

THE

"Argosy" Junk

Printed by
BENHAM AND COMPANY LIMITED
COLCHESTER

PUMPING SET



OPERATING INSTRUCTIONS AND
SPARE PARTS SCHEDULE.
THE CONTENTS OF THIS BOOKLET
SHOULD BE CAREFULLY READ
BEFORE PUMP SET IS INSTALLED

SPARES FOR "ARGOSY TWIN" PUMPS

The following spares and accessories are supplied free of charge with every pump:

- Gland packing for 1 replacement
- 2 valve plate gaskets
- 1 back cover joint
- 1 tin oil, for first filling of crankcase
- 1 tube spanner for removing buckets

Manufactured by

F. W. BRACKETT & CO. LTD.

HYTHE BRIDGE IRONWORKS

COLCHESTER

ESSEX

Telephone : Colchester 73958

WORKING INSTRUCTIONS for

"ARGOSY TWIN" PUMPING SET

GENERAL

On receipt, the "Argosy Twin" Pump Set should be carefully examined and the carriers notified if it is damaged in any way. The packing case should be returned carriage paid to the supplier, otherwise it will be charged for.

INSTALLATION (COLD WATER TYPE)

CAPACITY: 480 gallons per hour against a maximum head of 100 feet from all causes.

The Pump should be installed as near to the water as convenient, so as to keep the suction pipe as short as possible. If the suction lift exceeds 12 feet, a foot valve should be fitted to the lower end of the pipe, which must be submerged under working conditions. The lower end of the suction pipe should be kept at least one foot clear of the bottom of the well, otherwise mud is liable to be drawn up and to choke the pump.

The Suction Pipe must be absolutely free from air leaks, or the pump will not work properly; and under no circumstances may the suction lift exceed 25 feet. The suction pipe should fall all the way from the pump to the water to prevent air locks forming in the pipe.

The delivery pipe can be led away from the pump as desired. Both suction and delivery pipes should be not less than 1½ in. bore, but larger pipes can be used if desired. Sharp bends and elbows should be avoided, since these fittings add considerably to the working load on the pump. The set can be screwed down to a wooden floor, or bolted to a concrete floor with Lewis bolts, as found convenient.

INSTALLATION (HOT WATER TYPE)

CAPACITY: 480 gallons per hour against a maximum pressure from all causes of 40 lbs. per square inch.

The pumping set should be secured as detailed above, care being taken that the main casting is not distorted by uneven tightening of holding-down bolts or screws.

If the temperature of water to be pumped exceeds 160° Fahrenheit (71°C), a positive head must be arranged on the suction side of the pump.

The Suction Pipe must be absolutely free from air leaks, and both Suction and Delivery Pipes should be at least 1½ in. internal diameter. Sharp bends and elbows in the pipework should be avoided.

POSITIVE SUCTION HEAD REQUIRED WHEN PUMPING HOT WATER AT VARIOUS TEMPERATURES

Temperature °F	212	200	190	180	170	160
Temperature °C	100	93	87	82	76	71
Head required at pump suction in feet	12	9	6	4	2	0

LUBRICATION

After the pumping set has been fixed, the pump crankcase should be filled nearly to the top of the filling hole provided and clearly marked "OIL" on the body casting, the plug being replaced after filling. A further supply of oil should be added from time to time. The period during which the oil supply will last will vary according to the amount of work the pump is required to perform, but for general domestic purposes, filling every three months should be sufficient. A good quality medium oil should be used, such as Castrol XL or equivalent. It is recommended that the crankcase should be drained every twelve months.

WIRING

Wiring should be carried out by a competent electrician. If the set is to be hand controlled, both wires should be carried from the terminals of a double pole switch-fuse direct to the motor terminals. If the set is to be automatically controlled by a float-switch, one wire should be led from one terminal of the double pole switch-fuse direct to the motor, the other wire being led from the other terminal of the double switch-fuse to one side of the terminal block in the float-switch, then from the other side of this terminal block to the motor. A wiring diagram for the motor is attached to the inside of the cover of the motor terminal box.

MOTOR PROTECTION

It is essential that fuse wires of the correct value are fitted in the fuse box, and these are in fact fitted before despatch of sets from the works and a spare length of fuse wire is also supplied free of charge.

It should be understood however that fuses do not give such reliable protection as a contactor starter or circuit breaker and it is strongly recommended that one of these should be used.

When such a fitting is installed, it should be wired in between the double-pole switch-fuse and the motor terminals.

If a starter is used the double-pole switch-fuse may be omitted if an isolating switch is incorporated in the starter.

The table on page 7 shows the electrical characteristics of the types of motors usually fitted to the "Argosy" sets and the recommended values of fuses are indicated in the right hand column. On no account should fuse wires of a higher value than that shown in the table be fitted, as this may result in the motor being burnt out.

STARTING UP

After the set has been completely erected the current can be switched on. If the suction lift is short, the pump should commence to deliver water in two or three minutes. If the lift is more than about eight feet, the pump should be primed before switching on. To prime the pump, the Air Vessel and Valve Plate should be removed, and the body of the pump filled with clean water. If a foot valve is fitted to the lower end of the suction pipe, the latter can also be filled with water.

