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 **CompAir BroomWade**

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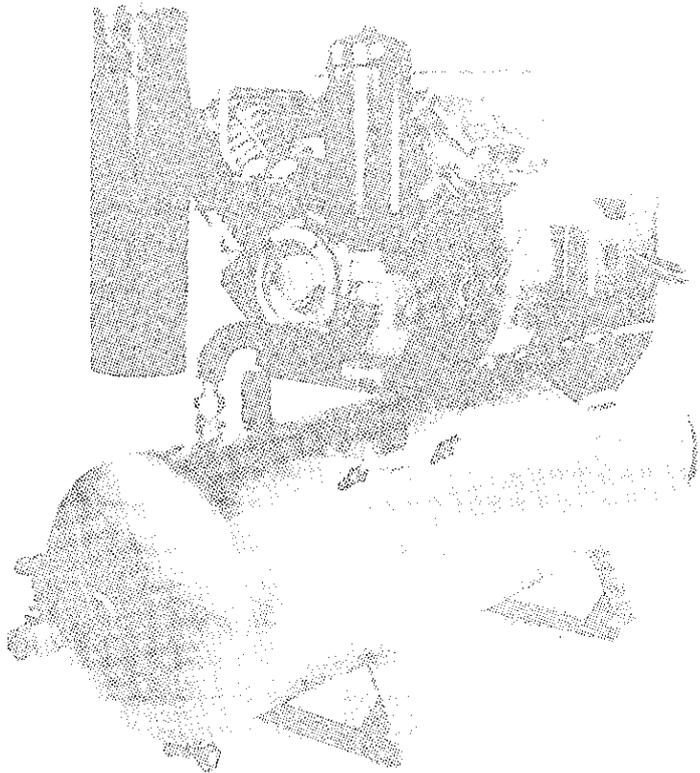
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2000

series User Manual

2085T & 2085HT air compressors



2085T and HT

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FOREWORD

1. These compressors have been designed and manufactured to provide maximum performance. Regular servicing will assist in maintaining the high performance.
2. World-wide service and parts facilities are provided by CompAir BroomWade Distributors. The Service and Parts departments at High Wycombe are available should any difficulty be experienced.
3. It is essential to quote the compressor MODEL and SERIAL numbers in all communications.
4. All pressures shown are gauge pressures.
5. In addition to automatically invalidating the warranty, the substitution of parts not manufactured or approved by CompAir BroomWade can reduce performance or service life and create potential mechanical or personnel hazards.
6. The right is reserved to modify the contents of this manual without notice and the data given is in no way binding on the manufacturers.
7. It is expected that users will employ safe working practices and will observe any related legal requirements when installing, operating, maintaining and overhauling these compressors. The attention of U.K. users is drawn to the Health and Safety at Work Act 1974.
8. Where approximate figures are shown, specific details are available on request.
9. All power supply cable and fuse data given in this publication are for guidance. Those selected and used must comply with relevant standards. The attention of U.K. users is drawn to I.E.E. regulations.

WARRANTY

CONDITIONS OF COMPAIR BROOMWADE WARRANTY ARE STATED IN OUR STANDARD CONDITIONS OF SALE. DETAILS OF WARRANTY FOR A PARTICULAR MACHINE MAY BE OBTAINED FROM THE SUPPLYING DISTRIBUTOR.

MAINTENANCE

COMPAIR BROOMWADE DISTRIBUTORS HAVE STAFF TRAINED AND EQUIPPED TO SATISFY YOUR SERVICE NEEDS. THEY CAN SUPPLY MOST REPLACEMENT PARTS FROM STOCK AND HAVE THE BACKING OF THE MANUFACTURER'S RESOURCES FOR EMERGENCY REQUIREMENTS.

WARNING

THE USE OF REPLACEMENT PARTS OR LUBRICATING OILS NOT SUPPLIED OR APPROVED BY COMPAIR BROOMWADE CAN LEAD TO EXPENSIVE FAILURES WHICH WILL NOT BE COVERED BY WARRANTY. CONSULT YOUR COMPAIR BROOMWADE DISTRIBUTOR FOR ADVICE IF ANY DOUBT EXISTS.

1. LEADING PARTICULARS

Type	2 Stage Single Acting
Cooling	Air Cooled
Number of Cylinders	2
Low Pressure Cylinder Bore	170 mm (6.7 in)
High Pressure Cylinder Bore	100 mm (3.94 in)
Stroke	73 mm (2.874 in)
Motor	12 kW 415V or 380V 3 phase 50 Hz
Maximum Speed	1460 R.P.M.
Maximum Air Delivery Pressure	10.4 bar (150 lbf/in ²)
Crankcase Oil Capacity	3 litres (5 ¹ / ₄ Imp. Pints)
Recommended Oil	Shell Corena H68
Lubrication	Splash Feed
Direction of Rotation (Looking on Motor End)	Clockwise
Weight (Receiver Mounted Unit with 12 kW Motor)	546 kg (1204 lbs)
Weight (Free Standing Unit with 12 kW Motor)	355 kg (784 lbs)

2. GENERAL DESCRIPTION

- 2.1 The 2085 air compressor is a two stage single acting compressor with two lubricated cylinders arranged in a 90° vee formation for complete primary balance. It is suitable for pressures up to 10.4 bar (150 lbf/in²) and is available as either a free standing, or receiver mounted unit. When receiver mounted it is supplied complete with starter, automatic stop/start control, pressure relief valve and pressure gauge. A finned delivery pipe is fitted between the pulsation vessel and the air receiver.
- 2.2 Air is drawn into the first stage cylinder via a dry element intake filter and compressed to an interstage pressure of 1.7-2.4 bar (25-35 lbf/in²) depending on the final air delivery pressure. It then passes through the intercooler to the second stage cylinder where it is further compressed to the final air delivery pressure.
- 2.3 The normal method of drive is by a flexible coupling to a flange mounted motor.
- 2.4 The single piece crankcase is fitted with two detachable bearing housings which carry the main bearings. The counterbalanced crankshaft has a single crankpin which carries the two forged steel connecting rods on aluminium tin bearings.

- 2.5 The pistons are fitted to the connecting rods by fully floating gudgeon pins. The L.P. piston is aluminium alloy and the H.P. piston cast iron. Each is fitted with two compression rings and one conformable scraper ring.
- 2.6 The valves are of the low lift, multi-ported, plate type resulting in low air speed, quiet frictionless operation and reliability. One suction and one delivery valve are incorporated in each cylinder head.
- 2.7 The intercooler is of the air blast type containing banks of horizontal tubes and is connected between the cylinders. An interstage relief valve is incorporated on the L.P. side.

3. INSTALLATION

3.1 GENERAL

- 3.1.1 The floor should be capable of accepting a loading of 500 kg/m² (100 lb/ft²) and be level to within 3 mm (0.12 in) at location points.

Model 2085T anti-vibration mountings MUST NOT be removed or solid mountings substituted. Model 2085HT can be bolted to the floor if necessary.

3.1.2 Minimum room volume required is 18.5 m³ (650 ft³) with inlet and outlet openings of 0.3 m² (3.2 ft²). The minimum size of openings when operating at 10.4 bar (150 lbf/in²) is 0.36 m² (3.6 ft²). The inlet opening should be opposite the motor and the outlet near ceiling height. If an air cooled aftercooler is incorporated an additional wall opening of 0.15 m² (1.6 ft²) is required for air inlet purposes. Minimum ambient temperature 0°C (32°F), maximum 50°C (122°F).

3.1.3 The units can be lifted by a fork lift or sling attachment (with spreader) to the two lifting points. Approximate weights:

Model 2085T	355 kg (784 lb)
Model 2085HT	564 kg (1204 lb)
Dimensions — L x W x H:	
Model 2085T	1200 mm (49 in) x 720 mm (29 in) x 790 mm (32 in)
Model 2085HT	1956 mm (77 in) x 724 mm (28.5 in) x 1372 mm (54 in)

3.1.4 The unit has been inhibited before despatch. Providing all blanks and protection tapes remain secure normal inhibitor life is 12 months from date shown on Unit Test Card.

3.2 CONNECTING UP THE UNIT

3.2.1 Remove all protective blanks and tapes and fit the suction filter/ silencer.

3.2.2 Model 2085T — Connect to power supply through a 35 amp H.R.C. fused isolator. The unit requires a hand operated star/delta starter suitable for the motor. Connect in accordance with the starter diagram. Set the starter overload to the motor full load current rating (refer to motor specification plate).

3.2.3 Model 2085HT — Connect power supply cable to the starter/control box in accordance with wiring diagram inside the starter. Pass power supply through a 35 amp H.R.C. fused isolator. The starter is set to the motor full load current rating.

3.2.4 Connect air delivery to main distribution pipework.

Model 2085T	1 1/2 Rp (1 1/2 in BSP)
Model 2085HT	1 1/4 Rp (1 1/4 in BSP)

3.2.5 When the compressor is piped into an existing rigidly fixed compressed air main the length of pipe between the compressor discharge flange and the nearest fixed support should always be at least 1828.0 mm (72.0 in). This connection must include one 90° bend of 127.0 mm (5 in) minimum radius with a straight vertical length of pipe of at least 762.0 mm (30.0 in) between the compressor discharge flange and the bend.

3.2.6 When air blast aftercooler Model ABK 75 is fitted, refer to Part No. C20160/353.

4. CONTROL SYSTEMS/ PRESSURE SETTINGS

4.1 As the demand for air decreases, the receiver pressure will rise. The compressor output must be subject to control which will reduce or prevent compressed air being delivered to the air receiver. Two systems are in general use. On the 2085T compressor, automatic air governor control is in use whilst on the 2085HT compressor unit, pressure switch control is used.

4.2 For both systems an unloader is fitted above the low pressure suction valve. The unloader consists of an air operated diaphragm and hand operated cam which depresses a fork to hold the suction valve plate off its seating allowing the compressor to run off-load.

4.3 The air governor (Model 2085T) and the pressure switch (Model 2085HT) are set to cut out at 10.5 bar (150 lbf/in²) and cut in at 9.2 bar (135 lbf/in²).

NOTE: THE MINIMUM DIFFERENTIAL IS .4 bar (5 lbf/in²). 10.5 bar (150 lbf/in²) IS THE MAXIMUM OPERATING PRESSURE AND MUST NOT BE EXCEEDED. 4 bar (60 lbf/in²) IS THE MINIMUM OPERATING PRESSURE.

