DIMENSION BID (M) SDN BHD
WEST MALAYSIA OPERATION
(WMO)

TRAINEE ASSESSMENT

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TABLE OF CONTENT

Safety Policy

- DB management is committed to provide a safe and healthy workplace and ensuring that all business activities are conducted in a manner that protects the environment

- Therefore, 7 safety policies established by company:

1. Driving Policy
2. Drugs & Alcohol Policy
3. Harassment In The Workplace Policy
4. HSSE Policy
5. PPE Policy
6. Smoking & Vaping Policy
7. Stop Work Policy

Golden Safety Rules

- Designed to set boundaries for work.
- Spell out the minimum requirement to all employees to follow to ensure for safe work.

1. Personal ownership of Safety
2. Stop Work
3. Risk Assessment
4. Management of Change
5. Full Compliance of PPE
6. Working at Height
7. Lifting Operations
8. Approved PTW (Permit to work)
9. Operate Vehicles Safely
10. Avoid position in the line of fire

PERSONAL PROTECTIVE EQUIPMENT [PPE]

- Function: To minimize exposure to hazard that cause serious workplace injuries and illness.

1. Coverall
2. Hard Hat
3. Ear Plug
4. Safety Glasses
5. Gloves
6. Safety Boot

Why is PPE important?

- Personal protective equipment is designed to protect the worker’s body from hazards and injuries such as blunt impacts, electrical hazards, heat, chemicals and infections.

When do employees need to wear PPE?

- Working on or around hot, wet or slippery surfaces.
- Working when electrical hazards are present.
- Handling the hazardous substances and uncontained chemicals.
- Working at the high place or place with high tendency of falling objects.
- Working around overhead tools or machinery.
- Working with highly toxic chemicals or dusty environment

Permit To Work (PTW)

- A PTW is a documented authorization for specific tasks to be performed at a specific location within a specified timeframe.
- Every job carries an equal amount of risk for the worker. The type of safeguards needed to protect the worker depends on the level of risk.

1. Hot work permit
2. Cold work permit
3. Electrical work permit
4. Radioactive work permit
5. Lifting permit
6. Flammable Realese permit

Job Hazard Analysis (JHA)

- A job hazard analysis (JHA), also known as a job safety analysis (JSA), is a method used to recognize the risks of particular tasks with the aim of minimizing the chances of workers getting injured.

Example: Top Up Diesel

JOB STEP	DESCRIPTION OF JOB STEP	POTENTIAL HAZARD	POTENTIAL CONSEQUENCES	CONTROL BARRIERS	ACTION PARTY	RECOVERY BARRIERS	ACTION PARTY
1	Check Condition Diesel	• Incorrect refueling method	• Spill oil • Sharp edge	• Wear rubber glove.	wireline	Apply first aid and get medical assistance if the injuries are severe	wireline
2	Check diesel level in power pack and air compressor	• Overheat and leaking oil • Hydrocarbon • Flammable liquid	• Hand injury • Broken equipment	• Standby P.D.C at work site • Grounding Cable • Wear rubber glove	wireline	Medical treatment	wireline

Example JHA

EPOMS	JOB HAZARD ANALYSIS [JHA] WORKSHEET				
JHA NO.		**PTW NO**		**WORK PERMIT TYPE**	FW
FACILITY :		**LOCATION**	MAINDECK	**SPECIFIC WORKSTATION**	
EQUIPMENT NO. :		**WORK DESCRIPTION**	Perform topup diesel on wireline equipment		

NOTE

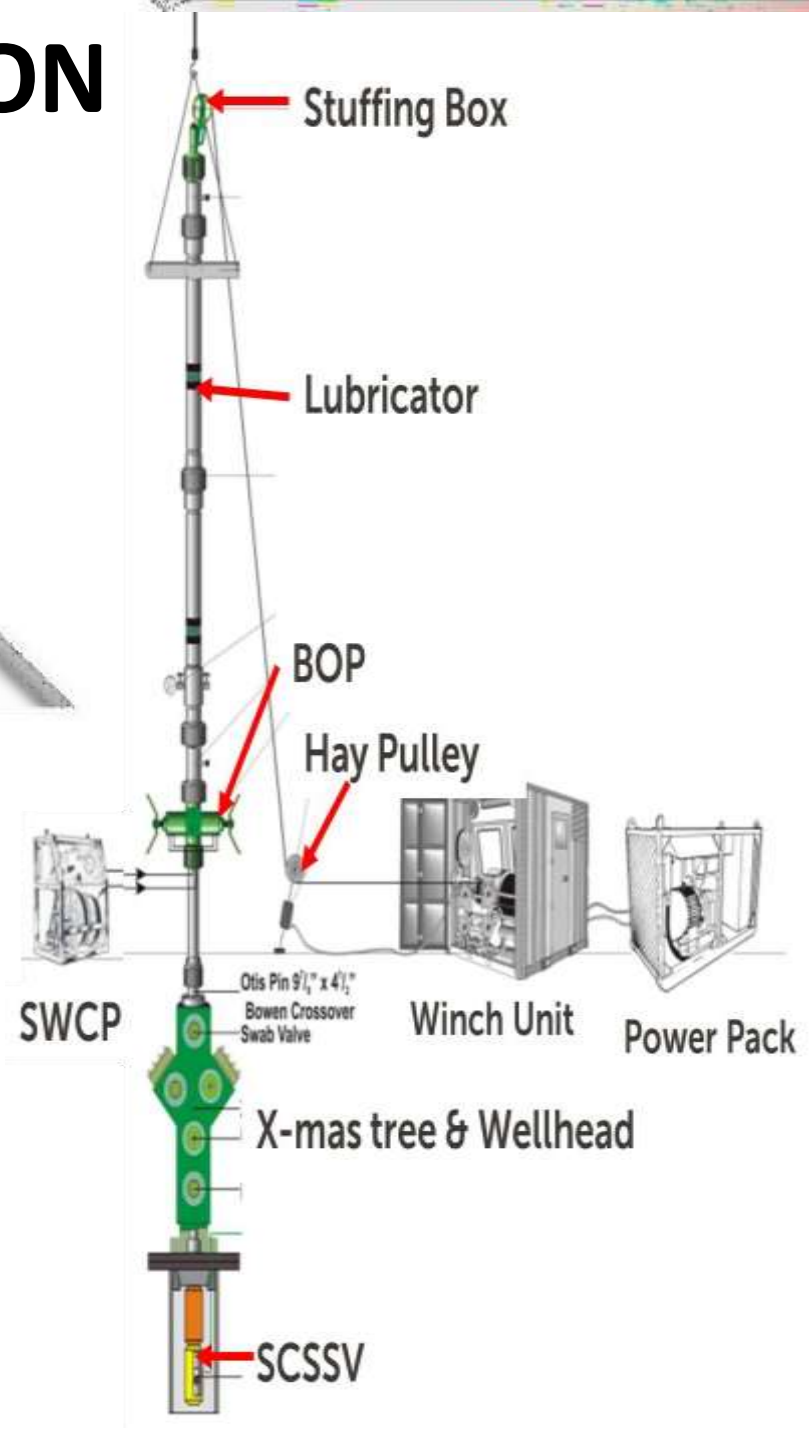
1. JHA shall be applicable for all work activities which requires PTW.
2. The pre-prepared JHA and JHA prompters will be used as a reference/guide during the development of JHA.
3. Personnel carrying out the work shall be fully familiar with the written Work/Operating Procedures developed for the job. The Work/Operating Procedures shall describe, in step-by-step instructions, the correct method of executing the specified work.
4. Prior to commencement of work (after PTW has been approved), the task-specific JHA shall be discussed amongst all personnel involved in the execution; and requirements contained therein shall be fully understood and agreed by all involved personnel.

JOB STEP	DESCRIPTION OF JOB STEP	POTENTIAL HAZARD	POTENTIAL CONSEQUENCES	CONTROL BARRIERS	ACTION PARTY	RECOVERY BARRIERS	ACTION PARTY
1	Preparation for PTW	• Wrong job or task. • To avoid clash of work at platform • Incomplete detail of work.	To avoid clash of work at platform	• PTW approval from in charge personal. • Competent personal to conduct the operation. • Inform to all crew on location and description of work	wireline	Ensure all team member review jha	wireline
2	Pre Job Meeting	• Wrong job or task. • To avoid clash of work at platform • Conflict of work.	Other parties are not aware where you are performing the job	• Inform to all crew on location • Inform the hazard involved at place of work	wireline	Ensure team member not miss toolbox meeting	wireline

SLICKLINE INTRODUCTION

What Is Slickline?

- Slickline is a type of single-strand wire that is employed to lower a range of tools into the wellbore for various reasons.
- It is utilized in the oil and gas industry for drilling wells.
- The purpose of slickline is to lower downhole equipment into an oil or gas well in order to conduct a designated maintenance task in the wellbore.



SLICKLINE INTRODUCTION

SLICKLINE WIRE

- Diameter sizes of wire (in Inch) :

0.108, 0.125, 0.140 and 0.160 [Commonly use in DB]
0.092 [Not use in DB]

- Length of the wire (in ft) :
  25000 , 30000

- Types of the wire :

1. ZERON (100 HS Stainless Steel)
2. EIPS (Carbon Steel EIPS Grade)
3. ZAPP (SUPA 75 Alloy)

Basic Tool String Configuration

1. Rope Socket
2. Swivel Joint
3. Stem
4. Jar
5. Knuckle Joint

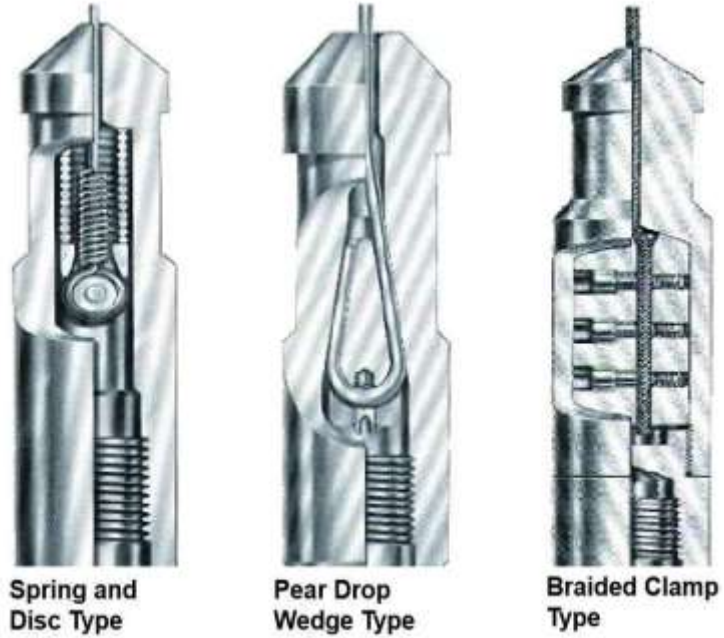
Downhole Equipment	Function
Rope Socket 	• Connect slickline wire to toolstring
Swivel Joint 	• Provides free rotation of toolstring & minimize line torque
Stem 	• Adds weight to toolstring
Jar 	• Provides flexibility within toolstring • Creates impact force to set/unset or operate downhole tools
Knuckle Joint 	• Provides flexibility within toolstring

