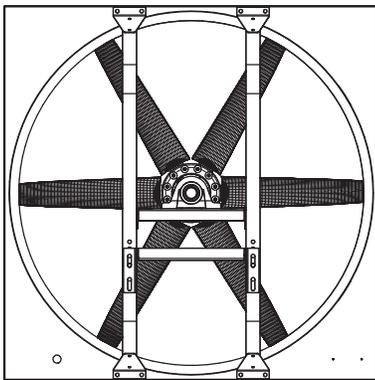


**Please read and save these instructions.** Read carefully before attempting to assemble, install, operate or maintain the product described. Protect yourself and others by observing all safety information. Failure to comply with instructions could result in personal injury and/or property damage! Retain instructions for future reference.

# Dayton® Heavy Duty Belt-Drive Exhaust and Supply Fans

## Description

Dayton exhaust and supply fans are designed for commercial and industrial applications requiring high volume of air at low to medium static pressures. Construction includes heavy-duty drive frame channels, bearing plate and motor plate. The propeller utilizes a six-blade heavy-duty cast aluminum design. Heavy-duty ball bearings are regreasable cast pillow block and rated for L10 – 100,000 hours. Mount in vertical position for exhaust applications, or horizontal position for supply applications. All exhaust fans are UL/cUL listed standard 705.



## Optional Accessories

Description	General or UL 705 Model No.'s
-------------	-------------------------------

- NEMA 1 Dis. Switch:  
 1H400 (2 pole, 115/230V, 2HP max)  
 1H401 (3 pole, 230V, 7½HP max)  
 1H401 (3 pole, 460V, 10HP max)
- NEMA 4 Dis. Switch:  
 1H408 (2 pole, 115/230V, 2HP max)  
 1H409 (3 pole, 230V, 7½HP max)  
 1H409 (3 pole, 460V, 10HP max)



Dayton Electric Mfg. Co. certifies that the ventilators shown herein are licensed to bear the AMCA seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.

## Optional Accessories (Continued)

Model	Prop. Dia.	Shutter Motor No.	Galvanized Wall Shutter No.	Aluminum Wall Shutter No.	Fiberglass Wall Shutter No.	Wall Housing No.	Fan Guard No.	Wall Collar No.	Weather Hood No.
<b>EXHAUST FANS</b>									
1AHA8	24"	2C831	1C746	3C308	5C215	3FKF8	1WBU3	1WBV1	1WBV9
1AHA9	30	2C831	1C055	3C309	5C216	3FKF9	1WBU4	1WBV2	1WBW1
1AHB1	36	2C831	4C521	3C310	5C217	3FKG1	1WBU5	1WBV3	1WBW2
1AHB2	42	2C832	1C210	3C311	5C219	3FKG2	1WBU6	1WBV4	1WBW3
1AHB3	48	2C832	1C211	3C312	5C220	3FKG3	1WBU7	1WBV6	1WBW4
1AHB4	54	4C885	3C115	3C313	5C221	3FKG4	1WBU8	1WBV7	1WBW5
1AHB5	60	4C885	3C116	3C314	5C222	3FKG5	1WBU9	1WBV8	1WBW6
<b>SUPPLY FAN</b>									
3FKD6	60"	—	3C733	3C189	—	3FKG5	1WBU9	1WBV8	1WBW6

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# Dayton® Heavy-Duty Belt-Drive Exhaust and Supply Fans

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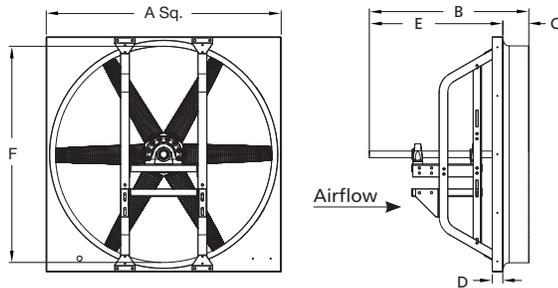


