

## Hydraulic holelock for seismometer coupling

Hydraulic holelock for low and high temperature applications.

Holelock devices may be used to couple sensors at specific depths in boreholes for either short or longer term measurements (<2 years). The simple hydraulic components provide reliability and high coupling force. Holelock components are project specific and will have specifications dependent on the seismometers used, temperatures, casing materials and other factors. The weight of these systems depends on the depth of the deployment but usually requires a crane, winch and reel stands for installation. Specifications below are given for two example scenarios.



Holelock arm for PVC casing

### Features

- Customizable holelock arm
- Withstands installations up to 150 °C and ca. 1,000 m depth
- Serviceable double-acting hydraulic system
- 3 points of contact for maximum coupling
- Potential for multiple holelocks/sensors per hole

### Holelock parameters:

Material	Stainless steel 316L (marine grade)
Weight	20 kg (excluding oil-charged hose)
Minimum borehole diameter	101.6 mm / 4 inch ID
Length	706 mm
Hydraulic cylinder pressure rating	345 bar / 5,000 psi / 34.5 MPa

### Specifications

### Hydraulic line parameters:

#### Low temperature, 450 m depth

Material	Thermoplastic and aramid
Maximum temperature	100 °C
Working pressure	345 bar / 5,000 psi / 34.5 MPa

#### High temperature, 450 m depth

Material	PTFE and stainless steel
Maximum temperature	150 °C
Working pressure	250 bar / 3,620 psi / 25.0 MPa

### Surface components:

A typical setup is a combination of the following elements:

- Double-acting pump
- Nitrogen reservoir
- Pressure gauges and valves
- Submerged return lines and oil cooling



Holelock arm for steel casing with pump in background

For more information, please email us at [enquiries@iese.co.nz](mailto:enquiries@iese.co.nz), phone +64 9 354 4224, or visit [www.iese.co.nz](http://www.iese.co.nz).