

516d Bankroom Blower  
Installed 9-26-12

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® High Volume Direct Drive Forward Curve Blowers

## Description

Dayton high volume direct drive forward curve blowers are for general ventilation where duct systems are used for exhausting foul air, cooling, drying, or in forced air furnaces.

Includes 16 GA welded steel housing and motor base, dynamically balanced wheel, and a baked-on gray polyester/epoxy finish. Blowers are CW rotation and can be assembled in any one of eight discharge positions. See Figure 2. Maximum temperature is 180°F (82°C). Air deliveries are based on standard test codes of AMCA. Dayton motors packed separately when blowers are ordered complete.

## General Safety Information

1. Follow all local electrical and safety codes, as well as the National Electrical Code (NEC) and the Occupational Safety and Health Act (OSHA) in the United States.
2. Blower must be securely and adequately grounded. This can be accomplished by wiring with a grounded, metal-clad raceway system, by using a separate ground wire connected to the bare metal of blower frame, or other suitable means.
3. Always disconnect power source before working on or near a motor or its connected load. If the power disconnect point is out-of-sight, lock it in the open position and tag to prevent unexpected application of power.
4. Be careful when touching the exterior of an operating motor – it may be hot enough to be painful or cause injury. With modern motors, this condition is normal when operated at rated load and voltage – modern motors are built to operate at higher temperatures.
5. Protect the power cable from coming in contact with sharp objects.
6. Do not kink power cable and never allow the cable to come in contact with oil, grease, hot surfaces, or chemicals.
7. Make certain that the power source conforms to the requirements of your equipment.
8. When cleaning electrical or electronic equipment, always use an approved cleaning agent such as dry cleaning solvent.
9. Not recommended as an explosion proof blower. Do not use where explosive fumes or gases are present.
10. If blower is operated without an inlet or outlet duct, guard openings in accordance with OSHA regulations to prevent contact with rotating blower wheel.

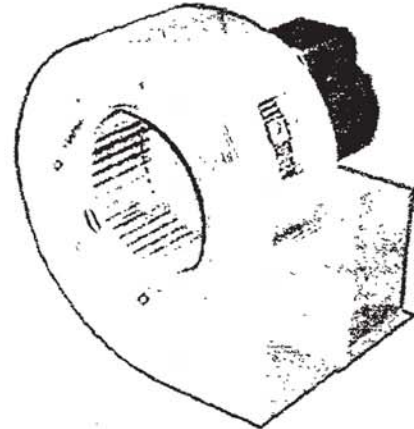


Figure 1 – High Volume Direct Drive Forward Curve Blower

**WARNING** Do not use where explosive gases or fumes are present or in material handling applications.

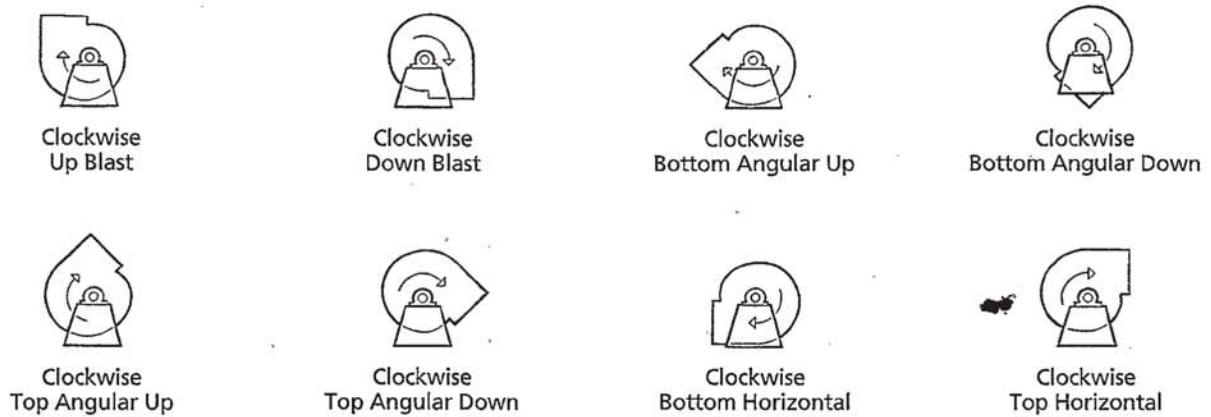
E  
N  
G  
L  
I  
S  
H

E  
S  
P  
A  
Ñ  
O  
L

F  
R  
A  
N  
C  
A  
I  
S

# Dayton® High Volume Direct Drive Forward Curve Blowers

E  
N  
G  
L  
I  
S  
H



Viewed From Motor Side

Figure 2 - Adjustable Blower Discharge Positions

**NOTES:**

1. Direction of rotation is determined from drive side of fan.
2. For fan inverted for ceiling suspension, or side mounting, direction of rotation and discharge is determined when fan is resting on floor.

