SECTION 1

UNPACKING AND PREPARING FOR INSTALLATION

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Note:—*This section applies to Avon Mk.10801 and 11401 Engine Change Units and Associated Jet Pipes*

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Introduction

1. This chapter describes the preparation of Avon 10801 and 11401 Engine Change Units and associated jet pipes before installation. On the E.C.U., provision is made for mounting the unit from four suspension points. The two forward points, located on each side of the compressor casing lower half, comprise flexible link mountings with vibration-insulated eye fittings. The rear suspension points are rigid trunnion mountings located centrally on either side of the nozzle box.

2. The jet pipe is fitted with handling rollers on the top centre line near the front of the pipe and sliding suspension attachments on each side at the intersection of the main jet pipe and variable nozzle casing.

3. Engine and jet pipe installation procedures and sequence of operations are promulgated in the appropriate aircraft Air Publication.

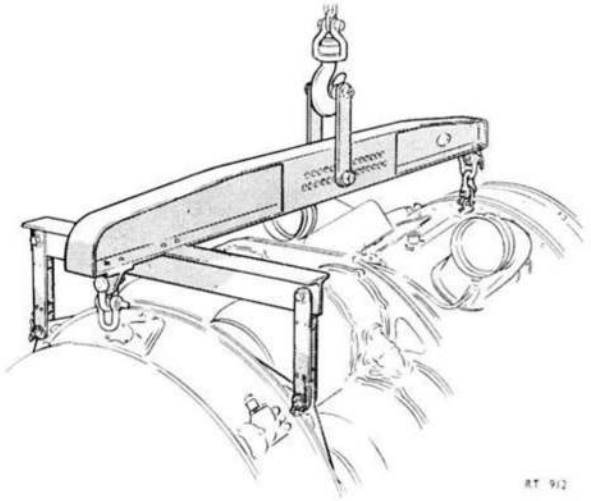

Fig. 1. Engine change unit sling

(A.L.5, June, 54)

