

SELWOOD SPATE 75C

Operating & Service Manual

The products of Selwood Limited, are designed, developed and produced in the company's Chandler's Ford factory. Many features are covered by world-wide patents. Product names such as Spate, Simplite and Seltorque, are registered trade marks.

As all products are subject to continuous development, the company reserves the right to alter the specifications and information given in this manual without prior notice.

Whilst every care has been taken in the preparation of this publication the information it contains must not be regarded as binding.

Amendments to this publication will only be issued to cover those design changes which fundamentally alter the build or operation and servicing procedures. They will be distributed through the company's dealers and agencies.

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Additional copies of this manual may be ordered from Selwood Limited, Pump Division, by quoting the publication number shown on the outside back cover.

HEALTH AND SAFETY AT WORK

April 1975

As manufacturers of pumps and associated equipment we wish to inform you that, in compliance with Section 6 of the Act, safety precautions should be taken with certain of our products.

We take every care to ensure as is reasonably practicable that our products are safe and without risk to health when properly used. Nevertheless, appropriate health and safety precautions must be taken, and in particular you are requested to have special regard to the operational and safety requirements leaflet P769 which accompanies each pump on despatch from our premises.



Our products also conform to the E.E.C. machinery Safety Directive and carry the C.E. mark.

CALIFORNIA USA PROPOSITION 65 WARNING



Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.

WARNING

Pumps and engines may be fitted with seals or 'O' rings manufactured from **VITON** or similar material.



When temperatures reach 400°C (720°F) a corrosive acid is produced, which cannot be removed from the skin.

If signs of material decomposition are evident, or if in doubt, **always wear disposable heavy-duty gloves.**

SELWOOD SPATE 75C

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1 GENERAL INFORMATION

1.1 Installation

1. The pump unit and its associated baseplate or trolley mounting should be positioned on a firm horizontal platform, and in the case of portable units restrained from accidental movement.
2. If the pump is fitted with push-on type suction and delivery spigots the hoses must be firmly secured on these spigots with heavy duty clamps or clips capable of withstanding the system operating pressure. The integrity of the hose clamping arrangements should be checked at regular daily intervals in the case of static installations or whenever the pump is repositioned in the case of portable units. Similar precautions should be taken with clamps securing multiple lengths of hose on installation where long delivery and suction lines are involved.
3. Delivery hose and any associated pipework should be capable of withstanding the maximum system operating pressure. Suction hose should be of non-collapsible variety.

1.2 Operation

1. The pump should only be operated within the speed and pressure limits detailed in the operating handbook for the model in question.
2. If there is a danger of freezing, the fluid normally retained within the pump between operating cycles should be drained off through the drain taps provided.
3. Positive displacement pumps of the 50F; Simplite 75C and 100D type should not be run against a closed valve on the delivery side. If there is a danger of high system pressures developing because of closed delivery valves or some other reasons the pump should be fitted with a full flow relief valve adjusted to a lift at a safe working pressure for the pump and pipework system.
4. Where protective caps are used to prevent damage to the suction and delivery spigots during storage or in transit they must be removed before the pump is started up.

1.3 Maintenance

1. Inspection and maintenance procedures are detailed in the operating and servicing manual for the model in question.
2. Replacement parts. Only the manufacturers or factory approved components should be used as replacement parts and where necessary they should be fitted with the assistance of the special purpose tools indicated in the operating and servicing manual.
3. All maintenance work must be carried out with the pump and engine/motor stationary.

1.4 I.C. Engines

1. Where I.C. engines are used to power the pump they have been mounted in accordance with the engine manufacturers recommendations and adequate guarding provided between the pump and engine.
2. **Exhaust and Exhaust Pipes.** If there is a risk of accidental contact by operators, the exhaust system should be lagged or screened and the outlet directed away from operators or other persons likely to be nearby. Direct contact with flammable materials of all types must be avoided.

The importance of adequate ventilation to ensure removal of exhaust fumes when engines are operated in enclosed or covered accommodation cannot be overstressed. Engines should not be run in hazardous explosive atmospheres.

3. **Access and Operation.** Ensure that the operator can start, control and stop the engine easily by making all controls readily accessible. Fit remote controls if access is difficult. Follow the instructions laid down in the engine manufacturer's Operators Handbook for starting, operating and stopping procedures.
4. **Fuel.** In addition to the fire hazard associated with fuel and lubricating oils, preventative action is necessary with respect to leakage, contamination and bodily contact.
5. **Electrical Connections.** It is essential that earth terminals are connected with an absolutely sound earth point and care should be taken to ensure that the correct sized conductors are selected to suit the current and distance it is to be carried.

1.5 Electric Motors

1. All electrical connections should be made through adequately rated conductors and starters. Isolators and other associated switchgear should be of adequate capacity for the imposed power loadings. All electrical equipment should be adequately earthed.
2. Isolate the power supply before carrying out any commissioning, servicing or maintenance work on the pump or electric motor.
3. Where electric motors are to be operated in hazardous or explosive atmospheres they should be of the flameproof enclosure type appropriate to that atmosphere.

You are requested to take such steps as are necessary to ensure that this information is made available to all those involved with the use of our products. This information must be made available not only to your own employees at their workplace, but also to anyone who may purchase or otherwise acquire (hire) such products for use in his own workplace.

It is our intention constantly to review our obligations under the Act and we will be issuing from time to time further information with regard to the safe application, use, inspection, and service associated with our products.

1.6 Selwood Spate 75C Standard Data

Capacity	31.8m ³ /h, 7000gal/h
Total Head	40m, 130ft
Delivery Head	30.5m, 100ft
Self Priming Lift	8.8m H ₂ O, 29ft H ₂ O
Suction Lift	9.1m, 30ft
Solids Size	6mm, 0.25in
Air Handling	3.77l/s, 8ft ³ /min
Pump Speed	1500 strokes per min
Port Size Spigot	75mm, 3in

2 INSTALLATION, COMMISSIONING AND OPERATION

2.1 Self Priming

In normal practice, the SPATE 75C pump remains primed after initial use, even when the hoses are removed and it is out of service. When priming a new pump, or after draining for any reason, maximum self-prime lift of 8.8/9.1m (29/30ft) will only be obtained if the flood prime manifold is filled with water through the delivery connection.

2.2 The Suction Strainer

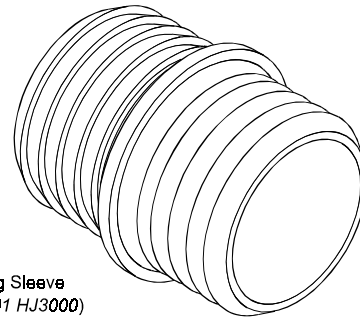
Always use the 75mm SPATE hose strainer supplied with the pump. Make sure that it is firmly secured to the suction hose by using heavy duty clamps or clips illustrated. Failure to secure the strainer firmly may result in its loss and consequential blockage of the hose and pump by excessive solids.

2.3 Securing and Joining Hoses

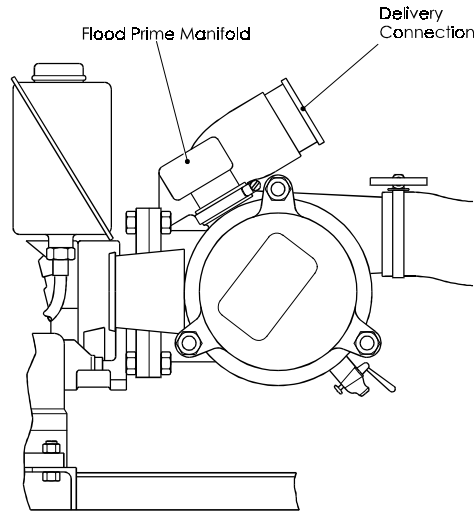
The pump is fitted with push-on type suction and delivery spigots and the hoses must be firmly secured to these spigots with heavy duty clamps or clips.

When pumping at high pressure, to high heads or compressing air, the SELCLAMP (Patented) heavy duty hose clamp which is designed to withstand pressures up to 6.9bar (100lbf/in²) is recommended. The clamp can be hand tightened and does not require tools.

Hoses of various lengths can be joined together by the push-on method using hose joint sleeves which should be firmly clamped to avoid leakages, particularly in the suction hose.

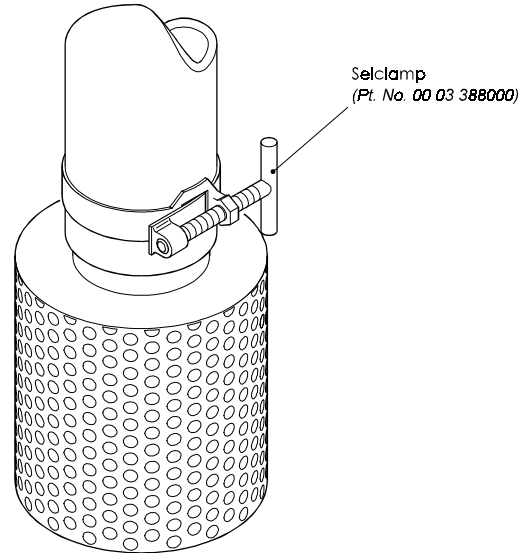


Hose Joining Sleeve
(Pt. No. 00 01 HJ3000)



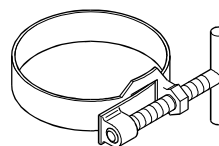
Flood Prime Manifold

Delivery Connection



Strainer
(Pt. No. 00 03 335200)

Selclamp
(Pt. No. 00 03 388000)



Selclamp
(Pt. No. 00 03 388000)

2.4 Oil Handling

The standard synthetic rubber seals (Items 3 and 7) and valves (Items 5 and 11) of the Spate 75C pump are suitable for handling most lubricating oils and greases without undue chemical deterioration.

