
# Technical Manual

tp66123

# SCOPE OF WORK

**SCOPE No:** 2

**EQUIPMENT:** O&K RH200 HYDRAULIC EXCAVATOR

**MACHINE CONFIGURATION:** FACE SHOVEL

**DESCRIPTION:** BOOM CHANGEOUT

9.19 Align Boom Foot Pin and using suitable equipment carefully push Boom Foot Pin into position.

9.20 Replace Boom Foot Pin retainer plate and tension bolts (710Nm).

9.21 Disconnect 50 tonne Crane from Boom Foot Pin end of Boom.

9.22 Sling Boom Cylinder and lift into position.

9.23 Align Boom Cylinder Barrel Eye and Boom pivot point. The Crane attached to front of the Boom may need to be raised or lowered to assist in Boom Cylinder installation.

9.24 Apply Assembly Paste to Boom Cylinder Pin and install. Replace pin retainer and tension bolts (410Nm).

9.25 Connect grease line to Boom Cylinder Barrel Eye.

9.26 Connect hydraulic supply hoses to Boom Cylinder Barrel port first then to the Cylinder Guide port, replace all seal rings.

9.27 Repeat steps 9.22 to 9.26 for opposite Boom Cylinder.

9.28 Lift ***TriPower*** Tie Rod into position, align Tie Rod Pin. Apply Assembly Paste to pin and install.

9.29 Replace Tie Rod Pin retainer plates and tension bolts (410Nm).

9.30 Lift Boom walkway access into position, install and tension bolts (410Nm).

9.31 Repeat steps 9.28 to 9.30 for opposite Tie Rod.

9.32 Connect all grease lines to ***TriPower*** castings, Boom Cylinders and Boom Foot Pin.

9.33 Remove ***TriPower*** locking bar and slowly lower front Crane.

9.34 Connect all hydraulic hoses and grease lines to Boom, replace all seal rings.

9.35 Lift Cooling Module into position, replace mounting bolts and tension (1020Nm).

9.36 Connect supply and return lines to Cooling Module, replace all seal rings.

9.37 Connect electrical harness for work lights.

9.38 Lift Cooling Module deck mesh into position and secure.

9.39 Connect Slew Gearbox Reservoir hoses and fill with oil to correct level.

**Replace Stick**

9.40 Clean Stick bushes and fill cavities with grease. Apply Assembly Paste to all pins and bushes.

9.41 Install Boom / Stick Pin and fit retainer plates loosely to prevent pin falling out during lift.

9.42 Fill Boom cavity with grease. Apply Assembly Paste to bushes before engaging Stick.

9.43 Lift Stick into position. Remove retainer plates and install pulling eye.

9.44 Position equipment capable of pulling Stick / Boom Pin safely and connect appropriate towing chain or sling to pulling eye in end of pin.

## 5. PARTS REQUIRED

1 X Bucket
2 X Seal Ring P/N 1725420
2 X Bush Stick/Bucket P/N 1929534
1 X Pin Stick/Bucket P/N 2117788
1 X Assembly Paste A080096

## 6. SAFETY

6.1 Personnel must at all times wear the correct safety equipment issued to them, as required by their location, i.e. Helmet, Gloves, Glasses, Personal Harness etc.

## 7. TOOLS

Standard Trade Tooling.
Sledge Hammer.
Metric Spanners and Sockets up to 36mm.
2 X Cumalong SWL 3000kg.
Clean container to catch oil spillage.
Clean Rag, Plastic Bags, and Cable Ties.
Hose Blanking Plates and Caps.
Anti Seize Paste.
Large Pry Bars.
Chicken Bar.
Pulling Chain SWL 3000kg.
Metric Lifting Eyes for pulling Bucket, Stick and Boom Pin P/N A070349 (M30) P/N A070348 (M46) P/N A070347 (M64)

## 8. REMOVAL METHOD

**Note: All hoses which have been disconnected during this component changeout should be sealed to prevent contamination and clearly labelled to identify which position or port the hose has been removed from.**

8.1 Position Bucket on pad of fine material, sweep left & right to produce a bed to support the Bucket.

8.2 Disconnect air supply to Grease Pump. Place “Out Of Service” tag on key switch in the Cab.

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# SCOPE OF WORK

**SCOPE No:** 6

**EQUIPMENT:** O&K RH200 HYDRAULIC EXCAVATOR

**MACHINE CONFIGURATION:** FACE SHOVEL

**DESCRIPTION:** CLAM CYLINDER CHANGEOUT

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# SCOPE OF WORK

**SCOPE No:** 8

**EQUIPMENT:** O&K RH200 HYDRAULIC EXCAVATOR

**MACHINE CONFIGURATION:** FACE SHOVEL

**DESCRIPTION:** ENGINE RADIATOR CHANGEOUT

9.1 Apply thin film of Omnifit sealant to Pump Drive Gearbox Input Shaft prior to installing replacement seal runner sleeves.

