FUEL – AUXILIARY TANK – INSTALLATION OF NON RETURN VALVE IN FILLER NECK (MODIFICATION N693)

1. PLANNING INFORMATION

A. Effectivity

All Nomad aircraft fitted with Auxiliary Fuel Tanks in accordance with Customer Option G99, G99M or G99-24.

B. Reason

To prevent fuel loss from the main and auxiliary tanks, during flight, if the auxiliary fuel filler cap is left off or incorrectly fitted.

C. Description

An extended filler neck is fitted to the auxiliary fuel tank inlet incorporating a spring loaded lever arm and flapper plate (Ref Figure 1).

NOTE

It is recommended that Service Bulletin NMD-28-18 (Modification N684), Gasket Seal Deletion, be incorporated concurrently with this bulletin.

D. Compliance

Within 300 hours TIS., or three months from the issue of this bulletin. whichever comes first.

E. Approval

This modification is approved pursuant to CAR 35 and conforms with type certification requirements.

F. Manpower

Ten manhours plus time taken for leakage checks.

NOTE

Two men are required for some portions of this task.

G. Material, Price and Availability

Kit NMD-28-17-1 can be obtained by placing a purchase order on ASTA Spare Parts Department.

H. Tooling, Price and Availability

None required.

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I. **Weight and Balance**

The following information is to be used to amend the appropriate Flight Manual and Weight and Balance Manual (if issued).

	N22 Series	N24 Series
Weight	+Al kg (2 lb)	+Al kg (2 lb)
Moment change	+4383 kg mm (380 lb in)	+5030 kg mm (437 lb in)
Index Units (Moment/1000)	+4.38 (.38)	+5.03 (.437)

J. **References**

MM Maintenance Manual

IPC Illustrated Parts Catalogue

Service Bulletin NMD-28-18 (Mod N684)

Customer Option Data for G99, G99M or G99-24.

K. **Publications Affected**

MM Maintenance Manual

IPC Illustrated Parts Catalogue

IRM Inspection Requirements Manual

2. **ACCOMPLISHMENT INSTRUCTIONS**

Referring to Maintenance Manual, Chapter 12-10-00, drain the auxiliary fuel tank and allow to air dry for a minimum of one hour.

To gain access to the inside of the tank proceed as follows:

A. Remove the wing tip fairing as detailed in MM Chapter 57-20-00.

B. Remove the tank end as follows:

(1) Loosen the 68 attachment bolts until the bolts have approximately three mm of slack.

(2) Rig a pressure supply system to the wing vent as shown in Figure 3 and, using a nitrogen supply, apply a maximum pressure of 0.5 p.s.i. until the tank end seal separates from the tank.

(3) Remove the 68 bolts and lift the tank end clear.

(4) Remove the tank end gasket or, Post Mod N684, the Permatex “Form a Gasket”.

C. Rework stringer one inch either side of w.stn 284.35 to clear the filler neck as shown in Figure 2.

D. Drill out the two rivets holding plate assembly I/N-20-803 to stringer.

E. Trim the stringer attachment bracket in two places sufficient to clear the valve assembly, refer to Figure 2.

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F. Rivet the fill level indicator, packer and support bracket to the filler neck using four MS20470 AD3 7 rivets.

G. Rivet together the support bracket, tapered packer and plate using four MS20470 AD3-6 rivets. Ensure that the indented side of the tapered packer faces away from the filler neck opening.

H. Assemble the cleats, plate and filler neck, drill and temporarily pin together. Position the assembly in the tank. Ensure that the filler neck is fitting correctly in the filler adaptor and, using the plate as a template, mark and drill the seven rivet holes in the stringers using a 3.3 mm drill, and pin plate in position. It may be necessary to rework the tag shown in Figure 2 to clear the filler neck; ensure that the retaining lanyard can be installed with the filler neck in position.

I. Reposition the plate assembly I/N-20-803 as shown in Figure 2, mark and drill two holes 2.45 mm to suit the plate assembly.

J. Remove the filler neck assembly and deburr holes in stringers. Clean swarf from the tank and apply corrosion protection to the trimmed areas as follows:

(1) Degrease with MEK.

(2) Clean with water and allow to dry.

