FUME HOOD FANS
INSTALLATION & MAINTENANCE

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5/8 Size LS Fume Hood Fan

Size 1 LS Fume Hood Fan

INSPECTION: Inspect unit for damage in transit against the bill of lading. Report any damage or shortage to the carrier for adjustment or tracing.

INSTALLATION: DF Fan Services, Inc. fans have been floor aligned, run, and checked at the factory.

To retain alignment and smooth, quiet operation, the following precautions should be taken.

1. Fan foundation must be flat, level, and rigid. Where foundation is not flat and level, shim under fan support at each foundation bolt as required. Install and tighten all foundation bolts equally. The factory recommends using vibration isolators under all Fume Hood Fans.

2. Structural platform or hanger-type foundations must be adequately cross-braced for live load support.

3. Standard Fume Hood Fans are designed for slipover connections to standard pipe sizes. On fans with flanged connections, use proper gaskets and tighten all bolts equally around the flange.

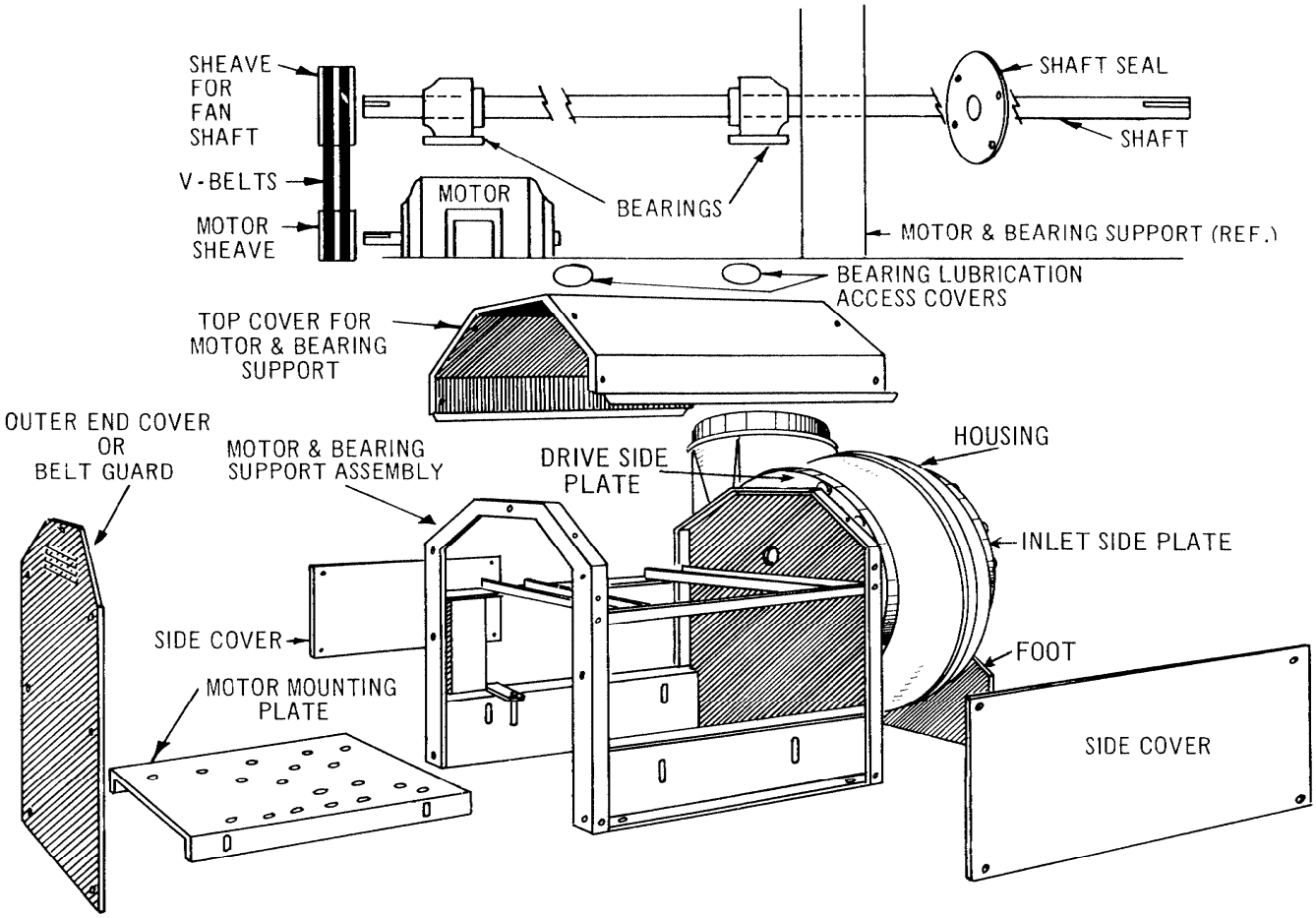
4. Check parallel alignment of shafts and alignment of sheaves on the same plane; to adjust, reposition driver, tighten belts to firm springy tension. DO NOT OVER TIGHTEN

