

Chapter 4

STARTING VALVE

This chapter applies to the Goblin Mk. 2 aero-engine

LIST OF CONTENTS

General	Para. 1	Installation	Para. 7
Description	2	Servicing	8
Principle of operation	5		

LIST OF ILLUSTRATIONS

Starting valve	Fig. 1	Exploded view of starting valve	Fig. 2
-----------------------	--------	--	--------

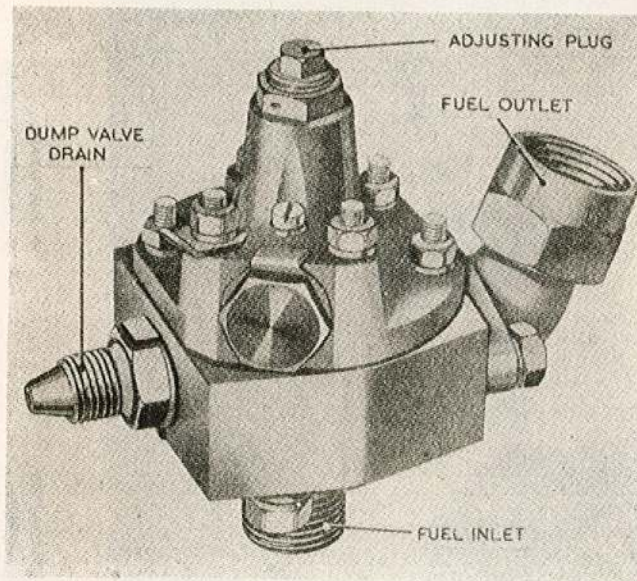


Fig. 1. Starting valve

GENERAL

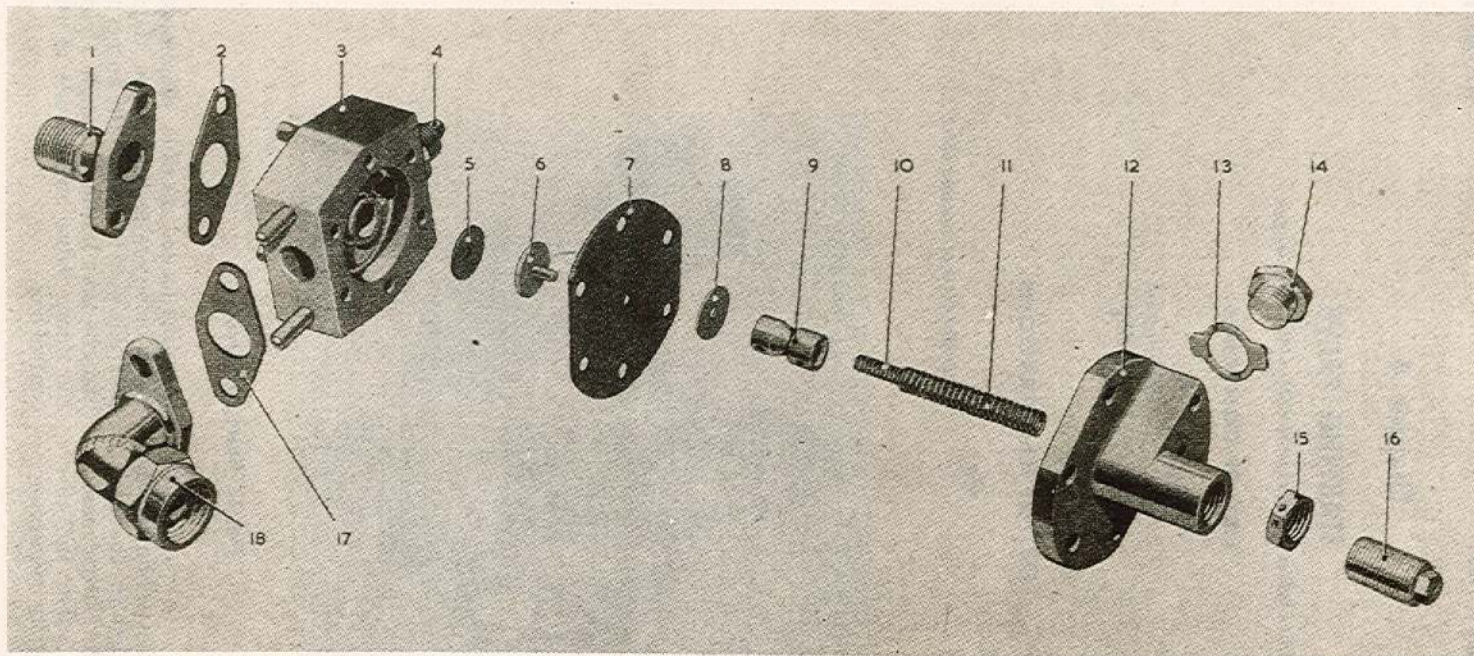
1. The starting valve on the Goblin Mk. 2 aero-engine (*fig. 1*) is situated in the fuel system immediately before the burner manifold. Between the starting valve and the overspeed governor is a tapping for connection to the fuel accumulator.

