



instruction booklet



MCPHERSON'S LTD.
MELBOURNE · SYDNEY · BRISBANE · ADELAIDE · PERTH



Ajax Piston Pumps Spare Parts List

A. E. KEATING 

Warranty:

The Company warrants each new pump and each new part against defective material or workmanship and agrees that should any part prove, in the opinion of the Company, to be defective within 6 months after delivery to the Purchaser, the Company will supply another part free at the address of the Company. Provided that any customer claiming replacement of any defective part shall forward the same, carriage paid, to a Warehouse of the Company, accompanied by a letter making such claim. This Warranty shall not include —

- a. Any labour, freight charges and other expenditure incurred in replacement.
- b. Any contingent or consequential loss or damage.
- c. Any damage attributable to wear and tear, misuse, neglect or adjustment, dirt, improper installation or accident.
- d. Any equipment which has been repaired by any person, other than the Company, unless with the consent in writing of the Company.

Installation, Operation and Maintenance Instructions and Spare Parts List of AJAX Piston Pumps

LOCATION — Install the pump as near the source of supply as possible. Never exceed the recommended distance and height from the lowest level of the source of supply. A dry place should be chosen for the installation of a motor driven unit. Allow sufficient space in front of the pump for withdrawing the plunger rod and liner.

FOUNDATION — This should be sufficiently substantial to support the pump and prevent movement.

PIPE SUPPORT — All piping should be supported independently near the pump. Pipes must register with the pump connections without being strained into position.

SUCTION PIPE — The suction line in particular must be airtight, as even a small leak may impair the operation of the pump. The pipe should never be smaller than the pump connection, and may, with advantage, be a size larger. Avoid abrupt changes in pipe diameters. The suction line must be as short and direct

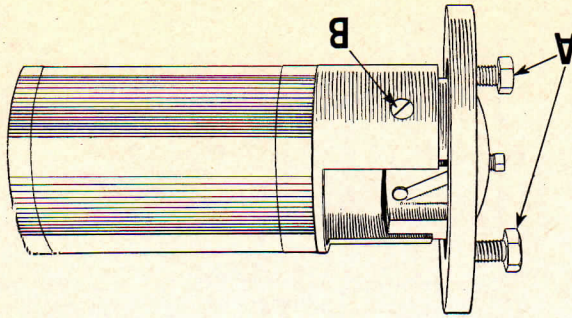
as possible. Avoid sharp turns, use bends rather than elbows.

When laying the line a uniform grade should be maintained, rising towards the pump the whole way. Particular care should be taken to avoid humps or depressions in the pipeline, otherwise air may be trapped in the pipe. This would greatly reduce the flow. It is important to avoid these air pockets whether the pump is above or below the supply level. Ensure that the end of the suction line is always well below the surface of the water; when the pump is operating, check to see that a vortex does not form.

FOOT VALVE — If a foot valve is used, it should have an area at least $1\frac{1}{2}$ times that of the suction pipe. If a strainer is used, it should have a clear area 3 to 4 times that of the suction pipe.

DELIVERY PIPE — The size of the delivery pipe should be selected so that the friction head is not excessive. If delivery pipe is too small, frictional head is very greatly increased, consequently more power is required to drive the pump. Avoid sharp turns, use bends rather than elbows. A check valve should be installed between the pump and delivery line to protect the pump from injury due to water hammer and to enable the pump to be examined without drain-

SKETCH 2



are disturbed they should be removed from the pump and rubbed against a piece of emery paper supported on a flat surface until they are perfectly flat.

LINER — To remove the liner, unscrew the nuts on the cylinder head, then insert two set screws (A) in the tapped holes provided (See Sketch 1). Tighten both screws evenly, and the cylinder head and liner will be withdrawn. The liner can be removed from cylinder head by withdrawing the small studs (B) (see Sketch 2). When replacing the liner, see that the cut out portion is on top.

PLUNGER — To change plunger cups, first turn the pump by hand until the plunger is in its most forward position. Then remove cylinder head and liner, and, with the box spanner provided, unscrew the nut and locknut on the end of the plunger rod. The cups and plates can then be taken out, and the cups changed. To withdraw the complete plunger rod, first remove the cylinder head and liner. Slacken the gland nut and the plunger rod crosshead locknut. Unscrew the plunger rod from the crosshead, remove the locknut and deflector, and withdraw the rod through the cylinder. When the plunger is being replaced in the pump, it may be found more convenient to insert it in the liner before fitting it to the

pump. The assembly of plunger, liner and cylinder head may then be fitted to the pump. If the pump has been standing for some time, the plunger leathers may become hard and dry. This will greatly impair the operation of the pump. The leathers should be removed from the pump and soaked in castor or neat-foot oil, or, if this is not available, water, for some hours. They should then be worked with the fingers until the flange is soft, and replaced in the pump.

GLAND — This should be just tight enough to permit a slow drip from the gland when the pump is operating. If the gland is too tight, the pump will use excessive power and the plunger rod will wear rapidly. Graphited square greasy hemp packing should be used.

SPEED — If the pump is operating under difficult suction conditions, the speed should be reduced to 40, 30 or, if necessary, fewer strokes per minute.

