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Technical Manual

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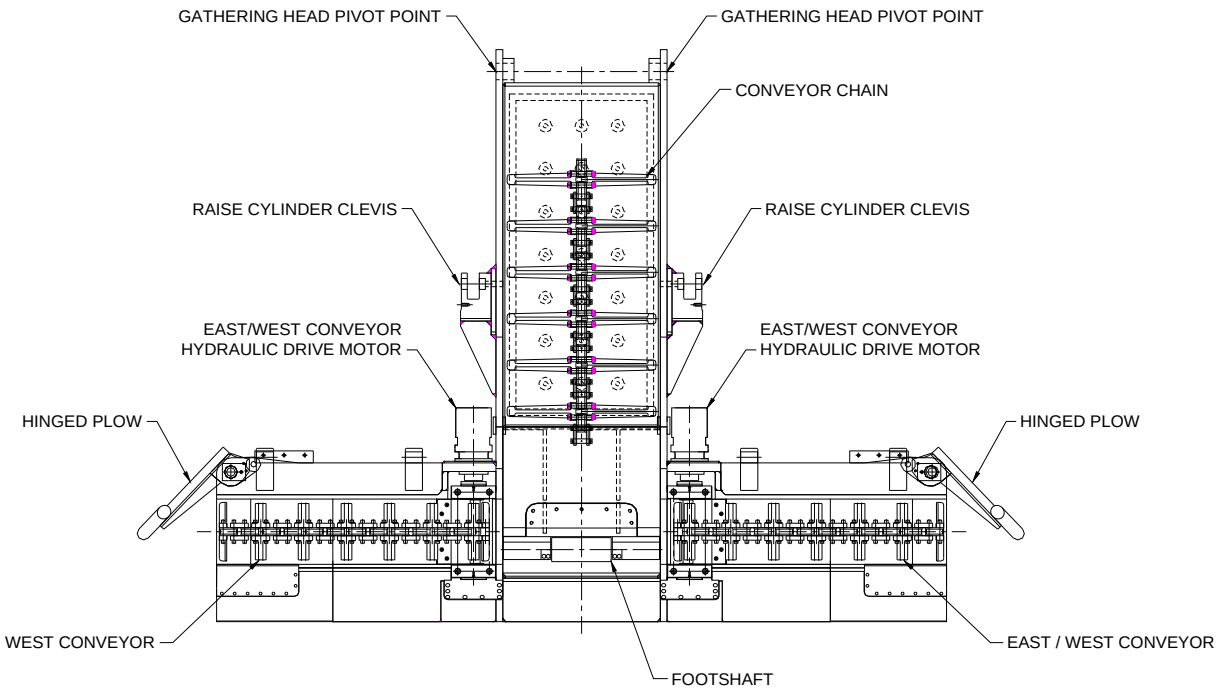
These cylinders enable the cutting head assembly to range from 249 mm below ground level to a maximum height of 4100mm.

The power train of the cutting head consists of RH and LH sides, which tie together at the common main drive shaft, allowing the combined power of both electric drive motors to be available at any point on the cutting drums.

Gathering Head Assembly



Gathering Head Assembly

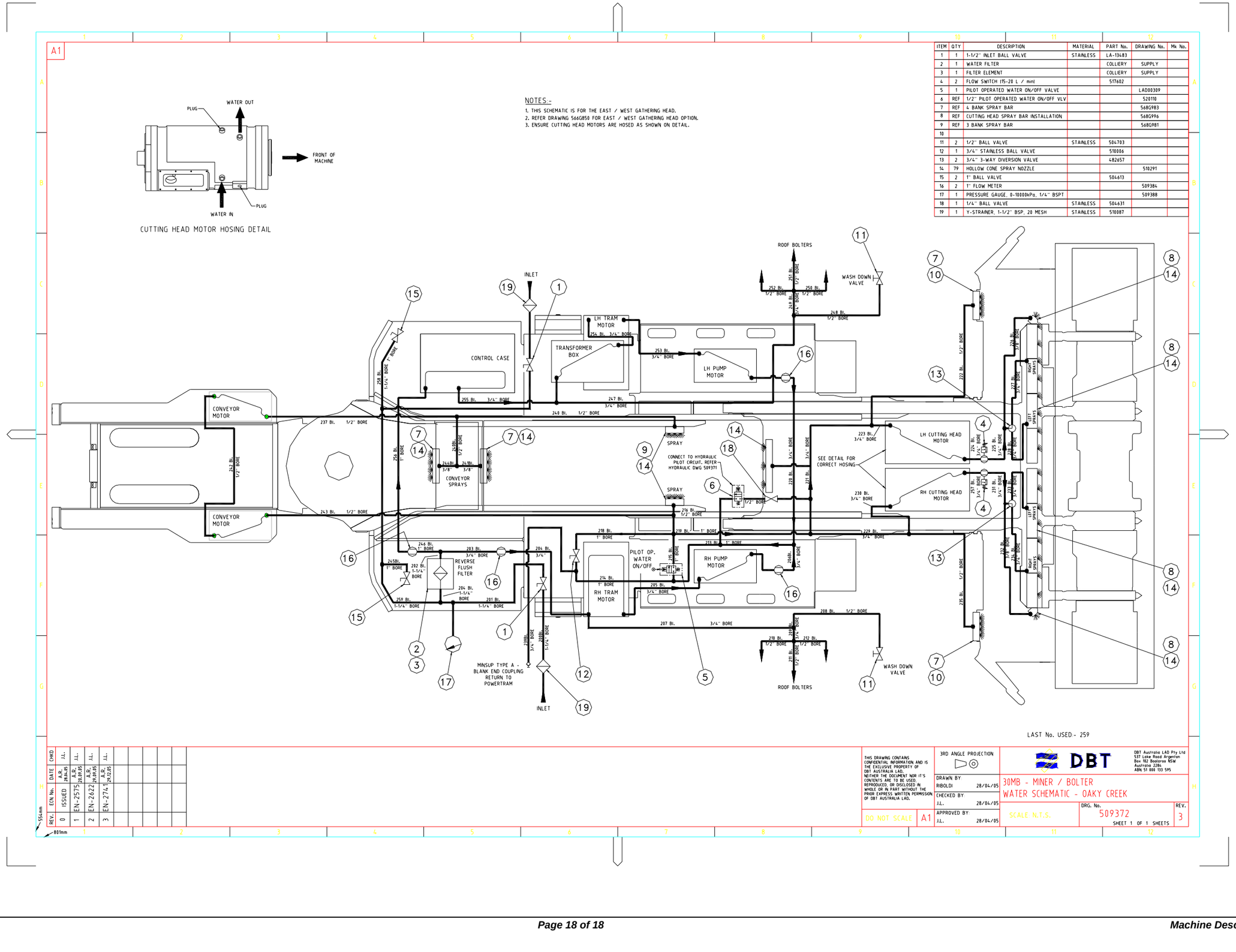
The gathering head assembly is attached to the main chassis at RH and LH independent pivot points around which the assembly is articulated to adjust the gathering head for uneven floor conditions and for tramming the miner from place to place. The independent pivots allow removal of the gathering head assembly without disturbing the cutting head or discharge conveyor.

The gathering head assembly includes the following:

- The gathering head structure consists of RH/LH pivot points for attaching to the main chassis, upper mounting clevises for the two gathering head raise cylinders, extendible plows compatible with extendible widths of the cutter head widths and shields mounted on rear of structure to support the roof bolting rigs.

The cross conveyor or east west chains are driven by 2 hydraulic motors. The hydraulic motors only drive the east west conveyor chains.

