



WIRESOLUTIONS
DOWNHOLE COMPLETION TOOLS

Wireline Service Tools



Wireline Tool String

The Wireline Tool String as an assembly of wireline tools connected to the wireline (slickline) for setting, pulling, or servicing downhole equipment. An assembly of wireline tools is used to deliver surface controlled impacts (jar action) to manipulate devices within the well bore.



A standard set of wireline tools typically consists of:

- ❖ Wireline Socket (rope socket) provides a means for connecting the wireline to the tool string.
- ❖ Wireline Stem (sinker bar) is used as weight to overcome well pressure, fluids, and friction to sink the tools into the well bore. Stem is also used to transmit force either upward or downward to set or retrieve downhole controls.
- ❖ Wireline Knuckle Joint is used for flexibility through the tool string.
- ❖ Wireline Jars (spang type link jars) used for obtaining a hammering effect by upward or downward movement.
- ❖ Wireline running tool, pulling tool, or other service tool required to perform services desired.
- ❖ Tool strings are available in various sizes that are designed by nominal dimensions rather than tubing sizes.

| Wireline Tool String Size – O.D. | Thread Connection Pin X Box | Fishing Neck Size |
|----------------------------------|-----------------------------|-------------------|
| 1" | 5/8" – 11 NC | 1.000" |
| 1 1/4" | 15/16" – 10 UN | 1 3/16" |
| 1 1/2" | 15/16" – 10 UN | 1 3/8" |
| 1 3/4" | 1 1/16" – 10 UN | 1 3/4" |
| 2 1/8" | 1 1/16" – 10 UN | 1 3/4" |

Other Sizes Available Upon Request

Sand Bailer

The Sand Bailer is a wireline service tool used to remove sand, mud, salt, or small pieces of junk from the tubing or casing. The Sand Bailer is also used to clear debris which has settled on top of sub surface equipment, preventing the recovery of the equipment by regular wireline operations.

The Sand Bailer is a pump-type tool which operates on the principle of a conventional lift pump with piston.

The Sand Bailer consists of a piston and check valve encased in an outer cylinder. At the lower end of the bailer there is a ball check valve or flapper-type valve, which allows sand and debris to enter the bailer tube. By lightly stroking up and down with the wireline tool string the bailer acts to suck sand and debris into the cylinder through the ball or flapper bottom and trapping the substances inside the tube.

Various bottom shoe sizes and configurations, as well as extension tubes for the Sand Bailer are available on request.



| SIZE | ONE PIECE ASSY PART NUMBER | TWO PIECE ASSY PART NUMBER |
|-----------|-------------------------------|-------------------------------|
| 1" OD | 1105-100-00 | 1110-100-00 |
| 1 1/4" OD | 1105-125-00 | 1110-125-00 |
| 1 1/2" OD | 1105-150-00 | 1110-150-00 |
| 1 5/8" OD | 1105-162-00 | 1110-162-00 |
| 1 3/4" OD | 1105-175-00 | 1110-175-00 |
| 2" OD | 1105-200-00 | 1110-200-00 |
| 2 1/8" OD | 1105-212-00 | 1110-212-00 |
| 2 1/4" OD | 1105-225-00 | 1110-225-00 |
| 3" OD | 1105-300-00 | 1110-300-00 |

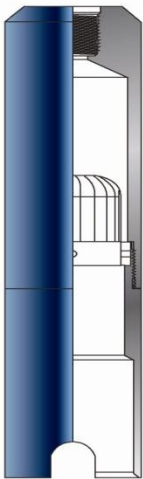
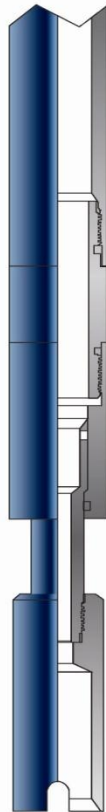
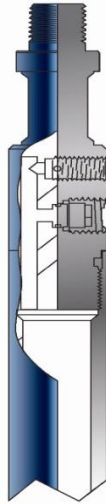
Other Sizes Available Upon Request

Hydrostatic Bailer

The Hydrostatic Bailer is a wireline service tool used when substances to be bailed cannot be removed by a pump bailer. This sometimes occurs when small metallic particles or other type debris become lodged on top of the dogs of a lock mandrel, etc.

The Hydrostatic Bailer is made of a cylinder, about 5 feet long, with a shear disc mechanism at the bottom. The cylinder is at atmospheric pressure, sealed off from well pressure with an O-ring. When the obstruction is reached, the disc is sheared by downward jarring.

Different skirt sizes can be fitted for various tubing and tool sizes. Brass shear discs are available in different thicknesses for various well pressures.



**Junk Basket
Bottom**

| SIZE | PART NUMBER |
|-----------|-------------|
| 1 1/4" OD | 1140-125-00 |
| 1 1/2" OD | 1140-150-00 |
| 1 5/8" OD | 1140-162-00 |
| 2" OD | 1140-200-00 |
| 2 1/2" OD | 1140-250-00 |
| 3" OD | 1140-300-00 |

Other Sizes Available Upon Request

Blind Box

The Blind Box is used when heavy downward jarring on an obstruction is required. It can also be used to cut wireline on a rope socket during fishing operations.

The Blind Box is flat on the bottom and hardened to reduce damage. The O.D. of the Blind Box should be matched in accordance with the tubing in which it is to be used.



| SIZE MAX O.D. | THREAD CONNECTION | FISHING NECK SIZE | PART NUMBER |
|------------------|------------------------|----------------------|-------------|
| 1.250" | 15/16 – 10 UN PIN | 1 3/16" | 1150-125-00 |
| 1.500" | 15/16 – 10 UN PIN | 1 3/16" | 1150-150-00 |
| 1.750" | 15/16 – 10 UN PIN | 1 3/8" | 1150-175-00 |
| 2.250" | 15/16 – 10 UN PIN | 1 3/8" | 1150-225-00 |
| 2.500" | 15/16 – 10 UN PIN | 1 3/8" | 1150-250-00 |
| 2.750" | 1 1/16" – 10 UN PIN | 1 3/4" | 1150-275-00 |

Other Sizes Available Upon Request

Centralizer

The Centralizer is a wireline service tool designed to ensure that the work string service tool is at most central position, especially during wireline operations in deviated wells. It is normally attached to the tool string just above the running tool, pulling tool, or other service tool being used.

