

ASSEMBLY INSTRUCTIONS FOR INDUCED DRAFT, GEAR DRIVE UNITS

Customer is to provide the foundation or supports, with anchor or setting bolts. Information for base plates and bolt requirements is shown on the General Arrangement drawings .

1. Review General Arrangement drawings, Assembly drawings, and Parts List.
2. Identify and sort materials per assemblies.
3. An assembly crew of 4 to 5 is recommended for substructure and walkways. For units shipped unassembled, a second crew of 4 to 5 is recommended for tube bundles, hoods, mechanicals, louvers, and steam coils, if required.
4. Substructure can be erected as the basic unit is being assembled.

A. SUBSTRUCTURE

1. Place columns on anchor bolts or support beams (loose bolted). Shims, by others, may be required for proper elevation.
2. Install cross bracing (loose bolted).
3. Tighten all bolts on substructure.
4. Install assembled unit to substructure. See sections B through E for unit assembly, if required. **For units shipped assembled, these sections are included for reference only.**
5. Install knee braces to columns and tube bundle frames.
6. Attach walkway supports and brackets, if required. See Parts List and Assembly drawings.
7. Attach walkway stringers, handrails, and ladders, if required. See Parts List and Assembly drawings.

B. HOOD ASSEMBLY

1. Prop up hood end panels with 3 ft. (0.9 m) wood timbers, or other support. Loose bolt corner splice angles to end panels. Loose bolt hood side panels to corner splice angles. Attach vertical stiffeners to end and side panels. These stiffeners may be bolted tight at this time. Loose bolt hood top panels to side and end panels. Leave out bolts which are also attached through fan ring sections. See Fig. B1.
2. Loose bolt fan ring quarters to each other and then loose bolt fan ring to top panels. See Fig. B2.
3. Square off the hood and tighten all bolts.
4. Install inlet bell. See Fig. B3 and "INLET BELL INSTALLATION FOR INDUCED DRAFT UNITS".
5. Attach louvers, if required, to tube bundle frame.
6. Place tube bundle frame, with louvers and steam coil, if required, on a 4 ft. (1.2 m) spacer support. Attach hood assembly to tube bundle frame assembly. Lift hood using eyebolts or hooks through the fan ring stiffeners or through the top flange holes at splice bars. Remove shaft-thru air seals, if required, for installation of fan mount. See Fig. B4.
7. Lift fan mount through top of fan ring and lower down onto fan mount support in tube bundle frame, or for multi-bundle units, onto tube bundle frame side channels. Reinstall shaft-thru air seals, if required, after fan mount is bolted to fan mount support. Install fan ring struts. See Fig. B5.

C. GEAR DRIVE INSTALLATION

1. Place leveling support plate on machinery mount. Bolt gear and motor through leveling support plate, and shims if required, onto machinery mount. See Fig. C1.
2. Apply grease ("NEVER-SEEZ" or equivalent) to motor and gear shafts.
3. Attach motor coupling, with keys, and align shafts per coupling brochure. See Fig. C2.
4. Attach machinery mount to tube bundle frame(s). See Fig. C3.
5. For units in which the fan shaft runs between two bundles, attach machinery mount brace to machinery mount and tube bundle frame. See Fig. C4.

D. SHAFT INSTALLATION

1. Apply grease ("NEVER-SEEZ" or equivalent) to upper (tapered) end of fan shaft. Attach upper bearing to fan shaft and tighten bearing set screws into groove in shaft. Place fan shaft with bearing through the top of fan mount.
2. Apply grease ("NEVER-SEEZ" or equivalent) to lower end of fan shaft and to gear shaft.
3. Attach fan shaft coupling, with keys, and align shafts per coupling brochure. See Fig. D1. NOTE: Upper bearing must support fan shaft. Coupling is not designed to take the load of the fan shaft or the fan.
4. Bolt bearing to fan mount, with grease connection facing the machinery mount side channel to which remote grease fitting will be installed. See Fig. D2.
5. Install grease line to fan shaft bearing. See Fig. D3 and "DRIVE ASSEMBLY" section of Parts List for grease line fittings and couplings. Grease bearings per "LUBRICATION INSTRUCTIONS FOR FAN SHAFT BEARINGS".

E. FAN INSTALLATION

1. Install fan assembly to shaft. See fan brochure.
2. Set radial clearance between the fan blade tip and the fan ring per chart below. See fan brochure for adjustment procedure.

Fan Diameter, D	D 10 ft. (D 3.05 m)	10 ft. < D < 20 ft. (3.05 m < D < 6.1 m)	D 20 ft. (D 6.1 m)
Min. Clearance	3/8" (10 mm)	3/8" (10 mm)	3/8" (10 mm)
Max. Clearance	5/8" (16 mm)	3/4" (19 mm)	1" (25 mm)

3. Set fan blade pitch per the FIN-FAN[®] specification sheet. See fan brochure for blade pitch adjustment procedure.
4. Install AV accessory support, if required. See "FAN ASSEMBLY" section of the Parts List for air line fittings and couplings.
5. Install fan guards, if required.
6. Install coupling guards.
7. Install vibration switch, if required. See vibration switch brochure.

