Chapter 1

AIRBORNE AUXILIARY POWER PLANT

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LEADING PARTICULARS

Airborne auxiliary power plant	**Ref. No. 4F/3549**
Engine 500 *c.c. Triumph*	*Ref. No.* 42*QK*/1
Fuel M.T. gasolene (capacity $2\frac{1}{2}$ *galls.)*	*Ref. No.* 34C/9100453
Engine lubricating oil OMD 330 *(capacity* $4\frac{1}{2}$ *pts.)*	*Ref. No.* 34*D*/9100585
Air compressor unit	*Ref. No.* 4F/3548
*Compressor gear box lubricating oil OM*71	*Ref. No.* 34*D*/9433224
*Generator Type P*3	*Ref. No.* 5*UA*/4751
Voltage regulator Type 23	*Ref. No.* 5*UC*/2844
Cut-out Type 'A' differential	*Ref. No.* 5CY/4211
*Circuit breaker Type D*1*B*	*Ref. No.* 5CY/5336
*Suppressor Type X*1	*Ref. No.* 5CY/2100
Plug N.A.T.O. Type	*Ref. No.* 5CY/4314

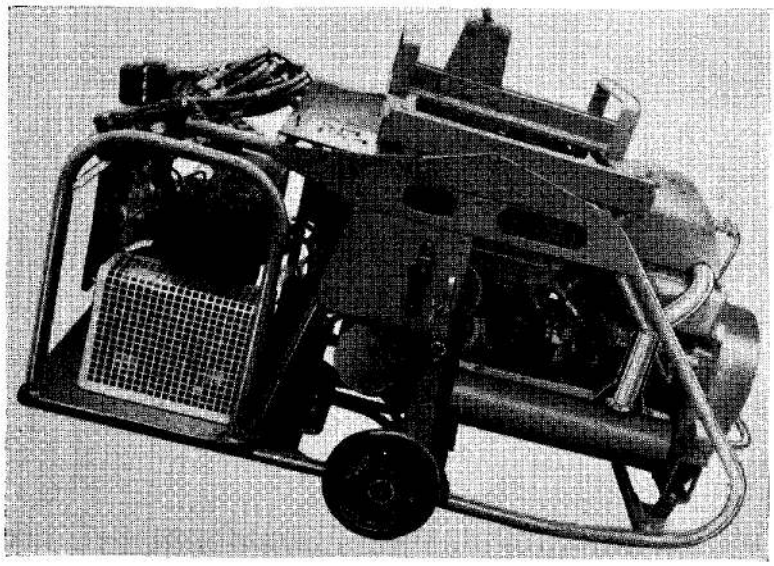

Fig. 1. Airborne auxiliary power plant

Introduction

1. The airborne auxiliary power plant is an air transportable ground servicing trolley which is designed to provide a 28V, 6kW d.c. supply for servicing aircraft radio and electrical equipment. The unit may alternatively be used to supply compressed air at a maximum delivery pressure of 2800 lb/in^2 to the aircraft pneumatic system. For air transporting the unit is loaded on to a heavy stores carrier in the aircraft bomb bay. The airborne auxiliary power plant is essentially a ground servicing trolley and must be removed from the aircraft for use; it is primarily intended for operation where normal ground servicing facilities do not exist.

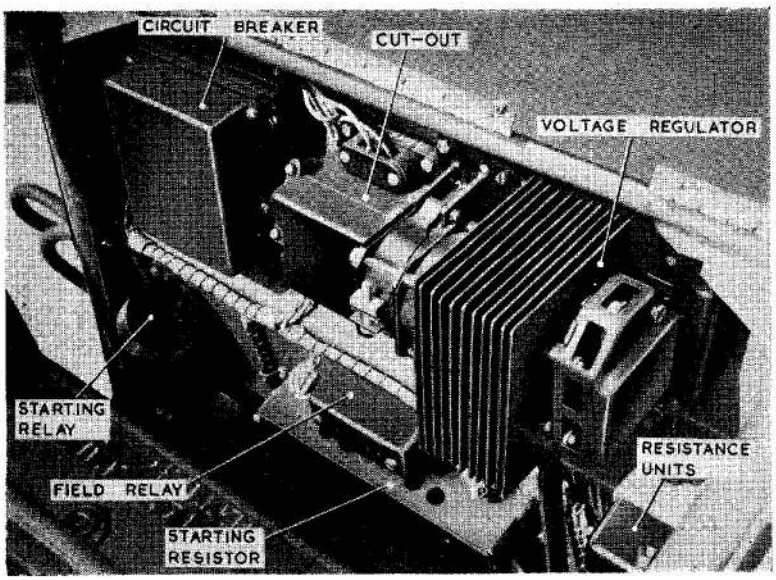

Fig. 2. Generator control panel

WARNING . . .

The air compressor operates at 2800 lb/in², this pressure must be released by opening the stop valve before attempting to start or service the unit.

DESCRIPTION

General

2. The auxiliary power plant (*fig.* 1) comprises a tubular steel chassis equipped with retractable rubber wheels on which is mounted a 500 c.c. Triumph internal combustion engine coupled to a Type P3 generator. Control and protection equipment for the latter is mounted on a metal plate (*fig.* 2) located behind the air compressor. The motor-driven air compressor, together with its associated equipment, is mounted on a detachable platform bolted on to the main frame and is located at the end of the unit (*fig.* 1). A length of unipren 150 cable, fitted with N.A.T.O. sockets, is provided to connect the unit to the aircraft. Provision is made to connect a 24V, 40 A.H. battery to the trolley as shown in fig. 6, however, as a battery is not normally connected the battery cables are connected to a dummy stowage block.

Engine

3. The prime mover is a 500 c.c. vertical twin, O.H.V. Triumph engine which is mounted on rubber blocks bolted to the tubular frame. The engine is fuelled with M.T. gasolene, the 2½ gallon tank, when full, being sufficient to run the unit for approximately 24 hours. The lubricating oil for use in the engine is OMD330 Ref. No. 34D/9100585, 4½ pints being the quantity required to fill the sump to the high mark on the oil dipstick.

4. The engine may be started either with the starting handle; or by means of the aircraft accumulators, which motor the Type P3 generator when the aircraft accumulator isolate switch is appropriately selected, and the engine starting button is pressed. Further information on the engine is contained in A.P.2173A, Vol. 1 and 6, Sect. 10.

