Chapter 3P

MISCELLANEOUS

LIST OF CONTENTS

LIST OF TABLES

LIST OF ILLUSTRATIONS

Introduction

1. This chapter contains descriptive servicing, removal and installation information for the following electrically operated systems:-

Windscreen wipers
Windscreen washers
A.S.V. cooling
A.S.V. pressurisation
Air sampler ducts
K.L.7 sockets
Crew's razor supplies

Crews razor socket

2. General location illustrations are included in this chapter. A routeing chart for each system will be found following the text at the end of the chapter.

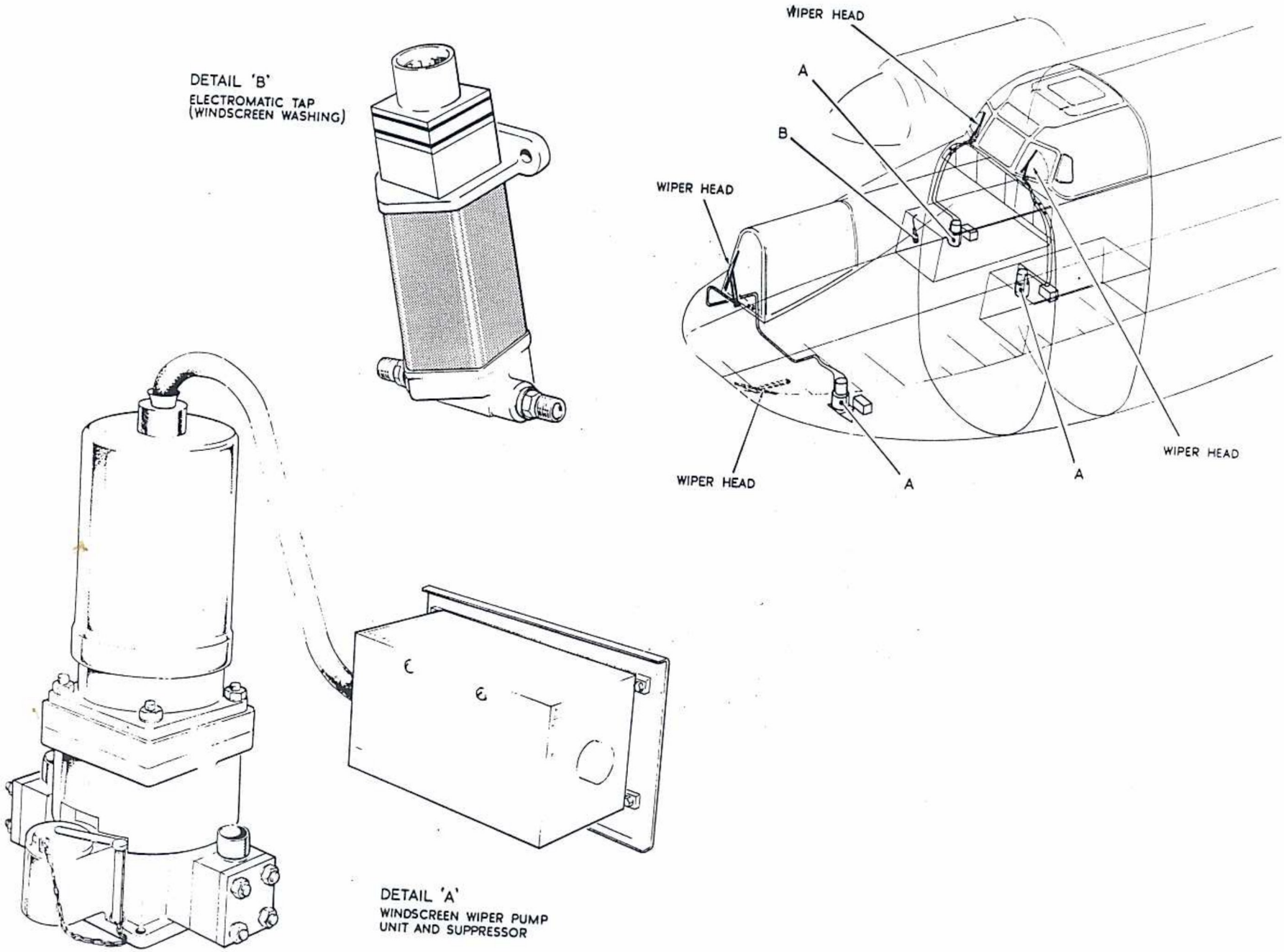

Fig. 1 .Windscreen washing and wiper equipment

DESCRIPTION AND OPERATION

WINDSCREEN WIPERS

General

3. Four windscreen wipers are fitted to the aircraft, one for each of the following crew members:- air bomber, front gunner and first and second pilot. The air bomber's wiper is operated from the main hydraulic system, the description of which will be found in Sect.3, Chap.6 of this publication. The remaining three wipers and electrically controlled and a description of their operation is given in the subsequent paragraphs.

4. Each wiper is motivated by hydraulic fluid which is delivered to the wiper from an electrically driven hydraulic pump. The electrical supply to the motor is controlled by a single-pole switch, and a rheostat is connected in the series field of the motor to give speed control of the wipers.

Major items of equipment

Pump units

5. The Maxivue pump units, Type A.C.10230, are powered by 28-volt, d.c. compound wound motors, Type L.D.1005. These units are located in the nose of the aircraft on the forward face of former J.

Suppressors

6. Fitted adjacent to each pump unit is a suppressor, Type 02, Ref.No.5C/2967. These units are connected in the supply lines to the pump motors in order to minimise interference with the wireless equipment.

Rheostats

7. Rheostats, Type A.C.13880, are located one at each of the following positions; pilots' port and starboard side panels, and when fitted, the nose gunner's panel. It should be noted that the front gunner's rheostat is a type AC12685, modified by H.S.A. and becomes Part No. 1 Z10586. Operation of a rheostat, labelled WINDSCREEN WIPERSPEED varies the supply current to its associated motor, and hence windscreen wiper speed.

Control switches

8. Single-pole switches, Type D.N./1260/1-A-1-1-A, control the 28-volt d.c. supply to the pump motors. The switches for the first and second pilots' windscreen wipers are fitted to the pilots' port and starboard side panels respectively. The control switch for the front gunner's wiper is located on the nose gunner's panel. These switches are labelled WINDSCREEN WIPER ON.