The gathering head assembly is raised and lowered by two hydraulic cylinders, which are mounted to the main chassis at their lower ends and attached to points of the gathering head structure at their upper ends. These cylinders allow vertical ranging of the forward edge of the gathering head from 200 mm below floor level to 537 mm


A1
PLUG
WATER OUT
FRONT OF MACHINE
PLUG
WATER IN
CUTTING HEAD MOTOR HOSING DETAIL
NOTES:-
1. THIS SCHEMATIC IS FOR THE EAST / WEST GATHERING HEAD.
2. REFER DRAWING 566G850 FOR EAST / WEST GATHERING HEAD OPTION.
3. ENSURE CUTTING HEAD MOTORS ARE HOSED AS SHOWN ON DETAIL.
ITEM | QTY | DESCRIPTION | MATERIAL | PART No. | DRAWING No. | Mk No.
1 | 1 | 1-1/2" INLET BALL VALVE | STAINLESS | LA-13483 | |
2 | 1 | WATER FILTER | | COLLIERY | SUPPLY |
3 | 1 | FILTER ELEMENT | | COLLIERY | SUPPLY |
4 | 2 | FLOW SWITCH 115-20 L / min | | 517602 | |
5 | 1 | PILOT OPERATED WATER ON/OFF VALVE | | | LAD00309 |
6 | REF | 1/2" PILOT OPERATED WATER ON/OFF VLV | | | 520110 |
7 | REF | 4 BANK SPRAY BAR | | | 568G983 |
8 | REF | CUTTING HEAD SPRAY BAR INSTALLATION | | | 568G996 |
9 | REF | 3 BANK SPRAY BAR | | | 568G981 |
10 | | | | | |
11 | 2 | 1/2" BALL VALVE | STAINLESS | 504703 | |
12 | 1 | 3/4" STAINLESS BALL VALVE | | 510006 | |
13 | 2 | 3/4" 3-WAY DIVERSION VALVE | | 482657 | |
14 | 79 | HOLLOW CONE SPRAY NOZZLE | | | 510291 |
15 | 2 | 1" BALL VALVE | | 504613 | |
16 | 2 | 1" FLOW METER | | | 509384 |
17 | 1 | PRESSURE GAUGE, 0-10000kPa, 1/4" BSPT | | | 509388 |
18 | 1 | 1/4" BALL VALVE | STAINLESS | 504631 | |
19 | 1 | Y-STRAINER, 1-1/2" BSP, 20 MESH | STAINLESS | 510087 | |
INLET
ROOF BOLTERS
WASH DOWN VALVE
LH TRAM MOTOR
TRANSFORMER BOX
CONTROL CASE
LH PUMP MOTOR
CONVEYOR MOTOR
CONVEYOR MOTOR
CONVEYOR SPRAYS
SPRAY
SPRAY
CONNECT TO HYDRAULIC PILOT CIRCUIT. REFER HYDRAULIC DWG 509371
SEE DETAIL FOR CORRECT HOSING
LH CUTTING HEAD MOTOR
RH CUTTING HEAD MOTOR
REVERSE FLUSH FILTER
PILOT OP. WATER ON/OFF
RH PUMP MOTOR
RH TRAM MOTOR
MINSUP TYPE A - BLANK END COUPLING RETURN TO POWERTRAM
INLET
ROOF BOLTERS
WASH DOWN VALVE
LAST No. USED:- 259
REV. | ECN No. | DATE | CHKD
0 | ISSUED | A.R. 28.04.05 | J.L.
1 | EN-2575 | A.R. 29.04.05 | J.L.
2 | EN-2622 | A.R. 29.09.05 | J.L.
3 | EN-2714 | A.R. 29.12.05 | J.L.
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DO NOT SCALE
A1
3RD ANGLE PROJECTION
DRAWN BY: RIBOLDI 28/04/05
CHECKED BY: J.L. 28/04/05
APPROVED BY: J.L. 28/04/05
DBT
DBT Australia LAD Pty Ltd
537 Lake Road Argenton
Box 102 Boolaroo NSW
Australia 2284
ABN 51 008 133 595
30MB - MINER / BOLTER
WATER SCHEMATIC - OAKY CREEK
SCALE: N.T.S.
DRG. No. 509372
SHEET 1 OF 1 SHEETS
REV. 3

- If the tag cannot be re-attached then the person who is aware of the problem will apply his or her own Personal Lock and Personal Danger Tag and inform the person whose tag was removed, immediately. Upon being notified the person whose tag was removed will fill out another tag and reattach it.
- Inform the Supervisor and person of the occurrence and steps taken.

Discovery of Personal Danger Tag – Not Attached

A person who discovers a completed Personal Danger Tag that is not attached to the stated equipment must take that tag and inspect the equipment for that person and advise them that the tag has been found. If the person cannot be found then the person discovering the tag must place an Out of Service Tag on the stated equipment, report the discovery to their Supervisor and give the Supervisor the Personal Danger Tag.

YOU MUST NEVER INTERFERE WITH ANOTHER PERSON'S PERSONAL LOCK and PERSONAL DANGER TAG

Commissioning and Testing Tag

Commissioning and Testing Tags are coloured fluorescent pink with black writing. They are only available through Maintenance Superintendents in each operating department at Oaky No.1 Mine and are used by maintenance personnel only.

The Commissioning and Testing Tag is designed to protect the person placing the tag from exposure to an energy source through inadvertent operation of energised equipment that is undergoing commissioning or testing. The commissioning tag will only be used for tasks that **ABSOLUTELY** require the energy source to be available to complete the task. The tag will **NOT** be used for any other purpose or as a substitute for a Personal Lock and Danger Tag.

Process of Tag Placement

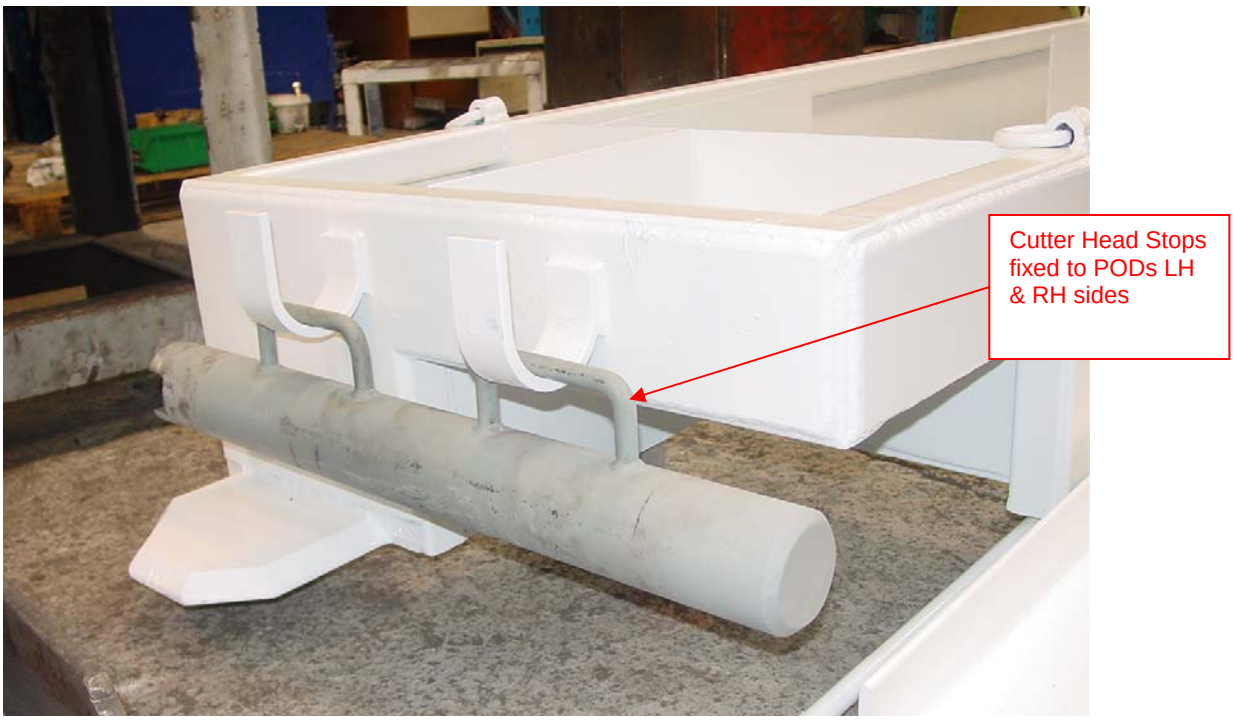
The tag must be attached in a prominent location by the person whose name appears on the tag. The area surrounding the equipment under commissioning or testing may require effective barricades to prevent access by personnel not associated with the work.

NOTE: Multiple tags may be placed on the machine by one person, eg one on the main isolator and one in a prominent location in the operating cabin.

Process of Tag Removal

- No person shall leave site without first removing their Commissioning and Testing Tag. The only person permitted to remove the Commissioning and Testing Tag is the person whose name appears on the tag.

3.1 Auger stop fixing mounts



3.2 Auger stop storage mount

Final Assembly

While completing the assembly of the unit, make sure that both housings are in correct alignment and are concentric. Slowly bring the two housings together. High impact can scratch or break the seal components.

If the rubber toric slips at any location, it will twist, causing the seal rings to cock. Cocked seals create uneven pressure on the seal faces, resulting in galling, scoring and leakage. Any wobbling action can cause dirt to enter by pumping mud past the torics.

MAINTENANCE GUIDELINES

Mechanical maintenance requires you to know your machine and be ready to perform correct servicing when needed. This includes several factors.

Use the proper procedure.