The standard pressure regulator inner sleeve is made from natural rubber as there is no available synthetic with the necessary characteristics for this duty. Oils and hydrocarbons will damage this regulator sleeve. If the pump is to be used for handling products of this type then the complete pressure regulator assembly must be changed, on each pump cylinder, to either oil tolerant regulators or oil blanks. This choice depends on existing pump speed and viscosity of product to be handled.

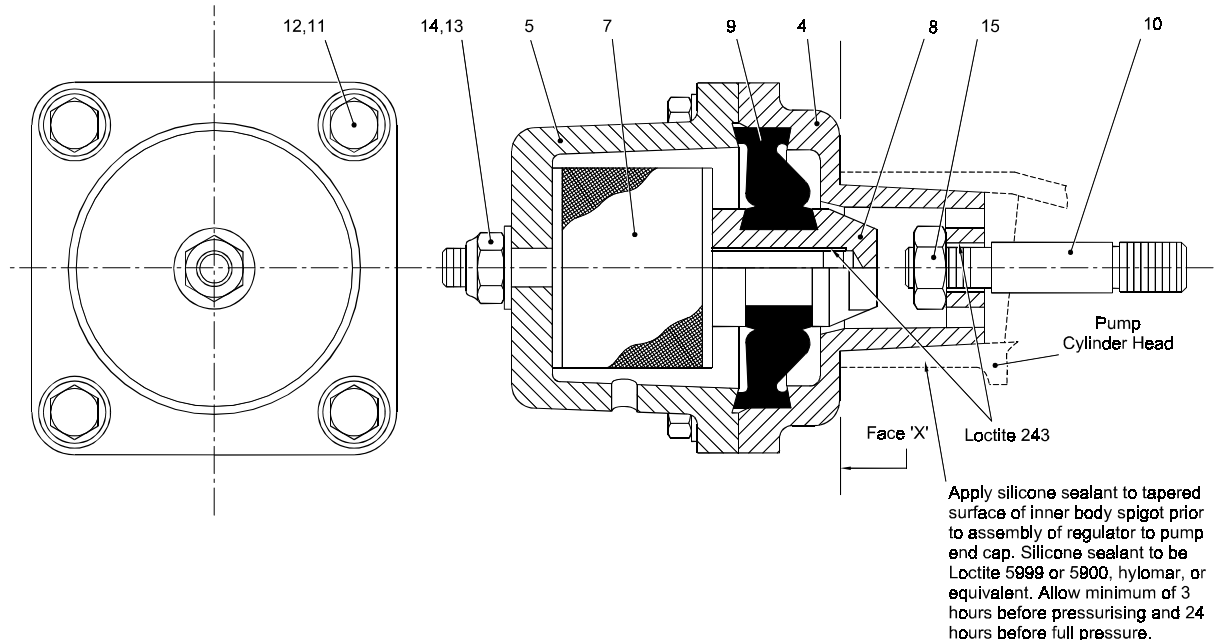
2.5 Oil Tolerant Regulators

Oil tolerant regulators, as their name suggests, are suitable for handling most oil and water mixes at pump speeds up to the max 1500rpm.

For high viscosity oils or greases the pump speed should be reduced to allow the internal valves (Items 5 and 11) time to respond to the thicker material. Oil tolerant regulators are directly interchangeable with the standard items, and can be retro fitted if required. Regulators are available as individual assemblies (Part No. 0393040000). These pressure regulators allow the pump to operate at maximum speed and output on oil applications; viscosity effects permitting. They will also enable the use of the Lister/Petter AD1 and clutch at 1500rpm.

The vent hole may be orientated to point downwards thus minimizing the spread of pumped products in the event of a failure.

The Oil Resistant Pressure Regulator consists of an aluminium LM6 body and a Spate 75C neck seal (Part No. 0003316000) backed by a natural rubber anti-vibration mount. Replacement neck seals must be fitted using assembly tool (Part No. 0393038000).



The regulators may be fitted to existing pumps as follows:

1. Remove standard regulators.
2. Remove pump cylinder heads.
3. Ensure the two components abut at face 'X'. It may be necessary to dress the locating taper of Item 4 to achieve this.
4. Fit special studs (Item 10) into cylinder heads.
5. Secure inner bodies to special studs (using nut Item 15) and seal into cylinder head spigots in accordance with above sketch instructions.
6. Secure outer body (Items 5, 7, 8, 9, 13 and 14) assembly to inner body flange with four M8 screws and nuts (Items 11 and 12) orientating the vent hole downwards.

2.6 Regulator Blanks

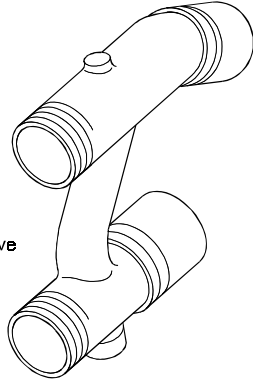
Regulator blanks were introduced before the development of oil tolerant regulators, and are a non pressure damping plug that allows pumps to transfer oil/water slurries and other hydrocarbons which were not suitable for standard regulator sleeves. Their use requires the pump speed to be reduced, to below 1250rpm due to the lack of pressure damping. Damage and loss of performance can occur if run faster when they are fitted.

Regulator blanks may still be fitted for some applications although their use has declined with the advent of the more versatile oil tolerant regulator. In order to fit regulator blanks the regulator assembly on each cylinder must be removed and a blanking plate (Part No. 0003528000) with a connecting rubber (Part No. 0003236200) and clip (Part No. 9505007004) must be fitted in its place.

2.7 Full Flow Relief Valve

The full flow relief valve (Part No. 0003353000) should be fitted if it is likely that the pump will operate against a closed delivery line or heads greater than the maximum operating pressure of the pump. The valve is simple in operation but is factory set and it is not recommended that adjustments be made in the field unless instructed to do so.

3" Full Flow Relief Valve
c/w
Rubber Connector Sleeve
(Pt. No. 0003 353000)



2.8 Use of the Spate High Pressure Nozzle

For pressure washing or jetting the SPATE high pressure nozzle (optional extra) will not over-pressurise the pump, but for all other high-pressure operations the manufacturers should be consulted. Maximum recommended working pressure of the pump is 30.5m (100ft) head, or 3bar (43lb/in²).

2.9 Use of Air Inflator Attachment

The pump is capable of compressing air to a maximum pressure of 4.8bar (701bf/in²). An air adaptor is available for tyre inflation, etc. The adaptor should be attached to the pump delivery spigot and secured very firmly with heavy duty clips or clamps. The priming manifold must be filled with water to obtain maximum air pressure. When operating dry, the pump air pressure will be considerably reduced. Make sure that the suction hose has been disconnected before starting the pump to compress air.

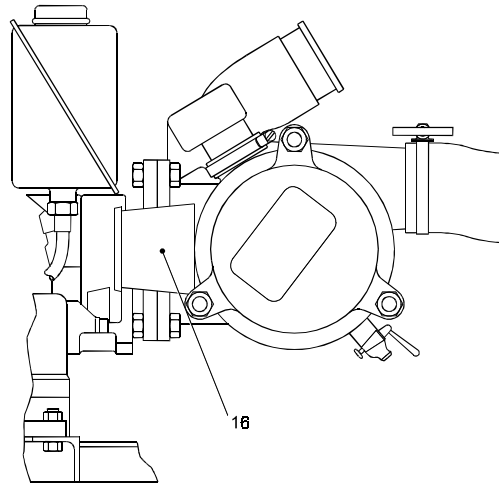


WARNING

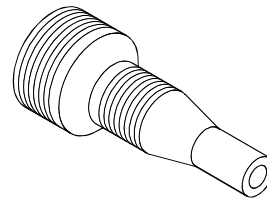
Compressed Air is Dangerous.

2.10 Frost and Ice

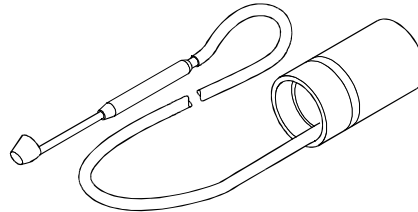
To prevent ice damage in cold weather remove the suction and delivery hoses, open the drain taps in the pump cylinders and continue to run the pump until all water has been expelled.



