

**INSTALLATION, OPERATING AND MAINTENANCE INSTRUCTIONS**  
**CENTRIFUGAL INLINE DUCT FANS**  
**MODELS VIBK — BELT and VIDK — DIRECT DRIVE**

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**CAUTION!**

**DO NOT INSTALL, USE OR OPERATE THIS EQUIPMENT UNTIL THIS MANUAL HAS BEEN READ AND UNDERSTOOD. READ AND SAVE THESE SHEETS FOR FUTURE USE.**

**RECEIVING, HANDLING AND STORAGE**

1. Handle the fan with care. Avoid severe jarring or dropping of the unit.
2. Carefully inspect the unit for damage upon delivery. If the unit has been damaged in transit it is the responsibility of the recipient to make all claims against the carrier.
3. Provide adequate, protected storage prior to installation.

**INSTALLATION**

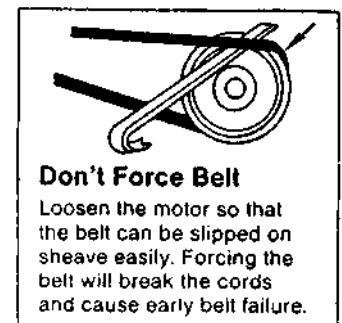
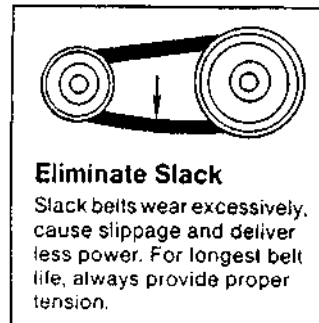
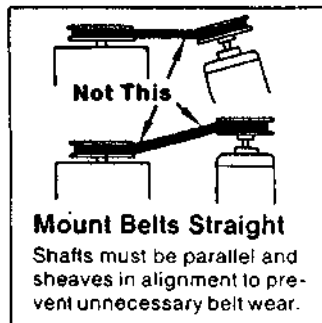
1. Upon unpacking, inspect the unit for any damage that may have occurred in transit. Check also for loose or missing parts.
2. **CAUTION!** This fan contains rotating parts and requires electrical service. Appropriate safety precautions should be taken during installation, operation and maintenance.
3. **WARNING!** Do not install or operate this fan in an environment or atmosphere where combustible or flammable materials, gasses or fumes are present, unless it has been specifically designed and manufactured for use in that environment. **Explosion** or **Fire** could result.
4. This ventilator is designed for floor, wall or ceiling suspended mounting. Orient the fan for best use of access panels.
5. Optional mounting brackets are bolted to the fan cabinet through the knock-outs in the top or bottom of the unit (Refer to IO&M 1404).
6. Attach the spring or R-I-S isolators to the mounting brackets. Be sure all fasteners are securely tightened.
7. Join the fan to the duct using any suitable flexible connector. Flexible connectors should overlap the fan and duct sufficiently to assure against leaks.
8. A damper, if used, should be securely mounted within the ductwork, a minimum of 8 inches from fan, in a manner which allows free and unobstructed operation.
9. **CAUTION!** All electrical work must be done in accordance with local and/or national electrical code as applicable. If you are unfamiliar with methods of installing electrical wiring, secure the services of a qualified electrician.
10. **WARNING!** This product must be grounded.
11. **DANGER!** Make sure power is turned off and locked in **OFF** position at the service entrance before installing, wiring or servicing fan.
12. **CAUTION!** Before wiring the motor, check the supply voltage against the motor nameplate voltage. High or low voltage can damage the motor and void the warranty.
13. **WARNING!** Be sure to keep all wiring clear of rotating or moving parts.
14. **WARNING!** Before starting the fan, turn the wheel to assure it rotates freely. If needed, adjust the wheel/shaft bearing/motor position as required to achieve necessary clearances.
15. **CAUTION!** On belt drive units assure belts are tensioned and aligned properly. (See Maintenance section).
16. **WARNING!** Check all set screws and keys, tighten as necessary prior to fan start up. Anchor the fan securely using optional mounting brackets and suitable fasteners or other suitable means prior to operation.
17. Anchor the fan securely using optional mounting brackets and suitable fasteners or other suitable means prior to operation. (Refer to IO&M #1404).

## **OPERATION**

1. **CAUTION!** Check that the fan inlet/ductwork/exhaust openings are clean and free of obstructions. Poor inlet conditions will result in seriously reduced fan performance.
2. **WARNING!** This fan contains rotating parts. Appropriate safety precautions should be taken during operation.
3. Operate under power and check for correct wheel rotation direction (clockwise when looking at top of the wheel).
4. **CAUTION!** Incorrect rotation can damage the fan motor and seriously impede fan operation.