Consult this manual, the parts book, operators and your DBT Australia representative as often as needed to be sure maintenance is done right. They will also alert you to any special conditions or hazards that may arise during a procedure.

Exercise safety precautions at all times.

Every effort has been made to be sure that the manual covers major hazards that arise during a procedure, but it is not comprehensive. Common sense is needed.

If you work under an elevated component, be sure the lifting device - whether hydraulic cylinders, a make-shift block and tackle, or a jacking device - works properly, is secure, and correctly positioned.

Do not ever position yourself under an assembly until it is also securely blocked. Failure to do this could result in ***loss of life***.

Practice sound disassembly and assembly methods.

Be sure the tools you need are available. Set the miner so that your work area is easily and comfortably accessible. Be sure help is available.

Disassemble in correct sequence, according to the manual or the instructions of the DBT Australia representative. Cover removed parts and lay them out neatly for reassembly.

During disassembly, take care of parts intended for reuse. As strip down progresses, inspect each part for wear or damage. Pay particular attention to failed components for cause. Determining what failed and why may show how to fix the problem and prevent more failures.

SPECIAL FASTENERS

Various types of self- locking bolt and nut fasteners are in use. They are to be used in the same manner as standard fasteners with regard to tensile strength and torque; but they provide better locking qualities and reduce the number of parts used in fastening. Most special fasteners, once used, should not be re-used because of the locking material retention limitations.

SELF-LOCKING SCREWS

This socket head screw has a number of threads with wide, offset sections, which produce the self-locking effect by causing a high friction bind against the matting threads. This type fastener is identified by a triangle at the base of the socket. Because of this self- locking feature, the use of washers is usually not necessary. It is suitable in assemblies subjected to high vibration.

Installation Recommendations

1. The self- locking screw is generally used where measured torque is required. When this is specified, hand wrench only - do not power wrench. This is to obtain an accurate reading and not due to structural limitations of the screw.

2. The top performance of this screw is reduced with each use. Re-use of this fastener should be limited to twice.

3. For assemblies that need shims with self- locking screws, establish the shim set using standard fasteners. For final assembly remove the standard fasteners and install the self- locking type, then torque down as required.

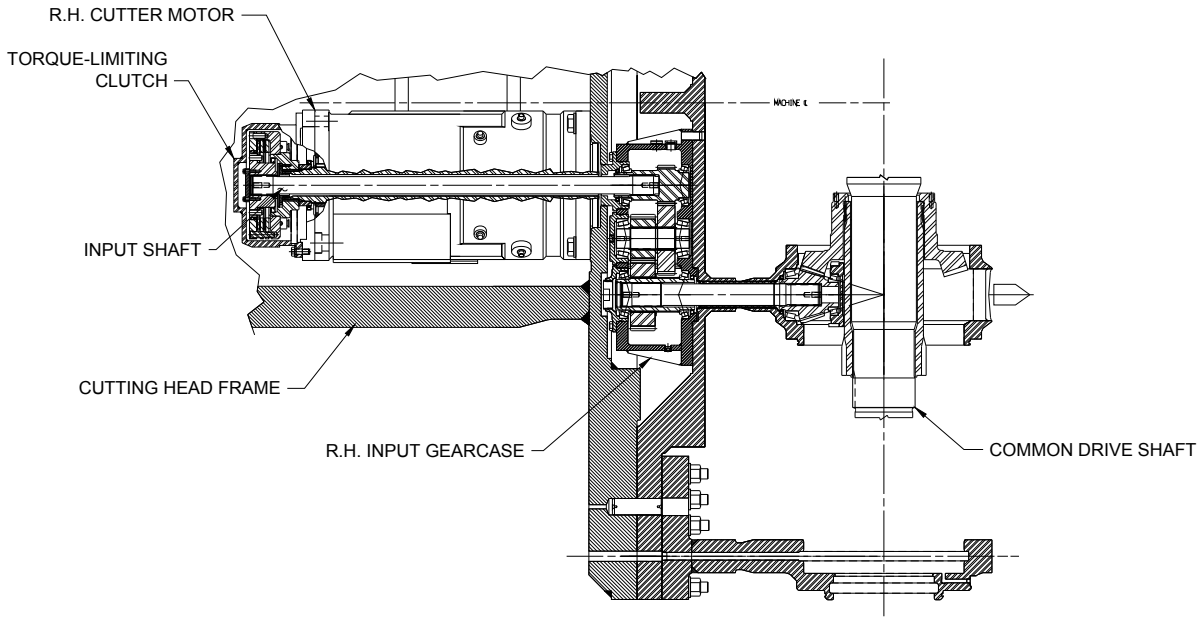


Figure 5.2

The cutting final drive is shown in Figure 5.3.

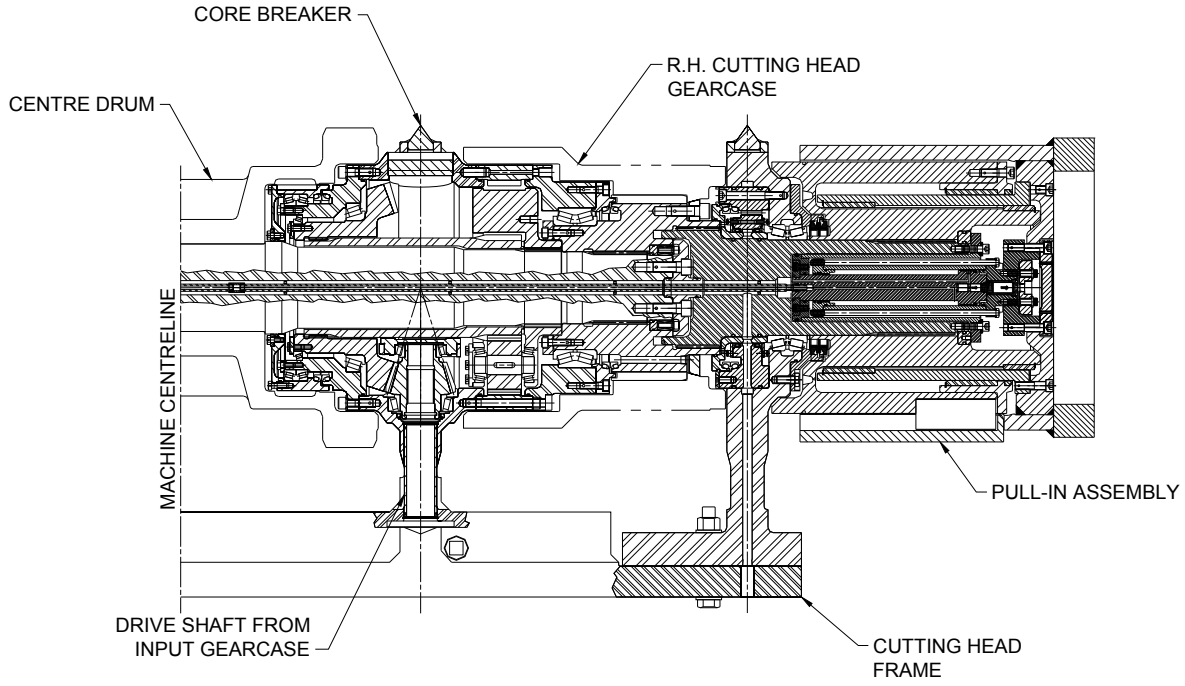


Figure 5.3

The cutting head is attached to the main frame at a heavy-duty pivot (see later Figures 5.21 and 5.22). Two double-acting hydraulic cylinders raise and lower the cutting head.

NOTE: **Before next step ensure that lifting devices have adequate tension on the assembly.**

8. Remove remaining two (2) 1-1/4 " x 9" long hex head cap screws from assembly. See figure 5.8.
9. Move assembly horizontally away from the centre of the machine approximately 12".

NOTE: **If removing the left side assembly when viewing from rear of machine A ¼ I.D. Pressure pipe will be connected to the extending cylinder. Unscrew pipe from left side assembly. If right side assembly is being removed pipe will not be screwed into assembly.**

NOTE: **When complete pull in assembly has been removed commence removal of intermediate drum.**

10. Loosen the eighteen 1" socket head cap screws that secure the wedge block assembly and the drum to the cutting head hub. Remove the cap screws and wedge. Figure 5.9.

