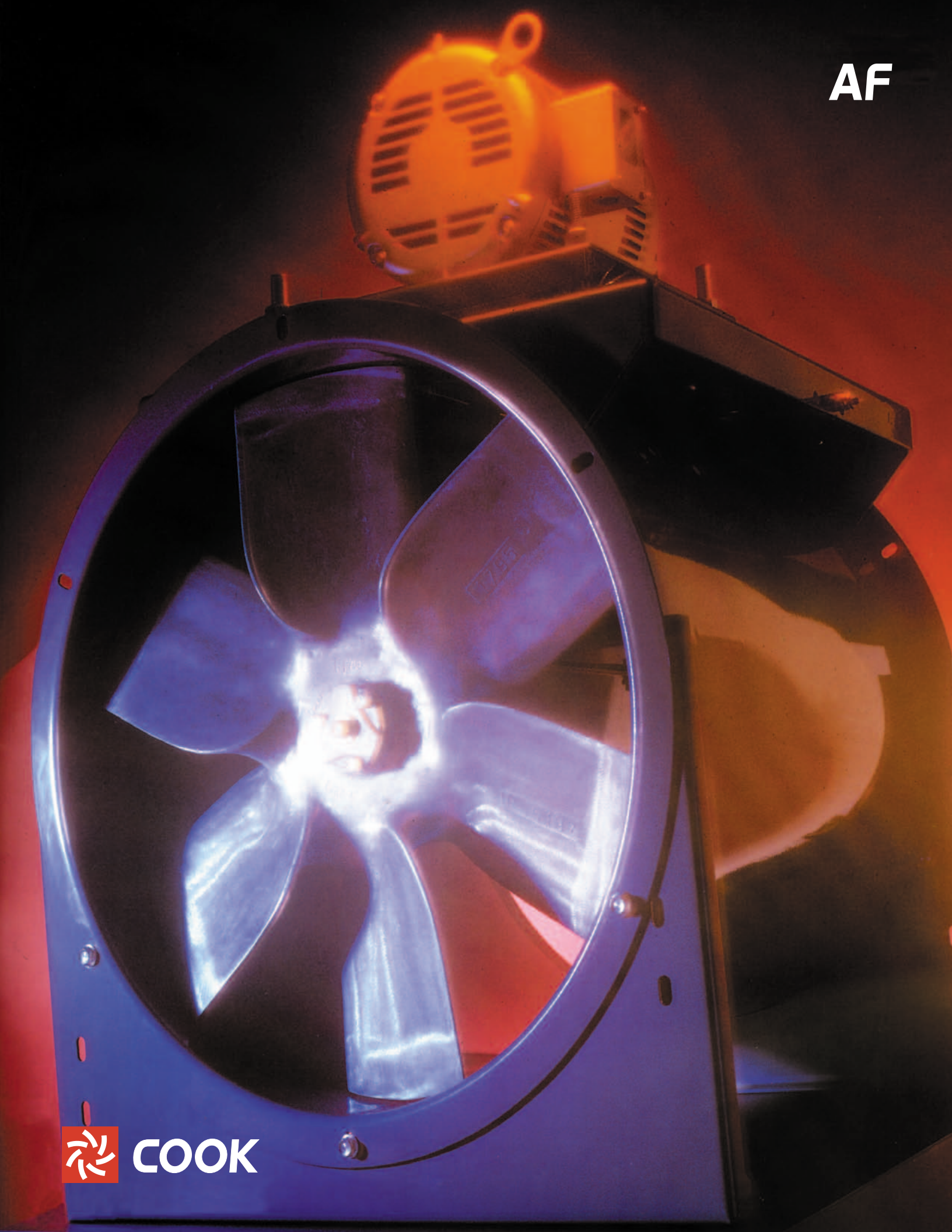
AF
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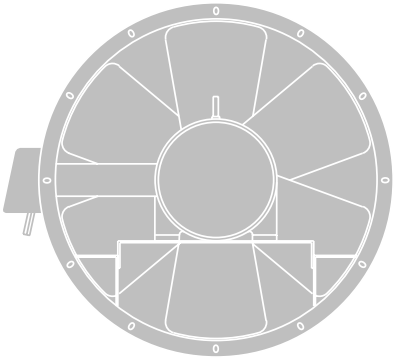
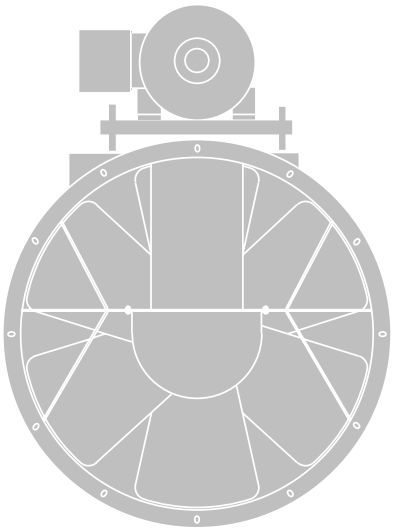
AF

Tube Axial Fan





Introduction

Cook AF tube axial fans are designed to fill the performance gap between typical duct fans and heavy-duty vane axial fans.

- High efficiency propeller with six airfoil blades available in one-piece cast aluminum (AFB-C and AFD-C); welded steel (AFB-H); or welded stainless steel (AFB-S).
- Minimum 12 gauge steel housing with continuously welded seams, and integral inlet and outlet flanges pre-punched for mounting.
- Copper lubrication lines are standard on belt drive units and also standard on direct drive units when applicable.
- The motor plate is attached to a heavy welded sub-base and features threaded studs for positive belt tensioning.
- Direct drive units feature a totally enclosed motor.
- Belt drive units feature an inner drum that encloses the driven sheave, shaft and bearings. The low-drag tunnel, separating belts from the airstream, also protect the extended lubrication lines. Removable covers provide access to the shaft, bearings and belts.
- All steel fan components feature a Lorenized® powder coat finish.
- Bearings are heavy duty regreasable ball or roller type in a cast iron pillow block housing selected for a minimum L50 life in excess of 400,000 hours for horizontal units and L50 life in excess of 250,000 hours for vertical units.
- Accurate performance is assured through compliance with the AMCA Certified Ratings Program. The AFD-C, AFB-C, AFDV-C, and AFBV-C are licensed to bear the AMCA Seal for Air Performance.