DESCRIPTION

2. The starting valve body (*fig. 2*) consists of an aluminium block, in which is housed

a spring-loaded flexible diaphragm. The block incorporates three ports, the fuel inlet port, the port leading to the burner manifold, and the port leading through a pipe line to the dump valve on the side of the engine control box.

3. The flexible diaphragm assembly consists of a clamping screw, the diaphragm, a locking washer and the diaphragm piston. A small locking pin passing through the piston and the



- 1 OUTLET ADAPTER
- 2 JOINT WASHER
- 3 STARTING VALVE BODY
- 4 DUMP VALVE DRAIN
- 5 WASHER
- 6 CLAMPING SCREW

- 7 DIAPHRAM
- 8 BACKING WASHER
- 9 DIAPHRAM PISTON
- 10 INNER SPRING
- 11 OUTER SPRING
- 12 COVER

- 13 LOCKING WASHER
- 14 BLANKING PLUG
- 15 LOCK-NUT
- 16 ADJUSTING PLUG
- 17 JOINT WASHER
- 18 INLET ADAPTER

Fig. 2. Exploded view of starting valve

clamping screw ensures that the assembly does not work loose during operation. Two small holes are provided at the end of the piston to receive a fine tommy bar for dismantling purposes.

4. The adjuster nut on the end of the diaphragm spring of the starting valve allows the setting to be varied and in this way controls the pressure at which the diaphragm will open.

PRINCIPLE OF OPERATION

5. Before the starting operation commences the spring holds the diaphragm against the fuel port. When the fuel accumulator has filled and the pressure in the supply line reaches the value necessary for an efficient start, the spring is overcome and the diaphragm moves so that the inlet port is uncovered and fuel flows to the port leading to the burner manifold. As the total area of the flexible diaphragm is much larger than the area of the inlet port, the load on the diaphragm becomes considerably increased as soon as the fuel port begins to open, and consequently the diaphragm moves smartly into its new position.

6. After flight the engine is stopped by the operation of the high pressure cock lever in the pilot's cockpit. This lever operates a lever arm on the control box which closes

the high-pressure fuel cock, thus shutting the fuel delivery line to the burner manifold. As the pressure in the delivery line falls, the starting valve diaphragm moves across and seals off the delivery to the burner manifold. At the same time the closing of the high-pressure fuel cock opens the cam-operated dump valve, thus allowing fuel to drain from the burners and manifold.

Note . . .

Any references to the dump valve in this chapter, or in Vol. 2, Part 3, Section 3, Chapter 4 of this A.P., are not applicable on engines where Mod. 403 has been incorporated.

INSTALLATION

7. The starting valve is supported and held in position against the diffuser casing by a small mild steel bracket. Before attempting to install the starting valve, reference must be made to the relevant engine Air Publication where such points as the left-handed thread upon the outlet union are fully enumerated.

SERVICING

8. Servicing of the starting valve after installation, other than a periodic check of the nuts and unions, is not permissible. In the event of the starting valve being defective it must be removed and returned to a Repair Depot for rectification.

This file was downloaded
from the RTFM Library.

Link: www.scottbouch.com/rtfm

Please see site for usage terms,
and more aircraft documents.

