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50-348/364-CIVP  
5/18/92

STAFF EXH. #78

Installation and  
Maintenance Manual

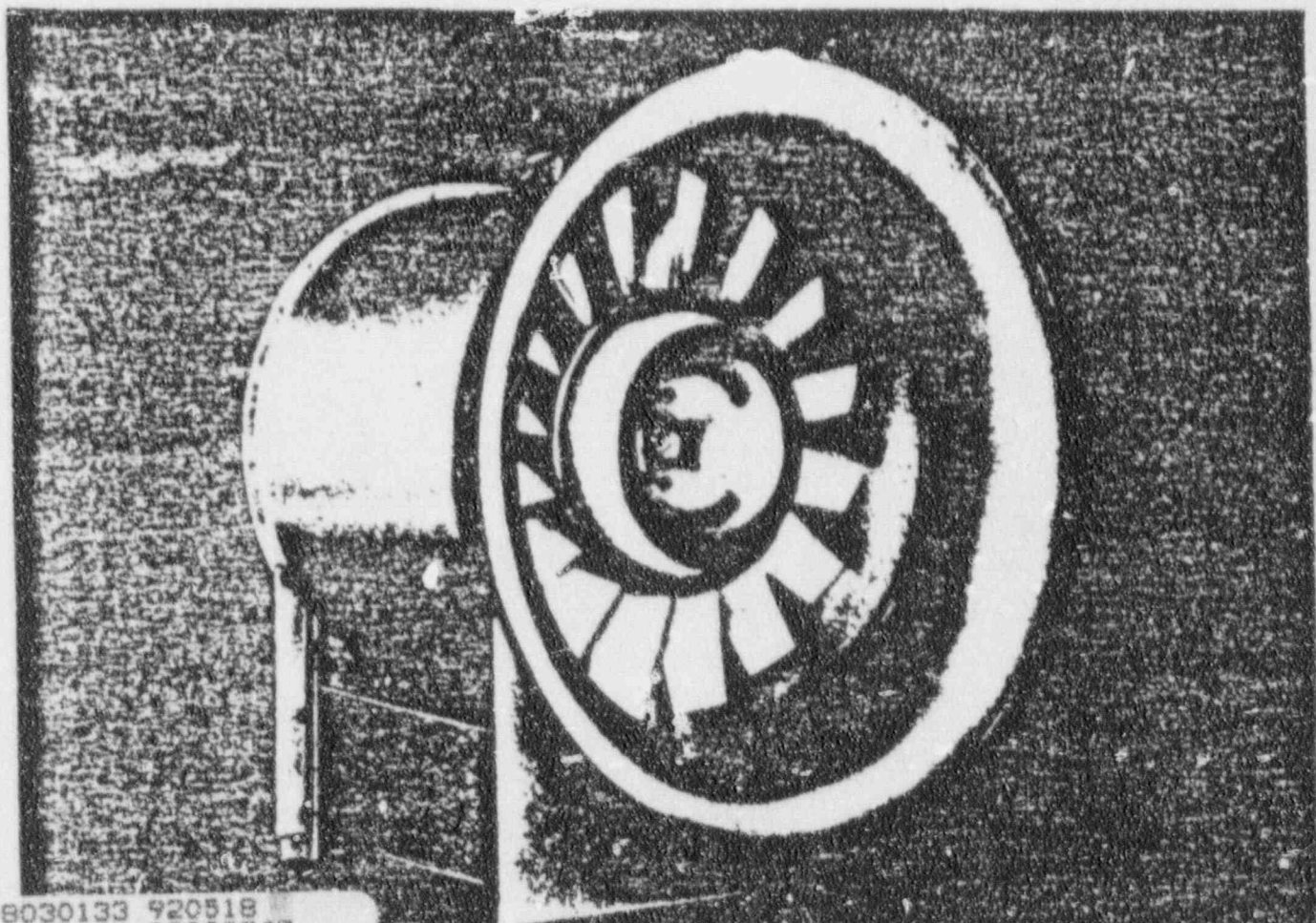
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92 JUN 2 AM 32

**Series 800/1000/2000/3000**  
**Axivane® Fans**  
**Adjustable Pitch**  
**Direct Connected**  
**Single and Two Stage**  
**Axial Flow Fans**

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0008



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PDR ADDCK 0500034B  
G PDR

**WARNING**

FAILURE TO COMPLY WITH THESE INSTRUCTIONS  
COULD CAUSE SERIOUS BODILY HARM OR PROPERTY  
DAMAGE AND WILL VOID THE WARRANTY.

NP 408

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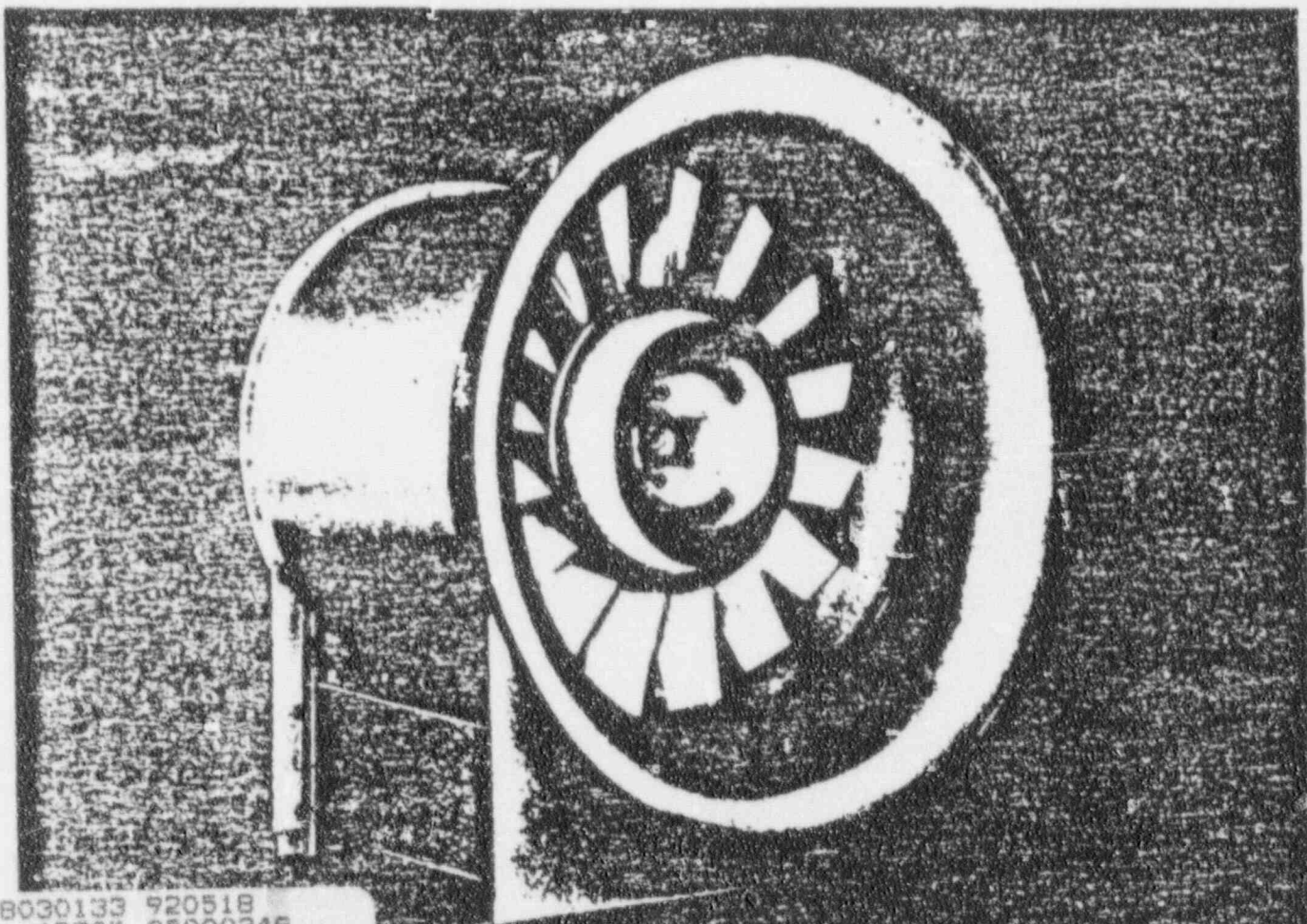
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*This AXIVANE® FAN was carefully inspected, operated, and balanced before leaving our factory. To insure years of quality performance, read this installation and maintenance manual and retain it for installation, operation and maintenance reference.*