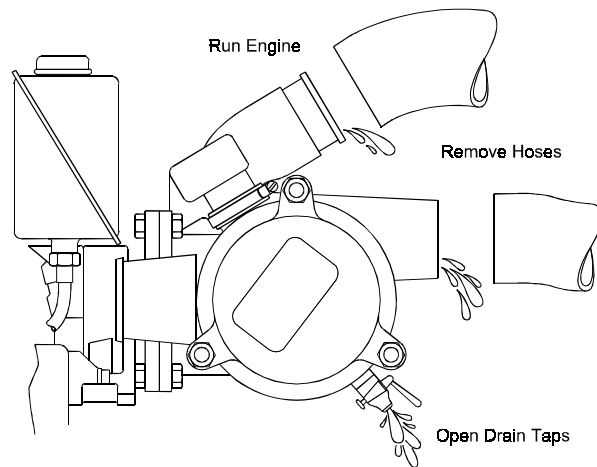
Pressure Regulator Assembly



High Pressure Nozzle
(Pt. No. 00 03 277000)



High Pressure Nozzle
(Pt. No. 00 03 342000)



3 FIELD SERVICING

3.1 To Dismantle a Pump Cylinder

1. Slacken the induction manifold connector clip (18).
2. Remove the pump cylinder head nuts (15) and cylinder head (14).
3. Remove the priming annulus (5) and delivery port plate (12).
4. Remove the split pin (10a) and release the actuator nut (10) with the actuator valve (11) attached.
5. Remove the actuator washer (9) from the connecting rod (25).
6. Remove the cylinder body ring (6) complete with actuator (8) and seal (7) assembly.
7. Remove the priming annulus (5) and suction port plate (4).
8. If the pump drive mechanism is to be dismantled, remove the connecting rod cylinder seal (3).

NOTE: This should not be removed when only cleaning or inspecting the cylinder parts.

Before re-assembly:

1. Wash all components and assemble wet.
2. Check that the 4.8mm (3/16") diameter flood prime hole in the delivery port plate (12) is clear and that the drain tap is not blocked.
3. Ensure that the actuator washer (9) is in place and the actuator nut (10) is completely tightened. Recommended torque 5.5kg m (40lb/ft.).



Caution

Do not overtighten the cylinder head nuts (15).

3.2 Examination and Replacement of Flexible Components

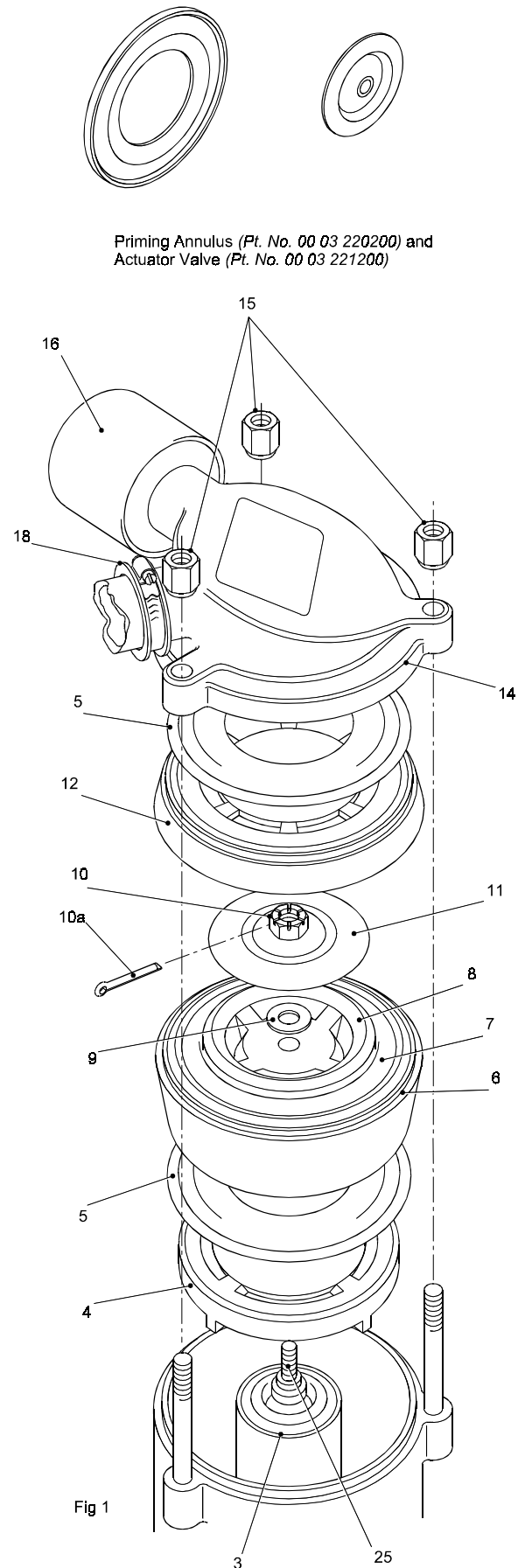
3.2.1 Priming Annulus and Actuator Valve

These flexible mouldings of synthetic rubber are oil resisting and are not expected to fail in normal use.

Look for splits due to excess pressure or distortion due to petrol contamination. Each priming annulus must be a free fit in the cylinder ring and cylinder head recess.

Replacement

Re-assemble these parts wet if possible, and turn each priming annulus over to improve its seating.



3.2.2 Connecting Rod Cylinder Seal

These seals are synthetic rubber mouldings, oil resisting, and with long use may develop cracks around the inner neck diameter. When these have grown to half to three-quarters of the original thickness the seals should be replaced. The pump should not be operated for any long period with failed seals. Radial crack in the seals can be ignored. It is advisable to replace both connecting rod cylinder seals and both actuator seals at the same overhaul period.

Replacement

1. Prise the old seals out of their housings and position the pump connecting rod out as far as it will go, by rotating the engine flywheel. (This is very important).
2. Wet the end of the connecting rod and push the seal on with the palm of the hand.
3. Press the seal centre completely into the recess of the connecting rod and its outer flange into the body housing.

3.2.3 Actuator Seal

These seals are oil resisting synthetic rubber mouldings. Over a long wear life cracks develop around the inside neck recess, but the seals need replacement only when half to three-quarters of the original moulded thickness is separated. It is advisable to replace both actuator seals and both connecting rod cylinder seals at the same overhaul period.

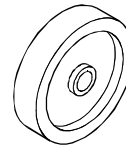
Replacement

1. Press the inner flange of the seal completely into the actuator.
2. Wet the outer flange and press it into the cylinder ring, making sure that all mating surfaces are clean and free from grit.
3. Replace the actuator washer, tighten the actuator nut completely and replace the split pin.

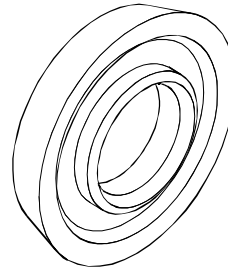
It is very important that this joint should be completely re-tightened to the recommended torque of 5.5kg m (40lb. ft.). Failure to tighten sufficiently may result in wear of the connecting rod end and the actuator centre. If this wear takes place the connecting rod and Actuator must be replaced.

3.2.4 Pressure Regulator Assembly

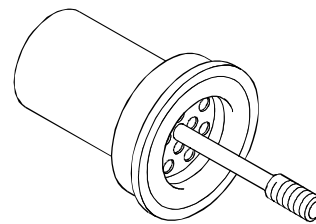
Natural rubber moulding. (See Oil Handling, Section 2.4).



Connecting Rod Cylinder Seal
(Pt. No. 00 03 316000)



Actuator Seal
(Pt. No. 00 03 337000)



Pressure Regulator Assembly
(Pt. No. 00 03 230200)

4 WORKSHOP SERVICING

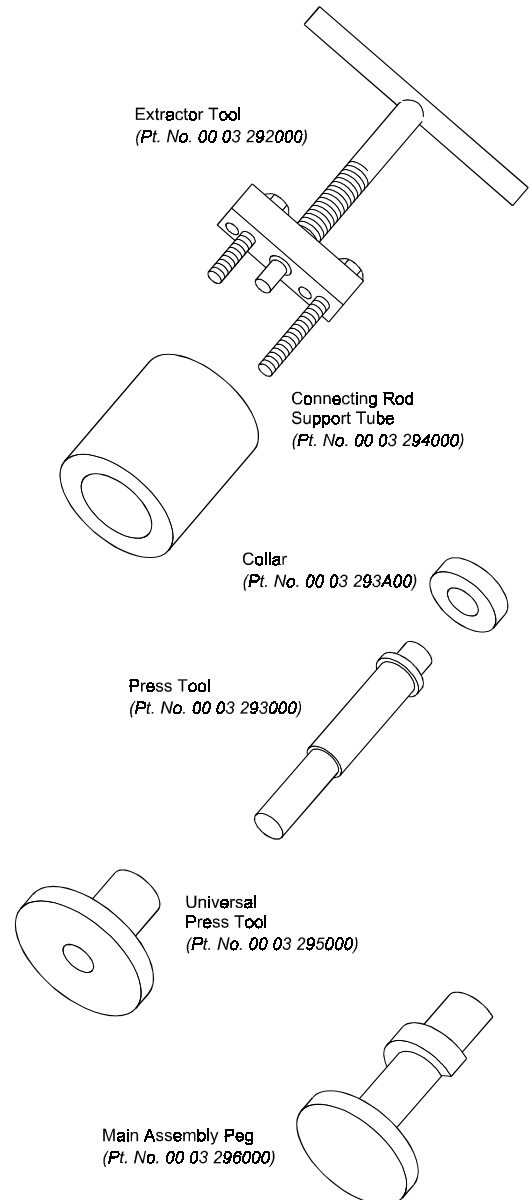
4.1 Dismantle Pump Drive Mechanism

1. Dismantle the pump cylinders as described in Field Servicing, refer to pump dismantling page 7.
2. Remove the pump register nuts (41).
3. Withdraw pump unit to separate the drive coupling.
4. Slacken the coupling grub screw (40), and remove the pump half coupling (31 or 47) using the extractor tool (Part No. 0003292000) with its two 3/8" whitworth bolts.
5. Remove the main bearing housing (28) using the extractor tool (Part No. 0003292000) with its two 1/2" whitworth bolts. The main bearing (22) will usually be left behind on the eccentric drive shaft.
6. Place the pump body assembly on the press table, supporting the connecting rods with the connecting rod support tube (Part No. 0003294000) using press tool (Part No. 0003293000) to press out the eccentric drive shaft.
7. Remove the connecting rods complete with bearings and spacers.
8. Press out the rear main bearing, if required, with press tool (Part No. 0003293000). Removal of the rear main bearing in most cases results in its damage because it can only be pressed out from the centre race and this should only be carried out when it is necessary to replace the bearing.

