HUGHES SERVICE INFORMATION NOTICE

NOTICE NO. HN-144
DATE 23 July 1979

MANDATORY MANDATORY MANDATORY

SUBJECT: KIT INSTALLATION, PN 369D290140 - AUXILIARY FAIRINGS AND SEALS, ENGINE AIR FILTER (PARTICLE SEPARATOR)

MODELS AFFECTED: 500 Series Model 369H Helicopters equipped with PN 369H90148-Basic or -501 Particle Separator Kit

TIME OF COMPLIANCE: Shall be accomplished within 100 hours of helicopter operation after receipt of parts

PREFACE: The information given in this Service Information Notice lists a procedure for installing auxiliary fairings and seals, to preclude possible entry of foreign materials or objects through gaps between the particle separator filter assembly and the fuselage structure.

Instructions and material specifications are provided for field fabrication of auxiliary fairings, supports and seals required for the kit installation. Optionally, complete kits are available through your authorized HH Service Center or distributor.

It is to be noted that the 369A8402-7 pressure switch is required for the kit installation. A procedure for optional retrofit of the existing pressure switch to the new -7 configuration is provided.

Reference

500 Series - Basic HMI, Issued 1 October 1972; Rev. No. 7, 15 October 1976
500 Series - HMI Appendix A, Issued 1 October 1972; Rev. No. 4, 15 December 1974

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PARTS LIST

The following components are included in Particle Separator Auxiliary Fairing Kit, PN 369D290140:

Nomenclature	Part No.	Qty	Mfr
Fairing Assembly -	369D290140-11		
Fairing	369D290140-3	1	HH*
Plate	369D290140-9	1	HH*
Fairing Assembly -	369D290140-12		
Fairing	369D290140-4	1	HH*
Plate	369D290140-9	1	HH*
Support	369D290140-5	1	HH*
Support	369D290140-7	1	HH*
Seal	369D290140-13	2	HH*
Seal	369D290140-15	1	HH*
Seal	369D290140-17	2	HH*
Seal	369D290140-19	1	HH*
Seal	369D290140-23	1	HH*
Seal	369D290140-25	1	HH*
Grommet	MS35489-19	2	Commercial
Rivet	NAS1738B4-2	5	Commercial
Rivet	MS20470AD2	4	Commercial
Switch, Pressure**	369A8402-7	1	HH
or			
Kit, Modification**	800-174 (Jensen)	1	HH

*May be field fabricated per materials and specifications listed below. Also see Figure 2.

**Rework of existing 369A8402 or 369A8402-3 pressure switch to 369A8402-7 configuration with mod kit is optional.

MATERIALS

Aluminum alloy sheet	2024-T3; QQ-A-250/4	Commercial
- for 369D290140-3 fairing	(0.032 x 6.00 x 4.00)	
- for 369D290140-4 fairing	(0.032 x 6.00 x 4.00)	
- for 369D290140-5 support	(0.020 x 2.50 x 2.75)	
- for 369D290140-7 support	(0.020 x 2.50 x 2.75)	
- for 369D290140-9 plate	(0.032 x 0.75 x 2.03)	
Pressure sensitive tape	No. Y-9132B or equiv	3M Co. St. Paul Minn
- for 369D290140-13 seal	(0.88 x 0.75 x 3.00)	
- for 369D290140-15 seal	(0.88 x 0.75 x 4.00)	
- for 369D290140-17 seal	(0.13 x 1.00 x 2.50)	
- for 369D290140-19 seal	(0.13 x 2.00 x 10.00)	
- for 369D290140-23 seal	(0.13 x 2.00 x 11.00)	
- for 369D290140-25 seal	(0.50 x 0.75 x 1.75)	
Sealant	Silastic RTV No. 732	Dow Corning
Primer	Fed Std 595 No. 20371	Commercial

TOOLS AND EQUIPMENT

Rivet gun/nose assembly

Drill motor, portable

Drill bit - 0.250 inch diameter (No. E)

Drill bit - 0.1285 inch diameter (No. 30)

Drill bit - 0.067 inch diameter (No. 51)

KIT INSTALLATION, PN 369D290140 - AUXILIARY FAIRINGS, PARTICLE SEPARATOR

a. Remove engine air inlet forward fairings. (Refer to Basic HMI.)

b. Remove, clean and inspect particle separator filter assembly. (Refer to HMI Appendix A.)

