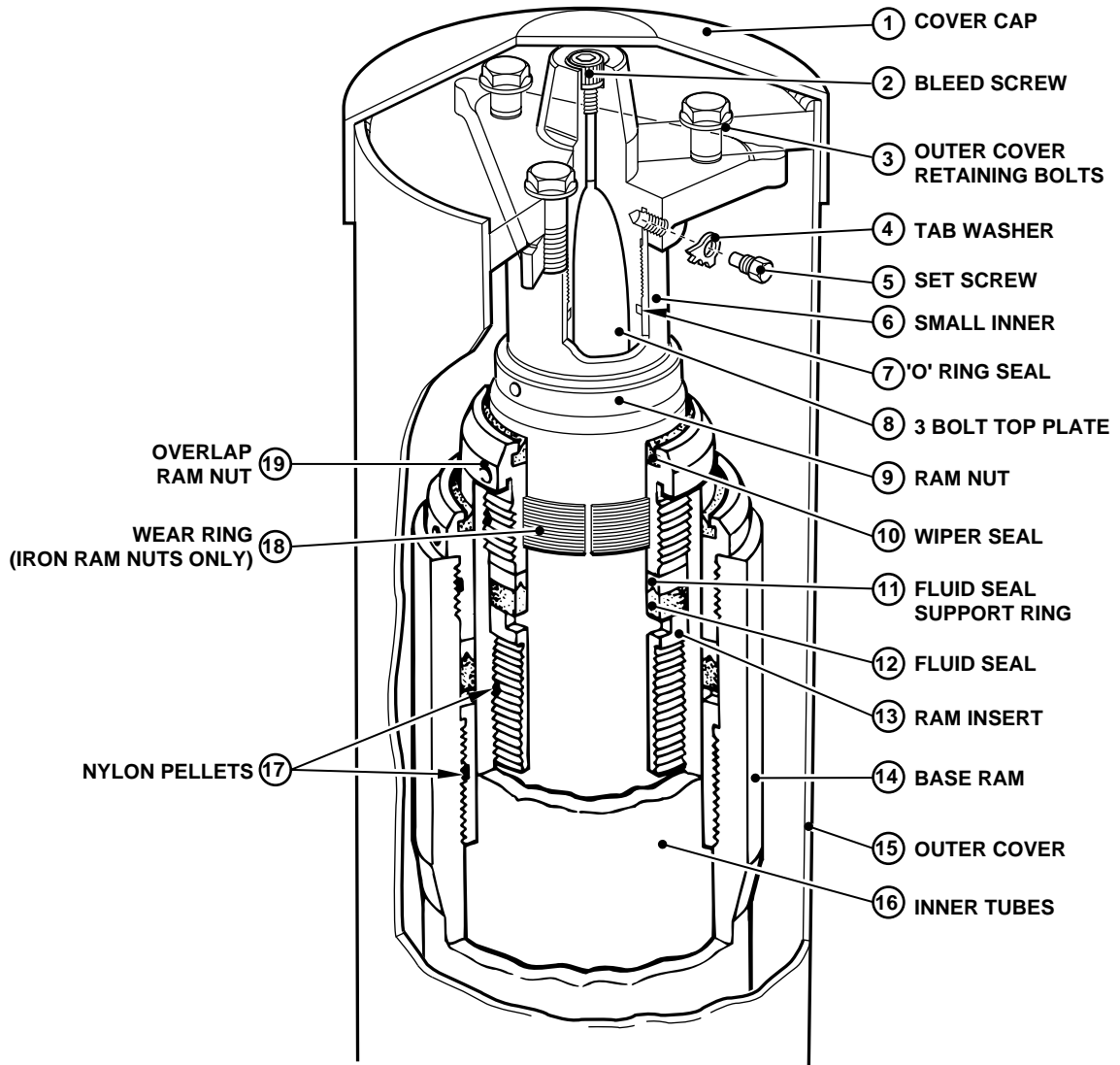


SERVICE INFORMATION



SEAL SERVICING D SERIES HOISTS (OUTER COVER & 3 BOLT FIXING)



