SHELDONS ENGINEERING Inc.

Sheldons Engineering Product Index www.sheldonsengineering.com

TYPICAL SPECIFICATION POWER ROOF VENTILATOR –9700 Vaneaxial

GENERAL

The roof ventilator shall be mounted with up-blast discharge and include a complete (direct/belt) driven vaneaxial type fan as designed and manufactured by Sheldons Engineering to ensure smooth operation. Fan wheel shall be (steel/aluminum/stainless steel or graphite reinforced plastic-GRP) construction to ensure continuous operation in a hostile environment. Unless otherwise directed, fans shall have the arrangement, motor position and orientation as shown on the layout drawings.

PERFORMANCE (Fixed Pitch or Adjustable Pitch Aluminum Wheel)

Fan ratings shall be based on tests made in accordance with AMCA Standard 210. Flow shall be actual volumetric flow at the fan inlet. Fan static pressure is defined as static pressure at fan outlet less total pressure at fan inlet. Standard inlet density is to be taken as 0.75 lb/ft^3 with corrections for temperature, elevation, inlet static pressure, gas composition and humidity as defined in the schedule. Fans shall be selected to operate to the right of the peak static pressure at the given speed to ensure stable performance. Fan brake horsepower shall be equal to or less than specified at the given flow and fan static pressure.

SOUND

Fan manufacturers shall provide sound power level ratings for fans tested and rated in accordance with AMCA Standards 300 and 301. Sound power ratings shall be in decibels (reference 10-12 watts) in eight octave bands. Sound power levels will be corrected for installation by the specifying engineer...dBA or sound pressure levels only are not acceptable.

CONSTRUCTION

Fan housings are to be heavy -- min. 12 gauge, continuously welded construction with flanged and punched inlet and outlet. Housings with lock seams or spot welded construction are not acceptable.

Windband to be heavy gauge, galvanized steel seam welded. Dampers fabricated of aluminum sheet with flanged edges for rigid performance. Rain tight weather cover furnished for all v-belt driven fans. Roof curb sheet to be heavy gauge steel—at least twice the thickness of the housing with flanged edges to simplify flashing to roof curb and ensure leak proof installation. Aerodynamically designed straightening vanes are to be integral to the fan housing. Bearing lubrication lines to be extended to a termination point inside the weather cover. Rotors shall be attached to motor shaft by use of split, taper-lock Q-D bushing. A locking plate is bolted to the end of the shaft to ensure safe operation.

BEARINGS (belt driven fans)

Bearings are to be heavy duty, grease lubricated, precision anti-friction deep grove ball or spherical roller, self-aligning design. Bearings shall be designed for a minimum L-10 life of 40,000 when rated at the fan's maximum cataloged operating speed.

SHELDONS ENGINEERING Inc.

TYPICAL SPECIFICATION POWER ROOF VENTILATOR –9700 Vaneaxial

SHAFT (belt driven fans)

Shafts are to be ASTM A-108 steel, grade 1040/1045, precision turned, ground and polished. Grade 1018 steel is not acceptable. The shaft's first critical speed shall be at least 143% of the fan's maximum operating speed.

PAINT

All fan surfaces are to be thoroughly prepared prior to painting using a combination of washing and hand and power tool cleaning as required in SSPC-SP-3. After cleaning, all surfaces (except wheel if other than steel) are to be coated with industrial grade alkyd enamel. Surfaces of bolted components not accessible after assembly shall be coated and allowed to dry prior to final assembly. Primer only will not be accepted. When a stainless steel fan is specified, steel parts have an SSPC-SP-6 surface preparation and gray epoxy paint is applied.

BALANCE & INSPECTION

All fans shall be precision balanced to ISO quality grade 2.5, report to be submitted with the maintenance manual. A final inspection by a qualified inspector prior to shipment is required to include: scope of supply confirmation, balance, welding, dimensions, bearings, duct and base connection points, paint finish and overall workmanship.