The Centralizer is available in a variety of sizes, with either Steel or Teflon construction

Adjustable Bow String Centralizer

(See Picture)

| DESCRIPTION | PART NUMBER |
|-------------|-------------|
| Assembly | 1195-000-00 |

Teflon Centralizer

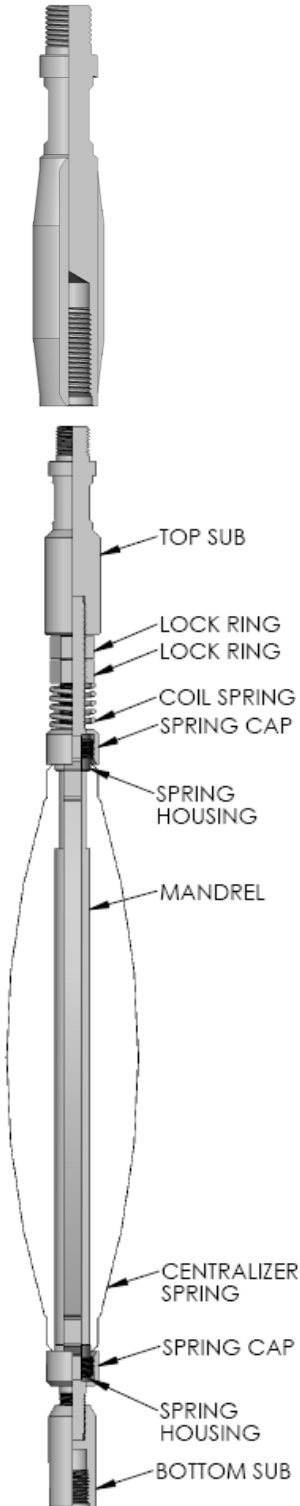
| NOMINAL SIZE | PART NUMBER |
|--------------|-------------|
| 2" | 1190-200-00 |
| 2 1/2" | 1190-250-00 |
| 3" | 1190-300-00 |

Other Sizes Available Upon Request

Steel Centralizer

| NOMINAL SIZE | MAX O.D. | PART NUMBER |
|--------------|----------|-------------|
| 2" | 1.843" | 1185-184-00 |
| 2 1/2" | 2.250" | 1185-225-00 |
| 3" | 2.700" | 1185-270-00 |

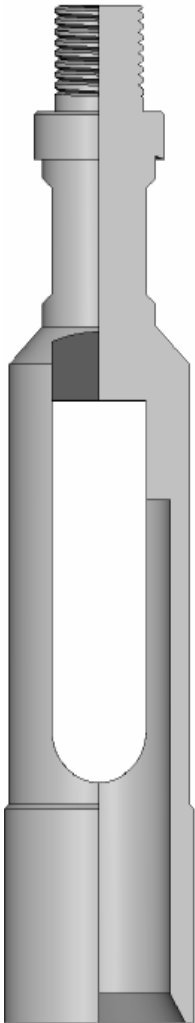
Other Sizes Available Upon Request



Gauge Ring (Paraffin Cutter)

The Gauge Ring is a wireline service tool used to gauge the I.D. of the tubing in which it is run. It should be run prior to running or pulling a sub-surface device, thus assuring the operator that the tubing is unobstructed down to the depth that he will be working.

The Gauge Ring may also be used as a paraffin / wax cutter or to determine the profile of a bridge of debris inside the tubing.



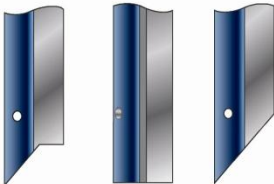
| SIZE MAX O.D. | THREAD CONNECTION | FISHING NECK SIZE | PART NUMBER |
|------------------|----------------------|----------------------|-------------|
| 1.250" | 15/16" – 10 UN PIN | 1 3/16" | 2650-125-00 |
| 1.500" | 15/16" – 10 UN PIN | 1 3/16" | 2650-150-00 |
| 1.750" | 15/16" – 10 UN PIN | 1 3/16" | 2650-175-00 |
| 1.843" | 15/16" – 10 UN PIN | 1 3/8" | 2650-184-00 |
| 1.906" | 15/16" – 10 UN PIN | 1 3/8" | 2650-190-00 |
| 2.250" | 15/16" – 10 UN PIN | 1 3/8" | 2650-225-00 |
| 2.343" | 15/16" – 10 UN PIN | 1 3/8" | 2650-234-00 |
| 2.500" | 15/16" – 10 UN PIN | 1 3/8" | 2650-250-00 |
| 2.750" | 1 1/16" – 10 UN PIN | 1 3/4" | 2650-275-00 |
| 2.875" | 1 1/16" – 10 UN PIN | 1 3/4" | 2650-287-00 |

Other Sizes Available Upon Request

Go-Devil

The Go-Devil is a wireline service tool that makes it possible to cut a conventional wireline when the tool string is entangled in wire or covered with sand or debris, and the rope socket is no longer clear making a cutter bar or wireline snipper ineffective.

The Go-Devil is constructed of a solid length of bar with a slot through which the wireline is passed. Once the wireline is secured through the Go-Devil, it is dropped downhole in the same manner as a cutter bar.

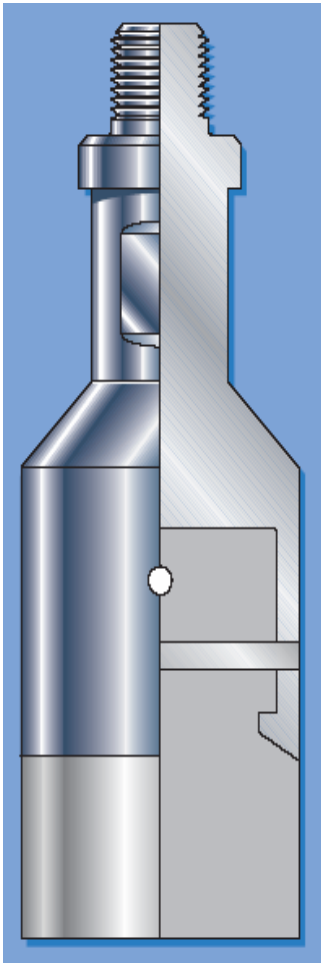


| SIZE | FISHING NECK SIZE | PART # 2 Ft. LONG | PART # 3 Ft. LONG | PART # 5 Ft. LONG |
|--------|-------------------|----------------------|----------------------|----------------------|
| 1 1/4" | 1 3/16" | 2270-125-02 | 2270-125-03 | 2270-125-05 |
| 1 1/2" | 1 3/8" | 2270-150-02 | 2270-150-02 | 2270-150-05 |
| 1 3/4" | 1 3/4" | 2270-175-02 | 2270-175-03 | 2270-175-05 |
| 1 7/8" | 1 3/4" | 2270-187-02 | 2270-187-03 | 2270-187-05 |
| 2 1/8" | 1 3/4" | 2270-212-02 | 2270-212-03 | 2270-212-05 |

Other Sizes Available Upon Request

Impression Block

The Impression Lock is a wireline service tool used to take impressions of foreign objects within the well bore. The Impression Block is a useful tool during fishing operations, as the impression taken will define the shape and relative position of the obstruction so that the proper fishing tool may be selected.