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NOTE

1. The 369D290140-5 and -7 supports, and -11 and -12 fairing assemblies may be field fabricated per dimensions shown in Figure 2. Apply coat of primer to parts.

2. Refer to Materials listing for dimensions for all seals (pressure sensitive tape).

c. Install auxiliary fairings and seals to LH side of helicopter as follows:

1. Position -5 support aft of filter mounting frame on LH aft engine air inlet fairing, per dimensions shown in Figure 1, Detail A and Section B-B. Install -5 support to fairing with two NAS1738B4-2 rivets. Apply -13 seal to support as shown in Detail A.

2. Apply -25 seal to aft inlet fairing, with -25 seal forward of and in line with -13 seal as shown in Detail A.

3. Position -11 fairing with flanges in mast support structure fitting and on forward side of mounting frame of aft inlet fairing. Mark and drill 0.250 inch diameter hole in -11 fairing to match existing nutplate location on aft engine air inlet fairing.

4. Split grommet and install grommet on wiring/controls bundle; insert grommet into -11 fairing as shown.

5. Temporarily install -11 fairing with grommet to aft engine air inlet fairing with existing hardware.

6. Install -17 seal on underside of 369H90151-11 fairing; locate -17 seal on aft outboard side of fairing as shown.

7. Install -19 seal on underside of 369H90151-11 fairing; locate -19 seal at forward edge of fairing as shown. Trim -19 seal at forward edge of fairing as shown. Trim -19 seal to match contour of fairing.

8. Seal gaps between flanges of -11 fairing and mast support structure fitting. Also seal all openings and gaps in areas shown in Detail A.

d. Install auxiliary fairings and seals to RH side of helicopter as follows:

1. Position -7 support aft of filter mounting frame on RH aft engine air inlet fairing, per dimensions shown in Figure 1, View A-A and Section C-C. Install support to fairing with three NAS1738B4-2 rivets. Apply -15 seal to support as shown.

2. Position -12 fairing with flanges in mast support structure fitting on forward side of mounting frame of aft inlet fairing. Mark and drill 0.250 inch diameter hole in -11 fairing to match existing nutplate location on aft engine inlet fairing.

3. Split grommet and install grommet on wiring/controls bundle; insert grommet into -12 fairing as shown.

4. Temporarily install -12 fairing with grommet to aft engine inlet fairing with existing hardware.

5. Install -17 seal on underside of 369H90151-21 fairing; locate -17 seal on aft outboard side of fairing as shown.

6. Install -23 seal on underside of 369H90151-21 fairing; locate -23 seal at forward edge of fairing as shown. Trim -23 seal to match contour of fairing.

7. Seal gaps between flanges of -12 fairing and mast support structure fitting. Also seal all openings and gaps in areas shown in Detail A.

e. Check installation of auxiliary fairings and seals for discrepancies.

f. Replace existing 369A8402 or 369A8402-3 pressure switch with new 369A8402-7 pressure switch (Refer to HMI Appendix A); or rework existing switch to 369A8402-7 configuration as follows:

1. Disconnect and remove pressure switch from angle inside plenum chamber. (Refer to HMI Appendix A.)

2. Remove lockwire and three retaining screws; carefully separate switch body halves; remove switch diaphragm-magnet assembly and diaphragm return spring. (See Figure 3.)

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3. Clean both body halves of any dust or debris.

4. Install new diaphragm-magnet assembly in cavity of switch body with threaded port. The diaphragm-magnet assembly should be placed in the cavity with magnet facing up as shown.