D.C. motor and air compressor

5. The 28V d.c. motor, which is coupled to the air compressor, is supplied by the Type P3 generator when the aircraft compressor changeover switch, located on the side of the unit, (*fig.* 1) and the compressor

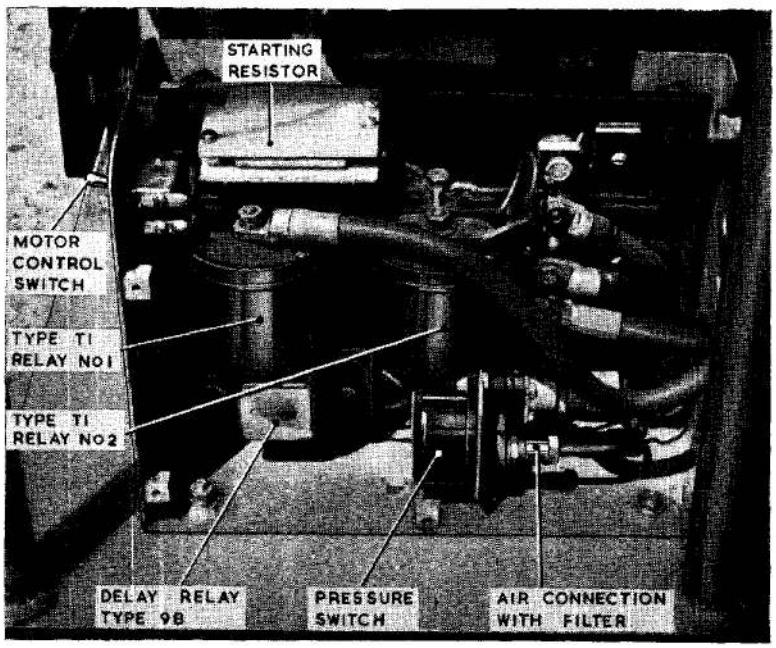

Fig. 3. Motor control panel

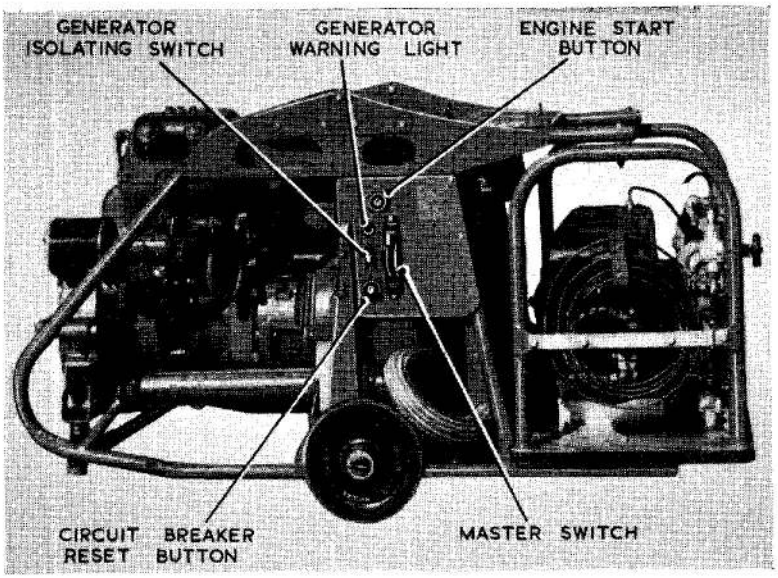

Fig. 4. Switch panel

motor control switch (*fig.* 3), are appropriately selected. The high pressure air supply is alternative to the electrical supply provided by the auxiliary power plant. Information on the construction, operation and servicing of the compressor is given in Appendix 1 to this chapter.

Motor compressor control panel

6. The control panel (*fig.* 3) is mounted adjacent to the motor compressor, it is protected by a mesh guard as illustrated in fig. 1. The purpose of the control panel is to limit the current consumed by the compressor motor during starting, and to automatically disconnect the motor from its supply source when the air pressure acting on the pressure switch reaches the required value.

Generator

7. The Type P3 generator, which has a rated output of 6kW at 30V is directly coupled to the Triumph 500 c.c. engine. It supplies electrical power to drive the motor compressor or for aircraft electrical servicing. Cooling is provided by the engine cooling fan, the air being ducted through pipes connected between the generator and fan casing. Complete information on the construction, operation and servicing of the Type P3 generator is contained in A.P. 4343A, Vol. 1, Sect. 3.

Suppressor

8. The Type X1, single stage, three leg suppressor is fitted to eliminate radio interference due to ripple produced by the generator. The suppressor is located at the bottom of the electrical panel (*fig.* 2). Further information on this component may be found in A.P.4343C, Vol. 1, Book 3, Sect. 6.

Voltage regulator

9. The Type 23 voltage regulator is fitted to the right of the electrical panel (*fig.* 2). As may be seen from the circuit diagram (*fig.* 6) the decompounding coil (terminal 2) is not used, since load sharing facilities are not required on a single generator system. Since, in consequence, the generator voltage remains relatively constant, a Type 32 master regulator is not required and two type A resistance units are substituted for the carbon pile of the latter. These are connected between terminals 4 and 5 of the voltage regulator so enabling it to control the voltage at approximately 28V. A.P. 4343B, Vol. 1, Book 1, Sect. 1 provides detailed information on the Type 23 voltage regulator.

Cut-out and circuit breaker

10. A Type D1/B circuit breaker operating in conjunction with a Type A differential cut-out is used to make and break the connection between the positive line of the Type P3 generator and the master switch Type C, which is located on the side of the unit (*fig.* 4). Generator overload protec-

tion is also provided by the circuit breaker. Further information on the cut-out and circuit breaker is contained in A.P.4343B, Vol. 1, Book 2, Sect. 10.

OPERATION

Engine starting

Preliminary precautions

11. (1) Before attempting to start the unit ensure that the following instructions are complied with.

(a) Check the oil level in the oil tank by means of the dipstick. The engine should not be started if the level is below the maximum mark.

(b) Ensure that there is sufficient gasolene in the tank for the required running period.

(c) Check level of oil OM-71 in the compressor gearbox, fill to level of filler plug.

(d) Drain the oil and water trap,

Note . . .

The drain cock should only be opened $\frac{1}{4}$ of a turn until pressure in the system has been exhausted.

(e) Open the stop valve to reduce the starting load.

(f) Place the master switch to the off (FLIGHT) position.

(g) Turn ON the petrol cock.

(h) Move throttle lever (*fig.* 5) upwards to the closed position and then open slightly.

Starting by hand

(2) (a) Engage starting handle, close the choke, pull up smartly on the starting handle and release choke immediately the engine has warmed up sufficiently.

(b) Move the throttle lever downwards until the plunger engages, the governor will now control the speed automatically at 4000 rev/min.

Electrical starting (from aircraft accumulators)

(3) (a) Connect starting cable between the aircraft 28V N.A.T.O. plug and the auxiliary power plant N.A.T.O. plug.