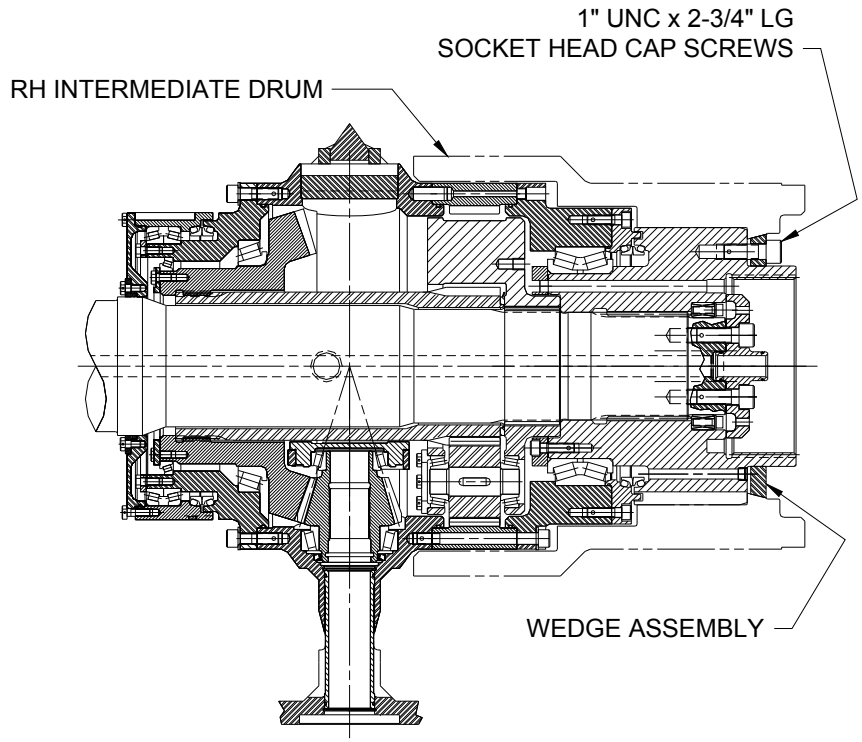


Figure 5.9

CAUTION: **It is important to matchmark both the end drum and the cutting head hub to which it is attached, so that the pick block lacing is not disturbed upon reassembly.**

11. Slowly pull the intermediate drum off the main assembly, and manoeuvre it away from the miner.

Centre Drum Assembly

1. With the machine in the same position as centre drum removal and the machine still isolated as per mines procedures position the bottom half and top half of the centre drum in front of the machine.

WARNING: Isolate machine as per mines isolation procedures.

2. Pack up bottom half of centre drum using match marks lined against intermediate drums.
3. Remove isolating tags and re-power machine as per mines procedures.
4. Tram machine with cutter head raised enough to clear bottom half of centre drum. Tram into position that allows cutter head to be lowered into the bore of the drum.
5. Check keys are in position and lower cutter head onto bottom half of centre drum.
6. Isolate machine as per mines procedures.

WARNING: Failure to isolate machine as per mines procedures may cause injury or death.

7. Using lifting gear as per disassembly procedure position top half of drum over cutter head.

WARNING: Ensure that lifting devices have adequate tension on both ends of the top half of centre drum.

8. Position the top keys into keyways of the cutter head shaft.
9. Lower the top half of the drum into position resting the top half against the bottom half.
10. Start all bolts and tighten the nuts finger tight.
11. Tighten all retainers using ¾” square drive and socket.
12. Remove isolating tags and re-power machine as per mines procedures.
13. Raise cutter head to a comfortable working position to allow torquing of the fasteners.
14. Isolate machine as per mines isolation procedure.

Reinstall Cutter Head Gearcase Complete with Pull in Assemblies

1. With the machine in the same position as removal procedure and isolated as per mines isolation procedure position the cutter head in front of machine.

2. Using the same lifting gear as gearcase removal lift cutter head into a position that the 2 faces to be bolted is parallel.

3. Re-power machine as per mines re-power procedure.

4. Ensure cutter head circuit breaker is isolated.

5. Tram miner onto the cutter head gearcase until faces are as close together as possible.

6. Remove all power from machine and isolate as per mines procedures.

WARNING: **Failure to isolate machine as per mines procedure may cause serious injury or death.**

7. Using lever bars (crow bars) manoeuvre gearcase to allow top row of bolts to be started use 1 ¼ bolt. Lengths as shown in figure 5.18.

8. Position all top row of bolts and pull faces together until slightly touching.

9. Enter and drive home 2 (one each side) 2” hardened steel dowels.

10. Tighten top row of bolts (do not torque to requirement).

11. Start 4 motor bolts, the top 2 of each motor and torque to 1940 ft lbs or 2630Nm.

NOTE: **To achieve this torque the 1 ¼ bolts to 600 ft lbs or 814Nm. By using a slogging spanner tighten the nut. Five flats. NOTE: Reduce torque rating by 25% if lubricant is used on threads.**

12. Repower machine as per mines repower procedures.

13. Start machine in mining mode.

14. Raise cutter head and set cutter head safety stops. One each side.

15. Reisolate machine as per mines isolation procedures.

WARNING: **Failure to isolate machine as per mines procedure may cause serious injury or death.**

NOTE: **Ensure to remove mine water supply from the machine.**

8. Disconnect electrical leads from the RH and LH cutting head drive motors, horizon control unit and headlights. Tag these leads for identification in re-assembly. Pull them rearward off the support frame and lay them on the machine chassis.

9. Disconnect water lines going to the cutting head. Tag them and lay them on the chassis.

10. Disconnect lubrication and hydraulic lines going to the cutting head, and all lubrication lines to the main pivot pins and hydraulic cylinder pins. Tag them and set on the machine chassis.

.

NOTE: **Cables, water and hydraulic lines to the gathering head do not need to be disconnected or removed.**

11. Position 10 tonne lifting blocks one each side above lifting lugs at front of cutter head position 5 tonne lifting blocks above rear lifting lugs.

12. Remove the two (2) 3/4" UNC flat head cap screws and keeper plates from the upper cylinder pins on each side (see Figure 5.22 & 5.23).

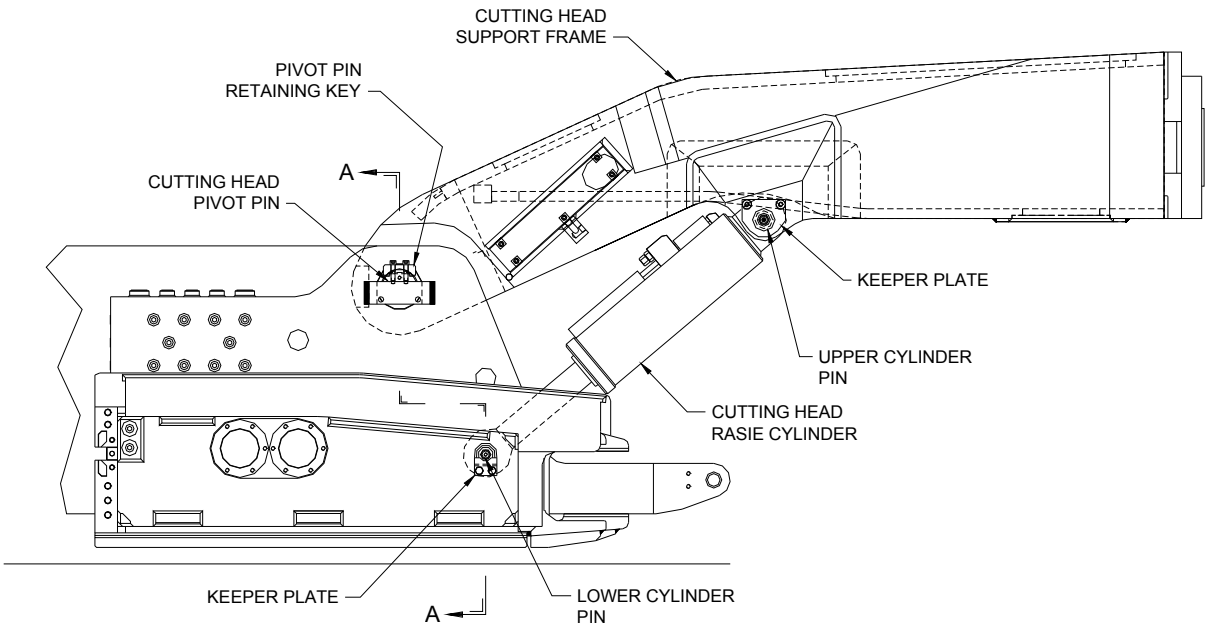


Figure 5.22

A cross conveying system consisting of cross flight chains driven by hydraulic motors. This set up allows forward mounting of the roof drills so that poor roof may be supported. The cross flight chains gathers the mined material at the front of the machine and conveys the material on to the conveyor in the centre of the machine. The system consists of hydraulic motors connected to a drive shaft which has a sprocket for driving the cross conveyor chains.
The gathering head structure includes a special noise-damped running deck for the conveyor chain to minimise noise generation

