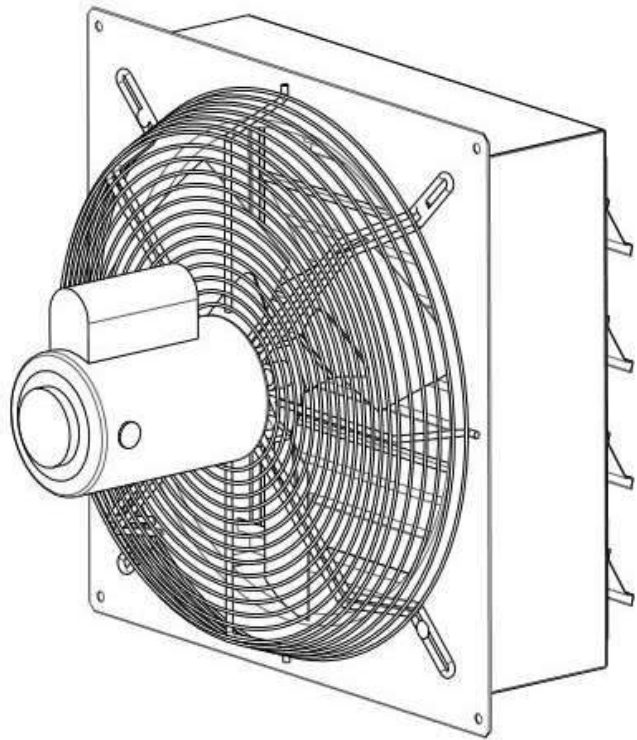




# Canarm Standard Exhaust Fans Operation Instruction and Parts Manual



## INSTRUCTION MANUAL FOR STANDARD EXHAUST FANS

READ INSTRUCTIONS COMPLETELY BEFORE INSTALLATION & SAVE FOR REFERENCE

Congratulations on the purchase of your quality built direct drive, wall exhaust ventilation fan. All of these models use totally enclosed motors with thermal over load protection. Variable speed motors are high efficiency motors which save on electrical costs and can be run as a single speed motor. The motors are mounted on heavy gauge welded steel rod motor mounts that have a Bright Zinc finish. Fans come fully assembled and 100% of fans are tested for proper operation before shipping.

THESE ARE GENERAL INSTRUCTIONS WHICH COVER OUR SINGLE, VARIABLE AND TWO SPEED STANDARD FANS, AS WELL AS OUR SINGLE SPEED EXPLOSION PROOF MODELS.

### STANDARD FANS:

These models have a rugged, welded steel box housing with a powder coated finish and aluminum or plastic exhaust louvers that are supported by long life nylon bushings. The louvers open automatically when the fan starts up and close when the fan stops

Fan Size	A	B	C	D (c/c)	E	N	Framing
8"	13 1/4"	11"	4"	12"	10 3/4"	2	11 X 11
10"	15 1/4"	11"	4"	14"	12 3/4"	2	13 X 13
12"	17 1/4"	17"	6"	16"	14 3/4"	3	15 X 15
14"	19 1/4"	17"	6"	18"	16 3/4"	3	17 X 17
16"	21 1/4"	17"	6"	20"	18 3/4"	4	19 X 19
18"	23 1/4"	15"	6"	22"	20 3/4"	4	21 X 21
20"	25 1/4"	18"	6"	24"	22 3/4"	5	23 X 23
24"	29 1/4"	18"	6"	28"	26 3/4"	5	27 X 27
30"	35 1/4"	19"	6"	34"	32 3/4"	16	33 X 33
36"	41 1/4"	18"	6"	40"	38 3/4"	20	39 X 39
42"	47 1/4"	18"	6 3/4"	46"	44 3/4"	24	45 X 45
48"	53 1/4"	19"	6 3/4"	52"	50 5/8"	26	51 X 51