FLUID SEAL SERVICING WITH HOIST FITTED TO CHASSIS

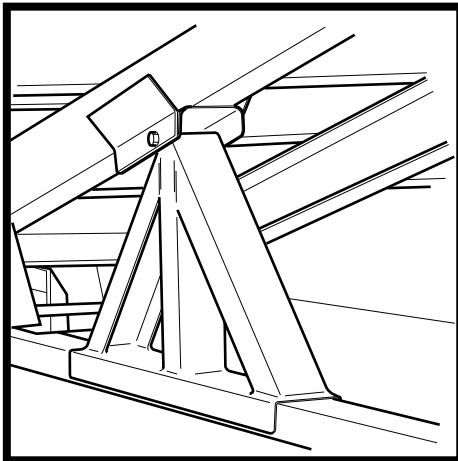
A design feature of the hoist is the way any individual ram nut and seal can be removed without dismantling the complete hoist, or without disturbing any other ram nut or seal in the nest of rams.

For individual seal replacement, this can be carried out with hoist remaining fitted to chassis. For complete overhaul or full seal change, we recommend the hoist is removed from vehicle for servicing.

SEAL REMOVAL - hoist fitted to chassis.

- 1 Slightly raised body - approximately 25mm, to "load" cylinder and prevent inner nest of rams from turning when releasing outer cover. Remove cover cap.
- 2 Remove M16 x 3 self-locking bolts from top of outer cover.

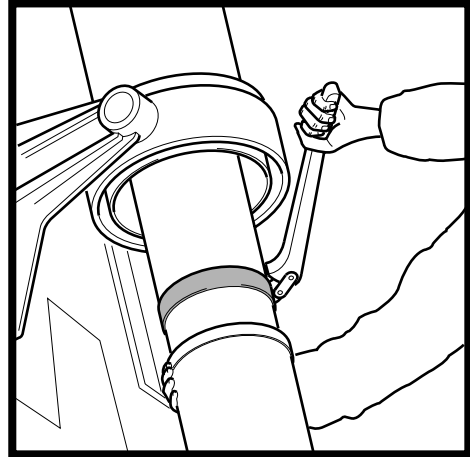
FIG
1



- 3 Raise body until cover is approximately 400mm clear of base ram and secure prop body (Fig 1).
- 4 Wedge cylinder assembly against chassis to prevent falling.
- 5 Place hoist control valve handle into "LOWER" position, to release pressure in cylinder and allow oil to return to tank. Slacken bleed screw in top of spigot on top cap.

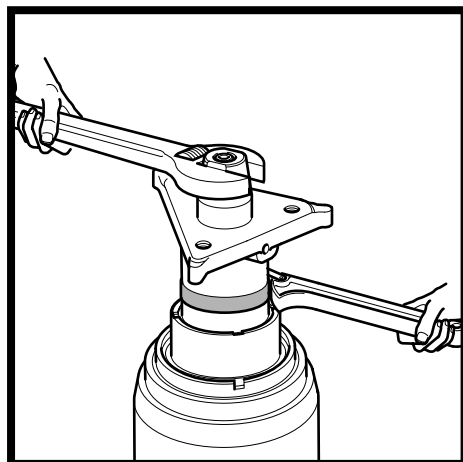
- 6 Using strap spanner screw down the nest of inners so as to be free from the outer cover (ensuring wedge support is in position) and prop the cylinder assembly in a vertical position (Fig 2).