5. Install new diaphragm return spring on spring centering boss of diaphragm-magnet assembly.

6. Carefully lower remaining half of switch body onto the partial assembly; check that magnet and diaphragm return spring are centered in their proper bores.

7. Before bringing the two switch body halves completely together, carefully rotate either body half to align the three retaining screw holes. After proper alignment, check the diaphragm to ensure that it has remained centered in the body cavity, and that it has not folded or twisted.

8. Install the three retaining screws until snug and install lockwire.

9. Install new nameplate over existing nameplate on switch body.

g. As applicable, perform function test of reworked pressure switch as follows:

1. Fabricate test set-up per Figure 4 and install reworked switch as shown.

2. Apply suction source to cycle switch "closed" and "opened" several times. Watch ohmmeter or continuity tester for indication of switch actuation. Suction may be produced orally or by use of suction bulb.

3. After cycling switch, apply suction slowly and note the differential in water height, from the static height, on both legs of the U-tube when the ohmmeter or continuity tester indicates switch actuation.

NOTE

The total of the differential heights of both legs of the U-tube is equal to the switch actuation pressure. Switch actuation (closing) pressure should be 10.25 to 10.75 inches H_2O.

h. Reinstall particle separator filter assembly, per HMI Appendix A.

i. Remove hardware that is temporarily holding the -11 and -12 fairings to the aft engine inlet fairing.

j. Reinstall forward engine air inlet fairing assemblies, per HMI, ensure that hole in -11 and -12 fairings align with nutplate on aft engine inlet fairing.

k. Record compliance with this Service Information Notice in Compliance Record of helicopter Log Book.

WEIGHT AND BALANCE DATA

Weight and balance not affected.

