AP 105D-1304-1

HUNTER

LOCKED RELEASE UNIT

FAIREY HYDRAULICS LTD.

PART No. CH23521

GENERAL AND TECHNICAL INFORMATION

BY COMMAND OF THE DEFENCE COUNCIL

Frank Cooper.

Ministry of Defence

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Service users should send their comments through the channel prescribed for that purpose in :
AP(N)140 Chap.1 Annex A (RN)
AP 100B–01, Order 0504 (RAF)

MODIFICATIONS

The following modifications are included in this publication :–

FHB 171A

CAUTIONARY NOTICE

Acid damage

The cleaning fluid for many hydraulic components is trichloroethane or some other form of chlorinated solvent. If traces of solvent are left in components they can combine with minute amounts of water, present in operational hydraulic systems, to form hydrochloric acid. It is essential that when hydraulic components are cleaned with a chlorinated solvent all traces of the solvent must be removed from internal surfaces and passages, before assembly, using the air blast method or other effective means.

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Leading Particulars

Locked release unit CH 23521	Ref. No. 27KF/3065
Overall dimensions (approx.)–	
Length	5.0 in
Width	2.1 in
Height	2.8 in
Weight (approx.)	1.2 lb

INTRODUCTION

1. A release unit normally provides automatic release of the jack ram of a control unit when the fluid pressure supply fails or is turned off i.e., on reversion to manual. The locked release unit, fitted to control units embodying an alternative means of reversion but still retaining the earlier notched ram, has no other function than that of providing a permanent anchorage for the ram.

DESCRIPTION

2. The chamber forming the upper part of the release unit body houses a spring loaded piston. The inner bore of an adapter which is screwed into one end of the chamber and secured by a lockwasher, forms the cylinder for the head of the piston. A bearing fitted into the other end of the chamber and located by a circlip, serves to support the end of the piston and retain the piston spring.

3. A hinge pin, the ends of which are expanded to retain it in the unit body, provides the pivot for a pawl. The spherical head of the pawl engages in a hole in the piston and the hooked lower part is shaped to fit the notch of a jack ram, the jack ram locating in the bores of the lower part of the body when the unit is mounted in relation to a jack.

4. Two trunnions, one on each side of the body, carry bearing races and form the unit attachment points; the trunnions are grooved at their extreme ends to accommodate the bearing retaining circlips. A locking bolt, screwed into the body end adapter, depresses the piston against its spring and, when the unit is mounted on a jack, retains the pawl in engagement with the ram notch.

SERVICING

SPECIAL TOOLS

5. The following special tools are required when servicing the unit:–

Description	Part No.	Ref. No.
Spring compressing tool	FHQ 153	27KF/684
Vice blocks	FHQ 154	27KF/685
Hinge pin extracting tool	FHQ 155	27KF/686
Hinge pin expanding tool	FHQ 156	27KF/687
Reference ram	FHQ 157	27KF/691

DISMANTLING

6. Support the unit between vice blocks FHQ 154 as necessary and dismantle as follows:–

(1) Disengage the circlips and remove the bearing races from the body trunnions.

(2) Unscrew and remove the unit locking bolt.

(3) Using the spring compressing tool FHQ 153, press the end bearing into the body and remove the circlip. Slacken the tool and remove the bearing, piston and spring.

(4) Unscrew the adapter from the end of the body and remove it and the locking washer.

(5) Using the hinge pin extracting tool, press the hinge pin out of the body and withdraw the pawl.

