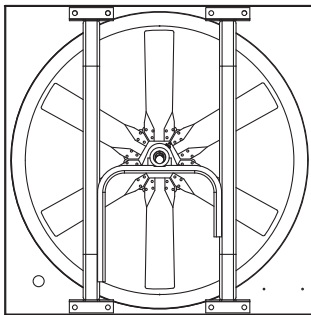


Please read and save these instructions. Read carefully before attempting to assemble, install, operate or maintain the product described. Protect yourself and others by observing all safety information. Failure to comply with instructions could result in personal injury and/or property damage! Retain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

Dayton® Standard-Duty Belt-Drive Exhaust & Supply Fans

Description

Dayton exhaust and supply fans are designed for commercial and industrial applications requiring high volume of air at low static pressures. Construction includes rigid drive frame rails and one-piece motor/bearing plate. Propeller utilizes a six-blade galvanized steel design. Units with 24 inch propeller feature sealed pillowblock bearings. Units with 30 inch and larger propellers feature regreaseable pillowblock bearings and are rated for L10, 100,000 hours. Fans may be mounted either in the horizontal or vertical position. Exhaust fans mounted in horizontal position become supply fans. Supply fans mounted in horizontal position become exhaust fans. Assumes motor location should be in top position. All fans are UL/cUL listed standard 705.



Optional Accessories

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

- NEMA 1 Dis. Switch:
- 1H400 (2 pole, 115/230V, 2HP max)
 - 1H401 (3 pole, 230V, 7½ HP max)
 - 1H401 (3 pole, 460V, 10HP max)
- NEMA 4 Dis. Switch:
- 1H408 (2 pole, 115/230V, 2HP max)
 - 1H409 (3 pole, 230V, 7½ HP 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.
EXHAUST FANS									
3FKD7	20"	2C831	1C745	4C559	5C214	3FKF7	1WBU2	3FKF3	3FKF2
1WDB9	24	2C831	1C746	3C308	5C215	3FKF8	1WBU3	1WBV1	1WBV9
1WDC1	30	2C831	1C055	3C309	5C216	3FKF9	1WBU4	1WBV2	1WBW1
1WDC2	36	2C831	4C521	3C310	5C217	3FKG1	1WBU5	1WBV3	1WBW2
1WDC3	42	2C832	1C210	3C311	5C219	3FKG2	1WBU6	1WBV4	1WBW3
1WDC4	48	2C832	1C211	3C312	5C220	3FKG3	1WBU7	1WBV5	1WBW4
SUPPLY FANS									
3FKD4	20"	—	3C726	4C561	—	3FKF7	1WBU2	3FKF3	3FKF2
1WDC5	24	—	3C727	3C315	—	3FKF8	1WBU3	1WBV1	1WBV9
1WDC6	30	—	3C728	3C234	—	3FKF9	1WBU4	1WBV2	1WBW1
1WDC7	36	—	3C729	3C131	—	3FKG1	1WBU5	1WBV3	1WBW2
1WDC8	42	—	3C730	3C235	—	3FKG2	1WBU6	1WBV4	1WBW3
1WDC9	48	—	3C731	3C132	—	3FKG3	1WBU7	1WBV5	1WBW4

