

SUBJECT: CARBURETOR AND FUEL SYSTEM MODIFICATIONS

MODELS AFFECTED:

Instruction I: Forney Models F-1 and F-1A (All aircraft using Continental C-90 engines equipped with the Marvel-Schebler Model MA-3-SPA carburetor).

Instructions I, II, & III Forney Model F-1A, S/N 5764 only.
Alon Model A-2, S/N A-2 thru A-245.
Alon & Mooney Models A-2A, S/N B-246 thru B-298.
Mooney Model M10 S/N 690001 thru 690008.

TIME OF COMPLIANCE: MANDATORY compliance within the next 50 hours.

INTRODUCTION: Certain combinations of atmospheric conditions, aircraft attitudes, fuel levels and/or normal flight maneuvers, may result in a condition where fuel starvation can occur. To preclude this possibility, accomplish applicable instructions.

INSTRUCTION I: Carburetor Modification - Change the float valve and seat from a .125 to .140 diameter assembly. THIS MUST BE ACCOMPLISHED BY AN FAA APPROVED REPAIR FACILITY.

Step 1 Remove the carburetor (Part List No. 10-4252) from the C-90 engine in accordance with the Continental Service and Overhaul "C" series engine manual.

Step 2 Replace the float valve and seat assembly with a Marvel-Schebler P/N ACX-1339-233 assembly. These assemblies are matched sets, pressure tested, and must not be interchanged.

NOTE: For assembly and disassembly instructions, refer to Marvel-Schebler Model MA-3-SPA Aircraft Carburetor Overhaul Instructions.

Step 3 Restamp the reworked carburetor (Part List No. 10-4252) to read "Part List No. 10-4252-1".

Step 4 Reinstall carburetor in accordance with the Continental Service and Overhaul "C" series engine manual.

INSTRUCTION II: Fuel System Modifications - Modify the fuel tank, relocate the fuel filter and replace all fuel lines and fuel fittings between the fuselage tank and the carburetor.

Step 1 Modification of the fuselage tank:

- a. Removal of the fuselage fuel tank (recommended to facilitate rework).

Step 1 cont...

- a.
 1. Remove instrument panels and control wheels with control wheel shafts.
 2. Disconnect clamps retaining engine controls to fuel tank.
 3. Drain fuselage fuel tank.
 4. Disconnect fuel lines at tank fittings.
 5. Remove filler cap.
 6. Remove screws securing tank.
 7. Place control column in full forward position.
 8. Lower tank and pull tank aft.
 9. Remove all fittings from tank.
- b. Modification of fuel tank outlet fitting.
 1. Remove fitting by cutting 1.30 X 2.80 inch hole as shown on Figure 1.
 2. Remove excess weld of existing tank fitting and install 610230-1 nut plate assembly (See Figure 2) with two No. 3 flush rivets.
 3. Thoroughly clean tank, removing all burrs and metal shavings.
 4. Position P/N 610227-1 fuel tank fitting assembly on 1.30 X 2.80 cutout as shown in Figure 2.
 5. Apply PRC 1321-B sealant, install P/N 610227-9 gasket, NAS 221-10 screw, AN960-516 washer, and MS 29513-009 O-ring as shown and noted in Figure 2.
 6. Cap fittings & pressure test tank for leaks with 2.0 psi air.
- c. Install AN911-3D nipple, 9239B-3PP valve, and AN816-6D nipple (Refer to Figure 3).
- d. Reinstall tank in aircraft (if removed).
- e. Reinstall instrument panels, control wheels, and shafts in reverse sequence of removal. Check for clearance.

NOTE: Install new P/N 610229 fuselage tank support strap supplied in Service Bulletin Kit. Use available hardware from existing tank support strap.