9.2 Apply a small amount of heat to each sleeve to open interference tolerance. Fit seal runner sleeves to Pump Drive Gearbox Input Shaft, ensure sleeves are correctly seated on Shaft.

9.3 Replace Input Shaft lip seal in Pump Drive Gearbox.

9.4 Apply Assembly Paste to Pump Drive Gearbox Input Shaft spline and lift new Engine Coupling into position.

9.5 Insert all threaded bar into Engine Coupling mounting bolt hole in Pump Drive Gearbox Input Shaft and use Porta Power Pump and hollow cylinder to press Engine Coupling onto Input Shaft.

**Note: Do not use the Engine Coupling mounting bolt to pull the Coupling onto the Pump Drive Gearbox Input Shaft .**

9.6 Press the Engine Coupling onto the Pump Drive Gearbox Input Shaft. It is critical that the Coupling is pressed all the way onto the Input Shaft as it will be very difficult to obtain the correct clearance on the Engine Crankshaft.

9.7 Replace the Engine Coupling retainer plate and tension bolt (420Nm).

9.8 Replace the Engine Flywheel Drive Ring. Apply Loctite and tension mounting bolts (195Nm).

**Note: The Engine Flywheel Drive Ring has a spigot on one end and this must be mated with the Engine Flywheel.**

9.9 Sling the Engine Lifting Frame. Attach hooks to lifting brackets between Engine Rocker Covers, then take weight on Crane.

9.10 Replace Front Engine Mount Discs.

9.11 Lift the Engine into position and lower carefully until Engine is almost touching Front Engine Mounts.

9.12 Slide Engine toward Pump Drive Gearbox and align Engine Coupling. Engage Coupling and install Engine Flywheel Housing bolts and tension (86Nm).

9.13 Replace front engine mount bolts and lower Engine completely, tighten mount bolts. Do not tension bolts.

9.14 Set Dial Test Indicator up and check Engine Crankshaft axial clearance. Cummins specification 0.13mm - 0.51mm. If unable to obtain clearance Engine must be removed and Coupling checked for correct instalment.

**Note: Do not proceed until Engine Crankshaft clearance is obtained. If clearance is not obtained, check Coupling installation.**

9.15 Tension engine mounting bolts (385Nm).

9.16 Connect electrical wiring to:

Water Rail Sensors and Switches.

Starter Motors.

Engine Oil Pressure and Temperature Sensors

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# SCOPE OF WORK

**SCOPE No:** 11

**EQUIPMENT:** O&K RH200 HYDRAULIC EXCAVATOR

**MACHINE CONFIGURATION:** FACE SHOVEL

**DESCRIPTION:** FINAL DRIVE OR SPROCKET (MACHINE S/N 40060 ON) CHANGEOUT

**CAUTION! Pressure may still be trapped in hoses, loosen hose clamping bolts and allow any residual pressure to bleed off.**

8.19 Sling Travel Motor and take weight with Crane.

8.20 Remove Travel Motor mounting bolts, gently pry Travel Motor clear of Final Drive Assembly.

8.21 Repeat steps 8.17 to 8.20 for remaining Travel Motor.

8.22 Support the Sprocket by welding braces from the Sprocket to the Track Frame, this should be done in several places to prevent the Sprocket from moving during removal of the Final Drive.

8.23 Remove the Final Drive mounting bolts.

8.24 Fit the lifting bar to the end of the Final Drive Spindle using spacer which comes in the Final Drive Tooling Kit. Attach two lifting tags to the back of the Final Drive mounting flange in the 3 and 9 o'clock positions.

8.25 Sling the Final Drive with a 3 ton Cumalong attached to the end point of the lifting bar. A second 3 ton Cumalong to one lifting tags and lifting chain to remaining tag. Take up the weight on the three lift points evenly. The Cumalongs will allow the position of the Final Drive to be adjusted to ensure it is lifted level.

8.26 Insert the two 30mm jacking bolts into the jacking holes in the mounting flange of the Final Drive in the 12 and 6 o'clock positions and begin to evenly press the Final Drive Assembly away from the Sprocket and Track Frame.