# INSTALLATION AND MAINTENANCE MANUAL



## GENERAL

**1. Fan Description**—The JOY Series 800/1000/2000/3000 AXIVANE fans are of fabricated steel construction with cast aluminum blades and hubs. The blades and hubs are cast in permanent molds for true blade alignment and accurate aerodynamic blade cross sections of all rotor assemblies.

The fans are given one coat of JOY Orange prior to shipment. Special finishes and coatings are available at additional charge. All rotor assemblies are balanced before being mounted in the fans. Before the fans are shipped they are operated and vibration tests made. Any unit which shows vibration in excess of the standard is rebalanced before shipment.

**2. Fan Accessories**—All JOY Series 800/1000/2000/3000 fans are equipped with intake and discharge flanges to provide for duct connection. JOY inlet bells (for good inlet flow when fan is taking air from plenum). JOY inlet bell screens and JOY fan supports are available as standard accessories at extra cost.

JOY inlet bells are fabricated of steel, aluminum or fiberglass. JOY Screen guards are made of crimped aluminum wire, and JOY fan supports are made of formed steel plate. Fan supports, when purchased with fan, are always bolted to the fan prior to shipment.

**3. Fan Parts**—All required parts for the direct connected Series 800/1000/2000/3000 AXIVANE fans are described in Figures 1, 2, 3, and 4. Figures 2, 3, and 4 show the complete fan assembly, while figure 5 shows a cross sectional view of the motor. When ordering repair fan parts, give the fan model number and serial number (obtained from the name plate on fan casing) along with the complete description of part required. If further information is desired, consult your nearest JOY Office.

**4. Fan Motor**—Standard motors used on the JOY Series 800/1000/2000/3000 fans are totally enclosed. Underwriters Approved, Class I, Group D enclosures are available as well as Class H insulation for high temperature (Air temperature above 110 F. and below 150 F.). All motors are flange mounted to assure proper alignment when assembled or when servicing the fan after it is installed.

Motors are furnished with standard voltages of 230/460 volts or 208 volts for operation on three phase, sixty cycle, A.C. power. Special voltages or cycles can be furnished on request.

**5. Service Facilities**—The JOY Manufacturing Company maintains a staff of field service personnel for inspecting, adjusting, and supervising or installing replacement parts on older units. Their services are available on short notice and their expert knowledge may be of great assistance in getting your fan unit back in service with a minimum of delay.

## STORAGE AND HANDLING

**Receiving & Unloading**—Upon unloading this equipment, inspect it for damage. If damage has occurred, file a claim immediately against the carrier. Shortages should be reported to Seller's Fan Order Service Dept. at New Philadelphia, Ohio within fifteen (15) days from receipt of shipment at destination.

**Handling**—Use a sling around large fan casings, or install eye bolts in the flanges for lifting the smaller fan units. Severe impacts could distort the casing or possibly damage the bearings.

**Storage**—If not installed immediately, this fan should be protected to remain dry at all times.

(1) Use a storage area which is dry, protected from low temperature, rapid and extreme changes in humidity, and free from any vibration.

(2) For extended storage and negotiated extended warranty, the following instructions must be followed: If stored for a long period of time, every 90 days the rotor and motor should be turned several revolutions. If your fan is a Controllable Pitch unit, the Controllable Pitch Mechanism should be actuated full stroke at the same time.

When fans are in storage for six (6) months, the rotors are to be rotated manually again and additional grease is to be added.

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## STORAGE AND HANDLING (continued)

If motors are equipped with space heaters, they are to be made operable.

Motor windings are to be megged at time of storage and at time of removal from storage. The resistance reading must not have dropped more than 50%

of the initial reading. If the drop is below 50%, then the fan motor must be dried electrically or mechanically.

(3) Upon removal from storage, fan motor bearings are to be regreased.

## FAN APPLICATION RECOMMENDATIONS

1. Fan mounted with duct ahead of the fan.—No inlet bell is required. Fan supports bearing the weight of the complete fan can be mounted horizontally on the floor or hung from the ceiling. Special supports for vertical mounting are required for the larger fan sizes. NOTE: When connecting the fan to duct work, care should be taken to avoid twisting or deforming the housing as this may cause the blades to strike the fan casing. When duct work is mounted ahead of the fans, 90° elbows directly ahead should be avoided whenever possible. If an elbow must be used, turning vanes should be installed to provide a minimum of turbulence to the air entering the fan. A bad inlet condition will reduce the fan efficiency, cause an increase in the fan noise level, and possibly lead to premature rotor failure.

2. Fan installed to draw air from a plenum.—An inlet bell is recommended for maximum efficiency. WARNING: To comply with OSHA regulations

and to guard personnel, an inlet bell screen must be used in this application. Specially-designed inlet bells and screens are available to fit each model of the Joy Series 800/1000, 2000/3000 fans. There should be a distance of at least two fan diameters from the face of the inlet bell to an obstruction such as a wall or building. The minimum free distance from the inlet bell to either side and roof should be one fan diameter. Should it be impossible to conform to these recommendations your Joy representative will be happy to help you solve your installation problems.

3. Sound Isolation.—Fan vibration and sound will be reduced when the fan is isolated from the supporting structure and duct-system by properly sized, commercially available rubber or spring isolators. Heavy inertia pads are generally not required for AXIVANE fans. Metal to metal connections at the fan should be avoided wherever possible.

