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P-Quip Product Manual

WP000050

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Instructions for the Safe Use of P-Quip Wash Pipe Systems – Pt. No. WP000050
Pressure rating 7500psi

This product is a direct replacement for the Original Equipment supplied for a **Varco** / **National etc. 3" pipe with 6¼" x 3 TPI threads.**

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Safety

General safety notes:

1) These safety notes should be read in conjunction with local rules and working procedures, particularly where permit to work systems are in place.

2) Prior to working on the top drive / swivel, the unit must have its motive power isolated and locked off and hydraulic flow lines isolated and locked off. The mud system should be vented to atmosphere.

3) The following protective clothing should be worn while working with this equipment.
   - Eye protection suitable to protect from inadvertent discharge of pressurized oil.
   - Foot protection suitable to protect the operator from accidental dropages.
   - Hand protection suitable to protect against the effect of mineral oil on the skin.
   - Coveralls to allow more efficient lifting and handling.

4) Great care should be taken when handling this equipment as various components are over 25kg (N.B. all items heavier than 25kg are marked with their weights) and it may not be practical to use mechanical lifting aids. During regular use it will be necessary to man handle the wash pipe assembly. Care must be taken during these operations to position the body over the component where possible.

5) Extra care must be taken when manually handling these components, as they are prone to become slippery due to the spillage of oil and mud.

Regular safety checks:

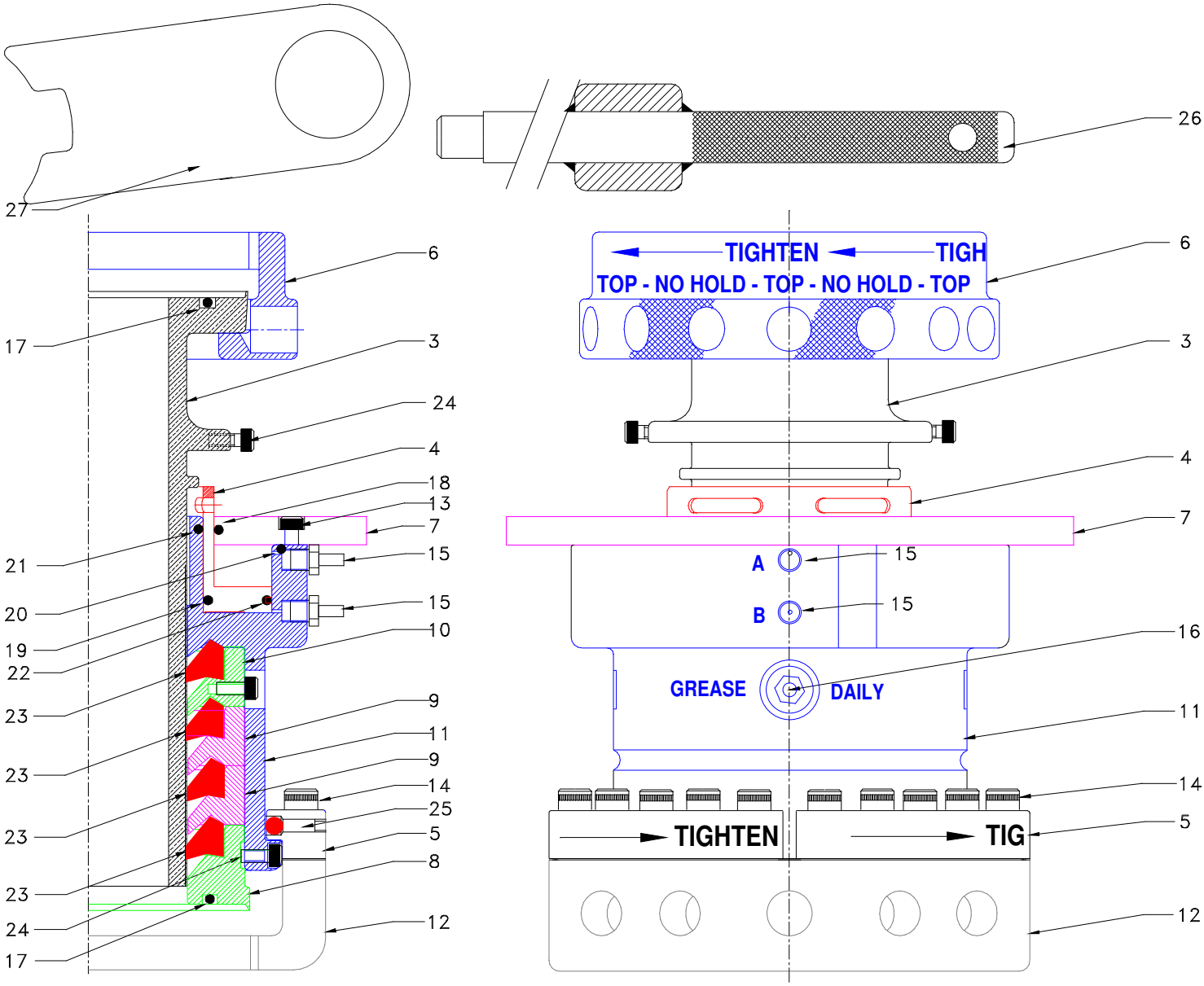
1) Check that the appropriate protective clothing warning signs are posted on the drill floor or workspace and are clearly legible.