(3) Touch up with Alodine 1200 and allow to dry.

(4) Apply a coating of epoxy primer.

K. Deburr holes in plate and cleats and rivet to filler neck using six MS20470 AD4-5 rivets.

L. Complete assembly of non return valve as shown in Figure 1.

NOTE

Tighten the bolt holding the spacers just sufficiently to clamp the spacers.

M. Check the operation of the non return valve.

N. Rivet plate assembly I/N-20-803 in position and fit the clamp to MS35338-43 is also required.

O. Position the valve assembly in the tank and temporarily pin in position. Check that the valve operates correctly and that the filler neck is locating correctly on the filler adaptor. if necessary, shim between the faying surfaces of the valve assembly and stringers, with shims to MIL-S-22499-B, to obtain correct alignment.

P. Seal the overlap between the filler neck and filler adaptor with PERMATEX and rivet the valve assembly in position using nine CR3223-4-2 rivets.

Q. Fit the tank end as follows:

(1) Pre Mod N684

(a) Fit the gasket between the tank end and auxiliary tank end set. Fitting a bonding lead under the attachment bolt at each corner of the tank end, install the 68 attachment bolts. (Fitment to Post SB NMD-28-18 (Mod N684) standard preferred)

(2) Post Mod N684

(a) Clean mating surfaces of tank end and auxiliary tank end with MEK.

(b) Apply PERMATEX Form a Gasket 3D to the sealant gasket on auxiliary tank end rib. Ensure that the solution does enter into the anchor nut holes.

(c) Fit the tank end to the auxiliary tank end rib, install attachment bolts fitting the bonding leads at each tank end corner. Working in a clockwise direction from the t centre of the tank end, carefully torque tighten every fifth attachment bolt to between 10-5 in. lb. until all bolts are tightened.

R. Leak test the auxiliary tank as follows:

(1) Rig a pressure supply system to the wing vent as shown in Figure 3.

(2) Blank off the syphon breakers, outlets to the engine and crossfeed pipes.

(3) Using clean air or nitrogen, apply a maximum pressure of 0.5 p.s.i. or 13.85 inches water. Check that this pressure is maintained for 10 minutes. If the pressure is not maintained, check for leaks using liquid bubble leak detector. Rectify leaks and repeat pressure test until a satisfactory result is obtained.

CAUTION

USE OF A WATER MANOMETER TO MEASURE PRESSURE IS RECOMMENDED TO PREVENT OVER PRESSURISATION OF THE TANK.

(4) On completion of the pressure test, remove test rig and blanks.

(5) Fit the wing tip fairing, refer MM Chapter 57-20-00.

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3. **MATERIAL INFORMATION**

One kit PN NMD-28-17-1 is required per aircraft. Each comprises the following items.

Part No	Qty	Title
I/N-20-803	2	Plate Assembly
I/N-57-322	2	Pivot Arm
I/N-57-323	2	Support Bracket
I/N-57-324	4	Spacer
I/N-57-325	2	Spring
I/N-57-326	2	Spring
I/N-57-327	4	Packer
I/N-57-328	2	Hinge
I/N-57-413	2	Flapper Plate
I/N-57-414	2	Filler Neck
1A/N-57-415	2	Plate
1B/N-57-415	2	Cleat LH
1C/N-57-415	2	Cleat RH
1D/N-57-415	2	Packer
1E/N-57-415	2	Packer, Tapered
1F/N-57-415	2	Fill Level Indicator
NAS6603-38	2	Bolt 10-32
AN3-26A	2	Bolt 10-32 (ALT)
MS21083-N3	2	Stiffnut 10-32 UNF
AN960 KD10	2	Washer
AN960 PD10	2	Washer (ALT)
MS3507-364	2	Screw, Pan Head 10-32 UNF
MS21919 DF6	2	Clamp, Cushioned
MS9025-05	2	Clamp, Cushioned (ALT) or
AS3181-6C	2	Clamp, Cushioned (ALT)
MS35338-43	2	Washer, Spring (req'd if ALT Clamp fitted)
MS20426 AD4-5	6	Rivet 1/8 CSK H'D
MS20470 AD4-5	18	Rivet 1/8 Univ. H'D
MS20470 AD3-7	8	Rivet 3/32 Univ. H'D
MS20470 AD3-6	8	Rivet 3/32 Univ. H'D
MS20470 AD3-4	4	Rivet 3/32 Univ. H'D
CR3223-4-2	18	Rivet 1/8 Cherrymax

4. **SPECIAL TOOLS AND EQUIPMENT**

None.