FIG
2

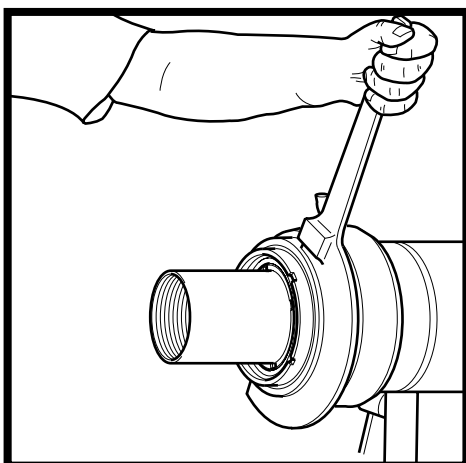


- 7 Pull out small inner approximately 100mm and clamp to retain in position.
- 8 Release tab washer and the 8mm locking set screw situated on the triangular side face of the top plate casting.
- 9 Using a strap spanner to stop the small inner lining turning unscrew and remove top plate (Fig 3).

FIG
3



**FIG
4**

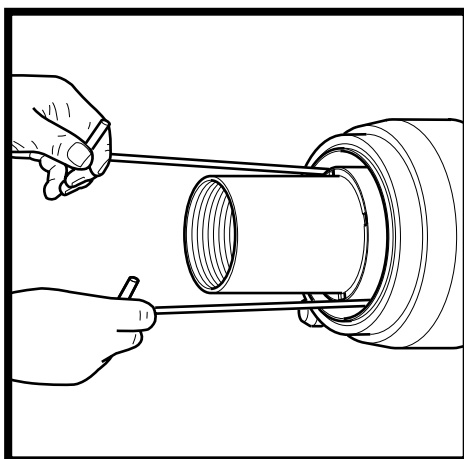


- 10 Select RK spanner for appropriate ram nut to be removed (refer to chart) and remove ram nut (Fig 4).

NOTE: It may be necessary to strike the spanner with a hammer to initially shock the nut free.

- 11 When removing overlap ram nut, BEFORE unscrewing, scribe a witness mark with a sharp pointed tool on the tube at the bottom edge of the ram nut, to provide a reference point when re-fitting.

**FIG
5**



- 12 Remove fluid seal using two extractor tools. The seal extractor tools are of a "corkscrew" type and must be securely screwed through the seal support ring and fluid seal at 180 degrees to each other. Pull on both extractors and remove both support ring and seal (Fig 5).

NOTE: Care must be taken not to damage the seal housing inside the tube.

SEAL REMOVAL - hoist removed from chassis.

Follow steps 1-6 opposite leaving outer cover fitted to body, then:

- 1 Detach the hydraulic pipe and place a suitable plug in the feed boss to prevent:
 - (a) dirt getting in
 - (b) the loss of hydraulic oil
- 2 Remove one of the cradle trunnion pivot support brackets and carefully remove the cylinder from its fixings.
- 3 Drain the residue of oil from the cylinder into a clean receptical (if the oil is clean it may be re-used to top up the hydraulic tank on completion of re-fitting).
- 4 Support cylinder in horizontal position with suitable clamp. And follow steps 7-9 to remove 3 bolt top plate.
- 5 Continue as steps 10-11 for seal replacement.

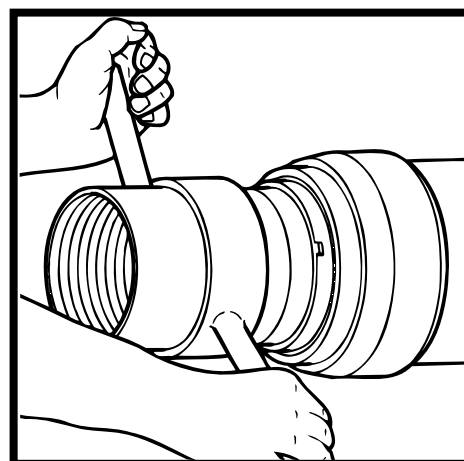
INSERT REMOVAL

The ram insert does not need replacing when fitting a new fluid seal. Replace only when damaged or worn.

Procedure for removal and re-fitting is as follows:

- 1 With fluid seal removed, insert appropriate tool (refer to chart) into slots on top of insert. Unscrew the insert and withdraw over ram tube.