AFD-C/AFDV-C

AFD-C / AFDV-C

- AFD-C available in 11 direct drive sizes. Capacities range from 1150 to 68,000 CFM, with static pressures from 0 to 4 ½ inches.
- AFDV-C available in 11 direct drive sizes. Capacities range from 1150 to 68,000 CFM, with static pressures from 0 to 5 inches.
- Temperature operating range for AFD-C and AFDV-C units is from -20°F to 104°F. (Direct Drive, Cast Prop)

AFB-C/AFBV-C

AFB-C / AFBV-C

- AFB-C available in 11 belt drive sizes. Capacities range from 200 to in excess of 97,000 CFM, with static pressures from 0 to 6 inches
- AFBV-C available in 11 belt drive sizes. Capacities range from 200 to 97,000 CFM, with static pressures from 0 to in excess of 6 inches.
- Temperature operating range for AFB-C and AFBV-C units is from -20°F to 180°F. (Belt Drive, Cast Prop)

AFB-H/AFBV-H

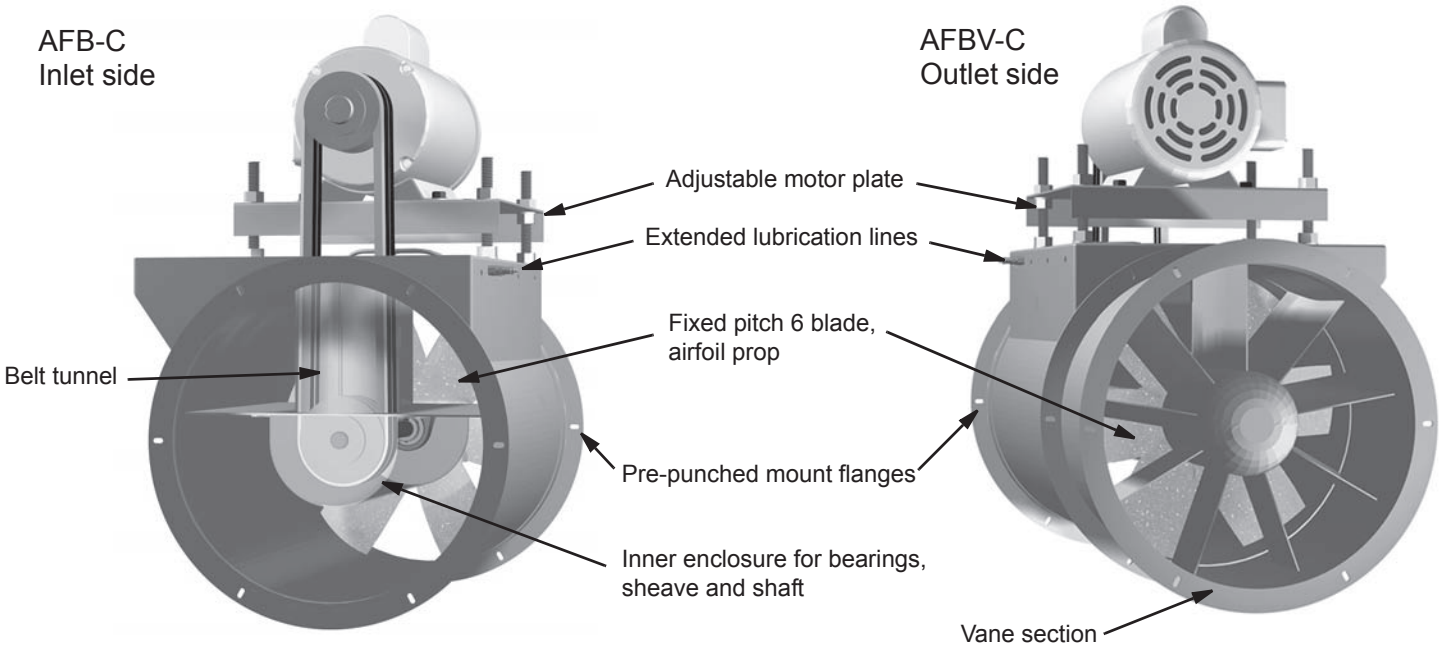
AFB-H / AFBV-H

- AFB-H available in 9 belt drive sizes. Capacities range from 600 to in excess of 25,000 CFM, with static pressures from 0 to 5 inches.
- AFBV-H available in 9 belt drive sizes. Capacities range from 600 to 25,000 CFM, with static pressures from 0 to in excess of 5 inches.
- UL Listed for inline “Smoke Control Systems”
- Temperature operating range for AFB-H and AFBV-H units is from -20°F to 500°F. (Belt Drive, High Temperature, Steel Prop)

AFB-S/AFBV-S

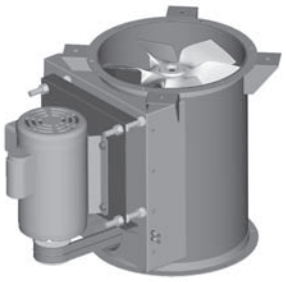
AFB-S / AFBV-S

- AFB-S available in 9 belt drive sizes. Capacities range from 600 to in excess of 25,000 CFM, with static pressures from 0 to 5 inches.
- AFBV-S available in 9 belt drive sizes. Capacities range from 600 to 25,000 CFM, with static pressures from 0 to in excess of 5 inches.
- 304 stainless steel construction standard.
- Temperature operating range for AFB-S and AFBV-S units is from -20°F to 200°F. (Belt Drive, Stainless Steel Prop)



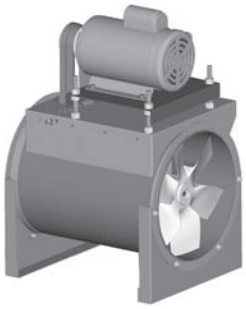
Mounting Options

Vertical



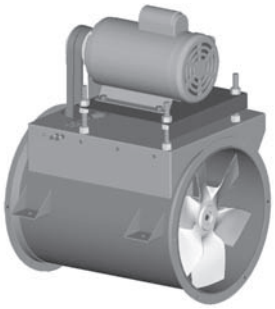
Vertical mounting brackets provide for vertical installation, floor or ceiling mount, with upblast or downblast configuration. Vibration isolators can be used in all mounting configurations. Ceiling brackets with upblast configuration shown.

Floor, Ceiling, Wall or Platform



Mounting feet, bolted to the inlet and outlet flanges, can be field rotated for different motor positions. The mounting feet provide a solid base for mounting to the floor, ceiling or wall. They can be used with vibration isolators.

Ceiling Horizontal



Side-angle supports provide for suspension of the unit. The supports can be used with vibration isolators. Motor location “A” only.

Roof Exhauster

AFD and AFB, when used with optional butterfly damper, panel and curb, can be mounted as a roof exhauster. Allow 1/8” static pressure resistance for damper. (See table, **CFM Limitation for Damper Operation**, for additional information.)