**Note: It is very important to ensure the jacking force is even, to prevent the Final Drive jamming on the Sprocket.**

8.27 When the Cumalong on the lifting bar fouls on the outside of the Track Frame. The Final Drive should be lowered onto blocks while the lift point is changed to the other end of the lifting bar. The Final Drive can then be removed.

**Note: Care must be taken to ensure the Final Drive is adequately blocked prior to re-positioning the lift point on the lifting bar, failure to do so may result in the Final Drive toppling over.**

8.28 Clean mounting faces of Track Frame Sprocket and Final Drive.

8.29 Transfer any fittings and blanking plates between Final Drive removed and unit to be fitted.

8.30 If fitting a new Sprocket, sling Sprocket being removed. Remove bracing holding Sprocket in position during Final Drive removal.

8.31 Lift Sprocket clear of Track Frame.

8.32 Lift Replacement Sprocket into position. Align Sprocket and Track Frame bores.

8.33 Secure Sprocket with bracing ready for Final Drive fitment.

9.28 Start machine and lift Sprocket clear of Track. Rotate several times in both directions. Check for abnormal temperatures, vibration, noise and fluid loss. Lower Track Frame and refit Travel Motor cover.

9.29 Sling the Track and lift into position over the Sprocket. Join the Track using two Cumalongs to pull the ends of the Track Belt together. Align Track Pads and install pins, replace retainer plates and circlips.

9.30 Connect servo supply hose to Track Tension Shock Relief Valves and close Shock Relief Valves.

9.31 Function test machine and bleed air from the travel circuit at the Travel Retarder Valve. Position Final Drive oil level plug correctly and re-check oil level.

## 10. ON COMPLETION

10.1 Clean down machine.

10.2 Clean up work area.

10.3 Return all tools to store.

10.4 Remove tags.

10.5 Clear machine with production or pit control.

10.6 Clean failed parts ensure all ports are capped.

10.7 Complete all relevant documentation and return failed component to Terex Mining for repair.

## 11. TIME ALLOWED

36 hours.

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# SCOPE OF WORK

**SCOPE No:** 16

**EQUIPMENT:** O&K RH200 HYDRAULIC EXCAVATOR

**MACHINE CONFIGURATION:** FACE SHOVEL

**DESCRIPTION:** HAND CONTROL VALVE CHANGEOUT.

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# SCOPE OF WORK

**SCOPE No:** 18

**EQUIPMENT:** O&K RH200 HYDRAULIC EXCAVATOR

**MACHINE CONFIGURATION:** FACE SHOVEL

**DESCRIPTION:** HYDRAULIC COOLING DISTRIBUTION BLOCK CHANGEOUT

## 1. MACHINE SET UP

1.1 Machine to be set up on a clean flat level surface.

1.2 Working Equipment positioned over the Idlers and Bucket grounded.

1.3 Area around Hydraulic Cooler Pump to be wash down.

## 2. ISOLATION PROCEDURE

2.1 Relevant Site Isolation Procedures must be followed. Main Battery Isolators to be turned off and an “Out of Service” and “Personal Danger” tag fitted to key switch in Cab or Battery Isolator Switches.

2.3 Close Hydraulic Tank Isolation Valve and place an “Out of Service” tag fitted to key switch in Cab.

## 3. SERVICES REQUIRED

3.1 Crane or lifting device capable of lifting 1000kg to top deck of machine.

3.2 Drain Trailer.

3.3 Pressure Cleaner.

## 4. PERSONNEL REQUIRED

4.1 2 X Mechanical Tradespeople.

4.2 1 X Crane Operator (Ticketed).

## 1. MACHINE SET UP

1.1 Machine to be set up on a clean flat level surface.

1.2 Working Equipment should be positioned at 90 degrees to Track Frame on which Idler is to be removed. Bucket should be grounded.

1.3 Area around Idler to be washed down.

## 2. ISOLATION PROCEDURE

2.1 Relevant Site Isolation Procedures must be followed. An "Out of Service" and "Personal Danger" tag must fitted to key switch in the Cab.

**Note: Machine must not be completely isolated at the start of the job because the machine must be run to enable the Idler to be removed.**

## 3. SERVICES REQUIRED

3.1 Crane or lifting device capable of lifting 5000kg.

3.2 Pressure Cleaner.

## 4. PERSONNEL REQUIRED

4.1 3 X Mechanical Tradespeople.

4.2 1 X Crane Operator (Ticketed).