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- 4.4 STARTER/CONTROL BOX — INSTALLATION AND OPERATING**
- 4.4.1 Connect the Starter/Control box to the main power supply (refer to diagram). It is recommended that the power supply passes through an isolator which is fitted with a high rupture current (H.R.C.) fuse of 35 amps.
- 4.4.2 With the power supply ON and selector switch in the HAND position, the compressor starts and runs on load when the starter sequence is completed, runs continuously unloading and loading at the air pressure switch settings. The compressor is stopped by turning the selector switch to the OFF position.
- 4.4.3 With the power supply ON and selector switch in the AUTO position, the compressor starts when receiver pressure is lower than the cut-in setting of the air pressure switch and runs on load when the starter sequence is completed. When receiver pressure reaches the cut-out setting of the air pressure switch, the compressor runs unloaded for the period to which the run-on timer is set. If during this time, demand reduces receiver pressure to the cut-in setting of the air pressure switch, the compressor reverts to on load running and the timer is automatically reset. If at the end of the run-on time, the receiver pressure exceeds the cut-in setting of the pressure switch, the compressor stops and restarts when demand reduces the receiver pressure to the cut-in figure.
- 4.4.4 **ADJUSTMENTS.** Air Pressure Switch. Adjustable to pressures between .4 bar (5 lbf/in²) minimum and 10.4 bar (150 lbf/in²) maximum. Turn the pressure adjusting nut clockwise to decrease and anti-clockwise to increase the cut-out pressure. The differential is adjustable to pressures between .4 bar (5 lbf/in²) minimum and 1 bar (15 lbf/in²) maximum. Turn the notched wheel clockwise to decrease and anti-clockwise to increase the differential.
- 4.4.5 Run-on Timer. Adjustable to between 1 minute minimum and 12 minutes maximum. Rotate the adjusting knob to align the word 'min' with the desired figure on the scale. It is recommended that the setting is not less than 8 minutes.
- 5. STARTING/OPERATING**
- 5.1 INITIAL START**
- 5.1.1 Remove combined filler/dipstick plug and pour Shell Corena H68 oil into crankcase until level is at maximum on dipstick. Replace filler plug. Approximate oil capacity is 5¹/₄ Imp. pints (3 litres).
- 5.1.2 Remove plug (G 3/4) from crankcase and spray a small quantity of oil onto main bearing housings. Replace plug.
- 5.1.3 Start compressor (refer to para. 3.2). **CHECK FOR CORRECT ROTATION** which is clockwise looking on motor end. Open receiver drain valve and close outlet valve. Run unit for approximately 15 minutes to disperse the inhibitor which is slightly toxic. Close drain valve and open outlet valve.
- 5.2 NORMAL START**
- 5.2.1 Switch power 'ON'. Model 2085T — operate starter. Model 2085HT — position selector switch on starter/control box as required. 'HAND' position provides continuous running and 'AUTO' automatic stop/start control.
- 5.3 STOPPING**
- 5.3.1 Model 2085T — operate starter. Model 2085HT — turn the selector switch to 'OFF' position.
-

5.4 ADJUSTMENTS

- 5.4.1 ISOLATE THE POWER SUPPLY
- 5.4.2 Model 2085T — Automatic Air Governor. To adjust cut-out pressure, loosen locknut and turn adjusting screw clockwise to increase or anti-clockwise to decrease. Tighten locknut. Check cut-in pressure. To adjust differential unscrew top seat from body and remove shim(s) to increase or add shim(s) to decrease. Maintain .032 in (0.81 mm) clearance between wing nut and adjusting nut. To adjust clearance, loosen locknut and turn spring rod.
- 5.4.3 Model 2085HT — Pressure Switch. Remove cover. Turn pressure adjusting nut clockwise to decrease and anti-clockwise to increase the cut-out pressure. Turn notched wheel clockwise to decrease and anti-clockwise to increase differential. Replace cover.
- 5.4.4 RUN-ON TIMER. Adjustable to between 1 minute minimum and 12 minutes maximum. Rotate adjusting knob to align the word 'min' with the required figure on the scale. The setting should not be less than 8 minutes.

6. WARNING/PROTECTION DEVICES

- 6.1 The relief valve on the intercooler will discharge to atmosphere if the interstage pressure exceeds 3 bar (45 lbf/in²).
- 6.2 The air receiver (Model 2085HT) is fitted with a fusible plug which operates if the temperature exceeds 210°C (410°F) and a relief valve that will discharge to atmosphere if operating pressure reaches 10.7 bar (155 lbf/in²).

7. MAINTENANCE

7.1 SAFETY WARNING

BEFORE REMOVING COMPONENTS MAKE SURE THAT THE ISOLATOR HAS BEEN OPENED AND THAT ALL PRESSURISED AIR HAS BEEN RELEASED FROM THE COMPRESSOR AND PIPEWORK.

- 7.2 CONDENSATE DRAIN. Model 2085T — Open the air governor drain valve. Model 2085HT — Open the receiver drain valve.
- 7.3 OIL DRAIN. Remove drain plug from crankcase.
- 7.4 OIL LEVEL. Maintain at max. mark on dipstick.
- 7.5 VALVE EXAMINATION. Remove lantern cover securing screws. Lift off lantern covers and 'O' rings, take out diaphragm, follower and lanterns. Do not remove lantern bush. Lift out valves.
- 7.5.1 Dismantling Valves — Remove split pins and locking nuts complete with washers. Separate valve components taking careful note of position of valve plates, cushion plates, spring plates and lift washers. Thoroughly clean and examine, renewing any damaged components. Assemble valves in reverse order of dismantling.
- 7.6 INTERCOOLER TUBESTACK. Clean with compressed air. If heavily contaminated use a soluble oil remover and afterwards wash down with water. CAUTION: DO NOT USE CAUSTIC OR ACID.
- 7.7 AIR INTAKE FILTER. Remove element. Clean with compressed air. Renew element if heavily contaminated.

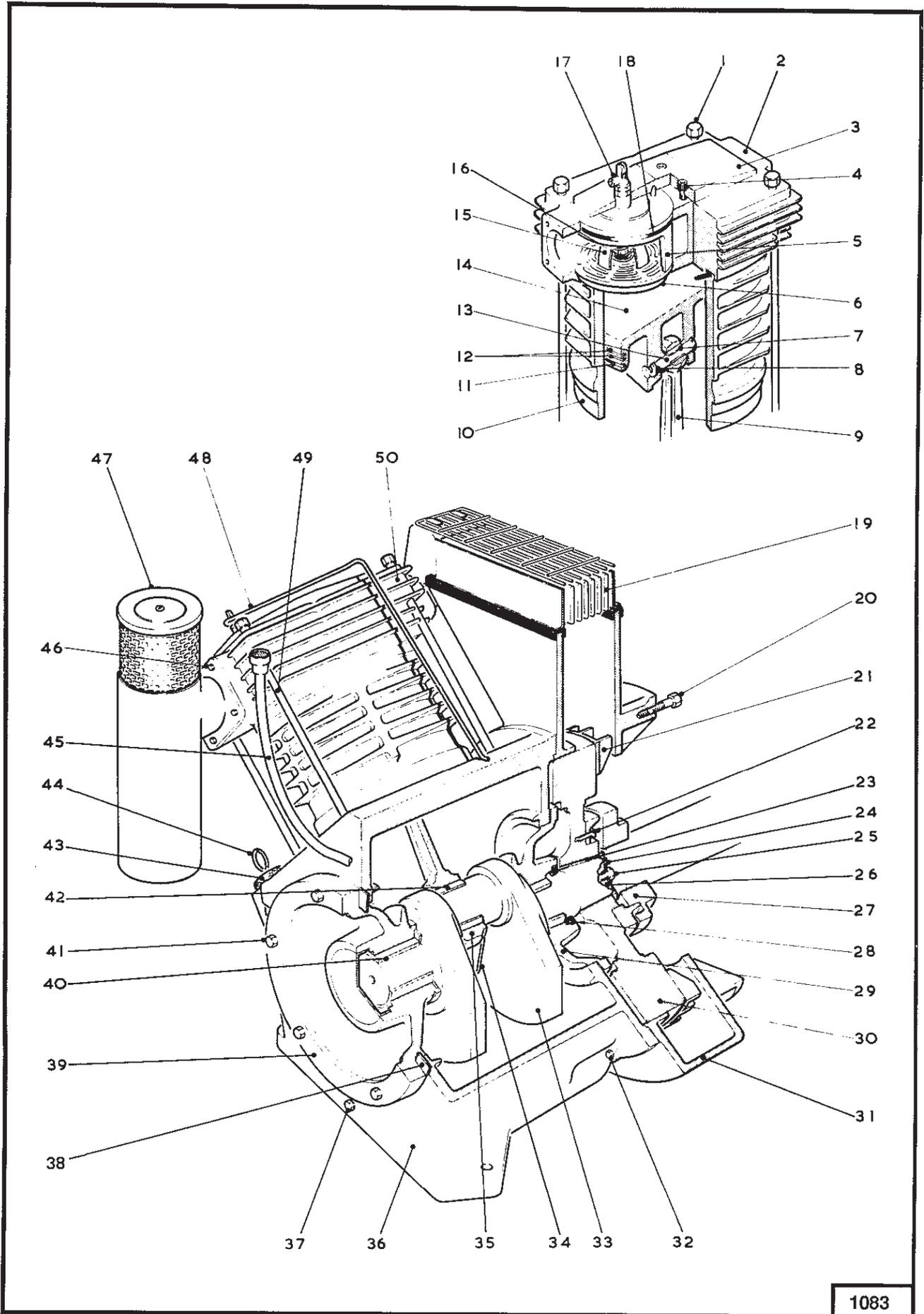


FIG. 1 SECTIONAL ARRANGEMENT

7.8 MAINTENANCE SCHEDULE

	Daily	RUNNING HOURS				
		At 50	Every 50	Every 150	At 500	Every 1000
Drain Condensate	•					
Initial Oil Change		•				
Check Oil Level			•			
Clean Suction Filter				•		
*Initial Valve Check					•	
Change Oil						•
Clean Intercooler Tubestack						•

*Subsequent examination periods to be based on condition as found.

7.8.1 The maintenance schedule is based on normal operating conditions.

7.9 GENERAL SERVICE

7.9.1 It is recommended that the compressor is given a general service at not more than 5,000 running hour periods.

8. DISMANTLING (Fig. 1)

WARNING: BEFORE DISMANTLING MAKE SURE THAT THE ISOLATOR OR CIRCUIT BREAKER HAS BEEN OPENED AND THAT ALL PRESSURISED AIR HAS BEEN RELEASED FROM THE COMPRESSOR AND PIPEWORK. RELEASE OF ALL PRESSURE IS VERY IMPORTANT TO PREVENT INJURY TO PERSONNEL.

8.1 GENERAL

8.1.1 Block the compressor under the flywheel end of the crankcase. Support the motor, remove external wiring and pipework. If receiver mounted remove the control gear and motor mounting bolts.

8.1.2 Remove the bolts (20) which hold the motor to the flywheel housing and withdraw the motor in a straight line until it is clear of the compressor shaft.

8.1.3 Remove the drain plug from the pulsation vessel.

8.1.4 Disconnect unloader pipework (48) and remove the instrument panel, taping all pipes to exclude dirt.

8.1.5 Remove the suction unloader (17) from the L.P. suction valve lantern (5) and the tee-piece from the H.P. cylinder head.