CFM Limitation for Damper Operation

Fan Size	CFM	
	Min.	Max.
12	990	2435
14	1355	3330
18	2250	5535
20	3070	7560
24	4020	9895
28	4725	11630
32	5885	14490
36	9095	22385
44	12395	30515
48	16165	39795
54	20485	50425
60	25315	62310

Product Nomenclature

Sample - 54AFBV-C

54 - Prop Diameter in inches.
Sizes range from 12 to 60
AF - Tube Axial
B - Drive Type
D - Direct Drive
B - Belt Drive
V - Vane Section
C - Unit and Prop Construction
C - Lorenized® housing with cast aluminum prop
H - High temperature steel construction with welded steel prop
S - Stainless steel housing with welded stainless steel prop

Duty Levels

Fan Size	Outer Housing	Duty Level 1		Duty Level 2	
		Shaft Diameter	Motor HP	Shaft Diameter	Motor HP
12	12 ga.	1”	1/2 - 2	-	-
14	12 ga.	1”	1/2 - 3	-	-
16	12 ga.	1”	1/2 - 3	-	-
18	12 ga.	1”	1/2 - 5	1	7-1/2
20	12 ga.	1”	1/2 - 5	-	-
24	10 ga.	1-3/16”	1/2 - 7-1/2	1-3/16”	10
28	10 ga.	1-3/16”	1 - 7-1/2	1-3/16”	10 - 15
32	10 ga.	1-7/16”	2 - 7-1/2	1-7/16”	10 - 15
36	10 ga.	1-11/16”	2 - 20	-	-
44	10 ga.	1-15/16”	2 - 10	1-15/16”	15 - 30
48	10 ga.	1-15/16”	5 - 7-1/2	1-15/16”	10 - 40
54	1/4”	2-7/16”	5 - 50	-	-
60	1/4”	2-7/16”	5 - 60	-	-

Information

Inlet/Outlet Cones

Cones are used on the tube axial fan to adapt it to larger or smaller size ducts on both the inlet and outlet sides. For example, a Diverging Outlet Cone, as illustrated in Figure A, connects the fan to a larger duct resulting in static regain. The **Static Regain** table provides examples of the regain for a cone with an angle of 25 degrees to 30 degrees and varying fan outlet velocities.

For other diverging outlet cones, an approximate determination of static regain can be obtained if the following formula is used.

$SP_2 = SP_1 + .45(VP_1 - VP_2)$

A Converging Inlet Cone, as illustrated in Figure B, is used to connect a large duct to the fan inlet. Due to the tapered shape of the cone, friction loss is negligible. To determine this slight difference in static pressure, the following formula can be used.

$SP_2 = SP_1 - .08(VP_1 - VP_2)$

A Converging Outlet Cone, as illustrated in Figure C, is used to connect a small duct to the outlet flange of the fan. The across-the-cone change in velocity pressure is added to the fan's static pressure. To determine the change in static pressure, the following formula can be used.

$SP_2 = SP_1 - (VP_1 - VP_2)$

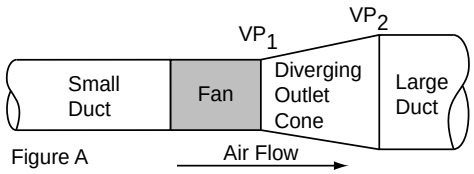


Figure A

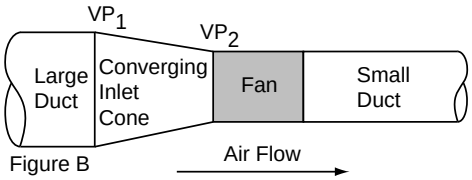


Figure B

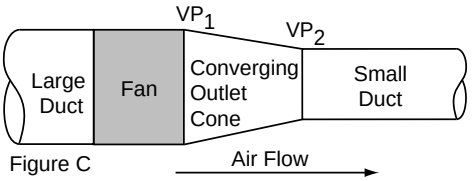


Figure C

Static Regain

Velocity (FPM)	SP (in inches)	Velocity (FPM)	SP (in inches)	Velocity (FPM)	SP (in inches)
1000	.012	2750	.099	4500	.261
1250	.020	3000	.117	4750	.290
1500	.029	3250	.138	5000	.323
1750	.040	3500	.160	5250	.356
2000	.052	3750	.183	5500	.392
2250	.065	4000	.207	5750	.428
2500	.081	4250	.233	6000	.467

Velocity Pressure - $VP=(velocity/4005)^2$

Velocity (FPM)	VP (in inches)	Velocity (FPM)	VP (in inches)
500	.0156	2250	.316
600	.0225	2500	.391
700	.0305	2750	.473
800	.0400	3000	.562
900	.0504	3250	.661
1000	.0625	3500	.768
1100	.0758	3750	.880
1200	.0900	4000	1.000
1300	.106	4250	1.130
1400	.122	4500	1.265
1500	.141	4750	1.410
1600	.160	5000	1.560
1700	.181	5250	1.720
1800	.203	5500	1.890
1900	.226	5750	2.060
2000	.250	6000	2.250

Vane Section

The "V" in the model number designates that the AF unit is furnished with a bolt-on vane section. The addition of the vane section increases the performance of the AF static pressure range by approximately 30 percent for the same horsepower thus creating an efficient, low-powered vane axial fan.

Lorenized® Fan Finish Specification

All steel fan components shall be finished with an electrostatically applied, baked polyester powder coating. Each component shall be subject to a five stage environmentally friendly wash system, followed by a minimum 2 mil thick baked powder finish. Paint must exceed 1,000 hour salt spray under ASTM B117 test method.

Standard Color - Gray

Final Coat Thickness - Minimum 2 mils

Polyester Powder Testing Information

Property	Test Method	Value
Impact Resistance	ASTM D2794	100 inch-pounds
Pencil Hardness	ASTM D3363	2H (Mar or Gouge)
Crosshatch Adhesion	ASTM D3359 Method B	100 percent
Humidity Resistance	ASTM D2247	1000+ Hours
Salt Spray	ASTM B117	1000+ Hours
Continuous Service Temperature	N/A	230°F (110°C)

Tube Axial Fan
Direct Drive

Description - Fan shall be direct drive, fixed pitch, tube axial fan.

Certifications - Fan shall be manufactured at an ISO 9001 certified facility. Fan shall be listed by Underwriters Laboratories (UL 705) and UL listed for Canada (cUL 705). Fan shall bear the AMCA Certified Ratings Seal for Air Performance.

Construction - Fan shall be of bolted and welded construction utilizing corrosion resistant fasteners. Housing shall be a minimum 12 gauge steel with continuously welded seam and integral inlet and outlet flanges pre-punched for mounting. Copper lube lines shall be extended from the motor to the outside of the housing. Unit shall bear an engraved aluminum nameplate. Nameplate shall indicate design CFM and static pressure.

Coating - All steel fan components shall be Lorenized® with an electrostatically applied, baked polyester powder coating. Each component shall be subject to a five stage environmentally friendly wash system, followed by a minimum 2 mil thick baked powder finish. Paint must exceed 1,000 hour salt spray under ASTM B117 test method.

