

Chapter 3

SERVO THROTTLE VALVE, TYPE 2/2C

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ILLUSTRATION

Servo throttle valve, dismantled	Fig. 1
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General

1. The servo throttle valve provides an automatic variable restriction in the fuel flow in the event of excessive temperature or speed and is employed in conjunction with an electric pressure control (L.P.C.).

2. The valve and the L.P.C. are a matched set and are identified by a set number engraved on the body to avoid interchanging with other units.

Special tools

- (1) T.282105, holding fixture, diaphragm and plates to throttle valve.
- (2) T.282117, hydra-clamp adapter, dismantling and assembling.

Dismantling and cleaning

4. Remove the fuel outlet union and bonded seal. Remove the fuel inlet banjo bolt, banjo body and two bonded seals. Remove the combined orifice and union and the bonded seal.

5. Remove the four nuts, lift off the cover and withdraw the internal orifice bobbin with two sealing rings and the strainer assembly.

6. Remove the throttle valve from the body. Remove the split pin, nut and washer on the valve stem and lift off the clamp plate, diaphragm, diaphragm plate and sealing ring. The kidney slotted throttle valve orifice is an interference fit in the unit body.

7. Thoroughly clean the parts by using a kerosine bath and spray gun and then dry them with compressed air.

Inspection

8. Examine the parts for corrosion. Ensure that all internal bores and drillings are clean and that the sealing faces and sealing ring grooves are in good condition.

9. Check the throttle valve for free sliding movement in the body orifice and see that the orifice inner metering edge is sharp but free from damage.

10. Examine the threads and seating of the fuel connections and check the orifice diameter of the combined orifice and union; this should be 0.031 ± 0.0005 in.

Pre-assembly pressure test

11. Fit a new sealing ring to the throttle valve stem. Place the valve in the fixture

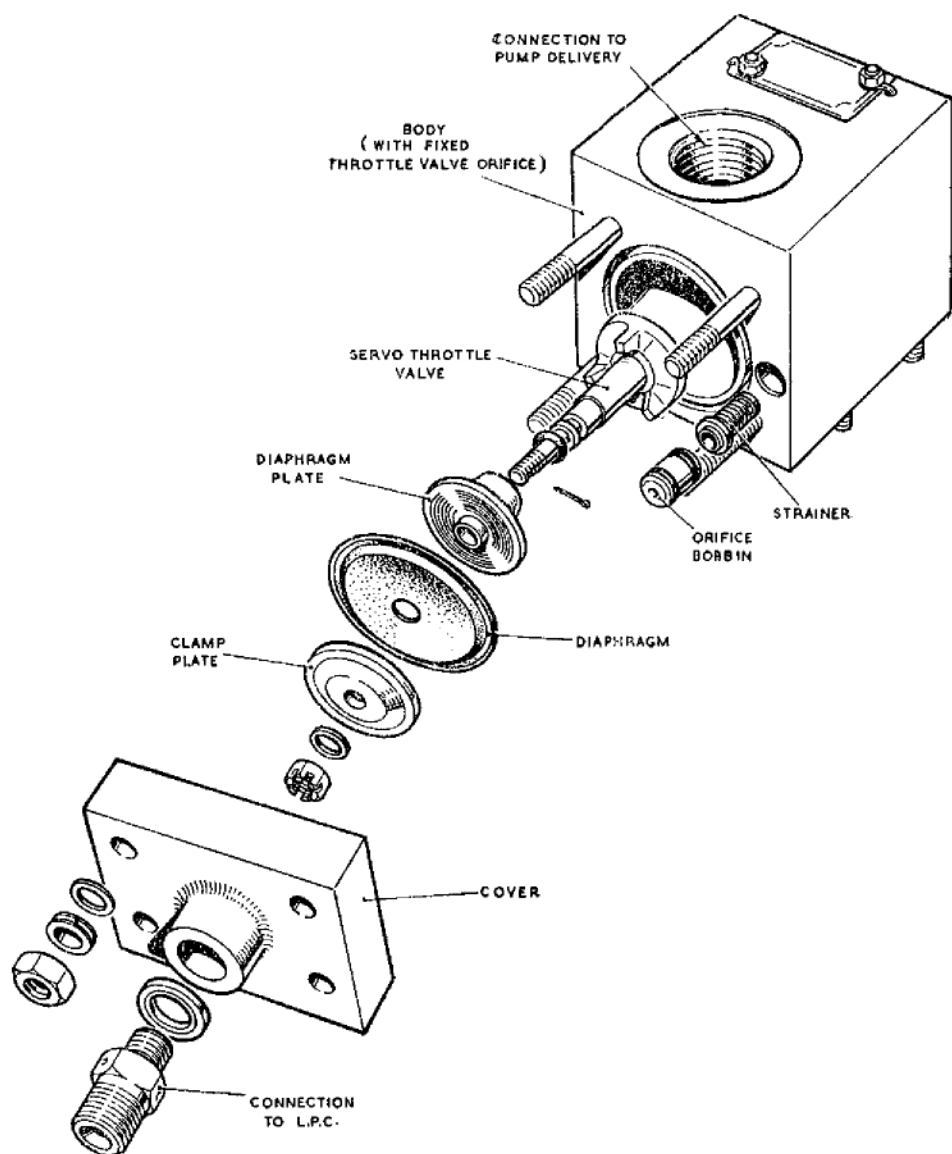


Fig. 1 Servo throttle valve, dismantled

T.282105 and assemble the diaphragm plate, a new diaphragm and the clamp plate to the valve stem in that order and secure them with the plain washer, slotted nut and split pin.

12. Insert the small strainer and a suitable blank bobbin with sealing rings in place of the normal internal orifice. Fit the cover to the body, ensure that the diaphragm and blank bobbin are correctly aligned, then secure them with washers and nuts.

13. Apply an air pressure of 20 lb/in^2 to the cover connection and immerse in kerosine for five minutes. There must be no internal or external leakage. Remove the cover and blank bobbin from the body.

Pre-assembly flow test

14. Using suitable fixtures, test the flow values of the internal orifice and the combined orifice and union at the following conditions:-

RESTRICTED

	<i>Pressure</i> (lb/in ²)	<i>Flow</i> (gal/h)
Internal orifice...	100	10.2 to 10.4
	400	20.6 to 20.8
	900	30.7 to 30.9
Combined orifice & union.	100	11.4 to 11.6
	400	23.0 to 23.2
	900	34.6 to 34.8

16. Fit the combined orifice and union with bonded seal to the cover and fit the cover to the body as described in para. 12.

17. Fit the outlet and inlet fuel connections, with their bonded seals, and tighten them.

Assembling

15. Fit the internal orifice and two sealing rings to the body, ensuring that the smaller bore of the orifice is uppermost.

Testing

18. Test the unit in conjunction with the L.P.C. as described in Sect. 8.

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