3. Reprinted from AMCA, STD. 99-2406-83, with the express written permission from the Air Movement and Control Assoc. Int., Inc., 30 West University Dr., Arlington Heights, IL 60004-1893.

## Troubleshooting Chart

Symptom	Possible Cause(s)	Corrective Action
Noise	<ol style="list-style-type: none"> <li>1. Foreign objects in housing</li> <li>2. Loose set screw on wheel</li> <li>3. Incorrect wheel rotation</li> </ol>	<ol style="list-style-type: none"> <li>1. Remove</li> <li>2. Tighten</li> <li>3. Reverse rotation</li> </ol>
Motor bearing noise	Lack of bearing lubrication	Lubricate
Excessive vibration	<ol style="list-style-type: none"> <li>1. Loose wheel on shaft</li> <li>2. Loose mounting bolts</li> <li>3. Motor out of balance</li> <li>4. Wheel out of balance</li> <li>5. Accumulation of material on wheel</li> </ol>	<ol style="list-style-type: none"> <li>1. Tighten setscrews</li> <li>2. Tighten</li> <li>3. Replace</li> <li>4. Replace or rebalance</li> <li>5. Clean</li> </ol>
Motor overloaded 4C118 & 4C119 only	System static pressure less than 1/2" water column	Increase system static pressure

**Models 1C791, 1C792, 2C889, 2C890, 2C938, 2C939A, 4C118 and 4C119****Specifications**

Model	CFM AIR DELIVERY AT RPM SHOWN (IN INCHES)											
	HP Req'd	RPM	Free Air	1/8" SP	1/4" SP	3/8" SP	1/2" SP	5/8" SP	3/4" SP	1" SP	1 1/4" SP	Shpg. Wt.
1C791	1/4	1725	595	560	515	470	420	360	300	—	—	12
1C792	1/3	1725	985	920	870	820	765	710	655	510	360	18
2C889	1/3	1725	1005	968	930	890	850	810	773	680	480	22
2C938*	1/3	1140	1180	1160	1125	1090	1035	963	855	—	—	24
2C890	3/4	1725	1510	1450	1400	1350	1290	1240	1200	1100	1000	32.6
2C939A*	3/4	1140	2060	1970	1870	1800	1710	1650	1500	1290	1020	35

(\* ) For extra quiet operation, operate blowers No. 2C938 and 2C939A at 1140 RPM. These are supplied with rubber motor mounts.

Model	HP Req'd	RPM	1 1/2" SP	1 3/4" SP	2" SP	2 1/4" SP	2 1/2" SP	2 3/4" SP	Shpg. Wt.
4C118	1	1725	1390	1250	1050	—	—	—	24
4C119	1 1/2	1725	1848	1735	1610	1457	1288	1047	33

(†) CAUTION: Must not be used where static pressure is less than 1 1/2" W.C. Severe motor overload will result. Motor overload protection is highly recommended.

**Assembly**

1. Attach base upright to the motor mounting base as shown in the exploded view. See Figure 5. Hand tighten (4) 1/4 -20 x 1/2" bolts, washers, and nuts through slotted holes in base upright. Place motor on motor base and align the center hole of the base upright with the motor shaft. Secure the four 1/4-20 bolts.
2. Bolt the housing to the base upright in the desired discharge position using #10 x 3/8" self tapping bolts.

- Blower is clockwise rotation. Refer to exploded view showing clockwise bottom horizontal discharge.
3. With the motor shaft through the center hole of the base upright, align the mounting holes of the motor to the predrilled holes in the motor base. Install two bolts to retain proper motor alignment but do not tighten. Mount the wheel to the motor shaft. Refer to exploded view drawing.
  4. Mount the inlet cone and inlet ring to the housing and secure with

5. Slide the wheel toward the inlet cone so there is at least 1/4" clearance between the wheel and cone. The motor shaft should extend through the hub of the wheel so when the set screws are securely tightened, they will make contact with the motor shaft.
6. Install the remaining nuts, bolts, and washers (not provided) to the motor mounting holes of the motor and secure to the blower motor base.

