

# DIRECT DRIVE PROPELLER FANS

DynaMaster® Models FN and FQ



MODEL FN



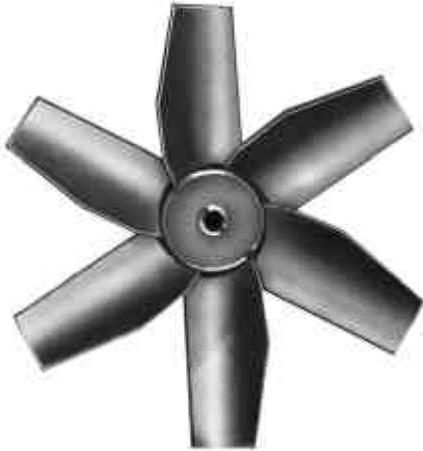
MODEL FQ



**SYMBOL  
OF QUALITY**

# CONSTRUCTION FEATURES

Models FN and FQ direct drive propeller fans are offered for commercial and industrial applications having low noise and high pressure requirements.



## FN FANS

FN fans are designed to operate up to 1" static pressure with capacities to 22,400 CFM. Available in 9 sizes, 14" through 48", these heavy duty fans are designed for industrial type applications where extra strength and durability are desired.

Fan panels are constructed of steel and range from 18 to 14 gauge.

Aluminum blade thickness is from .080" to .125".

## HIGH PRESSURE PROPELLERS

For increased pressure requirements, FN propellers, depending on size and horsepower, have four or six tapered circular-arc airfoil blades. Standard construction is all welded heavy duty aluminum that is precision balanced. Non-overloading design prevents motor overload when operated within cataloged static pressure ranges. Optional steel prop is available for all FN fans, except size 48".

## FQ FANS

These fans are designed to operate more quietly than conventional propeller fans and are recommended for ventilating applications desiring less fan noise. FQ fans are available in 10 sizes, 9" through 36" with a maximum capacity of 17,800 CFM.

Fan panels are constructed of steel and range from 18 to 16 gauge.

Aluminum blade thickness is from .050 to .125.

## ADVANCED PROPELLER DESIGN

These propellers feature an advanced teardrop shape blade designed for exceptionally low noise level performance.

Aluminum blades are fastened to a formed steel hub with heavy duty oversize rivets. Propeller is precision balanced for smooth operation.

The swept-back teardrop blade shape with its aerodynamic leading edge propels the air through the streamlined orifice with a minimum of air turbulence.

FQ not available with steel propeller.



## LICENSED RATINGS FOR SOUND AND AIR



Acme Engineering & Manufacturing Corp. certifies that the FQ and FN Propeller Fans 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.

The sound ratings shown are loudness values in fan sones at 5 feet in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation Type A: Free Inlet fan sone levels.



Most Acme FQ and FN fans are listed by the Canadian Standards Association Testing Laboratory as approved.



# CONSTRUCTION FEATURES

**FAN PANEL** - Construction of heavy gauge steel. Wide flange on all four sides provides extra strength and rigidity to reduce the possibility of vibration and for a more secure installation. Standard finish is acrylic epoxy.

**STREAMLINED ORIFICE** - Die formed for uniformity, the deep streamlined orifice provides for high efficiency airflow throughout the propeller.

**EASY TO INSTALL** - Prepunched holes in flange saves on installation time and cost.

**MOUNT IN ANY POSITION** - All motors are equipped with all-angle thrust ball bearings.



FQ09 AND 10



FQ12 THRU 18



FN14 THRU 18



FQ21 THRU 36



FN21 THRU 48

**EXHAUST MODELS FQ09 and 10** utilize the rugged motor side wire guard as the motor support means thereby making this guard standard equipment. Front (propeller side) guard is optional. **FQ09 and FQ10 are not available in reverse flow (supply).**

**EXHAUST MODELS FQ12 to 36** have the motor mounted on an all welded steel plate and formed pipe frame assembly for extra strength and rigidity. Front and back guards are optional on these sizes. **FQ1210 and FQ129 are not available in reverse flow (supply).**

**EXHAUST MODELS FN14 to 48** have the motor mounted on an all welded steel plate and formed pipe frame assembly for extra strength and rigidity. Front and back guards are optional on all sizes.

