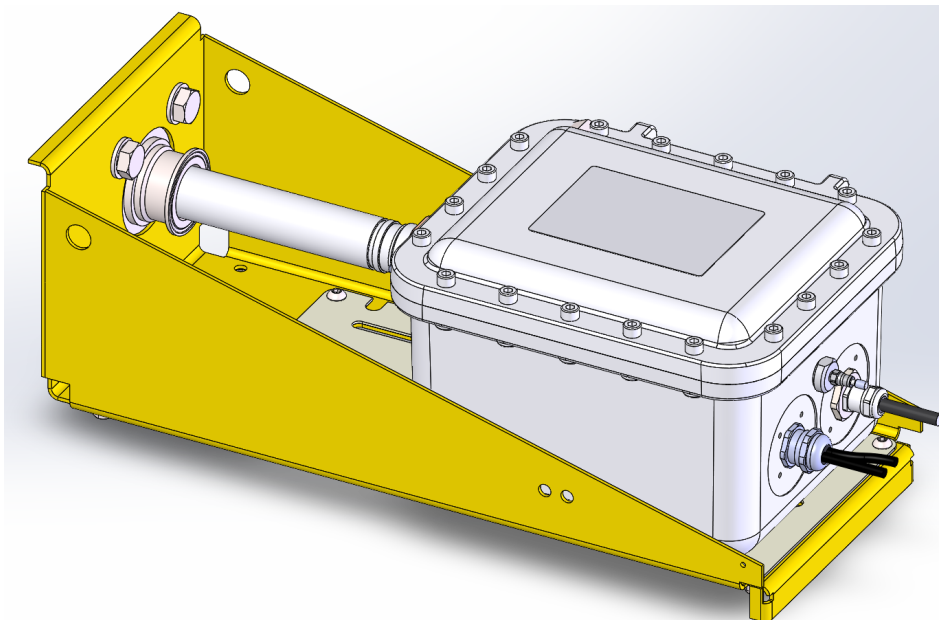
3. MOUNTING IRMADILLO

- 3.1.1. Place the O-ring onto the probe, positioning it in the narrower of the two grooves near the fixed end of the probe (O-ring shown in blue, below).

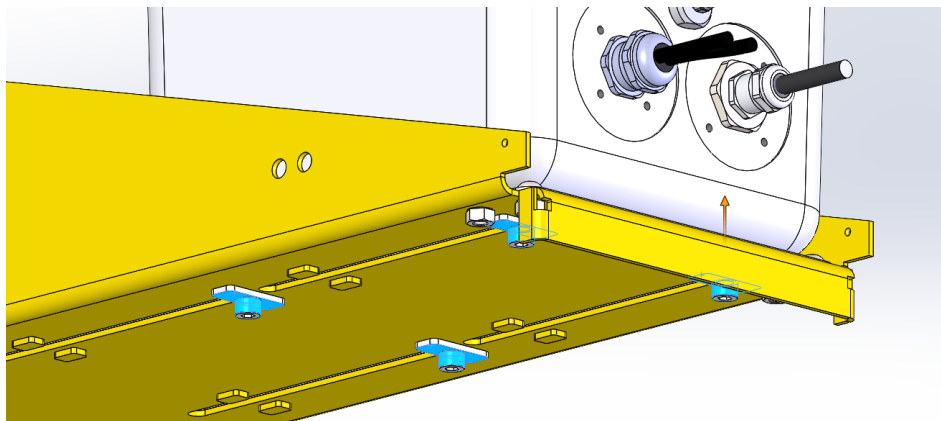


- 3.1.2. With the cradle securely mounted, place the IRmadillo onto the edge of the cradle, carefully sliding the probe tip into the port tube.

N.B. if you have a ball valve, ensure it is in the open position. The valve must not be opened under pressure.

