# Chapter 8A AIR SYSTEMS - GENERAL INFORMATION, MAIN AIR SUPPLY AND AUXILIARY POWER SUPPLIES SYSTEMS

*(completely revised)*

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## DESCRIPTION

### General information

**1.** This chapter contains information about the main air system, the accessory drive unit and reheat jet pipe services. A list of major components is provided in Tables 3 and 4.

### Main air supply *(fig.4 to 8)*

**2.** The air employed for the main supply, with the exception of some cooling air, is derived from two interconnected 15th-stage compressor tappings, one from each engine, and passes through non-return valves to the main air duct.

**3.** The main air duct, which comprises several interconnected lengths of stainless steel ducting, runs along the starboard side of the rear fuselage, approximately parallel with the horizontal datum line, from frame 25 to frame 55. Thermal expansion is provided for by the inclusion of sliding and bellows-type expansion couplings, and Conoseal-type clamp couplings. Refrasil-type lagging secured to the duct by hose clips reduces the heat transfer. An accessory drive unit turbine shut-down valve is inserted in the duct at frame 53. The duct is divided, at its forward end, into two pipes which supply the cabin air system *(Chap.8B)* and the canopy seal, gun purging, de-misting, anti-icing and rain dispersal systems *(Chap.8C)* respectively. The aft end of the duct traverses the fuselage at frame 55 to terminate on the volute casing of the accessory drive unit. Intermediate tappings direct air to operate the reheat nozzles *(para.7)* and

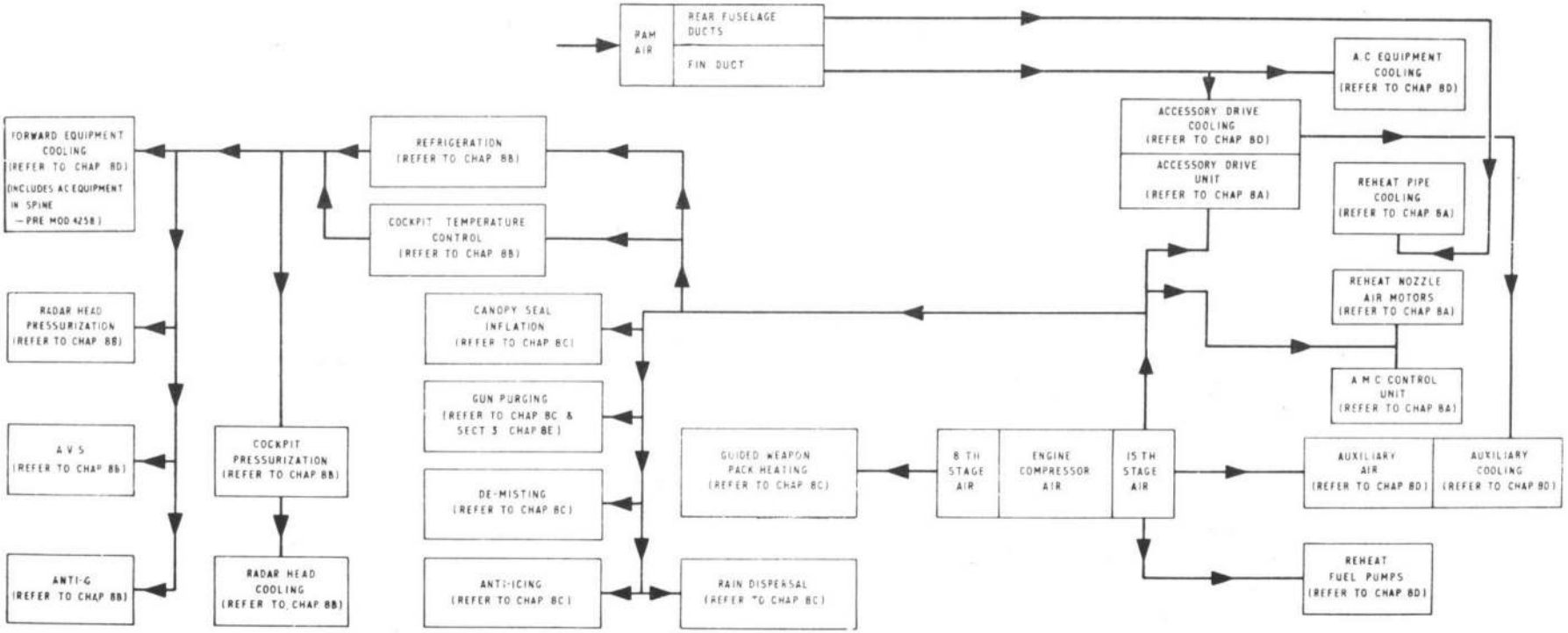


**Fig. 1. Layout of systems**

to assist the induction of reheat pipe cooling air *(para.8)*.

**Accessory drive unit** *(fig.10)*

**4.** The accessory drive unit, located in the port side of the fuselage between frames 53 and 55, comprises a constant speed air turbine, gearbox, governor, control switch, shut-off valve, over-speed cut-out switch, cooling fan, and various ducts. The turbine is operated by air from the engine compressors and it drives, through the gearbox, the fan and the a.c. and d.c. generators. For further information on the accessory drive unit refer to A.P.2240A, Book 15, Vol.1 and 6.

**5.** Air supplied to the turbine via a shut-down valve *(para.6)*, passes through the turbine and is then discharged into the fuselage. Ram air from the fin intake is ducted to the fan casing where it is distributed to various ducts for cooling gearbox oil, the a.c. generator and the d.c. generator. The exhaust air then passes through the auxiliary air heat exchanger into the fuselage.

**Accessory drive unit shut-down valve** *(fig.9)*

**6.** The valve is an electro-mechanically-operated butterfly type, incorporating a manual reset lever (access panel 47S), and is interposed in the main air duct between frames 53 and 54 on the starboard side of the fuselage. It is a safety device which automatically shuts off the main air supply to the air turbine *(para.4)* should overspeeding of the turbine occur, and is electrically controlled by an over-speed cut-out switch incorporated in the turbine. Once overspeeding has occurred and the valve has operated, it can only be reset manually on the ground. For a detailed description and the resetting procedure refer to A.P.2240A, Vol.1, Book 15, Sect.3, Chap.6.

**Note...**

*The embodiment of Mod.2184 deletes the regulating facilities from the valve; the air inlet is left open to atmosphere.*

**Reheat nozzle control** *(fig.9)*

**7.** Reheat nozzle area is varied by an air-motor-driven screwjack. The air supply is drawn from the main air duct through a tapping upstream of the accessory drive unit shut-down valve *(para.6)*. At frame 57, the air supply is routed through two pipes, one pipe continuing along the starboard side and the other crossing the fuselage and continuing along the port side; both terminate at their respective motors on No.1 and No.2 reheat pipes. A small tapping from each branch pipe directs compressed air to the associated air motor control unit. For detailed information of the reheat system refer to Sect.4, Chap.1 and to A.P.102C-1520-1, Sect.1, Chap.5.

**Reheat pipe cooling** *(fig.9)*

**8.** The reheat pipes are cooled by air passed between their inner and outer skins. The air is introduced from outside through four intakes in the fuselage skin *(Chap.8D)*; in flight, this is effected by ram pressure. To maintain the cooling air flow during ground running when no ram pressure exists, each duct from the intakes incorporates an injector nozzle through which compressed air flows to induce the flow of cooling air. The compressed air is directed to the nozzles from two tappings at frame 55 in the air motor supply pipe.

## SERVICING

**WARNING**

**The relevant safety precautions detailed on the LETHAL WARNING marker card must always be observed before entering the cockpit or performing any operations upon the aircraft.**

**Lubrication**

**9.** After breakdown of pipe joints and components:-

(1) Ensure good ventilation.

(2) Thoroughly clean with trichloroethane, Ref.No.33D/2201949, the surfaces to be lubricated.

(3) (a) *Screw threads*
Using a soft brush, apply grease ZX-24. Allow 30 minutes to elapse before assembly.

(b) *Sliding joints*
Using a soft clean cloth, apply Molypaul powder No.3 (C.S.2819) to the sliding surfaces of the joints to be treated. Move the joint repeatedly to bed-in both surfaces. Remove surplus powder before assembly. If a new component is being fitted, treat sliding surfaces with Molybdenum disulphide *(A.P.101B-1000-6, Part 1, Chap.1)*,