8.2 COMPRESSOR

8.2.1 Remove the bolts (46), remove the joint and suction filter (47) from the L.P. cylinder head (50) and the pulsation vessel from the H.P. cylinder head (Fig. 6).

8.2.2 Remove the four bolts securing the intercooler to the cylinders (Fig. 6) and lift the intercooler from the compressor.

8.2.3 Remove the plug (37) and drain the oil from the crankcase.

- 8.2.4 Remove the screws (22) and withdraw the coupling ring (27) from the flywheel (30). Take out the screws (32) and lift off the flywheel housing (31).
- 8.2.5 Remove the tab washer (24), bolt (25) and keep plate (26) from the end of the crankshaft (33).
- 8.2.6 Withdraw the flywheel (30) and key (23).
- 8.2.7 Remove the cylinder head retaining nuts (1), lift off the cylinder heads complete with valves and lanterns.
- 8.2.8 Lift the cylinders from the crankcase.
- 8.2.9 Remove piston rings (11 and 12) from the pistons, the circlips (8) from the gudgeon pins (13) withdraw the gudgeon pins and lift the pistons from the connecting rods (9).
- 8.2.10 Remove the plug (25 Fig. 2 in the side of the crankcase and with the crankpin at the top of its stroke, use a spanner through the L.P. cylinder aperture to release the H.P. connecting rod. Use a box or socket spanner through the hole in the side of the crankcase to release the L.P. connecting rod bolts. The components should be marked and kept in their respective assembly groups.
- 8.2.11 Remove the screws (41) and lift off the bearing housing (39) with joint (38). Support the free end of the crankshaft, remove the bolts holding the drive end bearing housing, withdraw the housing (28) and crankshaft (33).
- 8.2.12 Remove the crankcase breather pipe from the crankcase.
- 8.2.13 Unscrew the dipstick/filler plug (43) and dipstick (44).

8.3 CYLINDER HEADS (Fig. 4)

- 8.3.1 Using T handled extractors lift out the suction and delivery valve lanterns (5), taking care not to damage the 'O' ring seals.
- 8.3.2 Lift out the unloader fork (11) and spring (10).

8.4 SUCTION LANTERN ASSEMBLIES (Fig. 4)

- 8.4.1 Remove the lantern cover securing screws (18).
- 8.4.2 Lift off the lantern covers (17) and 'O' ring (4) take out the diaphragm (16) and diaphragm follower (15). It is not necessary to disturb the lantern bush (12).

8.5 VALVE ASSEMBLIES (Fig. 5)

- 8.5.1 Remove the split pins (2 and 24) from the castellated locking nuts (3 and 23).
- 8.5.2 Remove the locking nuts (3 and 23) and remove the washers (4 and 22).
- 8.5.3 Separate the valve components, taking careful note of the position of the valve plates (6 and 17), cushion plates (8 and 19) spring plates (9 and 20) and lift washers (7 and 18).
- 8.5.4 Thoroughly clean all parts and assemble the valves in the reverse order of the dismantling procedure.

9. ASSEMBLY

- 9.1 The machine can be assembled in the reverse order from dismantling. Clearances are given in Section 9.5 and torque figures are given in Section 9.6.
- 9.2 Thoroughly clean and dry all parts and before assembly, liberally coat all moving surfaces with the correct grade of compressor oil.
- 9.3 Parts which show signs of wear or damage should be renewed.
- 9.4 When renewing big-end and main bearings or adjusting crankshaft end float, it is MOST IMPORTANT to ensure that the thrust washers (halves) (11 Fig. 3) are correctly positioned.

Crankshaft end float is adjusted by means of shims between the rear bearing housing and the crankcase. (See Section 8.5 for crankshaft end float clearance.)

9.5 DESIGN CLEARANCES

Clearance	Min–Max mm	Min–Max Ins
Main Bearing Diametral	0.047–0.116	0.0019–0.0046
Big End Bearing Diametral	0.027–0.073	0.0011–0.0029
Connecting Rod End Float (Total 2)	0.300–0.460	0.0118–0.0181
Crankshaft End Float	0.250–0.770	0.0098–0.0303
L.P. Piston Top Land/Cyl. Bore	0.495–0.597	0.0195–0.0235
L.P. Piston/Cylinder Head	0.666–1.277	0.0262–0.0500
H.P. Piston Top Land/Cyl. Bore	0.178–0.226	0.0070–0.0089
H.P. Piston/Cylinder Head	0.666–1.277	0.0262–0.0500
L.P. Compression Ring Gap	0.355–0.609	0.014–0.024
L.P. Conformable Ring Gap	0.355–0.609	0.014–0.024
H.P. Compression Ring Gap	0.203–0.330	0.008–0.013
H.P. Conformable Ring Gap	0.203–0.330	0.008–0.013
L.P. Piston/Cylinder Over–Run	14.620–15.130	0.5754–0.5958
H.P. Piston/Cylinder Over–Run	14.620–15.130	0.5754–0.5958

9.5.1 After a long period of service, examination of piston/cylinder clearances and big end bearing clearances may show these to be in excess of the limitations shown in Section 9.5. To assist in deciding whether renewal of these components is necessary, the maximum acceptable clearances in these positions are shown in 9.5.3.

9.5.2 It is not suggested that routine maintenance extends to the inspection and measurement of these clearances. The satisfactory performance of the compressor is a sufficient indication that component renewal is not required.

9.5.3 MAXIMUM ACCEPTABLE CLEARANCES (BEFORE RECOMMENDED REPLACEMENT)

Clearance	mm	Ins
Main Bearing Diametral	0.203	0.008
Big End Bearing Diametral	0.152	0.006
L.P. Piston Top Land/Cyl. Bore	0.889	0.035
H.P. Piston Top Land/Cyl. Bore	0.635	0.025
L.P. Compression Ring Gap	1.371	0.054
L.P. Conformable Ring Gap	1.371	0.054
H.P. Compression Ring Gap	0.812	0.032
H.P. Conformable Ring Gap	0.812	0.032

9.6 SCHEDULE OF TIGHTENING TORQUES

Component	Size	Nm	lbf.ft
Valve Lantern Screw	2BA	1.3-1.5	1.00-1.25
Flywheel Fan Screw	M6	10.0-12.0	8.0-9.0
Bearing Housing to Crankcase Screw	M8	26.0-29.0	19.5-21.5
H.P. Valve Nut	M10	21.0-23.0	16.0-17.5
Lifting Plate to Crankcase Screw)	M10	51.0-57.0	38.0-42.5
Intake Filter to Cylinder Head Screw)			
Intercooler to Cylinder Head Screw)			
Pulsation Vessel to Cylinder Head Screw)			
Flywheel Drive Coupling Ring Screw)			
Connecting Rod Big End Nut)			
L.P. Valve Nut	M12	39.0-43.0	29.0-32.0
Cylinder Head to Crankcase Nut	M12	40.0-47.0	30.0-35.0
Flywheel to Crankshaft Screw	M12	52.0-57.0	38.5-42.5
Lantern Retaining Plate Screw	M12	63.0-71.0	47.0-52.5
Flywheel Housing to Crankcase Screw)	M12	88.0-97.0	65.0-72.0
Compressor Support Bracket Screw)			
Motor Support Bracket Screw)			
Motor to Flywheel Housing Bolt	M16	222.0-243.0	165.0-180.0
Air Delivery Flange Nut	5/8 in UNC	162.0-168.0	120.0-125.0

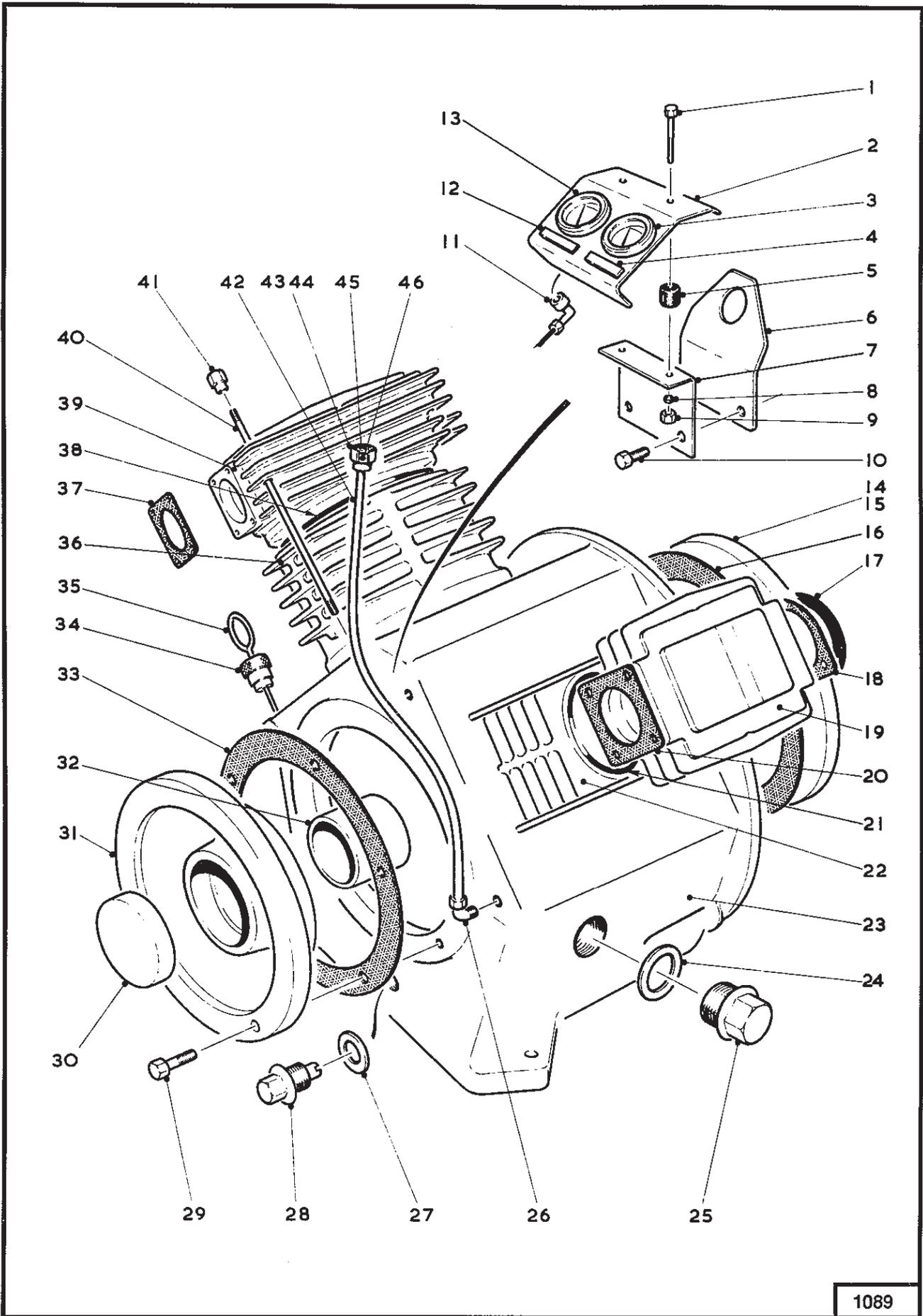
PARTS PACKS

PART NO.	DESCRIPTION
C11400/181 C11400/182	Complete Set of Joints Complete Set of 'O' Rings