Step 2

Installation of firewall plate:

- a. Locate firewall plate S.B. A-19-9 as shown on Figures 3 and 4, on forward side of firewall, 1.9 inches below rivet line of inside firewall stiffener (new location at Water Line -13.3), and 1.1 inches inboard of inboard AN-4 bolt which attaches the fuel filter (at butt line 1.1 inches right hand side).
- b. Cut a 2.3 X 2.3 inch hole (radius bottom to match A-19-9 plate) centered at this location as shown on Figures 3 and 4.
- c. Center firewall plate on cutout and back-drill into firewall, thru existing holes on S.B. A-19-9 plate, eight .166/.170

Step 2 cont...

- c. diameter holes. Remove all sharp edges and burrs.
- d. Apply PRC 1902 primer and PRC 1955 sealant to firewall skin outer faying surfaces around attaching holes, and install S.B. A-19-9 plate attached with eight (8) each AN515-8R8 screws, AN960-8 washers, and AN365-832 nuts (Refer to Figure 4).
- e. Plug existing fuel line hole in firewall with AN4-3A bolt, two AN970-4 washers, and AN365-428 nut.

Step 3**Relocation of fuel filter:**

- a. Remove all fittings and hardware attached to the fuel filter.
- b. Remove fuel filter and plug two (2) holes on firewall by installing on each hole an AN4-3A bolt, AN960-4 washers (2), and AN365-428 nut.
- c. Relocate fuel filter by reinstalling with available hardware 3.7 inches below present location.

NOTE: This location is 3.0 inches below inside firewall stiffener rivet line (at Water Line -14.4) as shown on Figure 3; inboard and outboard location remains unchanged at butt line 3.0 left hand side (center line of fuel filter).

- d. Replace fuel drain pipe with 1/8 NPT pipe and coupling.
- e. Rotate the bottom of fuel filter 180° so as to allow the fuel filter drain line to match the existing cutout thru the cowling.
- f. Install MS21919 DG6 clamp (fuel filter support) on drain pipe and cup on firewall with attaching hardware as shown on Figure 3.
- g. Install fuel fittings on filter and firewall as shown on Figure 3.

Fuel line installation (Refer to Figures 3 and 4).

- a. Install fuel line P/N 610226-1 between fuselage tank and firewall with hardware as noted on Figure 3.
- b. Install fuel line P/N 610188-65 between firewall and fuel filter.
- c. Leak-check all connections.

Step 4 cont...

- d. Replace P/N 610188-45 fuel line from filter to carburetor. Routing of this fuel line shall be such that uniform slope upward is maintained without high or low spots from the fuel filter to the carburetor.
- e. Replace P/N 660170-2 fuel primer line.

Step 5

Updating of Manuals:

Include "Supplement to A-2 and A2-A Owners' Manuals" or replace the M10 Flight Manual and loading graph.

Correct weight and balance record by adding 15.5 lbs. unusable fuel to empty weight of aircraft (at Fus. Sta. 7.0).

INSTRUCTION III:

Installation of Primary Fuel Shutoff Valve Placard - Adhere, over existing placard between ignition switch and carburetor heat control, the S.B. A-19 (M10-1)-3 primary fuel shutoff valve decal. This decal is self-adhering (pressure sensitive).

INSTRUCTION IV:

Upon completion of Instructions I, II, III, and compliance (on applicable aircraft) with mandatory Mooney Service Bulletin A-16 (Alon) "Fuel System Modifications", dated 6-21-68, fill out and mail accompanying Service Bulletin Compliance card.

Neither this document (nor any amendment hereto) nor anything contained herein shall be construed an assumption by this corporation of any of the obligations or liabilities of its predecessors, Mooney Aircraft, Inc. or Mooney Corporation, both Texas corporations, or as otherwise imposing on Mooney Aircraft Corporation (a Pennsylvania corporation) any of the obligations or liabilities of its predecessors.