The Impression Block is constructed of a hollow steel housing open at one end and filled with lead, with a pin through the lead section to keep it in tact. The impression is made on the exposed soft lead face on the bottom on the Impression Block.

| SIZE MAX O.D. | THREAD CONNECTION | FISHING NECK SIZE | PART NUMBER |
|------------------|----------------------|----------------------|----------------|
| 1.250" | 15/16" – 10 UN PIN | 1 3/16" | 2300-125-00 |
| 1.500" | 15/16" – 10 UN PIN | 1 3/16" | 2300-150-00 |
| 1.750" | 15/16" – 10 UN PIN | 1 3/16" | 2300-175-00 |
| 1.875" | 15/16" – 10 UN PIN | 1 3/8" | 2300-187-00 |
| 2.000" | 15/16" – 10 UN PIN | 1 3/8" | 2300-200-00 |
| 2.250" | 15/16" – 10 UN PIN | 1 3/8" | 2300-225-00 |
| 2.375" | 15/16" – 10 UN PIN | 1 3/8" | 2300-237-00 |
| 2.500" | 15/16" – 10 UN PIN | 1 3/8" | 2300-250-00 |
| 2.750" | 1 1/6" – 10 UN PIIN | 1 3/4" | 2300-275-00 |
| 2.875" | 1 1/16" – 10 UN PIN | 1 3/4" | 2300-287-00 |

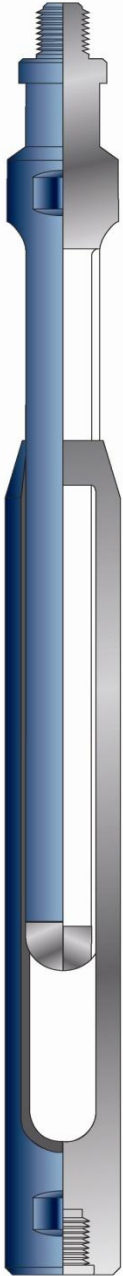
Other Sizes Available Upon Request

Spang Type Stroke Jars

“Spang Type” Jars utilize the weight of the stem connected immediately above to deliver upward or downward jarring impacts by manipulating the wireline at the surface.

Effective jarring impacts depends on the weight of the stem used, the length of the strength of the jars, the size and depth of the tools, the viscosity of the fluid in the tubing, and the well pressure acting upon the cross sectional area of the wireline.

Jars are constructed of two pieces linked together (similar to along chain link), which are free to be extended or collapsed creating a stroke type motion.



| SIZE | STROKE LENGTH | THREAD CONNECTION BOX X PIN | FISHING NECK SIZE | PART # |
|--------|---------------|-----------------------------|-------------------|-------------|
| 1" | 18" | 5/8" – 11 NC | 1.000" | 2305-100-18 |
| 1 1/4" | 20" | 15/16" – 10 UN | 1 3/16" | 2305-125-20 |
| 1 1/4" | 30" | 15/16" – 10 UN | 1 3/16" | 2305-125-30 |
| 1 1/2" | 20" | 15/16" – 10 UN | 1 3/8" | 2305-150-20 |
| 1 1/2" | 30" | 15/16" – 10 UN | 1 3/8" | 2305-150-30 |
| 1 3/4" | 20" | 1 1/16" – 10 UN | 1 3/4" | 2305-175-20 |
| 1 3/4" | 30" | 1 1/16" – 10 UN | 1 3/4" | 2305-175-30 |
| 1 7/8" | 20" | 1 1/16" – 10 UN | 1 3/4" | 2308-187-20 |
| 1 7/8" | 30" | 1 1/16" – 10 UN | 1 3/4" | 2305-187-30 |
| 2 1/8" | 20" | 1 1/16" – 10 UN | 1 3/4" | 2305-212-30 |
| 2 1/8" | 30" | 1 1/16" – 10 UN | 1 3/4" | 2305-212-30 |

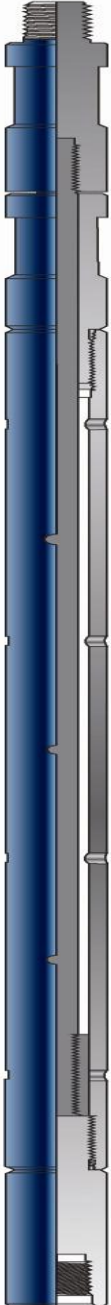
Other Sizes Available Upon Request

Tubular Jars

The Tubular Jar is designed to provide effective jarring forces in conjunction with wireline service tools. The Tubular Jar operates on the same principle as Stroke Jars.

The jar is tubular in construction, with a perforated tube to allow for fluid by-pass when the plunger is moved up or down.

The Tubular Jar is especially effective in large tubing and casing since there is less tendency for buckling action of the tube, as might happen with a stroke jar during fishing and bailing operations.

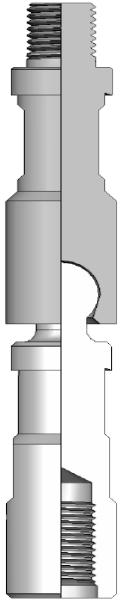


| SIZE | THREAD CONNECTION PIN X BOX | FISHING NECK SIZE | PART NUMBER |
|--------|--------------------------------|----------------------|----------------|
| 1" | 5/8" – 11 NC | 1.000" | 2310-100-00 |
| 1 1/4" | 15/16 – 10 UN | 1 3/16" | 2310-125-20 |
| 1 1/2" | 15/16 – 10 UN | 1 3/8" | 2310-150-20 |
| 1 3/4" | 1 1/16" – 10 UN | 1 3/4" | 2310-175-20 |
| 1 7/8" | 1 1/16" – 10 UN | 1 3/4" | 2310-187-20 |
| 2 1/8" | 1 1/16" – 10 UN | 1 3/4" | 2310-212-20 |

Other Sizes Available Upon Request

Knuckle Joint / Knuckle Jar

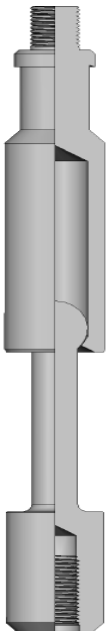
The Knuckle Joint is a wireline tool accessory used to provide flexibility in the tool string. The Knuckle Joint is constructed with a ball and socket and is recommended for use within all wireline tool strings.