#10 x 3/8" self tapping screws.

# Dayton® High Volume Direct Drive Forward Curve Blowers

E  
N  
G  
L  
I  
S  
H

## Installation

1. Make sure all bolts and screws are tightened before mounting on a rigid, flat, level foundation. Bolt the blower securely into position.
2. With power disconnected, check the interior of the fan housing to be sure it is free of debris. Rotate the wheel to insure that it is not rubbing or binding. Check the clearance of the wheel and the inlet cone. If rubbing exists, loosen the bolts on the cone and shift the cone until clearance is obtained. If still rubbing, loosen the set screw on the wheel and shift the wheel rearward to obtain clearance. Retighten the set screw.

**⚠ DANGER** *Electrical Hazard – Turn power off before servicing. Lock it out.*

**⚠ WARNING** *Rotating Blades – Keep hands and feet away from unguarded openings.*

## Operation

1. Before connecting the motor to the electric supply, check the electrical characteristics as indicated on the motor nameplate to insure proper voltage and phase.

**⚠ CAUTION** *A ground wire must run from the blower motor housing to a suitable electrical ground such as a properly grounded metallic raceway or a ground wire system.*

2. After electrical connections are completed, apply just enough power to start the unit. Be sure that the rotation of the wheel is correct as indicated by directional arrows on the unit. If proper rotation, apply full electrical power. If rotation is incorrect, reverse direction according to instructions given on motor nameplate. See Figure 3.

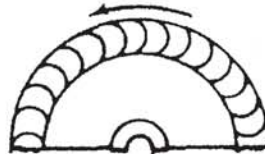


Figure 3 – Wheel Rotation Forward Curve

3. With the air system in full operation and all ducts attached, measure current input to the motor and compare with the nameplate rating to determine if the motor is operating under safe load conditions.

## Maintenance

**⚠ WARNING** *Before attempting any repair work, be certain that all power to the motor and electrical accessories are turned off and locked in off position.*

- A. Periodically remove dirt from blower wheel and housing.
- B. Check tightness of wheel set screw.
- C. After disconnecting the power source, check the wiring to see if it is secure and well insulated.
- D. Relubricate motor per manufacturers' instructions. Remove any excess lubricants.

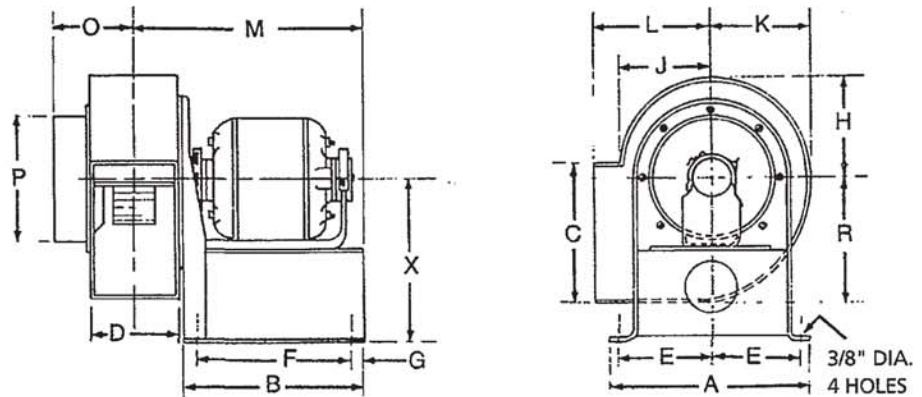
**Models 1C791, 1C792, 2C889, 2C890, 2C938, 2C939A, 4C118 and 4C119**