Circuit operation

9. Reference to the routeing chart (fig.5), shows that with the first pilots' control switch selected to ON, a 28-volt, d.c. supply from fuse GG3 in the main power panel, is fed to the windscreen wiper pump motor, via the rheostat and suppressor. The circuit for the second pilots' and the nose gunner is similar. The d.c. supply for the second pilots windscreen wiper pump motor is taken from fuse WW3 in the main power panel whilst the nose gunner is supplied from fuse BP3 in the air bomber's panel.

WINDSCREEN WASHERS

10. Electrically controlled windscreen washing is provided for the first and second pilots' windscreens. The electrical components used in this system are two push-switches labelled WINDSCREEN WASHER, and an electromatic tap.

11. The first and second pilot's push-switches, Ref.No.5CW/6847, are mounted on their respective pilot's side panels. The electromatic tap, Type A.C.11326, is an electrically controlled pneumatic unit. This unit is located under the pilot's trough between formers E and F.

12. Reference to fig.6 shows that with either of the push-switches depressed, a 28-volt d.c. supply from fuse BP2 in the air bomber's panel is connected to the electromatic tap. Operation of this unit permits the release of air under pressure which forces the washing spray on to the windscreens.

A.S.V. COOLING

13. Three air extractor fan motors, Type 12A/11581, are fitted in the aircraft to extract the hot air from around the A.S.V. equipment. Two of the fan motors are mounted on top of the A.S.V. crate at former 22 and help to extract the hot air from around the waveform generator and the power unit (fig.3). The third extractor fan is mounted in the scanner cupola to assist in cooling the transmitter - receiver and the modulator (fig.2). Connected in the supply line to each fan motor is a suppressor, Type P1.

14. Reference to fig.7 will show that the three fan motors are controlled directly from the A.S.V. master switch. Selection of this switch to ON will connect a 28-volt, d.c. supply from fuse BK4 to the fan motors. Both the switch and fuse are

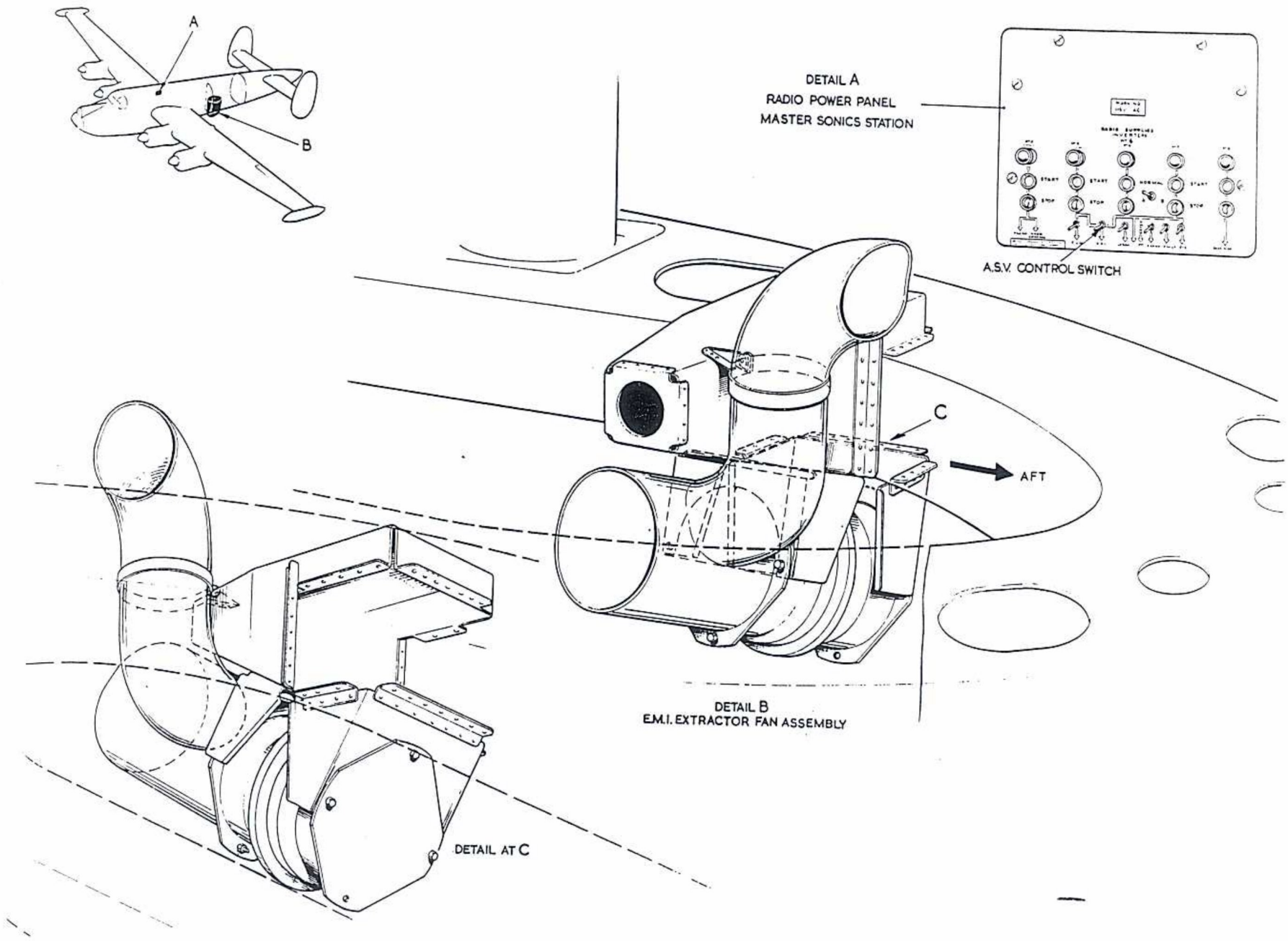

Fig. 2 Extractor fan assembly – A.S.V. scanner.

located on the radio power panel. For further details on the A.S.V. installation reference should be made to Book 3, Sect. 9, Chap.2 of this publication.

A.S.V. PRESSURISATION

15. An air pressurisation system installed in the scanner well supplies air to the modulator, transmitter-receiver and waveguide, at a controlled pressure of approximately 16 p.s.i. absolute. The passage of air to the equipment is controlled by an electromatic tap, Ref.No. 27VA/5125, located in the scanner well.

16. This electromatic tap is energised when the single-pole switch on the scanner control panel is selected to ON. Operation of this switch connects a 28-volt d.c. supply from fuse KK12 in the main power panel to the electromatic tap (fig.8).

AIR SAMPLER DUCT

17. Provision is made on the aircraft to carry and operate two Mk.9 air sampling ducts. These ducts are fitted one to each wing and are carried when samples of dust are required for testing purposes. A description of this system will be given when the information becomes available, but a routeing chart for the air sampler duct installation will be found in fig.9.