## REVERSE FLOW (SUPPLY) FANS

Supply fans are available in all models except FQ09, 10, 1210 and 129. The airflow capacity is the same as for exhaust type fans as shown on page 4.

Only circular basket type guards are available with these fans.

**When supply type fans are used with motorized wall dampers, it is recommended to use WAGC and**

**WAGCH center pivot dampers. A time delay is recommended in the fan motor's starter control circuit to allow the damper to fully open before the fan is activated.**



**RESERVE MOTOR POWER** - Fans are designed with conservative motor loadings and efficient motor cooling to obtain longer motor life under continuous duty operation.

All motors are totally enclosed type with lubricated sealed ball bearings. All single phase motors have automatic resetting thermal overloads for low voltage protection.

Models FQ09, 10, 1210 & 129 use two speed tapped winding, single phase, shaded pole type ball bearing motors only.

All other models have split phase, capacitor start, capacitor run, or permanent split capacitor single phase motors. Some are available in two speed types.

Explosion resistant and three phase single speed motors are also available for some models. Consult your Acme Representative for more details plus availability of motors.

Single phase motors are resilient mounted in circular neoprene vibration isolators integral with the motor base.



# PERFORMANCE DATA

FAN MODEL	RPM	TIP SPEED Ft/Min	HP	SONES @ .100"SP	CFM vs. STATIC PRESSURE										MAX BHP	FAN SHIP WT. Lbs.	DAMPER MODEL		
					.000"	.100"	.125"	.250"	.375"	.500"	.625"	.750"	.875"	1.000"					
FQ098LO FQ098HI	1500 1650	3435 3780	1/28 1/28	8 10	455 500	355 410	385									† 70	15 15	WAG WAG	
FQ108LO FQ108HI	1500 1650	3925 4320	1/28 1/28	6 6	620 685	530 600	505 580									†120	17 17	WAG	
FQ1210LO FQ1210HI FQ129LO FQ129HI FQ12D4	980 1060 1350 1550 1760	3030 3280 4180 4795 5445	1/28 1/28 1/8 1/8 1/6	4 4 5 6 8	870 940 1200 1380 1565	645 750 1075 1280 1475	565 685 1030 1245 1450										.027 .034 .069 .105 .158	27 27 27 27 29	WAG WAG WAG WAG WAG
FQ14C6 FQ14F4	1160 1760	4150 6295	1/8 1/3	7 14	1625 2460	1440 2380	1375 2350	2170 1940								.100 .353	32 35	WAG WAGH	
FN14D4 FN14E4	1760 1760	6450 6450	1/6 1/4	14 14	1880 2160	1780 2050	1750 2020	1600 1850	1430 1640	1300 965	760					.208 .300	32 35	WAG WAG	
