# Service Manual

# Attachments

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**Issue 6***

## Hydraulic Oils, Filtering and Cooling

**Introduction**

Generally speaking the hydraulic oil specified for the carrier can be used in the attachment. However, since working with the attachment will heat the oil much more than excavation work, the viscosity of the oil must be checked periodically when working in hot climates.

When the attachment is used continuously, the temperature of the hydraulic oil normalises at a certain level depending on conditions and the carrier. At this temperature, the viscosity of the hydraulic oil should be 20 - 40 cSt (2.90 - 5.35 °E).

The attachment must not be started if the viscosity of the hydraulic oil is above 1000 cSt (131 °E) or operated when the viscosity of the hydraulic oil is below 15 cSt (2.35 °E).

**Possible Result of using incorrect Oil**

Oil too thick:
- Difficult start up.
- Stiff operation.
- Motor runs slowly.
- Danger of cavitation in the pumps and motor.
- Sticky Valves.
- Filter bypass, impurities in oil not removed.

Oil too thin:
- Efficiency losses (internal leaks).
- Damage to gaskets and seals, leaks.
- Accelerated wearing of parts, because of decreased lubrication efficiency.

**Note:** We recommend different hydraulic oils for use in summer and winter if there is an average temperature difference of more than 35 °C (95 °F).

**Special Oils**

In some cases special oils (e.g. biological oils and non-inflammable oils) can be used with the attachment. Observe the following aspects when considering the use of special oils.

- The viscosity range in the special oil must be in the given range (15 - 1000 cSt).
- The lubrication properties must be good enough.
- The corrosion resistance properties must be good enough.

**Note:** Although a special oil could be suitable for the carrier, it may not be suitable for the attachment. Please check with your JCB Distributor.

JCB OWNERS SHOULD ALWAYS CONSULT THEIR JCB DISTRIBUTOR BEFORE CHANGING THE MACHINE HYDRAULIC OIL.

**Hydraulic Oil Purity**

No separate filter is required for the attachment. The carrier's oil filter will clean the oil flowing through the attachment. The purpose of the oil filter is to remove impurities from the hydraulic oil since they cause accelerated component wear, blockages and even seizure. Impurities also cause the oil to heat and deteriorate. Air and water are also impurities in oil. Not all impurities can be seen with the naked eye.

Impurities enter the hydraulic system:
- During hydraulic oil changes and refilling.
- When components are repaired or serviced.
- When the attachment is being installed on the carrier.
- Because of component wear.

**Oil Filter**

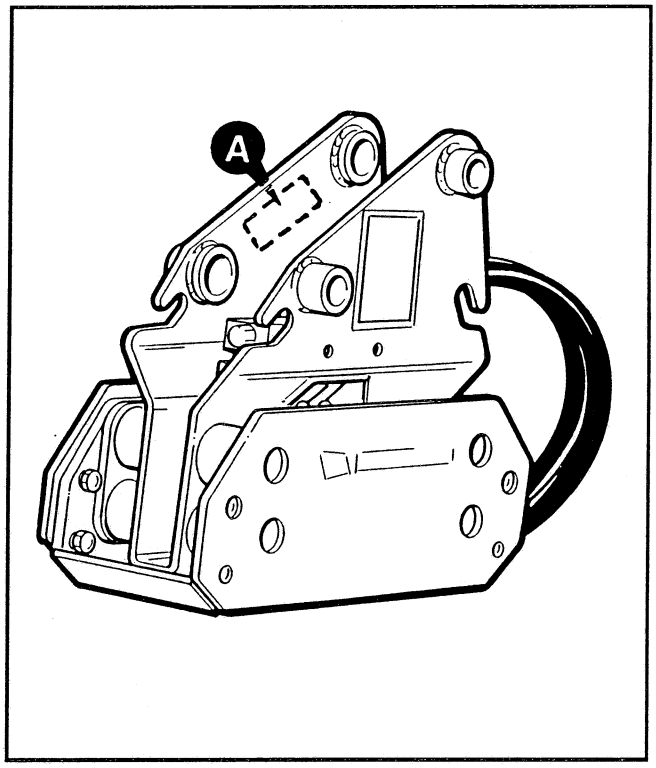
In hydraulic attachment work, the carrier oil filter must fulfil the following specifications:
- The oil filter must allow maximum particle size of 25 microns (0.025 mm).
- The oil filter material must be man-made fibre cloth or very fine gauge metallic mesh to withstand pressure fluctuations.
- The oil filter must have a volume flow capacity of at least twice the attachment's maximum flow.

In general, oil companies guarantee new oils to have a particle count of 40 microns maximum. When adding oil to the system the oil must be filtered.

## Compactor Identification

The attachment part number is engraved on a data plate **A**.

Always quote this part number when ordering replacement parts.




## Safety

**⚠ WARNING**

**You or others can be injured if you operate or maintain any attachments without first studying the machine Operator Handbook and the attachment Operator Handbook. Read the safety instructions before operating or maintaining the attachment. Do not operate or maintain the attachment without the relevant manuals or if there is anything you do not understand.**

ATT-1-1

## Regulator Valve (continued)

### Adjustment and Test (continued)

**7** Adjust **F** to obtain the correct flow meter reading (see **Technical Data**). When the correct reading is obtained tighten locknut **E**. Recheck flow reading, repeat procedure if necessary.

**8** Stop the engine, remove the key, operate the controls a few times to remove residual hydraulic pressure.

**9** Disconnect the Compactor from the machine hydraulic circuit (see **Quick Release Coupling** in the machine Operator Handbook).

**10** Remove the flow test equipment from the valve and reconnect hose **4** at **A**.

**11** Reconnect inlet **4**, outlet **7** and drain **6** hoses to the motor at **B**, **C** and **D** respectively. The Compactor is now ready for operation.

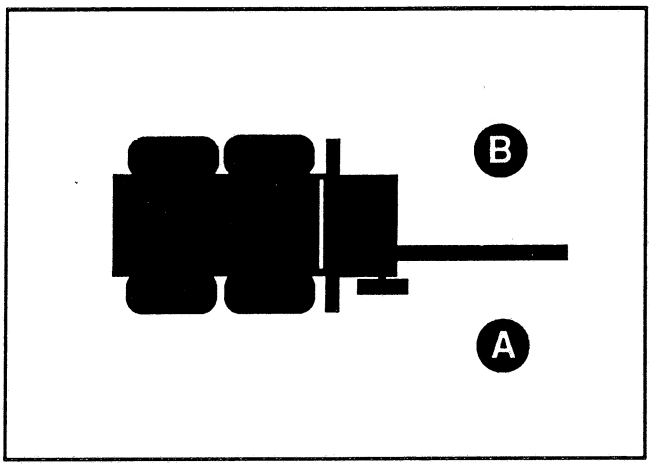
## Trencher Identification

The attachment part number is stamped on the data plate.

## Left Hand/Right Hand

Sitting correctly in the machine and looking at the attachment.