K.L.7 SOCKETS

18. Two 28-volt, d.c. K.L.7 sockets are fitted to the aircraft. One is located above the bookcase at bulkhead 17, and is fed from fuse CB6. The other socket is located at the starboard observer's station, and is supplied from fuse CB12. Both fuses are located in the galley control panel. A routeing chart for the K.L.7 sockets is given in fig.10.

CREW'S RAZOR SUPPLIES

19. A 250-volt, a.c., 50 c/s. socket, Ref.No.5CY/1044, is fitted in the toilet compartment to provide power for an electric shaver. The a.c. supply for the razor is provided by a static inverter, Type 509/1/01230, located in the forward camera bay. Control of the inverter is by a single-pole switch labelled RAZOR SWITCH. Operation of the switch connects 28-volt d.c. from fuse CB8 (in the galley control panel) to the static inverter, thus making the razor socket 'live'. The socket and switch are mounted side by side on the mirror and lamp panel in the toilet compartment.

SERVICING

WINDSCREEN WIPERS

General

20. The supply wiring to the windscreen wiper installations should be examined periodically for signs of general deterioration and security of connections. Servicing details for suppressors, Type 02, will be found in A.P.4343C, Vol.1, Book 3, Sect.5.

Pump motors

21. The pump motors, Type LD.1005, require little servicing other than a periodical check on the brush lengths and the brush spring pressures. General servicing details for motors are contained in A.P. 4343D, Vol.1, Book 4, Sect.20 and A.P. 4343, Vol.1, Sect.11.

Wiper assemblies

22. Servicing information for the mechanical and hydraulic sections of the windscreen wiper assemblies, including replenishing of the pump unit with hydraulic fluid and checks on the wiper arm and blade spring pressures, will be found in A.P.1803S, Vol.1, Sect.11, App.1. It should be noted that the windscreen wipers must NOT be operated on a dry windscreen.

WINDSCREEN WASHERS

23. This system should be checked regularly in accordance with the relevant Servicing Schedule. The electrical connections and electromatic tap should be inspected for security of attachment and damage.

A.S.V. COOLING

24. Before testing this circuit, reference must be made to the relevant routeing charts so that circuits normally energised by the A.S.V. Mk.21 switch, but not required for this particular test, may be disconnected and made safe. The blower motors, suppressors and wiring can then be checked in accordance with the appropriate Servicing Schedule.

25. The various units, of the installation not already mentioned, should be checked at the appropriate inspection periods for security of attachment and signs of damage. Cable assemblies and connectors should be examined for tightness.

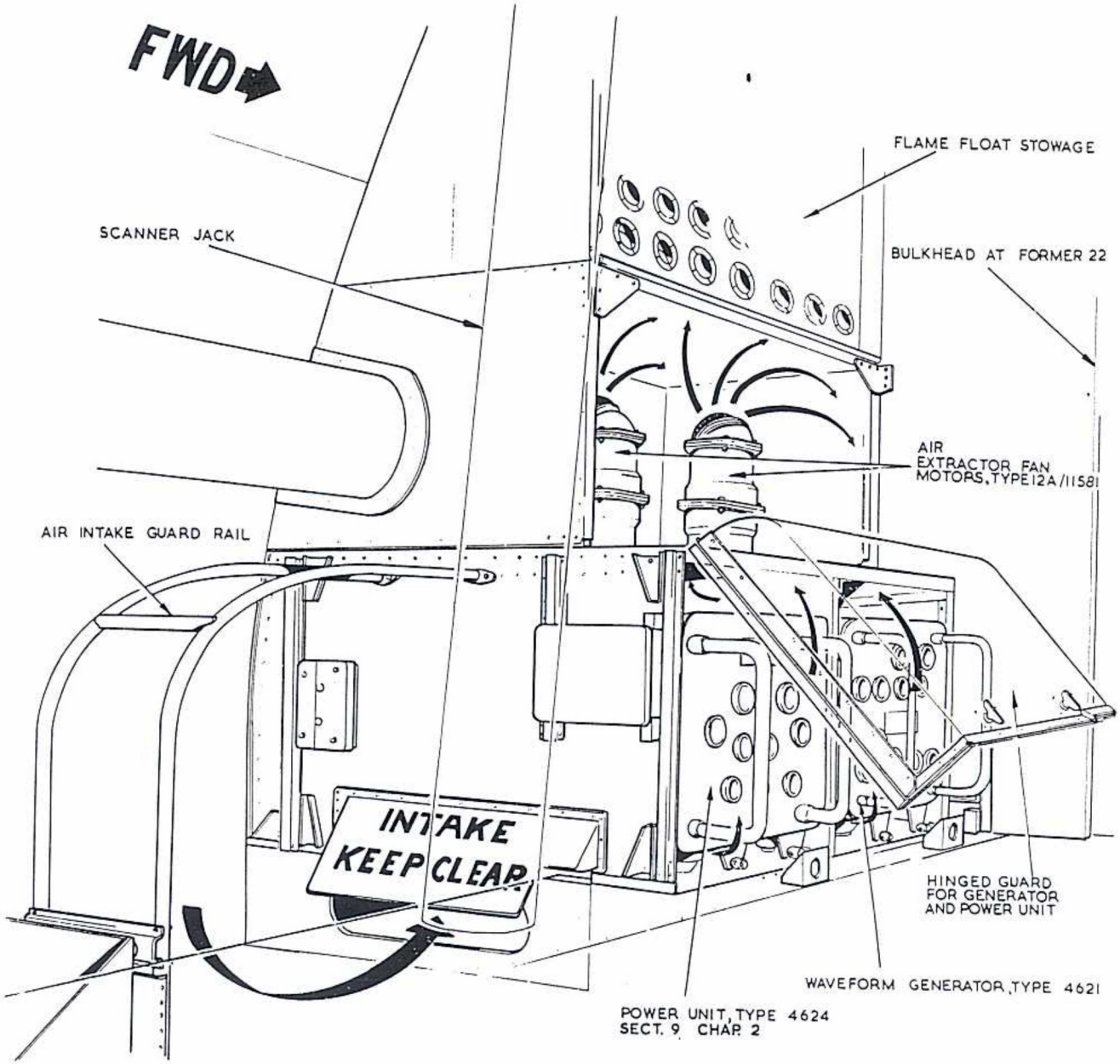

Fig.3 Extractor fan assembly – A.S.V. crate.

◂ *Power unit chapter identified* ▸

REMOVAL AND INSTALLATION

WINDSCREEN WIPERS

General

26. No difficulty should be experienced when removing the components of this system. However, the co-operation of the airframe fitter tradesman will be necessary when the piping has to be moved.