If the Air Vessel and Valve Plate do not come away easily after the central fixing bolts have been removed, the rubber joints above and below the valve plate are probably sticking. A sharp tap with the wooden handle of a hammer will effectively loosen these parts.

When reassembling Air Vessel and Valve Plate, the rubber joints should be dusted lightly with french chalk and very carefully replaced in their correct positions.

After the pump has once been pumping satisfactorily, no further priming should be necessary.

FLOAT SWITCH

This should be fixed as shown by Fig. 1, centre sheet, no holes being required in the tank, the switch base being clamped in position by the two screws provided. The balance weight, float and wire cord should be suspended from the rocking arm as shown. If the cord is too long for the tank, it should not be cut short, but the surplus should be wrapped round the end of the rocking arm, otherwise the balance of the float switch will be upset. Each float switch is balanced before despatch.

The float switch operates as follows: Assuming that the tank is practically empty, the weight of the float on the balance weight will pull the rocking arm down on the tank side, switch the motor ON, and the pump will start to fill the tank. As the water level rises in the tank, it will carry the float up with it until the top of the float comes into contact with the Stop fixed to the wire cord. A further rise in water level will cause the float to lift the balance weight and upset the equilibrium of the rocking arm, which will be raised on the tank side until the switch is automatically cut out, stopping the pump, no more water being delivered into the tank.

SCHEDULE OF SPARE PARTS

Referring to Litho No. 1189

As water is drawn from the tank, the float falls, until once again it comes into contact with the balance weight, which, being depressed, starts the motor, and the pump recommences delivering water into the tank. It will be seen that the balance weight should be arranged as low as possible in the tank when the switch is ON, and the STOP fixed in such a position on the wire cord that the tank is as full as possible when the switch is cut OFF.

The above operation is for TANK FILLING, in which case the cord, float, balance weight and stop are suspended on the right side of the rocking arm looking at the float-switch, with the single balance weight suspended on the other end. For TANK EMPTYING or SUMP EMPTYING operation the positions of the cord, floats, etc., should be reversed, i.e. the cord, float, balance weight and stop should be suspended from the left side of the rocking arm, with the single balance weight on the right.

The side of the tank to which the float switch is clamped should be stiff enough to resist bulging as the water level rises, as, if bulging occurs, the float switch may be thrown out of balance. Always fit the float switch in the stiffest part of the tank, usually at one corner.

SPARE PARTS

When ordering spare parts always quote the pump number, which is stamped on the number plate, or, if Motor Spares are required, quote motor number which is stamped on the motor name plate. Where it is essential to keep the pump running without waiting for spares, it is recommended that the following spare parts should be kept on hand.

(Numbers refer to Litho 1189.)

- One set of eight valves (14) or (14a) for hot water.
- One set of eight valve springs (17).
- One set of four composition buckets (21).
- One driving belt (68).
- Two sets of gland packing (41).
- One pair valve plate rubber joints (62).

ELECTRIC MOTOR (A.C. SINGLE PHASE)

Keep the motor clean and dry, any deposits from a dirty or dusty atmosphere being occasionally blown out.

All motors are fitted with waste-packed sleeve bearings which are filled before despatch with lubricating oil. Where the motor is only running for an hour or two each week, no subsequent lubrication is required, for about three years. Where the motor is continually in service, about 20 drops of good machine oil should be added to each bearing every 12 months. All surplus oil spreading from the bearings should be immediately wiped off. It is important not to give too much oil to the bearings.

Alternating current motors have no brushes nor collector rings, and do not require any attention other than that described above.

- | | |
|---|-----------------------------------|
| 2. Cylinder liner | 39. Pump pulley |
| 5. Bearing housing (pulley side) | 40. Locking screw |
| 6. Bearing Housing (other side) | 41. Gland packing |
| 7. Setscrew (crankcase) | 45. Locknut (belt tension screw) |
| 8. Setscrew (bearing housing) | 49. Motor pulley |
| 10. Screwed plug | 52. Pump body |
| 12. Air vessel washer | 53. Crankcase cover |
| 14. Rubber valve (for cold water type pumps only) | 54. Air vessel |
| 14a. Gunmetal valve (for hot water type pumps only) | 55. Air vessel fixing stud |
| 15. Valve guard (for cold water type pumps only) | 56. Air vessel nut |
| 16. Valve guide | 57. Valve plate |
| 17. Valve spring | 58. Crankshaft |
| 18. Plunger sleeve | 59. End cap |
| 19. Keep ring | 60. Rubber joint (end cap) |
| 20. Washer | 61. Stud, nut and washer |
| 21. Composition bucket | 62. Rubber gasket (valve plate) |
| 22. Plunger rod | 63. Fibre Joint (crankcase) |
| 23. Cross head | 65. Motor base |
| 24. Crosshead pin | 67. Belt tension screw |
| 25. Connecting rod (complete with screws and washers) | 68. Belt |
| 29. Oil slinger | 69. Motor |
| 30. Ball bearing | 70. Washer for screwed plug |
| 31. Drain pipe | 76. Deflector (rubber) |
| 33. Gland | 77. Hinge pin |
| 34. Stuffing box | 79. Crosshead guide cover |
| 38. Fibre joint (bearing housing) | 80. Cover plate |
| | 81. Cover plate screw |
| | 82. Crankcase vent hole cap |
| | 83. Crankcase vent hole cap screw |