**A** = Right Hand
**B** = Left Hand

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ATT-1-1

## Lower Boom Housing

### Removal and Replacement

#### Removal

**Note:** The numerical sequence is a guide to dismantling. For assembly the sequence should be reversed.

1 Follow the procedure for removing the digging chain. (See **Digging Chain, Removal and Replacement**).

2 Once the chain has been removed the lower boom assembly **1** can be pulled from the digging boom.

3 Remove the idler bolt **2**. This will enable the idler roller assembly **3** to be lifted clear. Remove and discard the disc seals **4**.

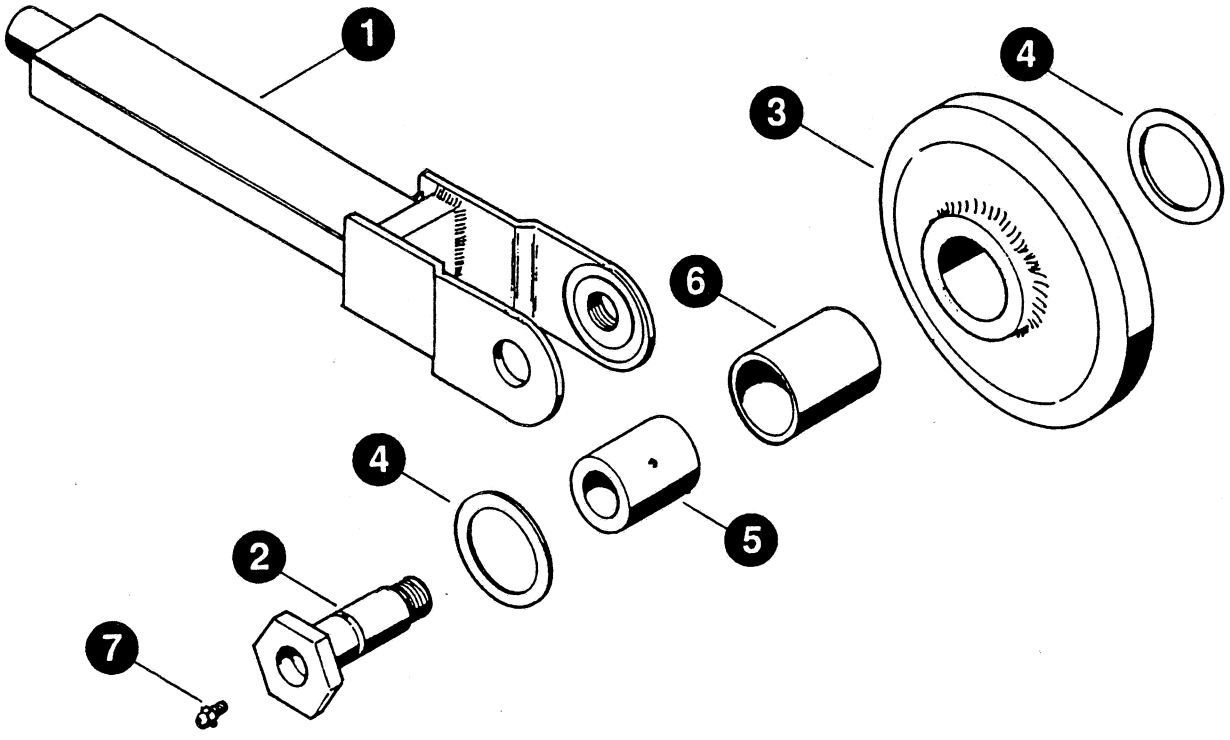
4 Using a suitable mandrel drive the idler spindle bush **5** and bronze bush **6** from the idler roller **3**.

5 Inspect all surfaces for abrasions and wear. Replace any worn parts.

6 Remove the grease nipple **7** and clean all greaseways.

#### Replacement

Use new disc seals **4**. On completion pump grease into the grease nipple (6 shots should be sufficient).



## Gauge Manifold

### Description

The gauge manifold is designed to carry the inlet and outlet hoses from the carrier, the cross line relief valve, the pressure and temperature gauges and the inlet and outlet hoses to the motor.

### Removal and Replacement

1 Follow procedure in the Operator Manual for disconnecting the attachment (see **Operator Manual Disconnecting/Connecting Hydraulic Hoses**).

2 Remove inlet/outlet hoses from the carrier at **1/2**.

3 Remove motor inlet/outlet hoses from the adaptors **3, 4**.

4 Remove bolts **5** (2 off) and washers **6** (2 off). Remove manifold **7** from the cover **8**.

5 All hoses should be plugged to prevent ingress of dirt.

6 If the manifold is off the attachment for any length of time all ports should be plugged.

### Dismantling and Assembly

#### Dismantling

1 Remove the valve cartridge **9** from the manifold **7**. Remove and discard all 'O' rings.

2 The male/male adapters **1, 2, 3, 4** together with their bonded seals **10** (4 off) can be removed. Discard the bonded seals.

3 Remove the set screw **11** and then pressure gauge **12** together with the bonded seal **13**. Discard the bonded seal.

4 Remove temperature gauge **14**.

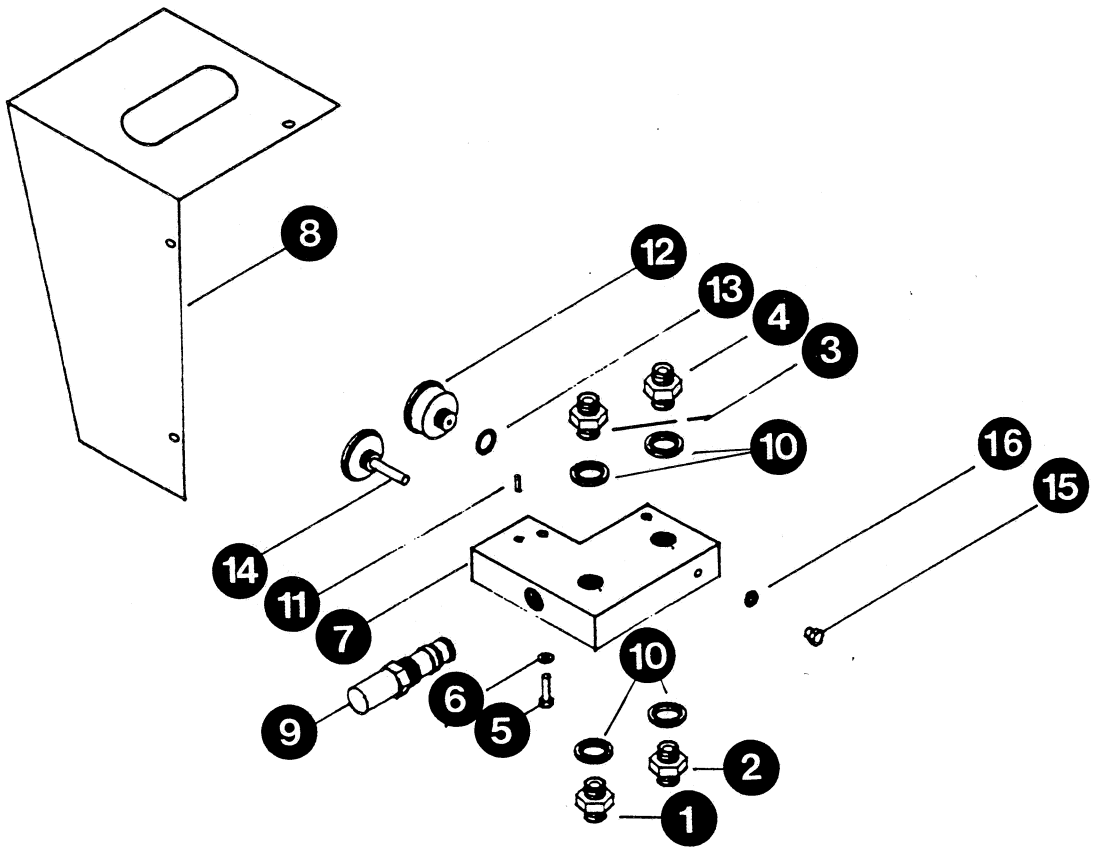
5 Remove plug **15** and bonded seal **16**. Discard seal.