Rope Socket

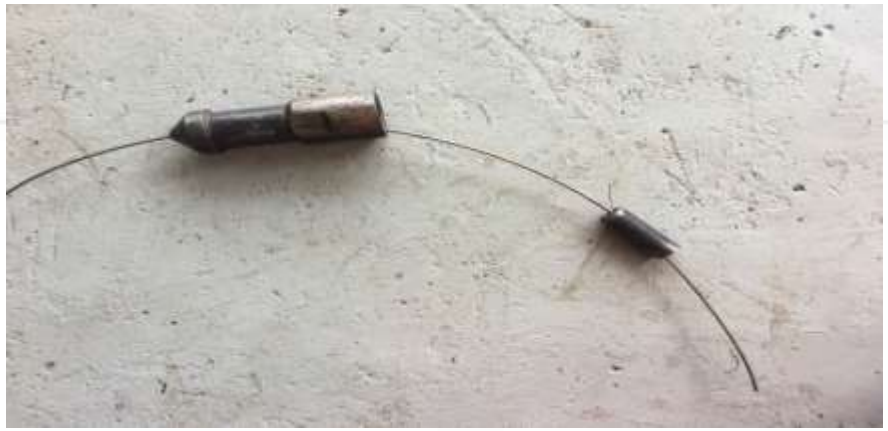
1. To connect the wire to tool string.
2. Type of Rope Socket:

- Tear/Pear drop -0.108”, 0.125”, 0.140”
- Regular knot type - 0.092”
- Braided clamp

OD (in)	Fish Neck (in)
1”	1.000”
1.1/4”	1.187”
1.1/2”	1.375”
1.7/8”	1.750”
2.1/8”	1.750”
2.1/2”	2.313”



How to make up Rope Socket



1. Insert the wire into the rope socket and then attach the thimble eye sleeve.

2. Turn the wire at a 90° angle, measure the wire using a thimble eye, and then bend the opposite side.

3. Insert the wire into the thimble eye, then measure and trim the wire.

4. Ensure that the wire is appropriately sized to fit within the thimble's cross section.

5. Put thimble eye into the thimble sleeve.

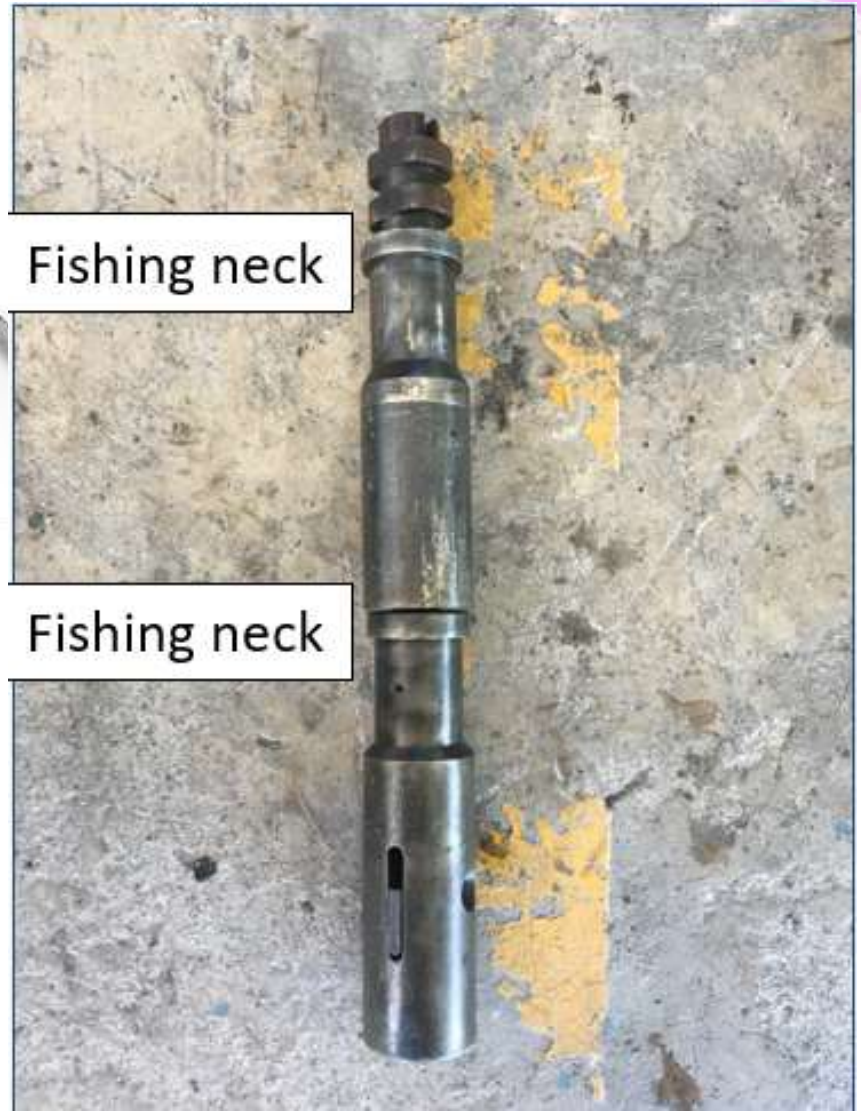
6. Insert thimble sleeve into rope socket body.

7. Complete

Swivel Joint

1. **Function:** To reduce the impact of wire twisting from downhole tool usage.

Swivel Joint		
O.D. (in.)	Fishneck O.D. (in.)	Bottom Connection (in.)
1.1/4 - 1.250	1.187	15/16
1.1/2 - 1.500	**1.375**	**15/16**
1.3/4 - 1.750	1.375	1.1/16
1.7/8 - 1.875	**1.750**	**1-1/16**
2.1/8 - 2.125	1.750	1-1/16
2.1/2 - 2.500	**2.313**	**1-9/16**

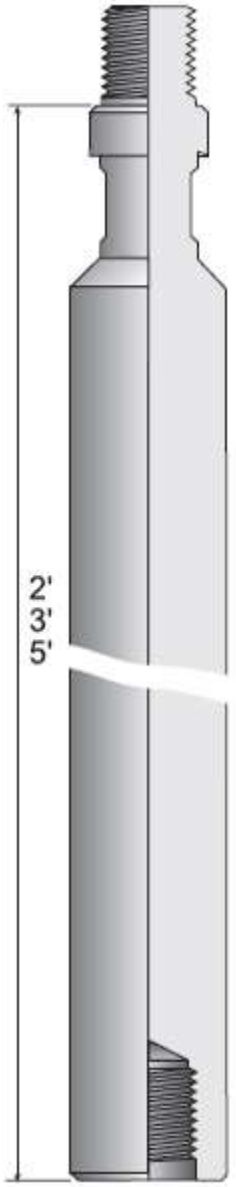


Stem

Function: To add more weight to the tool string.

- Length: 2ft, 3ft, 5ft

OD (inc)	Weight lb/ft	Fishing Neck
1 “	2.5lbs	0.875”
1.1/4 – 1.250 “	4.2lbs	1.187”
1.1/2 – 1.50 “	6.0lbs	1.375”
1.7/8 – 1.875 “	9.4lbs	1.750”
2.1/8 – 2.125 “	12lbs	1.750”
2.1/2 – 2.50 “	16.7lbs	2.313”



Jar

1. **Function:** act as hammer in the borehole moves up and down to create impact.

❖ Mechanical Jar

- Type of Stroke: 20” and 30”

O.D. (in.)	Fishneck O.D. (in.)
1.1/4	1.187
1.1/2	1.375
1.7/8	1.750
2.1/8	1.750

Type of Jar

Mechanical Jar

Hydraulic Jar

Spring Jar

Tubular Jar

Knuckle Joint

1. To create the bending of the tool while it is operating inside the hole.
2. Bending up to 15° angle.

Downhole Tools Connection

1. Sucker Rod Thread

2. Quick Lock System

Sucker Rod	Quick Lock System (QLS)
1.1/2”	15/16
1.7/8”	1.1/16
2.1/2”	1.9/16

Connection Size

Pulling Tool

- Otis `S type (Jarring down to shear)

-SB

-SS

- Otis `R type (Jarring up to shear)

-RS

-RB

- Otis `GS (Jarring down to shear)
- Otis `GR (Jarring up to shear)

OTIS `S Series Pulling tool

- S Series pulling tool used to engage an external fishing neck.

SB (Long Core – Short Reach)

SS (Short Core - Long Reach)

- Jarring down to shear pin.
- Top sub not attached directly to core.

Sleeve on "S"

Shear pin Size
1/8 “
3/16 “
¼ “
5/6 “
3/8 “

Tool Size (in)	Fishing Neck (in)	Pulls F/Neck
1.1/2" SB	1.187”	1.187”
2" SB	1.375”	1.375”
2.1/2" SB	1.375”	1.750"