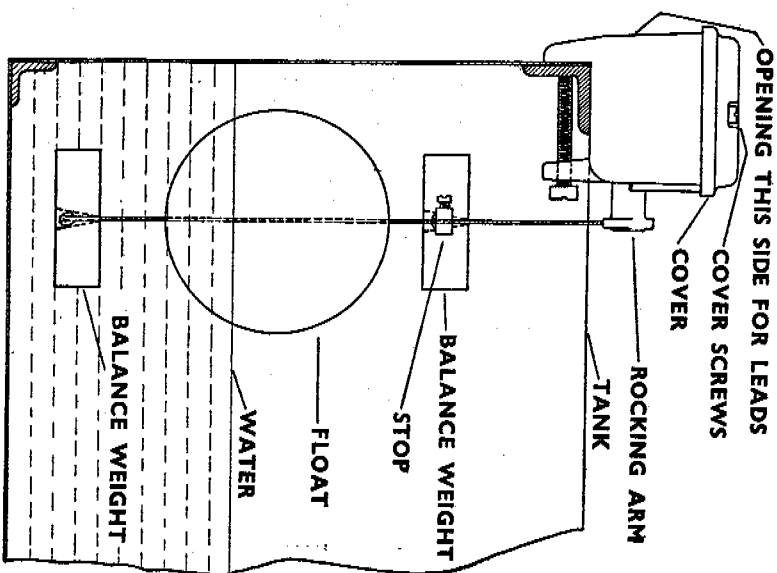


Fig. 1

The following are the individual parts included in the float switch gear:

1. Body
2. Cover for body
3. Rocking arm
4. Balance weights
5. Flexible wire cord
6. Stop collar and screw
7. Terminal block
8. Float
9. Mercury tube
10. Tube clip
11. Base fixing screw

DIRECT CURRENT MOTORS

The commutator should be cleaned occasionally, and this is best done by wiping with a clean rag moistened with benzine or petrol. See that the commutator is dry before switching on the motor. If the commutator becomes roughened, smooth down with a fine sand paper, not emery cloth, and afterwards blow or brush out all dust from grooves between segments. Worn brushes should be replaced when necessary, and new brushes should be bedded-down to the commutator with No. 0 sand paper, the smooth side of the sand paper being held firmly against the surface of the commutator.

The brushes should move freely in their holders without sticking, and the brush springs should exert a continuous gentle pressure on the brushes. Make sure that both brushes are bedding perfectly and that all terminals are screwed up tightly before switching on.

FROST

During frosty weather the pump cylinder and pipework should be drained. Two drain plugs are provided on the pump cylinder, one on each side of the outlet branch. Alternatively, the pump end and pipes can be lagged with straw or other protective material, and, in any case, the pump should be reasonably protected from severe exposure.

MAINTENANCE

The belt should be just tight enough to drive the pump, and excessive tightness is to be avoided.

To remove the buckets, when required, proceed as follows, referring to the illustration on the centre sheet.

Remove Cover (59), also Air Vessel (54) and Valve Plate (57). Revolve Flywheel (39) until the buckets are as near to the valve end of the pump as possible. With the rubular spanner provided, unscrew the Plunger Sleeve (18) and remove it from the pump body. Then revolve the flywheel until the pump rod is withdrawn from the buckets (21), after which the buckets (21) and lock ring (19) can be removed with a bent wire.

FOOT VALVE AND STRAINER

When this is fitted, make sure that the valve will hold water before screwing the casting on to the lower end of the suction pipe. If necessary, soften the leather flap with tallow, or, if this is not procurable, vaseline. When the pump is to be used for drinking water olive oil may be preferable.

ATTENTION TO WORKING PARTS

After a cold water type pump has been standing idle and empty of water for a considerable time, the rubber valves in the pump may have curled upwards at

the edges, partially uncovering the holes in the valve plate. This can usually be remedied by turning the valves upside down. If this procedure does not cure the trouble, new valves should be fitted.

It is possible for the valve springs to lose a certain amount of compression after long use, resulting in the valves not being held sufficiently tight on their seats. This can usually be adjusted by stretching the springs slightly, but if not, new springs should be fitted.

MECHANICAL NOISE

After some use, a slight tapping sound may be noticed when the pump is working, which may indicate a small clearance in the connecting rod bearings. As long as this tapping is only of moderate volume, no harm will be done, but, if it becomes loud, the wear in the connecting rod big end should be taken up by a competent fitter.

Under certain conditions of working, water hammer may develop, which is caused by the impact of the water travelling up the suction pipe and coming into contact with the closed valves, and usually registers as a distinct knock. If this occurs to an objectionable degree, an air admission valve should be fitted in place of one of the screwed drain-plugs (10) in the cylinders, the fitting being obtainable from the pump suppliers.