## INSTALLATION AND START-UP

INSTALLATION — All supporting points must be uniformly located so there is no twisting or distortion through the fan unit. Also, the intake should be carefully arranged to direct a smooth and uniform air flow into the fan rotor.

START-UP — Before start-up, be sure the rotor turns freely and all material has been removed from duct or the area in front of the fan intake. The rotor should rotate counterclockwise when looking into the intake. As soon as fan is up to speed, check the motor amperage on each phase for balance and correct motor load. The full load amps are stamped on the fan name-plate, which is located on the outside of the fan casing, and must not be exceeded.

BLADE ANGLE—On all except Controllable Pitch fans, the blade angles have been set at the factory for the duty required. The blade index is numbered from 0-6 for 2000/3000 Series Fans and 0-16 for 800/1000 Series. The number 0 is the highest angle of attack in both fan series and requires the greatest horsepower. As the index setting number is moved toward 6 or 16, the flow, pressure, and horsepower are reduced. If it is necessary to readjust the blades, be sure each blade is set at the same index number and always check the motor amperage to prevent motor overload. Also after each adjustment, turn rotor by hand to make sure blades are not striking the casing or motor support.

## INSTALLATION AND START-UP (continued)

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To adjust the blades, the following procedure should be used:

- Remove the spun aluminum nose piece.
- Loosen the blade locknut.
- Set the blade at the new position by the use of the markings at the blade root.
- Tighten the locknut while holding the blade to make sure the position does not change.
- After changing all blades, check all blade positions to make sure they are all identical.
- Replace the nose piece securely.

When securing the position of the blades, the locknut should not be tightened more than necessary to hold the blades at the proper angle. Maximum blade position allowed and torque value for locknut is specified on a caution emblem attached to the rotor hub.

Due to the fact that only one half hour to one hour of labor is required to change the blade angle setting of any adjustable pitch fan, it is the responsibility of the customer to adjust or change the blade angle on an adjustable pitch fan. The motor nameplate current is not to be exceeded when the ventilated system is operated at its highest possible pressure.

If you place your hand or finger upon the outside of this unit, its operation should feel smooth and free of vibrations. This balance must always be main-

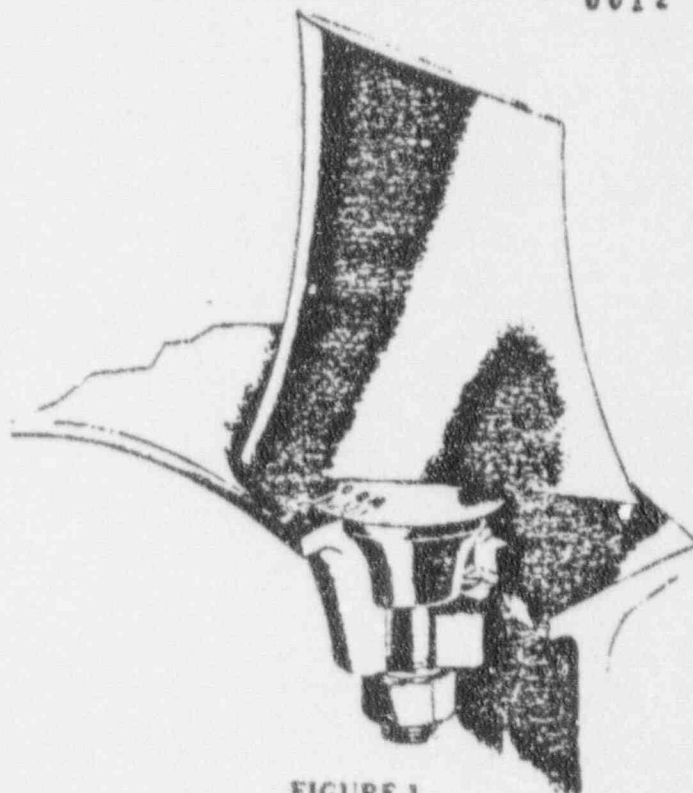


FIGURE 1

tained to assure long, faithful service. If operation is not smooth, contact our Fan Field Service Dept. at New Philadelphia, Ohio, advising fan serial number (stamped on the nameplate) and fan model number.

## DISMANTLING INSTRUCTIONS

Remove the fan from the duct work and/or fan supports. After this is done, the following steps should be followed:

- Unscrew the locknut and remove the lockwasher from the motor shaft.
- Pull the complete rotor assembly from the motor shaft. If binding occurs here, penetrating oil may free it. The machined steel hub insert is fitted with

drilled and tapped holes to allow the attachment of a wheel puller facing against the motor shaft to aid in removing the rotor.

- If the rotor blades are worn or broken, the entire rotor assembly should be replaced to insure a properly balanced fan.
- After disassembly, inspect all parts and replace any which are excessively worn.





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## LUBRICATION

**LUBRICATION**—Good preventive maintenance requires proper lubrication practices. Use only the recommended lubrications specified. Follow the lubrication schedules as listed.

All bearing cavities and grease leads have been properly loaded by Joy prior to shipment. Fans which are to be installed promptly upon delivery require no additional lubrication.

**NOTE:** If a lubrication instruction plate is mounted on the outside of the fan (near one of the grease fittings) follow the instructions on that plate, in lieu of those printed below.

From the lubrication schedules furnished on the reverse side, determine the proper time for lubrication and grease all fittings with lubrication as specified within the following paragraphs. Use a hand operated grease gun only. **DO NOT OVERGREASE AS**

**THIS CAN BE AS HARMFUL AS TOO LITTLE GREASE.**

Lubrication of anti-friction bearings should be done as a part of a planned maintenance schedule. The Recommended Lubrication Interval should be used as a guide to establish this schedule.

Cleanliness is important in lubrication. Any grease used to lubricate anti-friction bearings should be fresh and free from contamination. Similarly, care should be taken to properly clean the grease inlet area of the motor to prevent grease contamination.

If the fan is handling contaminated air, the rotor should be disassembled, cleaned and inspected periodically, the frequency depending upon degree of contamination.

Shut the fan off during greasing. Rotate the fan rotor by hand while greasing motor and Controllable Pitch Mechanism.

## LUBRICATION OF MOTORS

MOTORS furnished in all JOY Series 800/1000/2000/3000 fans have been lubricated with Chevron SRI #2 grease and it is recommended that the customer continue to use this lubricant in future lubrications. If this grease cannot be obtained, the only other suggested lubricants are:

OPERATING TEMP.—25°C. (–15°F.) to 50°C. (120°F.)

CHEVRON OIL SRI No. 2

SHELL OIL CO. DOLIUM R

TEXACO, INC. PREMIUM RB

MINIMUM STARTING TEMP.—–75°C. (–100°F.)

SHELL OIL CO. AEROSHELL #7

Using a hand operated grease gun only, pump in the following recommended grease volume.