FAA APPROVED

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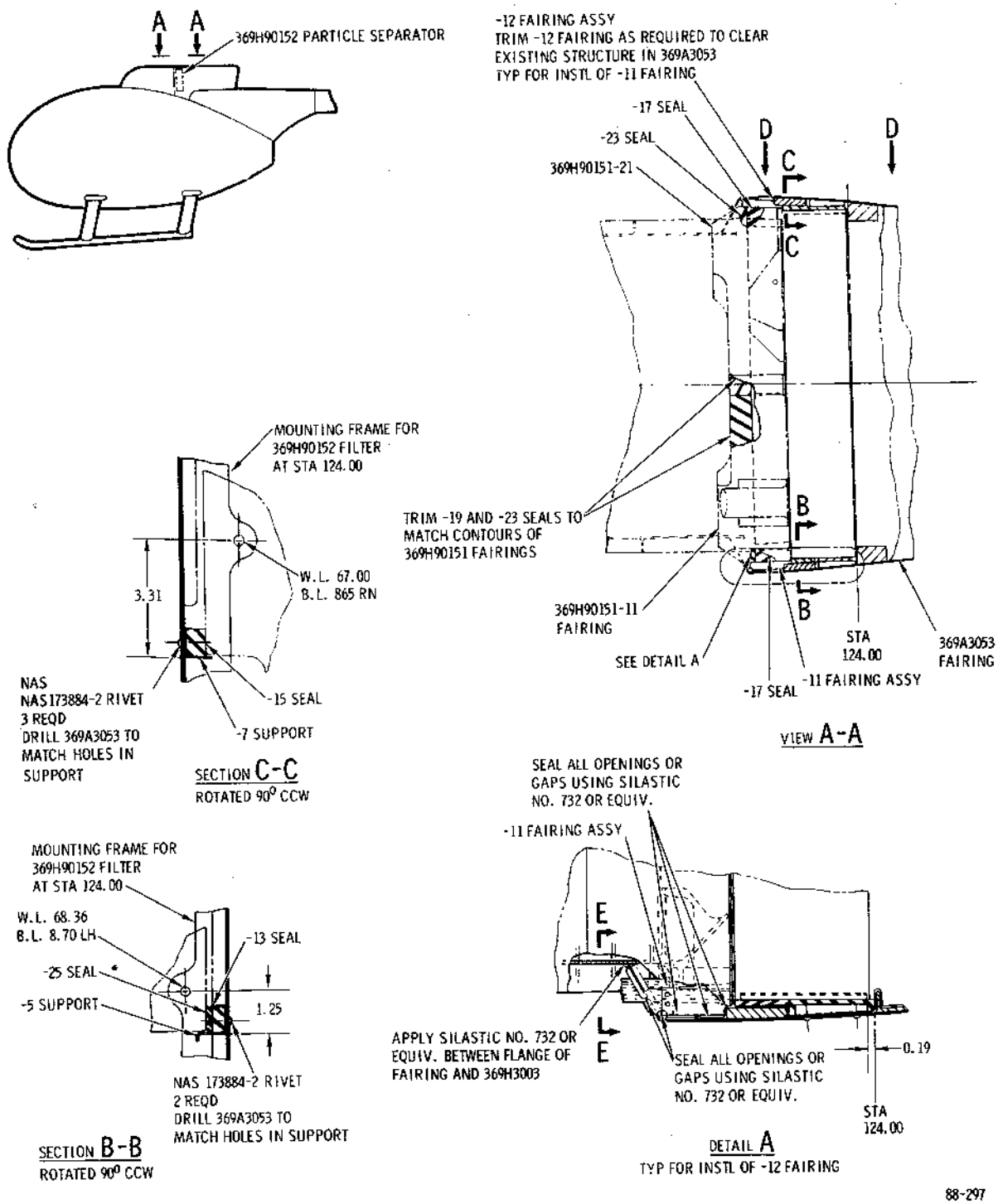
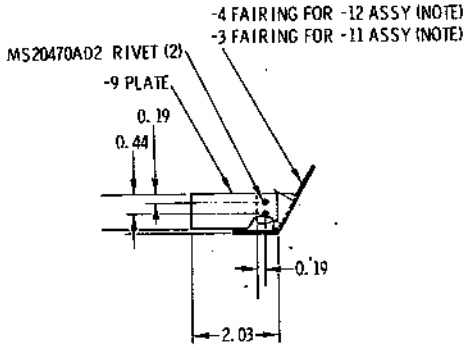
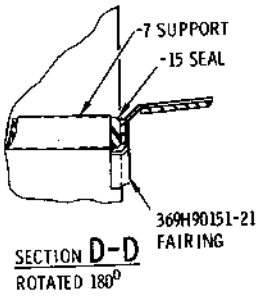
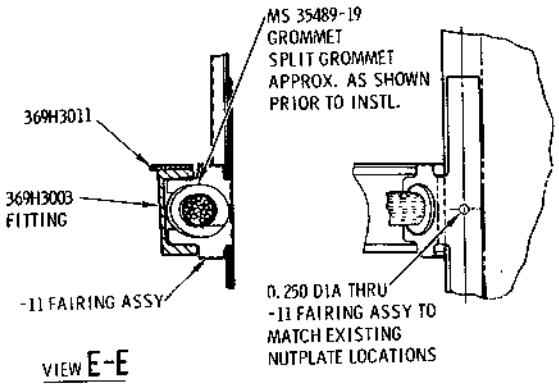


Figure 1. Installation of auxiliary fairings and seals, particle separator (Sheet 1 of 2)





SECTION D-D
ROTATED 180°



VIEW E-E
ROTATED 90° CCW
TYP FOR INSTL OF -12 FAIRING
ASSY

NOTE:

DRILL 0.063 DIA HOLES IN -3 AND -4 FAIRINGS TO MATCH HOLES IN -9 PLATE, 2 PLCS.