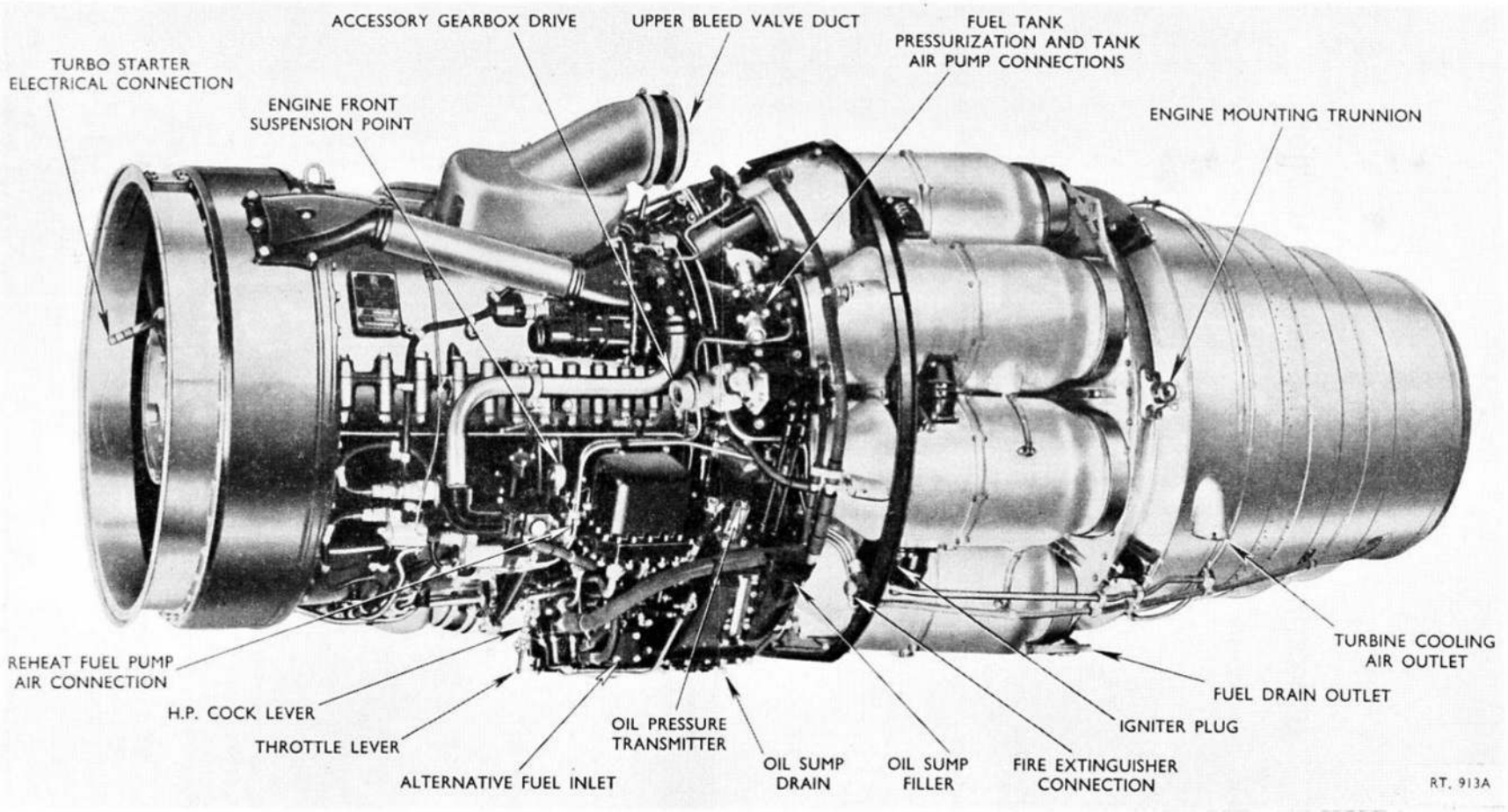

Fig. 2. E.C.U. installation connections (port side)