MOTOR FRAME SIZE	*STANDARD CONDITIONS	**SEVERE CONDITIONS
182 thru 215	1.0 cu. in.	0.75 cu. in.
254 thru 286	2.0 cu. in.	1.5 cu. in.
324 thru 365	3.0 cu. in.	2.0 cu. in.
404 thru 449	4.0 cu. in.	3.0 cu. in.

Lubrication frequency per the following schedule:

HORSEPOWER	*STANDARD CONDITIONS	**SEVERE CONDITIONS
1 thru 7½ 1800 RPM and slower	3 years	1 year
10 thru 75 1800 RPM and slower	2 years	6 to 12 months
100 and greater 1800 RPM and slower	1 year	6 months
All over 1800 RPM	6 months	3 months

\*STANDARD CONDITIONS: Eight hours per day, normal or light loading, clean, @ 40°C. (100°F.) maximum ambient.

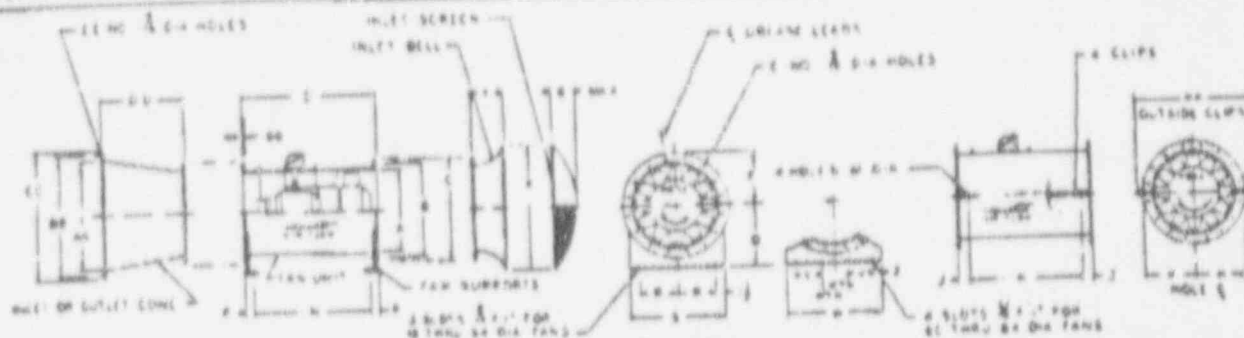
\*\*SEVERE CONDITIONS: Twenty-four hours per day operation or shock loading, vibration, or in dirt or dust, @ 40-50°C. (100-120°F.) ambient.

Motors with Class H, Type RN or Class B, Type RH insulation systems, nuclear applications, must be lubricated with Chevron SRI #2 with no substitutions permitted.

Some high horsepower motors have special bearings. These fans have a motor lubrication instruction plate mounted on the outside of the fan near one of the grease fittings. Follow the instructions on this plate in lieu of the standard instructions printed here.



# SERIES 1000/2000/3000 AXIVANE FANS

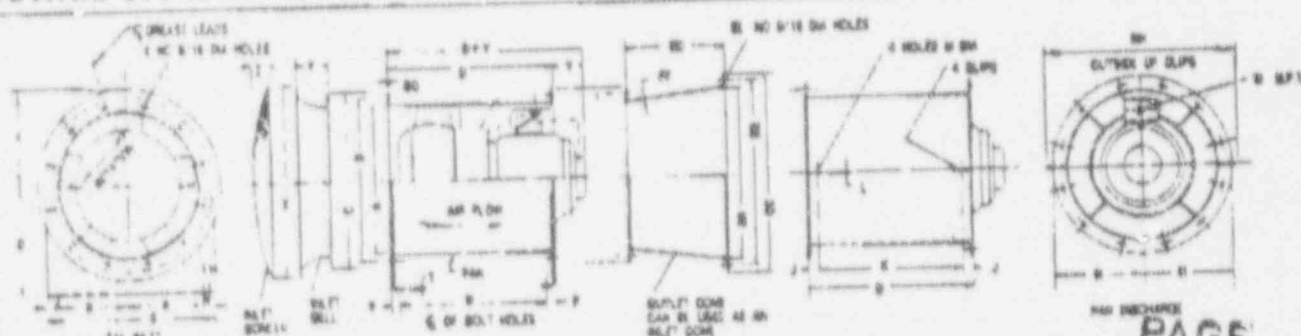


Typical Dimensions (Inches)

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FAN UNIT										SUSPENSION CLIPS										FAN SUPPORTS										BOLT & NUT		MILWAUKEE TORQUE	
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## SERIES 800 AXIVANE FANS



Typical Dimensions (Inches)