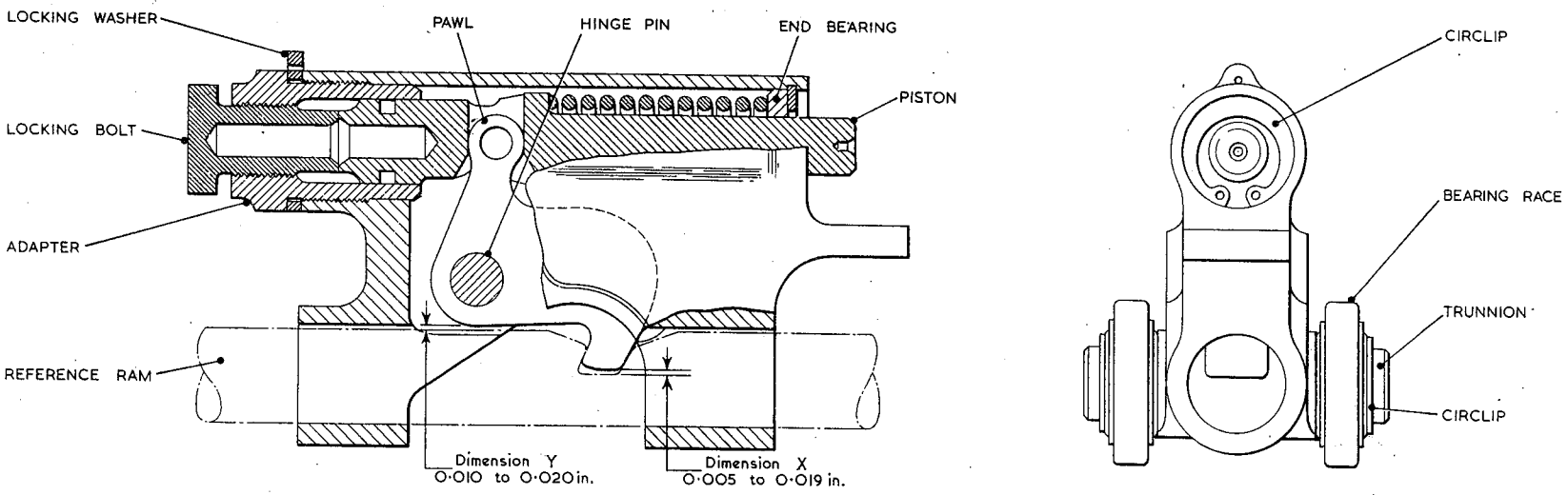

Fig.1 – Locked release unit

EXAMINING

7. Wash all parts, except the pre-packed bearings, in an approved cleaning fluid, and examine them for serviceability. Fits, clearances and repair tolerances are given in A.P. 105D–1304–6.

Note . . .

The pawl profile cannot be checked dimensionally. If the pawl is generally serviceable it should be accepted for assembly; the accuracy of the profile will be revealed during testing (para. 9).

ASSEMBLING

8. During assembly, pack the pawl hinge pin housing and liberally coat all internal parts with grease XG~~–275~~. Support the unit body between vice blocks FHQ 154 as necessary and assemble as follows:–

(1) Position a new locking washer on the body end adapter, screw in and tighten the adapter.

(2) Insert the piston and temporarily position the end bearing, ensure that the piston will stroke and rotate freely, then remove the two parts.

(3) Fit the pawl and pawl hinge pin but do not expand the pin.

(4) Re-insert the piston, locating the pawl hole, bevel downwards, with the head of the pawl.

(5) Insert the piston spring and, using tool FHQ 153, fit the end bearing and circlip.

(6) Screw the locking bolt into the adapter, sufficient only to ensure that it is retained.

TESTING

9. The unit is to be tested and the pawl profile checked as follows:–

(1) Slacken the locking bolt to lift the pawl and allow insertion of reference ram FHQ 157.

(2) Lock the pawl in the ram notch by tightening the locking bolt to a torque loading of approximately 60 lb. in. Check that dimensions 'X' and 'Y' are within the limits given (Fig. 1).

(3) Slacken the locking bolt and remove the reference ram, re-insert the bolt sufficient to retain.

AFTER TESTING

10. (1) Lock the adapter by peening the locking washer into the slots in the body and the adapter.

(2) Expand the ends of the pawl hinge pin to a minimum diameter of 0.42 in., using tool FHQ 156. Finish the ends of the pin flush with the unit body.

(3) Press the bearing races on to the body

(3) Press the bearing races on to the body trunnions and fit the retaining circlips.

(4) Grease the exposed portion of the pawl and the unit lower bores with grease XG–275.

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