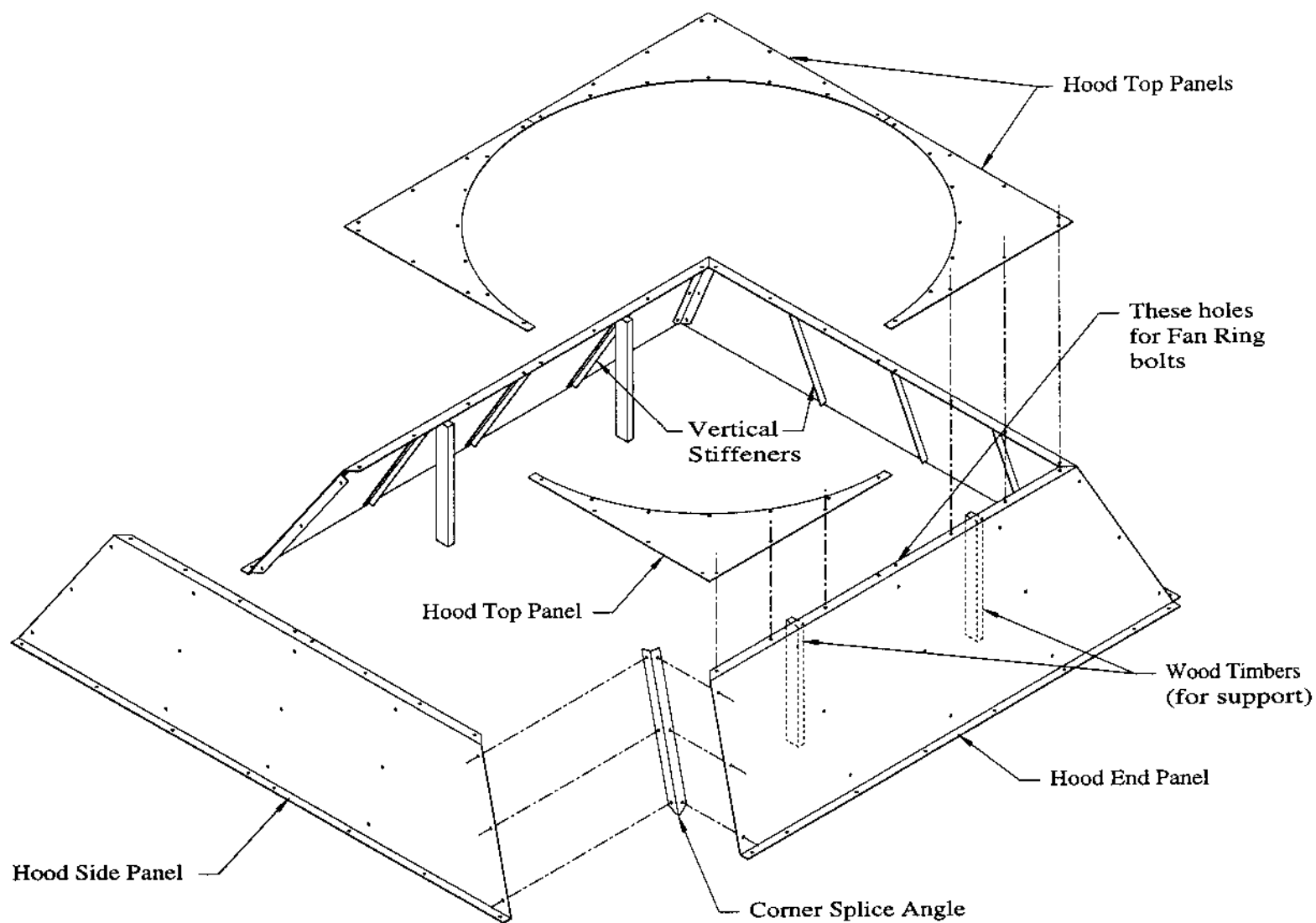


FIG. B1 - END, SIDE, AND TOP PANELS

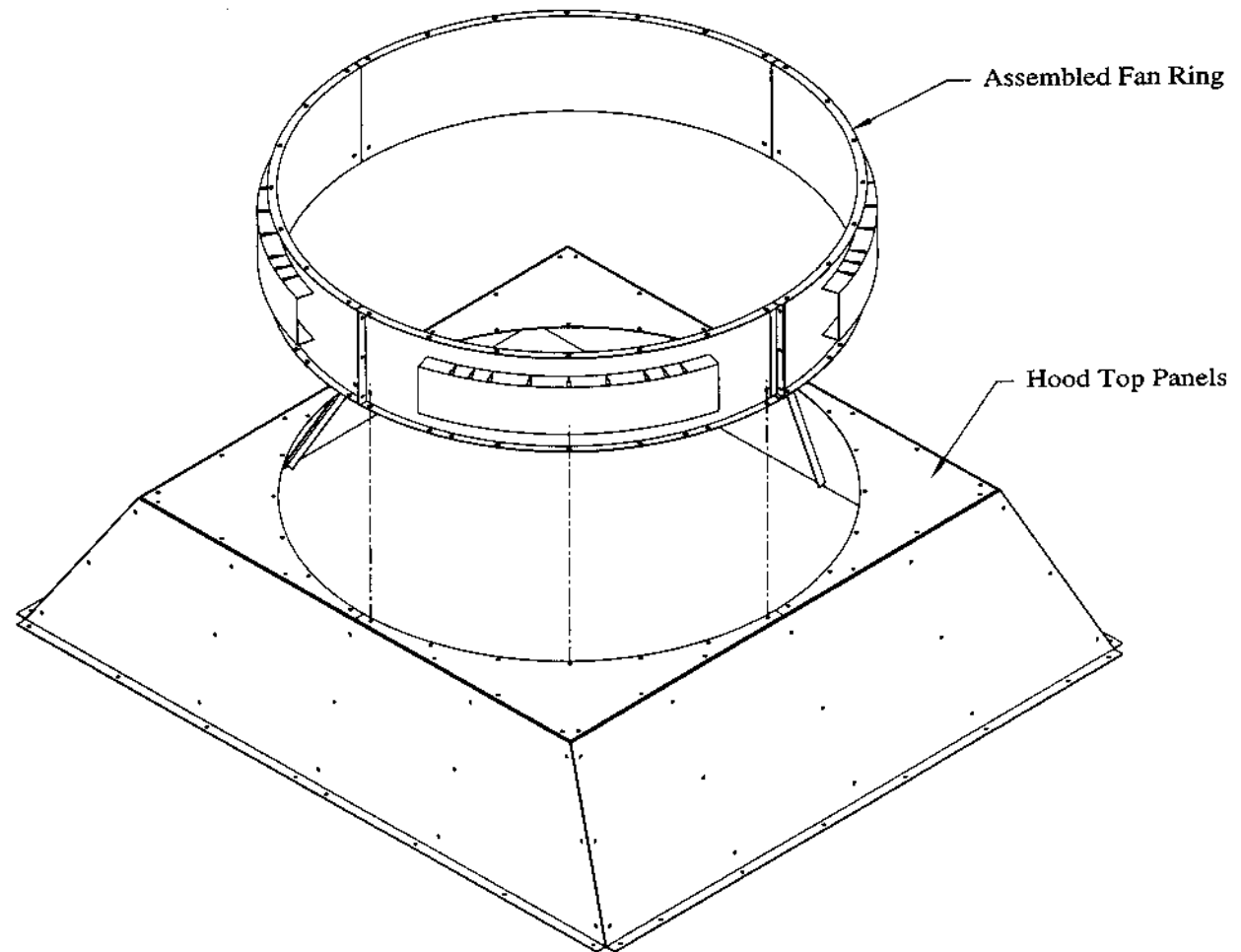


