



# FAN SELECTION And PERFORMANCE

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Job Name: Oskar Environmental  
 Reference: Quote: 164716

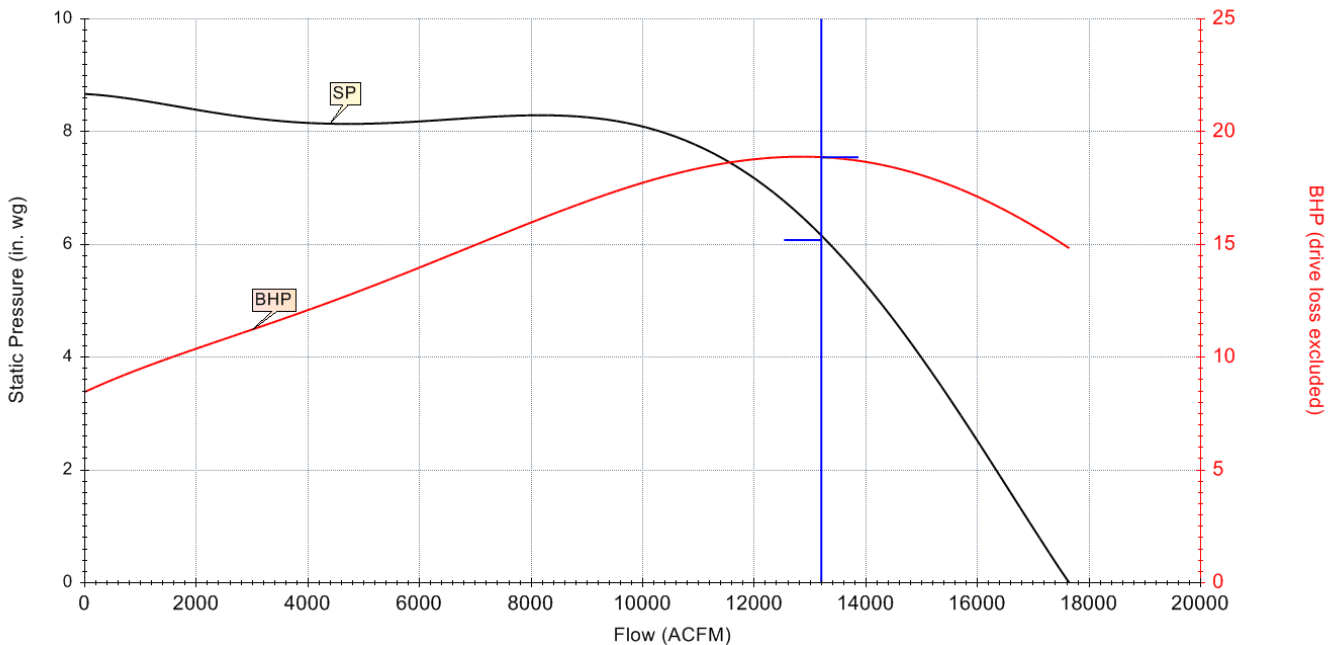
## Operating Requirements

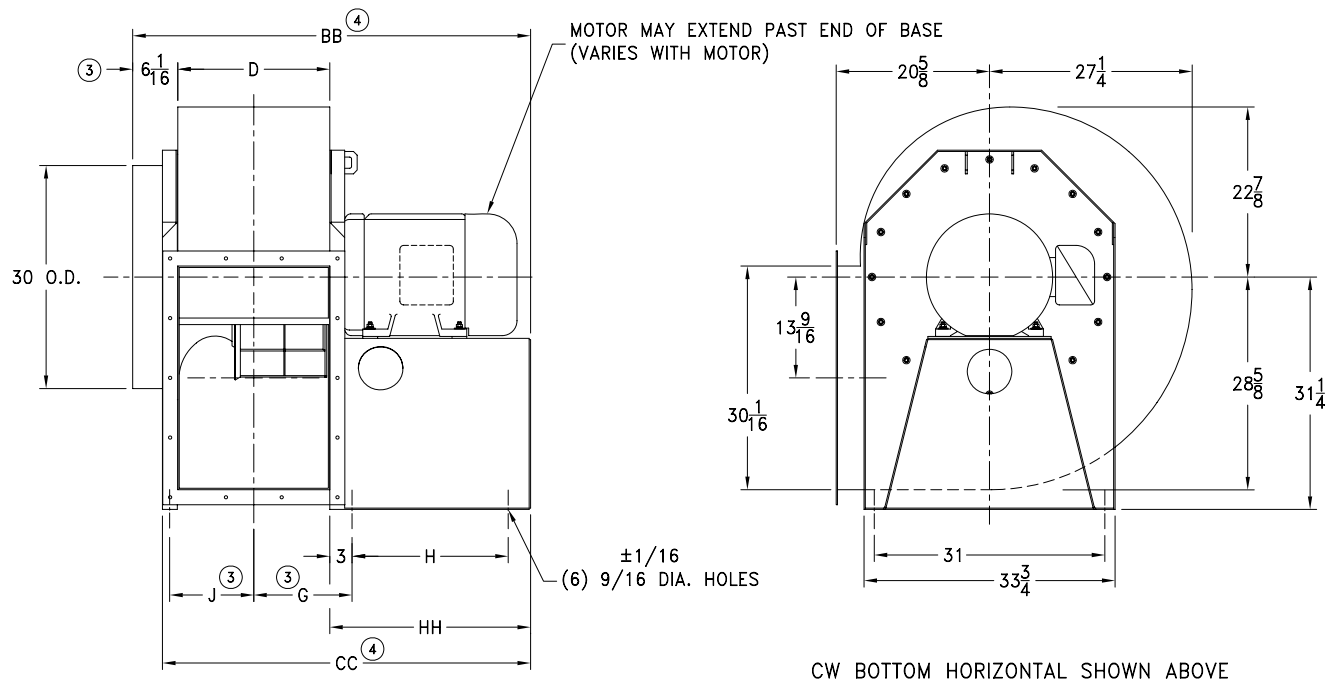
Volume, ACFM	13,200
Static Pressure, in. wg	6.0
Density, lb./ft. <sup>3</sup>	0.075
Operating Temperature, °F	70
AMCA Arrangement No.	4
Motor Frequency, Hz	60
Start-Up Temperature, °F	70

## Fan Selection and Specifications

Model	HDBI-270	
Fan RPM	1,750	
Wheel Description	HD Backward Inclined	
Wheel Width, %	90%	
Wheel Diameter, in.	27.00	
Inlet Diameter, in.	30.00	
Outlet Velocity, ft./min.	3,284	
Fan BHP	18.9	Suggested Motor HP: 20.0
Static Efficiency, %	67.3%	
Cold Start BHP	18.9	
Construction Class	Class IV	

Cincinnati Fan HDBI-270 HD Backward Inclined Wheel (90% Width) @ 1,750 RPM  
 Rating Point: 13,200 ACFM @ 6.0 in. wg SP, 0.075 lb./ft.<sup>3</sup> Density, 18.9 BHP