E  
N  
G  
L  
I  
S  
H

**Dimensions**

Model	WHEEL			HIGH VOLUME DIRECT DRIVE FORWARD CURVE BLOWER														X Adj. Min.	X Adj. Max.	
	Dia.	W	Bore	A	B	C	D	E	F	G	H	J	K	L	M	O	P			R
1C791	6 <sup>5</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>2</sub>	1/2	9 <sup>3</sup> / <sub>8</sub>	8	7 <sup>3</sup> / <sub>8</sub>	4 <sup>1</sup> / <sub>4</sub>	4 <sup>1</sup> / <sub>4</sub>	7	1/2	5	4	6	5	10 <sup>1</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>8</sub>	6	7 <sup>1</sup> / <sub>8</sub>	8 <sup>1</sup> / <sub>4</sub>	9 <sup>3</sup> / <sub>4</sub>
1C792	7 <sup>3</sup> / <sub>4</sub>	3 <sup>7</sup> / <sub>8</sub>	1/2	11	8	8 <sup>1</sup> / <sub>4</sub>	5 <sup>3</sup> / <sub>8</sub>	5	7	1/2	6	4 <sup>5</sup> / <sub>8</sub>	6 <sup>3</sup> / <sub>4</sub>	6 <sup>7</sup> / <sub>8</sub>	10 <sup>3</sup> / <sub>4</sub>	3 <sup>3</sup> / <sub>4</sub>	8	8	8 <sup>1</sup> / <sub>4</sub>	9 <sup>3</sup> / <sub>4</sub>
2C889	9	4 <sup>1</sup> / <sub>2</sub>	1/2	12 <sup>1</sup> / <sub>8</sub>	8	10 <sup>3</sup> / <sub>4</sub>	6 <sup>1</sup> / <sub>2</sub>	5 <sup>5</sup> / <sub>8</sub>	7	1/2	6 <sup>3</sup> / <sub>4</sub>	5 <sup>5</sup> / <sub>8</sub>	7 <sup>3</sup> / <sub>4</sub>	7 <sup>1</sup> / <sub>8</sub>	11 <sup>3</sup> / <sub>8</sub>	4 <sup>3</sup> / <sub>8</sub>	9	9 <sup>1</sup> / <sub>4</sub>	9 <sup>1</sup> / <sub>8</sub>	10 <sup>5</sup> / <sub>8</sub>
2C938	9	4 <sup>1</sup> / <sub>2</sub>	5/8	12 <sup>1</sup> / <sub>8</sub>	8	10 <sup>3</sup> / <sub>4</sub>	6 <sup>1</sup> / <sub>2</sub>	5 <sup>5</sup> / <sub>8</sub>	7	1/2	6 <sup>3</sup> / <sub>4</sub>	5 <sup>5</sup> / <sub>8</sub>	7 <sup>3</sup> / <sub>4</sub>	7 <sup>1</sup> / <sub>8</sub>	11 <sup>3</sup> / <sub>8</sub>	4 <sup>3</sup> / <sub>8</sub>	9	9 <sup>1</sup> / <sub>4</sub>	9 <sup>1</sup> / <sub>8</sub>	10 <sup>5</sup> / <sub>8</sub>
2C890	10 <sup>5</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>4</sub>	5/8	14 <sup>3</sup> / <sub>4</sub>	9	11 <sup>3</sup> / <sub>4</sub>	8	6 <sup>7</sup> / <sub>8</sub>	7 <sup>1</sup> / <sub>2</sub>	3/4	8	6 <sup>3</sup> / <sub>4</sub>	9 <sup>1</sup> / <sub>8</sub>	8 <sup>1</sup> / <sub>8</sub>	13 <sup>1</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>8</sub>	10	10 <sup>3</sup> / <sub>4</sub>	11 <sup>3</sup> / <sub>8</sub>	12 <sup>7</sup> / <sub>8</sub>
2C939A	10 <sup>5</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>4</sub>	5/8	14 <sup>3</sup> / <sub>4</sub>	9	11 <sup>3</sup> / <sub>4</sub>	8	6 <sup>7</sup> / <sub>8</sub>	7 <sup>1</sup> / <sub>2</sub>	3/4	8	6 <sup>3</sup> / <sub>4</sub>	9 <sup>1</sup> / <sub>8</sub>	8 <sup>1</sup> / <sub>8</sub>	13 <sup>1</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>8</sub>	10	10 <sup>3</sup> / <sub>4</sub>	11 <sup>3</sup> / <sub>8</sub>	12 <sup>7</sup> / <sub>8</sub>
4C118	9	4 <sup>1</sup> / <sub>2</sub>	7/8	12 <sup>1</sup> / <sub>8</sub>	8	10 <sup>3</sup> / <sub>4</sub>	6 <sup>1</sup> / <sub>2</sub>	5 <sup>5</sup> / <sub>8</sub>	7	1/2	6 <sup>3</sup> / <sub>4</sub>	5 <sup>5</sup> / <sub>8</sub>	7 <sup>3</sup> / <sub>4</sub>	7 <sup>1</sup> / <sub>8</sub>	11 <sup>3</sup> / <sub>8</sub>	4 <sup>3</sup> / <sub>8</sub>	9	9 <sup>1</sup> / <sub>4</sub>	9 <sup>1</sup> / <sub>8</sub>	10 <sup>5</sup> / <sub>8</sub>
4C119	10 <sup>5</sup> / <sub>8</sub>	4	7/8	14 <sup>3</sup> / <sub>4</sub>	9	11 <sup>3</sup> / <sub>4</sub>	5 <sup>7</sup> / <sub>8</sub>	6 <sup>7</sup> / <sub>8</sub>	7 <sup>1</sup> / <sub>2</sub>	3/4	8	6 <sup>3</sup> / <sub>4</sub>	9 <sup>1</sup> / <sub>8</sub>	8 <sup>1</sup> / <sub>8</sub>	12	4	10	10 <sup>3</sup> / <sub>4</sub>	11 <sup>3</sup> / <sub>8</sub>	12 <sup>7</sup> / <sub>8</sub>