OTIS S’ Series Pulling Tool

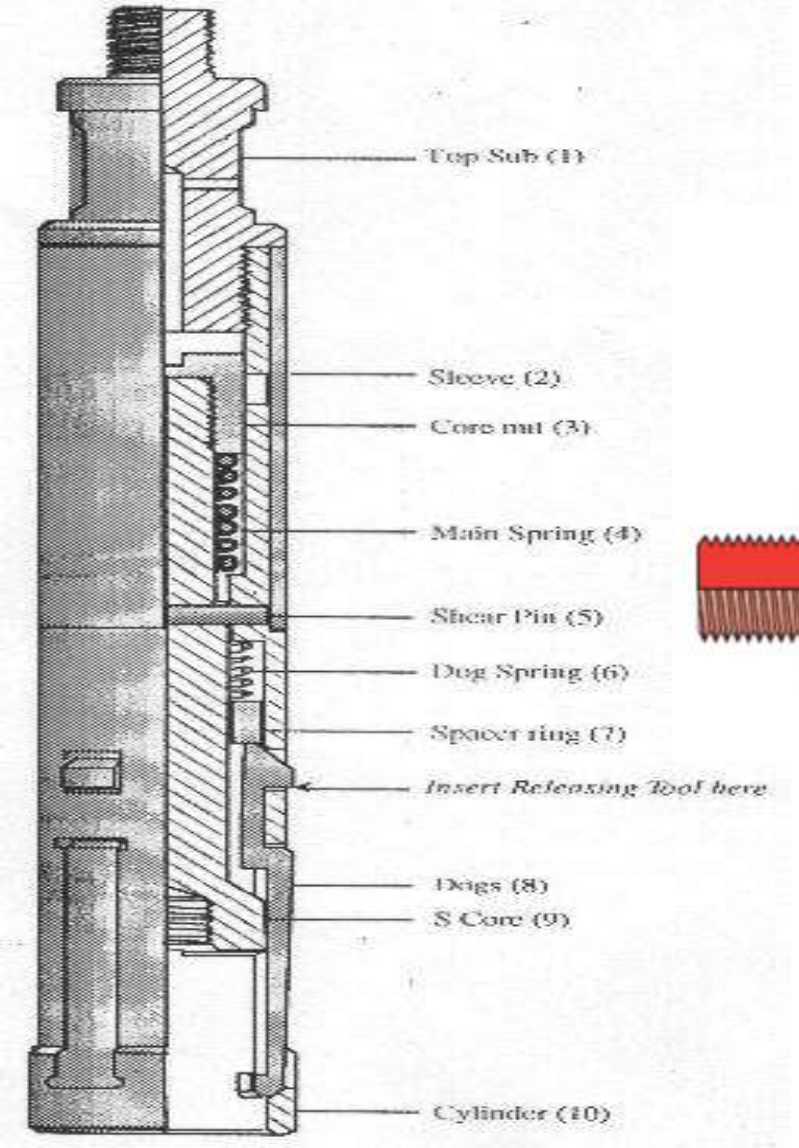
SB

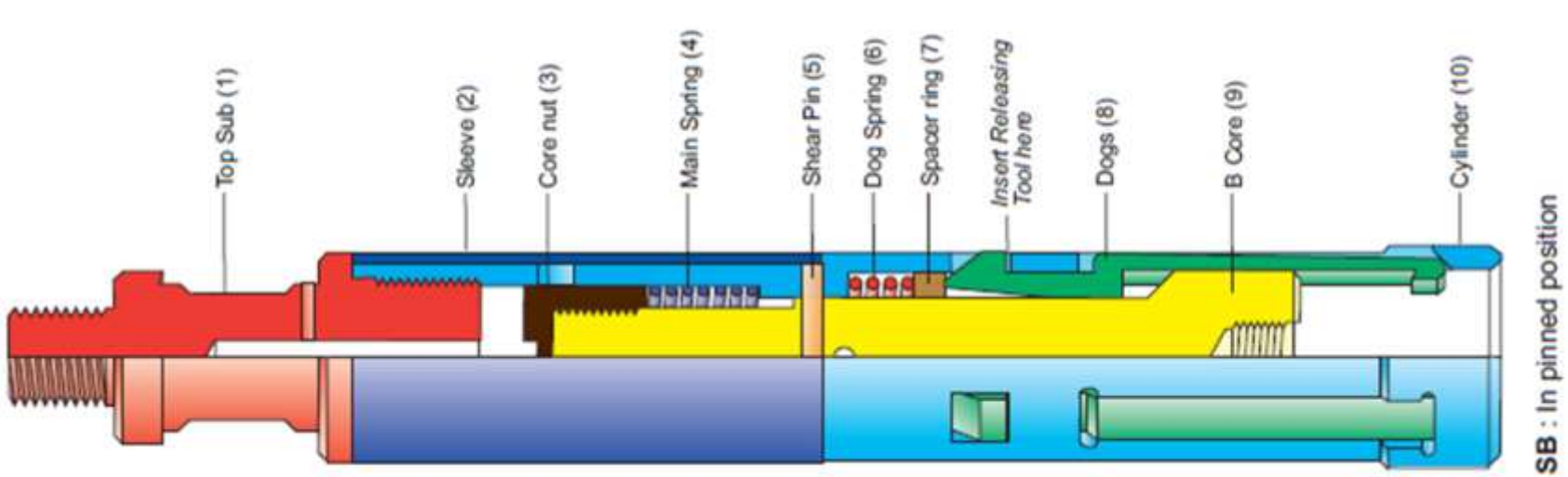
Size (ins)	OD (ins)	Fish Neck
1.1/2 “	1.437	1.187
2 “	1.766	1.375
2.1/2 “	2.188	1.375
3 “	2.734	2.313

SS

Size (ins)	OD (ins)	Fish Neck
1.1/2 “	1.430	1.187
2 “	1.770	1.375
2.1/2 “	2.180	1.375
3 “	2.840	2.313

COMPONENT OTIS `S PULLING TOOL





SS

OTIS `R Series Pulling Tool

1. To engage an external fishing neck.

RB (Long Core - Short Reach)

RS (Short Core - Long Reach)

2. Jarring up to shear pin

Ring on "R"

OTIS `R Series Pulling Tool

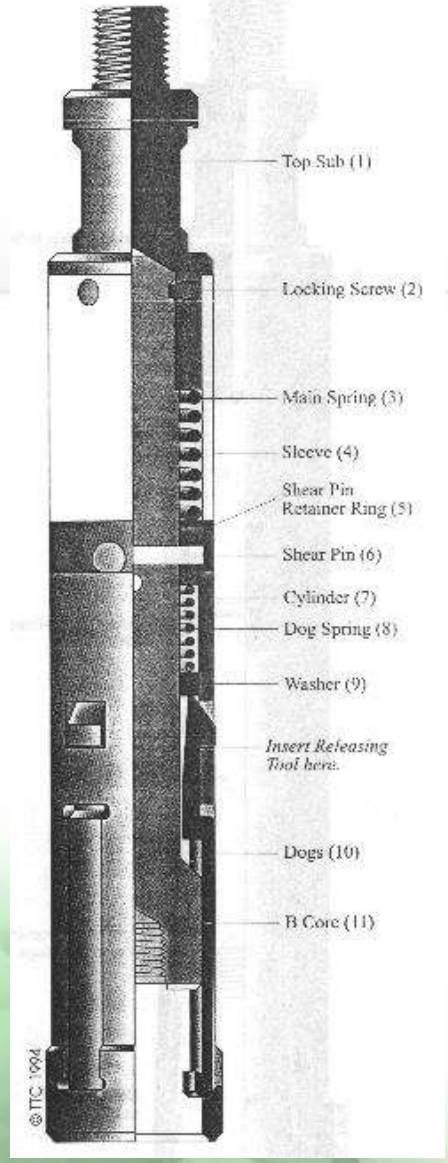
RB

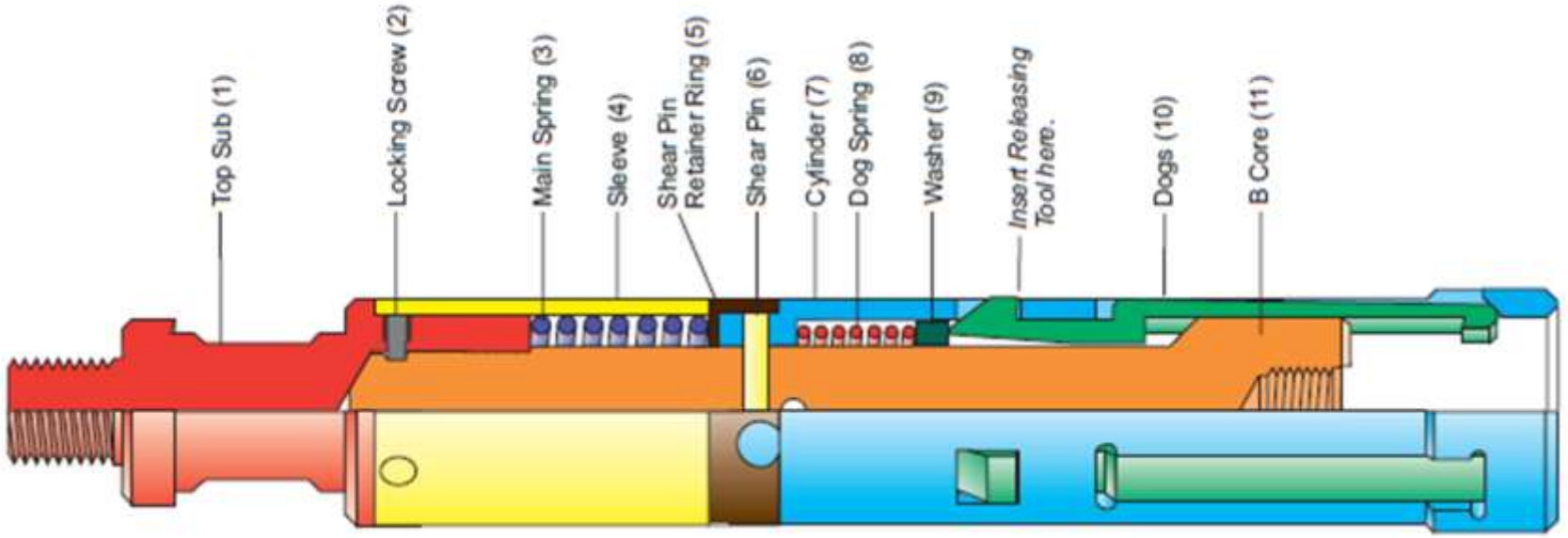
Size (ins)	OD (ins)	Fish Neck
1.1/2”	1.430	1.187
2”	1.770	1.375
2.1/2”	2.180	1.375
3”	2.740	2.313

RS

Size (ins)	OD (ins)	Fish Neck
1.1/2”	1.430	1.187
2”	1.770	1.375
2.1/2”	2.180	1.375
3”	2.740	2.313

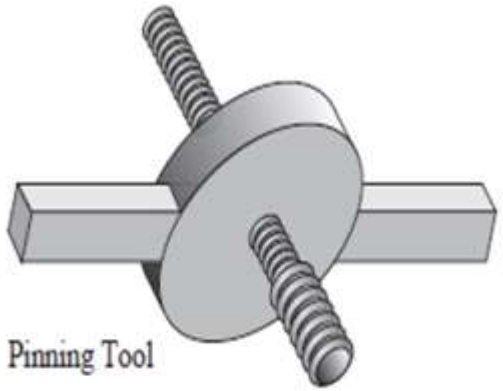
COMPONENT OTIS `R SERIES PULLING TOOL



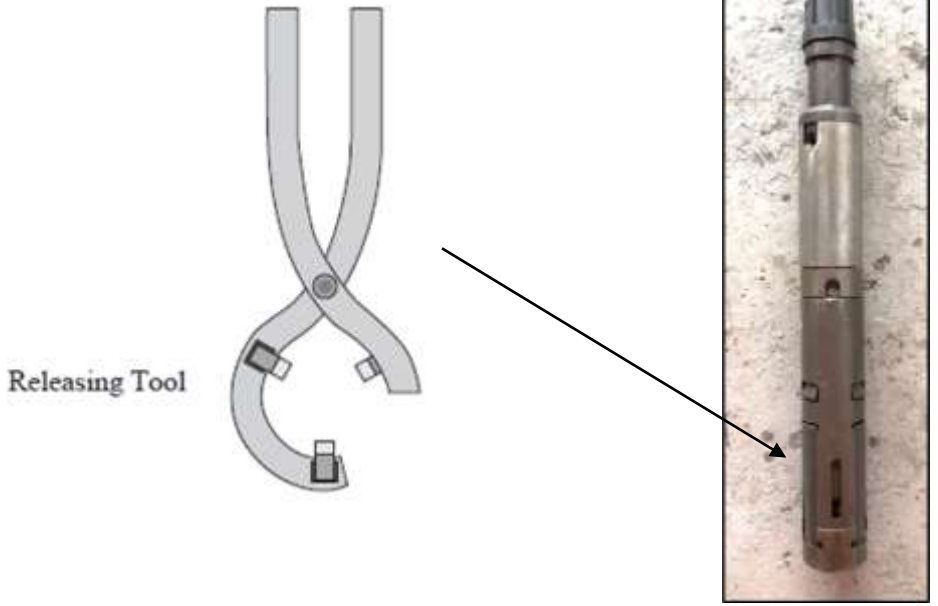


RS

Tools for ‘R’ and ‘S’ series



Used to re-pin the pulling tool ‘R’ and ‘S’ Series
**Inserting it into the bottom of tool*