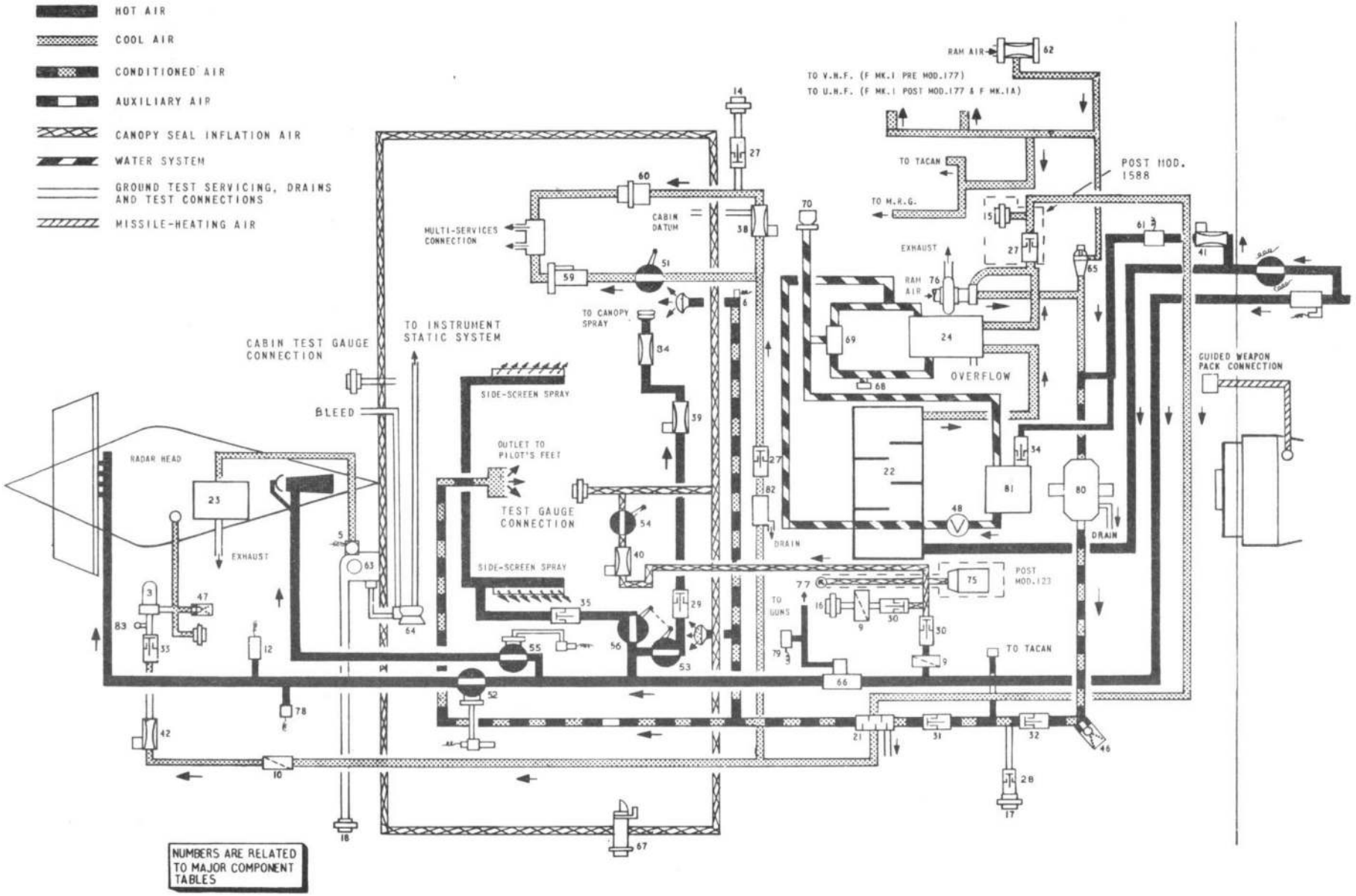


FIG. 2. AIR SYSTEMS DIAGRAM-FRONT FUSELAGE

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substituting Molypaul powder No.3 for Molypaste 300 in the final operation.

**Main air supply duct**

*Checks and adjustments*

**10.** On completion of any servicing operation involving the breakdown of the main air supply duct, the relevant dimensions shown in fig.4 to 8 inclusive must be checked and, where necessary, adjustments made to achieve them.

**Torque-loading Conoseal couplings**

**11.** The torque-loading figures given in Table 1 are applicable when tightening clamp bolts incorporated on all Conoseal-type couplings.

## REMOVAL AND ASSEMBLY

**Equipment required**

**12.** The special-to-type tools and equipment required during removal and assembly operations are listed in Table 2.

**Accessory drive unit**

*Removal (fig.10 and 11)*

**13.** To remove the accessory drive unit:-

(1) Ensure that the necessary precautions in Sect.4, Chap.1, are being observed.

(2) Remove the intermediate and reheat pipes *(Sect.4, Chap.1)*.

(3) Fit the rear fuselage walkway *(Sect.2, Chap.4)*.

(4) Remove the flexible pipe between the turbine air inlet cross-over pipe and frame 55.

(5) Remove the cross-over pipe by releasing the two clamps, and screwing down on the large nut at the starboard end to release the flexible metal gaskets at the flanged joints.

(6) Remove the cooling air duct by disconnecting at:-

(a) the joint on frame 53, starboard side

(b) the cooling fan inlet

(c) the downstream end of the 2½ in. non-return valve

(d) the compartment cooling air pipe.

(7) Remove the section of compartment cooling air pipe extending forward to frame 53 by releasing the joint at frame 53 and the intermediate clipping.

(8) Remove the accessory drive unit cooling manifold by disconnecting at:-

(a) The cooling fan outlet

(b) The a.c. generator

(c) The d.c. generator

(d) The oil cooler inlet

(9) Disconnect the fibreglass pipe at the oil cooler outlet and release the clip at frame 55.

(10) Remove the breather pipe between the turbine adapter casing and the fuselage skin *(detail A)*.

(11) Disconnect the turbine exhaust duct, and slide it aft.

(12) Disconnect the cables from the a.c. and d.c. generator terminal blocks (access panel 77P).

(13) Disconnect the cables from the turbine underspeed/overspeed switch and the stall-warning switch.

(14) Release the d.c. generator mounting clamp, withdraw the generator and remove it from the aircraft.

(15) Release the a.c. generator mounting clamp, withdraw the a.c. generator (weight about 60 lb) and remove it from the aircraft.

(16) Remove completely the aft, and the forward inboard, tie-rods connecting the gearbox with the fuselage. Disconnect the forward outboard tie-rod at the gearbox and swivel it upwards about its remaining bolt.

(17) Attach the hoist to the slinging point at frame 54.

(18) Attach the lifting hook of the hoist to the lifting eye on the air turbine casing, and take the weight of the unit.

(19) Mount the accessory drive unit handling cradle on the jet-pipe rails and move it forward to frame 54.

(20) With two assistants, one to operate the hoist and the other to assist in handling, withdraw the mounting bolts, bottom bolt first, from the gearbox. Lift the drive unit to clear the jet pipe rail, whilst applying restraint to

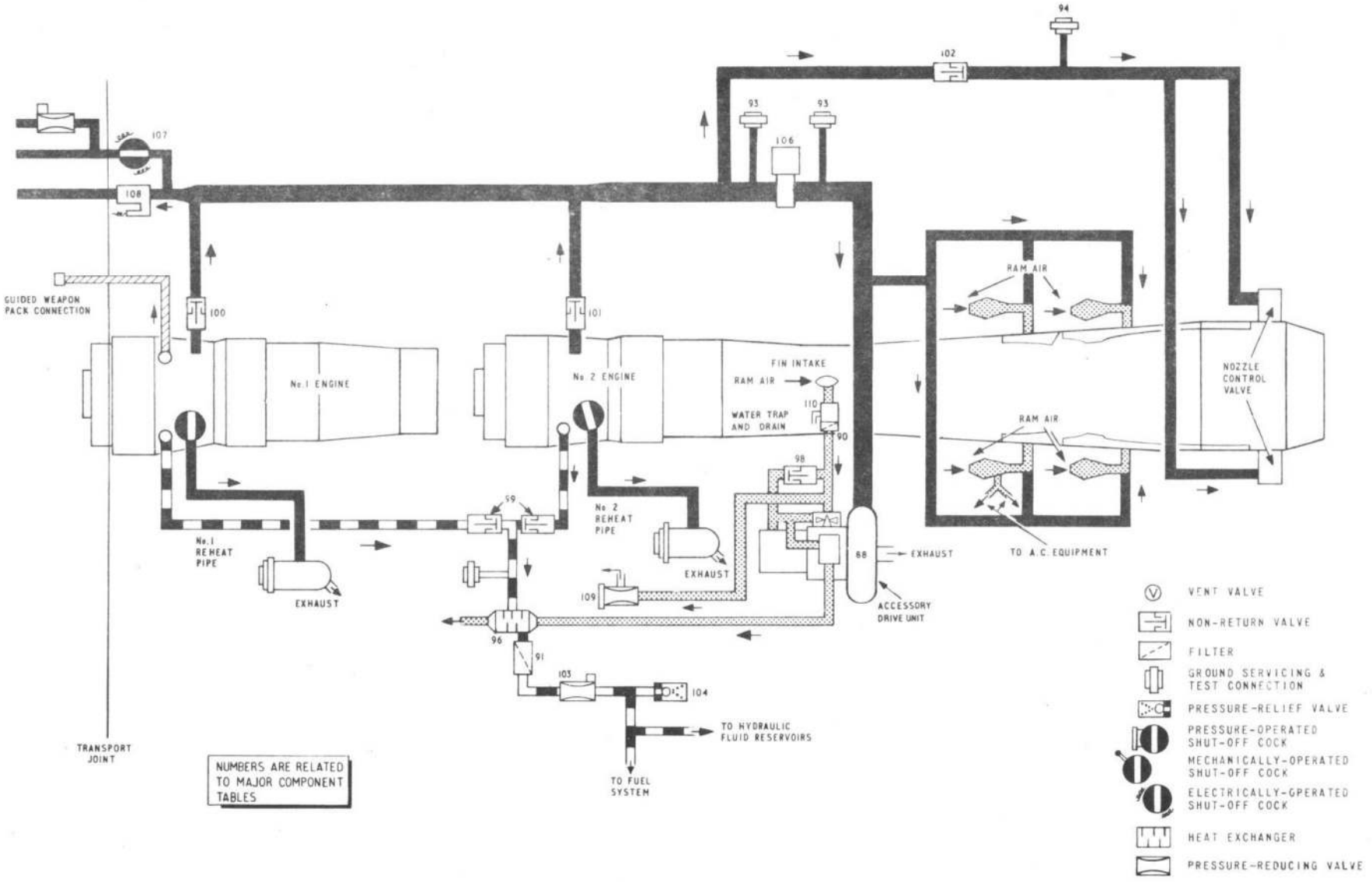


FIG. 3. AIR SYSTEMS DIAGRAM-REAR FUSELAGE

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prevent damage to the gearbox or fuselage components.

(21) Remove the pin and roller assembly from its stowage on the handling cradle and insert it through the bottom attachment bolt hole in the drive unit.

(22) Rotate the accessory drive unit until the turbine casing faces to starboard, and lower it carefully until the rollers contact the aft end of the cradle rails. Move the rollers forward, whilst still lowering the unit, until the upper mounting hole is aligned with the holes in the cradle locating brackets. Fit the locating pin and disconnect the hoist.

(23) Roll the cradle aft, and lift it away from the aircraft.

*Assembly*

**14.** To install the accessory drive unit:-

(1) Ensure that the necessary precautions *(Sect.4, Chap.1)* are being observed.

(2) Mount the accessory drive unit in the handling cradle *(para.13 (21) and (22))*.

(3) Lift the cradle and drive unit on to the jet-pipe rails and move them forward to a convenient point near frame 54.

(4) Attach the hoist to the slinging point at frame 54 and to the drive unit lifting eye.

(5) Take the weight of the drive unit on the hoist, and withdraw the cradle locating pin.

(6) With two assistants, one to operate the hoist and the other to assist in handling, lift the drive unit out of the cradle until the lower jet-pipe rail is cleared. Remove the cradle. Remove the pin and roller assembly from the drive unit and stow in the cradle.

