



## the *dynamic* offshore engineering company



### RENTAL TOOLS

In addition to our other services, Aquaterra Energy also has a range of rental tooling to enhance drilling, completion and testing operations. This following list covers a selection of these tools, however this list is not exhaustive. Please call us for further information.

### BRUSHING TOOLS

Aquaterra Energy can supply various brushing tools to suit applications such as cleanout of risers, mudline hanger systems, tieback seal areas, subsea wellhead gasket profiles and seal areas together with crown plug seal areas. Bespoke brushes can be made to suit a variety of other applications.

### FLUSHING TOOLS

Multi-ported flushing tools for use on various downhole cleanout operations such as BOP ram, seal and cavity areas, wellbore cleanout, wellhead and mudline hangers system jetting /cleaning. High pressure multi ports deliver large flowrate cleanout over a wide area. Multi angled nozzles are available if required. Can be used in conjunction with Aquaterra Energy Brushing Tools and Subsea Camera operations. Available with pin and box connections or a protective bullnose.

### DRILL STRING DIRECTOR TOOL

Dual purpose tool with side outlet valve for jetting and orientation of the drill string. Flow through the bottom of the tool is achieved via activation of the internal diverter mechanism hence allowing horizontal or downhole flow.

### BULLNOSE SUBS

Polyurethane bullnose subs provide protection from the BHA i.e. when entering mudline hangers, seal areas etc. Flushing through one or more multi directional ports is available if required. Can be supplied in a variety of lengths and connection types.

### RISERS – DRILLING AND PRODUCTION

Aquaterra Energy can provide a range of drilling and production risers of varying sizes and grades to suit operational requirements. Analysis of these riser systems can also be performed. Associated subsea connectors can also be supplied if needed.

### SPECIALITY SUBSEA CONNECTORS

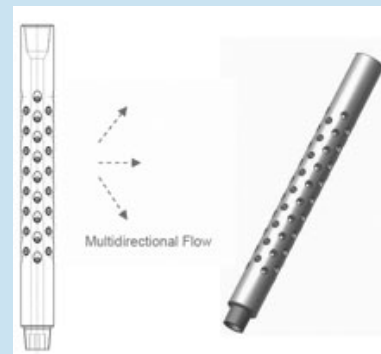
Bespoke hydraulic or mechanical connection devices can be supplied / engineered to suit client requirements. Typically, these items are required when other service providers' equipment is either unsuitable or unavailable for a project specific application.

### TIEBACK RISER STABBING AIDS

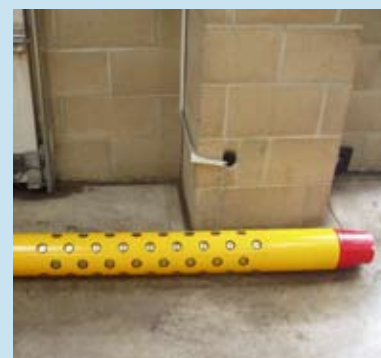
Inner string, drill pipe conveyed riser / conductor alignment tools. Typically used when a tieback riser string is misaligned with the wellstub / hanger system. Can be used with Aquaterra Energy's Subsea Camera System to provide visual confirmation.

### DRILL STRING CENTRALISER BUSHINGS

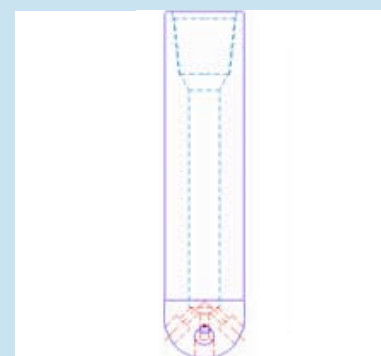
Disposable or steel fabricated drill bushings available in a variety of sizes. These are run above the drilling BHA to centralise the drillstring within the template / platform guide to help ensure a concentric top hole section is drilled.



Pin x Box Flushing Tool



Multi Ported Flushing Tool



Bullnose Subs



Centraliser Camera Mount

## SLIP JOINTS

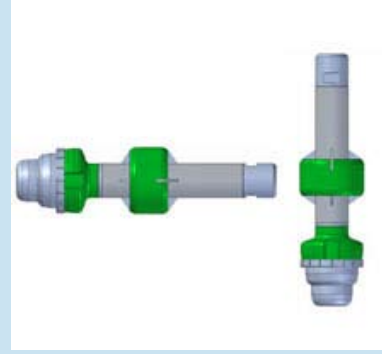
Similar in operation to a bumper sub, this drill string tool is used to assist in spaceout operations involving inner drill string components such as during downhole torque up operations for tieback adaptors. Can also be used to reduce impact loading e.g. on annulus insert equipment.

## MILLING TOOLS

A range of milling tools can be made available or specially manufactured to suit customer requirements.

## BESPOKE SUBSEA TOOLS

To compliment the range of standard rental tools, Aquaterra Energy can provide special build, bespoke downhole tools to suit a variety of customer requirements.



Bespoke Subsea Tools



Bespoke Subsea Tools