Pump motors

27. The pump motors are secured in their brackets by three bolts. After removal of these bolts, disconnection of the supply sockets and the hydraulic pipe lines, the motors may be removed.

Suppressors

28. The suppressors are secured by means of four bolts, when the cables are disconnected and the four bolts removed, the suppressors may be removed.

Speed control rheostats

29. The rheostats are secured to the outer instrument panels by two screws, the panel must be removed before the rheostat can be withdrawn. The control switches require a similar procedure.

30. The removal of the electrical equipment for the A.S.V. cooling, windscreen washing and A.S.V. pressurisation is fairly straightforward. The assistance of the airframe fitter tradesmen will again be required when removing the A.S.V. extractor fan motors, the electromatic taps for the A.S.V. pressurisation and the windscreen washers.

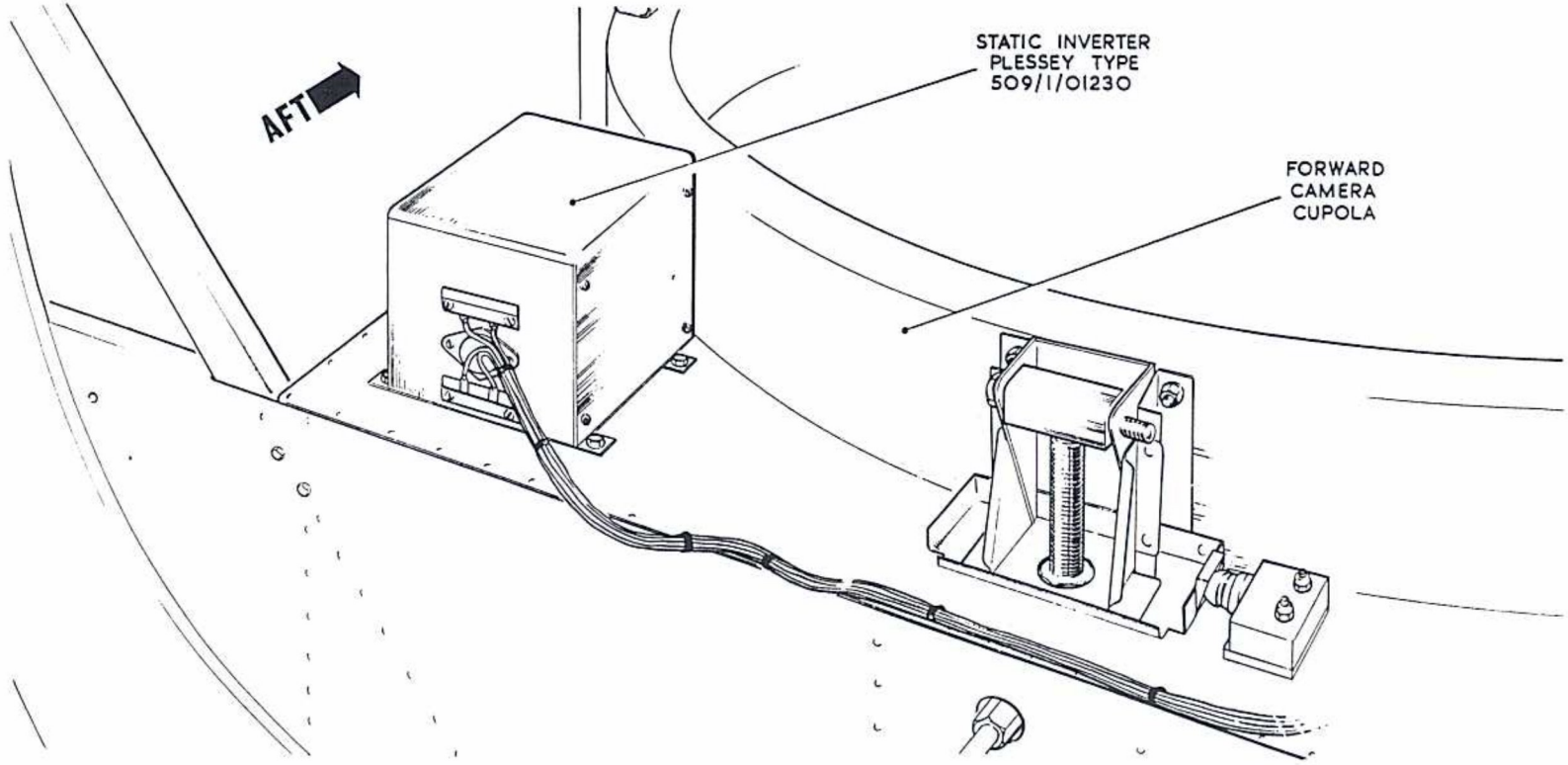

Fig.4 Static inverter installation

TABLE 1

Major items of equipment

Item	Type	A.P. Reference
Maxivue pump units	AC10230	A.P.1803S, Vol.1, Sect.11, App.1
Suppressors	02	A.P.4343C, Vol.1, Book 3, Sect.5
Speed rheostats	AC13880	-
Speed rheostat	H.S.A.Part No.1/Z10586	-
Electromatic tap	AC11326	A.P.4303B, Vol.1, Book 1, Sect.5
Extractor fan motors	12A11581	-
Suppressors	P1	A.P.4343C, Vol.1, Book 3, Sect.5
Static inverter	509/1/01230	◀A.P.113D-0305-16▶

