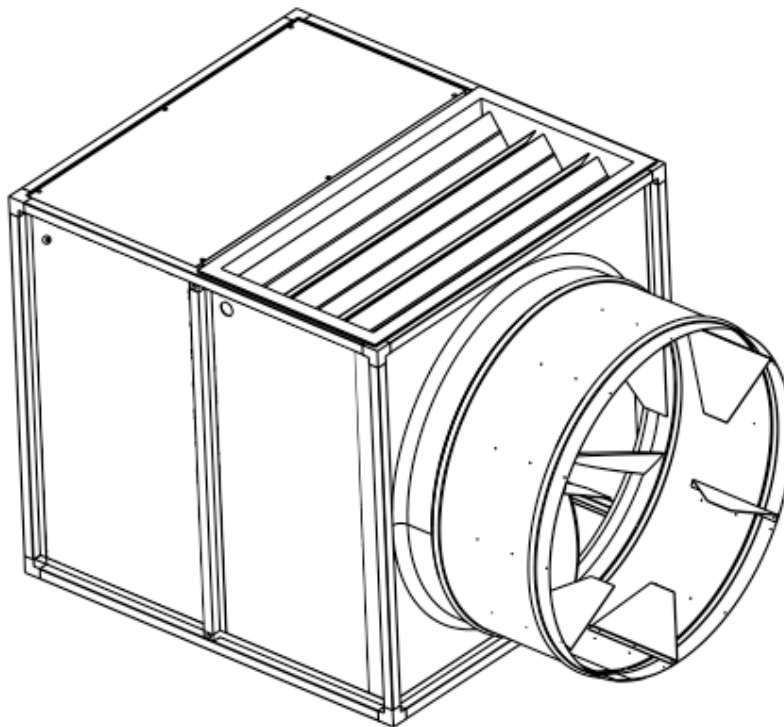




Jet Fans

Instruction Manual

READ AND SAVE THESE INSTRUCTIONS



WARRANTY

All Leader Fan products are guaranteed to be free from defects of workmanship or material and to function satisfactorily when properly installed, operated and maintained in accordance with instructions, for a period of twelve (12) months from date of delivery unless stated otherwise.

The guarantee does not apply if the product has been altered or tampered with in any way after leaving the factory. Canarm assumes no liability for resultant damages, labour and services charges of any kind arising from the use of its products. On equipment furnished by Canarm but manufactured by others, such as motors, the warranty will be honoured by the manufacturers thereof.

CANARM LTD. – CORPORATE HEAD OFFICE
2157 Parkedale Avenue, P.O. Box 367, Brockville, Ontario Canada K6V 5V6
Ph: (613) 342-5424 Fax: (613) 342-8437
Web Site: www.canarm.com