Figure 1 — Exhaust Dimensions

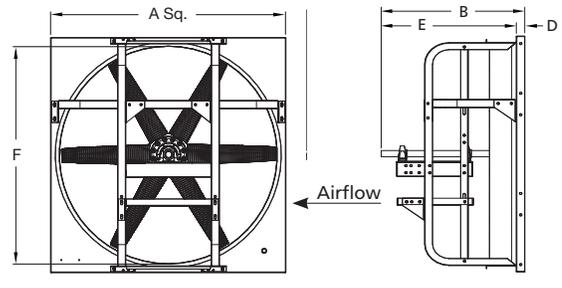


Figure 2 — Supply Dimensions

## Dimensions and Specifications

Model	Prop. Dia.	Shaft Dia.	A	B	C	D	E	F
<b>EXHAUST FANS (See Figure 1)</b>								
1AHA8	24"	3/4"	28"	18"	4 <sup>3</sup> / <sub>8</sub> "	1 <sup>1</sup> / <sub>4</sub> "	13 <sup>5</sup> / <sub>8</sub> "	24 <sup>3</sup> / <sub>8</sub> "
1AHA9	30	1	34	20	5 <sup>1</sup> / <sub>4</sub> "	1 <sup>1</sup> / <sub>4</sub> "	14 <sup>3</sup> / <sub>4</sub> "	30 <sup>3</sup> / <sub>8</sub> "
1AHB1	36	1 <sup>1</sup> / <sub>4</sub> "	40	22	6	1	16	36 <sup>3</sup> / <sub>8</sub> "
1AHB2	42	1 <sup>1</sup> / <sub>2</sub> "	46	26 <sup>3</sup> / <sub>8</sub> "	6	2	20 <sup>3</sup> / <sub>8</sub> "	42 <sup>1</sup> / <sub>2</sub> "
1AHB3	48	1 <sup>1</sup> / <sub>2</sub> "	54	28	7	2	21	48 <sup>1</sup> / <sub>2</sub> "
1AHB4	54	1 <sup>1</sup> / <sub>2</sub> "	60	33 <sup>1</sup> / <sub>2</sub> "	6 <sup>1</sup> / <sub>2</sub> "	2	27	55
1AHB5	60	1 <sup>1</sup> / <sub>2</sub> "	66	34	7 <sup>9</sup> / <sub>16</sub> "	2	26 <sup>7</sup> / <sub>16</sub> "	61
<b>SUPPLY FAN (See Figure 2)</b>								
3FKD6	60"	1 <sup>3</sup> / <sub>4</sub> "	66"	35 <sup>1</sup> / <sub>2</sub> "	—	2"	33 <sup>1</sup> / <sub>2</sub> "	61"

## Performance

Model	Prop. Dia.	HP	Fan RPM	Max BHP	Sones @ 0.000" SP @ 5Ft.	CFM Air Delivery @ Static Pressure Shown						
						0.000"	0.125"	0.250"	0.375"	0.500"	0.625"	0.750"
<b>EXHAUST FANS</b>												
1AHA8	24"	1/2	939	0.58	17.7	6469	5867	4987	3648	1158	—	—
		3/4	1068	0.86	21	7357	6847	6194	5282	2339	1469	—
		1	1178	1.15	24	8115	7669	7127	6375	5503	2475	1686
1AHA9	30	3/4	783	0.86	19.7	10,798	9474	7730	—	—	—	—
		1	863	1.15	23	11,901	10,739	9276	—	—	—	—
		1 <sup>1</sup> / <sub>2</sub>	989	1.73	27	13,639	12,646	11,452	10,112	—	—	—
		2	1087	2.30	31	14,990	14,090	13,072	11,885	10,489	—	—
	3	1245	3.45	39	17,169	16,387	15,570	14,596	13,547	12,372	10,720	

Performance certified is for installation type A: Free inlet, Free outlet. Power rating (BHP) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in fan sones at 5 ft. (1.5 m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A: Free inlet hemispherical sone levels.

# Models 1AHA8, 1AHA9, 1AHB1 thru 1AHB5, and 3FKD6

## Performance (Continued)

Model	Prop. Dia.	HP	Fan RPM	Max BHP	Sones @ 0.000" SP @ 5Ft.	CFM Air Delivery @ Static Pressure Shown						
						0.000"	0.125"	0.250"	0.375"	0.500"	0.625"	0.750"
<b>1AHB1</b>	36"	1	683	1.15	23	15,803	13,762	—	—	—	—	—
		1½	783	1.73	28	18,117	16,453	14,122	—	—	—	—
		2	861	2.30	31	19,922	18,434	16,458	13,986	—	—	—
		3	985	3.45	38	22,791	21,529	19,987	18,080	—	—	—
		5	1166	5.75	50	26,979	25,947	24,763	23,368	21,737	20,121	—
<b>1AHB2</b>	42	1½	605	1.73	21	20,652	17,843	—	—	—	—	—
		2	666	2.30	24	22,735	20,142	17,272	—	—	—	—
		3	762	3.45	31	26,012	23,867	21,621	18,395	—	—	—
		5	903	5.75	41	30,825	29,065	27,028	25,215	22,372	—	—
<b>1AHB3</b>	48	2	576	2.30	27	28,995	24,803	—	—	—	—	—
		3	660	3.45	32	33,223	29,689	25,707	—	—	—	—
		5	782	5.75	40	39,364	36,499	33,176	29,728	—	—	—
		7½	895	8.63	49	45,053	42,635	39,778	36,972	33,755	—	—
<b>1AHB4</b>	54	3	480	3.45	27	33,602	30,247	25,975	—	—	—	—
		5	569	5.75	37	39,833	37,674	33,796	30,011	—	—	—
		7½	651	8.63	48	45,573	43,687	40,399	37,596	33,972	—	—
		10	716	11.50	59	50,124	48,408	45,926	42,953	40,218	36,437	—
<b>1AHB5</b>	60	5	485	5.75	35	48,356	44,215	39,274	—	—	—	—
		7½	555	8.63	45	55,335	51,712	48,133	41,726	—	—	—
		10	611	11.50	54	60,918	57,628	54,364	50,737	43,055	—	—
		15	699	17.25	74	69,692	66,816	63,943	61,110	57,579	50,855	44,128
<b>SUPPLY FAN</b>												
<b>3FKD6</b>	60"	5	485	5.75	35	48,356	44,215	39,274	—	—	—	—
		7½	555	8.63	45	55,335	51,712	48,133	41,726	—	—	—
		10	611	11.50	54	60,918	57,628	54,364	50,737	43,055	—	—
		15	699	17.25	74	69,692	66,816	63,943	61,110	57,579	50,855	44,128

