

Nomad **SERVICE BULLETIN**

Reference No 231

**TRANSMITTAL LETTER
FOR
SERVICE BULLETIN NMD-28-16 Rev 1**

**CUSTOMER OPTION G28 AND G28A SELF-SEALING FUEL TANKS - ADDITIONAL
SUPPORT (MOD N625 PARTS A AND C)**

Reason

1. Inadequate support of the self-sealing tank in the tank bays combined with inadequate clamping area between the rubber vent tubes and the metal vent pipes resulted in some cases in failure of the rubber vent tube.
2. Revision 1 corrects the issue level of Marston Fuel Tanks PN AM3480LH and PN AM3480RH from Issue L to issue M and makes minor editorial changes.

Instructions

3. Remove Service Bulletin NMD-28-16 dated 28 Jan 87 from Service Bulletin binder and insert the attached Service Bulletin NMD-28-16 Rev 1, dated 7 May 91. Annotate the Service Bulletin Index accordingly.

Revision Status

Original	28 Jan 87
Revision 1	7 May 91

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CUSTOMER OPTION G28 AND G28A SELF-SEALING FUEL TANKS - ADDITIONAL SUPPORT (MOD N625 PARTS A AND C)

1. PLANNING INFORMATION

A. Effectivity

(1) Aircraft Affected

- (a) All Pre-Mod N3 N22-Series aircraft fitted with self-sealing fuel tanks (Ref Customer Option G28) whose log books do not record the embodiment of Mods N3 and N625 or compliance with Service Bulletin NMD-28-16 at any revision level.
- (b) All Post Mod N3 N22-Series and N24-Series aircraft fitted with self-sealing fuel tanks (Ref Customer Option G28A) whose log books do not record the embodiment of Mod N625 or compliance with Service Bulletin NMD-28-16 at any revision level.

B. Reason (Mod N625 Parts A and C)

Inadequate support of the self-sealing tank in the tank bays combined with inadequate clamping area between the rubber vent tubes and the metal vent pipes resulted in some cases in failure of the rubber vent tube.

C. Description

(1) Mod N625A

This part of the modification comprises two parts:

Part 1 - Provides modified or reworked vent pipes which are lengthened to give increased space for fitting the clamp on the tank vent pipe between the pipe bead and the tank inner wall.

Part 2 - Provides nine additional lacing brackets for each tank bay to improve the tank support at the ends and relieve the strain on the vent pipes.

(2) Mod N625C

This part provides modified or reworked self-sealing tanks incorporating seven additional lacing loops together with fabric reinforcing applied to the vent pipe moulding.

D. Compliance

Highly recommended.

E. Approval

The rework detailed herein has been approved pursuant to Civil Aviation Regulation 35 and conforms with the type certification requirements.

F. Manpower

Twelve manhours, not including removal and installation of fuel tanks or curing time for adhesives.

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G. **Materials - Price and Availability**

(1) Mod N625A

Order from ASTA General Aviation quoting the aircraft serial number and Service Bulletin No NMD-28-16.

(2) Mod N625C

Modified self sealing tanks and complete Mod kits are available from ASTA General Aviation. Prices are available on request.

H. **Tooling - Price and Availability**

None required.

I. **Weight and Balance**

None.

J. **References**

Maintenance Manual Chap 12-10-00 and 28-10-00

K. **Publications Affected**

IPC Section of Customer Option Supplement G28 and G28A.

2. **ACCOMPLISHMENT INSTRUCTIONS**

A. Drain the fuel tanks (Ref MM Chap 12-10-00).

B. Remove the fuel tanks (Ref MM Chap 28-10-00).

C. **Mod N625A Part 1 - Rework the Fuel Tank Bays Vent Pipes (Ref Fig 1).**



COVER THE TANK BAY FLOORS, APERTURES AND SURROUNDING AREAS TO CATCH ANY SWarf, ie CUTTINGS AND FILINGS.