JET FANS - JFHVA

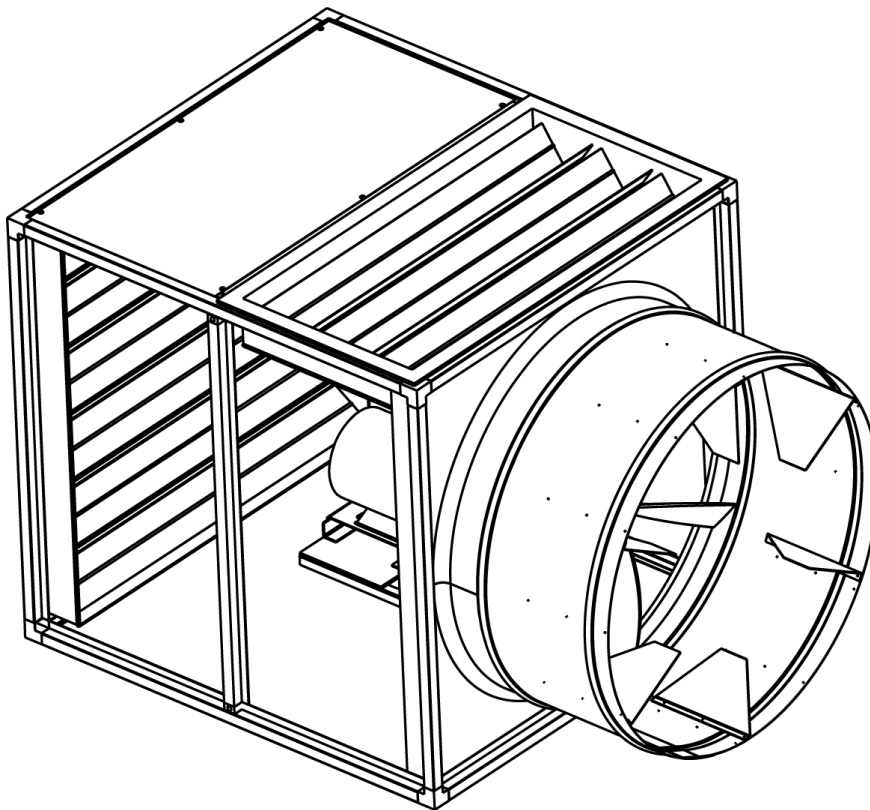
INSTALLATION, OPERATION, AND MAINTENANCE MANUAL

The purpose of this manual is to aid in the proper installation and operation of the fans. These instructions are intended to supplement good general practices and are not intended to cover detailed instruction procedures. It is the responsibility of the purchaser to assure that the installation and maintenance of this equipment is handled by qualified personnel.

Inspect all shipments carefully for damage. **THE RECEIVER MUST NOTE ANY DAMAGE ON THE CARRIERS BILL OF LADING AND FILE A CLAIM IMMEDIATELY WITH THE FREIGHT COMPANY.**

ASSEMBLY INSTRUCTIONS

1. Remove the panels and electrical box from inside the fan.
2. If equipped: adjust pre-assembled linkage/damper position to suit application.
3. Once the fan has been properly wired by a licensed electrician, assemble two panels to the side of the fan using the supplied self drilling screws.





INSTALLATION

- 1.** The fans are shipped mostly assembled, however final adjustments are required to suit your specific application. The fabric duct and associated hardware are shipped separately.
- 2.** Jet Fans should be installed as near the roof as is practical while still providing a straight, clear, unobstructed run for the fabric duct.
- 3.** The run of fabric duct should be kept clear of any moisture sensitive equipment.
- 4.** Construct a framed wall opening.
- 5.** Align the fresh air control damper with the framed wall opening and install in the opening and lag to the wall.
- 6.** Hang the discharge side of the Jet Fan using threaded rod (by others) to the ceiling.
- 7.** Place the fabric duct over the venturi extension and secure in place using a duct clamp.
- 8.** Attach one end of the cable to the wall then thread the cable through the eyelets on the fabric duct. Attach the cable to the ceiling using beam clamps.
- 9.** When utilizing the temperature sensor to adjust the amount of fresh and recirculated air, the sensor should be located in the system discharge duct. The temperature control can be located anywhere.
- 10.** Caution: The fan contains rotating parts and requires electrical service. Appropriate safety precautions should be taken during installation, operation and maintenance.
- 11.** All electrical work must be done in accordance with all applicable electrical codes, by a qualified electrician.
- 12.** Prior to wiring, ensure that the power supply is locked in the off position and that the motor nameplate voltage and the supply voltage match.
- 13.** Ensure that the propeller rotates freely.



Wiring Instructions

A qualified electrician, in accordance with all local and national electrical codes, should do all wiring. **Lock off all power sources before any wiring is to be performed.** All wiring is to be done in the electrical box on the exterior of the jet fan. Excess wire must be restrained in order to prevent it from entanglement with moving parts. Disconnect switches are recommended and should be located near the fan in order to swiftly cut off power in case of an emergency and maintain complete control of the power source. Follow the wiring diagrams provided.