(7) Manoeuvre the drive unit into position between frames 53 and 55, rotating it so that the gearbox is facing forward; lower the unit slowly until the top mounting bolt can be inserted.

(8) Locate and fit the bottom bolt (eye-end forward) and align the eye-end of the bolt with the tie-rod. Bolt in position and lock with a new split pin. Refit nuts on both mounting bolts and secure with new split pins.

(9) Fit the tie-rods.

(10) Assemble the breather pipe and wire-lock the unions.

(11) Refit the a.c. generator and d.c. generator, in that order, after first:-

(a) Immersing the drive quills in gearbox oil and ensuring an unbroken film of oil on the splines (the quills are fitted wet).

(b) Lubricating the a.c. generator drive shaft with gearbox oil.

(c) Lubricating the d.c. generator drive shaft with grease XG-2.

(d) Lubricating the clamp-ring adapter flanges and screw threads with grease XG-278.

**Note...**

*Ensure that the white lines on the clamp ring and adapter flange are aligned in each case. Tighten the clamp ring nuts with a torque wrench, tightening each at least three times to a loading of:-*

| | |
|---|---|
| A.C. generator | 100 lb in. |
| D.C. generator | 60 lb in. |

(12) Connect the electrical cables to the a.c. and d.c. generator terminal blocks and the overspeed/underspeed, and stall-warning switches.

(13) Fit the accessory drive cooling ducts, ensuring correct locking and bonding at all joints.

**Note...**

*The pipe clamp latches at each end of the 2½ in. non-return valve must be vertically disposed and facing forward.*

(14) Fit the turbine exhaust duct.

(15) Fit the air turbine inlet crossover pipe:-

(a) Insert the metal gaskets and position the pipe, bellows to port, between the turbine and the fuselage pipe.

(b) Unscrew the large union nut to bring the faces of the flanged joints together.

(c) Fit the clamps and, after

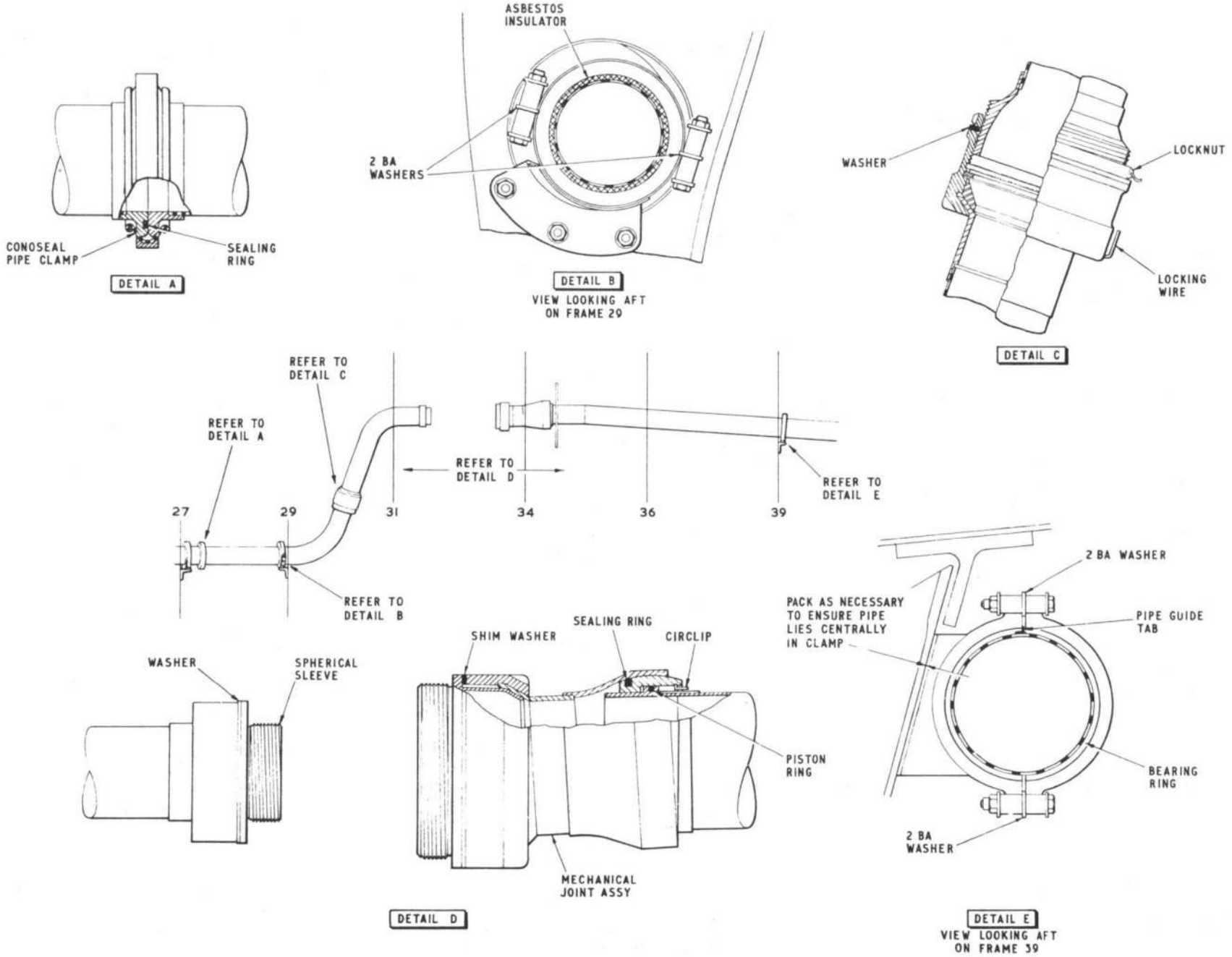
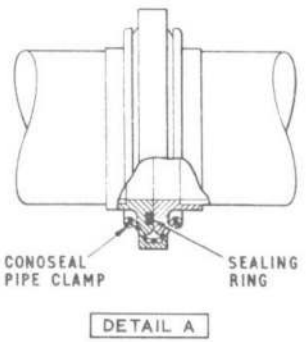
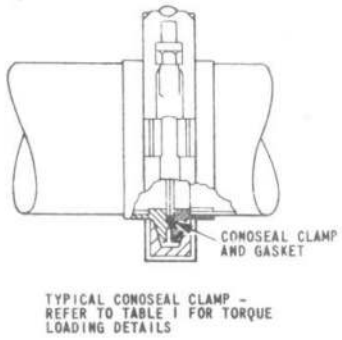
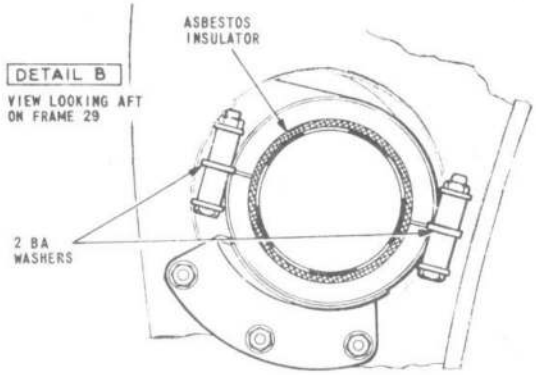
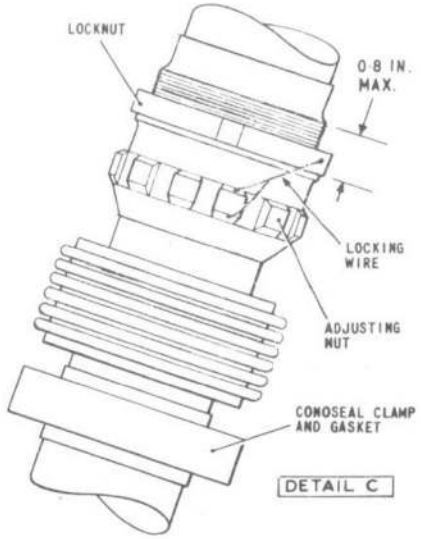


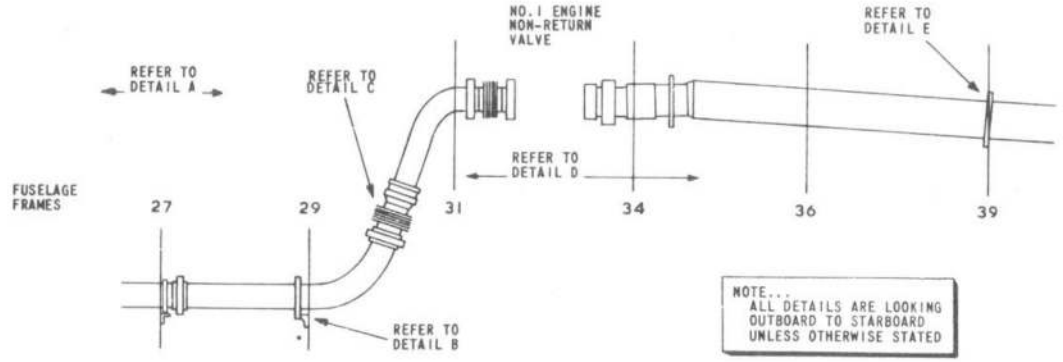

FIG. 4. MAIN AIR SUPPLY - FRAMES 25B TO 39 (MK. I A/C)