- (1) Using a small pipe cutting tool or hacksaw, cut off the pipe beading at each of the 16 tank vent pipes (four at each tank bay).
- (2) Deburr and smooth each cut end of the vent pipes using a small file.
- (3) Remove all cadmium plating from the straight section of each vent pipe using a fine grade abrasive paper. Clean and degrease the abraded sections of the vent pipes with LOCQUIC T PRIMER. Do not permit the primer to contact any internal surface of the pipe.
- (4) Clean and degrease both internal and external surfaces of the vent pipe extension tubes (PN 1A/N-03-787) with either LOCTITE 15 QUICK CLEAN or trichloroethane solvent.
- (5) After ensuring that the primer has completely evaporated from the external surfaces of the vent pipes, select one vent pipe extension tube and coat the inner surface of the non-beaded end

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of the tube for a minimum length of 41.0 mm (1.6 in) with LOCTITE RETAINING COMPOUND GRADE 620. Ensure that the entire surface is completely wetted with compound.

- (6) Select one of the vent pipes and coat the previously abraded and primed surface with LOCTITE RETAINING COMPOUND GRADE 620. After ensuring that the entire surface is completely wetted with compound, carefully slide the coated end of the wetted extension tube over the coated section of the vent pipe. Locate the beaded end of the extension tube at 66 mm (2.6 in) from the tank wall and immediately twist the extension tube through 180 degrees while maintaining the 66 mm dimension.

NOTE

The two LOCTITE coated parts must be correctly located relative to each other within four minutes from the time that the LOCTITE RETAINING COMPOUND came into contact with the primed surface of the vent pipe. The compound requires 24 hours to fully cure at room temperature.

- (7) Allow approximately 30 minutes for the LOCTITE to partially cure then check the jointing between the vent pipe and extension tube for complete fill and satisfactory adhesion.
 - (8) Using a pull-through wetted with the solvent used in step (4), remove all traces of LOCTITE RETAINING COMPOUND from the internal and external surfaces of the vent pipe and extension tube.
 - (9) Repeat steps (4) to (8) inclusive for each of the remaining tank vent pipes.
 - (10) Apply zinc chromate primer or suitable alternative to all exposed abraded surfaces of the tank vent pipes.
 - (11) Check all vent tubes are clear.
- D. **Mod N625A Part 2 - Installation of Additional Tank Lacing Brackets in Fuel Tank Bays (Ref Fig 2).**



COVER THE TANK BAY FLOORS, APERTURES AND SURROUNDING AREAS TO CATCH ANY SWARF, ie CUTTINGS AND FILINGS.

- (1) At 72 locations (Ref Fig 2) drill No 30 (3.3 mm) dia holes, countersink (100 deg) and deburr, for additional tank lacing brackets.
- (2) Install 36-off additional tank lacing brackets, PN 1/N-20-401 in fuel tank bays. Wet assemble brackets using pigmented chromate jointing compound and rivet with 72-off countersunk rivets PN MS20426AD4-6. Refer to Figure 2 for installation details.
- (3) Clean off excess jointing compound and touch up bare metal surfaces as required with zinc chromate primer.

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E. Mod N625C - Installation of Additional Support Loops and Vent Pipe Moulding Reinforcement to Fuel Tanks (Ref Fig 3).

NOTE

Fuel tanks PN AM3480 LH and RH at issue M and later issues are supplied with additional support loops and vent pipe moulding reinforcements already fitted. Requirements for tank modification in accordance with this section of this Service Bulletin only apply to fuel tank PN AM3480 LH and RH at issue L and earlier.

- (1) Locate positions of additional support loops as shown in Figure 3 and remove the paint from the tank for a sufficient area to allow the support loop and the net to bond directly to the reinforcing fabric on the tank.

NOTE

The paint may be removed by gently scraping with a penknife blade or similar taking great care to ensure no damage is done to the tank skin.

- (2) Coat the bared tank fabric and the buffed face of the support loop with two coats of adhesive BOSTIK 2762 or GOODYEAR 80 C29, allowing the first coat to dry before applying the second coat.

NOTE

Both adhesives are a 2-part cement type and may be used for up to 12 hours following mixing, after which time it must be discarded.

When the second coat is almost dry, apply the cord support loop to the tank, ensuring that a 6mm dia bar can be passed through the loop, then firmly press the legs of the loop to the tank.