Knuckle Joint

| SIZE | THREAD CONNECTION PIN X BOX | FISHING NECK SIZE | PART NUMBER |
|--------|--------------------------------|----------------------|----------------|
| 1" | 5/8" – 11 NC | 1.000" | 2395-100-00 |
| 1 1/4" | 15/16 – 10 UN | 1 3/16" | 2395-125-20 |
| 1 1/2" | 15/16 – 10 UN | 1 3/8" | 2395-150-20 |
| 1 3/4" | 1 1/16" – 10 UN | 1 3/4" | 2395-175-20 |
| 1 7/8" | 1 1/16" – 10 UN | 1 3/4" | 2395-187-20 |
| 2 1/8" | 1 1/16" – 10 UN | 1 3/4" | 2395-212-20 |

Other Sizes Available Upon Request



Knuckle Jar

| SIZE | THREAD CONNECTION PIN X BOX | FISHING NECK SIZE | PART NUMBER |
|--------|--------------------------------|----------------------|----------------|
| 1 1/4" | 15/16 – 10 UN | 1 3/16" | 2390-125-20 |
| 1 1/2" | 15/16 – 10 UN | 1 3/8" | 2390-150-20 |
| 1 3/4" | 1 1/16" – 10 UN | 1 3/4" | 2390-175-20 |
| 1 7/8" | 1 1/16" – 10 UN | 1 3/4" | 2390-187-20 |
| 2 1/8" | 1 1/16" – 10 UN | 1 3/4" | 2390-212-20 |

Other Sizes Available Upon Request

GS Pulling Tool

| | | | | | |
|---------------------|---------------|-------------|---------------|-------------|-------------|
| NOMINAL SIZE | 1 1/2" | 2" | 2 1/2" | 3" | 4" |
| PART NUMBER | 2910-150-00 | 2910-200-00 | 2910-2160-00 | 2910-300-00 | 2910-400-00 |

SPECIFICATIONS

| | | | | | |
|--------------------------------------|-------------|-------------|-------------|--------------|--------------|
| WILL ENGAGE FISHING NECK I.D. | 1.062" | 1.375" | 1.812" | 2.313" | 3.125" |
| TOP THREAD CONNECTION | 15/16" - 10 | 15/16" - 10 | 15/16" - 10 | 1 1/16" - 10 | 1 1/16" - 10 |
| FISHING NECK O.D. ON TOOL | 1.187" | 1.375" | 1.750" | 2.313" | 2.313" |
| BOTTOM THREAD CONNECTION | 1/2" - 13 | 1/2" - 13 | 5/8" - 11 | 5/8" - 11 | 2 1/8" - 12 |

Other Sizes Available Upon Request

"GS" Pulling Tool

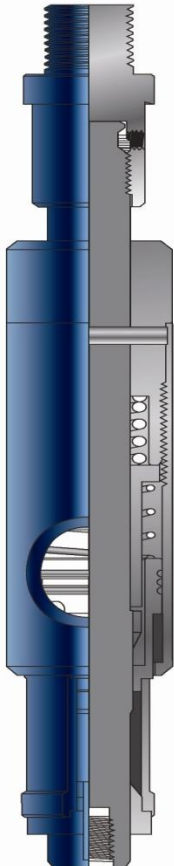
The "GS" Pulling Tool is a wireline service tool designed to retrieve flow control devices from well bore. The "GS" Pulling Tool is designed to engage an internal type fishing neck. The tool is available in a wide range of sizes, for standard or H2S service.

The "GS" Pulling Tool is designed to be released from the downhole device by downward jarring.

"GR Shear Up Adapter"

The "GR" Shear Up Adapter is a wireline pulling tool device used to convert a Type "GS" Pulling Tool. The shear pin on the "GS" Pulling Tool must be removed. The complete assembly, now a Type "GR" Pulling Tool will operate with a shear-up to release action instead of a shear down.

The "GR" Adapter is available to suit all sizes of the "GS" Pulling Tool.



| NOMINAL SIZE | PART NUMBER |
|--------------|-------------|
| 1 1/2" | 2925-150-00 |
| 2" | 2925-150-00 |
| 2 1/2" | 2925-250-00 |
| 3" | 2925-300-00 |

JD Pulling Tool

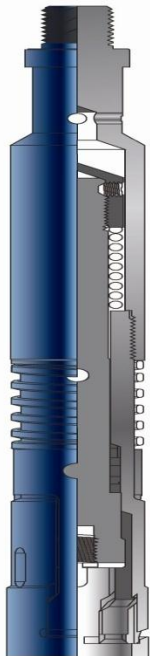
“JD” Series Wireline Pulling Tool

The “JD” Pulling Tool is a wireline service tool designed to remove retrievable subsurface devices with external fishing necks from well. This tool has collet-type dogs with large latching area. It is also available with different length cores which make the reach of the tool adaptable to retrieve subsurface devices with fishing necks of different lengths.

The “JD” Pulling Tool utilizes the “D” top sub which is made up to the skirt of the tool. The dogs, which are mounted on the skirt, are inserted into the vertical openings in the skirt. The “JD” Series Pulling Tool can be released, if necessary from the retrievable device by downward jarring.

In the Pulling Tool nomenclature, the second letter is used to designate the direction of shear release. A “JD” is a “jar down” release tool. The third letter designates core length: with a “C” being a “long” core and an “S” core being a “short” core. A third core length, designated as an “L” core is even shorter but has limited applications.

| NOMINAL SIZE | “JDC” ASSEMBLY | “JDS” ASSEMBLY |
|--------------|----------------|----------------|
| 1 1/4” | 2930-125-00 | |
| 1 3/8” | 2930-137-00 | |
| 1 1/2” | 2930-150-00 | 2935-150-00 |
| 1 5/8” | 2930-162-00 | 2935-162-00 |
| 2” | 2930-200-00 | 2935-200-00 |
| 2 1/2” | 2930-250-00 | 2935-250-00 |
| 3” | 2930-300-00 | 2935-300-00 |
| 4” | 2930-400-00 | 2935-400-00 |

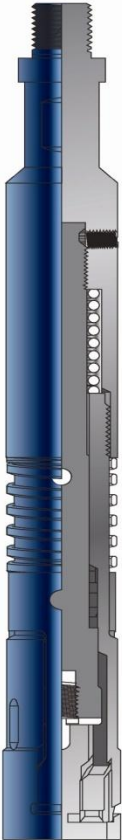


| SIZE | TYPE | TO ENGAGE FISHING NECK O.D. | REACH | MAX O.D. | TOP THREAD CONNECTION |
|--------|------|-----------------------------|--------|----------|-----------------------|
| 1 1/4” | JDC | .875” | 1.937” | 1.281” | 15/16-10 |
| 1 3/8” | JDC | 1.000” | 1.875” | 1.375” | 15/16-10 |
| 1 1/2” | JDC | 1.187” | 1.093” | 1.422” | 15/16-10 |
| 1 1/2” | JDS | 1.187” | 1.843” | 1.422” | 15/16-10 |
| 1 1/2” | JUC | 1.187” | 1.093” | 1.422” | 15/16-10 |
| 1 1/2” | JUS | 1.187” | 1.843” | 1.422” | 15/16-10 |
| 1 5/8” | JDC | 1.187” | 1.093” | 1.625” | 15/16-10 |
| 2” | JDC | 1.375” | 1.437” | 1.859” | 15/16-10 |
| 2” | JDS | 1.375” | 2.125” | 1.859” | 15/16-10 |
| 2” | JUC | 1.375” | 1.437” | 1.859” | 15/16-10 |
| 2” | JUS | 1.375” | 2.125” | 1.859” | 15/16-10 |
| 2 1/2” | JDC | 1.750” | 1.312” | 2.250” | 15/16-10 |
| 2 1/2” | JDS | 1.750” | 2.187” | 2.250” | 15/16-10 |
| 2 1/2” | JUC | 1.750” | 1.312” | 2.250” | 15/16-10 |
| 2 1/2” | JUS | 1.750” | 2.187” | 2.250” | 15/16-10 |
| 3” | JDC | 2.312” | 1.437” | 2.796” | 1 1/16-10 |
| 3” | JDS | 2.312” | 2.125” | 2.796” | 1 1/16-10 |
| 3” | JUC | 2.312” | 1.437” | 2.796” | 1 1/16-10 |
| 3” | JUS | 2.312” | 2.125” | 2.796” | 1 1/16-10 |
| 4” | JDC | 3.125” | 2.312” | 3.750” | 1 1/16-10 |
| 4” | JUC | 3.125” | 2.312” | 3.750” | 1 1/16-10 |