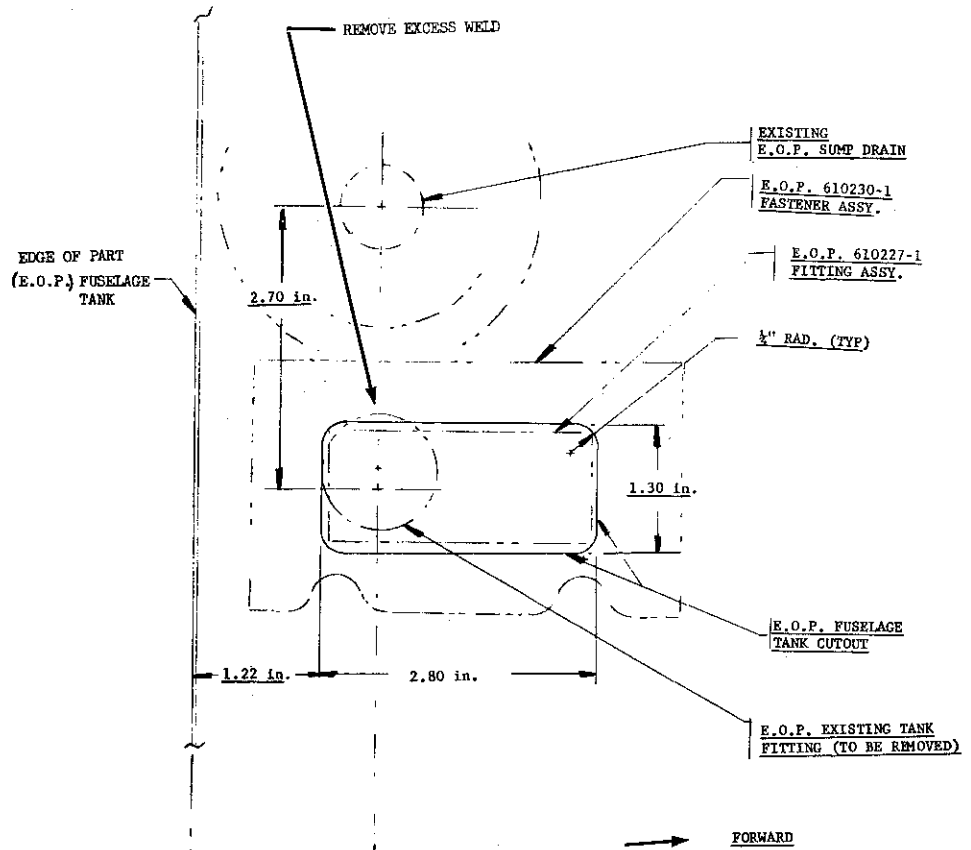


FIGURE 1
(VIEW LOOKING DOWN ON BOTTOM SIDE OF FUSELAGE TANK)
SCALE: NONE

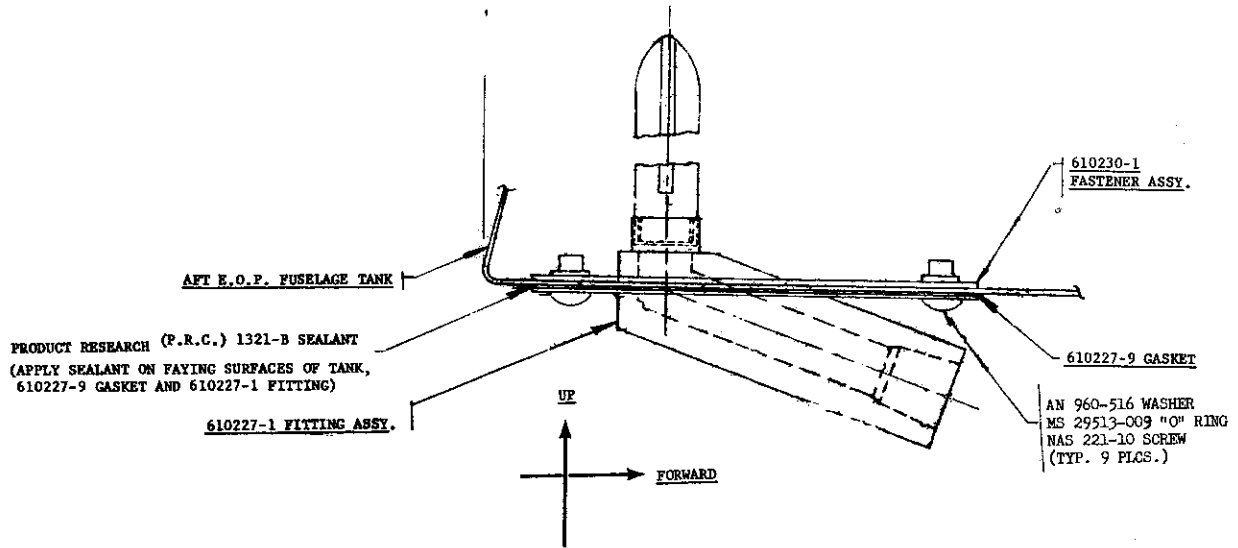