- (3) Repeat step (2) at remaining support loop positions and then apply net patches by cementing and stippling through.
- (4) All areas of the tank reinforcing fabric where paint has been removed (Ref step (1)) and is still exposed after fitment of the support loops and net patches are to be covered by two coats of adhesive to prevent ozone attack.
- (5) Lightly buff around the outside diameter of the vent pipe moulding, then apply two coats of adhesive to the buffed areas and also to the buffed face of the 1/2 in x 2 1/2 in reinforcing strip PN MM169, allowing the first coat to dry before applying the second coat.

When the second coat is almost dry, wrap the rubber reinforcing strip around the vent moulding, cementing the outside of the strip where it overlaps onto itself, and retain in position until dry.

- (6) Repeat step (5) for remaining vent pipe mouldings.
- (7) When all rework to the tank has been completed, the finished tank must be left for 24 hours to allow the adhesive to fully cure.
- (8) It is recommended that reworked tanks be pressure tested (Ref MM Chap 28-10-00 Maintenance Practices), after adhesive has fully cured, to check for leaks.

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F. Refit the Fuel Tanks

- (1) Remove the temporary covering from the tank bay floors, apertures and surrounding areas and vacuum out the tank bays to remove all loose dirt, filings etc.
- (2) Inspect the protective coverings over boltheads, rivet heads and tails, laps and joins in the tank bays. Carry out any repairs to the protective coverings as necessary using PR1222B compound and SCOTCHAL adhesive tape. Re-vacuum out the tank bays after repairs to the protective coverings have been completed.
- (3) Install the self-sealing fuel tanks (Ref MM Chap 28-10-00) ensuring that the tank rubber vent tubes engage a sufficient length of the tank bay vent pipes to enable a satisfactory clamping area as follows:
 - (a) Position hose clamps on vent pipes with a minimum of 0.125 in (3 mm) between pipe bead and clamp whilst ensuring that a minimum of 0.250 in (6 mm) of the tank vent moulding extends beyond the clamp.
 - (b) Torque tighten the hose clamp to 15 ±2 lb in (1.7 ±0.2 Nm). After initial torque tightening, allow two hours for the vent moulding to stabilize then retighten the clamps to the above torque value.

3. MATERIALS INFORMATION

A. Parts Required per Aircraft fitted with Customer Option G28 or G28A

- (1) Parts Required for Mod N625A Part 1 (Ref Para 2C)

New Part No	Qty	Description	Old Part No	Instruction/Disposition
New Parts supplied by ASTA General Aviation				
1A/N-03-787	16	Fuel vent pipe extension tube		4 required per tank (16 per aircraft).
Parts supplied from operator's stock or local sources				
	A/R	Abrasive paper, fine		
	A/R	Degreasing solvent		
	A/R	LOCQUIC T PRIMER		
	A/R	LOCTITE 15 QUICK CLEAN		
	A/R	LOCTITE RETAINING COMPOUND GRADE 620		
	A/R	Zinc chromate primer		

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(2) Parts Required for Mod N625A Part 2 (Ref Para 2D)

New Part No	Qty	Description	Old Part No	Instruction/Disposition
New Parts supplied by ASTA General Aviation				
1/N-20-401	36	Bracket, lacing		9 required per tank (36 per aircraft)
Parts supplied from operator's stock or local sources				
MS20426AD4-5	72 A/R	Rivet, 100° C/S Pigmented chromate jointing compound		

(3) Parts Required for Mod N625C (Ref Para 2E)

New Part No	Qty	Description	Old Part No	Instruction/Disposition
Modification kit PN CM 7609 (Marston Nomad Fuel Tank Mod Kit - AM3480/1), supplied by ASTA General Aviation - 1 required per tank (4 per aircraft).				
MM 264	7	Preformed support loop		
MM 170	14	Net patches		
MM 169	4	Pipe moulding, reinforcing		
	1	Modification instruction sheet		
Parts supplied from operator's stock or local sources				
BOSTIK 2762	500 ml (1 pint)	2-part cold curing nitrile rubber cement		
or GOODYEAR 80C29	500 ml (1 pint)	2-part cold curing nitrile rubber cement		
NOTE				
The following may be used as an alternative nitrile rubber cement: 100 parts BOSTIK 1768 to 6 parts BOSTIK 9104 by weight. Applicable solvent agent is BOSTIK 6904.				

