

Chapter 13

LOCK JACK

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Introduction

1. This jack consists of a piston operating in a cylinder, which is closed at one end by a plug and at the other by a gland assembly. A basic type is described in the chapter and the variants are detailed in the appendices.

DESCRIPTION

Cylinder assembly

2. The cylinder is closed at one end by a plug which is grooved for a sealing ring and

secured by a bush passing through two lugs. The opposite end houses a gland assembly, comprising a gland nut screwed into the cylinder to secure a spacer and a gland ring against a shoulder in the bore. The gland nut is fitted with a wiper ring. Two bosses formed on the cylinder receive the screwed connections 1 and 2, which consist of pipe adapters fitted with bonded seals.

Piston assembly

3. The piston head is integral with the piston rod and is fitted with a sealing ring and supporting split rings. The outer end of the rod is slotted to engage the tongues of a spanner grip and threaded for an attachment supplied by the aircraft manufacturer.

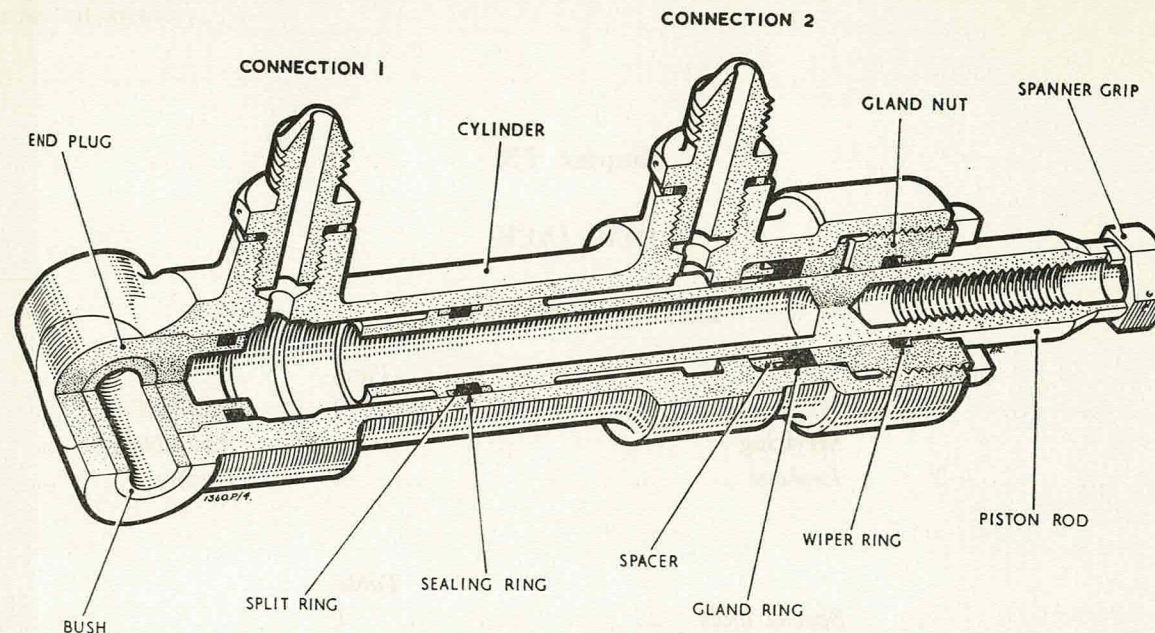


Fig. 1. Lock jack

TABLE 1

Special tools

Ref. No.	Part. No.	Description
27Q/	ST.1728	Drift for bush in cylinder and end plug
27Q/13609	ST.1921	"C" key spanner for gland nut
27Q/	03177TAO1	Assembly tool for gland ring
27Q/	03178TAO1	Assembly post for gland ring

SERVICING

Leakage

4. External leakage will indicate a faulty seal which must be renewed. Internal leakage past the sealing ring of the piston head will be shown by sluggish action of the jack

in service or loss of pressure under test. Renew the faulty sealing ring.

