



SLICKLINE OPERATOR WORKBOOK

IMPORTANT NOTE:

1. Your point of reference to complete this workbook may be obtained from the following
 - Training Manual and any other training materials provided together with this workbook
 - Your Trainer, Assessor (Slickline Operator), Verifier (FSM) or senior colleagues
 - SOP / Quality Procedures & Processors
2. The completion of this Workbook is a joint effort and responsibility between you and your assessor therefore you have the obligation to request from your assessor to be assessed upon your completion of each topic
3. The completion of this Workbook is part of the MANDATORY requirements which you must fulfill to qualify for a promotion
4. Your training program is mostly self-driven, including this Workbook. It requires individual initiatives, dedication and commitment to complete the process.

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RECEIVED DATE	
DATE COMPLETED	12/06/2024



C. MAINTENANCE

Legend: C-Competent, NME-Need More Exposure

Document No.	KNOWLEDGE ON EQUIPMENT AND SKILLS IN MAINTENANCE AND TROUBLESHOOTING	Assessment / Verification	Competency		Assessment	
			C	NME	Date	
Form C.1	EQUIPMENT DETAILED SPECIFICATION					
	1	Explain what is equipment specification of wireline tool example 3.0" GS pulling tool * Technical data or manual for the wireline tool including the certification.	Good	✓		12/06/24
	2	How do you place an order for wireline tools? What are the requirements to look for? * Fill up ESTR (equipment specification technical review) form and submit to technical department.	Good	✓		12/06/24
	3	If given a basic drawing of wireline tools are you able to service the tool? *No. still required toll manual.	Good	✓		12/06/24
4	When you received a new equipment or wireline tool what are things you should do and what to look for. * Do an acceptance check and fill up the acceptance form.	Good	✓		12/06/24	



	<p>5 Where do you look for specification of pressurized vessel or container? What is written there? * Data plate on equipment. The data include in plate is pressure rating, containment inside vessel and tagging for validity.</p>	Good	✓		12/06/24
Form C.2	EQUIPMENT OPERATION PROCEDURES				
	<p>1. What is an equipment operating procedure? * Equipment operation procedure is a guideline how to use a some equipment. * It have a step by step how to operate.</p>	Good	✓		12/06/24
	<p>2. Does all the equipment have an operating procedure and what is it for? * Yes. It is a procedure step by step how to operate the equipment.</p>	Good	✓		12/06/24
	<p>3. Explain what will be the consequences if you are not following the operating procedures. * If not follow the procedure can damage the equipment and injury the person.</p>	Good	✓		12/08/24
	<p>4. Does Dimension Bid have operating procedures and where are they kept? * Yes. In server</p>	Good	✓		12/06/24

	<p>5. Explain how the Reel Skid Unit Operating.</p> <ul style="list-style-type: none"> * Position the power pack such that it is located in the downwind position from the wireline winch - this is to prevent the wireline personnel, especially the operator from inhaling exhaust fumes emitting from the power pack diesel engine and also minimizing noise exposure to personnel. * Position the wireline winch such that it is directly in line with the well to be worked on - this is to prevent unnecessary bending to the wireline at the counter head guide rollers, thus reducing wear on the guide rollers. * Check that there is sufficient diesel fuel and hydraulic oil in their respective tanks on the power pack. * Check and ensure that there is sufficient engine oil in the crank case by pulling out the dip stick and note the level. Top up if necessary with the correct grade and type engine oil. * Check and ensure that the hydraulic hoses and quick couplings are in good condition. * Connect the hydraulic hoses from the power pack to the wireline winch. * Move the control lever (the 4-way directional valve on the SSR units) on the winch to mid position and ensure the parking brake is applied. * Start up the power pack and run the engine at idling speed for a few minutes to warm up, then run it at 1/4 throttle for another few minutes to observe for any signs of possible problems, e.g. bluish-white smoke, excessive vibration, unusual noise from the engine and leaks. * Set the depth counter (odometer) and spool out a short length of wire (e.g. 5 to 6 ft.) from the winch drum. Measure the length of this wire with a measuring tape and compare it with the counter reading to ensure that the right counter and the correct ratio of right-angle drive have been provided on the winch. (Sometimes there may be a mistake of counter measuring in meter or the wrong ratio of right-angle drive being installed). * Ensure that the counter head is installed with the correct size of wire measuring wheel and pressure wheels, and the wheel bearings are in good condition. * Check that the pressure wheels are tight by turning the tensioning bolts or idler clamp screw till hand-tight. * Check for wire grooves in the guide rollers and ensure they can rotate freely. Guide rollers with wire grooves in them must be replaced. * Ensure that the counter head post does not twist, and the traverse carriage assembly can traverse freely on the traverse support bar(s) which should be coated with light 	<p>Good</p>	<p>✓</p>		<p>12/06/24</p>
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<p>grease. * Proceed to spool out sufficient length of wire for making the rope socket and rigging up the wireline lubricator.</p>	<p>Good</p>	<p>✓</p>		<p>12/06/24</p>
<p>6. Explain how the following Power Pack operating:</p> <p>i. Diesel Power Pack * Check diesel power pack as per checklist. * Hook up Hydraulic hose to RSU. * Pump hydraulic to compress and use kick starter to start the power pack..</p> <p>ii. Electrical Power Pack * Check electric power pack as per checklist. * Hook up Hydraulic hose to RSU. * Connect socket (415V) from power pack to power supply. * Push ON button to start electric power pack.</p>	<p>Good</p>	<p>✓</p>		<p>12/06/24</p>
<p>7. Explain how to start the Diesel Power Pack and show how to hook-up 1" and 1 - 1/4" Hydraulic Hose * Hook up Hydraulic hose to RSU. * Pump hydraulic to compress and use kick starter to start the power pack..</p>	<p>Good</p>	<p>✓</p>		<p>12/06/24</p>
<p>8. Explain how to start the Air Compressor * Check air compressor condition as per checklist. * Check emergency stop button. Make sure the button not activate. * Crank the spring starter. * Pull the start lever and push spring starter until power pack start.</p>	<p>Good</p>	<p>✓</p>		<p>12/06/24</p>



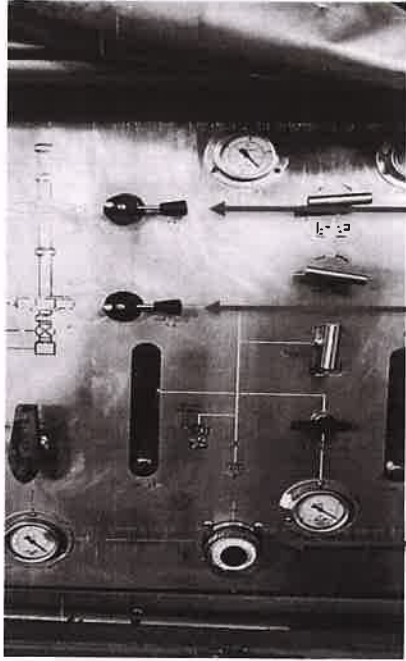
	<p>9. Identify the Portable Control Panel and explain its function. * Portable control panel or single control panel is use only to control SCSSV and HMV.</p>	Good	✓		12/06/24
	<p>10. Explain how to operate Control Panel – TRSCSSV, SDV, BOP, Accumulator Tank and Stuffing Box</p> <ul style="list-style-type: none"> • Hook up air hose from air supply to control panel. • Check ESD button make sure in closed position. • Open air supply valve and make sure air supply 110 psi. • Turn dial regulator clockwise for TRSCSSV and set at 5000 psi. For MV set dial regulator at 3000 psi and top up pressure into accumulator tank to desire Pressure. • For stuffing box use hand pump that attached to the control panel when Necessary. 	Good	✓		12/06/24
	<p>11. Show how to hook – up ¼” Hydraulic Hose to the following system</p> <ol style="list-style-type: none"> i. Pressure Manifold /TRSCSSV * Pull out ¼” hydraulic hose from control panel and hook up to TRSV manifold thru 10k snap tite. ii. Stuffing Box * Pull out ¼” hydraulic hose from control panel and hook up to stuffing box thru 5k snap tite. iii. BOP * Pull out ¼” hydraulic hose from control panel and hook up to BOP using T-Hose thru 5k snap tite. 	Good	✓		12/06/24



	<p>12. Explain how to operate Test Pump</p> <ul style="list-style-type: none"> * Check test pump condition as per daily checklist. * Hook up air hose from test pump to air compressor. * Hook up hose from test pump to charted recorder. * Check ESD button. Make sure in normal position. * Check dump valve. Make sure in close position. * Push start button before operate. * Set air shut valve to open position. * Adjust high flow pump to fill up water into item to test. * After water full use regulator high pressure pump to increase pressure item to test. * Check paper charted inside charted recorder. Make sure pressure reading at test Test pump same with charted recorder. * After finish back off regulator for high pressure pump to 0 psi. * Open dump valve to bleed off water and pressure inside the hose. 	Good	✓		12/06/24
	<p>13. Identify the Air Receiver Tank and explain its function</p> <ul style="list-style-type: none"> * Air receiver tank function to store compressed air before it enters into the piping system and or equipment. 	Good	✓		12/06/24
	<p>14. Explain how to operate Air Receiver Tank</p> <ul style="list-style-type: none"> * Hook up air hose from air compressor to air receiver tank. * Open the valve from air compressor to air receiver tank. * Air inside air receiver tank will distributor to other equipment using another air hose. 	Good	✓		12/06/24
	<p>15. What is the Working Pressure for Air Receiver Tank</p> <ul style="list-style-type: none"> * 150 psi 	Good	✓		12/06/24



	<p>16. Identify the Spooling Unit and explain its function * Spooling unit function as a device to spool in or spool out wire from RSU.</p>	Good	✓	12/06/24
	<p>17. Show where the following components allocated at Spooling Unit and explain the function</p> <ul style="list-style-type: none"> i. Pressure Control Valve – To control the hydraulic pressure ii. Braking System – To stop and control the spooling unit. 	Good	✓	12/06/24
	<p>18. Participate in spooling wire activity at least 3 times. Explain what are the other equipment required besides Spool * Empty wire drum, spooling unit, RSU, weight indicator, hay pulley, wire clamp and securing device (tie down chain).</p>	Good	✓	12/06/24
	<p>19. What do "SPOOL-IN" and "SPOOL-OUT" wire mean? When do these activities take place? * Spool in – Spool wire from spooling device to RSU. * Spool out – Spool out wire from RSU to Spooling device. * To replace the old wire and to spool new wire.</p>	Good	✓	12/06/24
	<p>20. Why is it compulsory to secure Spooling Unit with Tie Down Chain During spool-in / our wire activity? * To secure and prevent the Spooling Device from accidentally moving.</p>	Good	✓	12/06/24
	<p>21. Explain how the Stuffing Box operating * By apply pressure to energize the piston to compress the packing and if slickline breaking wire in hole, the stuffing box blow out plug seal the well pressure/fluid from come out to atmosphere.</p>	Good	✓	12/06/24
	<p>22. Show how to connect the Stuffing Box with lubricator and where to hook-up the Stuffing Box hydraulic hose * Hydraulic hose hooks up at hydraulic pack off circuit</p>	Good	✓	12/06/24

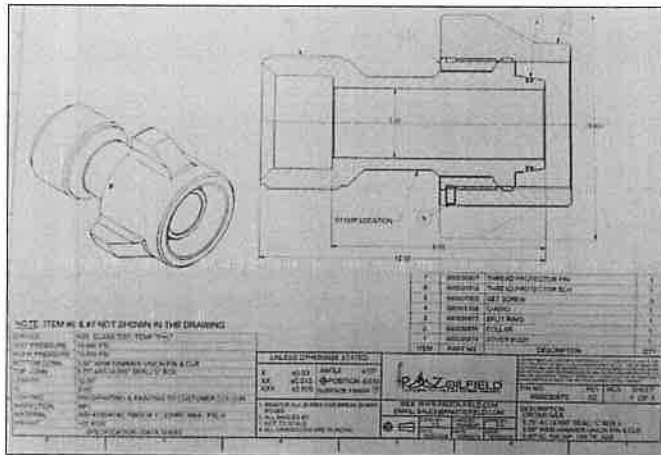
<p>23. Identify the BOP and explain its function * BOP function to seal, control and monitor oil and gas wells to prevent blowouts, the uncontrolled release of crude oil or natural gas from a well.</p>	<p>Good</p>	<p>✓</p>		<p>12/06/24</p>
<p>24. Identify the BOP hydraulic hose required and hook-up to the Control Panel. Explain how to Close and Open BOP Upper & Lower Ram</p>  <p>Upper ram BOP (OPEN/CLOSE POSITION)</p> <p>Lower ram BOP (OPEN/CLOSE POSITION)</p> <p>Regulator to operate BOP RAM</p> <p>* Select upper ram BOP lever to open or close position. * Using regulator pressure up until BOP ram open or close position. * Same step for lower ram BOP.</p>	<p>Good</p>	<p>✓</p>		<p>12/06/24</p>