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B. Parts Modified and Re-identified by Operator

New Part No	Qty	Description	Old Part No	Instruction/Disposition
1B/N-03-787	1	Fuel Tank Vent Assy LH	1/N-57-145	Rework
1C/N-03-787	1	Fuel Tank Vent Assy RH	1/N-57-146	Rework
1D/N-03-787	1	Fuel Tank Interconnecting vent Tube Assy LH	1/N-57-155	Rework
1E/N-03-787	1	Fuel Tank Interconnecting vent Tube Assy RH	1/N-57-156	Rework
1F/N-03-787	1	Fuel Tank Forward Vent Tube Assy LH	1/N-57-157	Rework
1G/N-03-787	1	Fuel Tank Forward Vent Tube Assy RH	1/N-57-158	Rework
1H/N-03-787	1	Fuel Tank Aft Vent Tube Assy LH	1/N-57-237	Rework
1J/N-03-787	1	Fuel Tank Aft Vent Tube Assy RH	1/N-57-238	Rework
AM3480LH R/W NMD-28-16		Fuel Tank	AM3480 LH (Pre Issue M)	Rework
AM3480LH R/W NMD-28-16		Fuel Tank	AM3480 RH (Pre Issue M)	Rework

C. Parts Required to Modify Spare Vent Tubes and Tanks

Refer Para 3A (1) and (3).

D. Removed Parts

None

E. Special Tools and Equipment

None

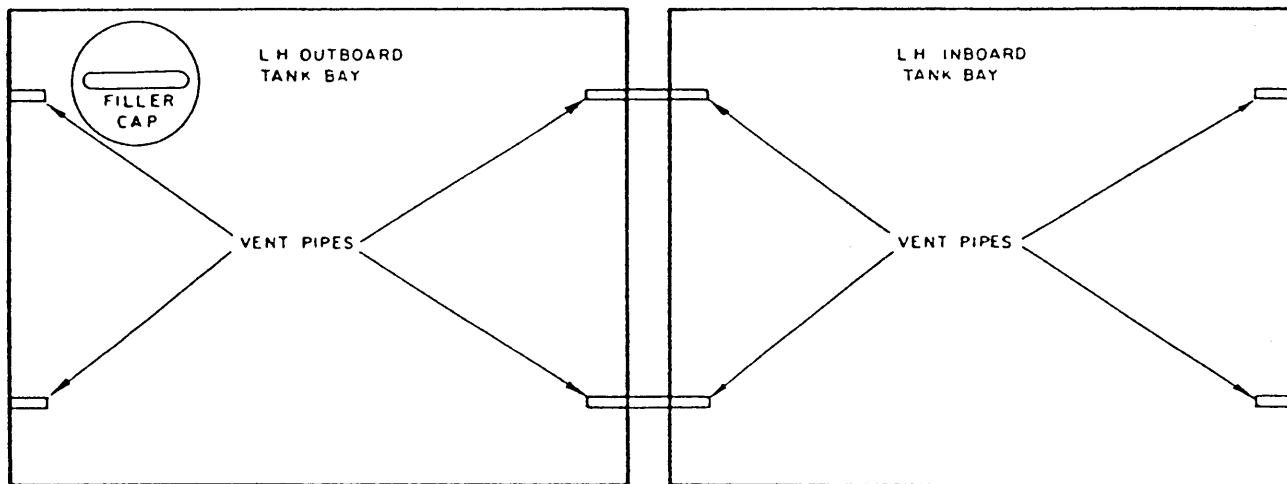
4. RECORDING ACTION

Record compliance with Service Bulletin NMD-28-16 Para 2C, 2D, 2E as appropriate in the Airframe Log Book.

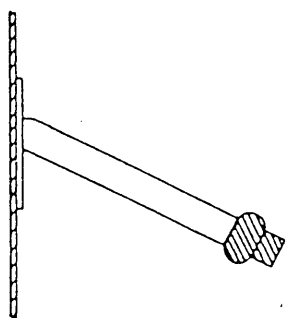
Aircraft which comply with this SB at original issue do not require recertification.