Jet Fans

- Extend the proper gauge wire to the fan motor.
- Restrain excess wire from entanglement with moving parts.

Typical Installations

Refer to page 8 and 9.

OPERATION

Pre Start Inspection

- Lock out all power sources.
- Inspect all fasteners and set screws and tighten as required to the proper torque settings (see chart).
- Inspect belt alignment and tension.
- Confirm power source voltage and motor voltage are the same and that the motor is wired correctly.
- Rotate the fan blade to ensure that the fan blade does not come into contact with the housing.
- Inspect the fan to ensure it is free from debris.
- Check to ensure that all guards and accessories are securely mounted.
- Check to be sure the propeller rotation is correct
- Check to ensure that the fabric duct is securely fastened to the fan discharge and that the fabric duct is in the correct orientation.

Start Up

Turn the fan on and inspect for the following:

- Direction of rotation
- Improper motor amperage
- Excessive vibration
- Unusual noise
- Improper belt tension or alignment



If a problem is discovered, shut off the fan and refer to the section on troubleshooting to discover the cause of the problem. The fan should be inspected after 30 minutes, 8 hours and 24 hours of operation to ensure all fasteners are tight and belts are properly tensioned and aligned.

MAINTENANCE

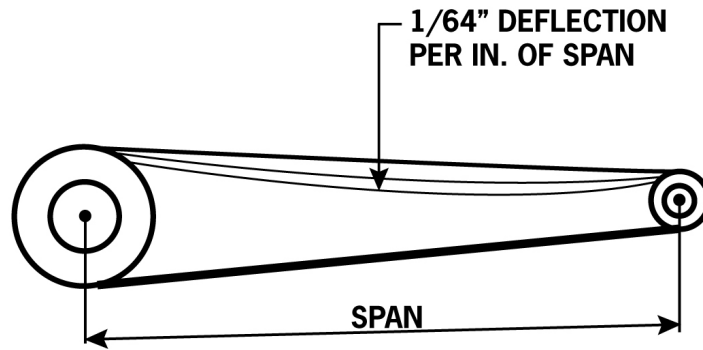


WARNING: Disconnect and secure to the **OFF** position all electrical power to the fan prior to inspection or servicing. Failure to comply with this safety precaution could result in serious injury or death.

1. Fans should be checked at least once a year. For critical or severe applications a routine check every two or three months is suggested.
2. When removing or installing a belt, do not force the belt over the sheave. Loosen the motor mount so that the belt can be easily slipped over the sheave.
3. The belt should be removed and carefully checked for cracks, ply separation or irregular wear. A small irregularity in the contact surface of the belt will result in noisy operation. If any of these defects are apparent, the belt should be replaced. At the same time, check the sheaves for chips, dents or rough surfaces that could damage the belt.
4. The correct belt tension is important. Too tight a belt will result in excess bearing pressure, which can cause premature bearing failure and may cause the motor to overload; too loose a belt will result in slippage, which will burn out belts. Proper belt deflection should be 1/64" (half way between sheave centers) for each inch of belt span when a force of approximately five lbs. is applied.
5. The belt alignment should be checked to be sure that the belt is running perpendicularly to the rotating shafts. Motor and drive shafts must be parallel.
6. A periodic inspection of all fasteners should be carried out to ensure they have not loosened due to vibration. Particular attention should be paid to fasteners attaching the propeller to the shaft and those attaching the shaft to the bearings.
7. The standard pillow blocks on belt driven fans are factory lubricated. These bearings should be lubricated on a semi annual basis (more frequently in severe applications). With the fan being rotated by hand add grease very slowly, using a manual grease gun, until a slight bead of grease forms at the seal. Be careful not to unseat the seal by over lubricating or by using excessive pressure. When the bearings are obstructed from view, use no more than three injections with a hand operated grease gun.
8. Dust and dirt on the exterior surface of the motor, fan panel, and the propeller should be removed, at intervals determined by the severity of the application, to ensure proper service life and safety.