FIGURE 2
(Bottom of Fuselage Tank-Section)
Scale: NONE

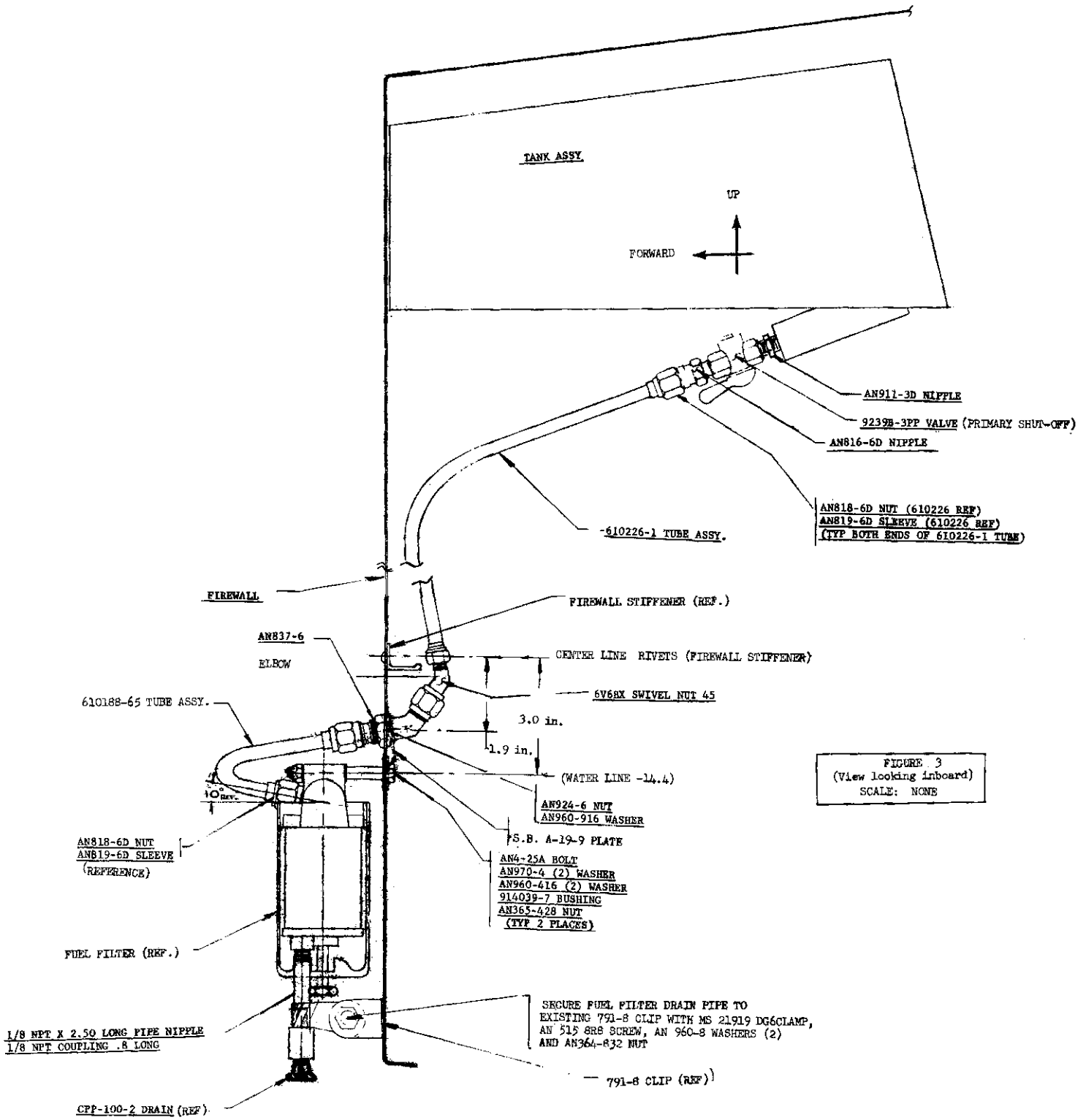
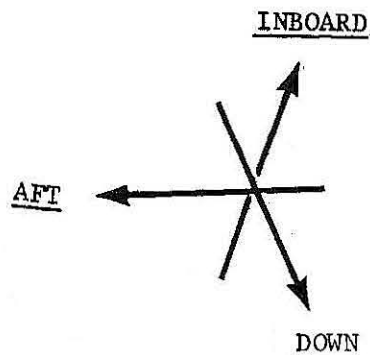