Dismantling

5. (1) Remove the connections 1 and 2.
- (2) Press out the bush and withdraw the end plug from the cylinder. Remove the sealing ring from the plug if necessary.
- (3) Unscrew the gland nut and slide it off the piston rod.
- (4) Push the piston rod out of the cylinder and remove the sealing ring and the split rings from the piston head.
- (5) Withdraw the gland ring and spacer from the cylinder.

Assembling

6. All sealing rings are to be lightly coated with Grease XG-315 (34B/9100519) before being assembled in the unit.

- (1) Fit the sealing ring and the supporting split rings to the piston head. If new split

rings are fitted, they are to be gapped 0-009 to 0-012 in. on assembly and the sharp edges at the gap, on the flat faces only, removed up to a maximum radius of $\frac{1}{64}$ in.

(2) Insert the piston assembly into the cylinder, rod end leading.

(3) Ensure that the sealing ring is fitted to the end plug and position the plug in the cylinder. Fit the bush, which is a press fit, through the plug and lugs on the cylinder end, and check ream the bore of the bush $\frac{1}{4}$ in. diameter Class "B" (Newall).

(4) Slide the spacer and the gland ring over the piston rod and locate them against the shoulder in the cylinder.

(5) Pack the bore of the gland nut with Grease XG-315 and fit the wiper ring to the nut. Slide the gland nut over the piston rod and screw it tightly into the cylinder.

(6) Fit the spanner grip to the piston rod.

Note . . .

The spanner grip must be suitably secured to the rod for transit and storage purposes.

RESTRICTED

(7) Fit a bonded seal to each of the pipe adapters for the connections 1 and 2 and screw them into their respective cylinder bosses.

(8) After final assembly and test, wire-lock each pipe adapter to the adjacent cylinder boss.

Testing

7. A static hydraulic test rig and a power pump rig fitted with a pump capable of delivering 3.45 gall per minute, are required. The pipes between the test rigs and the jack are to be $\frac{3}{8}$ in. outside diameter for metal pipes or $\frac{3}{8}$ in. nominal for flexible hose. Before test-

ing, the jack is to be hydraulically-operated at least six times in each direction to expel all air.

(1) Connect the supply line of the static hydraulic test rig to connection 1 and apply pressure to fully extend the jack. Gradually increase the pressure to 3,000 lb/in². Leakage is not permissible. Release the pressure and disconnect the supply line.

(2) Connect the supply line to connection 2 and apply pressure to fully close the jack. Gradually increase the pressure to 3,000 lb/in². Leakage is not permissible. Release the pressure and disconnect the supply line.

(3) Connect the supply line of the power pump rig to connection 1 and operate the rig to fully extend the jack. The pressure required to extend the jack must not exceed 100 lb/in² and the time required must not exceed 2 seconds. Release the pressure and disconnect the supply line.

(4) Connect the supply line to connection 2 and operate the rig to fully close the jack. The pressure required to close the jack must not exceed 150 lb/in² and the time required must not exceed 3 seconds. Release the pressure and disconnect the supply line.

Appendix 1

LOCK JACK

Type No. 1.00443.002

Introduction

1. This jack is identical to the type described in the chapter.

Installation

2. When installing the jack, the dimension with the piston rod in the extended position

is 7.19 to 7.31 in. measured from the pin centre of the bush to the outer face of the spanner grip. The piston travel is 1.70 to 1.80 in.

Appendix 2

LOCK JACK

Type No. 1.00442.002

Introduction

1. This jack is identical to the type described in the chapter, except for dimensional differences in the cylinder and piston rod giving a shorter piston travel.

Installation

2. When installing the jack, the dimension with the piston rod in the extended position is 5.29 to 5.41 in. measured from the pin

centre of the bush to the outer face of the spanner grip. The piston travel is 0.75 to 0.85 in.



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