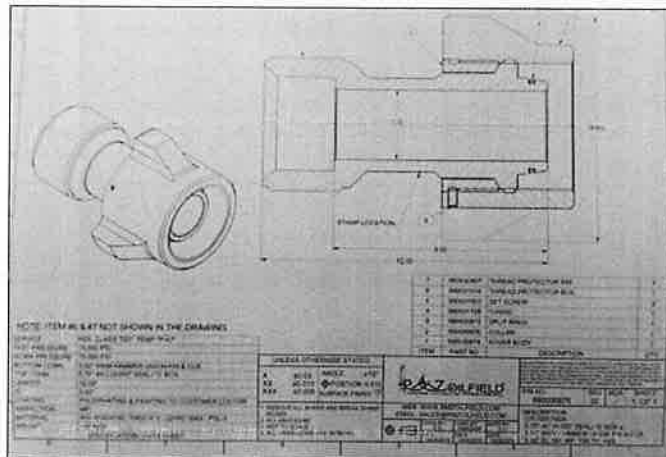
	<p>25. Show how to connect the BOP with lubricator and where the position of BOP during wireline job * For routine job BOP position on main deck above the Pumping Tee and for none routine (fishing), closed to the wellhead valve</p>	Good	✓		12/06/24
	<p>26. What is the different between Lubricator, Riser and Pump Joint? * Different length, position will rig up and function.</p>	Good	✓		12/06/24
	<p>27. Make-up 3 sections of lubricator and perform pressure test max 2000 psi ing Unit to perform spooling activity n/a</p>	Good	✓		12/06/24
	<p>28. What is the common length for Dimension Bid Lubricator? Besides the common length, what is the other length appear in Dimension Bid? * Common length Lubricator: 8ft Other length : 10ft</p>	Good	✓		12/06/24

29. Identify the following threaded size

i. 5 – 5/8" WKM Hammer Union to suit 3-1/8" WKM Single X-mass Tree



ii. 5 – 5/8" WKM Hammer Union to suit 2-9/16" WKM Single X-mass Tree



Good

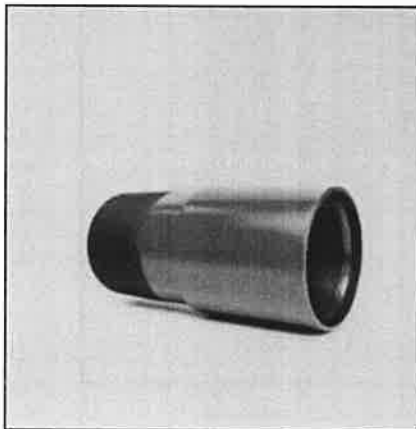
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iii. 5 – 1/5" WKM Quick Union to suit 3-1/8" WKM Single X-mass Tree



iv. 3 – 1/2 " EUE Pin

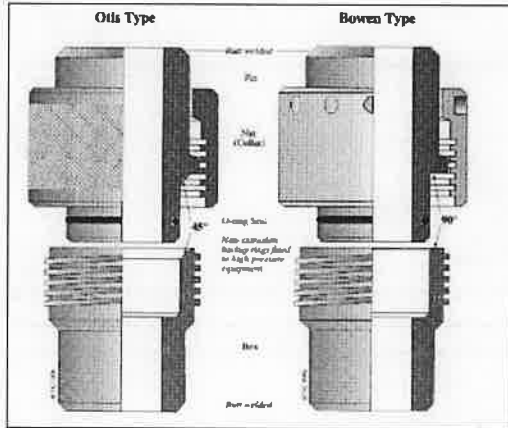


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v. 8.25" – 4 ACME Type 'O'



Otis Type Quick Union Dimensions

Bore (A)	WP	Service	Connection (B)	Pin OD (C)	Box ID (D)	Thread OD (E)	O-Ring Ø (F)
2.50	5,000 10,000	Std	5,000-4 ACME	3.494	3.500	5,000	338
2.50	15,000	Std	5,000-4 ACME	3.494	3.500	5,000	338
3.00	5,000 10,000	H,S	5,750-4 ACME	3,994	4,000	5,750	342
2.50	15,000	H,S	6,250-4 ACME	3,994	4,000	5,750	342
4.00	5,000 10,000	Std	6,500-4 ACME	4,744	4,750	6,500	348
3.00	15,000	H,S	7,500-4 ACME	5,494	5,500	7,500	354
5.00	5,000 10,000	Std	8,250-4 ACME	6,182	6,188	8,250	434
4.00	5,000 10,000	H,S	8,375-4 ACME	5,244	5,250	8,375	427
6.38	5,000	Std	8,750-4 ACME	7,494	7,500	8,750	441
5.00	5,000 10,000	H,S	9,000-4 ACME	6,744	6,750	9,000	362
6.38	5,000	H,S	9,500-4 ACME	7,994	8,000	9,500	443
4.00	15,000	H,S	9,500-4 ACME	6,244	6,250	9,500	435

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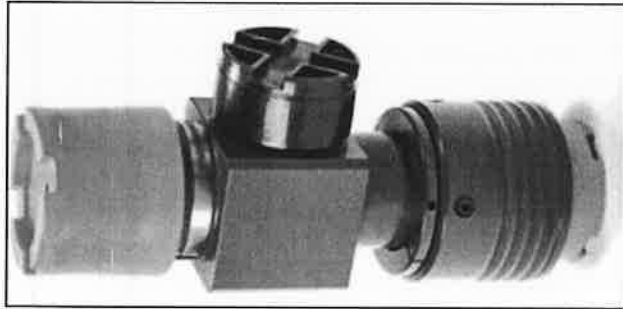
✓

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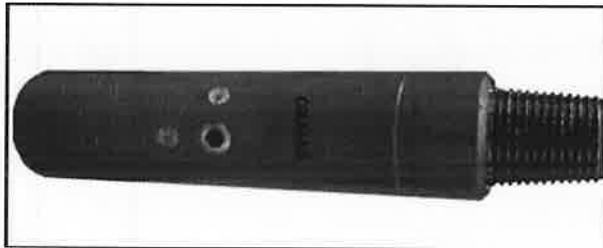
	<p>30. What is the common length of Wellhead X-over in Dimension Bid? Why?</p> <ul style="list-style-type: none"> * 1ft * 2ft 	Good	✓		12/06/24
	<p>31. Show how to rig-up Wellhead X-over and explain step by step</p> <ul style="list-style-type: none"> * Make sure no trap pressure before open xmass tree cap. * Using chain tong open xmas tree cap carefully. * Use crane to lift up xmass tree cap to maindeck. * Use crane to lift down x-over to the wellhead. * Check o-ring and put lubricant before hook up to xmass tree cap. * Use hand to tighten x-over collar. 	Good	✓		12/06/24
	<p>32. What is the ID for: 3- 1/2" , 4- 1/2" and 5- 1/2" nominal lubricator</p> <ul style="list-style-type: none"> * 3-1/2" lubricator = 3.0" * 4-1/2" lubricator = 4.0" * 5-1/2" lubricator = 5-1/8" 	Good	✓		12/06/24

33. Identify the Pump-in Tee and TIW Valve and explain its function



PUMPING TEE :

Pump in tee provides a large bore inlet through which various fluids can be pump for operation such a well control, inhibitor pumping, fluid sampling and bleed down.



TIW VALVE :

TIW Valve are ball valve design for high pressure condition. These ball valve can hold pressure from both direction. TIW valve are called "full opening" because when the ball valve is opened the flow path has a smooth inside diameter.

Good

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34. Identify the following threaded size and ball valve

i. 1502 Thread Half Union Side Outlet (For Chicksan Line)



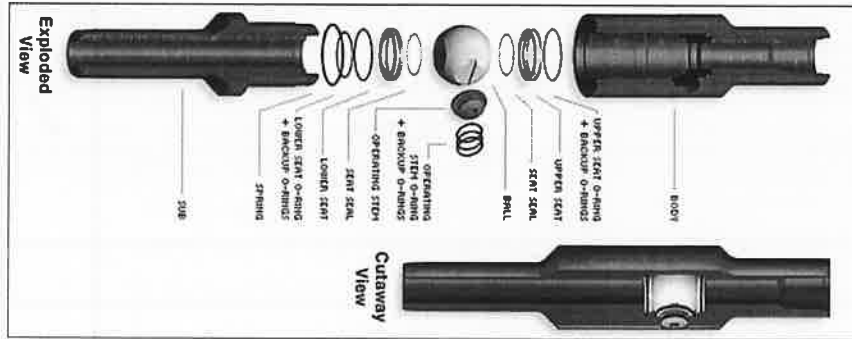
Size (inch)		Total Length		Nut Radius		Material		Weight	
in	mm	in	mm	in	mm	Nut	Subs	lbs	kgs
1	25.4	2-11/16	68.3	1-15/16	49.2	SC/SF	SF	1.75	0.8
2	50.8	3-5/16	84.1	2-29/32	73.8	SF	SF	5.25	2.4

Good

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ii. 3" Ball Valve



Safety Valve Specifications					
Complete Valve	310-412200-25	310-478276-27	310-638234-28	310-738314-30	
Size, Connection, & Weight	4-1/2" OD 2" EUE (55 lb)	4-7/8" OD 2-7/8" EUE (93 lb)	6-3/8" OD 3-1/2" EUE (138 lb)	7-3/8" OD 4-1/2" EUE (186 lb)	
Valve Components	Quantity	2" ID	2-7/16" ID	2-3/4" ID	
Body	1	310-412200-25B (23 lb)	310-478276-27B (36 lb)	310-638234-28B (69 lb)	310-738314-30B (88 lb)
Sub	1	310-412200-25S (22 lb)	310-478276-27S (41 lb)	310-638234-28S (50 lb)	310-738314-30S (76 lb)
Ball*	1	100016 (4 lb)	200015 (4 lb)	100011 (6 lb)	100003 (9 lb)
Seat*	2	100017 (2 lb)	200018 (2 lb)	100012 (2 lb)	100004 (2 lb)
Seal Ring: PTFE-568**/**	2	PTFE-568-228	PTFE-568-145	PTFE-568-234	PTFE-568-238
Operating Stem*	1	100007-478 (.2 lb)	100007-478 (.5 lb)	100005-1 (1 lb)	100005-2 (1 lb)
Stem O Ring: BUNA 70**/**	1	70-568-125	70-568-125	70-568-229	70-568-229
Spring*	1	SSR-0275-S17	SSR-0325-S17	A3917-042	A-4627-047
Stop Ring*	1	120007	127607	123407	131407
Body O Ring: BUNA 70**/**	1	70-568-339	70-568-342	70-568-347	70-568-430
Seat O Ring: BUNA 70**/**	2	70-568-231	70-568-234	70-568-240	70-568-245
Operating Wrench	1	KVW-412-L	KVW-412-S	KVW-412-L	KVW-412-L
Seal Kit		210-200-SK	210-276-SK	210-234-SK	210-314-SK
Repair Kit		210-200-RK (9 lb)	210-276-RK (10 lb)	210-234-RK (12 lb)	210-314-RK (15 lb)

Good

✓

12/06/24



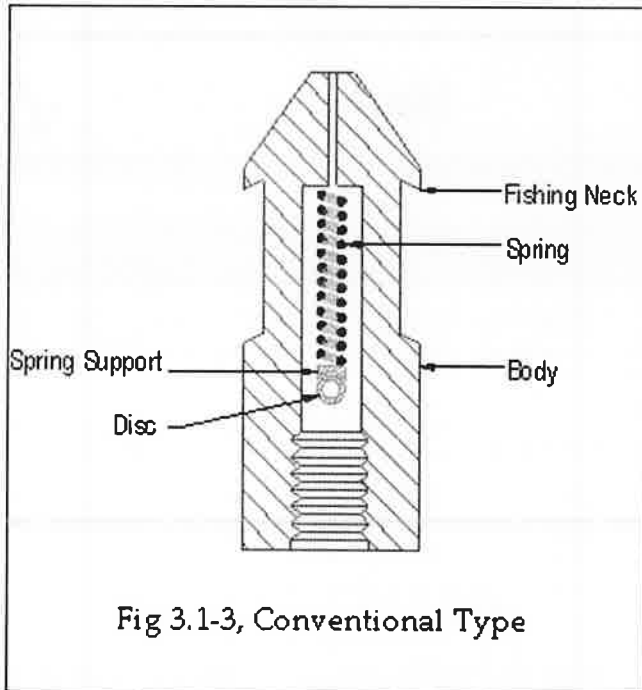
	<p>35. Where is the pump-in Tee and TIW Valve should be rigged-up during wireline job?</p> <ul style="list-style-type: none">i. Pump-in Tee * Below the BOPii. TIW Valve * Below the pump in tee	Good	✓		12/06/24
	<p>36. Explain step by step how to rig-up Pump-in Tee and TIW Valve</p> <ul style="list-style-type: none">* Open xmas tree cap.* Install xmas tree xover.* Install riser* Install TIW valve* Install Pump in tee	Good	✓		12/06/24



37. Identify the following wireline tools and explain the function

- i. Tie knot Rope Socket
The knot type rope socket consists of a body, spring, spring support and disc. The wire is bent around itself between 3 to 8 turns dependent upon the required weak point value required. For general wireline operations, 8 wraps are wound. The rope socket incorporates a FISHING NECK at its top end. This allows a fishing tool to latch on to a stuck or dropped tool string to fish it from the well.

