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SERVICE DIRECTIVE BULLETIN

DATE: February 13, 1997

1. SUBJECT: Cracked Isolation Mount Weldment

2. MODEL: TH-28 and 480 Helicopters

3. EFFECTIVITY: Model TH-28: Serial Numbers 3004 and 3006.
Model 480: Serial Numbers 5001 through 5017.

4. BACKGROUND:

Enstrom has received two reports from the field of a cracked isolation mount weldment. The cracks occurred at the weldment between the plate and the tube (see Figure 2).

The isolation mount weldment is welded to the pylon and is the mounting structure for the lower pulley isolation mount assembly.

5. COMPLIANCE:

Within the next 5 hours time in service, visually inspect the isolation mount weldment for cracks between the plate and the tube.

5.1. INSPECTION PROCEDURE:

1. Open the right side engine access panel and remove the access panel covering the steps and oil cooler heat exchanger (see Figure 1).

2. Clean the isolation mount as required.

3. Visually inspect the weld between the plate, the tube, and the surrounding area for cracks using a flashlight and mirror (see Figure 2).

4. If cracks are found, repair the isolation mount weldment in accordance with the repair procedure in Appendix A of this Service Directive Bulletin.

5. If no cracks are found, modify the pylon isolation mount weldment in accordance with the modification procedure in Appendix B of this Service Directive Bulletin. The helicopter may be returned to service if no cracks are found; however, the modification procedure in Appendix B must be made as soon as practical, but no later than the next 100 hour or annual inspection, which ever comes first.

NOTE

Refer to paragraph 11 for repetitive inspection requirements.

6. Reinstall the access panel covering the steps and oil cooler heat exchanger and close the right side engine access panel after completing the inspection procedure.

5.2. PARTS:

Description	Part Number	Quantity
Fitting	4130529-29	1 Each

6. SPECIAL TOOLS: None

7. MAN-HOURS:

.5 man-hours per inspection. 10 man-hours for the repair I/A/W Appendix A. 5 man-hours for the modification I/A/W Appendix B.

8. WARRANTY:

The replacement part will be provided free of charge. 10 man-hours of labor will be allowed for the repair procedure contingent on the return of the removed isolation mount plate. 5 man-hours will be allowed for the modification procedure.

9. WEIGHT CHANGE: None

10. LOG BOOK ENTRY:

Enter compliance with this Service Directive Bulletin for both the inspection and the repair or modification.

11. REPETITIVE INSPECTIONS:

Visually inspect the isolation mount for cracks in accordance with paragraph 5.1 as a preflight inspection until the isolation mount is modified/repaired in accordance with this Service Directive Bulletin.

NOTE

Compliance with this Service Directive Bulletin eliminates the preflight inspection requirement listed in this paragraph. The isolation mount is then inspected every 100 hours as part of the lower pulley assembly inspection as listed in the TH-28/480 Maintenance Manual.