88-298

Figure 1. Installation of auxiliary fairings and seals, particle separator (Sheet 2 of 2)

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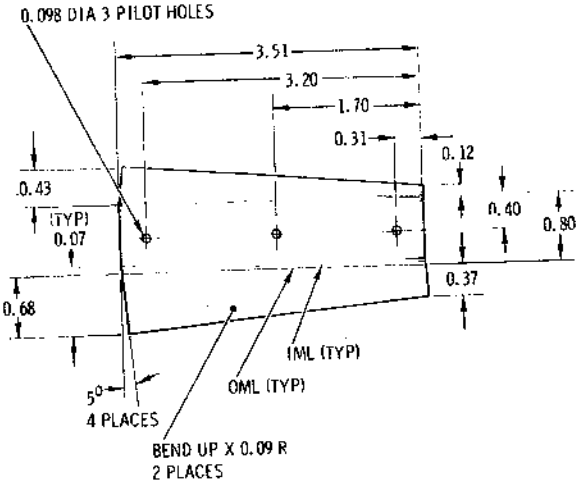
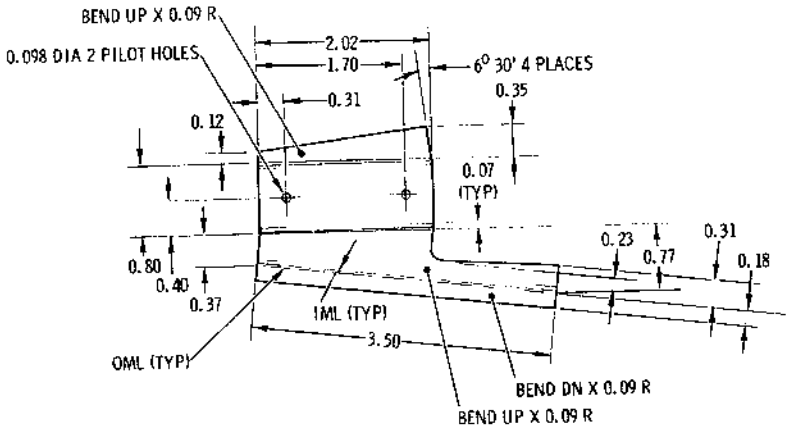
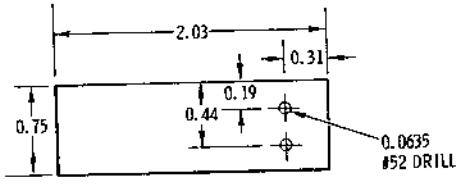


-7 SUPPORT (FLAT PATTERN)



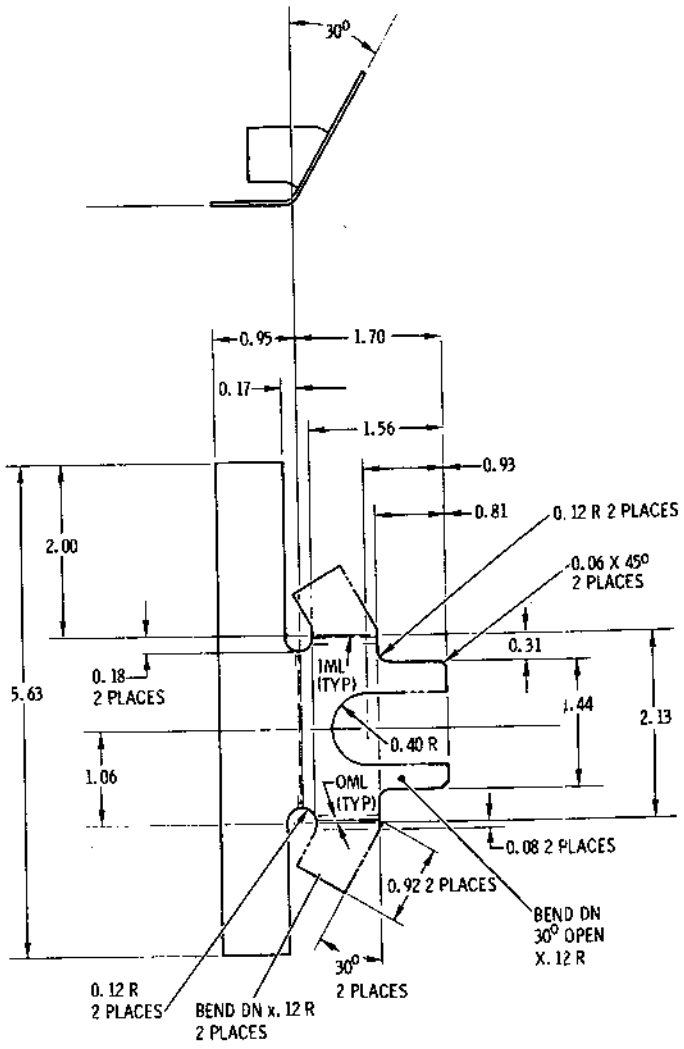
-5 SUPPORT (FLAT PATTERN)