**FIG
6**



- 2 Fit two new nylon securing pellets and refit insert using same tool (Fig 6).

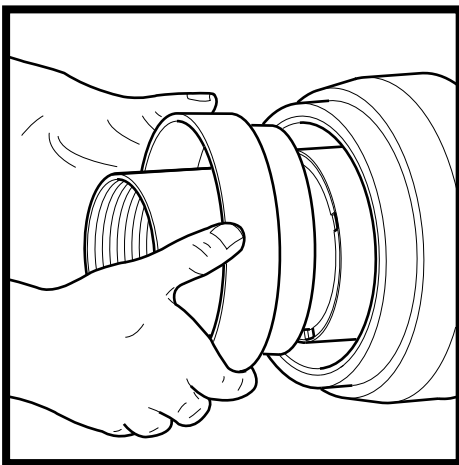
IMPORTANT: The insert should be tightened until the shoulder of the tool makes contact with the top of the tube (Fig 6).

SEAL REPLACEMENT AND RE-ASSEMBLY

NOTE:

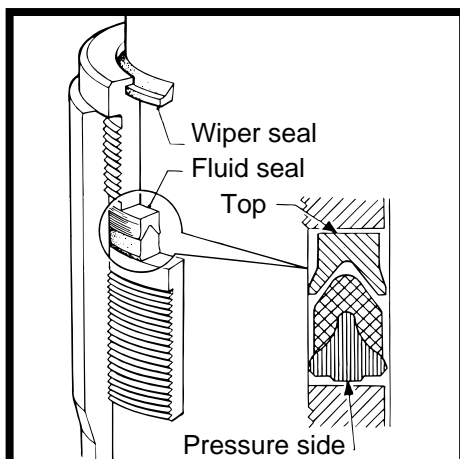
- a) It is recommended that the fluid seal be well lubricated with grease before fitting to hoist.
- b) The seal housing should be inspected for score marks, if housing is scored, tube replacements must be considered.
- c) Before fitting the seal, clean and inspect threads.
- d) Nylon locking pellets should always be renewed when ram nuts and / or inserts are refitted.

**FIG
7**



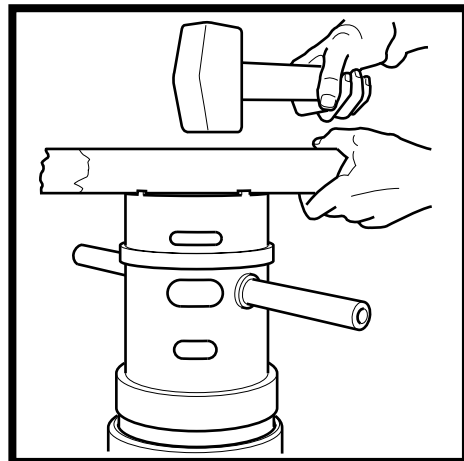
- 1 Select appropriate shim tool, (refer to chart) grease inside diameter and place over threads (Fig 7).

**FIG
8**



- 2 Place seal into shim housing, fluid seal first then support ring (Fig 8).

**FIG
9**



- 3 Select appropriate tool, (refer to chart) with the tool reversed (slot locating pins on top). Place a hardwood block across the top face and using a hammer drive the seal past the shim and into the housing (Fig 9).

NOTE: Shim will rotate freely on the threads when seal is correctly positioned in housing.