#### Inspection

Wash all galleries and components in a suitable solvent, lightly oil all parts with hydraulic fluid. Do not dismantle the cross line relief valve but renew all 'O' rings.

#### Assembly

Assembly is a reversal of the dismantling procedure.



## Lubricants

| ITEM | CAPACITY Litres (UK Gal) | FLUID/LUBRICANT | INTERNATIONAL SPECIFICATION |
|---|---|---|---|
| Hydraulic System | As detailed in the machine Operator Handbook, Service Capacities and Lubricants | JCB High Performance Hydraulic Oil (Above 38 °C, 100 °F)<br>JCB Special Hydraulic Fluid (Below 38 °C, 100 °F) | ISO VG46<br>ISO VG32 |
| Grease Points | - - - | JCB MPL Grease | Lithium based, No.2 consistency |
| Gear Box | 2 litres (0.44 gall) | JCB Super Universal Agricultural Oil<br>-15 °C to 30°C (5 °F to 86 °F) | (SAE140) 30 MIL-L-2105<br>AACD/SE MIL-L-2144C MIL-L-46152 |

**Note:** The total hydraulic system capacity depends on the equipment being used. Fill with all rams closed. Watch level indicator on hydraulic tank.

## Service Schedules

To make sure this attachment keeps working to maximum efficiency, it is essential that it is properly and regularly maintained in accordance with the service schedules included in this manual.

Badly maintained equipment can be a danger to the operator and the people working around him. Make sure that the regular maintenance and lubrication jobs listed in the service schedules are done to keep the equipment in a safe and efficient working condition.

Make sure that any defects found during the regular maintenance checks are rectified before you use the equipment.

**⚠ WARNING**

**Maintenance must only be done by competent personnel.**
A-3-1-1

## Daily

**Clean**

1 The earth drill and its hoses.

**Check**

2 For damage to the earth drill and its hoses.

3 The auger wear parts for damage or wear.

4 The auger flange nuts/bolts for tightness.

**Grease**

5 The hanger bracket swivel pins.

2 Offset weight casing bearings (2 off).

## Weekly

Do the daily jobs plus:

**Check**

1 Security of mounting bolts, pivot pins, retaining pins, etc.

2 Tail hoses for security and leaks.

3 The earth drill gearbox oil level.

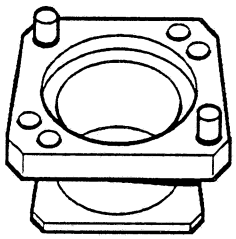
## Every 100 Hours

Do the weekly jobs plus:

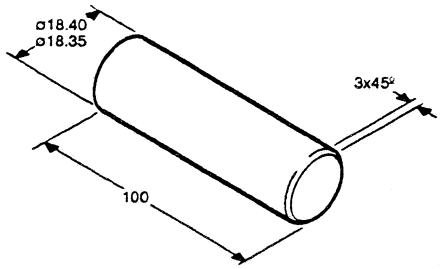
**Change**

1 The earth drill gearbox oil.

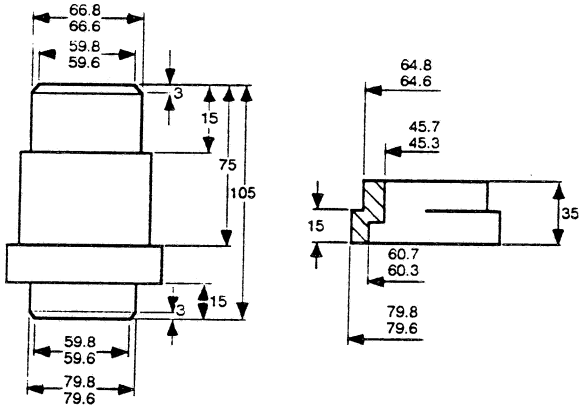
## Service Tools - Hydraulic Motor - OMV Series 2 (AP400 - 165/185 and 165/185 'E' Series)



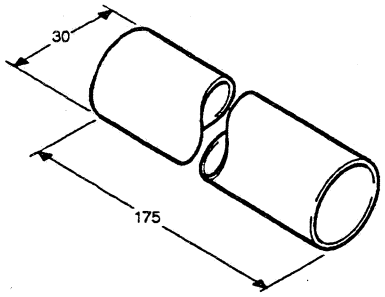
**A** Motor mounting jig
Code ref: SJ 151B 9000-2.



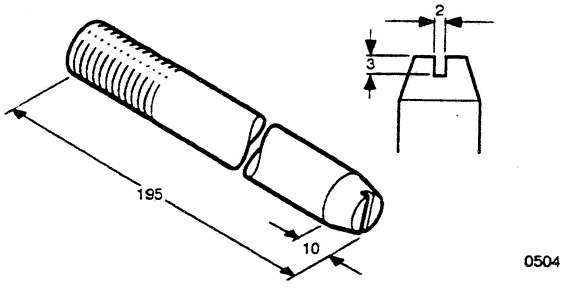

**B** Mandrel for balance plate removal.




**C** Mandrel and back stop for fitting shaft oil seal.




**D** Mandrel for output shaft removal (ex. hydraulic tube).




**E** Guide bolts for use in assembly.

0504

## * Hydraulic Motor (400II)

### Removal and Replacement

#### Removal

**⚠ WARNING**

**Do not work on the machine with the patch planer drum rotating or with the engine running.**

2-4-3-4

#### Make the Machine Safe

1 Position the machine on level ground. Engage the parking brake.

2 Stop the engine. Remove the starter key.

**⚠ WARNING**

**You can be seriously injured if the patch planer is operated while you are working on it. Keep people away from the cab while working on the patch planer.**

2-4-3-5

3 Operate the controls a few times to ensure all pressure is gone from the hydraulic system.

4 Disconnect the quick release couplings (see the machine Operator Handbook).

5 Disconnect the hydraulic hose connections on the motor at **A**, **B** and **C**. Plug both hoses and inlet ports to prevent ingress of dirt etc.

