CHAPTER 8 - STARTING SYSTEM

NOTE: This chapter applies to Avon Mk.10701, 10901, 11301, 11501, 12101 and 12201 engine change units and associated jet pipes.

Contents

Illustrations

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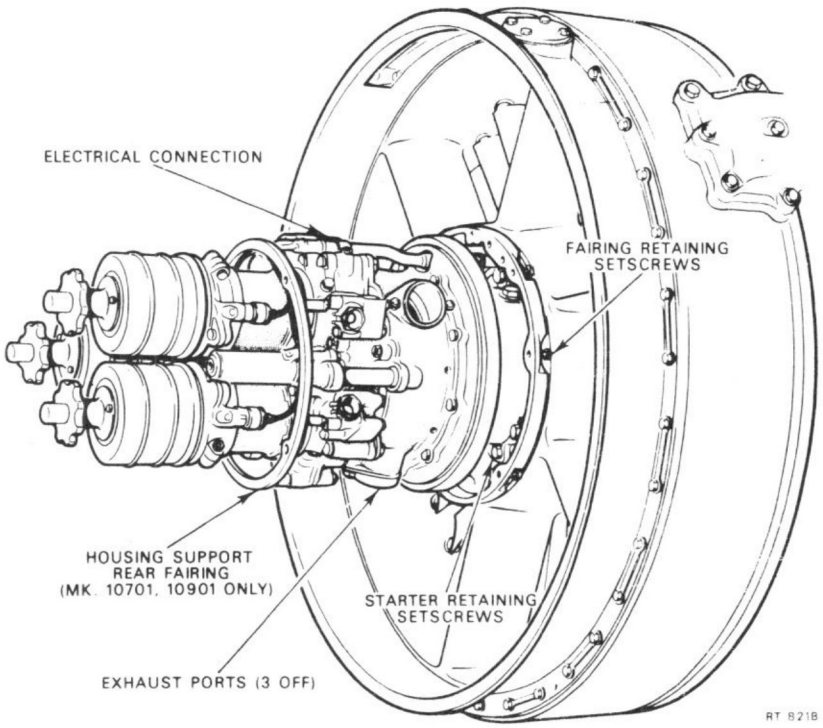
1. General

WARNING: A. BEFORE COMMENCING WORK ON THE STARTER, ENSURE THAT THE STARTER MASTER SWITCH IS OFF AND THAT ALL THE BREECHES ARE UNLOADED.

B. DO NOT REMOVE THE BREECH CAP WITHIN ONE MIN. OF AN UNSUCCESSFUL ATTEMPT TO FIRE A CARTRIDGE.



Turbo-starter
Fig.1

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2. Turbo-starter

A. Removal

(1) Avon Mk.10701 and 10901 only

(a) Dismantle the exhaust pipes until they are clear of the exhaust ports.

(b) Remove the fairing nose cap and breech caps, unlock the tabwashers then unscrew the three nuts (36DD 72771) which secure the starter fairing to the starter.

(c) Locate the withdrawal tool (Fig.2 and 3) in the starter breeches. Position the withdrawal clips on the rear face of the fairing then tighten the extractor nut to break the bearing housing/fairing seal. Remove the exhaust pipes and the starter fairing.

(d) Disconnect the electrical cable from the starter by withdrawing the multi-pin plug.

(2) Avon 11301, 11501, 12101 and 12201 only

(a) Dismantle the exhaust pipes until they are clear of the exhaust ports.

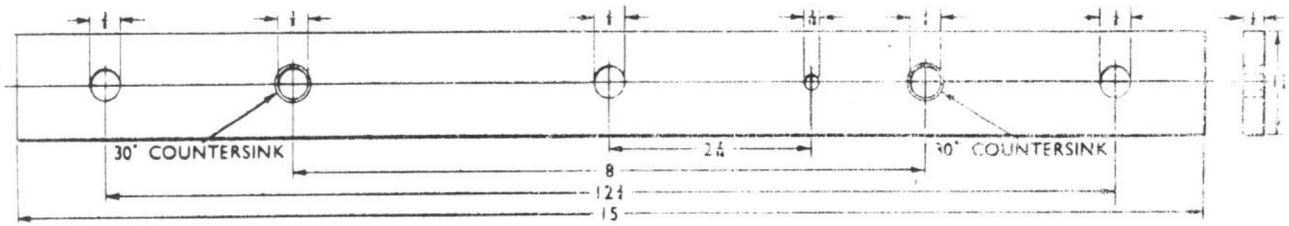
(b) Disconnect the electrical cable from the starter by withdrawing the multi-pin plug.

