SUBJECT: LANDING GEAR SHOCK DISC RETROFIT

MODELS AFFECTED: M20, S/N 1001 thru 1200  
M20A, S/N 1201 thru 1700  
M20B, S/N 1701 thru 1851, 1853 thru 1923

TIME OF COMPLIANCE: At owner's option.

INTRODUCTION: This service bulletin authorizes the owners of M20, M20A, and M20B aircraft to modify their landing gear to allow installation of Lord shock discs on nose and/or main gears.

INSTRUCTION I: NOSE GEAR MODIFICATION AND SHOCK DISC RETROFIT  
(See Figure 1.)

1. Place aircraft on jacks.
2. Remove nose wheel and spindle assembly.
3. Use Mooney shock disc replacement tool (ME-120) to remove collar bolt, collar, link assembly, and four Firestone shock discs and spacers. (See Note No. 2 at end of Instruction II for information on ME-120 tool.)
4. Remove exhaust cavity fairings.
5. Remove nose support V-truss (P/N 5015) and bushings.
6. Install S.B. Kit No. M20-161-1 (See Figure 1).
   a. Install nose support V-truss (P/N 540001-503) and enclosed 914007 bushings.
   b. Install (3) Lord shock discs (P/N 530021) on shock link assembly (P/N 540015-1).
   c. Install spacer (P/N 530023-1) on top disc with standoff block facing to rear of the gear.
   d. Install shock link, discs, and spacer on nose gear in reverse sequence of removal.
   e. Install collar (P/N 510027-7) and new bolt (AN 5-16A).
7. Reinstall spindle and nose wheel assembly, exhaust cavity fairings, and check security of all parts. Lubricate gear. (Proceed with Instruction III, if Instruction II is not to be complied with.)
INSTRUCTION II: MAIN GEARS SHOCK DISC RETROFIT (See Figure 2)

1. Remove spindle to shock link attach bolt and hydraulic brake lines. Swing main gear wheels forward.

2. Use Mooney Shock Disc Tool ME-121 to remove bolt and collar (P/N 5131). Remove shock link assemblies (P/N 520003-3) from main gears. (See Note No. 2 at end of this instruction for information on ME-121 tool.)

3. Install S.B. Kit No. M20-161-2 (See Figure 2).
   a. Install four Lord shock discs (P/N 530021) on each shock link assembly (P/N 520010-1).
   b. Install spacer assembly (P/N 510047-1) on top of disc with standoff facing forward on gear.
   c. Install shock link assemblies on gears in reverse sequence of removal.
   d. Install collar P/N 510049 Basic (with bevel facing down and forward) and new bolt P/N 914003-501.
   e. Reinstall spindle attach bolt.

4. Rework bracket (P/N 510013) by removing .3 IN. x .3 IN. of material from corner as shown in Figure 3. Partially retract gear and check clearance between reworked bracket P/N 510013 and 510047-1 spacer assembly. Minimum clearance between these parts is to be .10 inch.

   NOTE NO. 1: Bracket (P/N 510046) may be ordered separately and installed in lieu of reworking P/N 510013; however, replacement of this bracket may entail extensive work.

5. Check security of all parts. Lubricate gear.

6. Reconnect hydraulic brake lines and bleed brakes.


7. Proceed with Instruction III.

INSTRUCTION III: GEAR-DOWN PRELOAD AND GEAR RETRACTION TEST

1. Upon completion of shock disc retrofit of nose and/or main gears check gear-down preload in accordance with Mooney Service & Maintenance Manual.

2. Test operate landing gear retraction system including warning lights and warning horn operation.
3. Check gear down-and-locked. Remove jacks and return aircraft to service.

4. Fill out and mail Service Bulletin Compliance card.

SERVICE BULLETIN KITS:

**SERVICE BULLETIN KIT: M20-161-1**
(Instruction I, Nose Gear)

- AN 5-16A Collar bolt ........................................... (1)
- 510027-7 Collar .................................................. (1)
- 530023-1 Spacer Assembly ................................... (1)
- 530021 Lord Shock Discs .................................. (3)
- 540015-1 Shock Link ........................................... (1)
- 540001-503 Nose Support V-truss ......................... (1)
- 914007-4 Bushings ............................................. (1)
- 914007-2 Bushings ............................................. (2)

The following parts will be removed and will not be reinstalled:
- Bolt through Collar
- 5131 Collar
- 510008 Shock Pad
- 3CRE-714 Firestone Discs (4)
- 510021 Spacers (3)
- 510022 Spacer
- 540005-3 Shock Link
- 5015 Nose Support V-truss and bushings

**SERVICE BULLETIN KIT: M20-161-2**
(Instruction II, Main Gears)

- 914003-501 Collar Bolt ......................................... (2)
- 510049-Basic Collar ........................................... (2)
- 510047-1 Spacer Assembly ................................ (2)
- 530021 Lord Shock Discs .................................. (8)
- 520010-1 Shock Link ........................................... (2)

The following parts will be removed and will not be reinstalled:
- Bolt through Collar (2)
- 5131 Collar (2)
- 510008 Shock Pad (2)
- 510021 Spacers (8)
- 3CRE-714 Firestone Discs (10)
- 510022 Spacers (2)
- 520003-3 Shock Link (2)

These service bulletin kits may be procured from your local Mooney distributor. No direct factory orders will be accepted.
FIGURE 3  
REWORK OF BRACKET  P/N 510013.

NOTE: 510046 BRACKET MAY BE USED INSTEAD OF REWORK.