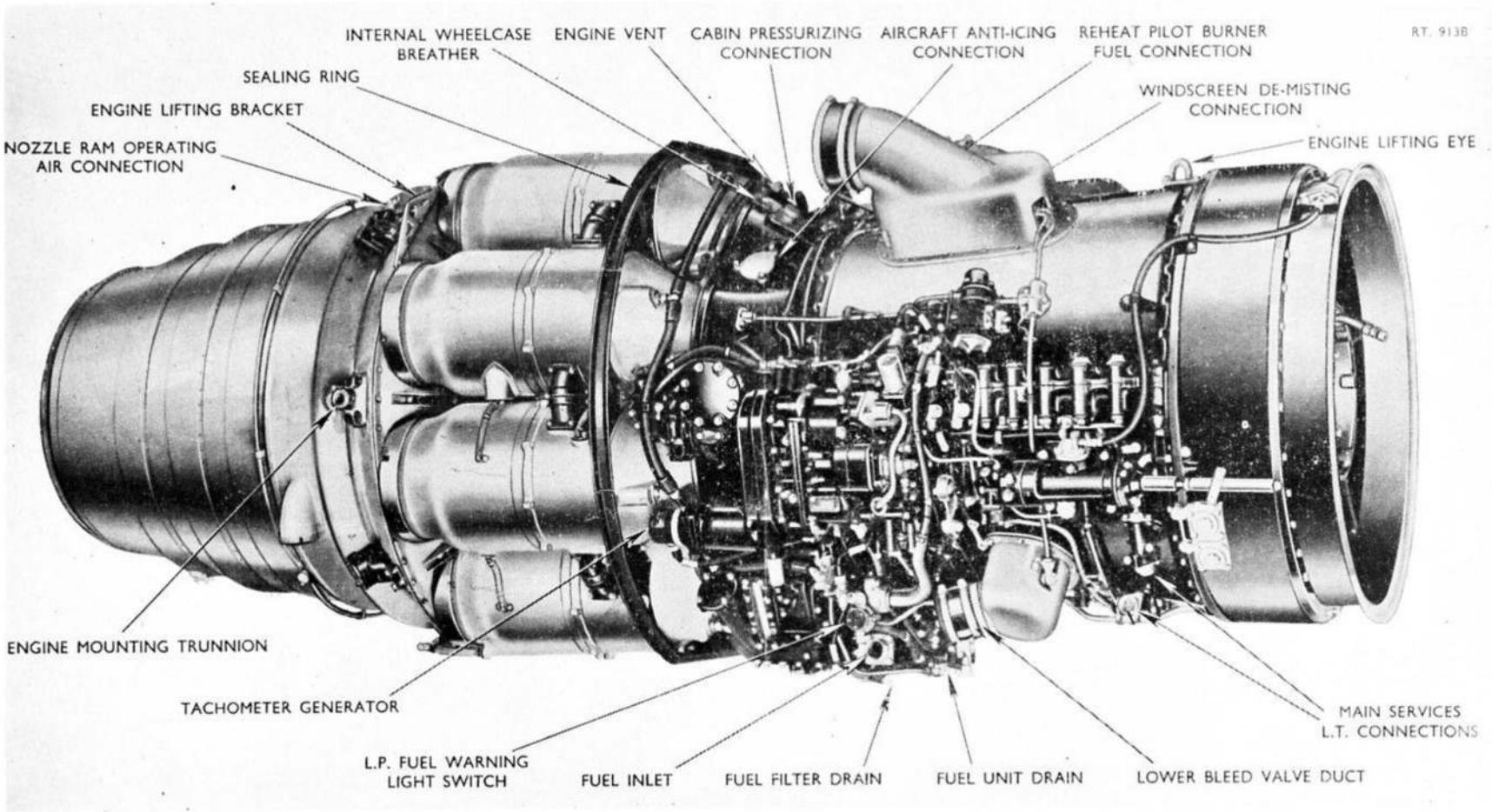

Fig. 3. E.C.U. installation connections (starboard side)

ENGINE CHANGE UNIT

Unpacking

4. To remove the E.C.U. from the packing case, remove the bolts from the bottom end of each of the metal straps surrounding the packing case and also from the angle brackets which provide additional securing points. Fit a four-hook sling to the lifting eyes at the topmost ends of the straps and lift the box-type lid vertically clear of the E.C.U., exercising great care to prevent the lid swinging sufficiently to cause impact damage to the E.C.U. Later packing cases incorporate vertical guide rails to eliminate this possibility. Forms 1125 and 1125A will be found attached to the E.C.U.

5. With the lid removed from the case, check the E.C.U. externally for signs of any corrosion or damage sustained during transit. Corrosion in any form, especially that resulting from damage to paintwork on magnesium components, must be promptly dealt with as described in A.P.4471A. Pipe connections and electrical wiring should be checked for security and correct locking. The transportation blanks should not be removed until the individual connections are made during installation. The air-intake and exhaust unit outlet should remain protected by the covers until it is necessary to remove them for engine installation.

PREPARING FOR INSTALLATION

Slinging the E.C.U.

6. The universal handling sling J.47623 (*Stores Ref.* 46/4783) and the method of attachment to the E.C.U. are illustrated in fig. 1. The slinging hook attachment is bolted to the fore and aft beam of the sling. Several alternative attachment positions are provided, but the sling may not necessarily be suitable for installing the engine in a particular aircraft. The sling specified in the relevant aircraft Air Publication should be used.

7. To remove the E.C.U. from the transportation stand, proceed as follows:—

(1) Remove the bolts securing the rear trunnion mounting blocks to the stand.

(2) Fit the sling and take the weight of the E.C.U.

(3) Remove the cross bolts securing the front suspension links to the stand.

(4) Raise the E.C.U. and slide the rear mounting blocks from the trunnions. Refit the blocks to the stand.

Warning . . .
The E.C.U. slinging eyes must never be used to lift the stand and the E.C.U. together.

Fuel system

8. If the E.C.U. is to be run within seven days of removal from storage, the fuel system should be drained of inhibiting oil. For this operation, remove the blanking nuts from the fuel inlet connection, the intake guide-vane ram connection and the fuel pump connection and loosen the low pressure fuel filter drain valve. The instructions for bleeding the fuel system, as described in Vol. 6, Part 1, Sect. 2, Chap. 6, should then be followed.

9. When draining is complete, remove the bleed tool and refit the blanks to the fuel pump, intake guide-vane ram and fuel inlet. Tighten and relock the drain valve.

Oil system

10. Check that the combined sump and oil tank is empty by loosening the drain valves on the oil filter and sump, then tighten and lock the drain valves. The sump is filled and the filler cap is locked after the fitting of the aircraft filler neck during installation in the aircraft; reference should be made to the aircraft Air Publication and to Vol. 1, Part 2, Sect. 3. If an oil inlet thermometer is not fitted to the aircraft, the pressure blank on the engine must not be disturbed.

