Chapter 16 DAMPER
Type No. 1.00471.001

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Introduction

1. This unit is secured to a main undercarriage uplock unit to damp the final upward movement of the leg before its engagement with the up-lock.

Description

2. A spring housing, drilled for attachment points to the uplock unit is fitted with a filler plug and houses a spring-loaded cylindrical piston operating over a fixed damping rod. This in turn is screwed into the upper end of the housing.

3. The piston operates through, and is retained by a sealed end-cap which is screwed into the spring housing to butt against a lower flange of the piston. A further flange at the upper end of the piston is slotted for the passage of fluid and fitted with a split piston ring for guidance in the bore of the spring housing. The inner and outer springs, which load the piston against the end-cap, seat against a spring seat and a spacer respectively.

4. Two small leak holes permit a limited flow of fluid in both directions through the damper rod head. A larger fluid passage permitting a flow from the upper to the lower side of the head during piston extension is provided by an axial and a diametral drilling intersecting at right angles. The axial drilling is counterbored to seat a ball valve which is retained in the end of the damper rod by a split pin. A small breather hole is provided at the upper end of the spring housing.

Principle of operation

5. As the undercarriage approaches the fully retracted position the main fitting contacts the damper piston, forcing it up. The ball valve is shut by the fluid force and the flow of fluid to the upper side of the damper head is confined to the two small holes. This slows the upward movement of the main fitting before the up-lock is engaged.

6. When the undercarriage is lowered, the springs extend the piston and internal pressure forces the ball valve from its seat, thus permitting free passage of fluid in addition to the two leak holes.

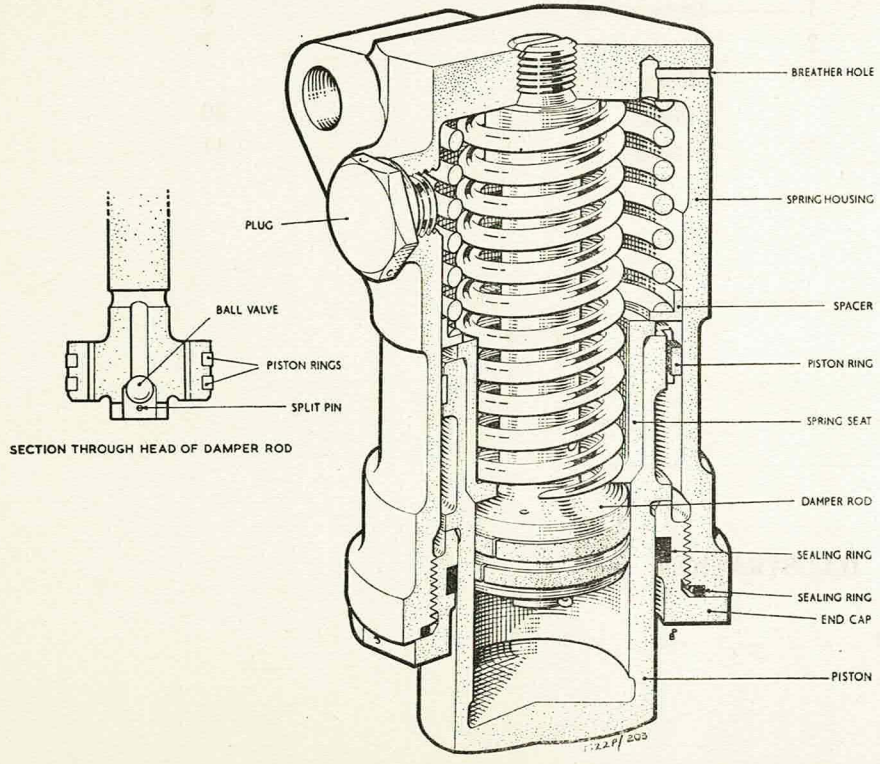

Fig. 1. Damper unit

TABLE 1

Special tool

Part No.	*Description*
03211TAO1	Sleeve—for assembly of piston rings and body.

SERVICING

Leakage

7. External leakage will indicate a faulty sealing ring which must be renewed. Internal leakage past the piston rings may be shown by a quick contraction of the damper under pressure. Renew the faulty ring.

Dismantling

8. (1) Unscrew the end cap and remove the sealing rings. Withdraw the piston from the spring housing and remove the piston ring.

(2) Remove the split pin from the damper rod to release the ball valve.

(3) Unscrew the damper rod and remove the rings from the damper head.

(4) Remove the spring seat, spacer and the two springs from the spring housing.

(5) Unscrew the blanking plug and its bonded seal from the housing.

Assembling

9. All sealing rings are to be lightly coated with Grease XG.315 (34B/9100919) before being assembled in the unit.

(1) Gap the piston rings to 0·009/0·012 in. removing the sharp edges at the gap on the flat faces only to $\frac{1}{64}$ in. max. radius.

(2) Fit the rings to the damper rod and insert the rod into the spring seat.

(3) Place the spacer on top of the spring seat and position the inner and outer springs on the spring seat and spacer respectively.

(4) Screw the damper rod sub-assembly into the housing. DO NOT lock the thread.

(5) Insert the ball valve into the damper rod seating and retain it with a split pin.

(6) Gap the piston ring to 0·009/0·012 in. removing the sharp edges at the gap on the flat faces only to $\frac{1}{64}$ in. max. radius. Fit the ring to the piston.

(7) Using the service assembly tool 03211TAO1 insert the piston into the body. Withdraw the service tool.

(8) Fit the two sealing rings to the end cap and screw it home into the spring housing.

(9) Position a bonded seal on the blanking plug and screw the plug home into the spring housing.

(10) After testing the unit wire-lock the blanking plug and the end cap to the housing. Finally lock the damper rod spigot by peening metal into the slot.

FILLING AND TESTING

Filling

10. (1) Remove the blanking plug and bonded seal and with the unit vertical fill with hydraulic fluid OM–15 (D.T.D.585).

(2) Compress the unit and allow the piston to extend freely. Top up with fluid. Repeat this operation several times to expel all air from below the level of the filler hole.

(3) With the unit vertical and fully compressed the oil should be level with the bottom of the filler hole.

(4) Fit the blanking plug and bonded seal.

Testing

11. (1) With the unit in the vertical position, compress the unit fully and release quickly. The unit should fully extend in a maximum of 3 seconds.

(2) With the unit still in the vertical position, compress the unit fully for a minimum of 15 seconds and release it quickly. The unit should be fully extended in a maximum of 10 seconds.