ACCESSORIES

Accessories shall be provided as called for in the plans and specifications. Standard accessories include:

Motor to be NEMA Design B 3/60/460-575V-1800 rpm, high efficiency TEFC 1.15 SF
V-Belt Drives - Variable Speed/Constant Speed with min 1.5 SF
Belt Guard or weather cover required on belt driven fans
Extended lubrication lines (nylon, copper or stainless steel) with fittings terminating in an accessible area. (belt driven fans only)

Additional Features that may be required:
Split pillow block bearings
Access Door – bolted/quick opening or plug type with raised door
Companion Flange (angle companion flange bolted to the fan inlet or outlet flange)
Inlet or Outlet screen heavy gauge wire on 1” or 2” centres
Inlet Bell streamlined for smooth air flow, flanged and bolted to the fan inlet
Above 300°F, split pillow block bearings required
Above 500°F, high temperature aluminum paint required
Vibration Isolation - Spring - Rubber-In-Shear
Fusable disconnect – to open the dampers in the event of fire
Square hinged mushroom hood with birdscreen &/or bugscreen &/or filters
Spark Resistant Construction –
AMCA “A” All parts of the fan in contact with the air stream non-ferrous material
AMCA “B” Non-ferrous wheel and aluminum rubbing ring where shaft passes through Housing with shaft seal and sealed belt fairing

SHELDONS ENGINEERING Inc.

Sheldons Engineering Product Index www.sheldonsengineering.com

TYPICAL SPECIFICATION POWER ROOF VENTILATOR –9700 Tubeaxial

GENERAL

The roof ventilator shall be mounted with up-blast discharge and include a complete (direct/belt) driven tubeaxial type fan as designed and manufactured by Sheldons Engineering to ensure smooth operation. Fan wheel shall be (steel/aluminum/stainless steel or graphite reinforced plastic-GRP) construction to ensure continuous operation in a hostile environment. Unless otherwise directed, fans shall have the arrangement, motor position and orientation as shown on the layout drawings.

PERFORMANCE (Fixed Pitch or Adjustable Pitch Aluminum Wheel)

Fan ratings shall be based on tests made in accordance with AMCA Standard 210. Flow shall be actual volumetric flow at the fan inlet. Fan static pressure is defined as static pressure at fan outlet less total pressure at fan inlet. Standard inlet density is to be taken as 0.75 lb/ft^3 with corrections for temperature, elevation, inlet static pressure, gas composition and humidity as defined in the schedule. Fans shall be selected to operate to the right of the peak static pressure at the given speed to ensure stable performance. Fan brake horsepower shall be equal to or less than specified at the given flow and fan static pressure.

SOUND

Fan manufacturers shall provide sound power level ratings for fans tested and rated in accordance with AMCA Standards 300 and 301. Sound power ratings shall be in decibels (reference 10-12 watts) in eight octave bands. Sound power levels will be corrected for installation by the specifying engineer...dBA or sound pressure levels only are not acceptable.

CONSTRUCTION

Fan housings are to be heavy -- min. 12 gauge, continuously welded construction with flanged and punched inlet and outlet. Housings with lock seams or spot welded construction are not acceptable.

Windband to be heavy gauge, galvanized steel seam welded. Dampers fabricated of aluminum sheet with flanged edges for rigid performance. Rain tight weather cover furnished for all v-belt driven fans. Roof curb sheet to be heavy gauge steel—at least twice the thickness of the housing with flanged edges to simplify flashing to roof curb and ensure leak proof installation. Aerodynamically designed straightening vanes are to be integral to the fan housing. Bearing lubrication lines to be extended to a termination point inside the weather cover. Rotors shall be attached to motor shaft by use of split, taper-lock Q-D bushing. A locking plate is bolted to the end of the shaft to ensure safe operation.

BEARINGS (belt driven fans)

Bearings are to be heavy duty, grease lubricated, precision anti-friction deep grove ball or spherical roller, self-aligning design. Bearings shall be designed for a minimum L-10 life of 40,000 when rated at the fan's maximum cataloged operating speed.

SHELDONS ENGINEERING Inc.

TYPICAL SPECIFICATION POWER ROOF VENTILATOR –9700 Tubeaxial

SHAFT (belt driven fans)

Shafts are to be ASTM A-108 steel, grade 1040/1045, precision turned, ground and polished. Grade 1018 steel is not acceptable. The shaft's first critical speed shall be at least 143% of the fan's maximum operating speed.

PAINT

All fan surfaces are to be thoroughly prepared prior to painting using a combination of washing and hand and power tool cleaning as required in SSPC-SP-3. After cleaning, all surfaces (except wheel if other than steel) are to be coated with industrial grade alkyd enamel. Surfaces of bolted components not accessible after assembly shall be coated and allowed to dry prior to final assembly. Primer only will not be accepted. When a stainless steel fan is specified, steel parts have an SSPC-SP-6 surface preparation and gray epoxy paint is applied.

BALANCE & INSPECTION

All fans shall be precision balanced to ISO quality grade 2.5, report to be submitted with the maintenance manual. A final inspection by a qualified inspector prior to shipment is required to include: scope of supply confirmation, balance, welding, dimensions, bearings, duct and base connection points, paint finish and overall workmanship.