2) Check that these equipment operating instructions are posted on the drill floor or workspace and are clearly legible.

3) Check the air hose and fittings are undamaged.

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Parts Drawing



Parts List

Item	Part Number	Description	Qty
		Assembly Items	
1	WP000050	Complete Assembly Consists of items 3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,	1
2	WP000050K	Rig Kit Consists of – 2 of item 1, plus spare items 3,8,(2 x 9),10,15,16,(2 x 17),23,(5 x 24), plus tools 26,27,28,29,30,31,32	
3	WP000002	Wash Pipe	1
4	WP000053	Piston	1
5	WP000073	Bottom Nut – Shoulder (set of 2)	1
6	WP000005	Top Nut	1
7	WP000054	Cylinder Cover	1
8	WP000058	Bottom Packing Ring (LAST IN)	1
9	WP000059	Intermediate Packing Ring	2
10	WP000060	Top Packing Ring (FIRST IN) comp. with grease nipple WP000018 & 3 keeper screws WP000062.	1
11	WP000057	Casing	1
12	WP000072	Bottom Nut – Thread	1
13	WP000014	Socket Head Cap Screw M6 x 16mm - SS	16
14	WP000102	Socket Head Cap Screw - Gd.12.9 M10 x 35mm, with hard washer.	24
15	WP000017	Quick Release Air Connector – 1/8” BSP Thread	2
16	WP000018	Grease Nipple – 1/8” BSP Thread	1
17	WP000019	O’ring – BS348 – Viton 90	2
18	WP000020	O’ring – BS157 – Viton 90	1
19	WP000021	O’ring – BS156 – Viton 90	1
20	WP000056	O’ring – BS166 – Viton 90	1
21	WP000147	O’ring – BS155 – Viton 90	1
22	WP000061	O’ring – BS165 – Viton 90	1
23	WP000024	Standard Packing – 5” x 3.5/8” (set of 4)	1 set
24	WP000062	Keeper Screw – Socket head cap screw M6 x 12mm - SS	13
25	WP000063	Bottom Nut lock - Set consists of - 6 x spring, 6 x ball, 6 x screw.	1 set
		Accessories and Tools	
26	WP000012	Tommy Bar	1
27	WP000013	Retract Tool	1
28	WP000026	Air Hose and Fitting (Not Shown)	1
29	WP000026F	Air Hose Female Coupler Only (Not Shown)	1
30	WP000138	Emergency C wrench for Top nut release (Not Shown)	1
31	WP000139	Emergency C wrench for Bottom nut release (Not Shown)	1
32	WP000031	5mm AF Hex Key (Not Shown)	1
33	WP000050T	Tool Kit Consists of – items 26,27,28,29,30,31,32	

Fitting Instructions

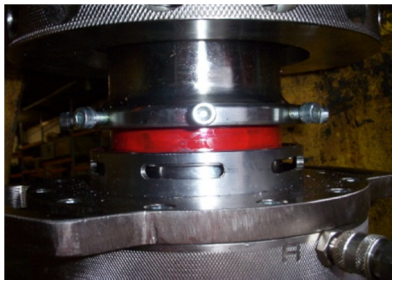
Prepare swivel to accept Wash Pipe.