Note . . .
Any oil spilled during filling must be wiped off immediately as this oil is synthetic and is injurious to paintwork and to certain types of rubber.

Accessories

11. Should the turbo-starter not be fitted to the E.C.U., remove the cover from the air-intake then transfer the gearwheel, setscrew and tabwasher from the blanking plate to the turbo-starter, bending up the tab of the locking washer.

12. Assemble the turbo-starter to the E.C.U. by fitting the eight bolts through the starter casing and interposing the sealing ring. Establish the electrical circuit from the E.C.U. to the starter by connecting the supply cable to the multi-pin plug situated above the starter reduction gear casing. Instructions regarding the fitting of the starter-motor casing and starter exhaust pipes are given in the relevant aircraft Air Publication.

WARNING
Before fitting the turbo-starter ensure that each breech is empty.

Fireproof bulkhead seal

13. Check that the seal is in position in the circumferential channel.

Controls

14. Adaptation of the engine throttle lever to the aircraft throttle linkage may require the engine lever being repositioned on the splined hub. The engine throttle assembly permits adjustment of the lever for length and for maximum travel (*fig.* 4). Should adjustment be necessary, it is essential that the engine throttle lever travel is limited only by the engine throttle stops and not by the throttle linkage. A ball-end, of the type specified for the particular installation, must be fitted to the control lever.

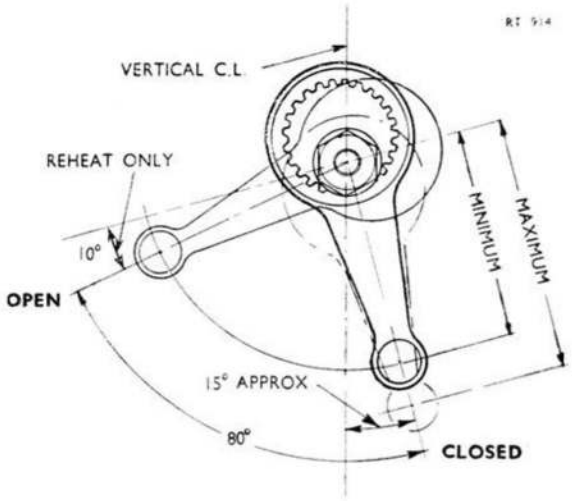

Fig. 4. Settings for E.C.U. throttle control lever

Mounting trunnions

15. Remove the spherical collars from the rear mounting bracket on the aircraft and clean and lightly grease them using grease XG-275 (*Stores Ref.* 34B/222). Also clean and lightly grease the E.C.U. trunnions. Slide the spherical collars over the trunnions and insert a locating pin through the port side trunnion. The starboard side collar is left free on the mounting to allow for lateral expansion of the E.C.U.

REMOVAL

16. Instructions regarding the procedure for removing an E.C.U. from the airframe are given in the appropriate aircraft Air Publication.

ANTI-CORROSIVE TREATMENT AND PACKING

17. Details of blanking, anti-corrosive treatment and packing are given in A.P.4471A.

JET PIPE

Unpacking

18. Remove the lid of the jet pipe packing case in a manner similar to that used for the E.C.U., again using a four-hook sling on the four lifting eyes provided. Examine the jet pipe to determine the general condition of the unit and to check for possible damage caused in transit.

Jet pipe sling

19. Using the special sling described in the appropriate aircraft Air Publication, transfer the jet pipe from the packing case to the installation cradle.

Installation and removal

20. Procedure for installing and removing the jet pipe from the aircraft is described in the relevant aircraft Air Publication.