It is important to record the fishing neck size of each individual section of toolstring, as this data is required for the selection of fishing tools should fishing operations become necessary.



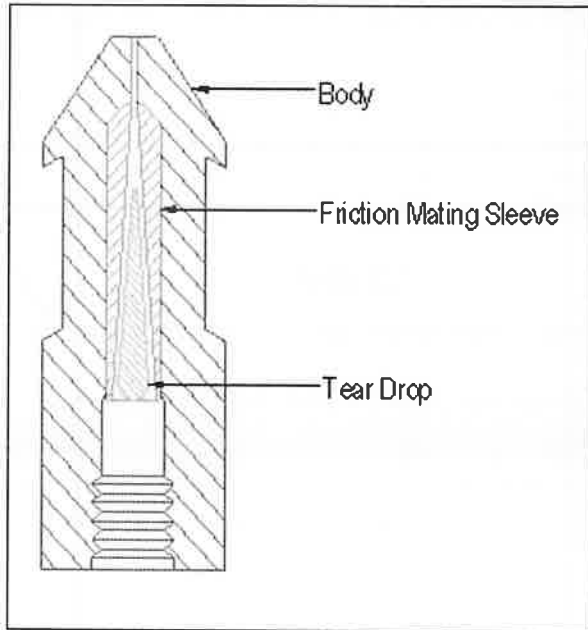
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- ii. **Tear Drop Rope Socket**
For 0.108-inch wireline, the most commonly used rope sockets are the "Tear Drop" sockets. This socket is easy to make-up and little experience is necessary to reliably "tie the knot". The wire is bent around a slotted "Tear Drop" and the loose end held in place at the top by an Allen screw or by the friction of the mating sleeve itself.



Good

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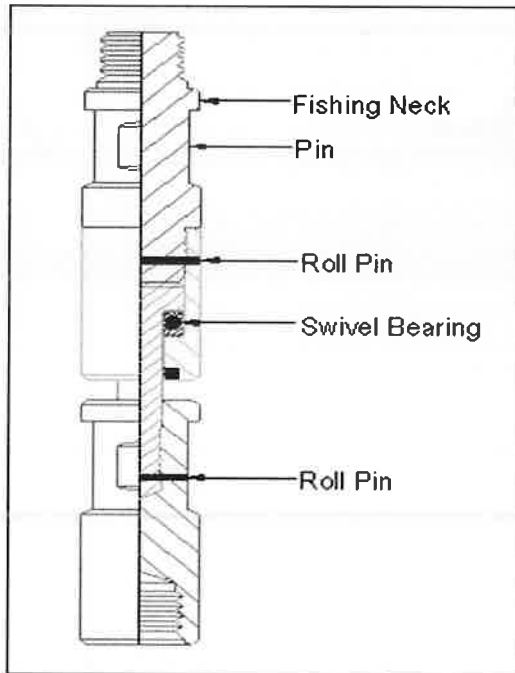
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iii. **Swivel Joint**
The Swivel Joint, Figure 3.1-11, is designed to reduce the toolstring change-out time at surface during a series of runs in the well. This tool consists of top and bottom subs with a swivel arrangement between them. This allows an operator to change out long sections without having to physically rotate them

Coupling is done with the Swivel Joint when the upper and lower subs are rotated to make connection.

Due to their construction, a Swivel Joint is stronger than a knuckle joint and therefore, when rotation of the toolstring is required (rather than angulations), the swivel is preferred.



Good

✓

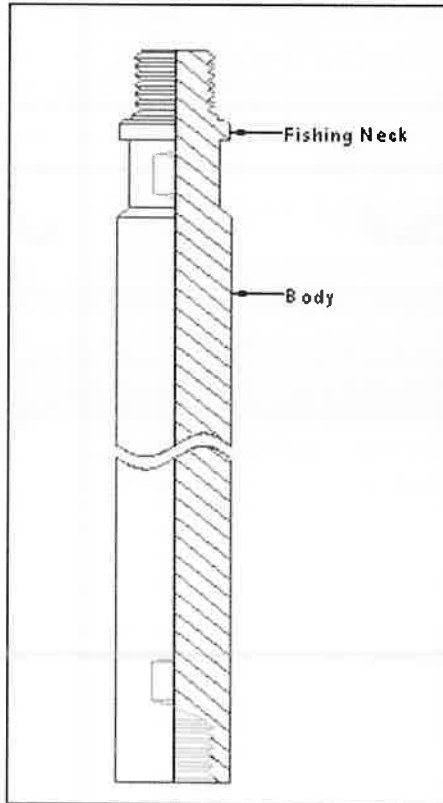
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iv. Wireline Stem

WIRELINE STEM or SINKER BAR is required as part of the wireline toolstring to increase the weight. A "rule of thumb" to determine the weight of solid steel stem is: $OD^2 \times 8/3 = \text{weight of stem in lbs/ft.}$

An increase in stem weight increases the impact force delivered by the jars. The toolstring should not be over-weighted as excessive mass dampens the "feel" and premature shearing of shear pins may occur.



Good

✓

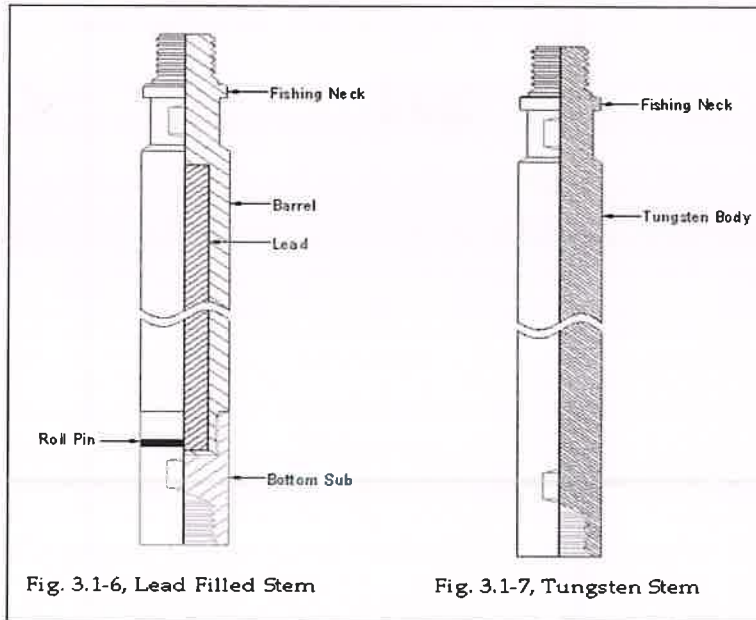
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v. Tungsten / Malory Stem

To provide greater weight for the same diameter and length, lead-filled stem is available, Figure 3.1-6. This stem has regular steel pin and box connections and tubular steel outer barrel. The inside is filled with lead to provide greater weight. This stem is used primarily for running pressure and temperature survey tools to obtain maximum weight with minimum cross-sectional area to prevent the tools "floating" or being blown up the hole by pressure surges.

Do not use lead-filled stem for jarring, as the lead will tend to creep downwards and split the outer barrel.

Other high density, heavy weight stem available includes: tungsten, uranium and Mallory (mercury alloy) filled stem. These high-density stems, Figure 3.1-7, are made of the tungsten, uranium and or Mallory (mercury allot) accordingly.

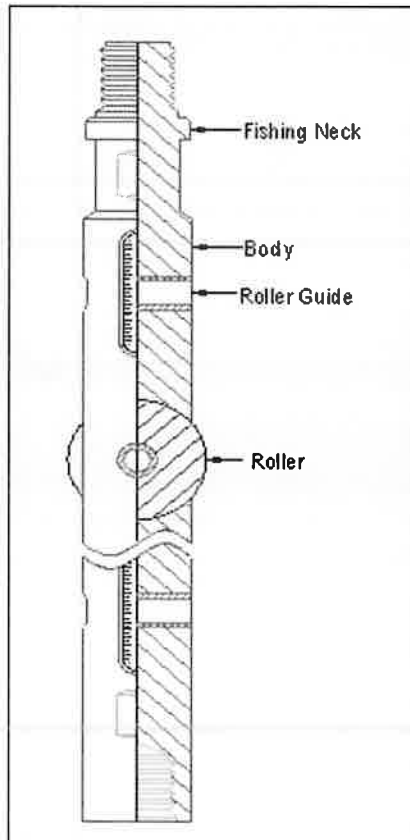


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- vi. **Roller Stem**
Roller stem, Figure 3.1-5, is used for work on deviated wells, or in wells with the paraffin, asphaltine etc. on the tubing internal walls. It allows the stem to roll down the tubing wall and hence, cut down the friction incurred when using regular stem.

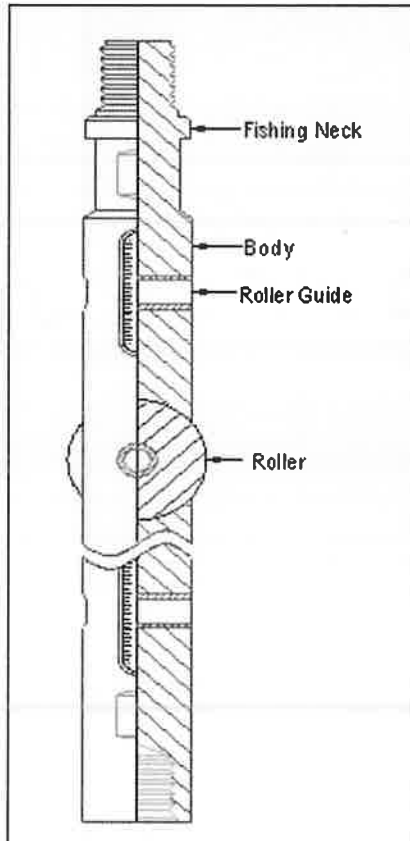


Good

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- vii. Tungsten Roller Stem
Tungsten Roller stem, Same like roller stem but with extra weight is used for work on deviated wells, or in wells with the paraffin, asphaltine etc. on the tubing internal walls. It allows the stem to roll down the tubing wall and hence, cut down the friction incurred when using regular stem.



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viii. **Multiwheel Roller Stem**
Multi roller stem, is used for work on high deviated wells, or in wells with the paraffin, asphaltine etc. on the tubing internal walls. It allows the stem to roll down the tubing wall and hence, cut down the friction incurred when using regular stem.



Good

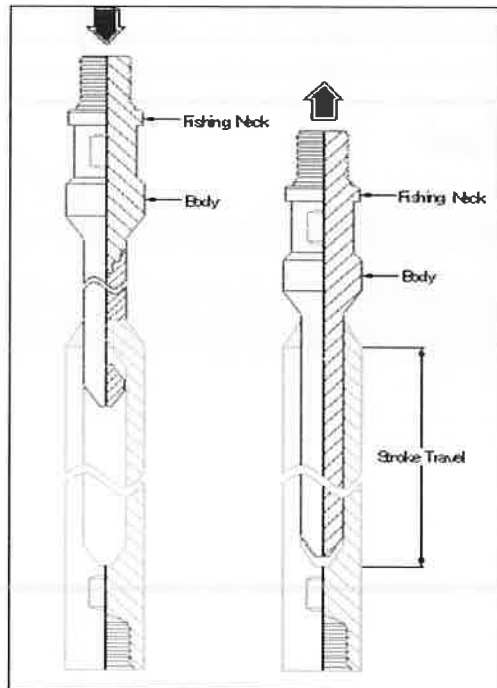
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	<p>ix. Roller Boggie Impact Selector's Slickline Roller Boggie tools enable slickline operations to be performed more quickly and easily. Operators can perform the work using the same equipment without changing wireline operating procedures resulting in time savings with less risk. This is the most efficient conveyance system available. Used in most wellbore conditions slickline Roller Boggie tools can be installed at any point in the tool string. With independent swivels, the self-orienting roller body ensures the rollers are at all times oriented to the low side of the tubing. The tool string is lifted onto large, highly-efficient rollers, eliminating contact friction and enabling easier and deeper wellbore access. Running weight remains positive and steady, pick-up weight is greatly reduced and the risk of wire breakage is lowered; jarring can be precise and more effective. Slickline Roller Boggie tools are available in a wide range of sizes to pass through all wellbore restrictions and can be ordered with a choice of connection types to suit individual tool string requirements.</p> 	<p>Good</p>	<p>✓</p>		<p>12/06/21</p>
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- x. **Mechanical Spang Jar**
Spang jars, Figure 3.1-8, are the most commonly used as they are mechanically simple, require little maintenance and can be used to jar both up and down.

However, well debris can interfere with this action and their open construction could possibly allow any wireline being fished to become entangled. Jarring force directions is governed by stem weight and wire speed and to a lesser extent by stroke length. However, the viscosity of the well fluid, the well deviation and the friction of the wire at the Stuffing Box restrict the efficiency of jarring down.

