Chapter 24J

COMBUSTION CHAMBERS, DISMANTLING

Contents

Illustrations

THIS CHAPTER, which is applicable to both the Ghost 48 Mk. 1 and the Ghost 48 Mk. 2, contains instructions for dismantling the combustion chambers after they have been removed from the engine in accordance with the instructions given in chapter 23. The general information contained in chapter 22 should be referred to as necessary.

The dismantling procedure for each of the ten combustion chambers is identical with the following exceptions. No. 3 and 10 combustion chambers are adapted to accommodate the igniter plugs (48 Mk. 1) or the torch igniters (48 Mk. 2).

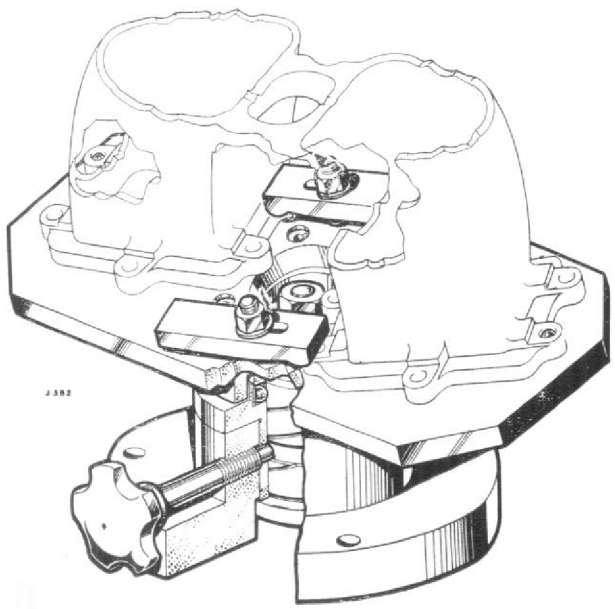

Fig. 1. Combustion chamber turntable fixture T.72531.

Two only of the three drain bosses on combustion chambers No. 4, 5, 6, 7 and 8 are fitted with blanks as compared to all three on the remaining chambers. No. 9 (48 Mk. 1) and No. 5 (48 Mk. 2) combustion chambers accommodate a banjo union for the connection to the air-fuel ratio control. It is desirable to keep the components from each combustion chamber assembly in sets so that upon reassembly, flame tube and head assemblies are refitted in their original expansion chambers and outer casings.

1. *48 Mk. 1.* Remove the diaphragm nut, also the four ¼ in. B.S.F. set-bolts and spring washers which secure the burners; remove the lockwire tab from the starboard outer set-bolt. *48 Mk. 2.* Remove the four set-bolts, spring and plain washers which secure the burners.

2. *48 Mk. 1.* Withdraw the burner assembly from the combustion chamber complete with the burner diaphragm cover, the diaphragm and the adjusting washers; securely attach the adjusting washers to the diaphragm and cover. *48 Mk. 2.* Withdraw the spill burner assembly complete with the cover, adjusting washers, bonded seal and dust plate; securely attach the adjusting washers to the cover.

   The bonded seal and dust plate are secured to the burner by two ¼ in. B.S.F. set-screws.

3. Fit rubber dust cap Part No. Z17091-43 (48 Mk. 1), Eng.110-99 (48 Mk. 2), over the atomiser and place the burner in a suitable box.