PARTS LIST

IMPORTANT

WHEN ORDERING PARTS, PLEASE QUOTE THE SERIAL NUMBER AND SALES ORDER NUMBER OF THE PLANT



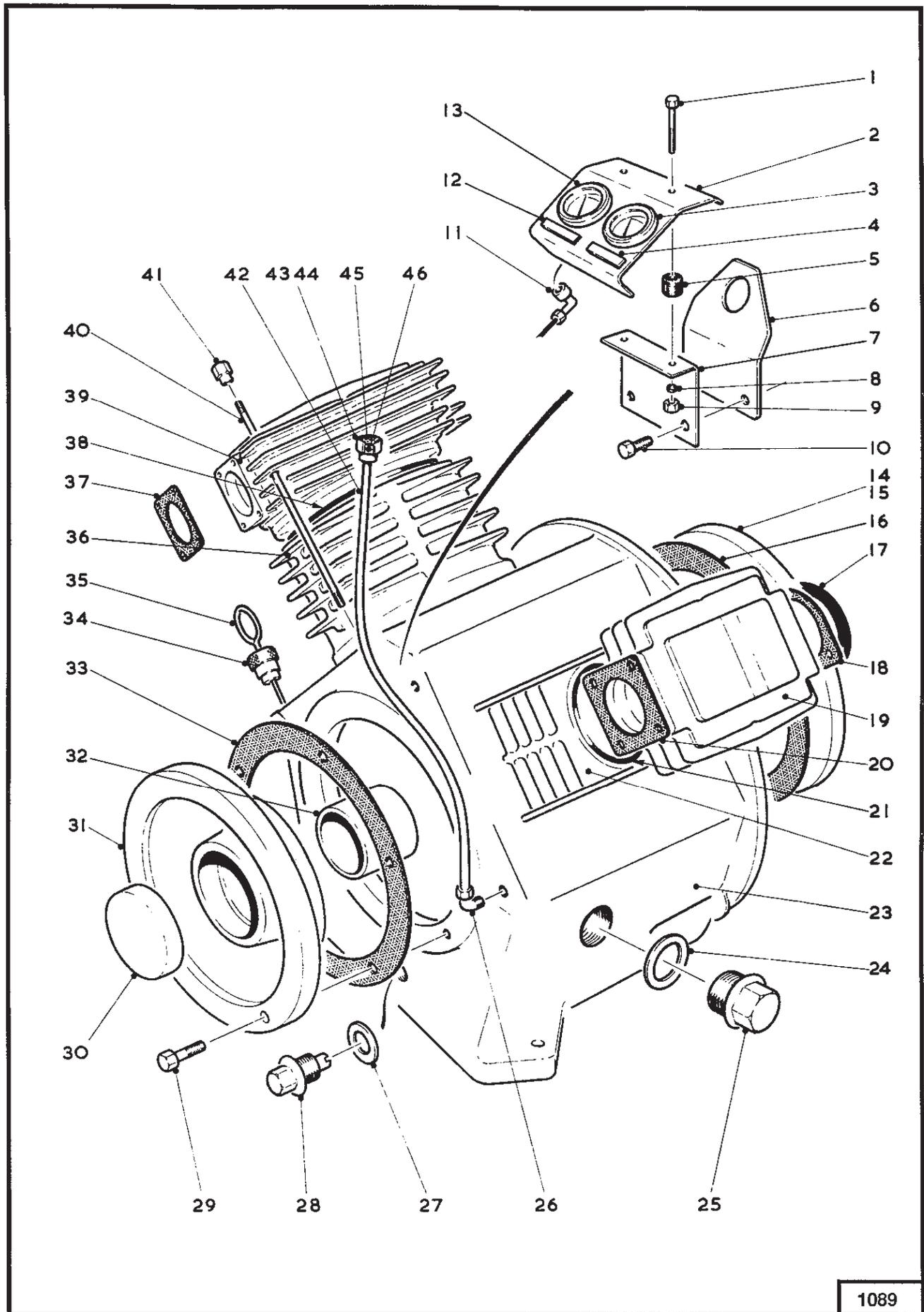
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FIG. 2 CRANKCASE, CYLINDERS AND INSTRUMENT PANEL

PARTS LIST

CRANKCASE, CYLINDERS AND INSTRUMENT PANEL

Ref. No.	Part No.	Qty	Description
1	95006/126	2	Bolt
2	C11400/71	1	Panel, Instrument
3	A37777/54	1	Gauge 0-200 lb/in ²
4	C4029/370	1	Tab, Gauge — H.P. Air Pressure
5	A1413/280	2	Bush
6	C11400/151	1	Plate, Lifting
7	C11400/72	1	Bracket
8	A6738/52	2	Washer
9	95111/4	2	Nut
10	95000/283	2	Screw
11	A10356/377	2	Elbow
12	C4029/369	1	Tab, Gauge — L.P. Air Pressure
13	A3777/53	1	Gauge 0-60 lb/in ²
14	C11400/59	1	Assembly, Wheel End Bearing Housing (Ref. Nos. 15, 16, 17 and 32)
15	C11400/26	1	Housing, Bearing
16	C11400/53	1	Joint
17	A6450/95	1	Seal, Oil
18	C11400/65	2	Joint
19	—	1	Assembly, H.P. Cylinder Head (Fig. 4)
20	C11400/154	1	Joint
21	A10347/15	1	'O' Seal
22	C11400/166	1	Cylinder, H.P.
23	C11400/3	1	Crankcase
24	A1442/7	1	Washer
25	A3764/14	1	Plug
26	A10356/445	1	Elbow
27	A1442/3	1	Washer
28	A10300/22	1	Plug, Drain
29	95000/257	12	Screw
30	C11400/101	1	Plug
31	C11400/26	1	Housing, Bearing
32	C11400/23	1	Bush, Main Bearing
33	C11400/54	1	Joint
34	C11400/157	1	Plug, Dipstick Filler
35	C11400/158	1	Dipstick, Oil Level
36	C11400/165	1	Cylinder, L.P.
37	C11400/153	1	Joint
38	A10347/18	1	'O' Seal
39	—	1	Assembly, L.P. Cylinder Head (Fig. 4)



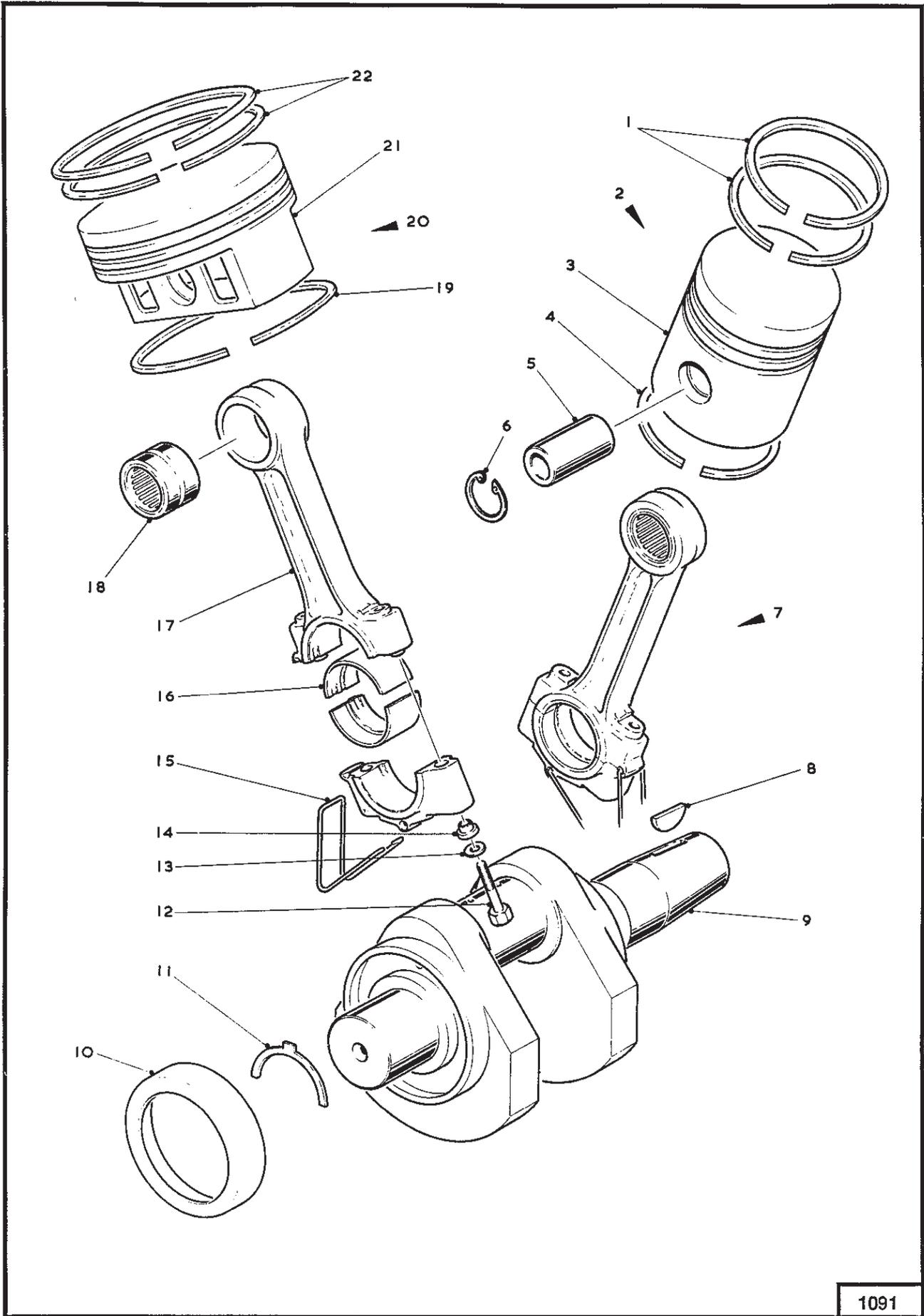
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FIG. 2 CRANKCASE, CYLINDERS AND INSTRUMENT PANEL

PARTS LIST

CRANKCASE, CYLINDERS AND INSTRUMENT PANEL (continued)