1. Remove existing wash-pipe assembly as instructed by the manufacturer.
2. Clean top and bottom threads and sealing surfaces.
3. Confirm that face to face distance is **281mm** / **287mm**
4. Lightly coat both threads with general purpose grease.
5. Connect the air supplied hose tail to a permanent rig air supply (100-150 psi), local to the working area.



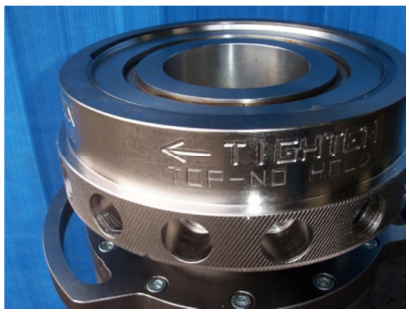
Prepare Wash Pipe for fitting

1. Confirm that piston is retracted by applying air to nozzle “A”
2. Confirm that bottom nut is raised up and locked in position by ball latches.
3. Confirm that assembly is in its shortest condition by placing on a clean surface and standing on it. If unit is not completely closed up, it will not fit between the threads.
4. Confirm that fresh O’rings are fitted in the top and bottom grooves.



Transport the Wash Pipe to the Swivel.

1. Note that the Wash-Pipe must be carried the right way up. See “TOP” mark.
2. Note that the Wash-Pipe should not be lifted by the top section as it will separate from the bottom section. The unit must be handled using the two grab handles, which are integral to the bottom section. A safety line may be attached to the grab handles.
3. Safety lines may be fitted to the Wash-Pipe assembly handles and the hole in Tommy-Bar and in the Retraction Tool.





Position the Wash Pipe in the Swivel.

1. Confirm the top and bottom O'rings are very lightly coated with clean grease and correctly located in their grooves.
2. Lift the Wash-Pipe squarely, using the grab handles, and slide it in to place between the threads.
3. Some systems are equipped with a location system that will locate on the centralising spigot on the bottom thread. Where no location system is provided, the system will be centralised when the top and bottom nuts are tightened.



Locate and fix the unit.

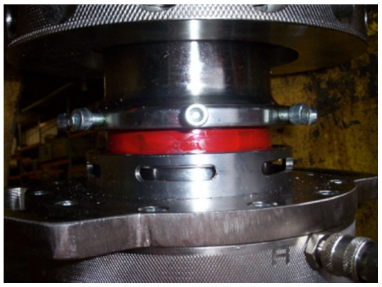
1. Slide the Wash-Pipe to the centre line of the swivel and rotate the complete assembly until the air inlets are facing forward.
2. Pull down on the bottom nut to disengage the ball latches.
3. Spin the bottom nut by hand, in a CCW direction (Indicated on Nut), until the thread comes to a stop.
4. Lift the top nut and turn by hand, in a CCW direction (Indicated on Nut), until the thread picks up.
5. Spin up the nut by hand until the thread stops.
6. The Wash-Pipe may now be considered as stable and any safety lines can be removed.





Compress and activate packing and O'rings

1. Push the air hose on to the lower fitting marked "B" .
2. Observe the piston rising and compressing all the seals. **Note that this creates a finger pinch point. Keep free hand clear.**
3. Wait for a few moments for the packing and the Oring seals to fully compress. Leave the air connected at this stage

Final tighten nuts.

1. Hand tighten both nuts (Direction indicated on nut). Nuts will turn a further 1-3 turns now that packing and the seals are compressed.
2. With the air still connected to the bottom connector "B", Final tighten both nuts by hand, and final tighten by giving a sharp pull on the Tommy-bar.




Starting up.

1. Remove the air hose from the “B” connector and push it on to the top connector “A”.
2. Observe the piston retracting, thus disconnecting the top fixed section from the bottom moving one.
3. Disconnect the air hose and apply 6-8 pump strokes of grease to the grease fitting.
4. Rotate the TD or swivel at 50 RPM for one minute with zero pressure. Turn on pumps and check for leaks while rotating.
5. Remove pump pressure. Push air hose on to “B” and check tightness of both nuts.
6. Remove the air hose from the “B” and push it on to the top connector “A”
7. Remove hose and continue drilling.