FIG. B2 - FAN RING

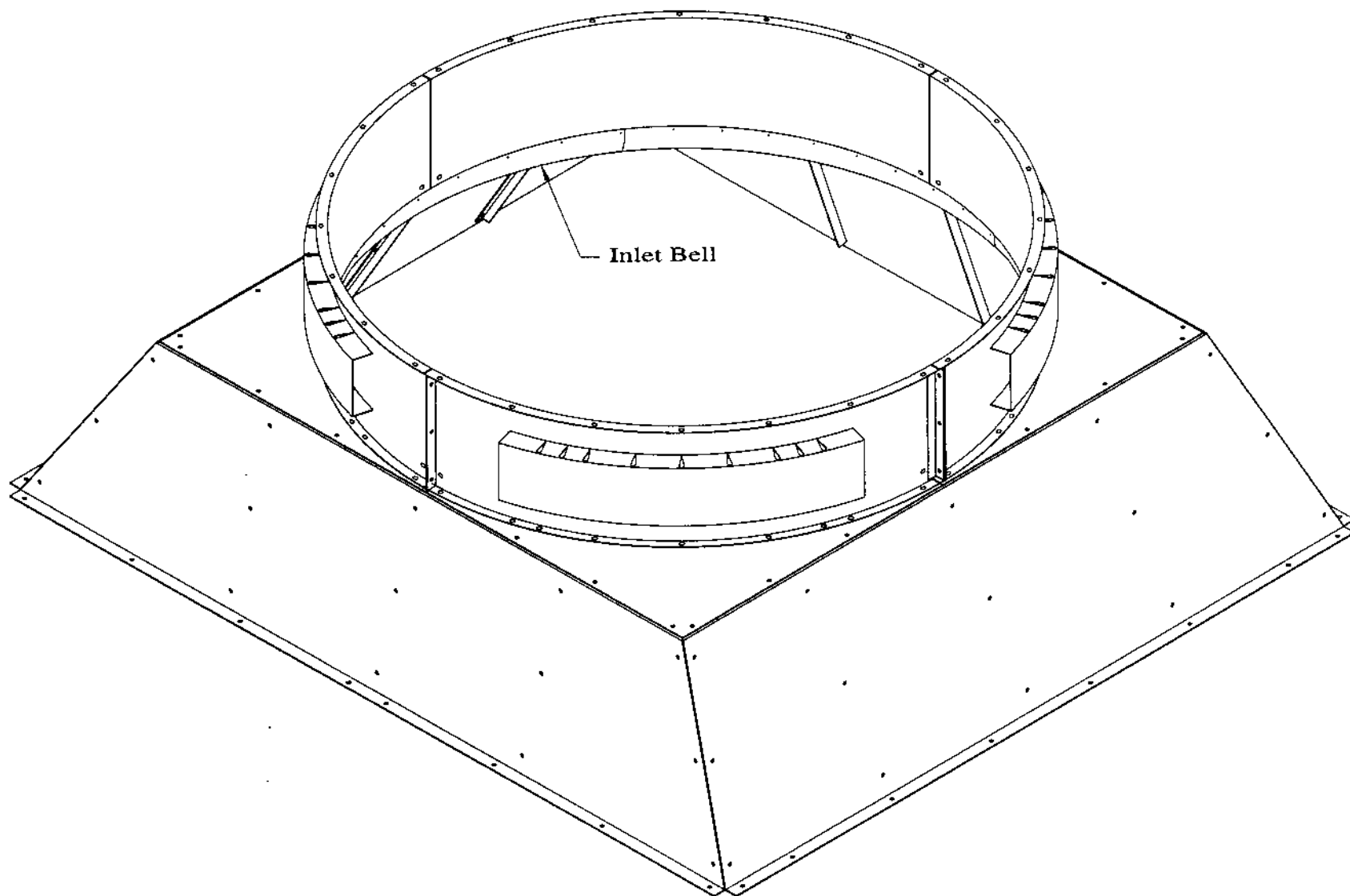


FIG. B3 - INLET BELL

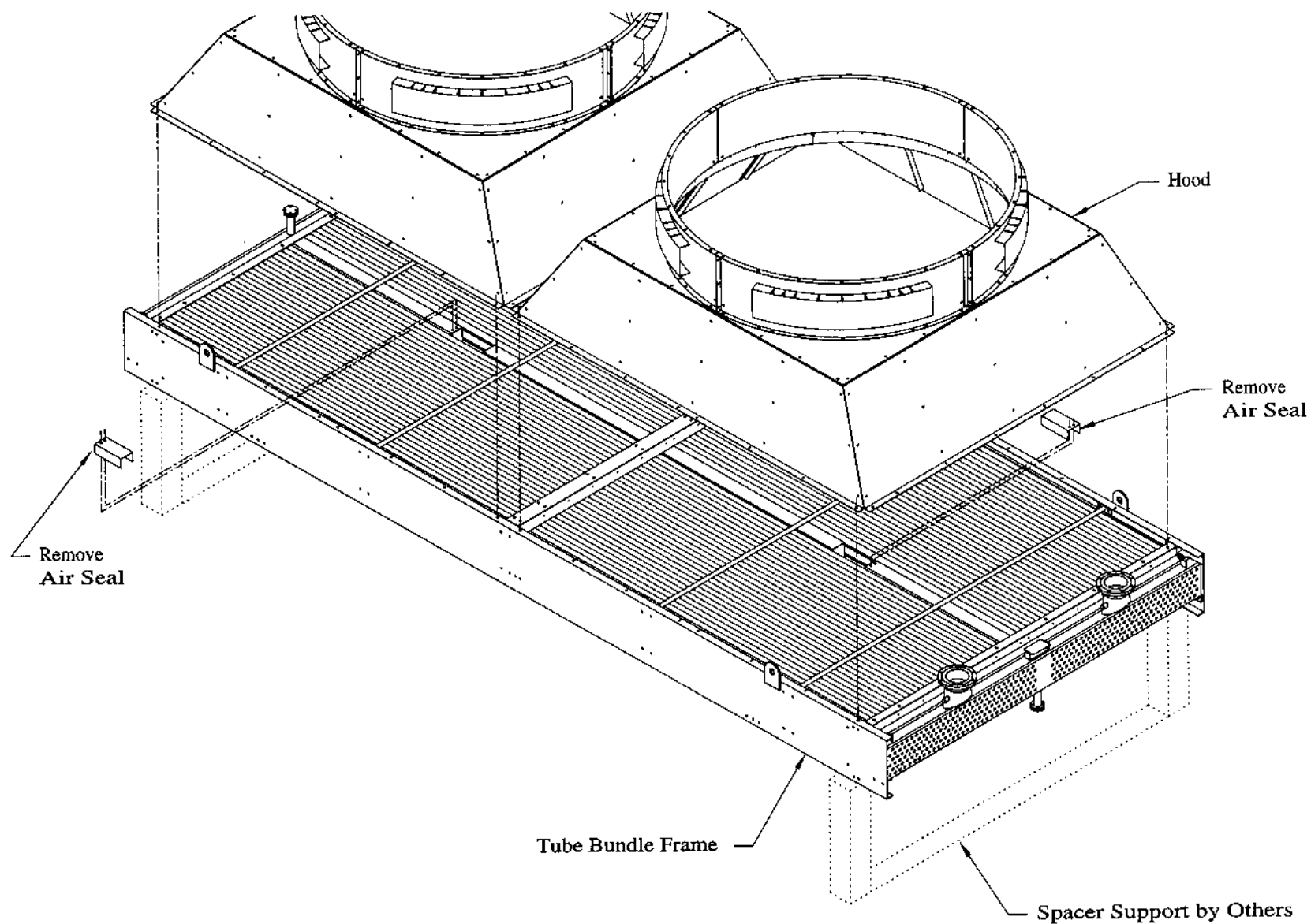