(c) Remove the fairing nose cap and breech caps and locate the withdrawing tool (Fig.2 and 3) in the starter breeches. Position the withdrawal clips on the rear face of the fairing, then tighten the extractor nut to break the bearing housing/fairing seal. Remove the exhaust pipes and the starter fairing.

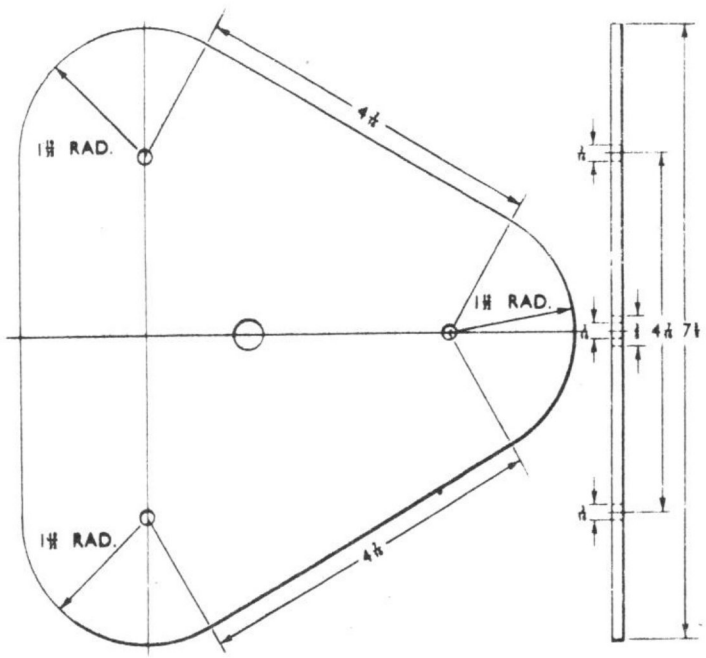
(3) All engine marks

(a) Unscrew the captive setscrews from the starter mounting flange, leave the top screw till last. Support the weight of the starter, then remove the top screw and lift the starter clear of the engine.

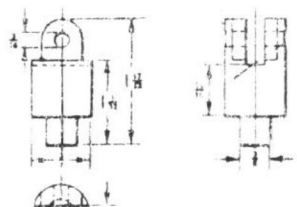
(b) The starter drive pinion is an engine part and must be removed from the old starter and retained, together with its retaining screw, for fitment to the replacement unit. A new tabwasher will be required for locking the setscrew.



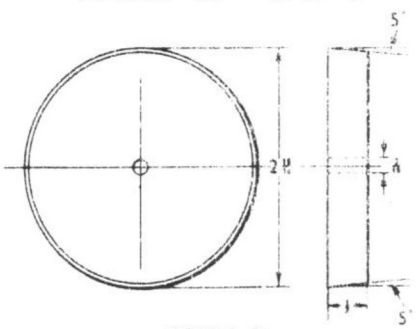
DETAIL A
MATERIAL : M.S. No. OFF 1



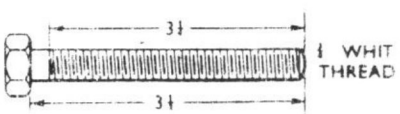
DETAIL B
MATERIAL : ALUMINIUM No. OFF 1



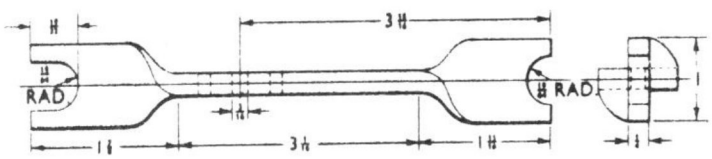
DETAIL C
MATERIAL : M.S. No. OFF 2



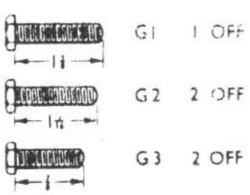
DETAIL D
MATERIAL : WOOD No. OFF 2



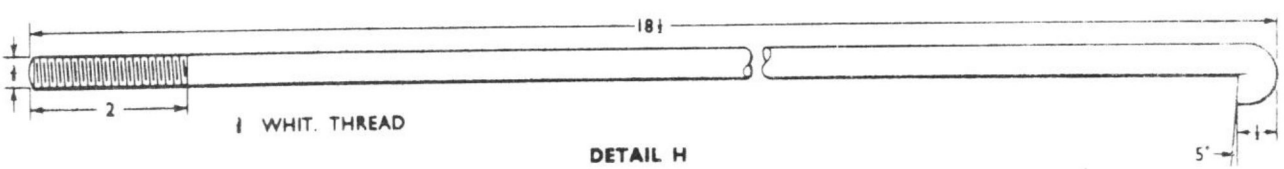
DETAIL E
M.S. BOLT No. OFF 1
WITH 2 NUTS & WASHERS