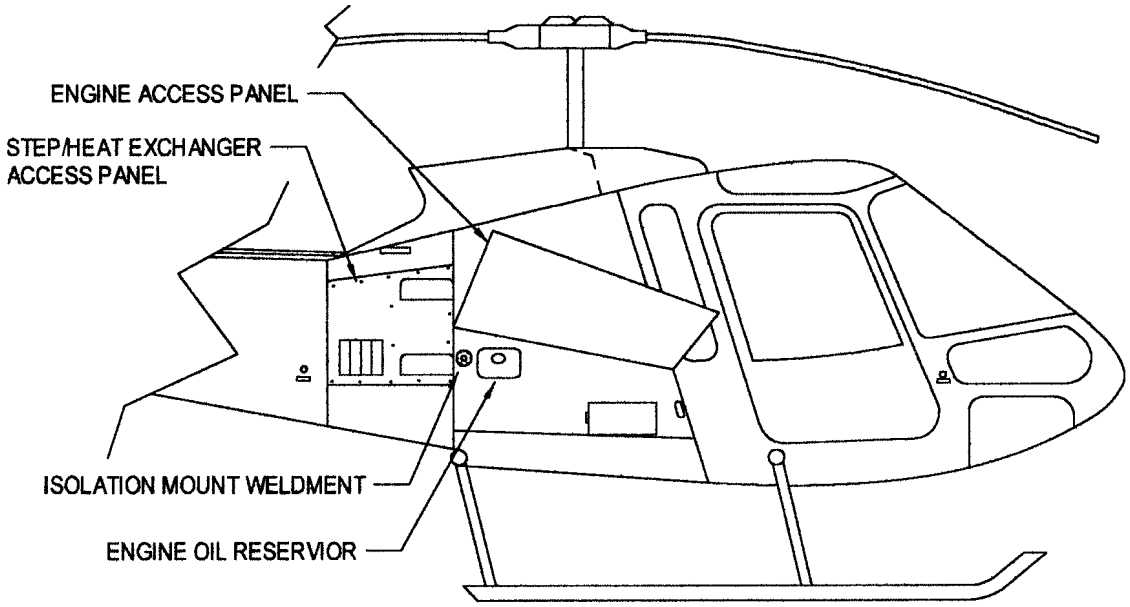

FIGURE 1

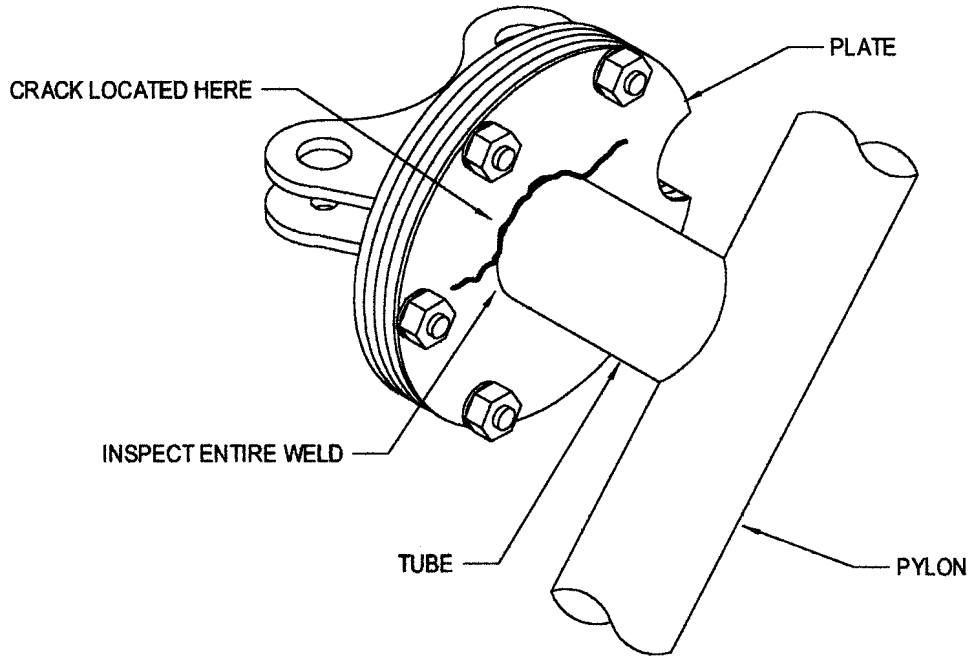

FIGURE 2

APPENDIX A

REPAIR PROCEDURE FOR ISOLATION MOUNT WELDMENT
FOUND CRACKED IN SERVICE

NOTE

Other parts of the helicopter may be removed as required to gain more access to the isolation mount area.

CAUTION

Plug and cap all open lines and fittings to prevent contamination of the engine oil system.

1. Drain and remove the engine oil reservoir and the scavenge oil filter assembly.

2. Index mark the tie rods (front and aft) and remove the tie rods from between the lower pulley assembly and the isolation mount. Do not change the rod lengths.

3. Disassemble the isolation mount (i.e. 5 screws, retaining ring, clevis, and rubber pads).

4. Pre-mark the butt line location of the isolation mount flange on the oil reservoir support bracket prior to cutting off the isolation mount flange (see Figure A2). Also mark the position of the scallop at the top surface of the oil reservoir support bracket (see Figure A1).

5. Cut off the isolation mount flange at the edge of the weld (see Figure A2).

6. Drill four #12 (4.8 mm) holes in the mounting tube at 45E to the water line (see Figure A3). Drill one pair of holes approximately .3 in. (7.6 mm) from the end of the mounting tube. Drill the other set of holes .55 in. (14.0 mm) from the end of the mounting tube.

7. Remove the epoxy paint finish from the pylon in the area shown in Figure A3 for a welder ground and around the holes for the rosette welds.

NOTE

Deburr the end of the stub pylon tube and clean the I.D. after cutting off the flange and drilling the four holes to insure no internal debris.