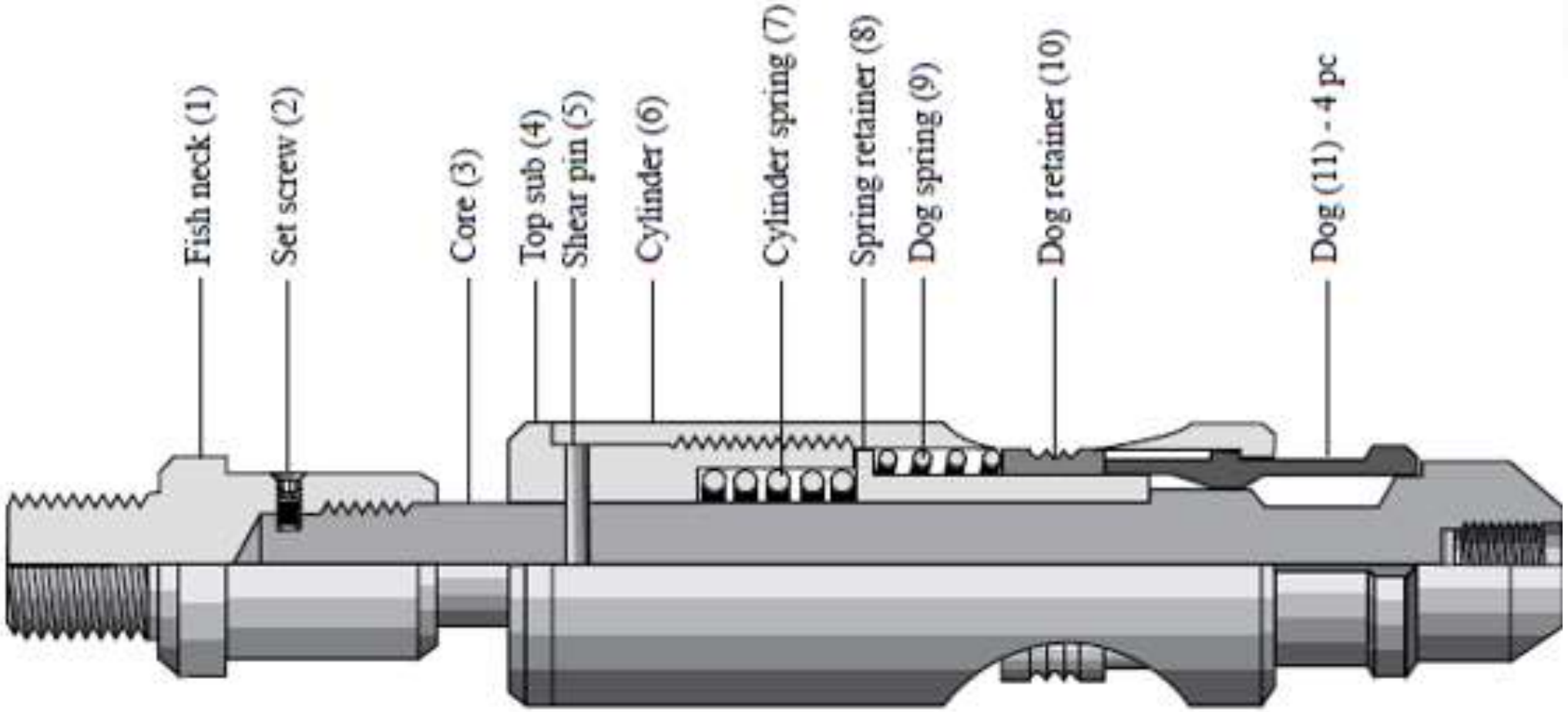
Used to release pulling tool ‘R’ and ‘S’ Series from the fish engaged

OTIS GS Pulling Tool

1. To remove all subsurface flow control tools that has inner fishing necks.
2. Jarring down to shear pin.

Nominal Size (ins)	Tools O.D (ins)	Tool Fish Neck (in)
2”	1.875	1.375
2.1/2”	2.313	1.750
3”	2.750	2.313
5”	4.562	2.125

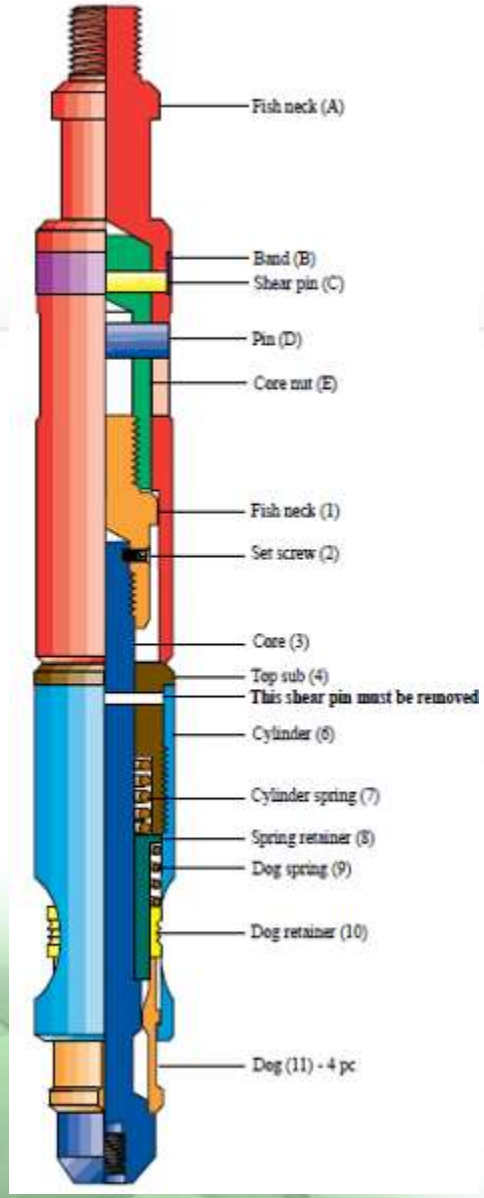
COMPONENT OTIS GS PULLING TOOL

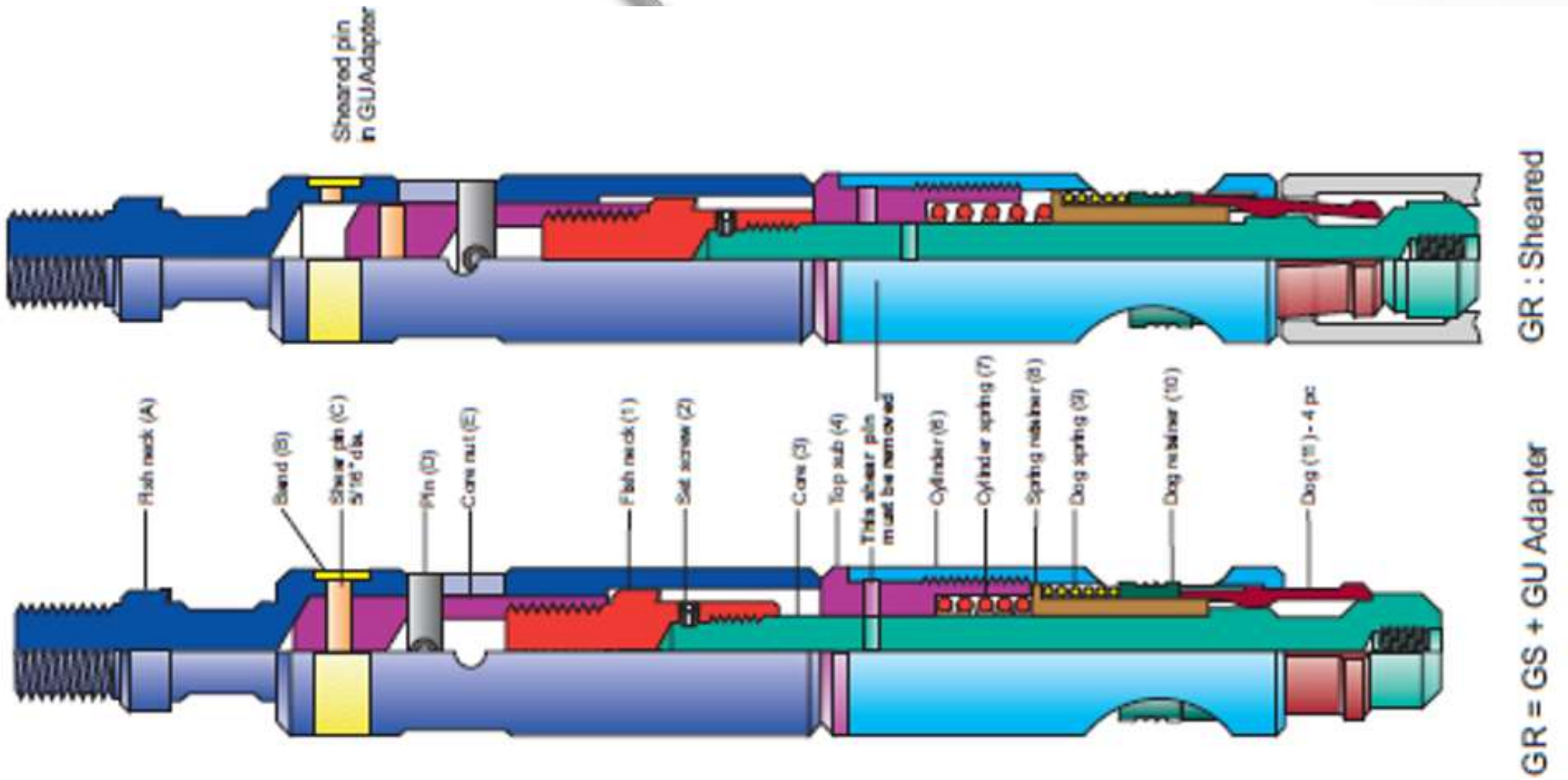


OTIS GR Pulling Tool

1. Jarring up to shear.
2. Setting and retrieval of items with internal “Otis” type fish necks.
3. The pin MUST BE REMOVED from the GS or the tool will not shear in either direction.
4. Combination of GS and GU.

COMPONENT OTIS GR PULLING TOOL



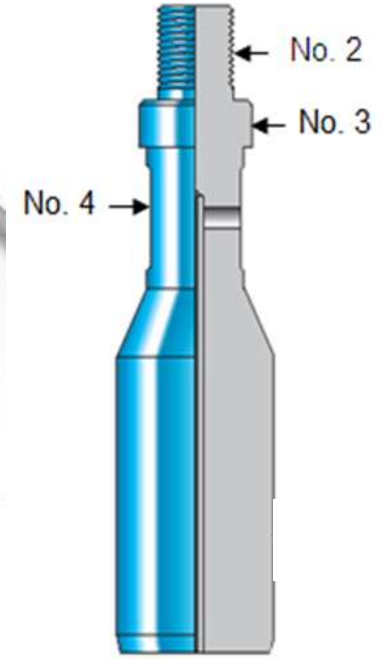


Service Tools

1. Tubing Drift
2. Gauge Cutter
3. Wire Scratcher
4. Lead Impression Block
5. Fluted Centralizer
6. Blind Box
7. Tubing Swage
8. Tubing Broach

Tubing Drift

- Drift checks are required before performing any wireline well intervention operations.
- Drift is the initial tool inserted into the hole to inspect the tubing's condition throughout its path.
- A fishing neck is situated at the tool's top for fishing purposes in case the tool gets lost downhole.
- There's a gap under the tool that allows for pressure or fluid to flow through.

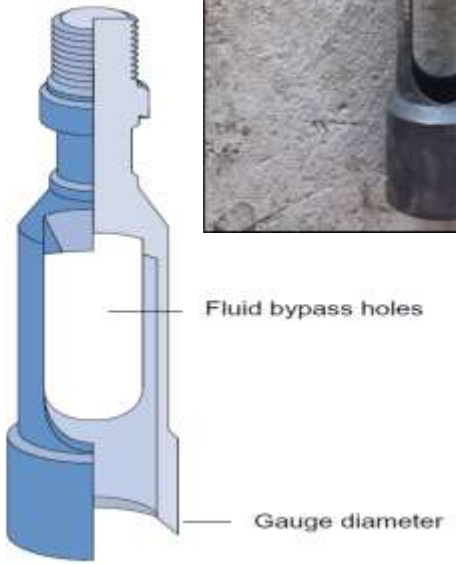


Fluid Bypass

Gauge Cutter

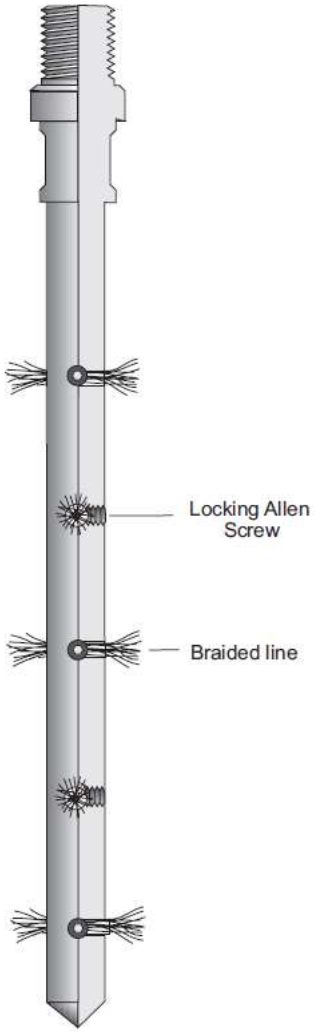
- **Function:** Verify inner diameter of tubing, mark overall depth, identify nipple ID and No-Go, remove sand, scale, paraffin buildup from tubing surface.
- Also known as **Tubing Gauge / Gauge Ring.**
- Is designed with open space in the body to allow fluid bypass.