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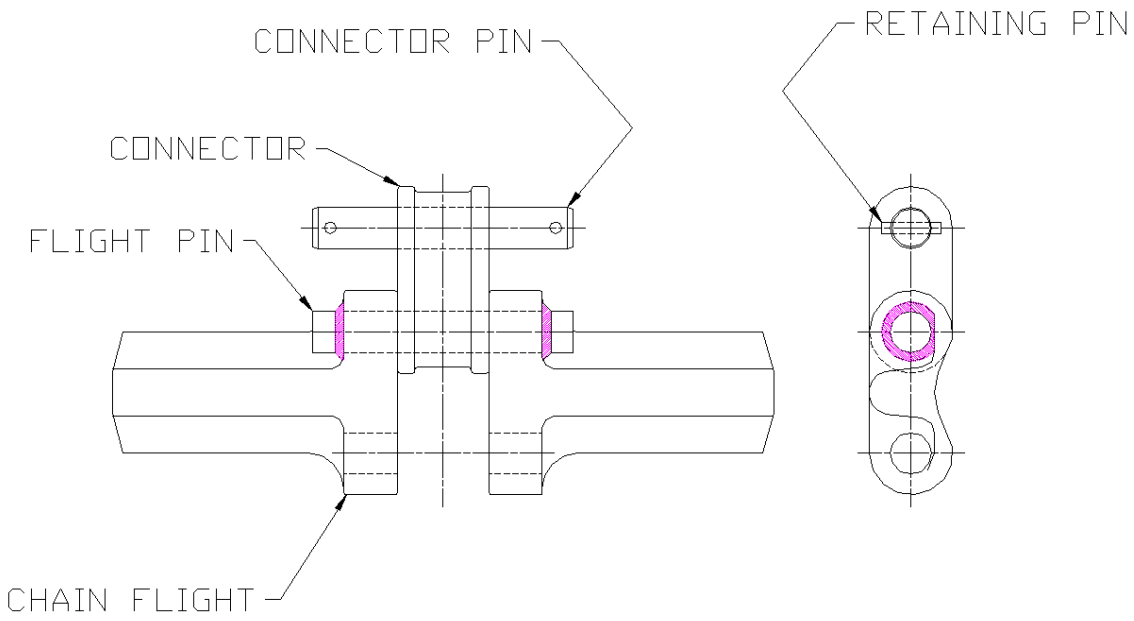

Figure 6.8

7. Remove the nose plate from over top of drive shaft.

8. Remove the four (4) 1" x 6" long UNC S.H.C.S. See figure 6.5.

9. Lift out the drive sprocket assembly complete with bearing blocks.

INSTALLATION

1. Make sure all ports and mating surfaces are in good condition clean and free of debris

2. Check grease lines from bearing blocks to remote grease nipples

3. Position complete foot shaft assembly onto frame ensuring 'O' rings for greasing are fitted at the bottom of each bearing block. See figure 6.6

4. Install four (4) off 1" – 8 UNC x 6" long S.H.C.S and torque to 1010ft lbs or 1370 Nm. See figure 6.5

NOTE: Reduce torque by 25% if lubrication is used on threads.

5. Install nose plate over top drive shaft.

6. Rejoin chain using connecting pin and fit retaining pins. See figure 6.8

7. Install the bearing housing deflector.

8. Reinstall the hydraulic motor as per the hydraulic motor installation at start of this section.

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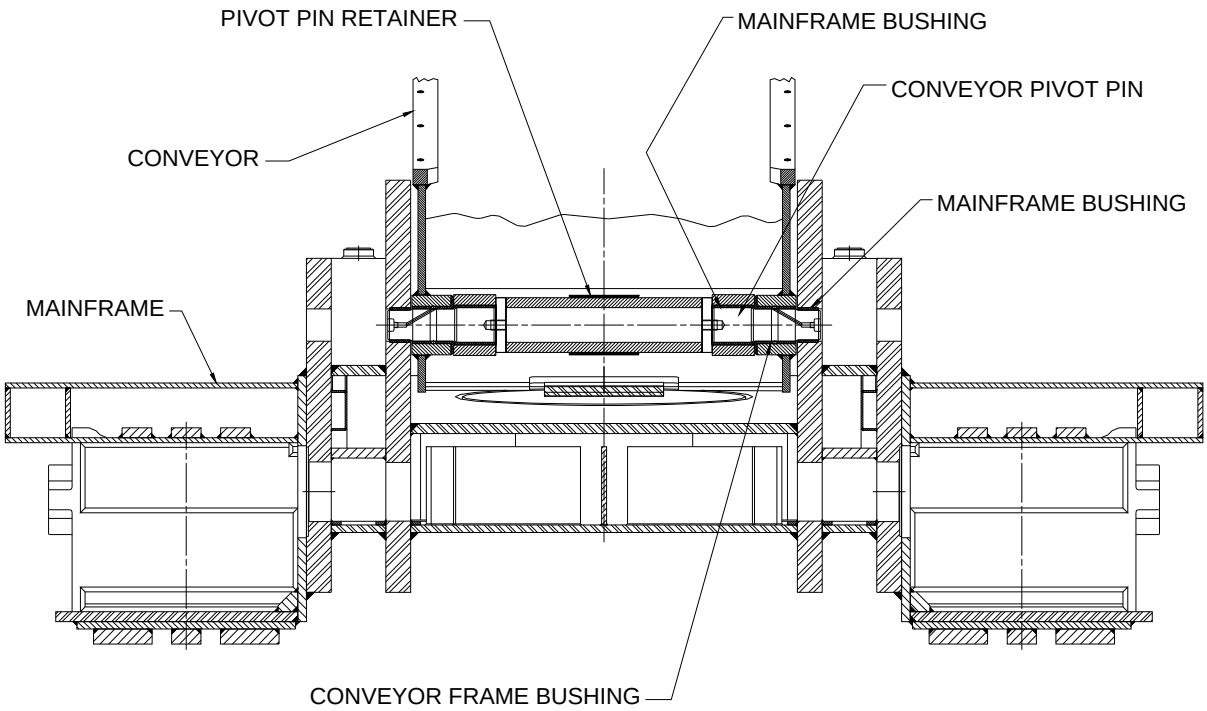

Figure 7.6

13. Using a porter power and 1" UNC threaded rod force the conveyor pivot pins towards the centre of the conveyor until they are free.

14. With the lifting gear raise the forward end of conveyor to clear machine.

15. The miner can now be driven forward away from the conveyor.

16. Apply power to the miner.

WARNING: Isolation of the conveyor motors and cutter head is required when driving the miner away from the conveyor.

17. Slowly drive the miner away from the conveyor.

10. Attach lifting device to the assembly and slide it horizontally toward the outlay end of the discharge conveyor until the entire assembly clears the conveyor structure.