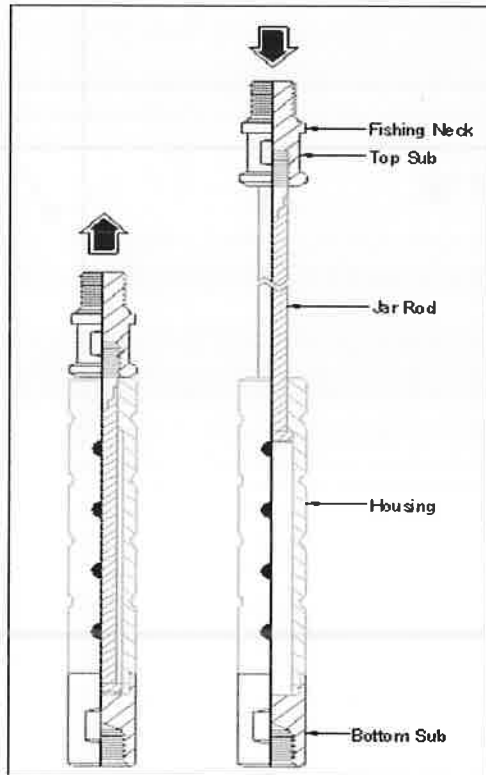


Good

✓

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- xi. **Tubular Jar**
Tubular Jars, Figure 3.1-8, are commonly used when fishing for wireline. Its moving components are for the most part enclosed inside a housing, protecting it from entanglement with the wireline to be fished and other well debris. Tubular jars have screwed components, which are susceptible to backing off during prolonged jarring. Also, the efficiency of jarring down may be decreased due to the viscosity effects of the fluid displaced from inside the housing



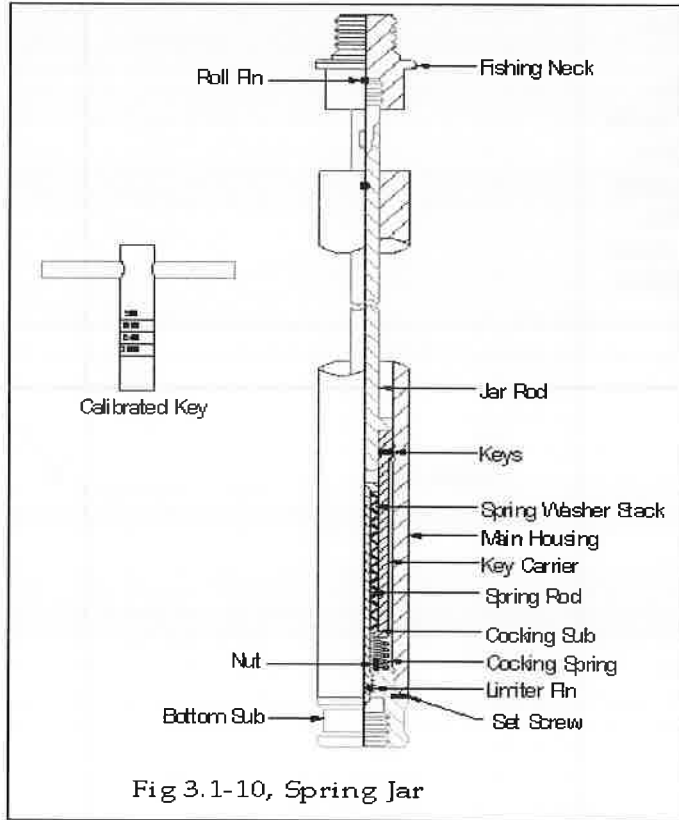
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	<p>xii. Upstroke Spring Jar Spring Jars, Figure 3.1-10, are used in situations where Spang Jars have been, or are likely to be unsuccessful. This can be, for example, in deviated wells when wire speed is insufficient or, in general, when more jarring force is required.</p> <p>They can be used to jar-up but because of their construction it is possible for debris to enter and make them difficult to reset. They also require regular maintenance. They are used in gas wells in preference to hydraulic jars since they are not dependent on elastomer seals (this removes the risk of fluid entry). In general, they are more durable than Hydraulic Jars as their construction is purely mechanical. The impact force of spring jars as determined by the selection or adjustment of the spring or release mechanism. This spring or release mechanism prevents any relative movement of the two parts of the jar, until a predetermined wire pull is reach. The first section of relative motion of the two parts is to overcome the spring or release mechanism tension. This in turn allows the release mechanism to actuate, freeing the inner rod to move upwards without restriction and induced the jarring action. The Spring Jar malfunctions, it is not normally detrimental to the function of the rest of toolstring. If unable to release, it acts as a rigid section of toolstring. If unable to close, it acts as an additional stem.</p>	Good	✓		12/06/24
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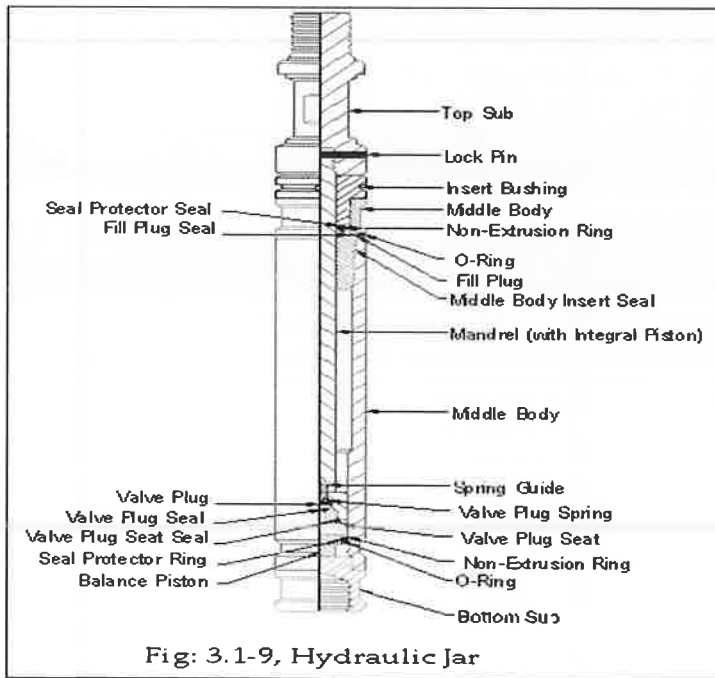
Good

✓

12/06/20



xiii. **Hydraulic Jar**
Hydraulic Jars, Figure 3.1-9, are used in similar circumstances to spring jars i.e. when spang jars have been unsuccessful, or are like to be unsuccessful. The main advantage of the Hydraulic Jar is that the jarring force is adjustable, since it is determined by the initial pull on the wire. In addition, this type of jar (in common with spring jars) is more suited to extended jarring operations. This is because the wireline can be run slower, since the impact force of these jars does not depend on the wire speed, which results in less wear and tear on the wire. Hydraulic Jars can only be used to jar up and, because their construction includes many elastomer seal, regular maintenance is required since well fluid and debris can enter the hydraulic chamber.



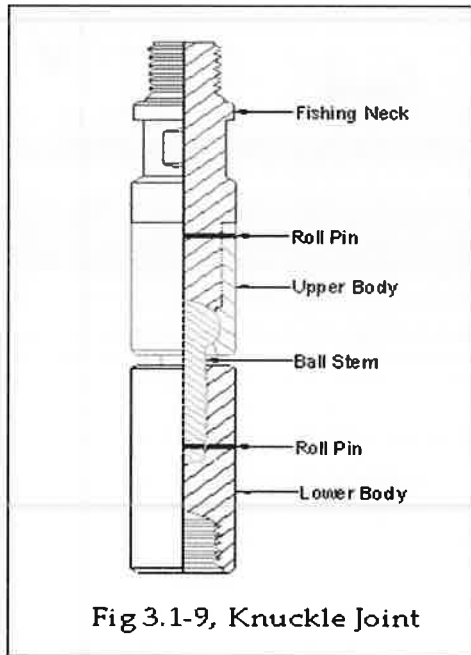
Good

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xiv. **Knuckle Joint**
Knuckle joints are included in the wireline toolstring to offer a degree of lateral flexibility. They incorporate a ball joint assembly allowing rotation and some compliance; Figure 3.1-9. During wireline operation in deviated wells, lengthy toolstrings without Knuckle Joints may be forced to bend during running to follow the angles of the tubing. This causes friction and up/down mobility can be seriously impaired. They are also used during fishing operations to give flexibility between fishing tool and jars, and so aid latching operations. Extended periods of jarring can damage the Knuckle Joint hence their use in toolstrings should be kept to a minimum. The ball joints, threads, and any pins should be thoroughly inspected prior to use.



Good

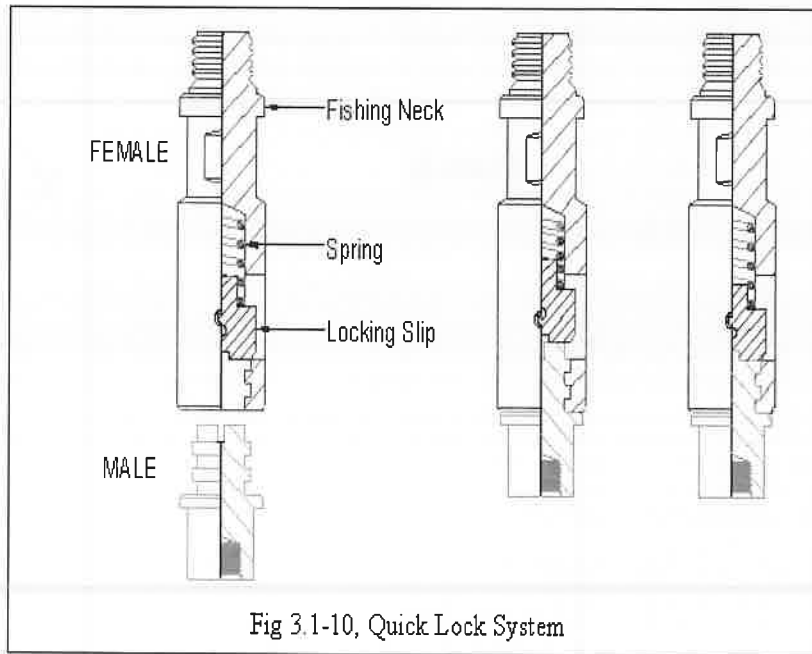
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xv. Quick Connect

Quick-Lock system toolstrings may be used instead of (or in conjunction with) the threaded type. The Quick-Lock System, Figure 3.1-10, is built onto the whole range of the toolstring equipment. There is no need for wrenches when making up this system. The male half is mated to the female half then rotated 90°. A spring loaded locking slip engages a slot and locks the assembly in place. To release the locking devices it is mechanically lifted by means of a cut away window in the stem body. This system is faster and easier to make up than the threaded type. It is stronger and will not accidentally back off since it does not incorporate threads.



Guard

✓

12/06/24



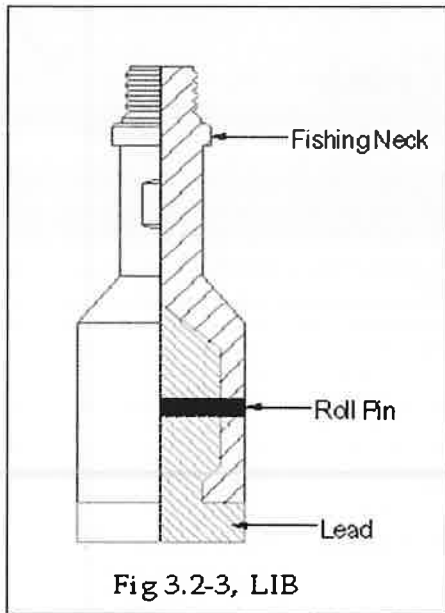
xvi. **Lead Impression Block**

Advantages:

Lead Impression Blocks are used to obtain an image profile of a wide range of equipment downhole to be latched or fished, e.g. Rope Sockets (with or without wire), Prongs, Lock Mandrels and parted tubing. They have no moving parts and incorporate a fishing facility.

Disadvantages:

Lead Impression Blocks have no shear-off facility. A false or double impression can occur at obstructions while running in prior to reaching the tool to be fished, causing difficulty interpreting the image obtained. Only a single downward stroke is used to make the impression, otherwise multiple impressions will confuse the image or loosen the lead.



Good



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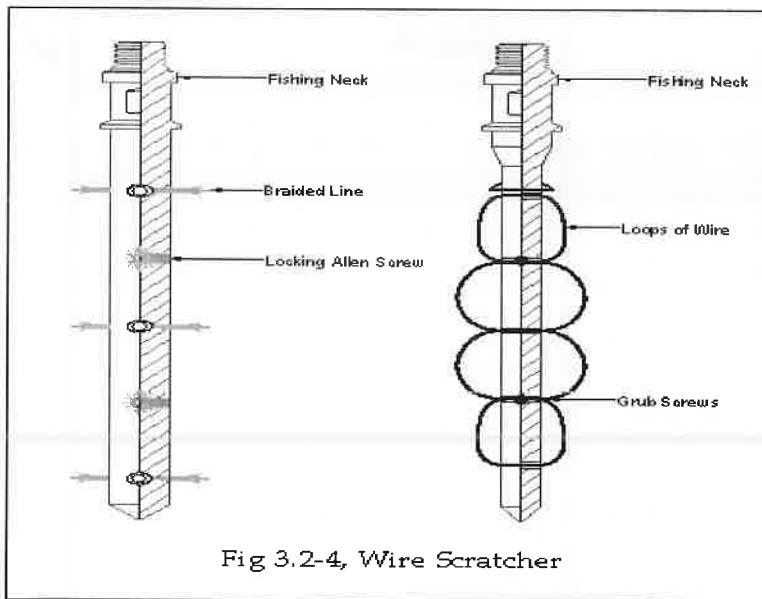
xvii. **Wire Scratcher**
Wire Scratchers, Figure 3.2-4, are made from a piece of stem drilled with a series of holes on 4 different axis. Pieces of 3/16 inch braided line or slickline (the length dependent on the tubing ID) are inserted in these holes and locked in place with grub screws.