INITIAL OPERATION: Apply just enough power to turn rotating assembly over. Make sure fan wheel turns freely. Check wheel rotation for proper direction. If rotation is not correct, change motor electrical connections as shown on the motor instruction plate.

After fifty (50) hours of operation, tighten wheel hub set screws, bearing set screws, sheave set screws and foundation bolts. Check tension and adjustments of V-belts.

NOTE: To increase the life of the fan system and to avoid excessive vibration and/or damage to the fume hood fan assembly, the variable pitch v-belt sheave must be removed and replaced with a fixed pitch sheave, after initial start-up and air balance of the fan system.

ILLUSTRATED PARTS LIST – FUME HOOD FANS



FH SIZE	DIA.	WIDTH	BORE	HUB
5/8	8-1/4	3-3/4	1	M-975
3/4	10	4-1/2	1	M-799
1	13-1/4	6	1	M-799
1-1/4	16-5/8	7-1/2	1-3/16	M-799

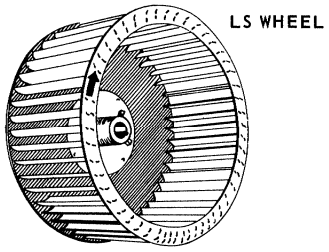


Figure 4

NOTE: All wheels, except aluminum, are supplied with pressure bars on the backplate. Aluminum wheels will have a shaft seal and no pressure bars.

DESCRIPTION OF PARTS	USED ON
WHEEL, 48 - blade, steel standard, monel for spark resistant const.	See Wheel Chart, Fig 4
SHAFT, steel standard, monel for spark resistant construction	ALL SIZES
HOUSING, cast iron coated with air-dried Heresite	ALL SIZES
INLET RING, cast iron coated with air-dried Heresite	SIZE 5/8
INLET RING WITH FOOT, cast iron coated with air-dried Heresite	SIZE 3/4 thru 1-1/4
BEARING - (2) fixed Pillow Block	ALL SIZES
MOTOR & BEARING FRAME ASSEMBLY Motor Mounting Plate Outer End Cover Side Cover (2) Top Cover	ALL SIZES

INSTRUCTIONS FOR ORDERING PARTS

DF Fan Services, Inc. recommends that if your fan is vital to production or the operation of your plant, or special metals or coatings are required, it is advisable to have spare parts on hand.

NOTE: When ordering parts, it is necessary that you include the following information:

1. **FAN NAMEPLATE**
   Fan type, size, and serial number.

2. **FROM ORIGINAL PURCHASER**
   Fan type, size, purchase order number, name of original purchaser and when purchased.

3. **IF 1 OR 2 ARE NOT AVAILABLE**
   Name of part (see illustrated parts list)
   Fan size (measure diameter and width of fan wheel)
   Bore diameter and rotation (CW or CCW viewed from the drive side) - See Figure 6 of Page 4.
   Any special metal or coatings

BEARINGS

GENERAL: Due to the importance of bearings on any rotating machine, special attention should be given to their maintenance and replacement. Where fans have instruction plates or tags pertaining to the bearings, these should be left in place and not covered or defaced. These instructions should be read with care before bearings are services. Extreme care must be taken to prevent entrance of dirt into bearings during maintenance and replacement.