The drain pipe (31) is fitted to the pump body to prevent water from gaining access to the pump crankcase, and must always be kept clear of obstructions. Where possible, the gland should be allowed to leak slightly, and a receptacle placed under the drain pipe to receive the leakage. Excessive leakage from this pipe indicates that the gland requires attention. Care should be taken to ensure that the gland is not screwed up too tightly, otherwise the motor may be overloaded.

All repairs and replacements should be carried out by competent engineers, and, when adjustments are required, the suppliers should be consulted.

PETROL DRIVEN "ARGOSY" PUMP

All remarks relating to the "Argosy" Pump are applicable to either Electric or Petrol Driven sets. For special instructions regarding maintenance of Engine, see separate booklet.

GUARANTEE

"Argosy" Pumping sets are guaranteed for 6 months from date of despatch against defects in workmanship, material or design. Should any part or parts fail due to any of the above causes, the defective part or parts will be replaced free on rail at site in Great Britain, or free on board ship in the case of export orders. This is the full extent of our liability from any cause whatsoever, no other claims being admitted.

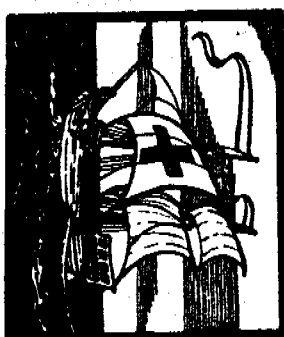
TABLE OF MOTOR CHARACTERISTICS (0.5 B.H.P. 1425 R.P.M.)

Type of Motor	Volt range	Full load current (amps.) per phase	Starting current (amps.) per phase	Size of fuse recommended (amps.)
Squirrel Cage A.C. Three Phase	380/440	1.2	5.4	5
Capacitor start, Induction run, Single Phase A.C.	230/250	3.5	14	10
"	200/220	4.175	16.5	10
"	100/105	8.15	32	20
Direct Current	230/250	2.35	14.2	10
"	200/220	2.65	16.2	10
"	100/110	5.3	32.4	15
"	50	11.2	68	30

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PUMPING SET

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BEFORE PUMP SET IS INSTALLED

SPARES FOR "ARGOSY" PUMPS

The following spares and accessories are supplied free of charge with every pump:

- Gland packing for 1 replacement
- 2 valve plate gaskets
- 1 valve
- 1 valve spring
- 1 valve guide
- 2 buckets (or 1 piston for Hot Water Pumps)
- 1 back cover joint
- 1 tin oil, for first filling of crankcase
- 1 tube spanner for removing buckets

WORKING INSTRUCTIONS for "ARGOSY" PUMPING SET

GENERAL

On receiving an "Argosy" Pump Set, it should be carefully examined and the carriers notified if it is damaged in any way. The packing case should be returned carriage paid to the supplier, otherwise it will be charged for.

INSTALLATION

The Pump should be installed as near to the water as convenient, so as to keep the suction pipe as short as possible. If the suction lift exceeds 12 feet, a foot valve should be fitted to the lower end of the pipe, which must be submerged under working conditions. The lower end of the suction pipe should be kept at least one foot clear of the bottom of the well, otherwise mud is liable to be drawn up and choke the pump.

The Suction Pipe must be absolutely free from air Leaks, or the pump will not work properly ; and under no circumstances may the suction lift exceed 25 feet. The suction pipe should fall all the way from the pump to the water to prevent air locks forming in the pipe.

The delivery pipe can be led away from the pump as desired. Both suction and delivery pipes should be not less than 3/4 in. bore, but larger pipes can be used if desired. Sharp bends and elbows should be avoided where possible, since these fittings add considerably to the working load on the pump. The set can be screwed down to a wooden floor, or bolted to a concrete floor with Lewis bolts, as found convenient.

LUBRICATION

After fixing the pumping set, the pump crankcase should be filled nearly to the top of the filling hole provided and clearly marked "OIL." on the body casting, the plug being replaced after filling. A further supply of oil should be added from time to time. The period during which the oil supply will last will vary according to the amount of work the pump is required to perform, but for general domestic purposes, filling every three months should be sufficient. A good quality medium oil should be used such as Parent Castrol C.W. Motor Oil, Single Shell Motor Oil, or other oil of equal grade and quality. We recommend that the crankcase should be drained every twelve months.

WIRING

This should be carried out by a competent electrician. If the set is to be hand-controlled, both wires should be carried from the terminals of the double-

pole switch fuse direct to the motor terminals. If the set is to be automatically controlled by a float switch, one wire should be led from one terminal of the double-pole switch fuse direct to the motor, the other wire being led from the other terminal of the double-pole switch and fuses, through the float switch to the motor. **A wiring diagram for the motor is attached to the inside of the cover screwed over the motor terminal box.**

We strongly recommend that a circuit breaker should be included in the circuit, as this fitting provides a much better protection for the motor than fuses. When a circuit breaker is fitted, it should be wired in between the double-pole switch and fuses, and motor terminals.

STARTING UP

After the set has been completely erected the current can be switched on. If the suction lift is short, the pump should commence to deliver water in two or three minutes. If the lift is more than about eight feet, the pump should be primed before switching on. To prime the pump, the Air Vessel and Valve Plate should be removed, and the body of the pump filled with clean water. If a foot valve is fitted to the lower end of the suction pipe, the latter can also be filled with water.