FIG. B4 - HOODS

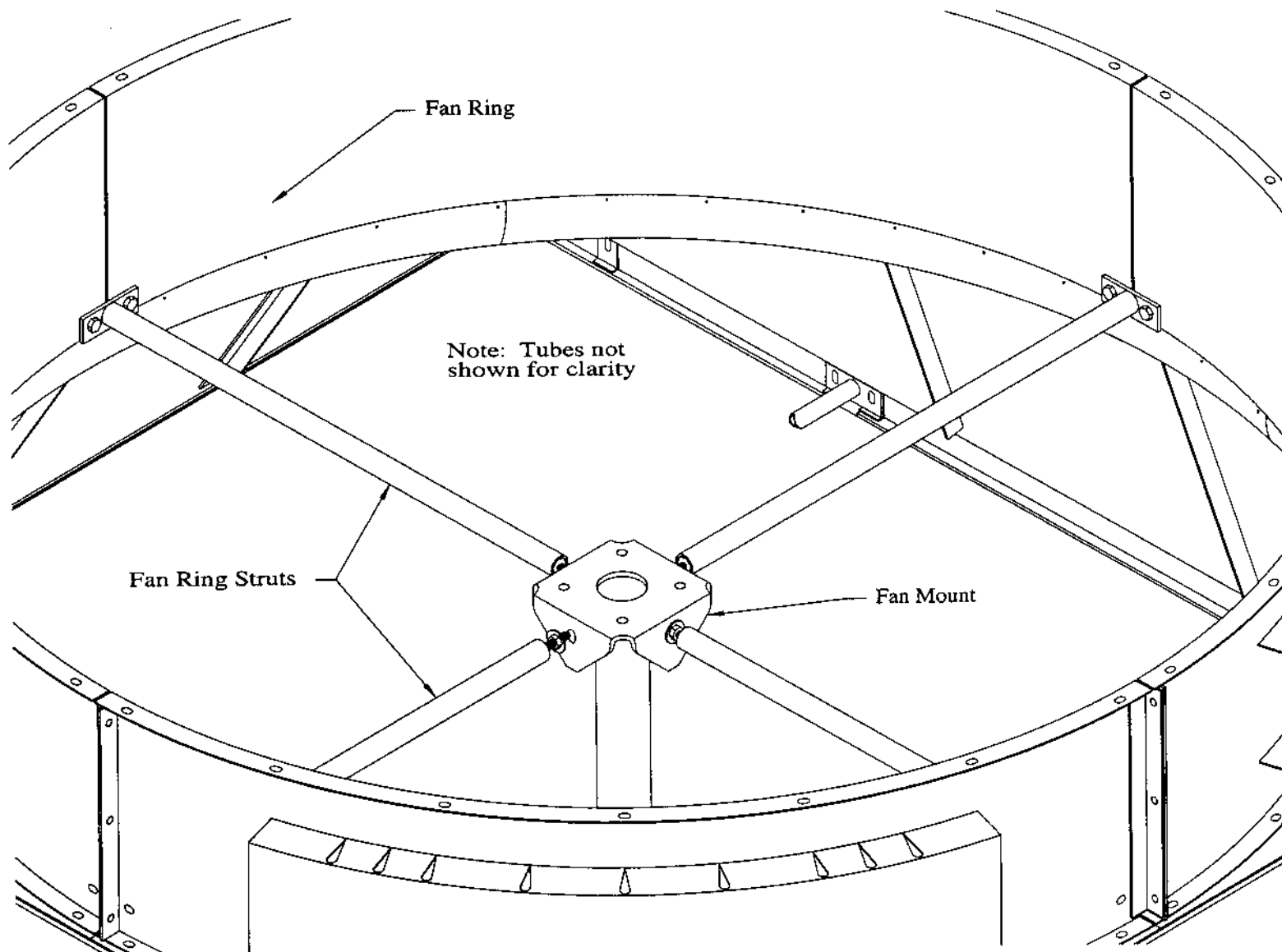


FIG. B5 - FAN MOUNT AND FAN RING STRUTS

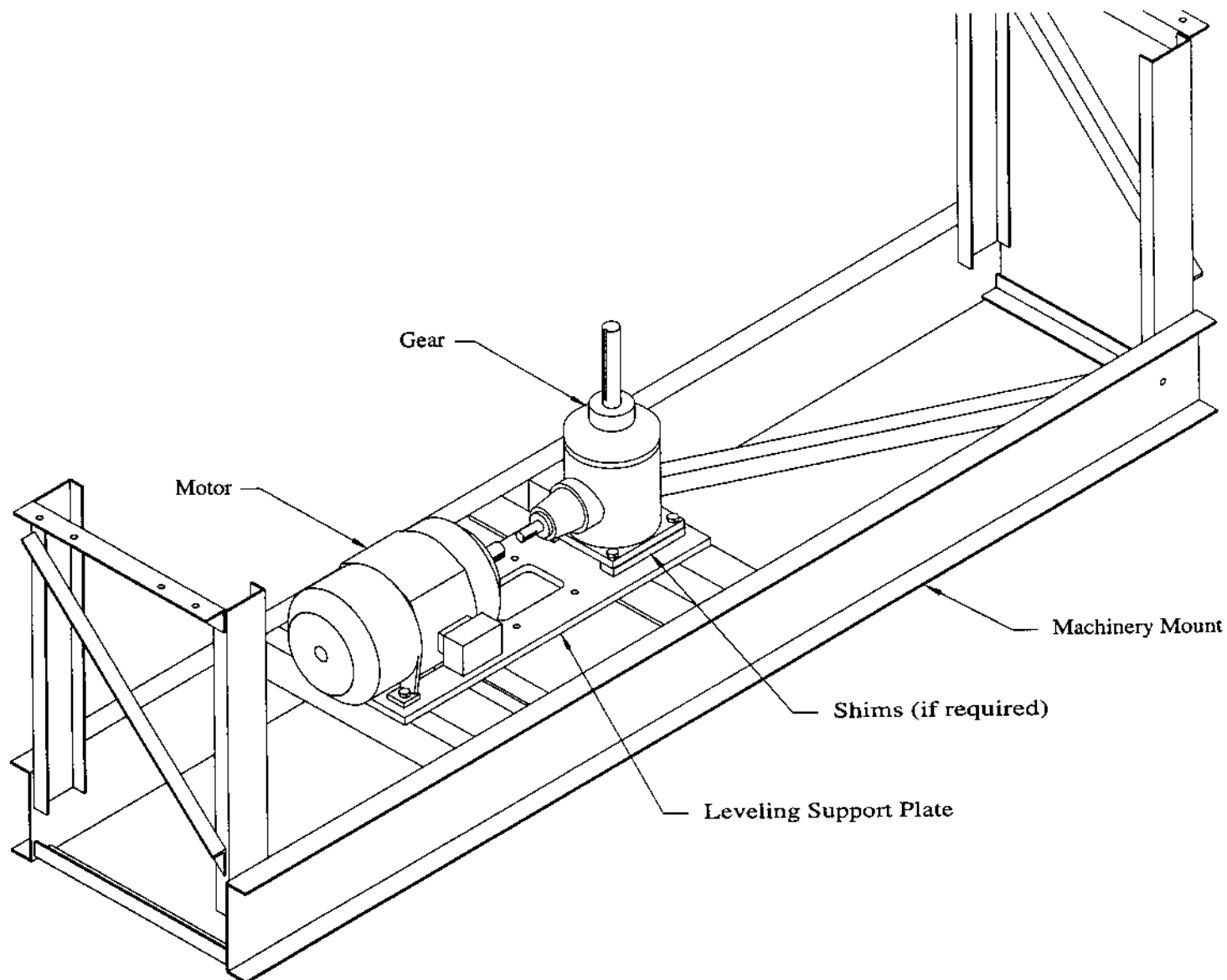