Figure 4 - Dimensions



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

24 hours a day - 365 days a year

Please provide the following information:

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

Address parts correspondence to:

Grainger Parts  
P.O. Box 3074  
1657 Shermer Road  
Northbrook, IL 60065-3074 U.S.A.

E  
N  
G  
L  
I  
S  
H

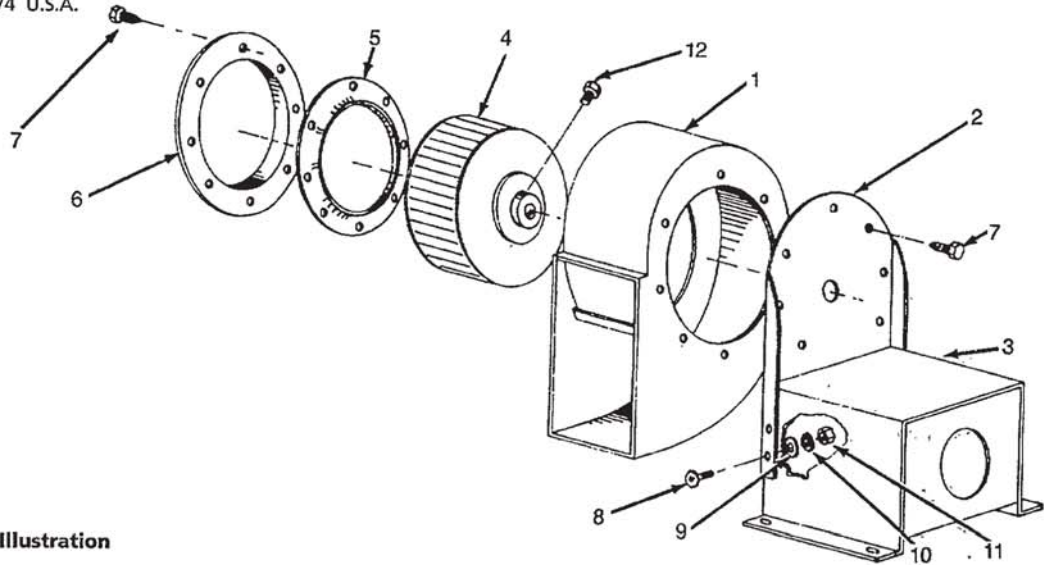


Figure 5 - Repair Parts Illustration

### Repair Parts List

Reference Number	Description	Part Numbers for Model:								QTY.
		1C791	1C792	2C889	2C890	2C938	2C939A	4C118	4C119	
1	Housing	201-06-3026-5	201-08-3037-5	201-09-3040-5	201-11-3033-5	201-09-3040-5	201-11-3033-5	201-09-3040-5	201-11-3034-5	1
2	Base upright	618-06-3004-5	618-08-7001-5	618-09-7001-5	618-11-7002-5	618-09-7001-5	618-11-7002-5	618-09-7001-5	618-11-7002-5	1
3	Motor base	203-06-3001-5	203-08-7001-5	203-09-7001-5	203-11-7005-5	203-09-7001-5	203-11-7005-5	203-09-7001-5	203-11-7005-5	1
4	Wheel	802-06-3001-5	202-08-3136-5	202-09-3166-5	202-11-3175-5	202-09-3229-5	202-11-3153-5	202-09-3227-5	202-11-3254-5	1
5	Inlet cone	609-06-3003-5	609-08-7001-5	609-09-7001-5	609-11-7001-5	609-09-7001-5	609-11-7001-5	609-09-7001-5	609-11-7001-5	1
6	Inlet ring	611-06-7002-5	611-08-7004-5	611-09-7004-5	611-11-7005-5	611-09-7004-5	611-11-7005-5	611-09-7004-5	611-11-7005-5	1
7	#10 x 3/8" Self tapping screw	*	*	*	*	*	*	*	*	8 or 14
8	1/4-20 x 1/2" Slotted mach screw	*	*	*	*	*	*	*	*	4
9	1/4" Flat washer	*	*	*	*	*	*	*	*	4
10	1/4" Lock washer	*	*	*	*	*	*	*	*	4
11	1/4-20 Hex hd nut	*	*	*	*	*	*	*	*	4
12	Set screw*	5/16-18 x 3/8	5/16-18 x 3/8	5/16-18 x 1/2	5/16-18 x 3/8	5/16-18 x 1/2	5/16-18 x 3/8	5/16-18 x 1/2	5/16-18 x 1/2	1

**NOTE: Model No. 2C938 and 2C939 require (4) 1x494 rubber mounts between motor and motor base.**

(\*) Standard hardware item, available locally.

## Models 1C791, 1C792, 2C889, 2C890, 2C938, 2C939A, 4C118 and 4C119

### LIMITED WARRANTY

**DAYTON ONE-YEAR LIMITED WARRANTY.** Dayton® High Volume Direct Drive Forward Curve Blowers, Models covered in this manual, are warranted by Dayton Electric Mfg. Co. (Dayton) to the original user against defects in workmanship or materials under normal use for one year after date of purchase. Any part which is determined to be defective in material or workmanship and returned to an authorized service location, as Dayton designates, shipping costs prepaid, will be, as the exclusive remedy, repaired or replaced at Dayton's option. For limited warranty claim procedures, see PROMPT DISPOSITION below. This limited warranty gives purchasers specific legal rights which vary from jurisdiction to jurisdiction.

**LIMITATION OF LIABILITY.