6 Remove bolts **1** (8 off) and their washers **2** (8 off).

7 Move all personnel from the area of the machine. Restart the engine and using the dipper controls, lift the casing **D** from the drum assembly **E**.

8 Make the machine safe (see items **1**, **2** and **3**).

**⚠ WARNING**

**You can be injured if you use faulty lifting equipment. Make sure that lifting equipment is in good condition. Make sure that lifting tackle complies with all local regulations and is suitable for the job. Make sure that lifting equipment is strong enough for the job.**

INT-1-3-7

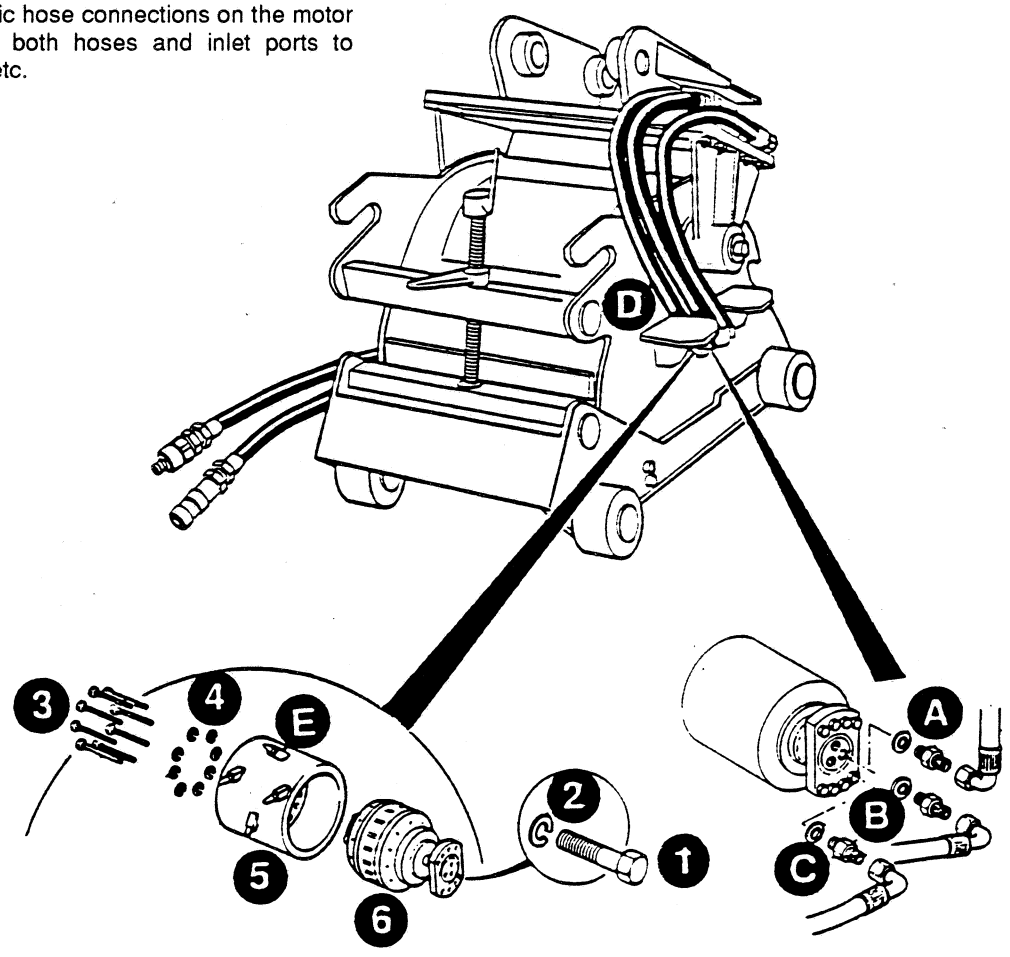
9 Move the drum assembly **E** to a suitable clean working area.

10 Remove bolts **3** (8 off) and their washers **4** (8 off) from the drum **5**.

11 Lift the motor **6** from the drum **5**.

#### Replacement

Replacement is a reversal of the removal procedure.



## * Hydraulic Motor (400II) (cont'd)

### Assembly (cont'd)

**10** Invert the motor and remove the bearing cover **21** and shims **22**. Fit the 'O' ring **24** to bearing cover **21**. Refit bearing cover **21** and shims **22**. Torque tighten capscrews **20** (5 off) to 33 Nm (3.3 kgfm, 24 lbf ft).

**11** Fit shaft seal **6** and 'O' ring **7** to the seal housing **5**. Refit the seal housing **5** taking care not to damage the shaft seal **6** as it goes over the crankshaft **14**. Install the capscrews **4** (4 off) and torque tighten to **21** Nm (2.15 kgfm, 15.5 lbf ft) (A dust seal **X** may be fitted at this stage to the shaft, it is a push-on fit).

**12** Refit the shaft key **3** and then the mounting flange **2** which should come to rest on the crankshaft **14** shoulder. A soft faced hammer may be used to drive the mounting flange to its final position.

**13** Clean and lightly oil the locking assembly **1**, insert the assembly, correctly orientated, into its bore between the mounting flange **2** and the crankshaft **14**. Tighten the screws, in turn diametrically with a torque wrench until they are at about 34 Nm (3.4 Kgfm, 25 lbf ft). Finally tighten in turn to 68 Nm (6.9 kgfm, 50 lbf ft).

**14** If the motor is to be stored plug all ports.

### Test Procedure

Standard testing is carried out using mineral oil at 40 °C having a viscosity of 30 centistokes.

**Note:** To ensure adequate lubrication at start-up, it is imperative to fill the crankcase with system fluid prior to operation.

**1 Initial Run**

Install the motor in the system but without coupling the load. (At start-up, air in the motor will cause momentary pulsing or throbbing. This air will be purged from the system during the course of normal operation and the motor should run smoothly after 2-3 minutes, depending on speed). Run the motor to purge air from the system and to ensure that the motor has been correctly assembled. Repeat run in the opposite direction if applicable.

**2 Run-in Test**

Couple the load to motor and commence running at minimum speed and pressure. Gradually increase the load, pressure and speed to normal operating conditions. During this time check the flow from the case drain port. This flow should be steady (not pulsing) and not excessive. Maximum drain leakage, at 170 bar, 150 r.p.m. and an oil temperature of 40 °C, should not exceed 0.5 l/min (0.11 gal/min).