FQ16C6 FQ16F4 FQ16H4	1160 1760 1760	4800 7280 7280	1/6 1/3 3/4	8 16 17	2180 2580 3710	2020 2490 3600	1960 2460 3570	1620 2320 3430	2150 3240	1850 3010	2770					.148 .390 .685	37 40 40	WAG WAG WAGH	
FN16F4	1760	7370	1/3	17	3200	3030	2980	2740	2480	2170	1500	1350				.393	36	WAG	
FQ18E6 FQ18G6 FQ18H4	1160 1160 1760	5505 5505 8350	1/4 1/2 3/4	9 12 17	3210 4030 4870	2960 3720 4720	2890 3640 4670	2500 3300 4450	2730 4220	3960	3700	3350				.253 .470 .870	40 48 48	WAG WAGH WAGH	
FN18G4	1760	8290	1/2	21	4170	4000	3960	3760	3520	3250	2950	2520	2040			.571	33	WAG	
FQ21G6 FQ21K4	1160 1760	6325 9595	1/2 1 1/2	13 24	5250 6750	5020 6570	4950 6530	4550 6300	4080 6050	5780	5490	5160	4700			.610 1.510	83 91	WAGH WAGH	
FN21J4 FN21K4	1760 1760	9670 9670	1 1 1/2	30 30	6330 8150	6150 7930	6100 7880	5860 7590	5600 7250	5320 6880	5020 6440	4690 5840	4290	3800	1.089 1.712	68 82	WAGH WAGH		
FQ24F8 FQ24H6	860 1160	5430 7325	1/3 3/4	10 14	5550 7140	5110 6820	4990 6750	4200 6260	5660	4850						.389 .882	93 93	WAG WAGH	
FN24J6 FN24J4 FN24L4	1160 1760 1760	7280 11050 11050	1 1 2	23 39 40	8150 6420 9590	7760 6220 9400	7660 6190 9360	7080 5950 9110	6350 5700 8870	5450 5170 8590	5170 4870 8210	4530 7600	4180 7200			.980 1.070 2.100	121 85 99	WAGH WAGH WAGH	
FQ30H8 FQ30K8 FQ30M6	860 860 1160	6700 6700 9035	3/4 1 1/2 3	18 14 21	8860 11600 15100	8310 10970 14660	8150 10800 14570	7330 9950 13980	6380 9000 13330		12610	11900	11130			.830 1.370 3.060	132 168 174	WAG WAGH WAGH	
FN30L6 FN30M6	1160 1160	9110 9110	2 3	30 31	12450 16040	12100 15500	12000 15420	11500 14750	10900 14000	10300 13150	9580 12050	8720	7750			1.96 3.03	175 213	WAGH WAGH	
FQ36K8 FQ36L8	860 860	8020 8020	1 1/2 2	21 22	14450 17800	13800 17000	13620 16800	12580 15800	11570 14700	13300						1.640 2.420	197 203	WAGH WAGH	
FN36K8 FN36L6 FN36M6	860 1160 1160	8100 10930 10930	1 1/2 2 3	27 43 43	13160 14280 17740	12650 13920 17360	12520 13820 17270	11800 13300 16780	10950 12700 16200	9900 12050 15600	8500 11400 15000	6600 10700 14300	5250 10000	4000	1.66 2.26 3.14	199 204 244	WAG WAGH WAGH		
FN42K8 FN42L8 FN42M8	860 860 860	9456 9456 9456	1 1/2 2 3	32 33 43	17560 19400 22320	16700 18600 21650	16340 18220 21450	14970 16980 20460		19000	16250					1.80 2.26 3.45	212 222 230	WAG WAGH WAGH	
FN48K8 FN48L8 FN48M8	860 860 860	10800 10800 10800	1 1/2 2 3	36 39 41	17120 19340 22400	15900 18200 21600	15530 17930 21440	13950 16550 20360	12400 15060 18940	10640 13360 17170	9025 11630 15260	7420 9900 13110	6000 8240 11285	4300 6840 10090	1.71 2.19 3.01	223 233 241	WAG WAG WAGH		

