

Inov8 Systems Ltd.

**In-line Controller
Installation and Extraction Guide –
Extraction Tool**

1.0 Extraction Tool

When referring to an extraction tool, typically this refers to a double block and bleed valve. This is used with the EXP and GPP range as a guide and assistance for hot insertion and hot extraction of the probe.

1.1 General Health and Safety



Ensure that there is no fluid in the process pipe before proceeding with the following procedures. Before installation of the probe, this manual should be read in full. In case of any doubt or additional instructions, please contact Inov8 Systems or your Inov8 representative.



Once the installation is complete, operation of the equipment should only take place when the process pipe contains water. This will prevent any unnecessary damage to the equipment.

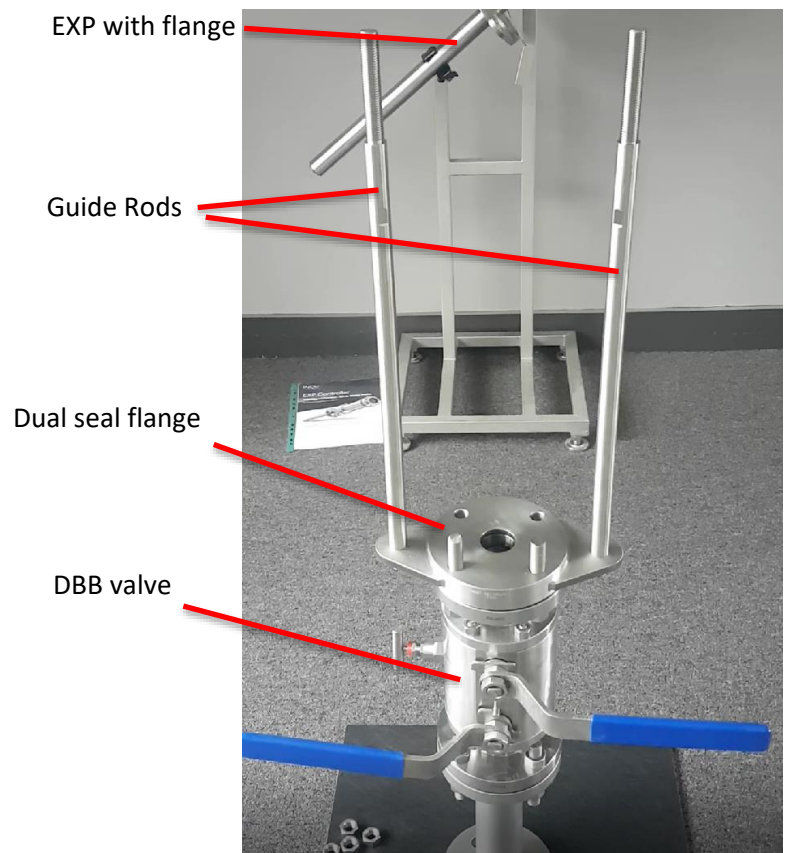


Live insertion or retraction of the probe on process pressures that are >5.0bar should only be performed in conjunction with an appropriate extraction tool arrangement, unless otherwise agreed by Inov8 Systems.

Contents:

When the peli case is opened, you will find:

- EXP/GPP (with flange)
- Guide Rods x2
- Dual seal flange x1
- DBB valve (extraction tool)



1.2 Method - Insertion

For installation of the extraction tool, follow the site guidelines where possible.

This section explains how to insert the oil in water analyser into a flowing process, though a DBB valve and a dual seal flange

- 1) Secure the DBB valve to the process nozzle, following onsite safety requirements in doing so
- 2) The additional dual seal flange should then be secured to the DBB valve using threaded bar as per onsite requirements.
- 3) Secure the guide rods into the dual seal flange guide rod holes and secure with a nut. As pictured here:



Guide rod secured
in through-hole

Threaded bar

Nut to secure
threaded bar

- 4) Before inserting the probe, ensure both valves are in the closed position. The handles should be in the position shown here:



- 5) One person can lift the probe without the need for lifting equipment. Carefully, position the probe flange onto the guide rods.