5. **RECORDING ACTION**

Record compliance with Service Bulletin NMD-28-17 in Airframe Log Book.

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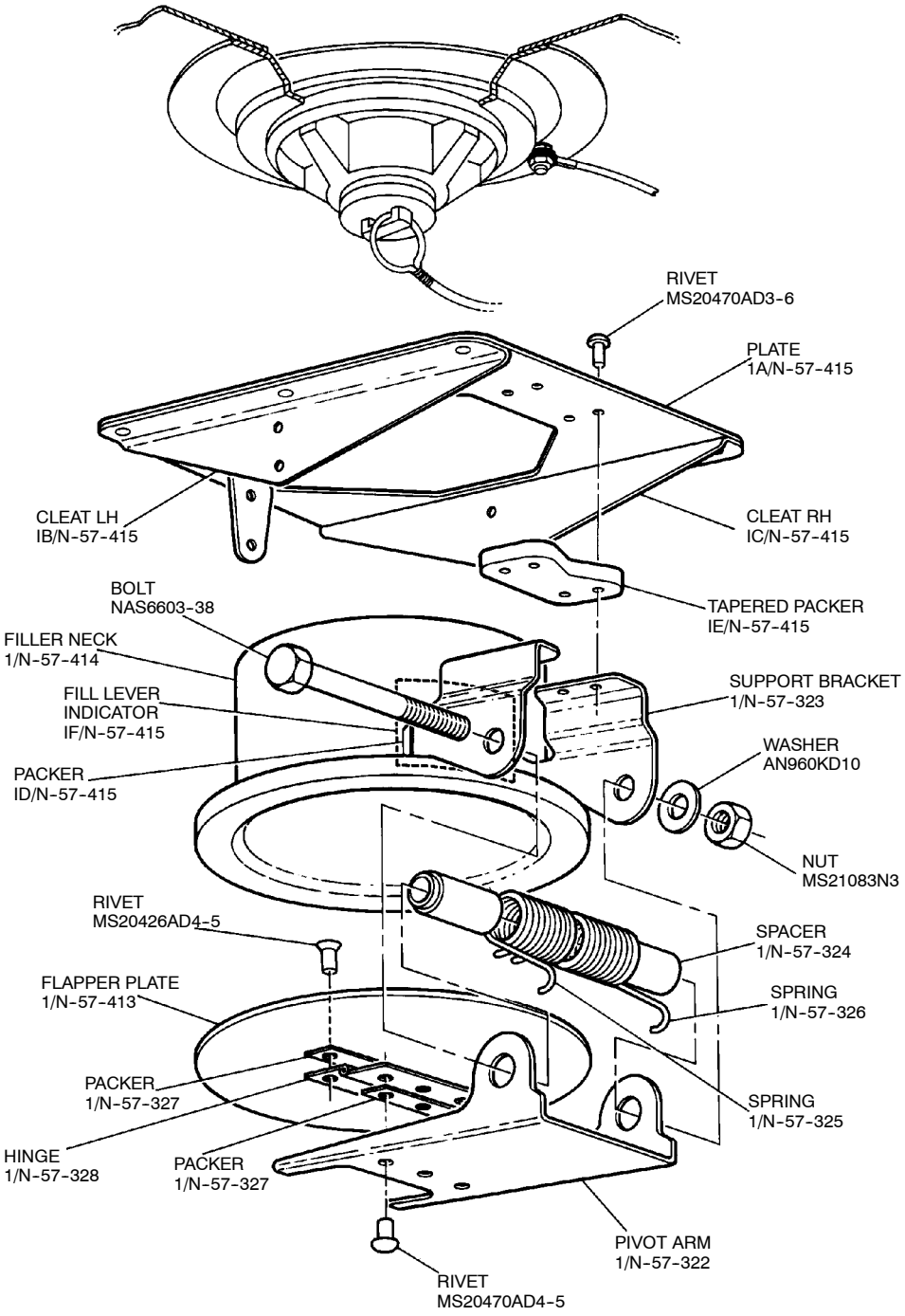