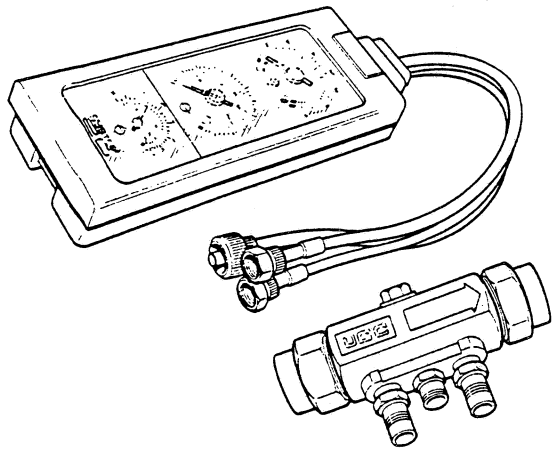
**Note:** There must be no leakage from the shaft seal **6**, bearing cover seal **24**, shaft seal housing seal **7** or crankcase seals **27**, **28**.

**3 Storage**

If, after completion of the test procedure, it is intended that the motor be put into storage plug all ports to prevent the ingress of foreign matter. Ensure that the unit is full of fluid to inhibit corrosion.

**Note:** If the system into which the motor is to be installed has suffered failure of any component, it must be thoroughly flushed prior to fitting any new or repaired motor. This is best achieved by fitting a micronic filter in place of the hydraulic motor and passing full flow around the circuit for a period of not less than 30 minutes or longer dependant on the complexity of the system.

## Service Tools

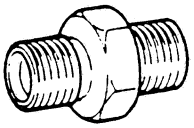


Flow Test Equipment

892/00268 Flow Monitoring Unit
892/00269 Sensor Head 0 - 100 l/min (0 - 22 UK gal/min)
892/00270 Load Valve
1406/0021 Bonded Washer
1604/0006 Adaptor 3/4 in M x 3/4 in m BSP

Bonded Washers

1406/0018 1/2 in BSP (4 off)
1406/0021 3/4 in BSP (4 off)



Male Adaptors - BSP x BSP

1604/0004 1/2 in x 1/2 in
1604/0006 3/4 in x 3/4 in

## Hydraulic Motor

### Dismantling and Assembly

### Dismantling

1 Hold the motor in a suitable jig or soft jaw vice with the output shaft downwards.

2 Remove the relief valve **1** from the housing **2**.

3 Remove the end cover bolts **3** (6 off) and their washers **4** (6 off). Slide end cover **5** sideways off the housing **2**.

4 Lift off the gearwheel set **6**, remove and discard 'O' rings **7** and **8**.

5 Lift off the distributor plate **9**, remove and discard 'O' rings **10**.

6 Remove the carden shaft **11**.

7 Remove the output shaft **12** from the body **2**.

8 Turn the motor over in the jig or vice.

9 Remove the screws **13** (6 off) and their washers **14** (6 off) from the spigot flange **15**.

10 Remove the spigot flange **15**, remove the 'O' ring **16** and bearing race **17** from the spigot flange.

11 Remove and discard the shaft seal **18** from the spigot flange **15**.

12 Remove the dust seal **19** from the spigot flange **15**.

13 Remove the needle bearing **20** from the housing **2**.

### Cleaning

Clean all parts carefully in low aromatic kerosene.

### Inspection and Replacement

Check all parts carefully for wear or damage and make any replacements necessary.

### Lubrication

Before assembly, lubricate all parts with hydraulic oil.

### Reassembling

Use 'O' rings and seals throughout.

1 Fit the needle bearing **20** into the housing **2**.

2 Place the shaft seal **18** into the spigot flange **15**. Hammer the seal into place using a plastic hammer.

3 Place the dust seal into the spigot flange **15**.

4 Hammer the dust seal **19** into position using a hammer and steel block.

## Brushes

### Adjusting for Wear

As the bristles wear down the castor stems **A** can be raised to compensate. When no further adjustment is available, renew the brushes. Both castor stems to be at the same height.

### Renewing Brush Segments

(Assumes attachment is installed on the machine)

* **1** Lower the forks or boom/loader arm until the attachment rests on its four castors, and then lower it a little more. Raise the forks or the arm so that they just start to take the weight of the sweeper collector. Use the shovel or fork control to roll back (crowd) the Quickhitch or fork mounting sufficient to place blocks beneath the rear castors. Roll the Quickhitch or fork mounting forward so that the rear castors rest on the blocks. The attachment underside will be partially exposed.

**2** Switch off the engine and vent the auxiliary circuit hydraulic pressure by operating the auxiliary control(s) at least six times (refer to the machine Owners Manual). Remove the starter key.

**3** Loosen and withdraw the four bolts **B**, then remove bearing assembly **C** and spacer **D**.

**4** Swing down brush shaft **E** away from its mounting slot in the roadsweeper frame.

**5** Remove end plate **F** from the end of brush core **G**.

**6** Slide alternate brush sections **H** and spacers **J** off the core.

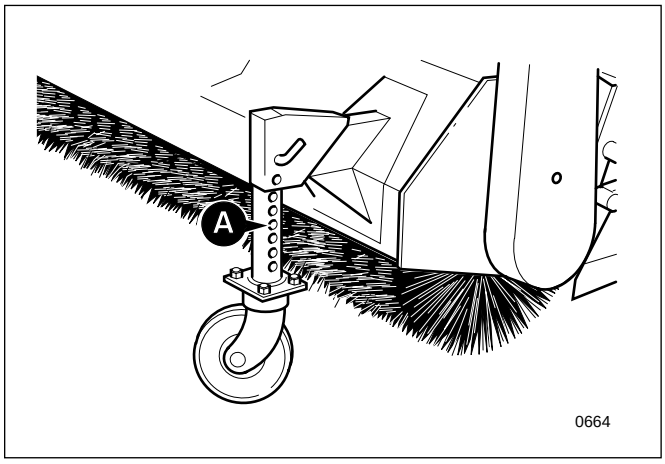
**Note:** Unless they are damaged, the core and spacers can be re-used.

**7** If necessary, slide the core off shaft **E** and replace it with a new one.

**Note:** Refer to Technical Data to confirm you have the correct number of brush segments/spacers for your particular sweeper collector.

**8** Re-assemble the brush by reversing steps **3** to **6**, remembering to start with a brush section. Tighten the four bolts **B** to a torque of 48 Nm (35 lbf ft).