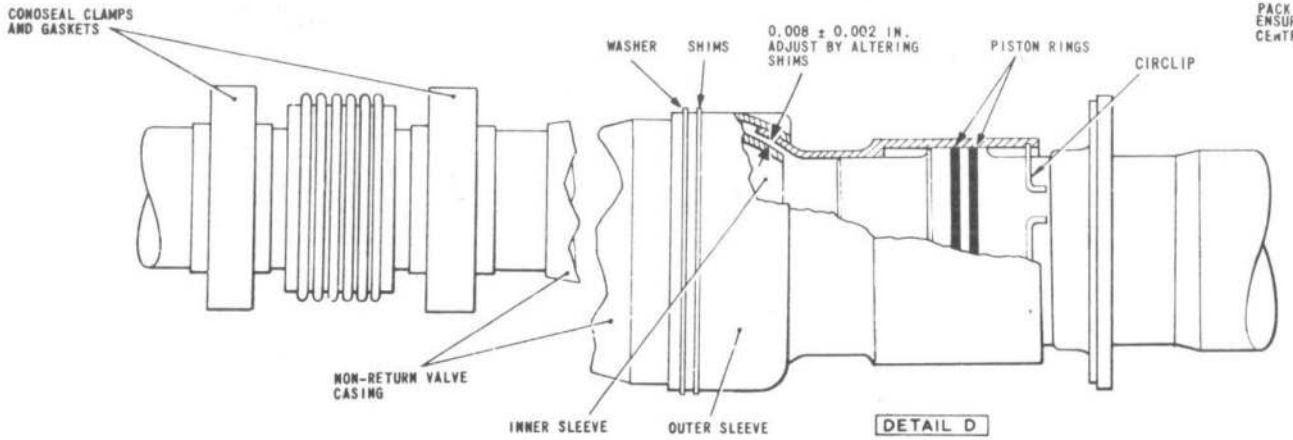


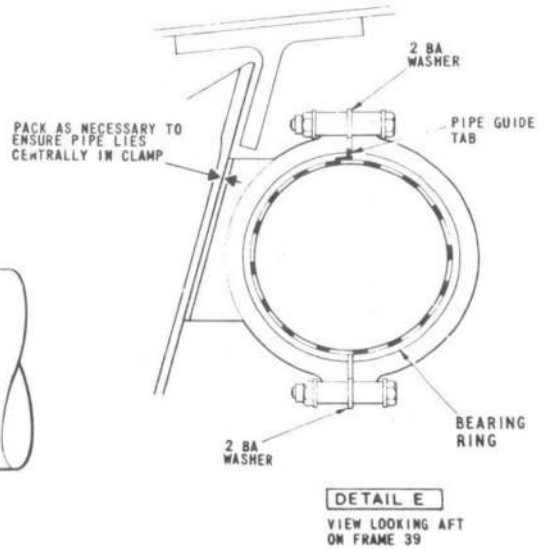




FIG. 5. MAIN AIR SUPPLY - FRAMES 25B TO 39 (MK.1A A/C)

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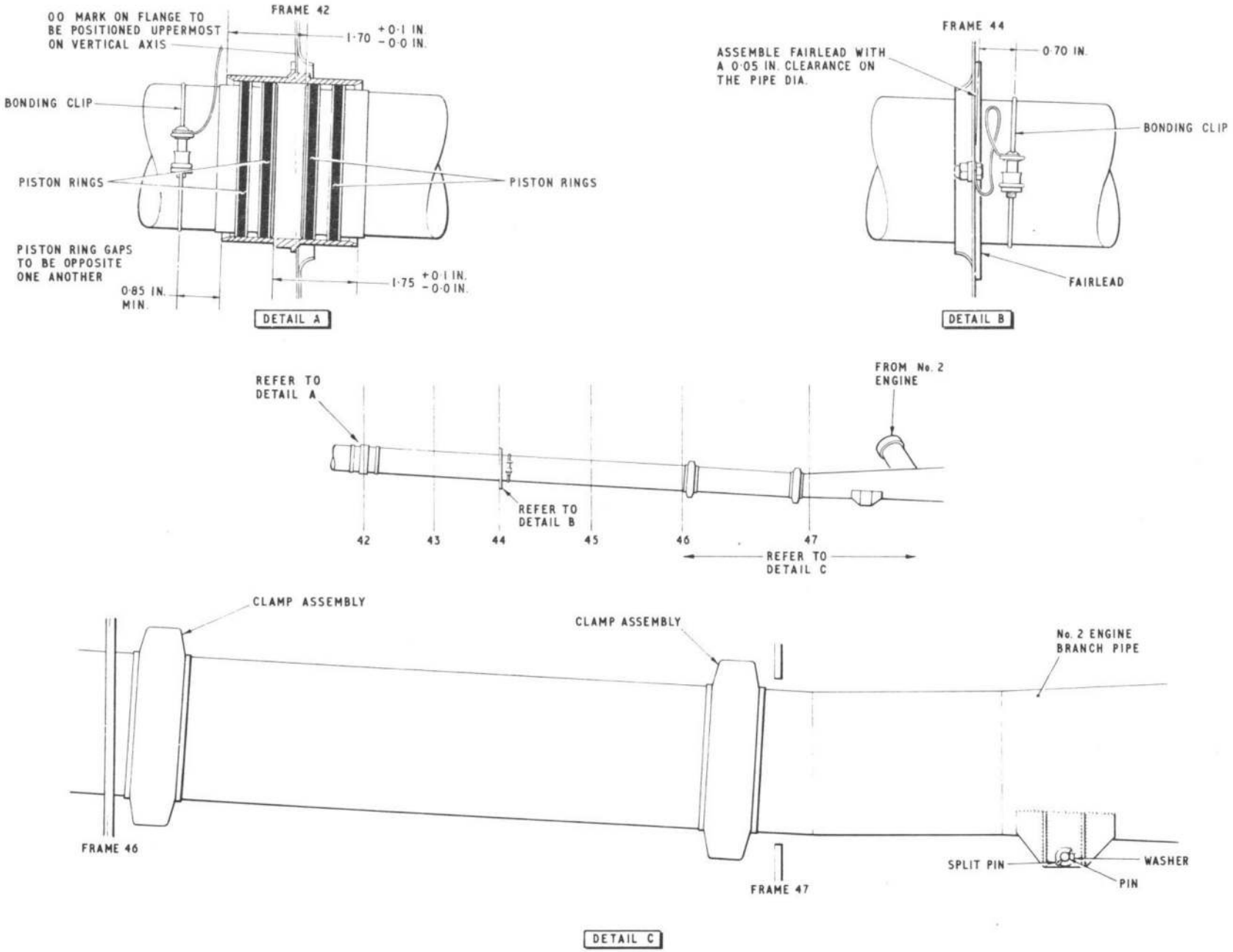


FIG. 6. MAIN AIR SUPPLY - FRAMES 39 TO 48 (MK. I A/C)

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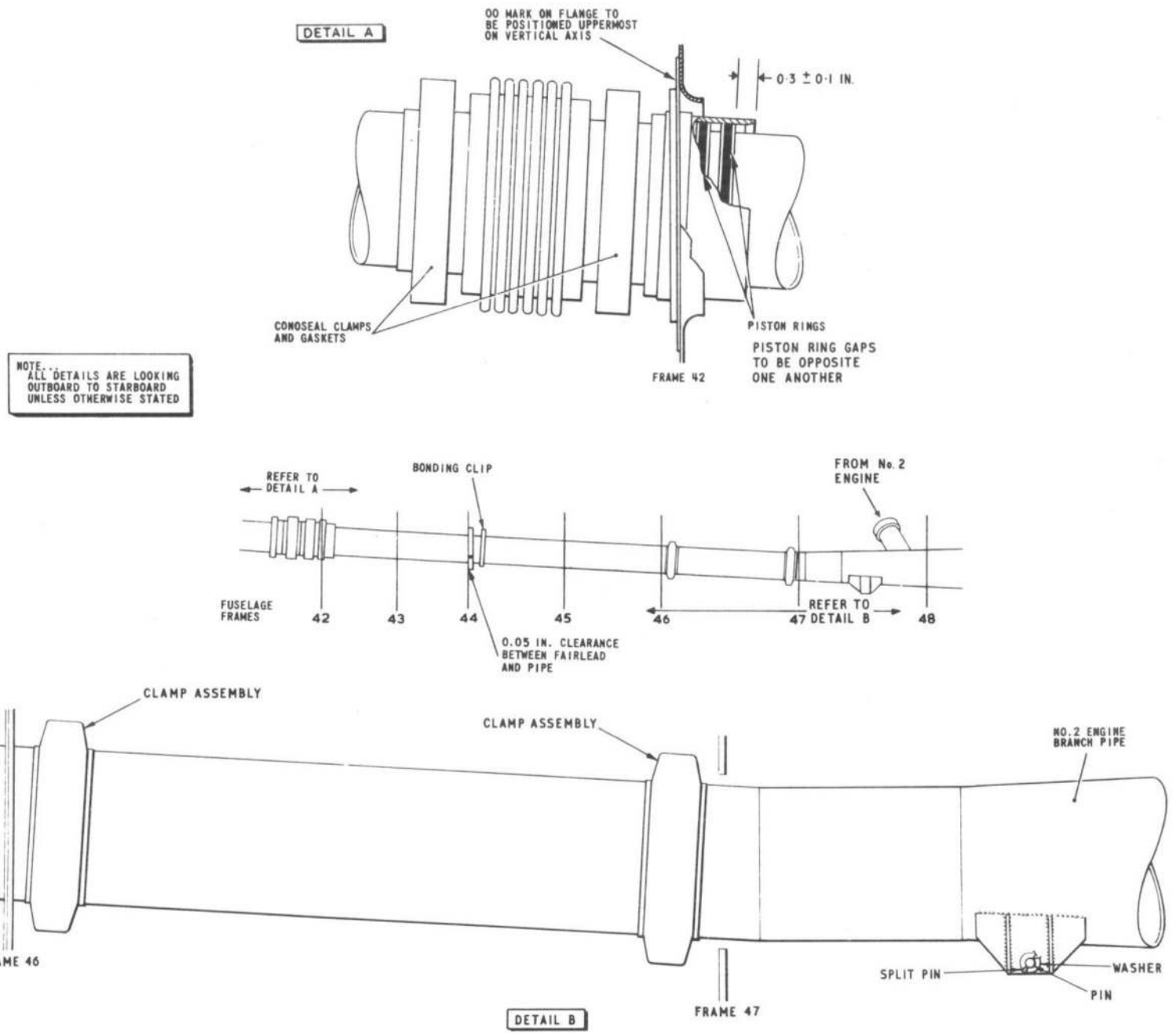


FIG. 7. MAIN AIR SUPPLY - FRAMES 39 TO 48 (MK. IA A/C)