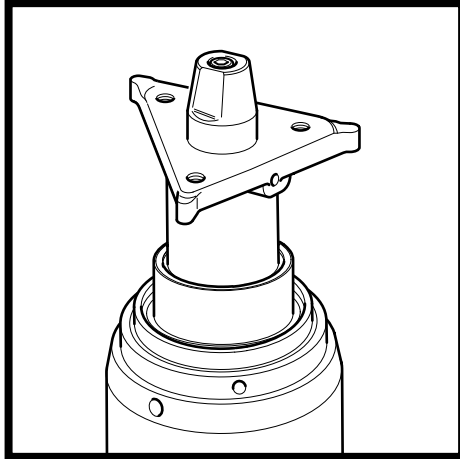
- 4 Hook out wiper seal in ram nut and replace with new seal. Fit new nylon securing pellets into blind holes in nut. Grease threads.
- 5 Using RK spanner, screw the ram nut into the tube until the lower face of the ram nut shoulder is in contact with the tube. To ensure the ram nut is fully home strike the RK spanner a sharp blow with a hammer.

NOTE: There must be no gap between the ram nut shoulder and the tube.

- 6 When replacing overlap ram nuts, confirm that tube has entered recess in overlap nut by comparing witness mark made on tube prior to removal.

REPLACING 3 BOLT TOP PLATE

FIG
10



- 1 Identify witness line on small inner 9mm down from top of tube.
- 2 Renew o-ring seal on 3 bolt top plate and liberally smear it with grease. Position top plate into small inner (take care not to damage o-ring seal on threads) and with appropriate spanner on top plate spigot, screw into position. To ensure top plate is fully home, strike the spanner a sharp blow with a hammer.

NOTE: Confirm that tube has entered recess in top plate check witness mark on tube is just visible.

- 3 It is not practical to assume that original top plate retaining setscrew holes will re-align. To refit the setscrew use one of the two alternative holes in adjacent triangular faces which for ease of identification have been partially pre-drilled.
- 4 Using a 6.8mm diameter drill proceed to further drill the selected hole to an overall depth of 24mm*.

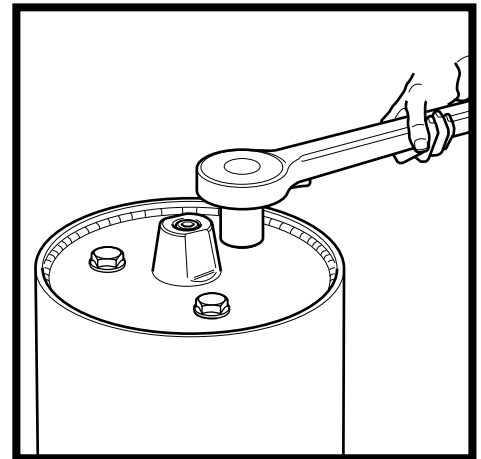
*This dimension **MUST NOT** be exceeded.

- 5 Hole to be tapped M8 x 1.25p to a depth of 10mm and made free from swarf.
- 6 Screw locking setscrew into position and tighten before engaging tabs on tab washer.
- 7 Tighten bleed screw in top plate spigot.