Belt Tension

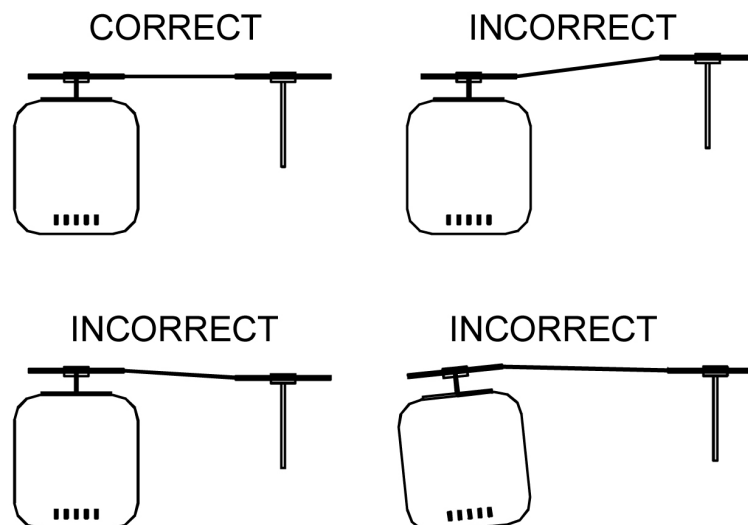


Belt and Pulley Replacement

In the course of regular maintenance, the belts and pulleys may have to be changed and or adjusted. The recommended procedure is as follows:

- Do not change the pulley pitch diameter in order to tension the belts. This will result in a change in the fan speed.
- Loosen the nuts on the motor plate or motor in order to reduce the belt tension such that the belts will easily slip over the pulleys. Never force the belts over the rim of the pulley.
- Loosen the setscrews on the pulleys and remove from either the motor or fan shaft using a two or three jaw puller.
- Remove any shaft imperfections, such as setscrew marks, using a file or emery cloth.
- Install the replacement pulleys tightening all setscrews and bolts to the recommended torque rating (see chart page 7) and ensuring that they are properly aligned.
- Pulley alignment is achieved by moving the pulleys on their respective shafts or moving the entire motor until the pulleys are correctly aligned (see Pulley Alignment on next page). Using a square with one edge parallel to the motor shaft adjust the pulleys until the other edge is parallel to the belts.
- Slip the belts over the pulleys, and then adjust the motor/ motor plate until the proper tension is reached (1/64" deflection, half way between pulley centers, per inch of belt span when pressed firmly).
- Tighten the motor plate/ motor adjusting nuts in place.

Pulley Alignment





Recommended Torque for Set screws/Bolts (inch/lbs)

SET SCREWS				HOLD DOWN BOLTS	
SIZE	HEX KEY	RECOMMENDED TORQUE INCH-LBS		SIZE	TORQUE INCH-LBS
		MIN	MAX		
NO. 10	3/32"	28	33	3.8" – 16	240
1/4"	1/8"	66	80	1/2" - 13	600
5/16"	5/32"	126	156	5/8" – 11	1200
3/8"	3/16"	228	275	3/4" – 10	2100
7/16"	7/32"	348	384	7/8" – 9	2040
1/2"	1/4"	504	600	1" – 8	3000
5/8"	5/16"	1104	1200	1 – 1/8" – 7	4200
3/4"	3/8"	1440	1800	1 – 1/4" - 7	6000

Bearings Replacement

Canarm/LFI uses pillow block bearings.