Propeller - Propeller shall be fixed pitch, one piece cast aluminum, six blade airfoil design. The propeller shall be keyed and secured to the shaft with a split taper bushing and retaining plate. Propeller shall be balanced in accordance with AMCA Standard 204-96, Balance Quality and Vibration Levels for Fans, Category BV-3.

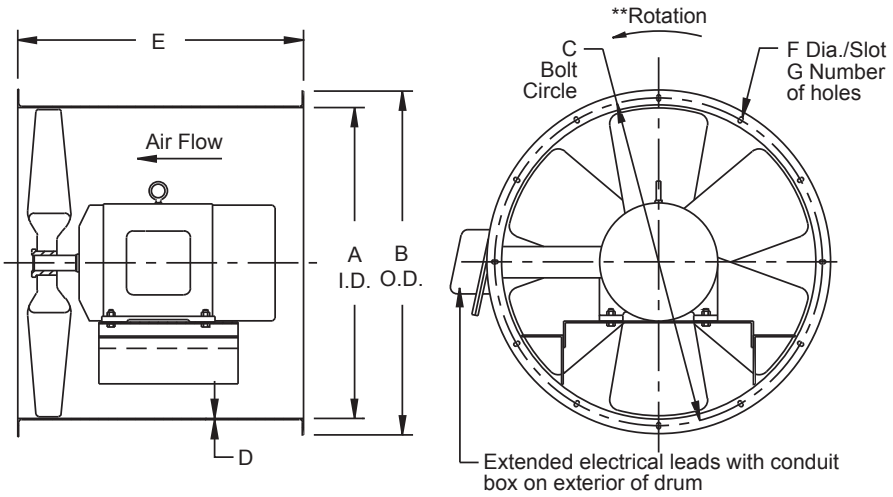
Motor - Motor shall be heavy duty type totally enclosed furnished at the specified voltage and phase.

Product - Fan shall be model AFD-C as manufactured by Loren Cook Company of Springfield, Missouri and AFDV-C when provided with vane section.

Loren Cook Company certifies that the AFD-C/AFDV-C 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 comply with the requirements of the AMCA Certified Ratings Program.

Type AFD-C/AFDV-C are furnished standard with UL 705 listing (Power Ventilator/ZACT) when furnished with factory supplied motor.

Type AFD-C/AFDV-C are furnished standard with cUL listing (Power Ventilator) when furnished with factory supplied motor.



AFD-C / AFDV-C Dimension Data

AFD Size	A	B	C	D	E	F	G	TEFC Motor Frame	Approx. Ship Wt. Lbs.*
12	12-7/8	15-5/8	14-5/8	12 ga.	22	5/16	6	56	49
16	16-7/8	19-5/8	18-5/8	12 ga.	25	5/16 x 5/8	6	182T	74
18	18-7/8	21-5/8	20-5/8	12 ga.	25	5/16 x 5/8	6	182T	86
24	24-7/8	29-1/8	26-7/8	10 ga.	31	7/16 x 3/4	6	182T	136
28	28-7/8	33-1/8	30-7/8	10 ga.	31	7/16 x 3/4	6	184T	178
32	33	37-1/4	35	10 ga.	34	7/16 x 3/4	6	215T	207
36	37	41-3/8	39	10 ga.	34	7/16 x 3/4	6	254T	223
44	45	49-3/8	47-1/2	10 ga.	42	7/16 x 3/4	12	256T	339
48	49-1/8	53-1/2	51-5/8	10 ga.	42	7/16 x 3/4	12	284T	404
54	55-3/8	60-3/4	57-5/8	7 ga.	42	7/16 x 3/4	12	365T	784
60	61-3/8	66-3/4	63-5/8	7 ga.	42	7/16 x 3/4	12	405T	875

All dimensions in inches. *Less motor.

**Rotation for size 54 & 60 is reverse from the diagram above.

Tube Axial Fan
Belt Drive

Loren Cook Company certifies that the AFB-C/AFBV-C 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 comply with the requirements of the AMCA Certified Ratings Program.

Type AFB-C/AFBV-C are furnished standard with UL 705 listing (Power Ventilator/ZACT) when furnished with factory supplied motor.

Type AFB-C/AFBV-C are furnished standard with $_{C}$UL listing (Power Ventilator) when furnished with factory supplied motor.

Description - Fan shall be a belt drive, fixed pitch, tube axial fan.

Certifications - Fan shall be manufactured at an ISO 9001 certified facility. Fan shall be listed by Underwriters Laboratories (UL 705) and UL listed for Canada (cUL 705). Fan shall bear the AMCA Certified Ratings Seal for Air Performance.

Construction - Fan shall be of bolted and welded construction utilizing corrosion resistant fasteners. Housing shall be minimum 12 gauge steel with continuously welded seam and integral inlet and outlet flanges pre-punched for mounting. Copper lube lines shall be extended from the bearings to the outside of the housing. Adjustable motor plate shall be attached to a welded motor sub-base and shall utilize threaded studs for positive belt tensioning. Unit shall bear an engraved aluminum nameplate. Nameplate shall indicate design CFM, static pressure and maximum fan RPM.

Coating - All steel fan components shall be Lorenized® with an electrostatically applied, baked polyester powder coating. Each component shall be subject to a five stage environmentally friendly wash system, followed by a minimum 2 mil thick baked powder finish. Paint must exceed 1,000 hour salt spray under ASTM B117 test method.

Propeller - Propeller shall be fixed pitch, one piece cast aluminum, six blade airfoil design. The propeller shall be keyed and secured to the shaft with a split taper bushing and retaining plate. Propeller shall be balanced in accordance with AMCA Standard 204-96, Balance Quality and Vibration Levels for Fans, Category BV-3.

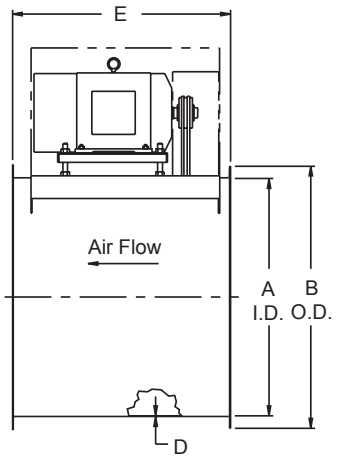
Motor - Motor shall be heavy duty type furnished at the specified voltage, phase and enclosure.