## 1. MACHINE SET UP

1.1 Machine to be set up on a clean flat level surface.

1.2 Working Equipment positioned over Idlers and Bucket grounded.

1.3 Area around Pump Module and Main Pump to be washed down.

## 2. ISOLATION PROCEDURE

2.1 Relevant Site Isolation Procedures must be followed. Main Battery Isolators to be turned off and an “Out of Service” and “Personal Danger” tag fitted to key switch in Cab or Battery Isolator Switches.

2.3 Close Hydraulic Tank Isolation Valve and place an “Out of Service” tag fitted to key switch in Cab.

## 3. SERVICES REQUIRED

3.1 Crane or lifting device capable of lifting 1000kg to top deck of machine.

3.2 Drain Trailer.

3.3 Pressure Cleaner.

## 4. PERSONNEL REQUIRED

4.1 2 X Mechanical Tradespeople.

4.2 1 X Crane Operator (Ticketed).

9. **INSTALLATION METHOD**

**Note: Bolt tensioning values have been included, applicable values can be obtained from O&K RH200 Service Manual 1, Section (General Data pages 30-35) and Torque Chart in rear of Workscopes Manual.**
**Also where applicable, use of Thread Lubricant or Anti Seize Paste is recommended.**

9.1 Replace Pump Drive Gearbox mount discs and prepare mounting bolts.

9.2 Apply Assembly Paste to Pump Drive Gearbox Input Shaft spline and lift Engine Coupling into position.

9.3 Insert all threaded bar into Engine Coupling mounting bolt hole in Pump Drive Input Shaft and use Porta Power Pump and hollow cylinder to press Engine Coupling onto Input Shaft.

**Note: Do not use the Engine Coupling mounting bolt to pull the Coupling onto the Input Shaft.**

9.4 Press the Engine Coupling onto the Pump Drive Gearbox Input Shaft. It is critical that the Coupling is pressed all the way onto the Input Shaft as it will be very difficult to obtain the correct clearance on the Engine Crankshaft.

9.5 Replace the Engine Coupling retainer plate and tension bolt (410Nm).

9.6 Install 2 x ½" UNC guide studs into Engine Flywheel housing.

9.7 Prior to commencing Pump Drive Gearbox installation record Engine Crankshaft axial clearance using Dial Test Indicator and record.

9.8 Lift Pump Drive Gearbox into position and lower carefully until Gearbox is almost touching mounts.

9.9 Position Pump Drive Gearbox toward Engine. Replace Engine Flywheel housing mounting bolts and pull Gearbox into position, tension mounting bolts (86Nm).

9.10 Align Pump Drive Gearbox mounting bolt and lower Gearbox completely, tighten mounting bolts.

9.11 Set Dial Test Indicator up and check Engine Crankshaft axial clearance. Cummins specification 0.13mm - 0.51mm, if unable to obtain clearance Pump Drive Gearbox must be removed and Coupling checked for correct instalment.

**Note: Do not proceed until Engine Crankshaft clearance is obtained. If clearance is not obtained, check Coupling installation.**

9.12 Tension Pump Drive Gearbox mounting bolts (710Nm).

9.13 Replace firewall panel between Engine and Pump Drive Gearbox.

9.14 Connect hoses to Engine Oil Reserve Pump.

9.15 Sling Main Pump and lift into position. Apply Assembly Paste to Pump Shaft Spline, replace mounting O'ring.

5. **PARTS REQUIRED**

| | **Parts That Maybe Required** |
|---|---|
| 1 X Servo Pump P/N 1732298 | 1 X Spur Gear P/N 1441029 |
| 1 X O'ring P/N 0425397 | |
| 1 X O'ring P/N 0899633 | |
| 1 X Omnifit P/N A080083 | |
| 1 X Assembly Paste P/N A080095 | |

6. **SAFETY**

6.1 Personnel must at all times wear the correct safety equipment issued to them, as required by their location, i.e. helmet, gloves, glasses, etc.

7. **TOOLS**

Standard Trade Tooling .
Metric Spanners and Sockets up to 36mm.
Clean Container to catch oil spillage.
Clean Rag, Plastic Bags, and Cable Ties.
Anti Seize Paste

8. **REMOVAL METHOD**

**Note: All hoses which have been disconnected during this component changeout should be sealed to prevent contamination and clearly labelled to identify which position or port which hose has been removed from.**

8.1 Visually inspect new Servo Pump for damage, corrosion or contaminants, record serial numbers from both Pumps and engine hours from machine.