FAN UNIT						SUSPENSION CLIPS						FAN SUPPORTS						BOLT & NUT		RECOMMENDED TORQUE			
1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
10	10-1/2	11-1/2	12	12	10-1/2	10-1/2	10-1/2	10-1/2	10-1/2	10-1/2	10-1/2	10-1/2	10-1/2	10-1/2	10-1/2	10-1/2	10-1/2	10-1/2	10-1/2	10-1/2	10-1/2	10-1/2	10-1/2
15	15-1/2	16-1/2	17-1/2	18	15-1/2	15-1/2	15-1/2	15-1/2	15-1/2	15-1/2	15-1/2	15-1/2	15-1/2	15-1/2	15-1/2	15-1/2	15-1/2	15-1/2	15-1/2	15-1/2	15-1/2	15-1/2	15-1/2
20	20-1/2	21-1/2	22-1/2	23	20-1/2	20-1/2	20-1/2	20-1/2	20-1/2	20-1/2	20-1/2	20-1/2	20-1/2	20-1/2	20-1/2	20-1/2	20-1/2	20-1/2	20-1/2	20-1/2	20-1/2	20-1/2	20-1/2
25	25-1/2	26-1/2	27-1/2	28	25-1/2	25-1/2	25-1/2	25-1/2	25-1/2	25-1/2	25-1/2	25-1/2	25-1/2	25-1/2	25-1/2	25-1/2	25-1/2	25-1/2	25-1/2	25-1/2	25-1/2	25-1/2	25-1/2
30	30-1/2	31-1/2	32-1/2	33	30-1/2	30-1/2	30-1/2	30-1/2	30-1/2	30-1/2	30-1/2	30-1/2	30-1/2	30-1/2	30-1/2	30-1/2	30-1/2	30-1/2	30-1/2	30-1/2	30-1/2	30-1/2	30-1/2
35	35-1/2	36-1/2	37-1/2	38	35-1/2	35-1/2	35-1/2	35-1/2	35-1/2	35-1/2	35-1/2	35-1/2	35-1/2	35-1/2	35-1/2	35-1/2	35-1/2	35-1/2	35-1/2	35-1/2	35-1/2	35-1/2	35-1/2
40	40-1/2	41-1/2	42-1/2	43	40-1/2	40-1/2	40-1/2	40-1/2	40-1/2	40-1/2	40-1/2	40-1/2	40-1/2	40-1/2	40-1/2	40-1/2	40-1/2	40-1/2	40-1/2	40-1/2	40-1/2	40-1/2	40-1/2
45	45-1/2	46-1/2	47-1/2	48	45-1/2	45-1/2	45-1/2	45-1/2	45-1/2	45-1/2	45-1/2	45-1/2	45-1/2	45-1/2	45-1/2	45-1/2	45-1/2	45-1/2	45-1/2	45-1/2	45-1/2	45-1/2	45-1/2
50	50-1/2	51-1/2	52-1/2	53	50-1/2	50-1/2	50-1/2	50-1/2	50-1/2	50-1/2	50-1/2	50-1/2	50-1/2	50-1/2	50-1/2	50-1/2	50-1/2	50-1/2	50-1/2	50-1/2	50-1/2	50-1/2	50-1/2
55	55-1/2	56-1/2	57-1/2	58	55-1/2	55-1/2	55-1/2	55-1/2	55-1/2	55-1/2	55-1/2	55-1/2	55-1/2	55-1/2	55-1/2	55-1/2	55-1/2	55-1/2	55-1/2	55-1/2	55-1/2	55-1/2	55-1/2
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65	65-1/2	66-1/2	67-1/2	68	65-1/2	65-1/2	65-1/2	65-1/2	65-1/2	65-1/2	65-1/2	65-1/2	65-1/2	65-1/2	65-1/2	65-1/2	65-1/2	65-1/2	65-1/2	65-1/2	65-1/2	65-1/2	65-1/2
70	70-1/2	71-1/2	72-1/2	73	70-1/2	70-1/2	70-1/2	70-1/2	70-1/2	70-1/2	70-1/2	70-1/2	70-1/2	70-1/2	70-1/2	70-1/2	70-1/2	70-1/2	70-1/2	70-1/2	70-1/2	70-1/2	70-1/2
75	75-1/2	76-1/2	77-1/2	78	75-1/2	75-1/2	75-1/2	75-1/2	75-1/2	75-1/2	75-1/2	75-1/2	75-1/2	75-1/2	75-1/2	75-1/2	75-1/2	75-1/2	75-1/2	75-1/2	75-1/2	75-1/2	75-1/2
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85	85-1/2	86-1/2	87-1/2	86	85-1/2	85-1/2	85-1/2	85-1/2	85-1/2	85-1/2	85-1/2	85-1/2	85-1/2	85-1/2	85-1/2	85-1/2	85-1/2	85-1/2	85-1/2	85-1/2	85-1/2	85-1/2	85-1/2
90	90-1/2	91-1/2	92-1/2	91	90-1/2	90-1/2	90-1/2	90-1/2	90-1/2	90-1/2	90-1/2	90-1/2	90-1/2	90-1/2	90-1/2	90-1/2	90-1/2	90-1/2	90-1/2	90-1/2	90-1/2	90-1/2	90-1/2
95	95-1/2	96-1/2	97-1/2	92	95-1/2	95-1/2	95-1/2	95-1/2	95-1/2	95-1/2	95-1/2	95-1/2	95-1/2	95-1/2	95-1/2	95-1/2	95-1/2	95-1/2	95-1/2	95-1/2	95-1/2	95-1/2	95-1/2
100	100-1/2	101-1/2	102-1/2	93	100-1/2	100-1/2	100-1/2	100-1/2	100-1/2	100-1/2	100-1/2	100-1/2	100-1/2	100-1/2	100-1/2	100-1/2	100-1/2	100-1/2	100-1/2	100-1/2	100-1/2	100-1/2	100-1/2
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110	110-1/2	111-1/2	112-1/2	95	110-1/2	110-1/2	110-1/2	110-1/2	110-1/2	110-1/2	110-1/2	110-1/2	110-1/2	110-1/2	110-1/2	110-1/2	110-1/2	110-1/2	110-1/2	110-1/2	110-1/2	110-1/2	110-1/2
115	115-1/2	116-1/2	117-1/2	96	115-1/2	115-1/2	115-1/2	115-1/2	115-1/2	115-1/2	115-1/2	115-1/2	115-1/2	115-1/2	115-1/2	115-1/2	115-1/2	115-1/2	115-1/2	115-1/2	115-1/2	115-1/2	115-1/2
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130	130-1/2	131-1/2	132-1/2	99	130-1/2	130-1/2	130-1/2	130-1/2	130-1/2	130-1/2	130-1/2	130-1/2	130-1/2	130-1/2	130-1/2	130-1/2	130-1/2	130-1/2	130-1/2	130-1/2	130-1/2	130-1/2	130-1/2
135	135-1/2	136-1/2	137-1/2	100	135-1/2	135-1/2	135-1/2	135-1/2	135-1/2	135-1/2	135-1/2	135-1/2	135-1/2	135-1/2	135-1/2	135-1/2	135-1/2	135-1/2	135-1/2	135-1/2	135-1/2	135-1/2	135-1/2
140	140-1/2	141-1/2	142-1/2	101	140-1/2	140-1/2	140-1/2	140-1/2	140-1/2	140-1/2	140-1/2	140-1/2	140-1/2	140-1/2	140-1/2	140-1/2	140-1/2	140-1/2	140-1/2	140-1/2	140-1/2	140-1/2	140-1/2
145	145-1/2	146-1/2	147-1/2	102	145-1/2	145-1/2	145-1/2	145-1/2	145-1/2	145-1/2	145-1/2	145-1/2	145-1/2	145-1/2	145-1/2	145-1/2	145-1/2	145-1/2	145-1/2	145-1/2	145-1/2	145-1/2	145-1/2
150	150-1/2	151-1/2	152-1/2	103	150-1/2	150-1/2	150-1/2	150-1/2	150-1/2	150-1/2	150-1/2	150-1/2	150-1/2	150-1/2	150-1/2	150-1/2	150-1/2	150-1/2	150-1/2	150-1/2	150-1/2	150-1/2	150-1/2
155	155-1/2	156-1/2	157-1/2	104	155-1/2	155-1/2	155-1/2	155-1/2	155-1/2	155-1/2	155-1/2	155-1/2	155-1/2	155-1/2	155-1/2	155-1/2	155-1/2	155-1/2	155-1/2	155-1/2	155-1/2	155-1/2	155-1/2
160	160-1/2	161-1/2	162-1/2	105	160-1/2	160-1/2	160-1/2	160-1/2	160-1/2	160-1/2	160-1/2	160-1/2	160-1/2	160-1/2	160-1/2	160-1/2	160-1/2	160-1/2	160-1/2	160-1/2	160-1/2	160-1/2	160-1/2
165	165-1/2	166-1/2	167-1/2	106	165-1/2	165-1/2	165-1/2	165-1/2	165-1/2	165-1/2	165-1/2	165-1/2	165-1/2	165-1/2	165-1/2	165-1/2	165-1/2	165-1/2	165-1/2	165-1/2	165-1/2	165-1/2	165-1/2
170	170-1/2	171-1/2	172-1/2	107	170-1/2	170-1/2	170-1/2	170-1/2	170-1/2	170-1/2	170-1/2	170-1/2	170-1/2	170-1/2	170-1/2	170-1/2	170-1/2	170-1/2	170-1/2	170-1/2	170-1/2	170-1/2	170-1/2
175	175-1/2	176-1/2	177-1/2	108	175-1/2	175-1/2	175-1/2	175-1/2	175-1/2	175-1/2	175-1/2	175-1/2	175-1/2	175-1/2	175-1/2	175-1/2	175-1/2	175-1/2	175-1/2	175-1/2	175-1/2	175-1/2	175-1/2
180	180-1/2	181-1/2	182-1/2	109	180-1/2	180-1/2	180-1/2	180-1/2	180-1/2	180-1/2	180-1/2	180-1/2	180-1/2	180-1/2	180-1/2	180-1/2	180-1/2	180-1/2	180-1/2	180-1/2	180-1/2	180-1/2	180-1/2
185	185-1/2	186-1/2	187-1/2	110	185-1/2	185-1/2	185-1/2	185-1/2	185-1/2	185-1/2	185-1/2	185-1/2	185-1/2	185-1/2	185-1/2	185-1/2	185-1/2	185-1/2	185-1/2	185-1/2	185-1/2	185-1/2	185-1/2
190	190-1/2	191-1/2	192-1/2	111	190-1/2	190-1/2	190-1/2	190-1/2	190-1/2	190-1/2	190-1/2	190-1/2	190-1/2	190-1/2	190-1/2	190-1/2	190-1/2	190-1/2	190-1/2	190-1/2	190-1/2	190-1/2	190-1/2
195	195-1/2	196-1/2	197-1/2	112	195-1/2	195-1/2	195-1/2	195-1/2	195-1/2	195-1/2	195-1/2	195-1/2	195-1/2	195-1/2	195-1/2	195-1/2	195-1/2	195-1/2	195-1/2	195-1/2	195-1/2	195-1/2	195-1/2
200	200-1/2	201-1/2	202-1/2	113	200-1/2	200-1/2	200-1/2	200-1/2	200-1/2	200-1/2	200-1/2	200-1/2	200-1/2	200-1/2	200-1/2	200-1/2	200-1/2	200-1/2	200-1/2	200-1/2	200-1/2	200-1/2	200-1/2
205	205-1/2	206-1/2	207-1/2	114	205-1/2	205-1/2	205-1/2	205-1/2	205-1/2	205-1/2	205-1/2	205-1/2	205-1/2	205-1/2	205-1/2	205-1/2	205-1/2	205-1/2	205-1/2	205-1/2	205-1/2	205-1/2	205-1/2
210	210-1/2	211-1/2	212-1/2	115	210-1/2	210-1/2	210-1/2	210-1/2	210-1/2	210-1/2	210-1/2	210-1/2	210-1/2	210-1/2	210-1/2	210-1/2	210-1/2	210-1/2	210-1/2	210-1/2	210-1/2	210-1/2	210-1/2
215	215-1/2	216-1/2	217-1/2	116	215-1/2	215-1/2	215-1/2	215-1/2	215-1/2	215-1/2	215-1/2	215-1/2	215-1/2	215-1/2	215-1/2	215-1/2	215-1/2	215-1/2	215-1/2	215-1/2	215-1/2	215-1/2	215-1/2
220	220-1/2	221-1/2	222-1/2	117	220-1/2	220-1/2	220-1/2	220-1/2	220-1/2	220-1/2	220-1/2	220-1/2	220-1/2	220-1/2	220-1/2	220-1/2	220-1/2	220-1/2	220-1/2	220-1/2	220-1/2	220-1/2	220-1/2
225	225-1/2	226-1/2	227-1/2	118	225-1/2	225-1/2	225-1/2	225-1/2	225-1/2	225-1/2	225-1/2	225-1/2	225-1/2	225-1/2	225-1/2	225-1/2	225-1/2	225-1/2	225-1/2	225-1/2	225-1/2	225-1/2	225-1/2
230	230-1/2	231-1/2	232-1/2	119	230-1/2</																		