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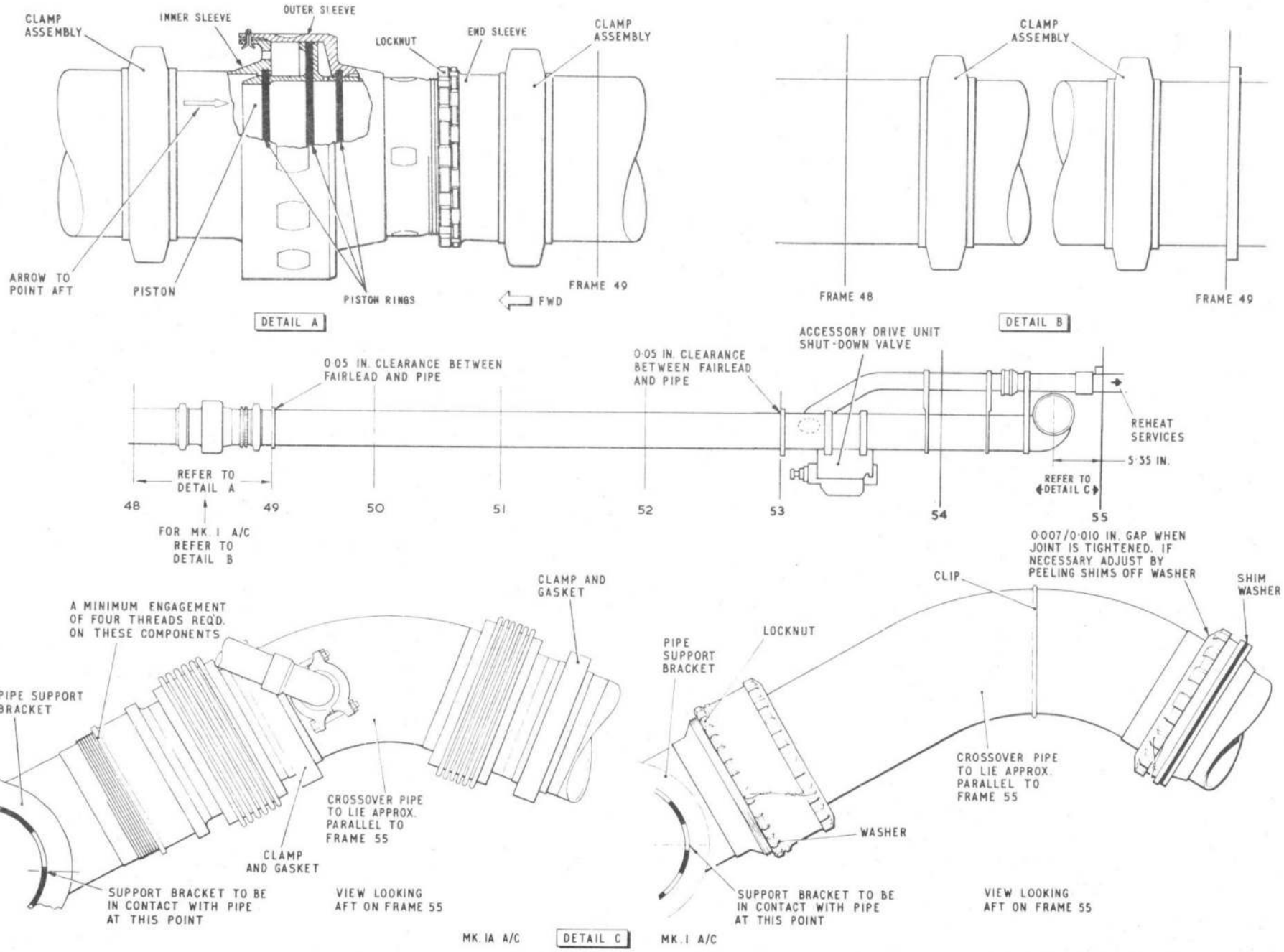


FIG. 8. MAIN AIR SUPPLY - FRAMES 48 TO 55 (MKS. I AND IA A/C)

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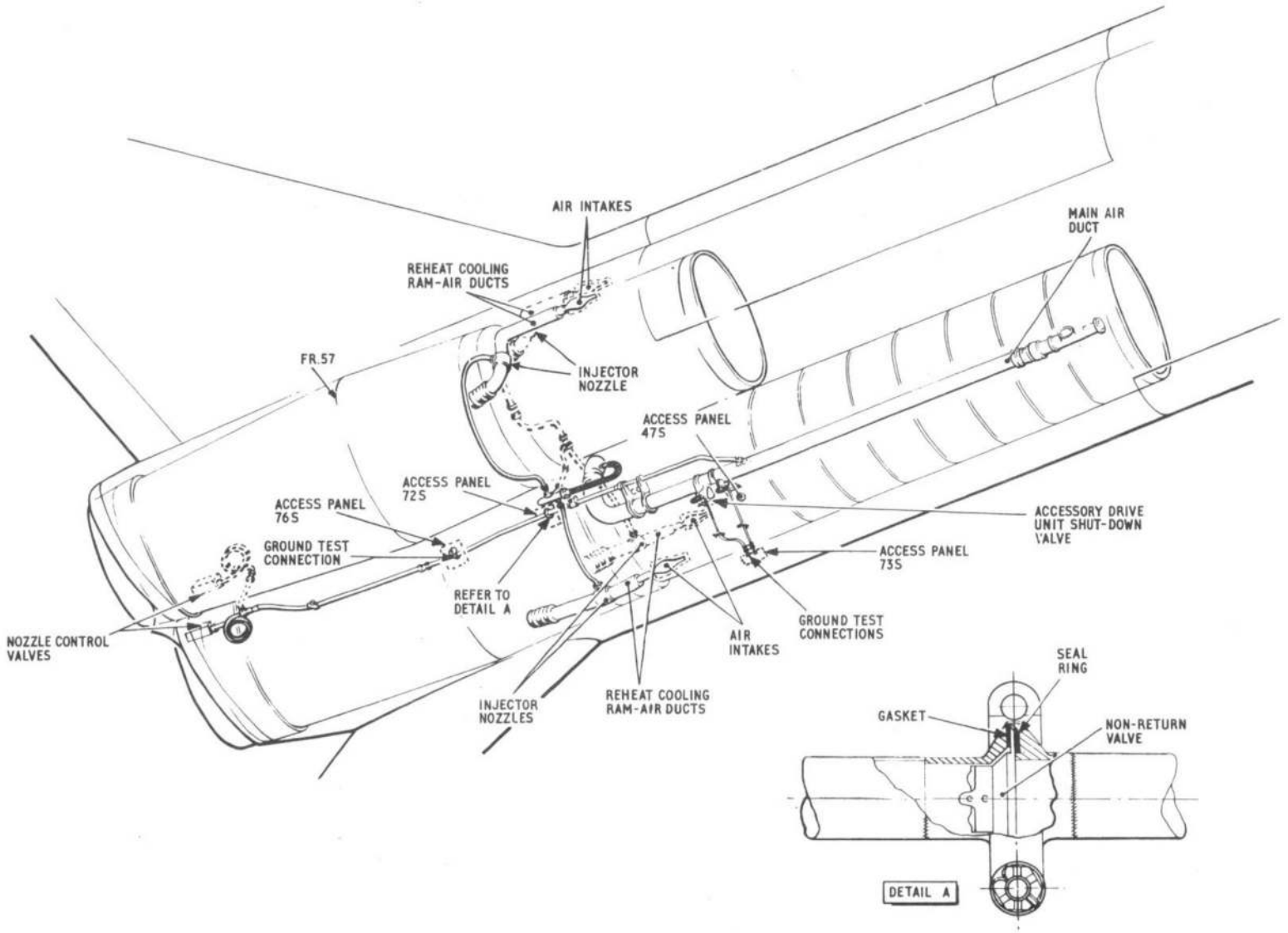


FIG.9. REHEAT SERVICES

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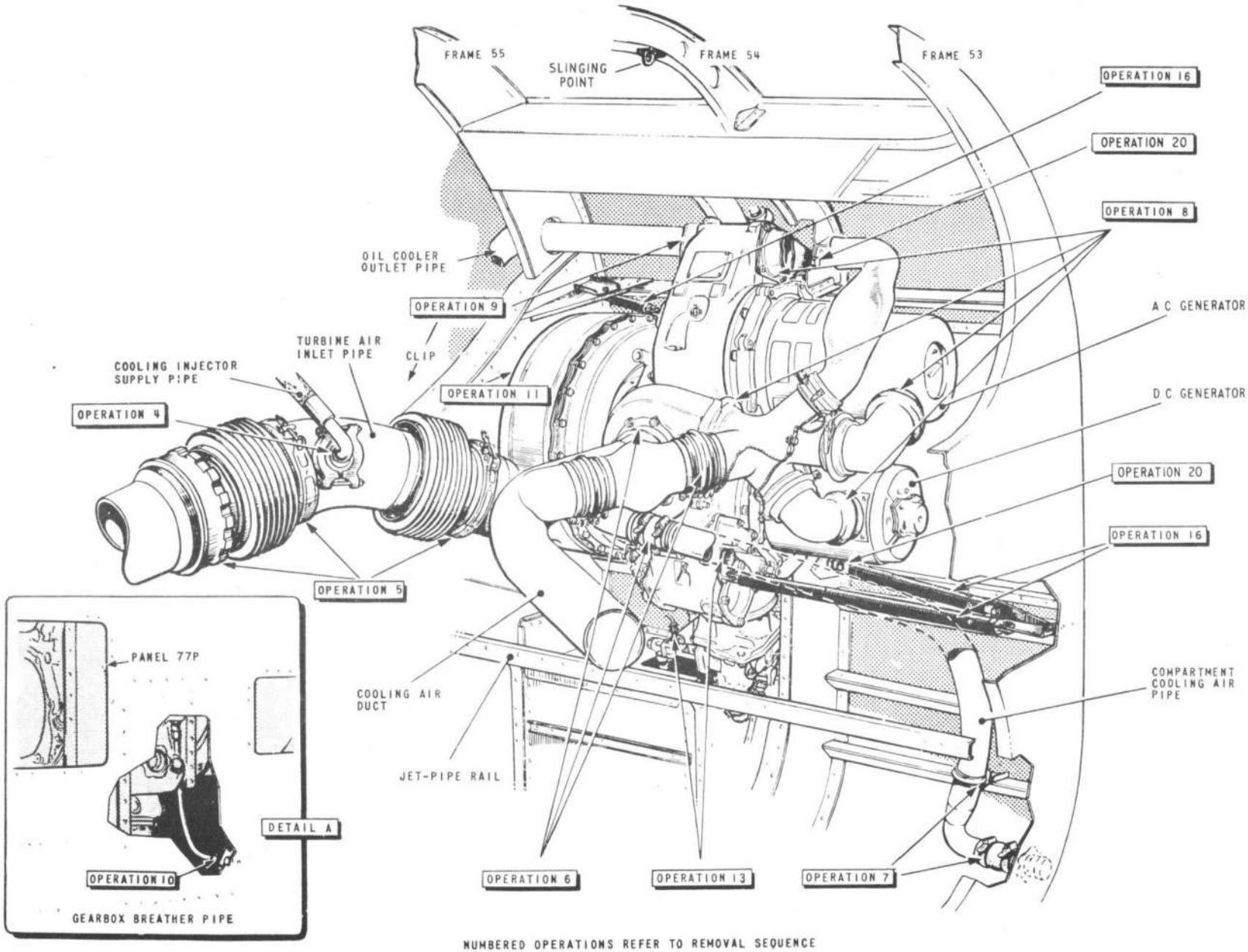