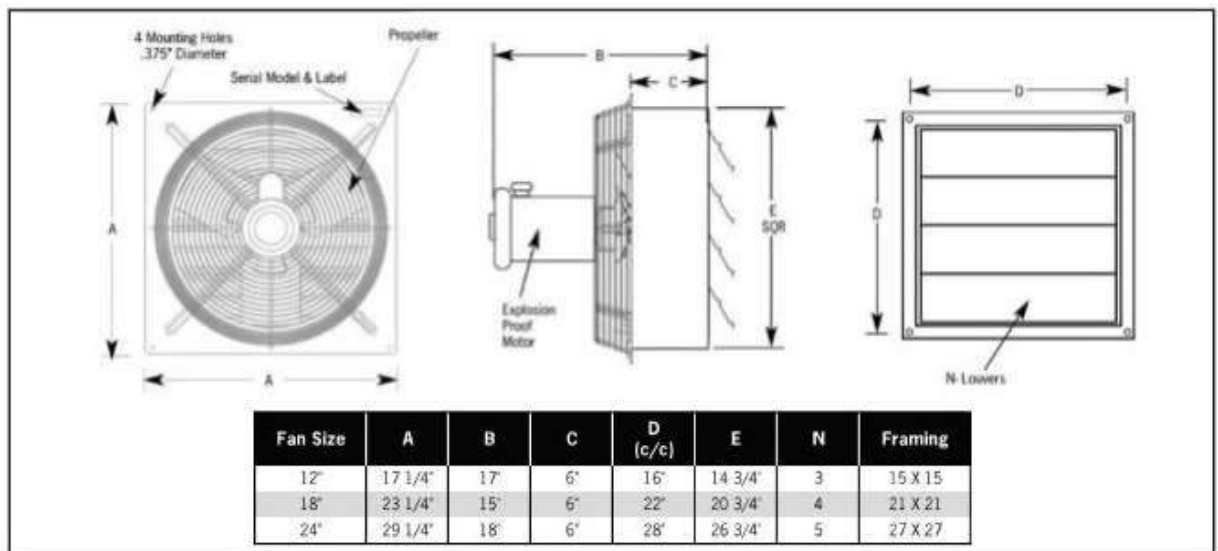
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## EXPLOSION PROOF FANS:

Explosion proof fans are equipped with single speed explosion proof motors and aluminum blades so sparks cannot occur if a metal object obstructs the blade path. Explosion proof fans have the same quality welded steel box housing and heavy gauge welded guard as the standard fans. These fans should be used to ventilate hazardous areas. Locations are considered hazardous if the atmosphere contains or may contain gas, vapor, or dust in explosive quantities.

**THE MOTOR AMBIENT TEMPERATURE IS NOT TO EXCEED +40°C OR -25°C UNLESS THE MOTOR NAMEPLATE SPECIFICALLY PERMITS ANOTHER VALUE. THE FOLLOWING TABLE INDICATES WHICH HAZARDOUS CLASSIFICATIONS CANARM EXPLOSION PROOF FANS DO AND DO NOT MEET.**

<p>Canarm explosion proof fans <b>DO</b> meet the following hazardous classifications.</p> <p><b>CLASS 1, DIVISION 1 (GASES, VAPORS)</b></p> <p><b>GROUP C</b> Acetaldehyde, cyclopropane, diethlether, Ethylene, isoprene</p> <p><b>GROUP D</b> Acetone, acrylonitrile, ammonia, benzene, butane, ethylene dichloride, gasoline, hexane, methane, methanol, naphtha, propane, propylene styrene, toluene, vinyl acetate, vinyl chloride, xylene</p> <p><b>CLASS 2, DIVISION 1 (COMBUSTIBLE DUSTS)</b></p> <p><b>GROUP F</b> Carbon black, coke or coal dust</p> <p><b>GROUP G</b> Flour, starch or graindust</p>	<p>Canarm explosion proof fans <b>DO NOT</b> meet the following hazardous classifications.</p> <p><b>CLASS 1, DIVISION 1 (GASES, VAPORS)</b></p> <p><b>GROUP A</b> Acetylene</p> <p><b>GROUP B</b> Butadiene, ethylene oxide, hydrogen, propylene oxide</p> <p><b>CLASS 2, DIVISION 1 (COMBUSTIBLE DUSTS)</b></p> <p><b>GROUP E</b> Aluminum, magnesium and other metal dusts with similar characteristics</p>
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## INSTALLATION

Installation is fast and simple. A sturdy framed wall opening should be prepared in advance to the size indicated for your fan in the charts above. With lag bolts for wooden frames or nut, bolt and lock washers for steel frames, secure the fan using the four mounting holes provided, one in each corner of the fan.