FIGURE 3
(View looking Inboard)
SCALE: NONE

610188-65 ASSY.
(FIREWALL TO FILTER FUEL LINE)

FILTER TO CARBURATOR
FUEL LINE



PRC 1902 PRIMER & PRC 1955
SEALANT (APPLY ON FIREWALL
AND INSIDE OF A-19-9 PLATE)

A-19-9 PLATE

AN 515-8R8 Screws
AN 960-8 Washers (2)
AN 365-832 Nuts
(typ. 8 Places)

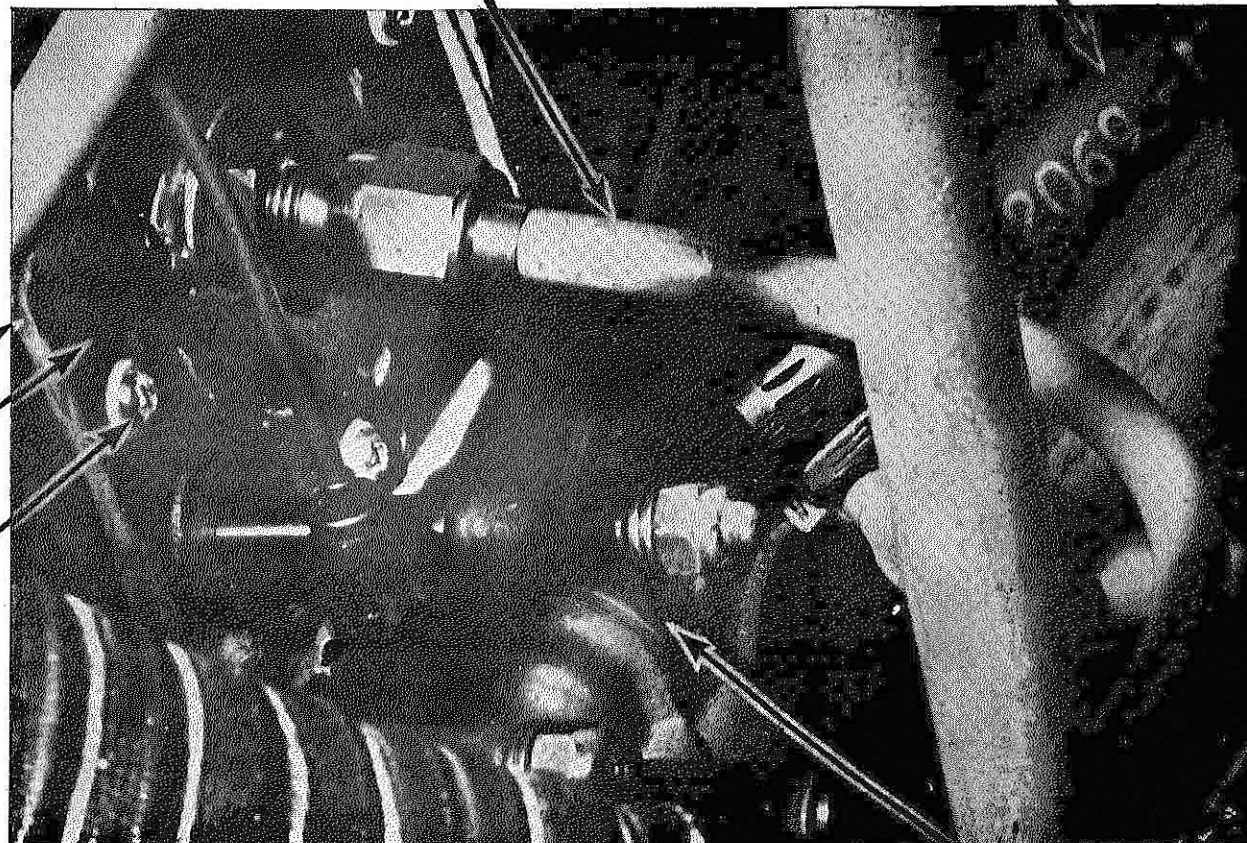


FIGURE 4
(View Looking At Firewall From Engine Compartment R.H. Side)

FILTER

A-19 (M10-1) SERVICE BULLETIN KIT:

No. A-19 (M10-1)-1 Kit for Instructions I, II, and III:

ACX-1229-233 Float Valve & Seat Assemblies	1 matched set
AN365-832 Nut	(8)
AN515-8R8 Screw	(8)
AN818-6D Nut	(1)
AN816-6D Nipple	(1)
AN911-3D Nipple	(1)
AN960-516 Washers	(9)
AN960-8 Washers	(8)
MS29513-009 O-ring	(9)
(Alternate AN6227-3)	
AN970-4 Washer	(6)
NAS 221-10 Screw	(9)
AN960-416 Washer	(4)
9239B-3PP Valve	(1)
AN4-3A Bolt	(3)
AN365-428 Nut	(3)
SB A-19-9 Firewall Plate	(1)
610227-1 Fuel Tank Fitting Assy	(1)
610230-1 Nut Plate Assy	(1)
610227-9 Gasket	(1)
610229-1 Tank Strap Assy	(1)
