

## Description

The Select A-Tool is designed to allow deployment of data acquisition cables (either thermocouple or fiber optic) housed inside capillary tubing into a carrier tubing string ran below a downhole pump. The carrier tubing, usually smaller OD threaded/coupled (know as "spaghetti") tubing is first run into the well. The A-Tool is installed on the tubing at surface and the capillary line is deployed through the adjustable mechanical pack-off of the A-Tool and pumped to the tubing end using fluid and an expendable pump down plug. The pump, either an ESP or PCP is connected to the A-Tool and ran into the well on the production tubing while the capillary tubing is simultaneously banded to the production tubing on the trip in the well and exits the surface wellhead equipment terminating at the data acquisition monitoring system. The "spaghetti" tubing, with data lines inside, is positioned in the producing section of the wellbore allowing continuous pressure and temperature monitoring of the production zone(s).

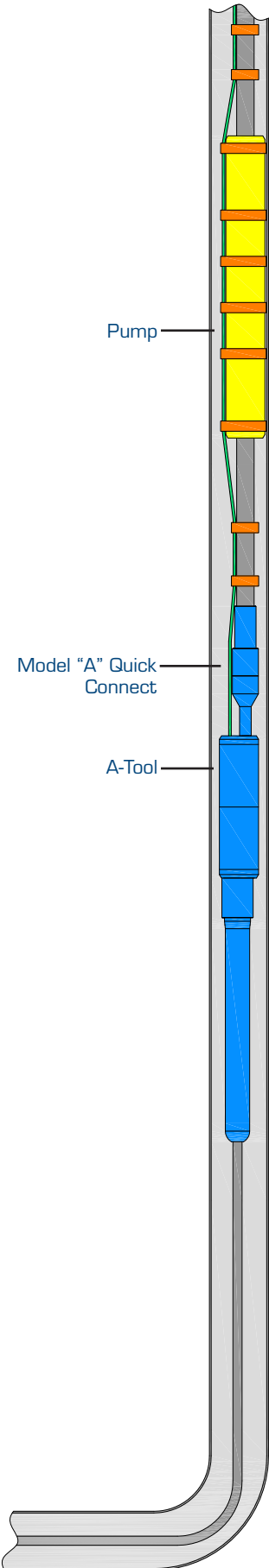
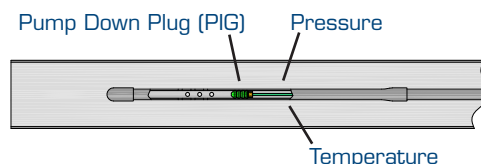
## Applications

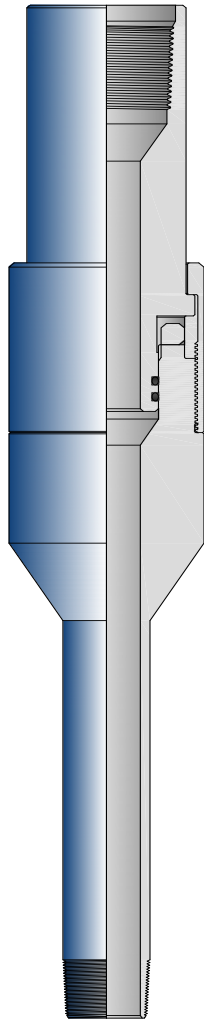
- Well Monitoring
- Typically Used on Producing Wells with ESP or PCP
- Chemical Injection

| Feature                                 | Benefit   |
|---|---|
| Allows Running Of Multiple Data Strings | - Improved Monitoring Of Production Formation<br>- Pressure, Temperature and/or Acoustic  |
| Installed Below Pump                    | - Can Be Used With PC / ES Pumps  |
| Temperature Expendable Pump Down Pig    | - Data Line Pulled To The Toe Of Well<br>- Dissolves In High Temp With No Contamination<br>- Bidirectional Mandrel  |
| 4130 Material                           | - Meets NACE MRO175 Spec  |
| High Temperature Seals                  | - Used in Thermal Applications (but not limited to) SAG-D or TAG-D  |
| Engineered Design                       | - No Larger Than Pump OD (does not restrict pump flow)<br>- Compact (ease of handling on rig floor)<br>- Light Weight (~45kgs)<br>- Non-Rotational Quick Connect To Pump<br>- Available For Multiple Data Lines (1/4"-5/8") |

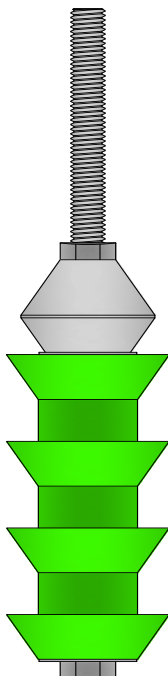
## Specifications

| Model # | Max OD (In. / mm) |
|---------|-------------------|
| 500     | 5" / (127)        |
| 658     | 6-3/8" / (162)    |





Model "A" Quick Connect



Pump Down Plug

## Findings

Users have reported the following, results may vary based on well conditions:

- Well efficiency increase of ~30% by regulation of steam injection
- Increased pump life (in excess of 700%) by turning pump off during high temperatures through automation, then restart pump when wellbore conditions return to ideal
- Stability of production, by eliminating down time for pump repairs

## MODEL "A" QUICK CONNECT

### Description

The Select Model "A" Quick Connector is designed to allow connecting the A-Tool to the bottom of a PC or ES pump. The "two piece" design features a 12 finger castellated joint to allow "clocking" the A-Tool to align the data acquisition line(s) with the pump and also prevents rotation of the A-Tool in relation to the pump when running in the well. A threaded ring connects and locks the upper and lower subs together. The standard tool has a Box thread to connect to the bottom of the pump. Connection to various pump threads can be achieved using crossovers or if desired, specific threads are available on special order.

## MELTABLE PUMP DOWN PLUG (PIG)

### Description

The Select Pump down Plug provides means for placing data lines, capillary strings, or other spooled lines inside well tubing or casing using the "pump-in" method. Once pumped into place, downhole temperature melts and dissolves the plug allowing ease of retrieving the lines in the future with out swabbing the well.