If the Air Vessel and Valve Plate do not come away easily after the central fixing bolts have been removed, the rubber joints above and below the valve plate are probably sticking. A sharp tap with the wooden handle of a hammer will effectively loosen these parts.

When reassembling Air Vessel and Valve Plate, the rubber joints should be very carefully replaced in their correct positions.

After the pump has once been pumping satisfactorily, no further priming should be necessary. Where convenient, prime the delivery pipe before starting the pump for the first time, although the pump will usually start without this being required.

FLOAT SWITCH

This should be fixed as shown by Fig. 1, no holes being required in the tank, the switch base being clamped in position by the two screws provided. The balance weight, float and wire cord should be suspended from the rocking arm as shown. If the cord is too long for the tank, it should not be cut short, but the surplus should be wrapped round the end of the rocking arm, otherwise the balance of the float switch will be upset. Each float switch is balanced before despatch, but, for final adjustment after erection, a length of lead wire is supplied, and, if necessary, as much as is required should be wrapped round the end of the rocking arm or the balance weight.

The float switch operates as follows:—Assuming that the tank is practically empty, the weight of the float on the balance weight will pull the rocking arm down on the tank side, switch the motor ON, and the pump will start to fill the tank. As the water level rises in the tank, it will carry the float up with it until the top of the float comes into contact with the Stop fixed to the wire cord. A further rise in water level will cause the float to lift the balance weight and upset the equilibrium of the rocking arm, which will be raised

on the tank side until the switch is automatically cut out, stopping the pump, no more water being delivered into the tank.

As water is drawn from the tank, the float falls, until once again it comes into contact with the balance weight, which, being depressed, starts the motor, and the pump recommences delivering water into the tank. It will be seen that the balance weight should be arranged as low as possible in the tank when the switch is ON, and the STOP fixed in such a position on the wire cord that the tank is as full as possible when the switch is cut OFF.

The side of the tank to which the float switch is clamped should be stiff enough to resist bulging as the water level rises, as, if bulging occurs, the float switch may be thrown out of balance. Always fit the float switch in the stiffest part of the tank, usually at one corner.

SPARE PARTS

When ordering spare parts always quote the pump number, which is stamped on the lower edge of the Air Vessel, or, if Motor Spares are required, quote motor number which is stamped on the motor name plate. Where it is essential to keep the pump running without waiting for spares, we recommend that the following spare parts should be kept on hand.

(Numbers refer to Litho 972.)

- One set of four valves (14).
- One set of valve springs (17).
- One pair of buckets (21).
- One driving belt (47).
- One set of gland packing (41).
- One pair valve plate rubber joints (36).

ELECTRIC MOTOR (A.C. SINGLE PHASE)

Keep the motor clean and dry, any deposits from a dirty or dusty atmosphere being occasionally blown out.

All motors are fitted with waste-packed sleeve bearings which are filled before despatch with lubricating oil. Where the motor is only running for an hour or two each week, no subsequent lubrication is required for about three years. Where the motor is continually in service, about 20 drops of good machine oil should be added to each bearing every 12 months. All surplus oil spreading from the bearings should be immediately wiped off. It is important not to give too much oil to the bearings.

Alternating current motors have no brushes or collector rings, and do not require any attention other than that described above.

DIRECT CURRENT MOTORS

The commutator should be cleaned occasionally, and this is best done by wiping with a clean rag moistened with benzine or petrol. See that the commutator is dry before switching on the motor. If the commutator

becomes roughened, smooth down with a fine sand paper, not emery cloth, and afterwards blow or brush out all dust from grooves between segments. Worn brushes should be replaced when necessary, and new brushes should be bedded-down to the commutator with No. 0 sand paper, the smooth side of the sand paper being held firmly against the surface of the commutator.

The brushes should move freely in their holders without sticking, and the brush springs should exert a continuous gentle pressure on the brushes. Make sure that both brushes are bedding perfectly and that all terminals are screwed up tightly before switching on.

MOTOR CHARACTERISTICS

It is essential to ensure that a fuse wire of the correct value is fitted in the fuse box. Correct fuses are fitted before despatch of sets from the works, and a spare fuse is also supplied free of charge. It should be understood, however, that fuses are very much less efficient than circuit breakers for protecting the motor against overload, and we strongly recommend that a circuit breaker should be included in the circuit.

The table on Page 6 shows the electrical characteristics of the types of motors usually fitted to the "Argosy" Sets, and the suggested values of fuses are indicated in the right hand column. The fitting of fuse wire of a higher value than that shown in the table may result in the motor being burnt out.

FROST

During frosty weather the pump cylinder and pipework should be drained. Two drain plugs are provided on the pump cylinder, one on each side of the outlet branch. Alternatively, the pump end and pipes can be lagged with straw or other protective material, and, in any case, the pump should be reasonably protected from severe exposure.