8.2 Disconnect suction and discharge hoses from Servo Pump and seal.

**CAUTION! Pressure may still be trapped in hoses, loosen hose clamping bolts and allow any residual pressure to bleed off.**

8.3 Remove Servo Pump mounting bolts. Gently pry Pump away from Pump Drive Gearbox and lift clear.

8.4 Clean mounting face of Pump Drive Gearbox and new Servo Pump.

**Remove Travel Motor / Brake**

8.63 Sling Travel Motor Rock Guard and take weight with Crane, remove mounting bolts and lift clear.

8.64 Disconnect servo and case drain hoses to Travel Motor and seal.

**Note: Caution must be exercised when removing case drain hose as this is below the oil level in the Hydraulic Tank, and will continue to drain oil unless sealed.**

8.65 Disconnect supply hoses to Travel Motor.

**CAUTION! Pressure may still be trapped in hoses, loosen hose clamping bolts and allow any residual pressure to bleed off.**

8.66 Sling Travel Motor and take weight with Crane.

8.67 Remove Travel Motor mounting bolts, gently pry Travel Motor clear of Final Drive Assembly.

8.68 Disconnect servo hose to Travel Brake and seal.

**CAUTION! Pressure may still be trapped in hoses, loosen hose clamping bolts and allow any residual pressure to bleed off.**

8.69 Remove (11) capscrews which mount the Travel Brake Assembly to the Final Drive primary housing.

**Note: Do not remove the (4) allen key capscrews which can only be accessed when the Travel Motor is removed, these hold the sections of the Travel Brake Assembly together.**