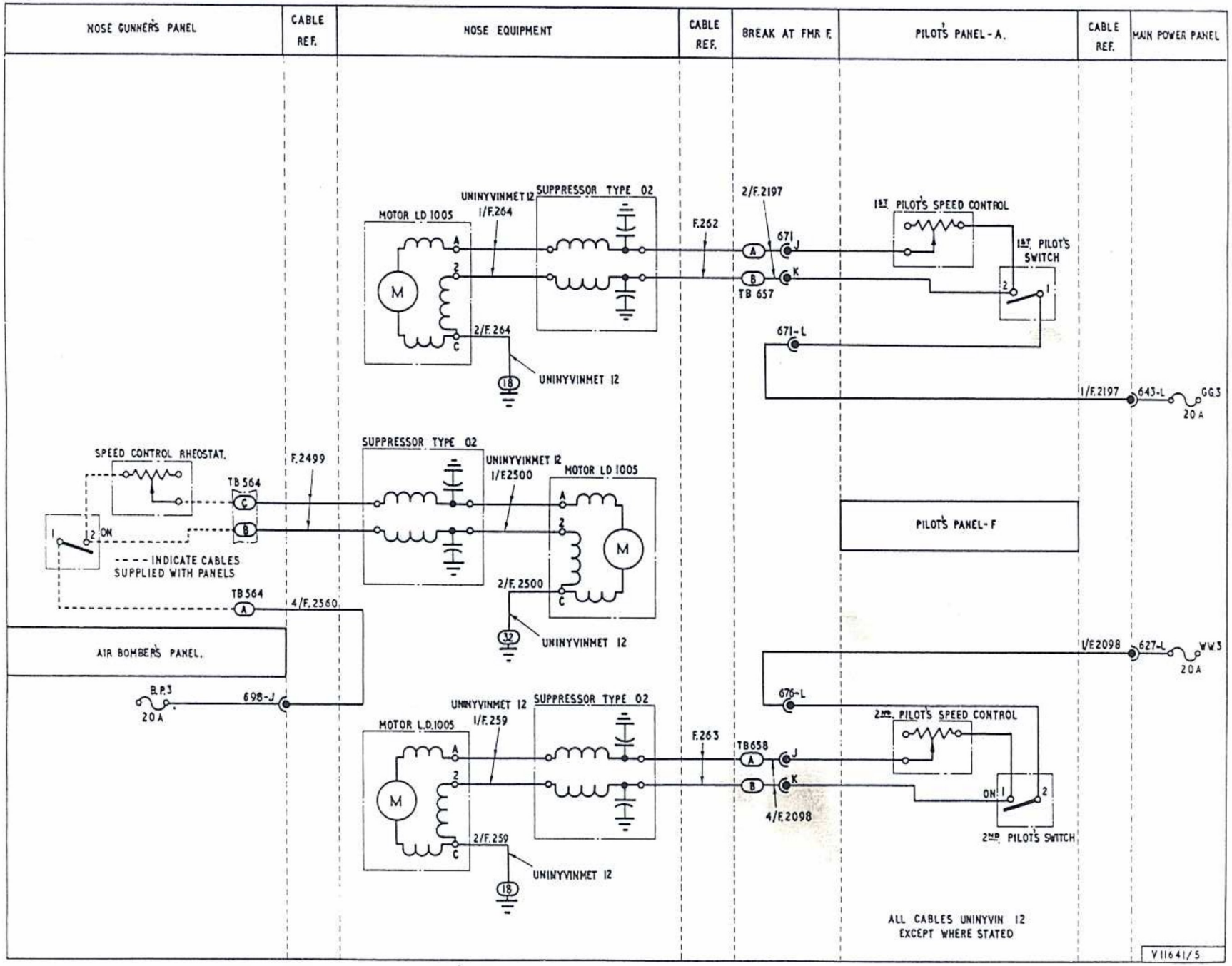

Fig. 5 Windscreen wipers

◂ Terminal numbers at 2nd pilots switch changed ▸

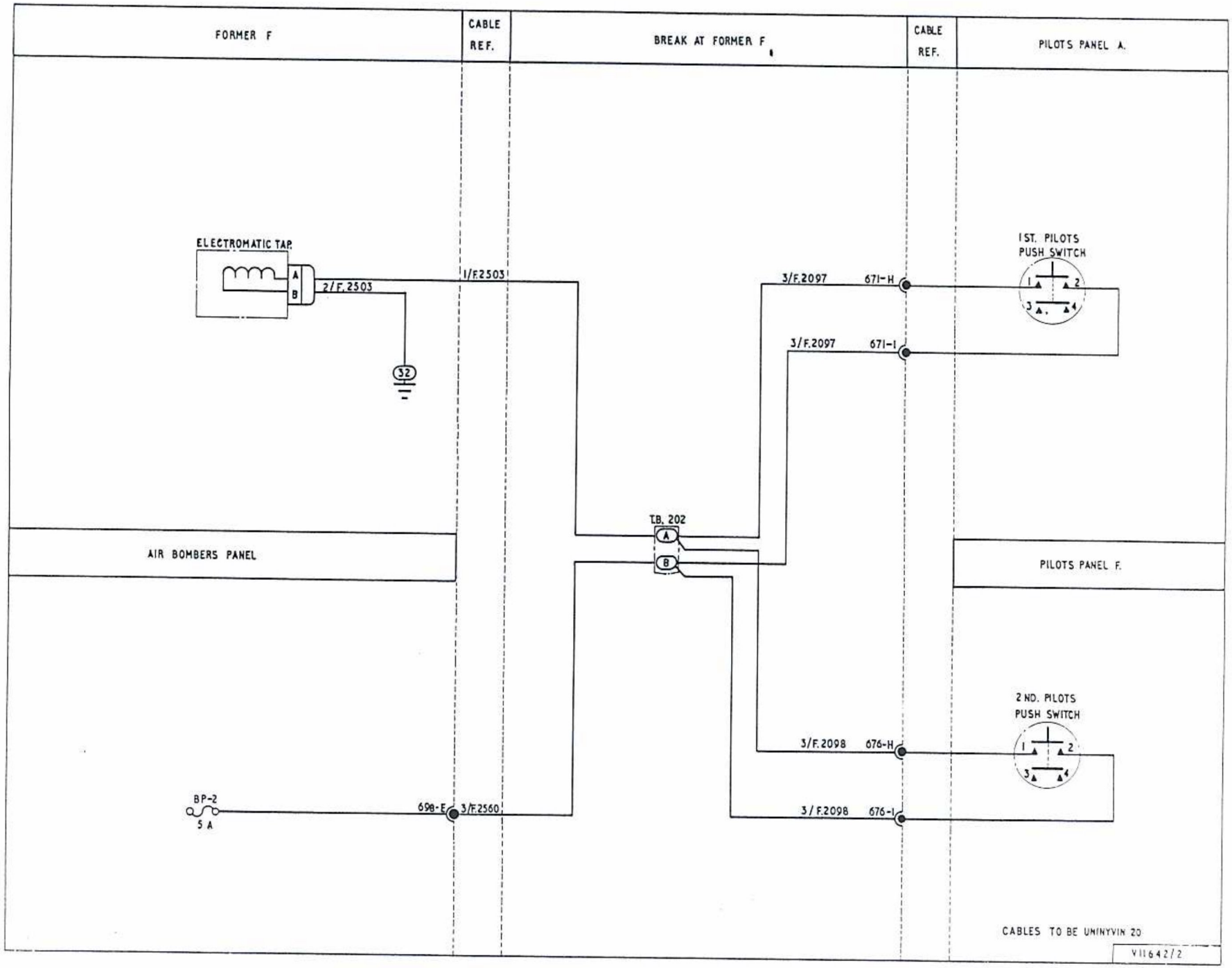