Gauge Cutter		
O.D. (in.)	Fishneck O.D. (in.)	Bottom Connection (in.)
1.25 – 1.50	1.187	15/16
1.50 – 2.00	1.375	15/16
2.00 – 2.50	1.375	15/16
2.50 – 3.00	1.750	1.1/16



Wire Scratcher

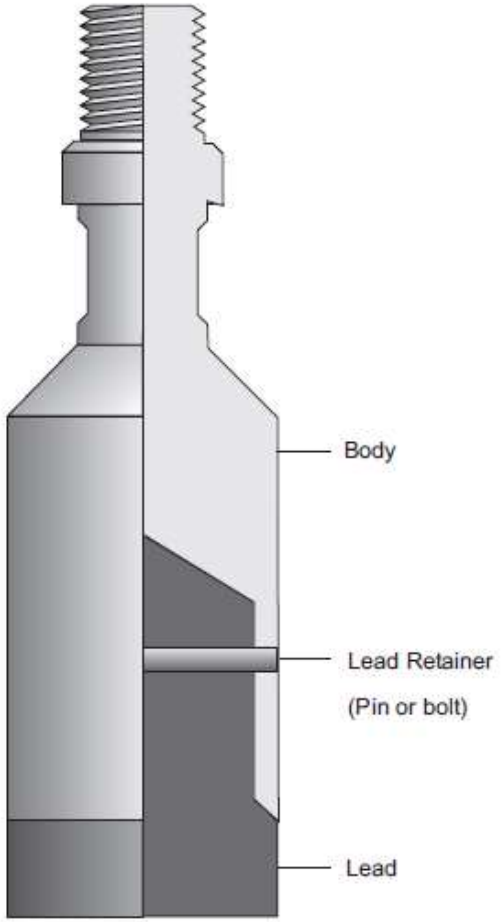
- Function: Removing wax, scale and sand from tubing wall, nipple profiles, SSD sleeves, and Side Pocket Mandrels.
- A wire scratcher is a tool resembling a brush.
- If the wire scratcher doesn't work, the gauge cutter/ring and tubing broch will be util



Wire Scratcher		
O.D. (in.)	Fishneck O.D. (in.)	Bottom Connection (in.)
1.000	1.375	15/16
1.500	1.375	15/16
1.875	1.750	1.1/16
2.125	1.750	1.1/16

Lead Impression Block

- Function: Used in fishing to inspect the appearance and dimensions of the fish head and decide on the right tool for the job.
- Also referred to as the ‘slickline bottom-hole



Lead Impression Block		
O.D. (in.)	Fishneck O.D. (in.)	Bottom Connection (in.)
1.25 – 1.50	1.187	15/16
1.50 – 2.00	1.375	15/16
2.00 – 2.50	1.375	15/16
2.50 – 3.00	1.750	1.1/16

Fluted Centralizer

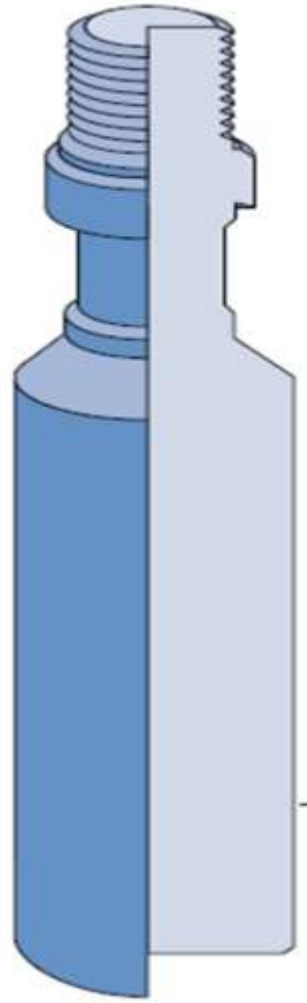
Function: Utilized in deviated wells to maintain the toolstring in a centralized location.

Fluted Centralizer		
O.D. (in.)	Fishneck O.D. (in.)	Bottom Connection (in.)
1.50 – 2.50	1.375	15/16
2.50 – 3.50	1.750	1.1/16
3.50 – 4.50	2.313	1.9/16

Blind Box

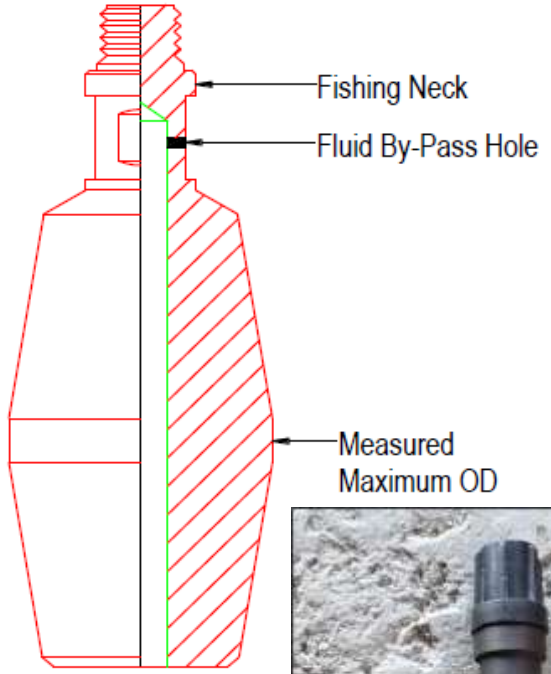
- Function: It is employed for applying strong downward force to remove a stuck fish or to push an object deeper into the wellbore.
- Act as a "Cutter Bar", severing the wireline at the top of the rope socket of the toolstring that is unextractable.
- The hardened flat bottom surface is designed to minimize wear and damage.

Blind Box		
O.D. (in.)	Fishneck O.D. (in.)	Bottom Connection (in.)
1.25 – 1.50	1.187	15/16
1.50 – 2.00	1.375	15/16
2.00 – 2.50	1.375	15/16



Tubing Swage

- Function: To fix the blocked tubing and remove significant blockages in order to bring back the light.
- It is advised to use a hydraulic or spring jar so that the operator can easily break free from the tubing in case the swage gets stuck.



Tubing Swage		
O.D. (in.)	Fishneck O.D. (in.)	Top Connection (in.)
1.25 – 1.50	1.187	15/16
1.51 – 2.50	1.375	15/16
2.51 – 3.00	1.750	1.1/16
3.01 – 5.00	2.313	1.1/16

Tubing Broach

- **Function:** In order to eliminate rough edges and debris inside the well hole, as well as to get rid of scale and corrosion from the tubing's inner surface

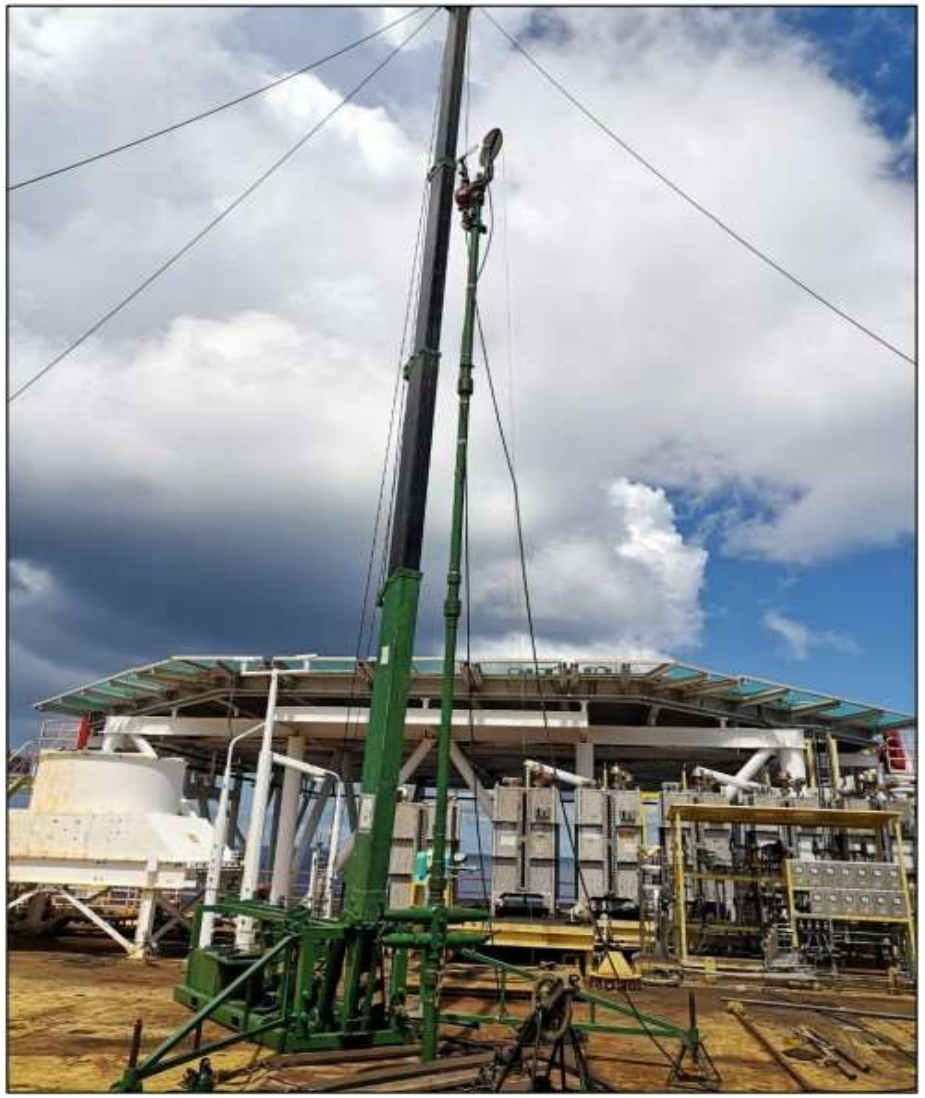
Tubing Broach		
O.D. (in.)	Fishneck O.D. (in.)	Top Connection
1.50 – 2.50	1.375	15/16
2.51 – 4.00	1.750	1.1/16
4.01 – 5.00	2.313	1.1/16
5.01 – 6.00	3.125	1.9/16