Figure 1 Non-Return Valve Assembly

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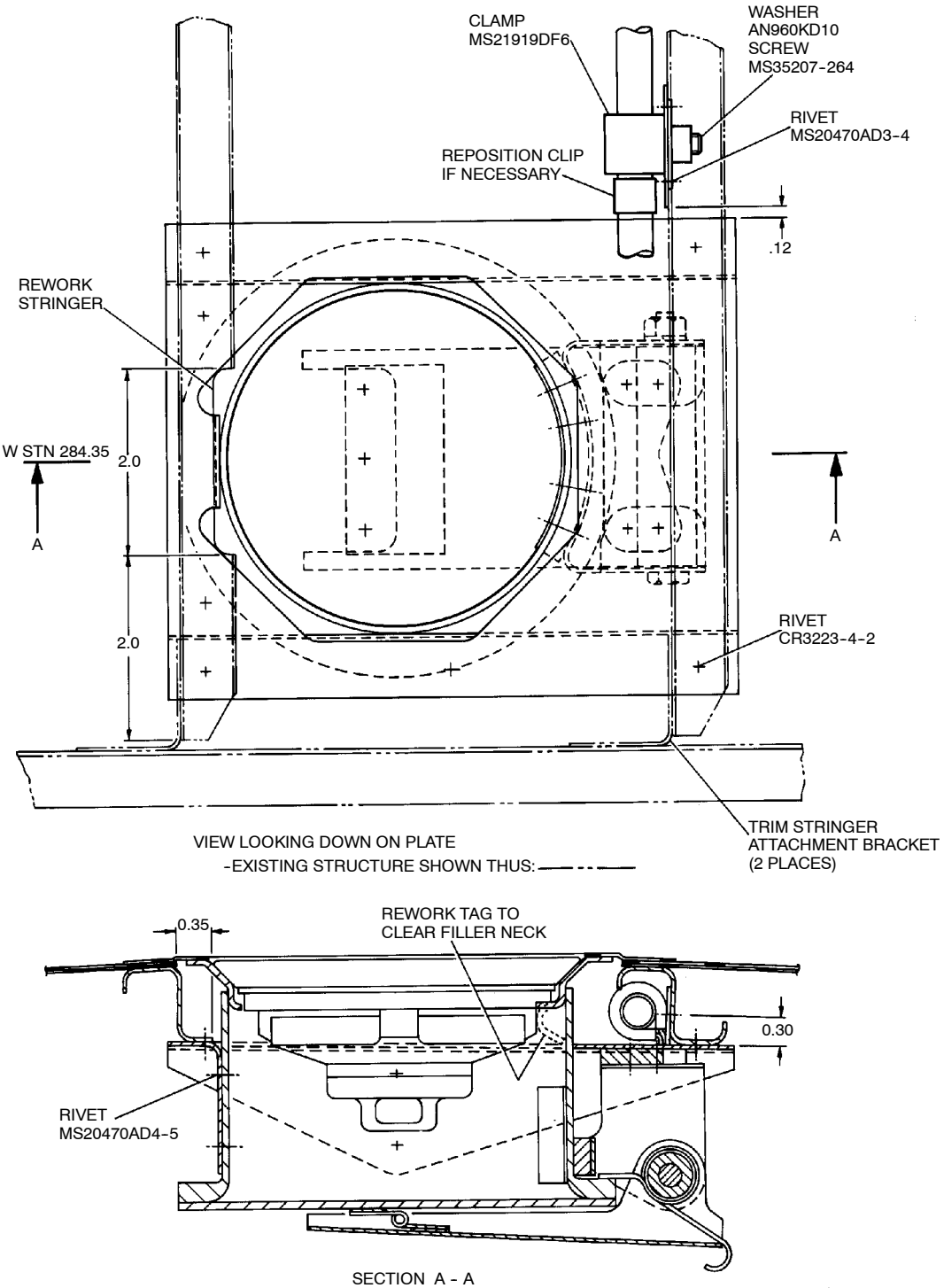