NOTES:

1. Figures shown thus (23) denote Parts List Drawing Numbers.
2. All particulars subject to alteration without notice, Illustrations not binding in detail.
3. Extractor tool (Part No. 0003292000) is also utilised to remove the centrifugal clutch drum when fitted.

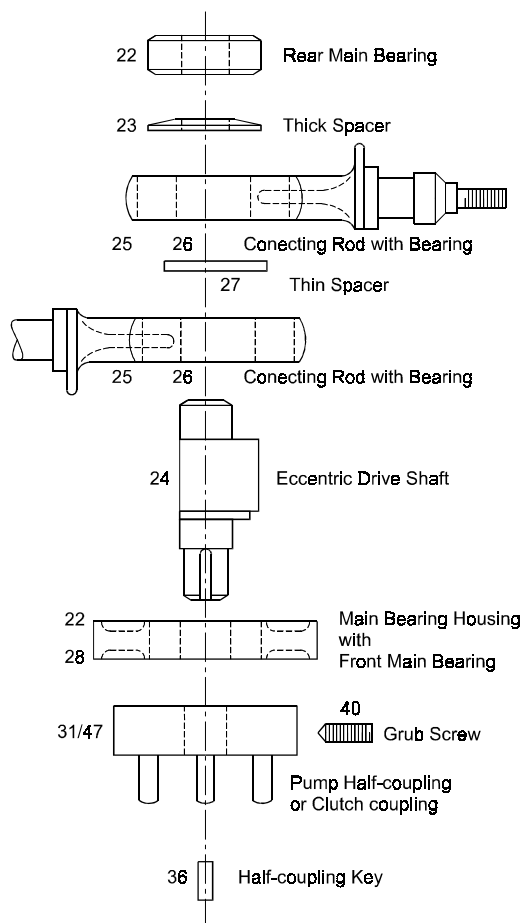
PUMP DRIVE MECHANISM MAINTENANCE TOOLS



4.2 Assemble Pump Drive Mechanism

1. Place the pump body casting vertically on the Main Assembly Peg (Part No. 0003296000) through the hole below the suction hose spigot, with the pump hose spigot facing the operator.
2. Place the rear main bearing (22) into position in the pump body casting and over it 60mm (2 3/8") collar (Part No. 0003293A00). Insert press tool (Part No. 0003293000) into the collar, and over it fit universal press tool (Part No. 0003295000) flange downwards, to provide correct centring of the pump. Press the main bearing into its housing until it meets the main assembly peg (Part No. 0003296000).
3. Place the Thick Spacer (23) centrally on the rear main bearing with the chamfer facing towards the bearing.
4. Assemble the connecting rod bearings (26) into the connecting rods (25) with the use of the universal press tool (Part No. 0003295000). Then insert the left side connecting rod into its operating position First. It will be found that the flat part of the flange on the connecting rod has to face the operator in order to insert it. When in position, rotate the connecting rod so that this flat surface faces downwards.
5. Place the thin spacer (27) centrally on the bearing in the connecting rod.
6. Insert the right side connecting rod into its operating position with the flat surface on the flange of the connecting rod facing upwards, but do not turn it over, i.e. the two flat surfaces should now face outwards from the centre.
7. Offset the centre of the connecting rod bearings and thin spacer 3.8mm (0.15") from the centre line of the Rear Main Bearing and then insert the eccentric drive shaft (24).
8. Press in the eccentric drive shaft, until the shaft end is firmly seated against the main assembly peg (Part No. 0003296000).
9. Assemble the front main bearing (22) into the main bearing housing (28) with the use of the universal press tool (Part No. 0003295000). Then press this assembly on to the eccentric shaft until the bearing housing is firmly seated on the machined surface in the pump body casting, by use of the universal press tool (Part No. 0003295000).
10. Press the pump half-coupling (31 or 47) on to the eccentric drive shaft with the stock end of the rear bearing press tool (Part No. 0003293000) until it is flush with the end of the eccentric drive shaft. Insert the key (36) and tighten the grub screw (40) using the body drain hole for access.

NOTE: The connecting rods should be within 0.8mm (0.030") of centre in the connecting rod seal housings in the pump body casting.



5 TROUBLE SHOOTING GUIDE

Proceed in the sequence in which the actions are given.

PUMP WILL NOT PRIME, OR LOSES PRIME HAVING PUMPED PRODUCT FOR A BRIEF PERIOD OF TIME

ACTION	COMMENT
1 Check that pumping chambers contain liquid.	The pump's priming ability will be greatly increased if the chambers are filled.
2 Check that duty lift does not exceed pump's standard capability.	This pump is capable of priming to a maximum vertical height of 8.8m (29ft) H ₂ O.
3 (a) Check all suction-side hoses, fittings and joints for air leaks.	Priming problems are VERY often caused by faults in supply pipework. Air must NOT be allowed to pass into the system across couplings, etc.
(b) Check strainer and suction hose for blockages.	Do not use un-reinforced hose. Always fit a strainer of correct size and type either to the submerged end of the hose, or into the pump's suction spigot. Selwood Pumps provide special strainers for this purpose - they are easy to clean but difficult to remove.
4 Check product viscosity.	As viscosity rises, pump speed must be reduced. Refer to Selwood Pumps for advice in connection with specific fluid and duty requirements.
5 Check for solids trapped beneath valves and also for damaged valve seats.	Occasionally, solids become trapped and so prevent the valves sealing. Fluids containing a high proportion of abrasive solids can cause seat erosion which likewise impairs valve efficiency.
6 Check condition of annular valves.	Contact with non-permitted chemicals can sometimes cause the rubber to swell. When at rest, the valves should contact their seats.
7 Check condition of actuator and connecting rod seals.	These components guide the actuator, and also seal the pumping chambers. It is essential that they should not be split or perforated in any way.
8 Check pump castings for holes, splits or porosity.	Fluids containing a high percentage of abrasive solids can lead to severe erosion of the passageways.
9 Check for air leaks across cylinder rings.	The actuator seal and priming annuli have sections of rubber that seal the cylinder rings. Damage to a ring's sealing surfaces during fitting, for example, can lead to leakage of air into the pump's chambers.
10 Check that actuators reciprocate freely when pump shaft is turned.	Bearing failure might result in inadequate displacement. However, as the bearings are generously-sized this situation is unlikely to arise.
11 Check that drain tap is not open.	Drain taps are sometimes left open overnight.

OUTPUT AND HEAD ARE LESS THAN PUBLISHED FIGURES**ACTION**

- 1 Check strainer and suction pipework for blockages. Also check that air is not being pulled through a vortex created in the supply reservoir.
- 2 Check sizes of suction and delivery hoses.
- 3 Check condition of annular valves and flexing seal.
- 4 Check for solids trapped in pump body and manifold.
- 5 Check pump speed.

COMMENT

- Choking of the supply system by solids will increase the flow resistance, thus increasing the head against which the pump has to operate, and reducing output. Entry of air through faulty pipe joints will have a similar effect. Reduction also occurs if air is entrained through a vortex - to eliminate, increase strainer's submergence.
- Use wire-reinforced hose for suction system. Length should be minimised and pump sited as close to supply reservoir as possible. Unnecessary bends and fittings should not be incorporated in either the suction or delivery pipework systems. Stop valves downstream of the pump must never be closed when pump is running.
- When at rest, the priming annuli should touch their seats. Flexing seals should be free from cracks and perforations.
- Blockages are most unlikely to occur if the correct strainer is fitted.
- Normal operating pump speeds are:
- Up to 1500rpm driven by I.C. engine.
 - Up to 1000rpm driven by electric motor.

FLUID ESCAPING FROM PUMP UNIT**ACTION**

- 1 If fluid is leaking from drain hole in body, check condition of connecting rod seal.
- 2 If fluid is leaking from pressure regulator, check condition of rubber sleeve.
- 3 If fluid is leaking from manifold connectors, tighten clips and check delivery pressure.

COMMENT

- The pump should not be run in this condition. Immediately replace seal if examination reveals a split component.
- As natural rubber is used for these components, the regulator assembly must not be fitted if the pump has to handle hydrocarbon products, for example.
- Delivery pressure must not exceed 30.5m (100ft).

PUMP IS UNEXPECTEDLY NOISY**ACTION**

- 1 Check that noise does not emanate from engine, chassis or tank.
- 2 Check that there is at least 2m of flexible hose connected to the suction and discharge spigots.
- 3 Check that maximum fluid pressures are not being exceeded.
- 4 Check that duty suction lift is not excessive.
- 5 Check that pump speed is not too high.
- 6 If running at normal maximum speed, check that pressure regulators are fitted.
- 7 Check that negative delivery head is not occurring.
- 8 Check condition of rubber bushes in flexible coupling.