Fig. 6 Windscreen washers

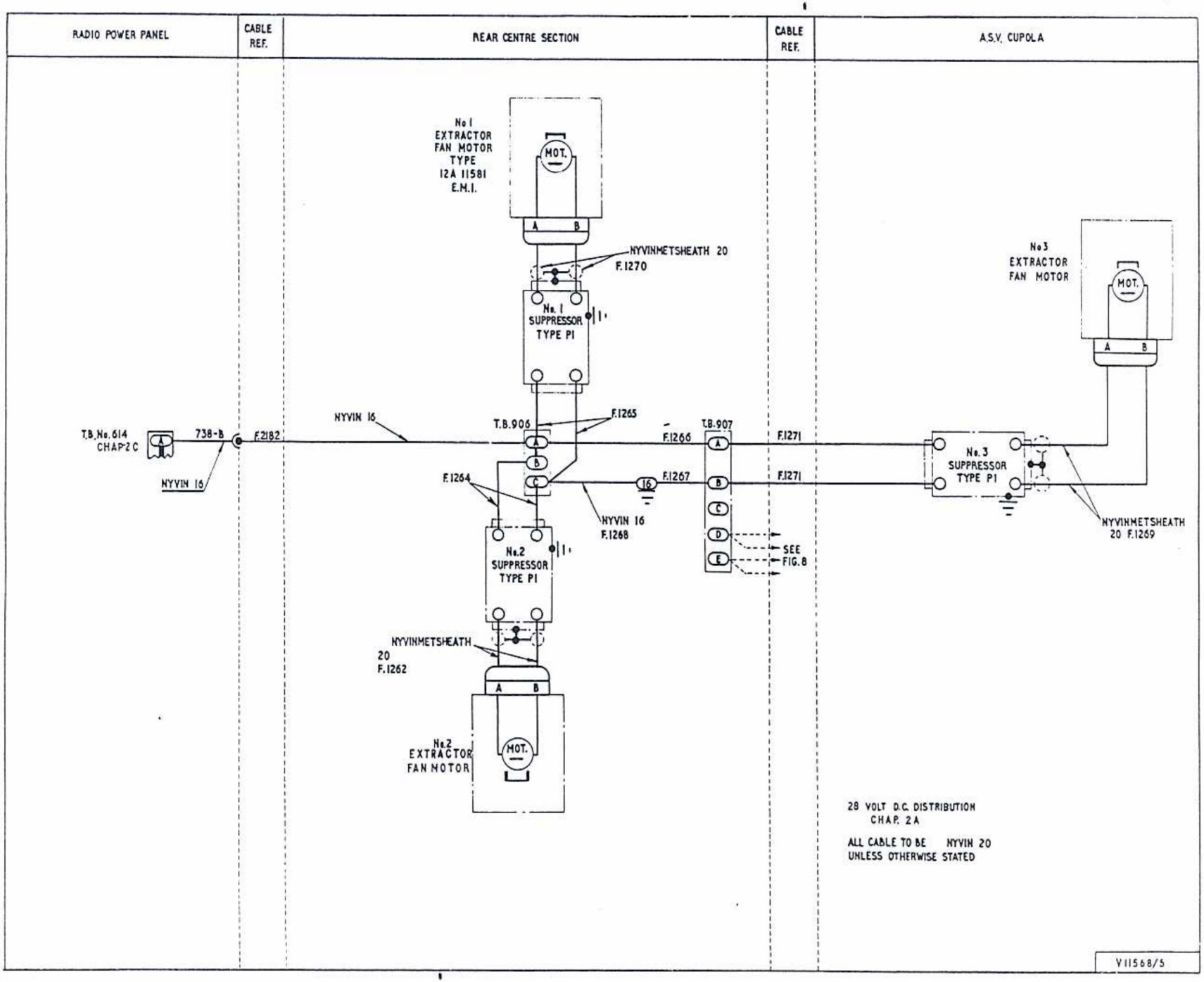

Fig. 7 A.S.V. air cooling

◂ *No.1 Fan Motor annotation corrected* ▸