Performance certified is for installation type A: Free inlet, Free outlet. Power rating (BHP) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in fan sones at 5 ft. (1.5 m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A: Free inlet hemispherical sone levels.

# Dayton® Heavy-Duty Belt-Drive Exhaust and Supply Fans

## Unpacking

1. Inspect for any damage that may have occurred during transit.
2. Shipping damage claim must be filed with carrier.
3. Look for hardware kit attached to drive frame of fan. Refer to page 8 for hardware contents.
4. Check all bolts, screws, set-screws, etc. for looseness that may have occurred during transit. Retighten as required. Rotate propeller by hand to be sure it turns freely.

## General Safety Information

**⚠ DANGER** Do not depend on any switch as the sole means of disconnecting power when installing or servicing the fan. Always disconnect, lock and tag power source before installing or servicing. Failure to disconnect power source can result in fire, shock or serious injury. Motor will restart without warning after thermal protector trips. Do not touch operating motor, it may be hot enough to cause injury.

**⚠ DANGER** Do not place any body parts or objects in fan, motor openings or drives while motor is connected to power source.

**⚠ WARNING** Do not use this equipment in explosive atmospheres!

1. Read and follow all instructions and cautionary markings. Make sure electrical power source conforms to requirements of equipment and local codes.
2. Fans should be assembled, installed and serviced by a qualified technician. Have all electrical work performed by a qualified electrician.
3. Follow all local electrical and safety codes in the United States and

Canada, as well as the National Electrical Code (NEC) and the Occupational Safety and Health Act (OSHA) in the United States. Ground motor in accordance with NEC Article 250 (grounding). Follow the Canadian Electric Code (CEC) in Canada.

**⚠ CAUTION** To reduce the risk of injury to persons, observe the following:

**OSHA requires OSHA complying guards when ventilator is installed within 7 feet of floor or working level.**

**ULicUL Standards require OSHA complying guards when ventilator is installed within 8 feet of floor or working level.**

4. Do not kink power cable or allow it to come in contact with sharp objects, oil, grease, hot surfaces or chemicals. Replace damaged cords immediately.
5. Make certain that the power source conforms to the requirements for the equipment.
6. Motor must be securely and adequately grounded. This can be accomplished by wiring with a grounded, metal-clad race way system by using a separate ground wire connected to the bare metal of the motor frame, or other suitable means.

## Installation

**⚠ WARNING** Installation, troubleshooting and parts replacement is to be performed only by qualified personnel.

**NOTE:** Refer to motor nameplate for wiring procedures. Refer to switch manufacturer for installation and wiring procedures.

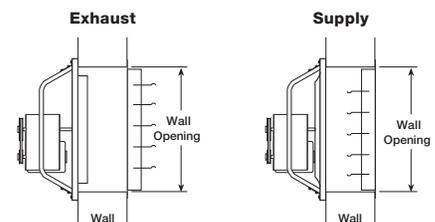
### WALL MOUNTING

1. Move fan to the desired location and determine the method by which

the fan is to be mounted as shown in Figures 3, 4, 5 and 6 on pages 4-5. Optional wall collar (Figure 4), wall collar and guard (Figure 5) or wall housing (Figure 6) provide a convenient means of mounting sidewall fans.

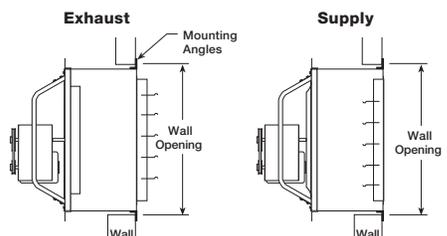
2. Wall opening size and propeller-to-shutter distance are two important dimensions for fan installation. Fans mounted to the wall require a different opening size than those mounted in collars or housings. See step 7 on page 5 for wall opening sizes.