- Before removing the bearings, mark the positions of the fan blade, bearings and pulley on the shaft.
- Note the clearance between the fan blade and the venturi.
- Remove the pulley and fan blade from the shaft using a puller.
- Unbolt the bearings and remove the shaft and pillow blocks as one unit.
- Clean the shaft and remove any marks using a file or emery cloth then remove the bearings using a bearing puller.
- Inspect the shaft and replace if necessary.
- Mount the new bearings on the shaft by tapping the bearings inner ring face using a soft mallet.
- Align the setscrews on the bearings and then tighten one setscrew on each bearing.
- Loosely install the bearings on the bearing mount.
- Rotate the shaft to find the center of free movement.
- Install the propeller adjusting the bearing location to center the propeller in the venturi.
- Tighten the bearing bolts to the proper torque rating (see chart page 7).
- Turn the propeller by hand; the propeller should rotate freely with the same resistance as before the bearing bolts were tightened.
- Tighten all setscrews to the proper torque rating (see chart page 7).
- Install the pulley and adjust the belt tension.

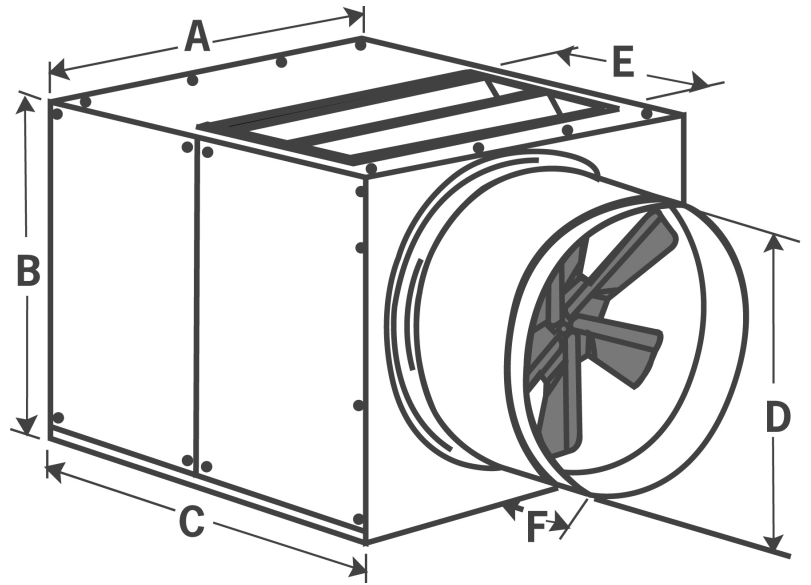
Follow the start up steps as outlined above.