COMMENT

- Loose fasteners, particularly those associated with the tow bar, can give rise to unexpected noises.
- Pump can be used for rigid-pipework installations provided that they incorporate these two lengths of hose.
- Refer to Fluid Escaping from Pump Unit, Action 3 for maximum delivery heads.
- In some circumstances, lifts over 5.5m (18ft) H₂O, can cause water-hammer problems in manifold.
- Refer to Output and Head are Less than Published Figures, Action 5 for maximum delivery heads.
- Speed must be reduced if regulators are not used.
- Negative delivery heads are only permissible if the pump is fitted with a snifter valve. Refer to Selwood Pumps for advice.
- The pump is coupled to its driver by means of a pin and bush coupling. It is important that the rubber bushes should be in good condition.

PUMP IS UNEXPECTEDLY NOISY (continued)**ACTION**

- 9 Check that pump is not handling solids of excessive size.
- 10 Check condition of reciprocating and rotating parts.

COMMENT

If a strainer is not fitted, over-sized solids can pass into the pump. Maximum permitted size 6mm (0.25in).

The problem could be due to a loose actuator nut, or to failure of the drive shaft or eccentric bearings.

PUMP MECHANISM IS SEIZED AND CANNOT BE ROTATED BY HAND**ACTION**

- 1 Check that ice has not formed in pump body.
- 2 Check for over-size solids in pump body.
- 3 Check that drive-shaft bearings have not seized.

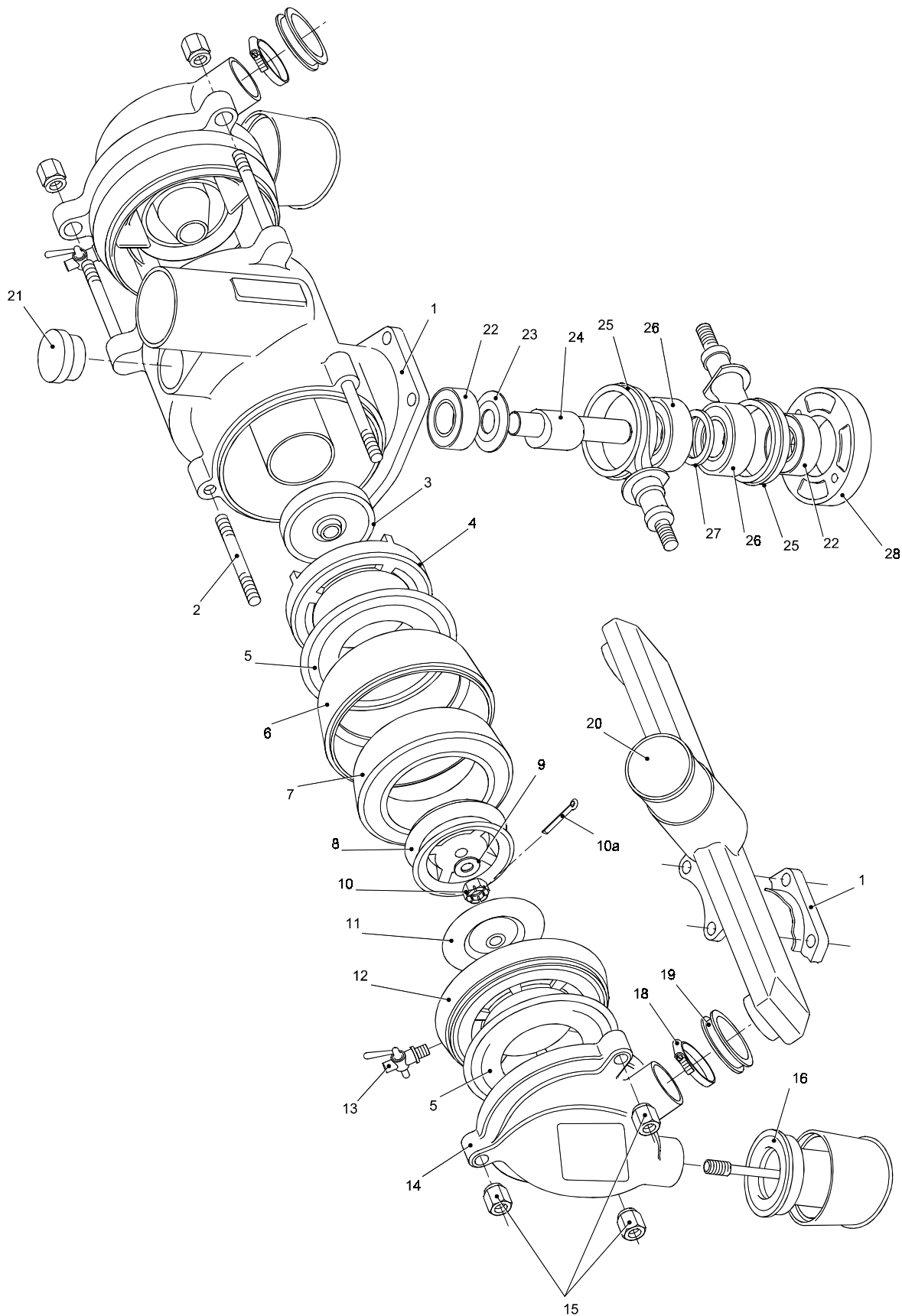
COMMENT

This condition can easily arise in cold weather if the pump is stationary and has not been drained.

Absence of a strainer can lead to unacceptably large solids entering the pump and obstructing the actuators.

Bearing seizure can arise if the pump has been operated for long time periods with a failed connecting rod seal.

Refer to Selwood Pumps if the above advice does not solve your problem.



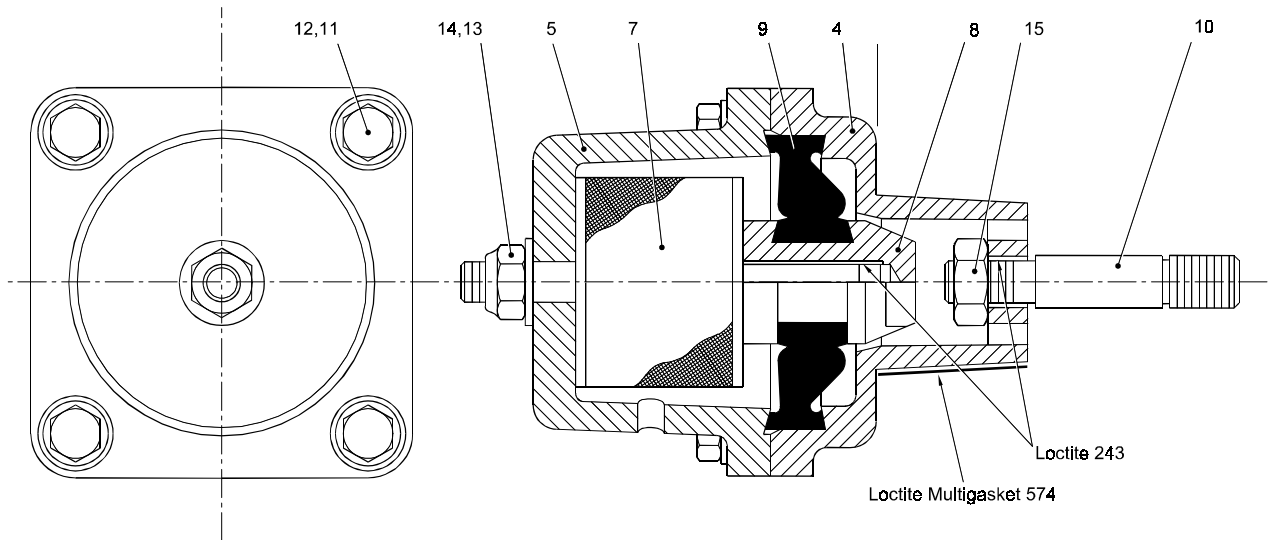
6 PARTS LISTS

6.1 Pump Parts

ITEM	DESCRIPTION	PART NUMBER	QTY
1	Pump Body Casting	0003302000	1
	Pump Body 2.5" BSP Male Threads (optional)	0003509640	1
2	Cylinder Studs	0003240000	6
3	Con. Rod Cyl. Seal	0003316000	2
	Con Rod Seal - Viton (optional)	0003316094	2
	Con Rod Seal - Polyurethane (optional)	0003316093	2
4	Suction Port Plate	0003215000	2
5	Priming Annulus	0003220200	4
	Priming Annulus - Viton (optional)	0003220294	2
	Priming Annulus - Polyurethane (optional)	0003220293	2
6	Cylinder Body Ring	0003223000	2
7	Actuator Seal	0003337000	2
	Actuator Seal - Viton (optional)	0003337094	2
	Actuator Seal - Polyurethane (optional)	0003337093	2
8	Actuator	0003219000	2
9	Actuator Washer	9030510359	2
10	Actuator Nut	0003248000	2
10A	Split Pin	0003249000	2
11	Actuator Valve	0003221200	2
	Actuator Valve - Viton (optional)	0003221294	2
	Actuator Valve - Polyurethane (optional)	0003221293	2
12	Delivery Port Plate	0003324000	2
13	Cylinder Drain Tap	0003350000	2
14	Cylinder Head	0003225000	2
15	Cylinder Nuts	0003212000	6
16	Pressure Regulator Assy.	0003230200	2
	Oil Resistant Pressure Regulator (Not Illustrated)	0393040000	2
18	Clip	9505007004	2
19	Cylinder Induction Manifold Conn.	0003236200	2
20	Induction Manifold	0003314000	1
	Manifold 2.5" BSP Male Thread (optional)	0003509630	1
21	Rubber Plug	0003243000	1
22	Main Bearing	0003202A00	2
23	Main Bearing Spacer (Thick)	0003398000	1
24	Eccentric Drive Shaft (Standard)	0003304000	1
	Eccentric Shaft 0.15" Stroke (optional)	0003509480	1
25	Connecting Rod	0003205200	2
26	Connecting Rod Bearing	0003204000	2
27	Connecting Rod Spacer (Thin)	0003399000	1
28	Main Bearing Housing	0003217000	1