## **MAINTENANCE**

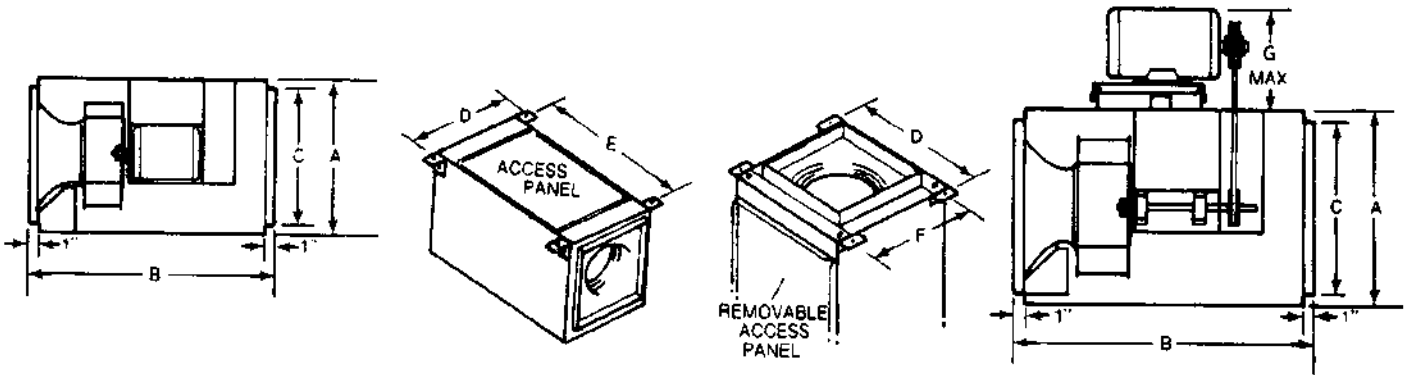
1. **DANGER!** Before performing and maintenance on the fan, be sure power is turned off and locked in the **OFF** position at the service entrance before servicing the fan.
2. Ventilators should be carefully checked at least once a year. For critical or rugged applications, a routine check every two or three months is suggested.
3. All motors supplied with CARNES ventilators carry a one year warranty from date of shipment. For repairs within the warranty period, the motor must be taken to the motor manufacturer's authorized service dealer. Contact your CARNES representative for additional warranty details.
4. Access to the motor compartment is possible by removing the motor cover or motor cover/motor tube assembly.
5. A periodic motor check should consist of spinning the motor shaft with the power off to be sure the motor turns freely and the bearings run smoothly. The belt on belt driven units should be removed from the motor sheave.
6. **CAUTION!** 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.
7. The belt on belt driven units should be removed and carefully checked for radial 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. Check the sheave also for chipping, dents or rough surfaces which could damage the belt.
8. **CAUTION!** The correct belt tension is important. Too tight a belt will result in excess bearing pressure on the motor bearings and shaft pillow blocks, and may also overload the motor. Too loose a belt will result in slippage which will quickly "burn" out belts. A belt should feel "live" when thumped, approximately 1/4" belt deflection when subjected to finger pressure (3 to 5 lbs.) at midpoint between sheaves.
9. **CAUTION!** The belt alignment should also be checked to be sure the belt is running perpendicular to the rotating shafts. Motor and drive shafts must be parallel. Improper alignment will result in excessive belt wear.



10. **CAUTION!** Check sheave set screws to ensure tightness. Proper keys must be in keyways.
11. **CAUTION!** Do not readjust variable pitch sheave without checking motor amps. Do not readjust variable pitch sheaves above the maximum catalog RPM for unit and motor. If fixed sheaves are replaced, use only sheaves of identical size and type.
12. **CAUTION!** If adjustment of two groove variable pitch sheaves is required, each sheave must be opened or closed the same number of turns. Improper adjustment can cause excessive belt wear and premature failure.

13. If unit is to be left idle for an extended period (especially over summer months), it is recommended that belts be removed and stored in a cool, dry place to avoid premature belt failure.
14. The standard pillow block bearings on CARNES belt driven ventilators are permanently lubricated and are supplied with an oil base corrosion preventive compound. These should not require any service except that during the first few months of operation it is recommended the set screws holding the shaft be checked to be sure they are tight. (Proper tightness will permanently deform Allen wrench.)
15. The centrifugal fan when should not require maintenance except for removing foreign materials that may accumulate on the blades. The balance weights should not be disturbed. If a wheel has to be removed from the shaft, **do not apply force** that will damage the bearings or warp the wheel. Use a wheel puller.
16. Access to the wheel for alignment purposes can be obtained by removing the motor lid and/or motor tube. Lateral adjustment is made with the motor mount. Vertical adjustment is made at the bearings.
17. Should it be necessary to remove the wheel, access is through the fan plate. Do not remove the motor/motor mount assembly. Carefully support the motor/motor mount assembly and remove all the fan plate fasteners. Carefully removed the entire assembly from the unit base. To rebuild, assemble in reverse order.