4. Install the combustion chamber on turntable fixture T.72531, Fig. 1.

5. Remove the interconnector outer and inner

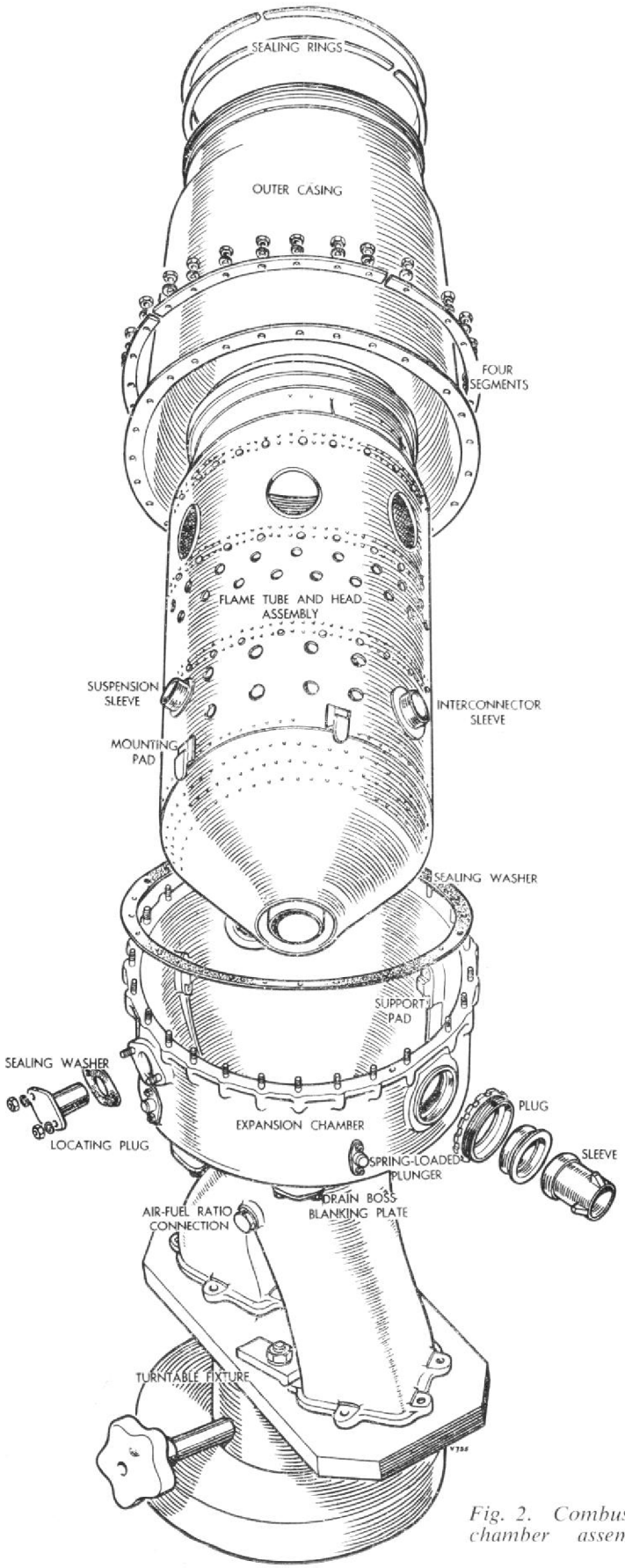

Fig. 2. Combustion chamber assembly.

sleeves complete with the nuts or plugs from their location in the interconnector ports in the expansion chamber, Fig. 2.

6. Carefully remove the two sealings rings from the rear end of the outer casing.

7. *48 Mk. 1. No. 3 and 10 combustion chambers only.* Remove the four 2 B.A. plain nuts, spring and plain washers which secure the adapter and withdraw it from the expansion chamber; remove the Klingerit washer situated under the adapter flange. *48 Mk. 2.* Remove the four 2 B.A. plain nuts, spring and plain washers which secure the torch igniter and withdraw the torch igniter complete from the expansion chamber; remove the joint washer situated under the torch igniter body.

8. Using spanner T.75785 remove the twenty-six 2 B.A. plain nuts and locking washers which secure the outer casing to the expansion chamber.

9. Remove the four segments from the outer casing front flange and carefully draw the outer casing off the studs in the expansion chamber and off the flame tube; remove the sealing washer from the rear face of the expansion chamber.

10. Remove the two $\frac{1}{4}$ in. B.S.F. plain nuts and spring washers which secure the locating plug in the expansion chamber and withdraw the locating plug and Klingerit washer.

11. Ease the flame tube

and head assembly out of the expansion chamber.

12. Remove the two $\frac{1}{4}$ in. B.S.F. plain nuts and spring washers which secure the drain boss blanking plates and remove the blanking plates and joint washers; repeat this operation on all combustion chambers.

13. Unscrew the banjo bolt for the air-fuel ratio connection on No. 9 48 Mk. 1 or No. 5 48 Mk. 2 combustion chamber; remove the connection and the two washers.

REMOVING THE SUPPORT PADS AND SPRING-LOADED PLUNGERS

When mod. 743 and 987 have been embodied

1. Unlock and remove the two 2 B.A. plain nuts and the locking washer which secure one of the two support pads; remove the support pad complete with the two plain washers and studs from the inside of the combustion chamber. Repeat this operation to remove the second support pad.

2. Unlock and remove the two 2 B.A. plain nuts which secure one of the spring-loaded plunger assemblies. Remove the locking washer, the supporting plate, the shim, the spring and the plunger. Withdraw the block with its studs and plain washers. Repeat this operation to remove the second plunger assembly.

3. Place the support pad and spring plunger assemblies in a bag and tie it securely to the respective combustion chamber.

When mod. 743, 987 and 1113 have been embodied.

1. Remove the support pads in accordance with the instructions given above.

2. Unlock and remove the two 2 B.A. plain nuts which secure one of the spring-loaded plunger assemblies, Fig. 3. Remove the locking washer, the support plate, the sealing washer, the shim, the flanged bush and the spring. Withdraw the locating block with its studs and plain washers. Repeat this operation to remove the second plunger assembly.

3. Place the support pad and spring plunger assemblies in a bag and tie it securely to the respective combustion chamber.