3. Figure 3 shows the recommended wall opening for direct to wall installations.



**Figure 3 — Direct to Wall Installation**

4. Figure 4 shows the wall opening required for installations using a wall collar.

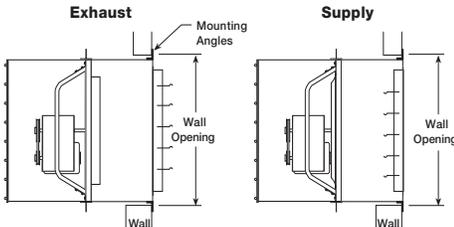


**Figure 4 — Wall Collar Installation**

5. Figure 5 shows the wall opening required for installation with a wall collar and a guard.

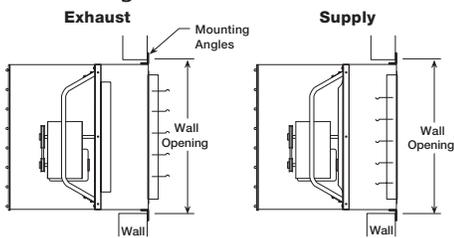
# Models 1AHA8, 1AHA9, 1AHB1 thru 1AHB5, and 3FKD6

## Installation (Continued)



**Figure 5 — Wall Collar & Guard Installation**

6. Figure 6 shows the wall opening required for installation with a wall housing.



**Figure 6 — Wall Housing Installation**

7. Cut an appropriate sized opening in the wall using the table below.

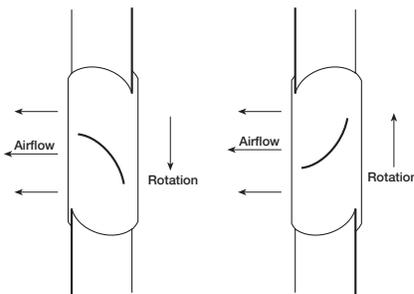
Model	Prop. Dia.	Wall Opening Install	
		Direct to Wall	Wall Collar (WC), WC & Guard, or Wall Housing
1AHA8	24"	26½ x 26½"	29⅝ x 29⅝"
1AHA9	30	32½ x 32½	35⅝ x 35⅝
1AHB1	36	38½ x 38½	41⅝ x 41⅝
1AHB2	42	44½ x 44½	47⅝ x 47⅝
1AHB3	48	50½ x 50½	55⅝ x 55⅝
1AHB4	54	56½ x 56½	61¾ x 61¾
1AHB5, 3FKD6	60	62½ x 62½	67¾ x 67¾

8. The fan should be securely mounted within a rigid framework to prevent flexing or movement of the fan frame during operation. The fan frame should be equally supported on all sides within the framework and caution should be taken to avoid twisting of the fan frame during installation.

**NOTE:** Allowing the fan frame to flex or move during operation will create harmful vibrations which may damage the unit.

9. Fans should be mounted in opening with 1/4" clearance around perimeter. Framing should be secured to building structure utilizing corrosion resistant fasteners, supplied by others. Fasteners should be used in all pre-punched mounting holes in the fan panel.

10. Install remaining components (shutter, intake guard, etc.).
11. Check all fasteners and set screws for tightness. This is especially important for bearing set screws.
12. Rotation direction of the propeller should be checked momentarily by turning the unit on. Rotation should be in the same direction as the rotation decal affixed to the unit or as shown in Figure 7. For 3-phase installations, fan rotation can be reversed by interchanging any two of the three electrical leads. For single phase installations follow the wiring diagram located on the motor or see Figure 13.



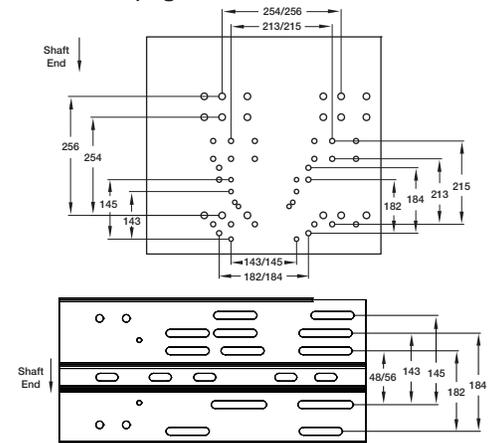
**Figure 7 — Rotation Decal**

## MOTOR AND PULLEY MOUNTING

**CAUTION** Never adjust pitch of propeller blades in field. Blade pitch should only be changed by manufacturer.

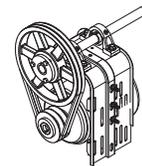
**NOTE:** For UL/cUL Listed units, the motor used with this fan must be designated as such by Dayton.

1. Secure motor to plate using hardware provided. Holes will align when the motor frame (shaft end) is flush with the edge of the motor plate. Motor mounting hardware is included in the hardware kit attached to the drive frame. Refer to Figure 8 for mounting position based on motor frame size. Refer to page 8 for contents of kit.



**Figure 8 — Motor Mounting Positions Based on Motor Frame Size**

2. Mount pulleys on shafts and secure with set screw. Check pulleys for proper alignment. Misaligned pulleys lead to excessive belt wear, vibration and noise.