8. Index mark the scallop of the replacement fitting in the same location as the index mark on the scallop of the flange (see Figure A3). Insert the replacement fitting, P/N 4130529-29, into the stub pylon tube. Locate the position of the fitting by aligning the inboard side of the fitting with the index mark on the oil reservoir support bracket (see Figure A2) and aligning the scallop index mark with the top surface of the oil reservoir support bracket (see Figure A1).

WARNING

Engine damage may occur when making a weld repair to the pylon using electric TIG welding if the TIG welder in not properly grounded. Never attach the TIG welder ground to the engine. The ground must be attached to a clean bare pylon tube as close to the weld as possible (See Figure A3). Use a C-clamp or other clamping device to ensure that the ground does not come off the pylon while welding on the pylon with the engine installed.

9. Rosette weld the replacement fitting in 4 places.

10. Apply epoxy paint (Courtaulds Aerospace 593x300 or equivalent) to the replacement fitting, mounting tube, and the pylon as required for corrosion protection.

11. Reassemble the isolation mount. Tighten the nuts on the screws until the washer and nut contact the mounting plate and tighten the nut one full turn. Longer screws may need to be used for proper thread engagement.

NOTE

No adjustment of the tie rod length is required if the repair procedure is properly performed and the lower pulley system was in proper alignment before removing the tie rods for this repair. If the alignment of the lower pulley assembly is in question, check the alignment of the lower pulley system in accordance with paragraph 11-16 of the TH-28/480 Maintenance Manual.

