

Service Bulletin

Service Bulletin: SB412-707; Bell 412 Air Conditioner Condenser Frame Assembly Modified Mounting Configuration.

Subject: Air Conditioner Condenser Frame Modification

Date: 10 May, 2000

Applicability: Bell Helicopter Model 412 EP (S/N **36198** & **36199**) equipped with the Air Comm Corporation Air Conditioner System.

Reference:

1. F.A.A./S.T.C. #SR00066DE, Bell Helicopter 412 Air Conditioning System.
2. Condenser Installation Drawing #: 412AC-707
3. Plumbing Installation Drawing # : 412AC-508
4. Condenser Frame Drawing #: 412AC-7038
5. Condenser Frame Drawing #: 412AC-7060
6. Air Conditioner Service Manual # 412AC-208M

Compliance: Shall be at the discretion of the operator.

I. Discussion:

During the initial installation of the 412AC-7038 Condenser Assembly, an interference with existing aircraft equipment resulted in the necessity for a field modification of one, or more of the Condenser Legs.

The resulting modification resulted in an inability to replace the Condenser Frame Assembly should it become necessary, utilizing a standard Condenser Frame.

This Service Bulletin provides the necessary instruction, and a bill of materials to modify a standard 412AC-7038 Condenser Frame Assembly to accommodate the field modification to the condenser Legs of Bell 412 EP S/N 36198 & 36199.

II. Approval:

The Technical aspects of this Service Bulletin have been FAA / DER approved.

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III. Purpose:

This Service Bulletin provides a change to the Condenser Leg(s) affected by the field modification to facilitate the interchangeability of the condenser assembly.

IV. Bill of Materials:

Qty.	Part Number	Nomenclature
1	412AC-7060-10	Mounting Foot Assy. RH FWD N708H
1	412AC-7060-11 (M/F 412AC-7060- 23,-24, & -25)	Mounting Foot Assy. LH FWD N708H
1	412AC-7060-12	Mounting Foot Assy. RH FWD N709H
1	412AC-7060-14	Mounting Foot Assy. LH FWD N709H
4	412AC-7060-21	Mounting Foot Base
3	412AC-7060-22	Mounting Leg
3	AN3C-10A	Bolt
3	NAS1149C0332R	Washer
3	MS21043-3	Nut
2 feet	308L	Welding Rod

V. Removal and Replacement of the Condenser Assembly.

NOTE

Disconnect battery and external power before starting work.

1. Discharge refrigerant from the air conditioner system.

NOTE

This system should be serviced by qualified personnel only!

2. Remove the aft cabin headliner assembly to gain access to the Condenser Frame mounting nutplate brackets.
3. Disconnect terminal leads from the aircraft wiring harness that attaches to the ES59120 RF Filter. These are located on each side of the aft lower section of the condenser frame.
4. Disconnect the 412AC-5026-H10 Hose, and the 412AC-5048-P19 Tube Assembly from the fittings on the aft of the 412AC-7007-4 Condenser Assembly.

CAUTION

Always use a back-up wrench when connecting or disconnecting refrigerant lines.

NOTE

Cap all refrigerant lines to reduce the possibility of system contamination, and refrigerant oil loss.

5. Remove the M485 Clamp, which retains the 804-297 Receiver Drier to the forward R/H Condenser mounting leg.
6. Remove all eight (8) bolts from Condenser Assembly Feet.

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7. Remove the 412AC-7007-4 Condenser Assembly from the aircraft.

NOTE

It maybe necessary to loosen the mounting hardware on the Hydraulic Reservoirs located on either side of the Condenser assembly to provide clearance with the Condenser Assembly Mounts. Consult the appropriate BHT Service Manual for Removal and Reinstallation of these parts.

The Following section contains instructions specific to the modification of aircraft S/N 36198 (N708H).

Instructions specific to S/N 36199 (N709H) are found in section VII. of this document.

These instructions are to be completed only when a replacement Condenser Assembly is required.

VI. Modification instructions for the Condenser Frame Assembly for S/N 36198 (N708H).

1. On the forward L/H & R/H Condenser Frame Legs, Measure down from the base of the forward condenser cross support 1.25" of the new condenser frame (See Page 6 of 10).
2. Cut off the bottom portion of the Frame Legs by removing the excess material with a Hacksaw or Cutoff Wheel, and discard the material that has been removed.