**Figure 9 — Drive Package Diagram for 24 - 36" Propeller Diameter**

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# Dayton® Heavy-Duty Belt-Drive Exhaust and Supply Fans

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## Installation (Continued)

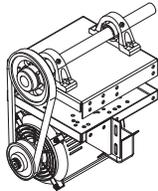


Figure 10 — Drive Package Diagram for 42" and Greater Propeller Diameter

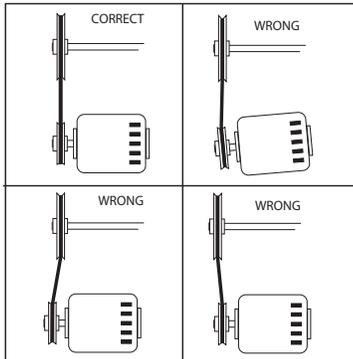


Figure 11 — Pulley Alignment

3. Install the belt and adjust the tension to allow for 1/64" of deflection per inch of span when moderate thumb pressure is applied to the belt. Too much tension will cause excess bearing wear and noise. Too little tension will cause slippage at startup and uneven wear.

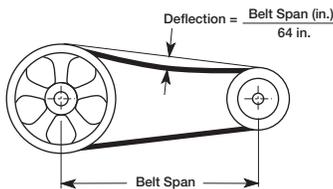


Figure 12 — Belt Tension

4. Adjust RPM to desired level using a variable pitch pulley. After adjustment, motor amperage should be checked to avoid overloading of the motor.

## ELECTRICAL CONNECTION

**CAUTION** Motor and fan must be securely grounded (bare metal) to a suitable electric ground, such as a grounded water pipe or ground wire system.

**WARNING** To reduce the risk of electrical shock — do not connect to a circuit operating at more than 150V to ground.

**NOTE:** For UL/cUL listed units, the motor used with this fan must be designated as such by Dayton.

1. Refer to Figure 13 to ensure the motor you are wiring has been UL/cUL approved for this unit. This label will also be found on the unit.

2. Wire motor for desired voltage per wiring diagram on motor or refer to Figure 14 for connection wiring diagram.

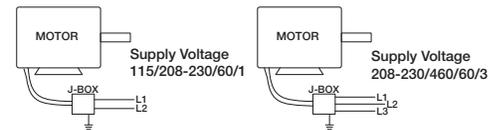


Figure 14 — Typical Wiring Diagram

3. Wire control switches at ground level.  
4. Before activating fan, inspect to be sure that there are no obstructions or debris that would interfere with the propeller.

Listed for use with the following motors. Mark the motor list to indicate which motor has been installed by placing a check by it. For dual voltage motors, indicate the voltage for which the motor is connected by placing a check by it.