NUMBERED OPERATIONS REFER TO REMOVAL SEQUENCE

FIG. 10. ACCESSORY DRIVE UNIT INSTALLATION

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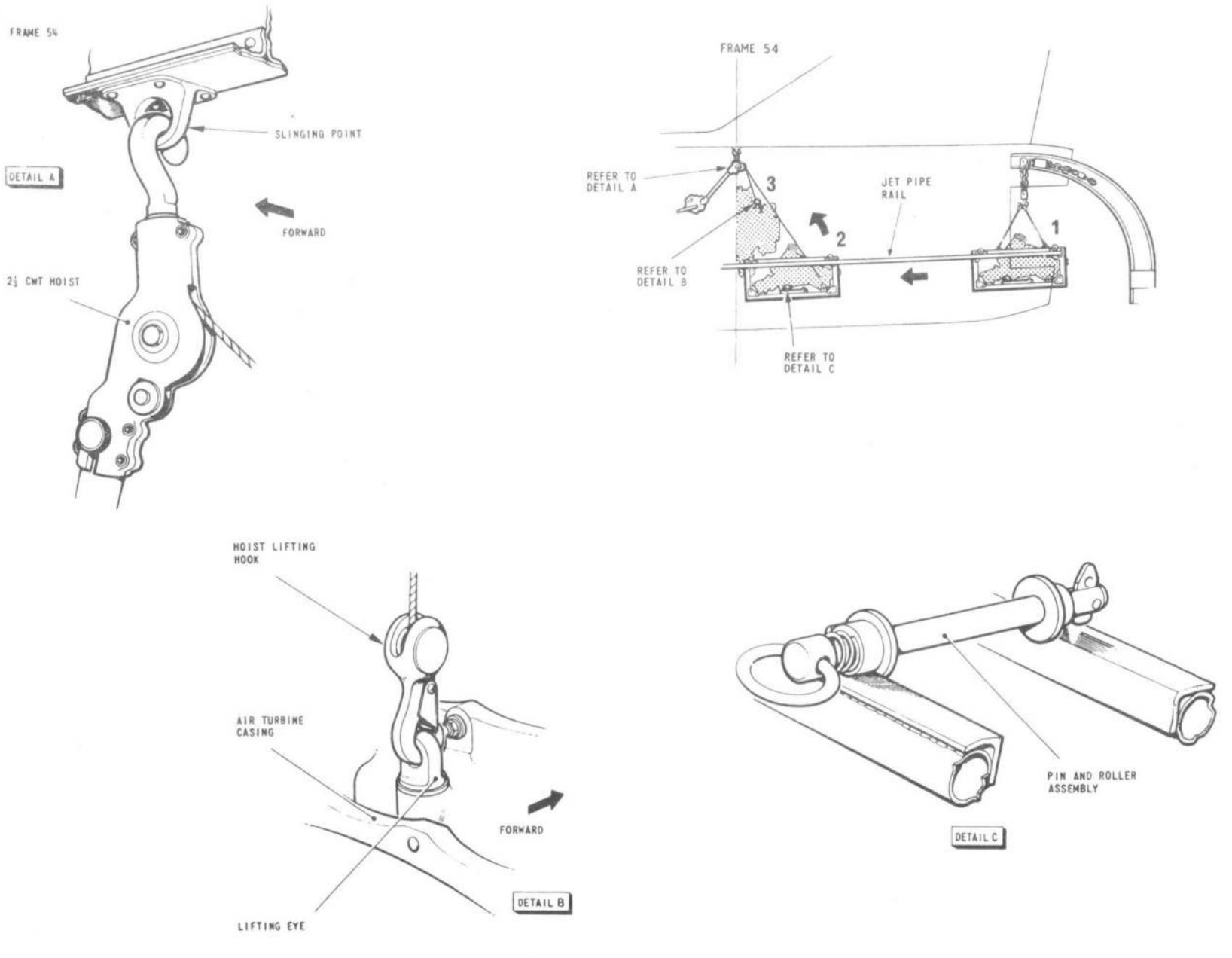


FIG.11. ACCESSORY DRIVE UNIT-REMOVAL AND ASSEMBLY

ensuring correct setting of the flexible pipe adapter, tighten them.

(d) Tighten the large union nut until the inboard face of the fuselage pipe contacts the pipe support bracket.

(e) Connect the flexible pipe.

(16) Refer to A.P.2240A, Vol.1 and 6, (Book 15), Sect.4, Chap.1 and ensure that the turbine nozzle is in the open condition.

(17) Remove the handling equipment and assemble the jet pipes *(Sect.4, Chap.1)*.

**D.C. generator**

*Removal*

**15.** To remove the d.c. generator:-

(1) Remove access panel 77P.

(2) Disconnect the electrical cables from the generator terminal block.

(3) Detach the cooling pipe from the generator by unfastening the quick-release clamp.

(4) Support the generator and remove the securing clamp.

(5) Move the generator forward approximately 2 in. to free the drive from the accessory drive unit gearbox and remove it from the fuselage.

*Assembly*

**16.** To assemble the d.c. generator re-

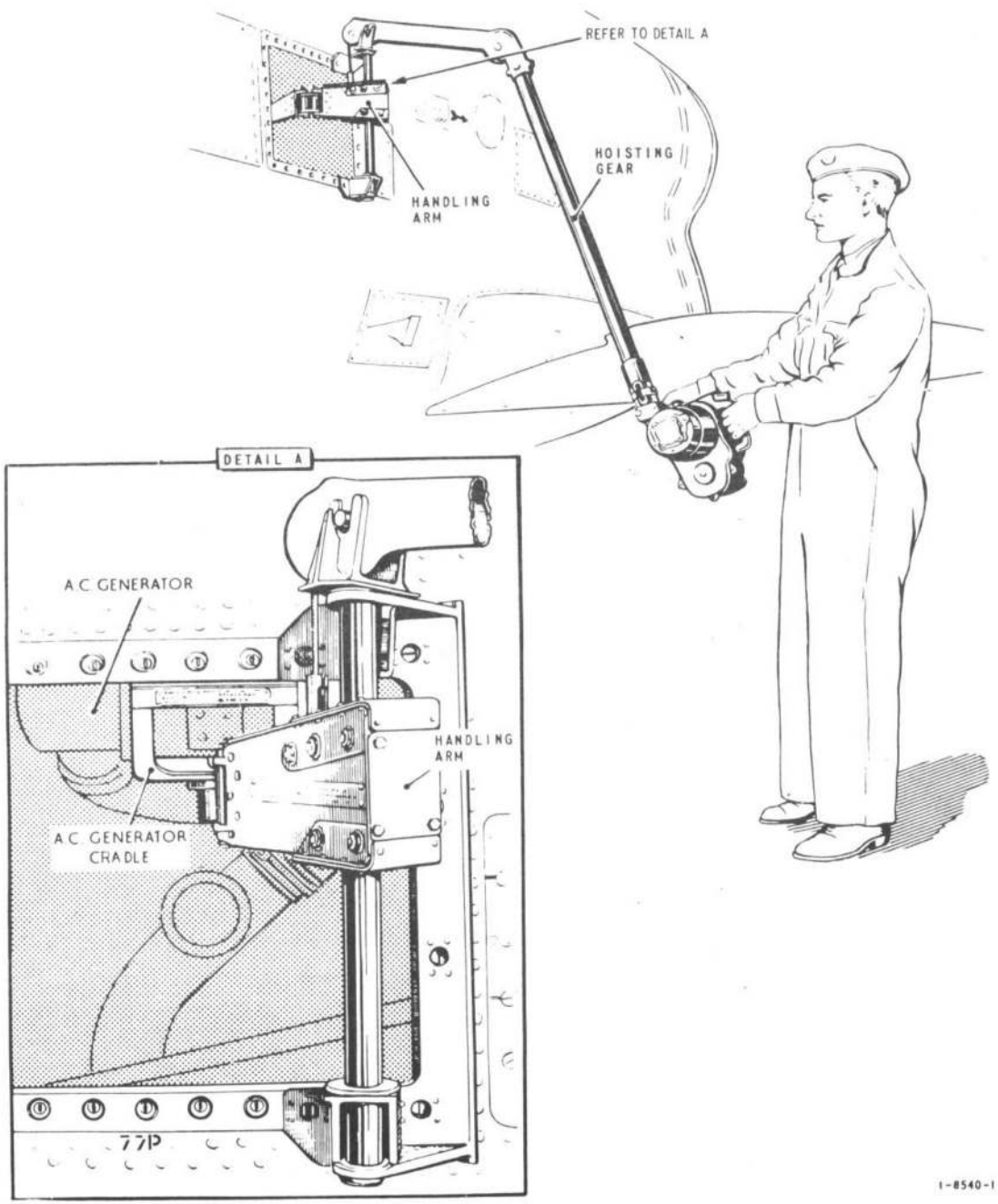


**Fig.12. A.C. generator - removal and assembly**

verse the removal procedure *(para. 15)* first lubricating the quill, drive shaft adapter flange and clamp-ring, using grease XG-287. The white lines on the clamp-ring and adapter flange should first be aligned and the clamp-ring nut tightened at least three times to a torque load of 60 lb in.

**A.C. generator**

*Removal (fig. 12)*

**17.** To remove the a.c. generator:-

(1) Remove the d.c. generator *(para. 15)*.

(2) Remove the outboard tie-rod from the accessory drive unit gearbox, through the access aperture.

(3) Disconnect the a.c. generator cooling duct.

(4) Disconnect and stow the electrical cables from the terminal blocks on the a.c. generator casing.

(5) Attach the handling arm to the access panel landing *(detail A)*.

(6) Assemble the hoisting equipment and attach it to the handling arm.