12. Reinstall the tie rods between the lower pulley assembly and the isolation mount.

14. Reinstall the engine oil reservoir and the scavenge oil filter assembly. Service the engine oil reservoir.

15. Perform a limited maintenance ground run and limited maintenance test flight.

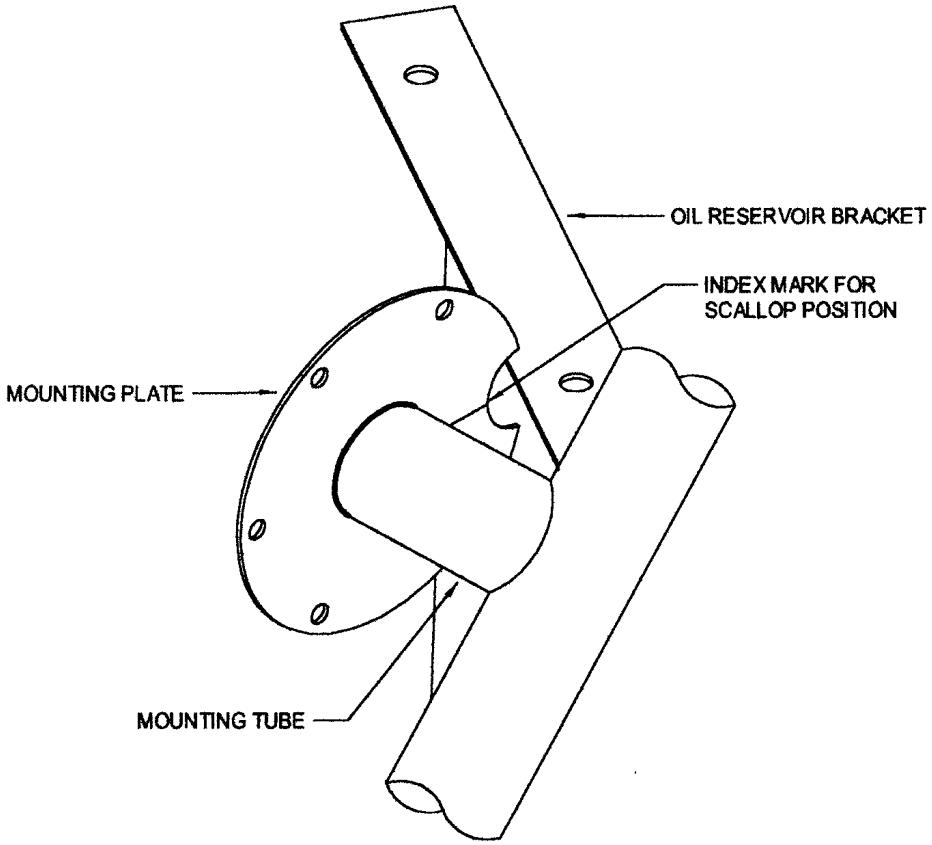

FIGURE A1

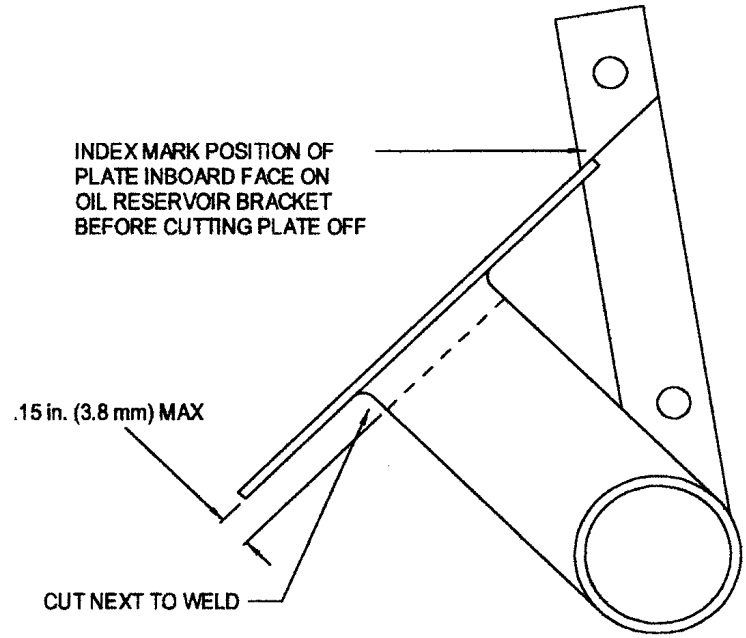

FIGURE A2

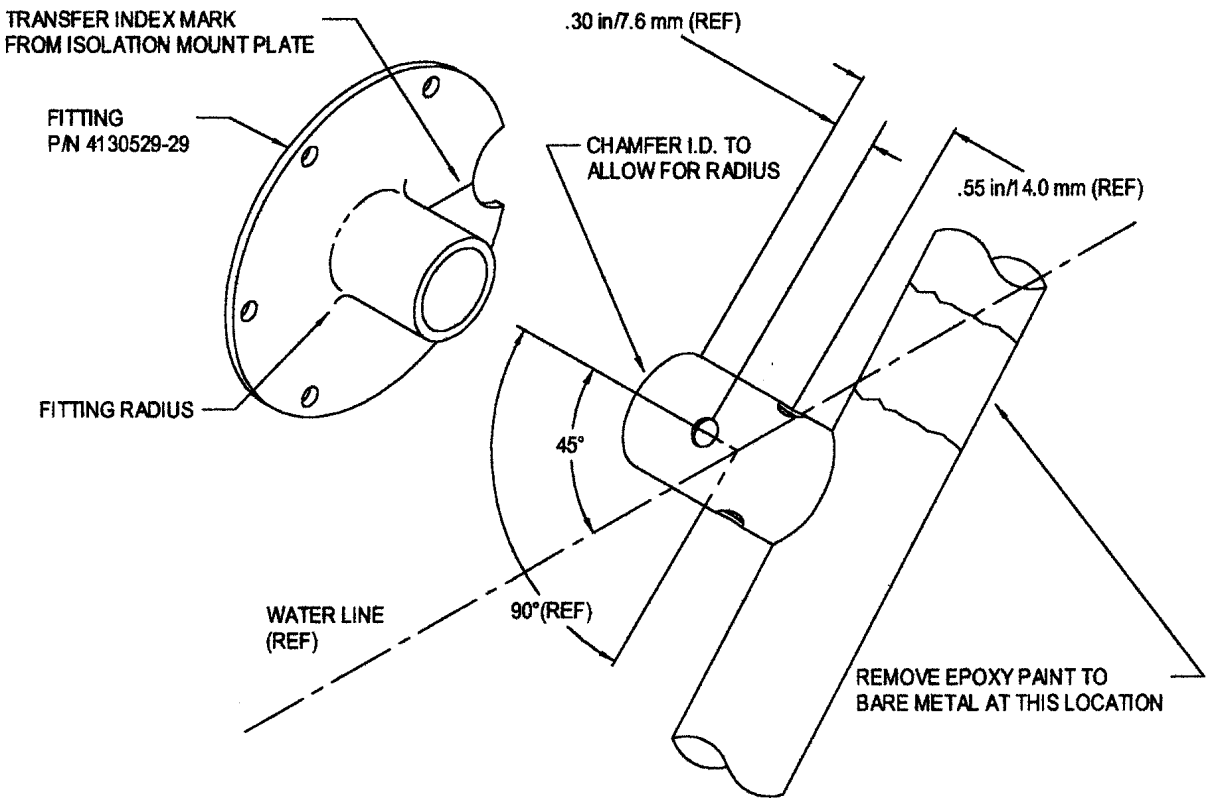
TRANSFER INDEX MARK
FROM ISOLATION MOUNT PLATE
FITTING
P/N 4130529-29
FITTING RADIUS
.30 in/7.6 mm (REF)
CHAMFER I.D. TO
ALLOW FOR RADIUS
.55 in/14.0 mm (REF)
45°
90°(REF)
WATER LINE
(REF)
REMOVE EPOXY PAINT TO
BARE METAL AT THIS LOCATION