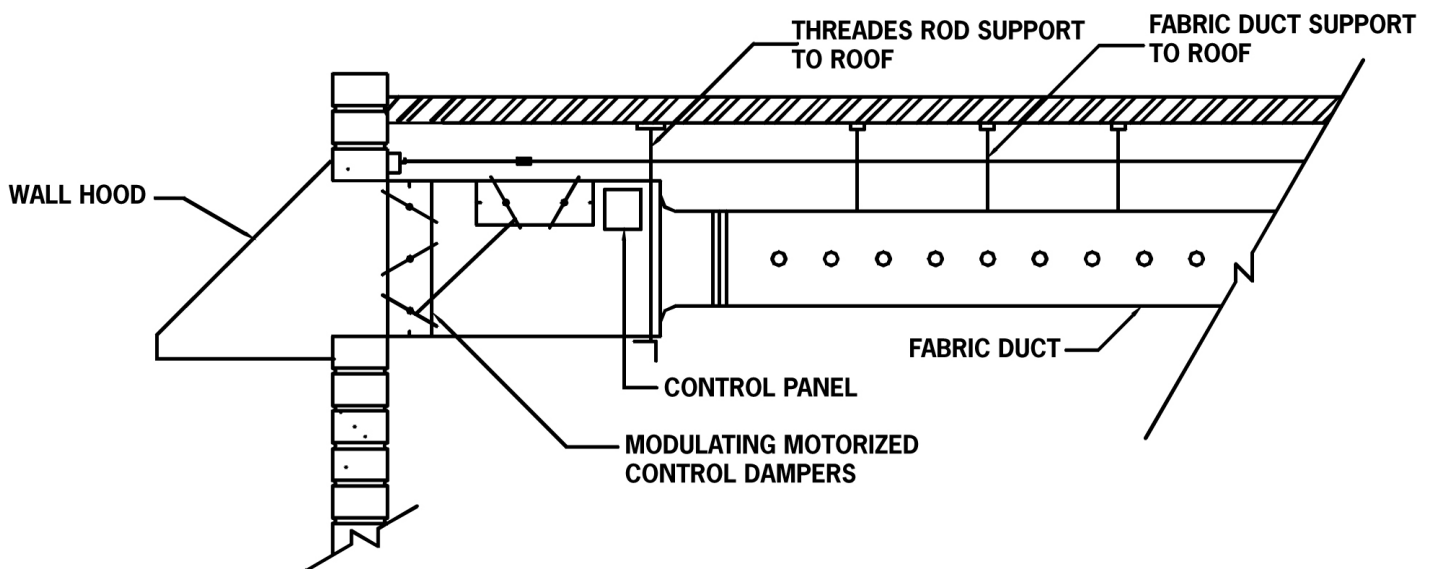
Typical Installations

Dimensions

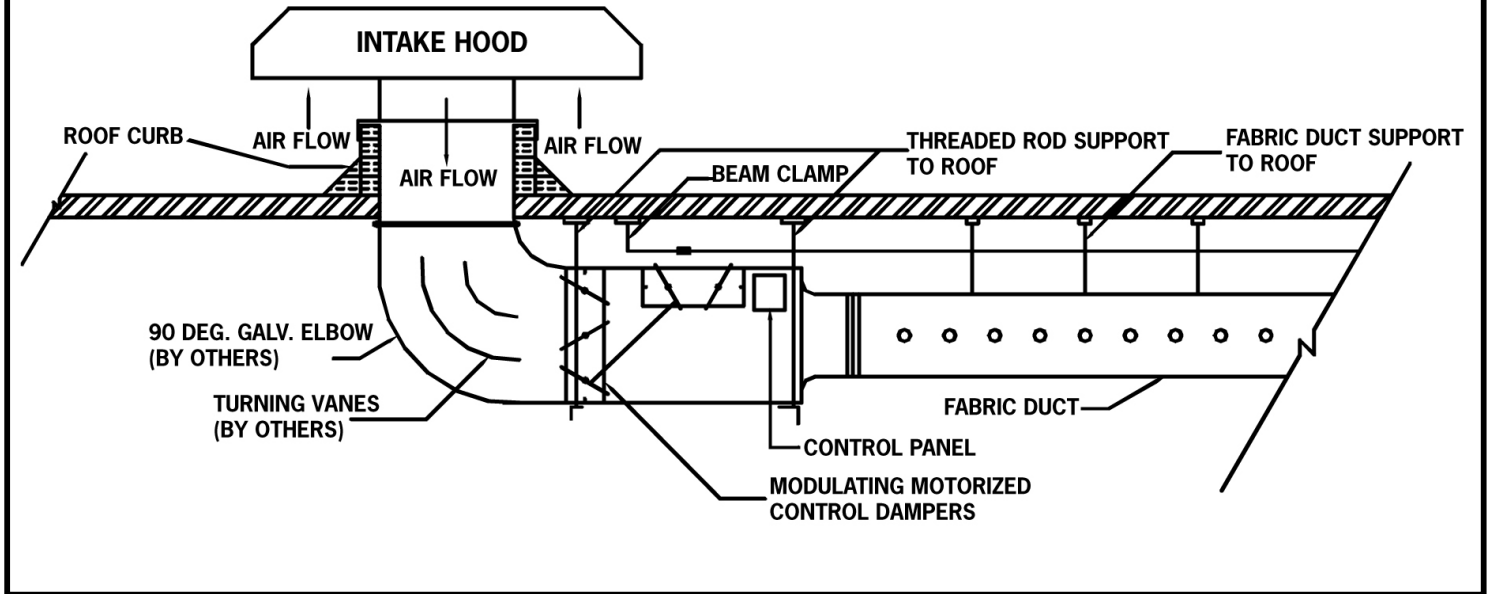
SIZE	A	B	C	D	F
24	32"	32"	36"	25"	18 7/8"
30	38"	38"	42"	31"	18 7/8"
36	44"	44"	48"	37"	26 3/4"
42	50"	50"	54"	42 7/8"	24 1/4"
48	56"	56"	60"	48 7/8"	27 1/4"