MS21919 Clamp (DG6)	(1)
610226-1 Fuel Line Assy	(1)
PRC 1321-B Sealant	5 oz. can
PRC 1955 Sealant (Product Research)	5 oz. can
PRC 1902 Primer (Product Research)	4 oz. can
S.B. A-19 (M10-1)-3 "Primary Fuel Shutoff Valve" Decal (Reference MG-6-150059)	(1)
1/8 NPT X 2.50 long Pipe Nipple	(1)
1/8 NPT Coupling (.8 long)	(1)
6V6BX Swivel Nut 45	(1)
AN837-6 Elbow	(1)
AN924-6 Nut	(1)
AN960-916 Washer	(1)
AN426 AD3	(2)
AN4-25A Bolt	(2)
914039-7 Bushing	(2)
610188-45	(1)
660170-2	(1)
"Supplement to A-2 and A2-A Owners' Manual" (Enclosed for A-2 & A2-A Owners only)	(1) copy
M10 Flight Manual dated 9/9/69 and loading graph (enclosed for M10 Owners only)	(1) copy ea.
Service Bulletin Compliance Card	(1)

No. A-19 (M10-1)-2 Kit (for Instruction I only):

ACX-1229-233 Float Valve & Seat Assemblies	1 matched set
Service Bulletin Compliance Card	(1)

These service bulletin kits may be procured from your local Mooney distributor and service center. Direct factory orders will not be accepted.