FIGURE A3

APPENDIX B

MODIFICATION PROCEDURE FOR ISOLATION MOUNT WELDMENT NOT FOUND CRACKED IN SERVICE

NOTE

Other parts of the helicopter may be removed as required to gain more access to the isolation mount area.

CAUTION

Plug and cap all open lines and fittings to prevent contamination of the engine oil system.

1. Drain and remove the engine oil reservoir and the scavenge oil filter assembly.

2. Index mark the tie rods (front and aft) and remove the tie rods from between the lower pulley assembly and the isolation mount.

3. Disassemble the isolation mount (i.e. 5 screws, retaining ring, clevis, and rubber pads).

4. Check the fit of the replacement fitting, P/N 4130529-29, in the mounting tube. Polish the inside of the mounting tube as required to allow the replacement fitting to be inserted into the mounting tube. Chamfer the mounting tube at the inside diameter to clear the radius on the stub of the replacement fitting (see Figure B1). Remove the fitting from the mounting tube.

5. Drill four equally spaced #12 (4.8 mm) holes in the mounting tube at 45E to the water line (see Figure B1). Drill one pair of holes approximately .3 in. (7.6 mm) from the mounting plate. Drill the other set of holes .55 in. (14.0 mm) from the mounting plate. Deburr the holes and remove any debris from inside the mounting tube.

6. Remove the epoxy paint finish from the pylon in the area shown in Figure B1 and around the holes for the rosette welds.

NOTE

There might be a slight gap between the edge of the mounting plate and the fitting due to warping of the mounting plate when it was originally welded to the mounting tube.

7. Insert the replacement fitting into the mounting tube. Use an awl or screw and align the holes in the fitting with the holes in the mounting plate. Clamp the fitting to the mounting plate using spring clamps or other suitable devices.

WARNING

Engine damage may occur when making a weld repair to the pylon using electric TIG welding if the TIG welder in not properly grounded. Never attach the TIG welder ground to the engine. The ground must be attached to a clean bare pylon tube as close to the weld as possible (See Figure B1). Use a C-clamp or other clamping device to ensure that the ground does not come off the pylon while welding on the pylon with the engine installed.

8. Rosette weld the replacement fitting in 4 places.

9. Apply epoxy paint (Courtaulds Aerospace 593x300 or equivalent) to the replacement fitting, mounting tube, and the pylon as required for corrosion protection.

10. Reassemble the isolation mount. Tighten the nuts on the screws until the washer and nut contact the mounting plate (close the gap between the mounting plate and fitting if applicable) and tighten the nut one full turn. Longer screws may need to be used for proper thread engagement.

11. Reinstall the tie rods between the lower pulley assembly and the isolation mount.

NOTE

The adjustment of the tie rods in the next step assumes that the lower pulley alignment was correct before disassembly of the isolation mount for this modification. Perform a complete alignment check in accordance with paragraph 11-16 of the TH-28/480 Maintenance Manual if the lower pulley alignment is in question.