FIG. C1 - GEAR AND MOTOR

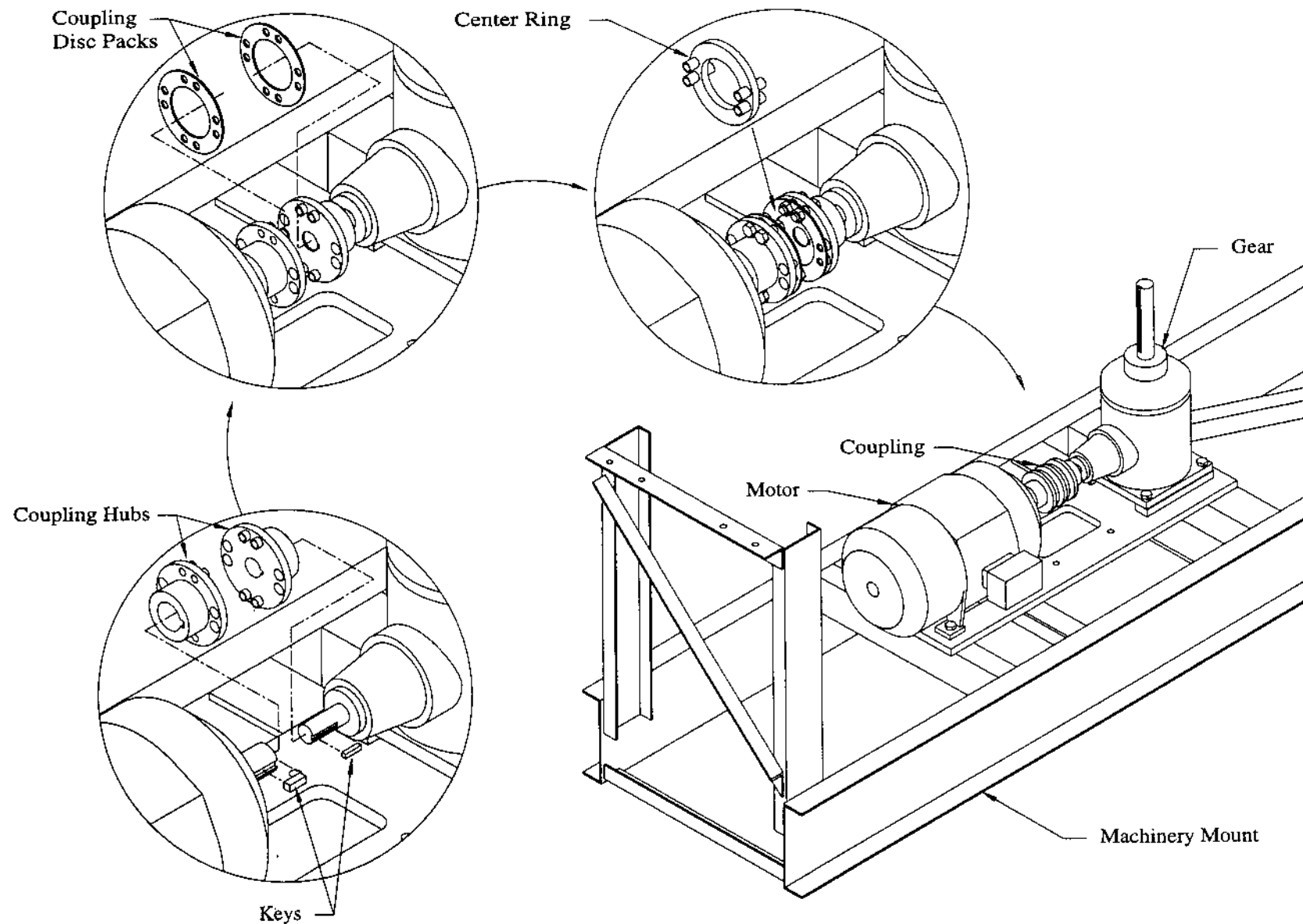


FIG. C2 - COUPLING

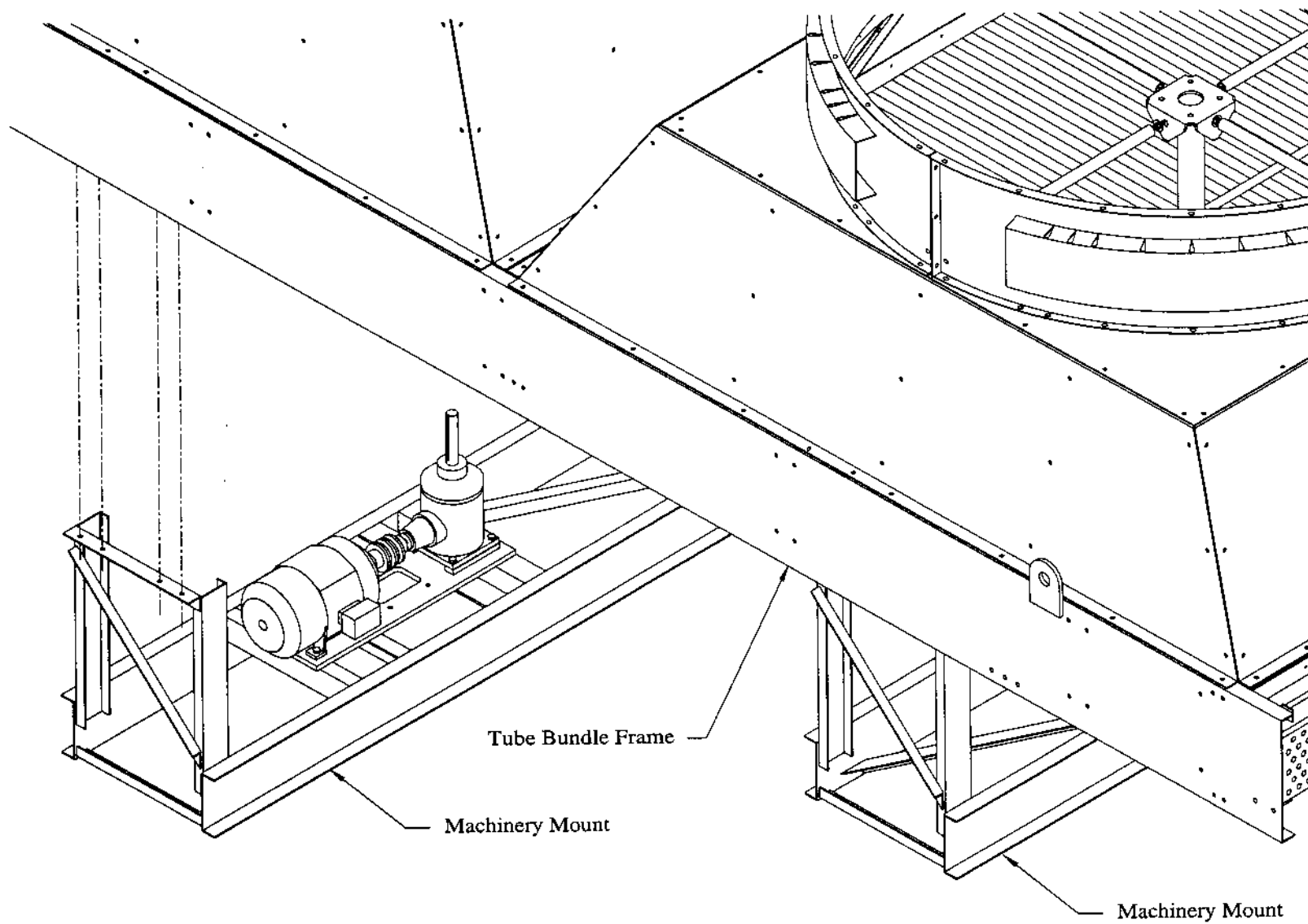