JU Pulling Tool

| NOMINAL SIZE | "JUC" ASSEMBLY | "JUS" ASSEMBLY |
|--------------|----------------|----------------|
| 1 1/4" | 2940-150-00 | |
| 1 3/8" | 2940-137-00 | |
| 1 1/2" | 2940-150-00 | 2945-150-00 |
| 1 5/8" | 2940-162-00 | 2945-162-00 |
| 2" | 2940-200-00 | 2945-200-00 |
| 2 1/2" | 2940-250-00 | 2945-250-00 |
| 3" | 2940-300-00 | 2945-300-00 |
| 4" | 2940-400-00 | 2945-400-00 |

"JU" Series Pulling Tool

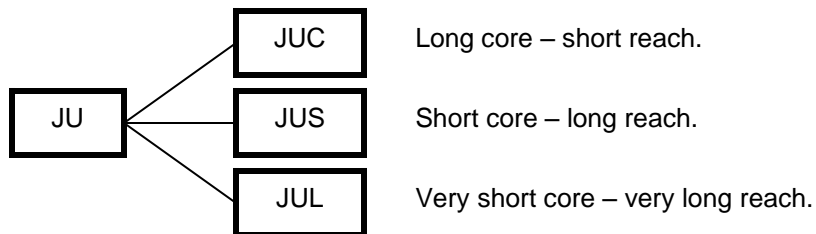


The "JU" Pulling Tool is a wireline service tool designed to remove retrievable subsurface devices with external fishing necks from a well. This tool has collet-type dogs with a large latching area. It is also available with different length cores which make it adaptable to retrieve subsurface devices with fishing necks of different lengths.

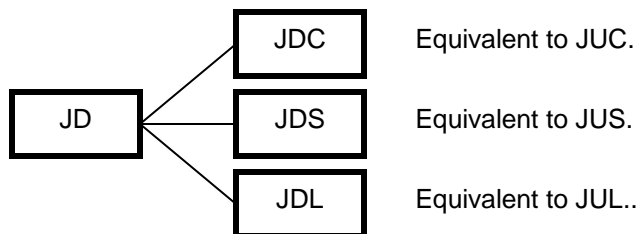
The "JU" utilizes the "U" top sub which is made up to the core of the tool. The "JU" can be released, if necessary from the subsurface device by continued upward jarring.

In the Pulling Tool nomenclature, the second letter is used to designate the direction of shear release. A "JU" is a "jar up" release tool. The third letter designates core length; a "C" being a "long" core and "S" being "short" core. A third core length, designated as an "L" core is even shorter but has limited application.

The "JD" and "JU" Pulling Tools differ only in the manner of shear release, The "JD" for jar down to release and the "JU" for jar up to release. The accompanying chart provides reach data along with core type necessary.



To convert a JU Pulling Tool into a JD, change the top sub and install a core cap to the core.



R Pulling Tool

| NOMINAL SIZE | “RB” ASSEMBLY | “RS” ASSEMBLY | “RJ” ASSEMBLY |
|--------------|---------------|---------------|---------------|
| 1 1/2” | 2960-150-00 | 2965-150-00 | 2970-150-00 |
| 2” | 2960-200-00 | 2965-200-00 | 2970-200-00 |
| 2 1/2” | 2960-250-00 | 2965-250-00 | 2970-250-00 |
| 3” | 2960-300-00 | 2965-300-00 | 2970-300-00 |
| 4” | 2960-400-00 | 2965-400-00 | 2970-400-00 |

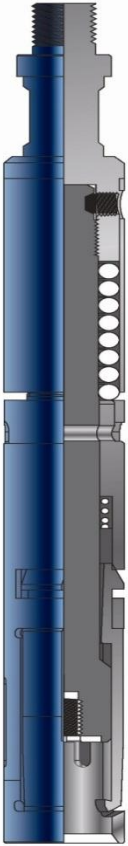
“R” Pulling Tool

The “R” Pulling Tool is a wireline service tool designed to remove retrievable subsurface devices with external fishing necks from a well. This tool utilizes a set of three dogs to engage the fishing neck.

The “R” Pulling Tool is available in a wide range of sizes, with three reaches in each sizes. All tools can be supplied for standard or H2S service.

The “R” Pulling Tool is designed to be released from the downhole device by upward jarring.

By changing only the core of the “R” Pulling Tool, it is possible to obtain a “RB”, “RS”, or “RJ” Pulling Tool



DATA and DIMENSIONS

| SIZE | TYPE | TO ENGAGE FISHING NECK O.D. | REACH | MAX O.D. | TOP THREAD CONNECTION |
|--------|------|-----------------------------|--------|----------|-----------------------|
| 1 1/2” | RB | 1.187” | 1.265” | 1.430” | 15/16-10 |
| 1 1/2” | RS | 1.187” | 1.797” | 1.430” | 15/16-10 |
| 1 1/2” | RJ | 1.187” | 2.547” | 1.430” | 15/16-10 |
| 2” | RB | 1.375” | 1.219” | 1.770” | 15/16-10 |
| 2” | RS | 1.375” | 1.984” | 1.770” | 15/16-10 |
| 2” | RJ | 1.375” | 2.547” | 1.770” | 15/16-10 |
| 2 1/2” | RB | 1.750” | 1.203” | 2.180” | 15/16-10 |
| 2 1/2” | RS | 1.750” | 1.984” | 2.180” | 15/16-10 |
| 2 1/2” | RJ | 1.750” | 2.547” | 2.180” | 15/16-10 |
| 3” | RB | 2.312” | 1.297” | 2.740” | 1 1/16”-10 |
| 3” | RS | 2.312” | 2.156” | 2.740” | 1 1/16”-10 |
| 3” | RJ | 2.312” | 2.609” | 2.740” | 1 1/16”-10 |
| 4” | RB | 3.125” | 1.406” | 3.718” | 1 1/16”-10 |
| 4” | RS | 3.125” | 2.156” | 3.718” | 1 1/16”-10 |