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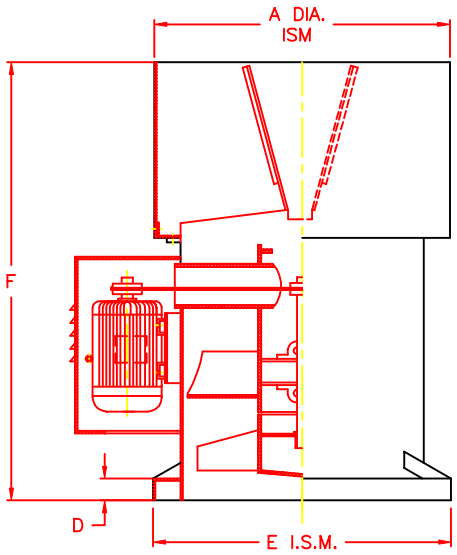
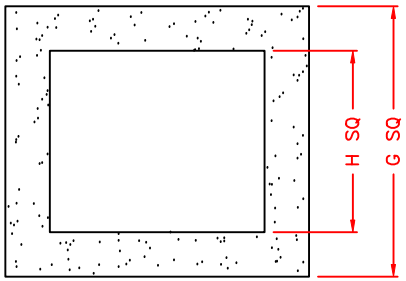
Motor to be NEMA Design B 3/60/460-575V-1800 rpm, high efficiency TEFC 1.15 SF
V-Belt Drives - Variable Speed/Constant Speed with min 1.5 SF
Belt Guard or weather cover required on belt driven fans
Extended lubrication lines (nylon, copper or stainless steel) with fittings terminating in an accessible area. (belt driven fans only)

Additional Features that may be required:

Split pillow block bearings
Access Door – bolted/quick opening or plug type with raised door
Companion Flange (angle companion flange bolted to the fan inlet or outlet flange)
Inlet or Outlet screen heavy gauge wire on 1” or 2” centres
Inlet Bell streamlined for smooth air flow, flanged and bolted to the fan inlet
Above 300°F, split pillow block bearings required
Above 500°F, high temperature aluminum paint required
Vibration Isolation - Spring - Rubber-In-Shear
Fusable disconnect – to open the dampers in the event of fire
Square hinged mushroom hood with birdscreen &/or bugscreen &/or filters
Spark Resistant Construction –
AMCA “A” All parts of the fan in contact with the air stream non-ferrous material
AMCA “B” Non-ferrous wheel and aluminum rubbing ring where shaft passes through Housing with shaft seal and sealed belt fairing



ELEVATION



CURB BASE

AIRFLOW

FAN SIZE	DIMENSIONS										
	A	D	E	F	G	H	SHAFT DIA. CL I	SHAFT DIA. CL II			
15	23 1/2	2	26	30 1/16	25	17	15/16	1 3/16			
18 1/4	25 1/2	3	30	37	29	21	1 3/16	1 3/16			
20	29 1/2	3	25 1/2	40	24 1/2	23	1 3/16	1 7/16			
24 1/2	33 1/2	3	36	49 1/16	35	27	1 7/16	1 7/16			
27	37 1/2	3	39	53 15/16	38	30	1 7/16	1 15/16			
30	41 1/2	3	42	59	41	33	1 7/16	1 15/16			
33	47 1/2	3 1/2	45	65 7/16	44	36	1 11/16	1 15/16			
36 1/2	47 1/2	3 1/2	49 1/2	69 1/2	48 1/2	39	2 3/16	2 3/16			
40 1/4	53 1/2	3 1/2	52	76	51	43	2 3/16	2 11/16			
44 1/2	59 1/2	3 1/2	56	85 3/8	55	47	2 3/16	2 15/16			
49	61 1/2	3 1/2	60	90 9/16	59	51	2 7/16	3 7/16			
54 1/4	65 1/2	3 1/2	66	99 5/8	65	57	2 7/16	3 7/16			
60	72 1/2	4	72	110 1/2	71	63	S.D.R.	S.D.R.			

ITEM NO.	NO. REQD.	FAN SIZE	CLASS	MODEL	PERFORMANCE				MOTOR DATA				
					CFM	SP	R.P.M.	BHP	HP	RPM	CURRENT	FRAME	TYPE

ITEM NO.	DRIVE DATA				SPECIAL FEATURES	UNIT TAGGING
	MTR. SHV.	FAN SHV.	BELTS	CTRS.		