FIG. C3 - MACHINERY MOUNT

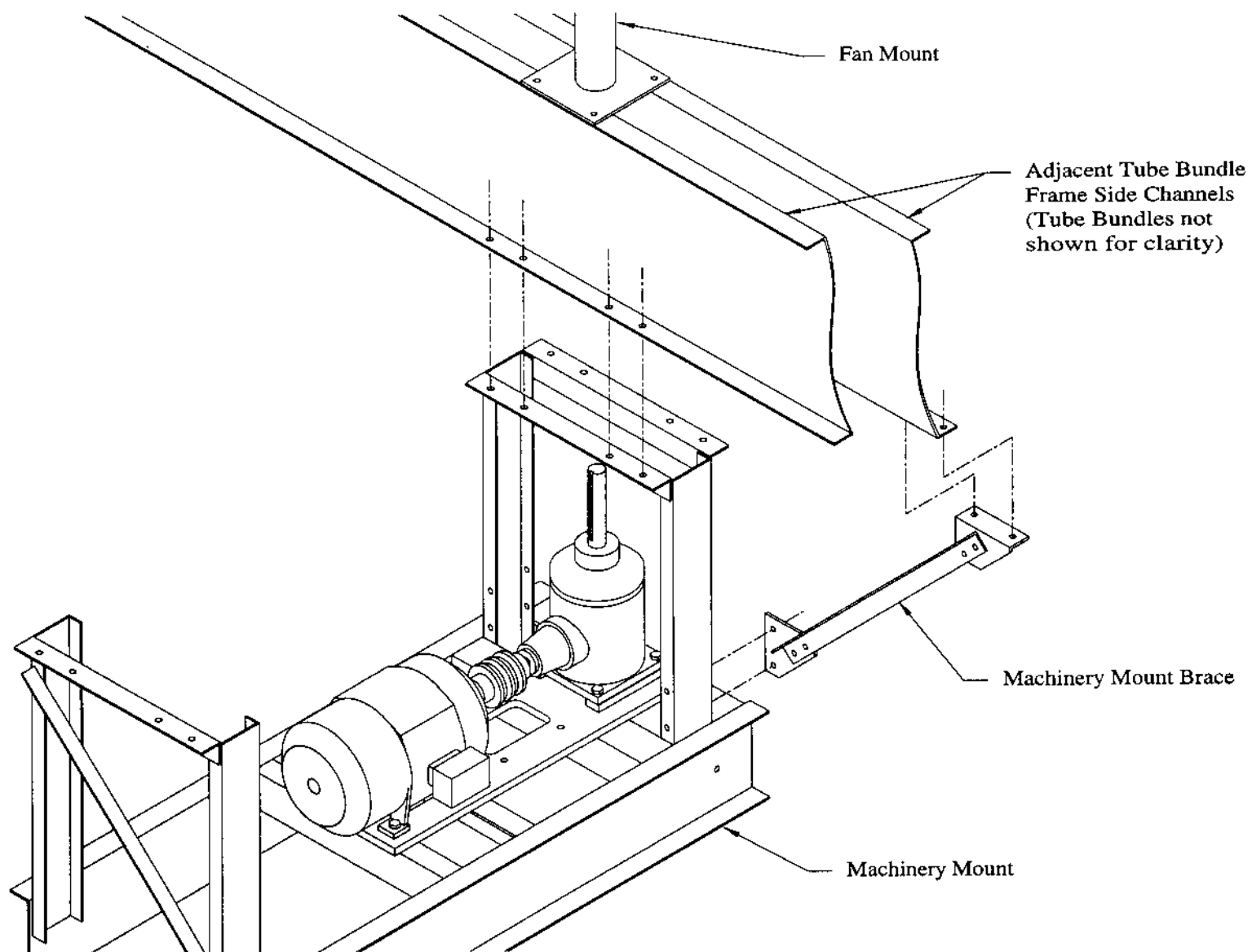


FIG. C4 - MULTI-BUNDLE MACHINERY MOUNT