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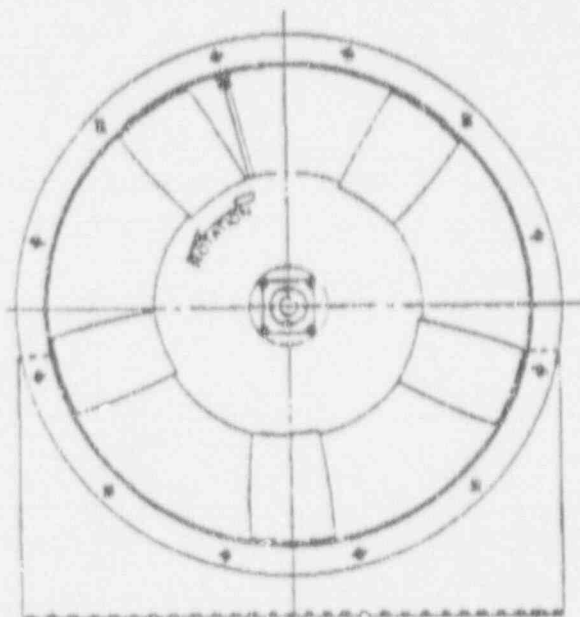




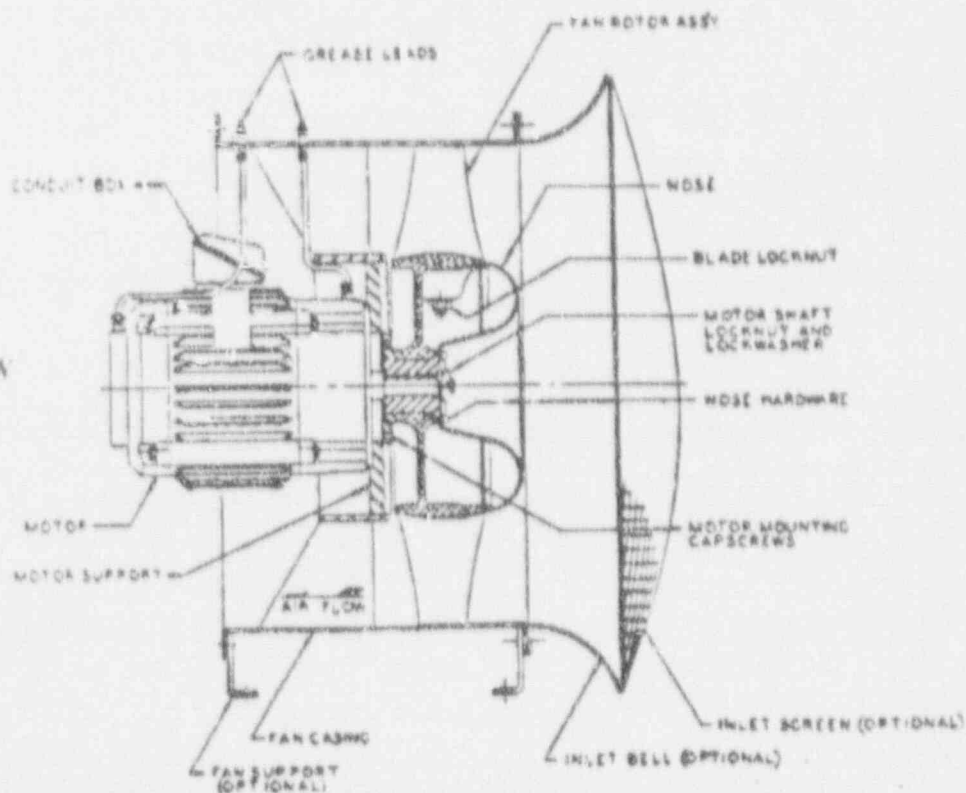
## FAN NOMENCLATURE (SERIES 800)