When ordering spares, please state:

PUMP NUMBER - PART NUMBER - DESCRIPTION OF PART



6.2 Oil Tolerant Regulator

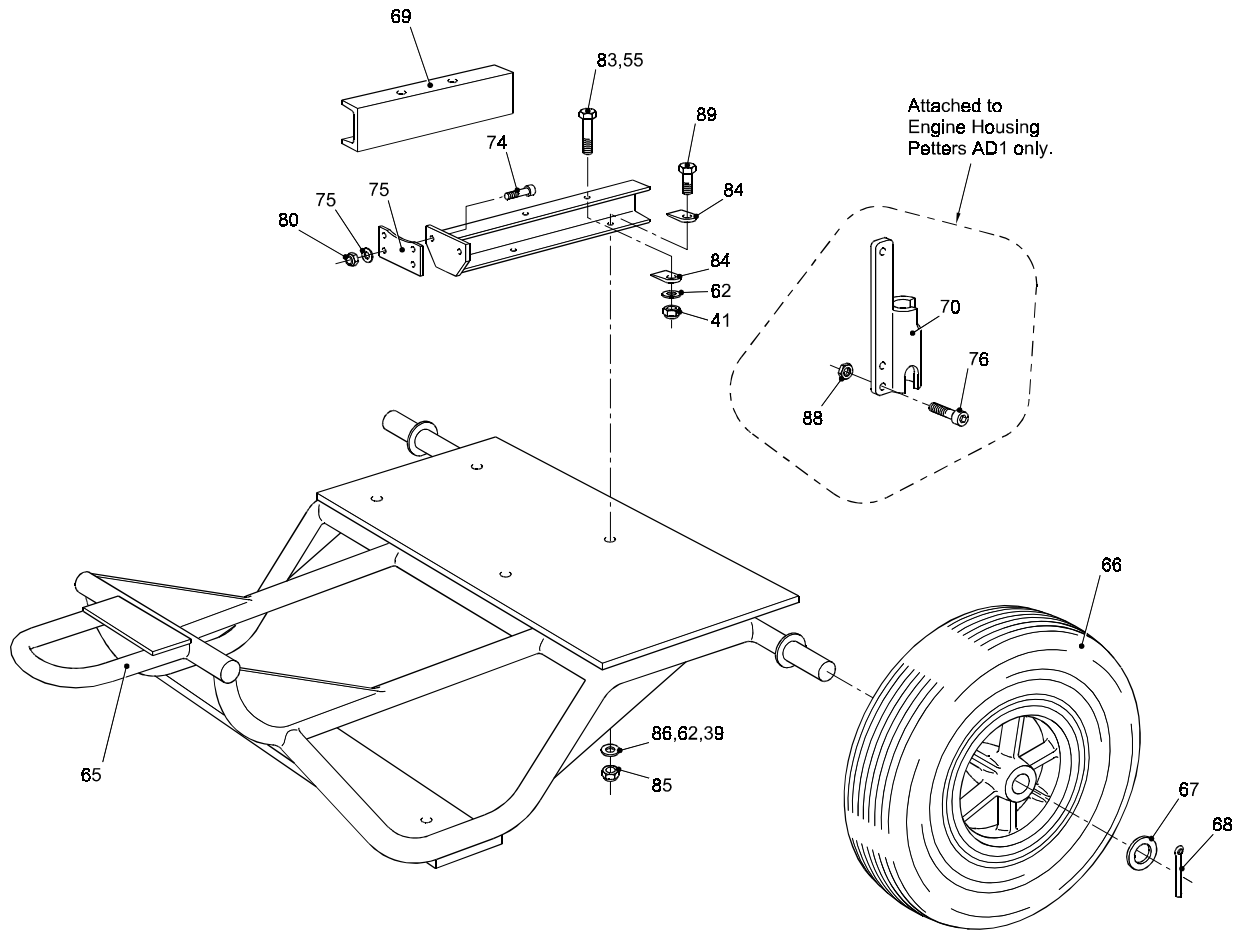
ITEM	DESCRIPTION	PART NUMBER	QTY
4	Inner Body	0393036000	1
5	Outer Body	0393035000	1
7	AV Mount	9680M00004	1
8	Seal Guide	0393037000	1
9	Neck Seal	0003316000	1
9	Neck Seal -Viton- (Optional)	0003316094	1
10	Stud	0393039000	1
11	Rect. Sect Spring Washer M8	9030080229	4
12	Hex Hd. Setscrew M8x25	9000080251	4
13	Plain Washer M10	9030100024	1
14	Hex Self Locking Nut	9025100344	1
15	Full Nut	9025100004	1

Assy Part No for Standard Seal 0393040000

Assy Part No for Viton Seal 039304000B

When ordering spares, please state:

PUMP NUMBER - PART NUMBER - DESCRIPTION OF PART

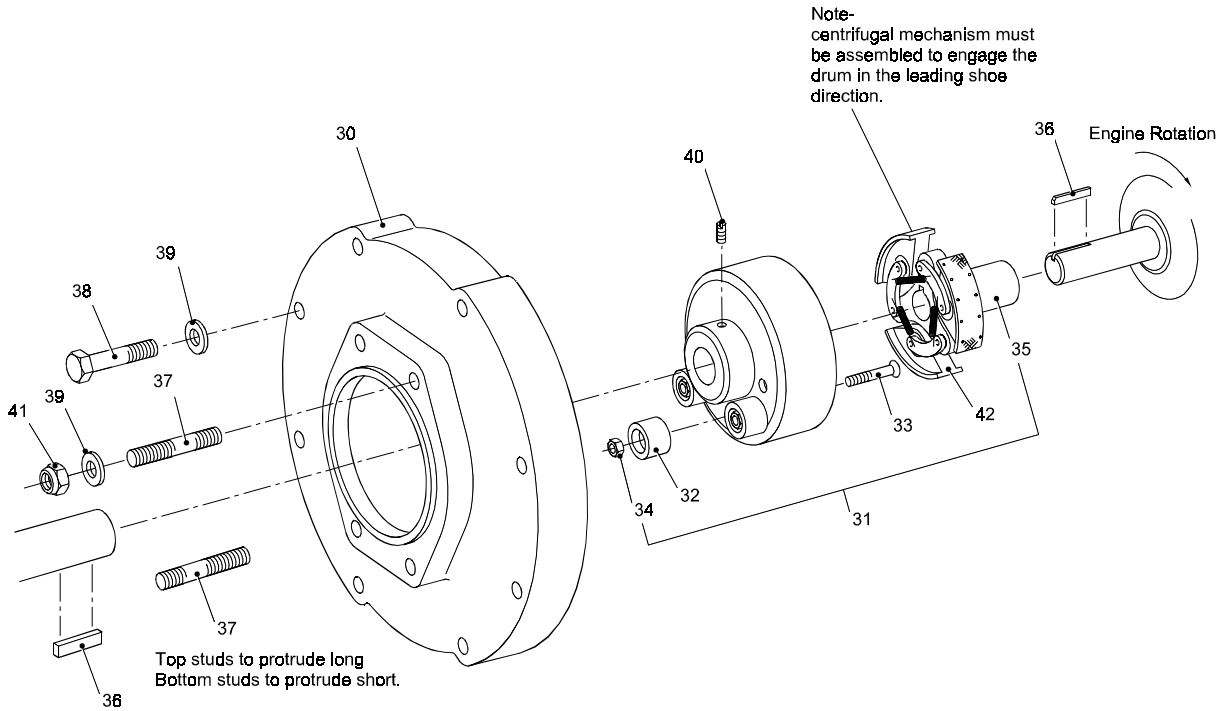


6.3 Chassis Parts

ITEM	DESCRIPTION	PART NUMBER	QTY
39	3/8" Plain Washer - Petter AD1	0003393000	4
41	3/8" BSF 'T' Type Lock Nut - Petter AD1	0003233B00	4
55	3/8" BSF Hex. Hd. Bolt - Petter AD1	0003391000	4
62	M8 Plain Washer - Honda	9030080004	8
65	Chassis - Petter AD1/AC1/Yanmar	0003880010	1
	Chassis - Honda	0003507220	1
66	Wheel	0003381000	2
67	Axle Washer	0003382000	2
68	Axle Split Pin	0003383000	2
69	Engine Support Bracket - Honda	0003507100	1
70	Handle Holder - Petter AD1	0003349000	1
72	Engine Mounting Rail - Honda	0003508580	1
73	Pump Support Bracket - Honda	0003508570	1
74	3/8" BSF Hex. Hd. Setscrew x 1"	0003872000	2
75	3/8" Plain Washer	0003393000	2
76	5/16" UNC Hex. Setscrew - Petter Engine Only	0003816000	2
80	3/8" BSF Self Lock Nut	0003233B00	2
83	M8 Hex. Hd. Bolt - Honda	9001080451	4
84	M8 Taper Washer - Honda	9030080306	8
85	M8 Locking Nut - Honda	9025080344	8
	M10 Hex. Locking Nut Engine to Chassis	9025100344	4
86	M10 Plain Washer Engine to Chassis	9030100024	4
88	5/16" Plain Washer - AD1 Only as Spacer	0003397000	2
89	M8 Setscrew - Honda	9000080301	4
	M10 Hex. Hd. Bolt x 45 Engine to Chassis	9001100451	4