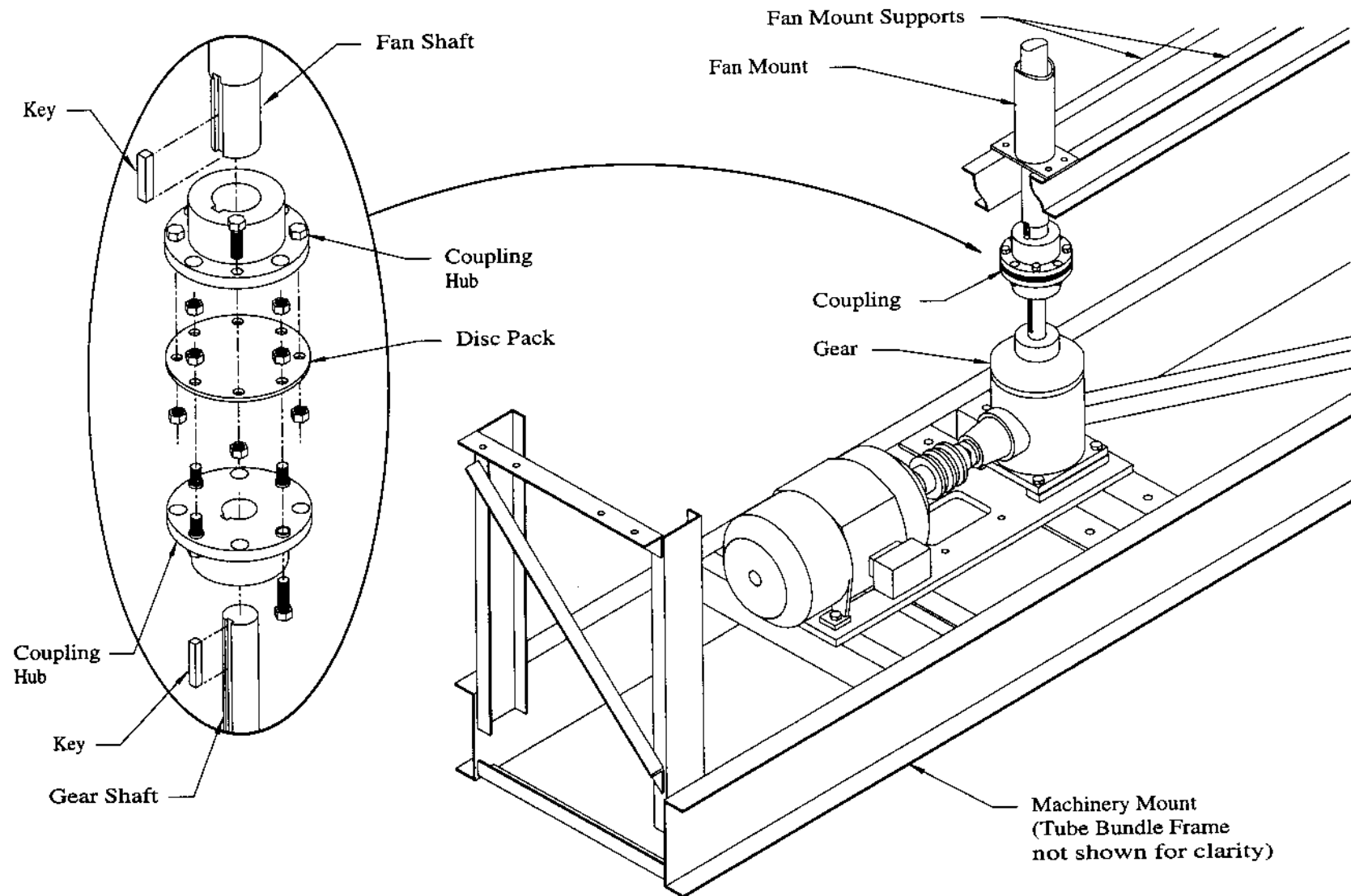


FIG. D1 - FAN SHAFT COUPLING

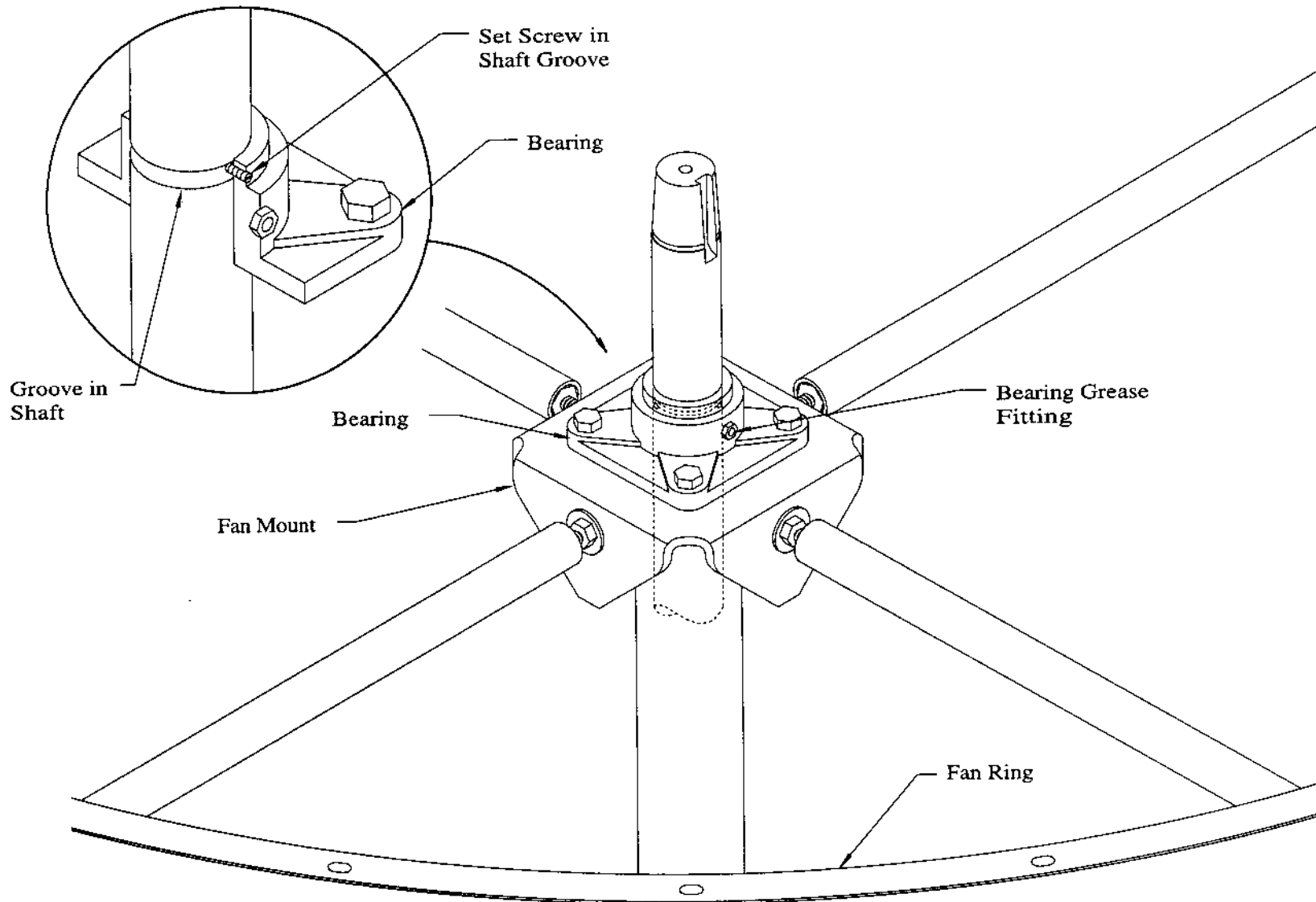