Performance shown is for Installation Type A: Free Inlet, Free Outlet. The sound ratings shown are loudness values in fan sones at 5 ft (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for Installation Type A: Free Inlet fan sone levels.

Performance ratings do not include the effects of appurtenances in the airstream; FQ12 through FQ48. Performance ratings include the effect of a back guard (motor side) on models FQ09 and FQ10.

Model numbers shown are for Exhaust Fans with standard direction of airflow (motor on intake side of propeller). For Supply Fans with direction of airflow reversed (motor on discharge side of propeller) add letter "R" to the model number; example: FN-R14.

**Reverse flow (supply) not available for models FQ09, 10, 1210, and 129.**

The brake horsepower (BHP) capability of a fan motor is dependent on the degree of cooling the motor receives from the moving airstream over the motor. The motor loading beyond the motor nameplate rating on Acme built fans does not overheat the motor and is within NEMA recommended limits. It is therefore not detrimental to the motor and is economically desirable.

See Page 7 for damper model numbers and sizes.

† Watts



# DIMENSIONAL DATA

## EXHAUST FANS

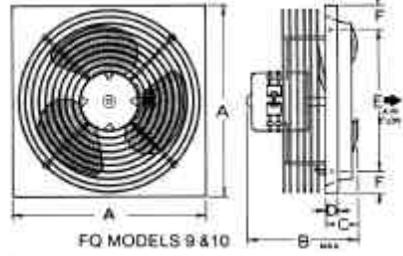
FAN MODEL	A	B Max.	C	D	E*	F	Metal Gauges	
	In.	In.	In.	In.	In.	In.	Orifice	Blades
FQ09	12.00	5.75	1.50	1.50	8.00	2.00	18	.050
FQ10	14.00	7.00	3.00	1.50	10.00	2.00	18	.050
FQ12	16.00	13.25	4.00	1.50	10.00	3.00	18	.063
FQ14	18.00	15.00	4.50	1.50	10.00	4.00	18	.080
FN14	18.00	13.67	3.75	1.50	10.00	4.00	18	.080
FQ16	21.00	15.50	5.00	1.50	8.00	2.50	18	.080
FN16	21.00	14.76	4.00	1.50	8.00	2.50	18	.080
FQ18	23.00	19.00	5.50	1.50	9.00	2.50	18	.080
FN18	23.00	13.82	4.50	1.50	9.00	2.50	18	.080
FQ21	26.50	17.50	6.00	1.75	10.00	3.25	16	.080
FN21	26.50	17.71	5.00	1.75	10.00	3.25	16	.080
FQ24	30.00	20.00	6.50	1.75	8.00	3.00	16	.080
FN24	30.00	17.78	6.00	1.75	8.00	3.00	16	.125
FQ30	37.50	26.25	7.50	1.75	10.00	3.75	16	.125
FN30	37.50	20.13	8.00	1.75	10.00	3.75	16	.125
FQ36	45.00	24.75	8.00	1.75	12.00	4.50	16	.125
FN36	45.00	21.38	9.00	1.75	12.00	4.50	16	.125
FN42	60.00	18.62	6.37	3.06	15.00	7.50	14	.125
FN48	64.00	21.00	7.50	3.06	16.00	8.00	14	.125

## SUPPLY FANS

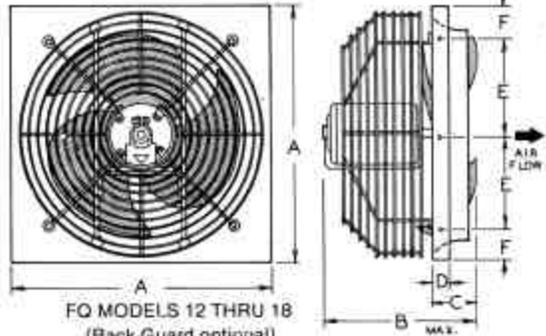
FAN MODEL	A	B Max.	C	D	E*	F	Metal Gauges	
	In.	In.	In.	In.	In.	In.	Orifice	Blades
FQ-R12	16.00	14.75	2.50	1.50	10.00	3.00	18	.063
FQ-R14	18.00	16.75	3.25	1.50	10.00	4.00	18	.080
FN-R14	18.00	13.50	1.50	1.50	10.00	4.00	18	.080
FQ-R16	21.00	20.00	4.50	1.50	8.00	2.50	18	.080
FN-R16	21.00	17.00	1.50	1.50	8.00	2.50	18	.080
FQ-R18	23.00	21.75	4.00	1.50	9.00	2.50	18	.080
FN-R18	23.00	19.00	1.50	1.50	9.00	2.50	18	.080
FQ-R21	26.50	22.00	2.75	1.75	10.00	3.25	16	.080
FN-R21	26.50	22.00	1.75	1.75	10.00	3.25	16	.080
FQ-R24	30.00	21.00	1.50	1.75	8.00	3.00	16	.080
FN-R24	30.00	25.00	1.75	1.75	8.00	3.00	16	.125
FQ-R30	37.50	27.09	4.50	1.75	10.00	3.75	16	.125
FN-R30	37.50	25.50	1.75	1.75	10.00	3.75	16	.125
FQ-R36	45.00	25.25	5.00	1.75	12.00	4.50	16	.125
FN-R36	45.00	30.00	1.75	1.75	12.00	4.50	16	.125
FN-R42	60.00	30.50	2.00	3.06	15.00	7.50	14	.125
FN-R48	64.00	32.25	2.50	3.06	16.00	8.00	14	.125

\*The number of holes varies depending on fan size.  
 FQ09 thru FN14 - 2 Holes, FQ16 thru FN21 - 3 Holes,  
 FQ24 thru FN48 - 4 Holes.

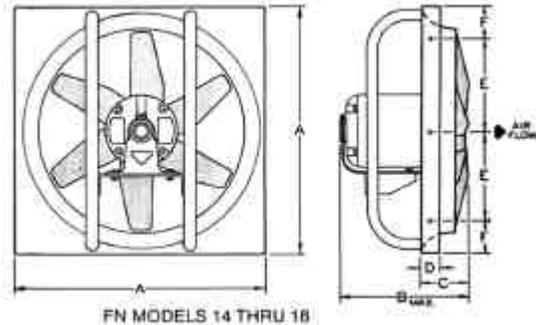
Typical drawings for dimensional purposes only, which are correct within limits suitable for normal installation requirements and do not necessarily show actual construction.