*

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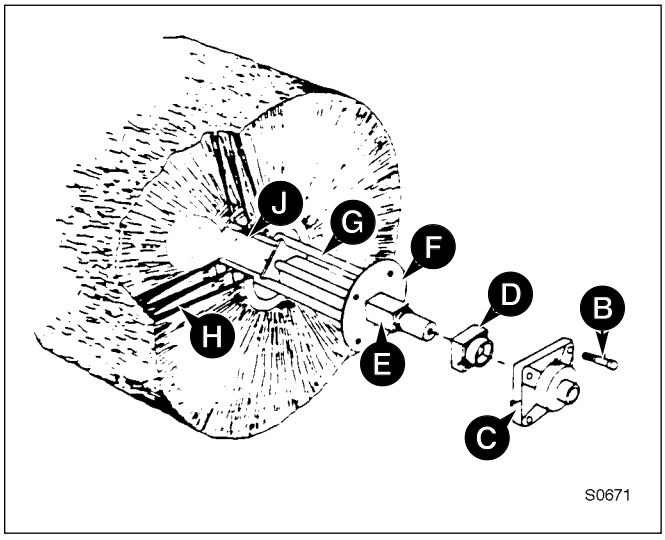
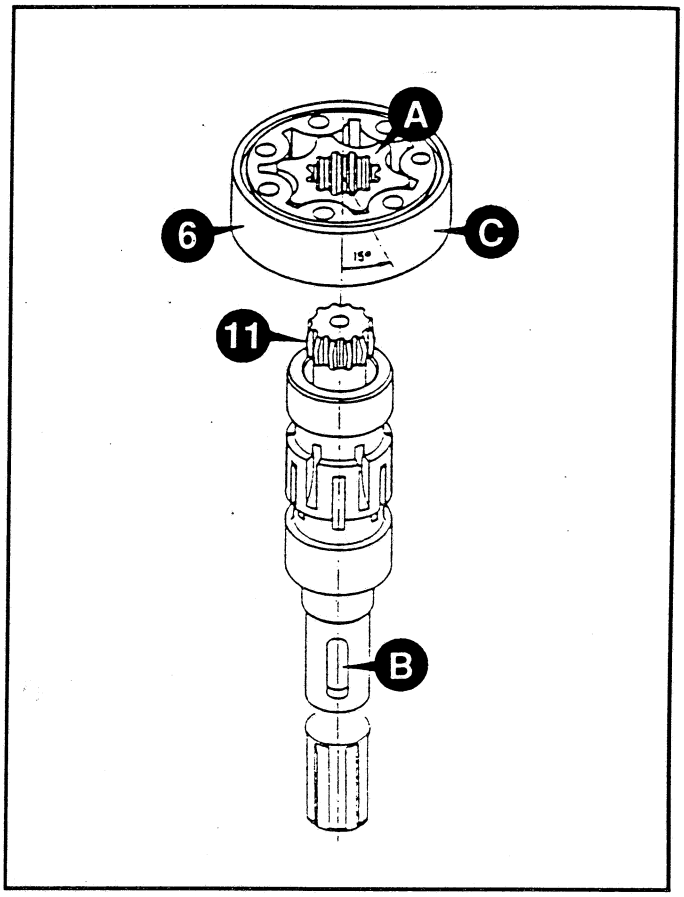


## Hydraulic Motor (cont'd)

*** Assembly (cont'd)**




**5** Fit the 'O' ring **16** and bearing race **17** into the spigot flange **15** (a light coating of vaseline will hold them in position).

**6** Fit the spigot flange **15** to the housing **2.**

**7** Place the spring washers **14** on the screws **13.** Place the screws in the spigot flange **15** and tighten them up. tightening to a torque of 5-8 Nm (4-6 lbf ft).

**8** Turn the motor so that the flange is downwards and fit the output shaft **12.**

**9** Fit the key **21** to the output shaft **12.**

**10** Fit the 'O' ring **10** to the distributor plate **9** (grease the 'O' ring with vaseline) and fit the distributor plate so that the screw holes line up with the holes in the housing **2.**

**11** Guide the carden shaft **11** down into the motor housing **2.** Place a thin piece of metal or thin screw driver under the carden shaft to prevent it dropping right down.

**12** Grease the 'O' rings **7** and **8** for the gearwheel set **6** and fit them to the gear rim. Place the gearwheel set **6** on the carden shaft **11** so that the top of an outer tooth in the rotor **A** is vertically above the shaft keyway **B.** Turn the gearwheel set **6** counter clockwise until the carden shaft **11** and the rotor **A** engage (15°). Turn the gear rim **C** so that the holes for the assembly bolts **3** line up with the holes in the housing **2** and distributor plate **9.**

**13** Fit the cover **5,** screws **3** and new washers **4.** Screw up loosely and remove the piece of metal or screwdriver from beneath the carden shaft **11.**

**14** Torque tighten the screws **3** to 35 Nm (26 lbf ft).

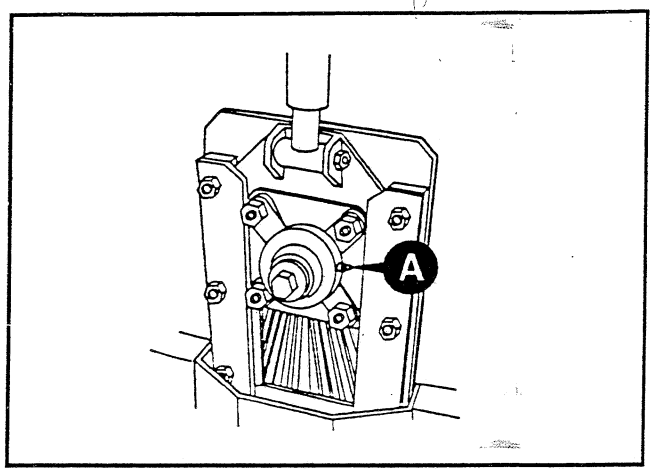
***15** Refit the relief valve **1** to the housing **2** (early models only). Torque tighten to 60 Nm (44 lbf ft).

## * Greasing

In the following procedures use **JCB Special MPL Grease** or equivalent (to JCB Standard 4003/0200 e.g. Texaco Multifak EP2).

### Brush Shaft Bearings

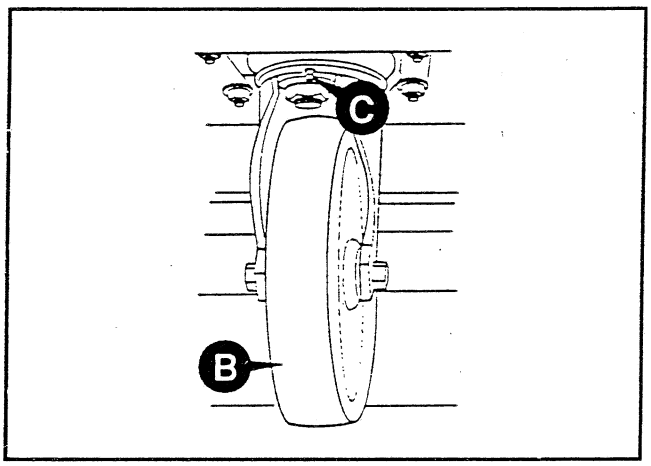
Grease the shaft bearing via grease nipple **A.**




### Front Castors

1 Smear the spindle on both sides of wheels **B.**

2 Grease the swivel bearings via grease nipples **C.**



## * Gutter Brush Assembly (Style 2 only) (Optional)

### Removal and Replacement

1 Ensure that the carrier machine engine is stopped and the starter key removed.

2 Operate the hydraulic controls a few times until pressure has decayed.

**⚠ WARNING**

**Hydraulic fluid at pressure can injure you. Make the machine safe before removing the hose blanking plugs or connecting/disconnecting the hoses; stop the engine and then operate the attachment control a few times to vent system pressure.**

2-4-1-5/1

3 Remove the hydraulic hoses from the cross line relief valve **3**, plug the hoses and the valve ports to prevent ingress of dirt.