ENGLISH

 ESPAÑOL

 FRANÇAIS

Dayton® Standard-Duty Belt-Drive Exhaust and Supply Fans

ENGLISH

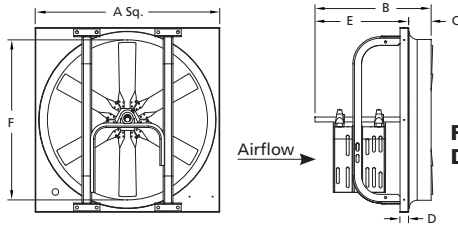


Figure 1 — Exhaust Dimensions

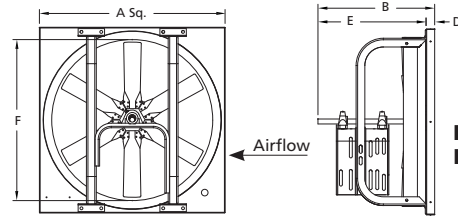


Figure 2 — Supply Dimensions

Dimensions and Specifications

Model	Prop. Dia.	Shaft Dia.	A	B	C	D	E	F
EXHAUST FANS (See Figure 1)								
3FKD7	20"	3/4"	24"	19 1/2"	3 1/4"	1"	16 1/4"	20 1/2"
1WDB9	24	3/4	28	18	4 3/8	1	13 5/8	24 3/8
1WDC1	30	3/4	34	21 1/2	5 1/4	1	16 1/4	30 3/8
1WDC2	36	1	40	22	6	1	16	36 3/8
1WDC3	42	1 1/4	46	23 1/2	6	2	17 1/2	42 1/2
1WDC4	48	1 1/4	54	23 1/2	7	2	16 1/2	48 1/2
SUPPLY FANS (See Figure 2)								
3FKD4	20"	3/4"	24"	19 1/2"	—	1"	18 1/2"	20 1/2"
1WDC5	24	3/4	28	18	—	1	17	24 3/8
1WDC6	30	3/4	34	22 7/8	—	1	21 7/8	30 3/8
1WDC7	36	1	40	23 1/4	—	1	22 1/4	36 3/8
1WDC8	42	1 1/4	46	24 3/8	—	2	22 3/8	42 1/2
1WDC9	48	1 1/4	54	25 1/8	—	2	23 1/8	48 1/2

Performance

Model	Prop. Dia.	Motor 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"
EXHAUST FANS										
3FKD7	20"	1/4	953	0.30	16.2	3581	3148	2469	1160	657
		1/3	1039	0.40	17.2	3904	3517	2954	2037	1064
		1/2	1221	0.60	20	4587	4277	3873	3333	2514
1WDB9	24	1/4	923	0.30	17.3	4826	4312	3570	—	—
		1/3	1012	0.39	21	5292	4830	4207	—	—
		1/2	1181	0.60	24	6175	5789	5337	—	—
1WDC1	30	3/4	1352	0.90	30	7069	6732	6372	5917	—
		1/4	621	0.30	13.2	7096	6015	—	—	—
		1/3	675	0.39	14.6	7713	6763	5160	—	—
		1/2	776	0.60	17.8	8867	8036	6990	—	—
		3/4	882	0.90	22	10,078	9342	8560	7424	—
		1	968	1.20	26	11,061	10,385	9736	8847	7570

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 1WDB9, 1WDC1 thru 1WDC9, 3FKD4 and 3FKD7

Performance (Continued)

Model	Prop. Dia.	Motor 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"
1WDC2	36"	1/3	477	0.39	12.5	10,484	8176	—	—	—
		1/2	556	0.60	15.8	12,220	10,328	—	—	—
		3/4	628	0.90	18.7	13,802	12,156	10,205	—	—
		1	694	1.20	21	15,253	13,798	12,111	9875	—
		1½	792	1.80	28	17,407	16,198	14,753	13,170	—
1WDC3	42	1/2	426	0.60	17.1	14,712	11,980	—	—	—
		3/4	482	0.90	20	16,646	14,327	10,507	—	—
		1	533	1.20	22	18,408	16,388	13,752	—	—
		1½	608	1.80	26	20,998	19,302	17,182	141,93	—
1WDC4	48	1/2	341	0.60	13.1	17,349	13,047	—	—	—
		3/4	393	0.90	16.4	19,995	16,655	—	—	—
		1	429	1.20	19.4	21,827	18,907	13,506	—	—
		1½	491	1.80	22	24,981	22,460	19,129	—	—
		2	540	2.40	25	27,474	25,206	22,529	18,065	—
		3	618	3.60	29	31,442	29,484	27,395	24,703	20,285