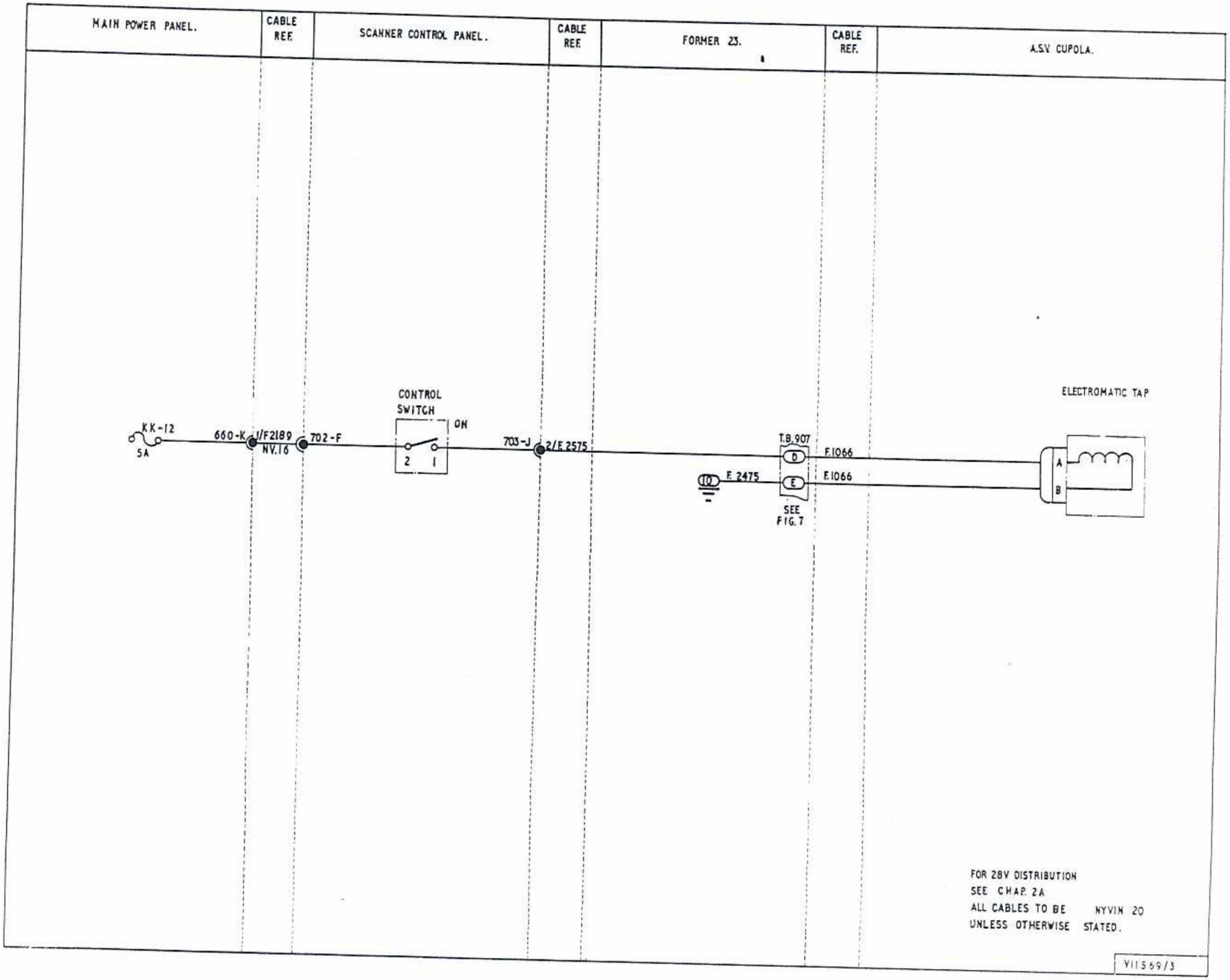

Fig. 8 A.S.V. pressurisation

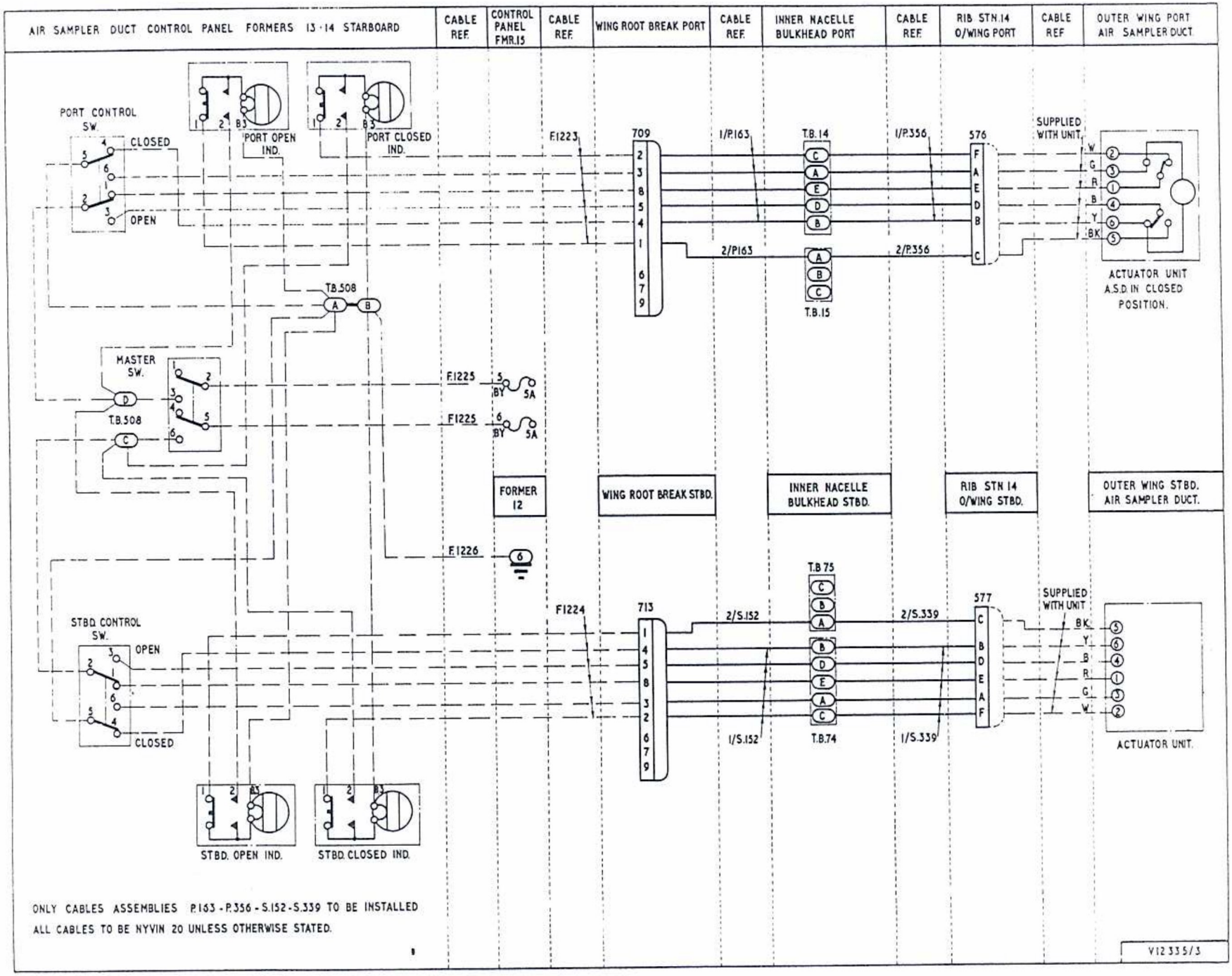

Fig. 9 Air sampler duct.