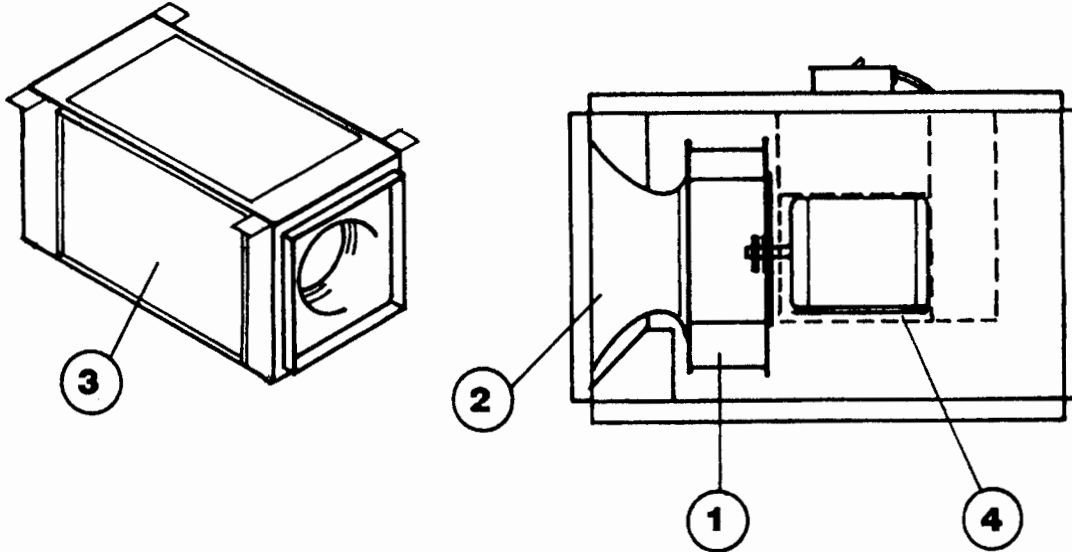
Safe installation and operation of fans is the responsibility of those who design, install, maintain and use the equipment. For general guidelines and safety recommendations, please refer to AMCA Publication 410-96. "Recommended Safety Practices for Users and Installers of Industrial and Commercial Fans." (Contact your local Carnes Representative for your free copy.)



**DIMENSIONS LISTED IN INCHES**

UNIT SIZE	A	B	C	D	E	F	G
06	14	28½	12	16½	25½	12½	12
08	14	28½	12	16½	25½	12½	
10	18	32½	16	20½	28½	16½	
12	18	32½	16	20½	28½	16½	
15	24	34½	22	26½	31½	22½	
18	28	36½	26	30½	32½	26½	
21	31	39½	29	33	33½	27½	14
24	40	42½	38	42	37½	36½	
30	48	46½	46	50	40½	44½	
36	56	48½	54	58	43½	55½	