-9 PLATE

88-285-1A

Figure 2. Field fabrication - auxiliary fairings and supports (Sheet 1 of 2)



-4 FAIRING (FLAT PATTERN) SHOWN
-3 OPP

88-285-2A

Figure 2. Field fabrication - auxiliary fairings and supports (Sheet 2 of 2)

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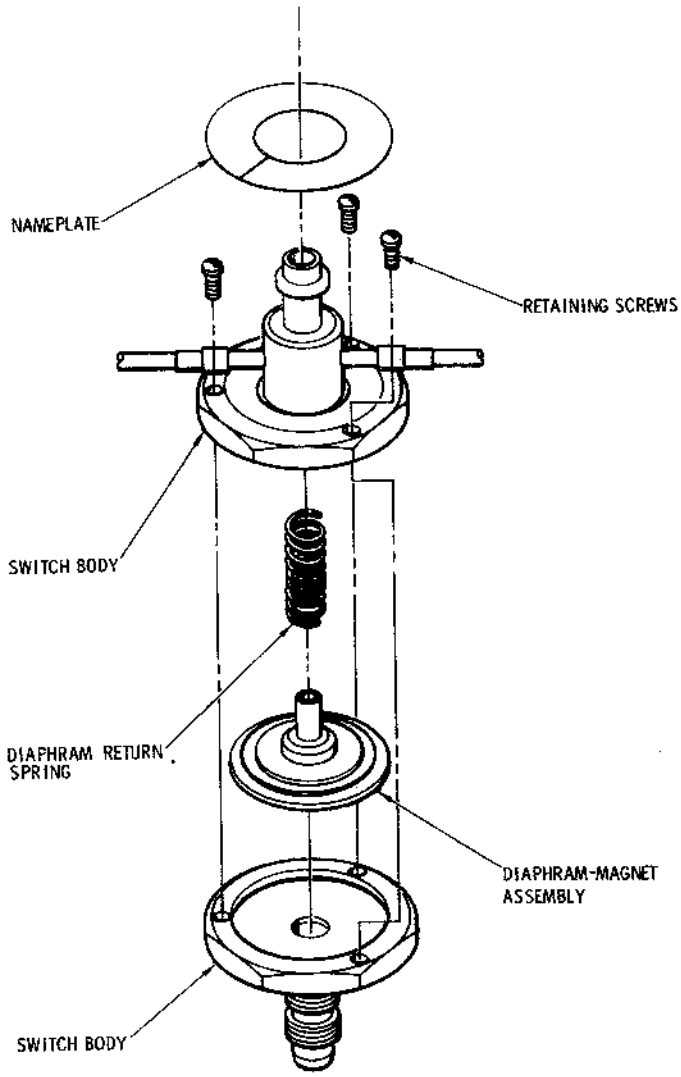