SUPPLY FANS

3FKD4	20"	1/4	953	0.30	16.2	3581	3148	2469	1160	657
		1/3	1039	0.40	17.2	3904	3517	2954	2037	1064
		1/2	1221	0.60	20	4587	4277	3873	3333	2514
1WDC5	24	1/4	923	0.30	17.3	4826	4312	3570	—	—
		1/3	1012	0.39	21	5292	4830	4207	—	—
		1/2	1181	0.60	24	6175	5789	5337	—	—
		3/4	1352	0.90	30	7069	6732	6372	5917	—
1WDC6	30	1/4	621	0.30	13.2	7096	6015	—	—	—
		1/3	675	0.39	14.6	7713	6763	5160	—	—
		1/2	776	0.60	17.8	8867	8036	6990	—	—
		3/4	882	0.90	22	10,078	9342	8560	7424	—
		1	968	1.20	26	11,061	10,385	9736	8847	7570
1WDC7	36	1/3	477	0.39	12.5	10,484	8176	—	—	—
		1/2	556	0.60	15.8	12,220	10,328	—	—	—
		3/4	628	0.90	18.7	13,802	12,156	10,205	—	—
		1	694	1.20	21	15,253	13,798	12,111	9875	—
		1½	792	1.80	28	17,407	16,198	14,753	13,170	—
1WDC8	42	1/2	426	0.60	17.1	14,712	11,980	—	—	—
		3/4	482	0.90	20	16,646	14,327	10,507	—	—
		1	533	1.20	22	18,408	16,388	13,752	—	—
		1½	608	1.80	26	20,998	19,302	17,182	14193	—
1WDC9	48	1/2	341	0.60	13.1	17,349	13,047	—	—	—
		3/4	393	0.90	16.4	19,995	16,655	—	—	—
		1	429	1.20	19.4	21,827	18,907	13,506	—	—
		1½	491	1.80	22	24,981	22,460	19,129	—	—
		2	540	2.40	25	27,474	25,206	22,529	18,065	—
		3	618	3.60	29	31,442	29,484	27,395	24,703	20,285

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® Standard-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.

UL/cUL 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.

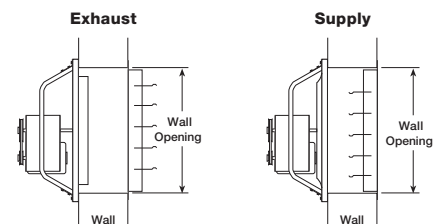


Figure 3 — Direct to Wall Installation

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

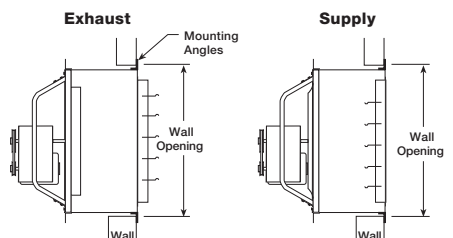


Figure 4 — Wall Collar Installation

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

Models 1WDB9, 1WDC1 thru 1WDC9, 3FKD4 and 3FKD7

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Installation (Continued)