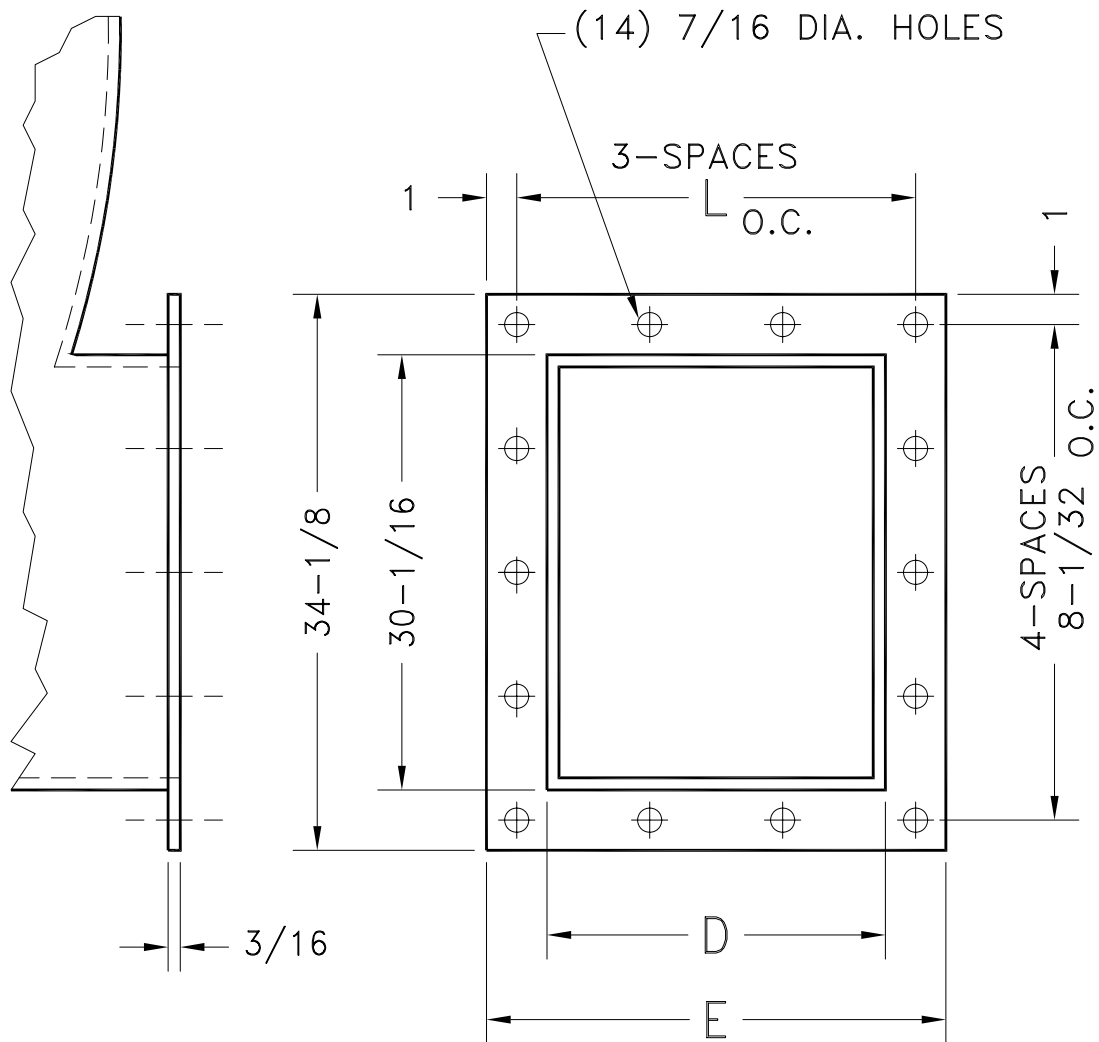


% WIDTH	D	③ G	③ J
100%	20 7/16	13 1/4	11 5/16
95%	19 15/16	12 31/32	11 1/32
90%	19 3/8	12 11/16	10 3/4
85%	18 7/8	12 7/16	10 1/2
80%	18 5/16	12 5/32	10 7/32
75%	17 13/16	11 29/32	9 31/32
70%	17 1/4	11 5/8	9 11/16
65%	16 3/4	11 3/8	9 7/16
60%	16 3/16	11 3/32	9 5/32
55%	15 11/16	10 27/32	8 29/32
50%	15 1/8	10 9/16	8 5/8