4 Support the upper and lower pivot arms **7**, **8** with suitable lifting gear.

**⚠ WARNING**

**You can be injured if you use faulty lifting equipment. Make sure that lifting equipment is in good condition. Make sure that lifting tackle complies with all local regulations and is suitable for the job. Make sure that lifting equipment is strong enough for the job.**

INT-1-3-7

5 Remove the bolts **18** (2 off) and Nyloc nuts **19** (2 off).

6 Drag the brush assembly clear of the machine.

### Replacement

The replacement is the reversal of the removal procedure.

### Adjustment

**Note:** For adjustment of the brush operating height see the machine Operator Handbook.

## Brush Drive Motor - Style 1

### Removal and Replacement

#### Removal

1 Remove the brush assembly from the machine (see **Brushes, Renewing Segments**, steps **1** to **5**, under **Routine Maintenance - Style 1**).

2 Remove bolt **1**, spring washer **2** and retaining washer **3**.

3 Lever off bearing **4** and side adjuster **5**.

**Note:** To break this assembly down remove countersunk bolts **6** ( 4 off), nuts (4 off) and spring washers **8** (4 off). The bearing **4** and side adjuster **5** can then be separated.

4 Remove bolt **9** ( 2 off) and washers **10** (2 off) lever off core end plate **11**.

5 Remove brush segments **12** from the core **13**.

6 Remove bolt **14**, retaining washer **15**, plain washer **16** and spring washer **17**.

7 Withdraw motor housing **18** and motor **19** from the core **13**.

8 Remove bolts **20** (4 off) and spring washers **21** (4 off) from the motor housing **18**.

* **Note:** On some types of machine, spring washers **21** (4 off) are replaced by tab washers (2 off).

9 Remove motor **19** from the housing **18**.

#### Replacement

The replacement is a reversal of the removal procedure.

#### Torque Setting

| Item | Nm | Kgf m | lbf ft |
|---|---|---|---|
| 1 | 56 | 5.7 | 42 |
| 6 | 98 | 10 | 72 |
| 9 | 56 | 5.7 | 42 |
| 14 | 28 | 3 | 21 |
| 20 | 28 | 3 | 21 |

### Dismantling and Assembly

Contact JCB Attachments Division for further information.

## Greasing

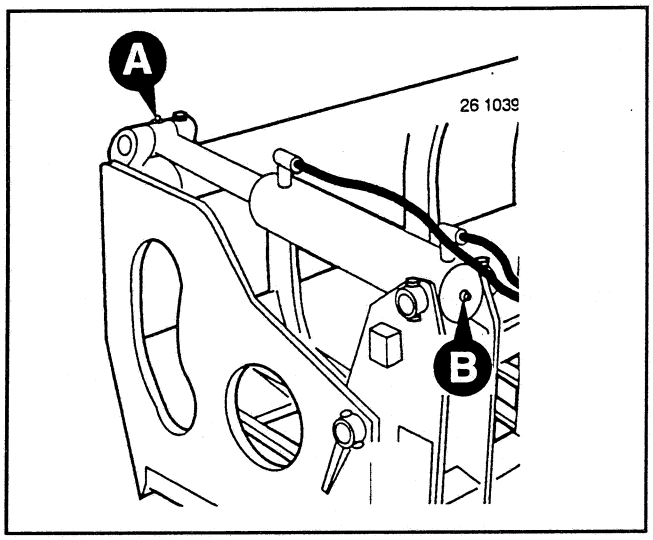
The attachment must be greased regularly to keep it working efficiently. Regular greasing will also increase the attachment's working life.

Grease should be applied with a grease gun.

## Ram Pivots

Grease the ram pivots via grease nipples **A** and **B** on each side of the attachment.

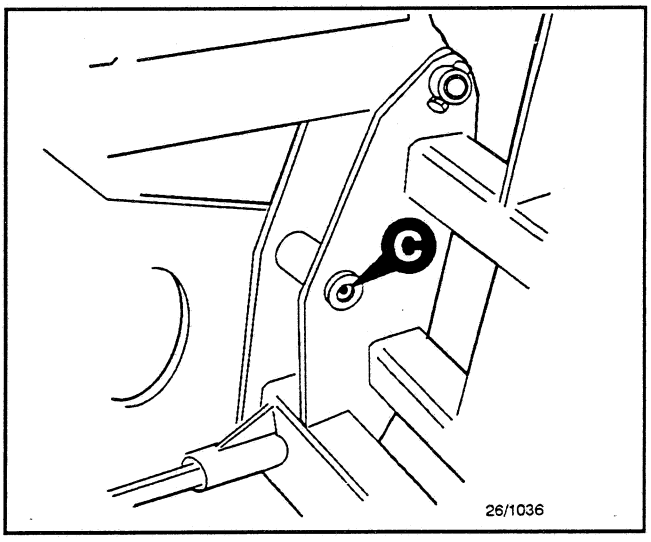
**Total 4 grease points.**




## Shear Assembly Pivots

Grease the shear assembly pivots via grease nipple **C** on each side of the attachment.

**Total 2 grease points.**



## Rams

### Removal and Replacement

#### Replacement

**Note:** It is assumed that the attachment has been removed from the machine (see **Operator Manual, Installing/ Removing**).

**⚠ WARNING**

**Metal Splinters**

**You can be injured by flying metal splinters when driving metal pins in or out. Use a soft faced hammer or drift to remove and fit metal pins. Always wear safety glasses.**

INT-3-1-3

1 Remove bolt **A** and lever out the pivot pin.

2 Remove bolt **B** and lever out the pivot pin.

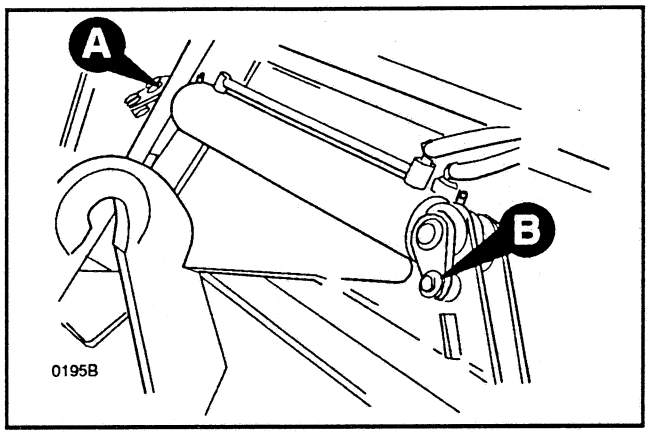
3 The ram can now be lifted clear.