## MODEL VIDK - DIRECT DRIVE - PARTS LIST VIDK 06-18



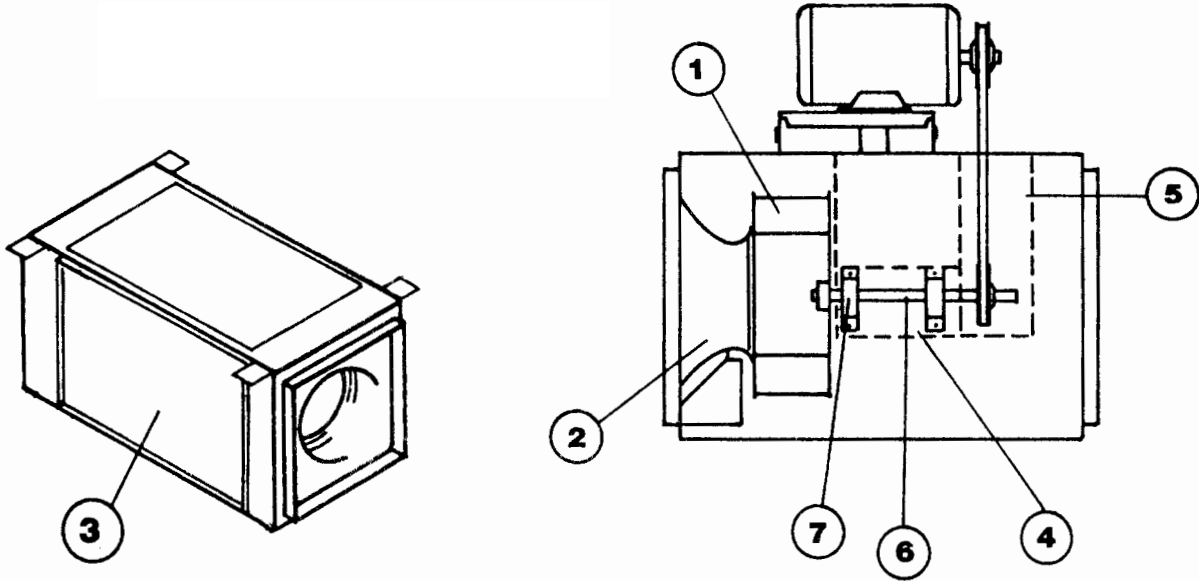
Model VIDK Size	1* Spark Resistant Wheel			Standard - Galv. Steel			Aluminum		
	1/2	5/8	7/8	2 Inlet Venturi Section	3 Access Panel (2)	4 Motor Compartment Cover	2 Inlet Venturi Section	3 Access Panel (2)	4 Motor Compartment Cover
06	V-384-0542	V-384-0543	—	V-384-8021	V-384-8202	V-384-0801	V-384-8031	V-384-8182	V-384-0811
08	V-384-0546	V-384-0547	—	V-384-8021	V-384-8202	V-384-0802	V-384-8031	V-384-8182	V-384-0812
10	V-384-0550	V-384-0551	—	V-384-8022	V-384-8204	V-384-0803	V-384-8032	V-384-8184	V-384-0813
12	V-384-0553	V-384-0554	V-384-0556	V-384-8022	V-384-8204	V-384-0804	V-384-8032	V-384-8184	V-384-0814
15	V-384-0557	V-384-0558	V-384-0560	V-384-8023	V-384-8205	V-384-0805	V-384-8033	V-384-8185	V-384-0815
18	V-384-0561	V-384-0562	V-384-0564	V-384-8034 †	V-384-8206	V-384-0806	V-384-8034	V-384-8186	V-384-0816

\* Includes set screw

† Aluminum standard construction

# MODEL VIBK - BELT DRIVE - PARTS LIST

## VIBK 06-42



### STANDARD CONSTRUCTION - COATED STEEL

Model VIBK Size	1 Wheel	2 Inlet Venturi	3 Access Panel (2)	4 Bearing Shroud Assembly	5 Vent Tube Cover	6 Fan Shaft	7 Pillowblock Bearings (2 Required)
06	V384-0544*	V384-8021	V384-8202	V384-8365	V384-8291	V998-5433	V999-8606
08	V384-0548*	V384-8021	V384-8202	V384-8365	V384-8291	V998-5433	V999-8606
10	V384-0552*	V384-8022	V384-8204	V384-8366	V384-8292	V998-5434	V999-8606
12	V384-0555*	V384-8022	V384-8204	V384-8366	V384-8292	V998-5433	V999-8606
15	V384-0559*	V384-8023	V384-8205	V384-8366	V384-8293	V998-5433	V999-8606
18	V384-0563*	V384-8034#	V384-8206	V384-8366	V384-8294	V998-5433	V999-8606
21	V384-0565	V384-8035#	V384-8207	V384-8367	V384-8295	V998-5423	V999-8637
24	V384-0566	V384-8036#	V384-8208	V384-8367	V384-8296	V998-5423	V999-8637
30	V384-0636	V384-8037#	V384-8209	V384-8368	V384-8297	V998-5435	V999-8632
36	V384-0637	V384-8038#	V384-8210	V384-8369	V384-8298	V998-5428*	V999-8633
42	V384-0638	V384-8039#	V384-8210	V384-8369	V384-8298	V998-5429	V999-8634

\* - Includes set screw

# - Aluminum standard construction

\* Units shipped before 4/30/2000, shaft is V998-5436.

### ALUMINUM CONSTRUCTION

Model VIBK Size	1 Spark Resistant Wheel	2 Inlet Venturi	3 Access Panel (2)	4 Bearing Shroud Assembly	5 Vent Tube Cover
06	STANDARD*	V384-8031	V384-8182	V384-8361	V384-8281
08	STANDARD*	V384-8031	V384-8182	V384-8361	V384-8281
10	STANDARD*	V384-8032	V384-8184	V384-8362	V384-8282
12	STANDARD*	V384-8032	V384-8184	V384-8362	V384-8282
15	STANDARD*	V384-8033	V384-8185	V384-8362	V384-8283
18	STANDARD*	V384-8034	V384-8186	V384-8362	V384-8284
21	STANDARD	V384-8035	V384-8187	V384-8363	V384-8285
24	STANDARD	V384-8036	V384-8188	V384-8363	V384-8286
30	V384-0631	V384-8037	V384-8189	V384-8364	V384-8287
36	V384-0632	V384-8038	V384-8190	V384-8370	V384-8288
42	V384-0633	V384-8039	V384-8190	V384-8370	V384-8288

\* - Includes set screw



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