MAINTENANCE

The belt should be just tight enough to drive the pump, and excessive tightness is to be avoided. To remove the buckets, when required, proceed as follows:

Remove Cap (32), also Air Vessel (9) and Valve Plate (13). Revolve Flywheel (39) until the buckets are as near to the valve end of the pump as possible. With a large screwdriver unscrew the Plunger Sleeve (18) and remove it from the pump body. Then revolve the flywheel until the pump rod is withdrawn from the buckets (21), after which the buckets (21) and lock ring (19) can be removed with a bent wire.

FOOT VALVE AND STRAINER

When this is fitted, make sure that the valve will hold water before screwing the casing on to the lower end of the suction pipe. If necessary, soften the leather flap with tallow, or, if this is not procurable, vaseline.

After a pump has been standing idle and empty of water for a considerable time, the leather buckets may have become hard. These should be softened with tallow, as described for the foot valve flap. Under similar circumstances, the rubber valves in the pump may have curled upwards at the edges, partially uncovering the holes in the valve plate. This can usually be remedied by turning the valves upside down. If this proceeding does not cure the trouble, new valves should be fitted.

It is possible for the valve springs to lose a certain amount of compression after long use, resulting in the valves not being held sufficiently tight on their seats. This can usually be adjusted by stretching the springs slightly, but if not, new springs should be fitted.

MECHANICAL NOISE

After some use, a slight tapping sound may be noticed when the pump is working, which may indicate a small clearance in the connecting rod bearing. As long as this tapping is only of moderate volume, no harm will be done, but, if it becomes loud, the wear in the connecting rod big end should be taken up by a competent fitter.

Under certain conditions of working, water hammer may develop, which is caused by the impact of the water travelling up the suction pipe and coming into contact with the closed valves, and usually registers as a distinct knock. If this occurs to an objectionable degree, a ½ in. snifting valve should be fitted into the suction pipe, this fitting being obtainable from the pump suppliers.

The drain pipe (31) is fitted to the pump body to prevent water from gaining access to the pump crankcase, and must always be kept clear of obstructions. Where possible, the gland should be allowed to leak slightly, and a receptacle placed under the drain pipe to receive the leakage. Excessive leakage from this pipe indicates that the gland requires attention. Care should be taken to ensure that the gland is not screwed up too tightly, otherwise the motor may be overloaded.

All repairs and replacements should be carried out by competent engineers, and, when adjustments are required, consult the suppliers.

PETROL DRIVEN "ARGOSY" PUMP

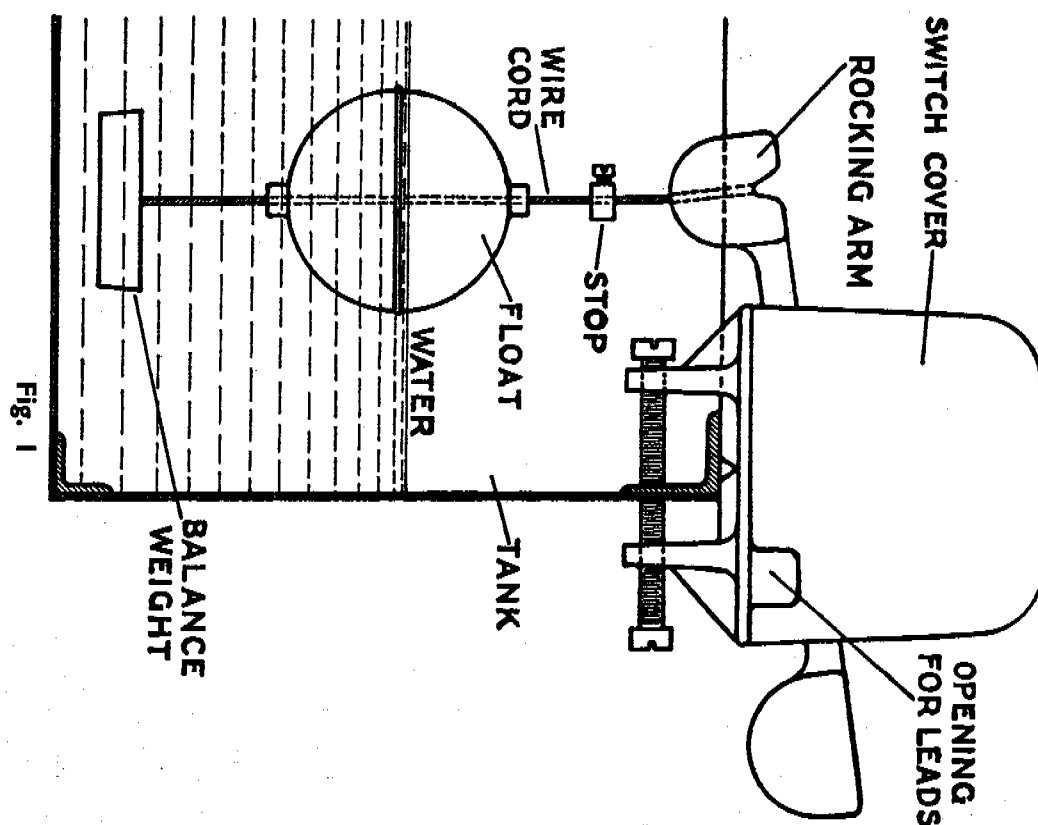
All remarks relating to the "Argosy" Pump are applicable to either Electric or Petrol Driven sets. For special instructions regarding maintenance of Engine, see separate booklet.