Ref. No.	Part No.	Qty	Description
40	C11400/52	8	Stud
41	C11400/51	8	Nut, Cap
42	C11359/232	1	Pipe, Breather
43	C11400/97	1	Assembly, Breather (Ref. Nos. 42, 44, 45 and 46)
44	C11359/233	1	Housing, Breather
45	C3938/3	1	Plate, Filter
46	A1413/441	1	Valve, Non-Return
			NON ILLUSTRATED ITEMS
	C11400/179	A/R	Shim — Crankshaft End Float Adjustment — Bearing Housing
	A1433/2	2	Washer — Leather (For Ref. No. 11)
	A1442/8	1	Washer — Fibre (For Ref. No. 34)



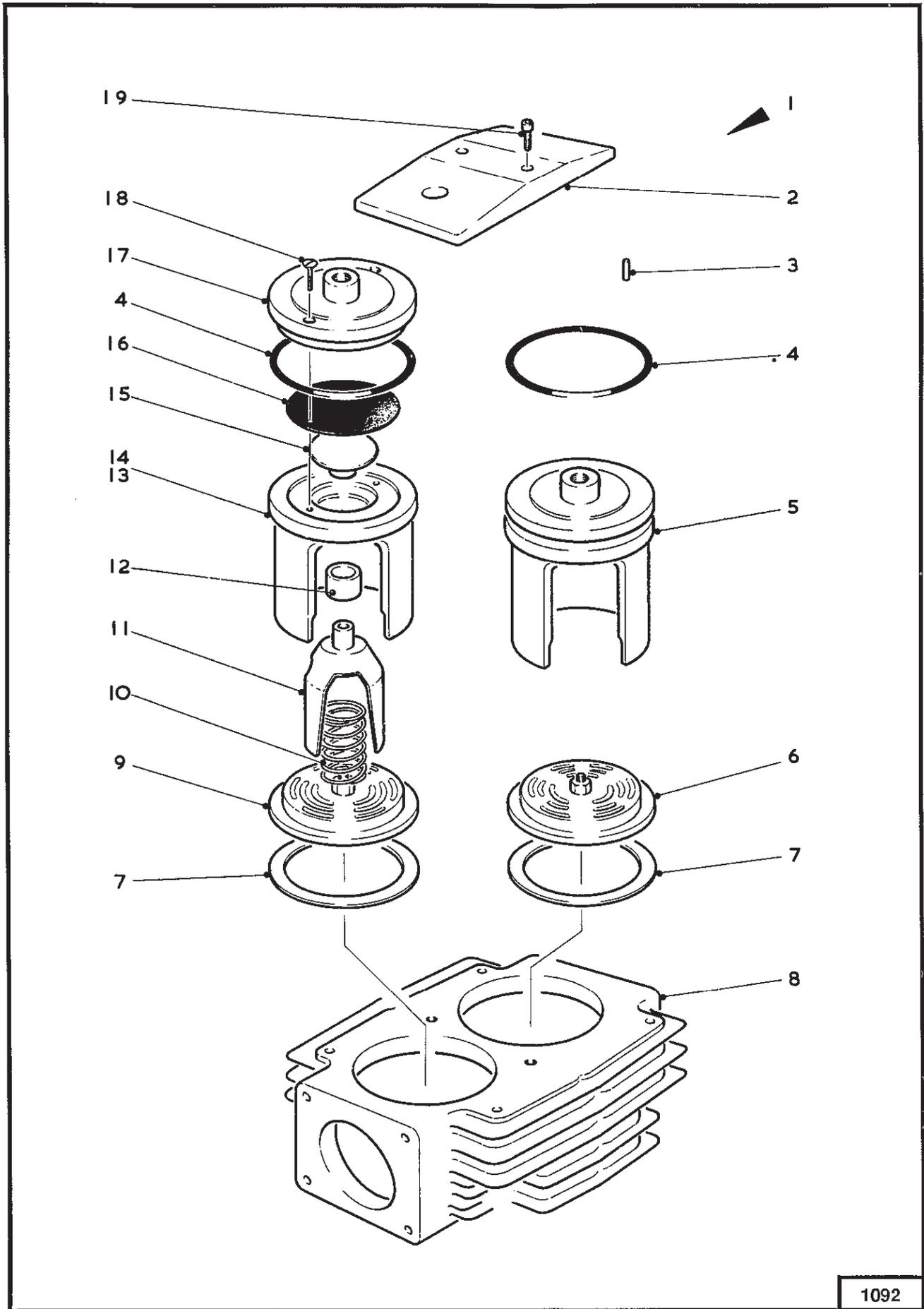
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FIG. 3 RUNNING GEAR

PARTS LIST
RUNNING GEAR

Ref. No.	Part No.	Qty	Description
1	—	2	Ring, Compression
2	C11400/56A	1	Assembly, H.P. Piston (Ref. Nos. 1, 3, 4-6)
3	—	1	Piston
4	—	1	Ring, Conformable
5	C11400/38	2	Pin, Gudgeon
6	C11400/67	2	Circlip
7	C11400/150	2	Assy., Connecting Rod (Ref. Nos. 12-18)
8	A3770/20	1	Key
9	C11400/169	1	Assy., Crankshaft (Includes Ref. No. 10)
10	C11400/100	2	Cup, Oil
11	C11400/24	4	Washers, Thrust (Halves)
12	95006/175	4	Bolt
13	95187/22	4	Washer
14	C11400/156	4	Bush, Collar
15	C11400/20	2	Dipper, Oil
16	C11400/197	4	Bearing, Big End (Halves)
17	—	2	Connecting Rod and Cap (Not supplied separately)
18	A6419/75	2	Bearing
19	—	1	Ring, Conformable
20	C11400/55A	1	Assy., L.P. Piston (Ref. Nos. 5, 6, 19, 21 and 22)
21	—	1	Piston
22	—	2	Ring, Compression

NOTE: Items 1 and 4 H.P. Piston Ring Set C11158/5577
 Items 19 and 22 Piston Ring Set C11158/5578
 Items 3 and 21 L.P. and H.P. Pistons (Bare). Not supplied separately.

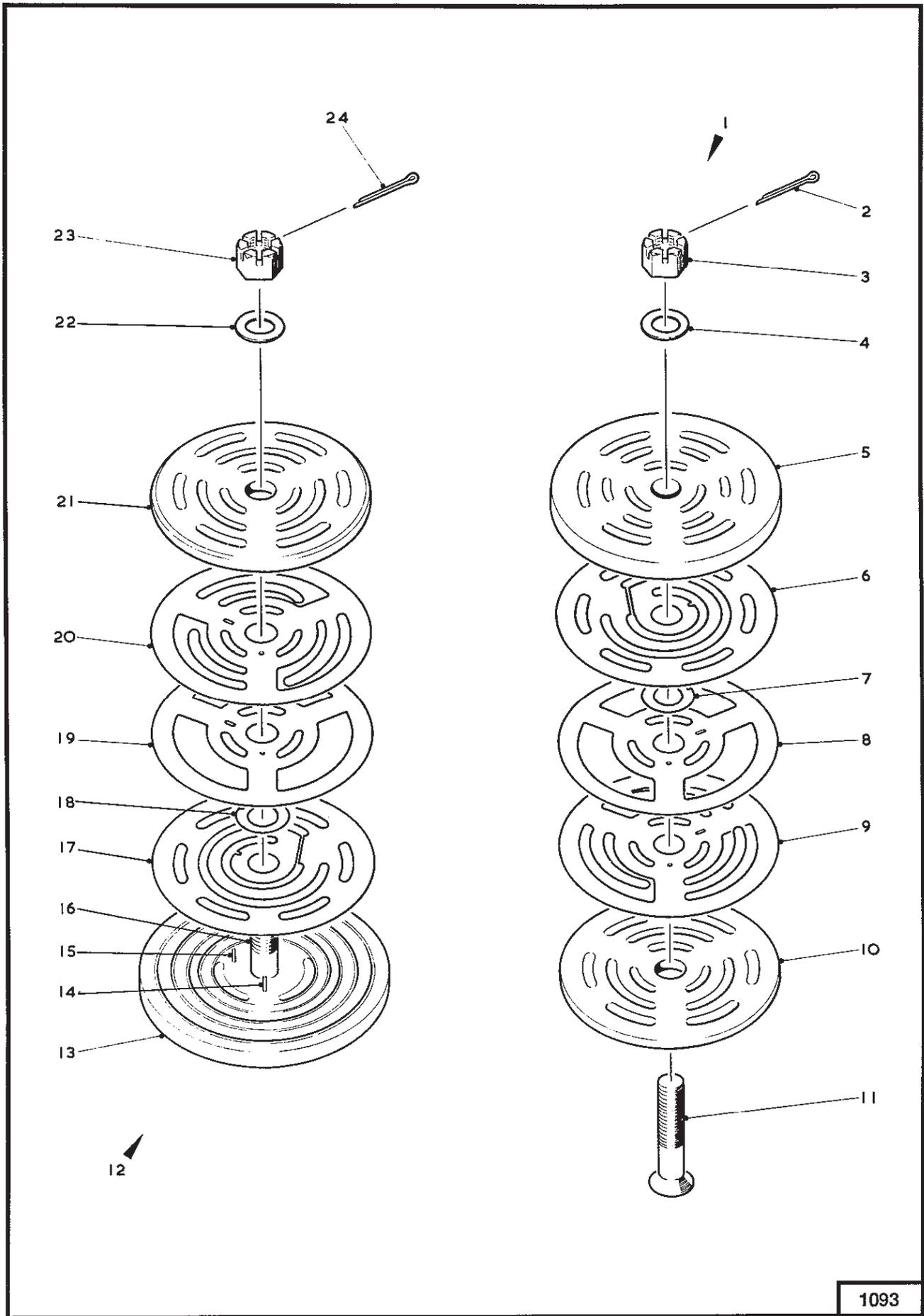


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FIG. 4 CYLINDER HEAD ASSEMBLIES

