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SERVICE BULLETIN **SB013-93**

Subject: Matco Brake Master Cylinders / Matco MC-3 cylinder shafts
Date: 25th September, 1999
Ref: Construction manual, chapters 3 & 5 standard, chapter 2 fast build
Pages: 2
Status: Advisory

Since Lancair utilizes the Matco style brakes, master cylinders and slave cylinders, their recent service bulletin is being forwarded to all of our customers.

VENDOR SUBJECT: DUAL MASTER CYLINDER BRAKING SYSTEMS:

Customer feedback regarding the dual master cylinder braking system has shown that in specific circumstances, the check valve will stay activated after releasing the brake pedal.

This occurs when the pilot activates the master cylinder by pressing the brake pedals, then the copilot activates the slave cylinder. When the pilot releases the brake pedals followed by the copilot, the hydraulic fluid heated by the brakes creates back pressure through the lines. This back pressure is sufficient to overcome the shaft spring which normally opens the check valve. To release this back pressure, the brake bleeder valve must be opened.

By placing a 7/8" O.D. x 5/8" I.D. tube over the shaft spring, the passage button forces the check valve open when t-he brake pedal is released. The tube should fit snugly between the passage button and the reservoir cap as shown on the attached drawing. It is recommended that four small slots (.25 - .375 long) be cut in the bottom end of the tube to allow free passage of fluid through the reservoir.

(Note from Lancair:)
Having performed one of these installations, we determined that the 7/8"O.D. tube can, in some instances based on internal part variations, be too large. The tube must rest on top of the plunger assembly at the bottom of the piston. We used a smaller diameter tube for our modification.

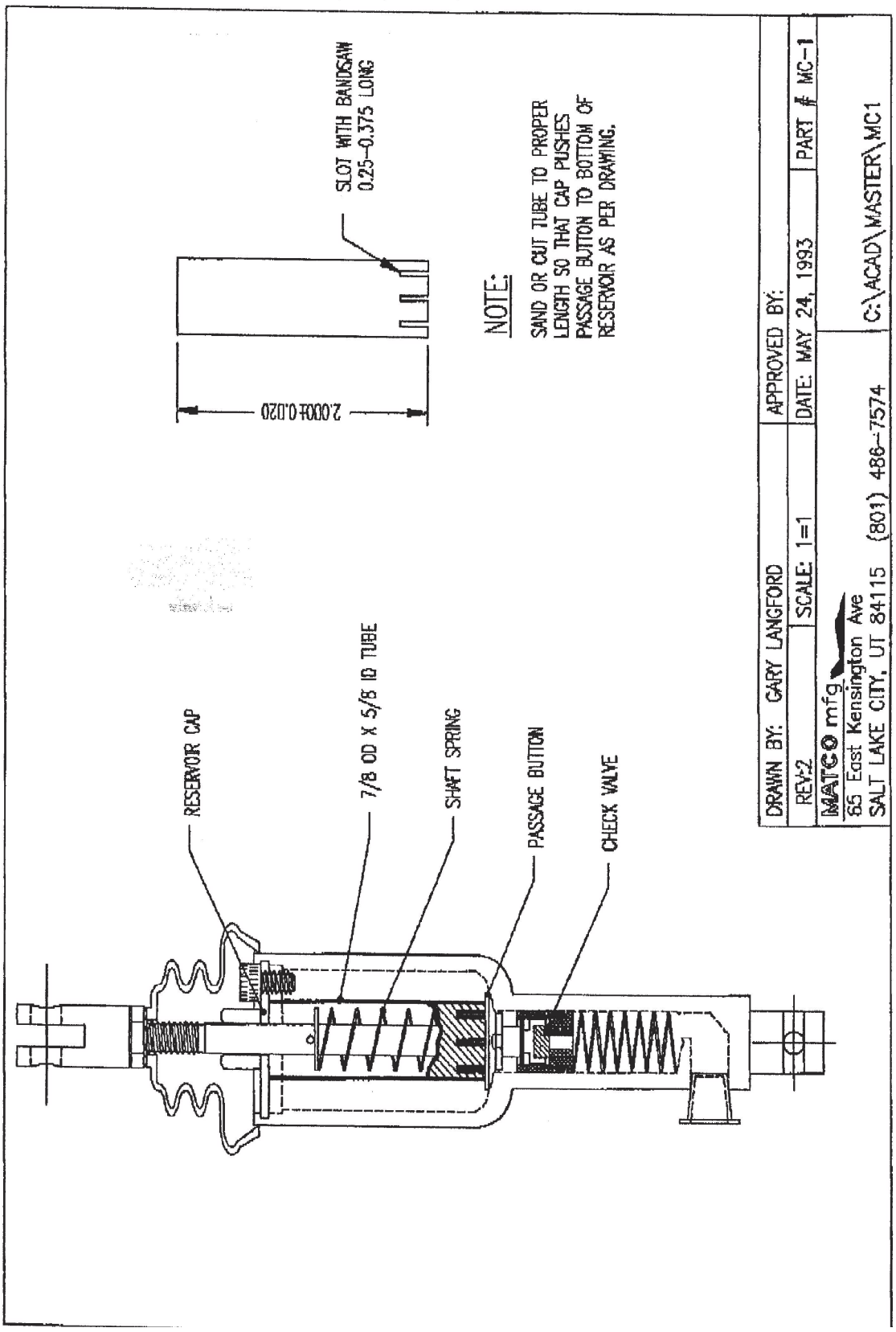
Matco letter dated: August 19 1993:

VENDOR SUBJECT: MC-3 MASTER CYLINDERS LEAKING AROUND SHAFT.

Observation in the field has found some MC-3 master cylinders (remote reservoir type) that have leaks around the shaft with some installations. We have noticed that the problem is more chronic with an installation in which a side load is placed on the shaft when activated. For those of you who may experience this problem, you may install a larger O-ring in the sleeve which rides on the shaft. A 6mm x 2mm metric 0-ring has a smaller inside dimension thus sealing the shaft better.

Installation of the new 0-ring should be done in the following manner to avoid cutting the 0-ring when reinstalling the shaft. Remove the small screw in the master cylinder nearest where the shaft enters the master cylinder (part #15 on drawing). Pull on the shaft and the entire shaft, sleeve, and piston will come out. Remove the clevis and lock nut from the unthreaded end of the shaft and slide the sleeve off the shaft past the threads. The 0-ring to be replaced can be seen just inside the sleeve. Replace this 0-ring with a 6mm x 2mm O-ring. To reinstall the shaft, you should rub the threaded end in paraffin to fill up the thread valleys. Apply vaseline or similar, on the shaft and gently insert the shaft through the sleeve sliding it carefully past the 0-ring. When the lock nut is reinstalled on the shaft, it will clean off the paraffin. Re-assemble by sliding the shaft assembly into master cylinder bore and tightening screw.

Questions regarding this modification can be referred to the technical support department of MATCO Mfg, at 65 E. Kensington Ave., Salt Lake City, UT 84115 or phone (801) 486.7574.


SLOT WITH BANDSAW
0.25-0.375 LONG
2.000±0.020
NOTE:
SAND OR CUT TUBE TO PROPER LENGTH SO THAT CAP PUSHES PASSAGE BUTTON TO BOTTOM OF RESERVOIR AS PER DRAWING.
RESERVOIR CAP
7/8 OD X 5/8 ID TUBE
SHAFT SPRING
PASSAGE BUTTON
CHECK VALVE
DRAWN BY: GARY LANGFORD
APPROVED BY:
REV:2
SCALE: 1=1
DATE: MAY 24, 1993
PART # MC-1
MATCO mfg
65 East Kensington Ave
SALT LAKE CITY, UT 84115 (801) 486-7574
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