DETAIL F
MATERIAL : M.S. No. OFF 2



DETAIL G
2 BA BOLTS No. OFF 5
WITH NUTS & WASHERS



DETAIL H
MATERIAL : M.S. ROD No. OFF 2

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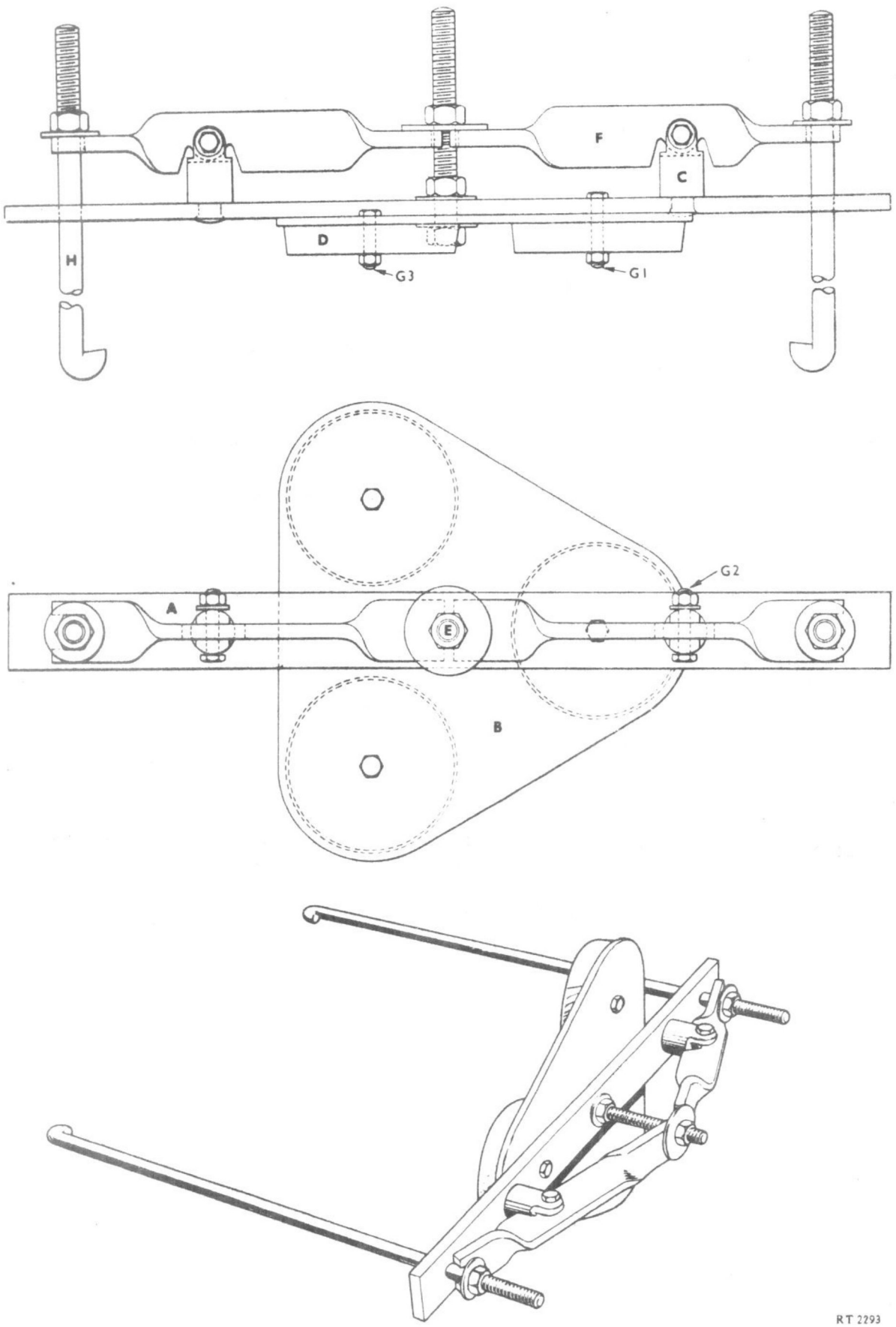
ALL DIMENSIONS IN INCHES

Fairing withdrawal tool (A)
Fig.2



Fairing withdrawal tool (B)
Fig.3

B. Inhibiting

(1) Protect the starter dogs by fitting a blank to the mounting face.