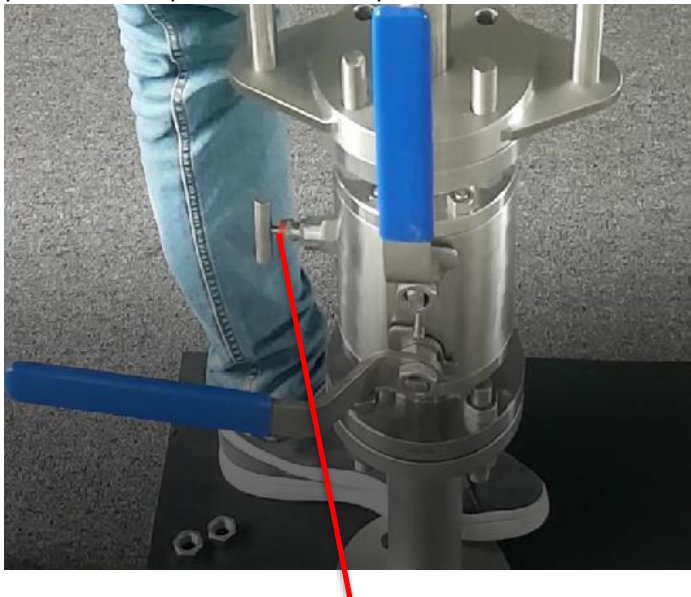
- 6) While holding the probe steady, allow the analyser to slide down the guide rods until the probe nose is resting on the first valve. You will see below that the probe nose is resting in the dual seal flange



- 7) Fit the nuts onto the guide rods. This will prevent the probe from retracting back when the ball valves are opened.



- 8) While holding the probe with one hand, open the first ball valve. Where possible, one user should hold the probe securely while another opens the ball valve. The handles will be in this position.

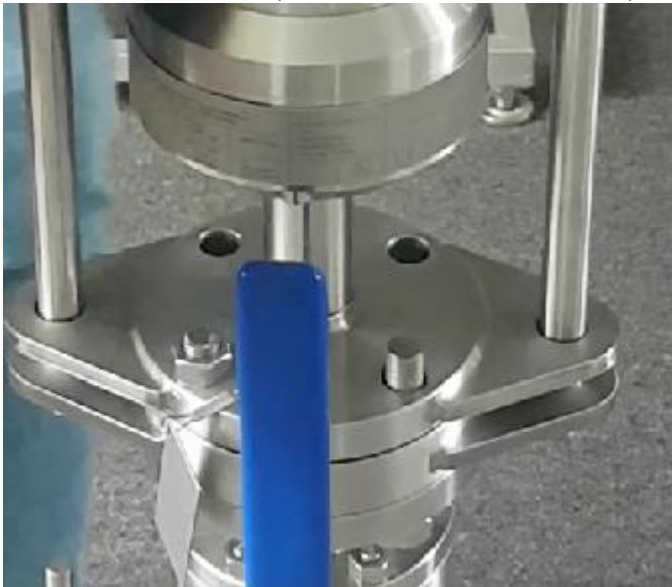


- 9) At this point, use the bleed handle to bleed off any pressure that may be present between the two ball valves

10) While holding the probe in place, open the second ball valve so the handles are in this position.



11) Ease the probe over the guide rods until the probe flange is resting on the dual seal flange. Then add nuts to the threaded bar as pictured below to secure the probe flange to the dual seal flange and DBB valve.




Inov8 recommends that all nuts are tightened by hand and then a quarter turn. Where site requirements are in place for torquing nuts, always follow the site instructions.

1.3 Method – Extraction

Before the extraction process begins, loosen the nuts holding the oil in water analyser and the dual seal flange in place.



At this stage you will feel if the process pressure is forcing the analyser away from the process line and out of the DBB valve.

 Do not stand directly above/behind the analyser in case there is a pressure build up that causes the analyser to uncontrollably retract back on the guide rods.