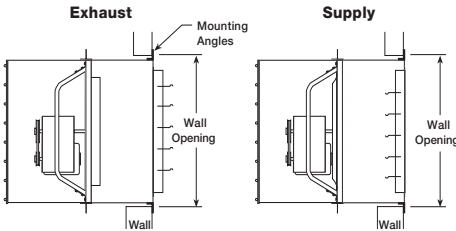


Figure 5 — Wall Collar & Guard Installation

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

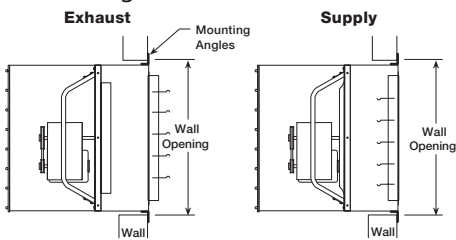


Figure 6 — Wall Housing Installation

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
3FKD4, 3FKD7	20"	22½ x 22½"	25⅝ x 25⅝"
1WDB9, 1WDC5	24	26½ x 26½	29⅝ x 29⅝
1WDC1, 1WDC6	30	32½ x 32½	35⅝ x 35⅝
1WDC2, 1WDC7	36	38½ x 38½	41⅝ x 41⅝
1WDC3, 1WDC8	42	44½ x 44½	47⅝ x 47⅝
1WDC4, 1WDC9	48	50½ x 50½	55⅝ x 55⅝

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.

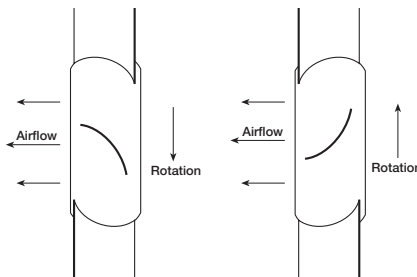


Figure 7 — Rotation Decal

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.

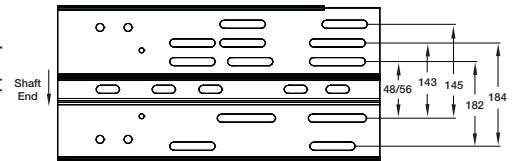


Figure 8 — Motor Mounting Positions Based on Motor Frame Size

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.

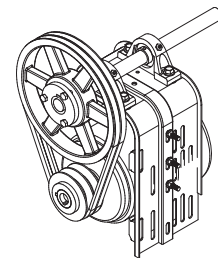


Figure 9 — Drive Package Diagram

Dayton® Standard-Duty Belt-Drive Exhaust and Supply Fans

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Installation (Continued)

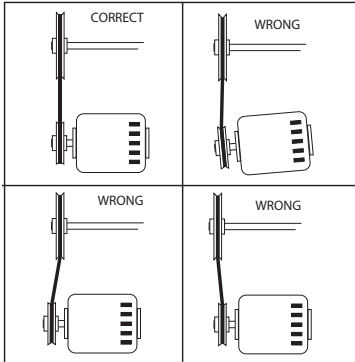


Figure 10 — Pulley Alignment

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.

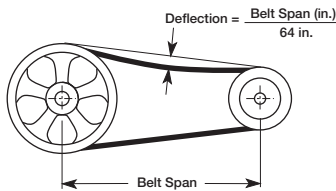


Figure 11 — Belt Tension

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 12 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 13 for connection wiring diagram.

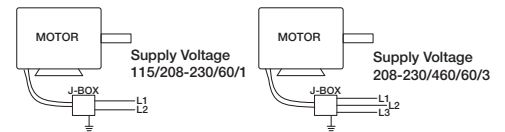


Figure 13 — Typical Wiring Diagram

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 12 — UL/cUL Approved Listing