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## ELECTRICAL CONNECTIONS



**WARNING: BE SURE POWER IS OFF AT THE ELECTRICAL PANEL BEFORE WIRING.**

**WARNING: ALL ELECTRICAL WORK SHOULD BE PERFORMED BY A QUALIFIED ELECTRICIAN.**

These fans are supplied with single, two or variable speed motors. Single and two speed motors are 120V only. Variable speed motors are dual voltage. All dual voltage motors are pre-wired at 240V in our factory. Rewire motor as per motor nameplate if running fan at 120V. Please see the motor nameplate for wiring diagram. Make electrical connections in motor connection box as per the motor nameplate. Follow **Chart #1** for wire sizes. Two speed fans require a two speed control or 3 position toggle switch to change from high/ low/off. See wiring diagram with control for 2 speed wiring instructions.

**CHART#1**

Motor HP	25 to 50 Feet			100 Feet			150 to 200 Feet		
	200V	230V	460V	200V	230V	460V	200V	230V	460V
1/8	14(18)*	14(18)*	14(18)*	14(18)*	14(18)*	14(18)*	14(16)*	14(16)*	14(18)*
1/6	14(18)*	14(18)*	14(18)*	14(18)*	14(18)*	14(18)*	14	14(16)*	14(18)*
1/4	14(18)*	14(18)*	14(18)*	14(16)*	14(18)*	14(18)*	14	14	14(18)*
1/3	14(18)*	14(18)*	14(18)*	14(16)*	14(16)*	14(18)*	12	14	14(18)*
1/2	14(16)*	14(18)*	14(18)*	12	14(16)*	14(18)*	10	12	14(18)*
3/4	14(16)*	14(16)*	14(18)*	12	14	14(18)*	10	10	14(16)*
1	14	14(16)*	14(18)*	12	12	14(18)*	8	10	14(16)*
1 1/2	12	14	14(18)*	10	10	14(16)*	6	8	14
2	12	12	14(18)*	8	10	14(16)*	6	6	12
3	10	12	14(18)*	6	8	14	4	6	12

Motor HP	25 to 50 Feet			100 Feet			150 to 200 Feet		
	200V	230V	460V	200V	230V	460V	200V	230V	460V
1/8	14(18)*	14(18)*	14	14(18)*	12	14(18)*	10	8	14
1/6	14(16)*	14(18)*	12	14(18)*	10	14(18)*	6	6	12
1/4	14	14(18)*	10	14(16)*	6	14	6	4	10
1/3	14	14(18)*	10	14(16)*	8	14	6	4	10
1/2	12	14(18)*	8	14	6	12	4	3	8
3/4	10	14(16)*	6	12	4	10	2	1	6
1	10	14(16)*	6	12	4	10	2	1	6
1 1/2	8	14	6	12	3	8	1	1/0	6
2	6	14	4	10	2	8	1/0	2/0	4
3	6	12	3	8	1/0	6	2/0	4/0	3

**NOTE:**

- NEC Article 310-5 - \*Minimum conductor size for general wiring at 115-440VAC is number 14AWG.
- Above wire sizes based on approximate 5% voltage drop during starting: copper conductors: and 75°C type THHW, THW, THWN, RH, RHW insulation etc. For aluminum wire, increase two wire size steps minimum. See NEC Article 310 for ampacities of aluminum conductors.
- Type S, SO, SJ, SJO, etc. flexible cable wire sizes. See NEC article 400 for ampacity.





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## OPERATION

**WARNING: VARIABLE SPEED FANS SHOULD HAVE THE MINIMUM SPEED SET TO OPEN LOUVERS AT LEAST ONE INCH FOR PROPER MOTOR COOLING AND TO PREVENT MOTOR FAILURE.**

All fans are direct drive. Fans with variable speed motors can be operated as an energy efficient single speed fan or in variable operation with the proper controller. As mentioned above two speed fans require a two speed control or 3 position toggle switch to change from high speed to low and off.



**WARNING: GUARDING SHOULD BE USED IF FANS ARE MOUNTED LOWER THAN SEVEN FEET (2 METRES) OFF FLOOR OR GROUND LEVEL.**

## ACCESSORIES

Canarm provides a complete line of manual and thermostatic controls. Canarm also offers wall mount exhaust shutter kits, replacement shutter sets, and weather protection hoods.

## MAINTENANCE

**MOTORS ARE EQUIPPED WITH AUTOMATIC OVERLOAD PROTECTION AND MAY RESTART WITHOUT WARNING. ALWAYS DISCONNECT FROM POWER BEFORE ATTEMPTING SERVICE.** Motor, blade and louvers should be kept clean of any buildup to prevent premature motor failure and to achieve proper performance. Automatic louvers should be kept operating freely. As with all mechanical equipment scheduled inspections should include checking that all hardware is secure and blade set screws are tight.