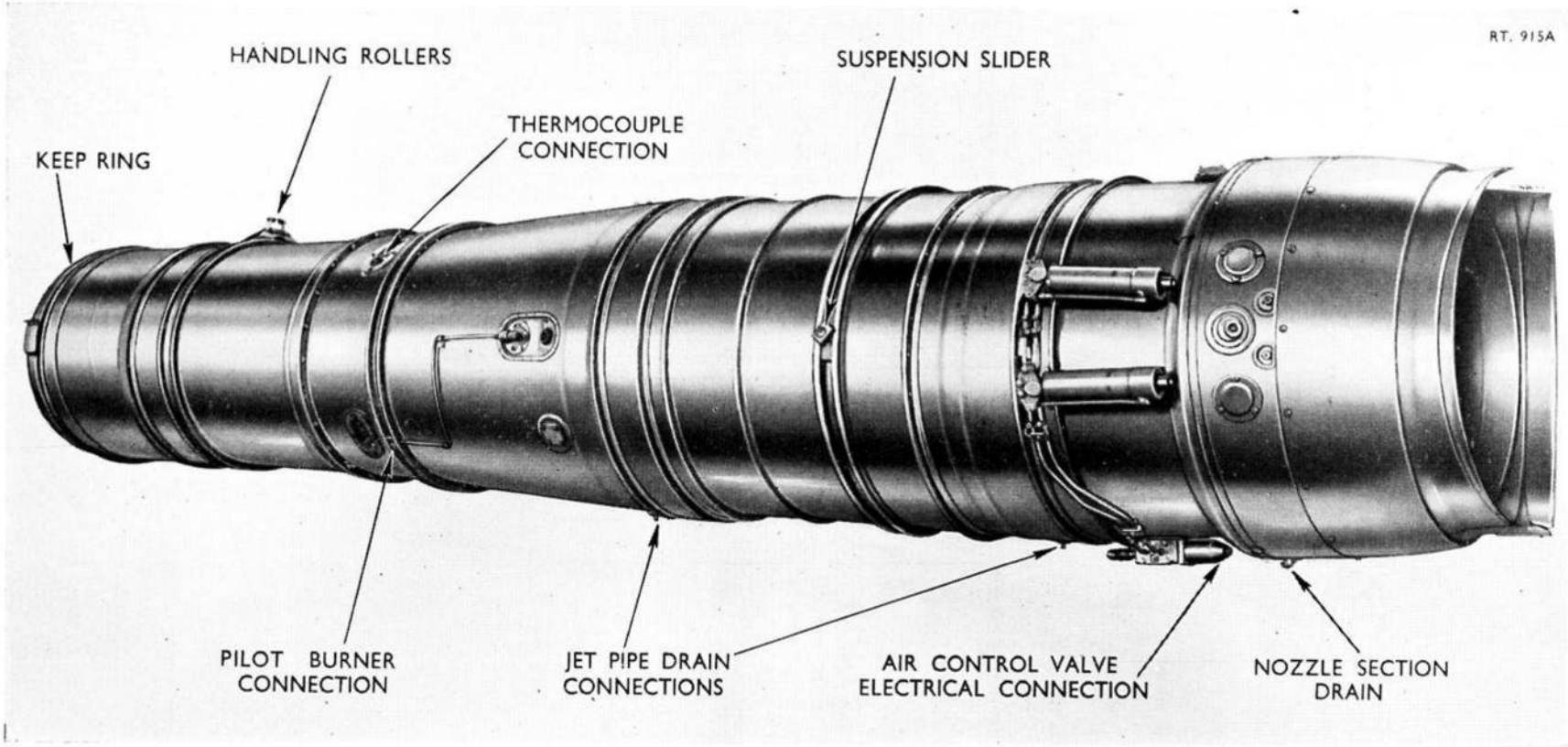

Fig. 5. Jet pipe installation connections (port side)