When ordering spares, please state:

PUMP NUMBER - PART NUMBER - DESCRIPTION OF PART

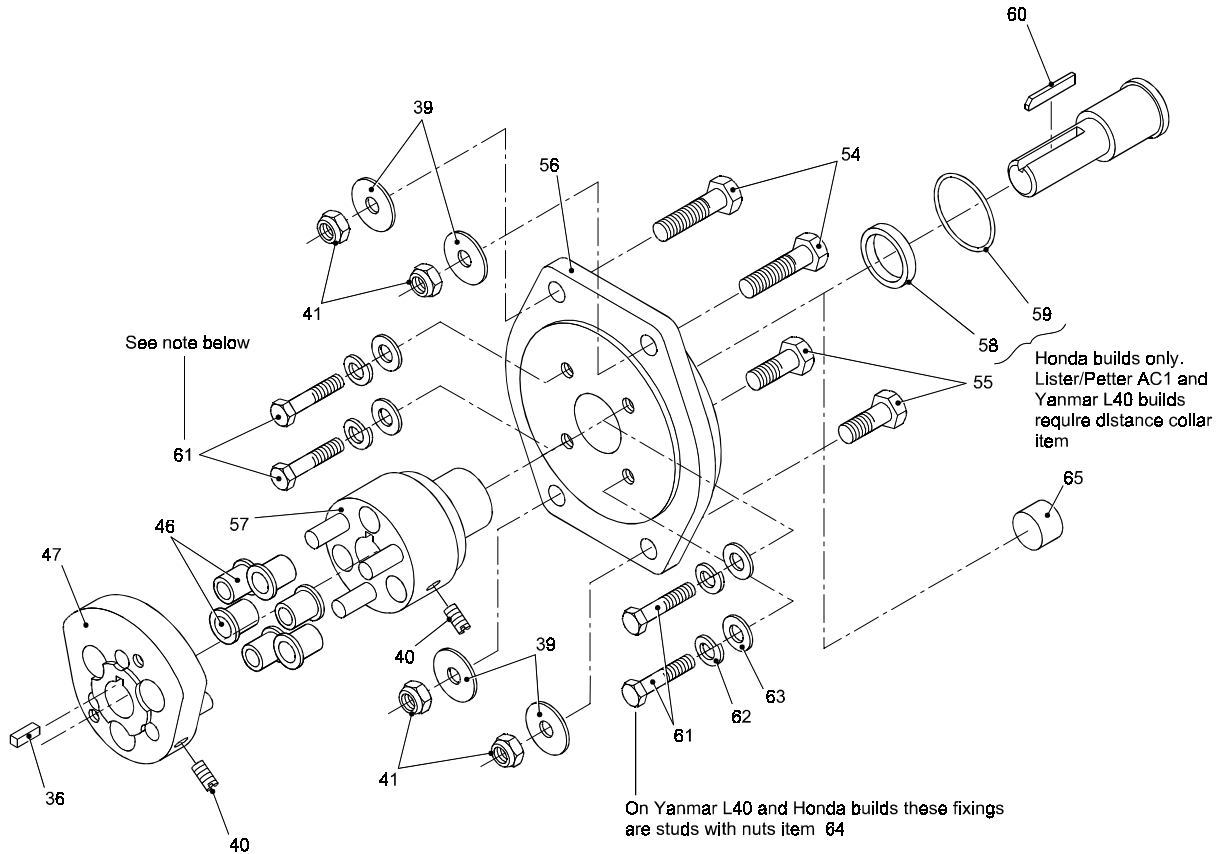


6.4 Coupling Assembly Petter AD1

ITEM	DESCRIPTION	PART NUMBER	QTY
30	Adaptor Plate	0003508300	1
31	Twiflex Centrifugal Clutch	0003508320	1
32	Clutch Balance Weight	0003508280	3
33	M6 Hex. Socket Csk. Hd. Screw	9009060250	3
34	M6 Self Lock Nut	9025060454	3
35	Spacer	0003508400	1
36	Key	0003207000	2
37	3/8" BSF Screwed Stud	9036121584	4
38	3/8" Unc Hex. Hd. Bolt	9051121751	8
39	3/8" Plain Washer	0003393000	12
40	1/4" BSF Hex. Socket Setscrew	0003209000	1
41	3/8" BSF 'T' Type Self Lock Nut	0003233B00	4
42	Comprising:		
	Lined Shoe Assy.	9670003000	3
	Bush - Rubber	9670006000	12
	Links	9670007000	6
	Soc. Hd. Cap Screw	9005060300	6
	Binx Nut	9025060464	6
	Spring (600rpm)	9670004000	6

When ordering spares, please state:

PUMP NUMBER - PART NUMBER - DESCRIPTION OF PART



6.5 Coupling Assembly

6.5.1 Parts List for Honda GX160 RX

ITEM	DESCRIPTION	PART NUMBER	QTY
36	Key	0003207000	1
39	3/8" Plain Washer	0003393000	4
40	1/4" BSF Hex. Socket Setscrew	0003209000	2
41	3/8" BSF Self Lock Nut	0003233B00	4
46	Coupling Rubbers	0003211000	6
47	Pump Half Coupling	0003309000	1
54	3/8" BSF Hex. Hd. Bolts (Upper) x 2" lg	0003392000	2
55	3/8" BSF Hex. Hd. Bolts (Lower) x 1 1/4" lg	0006719000	2
56	Adaptor Plate	0003507380	1
57	Engine Half Coupling	0003206L00	1
58	Lip Seal	9127030070	1
59	'O' Ring 1 1/4" I/D	9100240450	1
60	Drive Key	9040073324	1
61	M8 Stud 44 lg	9036080324	4
62	M8 Plain Washer	9030080004	4
63	M8 Spring Washer	9030080229	4
64	M8 Hex. Full Nut	9025090004	4

When ordering spares, please state:

PUMP NUMBER PART NUMBER DESCRIPTION OF PART

6.5.2 Parts List For Lister Petter AC1

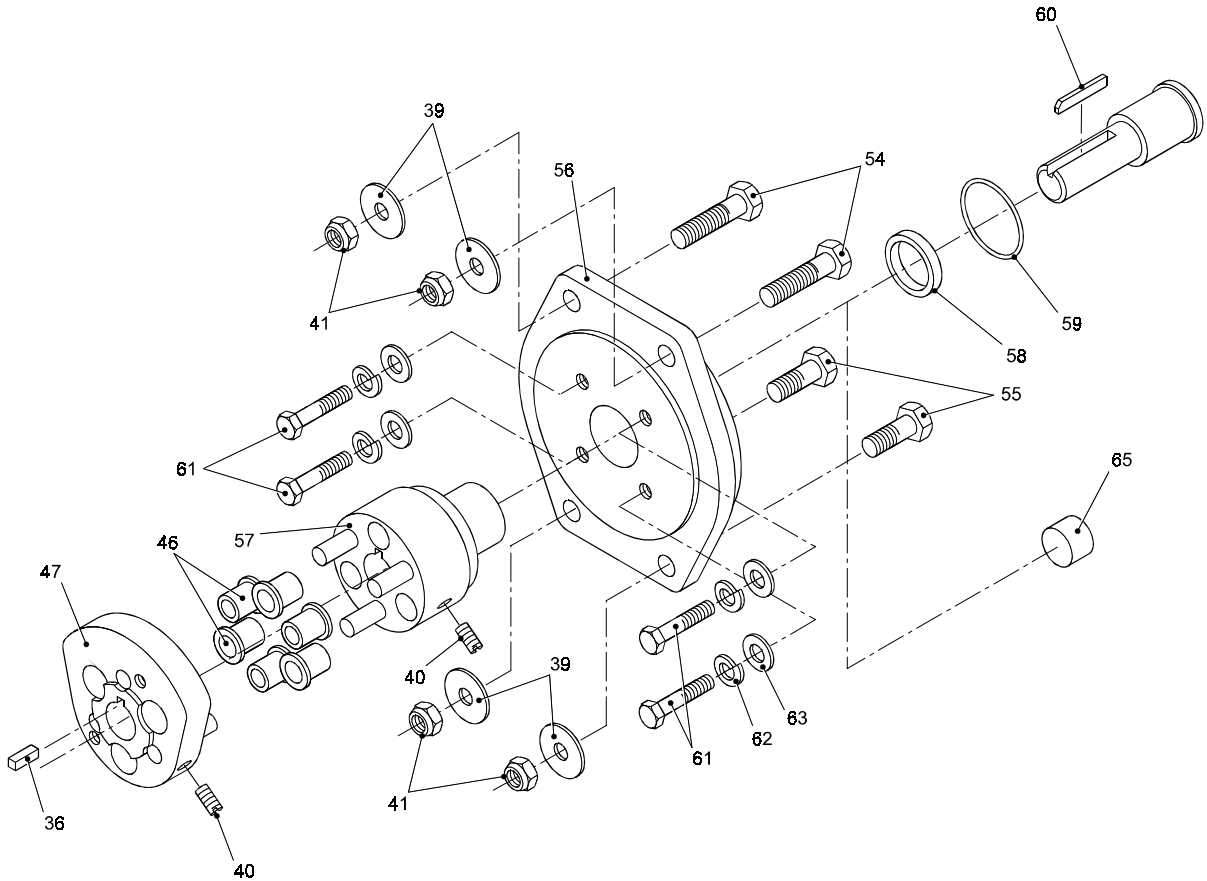
ITEM	DESCRIPTION	PART NUMBER	QTY
36	Key	0003207000	1
39	3/8" Plain Washer	0003393000	4
40	¼" BSF Hex. Socket Setscrew	0003209000	2
41	3/8" BS Self Lock Nut	0003233B00	4
46	Coupling Rubbers	0003211000	6
47	Pump Half Coupling	0003309000	1
54	3/8" BSF Hex. Hd. Bolts (Upper) x 2"	0003392000	2
55	3/8" BSF Hex. Hd. Bolts (Lower) x 1½"	0003391000	2
56	Adaptor Plate	0003519410	1
57	Engine Half Coupling	0003206B00	1
60	Drive Key	0003218B00	1
61	5/16" Unc. Hex. Hd. Bolt X 1 ³ / ₈ "	0003395000	4
62	5/16" Spring Washer	0003396000	4
63	5/16" ID Plain Washer	0003397000	4
65	Coupling Spacer	0003376000	1