Advantages

Wire Scratches incorporate a fishing facility. They are used to dislodge scale, salt, paraffin etc. from tubing ID or nipple ID etc. Wire Scratcher can also be used to fish small pieces of wireline lying loose in a well or used to locate nipples, Side Pocket Mandrels, etc

Disadvantages:

Wire Scratchers have no shear off facility and is time consuming when performing a regular redress. The Scratcher wire can become detached or broken downhole, staying in the well debris.



Good

✓

12/06/24



	<p>xviii. GS Running & Pulling Tool * Setting and retrieval of items with internal "Otis" type fish necks</p> 				
	<p>xix. OTIS X-Line Running Tool * A running tool used to run and set X and XN locking mandrels.</p> 	<p>Good</p>	<p>✓</p>		<p>12/06/24</p>



- xx. OTIS SB & RS Pulling Tool
 - * The Otis S Pulling Tool is designed to engage external fish necks on subsurface devices within the well-bore.



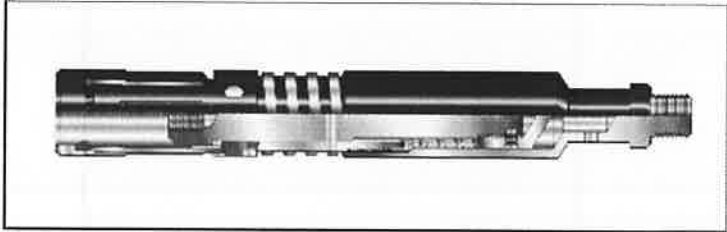
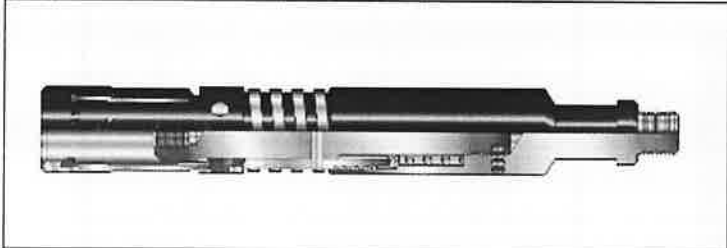
*RS puling tool is a jar up pulling tool used to either set or retrieve pulling necks.



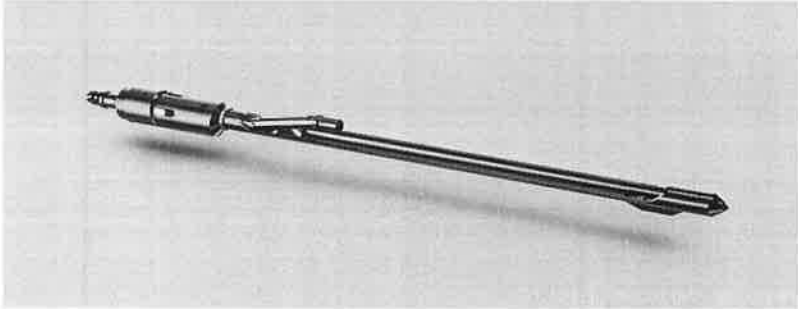
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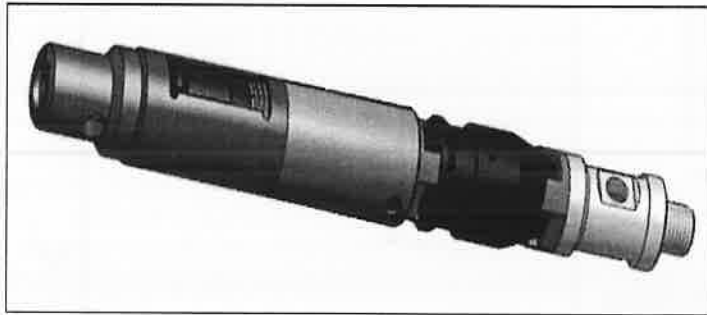
12/06/24

	<p>xxi. CAMCO JDC & JUS pulling Tool The Camco 'JD' series pulling tool is designed to engage external fishing necks on Sub-surface devices within the well-bore.</p>  <p>The Camco 'JU' series pulling tool is designed to engage external fishing necks on Sub-surface devices within the well-bore.</p> 	<p>Good</p>	<p>✓</p>		<p>12/06/24</p>
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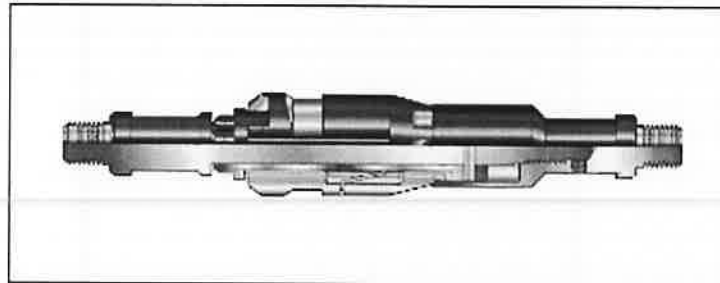


	<p>xxii. 1 – ¾” PCE Heavy Duty Pulling Tool Heavy duty recovery of items with standard external type fishing necks</p> 				
	<p>xxiii. CAMCO OK – 6 KOT Designed to set and retrieve 1” (OK) & 1-1/2” (OM) Gas Lift Valves in various Side Pocket Mandrels</p> 	<p>Good</p>	<p>✓</p>		<p>12/06/24</p>

xxiv. OTIS 142 BO & 42 BO Shifting Tool
The Otis® 142BO Selective Positioning tools are designed to selectively shift the inner sleeve of a sliding side door circulating device into the down position only. These tools are designed for tubing strings with multiple sliding side door devices of the same size so that one sleeve can be shifted into the down position without shifting any other sleeve in the tubing string.



The Otis B positioning (shifting) tool is designed to move the inner sleeve to an open or closed position in the type XA, RA, XO and XD Otis sliding side doors.

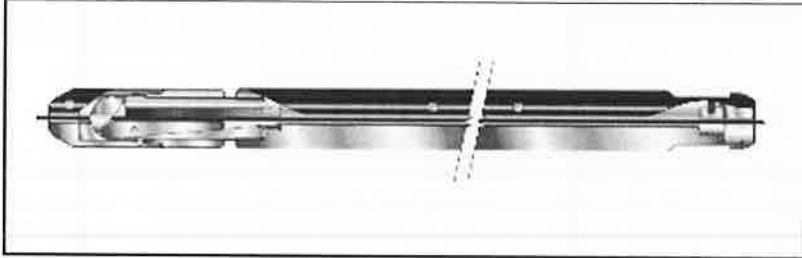
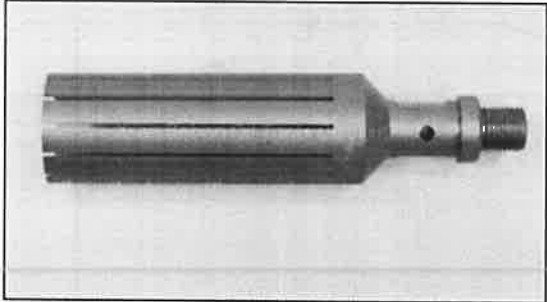


Good


✓

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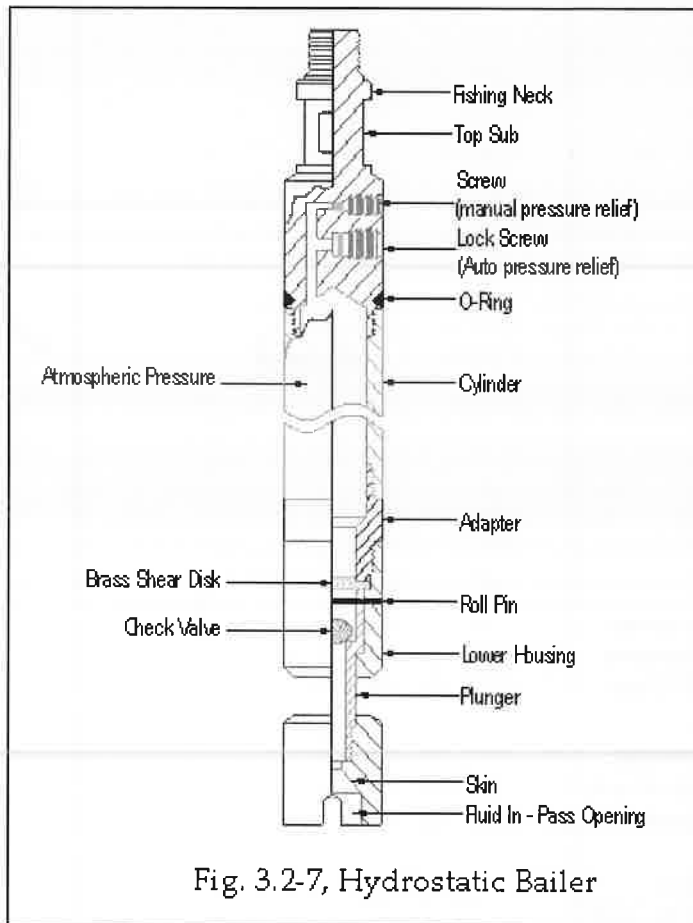
	<p>xxv. Flowpetrol Cutter & Drop Bar A wireline cutter is required when a slickline or braided wireline must be cut in the well. The Flopetrol cutter is attached over the wire, dropped from surface, cutting the wire and retrieving the wire and cutter.</p>  <p>xxvi. Wire Finder Locates and balls the upper end of the broken cable in the wellbore during fishing operations</p> 	<p>Good</p>	<p>✓</p>		<p>12/06/24</p>
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	<p>xxvii. Wireline Grab Wireline Grab is used to fish broken wire from the wellbore. It consists of two or three flexible prongs extending downwards. After locating the top of the parted wire, the Wireline Grab is then run to snag the wire in the upward facing barbs of the grab arms.</p> 	Good	✓	12/06/24
	<p>xxviii. Hydrostatic Bailer A hydrostatic bailer consists of a chamber sealed at atmospheric pressure. When the bailer reaches the top of the sand and is jarred down, a shear disk is ruptured, and the bottom hole pressure surging into the chamber sucks up the sand. A ball check in the bottom serves to trap the sand in the chamber. These bailers are used to clean off sand or foreign materials from around fishing neck very successfully and not recommended for normal bailing operations. In soft sand, this bailer will bury itself each time it goes off. It usually requires a hard object against which to shear the disc. ALWAYS use pump bailer to remove bulk of sand etc. until the pump bailer is resting on plug or what ever to be removed. THEN a hydrostatic bailer can be used to clean around the fishing neck.</p>			

Hydrostatic bailers are not recommended for normal bailing operations because:

- i) Too slow
- ii) High possibility of sticking in sand due to suction action when the sealed chamber is opened.

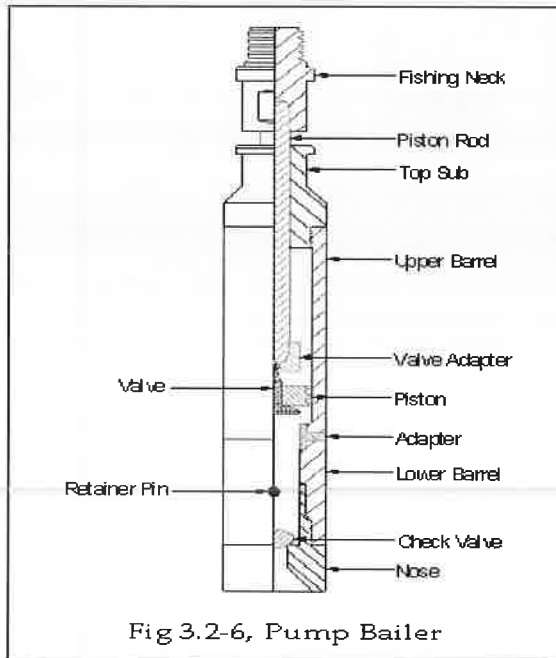


Good

✓

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xxix. **Sand Pump Bailer**
It is used to remove bulk of sand above the wireline flow control devices.
Description:
It is a hollow tube with check valve (ball or flapper) at its lower end, which is usually mule shoe. It contains a piston and a valve attached to a rod, which passes through a loose hole (for fluid bypass) at the upper end of the tube. This rod is attached to the toolstring.
Operation:
As the bottom end of the bailer sits on the sand, the weight of the toolstring, pushes the piston to the bottom of the tube. As this piston is picked up, it sucks sand and debris into the bottom of the bailer. This slow stroking process continues until the bailer is full.