(b) Place the aircraft accumulator isolating switch to A.A.P.P.

(c) Close the engine choke and press the starter button (*fig.* 4).

(d) The aircraft supply, passing via the starter button, will energize and close the following:—

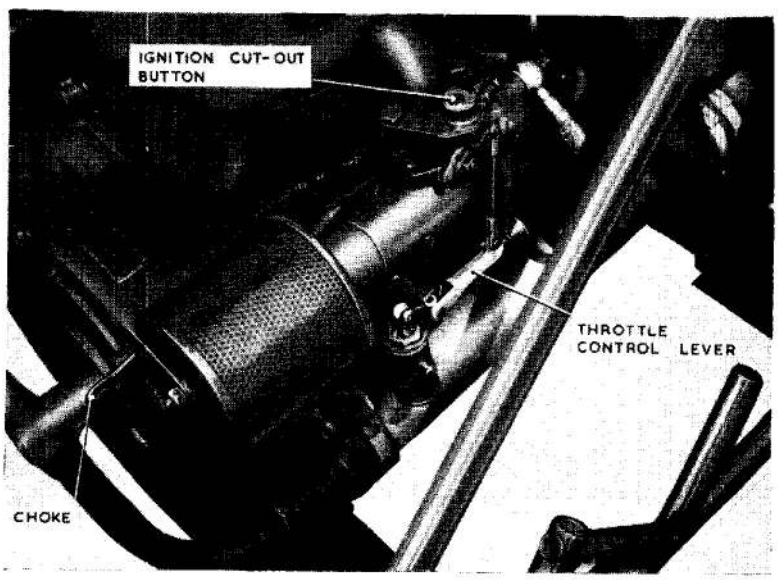

Fig. 5. Engine controls

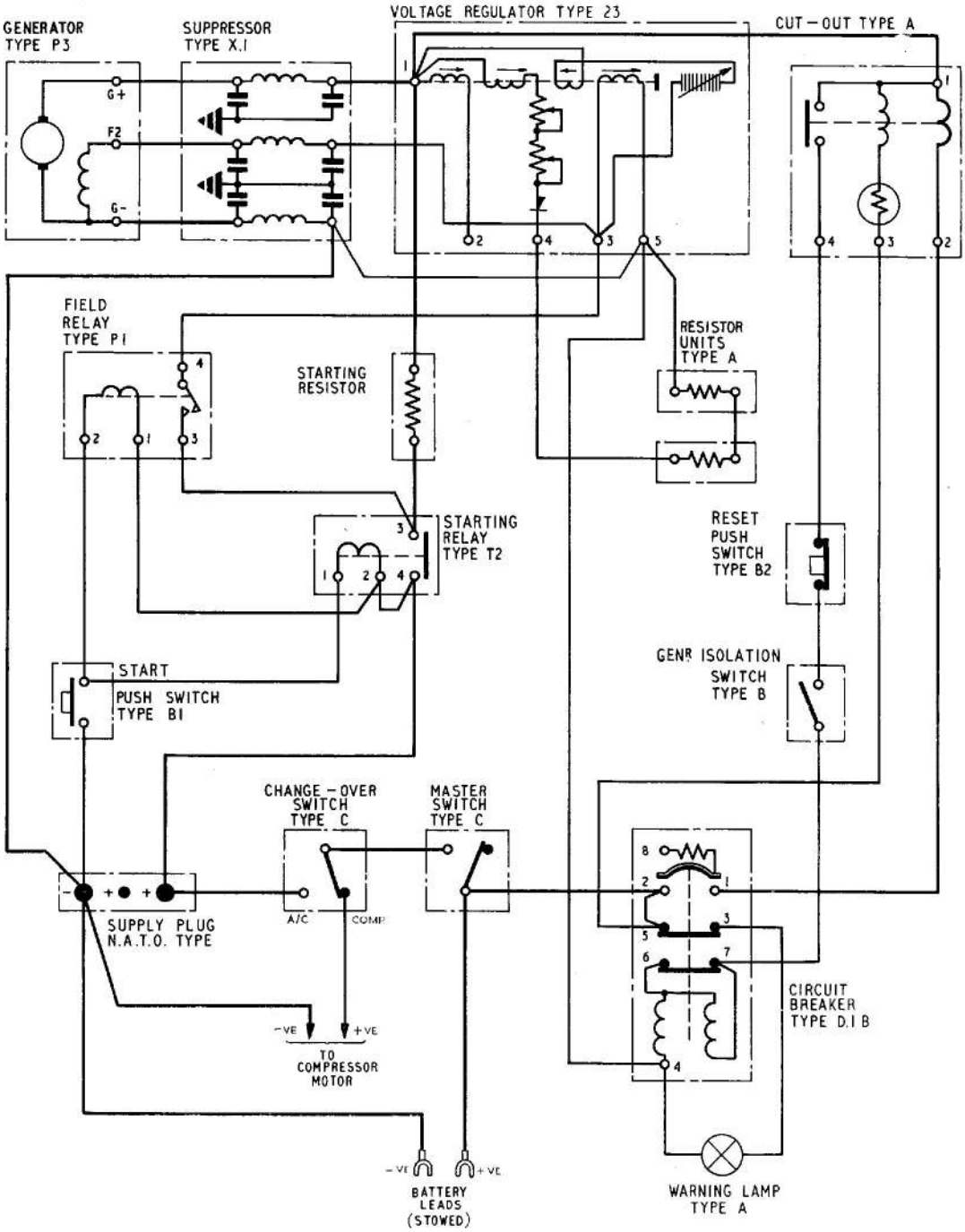

Fig. 6. Generator control circuit (theoretical)

(i) The Type P1 field relay, which will complete a supply to the generator shunt field without passing through the voltage regulator.

(ii) The Type T2 starting relay which connects the aircraft accumulator supply to the generator armature via the starting resistor.

(e) The generator, now being energized by the aircraft accumulator supply, will operate as a motor and the engine should start.

(f) Open the choke immediately the engine temperature has increased sufficiently and set the throttle as in para. (2) (b).

Note . . .

Prolonged use of the electrical starting system will cause rapid overheating of the components. If the engine should fail to start after approximately 15 *seconds, release the starter button and allow at least three minutes to elapse before attempting a further start.*

(g) Place the aircraft accumulator isolating switch to the OFF position.

Stopping the engine

12. To stop the engine, close the throttle by pulling the red knob of the throttle control lever until the plunger disengages and then move it upwards. Maintain pressure on the ignition cut-out button, mounted over the carburettor, until the engine stops. Turn off petrol.