** To the extent allowable under applicable law, Dayton's liability for consequential and incidental damages is expressly disclaimed. Dayton's liability in all events is limited to and shall not exceed the purchase price paid.

**WARRANTY DISCLAIMER.** Dayton has made a diligent effort to provide product information and illustrate the products in this literature accurately; however, such information and illustrations are for the sole purpose of identification, and do not express or imply a warranty that the products are MERCHANTABLE, or FIT FOR A PARTICULAR PURPOSE, or that the products will necessarily conform to the illustrations or descriptions. Except as provided below, no warranty or affirmation of fact, expressed or implied, other than as stated in the "LIMITED WARRANTY" above is made or authorized by Dayton.

**PRODUCT SUITABILITY.** Many jurisdictions have codes and regulations governing sales, construction, installation, and/or use of products for certain purposes, which may vary from those in neighboring areas. While Dayton attempts to assure that its products comply with such codes, it cannot guarantee compliance, and cannot be responsible for how the product is installed or used. Before purchase and use of a product, review the product applications, and all applicable national and local codes and regulations, and be sure that the product, installation, and use will comply with them.

Certain aspects of disclaimers are not applicable to consumer products; e.g., (a) some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you; (b) also, some jurisdictions do not allow a limitation on how long an implied warranty lasts, consequently the above limitation may not apply to you; and (c) by law, during the period of this Limited Warranty, any implied warranties of implied merchantability or fitness for a particular purpose applicable to consumer products purchased by consumers, may not be excluded or otherwise disclaimed.

**PROMPT DISPOSITION.** Dayton will make a good faith effort for prompt correction or other adjustment with respect to any product which proves to be defective within limited warranty. For any product believed to be defective within limited warranty, first write or call dealer from whom the product was purchased. Dealer will give additional directions. If unable to resolve satisfactorily, write to Dayton at address below, giving dealer's name, address, date, and number of dealer's invoice, and describing the nature of the defect. Title and risk of loss pass to buyer on delivery to common carrier. If product was damaged in transit to you, file claim with carrier.

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

**Dayton®**