PARTS LIST
CYLINDER HEAD ASSEMBLIES

Ref. No.	Part No.	H.P. Qty	L.P. Qty	Description
1	C11400/94A	1	—	Assembly, Cylinder Head
1	C11400/168	—	1	Assembly, Cylinder Head
2	C11400/117	1	—	Plate, Lantern Retaining
2	C11400/118	—	1	Plate, Lantern Retaining
3	A1475/100	1	1	Dowel, Pin Spring
4	A10347/10	2	—	'O' Ring
4	A10347/11	—	2	'O' Ring
5	C11400/204	1	—	Valve, Lantern Delivery
5	C11400/202	—	1	Valve, Lantern Delivery
6	C11552/4	1	—	Assembly, Delivery Valve)
6	C11552/8	—	1	Assembly, Delivery Valve) (Fig. 5)
7	C11360/61	2	—	Joint, Valve Ring
7	C11400/89	—	2	Joint, Valve Ring
8	C11400/30	1	—	Head, Cylinder
8	C11400/163	—	1	Head, Cylinder
9	C11552/3	1	—	Assembly, Suction Valve)
9	C11552/7	—	1	Assembly, Suction Valve) (Fig. 5)
10	C11360/94	1	1	Fork, Spring Unloader
11	C11400/80	1	—	Assembly, Fork Unloader
11	C11400/86	—	1	Assembly, Fork Unloader
12	A10218/1	1	1	Bush
13	C11360/60	1	—	Lantern, Suction Valve Assy) Items 4,
13	C11400/91	—	1	Lantern, Suction Valve Assy) 12, 14- 18
14	C11400/203	1	—	Lantern
14	C11400/201	—	1	Lantern
15	C11359/84	1	1	Follower, Diaphragm
16	C11359/310	1	1	Diaphragm
17	C11360/54	1	—	Cover, Lantern
18	C11400/81	—	1	Cover, Lantern
18	A6780/14	1	1	Screw
19	95018/272	2	2	Capscrew
NON ILLUSTRATED PARTS				
—	C10728/29	—	1	Assembly, Hand Unloader (Comprising Spirol Pin, Cam and Body)
—	C11359/341	—	1	Assembly, Unloader Stem (Comprising Spindle and Unloader Head)
—	C10737/21	—	1	Pin, Spirol
—	C3615/23	—	1	Cam
—	C10578/70	—	1	Body
—	A3768/3	—	1	Locknut
—	A10347/6	—	1	'O' Ring
—	C11359/207	—	1	Adaptor
—	A1442/3	—	1	Washer



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FIG. 5 HP SUCTION/DELIVERY VALVE ASSEMBLIES

PARTS LIST
VALVE ASSEMBLIES

SUCTION VALVE COMPONENTS

Ref. No.	H.P. Suction Valve Part No.	L.P. Suction Valve Part No	Qty	Description
1	C11552/3	C11552/7	1	Assembly, Valve
2	A3762/44	A3762/44	1	Pin, Split
3	95123/4	95123/5	1	Nut
4	95149/15	95149/16	1	Washer
5	C11552/134	C11552/142	1	Seat
—	C11552/124	C11552/149	1	Pin, Location (Not illustrated) 2.3
—	C11552/125	C11552/125	1	Pin, Location (Not illustrated) mm dia.
6	C11552/157	C11552/144	1	Plate, Valve
7	C11552/153	—	1	Washer, Lift
7	—	C11552/150	2	Washer, Lift
8	C11552/115	C11552/145	1	Plate, Cushion
9	C11552/117	—	3	Plate, Spring
9	—	C11552/146	2	Plate, Spring
10	C11552/107	C11552/147	1	Guard, Valve
11	C11552/110	C11552/137	1	Bolt, Centre

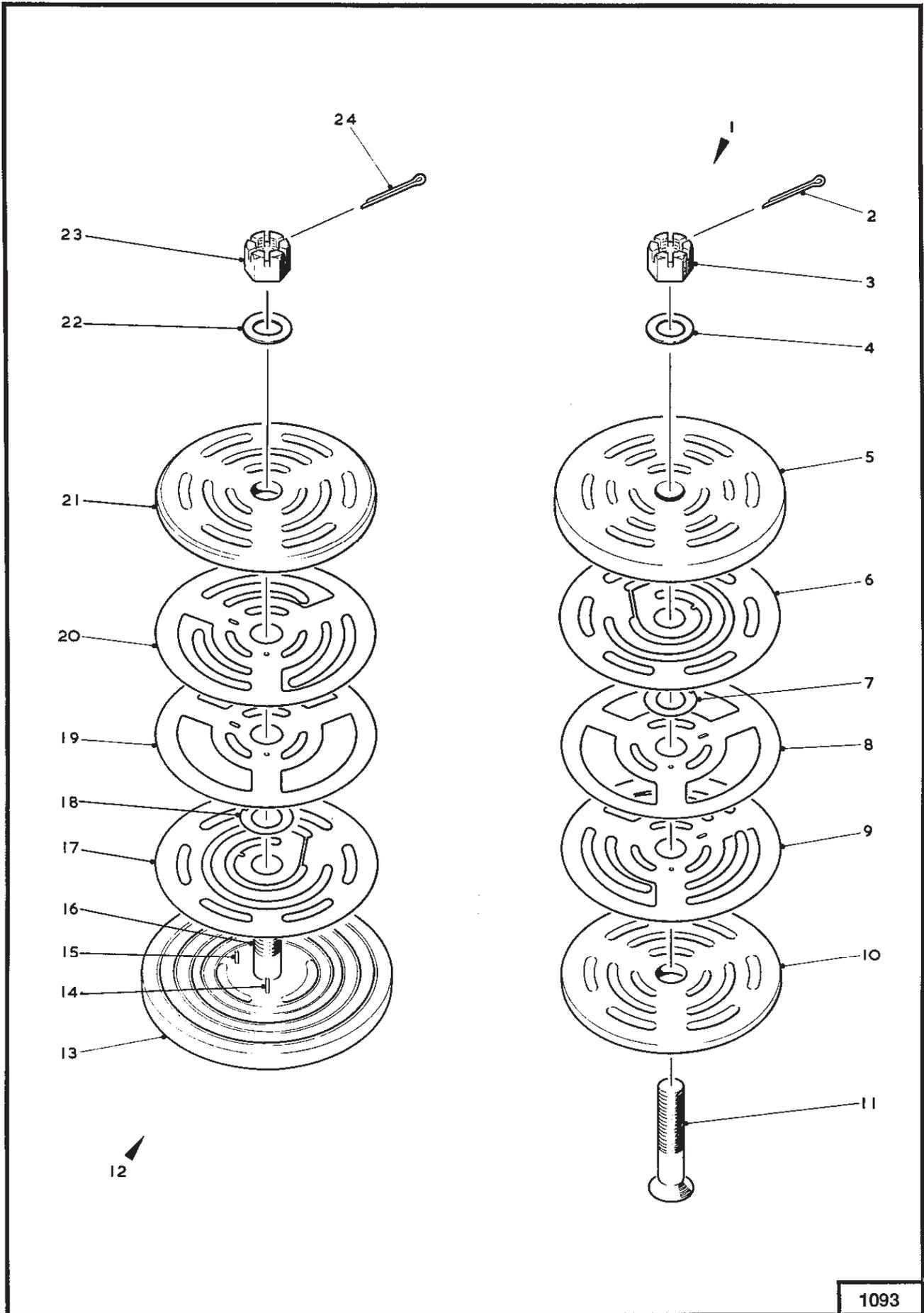


FIG. 5 HP SUCTION/DELIVERY VALVE ASSEMBLIES

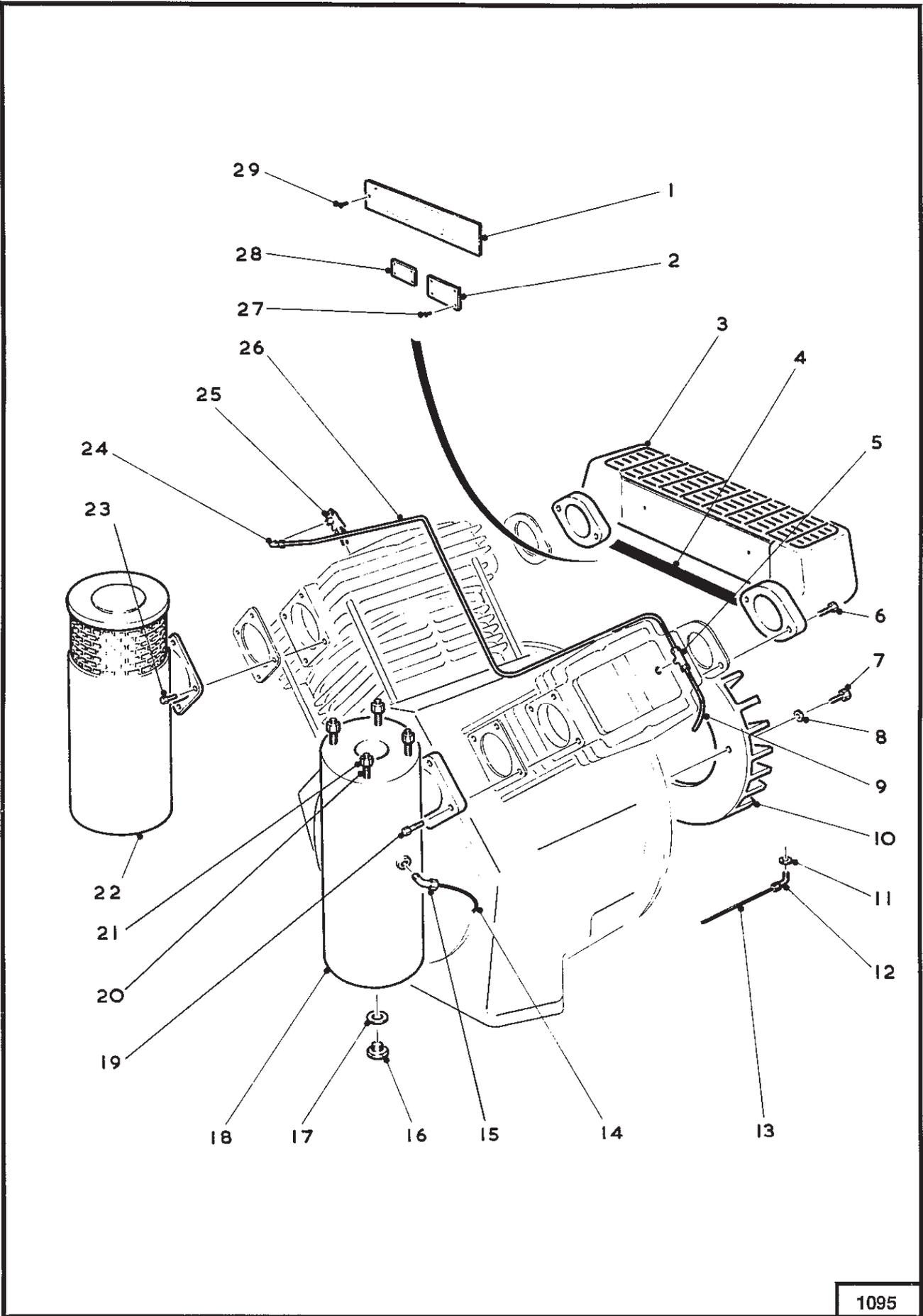
PARTS LIST
VALVE ASSEMBLIES

DELIVERY VALVE COMPONENTS

Ref. No.	H.P. Suction Valve Part No.	L.P. Suction Valve Part No	Qty	Description
12	C11552/4	C11552/8	1	Assembly, Valve
—	C11552/132	C11552/132	1	Back Peg (Not illustrated)
13	C11552/133	C11552/143	1	Centre Bolt
14	C11552/124	C11552/149	1	Seat
15	C11552/125	C11552/125	1	Pin, Location
16	C11552/161	C11552/162	1	Pin, Location
17	C11552/157	C11552/144	1	Bolt, Centre
18	C11552/153	—	1	Plate, Valve
18	—	C11552/150	1	Washer, Lift
19	C11552/115	C11552/145	2	Washer, Lift
20	C11552/118	—	1	Plate, Cushion
20	—	C11552/154	3	Plate, Spring
21	C11552/105	C11552/148	2	Plate, Spring
22	95149/15	95149/16	1	Guard, Valve
23	95123/4	95123/5	1	Washer
24	A3762/44	A3762/44	1	Nut
				Pin, Split

NOTE: The L.P. valves are assembled as shown in Fig. 5 except for the positions of the lift washers which are as follows:-

Between seat (5), (13) and valve plate (6), (17).
Between spring plate (9), and guard (10), (21).