Removal Instructions

Re-energise seals and loosen nuts

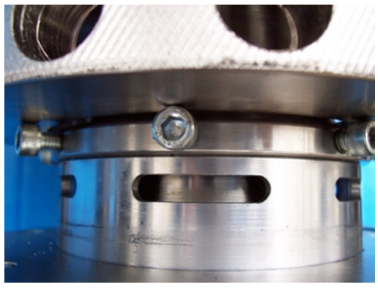
1. Rotate drill string until air connectors are assessable.
2. Push air-line on to bottom “B” connector.
3. Observe the piston rising and compressing all the seals. **Note that this creates a finger pinch point. Keep free hand clear.**
4. Break out top and bottom nuts using tommy-bar. If necessary use a hand hammer to strike the tommy-bar. Note the direction arrows relate to tightening.
5. Turn the nuts 1-2 turns only.
6. If the nuts should become difficult to remove (due typically to extruded Orings), then the supplied emergency crescent wrenches may be utilised. These may be hammered or tensioned using a “come along” type device. The steady pull created by a come along is far superior to hammering as the extruded rubber will cause the hammer to “bounce”.






Free top nut from swivel.

1. Disconnect air hose from “B” connector.
2. Spin top nut off by hand, turning in opposite direction to the arrows.
3. Allow nut to drop down and locate on supports.

Free bottom nut from swivel.

4. Spin bottom nut off by hand, turning in the opposite direction to arrows.
5. Lift nut until it latches in position.

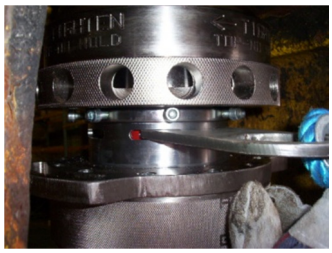
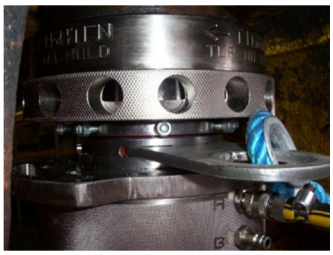





De-energise packing and seals prior to removal

1. Connect safety line to handle on wash-pipe.
2. Place de-energising tool into slot.

3. Push airline on to top connection “A” and observe the wash-pipe shortening by about 10mm. (3/8”). A gap can now be observed between the top thread and the wash-pipe.
4. Disconnect airline and remove de-energising tool.


Remove wash-pipe from swivel

1. The wash-pipe may now be lifted out using the handles. Do not lift by the top nut as the unit could separate into two parts.



Maintenance Instructions (Daily)

Daily Service.

1. Rotate drill string until the air inlets are accessible.
2. Apply 3-4 strokes of high temperature grease to grease nipple.
3. Push air hose onto bottom connector “B” and re-tighten both nuts with tommy-bar.
4. Remove air line from “B” and apply to “A” observing the piston retracting
5. Recommence drilling.



Maintenance Instructions (Inspection and Overhaul)

Remove “fixed” section from “rotating” section.

1. Place sheet of wood or plastic on floor to protect wash-pipe components.
2. Grasp top nut and pull up while restraining bottom section with feet. Fixed section will be pulled free of rotating section.



Inspect fixed section.

1. Clean pipe component and check for grooving. If plated area is damaged, return to P-Quip for repair or replace with new.
2. Remove O’ring from groove and discard. Check surface outside O’ring for “wash” marks.





Remove packing rings.

1. Invert rotating section (bottom section).
2. Unscrew grease nipple (zert) and 3 x anti rotation screws.
3. Unscrew 2 set screws through holes in bottom nut. (5mm Alan key).
4. Remove 4 packing rings.



Remove packing from packing rings.