(7) Fit the cradle to the handling arm (identification plate outboard) and, with the handling arm fully lowered, insert the cradle through the access aperture.

(8) Raise the cradle to support the a.c. generator, positioning it as in detail A.

(9) Remove the a.c. generator clamp-ring.

(10) Swing the handling arm and a.c. generator forward to disengage the drive from the gearbox and unwind the hoist to align the a.c. generator with the access aperture.

(11) Swivel the a.c. generator through 90 deg and manoeuvre it through the access aperture.

(12) Lift the a.c. generator (weight approx. 60 lb) from the handling arm.

*Assembly*

**18.** To assemble the a.c. generator:-

(1) Lubricate the drive quill and drive shaft *(para. 14 (11))* and insert the quill.

(2) Mount the a.c. generator in the handling arm cradle and manoeuvre it through the skin aperture, drive-end first.

(3) Rotate the a.c. generator through 90 deg and hoist it into alignment with the drive unit gearbox flange.

(4) Insert the drive and fit the attachment clamp-ring (after first lubricating the clamp-ring and adapter flange with grease XG-278). Ensure that the white lines on the clamp-ring and adapter flange are aligned, and tighten the clamp-ring nut at least three times to a torque loading of 100 lb in.

(5) Dismantle the hoisting equipment.

(6) Connect the a.c. generator cooling duct.

(7) Connect the electrical cables.

(8) Fit the d.c. generator *(para. 16)*.

(9) Replace the gearbox tie-rod and the access panel.

**TABLE 1**

**Torque-loading Conoseal couplings**

| Bolt size (UNF) | Max. torque-loading (lb in) |
|---|---|
| ¼ | 85 |
| 10 | 35 |

**TABLE 2**

**Tools and equipment**

| Ref.No. | Part No. | Item | Purpose |
|---|---|---|---|
| | | **Accessory drive unit** | |
| 4GC/5699 | – | Hoist, a/c heavy component, 2½ cwt | Removal and installation |
| 4GC/6673 | – | Jib No.4 | |
| 4GC/5743 | – | Handle, winch, 9-inch | Used with hoist |
| 4GC/5427 | – | Extension tube, 24-inch | |
| 4GC/5700 | – | Top sheath (Type No.1 hook) 2½ cwt | |
| 4GC/5429 | – | Hook, cable winch | |
| 26DK/95137 | EB2.88.4939 | Cradle, gearbox | Drive unit handling |
| 26DK/95055 | EB2.88.3943 | Walkway, fuselage rear end | Access to drive unit |
| | | **A.C. generator** | |
| 4GC/5699 | – | Hoist, a/c heavy component, 2½ cwt | Removal and installation |
| 4GC/5743 | – | Handle, winch, 9-inch | Used with hoist |
| 4GC/5443 | – | Extension tube 36-inch | |
| 4GC/5700 | – | Top sheath (Type No.1 hook) 2½ cwt | |
| 26DK/95209 | EB2.88.3151 | Arm, handling, a.c. generator assembly | Used to support cradle |
| 26DK/95296 | EB2.88.4215 | Cradle, a.c. generator assembly | Removal and installation |

TABLE 3

Major components - frames 1-25A

| Item No. | Component | | Type or Part No. | Qty. | A.P. Reference | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | A.P. | Sect. | Chap. | App. |
| Note... *Certain item numbers have been omitted to allow for any additional components that may be introduced in the future* | | | | | | | | |
| | **Air blowers, Mk.2** | | | | | | | |
| 1 | Canopy de-misting, interspaces | | E.E.AEC.6001.102 | 1 | | | | |
| | **Air driers** | | | | | | | |
| 2 | Canopy de-misting, interspaces | | EB2.76.393 | 2 | 101B-1001-1A | | | |
| 3 | Radar-head pressurization | (Mk.1 pre Mod.2144) | EB2.75.6293 | 1 | | | | |
| | | (Mk.1 post Mod.2144) | EB2.75.6491 | 1 | | | | |
| | | (Mk.1A. pre Mod.2144) | EB3.75.873 | 1 | | | | |
| | | (Mk.1A post Mod.2144) | EB3.75.1135 | 1 | | | | |
| | **Ductstats** | | | | | | | |
| 5 | Cockpit pressurization, inlet | | Teddington FHG/A/35 | 1 | 107B-0216-1 | | | |
| 6 | Cockpit pressurization, outlet | | Teddington FHG/A/35 | 1 | | | | |
| | **Filters** | | | | | | | |
| 9 | Canopy seal inflation | | Dunlop ACM 18302 | 2 | 4303B | 2 | 7 | |
| 10 | Radar-head pressurization | | Hymatic LF 7/4 | 1 | 4303C | 2 | 5 | 2 |
| | **Flamestat** | | | | | | | |
| 12 | Anti-icing | (Mk.1A post Mod.104) | Teddington FHO/A/583 | 1 | 1275A | 24 | 6 | |
| | **Ground connections** | | | | | | | |
| 14 | A.V.S. cooling air | | EB2.75.4937 | 1 | 101B-1001-1A | | | |
| 15 | A.V.S. anti-g and radar-head pressurization (post Mod.1588) | | EB2.75.6405 | 1 | | | | |
| 16 | Canopy seal inflation | | EB2.75.2571 | 1 | | | | |
| 17 | Cockpit pressurization | | Normalair 505560 | 1 | 4340 | 13 | 1 | 8 |
| 18 | Radar head cooling air | | Normalair 504300 | 1 | 4340 | 13 | 2 | |
| | **Heat exchangers** | | | | | | | |
| 21 | A.V.S. and anti-g system | | Marston Excelsior D934/1A | 1 | 4340 | 8 | 1 | 35 |
| 22 | Pre-cooler | | Marston Excelsior D158/10A | 1 | 4340 | 8 | 1 | 34 |
| 23 | Radar head | | Marston Excelsior D603/1A | 1 | 4340 | 8 | | |
| 24 | Water boiler | | Marston Excelsior D695/2A | 1 | 4340 | 8 | 4 | |

*continued...*

TABLE 3 Major components – frames 1-25A – *continued*

| Item No. | Component | | Type or Part No. | Qty. | A.P. Reference A.P. | Sect. | Chap. | App. |
|---|---|---|---|---|---|---|---|---|
| | **Valves** | | | | | | | |
| | *Non-return* | | | | | | | |
| 27 | A.V.S. and anti-g supply | | Flight Refuelling B9811155E | 3 | 4511 | 12 | 2 | |
| 28 | A.V.S./anti-g/radar head gd. connection | | Flight Refuelling B9811155E | 1 | | | | |
| 29 | Canopy de-misting | (Mk.1) | Saunders 706/AA/11B | 1 | 4340 | 6 | 3 | |
| | | (Mk.1A) | Saunders 706/AA/06B | 1 | | | | |
| 30 | Canopy seal inflation | | Hymatic NAR 131/002 | 2 | 4303C | 4 | | |
| 31 | Cockpit pressurization (flap type) | | Normalair 504390 | 1 | 107B-1021-16 | | | |
| 32 | Cockpit pressurization (insert type) | | Normalair 513930 | 1 | 107B- | | | |
| 33 | Radar head ground pressurization | | Flight Refuelling B9811000/C | 1 | 4340 | 6 | | |
| 34 | Water header-tank inlet (irreversible type) | (pre Mod.2082) | Flight Refuelling B9811240/C | 1 | 106D-1000A-1 | | | |
| | | (post Mod.2082) | Flight Refuelling B9811245/C | 1 | | | | |
| 35 | Windscreen de-misting | | Normalair 506420 | 1 | 4340 | 6 | 4 | |
| | *Pressure reducing* | | | | | | | |
| 38 | A.V.S. supply | | Hymatic PS60/31 | 1 | 4303C | 4 | 34 | 6 |
| 39 | Canopy de-misting | | Hymatic PS48/40 | 1 | 4303C | 4 | 21 | 9 |
| 40 | Canopy seal inflation | | Hymatic PS29/18 | 1 | 4303C | 4 | 15 | 13 |
| 41 | Cockpit pressurization | (pre Mod.2358) | EB2.75.6183 | 1 | 101B-1001-1A | | | |
| | | (post Mod.2358) | EB2.75.6503 | 1 | | | | |
| 42 | Radar-head pressurization | | Hymatic PAS/160/043 | 1 | 4303C | 4 | 34 | 12 |
| | *Pressure relief* | | | | | | | |
| 46 | Cockpit pressurization | | EB2.75.2693 | 1 | 101B-1001-1A | | | |
| 47 | Radar-head pressurization | | Hymatic RAV 150/005 | 1 | 4303C | 4 | 39 | 2 |
| 48 | Water header-tank outlet | (pre Mod.2132) | EB2.75.2301 | 1 | 101B-1001-1A | | | |
| | | (post Mod.2132) | EB2..75.6476 | 1 | | | | |
| | *Stop valves* | | | | | | | |
| 51 | Anti-g | (Mk.1) | Hymatic SV35/1 | 1 | 4303C | 6 | 10 | |
| | | (MK.1A) | Hymatic SV35/1 Mk.2 | 1 | | | | |
| 52 | Anti-icing | (Mk.1A post Mod.104) | | | | | | |
| | Butterfly valve | | Teddington FMP/A/145 | 1 | 4303E | 2 | 5 | 8 |
| | Solenoid valve | | Teddington FGB/A/16 | 1 | 4303E | 2 | 8 | 2 |
| | Filter and body | | Teddington FGB/SA/462 | 1 | | | | |