NOTE

Break all sharp edges from the areas from which the material was removed.

3. Install 412AC-7060-10 (R/H), and 412AC-7060-11 (L/H) Mounting Foot Assy. in the openings made in the condenser frame legs. Temporally re-install the condenser assembly in its original position in the aircraft, placing one each of the 412AC-7060-21 Mounting Foot Bases under the -10 & -11 Mounting Foot Assemblies. Position the Mounting Foot Assemblies and the Mounting Foot Bases as to align with the original mounting holes in the aircraft structure. Mark their location, and remove the condenser assembly again from the aircraft. Preheat parts to 350° F, and TIG weld the -21 Mounting Foot Bases to the -10 and -11 Mounting Foot Assemblies per Mil-W-8811 using the 308L welding rod, and match drill .193 DIA. Through the Condenser Frame Leg (See Pages 7 & 9 of 10).

NOTE

The 412AC-7007-4 Condenser Assembly should be placed on a level surface prior to match drilling .193 DIA, this will insure the proper location of the 412AC-7060-10, and -11 Mounting Foot Assy.

NOTE

If preferred the Condenser Mounting Foot Assemblies and Bases maybe returned to the Air Comm Corporation for welding.

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4. Install 1 each AN3C-10A Bolt through the match drilled hole.
5. Install 1 each NAS1149CO332R Washer, 1 each MS21043-3 Nut, and Torque to 50 to 70 in. lbs.
6. Reinstall the Condenser Assembly per Condenser Installation Drawing 412AC-707.

NOTE

Acceptable to shim under leg if required, using 6061-T6 aluminum.
Epoxy polyamide primer per, MIL-P-23377 TY I.

VII. Modification instructions for the Condenser Frame Assembly for S/N 36199 (N709H).

1. On the forward L/H and R/H Condenser Frame Legs, measure down from the base of the forward condenser cross support 1.25", on the new condenser frame (See Page 6 of 10).
2. Cut off the bottom portion of the Frame Legs by removing the excess material with a Hacksaw or Cutoff Wheel, and discard the material that has been removed.

NOTE

Break all sharp edges from the areas from which material was removed

3. Install 412AC-7060-12 (RH), and 412AC-7060-14 (L/H) Mounting Foot Assy. in the openings made in the condenser frame legs. Temporally re-install the condenser assembly in its original position in the aircraft, placing one each of the 412AC-7060-21 Mounting Foot Bases under the -12 & -14 Mounting Foot Assemblies. Position the Mounting Foot Assemblies and the Mounting Foot Bases as to align with the original mounting holes in the aircraft structure. Mark their location, and remove the condenser assembly again from the aircraft. Preheat parts to 350° F, and TIG weld the -21 Mounting Foot Bases to the -12, and -14 Mounting Foot Assemblies per Mil-W-8811 using the 308L welding rod, and match drill .193 DIA. Through the Condenser Frame Leg (See Pages 8 & 10 of 10).

NOTE

The 412AC-7007-4 Condenser Assembly should be placed on a level surface prior to match drilling .193 DIA, this will insure the proper location of the 412AC-6070-12, and 412AC7060-14 Mounting Foot Assy.

NOTE

If preferred the Condenser Mounting Foot Assemblies and Bases maybe returned to the Air Comm Corporation for welding.

4. Install 1 each AN3C-10A Bolt Through the match drilled hole(s).
5. Install 1 each NAS1149CO332R Washer, 1 each MS21043-3 Nut, in each of the Frame leg, and Torque to 50 to 70 in. lbs.
6. Reinstall the Condenser Assembly per Condenser Installation Drawing 412AC-707.

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(Modification instructions continued)

NOTE

Acceptable to shim under leg if required, using 6061-T6 aluminum.
Epoxy polyamide primer per, MIL-P-23377 TY I.

VIII. Air Conditioner Servicing Instructions.

NOTE

This system should be serviced by qualified personnel only!