12. Shorten the tie rods 1⅓ turns.

13. Reinstall the engine oil reservoir and the scavenge oil filter assembly. Service the engine oil reservoir.

14. Perform a limited maintenance ground run and limited maintenance test flight.

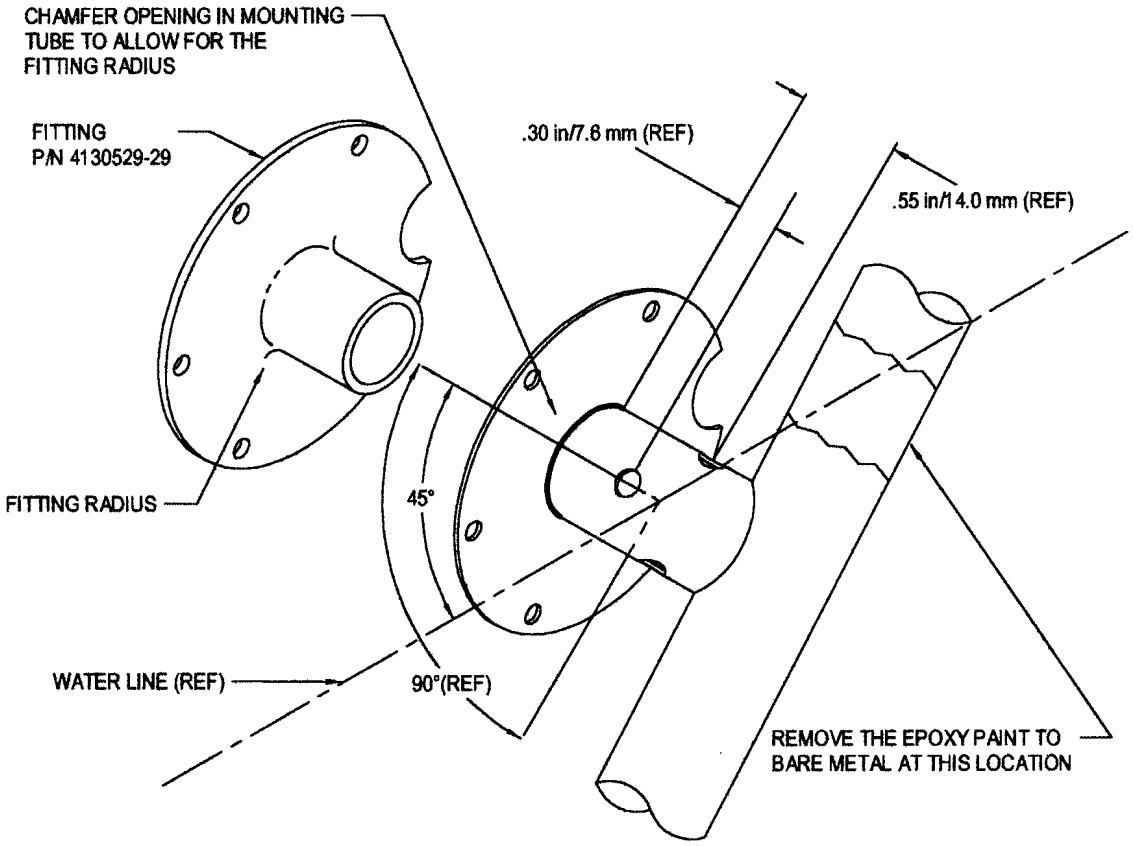

FIGURE B1

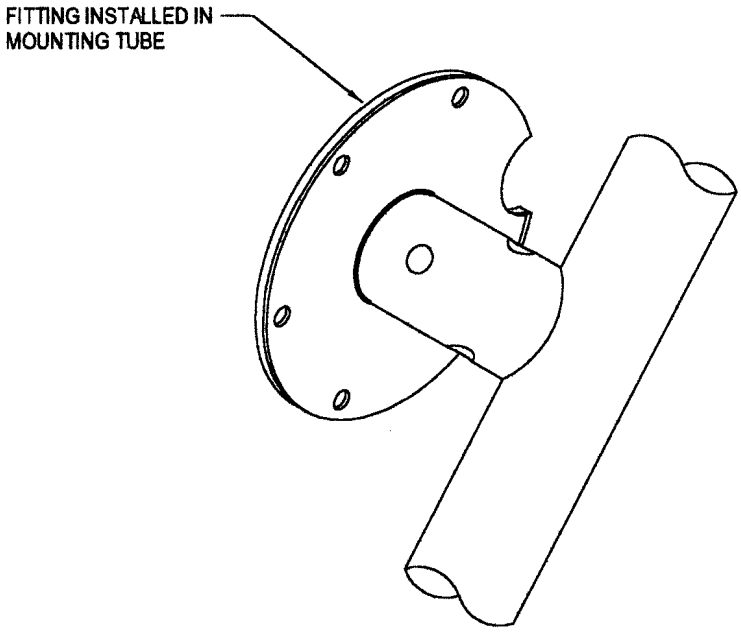

FIGURE B2