Sealmaster Part #	Bore Dia.
NP-16	1”
NP-19	1-3/16”

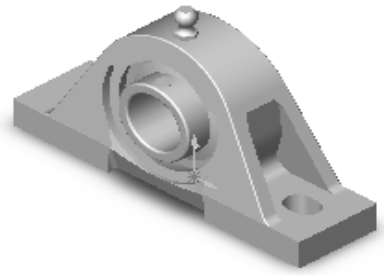


Figure 5

REPLACEMENT OF BEARINGS

To replace bearings, follow this procedure:

1. Scribe lines on shaft at bearing housings and scribe position of housing bases on bearing support.
2. Support the weight of the shaft and wheel on blocks or with non-marring slings.
3. Loosen set screws.
4. Smooth off shaft at areas of setscrew penetration and remove hold-down bolts from pillow blocks.
5. Slide bearing parts axially off drive end of shaft, noting arrangement of parts.
6. Slide new bearing assemblies on shaft in same arrangement as noted in step 5.
7. Align bearings with lines scribed on bearing support (step 1) and bolt in place.
8. Remove support from wheel, and shaft, aligning scribe lines on shaft (step 1) with bearing housings.
9. Tighten set screws securely.
10. Check wheel for concentricity with inlet and rotate shaft to check running Clearance of wheel; readjust pillow block position on bearing support as required. Also check uniformity of radial clearance between shaft and bearing housings, readjust bearing adjusting bolts as required. Re-tighten bearing hold-down bolts securely on pillow blocks.

MAINTENANCE INSTRUCTIONS

CLEANING: DF Fan Service's Fume Hood Fans will perform better if cleaned periodically. Inspect parts during cleaning, for signs of damage or abnormal wear.

V-BELT DRIVES: Rough fan operation is frequently caused by V-belt drives; use care in adjusting V-belt tension, replacing belts or changing speeds.

1. Adjusting belts - loosen motor (or motor mounting plate) hold down bolts, reposition motor (or plate) carefully to retain alignment of sheaves until firm, springy belt tension is obtained. DO NOT OVER TIGHTEN BELTS. Make sure base is level, and tighten hold down bolts.

2. Replacing belts - always completely relieve belt tension before adjusting speed or replacing belts.

3. Changing speed

- **a.** Warning - always measure motor amps and check with nameplate amps before and after increasing speed.
- **b.** 1 or 2 belt drives - completely relieve belt tension. Loosen set screws in threaded outer flange collars. Turn outer flanges oppositely and equally. Center set screws on hub flats. Re-tighten set screws and adjust belt tension.
- **c.** Periodically check belt tension and re-tighten sheave set screws.

LUBRICATION

FAN BEARINGS: All bearings are prelubricated at the factory with a white lithium soap grease which is compatible with multi -purpose grease readily available from local suppliers. The bearings should be relubricated while they are rotating; the grease should be pumped slowly until a slight bead forms around the seals. Please refer to the bearing manufacture for specific intervals required for relubricatrion, however it is recommended that all bearings be relubricated at least annually.

MOTOR BEARINGS: Motor manufacturer's lubrication recommendations are given on tags or nameplates attached to the motors. Should these recommendations be missing, the following instructions will apply:

1. Fractional HP sleeve bearing motors

- **a.** Under conditions of normal operation, after three years of service, lubricate annually with electric motor or SAE 10 oil.
- **b.** Under continuous operation at higher temperatures after one full year of service, lubricate annually with electric motor or SAE 10 oil.

2. Fractional HP ball bearing motors

Under normal conditions, ball bearing motors will operate for ten (10) years without re-lubrication. To re-lubricate where motors are not equipped with pressure fittings, disassemble motor and clean bearings and housings thoroughly. Re-pack each bearing and fill cavity in back of bearing 1/3 full with clean fresh ball bearing grease of approved quality.

3. Integral HP ball bearing motors

Under normal operating conditions, it is only necessary to re-grease a ball bearing motor every two (2) to five (5) years, depending on motor speed and operating conditions. Do not over grease. The greatest cause of ball bearing failure is over greasing rather than under greasing. To prevent over greasing, be sure pressure relief plugs, where provided, are left off and the equipment operated ten (10) minutes after re-lubricating before replacing relief plugs.

NOTE: Fan Rotation is viewed from the Motor side.

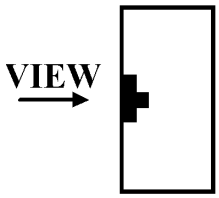


Figure 6 Fan Rotation