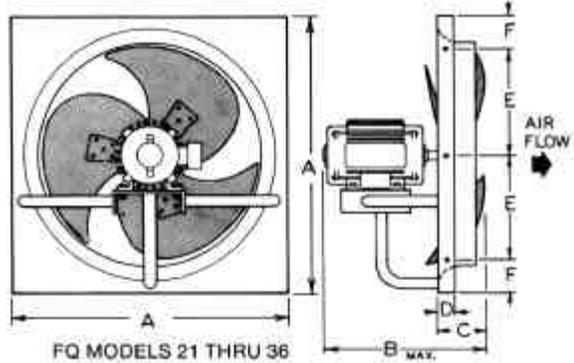
FQ MODELS 9 & 10



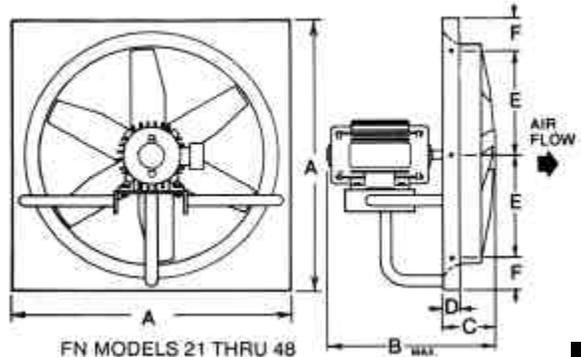
FQ MODELS 12 THRU 18  
(Back Guard optional)



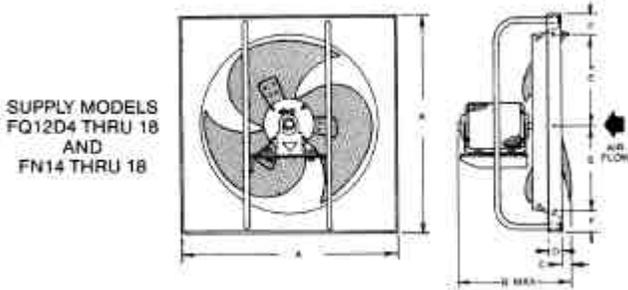
FN MODELS 14 THRU 18



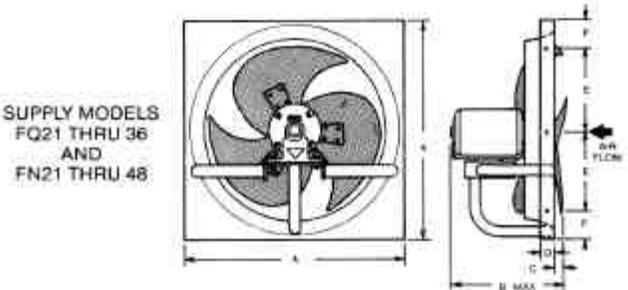
FQ MODELS 21 THRU 36



FN MODELS 21 THRU 48



SUPPLY MODELS  
 FQ12D4 THRU 18  
 AND  
 FN14 THRU 18



SUPPLY MODELS  
 FQ21 THRU 36  
 AND  
 FN21 THRU 48



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# OPTIONAL ACCESSORIES

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## SAFETY GUARDS



### CIRCULAR TYPE (SIZE 09 THRU 18)

Attractive circular type safety guards are available for exhaust type fans through size 18. They are constructed of heavy gauge concentric wire rings welded to a frame and finished with electroplated zinc to produce attractive sturdy guards that comply with OSHA standards.

The motor side circular guards for FQ09 and FQ10 are integral with the motor mounting frame and are standard equipment.

The circular type wire guards are available for the motor and propeller sides as optional equipment for exhaust fan sizes 12 through 18.

### SQUARE TYPE (SIZE 21 THRU 48)

Extruded aluminum frame guards Model BA for back (motor side) and Model FA for front (propeller side) are available for fan sizes 21 through 48. Constructed of 1/2" x 1" mesh heavy gauge welded galvanized wire and are open on all sides for maximum airflow. Guards are shipped knocked down, easily assembled with connecting clips which bolt to fan frame and are easily removed for servicing the fan.