FIG. D2 - FAN SHAFT BEARING

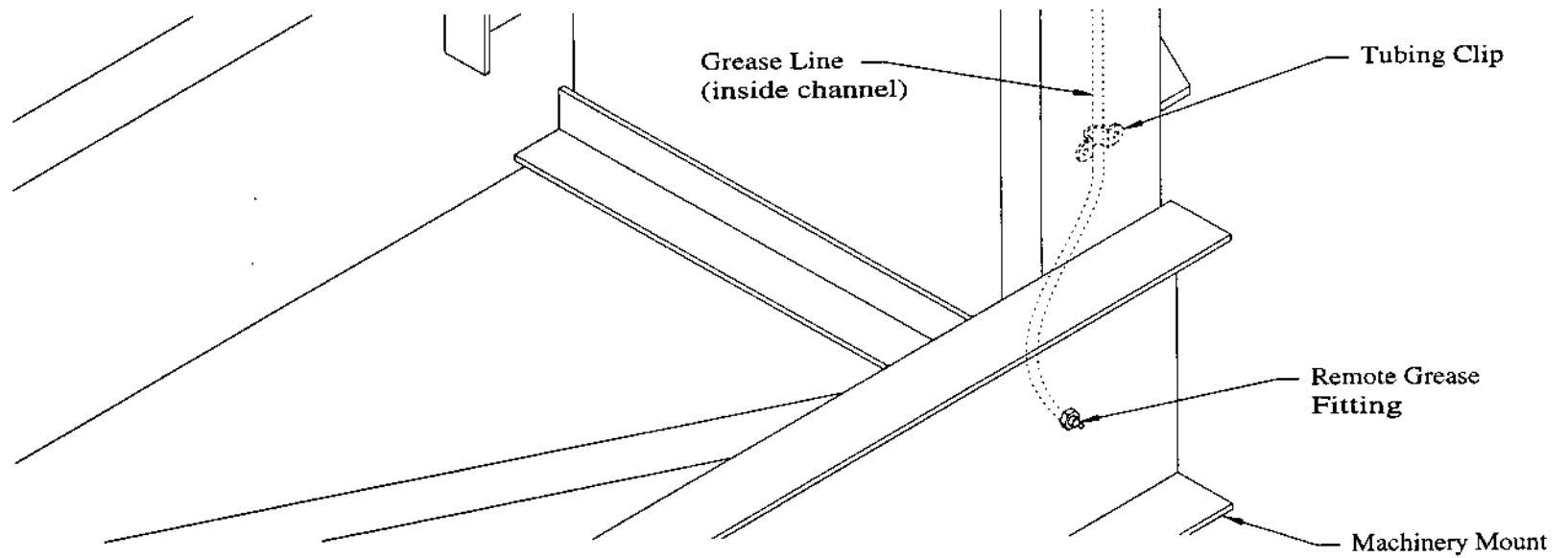
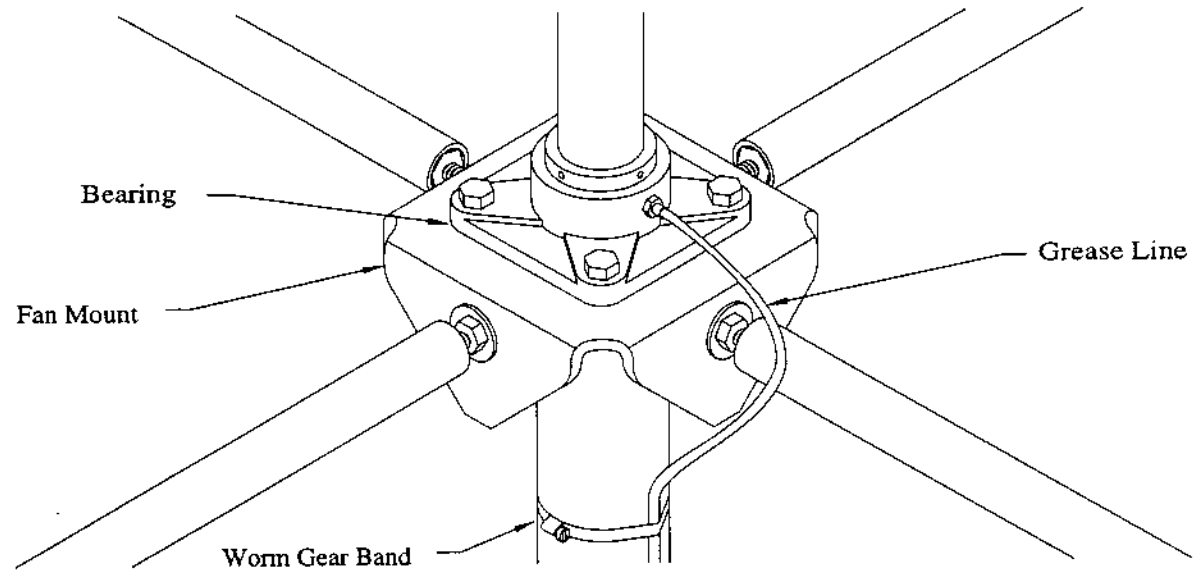


FIG. D3 - GREASE LINE