SPECIAL FEATURES

1. ACCESS DOOR (PAINT BOOTH)
2. MOTOR MOUNTING
3. WEATHERHOOD
4. EXTENDED GREASE FITTINGS
5. SPECIAL FINISH–SEE NOTE

CUSTOMER

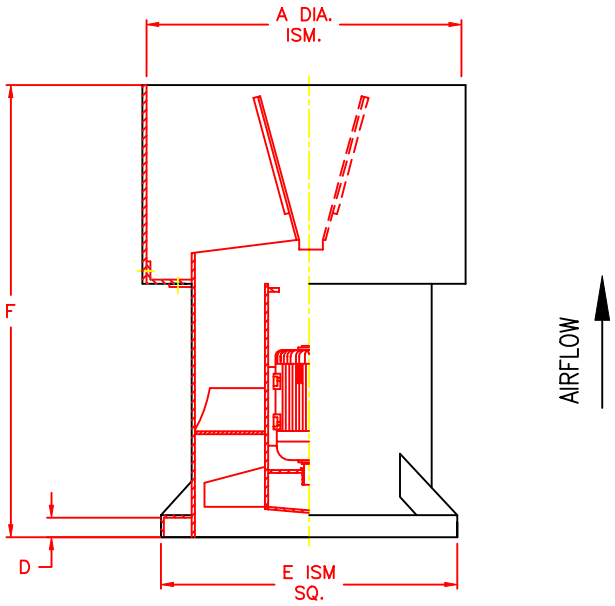
PROJECT

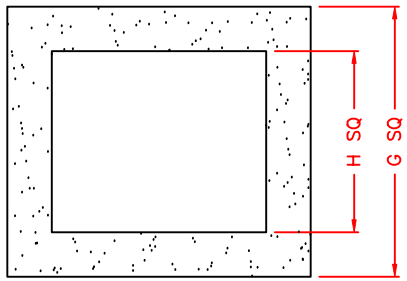
SERIES 9700 VANE AXIAL
BELT DRIVEN POWER ROOF VENTILATOR
ARRANGEMENT 9 CL I, II

SHELDONS ENGINEERING
www.sheldonsengineering.com
sales@sheldonsengineering.com

CUSTOMER ORDER NO	S.O.NO.	DATE

DRAWN BY:	CHECK BY:	DRAWING NO.





CURB BASE

FAN SIZE	DIMENSIONS										
	A	D	E	F	G	H	MAX. FRAME				
15	23 1/2	2	26	29 1/16	25	17					
18 1/4	25 1/2	3	30	33 9/16	29	21					
20	29 1/2	3	32	38 3/16	31	23					
24 1/2	33 1/2	3	36	45 17/32	35	27					
27	37 1/2	3	39	50 15/32	38	30					
30	41 1/2	3	42	55 3/8	41	33					
33	47 1/2	3 1/2	45	59 11/32	44	36					
36 1/2	47 1/2	3 1/2	48	61 13/16	47	39					
40 1/4	53 1/2	3 1/2	52	70 13/16	51	43					
44 1/2	59 1/2	3 1/2	56	79 27/32	55	47					
49	61 1/2	3 1/2	60	86 1/16	59	51					
54 1/4	65 1/2	3 1/2	66	91 1/16	65	57					
60	72 1/2	4	72	97 3/16	71	63					

ITEM NO.	NO. REQD.	FAN SIZE	CLASS	MODEL	PERFORMANCE				MOTOR DATA				
					CFM	SP	R.P.M.	BHP	HP	RPM	CURRENT	FRAME	TYPE

ITEM NO.	DRIVE DATA				SPECIAL FEATURES	UNIT TAGGING
	MTR. SHV.	FAN SHV.	BELTS	CTRS.		

SPECIAL FEATURES

1. ACCESS DOOR
2. MOTOR MOUNTING
3. WEATHERHOOD
4. EXTENDED GREASE FITTINGS
5. SPECIAL FINISH–SEE NOTE

NOTES:

1. FANS ARE COMPLETE WITH WIND GUARD, HINGED BACKDRAFT DAMPERS AND STEEL SQUARE MOUNTING BASE.

CUSTOMER _____

PROJECT _____

SERIES 9700 VANE AXIAL
DIRECT DRIVEN POWER ROOF VENTILATOR
ARRANGEMENT 4

SHELDONS ENGINEERING
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sales@sheldonsengineering.com

CUSTOMER ORDER NO	S.O.NO.	DATE

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9700–03–98