The openings for these guards comply with OSHA standards.

Optional guards are also available for reverse flow (supply type) fans from sizes 12 through 48.



**CAUTION!** Guards must be installed when a fan is within reach of personnel or within seven (7) feet of working level or when deemed advisable for safety.

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## COATINGS

Aluminum and galvanized components remain unpainted as a standard finish, but when required, are processed through the finishing system to apply decorative or special coatings. A high turbulence oven is used to produce a baked on finish for most special coatings. Decorative coatings are not baked on.

### DECORATIVE COATINGS

Acme offers 16 popular colors for decorative finishes utilizing an industrial grade enamel applied to the exterior of fan. Special colors are available upon request. See your Acme Representative for complete color selections.

### SPECIAL COATINGS

Products receiving special coatings have components painted before assembly. Fasteners are not painted.

- **ACRYLIC EPOXY**

This product provides a more durable surface.

- **CARBOLINE SANITILE (Eisenheiss)**

This air dry synthetic polyester forms a black coating that offers greater resistance to most organic and inorganic acids.

- **HERESITE (Air Dry)**

A phenolic coating with greater resistance to most organic and inorganic acids.

- **INSULMASTIC**

A black asphalt based mastic that provides some condensation control, sound deadening and corrosion resistance.

**NOTE:** For any coating selected the user assumes the responsibility for the corrosive agent, its concentration, temperature, moisture content and the ultimate effect on the coating and equipment.



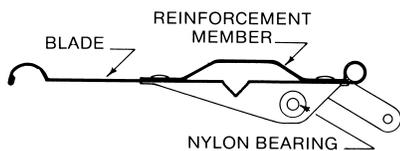
# OPTIONAL ACCESSORIES

## DAMPER (Model WAG or WAGC)

Constructed of rigid galvanized steel frame with double tie rods on the blades. Blades are industrial grade aluminum reinforced with steel rods. Nylon bearings are used to resist corrosion and prevent damper sticking making for quieter operation.

## HEAVY DUTY DAMPER (Model WAGH or WAGCH)

Heavy duty dampers are recommended when the air velocity exceeds 1500 FPM and up to 2500 FPM. Heavy duty dampers are similar in construction to standard duty dampers except each blade has a formed reinforcement member providing extra strength and rigidity.



## CENTER PIVOT DAMPER (Model WAGC or WAGCH)

When a supply type fan is used, a motorized center pivot type damper, model WAGC-MT or WAGCH-MT should be substituted for the WAG or WAGH. For 2 HP units and larger, it is recommended that a time delay switch be utilized. For center pivot damper add "C" to damper model number.



AUTOMATIC DAMPERS						
FAN MODEL	Standard Duty		Heavy Duty		Damper Size	Overall Size
	Model	Wt. Lbs.	Model	Wt. Lbs.	In.	In.
FQ09	WAG1212	6	WAGH1212	7	9 x 9	12 x 12
FQ10	WAG1414	8	WAGH1414	9	11 x 11	14 x 14
FQ1210 - 12	WAG1616	9	WAGH1616	10	13 x 13	16 x 16
FN/FQ14	WAG1818	10	WAGH1818	11	15 x 15	18 x 18
FN/FQ16	WAG2121	11	WAGH2121	12	18 x 18	21 x 21
FN/FQ18	WAG2323	12	WAGH2323	13	20 x 20	23 x 23
FN/FQ21	WAG2626	14	WAGH2626	15	23 x 23	26 x 26
FN/FQ24	WAG3030	17	WAGH3030	19	27 x 27	30 x 30
FN/FQ30	WAG3737	24	WAGH3737	26	34 x 34	37 x 37
FN/FQ36	WAG4545	30	WAGH4545	33	42 x 42	45 x 45
FN42	WAG6060	54	WAGH6060	61	57 x 57	60 x 60
FN48	WAG6060	54	WAGH6060	61	57 x 57	60 x 60

Models 1212 through 3737 are single panel; 4545 through 6060 are double panel. Maximum velocity for WAG style is 1500 FPM. Maximum velocity for WAGH style is 2500 FPM. Use WAGC-MT or WAGCH-MT for supply (reverse) installations.