S Pulling Tool

| NOMINAL SIZE | “SB” ASSEMBLY | “SS” ASSEMBLY | “SJ” ASSEMBLY |
|--------------|---------------|---------------|---------------|
| 1 1/2” | 2975-150-00 | 2980-150-00 | 2985-150-00 |
| 2” | 2975-200-00 | 2980-200-00 | 2985-200-00 |
| 2 1/2” | 2975-250-00 | 2980-250-00 | 2985-250-00 |
| 3” | 2975-300-00 | 2980-300-00 | 2985-300-00 |
| 4” | 2975-400-00 | 2980-400-00 | 2985-400-00 |

“S” Pulling Tool

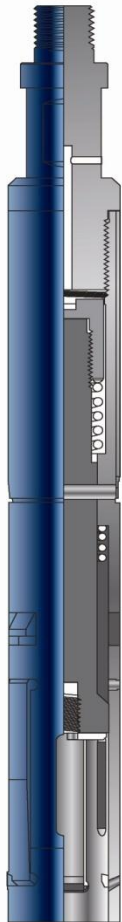
The “S” Pulling Tool is a wireline service tool designed to remove retrievable subsurface devices with external fishing necks from a well. This tool utilizes a set of three dogs to engage the fishing neck.

The “S” Pulling Tool is available in a wide range of sizes, with three reaches in each sizes. All tools can be supplied for standard or H2S service.

By changing only the core of the “S” Pulling Tool, it is possible to obtain a types “SB”, “SS”, or “SJ” Pulling Tools.

The “S” Pulling Tool is designed to be released from the downhole device by downward jarring. Therefore the “S” Pulling Tool is particularly suited for use as a pulling tool when extensive jarring is required.

Because of the downward shear release of the “S” Pulling Tool, it is particularly useful as a running tool for collar stops, pack-off anchor stops, and other subsurface devices landed against a positive no-go.

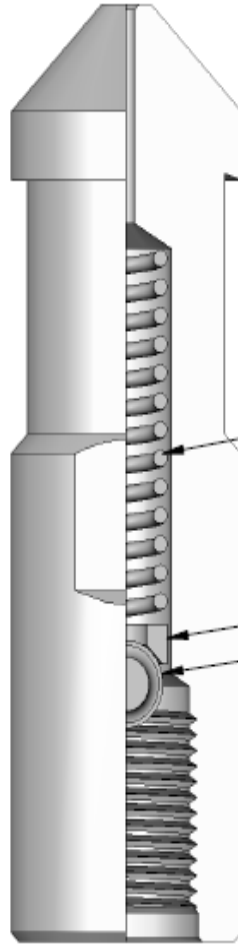


DATA and DIMENSIONS

| SIZE | TYPE | TO ENGAGE FISHING NECK O.D. | REACH | MAX O.D. | TOP THREAD CONNECTION |
|--------|------|-----------------------------|--------|----------|-----------------------|
| 1 1/2” | SB | 1.187” | 1.297” | 1.437” | 15/16-10 |
| 1 1/2” | SS | 1.187” | 1.781” | 1.437” | 15/16-10 |
| 2” | SB | 1.375” | 1.219” | 1.770” | 15/16-10 |
| 2” | SS | 1.375” | 2.031” | 1.770” | 15/16-10 |
| 2 1/2” | SB | 1.750” | 1.281” | 2.180” | 15/16-10 |
| 2 1/2” | SS | 1.750” | 2.000” | 2.180” | 15/16-10 |
| 3” | SB | 2.312” | 1.500” | 2.740” | 1 1/16”-10 |
| 3” | SS | 2.312” | 2.219” | 2.740” | 1 1/16”-10 |
| 4” | SB | 3.125” | 1.800” | 3.718” | 1 1/16”-10 |

Rope Socket (Single Strand)

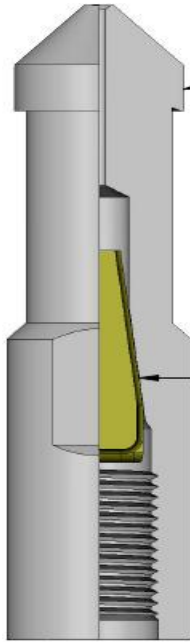
The Single Strand Rope Socket is used to securely attach .082" or .092" wireline to the tool string. The rope socket consists of a body, spring, spring support thimble, and disc.



| SIZE | PART NUMBER | FISHING NECK O.D. | THREAD CONNECTION |
|--------|-------------|-------------------|-------------------|
| 1" | 3100-100-00 | 1.000" | 5/8" - 11 NC |
| 1 1/4" | 3100-125-00 | 1.187" | 15/16" - 10 UN |
| 1 1/2" | 3100-150-00 | 1.375" | 15/16" - 10 UN |
| 1 3/4" | 3100-175-00 | 1.750" | 1 1/16" - 10 UN |
| 1 7/8" | 3100-187-00 | 1.750" | 1 1/16" - 10 UN |
| 2 1/8" | 3100-212-00 | 1.750" | 1 1/16" - 10 UN |

Rope Socket (Brass Wedge Type)

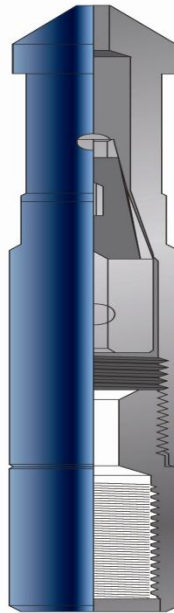
The Brass Wedge Rope Socket is used to securely attach .108" or larger wireline to the tool string. It utilizes a brass wedge to keep the wireline attached within the rope socket instead of a spring, thimble and spool as used in conventional rope sockets.



| SIZE | WIRE SIZE | PART NUMBER | FISHING NECK O.D. | THREAD CONNECTION |
|--------|-----------|-------------|-------------------|-------------------|
| 1 1/4" | 0.092" | 3105-125-00 | 1.187" | 15/16 – 10 UN |
| | 0.108" | 3110-125-00 | | |
| | 0.125" | 3115-125-00 | | |
| | 0.187" | 3120-125-00 | | |
| 1 1/2" | 0.092" | 3105-150-00 | 1.375" | 15/16" – 10 UN |
| | 0.108" | 3110-150-00 | | |
| | 0.125" | 3115-150-00 | | |
| | 0.187" | 3120-150-00 | | |
| 1 3/4" | 0.092" | 3105-175-00 | 1.750" | 1 1/16" – 10 UN |
| | 0.108" | 3110-175-00 | | |
| | 0.125" | 3115-175-00 | | |
| | 0.187" | 3120-175-00 | | |
| 1 7/8" | 0.092" | 3105-187-00 | 1.750" | 1 1/16" – 10 UN |
| | 0.108" | 3110-187-00 | | |
| | 0.125" | 3115-187-00 | | |
| | 0.187" | 3120-187-00 | | |

Multi Strand Rope Socket

The Slip Type Rope Socket is designed for use with small multi-strand lines through 5/16" diameter. The Slip Type rope Socket consists of a body, sub, slips, and set screw featuring easy assembly. The slips are designed to cause the line to break under severe loading at specific percentage of the full line tensile strength in the event that the wireline tool string becomes stuck. The operator is assured that the line will break at the Rope Socket, rather than up-hole, allowing retrieval of the line.