Good

✓

12/06/20

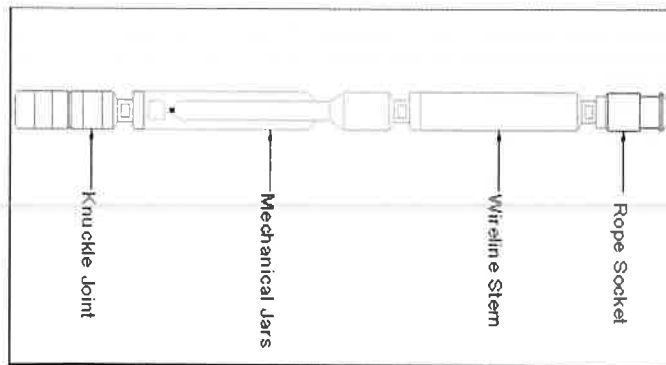
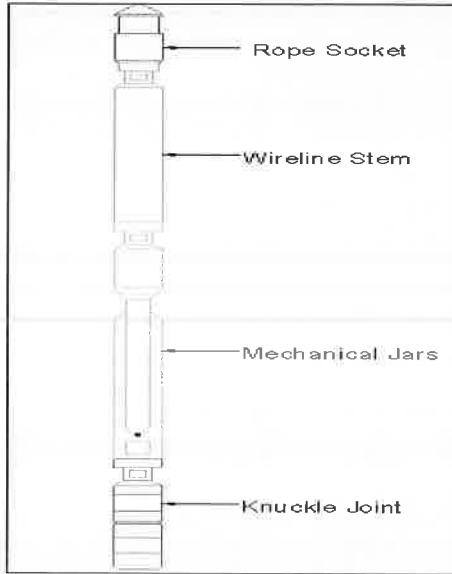
	<p>xxx. Thread Cross Over Wireline tools come in a wide range of sizes and configurations, and they don't necessarily all fit together. Size and thread are the most common variations, and a mismatch in either category can leave weak seals between various parts or even prevent them from working altogether. Crossovers serve as adapters between two disparate connections, enabling them to fit together securely.</p> <p>Crossovers function in the same manner as most types of adapters. One end of the tool matches the size and thread of one piece, while the other end matches the second piece to be connected. Although the two pieces wouldn't fit together on their own, crossovers make that connection possible.</p> <div data-bbox="387 675 1037 938" data-label="Image"> </div>	<p>Good</p>	<p>✓</p>	<p>12/06/24</p>
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	<p>38. What do PULLING and RUNNING tools mean? * Pulling tool mean tool we use to pull any desired tool like GS, RB, Overshot. * Running tool mean tool we use while running desired tool like Xlinerunning tool.</p>	Good	✓	12/08/20
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39. How to connect the following tool string in HORIZONTAL & VERTICLE position: From top – 1 – 1/2" Rope Socket, 1 – 1/2 x 5' Wireline Stem, 1- 1/2 " Knuckle Joint, 1 – 1/2 " x 20" Mechanical Spang Jar



Good

✓

12/06/24



	40. Why is Fishing Neck appear at wireline tools * We use fishing neck to catch any tool who become a fish.	Good	✓		12/06/29
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	<p>41. List down 20 Hand Tools in Dimension Bid and explain when and how to use them</p> <ol style="list-style-type: none"> 1. Pipe wrench – to loose and tighten toolstring. 2. Spannar – to loose and tighten manifold tubing. 3. Pliers – To grip anything 4. Wire cutter – To cut wire 5. Pin punch – To punch shear pin 6. Thread pitch – To measured thread 7. Center punch- To punch shear pin. 8. Screw driver – To loose and tighten any screw 9. Chain tong – To loose and tighten xmass tree cap 10. Slash hammer – to loose and tighten LTV 11. Filter opener – to loose and tighten any filter 12. Wire brush – To clean the toolstring / thread 13. Tubing cutter – to cut tubing 14. Chisel – to remove any iron debris 15. File – to clean any sharp edge 16. Allen Key – to loose and tighten allen screw type 17. Screw extractor – to loose any damage screw 	<p>Good</p>	<p>✓</p>	<p>17/06/24</p>
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	<p>18. Eclipse hacksaw – to cut shear pin</p> <p>19. Measuring tape – to measure toolstring length</p> <p>20 Stuffing box packing puller – to pull out packing from inside stuffing box.</p>	Good	✓		12/06/24
	<p>42. Why it is Compulsory to screw -in by hand before tightening wireline tool with pipe wrench</p> <p>* To prevent cross thread.</p>	Good	✓		12/06/24
FORM C.3	EQUIPMENT MAINTENANCE AND SERVICNG				
	<p>1. What is equipment maintenance about and what is the frequency of surface equipment, single well control panel and wireline unit.</p> <p>* Maintenance is time to service any equipment when the time is come.</p> <p>* Maintenance frequency at offshore is every 200 hours.</p> <p>* Maintenance frequency is every 200,400,600,800,1000 and 1200 hours.</p>	Good	✓		12/06/24



	<p>2. Why is it important to maintain your equipment at all time?</p> <ul style="list-style-type: none"> * Safety: Regular maintenance ensures that equipment remains safe to use, reducing the risk of accidents or hazards. * Prolonged Lifespan: Proper care and maintenance help extend the life of machinery, preventing premature wear and tear. * Quality Assurance: Well-maintained equipment produces better-quality products, benefiting your business and customers. * Cost Savings: Preventative maintenance saves money by minimizing unexpected breakdowns and repair expenses. * Operational Efficiency: Consistent upkeep ensures machinery operates at peak efficiency, maximizing productivity. * Regulatory Compliance: Maintenance helps equipment meet safety regulations and standards. 	Good	✓		12/06/24
	<p>3. If you found expired equipment offshore what should you do?</p> <ul style="list-style-type: none"> * Inform to WSS and request new equipment from town. 	Good	✓		12/06/24
	<p><u>Wireline unit maintenance</u></p> <p>4. Prior to sending out of wireline unit to offshore what are the check list to look for Zone 2 compliance.</p> <ul style="list-style-type: none"> * Pre-start checklist * Zone 2 checklist * Daily checklist 	Good	✓		12/06/24



	<p>5. What do you check and why for the following items:-</p> <p>i. exhaust flame trap Element Inspection: Regularly examine the flame element for any signs of clogging or damage. If the element is obstructed, it may compromise the arrester's effectiveness in quenching flames.</p> <p>ii. exhaust spark arrester Visual Inspection: Examine the outside of the spark arrester for holes, cracks, and metal corrosion. Look for any visible damage or wear. Internal Examination: With the engine stopped, use a flashlight to inspect the spark arrester outlet tube. Ensure there are no obstructions or buildup that could affect its performance</p> <p>iii. static fan belt * Belt Tension: Ensure the belt tension is tight enough but not overly so. Proper tension prevents slippage and ensures efficient power transmission¹. * Cleanliness: Check for dirt buildup on the belts and clean as needed. Dirt can affect performance and cause premature wear¹. * Wear and Damage: Look for signs of wear, cracks, or fraying on the belt. Replace worn-out belts promptly to prevent unexpected failures¹. * Alignment (for Direct Drive): If you have a coupled direct drive, check and adjust the coupling alignment. Regular greasing is also essential for smooth operation</p> <p>iv. flame trap of engine breather Element Inspection: Regularly examine the flame element for any signs of clogging or damage. If the element is obstructed, it may compromise the arrester's effectiveness in quenching flames.</p>	<p>Good</p>	<p>✓</p>	<p>12/06/24</p>
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	<p>v. Joints, connections of induction, exhaust and fuel system of the engine. * Check for any loose joint, make sure the exhaust is not clogged and the fuel system is not leak so that the equipment can be running in its full potential.</p> <p>vi. non- metallic cooling fan blades ,belt/s and pulleys Belt Tension: Ensure the belt tension is tight enough but not overly so. Proper tension prevents slippage and ensures efficient power transmission.</p> <p>Cleanliness: Check for dirt buildup on the belts and clean as needed. Dirt can affect performance and cause premature wear.</p> <p>Wear and Damage: Look for signs of wear, cracks, or fraying on the belt. Replace worn-out belts promptly to prevent unexpected failures.</p> <p>Alignment (for Direct Drive): If you have a coupled direct drive, check and adjust the coupling alignment. Regular greasing is also essential for smooth operation</p>				
	<p>6. Why do you keep minimum stock level of critical spares offshore? * So that we can immediately repair if any critical equipment is damage. With that we can maintain smooth operation.</p>	Good	✓		12/06/14
	<p>7. What do you do with aging, tear and worn out wireline tools offshore? * Separated it from other tools and tag it with damage. Request new one to replace the damage tool.</p>	Good	✓		12/06/14



	<p>8. For the wireline diesel power pack to operate in Zone 2 Hazardous Areas, and as per EEMUA 107, what are the safety features that are required to be incorporated into the power pack? <i>(Answer in bullets points)</i></p> <ul style="list-style-type: none"> * Flame Protection: Use flame-protected diesel engines that operate below 200°C. These engines have additional shutdown features to mitigate explosion hazards. * Exhaust Flame Trap: Install an efficient exhaust flame trap with a large surface area and low restriction. Regular maintenance ensures optimal performance and extended service intervals. * Modular Design: Opt for a modular exhaust cooler assembly for ease of maintenance. Quick-release fittings allow rapid access for cleaning and servicing 	Good	✓		12/06/14
	<p>9. How do you hook up and operate the hydraulic mast to the power pack?</p> <ul style="list-style-type: none"> * Connect hydraulic hose (supply and return) from power pack to hydraulic mast and make sure it is correct. On the hydraulic supply from power pack to mast. And then slowly function test the mast by pull up/down the mast lever. 	Good	✓		12/06/14
EQUIPMENT MAINTENANCE AND SERVICE					
	<p>10. What must you do before hooking up the hydraulic hoses to the unit or mast?</p> <ul style="list-style-type: none"> * Make sure no trap pressure inside the hose * Check thread connection. * Check any abnormalities at connection. * Check o-ring 	Good	✓		12/06/14



	<p><u>Wireline surface equipment</u></p> <p>11. How does the BOP operate and how do you change the ram? Name how many type of BOP and rams. BOP operate by closing off the rams by hydraulic pressure from well control panel. To change the BOP rams required fully redress on BOP and opening the chamber. BOP type: - Single BOP – Dual BOP – Tripled BOP and quad BOP. Rams type: - Blind rams -Multi rams & Shear and seal rams.</p>	Good	✓		12/06/14
	<p>12. How do you change the stuffing box packing? * Using stuffing box packing puller</p>	Good	✓		12/06/14
	<p>13. What must you do if there is a leak in the hydraulic system in SWCP and how do you know when there is a leak. ESD the SWCP. We can identify the leak when the SWCP continuously pumping/stroking.</p>	Good	✓		12/06/14
	<p>14. What is SWL? Where do you find this? SWL – Safe working load Can be find on equipment data plate, stencil and equipment certificate.</p>	Good	✓		12/06/14



	<p>15. Explain in steps how you service the following wireline tools</p> <p>i. Pulling tool * Redress and check the parts for any wear and tear. * Replace if needed * Assembly back and perform function test to make sure work properly.</p> <p>ii. Running tool * Redress and check the parts for any wear and tear. * Replace if needed * Assembly back and perform function test to make sure work properly</p> <p>iii. Positioning tool * Redress and check the parts for any wear and tear. * Replace if needed * Assembly back and perform function test to make sure work properly</p> <p>iv. Circulation and flow control device * Redress and check the parts for any wear and tear. * Replace if needed * Assembly back and perform function test to make sure work properly</p>	<p>Good</p>	<p>✓</p>		<p>5/2/06/14</p>
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	<p>16. Show how to carry out the following basic maintenance:</p> <ul style="list-style-type: none"> i. Greasing bearing * Apply grease to the bearing and test and spread evenly. ii. Re-tighten bolt and nut * Use spanner/adjustable and turn clockwise to tighten iii. Lubricate wire while RIH * fill hydraulic oil into bottle and spread then evenly on wire. iv. Re-Tension Dual Drive Chain * loosen the nut that hold the tension gear. Adjust the tensioner gear to tension the chain and hold and re tighten the nut to secure the tensioner gear. v. Lubricate Odometer and Odometer Cable * Use grease and apply to the odometer cable. vi. Protect bolt, nut, fitting etc with Denso Tape (Grease Tape) * Apply denso type to protect the bolt, nut and fitting to prevent from corroded. 	Good	✓		12/06/14
	<p>17. What should you check BEFORE operating the Reel Skid Unit (Show the start-up Maintenance Checklist and understand the requirements)</p> <ul style="list-style-type: none"> * Inspect installation, leakage at this section – fitting/joints * Check grounding cable for proper installation * Inspect leak and abnormality – hydraulic hoses * Inspect tension , condition and abnormality – drive chain * Check installation,functioning and abnormality – depth and tension system 	Good	✓		12/06/14