8.70 Gently pry the Travel Brake away from the Final Drive housing.

8.71 Clean mounting face of Final Drive and Travel Motor.

8.72 Repeat steps 8.63 to 8.71 for remaining Travel motors and Travel Brakes.

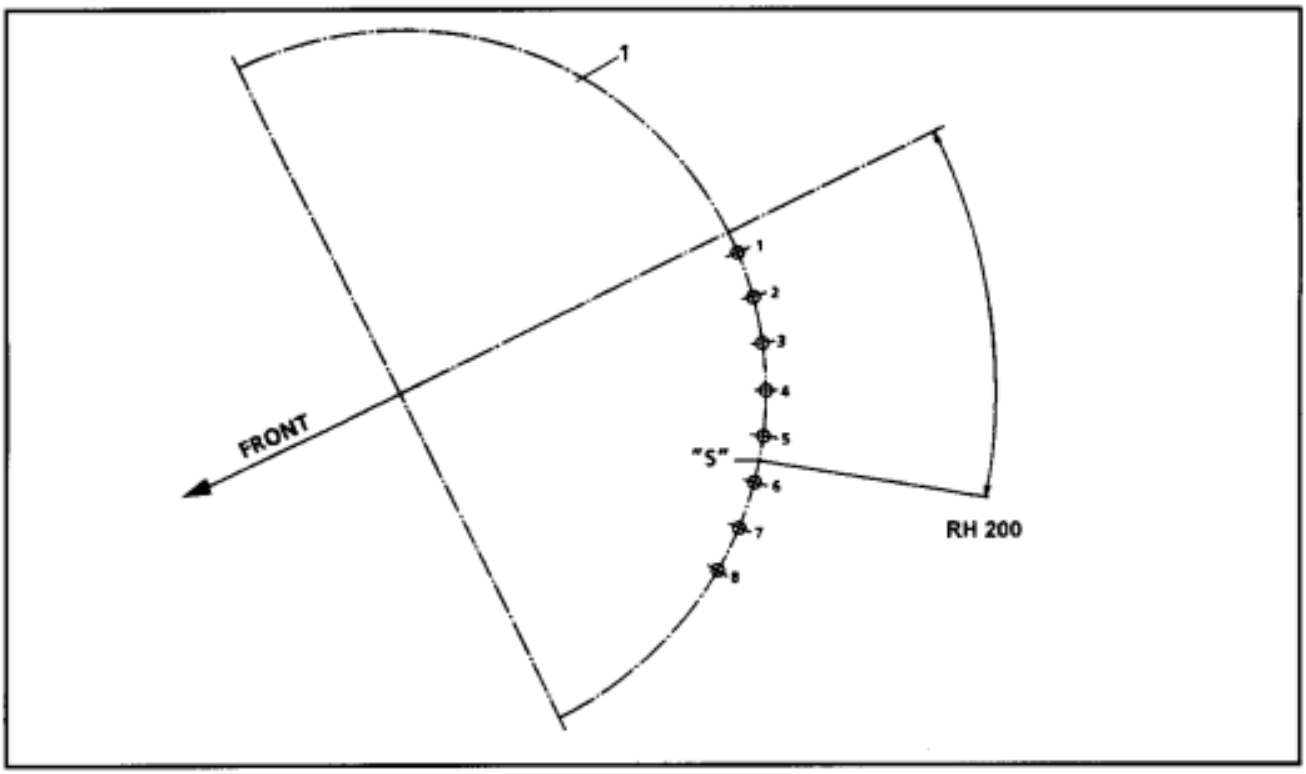
**Remove Superstructure**

8.72 Using work platform or steps disconnect high pressure and servo hoses from under side of Rotary Joint.

**Note: Caution must be exercised when removing case drain hose as this is below the oil level in the Hydraulic Tank, and will continue to drain oil unless sealed.**

**Caution! Pressure may still be trapped in hoses, loosen hose clamping bolts with care and allow any residual pressure to bleed off.**

8.73 Using Crane sling Rotary Joint Locking Bar from above, remove mounting bolts and lower to ground.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## 5. PARTS REQUIRED

| | **Parts That Maybe Required** |
|---|---|
| 1 X Slew Brake P/N 2401899 (96kg) | 1 X Hub P/N 2157336 if required |
| 8 X Sealing Ring P/N 1725419 | |
| 2 X Sealing Ring P/N 1725418 | |
| 1 X O'ring P/N 0599173 | |
| 1 X O'ring P/N 0370385 | |
| 1 X Shim 0.3mm P/N 0145680 | |
| 1 X Shim 0.5mm P/N 0145681 | |
| 1 X Shim 1.0mm P/N 0591361 | |
| 1 X Shim 2.0mm P/N 2168948 | |
| 1 X O'ring P/N 0023833 | |

## 6. SAFETY

6.1 Personnel must at all times wear the correct safety equipment issued to them, as required by their location, i.e. helmet, gloves, glasses, etc.

## 7. TOOLS

Standard Trade Tooling.
Metric Spanners and Sockets up to 36mm.
Sling SWL 1000kg.
Anti Seize Paste.
Clean Rag, Plastic Bags, Cable Ties.
Clean container to catch oil spillage.
Hose blanking plates and caps.
Vernier Calipers.
Straight Edge.
Porta Power Hand Pump and fittings to release Slew Brake.

## 8. REMOVAL METHOD

**Note: All hoses which have been disconnected during this component changeout should be sealed to prevent contamination and clearly labeled to identify which position or port the hose has been removed from.**

8.1 Visually inspect new Slew Brake for damage, corrosion or contaminants, record serial numbers from both Brakes and engine hours from machine.

8.2 Drain oil from Slew Gearbox Header Tank into a suitable container.

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# SCOPE OF WORK

**SCOPE No:** 31

**EQUIPMENT:** O&K RH200 HYDRAULIC EXCAVATOR

**MACHINE CONFIGURATION:** FACE SHOVEL

**DESCRIPTION:** SLEW MOTOR CHANGEOUT

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# SCOPE OF WORK

**SCOPE No:** 33

**EQUIPMENT:** O&K RH200 HYDRAULIC EXCAVATOR

**MACHINE CONFIGURATION:** FACE SHOVEL

**DESCRIPTION:** SLEW PUMP CHANGEOUT

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# SCOPE OF WORK

**SCOPE No:** 35

**EQUIPMENT:** O&K RH200 HYDRAULIC EXCAVATOR

**MACHINE CONFIGURATION:** FACE SHOVEL

**DESCRIPTION:** STICK CHANGEOUT

8.5 Lower Track Frame to ground and stop Engine.

8.6 Remove servo supply hose to Track Tension Shock Relief Valves and seal

8.7 Split the Track between the Carry Roller and the Idler.

8.8 Place Cumalong between Track Pads at break point to prevent Track Belt from "running away."

8.9 Remove the circlips and retaining plate from either side of the Track Pad. Sling through Track Pad on Idler side of break point and take up some weight on the Crane.

8.10 Remove the Track Pins, it maybe necessary to us a Porta-Power to press pin out of Track Pad.

**Note: Caution needs to be taken when splitting Track as Track Pads can part at any time. Pad weight approx. 800kg Std, 1000kg H/D.**

8.11 Once Track has been split use Crane to lift Track clear of Idler and lay out on ground.

8.12 Start machine and slowly travel machine in backward direction, trying to avoid disengaging the Track from the Sprocket completely, only walk off enough Track to allow the Tension Cylinder Cover to be removed.