6.5.3 Parts List for Yanmar L40

ITEM	DESCRIPTION	PART NUMBER	QTY
36	Key	0003207000	1
39	3/8" Plain Washer	0003393000	4
40	¼" BSF Hex. Socket Setscrew	0002033000	2
41	3/8" BSF Self Lock Nut	0003233B00	4
46	Coupling Rubbers	0003211000	6
47	Pump Half Coupling	0003309000	1
54	3/8" BSF Hex. Hd. Bolts (Upper) x 2"	0003392000	2
55	3/8" BSF Hex. Hd. Bolts (Lower) x 1½"	0003391000	2
56	Adaptor Plate	0389174000	1
57	Engine Half Coupling	0389175000	1
60	Drive Key Supplied with Engine 5 x 30		1
61	M8 Stud x 37	9034037001	4
62	M8 Spring Washer	9030080299	4
63	M8 Plain Washer	9030080004	4
64	M8 Hex. Full Nut	9025080004	4
65	Coupling Spacer	0389176000	1

When ordering spares, please state:

PUMP NUMBER PART NUMBER DESCRIPTION OF PART

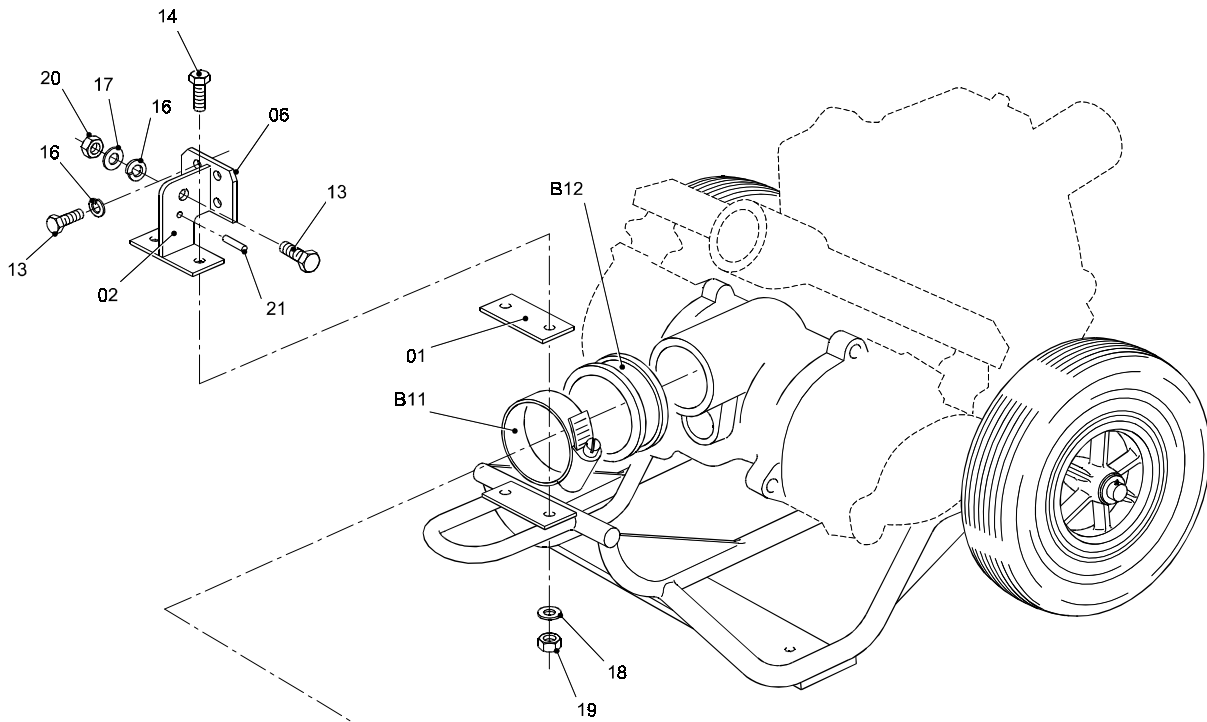


6.6 Coupling Assembly 2.2kW & 3.0kW Electric Drive Spate 75C

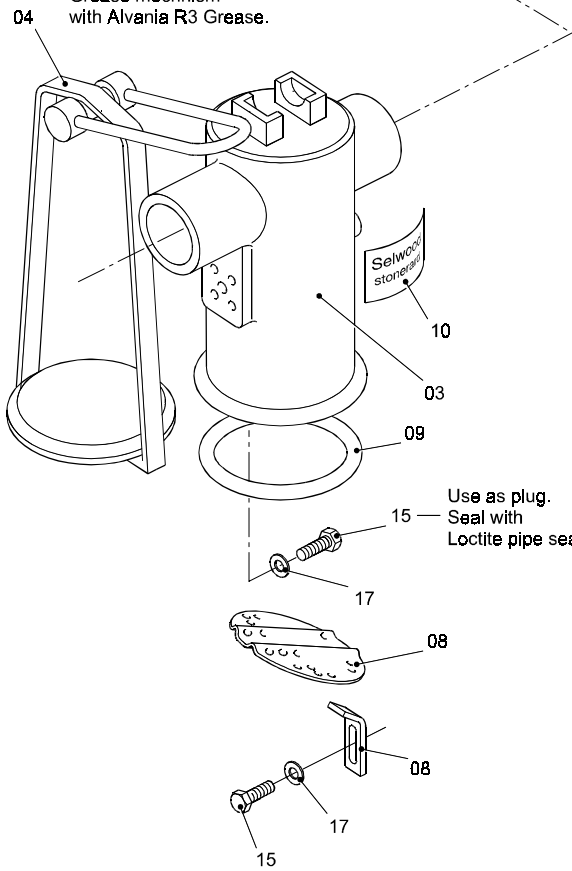
ITEM	DESCRIPTION	PART NUMBER	QTY
36	Key	0003207000	1
39	3/8" Plain Washer	0003393000	4
40	1/4" BSF Hex. Socket Setscrew	0003209000	2
41	3/8" BSF Self Lock Nut	0003233B00	4
46	Coupling Rubbers	0003211000	6
47	Pump Half Coupling	0003309000	1
54	3/8" BSF Hex. Hd. Bolts (Upper) x 2" lg	0003392000	2
55	3/8" BSF Hex. Hd. Bolts (Lower) x 1¾" lg	0006719000	2
56	Adaptor Plate Electric Motor	0395238000	1
57	Motor Half Coupling	0395237000	1
60	Drive Key (Supplied with Motor)		
61	Hex. Socket Cap Hd. Screw M8 x 20 lg	9005080200	4
65	Distance Collar	0396015000	1

When ordering spares, please state:

PUMP NUMBER PART NUMBER – DESCRIPTION OF PART



Note-
Grease mechnism
with Alvania R3 Grease.



6.7 Chassis & Extra Parts with MK2 Stonecatcher

ITEM	DESCRIPTION	PART NUMBER	QTY
01	Shim	0388002000	1
02	Mounting Bracket Lower	0396141000	1
03	Body MK2	0003509780	1
04	Closure Mechanism	0003508140	1
05	Not used		
06	Mounting Bracket Upper	0396140000	1
07	Strainer	0003508060	1
08	Strainer Clip	0003508070	1
09	3" Bauer Sealing Ring	9560003030	1
10	Stonecatcher Label	0003508150	1
11	3½" Hose Clip	9505000002	1
12	Connector	0003880001	1
13	Hex. Hd. Set Screw M8 x 25	9000080251	5
14	Hex. Hd. Set Screw M10 x 50	9000100501	2
15	Hex. Hd. Set Screw M8 x 20 S.S.	9000080207	2
16	Spring Washer M8	9030080229	5
17	Plain Washer M8	9030080024	5
18	Plain Washer M10	9030100024	2
19	Hex. Lock Nut M10	9025100344	2
20	Hex Full Nut M8	9025080004	2
21	Spring Roll Pin	9000497-01	2

When ordering spares, please state:

PUMP NUMBER - PART NUMBER - DESCRIPTION OF PART