GUARANTEE

"Argosy" Pumping sets are guaranteed for 12 months from date of despatch against defects in workmanship, material or design. Should any part or parts fail due to any of the above causes, the defective part or parts will be replaced free on rail at site in Great Britain, or free on board ship in the case of export orders. This is the full extent of our liability from any cause whatsoever, no other claims being admitted.

TABLE OF MOTOR CHARACTERISTICS (0-25 B.H.P. 1425 R.P.M.)

Type of Motor.	Volt range.	Full load current (amps.)	Starting current (amps.)	Size of fuse recommended (amps.)
Capacitor start. Induction run A.C.	240/250	1.88	9.025	8
"	220/230	2.05	9.85	8
"	200/210	2.25	10.8	8
"	100/110	5	25	20
Direct Current	230/250	1.2	5.2	4
"	200/220	1.4	5.8	4
"	100/110	2.8	11.6	8
"	50	5.8	24.3	15

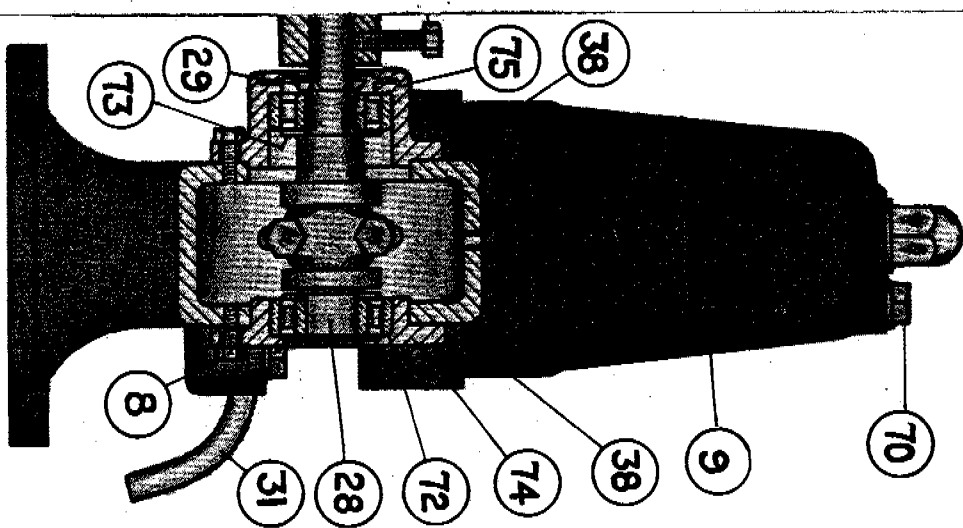


The following are the individual parts included in the float switch gear:

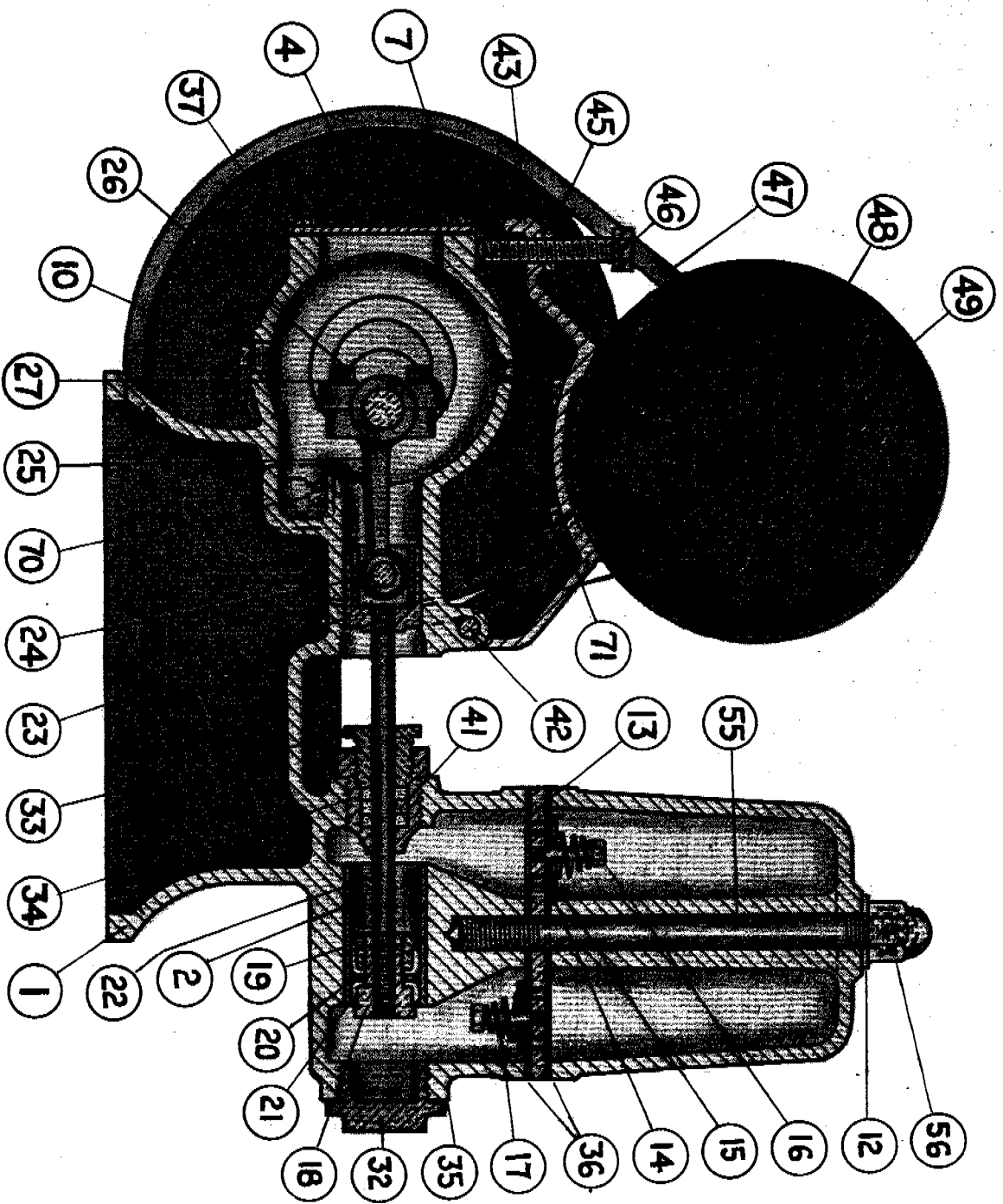
1. Base
2. Cover for base
3. Rocking arm
4. Balance weight
5. Flexible wire cord
6. Stop collar and screw
7. Terminal block
8. Float
9. Mercury tube
10. Tube clip
11. Base fixing screws