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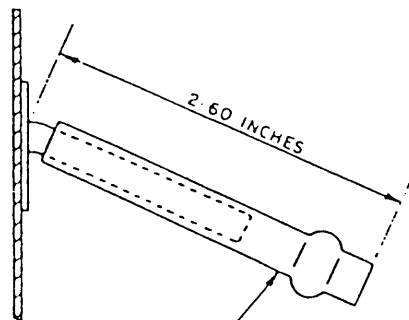


LH WING FUEL TANKS (RH WING SIMILAR)



CUT BEAD (SHADED AREA) OFF EXISTING VENT PIPE

TYPICAL EXISTING FUEL TANK BAY VENT PIPE



EXTENSION VENT TUBE P/N 1A/N-03-787

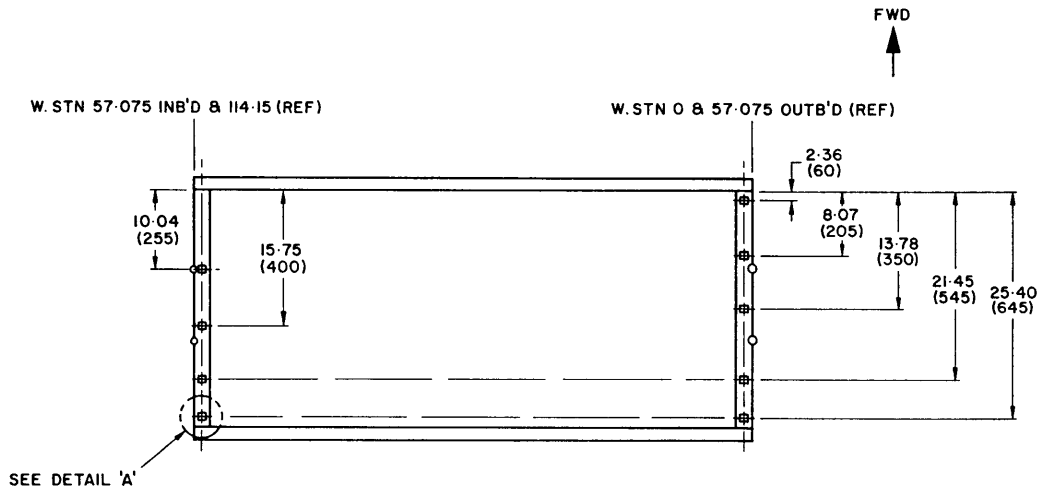
REWORKED TANK BAY VENT PIPE WITH EXTENSION VENT TUBE INSTALLED

Figure 1 Rework of Fuel Tank Bay Vent Pipes

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NOTE: BRACKETED DIMENSIONS
ARE IN MILLIMETERS



LH TANK BAY LACING SUPPORT LOCATIONS AS DRAWN
RH TANK BAY LACING SUPPORT LOCATIONS OPPOSITE HAND

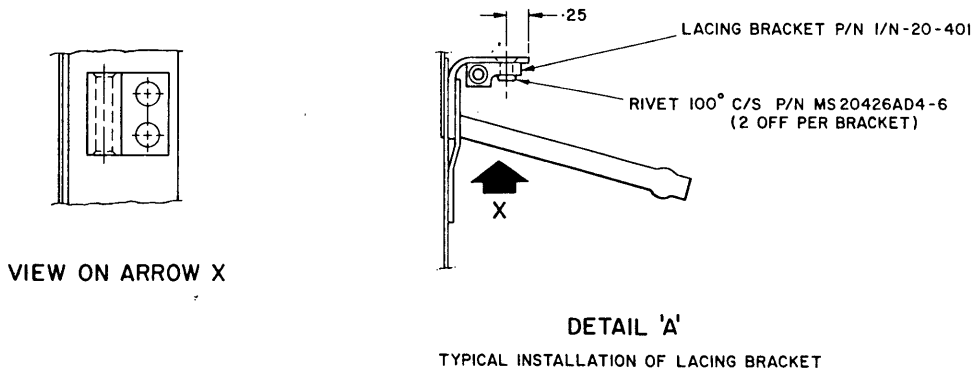
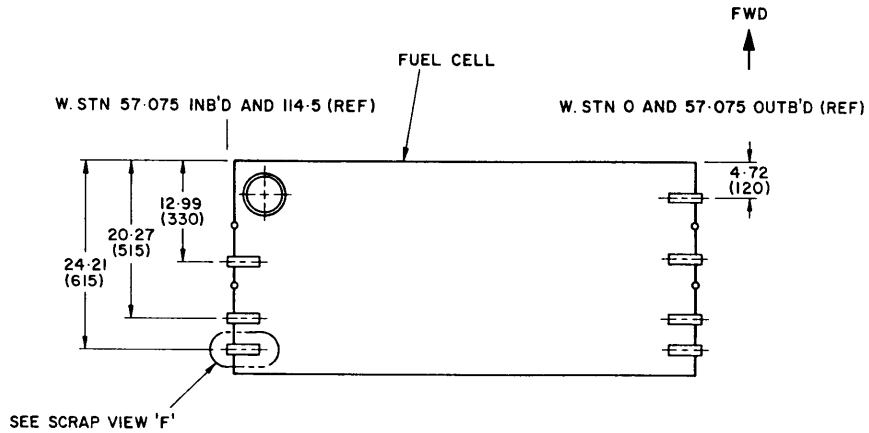


