

## DESCRIPTION AND MAINTENANCE INSTRUCTIONS

### PRECAUTIONARY MEASURES

## HYDRAULIC SYSTEMS AND COMPONENTS

(This EO replaces EO 05-1-2A dated 25 Oct 60)

#### PURPOSE

1 This EO establishes the requirement for testing hydraulic systems after the removal, dismantling, replacement and adjustment of the hydraulic system or components and also the internal preservation medium to be used when preparing hydraulic components for shipping, storage and off overhaul.

#### NOTE

Procedures for removal, dismantling, replacement, adjustment and re-assembly of specific hydraulic systems/components are to be in accordance with the relevant EO.

#### GENERAL

2 Most aircraft accidents and incidents resulting from hydraulic systems failures can be prevented provided the prescribed maintenance practices are adhered to. Cleanliness and care in all phases of handling hydraulic components/fluids cannot be over-emphasized.

#### HYDRAULIC FLUIDS

3 Care is to be taken that the correct hydraulic fluid, for the system concerned is used in accordance with EO 45-1-2, EO 45-1-4 and Figure 1 of this EO.

4 The following procedures are to be observed when hydraulic systems are being checked.

- (a) Only clean containers and new clean hydraulic fluid to be used when "topping up".
- (b) If contamination is detected in the system, the system is to be drained, flushed, and the filter elements replaced. Refill the system with clean fluid. Operate the system, re-examine the filters, and if contamination is still evident, repeat the flushing procedure.
- (c) A close check of the filters and filter elements is to be maintained until such times as it can be established the contamination has been cleared up.

#### NOTE

Hydraulic fluid suspected of contamination by mixing with fluid, other than the approved preservative, is to be discarded.

#### GROUND TESTS

5 Ground tests are to be performed to ensure the correct operation of the aircraft components when any of the following conditions have occurred; removal, dismantling, replacement and adjustment of hydraulic system parts or components and/or refilling of the hydraulic system.

Hydraulic Systems Using	Hydraulic Fluids to be Used	Preservative
(a) Synthetic Rubber Seals	34A/9150-21-578-7501 Spec MIL-H-5606A NATO Symbol H-515	34A/9150-00-265-9412 Spec MIL-H-6083B Type 1 NATO Symbol C-635
(b) Natural Rubber Seals	34A/9150-21-802-4374 Spec. DTD 900/4081 NATO Symbol H-534	No preservative required, this hydraulic fluid is adequate

Figure 1 (Issue 2)

### PIPE LINES

6 Areas adjacent to end fittings, on the heel of bends, and where clamps are attached are to be carefully inspected for nicks or cracks. Hydraulic pipe lines are to be removed from service if they are scratched or nicked on the heel of bends.

7 When it becomes necessary to disconnect hydraulic pipe lines or remove fittings from aircraft components, protective caps/plugs shall be fitted to prevent foreign matter from entering the system. Approved, caps/plugs, protective, dust and moisture seal, for the RCAF are listed in CAP 10, Section 40D. Wherever possible caps/plugs should not be removed until immediately prior to connecting pipe lines.

#### NOTE

Do not use cloth, tape, cork, paper or any composition that will crumble or leave residue in the openings.

8 When hydraulic system components that do not affect the airworthiness or the role of the aircraft are removed, the aircraft may fly providing all hydraulic lines are properly blanked off with approved screw type plugs or blanking caps. These caps/plugs are to be of sufficient strength to stand the pressure of the system. Approved blanking plugs for the RCAF are listed in CAP 10, Section 28. Following installation of the cap/plug, a pressure test is to be carried out to ensure that there is no leakage around the blanked off lines. Pressure tests are to be accomplished by means of an appropriate hydraulic test stand. However, where certain checks and/or conditions require the pressure of the aircraft's hydraulic system, an engine run-up is to be carried out.

#### **WARNING**

Hydraulic lines manufactured locally by a unit are to be thoroughly flushed and pressure tested prior to installation as indicated in EO 05-1-3/12, and properly identify these lines in accordance with EO 05-1-2Y.

### HYDRAULIC ACTUATORS

9 During inspection, maintenance, or when working in close proximity to hydraulic actuators, extreme care must be taken to prevent damage to the exposed portions of the piston rod. Nicked or scratched piston rod surfaces will cause seal damage. Piston rods having visible nicks and scratches are to be removed and returned for repair. The procedures of EO 05-1-2Z, are to apply when replacing hydraulic system seals.

## WEATHERIZATION AND PRESERVATION

10 Procedures for weatherization, marking and internal preservation of hydraulic components shall be carried out in accordance with EO 15-70-2A.

### GENERAL INSTRUCTIONS

11 The washing and cleaning of hydraulic components can best be accomplished when the following cleaning agents are utilized.

(a) For component/hydraulic systems using a mineral base hydraulic fluid, cleaner fluid 33C/6850-21-570-1570 is recommended.

(b) For component/hydraulic systems using a vegetable base hydraulic fluid, alcohol or its equivalent is recommended

ISSUED ON AUTHORITY OF THE CHIEF OF THE AIR STAFF

Prepared by:  
AMC/SAMO/CEng