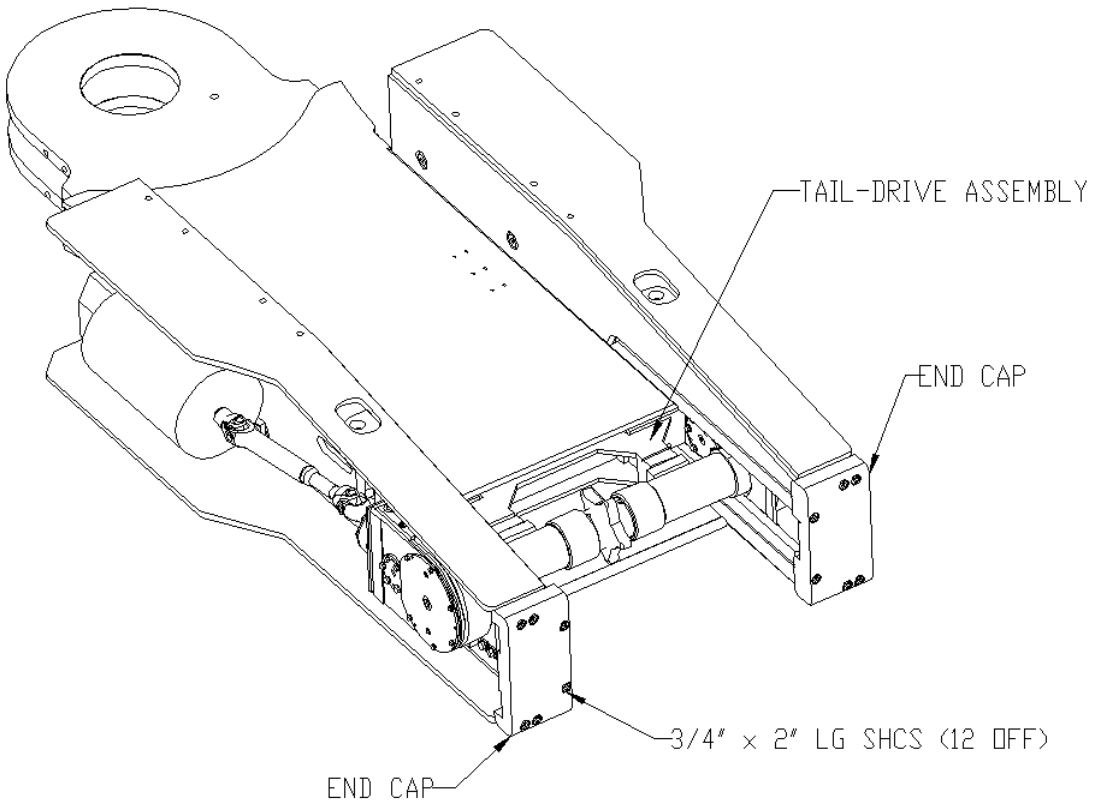

Figure 7.10

INSTALLATION OF THE TRAM DRIVE GEAR CASE ASSEMBLY

NOTE: **The crawler drive gear case and electric motor can be installed as one unit.**

1. Ensure that the crawler frame mounting area is cleared of dirt and debris. Be especially sure that the keyways, and the bore in the inner face of the main frame, are clean. Apply a generous coating of ANTISEIZE paste or EP2

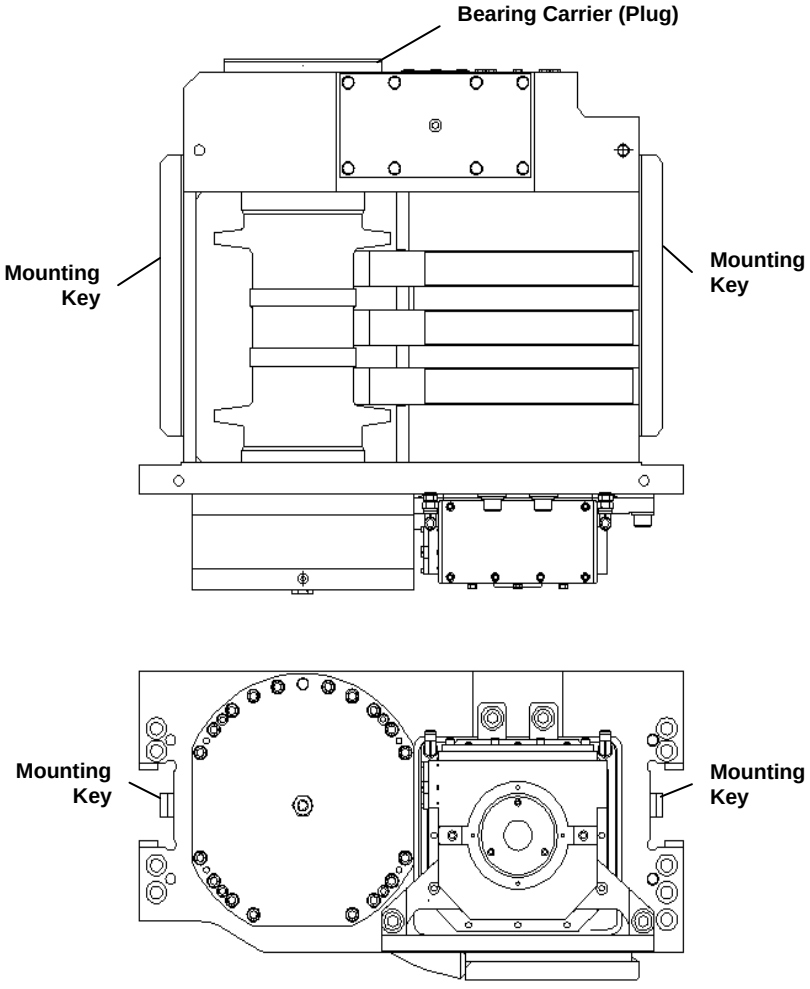

Figure 8.5

grease to aid re-installation.

2. Coat the mounting keys on the gear case with ANTISEIZE paste or EP2 grease. Also coat the bearing carrier on the inboard end of the main gear case

CRAWLER CHAIN INSTALLATION

1. The miner should placed in the same condition as for removing a crawler chain, that is, miner chassis raised and securely blocked, gathering head full up and blocked, cutting head resting on gathering head, and conveyor in its lowest position. All power should be removed from the machine and all circuit breakers switched to the "OFF" position.

WARNING: ISOLATE MACHINE AS PER MINES ISOLATION PROCEDURES.

IMPORTANT

ENSURE THAT THE GREASE PRESSURE IN THE CRAWLER CHAIN TAKE-UP CYLINDER IS RELIEVED (CRAWLER CHAIN REMOVAL, STEP 7) AND THAT THE CYLINDER IS FULLY COLLAPSED.

2. Lay the crawler chain on the mine bottom at the rear of the miner and extending back from the miner. The grousers should be on the bottom side on the mine bottom. (see figure 8.11 for correct direction).

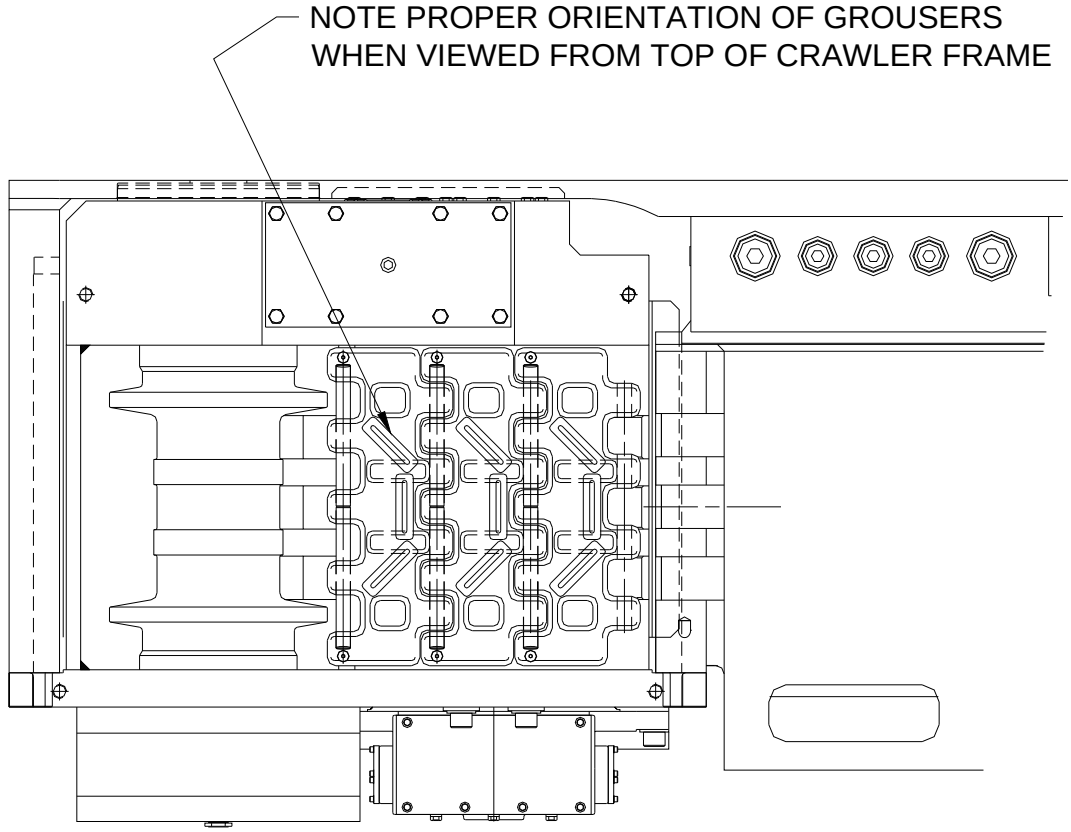

Figure 8.11

1. Position the machine so that they back frame portion under the conveyor can be easily reached and ensure conveyer is supported by safety stop attached to machine.

2. Lower the stabilizer shoe so it is resting on the mine floor

WARNING: ISOLATE MACHINE AS PER MINES ISOLATION PROCEDURES.

3. Remove pods, covers and guards from the right hand rear of mainframe to reveal cylinder. Remove the hydraulic lines, and cap them. Remove all lube lines, and cap them.