Models 1WDB9, 1WDC1 thru 1WDC9, 3FKD4 and 3FKD7

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

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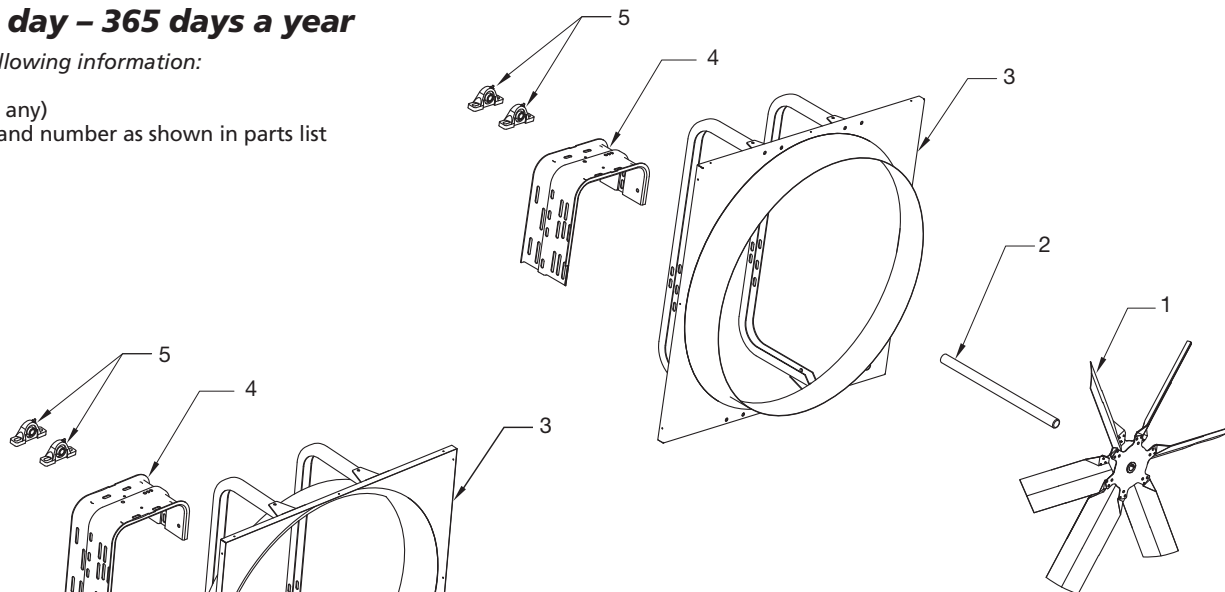


Figure 14 — Repair Parts Illustration for Standard-Duty Belt-Drive Exhaust Fans

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

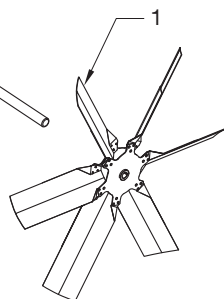


Figure 15 — Repair Parts Illustration for Standard-Duty Belt-Drive Supply Fans

Repair Parts List for Standard-Duty Belt-Drive Exhaust Fans (See Figure 14)

Reference Number	Description	Part Number For Models:						Qty.
		1WDB9	1WDC1	1WDC2	1WDC3	1WDC4	3FKD7	
1	Propeller	50M230	50M231	50M232	50M233	50M234	60N498	1
2	Shaft	50M227	50M224	6380115	50M225	50M225	50K395	1
3	Fan Panel & Drive Frame Assembly	50K339	50K342	50K345	50K348	50K350	60N499	1
4	Motor/Bearing Plate	50K366	50K366	50K368	50K370	50K370	60N500	1
5	Bearings	2X899	4XW60	4XW61	4XW63	4XW63	2X899	2
6	Hardware Kit	50K357	50K357	50K357	50K357	50K357	50K357	1

Repair Parts List for Standard-Duty Belt-Drive Supply Fans (See Figure 15)

Reference Number	Description	Part Number For Models:						Qty.
		1WDC5	1WDC6	1WDC7	1WDC8	1WDC9	3FKD4	
1	Propeller	50M230	50M231	50M232	50M233	50M234	60N498	1
2	Shaft	50M227	50M229	6380115	6380119	50M226	50M227	1
3	Fan Panel & Drive Frame Assembly	50K340	50K343	50K345	50M237	50K351	60N503	1
4	Motor/Bearing Plate	50K366	50K366	50K368	50K370	50K370	60N500	1
5	Bearings	2X899	4XW60	4XW61	4XW63	4XW63	2X899	2
6	Hardware Kit	50K357	50K357	50K357	50K357	50K357	50K357	1

Models 1WDB9, 1WDC1 thru 1WDC9, 3FKD4 and 3FKD7

Troubleshooting Chart

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

Dayton® Standard-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.