**Note: Position the Superstructure so it is a approx. 45 degrees to the Track Frame being worked on this will allow access to the Track Tension Cylinder with a Crane.**

8.13 Sling the Track Tension Cylinder cover and lift clear.

8.14 Disconnect supply hose to Track Tension Cylinder.

**CAUTION! Pressure may still be trapped in hoses, loosen hose clamping bolts and allow any residual pressure to bleed off.**

8.15 Sling the Track Tension Cylinder and take some weight with the Crane.

8.16 Remove the Track Tension Cylinder mounting bolts and carefully lift the Cylinder clear.

8.17 Clean mounting face of the Track Frame and replacement Track Tension Cylinder.

8.18 Transfer any fittings and blanking plates between Track Tension Cylinder removed and Cylinder to be fitted.

**CAUTION! Pressure may still be trapped in hoses, loosen hose clamping bolts and allow any residual pressure to bleed off.**

8.5 Drain oil from Travel Motor Drive Chamber into a suitable container.

8.6 Sling Travel Motor and take weight with Crane.

8.7 Remove Travel Motor mounting bolts, gently pry Travel Motor clear of Travel Motor Drive Chamber.

8.8 Remove Travel Motor Drive Chamber and Travel Brake mounting capscrews and lift clear.

8.9 Remove Travel Motor Drive Chamber mounting capscrews and separate from Travel Brake.

**Note: Do not remove the (4) capscrews which can only be accessed when the Travel Motor or Drive Chamber (if fitted) is removed, these hold the sections of the Travel Brake Assembly together.**

8.10 Clean mounting face of Final Drive, Travel Motor and Drive Chamber.

8.11 Inspect condition of Final Drive Input Shaft, support bearings and splined sleeve for wear or damage, replace if required.

8.12 Transfer any fittings and blanking plates between Travel Brake removed and Brake to be fitted.

## 9. INSTALLATION METHOD

**Note: Bolt tensioning values have been included, applicable values can be obtained from O&K RH200 Service Manual 1, Section (General Data pages 30-35) and Torque Chart in rear of Workscopes Manual.**
**Also where applicable, use of Thread Lubricant or Anti Seize Paste is recommended.**

9.1 Replace Travel Motor Drive Chamber seal and support bearing.

9.2 Apply Omnifit sealant to mounting faces of Travel Brake and Travel Motor Drive Chamber. Replace mounting O'ring between, replace capscrews and tension (86Nm).

9.3 Released Travel Brake using hand pump and fitting so Input Shaft and Sleeve and can be aligned with the Brake Plates.

9.4 Apply Omnifit sealant to Travel Brake mounting face. Replace O'ring and lift Brake and Drive Chamber into position. Replace mounting capcrews and tension (86Nm).

**Note: Travel Brake may need to be released using hand pump and fitting so Input Shaft and the Final Drive spur gear can be aligned.**

9.5 Connect servo hoses to Travel Brake

## 9. INSTALLATION METHOD

**Note: Bolt tensioning values have been included, applicable values can be obtained from O&K RH200 Service Manual 1, Section (General Data pages 30-35) and Torque Chart in rear of Workscopes Manual.**
**Also where applicable, use of Thread Lubricant or Anti Seize Paste is recommended.**

9.1 Lift new Travel Retarder Valve into position, replace seal rings. Replace mounting bolts and tension (86Nm).

9.2 Connect high pressure hoses to Travel Retarder Valve, replace all seal rings.

9.3 Connect all servo hoses to Travel Retarder Valve.

9.5 Check oil levels in Hydraulic Tank.

9.6 Start machine and slowly bring to high idle, check operate travel function.

9.7 Bleed air from travel circuit at Travel Retarder Valve

9.8 Stop machine and check Travel Retarder Valve for any fluid loss.

## 10. ON COMPLETION

10.1 Clean down machine.

10.2 Clean up work area.

10.3 Return all tools to store.

10.4 Remove tags.

10.5 Clear machine with production or pit control.

10.6 Clean failed parts ensure all ports are capped.

10.7 Complete all relevant documentation and return failed component to Terex Mining for repair.

## 11. TIME ALLOWED

3 hours.