4. Attach a lifting device to the cylinder and tension it. Remove hydraulic hoses to cylinder and plug and mark.

5. Remove the two (2) cap screws from the keeper plate (RH side) that secures the bottom cylinder pin to the stabilizing shoe and remove pin. See figure 9.1.

6. Remove the four (4) 1” x 4” HHCS from the top of the cylinder mounting clevis. See figure 9.1.

WARNING: When the 4 – 1” x 4” hex head cap screws are removed, the cylinder end will fall unless supported.

7. Slowly manoeuvre the cylinder out of and away from the main frame by lifting thru the cavity in which it is mounted.

8. When cylinder is suspended above the main frame.

9. Reapply power to machine as per mines isolation procedures.

10. Drive miner forward to allow cylinder to be lowered to mine floor.

Installation

TOOLING REQUIRED
General tools – Allan Keys, spanners, hammer etc
Sliding hammer 1” NPT for removing cylinder pins
1 long sling about 6 metres long
1 sling 1 tonne capacity 1.5 metres long
1 tonne lifting block
Timber packing
Eimco
Hydraulic external power sorce

WARNING: ISOLATE MACHINE AS PER MINES ISOLATION PROCEDURES.

1. Position the cylinder using the Eimco jib onto the gathering head with the rod end of the cylinder pointing into the machine with the gathering head and conveyor at their lowest position and all power off the machine

2. Using lifting gear used and positioned for removal, attach sling and slowly manoeuvre the cylinder in position on the frame, being sure all dirt and debris are cleaned out of the area for the auger raise cylinder

3. Install the cylinder pin into bottom end of the cylinder and mainframe clevis

4. Using external power sorce, extend the cylinder into the top clevis on cutter head frame and line up bores. Install the two cylinder pin keeper plates, one at each end of the cylinder. The load holding valve may need to be removed to do this. See figure 10.1.

5. Install top cylinder pin

6. Install keeper plates

7. Remove the lifting device and attach the hydraulic lines to the cylinder

8. Lubricate the cylinder pins using EP2 Grease and clean up area

9. Replace all covers

10. Turn power on the machine and remove head stops and check cylinder operation

REFER FIGURE 10.1

PLOW CYLINDERS

TOOLING REQUIRED
General tools – Allan Keys, spanner, hammer, chisel, etc
Long screwdriver or pinchbar

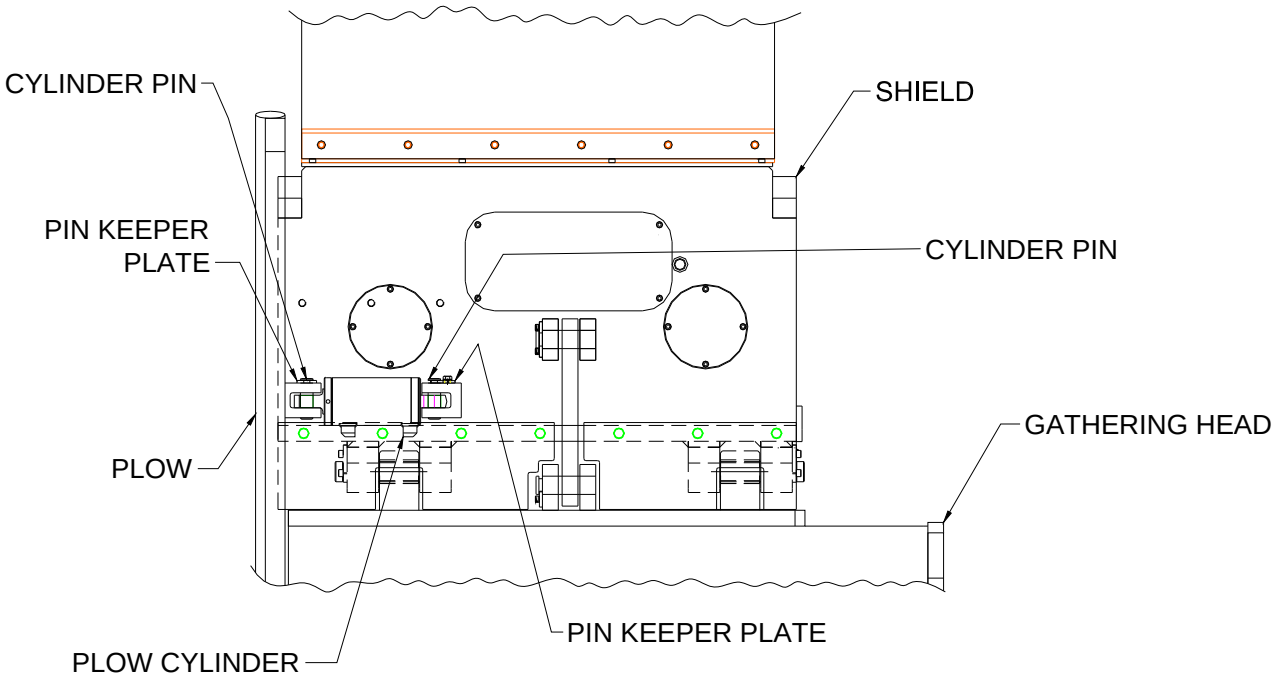

Figure 10.5

WARNING: SUCTION BALL VALVE MUST BE OPENED BEFORE STARTING PUMP MOTOR.

9. The hydraulic tank will need to be checked for the correct level before repowering the machine.

10. If hydraulic tank level is too low for the hydraulic oil fill pump to work. Using hand pump or airpump connect delivery hose to the ¾" JIC fitting on the left side return filter see figure 10.8(new figure required). When oil is replaced into the hydraulic tank it must pass through the return filter.

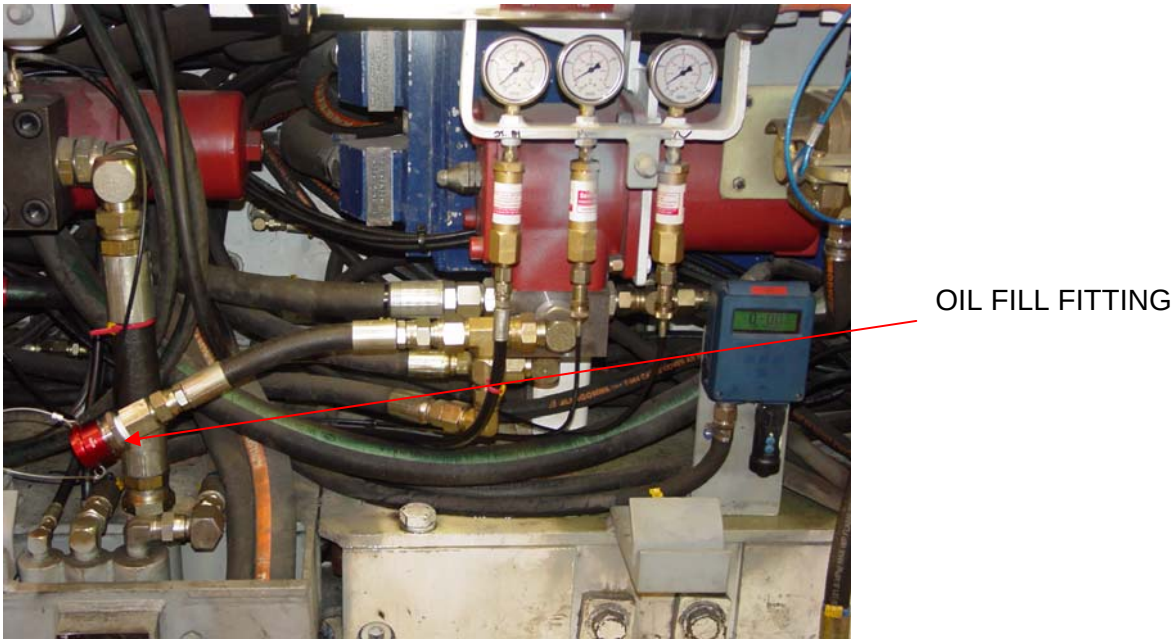

Figure 10.8

11. When oil has reached the correct level remove delivery hose and recap the return filter fitting.

12. Remove isolation tags and re-power machine.

13. Place the miner in mining mode so only the right side pump will start.

NOTE: The priming of both pumps will be required after changing either pump.

14. Start the right side pump and immediately turn off after starting. If there is air in the suction lines the pump will make a rattling noise.