SCHEDULE OF SPARE PARTS

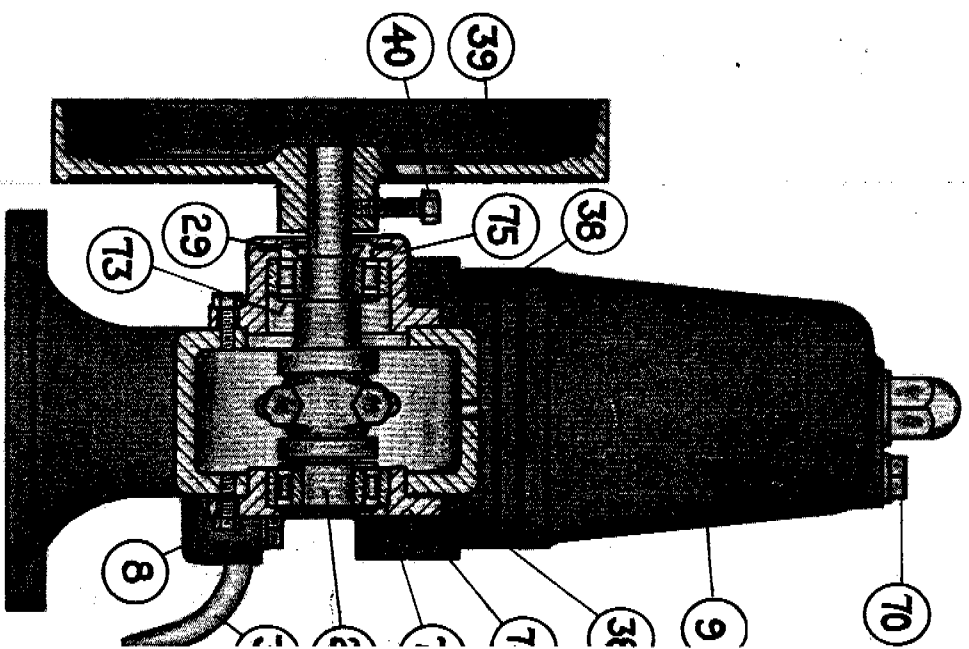
1. Pump body	32. End cap
2. Cylinder liner	33. Gland
3. Air vessel plug	34. Stuffing box
4. Crankcase cover	35. Fibre joint
7. Setscrew	36. Rubber gasket
8. Setscrew	37. Fibre joint
9. Air vessel	38. Fibre joint
10. Drain plug	39. Pump pulley
12. Air vessel washer	40. Locking screw
13. Valve plate	41. Gland packing
14. Rubber valve	42. Hinge pin
15. Valve guard	43. Motor base
16. Valve guide	45. Lock nut
17. Valve spring	46. Belt tension screw
18. Plunger sleeve	47. Belt
19. Keep ring	48. Motor
20. Washer	49. Motor pulley
21. Leather bucket	55. Air vessel fixing stud
22. Plunger rod	56. Air vessel nut
23. Crosshead	70. Plug
24. Crosshead pin	71. Setscrew
25. Connecting rod	72. Ball bearing
26. Connecting rod screws	73. Washer
27. Spring washer	74. Bearing housing (Out-side)
28. Crankshaft	75. Bearing housing (Pulley side)
29. Oil slinger	
31. Drain pipe	



ARGOSY PUMP



LITHO 972



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