(2) Mask off the electrical connection and the breech cap contact points, to exclude grease.

(3) Inhibit the starter as instructed in A.P.4471A, Vol.1, Part 2, (Book 2).

C. Replacement

(1) Replacement is the reverse of removal, observing the following points:

(a) On Mk.10701 and 10901 engines only, remove the rear fairing housing support from the old starter and fit the support to the replacement starter, using new tabwashers.

(b) When offering up the starter to the engine, ensure that the oil hole in both the starter mounting flange and the jointing correspond with the hole in the starter mounting face on the engine.

(c) Before fitting the fairing, remove the priming plug from the top of the starter drive casing, and prime the gears with approximately 200 c.c. ($^1/_3$ pint) of clean oil, OX-38, then replace and lock the priming plug.

D. Serviceability check

(1) Load the breeches and perform a motoring cycle.

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3. Igniter plugs

WARNING: THE ELECTRICAL ENERGY WHICH MAY BE STORED IN THE CONDENSORS OF THE HIGH ENERGY IGNITION UNIT IS POTENTIALLY LETHAL. IT IS IMPORTANT, THEREFORE, TO DISCONNECT THE L.T. SUPPLY AND WAIR FOR AT LEAST ONE MINUTE BEFORE HANDLING THE UNIT OR H.T. CABLE.

A. Removal

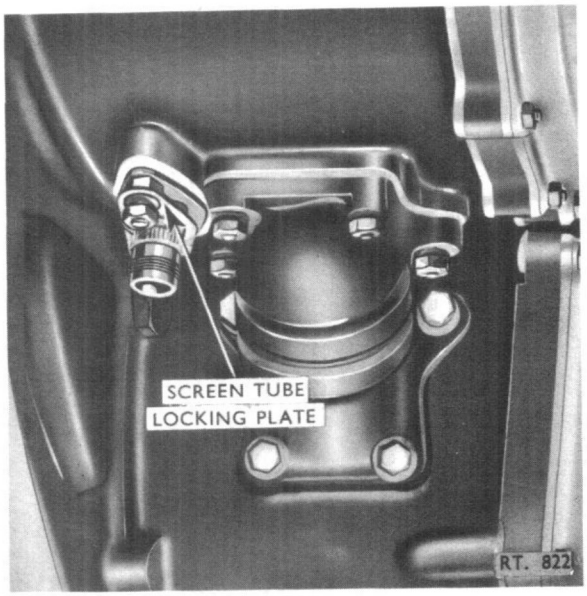

Fig. 1 Igniter plug

(1) Disconnect the l.t. lead from the igniter plug. Remove the screen tube locking plate, unscrew the two nuts which retain the igniter plug adapter in the combustion chamber then, withdraw the adapter and plug assembly from the combustion chamber.

Igniter plug
Fig. 4

B. Replacement

(1) Replacement is the reversal of removal.

(2) Effect (a) to (e) before replacing the igniter plugs.

(a) Using a soft lint-free cloth moistened with carbon tetrachloride (33C/1030), clean the complete plug except the firing end.

(b) Using glass paper (33J/9426828) clean the contact button.

(c) Visually inspect the igniter plug for:

(i) Excessive erosion of the electrode or shell end.

(ii) Cracked, chipped or grooved ceramic in the firing end insulator.

(iii) Cracked ceramic at the firing end insulator.

(iv) Corrosion.

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(d) Discard the plug if any of the defects specified in (i) to (iv) are apparent. When inspecting the plug as instructed in (c) (ii), carbon deposits may prevent a thorough inspection of the ceramic; do not remove the deposit but accept the plug provided none of the specified defects are apparent.

(e) Using a 500 volt megger, check that the resistance between the electrode and the plug body is not greater than 0.5 megohms. Discard the plug if the resistance is greater than 5 megohms.

(f) Fit the igniter plug; observe the following:

(i) Seal the joint between the igniter adapter and the combustion chamber with high temperature jointing compound (34B/298).

(ii) Ensure the interconnecting h.t. lead makes a good contact with the igniter plug and ignition units, and that the securing nuts are tight.

(iii) If the igniter screen tube has unscrewed from the adapter, use the double depth socket and torque spanner (Chap.1) to torque load the screen tube, to the adapter, to 380 to 420 lbf/in.

C. Serviceability check

(1) Press the relight button and listen for the click from both igniter plugs. If any doubt exists as to the functioning of either plug, temporarily isolate the other by disconnecting the l.t. supply from the apporpriate ignition unit.

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