Diamond Cut broach

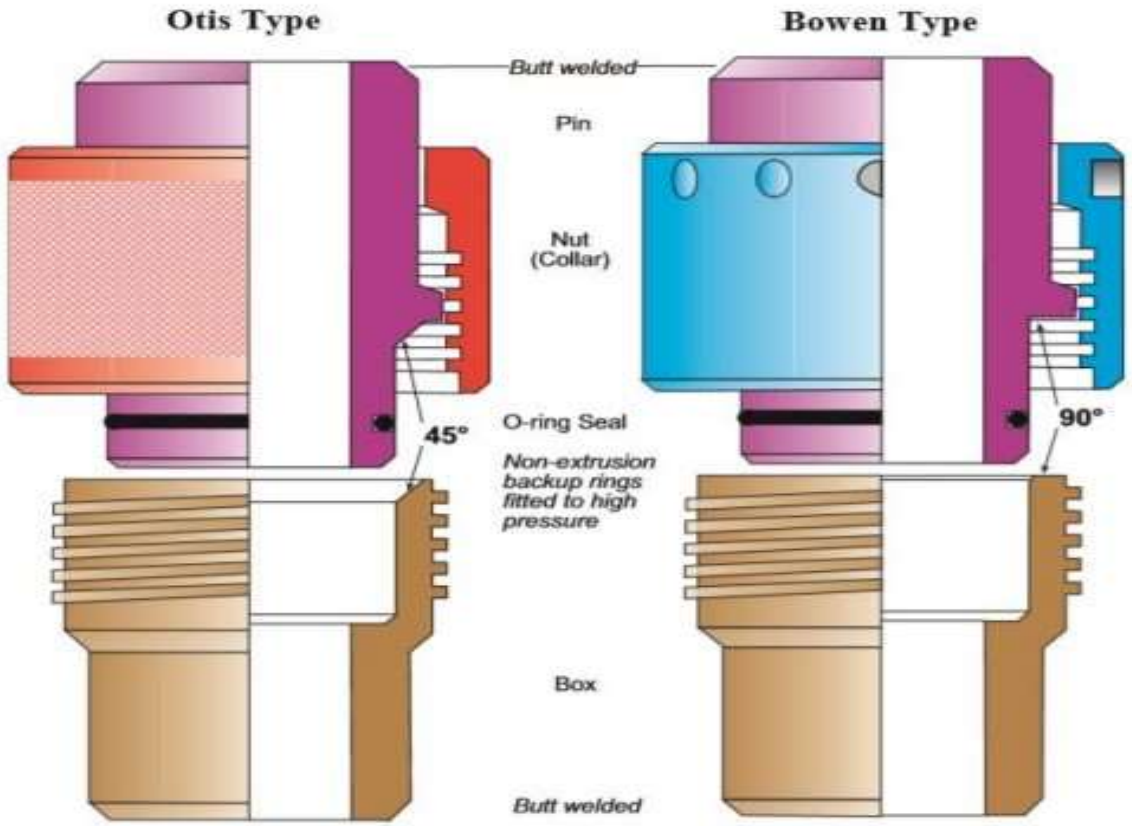
Straight Cut broach

Pressure Control Equipment (PCE)

- Stuffing Box
- Lubricator
- Quick Test Sub
- Blowout Preventer
- Ball Valve
- Wellhead Crossover
- Control Panel
- Single Well Control Panel

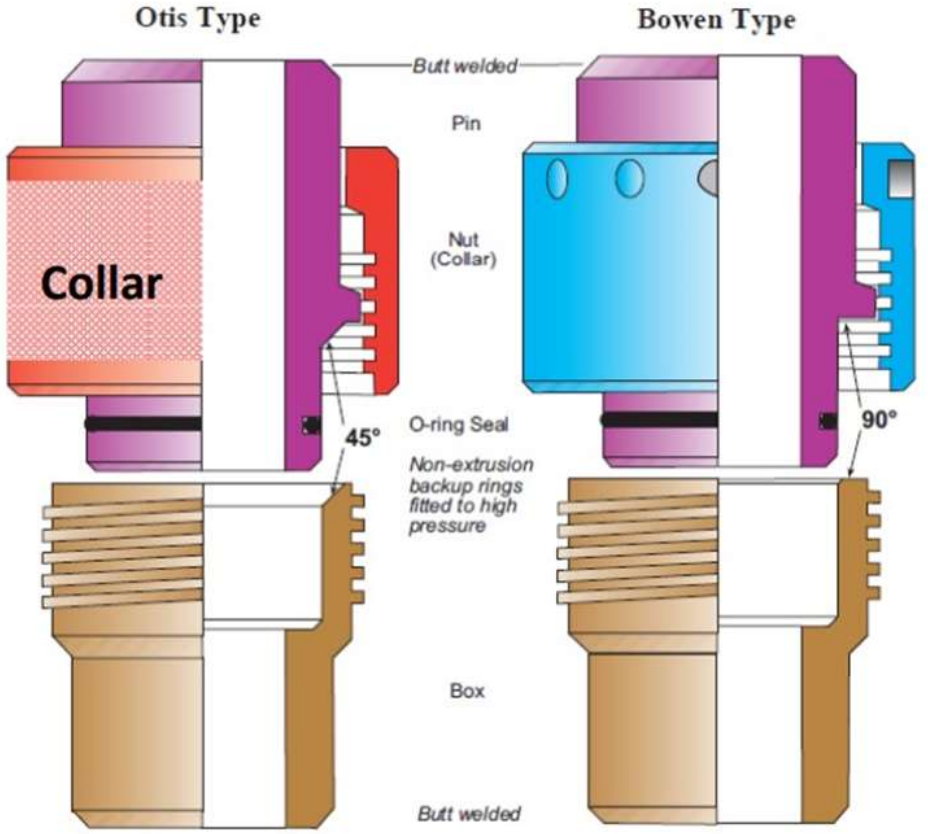


Quick Union

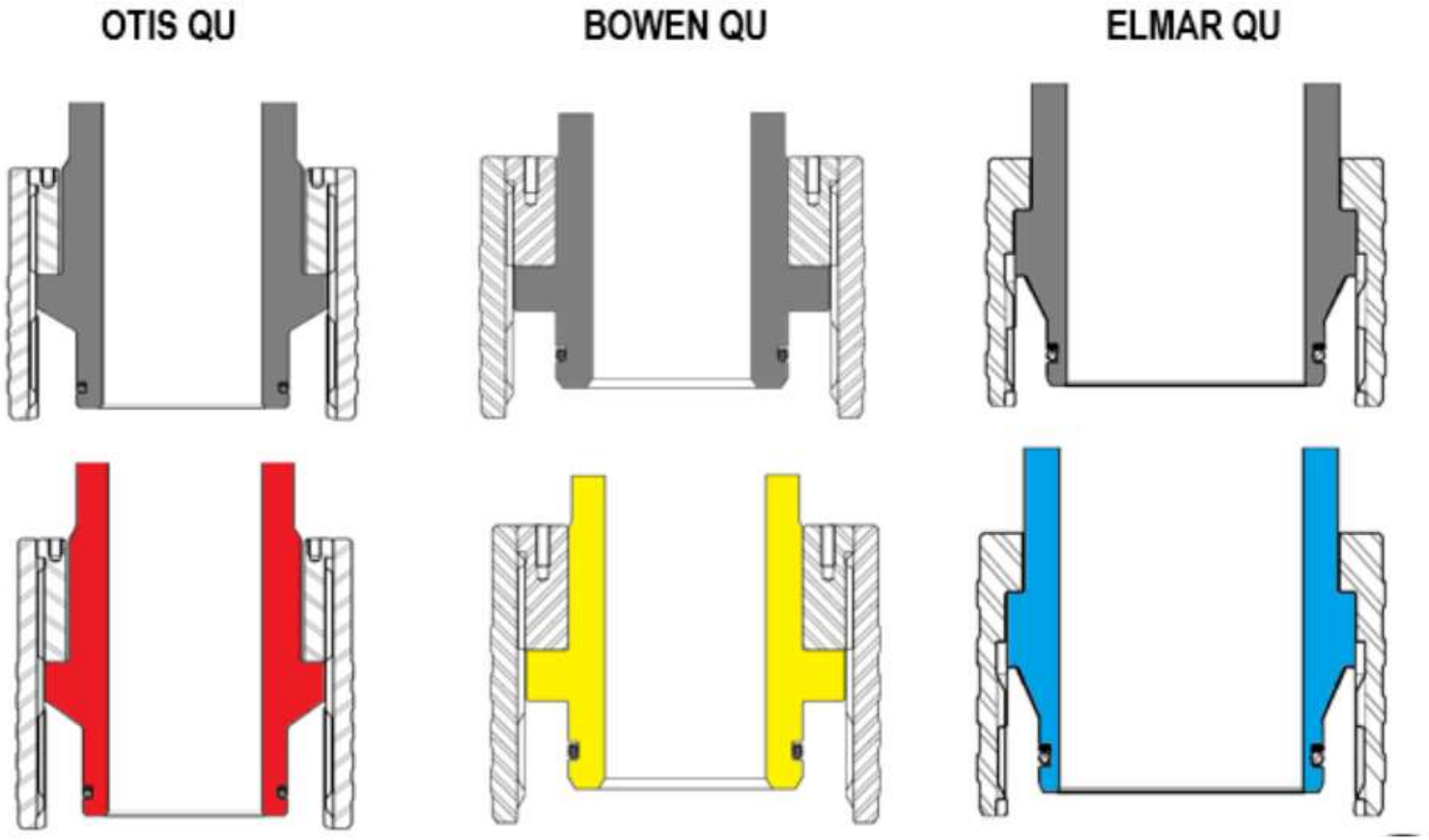


Pin

Box



Components / Parts

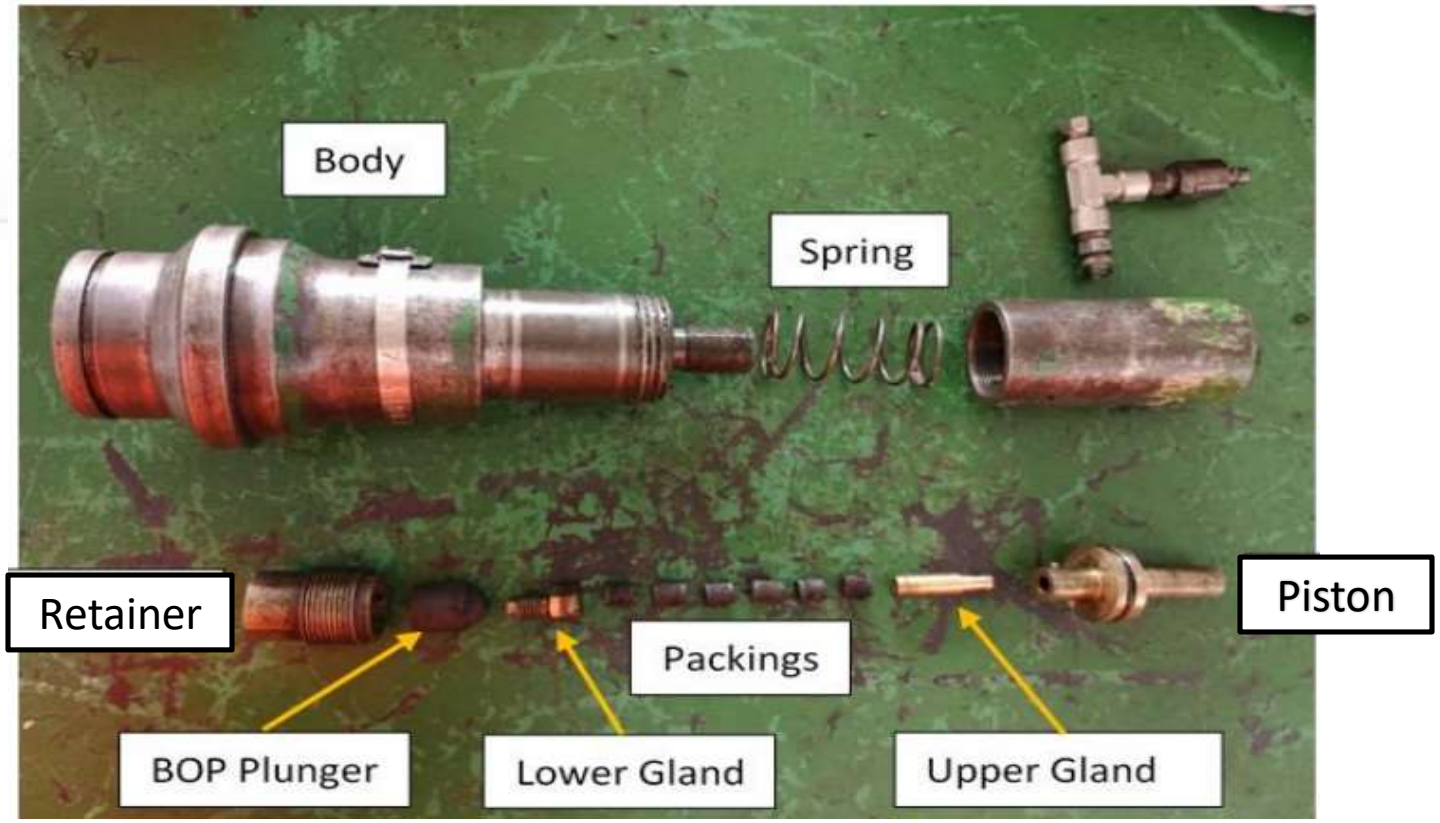


- Otis type connection - 45 degree angle.
- Bowen type connection- 90 degree angle.