RE-ASSEMBLY TO OUTER COVER AND INSTALLATION TO CHASSIS

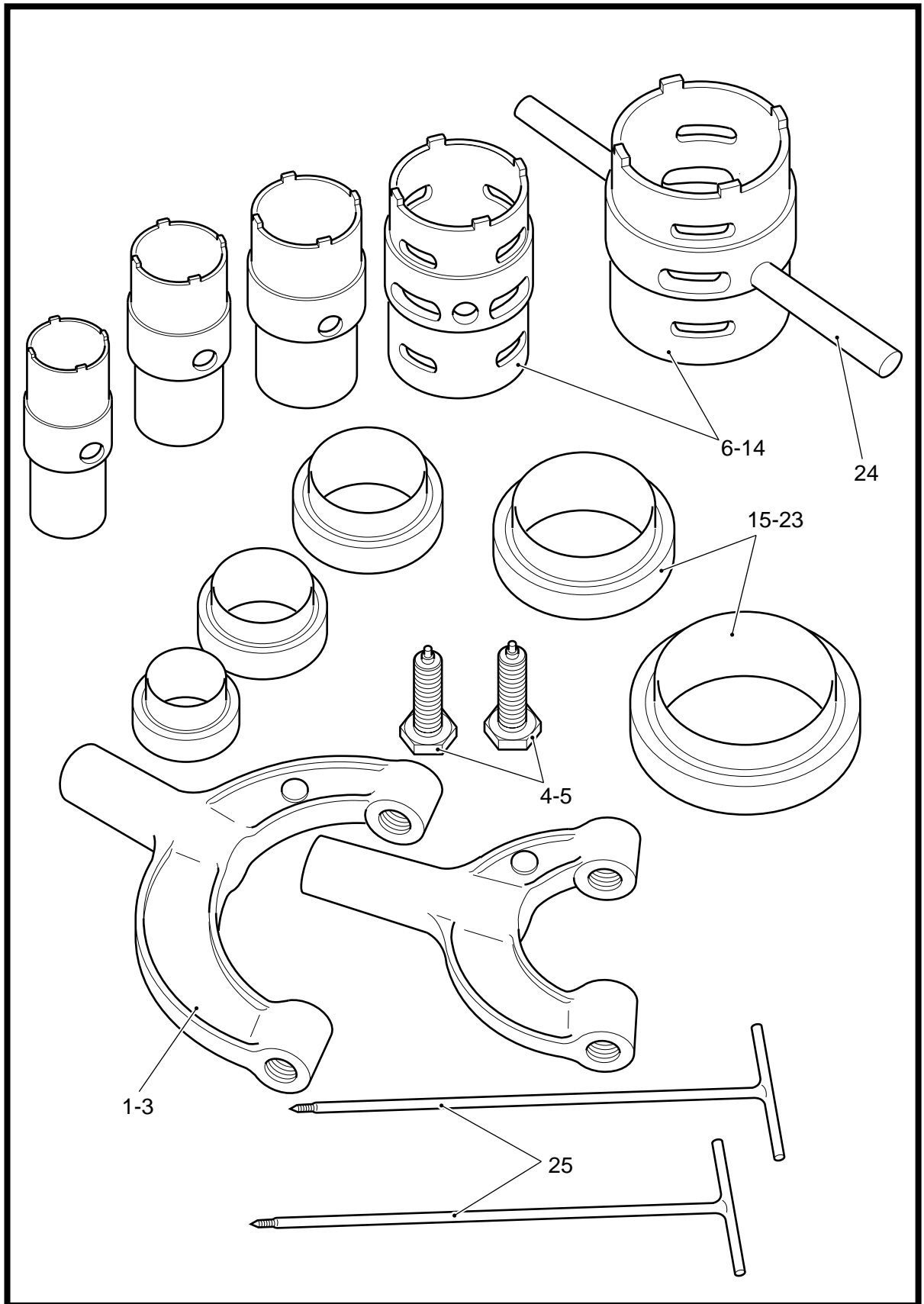
- 1 If cylinder has been removed, grease trunnion arms and refit to chassis.
- 2 Reconnect hydraulic pipes and check oil level in tank. Replenish if necessary.
- 3 With cylinder supported in line with outer cover, engage PTO and move hoist control to 'tip'. Carefully guide extending inner ram tubes back into outer cover and when body just begins to lift, move control handle into 'hold' position.
- 4 Remove body props and for safety reasons lower body to approximately 100mm from chassis.
- 5 Align the three holes in the outer cover top plate, by using a spanner on the projecting flats of the spigot. Insert the M16 x 3 self locking bolts and tighten to a torque of 270Nm (200lb ft). (See Fig 11).

FIG
11



- 6 Fully tip body two or three times. Visually check for any oil leakage.
- 7 Bleed air from cylinder by raising body approximately 300mm and putting hoist control into 'hold'. Slacken bleed screw about one turn, as air escapes the body will come down slowly. When oil flows freely, tighten the bleed screw.
- 8 Check oil level with body in lowered position, top up if necessary. Again check operation of hoist.
- 9 Replace the plastic cover to protect securing bolts and bleed screw from weather damage.

TYPICAL TOOLKIT





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