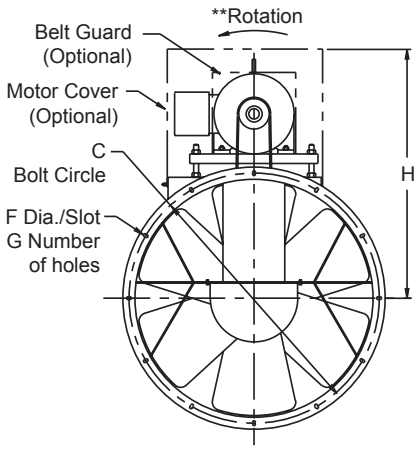
Bearings - Bearings are designed and tested specifically for use in air handling applications. Bearings are heavy duty regreasable ball or roller type in a cast iron pillow block housing selected for a minimum L50 life in excess of 400,000 hours for horizontal units and L50 life in excess of 250,000 hours for vertical units at maximum cataloged operating speed, horsepower and static pressure.

Shaft - Fan shaft shall be AISI C-1045 hot rolled and accurately turned, ground and polished. Shafting shall be sized for a critical speed of at least 125 percent of maximum RPM.

Belts and Drives - Belts shall be oil and heat resistant, non-static type. Drives shall be precision machined cast iron type, keyed and securely attached to the wheel and motor shafts.Drives shall be sized for 150 percent of the installed motor horsepower. The variable pitch motor drive must be factory set to the specified fan RPM.

Product - Fan shall be model AFB-C as manufactured by Loren Cook Company of Springfield, Missouri and AFBV-C when provided with vane section.





AFB-C / AFBV-C Dimension Data

AFB Size	A	B	C	D	E	F	G	H	ODP Motor Frame	Approx. Ship Wt. Lbs.*
12	12-7/8	15-5/8	14-5/8	12 ga.	22	5/16	6	24-5/8	145T	84
16	16-7/8	19-5/8	18-5/8	12 ga.	25	5/16 x 5/8	6	30-1/8	182T	119
18	18-7/8	21-5/8	20-5/8	12 ga.	25	5/16 x 5/8	6	31-1/8	213T	136
24	24-7/8	29-1/8	26-7/8	10 ga.	31	7/16 x 3/4	6	39-7/8	215T	231
28	28-7/8	33-1/8	30-7/8	10 ga.	31	7/16 x 3/4	6	41-7/8	254T	265
32	33	37-1/4	35	10 ga.	34	7/16 x 3/4	6	45-1/4	254T	350
36	37	41-3/8	39	10 ga.	34	7/16 x 3/4	6	47-1/4	256T	385
44	45	49-3/8	47-1/2	10 ga.	42	7/16 x 3/4	12	58-3/4	286T	576
48	49-1/8	53-1/2	51-5/8	10 ga.	42	7/16 x 3/4	12	60-3/4	324T	677
54	55-3/8	60-3/4	57-5/8	7 ga.	42	7/16 x 3/4	12	51-3/4	326T	940
60	61-3/8	66-3/4	63-5/8	7 ga.	42	7/16 x 3/4	12	54-3/4	364T	1042

All dimensions in inches. *Less motor.
**Rotation for size 54 & 60 is reverse from the diagram above.

Tube Axial Fan High Temperature Belt Drive

Description - Fan shall be a belt drive, high temperature, fixed pitch, tube axial fan.

Certifications - Fan shall be manufactured at an ISO 9001 certified facility. Fan shall be listed by Underwriters Laboratories (UL 705) and UL listed for Canada (cUL 705).

Construction - Fan shall be of bolted and welded construction utilizing corrosion resistant fasteners, and suitable for up to 500°F continuous operating temperature. Housing shall be minimum 12 gauge steel with continuously welded seam and integral inlet and outlet flanges pre-punched for mounting. Copper lube lines shall be extended from the bearings to the outside of the housing. Adjustable motor plate shall be attached to a welded motor sub-base and shall utilize threaded studs for positive belt tensioning. Unit shall bear an engraved aluminum nameplate. Nameplate shall indicate design CFM, static pressure and maximum fan RPM.

Coating - All steel fan components shall be coated with a heat resistant silicon-alkyd resin.

Propeller - Propeller shall be fixed pitch, welded steel six blade airfoil design. The propeller shall be keyed and secured to the shaft with a split taper bushing and retaining plate. Propeller shall be balanced in accordance with AMCA Standard 204-96, Balance Quality and Vibration Levels for Fans, Category BV-3.

Motor - Motor shall be heavy duty type furnished at the specified voltage, phase and enclosure.

Bearings - Bearings are designed and tested specifically for use in air handling applications. Bearings are heavy duty regreasable ball or roller type in a cast iron pillow block housing selected for a minimum L50 life in excess of 400,000 hours for horizontal units and L50 life in excess of 250,000 hours for vertical units at maximum cataloged operating speed.

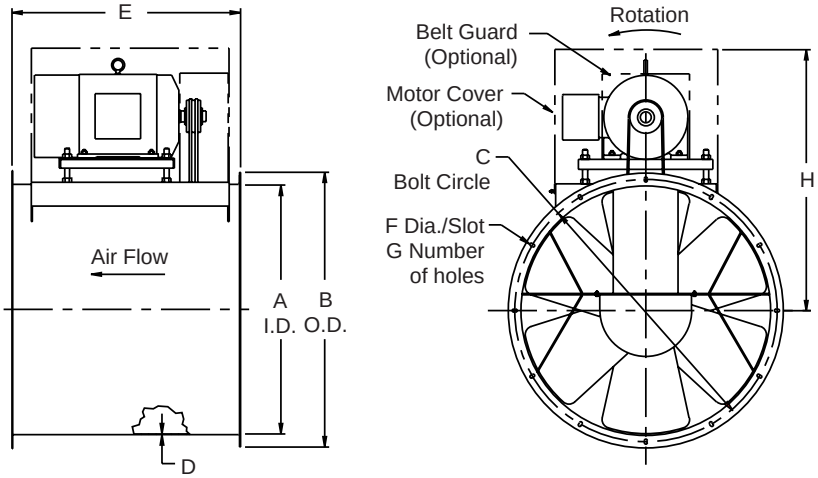
Shaft - Fan shaft shall be AISI C-1045 hot rolled and accurately turned, ground and polished. Shafting shall be sized for a critical speed of at least 125 percent of maximum RPM.

Belts and Drives - Belts shall be oil and heat resistant, non-static type. Drives shall be precision machined cast iron type, keyed and securely attached to the wheel and motor shafts. Drives shall be sized for 150 percent of the installed motor horsepower. The variable pitch motor drive must be factory set to the specified fan RPM.

Product - Fan shall be model AFB-H as manufactured by Loren Cook Company of Springfield, Missouri and AFBV-H when provided with a vane section.

Type AFB-H/AFBV-H are furnished standard with UL 705 listing (Power Ventilator/ZACT) when furnished with factory supplied motor.

Type AFB-H/AFBV-H are furnished standard with cUL listing (Power Ventilator) when furnished with factory supplied motor.