Stuffing Box

- A sealing device connected to the top of lubricator sections.
- Primary barrier.
- Hydraulically controlled packing nuts are available – can use hand pump.

Components / Parts



Lubricator

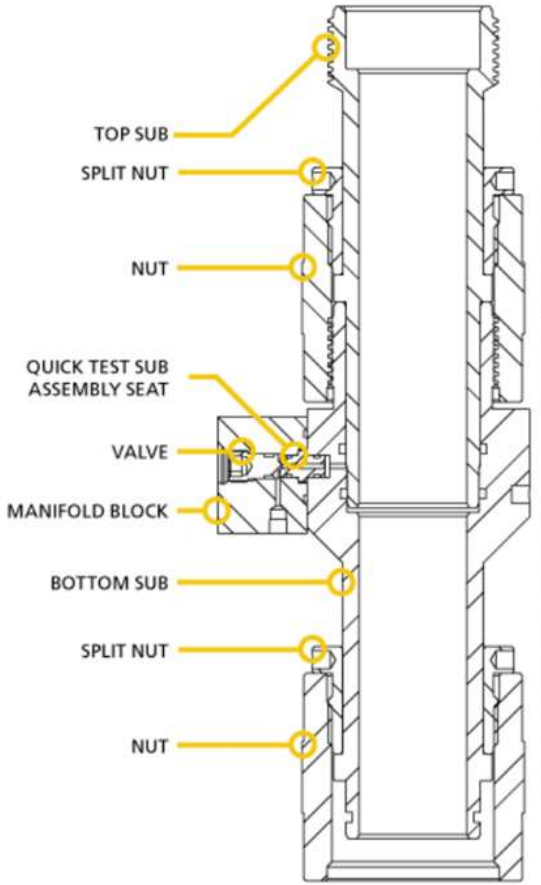
- The lubricator enables wireline toolstring to be inserted and removed from a well under pressure.
- Lubricator has a ported and non ported.
- The ported lubricator has a bleed off valve to vent pressure from well.
- Has a 8’ft lubricator.
- For Pup Joint has 2',3' and 4 ft length.

Conventional Lubricators (non ported)

Slimline Lubricators (ported)

Lightweight Lubricators (ported)

Quick Test Sub



- Used when pressure testing the pressure control equipment (PCE).
- Has two O-rings where it was disconnected that can be tested with hydraulic pressure to confirm the PCE can still hold the pressure.

Blowout Preventer (BOP)

Single, Hydraulic BOP

Dual, Hydraulic BOP

Triple, Hydraulic BOP

- Secondary barrier.
- Hold pressure from one direction.
- Hydraulic force is applied to close rams which seal around the wire.
- Operated by control panel.

Ball Valve

- Designed to hold pressure from below and above.
- Operated hydraulic or manual handle.
- Ball valves are available that cut wire.
- Additional safety in shutting well. Placed below the wireline valve/BOP and above

Wellhead Crossover

- Linked to the wellhead is the point where the pressure measurement and control tools are attached to the wellhead.
- Used for creating pressure seals on casing strings extending from the wellbore's surface to its bottom.
- Each wellhead comes with its own unique size of wellhead adapter.

Control Panel 10k

- To operated dual ram bop, stuffing box, safety valve, master valve and test line.
- Emergency shutdown facility.
- Function test 500psi – 8000psi in stages.
- Install pressure 4k psi in accumulator tank while performing slickline job.
- TRSCSSV = 5K
- HMV = 3K
- LV = 2K

Single Well Control Panel

- Ensure the Xmas tree valves operate safely and dependably through the provision of hydraulic power and control mechanisms.
- To operate SSV (actuator 2800psi) and TRSCSSV (3800psi).
- Has 2 haskel pump.
- Max working pressure 10000psi.
- Function test 5500 psi - 6500 psi.

PCE Accessories

Enerpac Hand Pump

Hunting Lifting Clamp

Hunting Lifting Cap

Surface Equipment

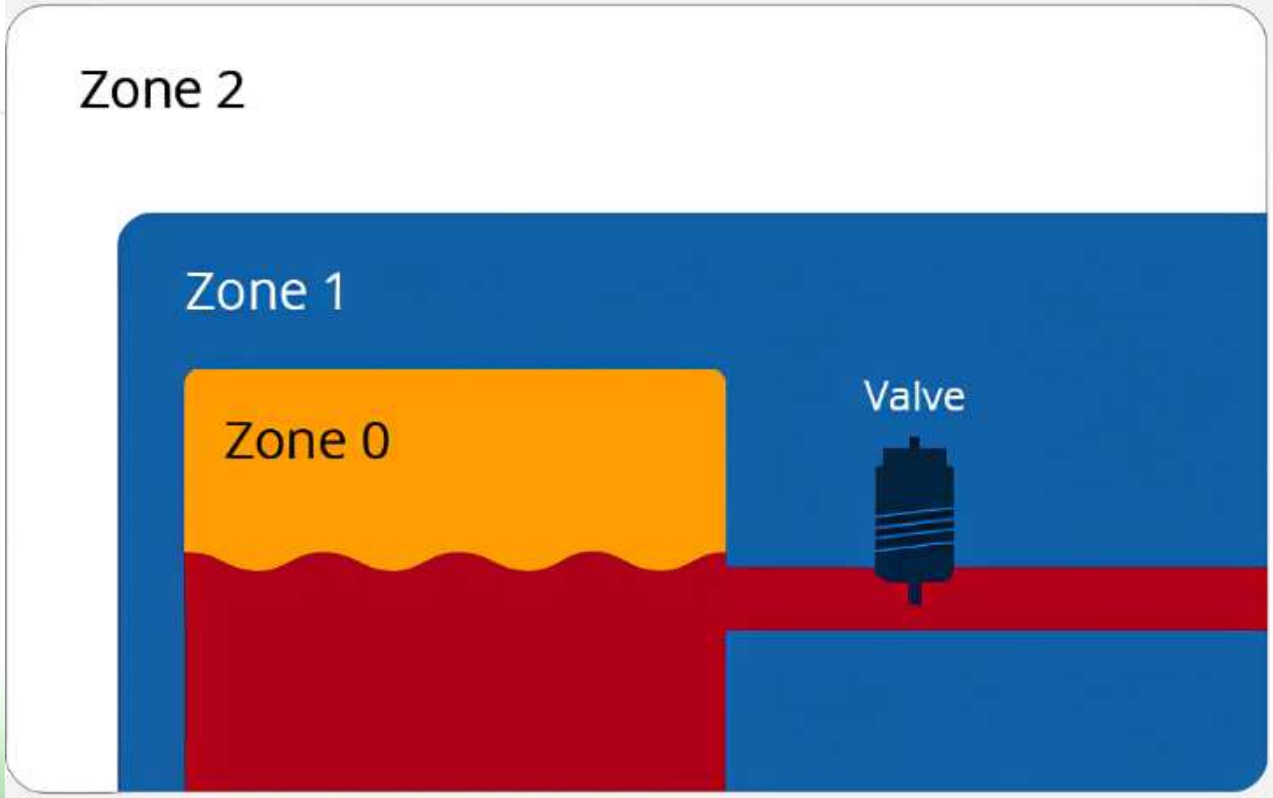
- Wireline Mast

- Power Pack

- Air Compressor

- Reel Skid Unit

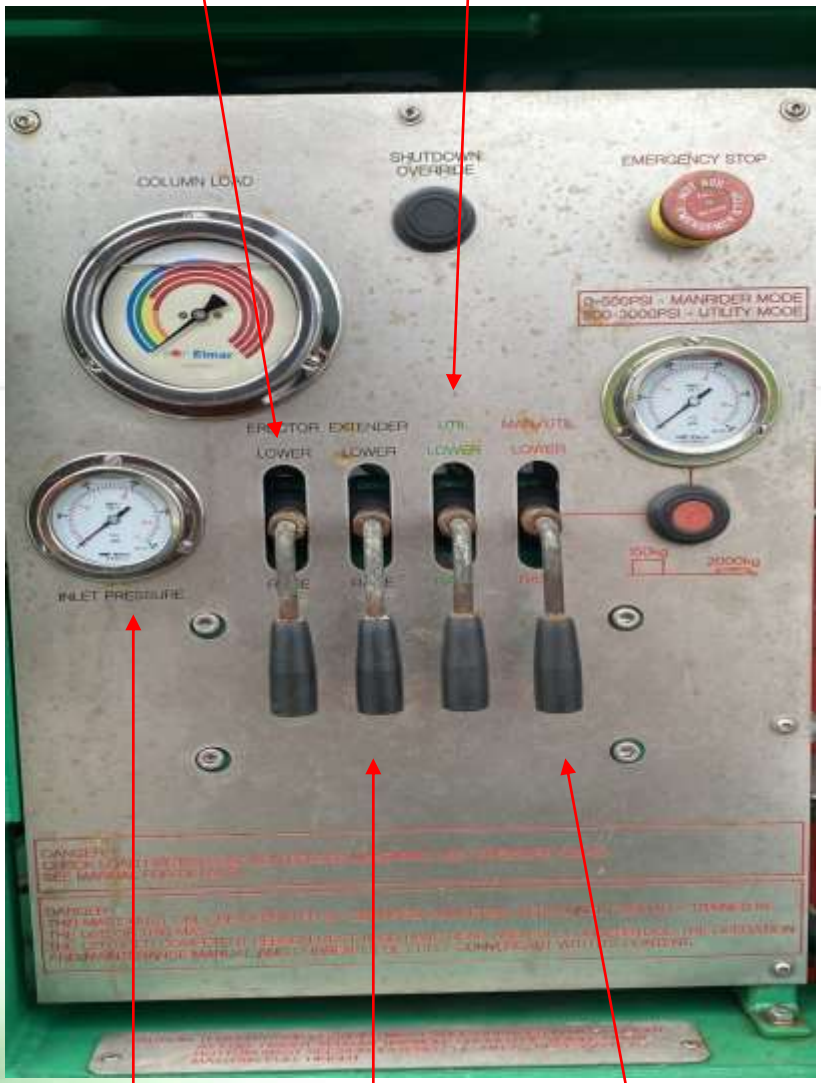
Oil and Gas Hazardous Zone



- Flammable material in liquid form
- Flammable material in gaseous form mixed with oxygen and in very high concentration
- Flammable material in gaseous form mixed with oxygen in high concentration
- Flammable material unlikely, or for a very short period and in no concentration