FIGURE 2

INLET VIEW



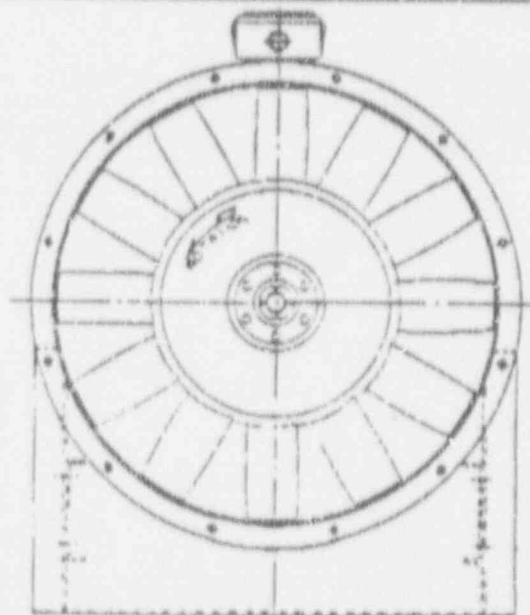
SIDE VIEW



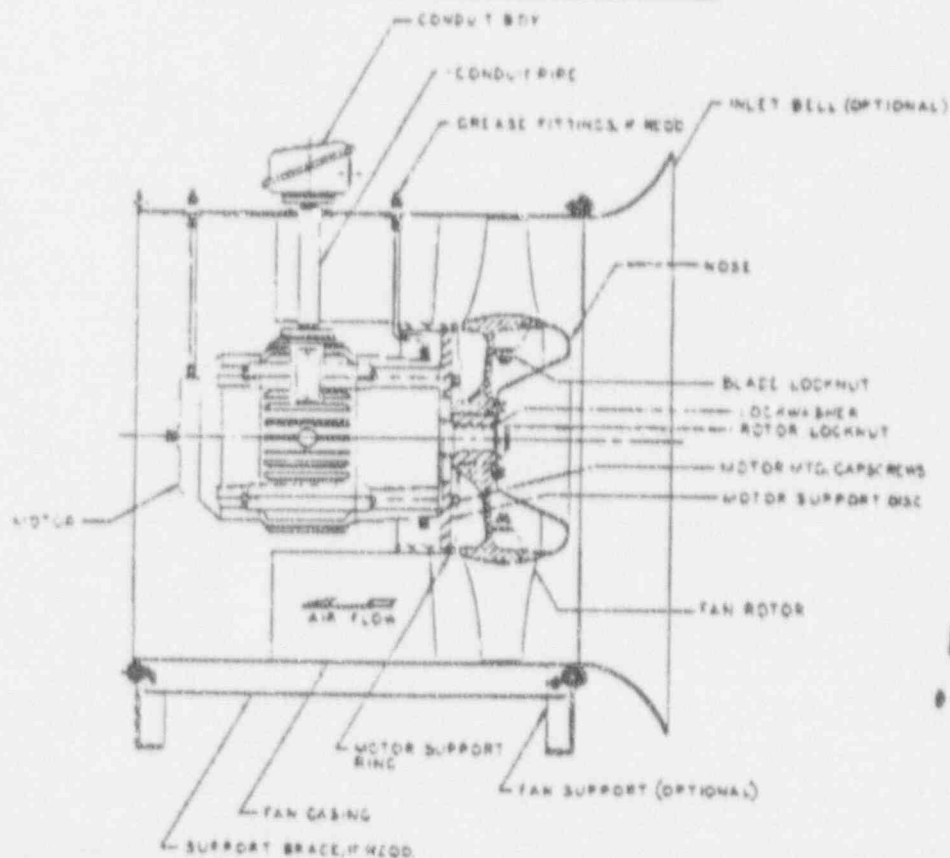
# FAN NOMENCLATURE (SINGLE STAGE)

