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YAK-52

REPLACEMENT OF PNEUMATIC BRAKING SYSTEM WITH A HYDRAULIC DISC BRAKE SYSTEM

Models Affected: Yak-52 aircraft equipped with pneumatic braking system

RECORD OF PAGE ISSUE

PAGE	ISSUE	PAGE	ISSUE	PAGE	ISSUE	PAGE	ISSUE	PAGE	ISSUE
1									
2									
3									

TABLE OF CONTENTS

I. SAFETY PRECAUTIONS

1. Jacking the aircraft – It will be necessary to jack the aircraft in order to perform some of the work. Follow the jacking procedures as laid out in the Yak-52 service manuals.
2. The work should be carried out by persons familiar with the Yak-52 aircraft.
3. The general safety precautions as described in the Yak-52 service manual should be followed.

II. INTRODUCTION

This is an optional service bulletin describes the installation of a hydraulic brake system for the Yak-52 aircraft to replace the pneumatic system. The reasons for the change are as follows:

- The continued availability and cost of parts for servicing the Yak-52 pneumatic system. The hydraulic brake system components are readily available from several sources and are used by many other aircraft.
- The cost of replacement parts. The typical cost of brake pad replacement is less than $50.00 for the hydraulic system and several hundred dollars for the pneumatic system.
- The service life of the hydraulic system is many times longer.
- The time to perform the required maintenance is considerably less than the pneumatic system.
- The level of training for the hydraulic system is less than for hydraulic system.
- The hydraulic system provides continuous braking without the fading associated with heavy use of the pneumatic brake system
- The hydraulic system provides for easier steering of the aircraft on the ground
- The hydraulic system uses toe operated braking that is compatible with most of the aircraft in use through out the world today.

III. INSTALLATION OF HYDRAULIC KIT

NOTE: The installation requires the disassembly and replacement of the main landing gear struts. It will also require the removal of the removal of the brake handles on the control sticks, the differential braking valve, the proportional air valve and the replacement of the rudder pedals. Reference to the Yak-52 parts manual and the Yak-52 service manual will be made throughout this bulletin.

The following items are removed from the pneumatic system:

NOTE: reference Figure 7.1 in the parts manual

1. Item 115 PU 8 brake valve and linkage to the rudder bar.
2. Item 116 Electromagnetic Valve
3. Item 117 PU 7 Reducing Valve
4. Air lines Items 42, 43 & 47
5. Air Lines 44, 45 & 46
6. Two Item 121 Non-Return Valve
7. Cap the air system at the "T" fittings where airlines Items 44 and 46 were removed.
8. Install Adapters 6X.250 on the ends of Item 38 left brake line and Item 39 right brake line
9. Install Parking brake valve P/N xxxyyy.

1. Jack and secure the aircraft per section
2. Remove left and right main tires.
3. Remove left and right main brakes.

4. Remove closeout plate above the landing gear strut exposing hose that runs to main wheel brakes (Figure 1).

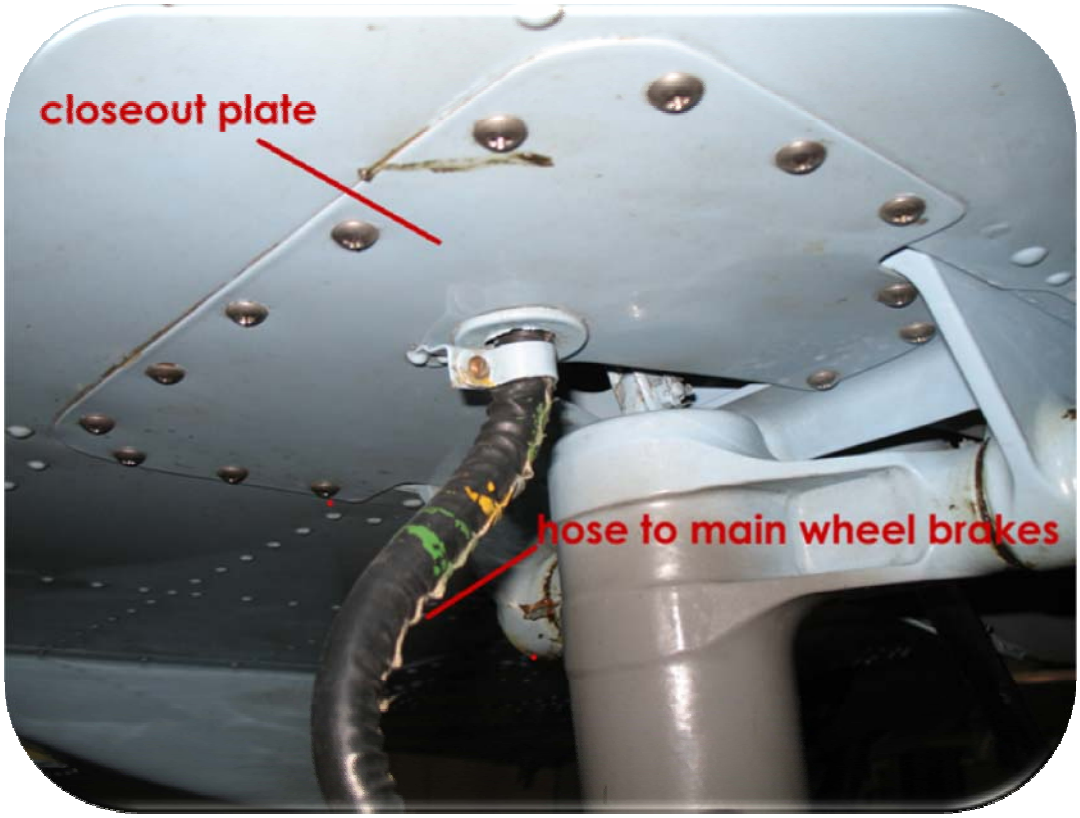

Figure 1

5. Remove hose assembly and discard.
6. Relieve pressure in strut.
7. Using caution, disassemble scissors links and remove (Figure 2).

Figure 2

8. Remove tapered bolt securing axle casting to bottom of strut (Figure 2). Gently heat casting with torch and drive it off the strut.
9. Replace axle casting with new casting provided in kit.
10. Heat casting and push into place.
11. Using a tapered reamer, re-ream and align precisely, as this controls toe in and toe out of the wheel.
12. Replace and tighten tapered bolt.
13. Reinstall scissors links.
14. Install new brake line provided in kit.
15. Install new wheel brake assembly provided in kit.
16. Installation complete.

IV. LIST OF NECESSARY PARTS AND TOOLS

V. GENERAL DATA

Schematic drawing
Rudder bar modification drawing
Rudder pedal installation drawing
Hydraulic reservoir installation drawing
Wheel installation drawing