	Model	HP	Enclosure	Phase	Volts	AMPS	Hz	KVA
<input type="checkbox"/>	4K252	1/3	ODP	1	<input type="checkbox"/> 115 <input type="checkbox"/> 208 <input type="checkbox"/> 230	6.6/3.0-3.3	60	N
<input type="checkbox"/>	5K116	1/2	ODP	1	<input type="checkbox"/> 115 <input type="checkbox"/> 230	8.8/4.4	60	L
<input type="checkbox"/>	5K117	3/4	ODP	1	<input type="checkbox"/> 115 <input type="checkbox"/> 230	12.4/6.2	60	L
<input type="checkbox"/>	6K321	1	ODP	1	<input type="checkbox"/> 115 <input type="checkbox"/> 208 <input type="checkbox"/> 230	13.0/6.6-6.5	60	K
<input type="checkbox"/>	6K305	1 1/2	ODP	1	<input type="checkbox"/> 115 <input type="checkbox"/> 230	20.4/10.2	60	K
<input type="checkbox"/>	6K393	2	ODP	1	<input type="checkbox"/> 115 <input type="checkbox"/> 208 <input type="checkbox"/> 230	21.4/12.2-10.7	60	J
<input type="checkbox"/>	5K121	1/3	TEFC	1	<input type="checkbox"/> 115 <input type="checkbox"/> 230	6.6/3.3	60	L
<input type="checkbox"/>	6K122	1/2	TEFC	1	<input type="checkbox"/> 115 <input type="checkbox"/> 208 <input type="checkbox"/> 230	9.2/4.4-4.6	60	M
<input type="checkbox"/>	6K123	3/4	TEFC	1	<input type="checkbox"/> 115 <input type="checkbox"/> 230	11.4/5.7	60	L
<input type="checkbox"/>	6K562	1	TEFC	1	<input type="checkbox"/> 115 <input type="checkbox"/> 208 <input type="checkbox"/> 230	14.0/7.1-7.0	60	K
<input type="checkbox"/>	5K565	1 1/2	TEFC	1	<input type="checkbox"/> 115 <input type="checkbox"/> 208 <input type="checkbox"/> 230	14.4/8.0-7.2	60	K
<input type="checkbox"/>	1K067	2	TEFC	1	<input type="checkbox"/> 115 <input type="checkbox"/> 230	19.0/9.5	60	J
<input type="checkbox"/>	5K967	3	TEFC	1	<input type="checkbox"/> 115 <input type="checkbox"/> 230	30.0/15.0	60	H
<input type="checkbox"/>								
<input type="checkbox"/>	3KW25	1	ODP	3	<input type="checkbox"/> 208 <input type="checkbox"/> 230 <input type="checkbox"/> 460	3.2-2.9/1.5	60	K
<input type="checkbox"/>	3KW28	1 1/2	ODP	3	<input type="checkbox"/> 208 <input type="checkbox"/> 230 <input type="checkbox"/> 460	4.4-4.0/2.0	60	L
<input type="checkbox"/>	3KW31	2	ODP	3	<input type="checkbox"/> 208 <input type="checkbox"/> 230 <input type="checkbox"/> 460	6.1-5.5/2.8	60	L
<input type="checkbox"/>	3KW34	3	ODP	3	<input type="checkbox"/> 208 <input type="checkbox"/> 230 <input type="checkbox"/> 460	9.2-8.3/4.2	60	K
<input type="checkbox"/>	3KW37	5	ODP	3	<input type="checkbox"/> 208 <input type="checkbox"/> 230 <input type="checkbox"/> 460	14.2-13.0/6.5	60	J
<input type="checkbox"/>	3KW40	7 1/2	ODP	3	<input type="checkbox"/> 208 <input type="checkbox"/> 230 <input type="checkbox"/> 460	20.6-18.7/9.3	60	H
<input type="checkbox"/>	3KW43	10	ODP	3	<input type="checkbox"/> 208 <input type="checkbox"/> 230 <input type="checkbox"/> 460	26.7-24.2/12.1	60	H
<input type="checkbox"/>	3KW46	15	ODP	3	<input type="checkbox"/> 208 <input type="checkbox"/> 230 <input type="checkbox"/> 460	38.8-35.1/17.5	60	G
<input type="checkbox"/>	2N864	1/3	TEFC	3	<input type="checkbox"/> 208 <input type="checkbox"/> 230 <input type="checkbox"/> 460	1.4-1.5/0.75	60/50	L
<input type="checkbox"/>	2N865	1/2	TEFC	3	<input type="checkbox"/> 208 <input type="checkbox"/> 230 <input type="checkbox"/> 460	2.0-2.0/1.0	60/50	L
<input type="checkbox"/>	2N866	3/4	TEFC	3	<input type="checkbox"/> 208 <input type="checkbox"/> 230 <input type="checkbox"/> 460	2.7-2.8/1.4	60/50	K
<input type="checkbox"/>	3KW91	1	TEFC	3	<input type="checkbox"/> 208 <input type="checkbox"/> 230 <input type="checkbox"/> 460	3.1-2.8/1.4	60	K
<input type="checkbox"/>	3KW94	1 1/2	TEFC	3	<input type="checkbox"/> 208 <input type="checkbox"/> 230 <input type="checkbox"/> 460	4.5-4.1/2.0	60	L
<input type="checkbox"/>	3KW97	2	TEFC	3	<input type="checkbox"/> 208 <input type="checkbox"/> 230 <input type="checkbox"/> 460	6.0-5.4/2.7	60	L
<input type="checkbox"/>	3KX01	3	TEFC	3	<input type="checkbox"/> 208 <input type="checkbox"/> 230 <input type="checkbox"/> 460	8.7-7.8/3.9	60	K
<input type="checkbox"/>	3KX04	5	TEFC	3	<input type="checkbox"/> 208 <input type="checkbox"/> 230 <input type="checkbox"/> 460	14.8-13.4/6.7	60	H
<input type="checkbox"/>	3KX07	7 1/2	TEFC	3	<input type="checkbox"/> 208 <input type="checkbox"/> 230 <input type="checkbox"/> 460	19.8-17.9/9.0	60	H
<input type="checkbox"/>	3KX09	10	TEFC	3	<input type="checkbox"/> 208 <input type="checkbox"/> 230 <input type="checkbox"/> 460	27.2-24.6/12.3	60	G
<input type="checkbox"/>	3KV89	15	TEFC	3	<input type="checkbox"/> 208 <input type="checkbox"/> 230 <input type="checkbox"/> 460	38.8-35.1/17.5	60	G

If the fan motor is NOT thermally protected, remote overload protection must be installed having adequate rating as to voltage, frequency, horsepower and full current per phase.

Figure 13 — UL/cUL Approved Listing

# Models 1AHA8, 1AHA9, 1AHB1 thru 1AHB5, and 3FKD6

## Operation

1. Before starting up or operating your new Dayton ventilator, check all fasteners for tightness. In particular, check bearing set screws in propeller hub (and sheaves, if applicable). While in the OFF position, or before connecting the ventilator to power, turn the fan propeller by hand to be sure it is not striking the orifice or any obstacle.
  2. Start the fan up and shut it off immediately to check rotation of the propeller with directional arrow in the motor compartment. Refer back to Figure 7.
  3. When the fan is started, observe the operation and check for any unusual noises.
  4. Adjust RPM to desired level using a variable pitch pulley.
  5. Motor amperage should be checked to avoid overloading of the motor. With the system in full operation measure current input to the motor and compare with the nameplate rating to determine if the BHP is operating under safe load conditions. See performance on pages 2-3.
- IMPORTANT:** Adjust (tighten) belt tension after the first 24 hours of operation.
6. Keep inlets and approaches to fan clean and free from obstruction.