Wall Mounted



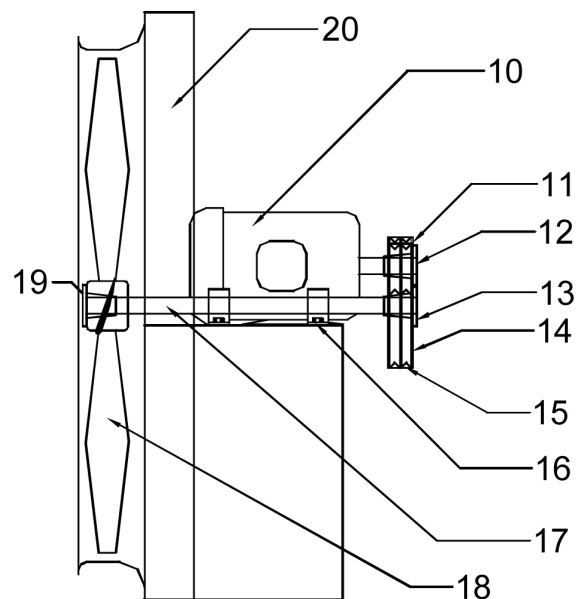
Roof Mounted



REPLACEMENT PARTS LIST

MODEL: JFHVA

ITEM	DESCRIPTION	QUANTITY
10	MOTOR	1
11	MOTOR SHEAVE	1
12	MOTOR SHEAVE BUSHING	1
13	DRIVEN SHEAVE BUSHING	1
14	DRIVEN SHEAVE	1
15	"V" BELTS	2
16	PILLOW BLOCK BEARINGS	2
17	FAN SHAFT	1
18	PROPELLER	1
19	PROPELLER BUSHING	1
20	WELDED FAN ASSEMBLY	1





FAN TROUBLESHOOTING GUIDE

PROBLEM	POSSIBLE CAUSES
VIBRATION	Propeller or sheaves loose Belts not tensioned properly Damaged shaft Out of balance propeller Loose fasteners Improper fan installation Loose or worn bearings Drive misalignment Mismatched belts Out of balance sheaves
MOTOR OVERLOADING	Static pressure higher than design Propeller rotating in wrong direction Improper fan speed Defective motor Fan speed higher than design
NOT ENOUGH AIR	Propeller rotating in the wrong direction Static pressure higher than design Clogged filters Fan speed lower than design Restricted inlet, outlet or duct
TOO MUCH AIR	Filters missing Static pressure lower than design Fan speed higher than design
FAN DOES NOT OPERATE	Lack of electricity to the fan Fan wired improperly Broken or missing belt Missing or blown fuses Overload protection has broken circuit Defective motor



FAN TROUBLESHOOTING GUIDE

PROBLEM	POSSIBLE CAUSES
EXCESSIVE NOISE	Propeller or sheaves loose Belts not properly tensioned Sheaves not properly aligned Propeller out of balance Sheaves out of balance Damaged shaft Bearings defective or require lubrication Worn belts Vibration or lack of isolation High velocity air Loose fasteners



CANARM LTD. – CORPORATE HEAD OFFICE
2157 Parkedale Avenue, Brockville, Ontario K6V 5V6 Canada Phone: (613) 342-5424 Fax: (613) 342-8437
Web Site: www.canarm.com