#### Replacement

Replacement is a reversal of the removal procedure.

### Dismantling and Assembly

See **Section 1, Introduction, Rams - Style 1.**



## Dismantling and Assembly

It is assumed that the attachment has been removed from the machine (see **Operator Handbook**).

The numerical sequence is a guide to dismantling. For assembly the sequence should be reversed.

**Note:** For removal and replacement of rams, see Operator Handbook, **Rams - Removal and Replacement.**

1 Drive out retaining pin **1** and lever out the pivot pin **2.**

2 Drive out bush **3.**

3 Clean and inspect all parts for wear - replace as necessary.

4 Remove nuts **5** and bolts **6.**

5 Take off wearing strip **7,** inspect for wear and damage. Replace as necessary.

On reassembly, install new retaining pins **1.**

**Note:** Only one side of the bucket is shown, the other side is identical.

**⚠ WARNING**

**You can be injured by flying metal splinters when driving metal pins in or out. Use a soft faced hammer or drift to remove and fit metal pins. Always wear safety glasses.**

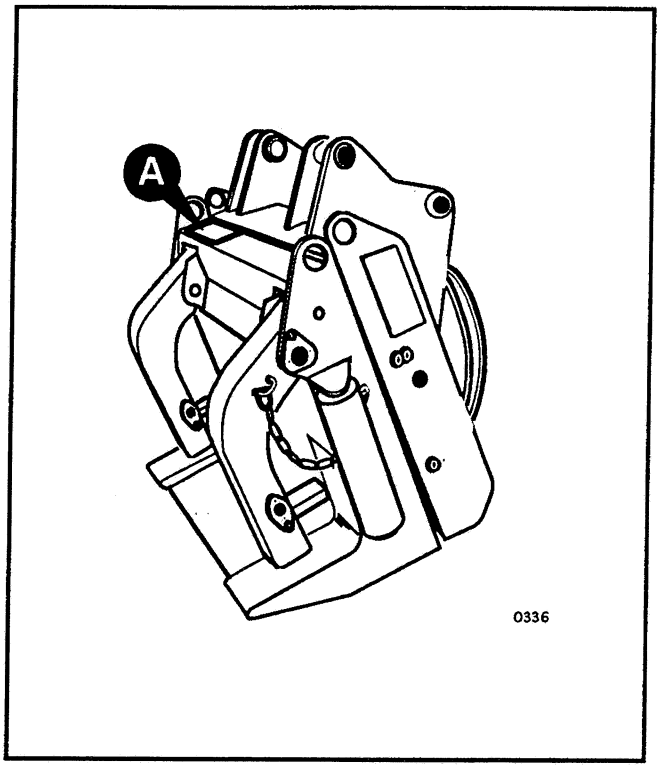
INT 3-1-3

*

## Pole Planter Identification

The attachment part number is engraved on a data plate **A**.

Always quote this part number when ordering replacement parts.




## Safety

**⚠ WARNING**

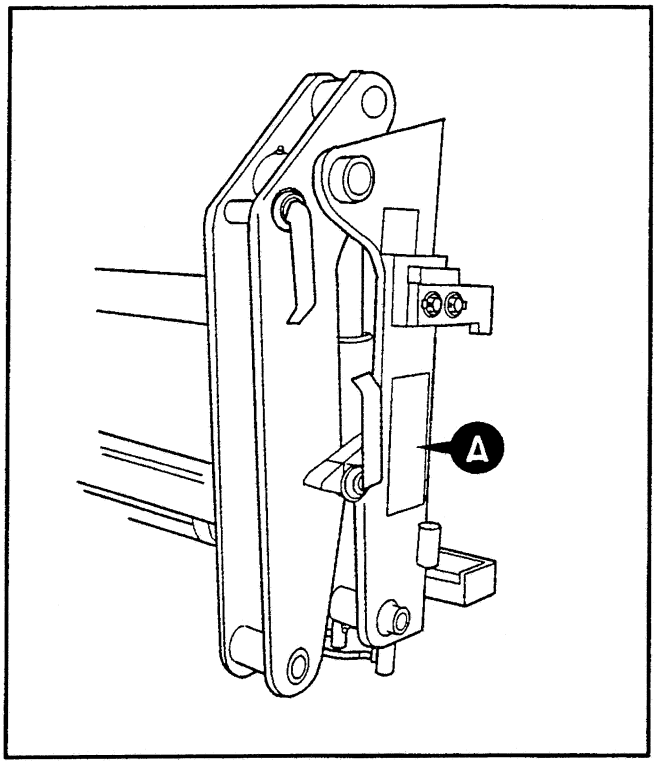
**You or others can be injured if you operate or maintain any attachments without first studying the machine Operator Handbook and the attachment Operator Handbook. Read the safety instructions before operating or maintaining the attachment. Do not operate or maintain the attachment without the relevant manuals or if there is anything you do not understand.**

ATT-1-1

## Multihitch Identification

The attachment part number is engraved on a data plate **A.**

Always quote this part number when ordering replacement parts.




## Safety

**⚠ WARNING**

**You or others can be injured if you operate or maintain any attachments without first studying the machine Operator Handbook and the attachment Operator Handbook. Read the safety instructions before operating or maintaining the attachment. Do not operate or maintain the attachment without the relevant manuals or if there is anything you do not understand.**

ATT-1-1

## Replacing Brush Sections (cont'd)

**Without using a Lifting Device**

### ⚠ WARNING

**Avoid serious injury - lower and stop the Sweeper Collector, set the parking brake, stop the carrier engine and remove the key before leaving the operators seat for any reason.**

**1** Disconnect and plug all hydraulic lines.

**2** Remove both side flaps from the Sweeper Collector.

**3** Remove eight screws and three plates from the motor end and three screws from the bearing end of the brush hood.

**4** Lift the brush hood and collector assembly with the carrier and then reverse leaving the brush head assembly on the ground.

**5** Stand the brush head assembly on the motor end, placing the motor on blocks to protect it.

**6** Remove the flange.

**7** Remove the retainer plate.

**8** Slide off the old sections.

**9** Install the new sections as follows:

**a** Number the tubes on the core 1,2 and 3, *(see illustration **A**).*

**b** Slide the first section onto the core with the drive pins on either side of tube **1**. Make sure that the drive pins face up, *(see illustration **B**).*

**c** Place the second section on the core with the drive pins either side of tube **2**. Make sure that the drive pins face down.

**d** Put the third section on with drive pins facing up on either side of tube **3**.

**e** Add sections until the core is full making sure to alternate the tubes used and the direction of the drive pins.

**10** Install the retainer plate.

**11** Install the flange on the core shaft.

**12** Using the carrier, lower the brush hood and collector assembly onto the brush head assembly.

**13** Install the screws and plates around the motor.

**14** Install the screws in the flange.

**Note:** Make sure the motor parts face the hinge on the hood.

**15** Adjust the brush print *(see **Operator Handbook**).*