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FIG. 6 EXTERNAL COMPONENTS

PARTS LIST
EXTERNAL COMPONENTS

Ref. No.	Part No.	Qty	Description
1	C20089/448	1	Nameplate, CompAir/BroomWade
2	C20089/270	1	Plate, Specification
3	C11159/73	1	Intercooler
4	C11400/76	40 in	Strip, Seal
5	A10356/578	1	Tee
6	95000/286	4	Screw
7	95000/229	4	Screw
8	A6738/52	4	Washer
9	C11353/219	1	Pipe, Air — Tee to Governor
10	C11400/17	1	Fan
—	C11400/90	1	Flywheel
11	A1442/1	1	Washer
12	C11400/200	1	Coupling
13	C11353/262	1	Pipe — L.P. Gauge to Intercooler
14	C11353/267	1	Pipe — Pulsation Vessel to Gauge
15	C11400/199	1	Coupling
16	C10589/1	1	Plug
17	A1442/11	1	Washer
18	C11400/69	1	Vessel, Pulsation
19	95000/284	4	Screw
20	A4331/9	4	Stud
21	A4322/8	4	Nut
22	C11400/183	1	Assembly, Filter/Silencer
23	95000/282	4	Screw
24	A10356/31	1	Coupling
25	—	1	Assembly, Unloader (Fig. 4)
26	C11353/218	1	Pipe — L.P. Unloader to H.P. Head
27	A1441/7	12	Screw
28	A1401/16	1	Nameplate — Oil Seal Corena
—	A10300/36	1	Element, Filter (For Ref. No. 22)

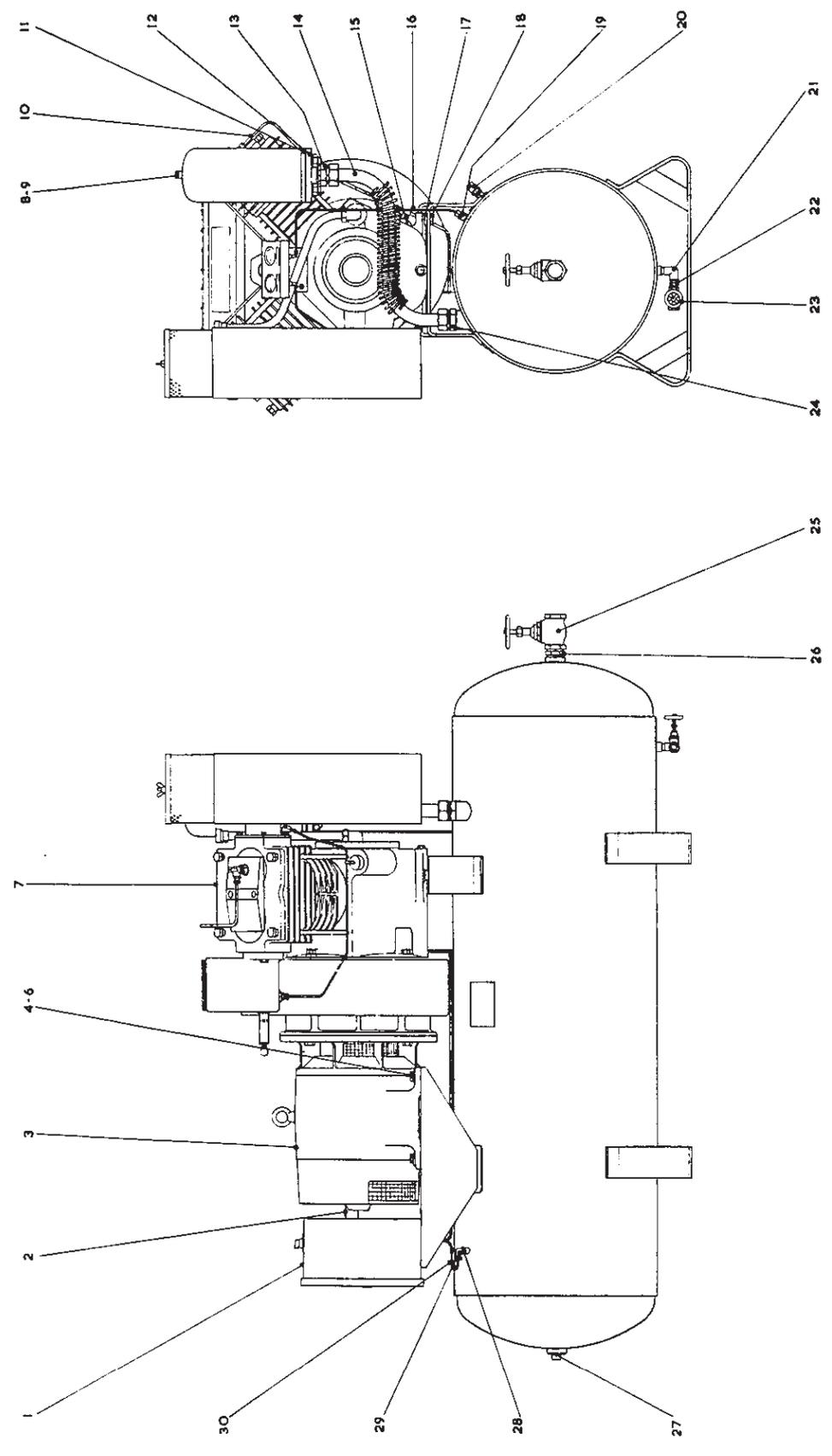


FIG. 7 RECEIVER MOUNTED UNIT

PARTS LIST

RECEIVER MOUNTED UNIT

Ref. No.	Part No.	Qty	Description
1	C20076/15	1	Starter/Control Box — 12 kW/380V
—	C20076/16	1	Starter/Control Box — 12 kW/415V
2	C20090/17	1	Wiring Harness — Starter/Motor
3	C20043/319	1	Motor and Key — C160M/12 kW/380V
—	C20043/318	1	Motor and Key — C160M/12 kW/415V
4	95006/199	4	Bolt
5	95111/7	4	Nut
6	95148/16	4	Washer
7	C11400B	1	Compressor
8	C10589/1	1	Plug
9	A1442/11	1	Washer
10	C11353/305	1	Pipe — Tee Piece/H.P. Head
11	C3641/12	1	Joint
12	A8801/48	1	Flange, Delivery
13	95405/875	1	Bush
14	C20090/4	1	Pipe, Delivery
15	C20090/12	1	Clip, Pipe
16	C11353/303	1	Pipe — Receiver to Pressure Gauge
17	C11400/32	2	Spacer
18	95006/198	2	Bolt
19	A10327/32	1	Coupling
20	A1451/3	1	Plug, Fusible
21	95405/53	1	Elbow
22	95405/798	1	Nipple
23	A10245/3	1	Valve, Wheel
24	C11405/3	1	Nipple
25	A10245/10	1	Valve, Wheel
26	95405/802	1	Nipple
27	95405/948	1	Plug
28	95640/6	2	Washer
29	A10356/330	3	Elbow
30	C11353/306	1	Pipe — Receiver/Starter Control Box (Pilot Unloading Valve Connection)