Wireline Mast

- Lifting and hanging lubricator during wireline operation.
- Zone 1



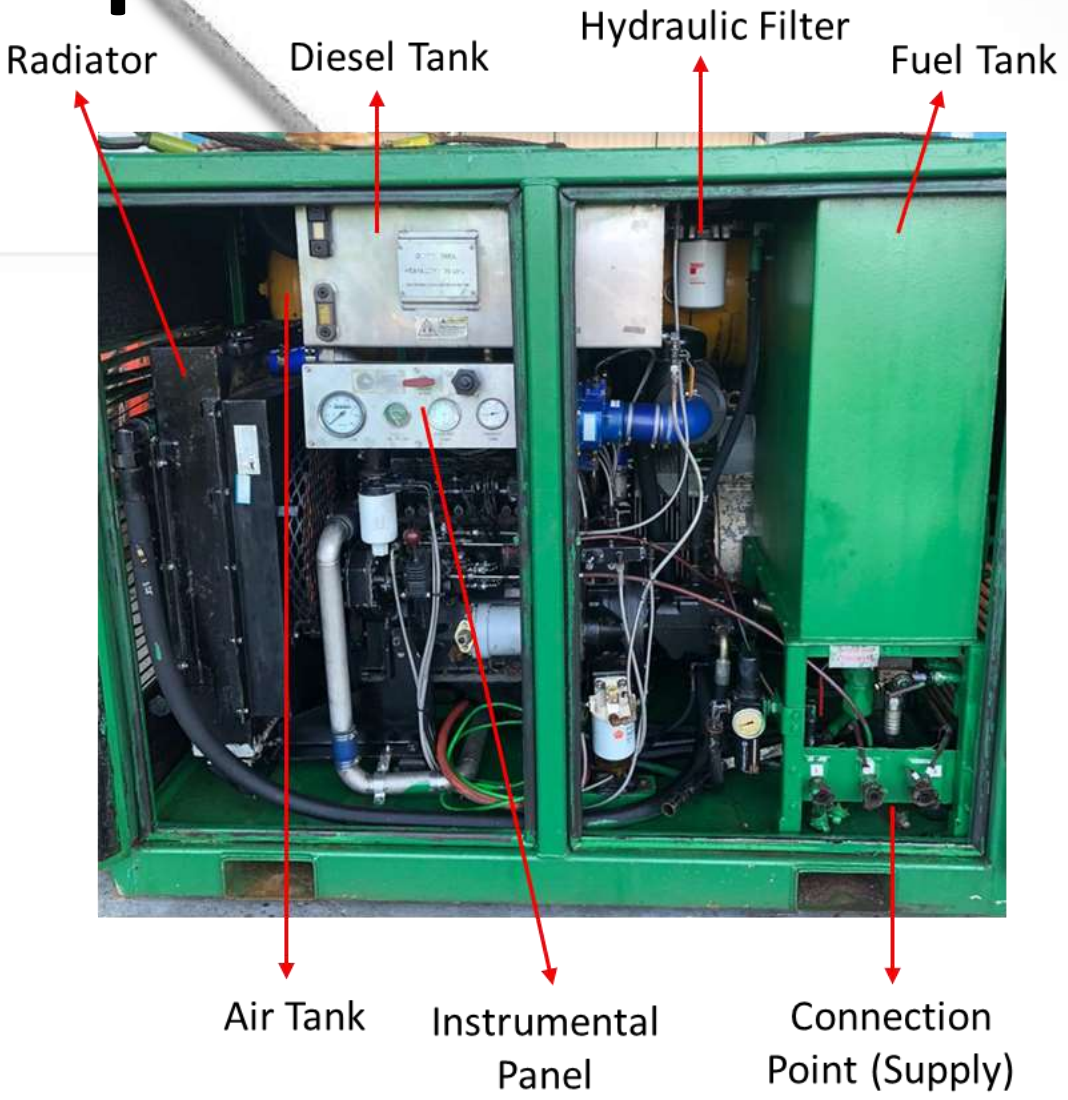
1. Inlet pressure gauge
2. Erector
3. Extender
4. Block (green)
5. Block (red)

Air Compressor

- Supply air
- Zone 2 rated equipment.
- Starter:

Hydraulic Starter

Spring Starter



Power Pack

- To provide and supply the hydraulic power to reel skid unit and wireline mast.
- Supply hydraulic from power pack to reel skid unit 2500psi.
- Diesel driven power pack.
- Zone 2 rated equipment.
- Starter:

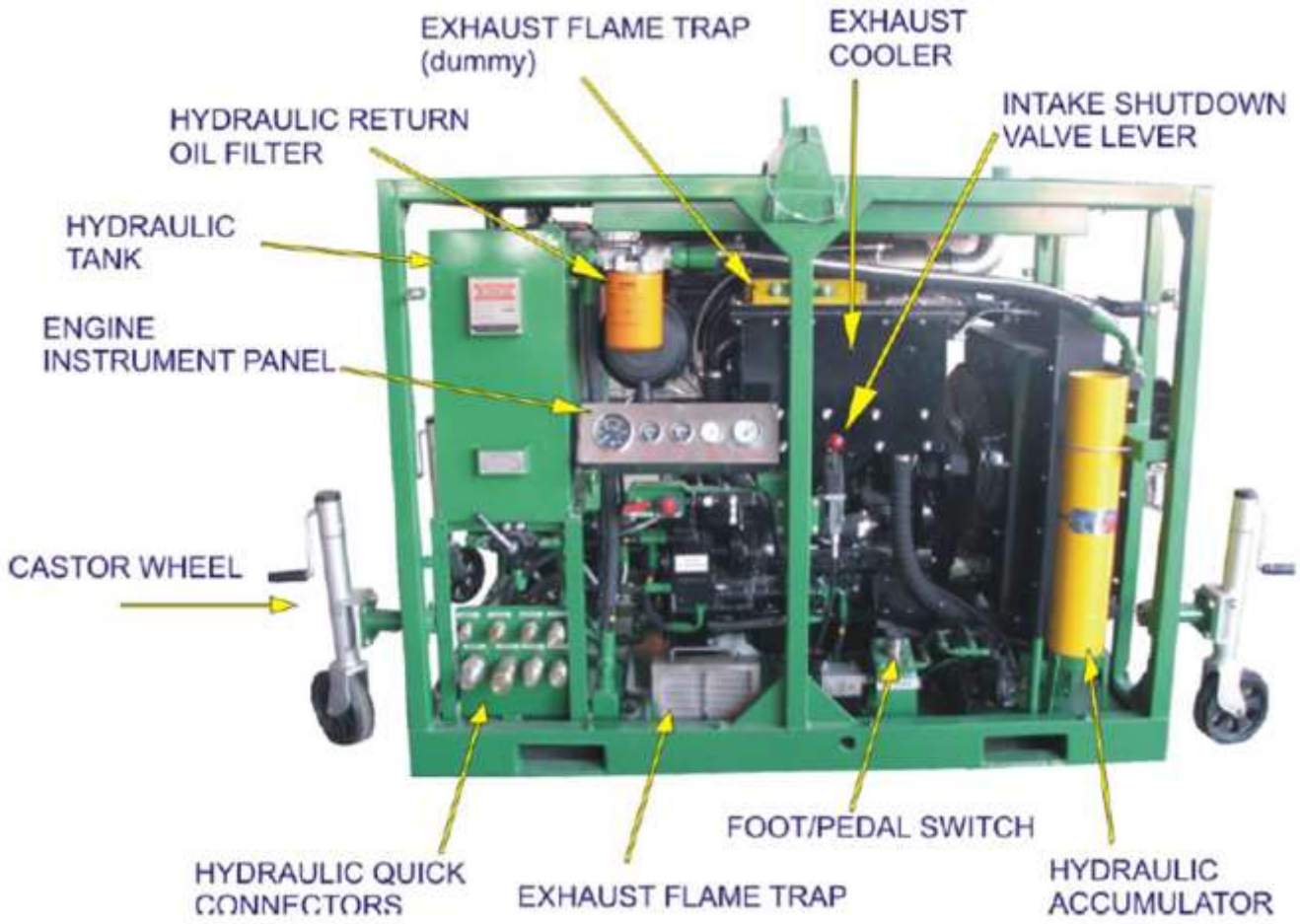
Spring Starter

Hydraulic Starter

Air starter.

- Permit to work:

Hot work permit



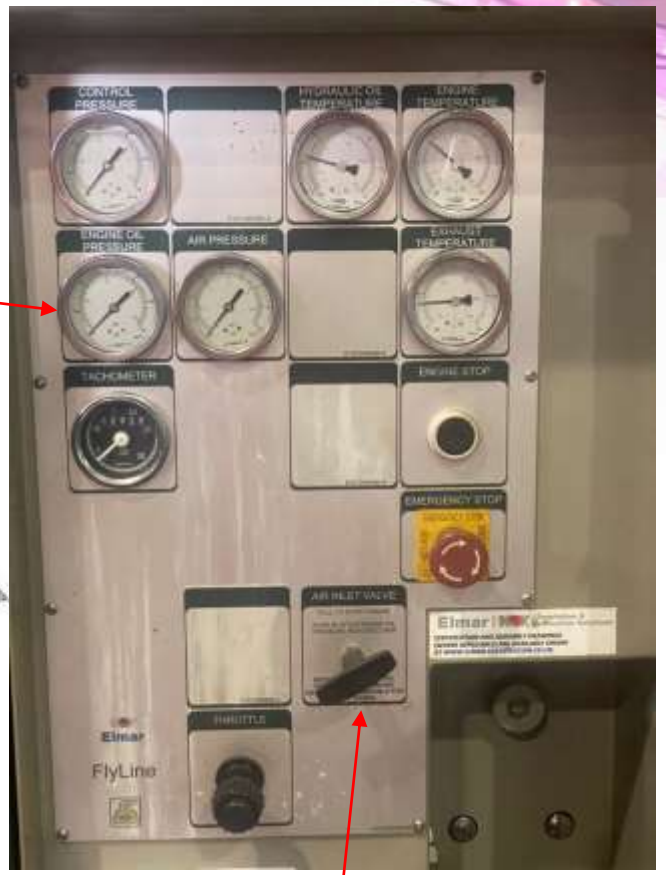
Powerpack Daily Checklist

1. Hydraulic oil
2. Engine oil
3. Radiator
4. Coolant
5. Oil filter
6. Connection hose

1. Rotate the sentinel valve clockwise.

2. turn the winding nut till the spring tension sight glass turn to green.

4. Engine oil pressure at 40-60psi



3. Pull the air inlet valve up.

Reel Skid Unit

- A wireline winch is used to lowering and raising toolstring in well.
- Direction lever is to select direction drum of rotation.
- Drum brake to keep drum stationary or used when jarring.
- Hydraulic control valve is to control speed of drum rotation.
- Odometer is to indicate wireline depths.
- Weight indicator is to measure the tension on wireline.

- Perform monitor WHCP (CHESS)
- Perform Perforation (VESTIGO)
- Perform fishing job (VESTIGO)
- Perform GLVCO (VESTIGO)
- Perform TCC and Logging (HESS)

CONCLUSION

1. Function equipments and tools.
2. Learn the basic rig up process.
3. Learn the process of slickline operation.
4. Learn to perform preventive maintenance.

THANK YOU!