*continued...*

TABLE 3 Major components - frames 1-25A - *continued*

| Item No. | Component | | Type or Part No. | Qty. | A.P. Reference | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | A.P. | Sect. | Chap. | App. |
| **Valves** | | | | | | | | |
| *Stop valves - continued* | | | | | | | | |
| 53 | Canopy de-misting | | Normalair 505980 | 1 | 4340 | 5 | 1 | 4 |
| 54 | Canopy seal inflation | | Hymatic SV 19/2 | 1 | 4340C | 6 | 6 | 4 |
| 55 | Rain dispersal | (Mk. 1A post Mod. 104) | | | | | | |
| | Butterfly valve | | Teddington FMP/A/170 | 1 | 4303E | 2 | 5 | 13 |
| | Solenoid valve | | Teddington FGB/A/16 | 1 | 4303E | 2 | 8 | 2 |
| | Filter and body | | Teddington FGB/SA/462 | 1 | | | | |
| 56 | Windscreen de-misting | | Normalair 505980 | 1 | 4340 | 5 | 1 | 4 |
| | **Miscellaneous valves** | | | | | | | |
| 59 | Anti-g | | Hymatic AG 9/1 or VAG 109/006 | 1 | 4303C | 4 | 38 | 1 |
| 60 | A.V.S. flow control | | Hymatic FC 2/5 | 1 | 4303C | 6 | 9 | 1 |
| 61 | Cockpit temperature regulation | (pre Mod. 2359) | Teddington FOZ/A/7 | 1 | 4303E | 2 | 14 | |
| | | (post Mod. 2359) | Teddington FOZ/A/5019 | 1 | 4303E | | | |
| 62 | Cooling air temperature control | | EB2. 75. 1503 | 1 | 101B-1001-1A | | | |
| 63 | Combined valve unit | | Normalair 518030 | 1 | 1275A | 20 | 6 | 6 |
| 64 | Pressure controller | | Normalair 517500 | 1 | 1275A | 20 | 32 | 4 |
| 65 | Spill valve | | EB2. 75. 3871 | 1 | 101B-1001-1A | | | |
| 66 | Gun purging | (pre Mod. 4047) | EB2. 75. 6223 | 1 | | | | |
| | | (post Mod. 4047) | EB2. 75. 7565 | 1 | | | | |
| 67 | Emergency air | | EB2. 75. 1689 | 1 | | | | |
| | **Water system** | | | | | | | |
| 68 | Drain valve | (pre Mod. 2227) | EB2. 75. 4127 | 1 | 101B-1001-1A | | | |
| | | (post Mod. 2227) | EB2. 77. 6507 | 1 | | | | |
| 69 | Float valve | | EB2. 75. 3511 | 1 | | | | |
| 70 | Replenishing valve | (Mk. 1) | Lockheed AVA 551D or AUX 227 | 1 | | | | |
| | | (Mk. 1A) | Lockheed AVA 1485 | 1 | | | | |
| | **Miscellaneous components** | | | | | | | |
| 75 | Canopy seal inflation storage bottle | (post Mod. 123) | Hymatic RES 4 Mk. 1 | 1 | 4303C | 3 | 5 | |
| 76 | Cold-air unit | | De Havilland RU45/03 | 1 | 4340 | 2 | 14 | |
| 77 | Canopy seal inflation pressure gauge | (post Mod. 123) | Smiths EU/13/LN/K006 | 1 | 1275A | 15 | 24 | |
| 78 | Anti-icing pressure switch | (Mk. 1A) | Teddington FRJ/A/6 | 1 | 112G-1107-1 | | | |
| 79 | Gun purging pressure switch | | Thermal controls TP 5563 | 1 | | | | |
| 80 | Water extractor | | Godfrey WE 30 Mk. 1A | 1 | 4340 | 9 | 2 | |
| 81 | Water header tank | | EB2. 75. 5271 | 1 | 101B-1001-1A | | | |
| 82 | Water trap - A.V.S. and anti-g system | | EB2. 75. 4211 | 1 | | | | |
| 83 | Radar head pressurization bursting disc | | EF3. 75. 3639 | 1 | | | | |
| 84 | Restrictor nipple - canopy de-misting | | EB2. 75. 1661 | | | | | |

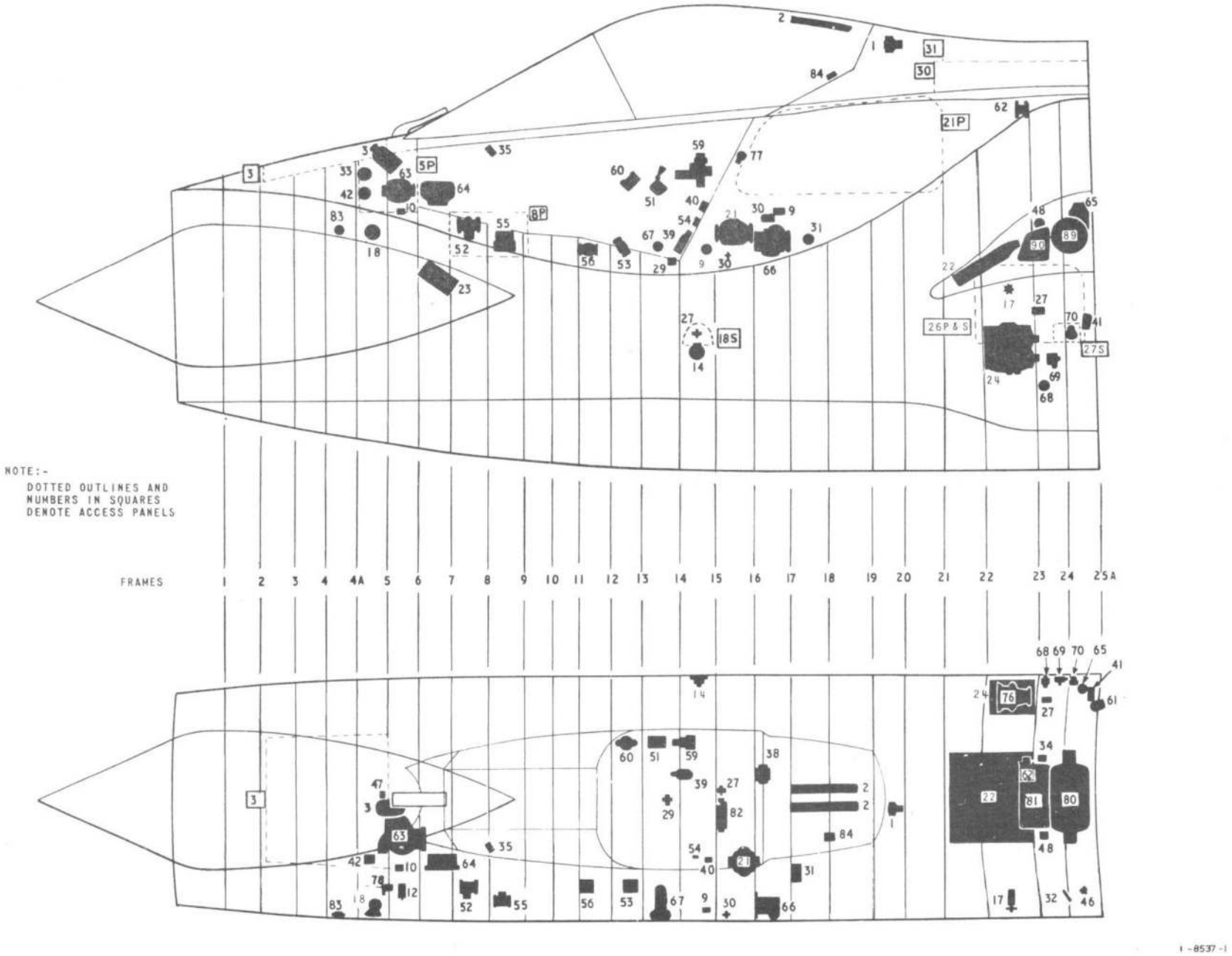


FIG.13. LOCATION OF MAJOR COMPONENTS-FRAMES 1-25A

TABLE 4

Major components – frames 25B-57

| Item No. | Component | | Type or Part No. | Qty. | A.P. Reference A.P. | Sect. | Chap. | App. |
|---|---|---|---|---|---|---|---|---|
| Note... *Certain item numbers have been omitted to allow for any additional components that may be introduced in the future* | | | | | | | | |
| | **Air driven accessories** | | | | | | | |
| 88 | Accessory drive unit | | Rotol ADE 326 | 1 | 2240A | | | |
| | **Filters** | | | | | | | |
| 90 | Accessory drive unit cooling | | EB2.55.435 | 1 | 4303C | 2 | 5 | 1 |
| 91 | Auxiliary air supply | | Hymatic LF/1 | 1 | | | | |
| | **Ground connections** | | | | | | | |
| 93 | Air turbine shut-off valve testing | | EB2.75.5941 | 2 | 101B-1001-1A | | | |
| 94 | Reheat nozzle valves supply | | EB2.75.4111 | 1 | | | | |
| | **Heat exchanger** | | | | | | | |
| 96 | Auxiliary air supply | | Marston Excelsior D555/2A | 1 | 4340 | 8 | 1 | 36 |
| | **Valves** | | | | | | | |
| | *Non-return* | | | | | | | |
| 98 | Accessory drive unit cooling | | Flight Refuelling B9807100/7 | 1 | 106D-1000A-1 | | | |
| 99 | Auxiliary air supply | | Saunders 706AA/11B | 2 | 107B-0905-16AD | | | |
| | Main air supply | | | | | | | |
| 100 | No.1 engine | (Mk.1) | EB2.75.1615 | 1 | 101B-1001-1A | | | |
| | | (Mk.1A) | EB2.75.255 | 1 | | | | |
| 101 | No.2 engine | (Mk.1) | EB2.75.1615 | 1 | | | | |
| | | (Mk.1A) | EB3.75.243 | 1 | | | | |
| 102 | Reheat nozzle supply | | Normalair 512200 | 1 | 107B-0905-16AD | | | |
| | *Pressure reducing* | | | | | | | |
| 103 | Auxiliary air supply | | Hymatic PS48/42 | 1 | 4303C | 4 | 21 | 6 |
| | *Pressure relief* | | | | | | | |
| 104 | Auxiliary air supply | | Hymatic RB28/9 or RV37/23 | 1 | 4303C | 4 | 28 | 2 |
| | *Stop valves* | | | | | | | |
| 106 | Accessory drive unit shut-down | (pre Mod.2216) | ATPR 2/1 or 2/2 | 1 | 2240A Bk.15 | 3 | 6 | |
| | | (post Mod.2216) | Rotol 6.1301/000 | 1 | | | | |
| 107 | Cockpit pressurization | | Teddington FMP/A/5027 | 1 | 4303E | 2 | 5 | 12 |
| | *Miscellaneous valves* | | | | | | | |
| 108 | Constant-flow | | EB2.75.4523 | 1 | 101B-1001-1A | | | |
| 109 | Cooling air temperature control | | EB2.75.1503 | 1 | | | | |
| | **Miscellaneous components** | | | | | | | |
| 110 | Water trap | | EB2.55.607 | 1 | | | | |


1-8538-1

FIG. 14. LOCATION OF MAJOR COMPONENTS - FRAMES 25B-57