AFB-H / AFBV-H Dimension Data

AFB-H Size	A	B	C	D	E	F	G	H	ODP Motor Frame	Approx. Ship Wt. Lbs.*
12	12-7/8	15-5/8	14-5/8	12 ga.	22	5/16	6	24-5/8	145T	84
14	14-7/8	17-5/8	16-5/8	12 ga.	22	5/16	6	25-5/8	182T	91
16	16-7/8	19-5/8	18-5/8	12 ga.	25	5/16 x 5/8	6	30-1/8	182T	119
18	18-7/8	21-5/8	20-5/8	12 ga.	25	5/16 x 5/8	6	31-1/8	184T	136
20	20-7/8	23-5/8	22-3/8	12 ga.	31	5/16 x 5/8	6	32-1/8	184T	169
24	24-7/8	29-1/8	26-7/8	10 ga.	31	7/16 x 3/4	6	39-7/8	213T	231
28	28-7/8	33-1/8	30-7/8	10 ga.	31	7/16 x 3/4	6	41-7/8	215T	265
32	33	37-1/4	35	10 ga.	34	7/16 x 3/4	6	45-1/4	254T	350
36	37	41-3/8	39	10 ga.	34	7/16 x 3/4	6	47-1/4	256T	385

All dimensions in inches. *Less motor.

Tube Axial Fan Stainless Steel Belt Drive

Type AFB-S/AFBV-S are furnished standard with UL 705 listing (Power Ventilator/ZACT) when furnished with factory supplied motor.

Type AFB-S/AFBV-S are furnished standard with cUL listing (Power Ventilator) when furnished with factory supplied motor.

Description - Fan shall be a belt drive, stainless steel, fixed pitch tube axial fan.

Certifications - Fan shall be manufactured at an ISO 9001 certified facility. Fan shall be listed by Underwriters Laboratories (UL 705) and UL listed for Canada (cUL 705).

Construction - Fan shall be of bolted and welded construction utilizing corrosion resistant fasteners. Housing shall be minimum 12 gauge 304 stainless steel with continuously welded seam and integral inlet and outlet flanges pre-punched for mounting. Lube lines shall be extended from the bearings to the outside of the housing. Adjustable motor plate shall be attached to a welded motor sub-base and shall utilize threaded studs for positive belt tensioning. Unit shall bear an engraved aluminum nameplate. Nameplate shall indicate design CFM, static pressure and maximum fan RPM.

Propeller - Propeller shall be fixed pitch, welded 304 stainless steel, six blade airfoil design. The propeller shall be keyed and secured to the shaft with set screws and retaining plate. Propeller shall be balanced in accordance with AMCA Standard 204-96, Balance Quality and Vibration Levels for Fans, Category BV-3.

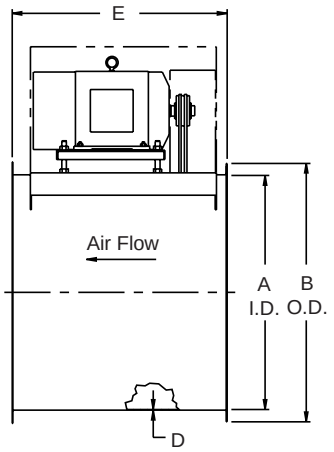
Motor - Motor shall be heavy duty type furnished at the specified voltage, phase and enclosure.

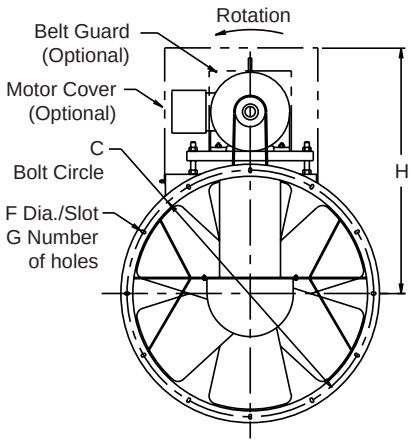
Bearings - Bearings are designed and tested specifically for use in air handling applications. Bearings are heavy duty regreasable ball or roller type in a cast iron pillow block housing selected for a minimum L50 life in excess of 400,000 hours for horizontal units and L50 life in excess of 250,000 hours for vertical units at maximum cataloged operating speed.

Shaft - Fan shaft shall be 304 stainless steel and accurately turned, ground and polished. Shafting shall be sized for a critical speed of at least 125 percent of maximum RPM.

Belts and Drives - Belts shall be oil and heat resistant, non-static type. Drives shall be precision machined cast iron type, keyed and securely attached to the wheel and motor shafts. Drives shall be sized for 150 percent of the installed motor horsepower. The variable pitch motor drive must be factory set to the specified fan RPM.

Product - Fan shall be model AFB-S as manufactured by Loren Cook Company of Springfield, Missouri and AFBV-S when provided with a vane section.





AFB-S / AFBV-S Dimension Data

AFB-S Size	A	B	C	D	E	F	G	H	ODP Motor Frame	Approx. Ship Wt. Lbs.*
12	12-7/8	15-5/8	14-5/8	12 ga.	22	5/16	6	24-5/8	145T	84
14	14-7/8	17-5/8	16-5/8	12 ga.	22	5/16	6	25-5/8	182T	91
16	16-7/8	19-5/8	18-5/8	12 ga.	25	5/16 x 5/8	6	30-1/8	182T	119
18	18-7/8	21-5/8	20-5/8	12 ga.	25	5/16 x 5/8	6	31-1/8	184T	136
20	20-7/8	23-5/8	22-3/8	12 ga.	31	5/16 x 5/8	6	32-1/8	184T	169
24	24-7/8	29-1/8	26-7/8	10 ga.	31	7/16 x 3/4	6	39-7/8	213T	231
28	28-7/8	33-1/8	30-7/8	10 ga.	31	7/16 x 3/4	6	41-7/8	215T	265
32	33	37-1/4	35	10 ga.	34	7/16 x 3/4	6	45-1/4	254T	350
36	37	41-3/8	39	10 ga.	34	7/16 x 3/4	6	47-1/4	256T	385

All dimensions in inches. *Less motor.

Disconnect Switches

NEMA 1 - Indoor general purpose.
NEMA 1 (Lockable) - Indoor general purpose with locking capability.
NEMA 3R - Exterior mount, rain-tight.
NEMA 4 - Watertight and dust-tight.
NEMA 7 and NEMA 9 - Lockable, indoor, explosion proof.


NEMA 1


NEMA 1 (lockable)


NEMA 4


NEMA 3R


NEMA 7
NEMA 9

Belt Guard

A belt guard is designed to cover the top, front and sides of the drive assembly. Belt guards are constructed of minimum 18 gauge Lorenized® steel and have an open back to allow for inspection or belt tightening. Belt guards are factory installed.

Motor Cover

The motor cover encloses the motor and drive assembly and serves as an OSHA belt guard. The motor cover is constructed of 18 gauge Lorenized® steel. Motor covers are factory installed.