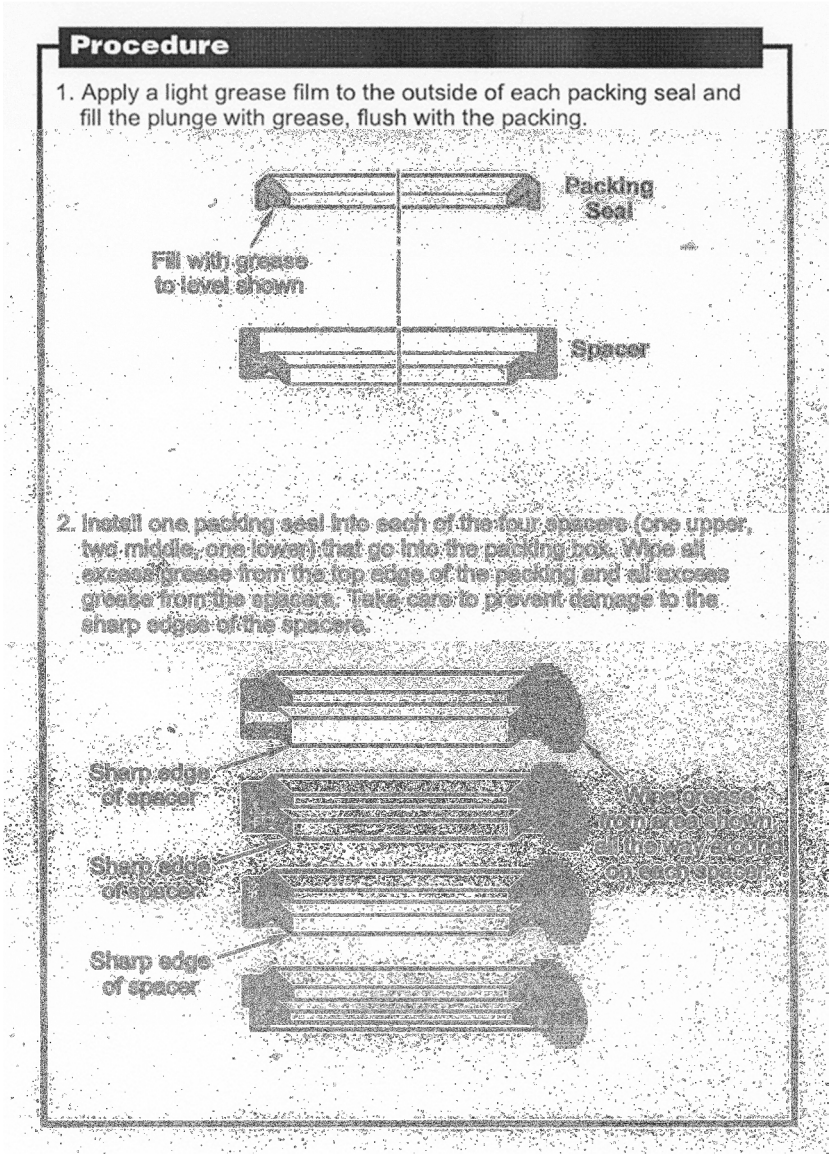
1. Pull out packing and O'ring and discard.
2. Clean and inspect metal packing backup rings. Discard and replace any that show any sign of wear or damage.





Fit new packing to rings.





Re-fitting packing to rotating section.

1. Invert body section and wipe off any grease from inside surface.
2. Drop rings in with their writing the correct way up, in the order “first”, “intermediate”, “intermediate”, “last”.
3. “First” must be set in with its 1/8” BSP hole lining up with the grease hole in the body.
4. “last” must be set in with its holes lining up with the slotted holes in the body.
5. Push down on rings to bed them in to the body.



Fit grease nipple and set screws to retain packing.

1. Apply thread lock and screw 2 set screws (5mm Alan key) through hole in bottom nut and check that “last in” ring as retained but still loose.
2. Apply thread lock to a new grease nipple and tighten into packing ring (7/16” wrench).
3. Apply thread lock to anti-rotation screws and tighten into packing ring.



Re-assemble rotating and fixed sections

1. Turn rotating section the correct way up.
2. Liberally coat surface of packing with high temperature grease. Fill all recesses.
3. Coat rubbing area of fixed section with high temperature grease and insert into rotating section. Push all the way home using body weight.