## Maintenance

**⚠ WARNING** *Disconnect and lockout power source before servicing.*

**⚠ CAUTION** *Uneven cleaning of the propeller will produce an out of balance condition that will cause vibration in the fan.*

1. Depending on the usage and severity of the contaminated air, a regularly scheduled inspection for cleaning the fan propeller, housing and surrounding areas should be established.
2. Check for unusual noises when fan is running.
3. Periodically inspect and tighten set-screws.
4. Periodically check belts for wear and tightness.

**NOTE:** When replacing belts use the same type as supplied with the unit.

**NOTE:** For belt replacement, loosen the motor mounting hardware to allow removal of the belt by hand.

**⚠ WARNING** *Do not force belts on or off. This may cause cords to break, leading to premature belt failure.*

5. All fan bearings are pre-lubricated. Sealed pillow block bearings require no further lubrication.
6. Follow motor manufacturer's instructions for motor lubrication.
7. For disassembly refer to the parts illustration.
8. For critical applications, a spare motor and belts should be available.

## RECOMMENDED RELUBRICATION FREQUENCY IN MONTHS

Operating Speed (RPM)	Bore in Inches 1/2 to 1 1/2
Up to 500	6
500 - 1000	6
1000 - 1500	5

**NOTE:** If unusual environmental conditions exist - high temperature, moisture, or contaminants - more frequent lubrication is recommended.

Any good quality lithium base grease conforming to NLGI Grade 2 consistency such as those listed here may be used.

Mobil 532	Texaco Multifak #2
Mobilux #2	Texaco Premium RB
B Shell Alvania #2	Unirex N2

# For Repair Parts, call 1-800-323-0620

24 hours a day – 365 days a year

Please provide following information:

- Model number
- Serial number (if any)
- Part description and number as shown in parts list

E  
N  
G  
L  
I  
S  
H

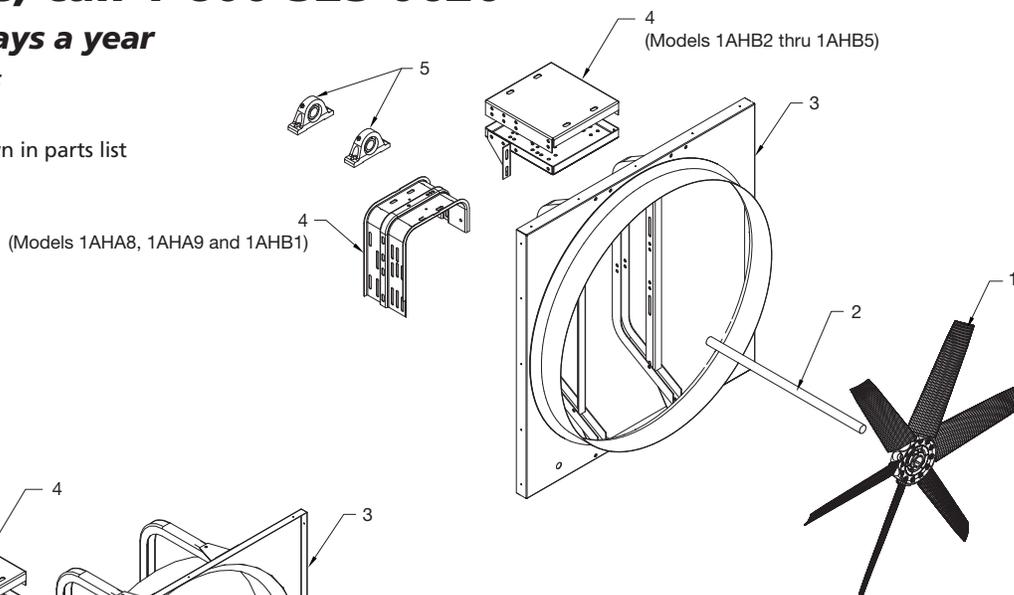


Figure 15 — Repair Parts Illustration for Heavy-Duty for Belt-Drive Exhaust Fans

## 50K357 Hardware Kit

Description	Qty.
Spin-lock Nut, 3/8-16	4
Spin-lock Nut, 5/16-18	4
Spin-lock Bolt, 3/8-16 x 3/4	4
Spin-lock Bolt, 5/16-18 x 3/4	4
Rectangular Flat Washer, 5/16	4
Flat Washer, 3/8	4
Key Shaft, 3/16 x 3/16 x 1 1/2	1
Key Shaft, 1/4 x 1/4 x 1 1/2	1
Key Shaft, 3/8 x 3/8 x 2	1