15. Repeat the above procedure until the noise abates and there is no evidence of air in the pump.

LUBRICATION CHART

No.	ITEM DESCRPTION	LUBRICANT TYPE	FILLING METHOD	FILTERING REQUIRED	LUBE INTERVAL	UNIT CAPACITY	REPLACEMENT INTERVAL	SAMPLE INTERVAL
1	CUTTING MOTOR	SHELL STAMINA RL2	GREASE GUN	NO	MONTHLY	4 PUMPS	N/A	N/A
2	PUMP MOTOR	SHELL STAMINA RL2	GREASE GUN	NO	MONTHLY	4 PUMPS	N/A	N/A
3	INPUT CUTTING GEARCASE	ISO 460 EP GEAR OIL	MANUAL FILL	YES	3 SHIFTS	6 LITRES	30 SHIFTS	60 SHIFTS
4	MAIN CUTTING GEARCASE	ISO 460 EP GEAR OIL	MANUAL FILL	YES	3 SHIFTS	6 LITRES	30 SHIFTS	60 SHIFTS
5	TRAM GEARCASE	ISO 460 EP GEAR OIL	MANUAL FILL	YES	3 SHIFTS	38 LITRES	30 SHIFTS	60 SHIFTS
6	CRAWLER IDLER ROLLER	ISO 460 EP GEAR OIL	MANUAL FILL	YES	3 SHIFTS	SEE NOTE 5	360 SHIFTS	60 SHIFTS
7	MAIN HYDRAULIC TANK	ISO 68 AW HYD OIL	MANUAL FILL	YES	3 SHIFTS	2000 LITRES	AS NEEDED	60 SHIFTS
8	CUTTING HEAD PIVOT	EP2 MULTI-PURPOSE GREASE	GREASE GUN	NO	3 SHIFTS	50 CU. CM.	N/A	N/A
9	GATHERING HEAD PIVOT	EP2 MULTI-PURPOSE GREASE	GREASE GUN	NO	3 SHIFTS	50 CU. CM.	N/A	N/A
10	CONVEYOR PIVOT	EP2 MULTI-PURPOSE GREASE	GREASE GUN	NO	3 SHIFTS	50 CU. CM.	N/A	N/A
11	CONVEYOR SWING PIVOT	EP2 MULTI-PURPOSE GREASE	GREASE GUN	NO	3 SHIFTS	50 CU. CM.	N/A	N/A
12	STAB SHOE PIVOT (FRAME)	EP2 MULTI-PURPOSE GREASE	GREASE GUN	NO	3 SHIFTS	50 CU. CM.	N/A	N/A
13	UPPER CUTTING CYLINDER PIN	EP2 MULTI-PURPOSE GREASE	GREASE GUN	NO	3 SHIFTS	50 CU. CM.	N/A	N/A
14	LOWER CUTTING HEAD CYLINDER PIN	EP2 MULTI-PURPOSE GREASE	GREASE GUN	NO	3 SHIFTS	50 CU. CM.	N/A	N/A
15	UPPER GATHERING HEAD CYLINDER PIN	EP2 MULTI-PURPOSE GREASE	GREASE GUN	NO	3 SHIFTS	50 CU. CM.	N/A	N/A
16	LOWER GATHERING HEAD CYLINDER PIN	EP2 MULTI-PURPOSE GREASE	GREASE GUN	NO	3 SHIFTS	50 CU. CM.	N/A	N/A
17	UPPER CONVEYOR RAISE CYLINDER PIN	EP2 MULTI-PURPOSE GREASE	GREASE GUN	NO	3 SHIFTS	50 CU. CM.	N/A	N/A
18	LOWER CONVEYOR RAISE CYLINDER PIN	EP2 MULTI-PURPOSE GREASE	GREASE GUN	NO	3 SHIFTS	50 CU. CM.	N/A	N/A
19	FRONT CONVEYOR SWING CYLINDER PIN	EP2 MULTI-PURPOSE GREASE	GREASE GUN	NO	3 SHIFTS	50 CU. CM.	N/A	N/A
20	REAR CONVEYOR SWING CYLINDER PIN	EP2 MULTI-PURPOSE GREASE	GREASE GUN	NO	3 SHIFTS	50 CU. CM.	N/A	N/A
21	UPPER STAB SHOE CYLINDER PIN	EP2 MULTI-PURPOSE GREASE	GREASE GUN	NO	3 SHIFTS	50 CU. CM.	N/A	N/A
22	LOWER STAB SHOE CYLINDER PIN	EP2 MULTI-PURPOSE GREASE	GREASE GUN	NO	3 SHIFTS	50 CU. CM.	N/A	N/A
23	CRAWLER CHAIN	WASTE OIL	BUCKET	NO	3 SHIFTS	AS NEEDED	N/A	N/A
24	CONVEYOR CHAIN	WASTE OIL	BUCKET	NO	3 SHIFTS	AS NEEDED	N/A	N/A
25	CONVEYOR TAKE-UP SHAFT	EP2 MULTI-PURPOSE GREASE	GREASE GUN	NO	3 SHIFTS	50 CU. CM.	N/A	N/A
26	E/W TAKE-UP CYLINDER FRONT	EP2 MULTI-PURPOSE GREASE	GREASE GUN					
27	E/W TAKE-UP CYLINDER REAR	EP2 MULTI-PURPOSE GREASE	GREASE GUN				N/A	N/A
28	E/W CONVEYOR IDLER ROLLER FRONT	EP2 MULTI-PURPOSE GREASE	GREASE GUN	NO	3 SHIFTS	50 CU. CM.	N/A	N/A
29	E/W CONVEYOR IDLER ROLLER REAR	EP2 MULTI-PURPOSE GREASE	GREASE GUN	NO	3 SHIFTS	20 CU. CM.	N/A	N/A
30	E/W CONVEYOR DRIVE SHAFT FRONT	EP2 MULTI-PURPOSE GREASE	GREASE GUN	NO	3 SHIFTS	50 CU. CM.	N/A	N/A
31	E/W CONVEYOR DRIVE SHAFT REAR	EP2 MULTI-PURPOSE GREASE	GREASE GUN	NO	3 SHIFTS	50 CU. CM.	N/A	N/A
32	CONVEYOR MOTOR	SHELL STAMINA RL2	GREASE GUN	NO	MONTHLY	4 PUMPS	N/A	N/A
33	UNIVERSAL JOINT	EP2 MULTI-PURPOSE GREASE	GREASE GUN	NO	3 SHIFTS	20 CU. CM.	N/A	N/A
34	TAIL-DRIVE GEARBOX	ISO 460 EP GEAR OIL	MANUAL FILL	YES	3 SHIFTS	8 LITRES	30 SHIFTS	60 SHIFTS

MAINTENANCE MODE

There are (2) two power on operations available in Maintenance Mode on the miner.

1. Hydraulic Oil Power Fill
2. Gear Case Oil Power Fill

If running, stop pumps prior to either of the power fill mode procedures.

Prior to selecting Maintenance Mode, isolate the CUTTER, GATHERING HEAD & TRACTION circuit breakers and tag out as per mine isolation procedures. Interlocking in the radio system will stop pumps if all three circuit breakers are not in the off position.

Hydraulic Oil Power Fill

The following procedure is to be followed to carryout hydraulic oil power fill tasks safely:-

1. Ensure Cutter, Gathering Head and Traction circuit breakers are isolated as per mines procedures.

2. Place selector valve handle in maintenance mode (lever in centre position).

3. Start machine.

NOTE: PUMP MOTOR WILL TURN OFF IF THE 3 CIRCUIT BREAKERS AS IN 1 ARE NOT IN THE OFF POSITION

4. Remove ¾" JIC cap from fill hose located forward of the left side main electrical control case and place in hydraulic oil drum. See photo page 17.

5. Open ball valve located forward of the electrical control case near oil fill hose.

6. Position oil fill valve (refer page 17) into hydraulic oil fill.

7. Full the hydraulic tank until oil flows from the ball valve.

NOTE: A CONTINUAL FLOW IS REQUIRED AS THE LINE TO BALL VALVE MAY HAVE OIL THAT DRIPS OUT WHEN OPENED

Power Cut Off Control – D

Pressure cut off corresponds to a pressure control which adjusts and lowers the pump displacement when the pressure signal valve setting is reached. This function overrides power control. i.e. Below the pressure cut off setting the power control function is performed. If the 'D' is adjusted to low it will affect the pressure of the machine. If 'D' is adjusted to high it can cause component failure.

Load Sensing Control – S

The load sensing control works as a flow controller controlled by load pressure and co-ordinates the pump displacement to the quantity required by the actuator. If the 'S' is adjusted to low it will not allow pump to deliver full flow. If the 'S' is adjusted to high it will cause increased oil temperature and erratic machine operation.

TOOLING REQUIRED
4 MM Allen Key 13 mm AF Spanncer

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