Figure 2 Non-Return Valve, Installation Details

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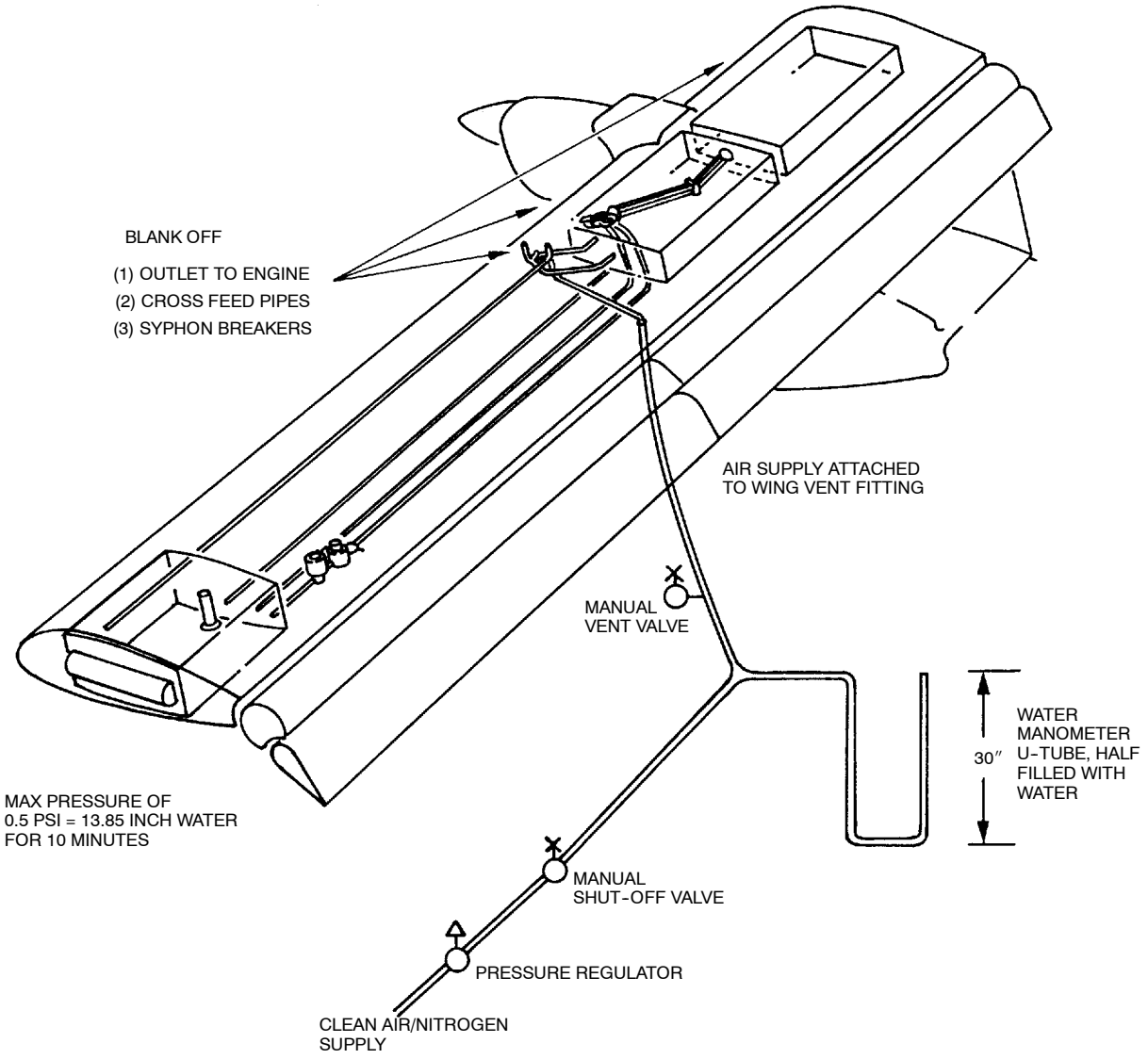

Figure 3 Auxiliary Tank, Pressure Test Rig

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