Figure 2 Installation of Additional Lacing Brackets

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REWORK TO FUEL CELLS PART No AM3480 LH & RH (PROOFED)

LH TANK STRAP LOCATIONS AS DRAWN
RH TANK STRAP LOCATIONS OPPOSITE HAND

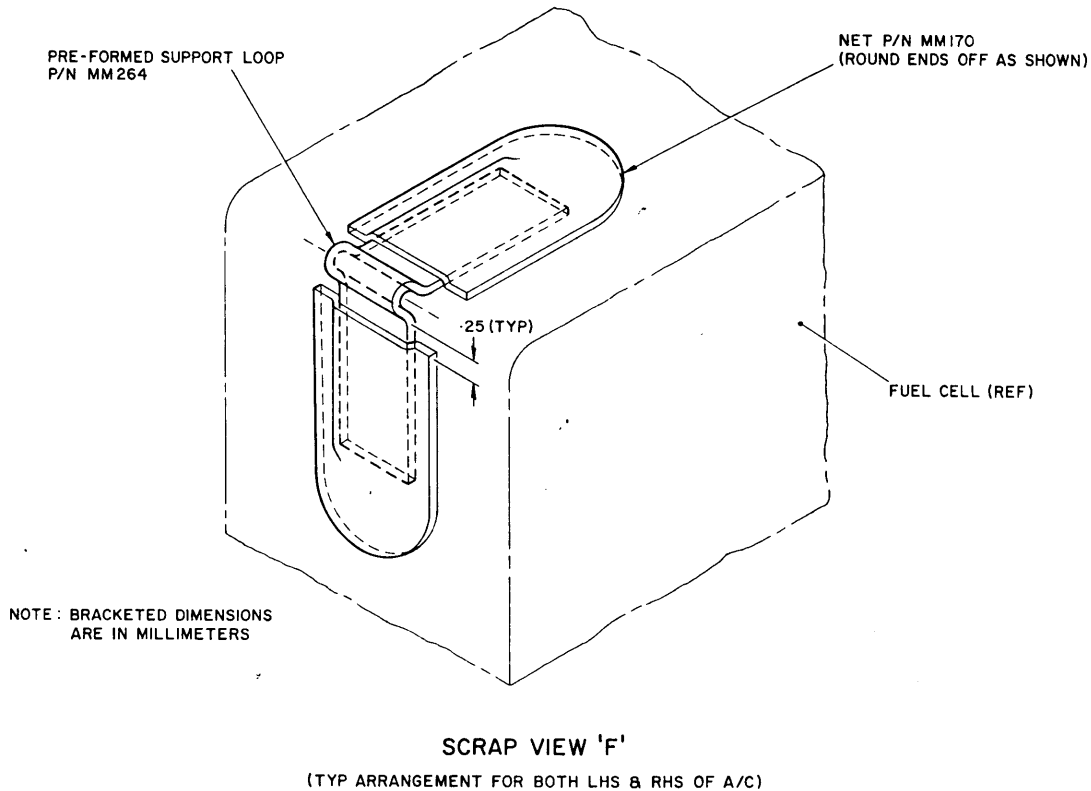


Figure 3 Installation of Additional Preformed Support Loops