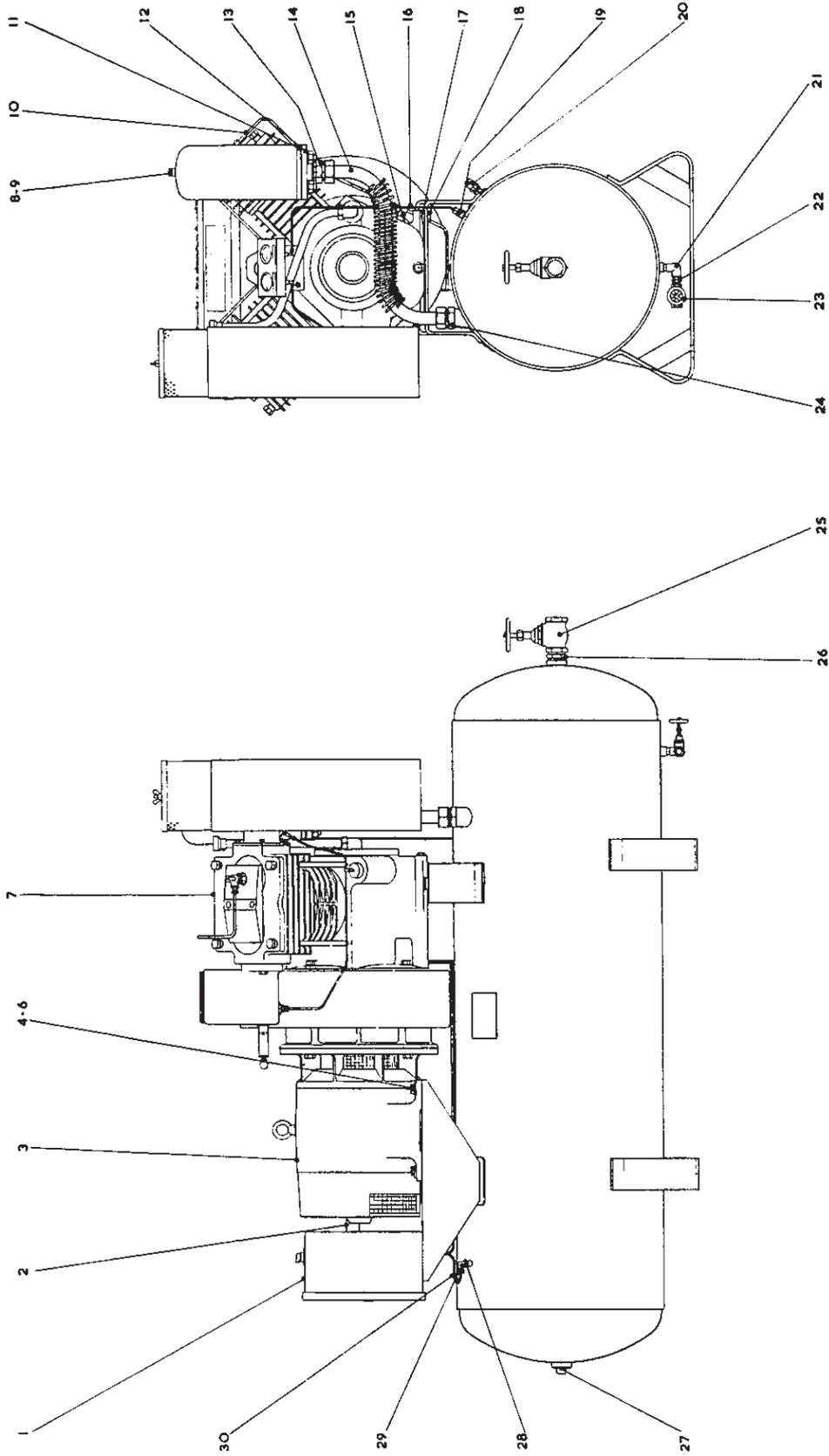
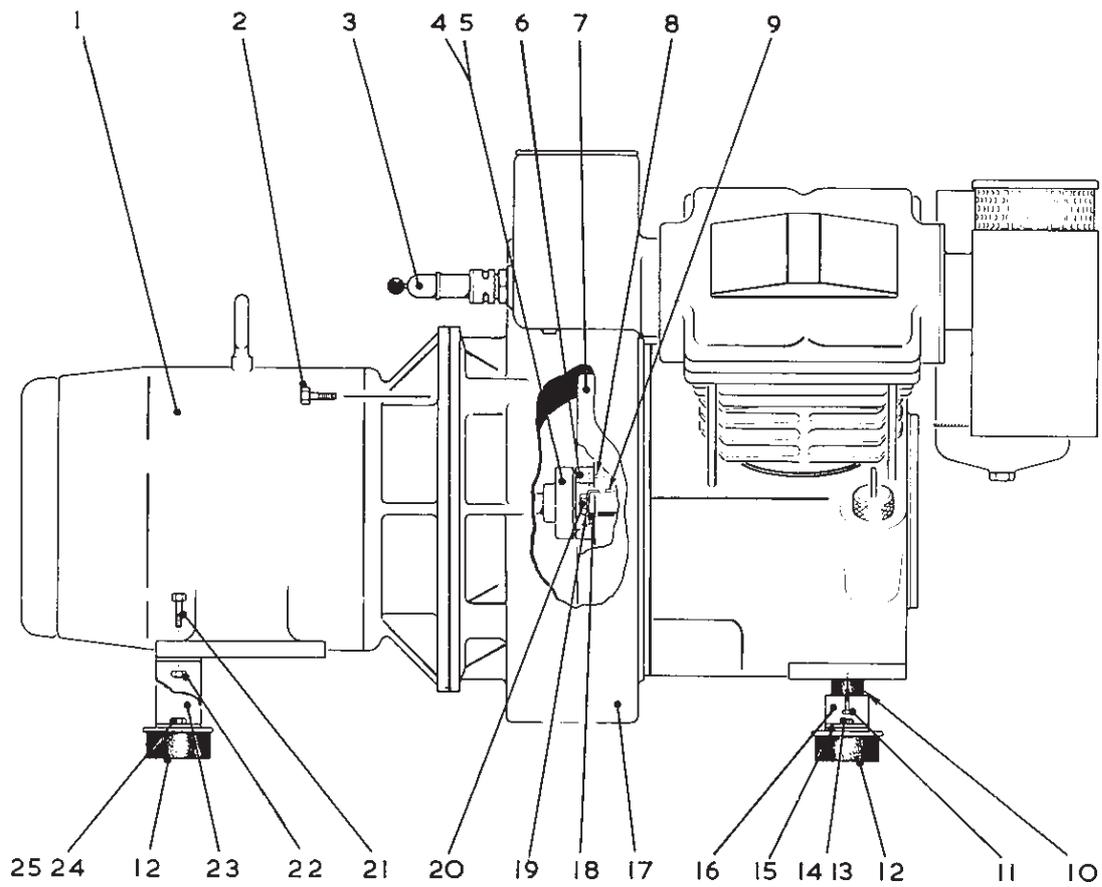


FIG. 7 RECEIVER MOUNTED UNIT



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FIG. 8 FREE STANDING UNIT

PARTS LIST
FREE STANDING UNIT

Ref. No.	Part No.	Qty	Description
1	C20043/318	1	Motor and Key (12 kW) 415V
1	C20043/319	1	Motor and Key (12 kW) 380V
2	95000/345	4	Screw
3	A1461/34	1	Valve, Relief (45 lb/in ²)
4	C11359/176	1	Assembly, Coupling (Includes Ref. No. 5)
5	C11158/5342	6	Inserts, Rubber
6	C11359/128	1	Ring, Coupling
7	C11400/90	1	Flywheel
8	95023/230	6	Capscrew
9	A3770/20	1	Key
10	C11400/32	1	Spacer
11	95000/314	2	Screw
12	A10300/41	3	Mounting, Flexible
13	95000/284	2	Screw
14	95111/6	2	Nut
15	C11400/31	1	Bracket, Mounting
16	C11400/13	1	Bracket, Support
17	C11400/16	1	Housing, Flywheel
18	C11400/61	1	Plate, Keep
19	C11400/62	1	Washer, Tab
20	95000/315	1	Screw
21	95000/198	2	Bolt
22	95111/7	2	Nut
23	C11400/33	1	Bracket
24	95000/283	1	Screw
25	95111/6	1	Nut
—	C20089/270	1	Plate, Specification
—	A1401/16	1	Nameplate Oil
—	A1441/8	8	Drive Screw — Plates
—	95000/315	4	Screw — for Ref. 17

SUGGESTED MAINTENANCE PARTS

The following list of parts are those which CompAir BroomWade consider to be the minimum required for the continuous operation of the compressor for a period of two years.

Ref. No.	Part No.	Qty	Description
1	C11400/18	1 pk	Set of 'O' Rings
2	A3762/44	1 pk	Pin, Split, 7/64 x 1 (10/pack)
3	95123/4	2	Nut, Slotted L.P.
4	95123/5	2	Nut, Slotted H.P.
5	C11552/157	2	Plate, Valve, Split Type
6	C11552/144	2	Plate, Valve
7	C11552/117	3	Plate, Spring
8	C11552/146	2	Plate, Spring
9	C11552/118	3	Plate, Spring
10	C11552/154	2	Plate, Spring
11	C11552/115	2	Plate, Cushion
12	C11552/145	2	Plate, Cushion
13	C11552/110	1	Bolt, Centre
14	C11552/137	1	Bolt, Centre
15	C11552/161	1	Bolt, Centre
16	C11552/162	1	Bolt, Centre — was 138
17	C11360/61	6	Joint, Valve Ring
18	C11400/89	6	Washer, Sealing
19	A10347/10	6	'O' Ring
20	A10347/11	6	'O' Ring
21	C11359/310	1	Diaphragm, PTFE
22	A10300/36	1	Element
23	C11400/181	1	Set of Joints

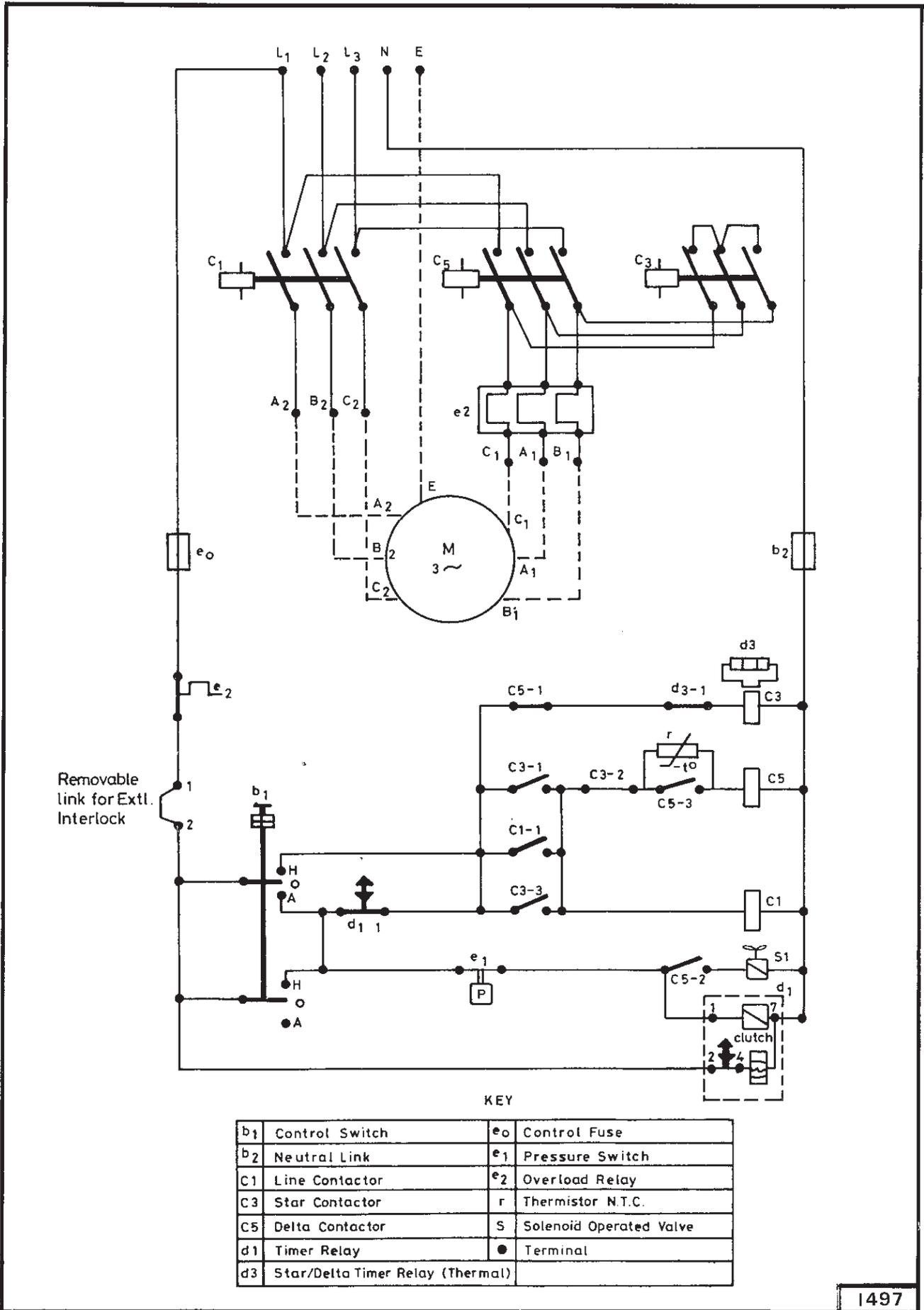


FIG. 9. ELECTRICAL INTERCONNECTIONS

NOTES/AMENDMENTS

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