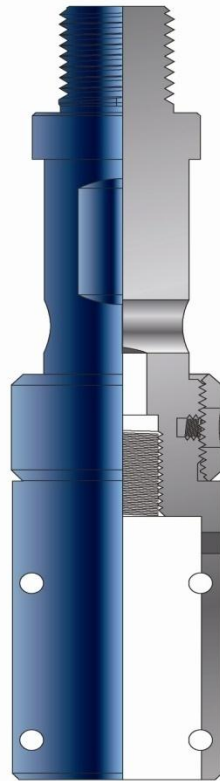


| SIZE | PART NUMBER | FISHING NECK O.D. | THREAD CONNECTION |
|--------|-------------|-------------------|-------------------|
| 1 1/4" | 3125-125-00 | 1.187" | 15/16" – 10 UN |
| 1 1/2" | 3125-150-00 | 1.375" | 15/16" – 10 UN |
| 1 3/4" | 3125-175-00 | 1.750" | 1 1-16" - 10 UN |
| 1 7/8" | 3125-187-00 | 1.750" | 1 1-16" - 10 UN |
| 2 1/8" | 3125-212-00 | 1.750" | 1 1-16" - 10 UN |

C-1 Running Tool

The Type “C-1” Running Tool is a wireline service tool used to install locking mandrels with external fishing necks in the appropriate landing nipple. The “C-1” Running Tool is run using a thread protector, which is the same O.D. as the body of the tool to set selective type locking mandrels. A seal bore locating ring may be used instead to set top no-go type locking mandrels.

The “C-1” Running Tool is threaded internally to accept the Type “A” or Type “N-1” Shank.



| NOMINAL SIZE | 2" | 2 ½" | 3" | 4" |
|--------------|-------------|-------------|-------------|-------------|
| PART NUMBER | 3135-200-00 | 3135-250-00 | 3135-300-00 | 3135-400-00 |

X-Line Running Tool

The X-Line Selective Running Tool is designed to install subsurface controls using a type X Locking Mandrel. The selective features of the X Running Tool allow the operator to install the downhole device in a pre-determined WX Landing Nipple by adjusting the tool into the selective position. If the subsurface control is to be installed in the upper most landing nipple, the locking mandrel may be run with the keys in the control or location position.

In addition to setting the X Locking Mandrel, the Running Tool may be used to locate WX Landing Nipples.

The R Selective Running Tool, similar in design, is available in a wide range of sizes to install Type R Locking Mandrels in heavy weight tubings.

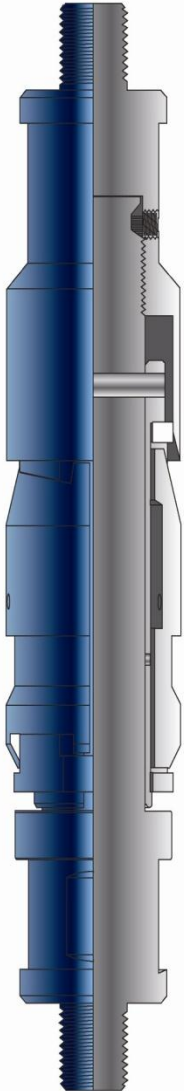


| SIZE | PART NUMBER |
|--------|-------------|
| 1.500" | 3200-150-00 |
| 1.625" | 3200-162-00 |
| 1.875" | 3200-187-00 |
| 2.313" | 3200-231-00 |
| 2.750" | 3200-275-00 |
| 2.813" | 3200-281-00 |
| 3.813" | 3200-381-00 |

| SIZE | PART NUMBER |
|--------|-------------|
| 1.710" | 3205-171-00 |
| 1.781" | 3205-178-00 |
| 2.125" | 3205-212-00 |
| 2.188" | 3205-218-00 |
| 2.562" | 3205-256-00 |
| 3.688" | 3205-368-00 |

B Shifting Tool

The Type “B” Shifting Tool is used to position the closing sleeve or sliding sleeve to the open or closed position.



| SIZE | PART NUMBER |
|--------|-------------|
| 1.781” | 3250-178-00 |
| 1.875” | 3250-187-00 |
| 2.125” | 3250-212-00 |
| 2.313” | 3250-231-00 |
| 2.562” | 3250-256-00 |
| 2.750” | 3250-275-00 |
| 2.813” | 3250-275-00 |
| 3.812” | 3250-381-00 |

Other sizes available on request

Selective Shifting Tool

| SIZE | 1.875” | 2.313” | 2.750-2.813” |
|-------------|-------------|-------------|--------------|
| PART NUMBER | 3270-187-00 | 3270-231-00 | 3270-275-00 |

Stem (Weight Bar)

Wireline Stems, often referred to as weight bars provide the mass required in jarring operations and the mass required to enable the tool string to “fall” against the tubing differential pressure and friction at the wireline stuffing box.



| SIZE | FISHING NECK SIZE | PART # 2' LONG | PART # 3' LONG | PART # 5' LONG |
|--------|-------------------|-------------------|-------------------|-------------------|
| 1" | 1.000" | 3350-100-02 | 3350-100-03 | 3350-100-05 |
| 1 1/4" | 1 3/16" | 3350-125-02 | 3350-125-03 | 3350-125-05 |
| 1 1/2" | 1 3/8" | 3350-150-02 | 3350-150-03 | 3350-150-05 |
| 1 3/4" | 1 3/4" | 3350-175-02 | 3350-175-03 | 3350-175-05 |
| 1 7/8" | 1 3/4" | 3350-187-02 | 3350-187-03 | 3350-187-05 |
| 2 1/8" | 1 3/4" | 3350-212-02 | 3350-212-03 | 3350-212-05 |

Other sizes available on request

Roller Stem

The Roller Stem is a specially designed tool used in the wireline tool string to minimize the effect of friction caused by the tool string sliding on the tubing wall in highly deviated wells.

The Roller Stem consists of a standard three foot length stem with four slots to accommodate simple disc rollers.

Roller Stem with Teflon Wheels

| SIZE | FISHING NECK SIZE | PART NUMBER 3 FT. LONG | PART NUMBER 5 FT. LONG |
|--------|-------------------|------------------------|------------------------|
| 1 1/4" | 1 3/16" | 3360-125-03 | 3360-125-05 |
| 1 1/2" | 1 3/8" | 3360-150-03 | 3360-150-05 |
| 1 3/4" | 1 3/4" | 3360-175-03 | 3360-175-05 |
| 1 7/8" | 1 3/4" | 3360-187-03 | 3360-187-05 |

Other sizes available on request

Lead Filled Stems

Lead Filled Stems are used instead of conventional stems when additional weight per foot on given O.D. is required.