	<p>18. Show how to carry-out following basic maintenance</p> <ul style="list-style-type: none"> i. Protect bolt, nut, fittings etc with Denso Tape (Grease Tape) * Apply denso type to protect the bolt, nut and fitting to prevent from corroded. ii. Re-tighten bolt & nut * Use spanner/adjustable and turn clockwise to tighten iii. Protect 1" & 1 - ¼ " Hydraulic Hose connection * Use denso tape to prevent corroded at hydraulic hose connection. iv. Take -out Air Starter from 'Crane Case' * Open the nut the hold the starter and slowly remove the starter from the crank case. v. Clean - up Air Filter with air * Open cover air filter. Bring out air filter and use air to clean up air filter. vi. Re - tension Fan Belt * loosen the nut that hold the tension pulley. Adjust the tensioner pulley to tension the chain and hold and re tighten the nut to secure the tensioner pulley. 	<p style="text-align: center;">Good</p>	<p style="text-align: center;">✓</p>	<p style="text-align: center;">(2/06/14)</p>
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	<p>19. What should you check BEFORE start the Power Pack (Show the Start – Up Maintenance Checklist and understand the requirement)</p> <ul style="list-style-type: none"> * Check fuel level (fill up as needed) * Check and take sample fuel (drain if needed) * Check oil level (fill up as needed) * Check coolant level (fill up as needed) * Inspect engine beltings (tension & conditon) * Check oil level (fill up as needed) * Inspect any leakage at this section – fitting/joint * Check grounding cable for proper installation * Check cap, radiator & fan condition * Check condition and clean if needed exhause flame trap * Inspect leak and abnormality * Inspect abnormality & in start mode * Record running hour 	Good	✓		12/06/14
	<p>20. What are the safety precautions to be alert while Power Pack running? Check and monitor: - Any leaking, temperature and any abnormally.</p>	Good	✓		12/06/14



	<p>21. Show how to carry-out the following basic maintenance:</p> <ul style="list-style-type: none"> i. Protect bolt, nut, fittings etc with Denso Tape (Grease Tape) * Apply denso type to protect the bolt, nut and fitting to prevent from corroded. ii. Re-tighten bolt & nut * Use spanner/adjustable and turn clockwise to tighten iii. Service battery terminal and assemble back (+ve & -ve) * Service the screw that hold the negative and positive terminal and clean any debris on the terminal. And install back the cable. Tighten back the screw. iv. Check battery water level and fill – up battery water if necessary * Open the battery water cap and fill up until reach full level. Closed back water cap when done. v. Check Compressor Hyd Oil Level and fill – up if necessary * When air compressor oil at red mark fill up the compressor oil by opening the filling cap on the tank. Fill up the oil until full. vi. Re – tension Fan Belt * loosen the nut that hold the tension pulley. Adjust the tensioner pulley to tension the chain and hold and re tighten the nut to secure the tensioner pulley vii. Service ON/OFF switch * Change with a new one if damage 	<p>Good</p>	<p>✓</p>		<p>12/06/14</p>
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	<p>22. What should you check BEFORE start the Air Compressor (Show the Start-Up Maintenance Checklist and understand the requirement)</p> <ul style="list-style-type: none"> * Check fuel level (fill up as needed) * Check and take sample fuel (drain if needed) * Check oil level (fill up as needed) * Check coolant level (fill up as needed) * Inspect engine beltings (tension & conditon) * Check oil level (fill up as needed) * Inspect any leakage at this section – fitting/joint * Check grounding cable for proper installation * Check cap, radiator & fan condition * Check condition and clean if needed exhause flame trap * Inspect leak and abnormality * Inspect abnormality & in start mode * Record running hour 	Good	✓		12/06/14
	<p>23. What are the safety precautions to be alert while Air Compressor running? Check and monitor: - Any leaking, temperature and any abnormally.</p>	Good	✓		12/06/14
	<p>24. Why contaminated water should be drained from Compressor Tank before start the Air Compressor? * To prevent water from migrate and enter to the equipment to be supply.</p>	Good	✓		12/06/14



	<p>25. Show how to carry-out following basic maintenance</p> <ul style="list-style-type: none"> i. Protect bolt, nut, fittings etc with Denso Tape (Grease Tape) * Apply denso type to protect the bolt, nut and fitting to prevent from corroded. ii. Re-tighten bolt & nut * Use spanner/adjustable and turn clockwise to tighten iii. Caring of pressure gauge * Make sure zero point is correct. Liquid inside pressure gauge is enough and the cap is not missing. Wrap with cotton rags to avoid the glass from broken. iv. Service Air Operated Pump Exhaust * Take out the pump exhaust and clean for any debris. Check oring in good condition. Apply grease on the oring and install back the pump exhaust. v. Check Hydraulic Oil Level and fill – up if necessary * Open the hydraulic tank cap and fill up until reach full level. Closed back hydraulic cap when done. vi. Release contaminated water from Air Isolator * Open the valve at water separator to drain water inside the water separator. vii. Release pressure in system upon completed job * Close air supply and bleed off pressure inside hose / system by activate the pump until pump stop. viii. Take – out ¼ “ Snap Tite from Control Panel and service * Disconnect snap tite from control panel. * check any leak at snap tite * if ok put Teflon tape and install back. 	<p>Good ↓</p>	<p>✓</p>		<p>12/06/14</p>
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	<p>ix. Pressure Manifold to be installed at Control Panel</p> <ul style="list-style-type: none"> * Check new pressure manifold condition. * Pressure test manifold as per rating instruction. * If ok and no leak install to control panel. 				
	<p>26. What should you check BEFORE start the Control Panel (Show the Start-Up Maintenance Checklist and understand the requirement)?</p> <ul style="list-style-type: none"> * Check pressure gauge * Check regulator * Check hydraulic oil * Check connection / fitting * Check air hose * Check hydraulic hose * Check manifold * Check alarm * Check ESD * Check water drain * Check hydraulic pump 	Good	✓		12/06/14
	<p>27. What are the safety precaution to be alert while operating Control Panel?</p> <ul style="list-style-type: none"> * Closely monitor the control panel for any abnormal and check if any leaking 	Good	✓		12/06/14
	<p>28. Why contaminated water should be drained from Air Hose before start the Control Panel ?</p> <ul style="list-style-type: none"> * To prevent water from enter to the control panel system/line. 	Good	✓		12/06/14



	<p>29. Show how to carry – out following basic maintenance</p> <ul style="list-style-type: none"> i. Protect bolt, nut, fittings etc with Denso Tape (Grease Tape) * Apply denso tape to protect the bolt, nut and fitting to prevent from corroded. ii. Re-tighten bolt & nut * Use spanner/adjustable and turn clockwise to tighten iii. Caring of pressure gauge * Make sure zero point is correct. Liquid inside pressure gauge is enough and the cap is not missing. Wrap with cotton rags to avoid the glass from broken iv. Service Air Operated Pump Exhaust * Take out the pump exhaust and clean for any debris. Check oring in good condition. Apply grease on the oring and install back the pump exhaust. v. Check Water Level and fill – up if necessary * Open the water tank cap and fill up until reach full level. Closed back water cap when done. vi. Release contaminated water from Air Isolator * Open the valve at water separator to drain water inside the water separator. vii. Release pressure in system upon completed job * Close air supply and bleed off pressure inside hose / system by activate the pump until pump stop viii. Flush the system with Hydraulic Oil * Connect hydraulic hose to the pump. * Flush old oil out from the system with new oil. 	<p>Good</p>	<p>✓</p>	<p>12/06/14</p>
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	<p>30. What should you check BEFORE start the Test Pump? (Show the Start – Up Maintenance Checklist and understand the requirement)</p> <ul style="list-style-type: none">* Check water level* Check air hose* check hydraulic hose.	Good	✓		12/06/14
	<p>31. What are the safety precautions to be alert of while operating Test Pump?</p> <ul style="list-style-type: none">* Closely monitor the control panel for any abnormal and check if any leaking	Good	✓		12/06/14
	<p>32. Why the system should be flushed with Hydraulic Oil?</p> <ul style="list-style-type: none">* To ensure no air trap in system.	Good	✓		12/06/14



	<p>33. Show how to carry – out following basic maintenance</p> <ul style="list-style-type: none"> i. 1" Air Chicago Coupling <ul style="list-style-type: none"> * Check Chicago coupling. Make sure no crack. * Check Chicago rubber seal. If tear change with new one. ii. Drainage Valve <ul style="list-style-type: none"> * Check and clean if have any blockage iii. Check Valve <ul style="list-style-type: none"> * Inspect it for scratches on the valve seat and the disc. Then, wash all parts in clean fluid that is used in the system. As you reassemble the valve, inspect the housing and trim parts for any corrosion or erosion. Replace the valve if there is corrosion or excessive roughness due to erosion. iv. Relief Valve <ul style="list-style-type: none"> * Check the tightness of fittings and look for water leaking from the joint. Compressible air in the pilot system can result in incorrect pressure readings. Relief valves can even become unstable. If you see an air pocket in the sight glass (above the water level), you'll need to vent the main valve bonnet. v. Protect following items with Denso Tape – Air Chicago Coupling, Drainage Valve & Relief Valve <ul style="list-style-type: none"> * Put denso tape at Chicago coupling, drainage valve and relief valve to prevent corroded while at offshore. 	Good	✓		12/06/14
	<p>34. What is the safety precaution to be alert of during spooling activity?</p> <ul style="list-style-type: none"> * Barricade the work area. * Monitor brake condition while spooling 	Good	✓		12/06/14

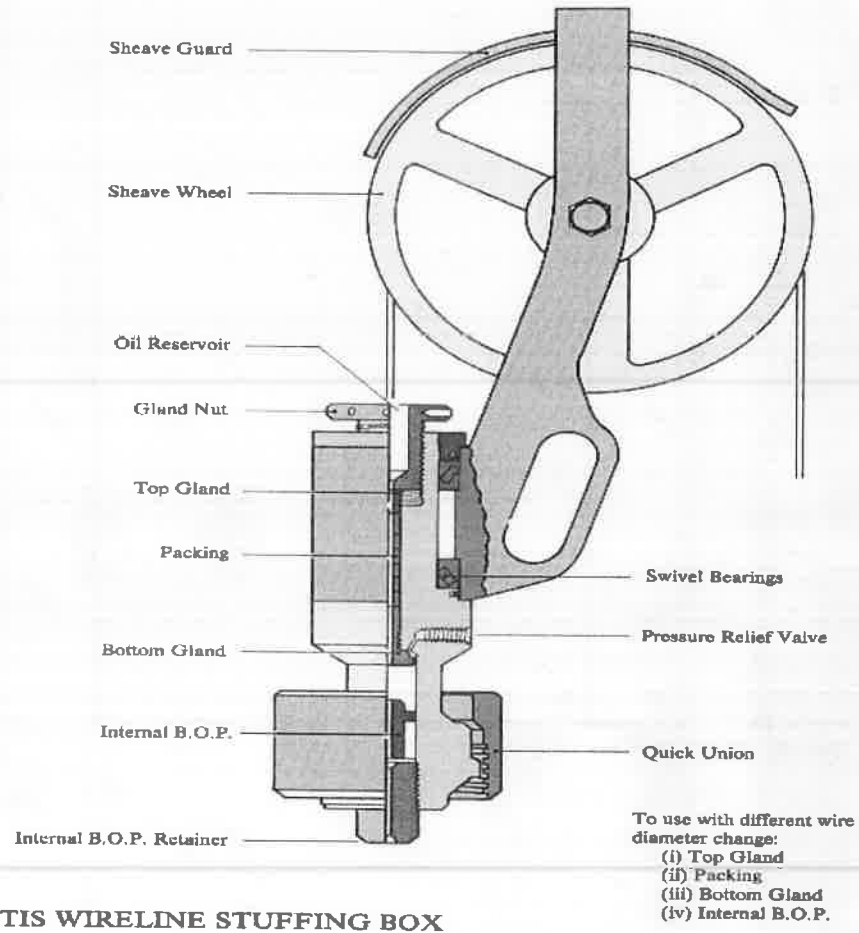


	<p>35. Show how you perform for the following basic maintenance</p> <ul style="list-style-type: none"> i. Service O ring and O ring set <ul style="list-style-type: none"> * Check o-ring condition. If found any tear or blister change with new one. ii. Service Sheave Wheel <ul style="list-style-type: none"> * Check sheave wheel condition. * Check groove at sheave wheel iii. Greasing Sheave Wheel bearing <ul style="list-style-type: none"> * Dismantle sheave wheel from stuffing box. * Check bearing condition. * If ok put grease at bearing and install back sheave wheel bearing, iv. Greasing Staff Am bearing <ul style="list-style-type: none"> * Dismantle sheave wheel from stuffing box. * Dismantle staff arm from stuffing box. * Check bearing condition. * If ok put grease at bearing and install back staff arm. v. Take-out used Stuffing Box packing <ul style="list-style-type: none"> * Using packing puller pull out all used stuffing box packing * Chnge all stuffing box packing with a new one. vi. Change – out Sheave Wheel bearing <ul style="list-style-type: none"> * Dismantle sheave wheel from stuffing box. * Check bearing condition. * If found any damage change with a new bearing. * Check size and part no before install new bearing. * Put grease at bearing and install back sheave wheel bearing, 	<p>Good</p>	<p>/</p>	<p>12/06/24</p>
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	<p>36. Explain the Stuffing Box element to be checked during Pre-Start-up Job</p> <ul style="list-style-type: none"> * Check stuffing box packing. * Check type of stuffing box to use. * Check upper gland and lower gland size. * Check piston size. * Check spring condition. * Check size of sheave wheel. 	Good	✓		12/06/14
	<p>37. What is the safety precaution to be alert of during handling of Stuffing Box?</p> <ul style="list-style-type: none"> * Check body position while using packing puller to pull out packing. * Use kong glove while entering wire inside stuffing box. * Use safety glass to prevent wire bounce back to eye. 	Good	✓		12/06/14
	<p>38. How to identify if the Stuffing Box require Standard Service or H2S Service?</p> <ul style="list-style-type: none"> * Change stuffing box packing from normal type to H2S type 	Good	✓		12/06/14