| Input Shaft | 41kg |
|---|---|
| **Component** | **Weight** |
| Input Shaft Bearing Carrier Flange | 18kg |
| Joystick | 5kg |
| Main Control Valve | 730kg |
| Main Control Valve Spool End Cap | 49kg |
| Main Pump | 545kg |
| Main Pump/Pump Drive Mounting Flange | 68kg |
| Muffler | 29kg |
| Oil Cooler | 180kg |
| Oil Cooler Fan | 12kg |
| Oil Cooler Fan Motor | 53kg |
| Oil Cooler Fan Motor Mounting Frame | 38kg |
| Oil Cooler Module | 7240kg |
| Oil Cooler Fan Shroud | 111kg |
| Oil Cooling Pump | 45kg |
| Pin ~ Boom Cylinder Lower | 26kg |
| Pin ~ Boom Cylinder Upper | 14kg |
| Pin ~ Bucket Cylinder | 7kg |
| Pin ~ Clam Cylinder Lower | 31kg |
| Pin ~ Clam Cylinder Upper | 27kg |
| Pin ~ Clam Pivot | 81kg |
| Pin ~ Stick Cylinder | 7kg |
| Pin ~ Tie Rod Pivot | 15kg |
| Pin ~ TriPower Pivot | 4000kg |
| Pump Distribution Block Complete | 1100kg |
| Pump Drive Gear Box | 1100kg |
| Pump Drive Gear Box Oil Cooler | 6kg |
| Radiator / Engine top Pipe | 5kg |
| Radiator ~ Engine | 440kg |
| Return Filter Basket Complete | 57kg |
| Return Filter ~ Individual | 4kg |
| Roller | 1068kg |
| Roller | 460kg |
| Rotary Joint | 373kg |
| Rotary Joint Anchor | 63kg |
| Seat ~ Operator | 32kg |
| Service Station Air Cylinder | 58kg |
| Servo Governing Block | 35kg |
| Servo Pump | 4kg |
| Slew Blocking Valve | 7kg |
| Slew Brake | 95kg |
| Slew Gear Box | 1057kg |
| Slew HP Filter | 18kg |
| Slew Motor | 45kg |
| Slew Motor Hose Adaptor Block | 6kg |
| Slew Pump | 170kg |
| Slew Pump Drive Gear | 23kg |
| Slew Pump/Pump Drive Mounting Flange | 18kg |
| Slew Ring | 6977kg |
| Stick/Arm | 16000kg |

**Remove Superstructure**

**Remove jacks from storage and test correct operation before placing under the machine. Inspect all cylinders, hoses and valves for any sign of damage. Tag out any defective or damage equipment and have it rectified before using the jacking system.**

8.19 Place rear jacks beneath the Superstructure rail under the back of the machine ensuring that they are placed on solid ground capable of supporting the weight.

8.20 Fit the front lifting frames in place over the boom cylinder mounts on the front of the superstructure. Ensure the light duty frames are used on machines from 40001 to 40030 and the HD frame with 2 pin holes are used on all other machines.

8.21 Place the pins in the lifting frame to lock it in place.

8.22 Locate the jack assemblies under the front lifting frames ensuring that they are placed on solid ground capable of supporting the weight.

8.23 Place the power pack to the side of the machine in clear view of the jacks.

8.24 Connect all jacks to the power pack and proceed to raise the jacks until the weight of the superstructure is taken.

8.25 Using work platform or steps disconnect high pressure and servo hoses from the under side of Rotary Joint.

**Note: Caution must be exercised when removing case drain hose as this is below the oil level in the Hydraulic Tank, and will continue to drain oil unless sealed.**

## CHECKING TORQUE

The Checking Torque is only used to verify the condition of bolts in situ. The Checking Torque is a value lower than the combined Torque Turn value.

The Checking Torque should only be used during the periodical slew ring bolt inspection.

Any bolt that can be turned when the checking torque is applied, should be considered unserviceable. It must then be removed and replaced, with the new bolt fitted using the appropriate pre-torque and turn angle.

- **USE OF MOUNTING ADHESIVE**

The use of our mounting adhesive, Omnifit, will resist compressive and shear forces, but not tension. A mounting adhesive will improve, but will not eliminate, resistance to fretting and moisture entry.

A mounting adhesive will improve the contact area between the steel structures and slew ring. Typical installed adhesive film thickness will vary between 0.1 mm to 0.3 mm, depending on surface condition.

The use of a mounting adhesive permits the transfer of radial forces three times as high as the normal force.

- **USE OF SEALING ADHESIVE**

To aid in reducing the ability of moisture to enter between the undercarriage and the slew ring, it is recommended to seal this joint with a proprietary based silicone sealant.

- **STORAGE**

The slew ring may be stored either flat on wooden blocks, or in the angular shipping frame. At all times the slew ring must have the supplied shipping “spider” installed, and must be securely sealed from the elements in a weatherproof facility.