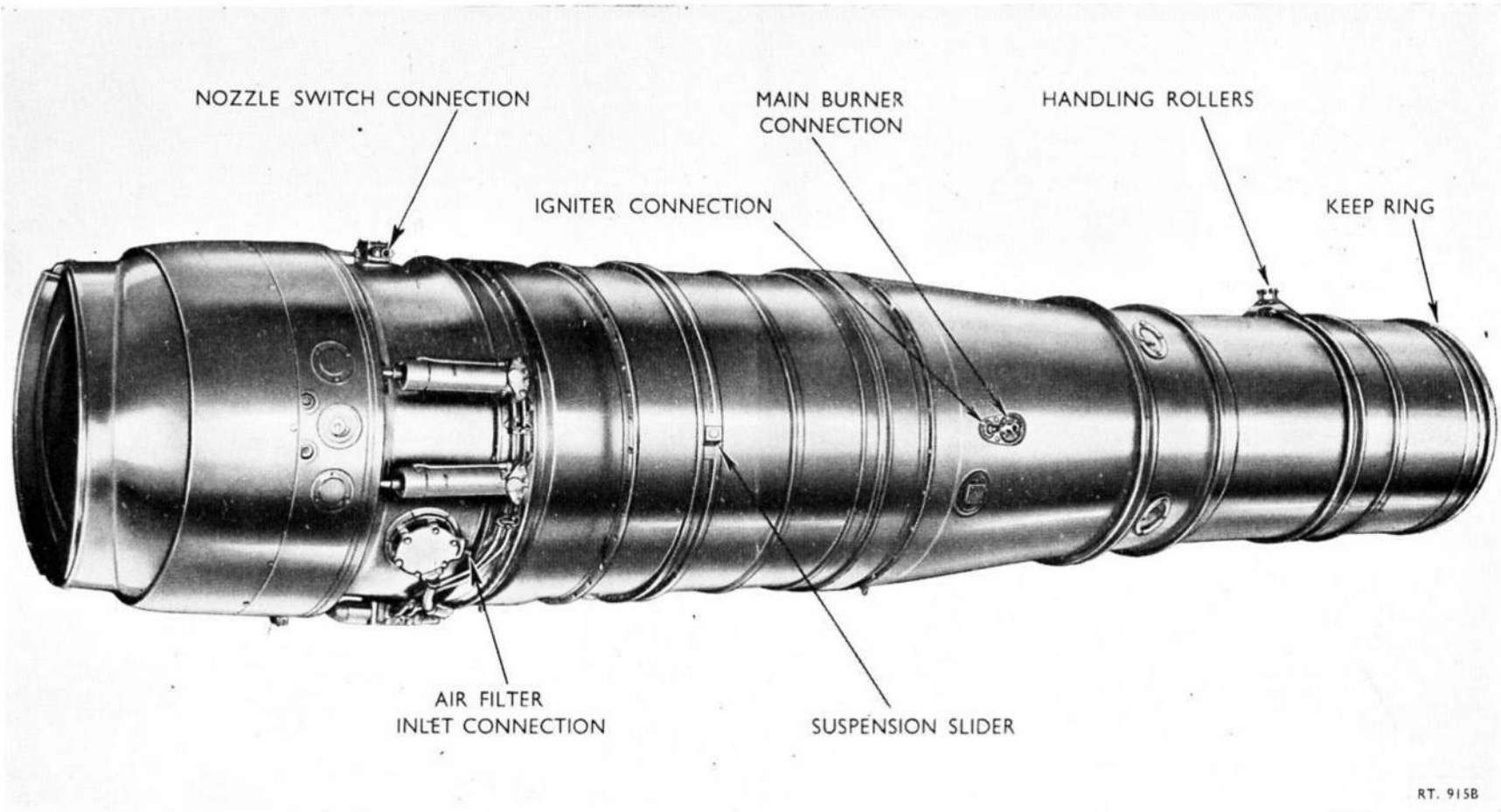

Fig. 6. Jet pipe installation connections (starboard side)

Supplement 1

Mk.10801 ENGINE CHANGE UNIT

Engine Change Unit items

1. The basic engine will be received from the manufacturer complete with the following Engine Change Unit items. With these items incorporated the complete unit is designated the Avon Mk. 10801 Engine Change Unit.

(1) Tachometer generator (*Stores Ref.* 6A/3344).

(2) E.C.U. name plate, B.A.44882.

(3) Engine gearbox drive coupling, Type EC1/1 (*Stores Ref.* 37L/383).

(4) Fuel pressure warning light switch unit, Mk. 1E* (*Stores Ref.* 6A/1912).

(5) Gas turbo-starter, Type TBS.720, Mk. 2 (*Stores Ref.* 37A/11005).

(6) Starter fairing, B.A.58088.

Supplement 2

Mk.11401 ENGINE CHANGE UNIT

Engine Change Unit items

1. The basic engine will be received from the manufacturer complete with the following Engine Change Unit items. With these items incorporated the complete unit is designated the Avon Mk. 11401 Engine Change Unit.

(1) Tachometer generator (*Stores Ref.* 6A/3344).

(2) E.C.U. name plate, B.A.57200.

(3) Engine gearbox drive coupling, Type EC1/1 (*Stores Ref.* 37L/383).

(4) Fuel pressure warning light switch unit, Mk. 1E* (*Stores Ref.* 6A/1912).

(5) Gas turbo-starter, Type TBS.720, Mk. 2 (*Stores Ref.* 37A/11005).

(6) Starter fairing B.A.58088.

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