Inlet/Outlet Companion Flange

Inlet/outlet companion Flanges are available for use in conjunction with the standard flanged inlet/outlet. The inlet/outlet companion flange is attached to the adjacent ductwork to provide an exact mate to the flanged connection on the fan.

Inlet/Outlet Guard

Inlet/outlet guards are used in non-ducted installations to protect personnel and prevent debris from entering the fan.

Inlet/Outlet Flex Duct Connector

Flex duct connectors are available for the inlet or outlet of the AFD/AFB. These connectors provide a flexible connection between the fan and the attached ductwork. This reduces the transmission of noise and vibration to the ductwork as well as allowing for slight misalignment and easy removal of the fan without disturbing the rigid ductwork. Flex duct connectors are constructed of reinforced neoprene fabric and aluminum bands. Flex duct connectors are not for use in temperatures above 250°F. Not available in stainless steel.

Mounting Feet

Mounting feet, bolted to the inlet and outlet flanges, provide a solid base for mounting to the floor, ceiling or wall. The mounting feet can be used with vibration isolators.

Mounting Brackets

Mounting brackets are securely welded in place in either the vertical or horizontal discharge configurations and are based upon the specific location requirements. The bracket design allows for use with vibration isolators in all configurations, when required.

Inlet Bell

An inlet bell provides for more uniform airflow to the fan blades and is normally used when no inlet ductwork is present. When a non-ducted tube axial fan is installed without an inlet bell, system effect will occur due to the uneven loading of the fan blades.

Inlet Cone/Outlet Cone

Normally used to adapt ductwork to a specific size tube axial fan. Depending on the location of the installation, the velocity pressure change can equate to static pressure regain or static pressure loss.

Sound Muffler

A sound muffler can be mounted on both the inlet or outlet of the unit and is used for sound critical applications. The sound muffler is not for use with wet atmospheres, velocities greater than 5000 FPM, and temperatures above 250°F. Not available in stainless steel.

Bufferfly Dampers

Butterfly dampers provide for a weatherproof closure for outdoor vertical discharge applications. The dampers must be used in conjunction with optional curb panel for roof curb mounting. Optional fusable links are available with butterfly damper.

Curb Panel

A curb panel, when used in conjunction with optional butterfly dampers, converts the unit to a tube axial roof upblast unit. The curb panel is used for mounting on a roof curb.

Access Door

An Access Door allows for ease of access to the bearing cover when the unit is installed in a system.

Bombay Construction

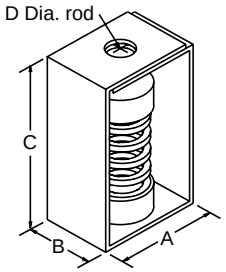
Bombay construction provides for access to the drive, belts, bearings, propeller, and the shaft when the unit is installed in a system. This is a special construction unit. Consult the factory for additional information and dimensions.

Thrust Restraints Kit

Thrust restraints minimize fan movement when the unit thrust ratio exceeds weight ratio. Thrust restraints require isolators. The kit includes two mounting brackets, welded to the fan housing, and two brackets shipped loose for duct work mounting.

Accessories

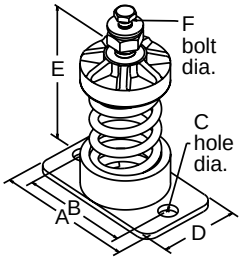
Spring Isolator - Ceiling Mounted



Unit	Rated Load (lbs.)	Spring. Rate (lbs./in.)	A	B	C	D	Approx. Ship Wt. Lbs.
SC-35	35	23	3-11/16	2-1/4	5-1/4	1/2	2
SC-70	70	51	3-11/16	2-1/4	5-1/4	1/2	2
SC-125	125	100	3-11/16	2-1/4	5-1/4	1/2	2
SC-245	245	206	3-11/16	2-1/4	5-1/4	1/2	2
SC-370	370	370	3-11/16	2-1/4	5-1/4	1/2	2
SC-500	500	500	3-11/16	2-1/4	5-1/4	5/8	2
SC-1000	1000	870	5-9/16	3-5/8	8-9/16	3/4	5

All dimensions in inches.

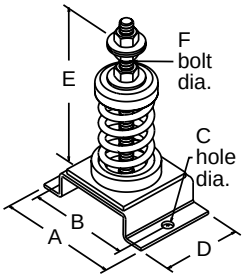
Free Standing Spring Isolator - Floor Mounted



Unit	Rated Load (lbs.)	Spring. Rate (lbs./in.)	A	B	C	D	E	F	Approx. Ship Wt. Lbs.
SF-70	70	51	2-5/8	**	11/16	2-5/8	3-1/2	3/8	2
SF-120	120	98	4-1/2	3-1/2	9/16	2-1/2	3-1/2	3/8	2
SF-220	220	196	4-1/2	3-1/2	9/16	2-1/2	3-1/2	3/8	2
SF-370	370	366	4-1/2	3-1/2	9/16	2-1/2	3-1/2	3/8	2
SF-625	625	419	7	5-1/2	11/16	4	4-1/2	3/8	4
SF-1250	1250	1096	7	5-1/2	11/16	4	4-3/4	3/8	5

All dimensions in inches. Isolators listed are designed to provide a minimum of 50 percent of overload capacity.
A single hole is provided at the center of the plate.

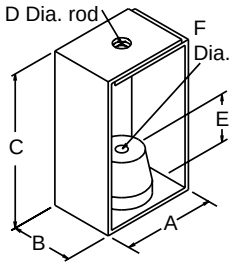
Restrained Spring Isolator - Floor Mounted



Unit	Rated Load (lbs.)	Spring. Rate (lbs./in.)	A	B	C	D	E	F	Approx. Ship Wt. Lbs.
RS-70	70	51	4-3/4	3-3/4	7/16	3	5	1/2	3
RS-120	120	98	4-3/4	3-3/4	7/16	3	5	1/2	3
RS-220	220	196	4-3/4	3-3/4	7/16	3	5	1/2	3
RS-370	370	366	4-3/4	3-3/4	7/16	3	5	1/2	3
RS-625	625	419	8	6-1/2	11/16	4	7-1/2	5/8	6
RS-1250	1250	1096	8	6-1/2	11/16	4	7-1/2	5/8	7

All dimensions in inches. Isolators listed are designed to provide a minimum of 50 percent of overload.