1. Connect a service manifold to the service ports located on the R/H side of the cabin roof adjacent to the Aft Evaporator Assembly.
2. Apply a vacuum to the system for a minimum of 30 minutes to check for leaks, and draw any moisture from the system.
3. Charge system with 6.25 lbs. (2.8 Kg.) of R134a refrigerant.

NOTE

Additional Information for charging, and leak checking this system can be found in the 412AC-208M Air Conditioner Service Manual.

IX. Weight & Balance:

There is a negligible change to the weight of the Condenser Assembly Due to this modification of the Condenser Frame.

X. Electrical Considerations:

A power on check of the Condenser Blowers should be conducted on completion of the Condenser Assembly installation to insure the proper rotation of the blower fans.

The Condenser Blowers are designed to exhaust the air through the Condenser Assembly and disperse it overboard through the cutouts in the sides of the upper transmission cowling.

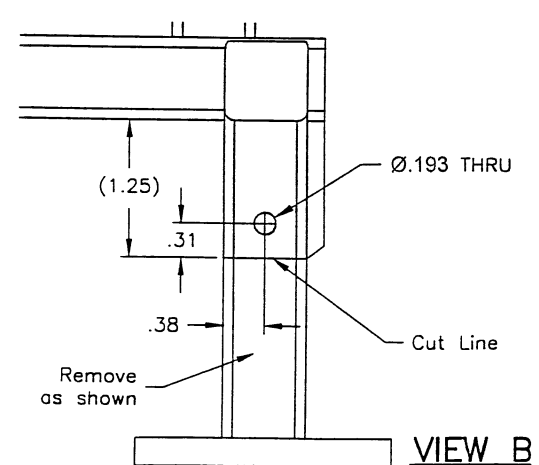
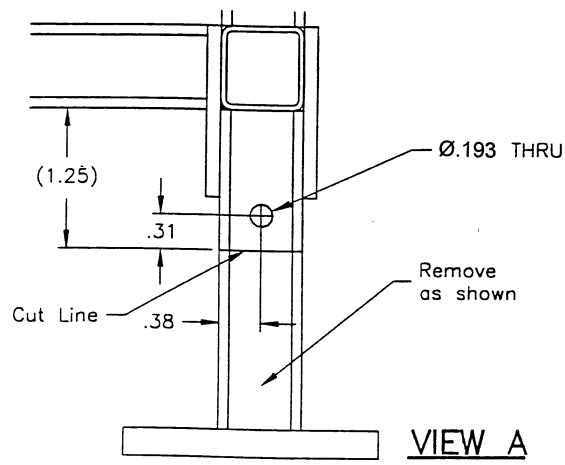
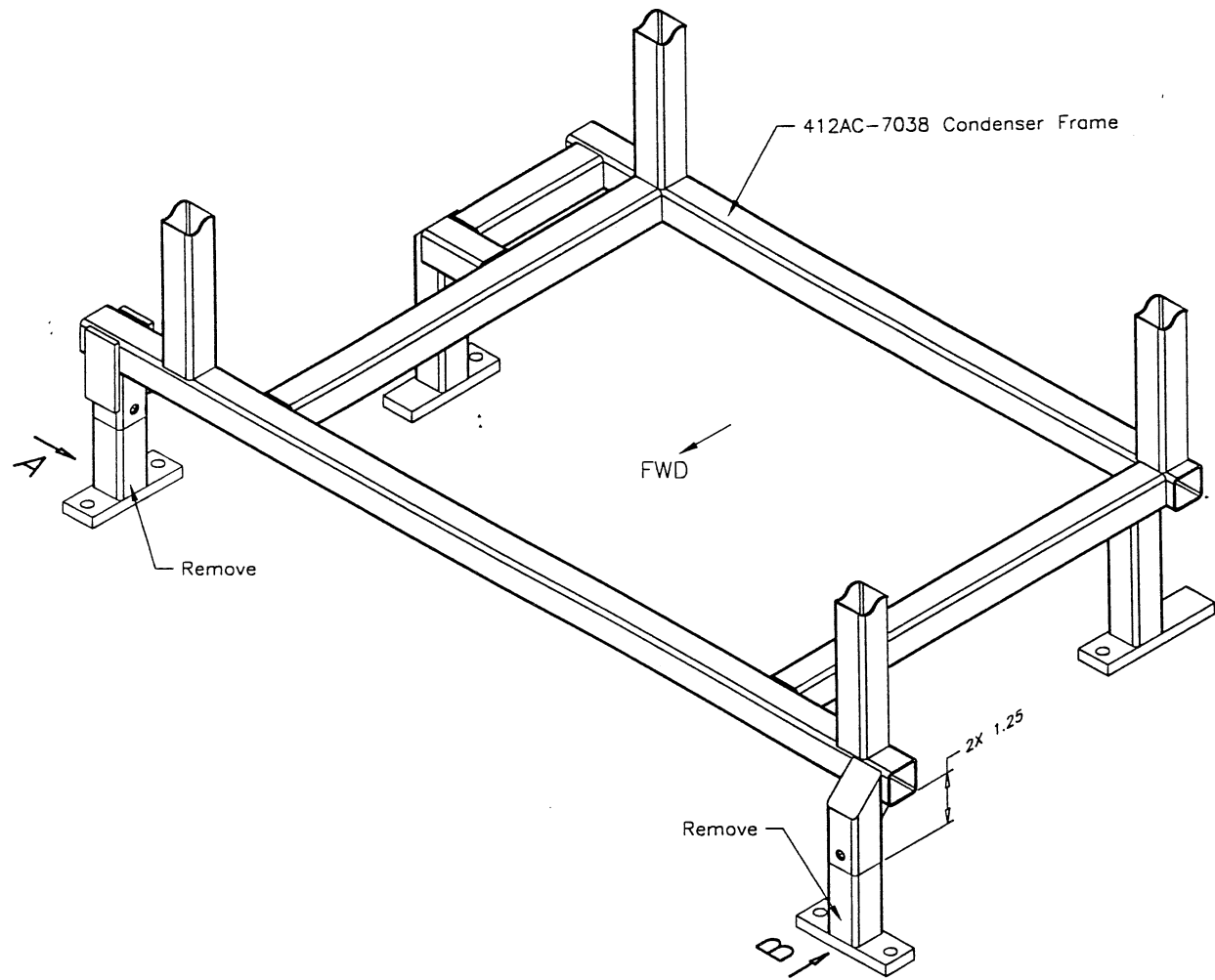
XI. Inspection Procedure:

- Inspect for the proper rotation of the Condenser Blowers (See Electrical Considerations).
- Inspect Condenser Assembly mounting hardware for condition and security after 1st flight.
- Inspect for refrigerant leaks around the Condenser Assembly fittings that were removed for this modification using an electronic leak detector.

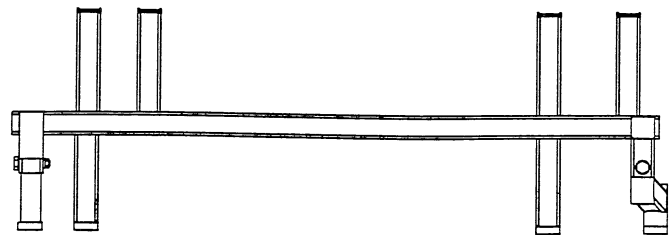
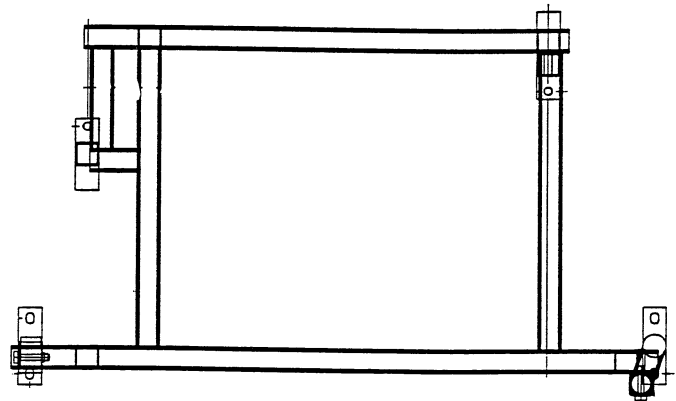
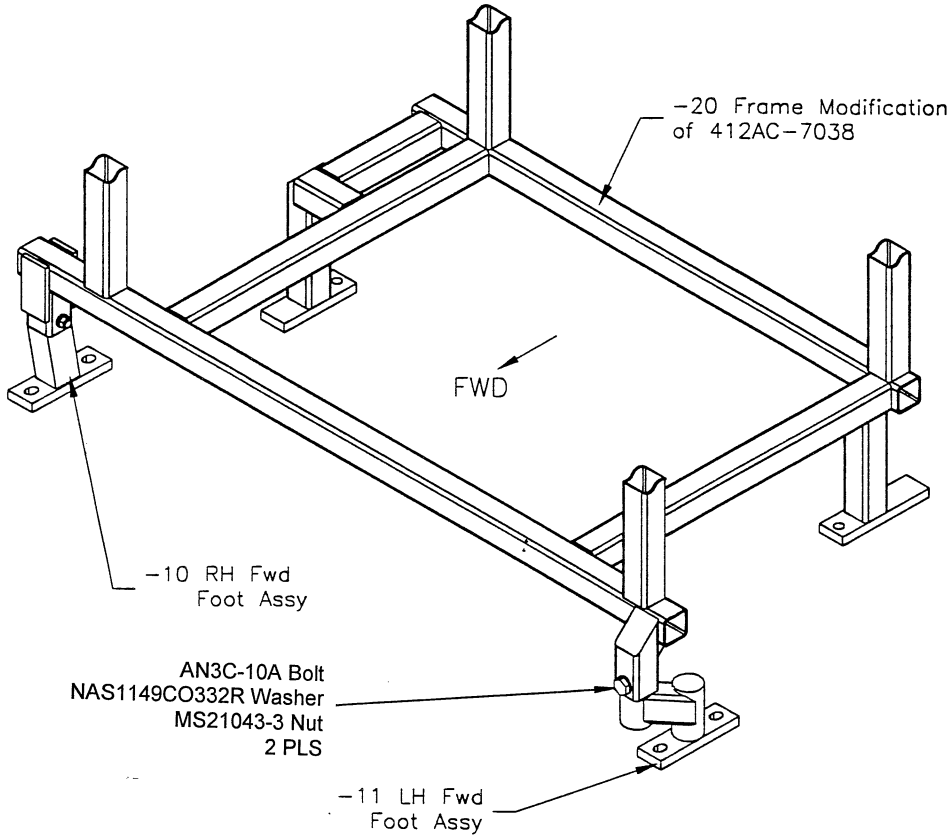
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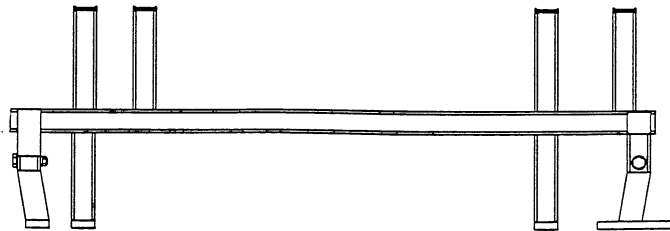
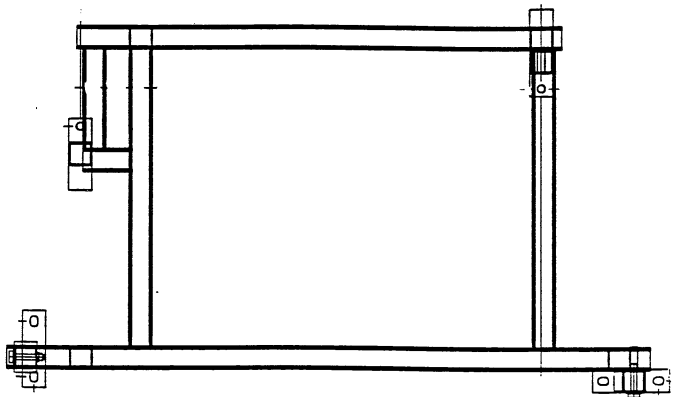
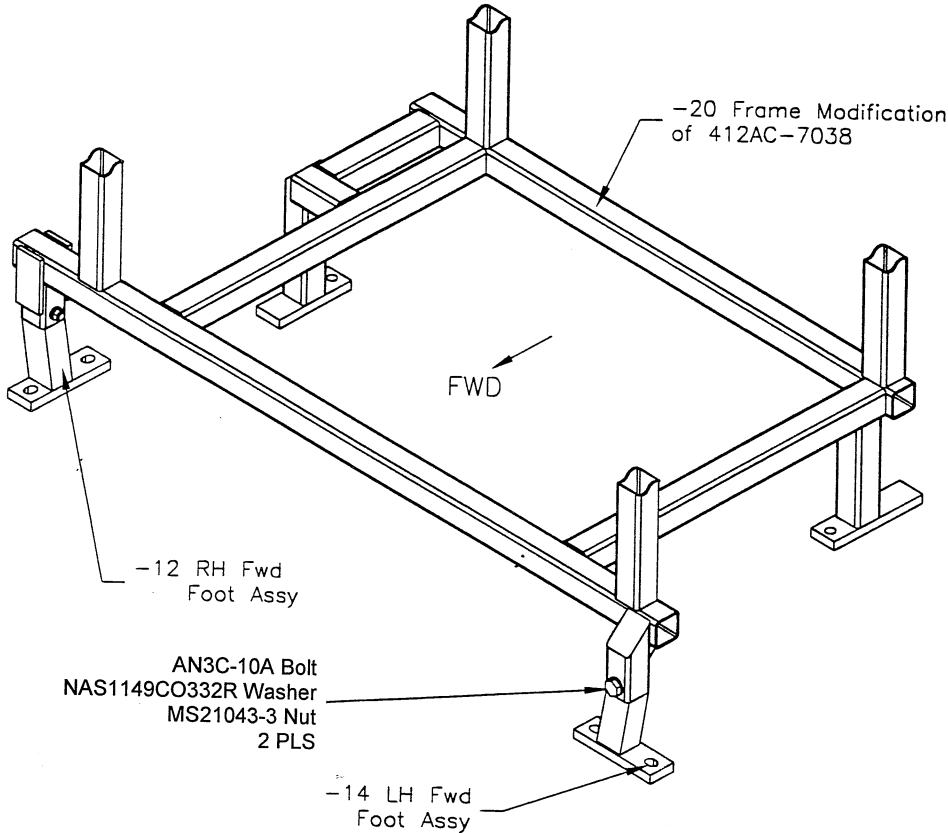
412AC-7038-20 Condenser Frame Modification
(Basic Frame Shown)