COMPRESSOR MOTOR CONTROL PANEL

Starting the motor

13. This paragraph should be read in conjunction with the theoretical motor control circuit diagram given in fig. 7. When the engine has warmed up and the generator output has reached its normal value of 28V. the compressor motor may be started as follows :—

(1) Select COMPRESSOR on the change-over switch located on the side of the unit (*fig.* 1).

(2) Place the motor control switch (*fig.* 3) to ON.

(a) The generator supply current will now energize the coil of the No. 1

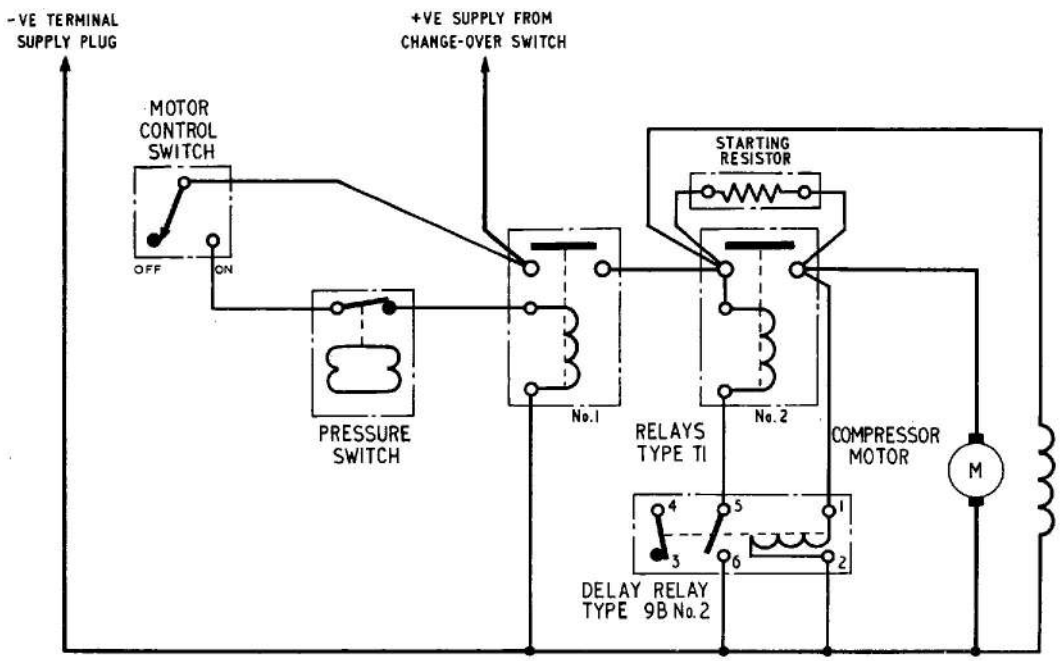

Fig. 7. Motor control circuit (theoretical)

Type T1 relay via the contacts of the motor control switch and the pressure switch.

(b) The motor shunt field will be fully energized via the No. 1 Type T1 relay, but the armature current will be restricted by the starting resistor.

(c) As the motor speed accelerates the back e.m.f. will rise: the armature current and potential drop across the starting resistor will decrease, thus permitting the coil current of the delay relay to rise to a point where its contacts close.

(d) The No. 2 Type T1 relay contacts will now close and short circuit the starting resistor. The armature current, being restricted only by motor back e.m.f., will increase until the motor reaches normal speed.

Pressure cut-out switch

14. The pressure cut-out switch (*fig.* 3) is connected in the pneumatic pipeline. When the aircraft pneumatic system air bottles are charged to the required pressure, the contacts of the pressure cut-out switch will open, so de-energizing the coil of the No. 1 Type T1 relay and stopping the motor.

Note . . .

After the stopping engine, and before disconnecting the pneumatic pipe-line from the aircraft, the air pressure must be released by opening the stop valve.

LOADING ON TO THE AIRCRAFT

15. Loading and unloading the auxiliary power plant is essentially the responsibility of the armourer. Instructions for this procedure will be issued as Appendices to the following chapters in A.P.2852B, Shackleton Mark II, A.P.2852B, Vol. 1, Sect. 5, Chap. 2; Shackleton Mark III, A.P.2852B, Vol. 1, Sect. 5, Chap. 2A.

Note . . .

Before loading the unit on to the aircraft the fuel system must be drained, blown through with compressed air and sufficient time allowed for all petrol vapour to evaporate.

SERVICING

Engine

16. Daily servicing is given in para. 11; in addition to this the engine should occasionally be checked for oil and petrol leaks. All nuts and bolts should be tightened as necessary and the throttle governor linkage should be lubricated. The engine mountings should be examined for wear and deterioration of rubber; the engine to generator coupling should also be examined for signs of wear and deterioration. Further information on servicing is contained in A.P. 2173A, Vol. 1, and 6 Sect. 10.

Compressor

17. Exhaust the air pressure as in para. 1.

18. In addition to the items listed in para. 11, the following should receive attention. Pipelines and components on the pneumatic panel. Renew the activated alumina pellets in the dehydrators. The pressure switch should be checked for correct operation; it should cut-out at 2800 lb/in^2 and cut-in at 2500 lb/in^2.

Electrical equipment

19. Paras. 6 to 10 refer to the main electrical components and the Air Publications relating to them, full servicing information will be found in the latter. Switch contacts and all connections should be periodically checked for serviceability and cleanliness. Particular attention should be paid to the security of cables, all insulation, especially that of the portable cable and its connections should be thoroughly inspected. The N.A.T.O. plug shroud should be free from cracks and distortion.

Chassis

20. The wheels should be lubricated with oil OMD-330 (Ref. No. 34D/9100585). Nuts, bolts and screws should be examined for tightness and signs of wear, particular attention should be paid to the fixtures on which the unit is suspended when loaded on to the aircraft. The chassis frame should be examined for security and signs of distortion.

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Appendix 1

DUNLOP AIR COMPRESSOR

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LIST OF ILLUSTRATIONS

LEADING PARTICULARS

Dunlop air compressor, Part No. 60258	*Ref. No.* 4*F*/3548
Operating voltage	24 *volt d.c.*
Current (nominal)	90 *amp.*
Maximum working pressure	3300 *lb/in²*
Maximum delivery pressure	2800 *lb/in²*
Lubricating oil	*OM*-71: *Ref. No.* 34*D*/9433224: *NATO Code No.* 0-138

DESCRIPTION

1. The compressor (*fig.* 1) is driven by an electric motor through a gearbox that is mounted axially on one end of the motor, the compressor is bolted on a spigoted flange to the output end of the gearbox. A fan at the other end of the motor supplies cooling air through a cowling to the motor, gearbox and compressor. A breather assembly secured to the top of the gearbox extends through a grommet in the cowling. The complete unit is supported on three feet, one centred on the gearbox and the other two at the sides of the motor. These mountings are supported on rubber bushes.