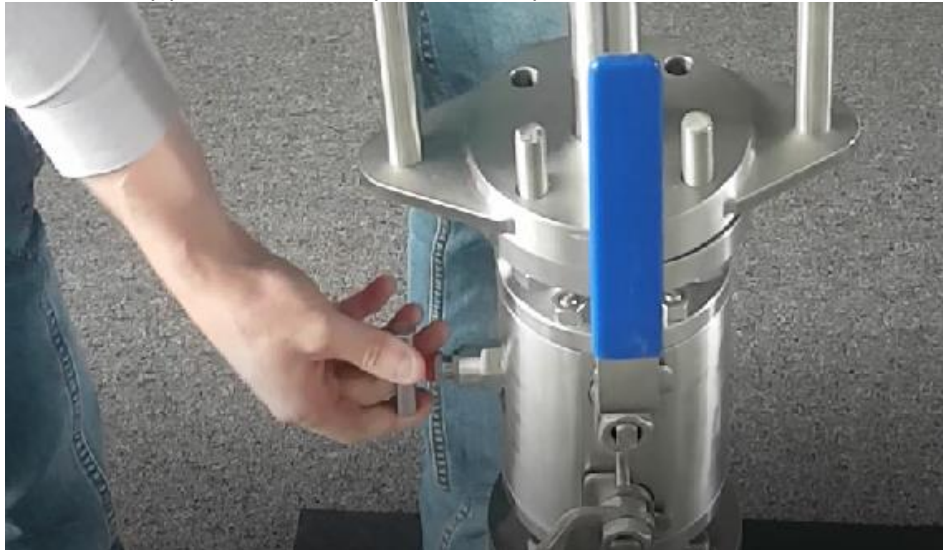
- 1) Retract the analyser back until the probe flange meets the nuts on the guide rods



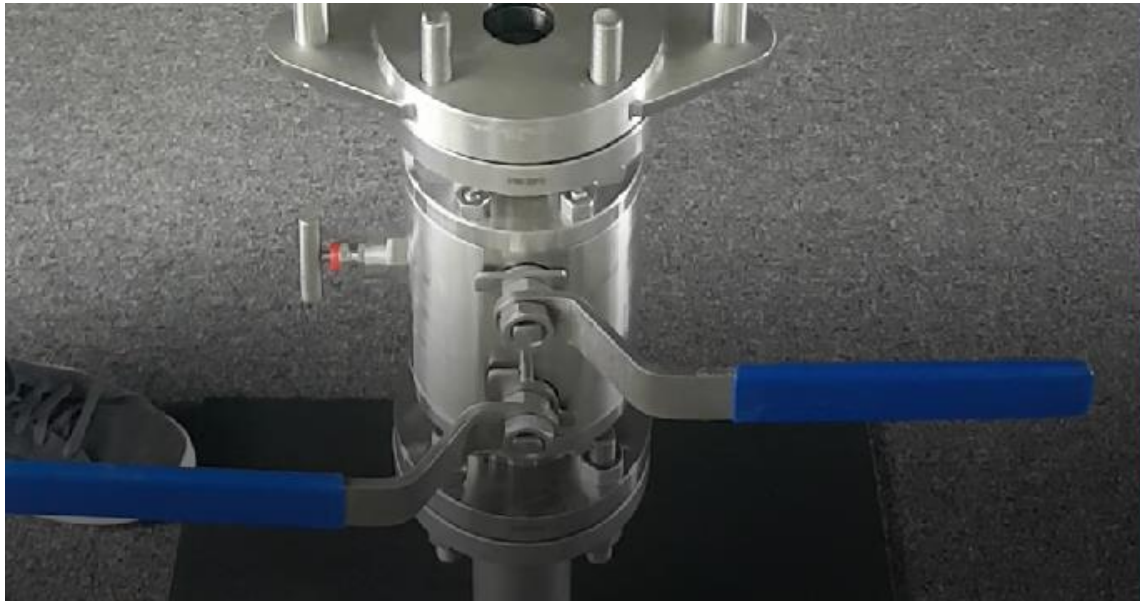
- 2) At this point, while holding the analyser in place, close the bottom valve. When closed, the handles will look like this:



- 3) Bleed off any pressure that may have built up between the two ball valves, using the bleed handle.



- 4) The probe will rest on the closed ball valve. This will prevent the user needing to hold the probe steady throughout the extraction process. Where possible, one user should hold and retract the probe, while another user should close the ball valves and remove any nuts where indicated in this procedure.
- 5) Next, the guide rod nuts should be removed from the top of the guide rods, as indicated in point 1 of the extraction procedure, above.
- 6) Completely remove the probe from the guide rods and away from the DBB valve assembly. Ensure the analyser is placed somewhere safely to prevent any damage to the equipment.
- 7) The second ball valve can now be closed. The position of the handles when both valves are closed will be:



- 8) The dual seal flange is not required to be removed and can remain secured to the DBB valve and guide rods.