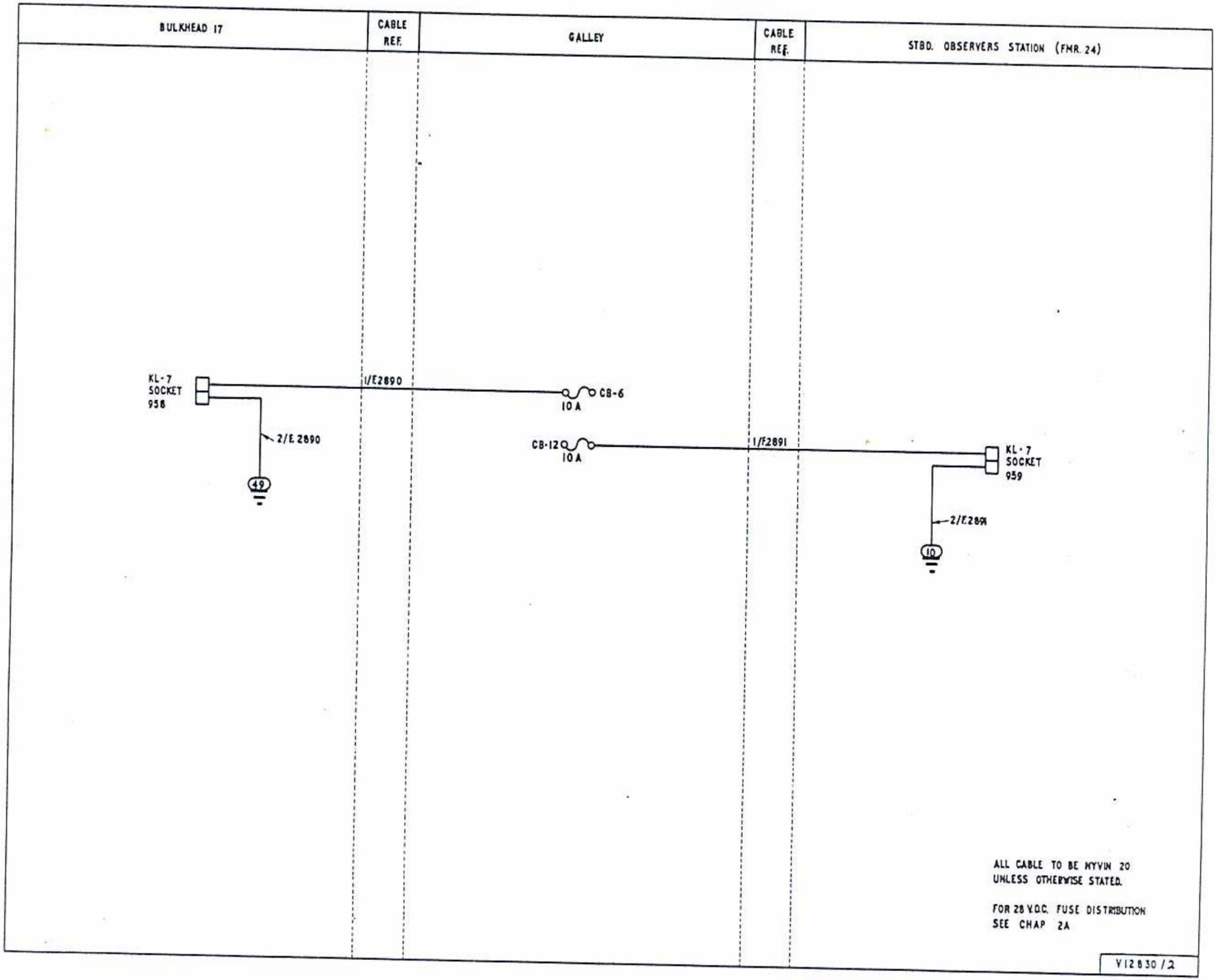

Fig. 10 KL7 sockets.
◄ Fuses uprated to 10 amps ►

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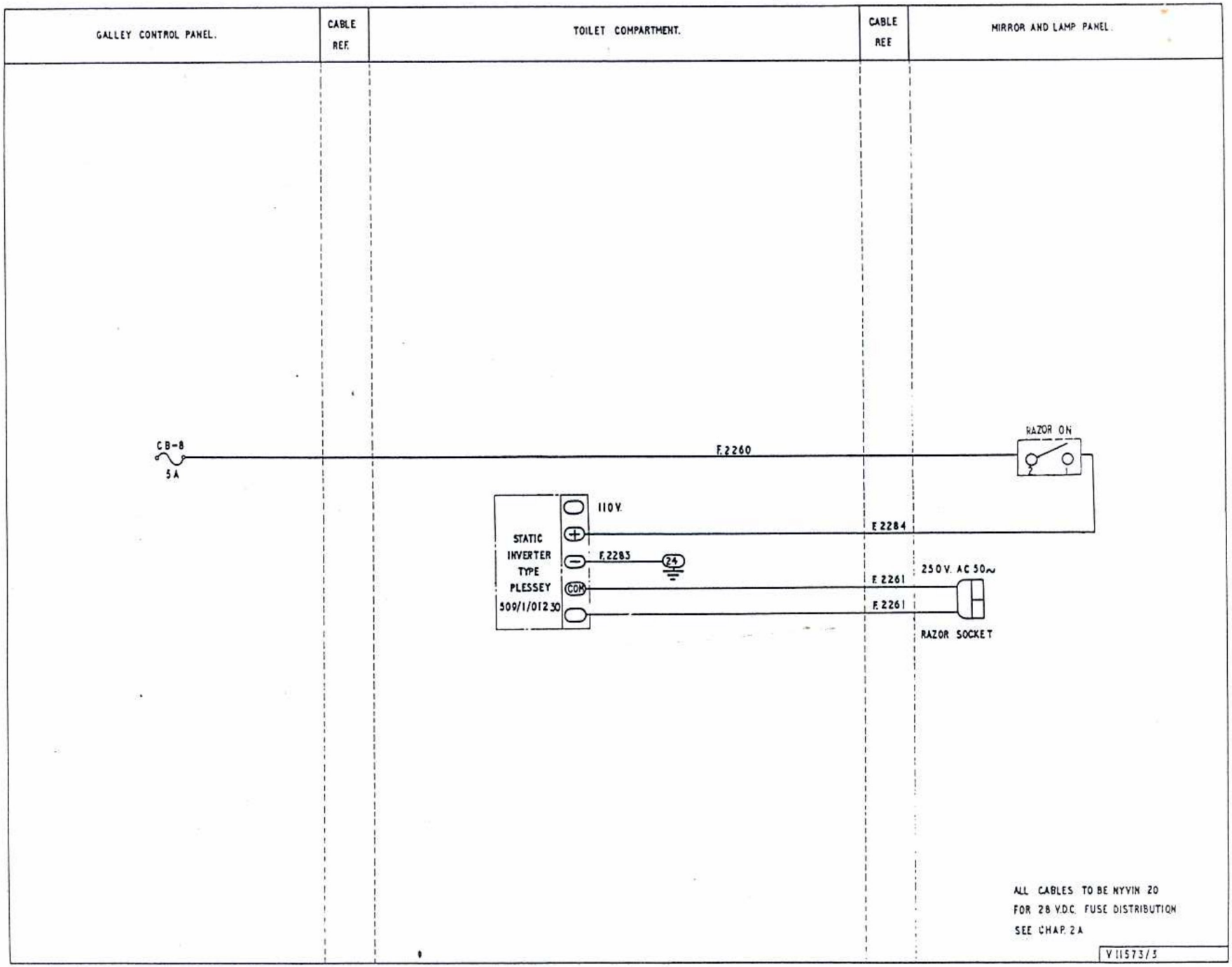

Fig. 11 Crew's razor supplies.