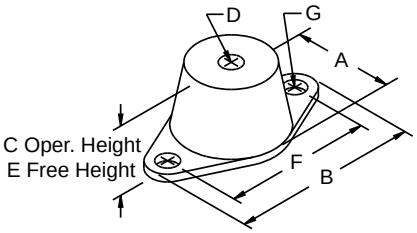
Rubber-in-Shear Isolator - Ceiling Mounted



Unit	Rated Load (lbs.)	A	B	C	D	E	F	Approx. Ship Wt. Lbs.
RC-75	75	2-5/32	1-1/2	2-23/32	11/16	15/32	3/8	1
RC-125	125	2-5/32	1-1/2	2-23/32	11/16	15/32	3/8	1
RC-175	175	3-5/32	2-1/4	5-11/16	3/4	1-31/64	3/4	2
RC-300	300	3-5/32	2-1/4	5-11/16	3/4	1-31/64	3/4	2
RC-450	450	3-5/32	2-1/4	5-11/16	3/4	1-31/64	3/4	2
RC-700	700	4	4-3/4	8	3/4	1-1/2	3/4	3
RC-1100	1100	4	4-3/4	8	3/4	1-1/2	3/4	5

All dimensions in inches.

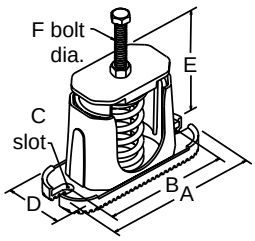
Rubber-in-Shear Isolator - Floor Mounted



Unit	Rated Load (lbs.)	A	B	C	D	E	F	G	Approx. Ship Wt. Lbs.
RF-55	55	1-13/16	3-3/16	1-7/64	5/16 NC	1-1/2	2-3/8	11/32	1
RF-120	120	2-3/8	3-7/8	1-1/4	3/8 NC	1-3/4	3	11/32	1
RF-220	220	2-3/8	3-7/8	1-1/4	3/8 NC	1-3/4	3	11/32	1
RF-375	375	2-3/8	3-7/8	1-1/4	3/8 NC	1-3/4	3	11/32	1
RF-600	600	3-1/4	5-1/2	2	1/2 NC	2-1/2	4-1/8	9/16	2
RF-1100	1100	3-1/4	5-1/2	2	1/2 NC	2-1/2	4-1/8	9/16	2

All dimensions in inches.

Housed Spring Isolator - Floor Mounted



Unit	Rated Load (lbs.)	Spring. Rate (lbs./in.)	A	B	C	D	E	F	Approx. Ship Wt. Lbs.
HF-120	120	98	6-1/8	5-5/8	5/16	2-1/8	3-1/2	3/8	2
HF-220	220	196	6-1/8	5-5/8	5/16	2-1/8	3-1/2	3/8	2
HF-320	320	302	6-1/8	5-5/8	5/16	2-1/8	3-1/2	3/8	2
HF-370	370	366	6-1/8	5-5/8	5/16	2-1/8	3-1/2	3/8	2
HF-500	500	500	6-1/8	5-5/8	5/16	2-1/8	3-1/2	3/8	2
HF-700	700	700	6-1/8	5-5/8	5/16	2-1/8	3-1/2	3/8	2
HF-800	800	588	9	7-1/2	7/16	3-1/2	5	5/8	13
HF-1000	1000	826	9	7-1/2	7/16	3-1/2	5	5/8	13

All dimensions in inches. Isolators listed are designed to provide a minimum of 50 percent of overload capacity.

Air Density and Temperature Factors

Altitude and Temperature Selection

When selecting the AFB-H or AFBV-H for your application, correct for altitude and temperature. Using the following procedures make the necessary corrections for these conditions.

Step 1 - Correct the operating static pressure (SP_{OPER}) to standard conditions (SP_{STD}) based on operating temperature and altitude. Use air density correction factor (C_a) from the table below.

$SP_{STD}=SP_{OPER}/C_a$

Step 2 - Select the size fan needed to operate the unit at the desired CFM and standard static pressure by using the performance tables.

Step 3 - From the performance table, select the BHP (BHP_{STD}) for the specific unit and convert it to actual operating BHP (BHP_{OPER}) by multiplying it by the air density correction factor (C_a).

$BHP_{OPER} = BHP_{STD} \times C_a$

Example
8800 CFM
1" w.g. static pressure
400°F
6,000 ft.

Step 1 - At an altitude of 6,000 ft. and temperature of 400°F, the air density correction factory (C_a) is 0.494.

ST_{STD} = 1" w.g./0.494 = 2.02 or approximately 2"

Step 2 - Now, we select from the performance table a 28 AFBV-H. The cataloged performance is 1699 RPM and 4.67 BHP. The 4.67 BHP is for 0.075 density and not actual operating density.

Step 3 - Convert the BHP to actual conditions.

BHP_{OPER} = 4.67 BHP_{STD} x 0.494 = 2.31

Summary - For a 28 AFBV-H to deliver 8,800 CFM of 400°F air 1" w.g. static pressure at 6,000 ft. elevation, the fan will require 1699 RPM and 2.31 BHP.

Air Density Correction Factor (C_a)

Air Temp °F	Altitude in Feet Above Sea Level												
	0	1000	2000	3000	4000	5000	6000	7000	8000	9000	10000	15000	20000
	Barometric Pressure in Inches of Mercury												
	29.92	28.86	27.82	26.82	25.84	24.90	23.98	23.09	22.22	21.39	20.58	16.89	13.75
70	1.000	0.965	0.930	0.896	0.864	0.832	0.801	0.772	0.743	0.715	0.688	0.564	0.460
100	0.946	0.913	0.880	0.848	0.817	0.788	0.758	0.730	0.703	0.677	0.651	0.534	0.435
150	0.869	0.838	0.808	0.779	0.750	0.723	0.696	0.670	0.645	0.621	0.598	0.490	0.399
200	0.803	0.774	0.747	0.720	0.693	0.668	0.644	0.620	0.596	0.574	0.552	0.453	0.369
250	0.746	0.720	0.694	0.669	0.645	0.621	0.598	0.576	0.554	0.534	0.513	0.421	0.343
300	0.697	0.673	0.648	0.625	0.602	0.580	0.559	0.538	0.518	0.498	0.480	0.394	0.320
350	0.654	0.631	0.608	0.586	0.565	0.544	0.524	0.505	0.486	0.468	0.450	0.369	0.301
400	0.616	0.594	0.573	0.552	0.532	0.513	0.494	0.475	0.458	0.440	0.424	0.348	0.283
450	0.582	0.562	0.541	0.522	0.503	0.485	0.467	0.449	0.432	0.416	0.400	0.329	0.268
500	0.552	0.532	0.513	0.495	0.477	0.459	0.442	0.426	0.410	0.395	0.380	0.312	0.254

Maximum Tip Speed

Product	Maximum Tip Speeds (FPM) for Various Temperatures Temperature in °F						
	-50	0	70	180	350	400	500
AFB-C/AFBV-C	22219	22219	22219	22219	-	-	-
AFB-H/AFBV-H	10039	14140	14140	14140	13291	13150	12584
AFB-S/AFBV-S	10039	14140	14140	14140	-	-	-

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