REMOVING THE BURNER FROM THE HOLDER *48 Mk. 1 only*

The burner proper (type C.S.H.) is of Lucas manufacture; the burner holder, locating block, diaphragm, adjusting shim, nut and washers are made by The de Havilland Engine Company, Fig. 4. Normally, the complete assembly will be inspected for condition without removing the

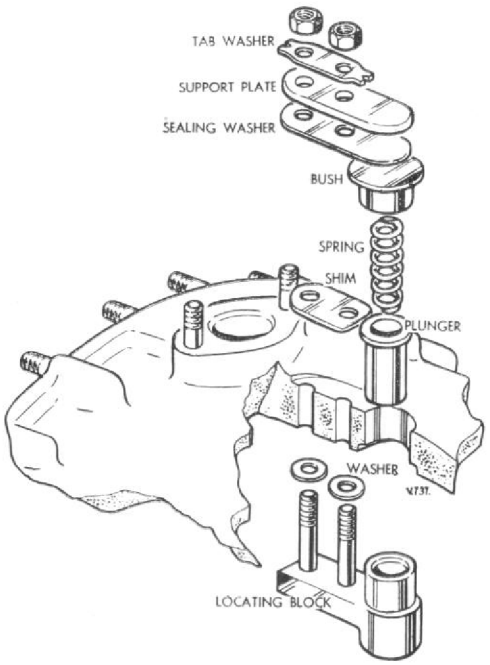

Fig. 3. Spring-loaded plunger assembly, mod. 743, 987, and 1113.

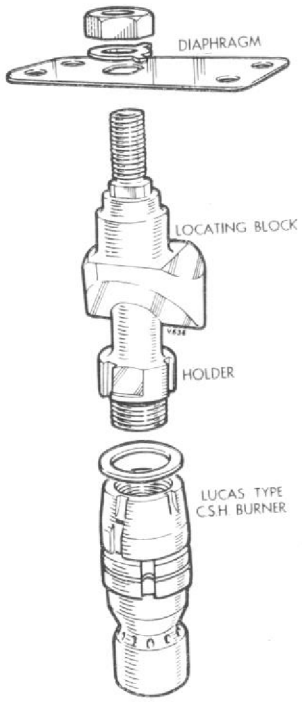

Fig. 4. Lucas type C.S.H. burner and holder.

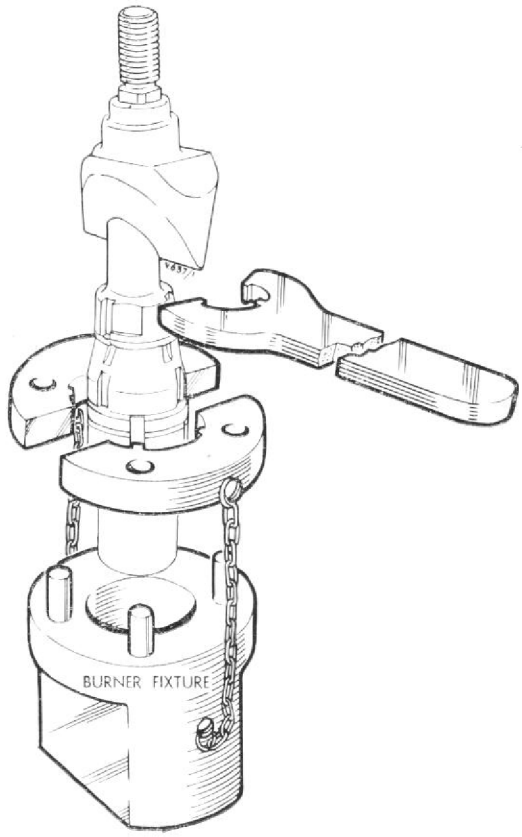

Fig. 5. Removing burner from holder, using fixture T.77086 and a 'C' spanner.

burner holder. If, however, it is considered necessary to remove the burner from the holder, proceed as follows.

1. Place fixture T.77086, Fig. 5, in a vice and tighten up securely.

2. Remove the rubber protective cap from the outlet connection.

3. Ensure that the lugs of the two halves of the fixture jaw plate fit snugly into the four slots in the burner body.

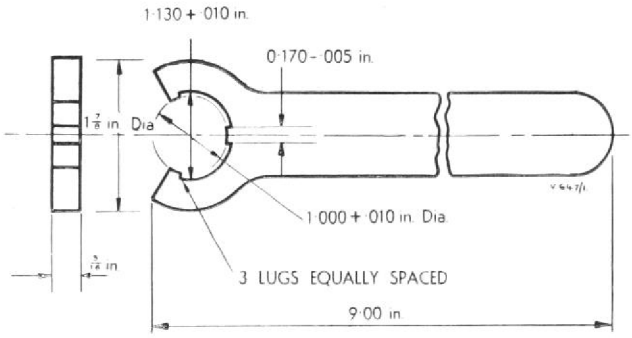

Fig. 6. Dimensions for manufacture of a 'C' spanner for removal of burner from holder.

4. Position the two halves of the jaw plate, with the burner, over the four dowels in the fixture.

5. Remove the plain nut and diaphragm from the body; blank off the screwed inlet.

6. Using a pin punch, knock down the peening of the copper locking washer between the holder and the burner.

7. Using a $\frac{9}{16}$ Whitworth open-ended spanner applied to the flats provided on the holder, unscrew the latter from the burner. If however the spanner is not a good fit on the flats, a 'C' spanner made to the instructions given in Fig. 6 may be used, advantage being taken of the slots machined in the holder.

8. Remove the jawplate and burner from the fixture; replace the rubber protective cap over the burner outlet and discard the copper locking washer.

9. Blank off the open ends of both the burner and the holder; place the burners and the holders in containers to prevent damage.