39. Strip the Stuffing Box and service completely (2 times)

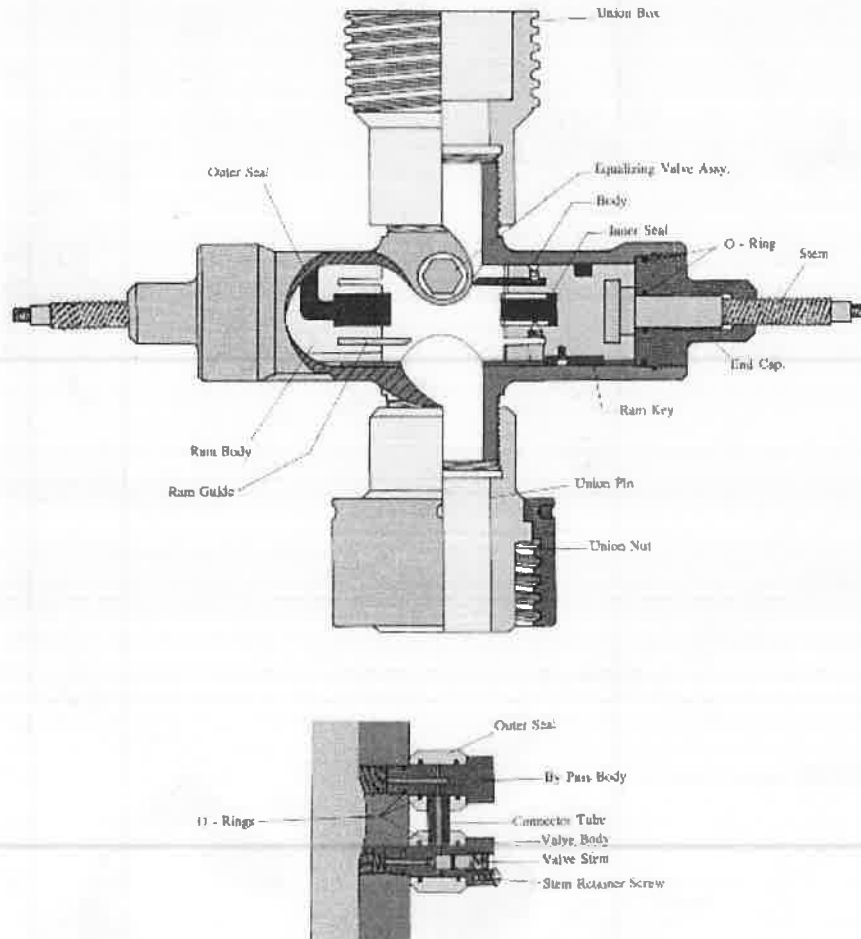


Good

✓

12/06/14

40. Strip the BOP and service completely (1 time)



Good

✓

12/06/14

	<p>41. Show how to carry-out following basic maintenance:</p> <ul style="list-style-type: none"> i. Manual Stem <ul style="list-style-type: none"> * Exercise and greasing manual stem to prevent corroded. ii. Inner and Outer Seal <ul style="list-style-type: none"> * Check any blister at inner seal and outer seal. * Change with new inner seal and outer seal if the old one is damage. iii. Equalizing Port <ul style="list-style-type: none"> * Check thread port. * Check any blockage at equalizing port. * Check o-ring condition iv. Box – up thread connection <ul style="list-style-type: none"> * Clean tread using diesel and wire brush. * Make sure thread clean from any old grease and any debris. * Check any damage at thread or o-ring seal area. * Use needle file to repair any damage at thread or O-ring seal area. v. Pin & Collar Down Thread Connection <ul style="list-style-type: none"> * Clean tread using diesel and wire brush. * Make sure thread clean from any old grease and any debris. * Check any damage at thread or o-ring seal area. * Use needle file to repair any damage at thread or O-ring seal area. vi. Internal BOP body <ul style="list-style-type: none"> * Check any scratch inside BOP body * Check any corroded area and clean it. 	<p>Good</p>	<p>✓</p>	<p>12/06/14</p>
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	42. What do you do during mob / de mob BOP from one location to other location * Put hydraulic inside BOP to protect sealing element before mob to other location.	Good	✓		12/06/14
	43. What are the safety precaution be alert of while BOP running? * Cheak any leakage at BOP body. * Check pressure from control panel is enough to close the BOP if any emergency. * Check manual handle condition.	Good	✓		12/06/14
	44. How to identify if the BOP requires Standard Service or H2S Service? * check the certificate * Check sealing element	Good	✓		12/06/14



	<p>45. Show how to perform for the following basic maintenance for Lubricator and Pump Joint</p> <p>i. Clean – up and greasing internal * Clean up inside pump in tee using fresh water. * Clean any corroded inside. * Put a lubriplate after cleaning to prevent any corroded.</p> <p>ii. Service box-up thread and o’ ring seal area * Clean tread using diesel and wire brush. * Make sure thread clean from any old grease and any debris. * Check any damage at thread or o-ring seal area. * Use needle file to repair any damage at thread or O-ring seal area.</p> <p>iii. Service pin & collar down thread, o’ ring and o’ ring groove * Clean tread using diesel and wire brush. * Make sure thread clean from any old grease and any debris. * Check any damage at thread or o-ring groove. * Use needle file to repair any damage at thread or O-ring groove</p> <p>iv. Service bleed – off port * Clean the thead with wire brush.</p>	Good	✓		12/06/14
	<p>46. What is the safety precaution to be alert of during handling lubricator section?</p> <p>* Hand placement while rig up lubricator. * Body position while hook up lubricator section</p>	Good	✓		12/06/14
	<p>47. If the Lubricator working pressure is 5000 psi, how many Test Pressure to be carried out?</p> <p>* 7500 psi</p>	Good	✓		12/06/14



	<p>48. Show how to carry – out following basic maintenance for wellhead x-over</p> <p>i. Clean up and greasing internal</p> <ul style="list-style-type: none"> * Clean up inside pump in tee using fresh water. * Clean any corroded inside. * Put a lubriplate after cleaning to prevent any corroded. <p>ii. Service box – up thread and o’ring seal area</p> <ul style="list-style-type: none"> * Clean tread using diesel and wire brush. * Make sure thread clean from any old grease and any debris. * Check any damage at thread or o-ring seal area. * Use needle file to repair any damage at thread or O-ring seal area. <p>iii. Service pin & collar down thread, o’ring and o’ring groove</p> <ul style="list-style-type: none"> * Clean tread using diesel and wire brush. * Make sure thread clean from any old grease and any debris. * Check any damage at thread or o-ring groove. * Use needle file to repair any damage at thread or O-ring groove 	Good	✓		12/06/14
	<p>49. What are the safety precaution to be alert of during handling wellhead x-over section and rig –up on top of x-mass tree</p> <ul style="list-style-type: none"> * Hand placement while rigup. Use kong glove * Body position while step in xmas tree. 	Good	✓		12/06/14

	<p>50. Show how to carry – out following basic maintenance for Pump – in Tee</p> <ul style="list-style-type: none"> i. Clean – up and greasing internal <ul style="list-style-type: none"> * Clean up inside pump in tee using fresh water. * Clean any corroded inside. * Put a lubriplate after cleaning to prevent any corroded. ii. Service box – up thread and o’ring seal area <ul style="list-style-type: none"> * Clean tread using diesel and wire brush. * Make sure thread clean from any old grease and any debris. * Check any damage at thread or o-ring seal area. * Use needle file to repair any damage at thread or O-ring seal area. iii. Service pin & collar down thread, o’ring and o’ring groove <ul style="list-style-type: none"> * Clean tread using diesel and wire brush. * Make sure thread clean from any old grease and any debris. * Check any damage at thread or o-ring groove. * Use needle file to repair any damage at thread or O-ring groove. iv. Service 1502 thread and rubber seal <ul style="list-style-type: none"> * Clean tread using diesel and wire brush. * Make sure thread clean from any old grease and any debris. * Check any damage at thread. * Use needle file to repair any damage at thread * Change rubber seal if wear. 	<p>Good</p>	<p>✓</p>	<p>12/06/14</p>
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	<p>51. What are the safety precaution to be alert during handling Pump – in Tee? * Hand placement while rigup pump in tee to PCE stack up. * Body position while slam the slash hammer to connect LTV to pump in tee</p>	Good	✓		12/06/14
Form C.4	EQUIPMENT HANDLING/EQUIPMENT PASSPORT				
	<p>1. What is Material Handling Equipment (MHE)? Name some example:- * Strap ratchet belt * Sling belt * Wire belt</p>	Good	✓		12/06/14



	2. How do you check for expired date of lifting equipment? * At data plate at equipment * At sling tag	Good	/		12/06/14
	3. What is Equipment Passport? * Equipment certificate	Good	/		12/06/14



	<p>4. List down what are the maintenance schedule for the following:-</p> <ul style="list-style-type: none"> i. 6-Monthly Planned Maintenance – Wireline Unit Power Pack <ul style="list-style-type: none"> * Clean air inlet valve * Drain diesel tank * Test hydraulic system unit ii. 12-Monthly Planned Maintenance – Wireline Unit Power Pack <ul style="list-style-type: none"> * Test/Adjust maximum angle speed * Clear air inlet valve. iii. 6-Monthly Planned Maintenance – Wireline Unit Reel Skid <ul style="list-style-type: none"> * Hydraulic motor coupling : Inspect if damage replace * Calibrate mechanical depth indicator * Calibrate mechanical weight indicator * Complete performance test iv. 12-Monthly Planned Maintenance – Wireline Unit Reel Skid <ul style="list-style-type: none"> * Replace right angle drive * Replace gear box oil * Replace hydraulic oil v. General Overhaul – Wireline Unit Power Pack <ul style="list-style-type: none"> * Overhaul engine vi. General Overhaul – Wireline Unit Reel Skid <ul style="list-style-type: none"> * Rebuild gear box * Rebuild all hydraulic hoses 	<p>Good</p>	<p>✓</p>	<p>12/06/14</p>
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	<p>5. What is the colour code for lifting equipment? * Yellow * Green * Blue * Red</p>	Good	/		12/06/14
	<p>6. What is SWL? Where do you find this? * Available at data plate on equipment and equipment certificate.</p>	Good	/		12/06/14
	<p>7. What is MPI? And load test date validity for a container, lub skid, and wireline unit * MP is Magnetic Particle Inspection * This method used for the detection of surface and near surface flaws in ferromagnetic material and is primarily used for crack detection.</p>	Good	/		12/06/14
	<p>8. How long is the validity test date for Equipment passport and if you find one expired offshore what is your next course of action * Valid for 1 year. * If found expired request for inspector from shore the revalidate.</p>	Good	/		12/06/14



Form C.5	PERFORM PROBLEM TROUBLESHOOTING AND REPORT			
1.	Why do you report for any abnormalities observed during wireline operation? * To prevent any problem that effected the wireline operation.	Good	✓	12/6/14
2.	List the daily prestart check point? * Check the fuel * Check the engine oil level * Check fan belt for any loose. * Check emergency button. * check hydraulic level. * Check starter (spring, hydraulic or air)	Good	✓	12/04/14
3.	If the diesel engine will not start what 2 things should you check point? * Check the emergency button position. * Check the fuel system.	Good	✓	12/06/14
4.	If the engine run out of diesel what must you do to restart? * Fill up diesel into the tank. * open fuel injection system and check for any air trap. * flush the fuel system so that the air trap can be remove. * After confirm that there is no air trap in the fuel system, the engine can be restarted normally.	Good	✓	12/06/14
5.	Why do you report for each break down of particular equipment? * To control reoccurring serious failures and to prevent similar problems and unscheduled repairs.	Good	✓	12/06/14



	<p>6. How do you carry out trouble shooting of equipment?</p> <ul style="list-style-type: none"> * Gather Information: Understand the symptoms, history, and context of the problem. Consult manuals, schematics, and maintenance records. * Visual Inspection: Examine the equipment for visible damage, loose connections, or abnormal conditions. * Functional Tests: Perform functional tests to verify proper operation of components (e.g., motors, sensors, switches). * Diagnostic Tools: Use diagnostic tools (multimeters, oscilloscopes) to measure voltages, currents, and signals. * Isolation: Narrow down the problem area by disconnecting subsystems or components. * Process of Elimination: Test components one by one to identify faulty parts. <p>Documentation: Record findings, measurements, and actions taken.</p>	Good	✓	12/06/24
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Assessed By:		Verified By	
Name	Sahrizan Bin Sapari	Name	AFIQ AIMAN BIN HASSAN <small>Field Service Manager</small>
Position	SASO	Position	DIMENSION BID (M) SDN BHD
Date	12/06/2024.	Date	12/6/24