-1 Frame Assembly
(N708H)

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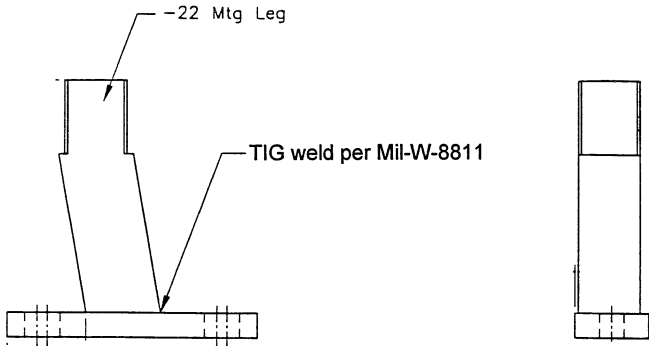
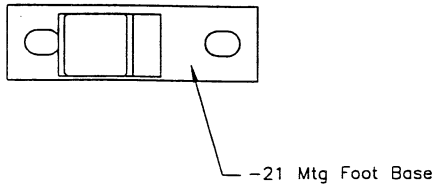
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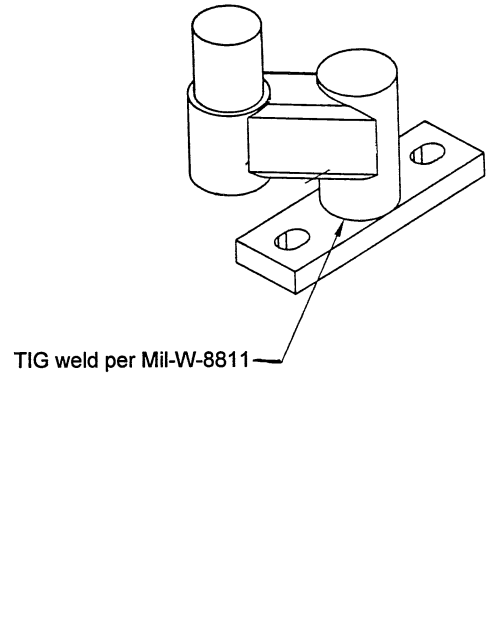
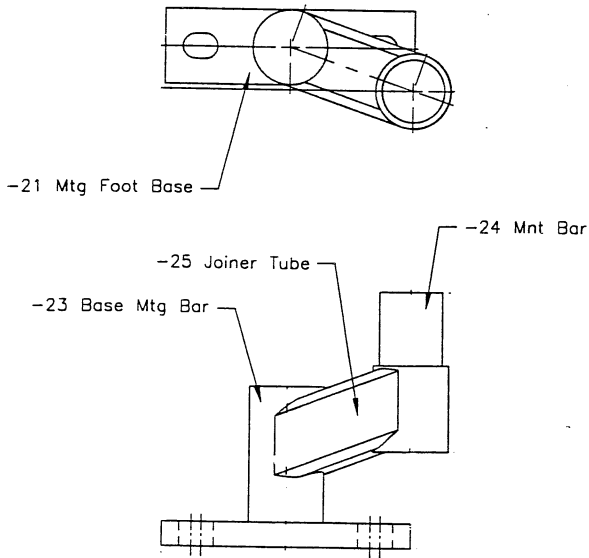
**-2 Frame Assembly
(N709H)**

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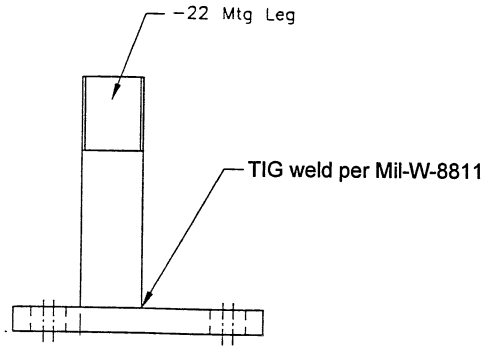
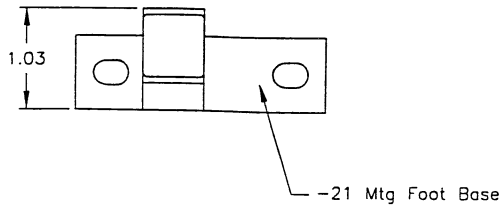


-10 Mtg Foot Assy
RH Fwd Mnt- N708H

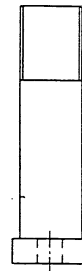
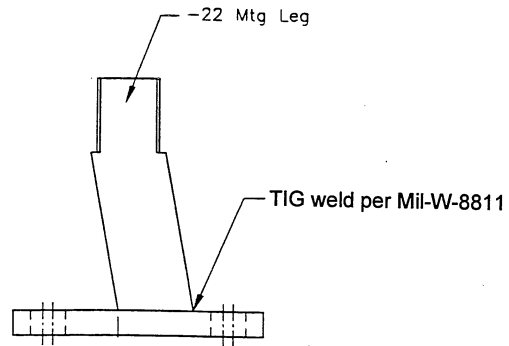
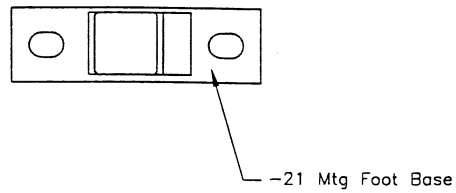


-11 Mtg Foot Assy
LH Fwd Mnt- N708H

412AC-7060-10 & -11 Mounting Foot Assemblies
(N708H)



-12 Mtg Foot Assy
RH Fwd Mnt- N709H



-14 Mtg Foot Base
LH Fwd Mnt- N709H

412AC-7060-12 & -14 Mounting Foot Assemblies
(N709H)

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