2. The compressor is a reciprocating action, normally aspirated unit embodying a four stage system of compression. The compressor is lubricated by oil pumped under pressure from the gearbox casing. The oil pump is driven by a wormdrive from the main shaft. The compressor is air-cooled by an axial flow fan mounted on the motor shaft and a hollow casing secured to the unit directs the resultant air flow over and around the compressor. A small volume of cooling air is also passed through the motor.

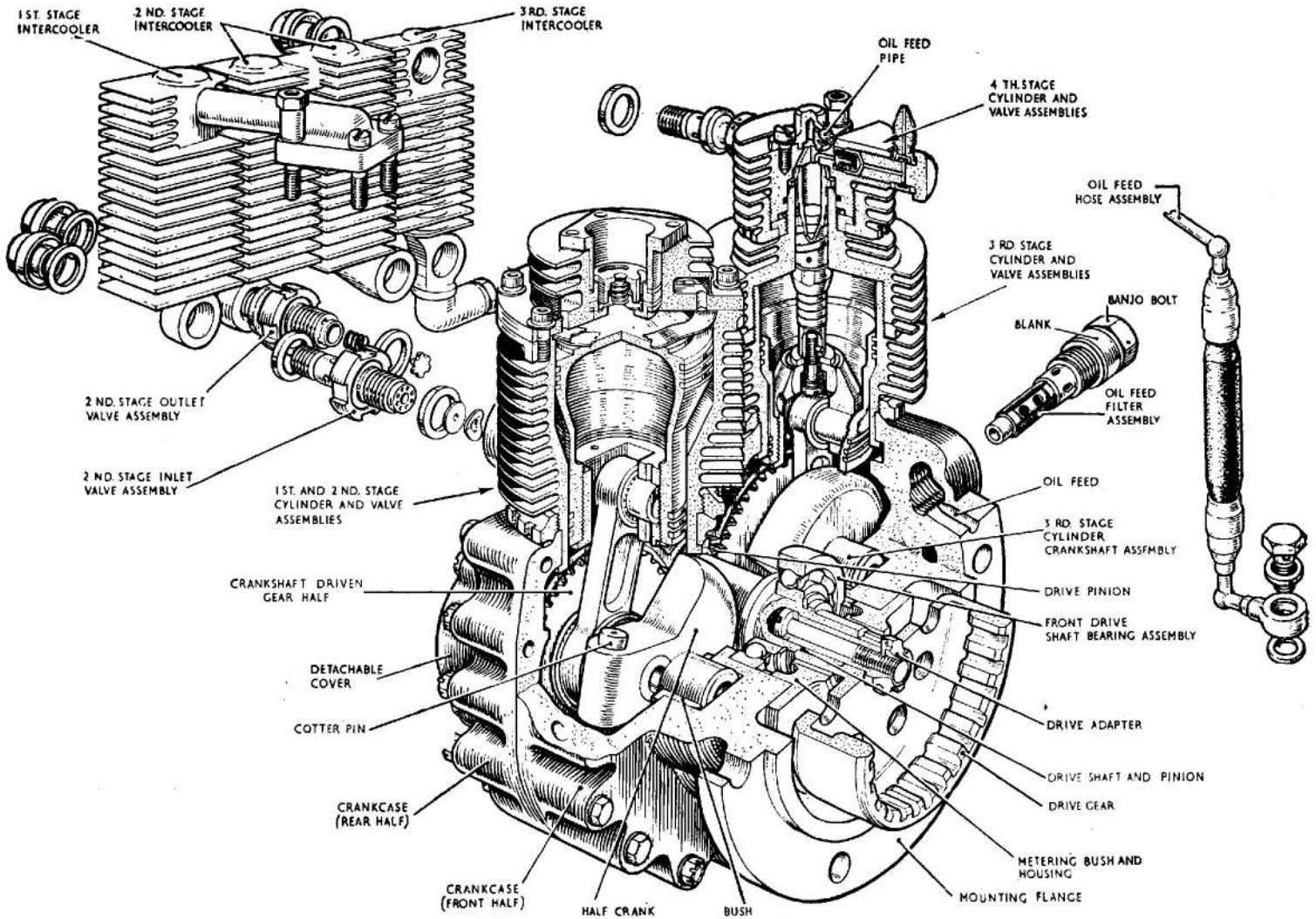

Fig. 1. General arrangement of the air compressor

3. Incorporated in the unit and attached to a panel secured to the frame is a pneumatic air drying and purifying system (*fig.* 2) which ensures that air emerging from the compressor is suitable for operational use when it reaches the delivery point located on the front of the panel.

4. The components of the pneumatic panel are mounted as shown in fig. 2 and incorporate an oil and water trap, two dehydrators, a non-return valve, a stop valve, a line filter, a relief valve and a pressure gauge which is located on the front of the panel.

5. The starter panel consisting of a base and casing on which are mounted the electrical components of the starter circuit is contained within a guard. The guard is secured to the base of the frame. The manually operated ON/OFF switch is located at the side of the casing and is adjacent to a Cannon type connection. A 24 volt d.c. supply is connected to this point.

6. The main components of the Air Compressor, Part No. AC.60258 (Ref. No. 4F/3548) are as follows:

Part No.	Ref. No.	Description	Location
AC.14106	—	Compressor Unit (consisting of Compressor Part No. AC.14154, A.E.I. (B.T.H.) Electric Motor, Part No. LD.2412 Form 10, and the gearbox and fan assembly.)	
ACM.16936	27VA/4699	Relief Valve	Pneumatic Panel
Series 1000 (4000 lb/in²)	4FZ/1946	Stop Valve (Pressure Control Ltd.)	,, ,,
ACO.6370	—	Non-return valve	,, ,,
ACM.18304	4FZ/1945	Line filter	,, ,,
ACM.22132	—	Dehydrator	,, ,,
ACM.18048	—	Oil and water trap	,, ,,
AN.3102A-28-ZP	—	Cannon connector	Starter Panel
AN.3106A-28-7S	—	Cannon connector	,, ,,
501056	4FZ/1955	Switch (Painton type)	,, ,,
FPH/A/2	4FZ/1956	Pressure switch (Teddington Controls)	,, ,,
	5CW/4620	Relay switch, Type 1	,, ,,
	5CW/5015 or 5CW/6453	Switch, Type 9B, No. 2	,, ,,
CX.182304	—	Resistor (A.E.I.)	,, ,,
—	5CW/430	Terminal block	,, ,,

Principle of operation

7. Air delivered from the compressor is piped through an after cooler, a coil of tubing mounted on the main framework in front of the fan inlet, to the oil and water trap and the two dehydrators and then flows through the line filter and non-return valve before reaching the delivery point located on the front of the panel. The oil and water trap acts as a separator and permits oil and water extracted from the air to be drained away. The dehydrators remove all residual moisture, and the line filter foreign matter, from the air.