The Lead Filled Stem consists of a top sub with a fishing neck and pin thread, a tube into which lead is poured, and a bottom sub with a box connection.

Lead Filled Stem

| SIZE | FISHING NECK SIZE | PART NUMBER 2 FT. LONG | PART NUMBER 3 FT. LONG | PART NUMBER 5 FT. LONG |
|--------|-------------------|------------------------|------------------------|------------------------|
| 1" | 1.000" | 3355-100-02 | 3355-100-03 | 3355-100-05 |
| 1 1/4" | 1 3/16" | 3355-125-02 | 3355-125-03 | 3355-125-05 |
| 1 1/2" | 1 3/8" | 3355-150-02 | 3355-150-03 | 3355-150-05 |
| 1 3/4" | 1 3/4" | 3355-175-02 | 3355-175-03 | 3355-175-05 |
| 1 7/8" | 1 3/4" | 3355-187-02 | 3355-187-03 | 3355-187-05 |

Other sizes available on request



Type F Collar Stop

The Type "F" Collar Stop is designed to locate and set in tubing coupling recesses. The Type "F" Collar Stop is used to prevent tools from falling through the tubing and into the casing and is applicable for a wide range of wireline operations.

Type F Collar Stop

| NOMINAL SIZE | 2" | 2 1/2" | 3" |
|-------------------|-------------|-------------|-------------|
| PART NUMBER | 3400-200-00 | 3400-250-00 | 3400-300-00 |
| MINIMUM I.D. | .875" | 1.125" | 1.625" |
| FISHING NECK O.D. | 1.375" | 1.750" | 2.312" |

Other sizes available on request

Collar Stop Running Tool

| TYPE | 2" – 2 1/2" Collar Stop | 3" Collar Stop |
|-------------|----------------------------|-------------------|
| PART NUMBER | 3130-000-12 | 3130-000-13 |



Tubing End Locator

The Tubing End Locator is used to locate the lower end of the tubing so that its depth may be accurately measured.

The Tubing End Locator consists of a slotted body in which a spring-loaded latch is retained. A shear pin limits the outward travel or rotation of the latch. When the tool emerges from the lower end of the tubing, the latch will be stopped in a position that is approximately perpendicular to the body and can now re-enter the tubing until the shear pin is cut.



**Tubing End
Locator**

Tubing End Locator

| SIZE – O.D. | 1 1/4" | 1 1/2" | 1 3/4" |
|-------------|-------------|-------------|-------------|
| PART NUMBER | 3570-125-00 | 3570-150-00 | 3570-175-00 |

Other sizes available on request

Tubing Swedge

The Tubing Swedge is used to swedge out mashed areas and other obstructions in the tubing string to insure the free passage of the subsurface controls. It is also used to open orange-peel type bull plugs on the lower end of the tubing.

The Tubing Swedge is tapered on both ends. The upper end is threaded with a pin connection and a fishing neck. Since the largest portions of the swedge is approximately equal to the drift diameter of the tubing, a fluid course is provided through the central bore and lateral ports.



Tubing Swedge

Tubing Swedge

| SIZE MAX O.D. | THREAD CONNECTION | FISHING NECK SIZE | PART NUMBER |
|------------------|----------------------|----------------------|----------------|
| 1.250" | 15/16" – 10 UN PIN | 1 3/16" | 3580-125-00 |
| 1.500" | 15/16" – 10 UN PIN | 1 3/16" | 3580-150-00 |
| 1.750" | 15/16" – 10 UN PIN | 1 3/16" | 3580-175-00 |
| 1.843" | 15/16" – 10 UN PIN | 1 3/8" | 3580-184-00 |
| 1.906" | 15/16" – 10 UN PIN | 1 3/8" | 3580-190-00 |
| 2.250" | 15/16" – 10 UN PIN | 1 3/8" | 3580-225-00 |
| 2.343" | 15/16" – 10 UN PIN | 1 3/8" | 3580-234-00 |
| 2.500" | 15/16" – 10 UN PIN | 1 3/8" | 3580-250-00 |
| 2.750" | 1 1/16" – 10 UN PIN | 1 3/4" | 3580-275-00 |
| 2.875" | 1 1/16" – 10 UN PIN | 1 3/4" | 3580-287-00 |

Other sizes available on request

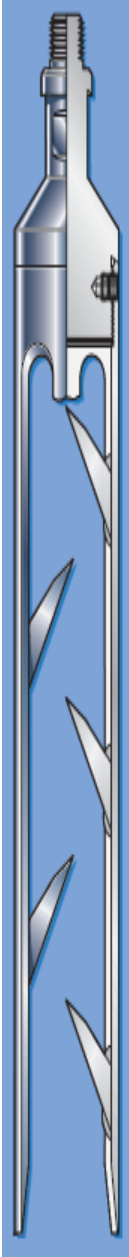
Wireline Grab

The Wireline Grab is a wireline service tool normally used to retrieve wireline that has been broken in the well bore. The Wireline Grab has flexible legs with pointed barbs inside each leg to form hooks that will catch the looped end of the broken wireline.

Wireline Grab

| SIZE MAX O.D. | PART # 2 PRONG | PART # 4 PRONG |
|------------------|-------------------|-------------------|
| 1.500" | 3620-150-00 | 3625-150-00 |
| 1.750" | 3620-175-00 | 3625-175-00 |
| 2.250" | 3620-225-00 | 3625-225-00 |
| 2.500" | 3620-250-00 | 3625-250-00 |
| 2.625" | 3620-262-00 | 3625-262-00 |
| 2.700" | 3620-270-00 | 3625-270-00 |

Other sizes available on request



Wireline Grab

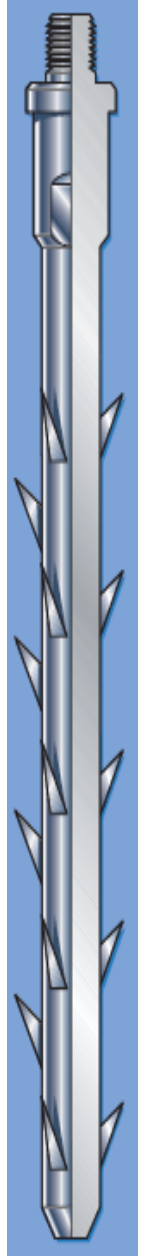
Center Spear

The Center Spear is a wireline service tool used to fish out broken wireline from the well bore. If the ball of wire is too compacted making it impossible to use a conventional wireline grab, this tool is used to pierce the ball of wire, loosen the wire, and retrieve it from the well bore.

Tubing Swedge

| DESCRIPTION | PART NUMBER |
|-------------|-------------|
| ASSEMBLY | 1180-200-00 |

Other sizes available on request



Center Spear