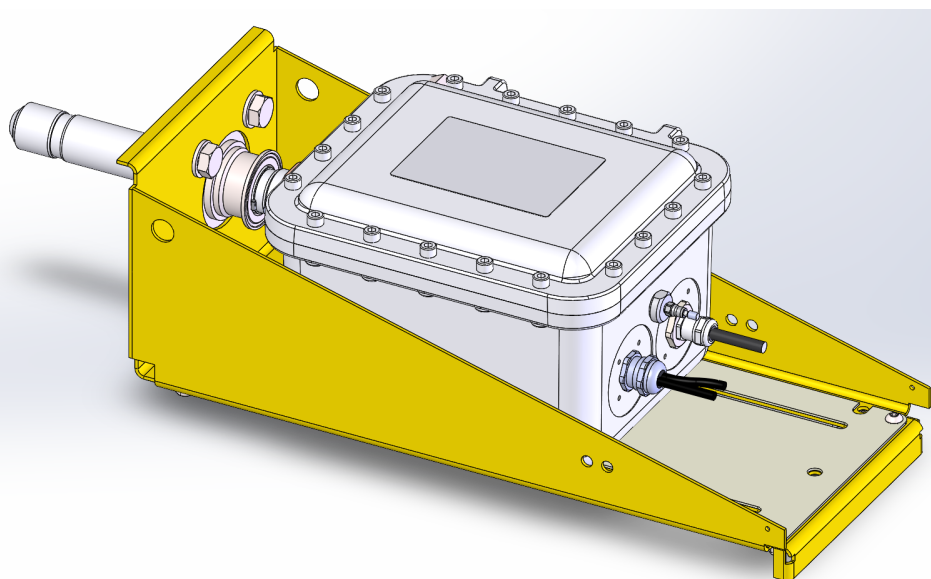
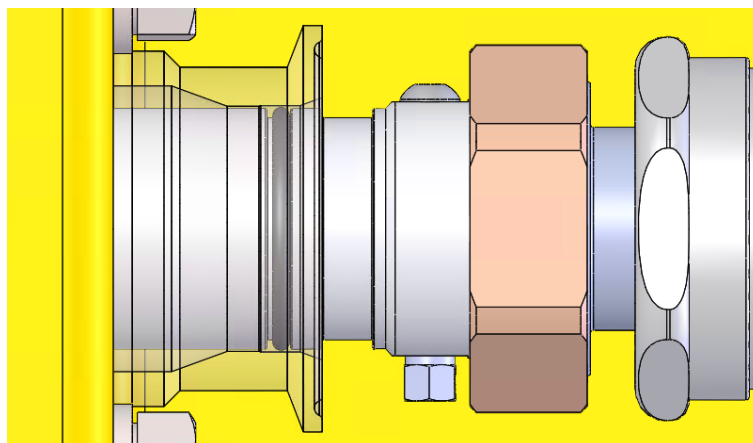


- 3.1.3. Place the rectangular stop bars over the M8 x 18 mm cap head socket screws, then insert them through the cradle and skid plate, loosely into the threads on the base of the IRmadillo (see *below*).

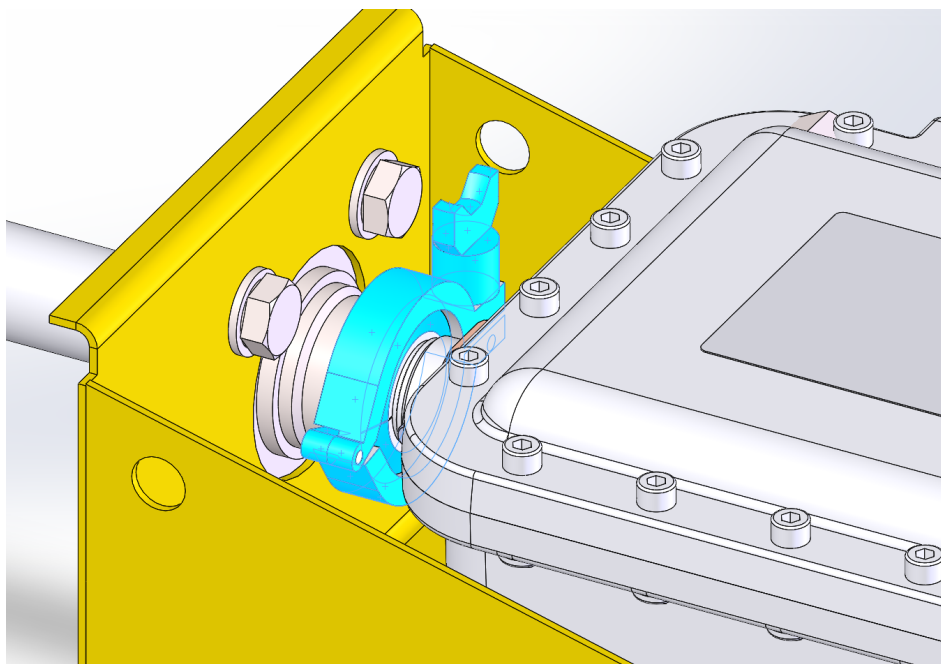


- 3.1.4. Ensure the probe is lined up correctly, then slide the IRmadillo slowly into the port tube.

Stop when the wider groove on the probe (not occupied by an O-ring) lines up with the port tube, as shown below (the port tube is shown semi-transparent):



- 3.1.5. Check that the stop bars are beyond the welded-on tabs on the bottom of the cradle, such that when the M8 x 18 mm cap head socket screws are tightened, the stop bars will prevent backwards movement of the IRmadillo.
- 3.1.6. Fit the semi-circular tri-clamp spacers to the unoccupied groove on the probe, with the flat face against the port tube. The spacers should fit together with dowel pins.
- 3.1.7. Attach the tri-clamp (highlighted below).



- 3.1.8. Finally, tighten the M8 x 18 mm cap head socket screws on the underside of the cradle, making sure the stop bars are aligned perpendicular to the probe (such that they sit behind the welded-on tabs).