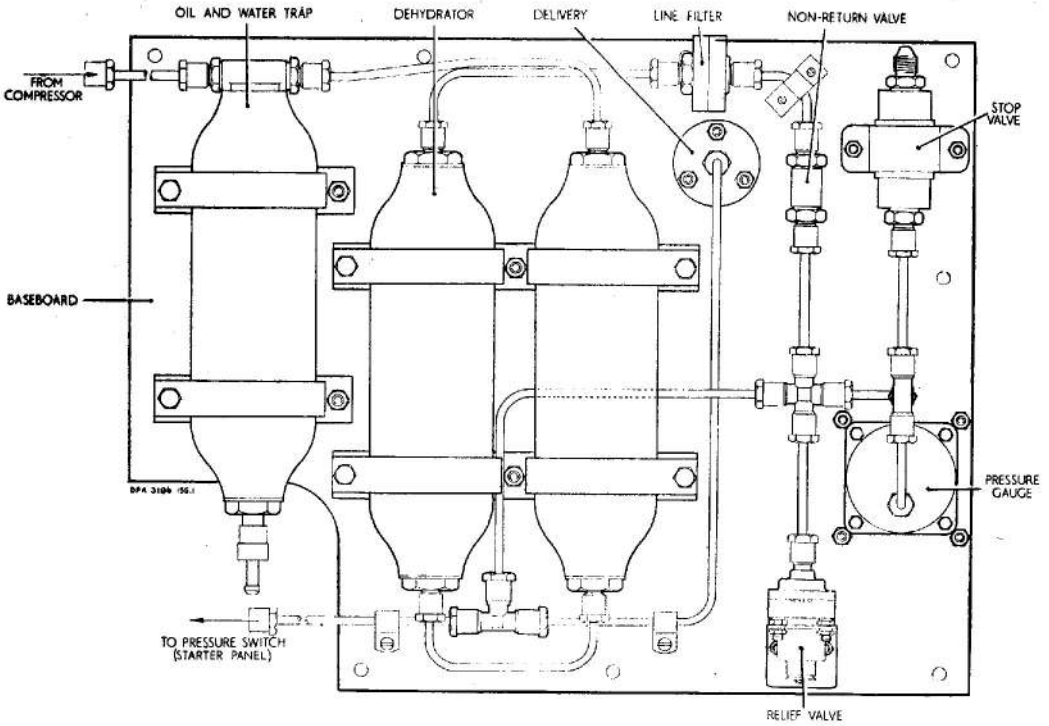

Fig. 2. Pneumatic panel

8. Excess air pressure build up in the system is dissipated by the relief valve which opens at a pre-determined pressure. The stop valve is used to exhaust the pressure from the oil and water trap and the dehydrators before the compressor is started and before the delivery pipe line is disconnected from the delivery point after the compressor has been in use. The stop valve control knob is located on the front of the panel.

9. The pipe line is also connected to the pressure switch on the starter panel and at a pre-determined air pressure, the pressure switch operates to shut off the compressor.

Starting the compressor

10. To start the compressor:—

(1) Drain the oil and water trap.

WARNING . . .

Whilst system pressure is present in the oil and water trap, the drain plug sleeve must not be unscrewed by more than $\frac{1}{4}$ turn.

(2) Open the stop valve, to exhaust the residual pressure present in the system and to reduce the starting load.

(3) Close the stop valve.

(4) Connect the air pipe line to the delivery connection on the front of the pneumatic panel.

(5) Connect a 24 volt d.c. supply to the Cannon type connection in the casing of the starter panel.

(6) Switch on to start the compressor.

Stopping the compressor

11. (1) Switch off the current.

(2) Open the stop valve and exhaust the pressure.

(3) Disconnect the external pipe line which is attached to the delivery connection on the front of the pneumatic panel.

Note . . .

It is imperative as a safety precaution that operation (2) *is carried out before operation* (3).

Functional test

12. To check the performance of the compressor:—

(1) Connect a 600 cu. in. air bottle to the delivery connection on the front of the

pneumatic panel. Connect a 24 volt d.c. supply to the starter panel and start the compressor.

(2) Charge the air bottle from 500 to 2800 lb/in². The pressure switch should cut out at 2800 lb/in² within 45 minutes.

(3) Reduce the pressure to 2500 lb/in² by opening the stop cock. The pressure switch should cut in again at this pressure.

(4) Close the stop cock and again build up the pressure to 2800 lb/in². Continue to cycle the unit thus by reducing and raising the pressure as detailed above every three minutes for a period of 15 minutes.

SERVICING

Lubrication

13. To check the oil pressure, remove the small pressure plug in the front bottom left-hand corner of the gearbox casing and insert a connection to which a pressure gauge is attached. Start the compressor, the oil pressure should be 40 to 50 lb/in².

14. The compressor and gearbox lubricating oil should be maintained to the level of the filler plug in the gearbox, using oil OM-71.

Compressor valves

Dismantling the valves

15. The following paragraphs give instructions for dismantling the valve system to carry out normal servicing operations:—

16. *Oil feed filter assembly.*—Unscrew the oil feed filter assembly from the crankcase, slide the filter complete with spring off the bolt.

17. *1st stage inlet filter.*—Release the filter clip and detach the filter gauze.

18. *1st stage valves and cylinder head (fig. 3).*—(1) Remove the screws and cowl post and cap nuts securing the 1st stage intercooler to the cylinder head and cylinder. Remove the intercooler.