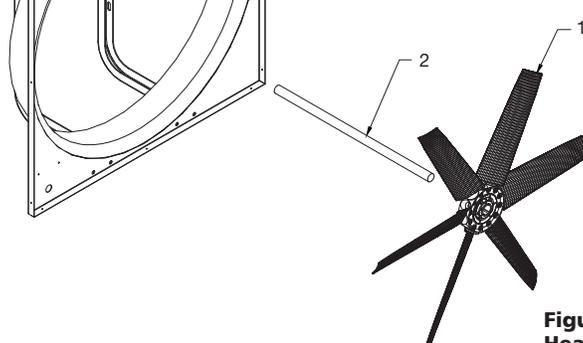


Figure 16 — Repair Parts Illustration for Heavy-Duty Belt-Drive Supply Fan

## Repair Parts List for Heavy-Duty Belt-Drive Exhaust Fans (See Figure 15)

Reference Number	Description	Part Number For Models:								Qty.
		1AHA8	1AHA9	1AHB1	1AHB2	1AHB3	1AHB4	1AHB5		
1	Propeller	50K377	50K378	50K379	50K380	50K381	50K382	50K383	1	
2	Shaft	50K395	50K396	50K397	50K398	50K399	50K400	50K401	1	
3	Fan Panel & Drive Frame Assembly	50K341	50K344	50K347	50K349	50K352	50K354	50K356	1	
4	Motor Bearing Plate	50K366	50K367	50K369	50K371	50K372	50K374	50K376	1	
5	Bearings	4XW60	4XW61	4XW63	4XW65	4XW64	4XW65	4PY66	2	
6	Hardware Kit	50K357	50K357	50K357	50K357	50K357	50K357	50K357	1	

## Repair Parts List for Heavy-Duty Belt-Drive Supply Fan (See Figure 16)

Reference Number	Description	Part Number For Model:	Qty.
		3FKD6	
1	Propeller	60N504	1
2	Shaft	60N505	1
3	Fan Panel & Drive Frame Assembly	60N506	1
4	Motor Bearing Plate	60N507	1
5	Bearings	4PY66	2
6	Hardware Kit	50K357	1

# Models 1AHA8, 1AHA9, 1AHB1 thru 1AHB5, and 3FKD6

## Troubleshooting Chart

Symptom	Possible Cause(s)	Corrective Action
Fan inoperative	<ol style="list-style-type: none"> <li>1. Blown fuse or breaker</li> <li>2. Defective motor</li> <li>3. Incorrectly wired</li> <li>4. Broken belts</li> <li>5. Loose pulley(s)</li> <li>6. Electricity turned off</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace or repair</li> <li>2. Replace or repair</li> <li>3. Shut power OFF and check wiring for proper connections</li> <li>4. Replace belts</li> <li>5. Check alignment and tighten</li> <li>6. Contact local power company</li> </ol>
Airflow - Insufficient	<ol style="list-style-type: none"> <li>1. Damper (shutter) stuck shut</li> <li>2. Speed too slow</li> <li>3. Belt slippage</li> </ol>	<ol style="list-style-type: none"> <li>1. Inspect/repair damper</li> <li>2. Check for correct drive combination</li> <li>3. Replace/adjust tension and match belt to pulley</li> </ol>
Airflow - Reversed air Airflow - Too much air	Propeller rotation reversed Insufficient static pressure	Reverse motor rotation, rewire motor Check static pressure calculation, adjust VP pulleys to more turns open
Excessive noise or vibration	<ol style="list-style-type: none"> <li>1. Loose or defective bearings</li> <li>2. Foreign material inside bearing</li> <li>3. Pulley not tightened on shaft (motor and or fan)</li> <li>4. Loose propeller</li> <li>5. Belt(s) too loose/tight</li> <li>6. Belts are worn, oily or dirty</li> <li>7. Mis-aligned pulley(s)</li> <li>8. Crooked or damaged propeller</li> <li>9. Fan not securely anchored</li> <li>10. Bent fan shaft</li> <li>11. Fan propeller out of balance</li> </ol>	<ol style="list-style-type: none"> <li>1. Tighten or replace bearings</li> <li>2. Replace bearing</li> <li>3. Check alignment and tighten setscrews and/or bushing screws</li> <li>4. Tighten set screws or taper bushing screws</li> <li>5. Adjust tension</li> <li>6. Clean or replace belts</li> <li>7. Re-align pulley(s)</li> <li>8. Replace propeller</li> <li>9. Secure properly</li> <li>10. Replace shaft and propeller</li> <li>11. Replace propeller</li> </ol>
Motor overloads or overheats	<ol style="list-style-type: none"> <li>1. Propeller RPM too high</li> <li>2. Shorted motor winding</li> <li>3. Incorrect propeller rotation</li> <li>4. Over/Under line voltage</li> <li>5. Belt slippage</li> </ol>	<ol style="list-style-type: none"> <li>1. Check drives, increase turns open on VP pulley</li> <li>2. Replace motor</li> <li>3. Check motor wiring</li> <li>4. Contact Power Company</li> <li>5. Tighten belt, match belt to pulley</li> </ol>

# Dayton® Heavy-Duty Belt-Drive Exhaust and Supply Fans

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**Manufactured for Dayton Electric Mfg. Co., 5959 W. Howard St., Niles, Illinois 60714-4014 U.S.A.**