LUBRICATION — The only lubrication required is for the gear case. Fill sump or the gear case with oil to the mark on the outside of the casing and check frequently the oil level. For correct lubrication use one of the following oils:

Ampol Ardea 37 — BP Energol HL 125 —

Caltex Regal PE (R & O) — Castrol Perfecto RR — Esso Teresso 56 — Golden Fleece HVX No. 8 — Mobil Oil DTE Heavy — Shell Turbo 37.

The capacities of the gear case sumps are as follows:

A2 = 2 pints A3 = 4 pints
AH3, A4, A5 = 10 pints A6 = 16 pints

FROST — Pump should be drained in cold weather, to prevent fractures due to frost.

MAINTENANCE KITS — Maintenance kits for Ajax Piston Pumps can be obtained from your pump supplier. These kits contain the replacement valves, valve springs, piston cups, gland packing and all gaskets needed to carry out the normal maintenance of your pump. A maintenance kit kept with your pump ensures that you always have on hand the parts necessary to avoid a pump stoppage.

Emergency Hints

NO WATER DELIVERED — Check suction line fittings for blockages or leaks. Check plunger cups and valves for excessive wear. Suction lift may be excessive.

UNEVEN FLOW — See that air chamber is not water logged. Check plunger cups for wear; see that the surface of the cup is not scored. Check valves, if face of rubber is worn or deformed, rub valve face against emery cloth supported on a flat surface until face is perfectly flat. See that no foreign matter is preventing valve from seating.

FALLING OFF OF CAPACITY OR PRESSURE — Check suction line and vacuum chamber plug for leaks. Check liner and plunger cups for wear. Check plunger cups for softness (see paragraphs under PLUNGER). Check speed of pump. Check valves.

PUMP KNOCKS — Check air chamber; if necessary, fit snifter valve (see page 4). Check valves. If pump still knocks, reduce speed.

GLAND LEAKS EXCESSIVELY — Tighten gland, repack if necessary. Check plunger rod for wear.

Parts List

See diagram at back of book.
Letter "C" indicates that part will be supplied complete.

No.	Part Name
1c	Base, with Plugs.
2	Gear Case Cover.
3c	Gear, with Setscrew.
4c	Gear Shaft Bearing, with Gasket.
5c	Pinion Shaft Long Bearing, with Gasket.
6c	Pinion Shaft Short Bearing, with Gasket.
7c	Connecting Rod, with Bush.
8	Crosshead.
9c	Fast Pulley, with Setscrew.
10c	Loose Pulley, with Greaser.
11c	Keeper Plate, with Setscrews.
12c	Cylinder Body, with Studs and Plugs.
13c	Cylinder Head, with Liner Studs, Plugs and Gasket.
14c	Stuffing Box, with Gland Nut and Gasket.
15c	Air Chamber, with Plug.
16c	Valve Cover, with Gasket.
17	Gland Nut.
18c	Vacuum Chamber, with Plug.
21	Gland Sleeve.
22	Connecting Rod Bush.
23	Cylinder Liner.
24	Cylinder Liner Studs.
25c	Deflector, with Screw.
26	Valve Spring.
27	Valve Plate.

Parts List (cont.)

No.	Part Name	No.	Part Name
28	Valve Seat.	78	Pipe Connection Plug.
29	Valve Stud.	79	Air and Vacuum Chamber Plugs.
30c	Pinion Rod, with Nuts.	80	Crosshead Split Pin.
40	Gear Shaft.	83	Valve Cover Gasket.
41c	Pinion Shaft, with Keys (A2 and A3, with Pinion shrunk on).	84	Cylinder Gasket.
42c	Crosshead Pin, with Split Pin.	85	Bearing Gasket.
43c	Pinion (A2 and A3, shrunk on shaft).	89	Valve Rubber.
48c	Pulley Collar, with Setscrew.	90	Piston Cup.
61	Valve Cover Bolt.	91	Gland Packing.
62	Loose Pulley Grease Cup.	92	Piston Rod Locknut.
62 }	Stuffing Box Setscrew (A4 and A5 only).	95	Vacuum Chamber Pipe Connection.
63 }	Stuffing Box Stud (A6 only).	101	Centre Plate.
64	Bearing Setscrew.	102	Piston Plate.
65	Keeper Plate Setscrew.	Pc	Plunger complete.
66c	Gear Setscrew, with Locknut.	Vc	Valve complete.
67	Fast Pulley Setscrew.		
68	Cylinder Head Stud (A6 only).		
69	Cylinder Head, Stuffing Box or Valve Cover Nut.		
70	Piston Rod Locknut.		
71	Gear Setscrew Locknut.		
72	Valve and Plunger Spanner.		
73	Pinion Shaft Woodruff Key (not on A2 or A3).		
74	Cylinder Head Stud or Bolt.		
75	Stuffing Box Stud or Bolt.		
76	Base Plug.		
77	Cylinder Plug.		

Important

All Pumps are fitted with a metal plate showing type and series symbols. A facsimile of this plate is shown opposite. Both these symbols must be quoted when parts are ordered, in addition to number and name of the part.