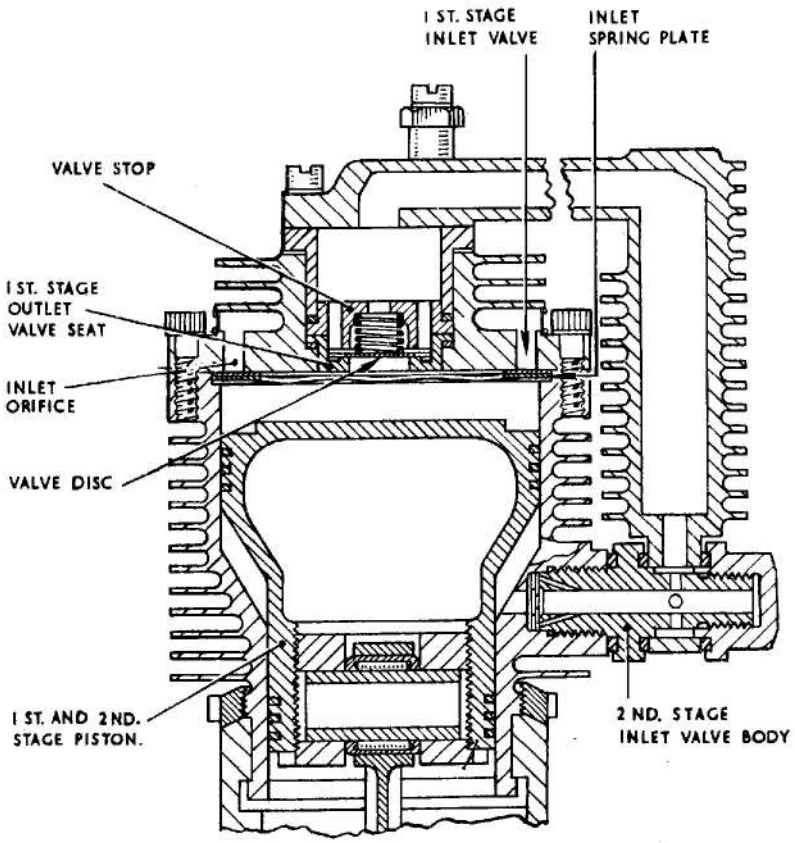

Fig. 3. 1st and 2nd stage system

(2) Free the screws and remove the cylinder head. Extract the outlet valve sleeve, the washer, the valve stop, the spring, the valve disc, the other washer and the valve seat.

(3) Lift the inlet valve and the spring plate away from the cylinder.

19. *2nd stage valves.*—(1) Unscrew the cap nuts and remove the 2nd stage intercooler.

(2) Unscrew the 2nd stage inlet banjo bolt from the side of the cylinder and remove the washers, the valve disc and the spring plate.

(3) Unscrew the 2nd stage outlet banjo bolt from the side of the cylinder and remove the washers, spring and outlet disc valve.

20. *3rd stage valves* (*fig.* 4).—(1) Remove the cap nuts securing the 3rd stage intercooler to the unit and detach the intercooler.

(2) Unscrew the inlet and outlet banjo bolts and extract the valve components as detailed in sub-paras. 19 (2) and 19 (3).

21. *4th stage valves* (*fig.* 4).—(1) Unscrew the inlet and outlet banjo bolts and detach the outlet connection.

(2) Extract the valve components as detailed in sub-para. 19 (3).

Examination and servicing

22. (1) Thoroughly clean and dry all parts, including the oil feed bolt, and the filter gauzes.

Note . . .

If chemical grease solvents are used for cleaning, ensure that they do not come into contact with the rubber components.

(2) Remove any carbon deposits or light scratches from the 1st, 2nd, 3rd and 4th stage outlet valves by light lapping with Wellworthy Turkey Powder. The seats may be soaked in a caustic soda solution before lapping, if the deposit is heavy. Scrupulously remove all traces of the lapping paste and soda after these operations.

(3) Examine the 1st stage cylinder wall to ensure that the unit has not been operated under excessively low oil pressure conditions, which could cause overheating and scoring. Check that the piston crown is slightly damp with oil.

(4) Check the coil springs for fracture and obvious loss of resilience. Springs of doubtful serviceability must conform with the requirements of Table 1 or be renewed. It is recommended that the coil type valve springs and the 4th stage piston spring should be renewed.

(5) Discard all spring plates, and the valve, valve discs and disc valves in the 2nd, 3rd and 4th stage valve systems. The 1st stage inlet valve and outlet valve disc may be cleaned up by light lapping.

(6) If for any reason the serviceability of the oil feed flexible hose assembly is suspected between overhaul periods it must be checked and tested as follows. Examine the rubber casing for excessive cracking caused by age hardening and deterioration due to contamination by fuels or oils. Apply a pressure of 500 lb/in² to the hose. Leakage is not permissible. Flow test the hose by passing air through it at 50 lb/in² inlet pressure. A rate of flow of not less than 36·36 litres per minute must be recorded.

Table 1

Spring check data

Item	Load	Length
Disc valve springs	15 to 17 oz	0·280 in.
1st stage outlet valve spring	$2\frac{3}{4}$ to $3\frac{1}{4}$ oz	0·300 in.
4th stage piston spring	$5\frac{1}{2}$ to $6\frac{1}{2}$ lb	0·187 in.

Note . . .

Under the applied relevant load, each spring must compress to the relevant length.