Figure 3. Rework of pressure switch to 369A8402-7 configuration

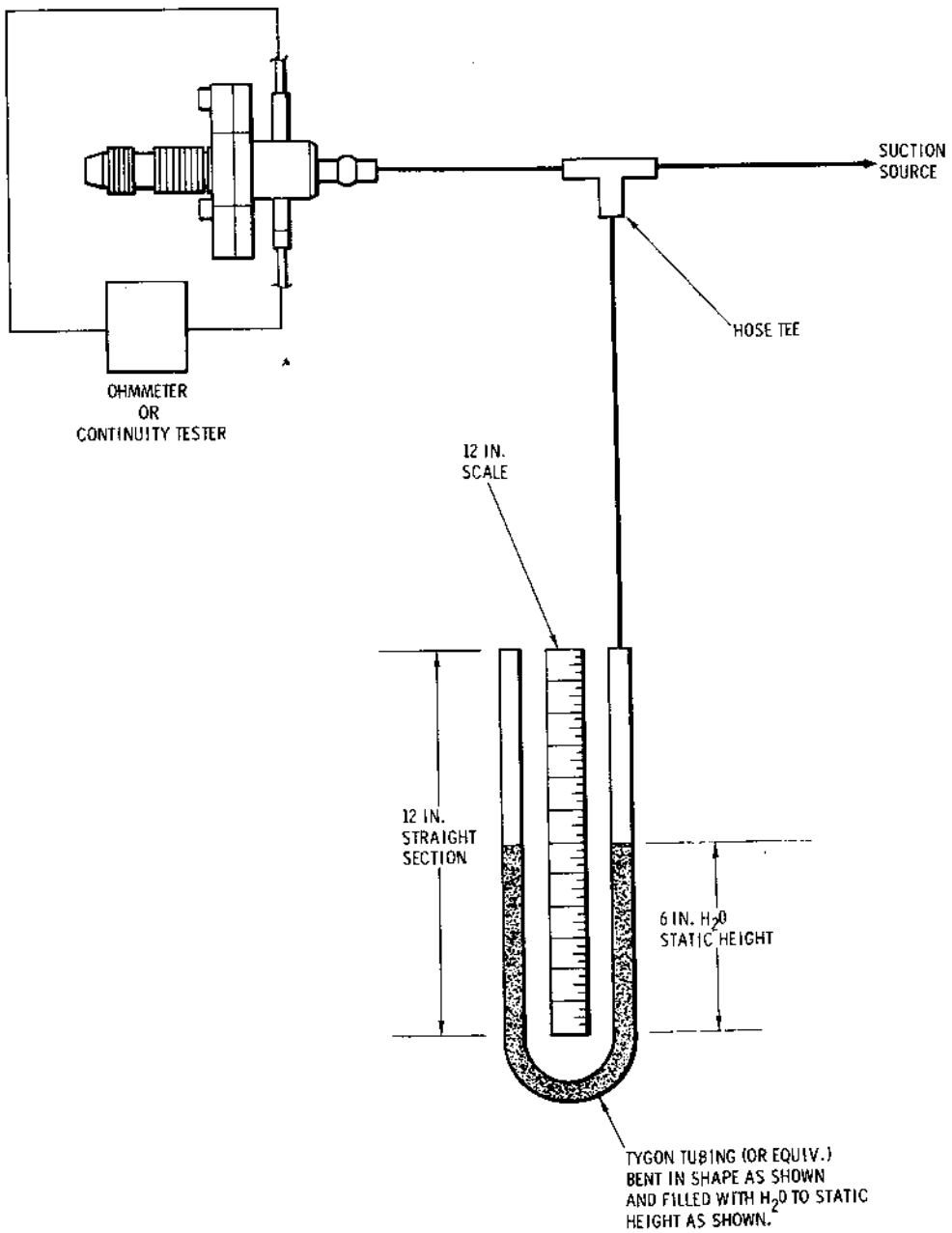

Figure 4. Function test - switch reworked to 369A8402-7 configuration

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REFERENCE SHEET

SERVICE INFORMATION NOTICES AND LETTERS

Action Reference: When performing maintenance or inspection of engine air filter particle separator kit installation, refer to Service Information Notice No. HN-144.

HMI Reference: Insert this sheet in HMI Appendix A, Group 12, page 12-19.

This reference sheet shall be kept as a part of the manual until the data is incorporated at the next revision of the HMI Appendix A. (Refer to Service Information Summary, HMI Appendix A, page 1.)