**WARNING!** Supply type fans utilizing a motorized wall damper should have a time relay in the fan motor's starter control circuit to allow the damper to fully open before the fan is activated.

## Automatic, Motorized or Manual Operated.

**Automatic** dampers open with the airflow of the fan and are spring closed. Not available with supply (reverse) type fans.

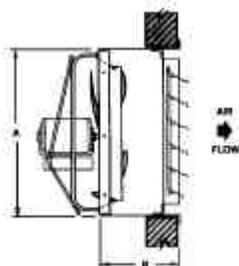
**Motorized** dampers use a stall type motor and are spring closed. For motorized damper add "MT" to damper model number.

**Manual** dampers open with a pull chain and are spring closed. For manual damper add "ML" to damper model number.

## WALL COLLAR (Model WC)

For sizes 09 through 21 exhaust or supply type. Designed for damper to be installed flush with wall surface. Damper is optional. Constructed of galvanized steel.

(Shipped Knocked Down)



## SOLID STATE SPEED CONTROLLER

Solid state controllers are available for selected fans equipped with 115 volt, 60 Hz single phase shaded pole and smaller size permanent split capacitor motors. They provide a variable speed control with fewer parts to wear out

and eliminate the need for 2-speed motors. Easily installed in a standard wall box, they require a simple 2-wire connection, but are equipped with a third wire that maintains a constant voltage to the damper motor in the event a motorized wall damper is used with the fan. Contact your Acme Representative for 50 Hz requirements.

WALL COLLAR							
FAN MODEL	Wall Collar Model	Dimensions					Weight Lbs.
		A	B	C	D	E	
		In.	In.	In.	In.	In.	
FQ09	WC9FQ	12.25	10.00	15.25	10.00	2.63	18
FQ10	WC10FQ	14.25	10.00	17.25	12.00	2.63	20
FQ12	WC12FQ	16.25	12.00	19.25	14.00	2.63	22
FN/FQ14	WC14FQ	18.25	12.00	21.25	16.00	2.63	25
FN/FQ16	WC16FQ	21.25	12.00	24.25	19.00	2.63	27
FN/FQ16	WC18FQ	23.25	13.00	26.25	21.00	2.63	31
FN/FQ21	WC21FQ	26.75	13.00	29.25	24.00	2.88	35



**CENTRIFUGAL VENTILATION FANS**



**DUCT FANS PROPELLER AND INLINE CENTRIFUGAL**



**CEILING, INLINE AND CABINET FANS**



**CENTRIFUGAL & PROPELLER ROOF EXHAUST FANS**



**CENTRIFUGAL & PROPELLER ROOF SUPPLY FANS**



**CENTRIFUGAL AND PROPELLER UPBLAST ROOF EXHAUSTERS**



**CENTRIFUGAL INDUSTRIAL PROCESS FANS**



**CENTRIFUGAL HEAVY DUTY INDUSTRIAL FANS**



**CENTRIFUGAL AIR HANDLING FANS**



**CENTRIFUGAL AND PROPELLER WALL FANS**



**MAKE-UP AIR SYSTEMS**



**EXHAUST & SUPPLY VENTS**



**LIMITED WARRANTY** Acme Engineering and Manufacturing Corporation warrants the products manufactured by Acme to be free from original defects in workmanship and material for two years subject to the terms and conditions of its published limited warranty. Warranties on purchased products are subject to the vendor's warranty. Refer to current Form MS149 for complete limited warranty terms and conditions.

**WARNING** Acme products are designed and manufactured to provide reliable performance but they are not guaranteed to be 100% free of defects. Even reliable products

will experience occasional failures and this possibility should be recognized by the User. If these products are used in a life support ventilation system where failure could result in loss or injury, the User should provide adequate back-up ventilation, supplementary natural ventilation or failure alarm system, or acknowledge willingness to accept the risk of such loss or injury.

**WARNING** DO NOT use in HAZARDOUS ENVIRONMENTS where fan's electrical system could provide ignition to combustible or flammable materials unless unit is specifically built for hazardous environments.

**CAUTION** Guards must be installed when fan is within reach of personnel or within seven (7) feet (2.134 m) of working level or when deemed advisable for safety.

**DISCLAIMER** The Company has made a diligent effort to illustrate and describe the products in this literature accurately; however, such illustrations and descriptions 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 or dimension.



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