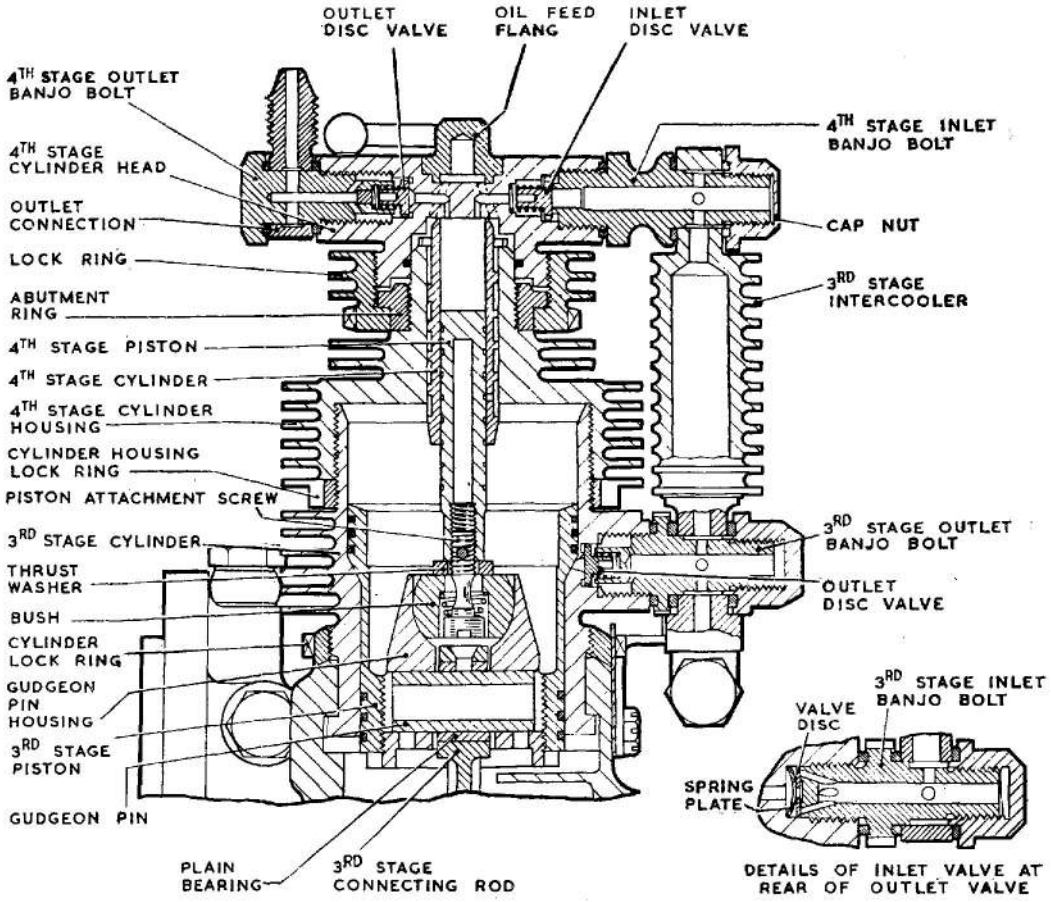

Fig. 4. 3rd and 4th stage system

Assembling the valves

23. All components must be scrupulously clean before assembly. Light alloy sealing washers should be renewed as considered necessary and should be smeared with a very thin film of jointing compound:—

(1) Fit the washer, the blank and the second washer to the oil feed banjo bolt. Position the filter assembly on the bolt and screw it into the crankcase.

(2) Position the spring, the 4th stage inlet valve and sealing washer in the inlet counterbore in the 4th stage cylinder head. Screw the inlet banjo bolt into the head.

Note . . .

It is recommended that a suitable soft metal rod is inserted through the bore of the banjo bolt to maintain the valve in the central position whilst the bolt is being screwed in.

(3) Fit the washer, the outlet connection and the second washer to the 4th stage outlet bolt. Position the 4th stage outlet valve and then the spring in the outlet counterbore in the cylinder head. Screw the banjo bolt assembly into the outlet counterbore.

(4) Fit the washer over the threads of the 3rd stage outlet banjo bolt. Position the outlet valve and the spring in the outlet counterbore in the 3rd stage cylinder and screw in the banjo bolt and washer.

(5) Position the spring plate, cavity first, into the 3rd stage inlet counterbore. Fit the valve disc on the plate and screw the 3rd stage banjo bolt complete with fitted washer, into the inlet orifice.

(6) Fit washers to the 4th stage inlet and 3rd stage inlet banjo bolts.

(7) Assemble the intercooler to the 4th stage inlet and 3rd stage outlet banjo bolts. Secure with cap nuts and washers.

(8) Assemble the 2nd stage inlet and outlet valve components to the second stage cylinder as detailed for the 3rd stage. The only difference is that the outlet valve has no stem.

(9) Fit an annealed copper washer to the 1st stage outlet valve bore in the cylinder head. Locate the valve seat, the valve disc, spring, valve stop, second annealed washer, and sleeve.

(10) Position the 1st stage inlet valve spring plate in the shallow counterbore in the top of the cylinder. Locate the inlet valve on the spring. Carefully fit the cylinder head ensuring that the valve remains central on the spring and that the intercooler attachment bolt holes in the head are correctly aligned for the attachment of the intercooler. Secure the head with screws, and check that the head is flush fitting.

(11) Fit the air intake filter gauze assembly.

(12) Fit the two remaining intercoolers, to the relevent valve bodies and secure to the cylinders with the washers and cap nuts. Attach the 1st stage intercooler, and mounting plate assembly, to the cylinder head with the cowl post, screws and washers. A very careful application of jointing compound may be made at the intercooler joint.

(13) Wirelock all cap nuts, banjo bolts nuts, screws and lockrings.

Oil and water trap

24. Fluid should be drained from the oil and water trap as operating conditions require. To do this, unscrew the drain plug nut ¼ turn only and allow the air pressure to expel the fluid accumulated in the base of the trap. This should be done at the end of each run and during a run according to atmospheric humidity.

WARNING . . .

Whilst system pressure is present in the oil and water trap, the drain plug must not be unscrewed by more than ¼ turn.

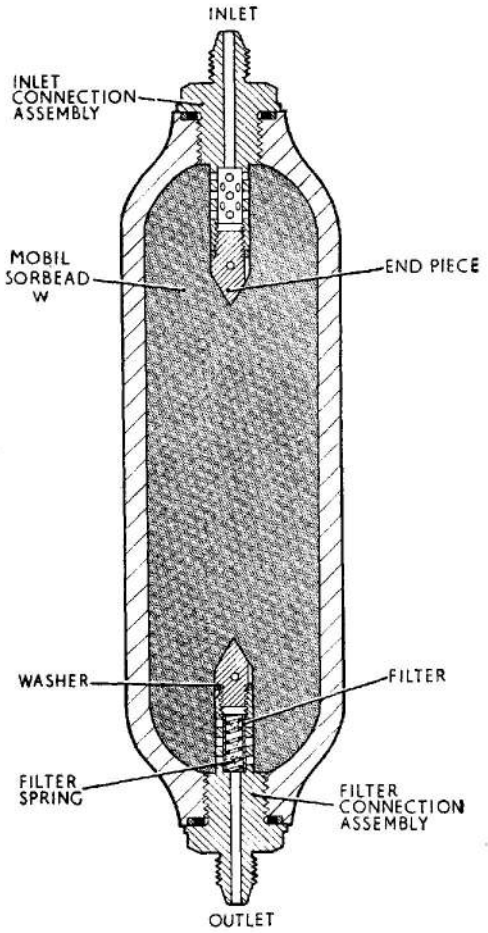

Fig. 5. Dehydrator

Renewing the dehydrator charge (*fig.* 5)

25. The dehydrator charge should be renewed about every 30 hours of running time. Proceed as follows:—

(1) Disconnect and remove the dehydrator from the pneumatic panel.

(2) Remove the inlet outlet connection assemblies and extract the dehydrator charge.

(3) Examine the interior of the body for free moisture and if necessary dry out by passing warm air through the body.

(4) Ensure that the filter is not obstructed and replace the outlet connection using a new sealing washer.

(5) Fill the body with Mobil Sorbead W dehydrant, shake gently to bed down the

dehydrant and leave sufficient space to accommodate the extension of the inlet connection.

(6) Screw in the connection using a new sealing washer.

(7) Tighten the inlet and outlet connection to a torque of 40 lb. ft.

(8) Pressure test the dehydrator to its maximum working pressure. Leakage is not permissible.

(9) Refit the dehydrator to the pneumatic panel.

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