FIGURE 3

INLET VIEW



SIDE VIEW



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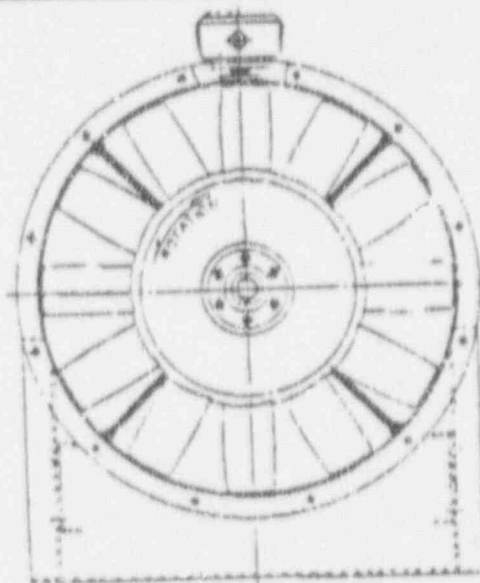
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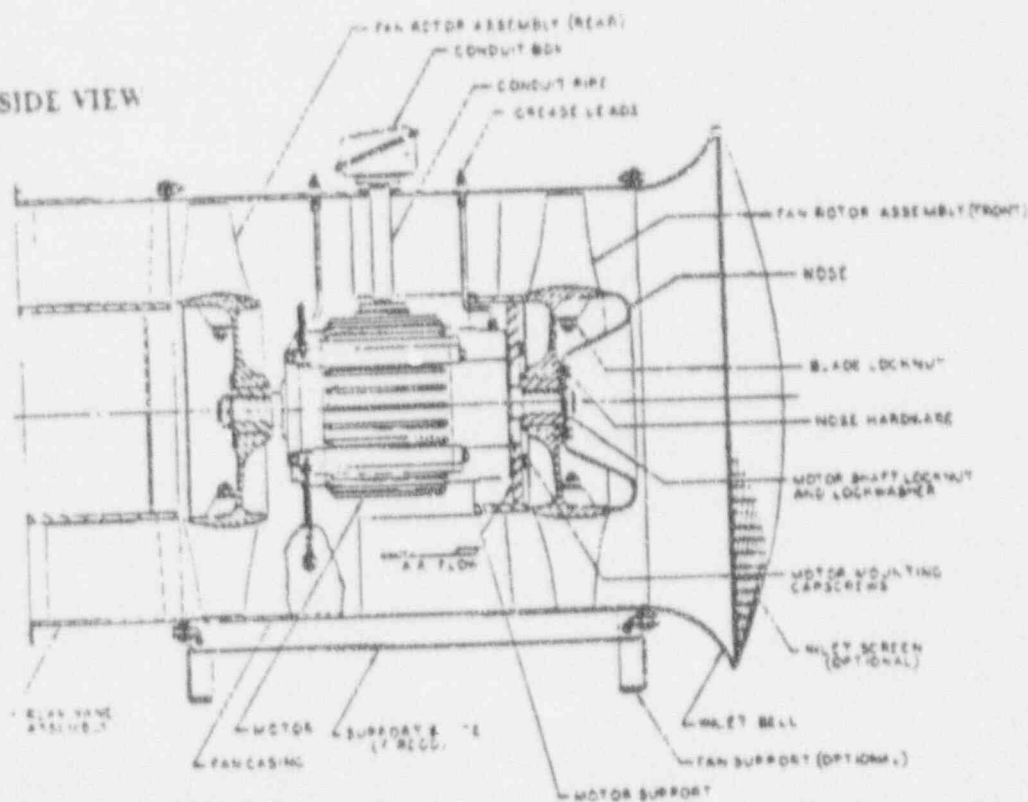
## FAN NOMENCLATURE (TWO STAGE)

FIGURE 4

INLET VIEW



SIDE VIEW

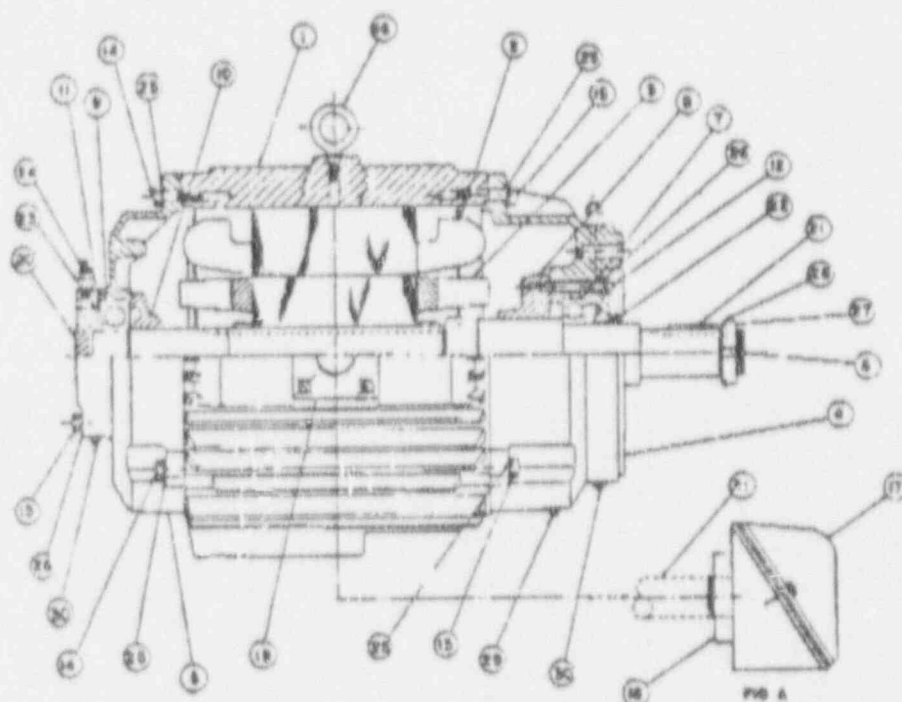


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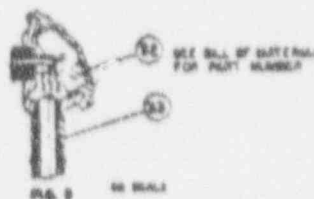


# MOTOR NOMENCLATURE

FIGURE 5



NO.	PART DESCRIPTION
1	FRAME
2	STATOR
3	ROTOR
4	BACKEND BRACKET
5	FRONTEND BRACKET
6	SHAFT
7	BACKEND BALL BEARING
8	BACKEND INNER CAP
9	FRONTEND BALL BEARING
10	FRONTEND INNER CAP
11	BALL WASHER FRONTEND
12	BACKEND CAP BOLTS
13	FRONTEND CAP BOLTS
14	FRONTEND BRACKET BOLTS
15	BACKEND BRACKET BOLTS
16	END BOLT
17	CONDUIT BOX (SEE FIGURE 1, FIG. 6)
18	PISTON ADAPTER CONDUIT BOX
19	PISTON ADAPTER FRAME
20	PISTON ADAPTER
21	KEY
22	V-RING BLINDER
23	RELIEF FITTING
24	BREAST FITTING
25	LOCK WASHER
26	V-RING WASHER
27	LOCKWASHER SHAFT
28	PISTON CONDUIT BOX DRAM
29	PISTON BREAST DRAM
30	CONDUIT PIPE
31	CONDUIT BOX (SEE FIGURE 1, FIG. 6)
32	PERMISSIBLE BACKEND BLIND ADPT



**For parts and service  
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U.S.A., Pittsburgh, Pennsylvania

**Your Local Representative is:**

**WARNING:**

The recommended lubricants have been selected for use with JOY Series 800, 1000, 2000 and 3000 Series AXIVANE Fans. JOY does not recommend mixing lubricants due to possible incompatibility. Motors with Class H, Type RN or Class H, Type RH insulation systems, nuclear applications, MUST be lubricated with Chevron SRI #2 with no substitutions permitted. DO NOT substitute other manufacturing brands without first consulting our factory. If it is desired to change lubricant, follow instructions for lubrication and repeat lubrication a second time after 100 hours of service. Care must be taken to look for signs of lubricant incompatibility, such as extreme soapiness visible from the grease relief area.

When writing about your equipment always include this machine reference with your inquiry.

SERIAL NO. \_\_\_\_\_ MODEL \_\_\_\_\_

SIZE \_\_\_\_\_ SHOP NO. \_\_\_\_\_

The Company reserves the right to alter or improve the design or construction of its machinery as described herein and to furnish it, when so altered, without reference to the illustrations or descriptions in this manual.

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**JOY MANUFACTURING COMPANY**  
**AIR MOVING PRODUCTS • NEW PHILADELPHIA, OHIO 44663**