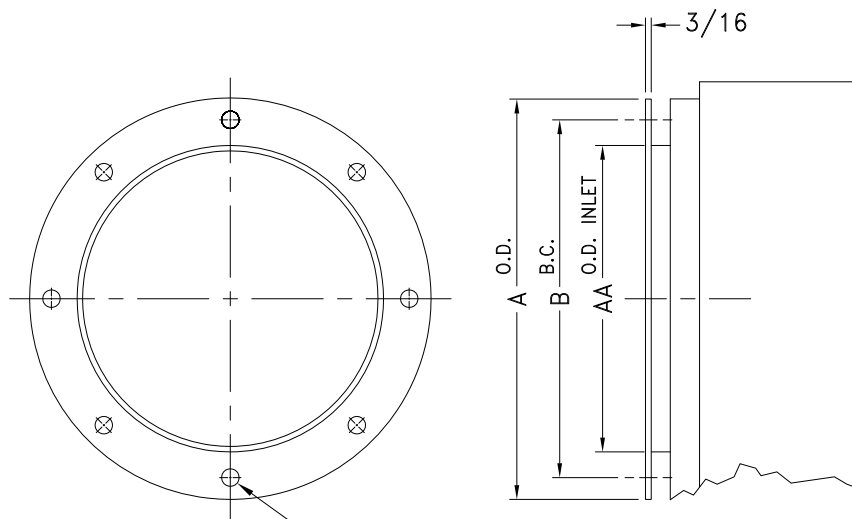
STANDARD BASES (SMALL)				
MOTOR FRAME 213T-256T				
H	HH	④ BB	④ CC	WEIGHT *
11 1/2	17 1/2	44	40	690
		43 1/2	39 1/2	685
		42 15/16	38 15/16	680
		42 7/16	38 7/16	675
		41 7/8	37 7/8	670
		41 3/8	37 3/8	665
		40 13/16	36 13/16	660
		40 5/16	36 5/16	655
		39 3/4	35 3/4	650
		39 1/4	35 1/4	645
38 11/16	34 11/16	640		

LARGE BASES				
MOTOR FRAME 284T-326T				
H	HH	④ BB	④ CC	WEIGHT *
21	27	53 1/2	49 1/2	730
		53	49	725
		52 7/16	48 7/16	720
		51 15/16	47 15/16	715
		51 3/8	47 3/8	710
		50 7/8	46 7/8	705
		50 5/16	46 5/16	700
		49 13/16	45 13/16	695
		49 1/4	45 1/4	690
		48 3/4	44 3/4	685
48 3/16	44 3/16	680		

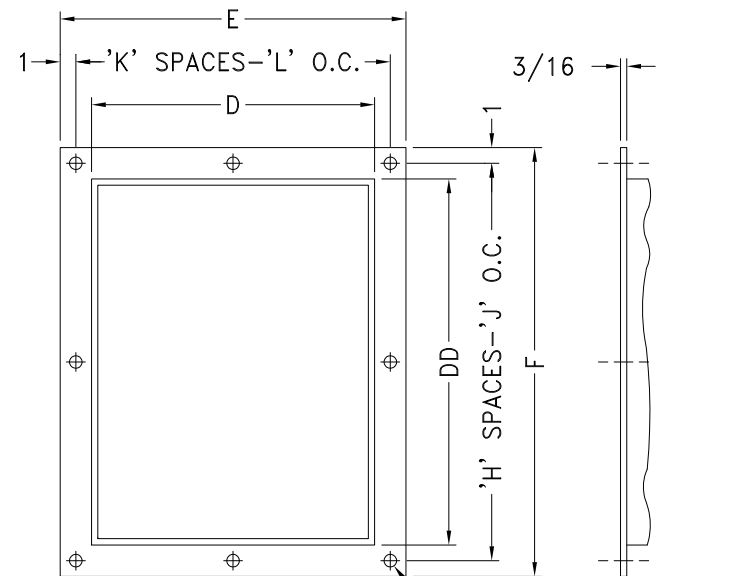
- NOTES:
- FANS ARE ROTATABLE IN 45° INCREMENTS.
  - DISCHARGE FLANGE IS STANDARD.
  - ADD 1/8" FOR AMCA "C" CONSTRUCTION FANS AND/OR DOWNBLAST DISCHARGE POSITION.
  - ADD 1/4" FOR AMCA "C" CONSTRUCTION FANS AND/OR DOWNBLAST DISCHARGE POSITION.
  - \*5. WEIGHT DOES NOT INCLUDE MOTOR OR OPTIONS.



% WIDTH	D	E	L
110	21-7/16	25-7/16	7-13/16
100	20-7/16	24-1/2	7-1/2
95	19-15/16	24	7-11/32
90	19-3/8	23-7/16	7-5/32
85	18-7/8	22-15/16	6-31/32
80	18-5/16	22-3/8	6-25/32
75	17-13/16	21-7/8	6-5/8
70	17-1/4	21-5/16	6-7/16
65	16-3/4	20-13/16	6-9/32
60	16-3/16	20-1/4	6-3/32
55	15-11/16	19-3/4	5-29/32
50	15-1/8	19-3/16	5-23/32



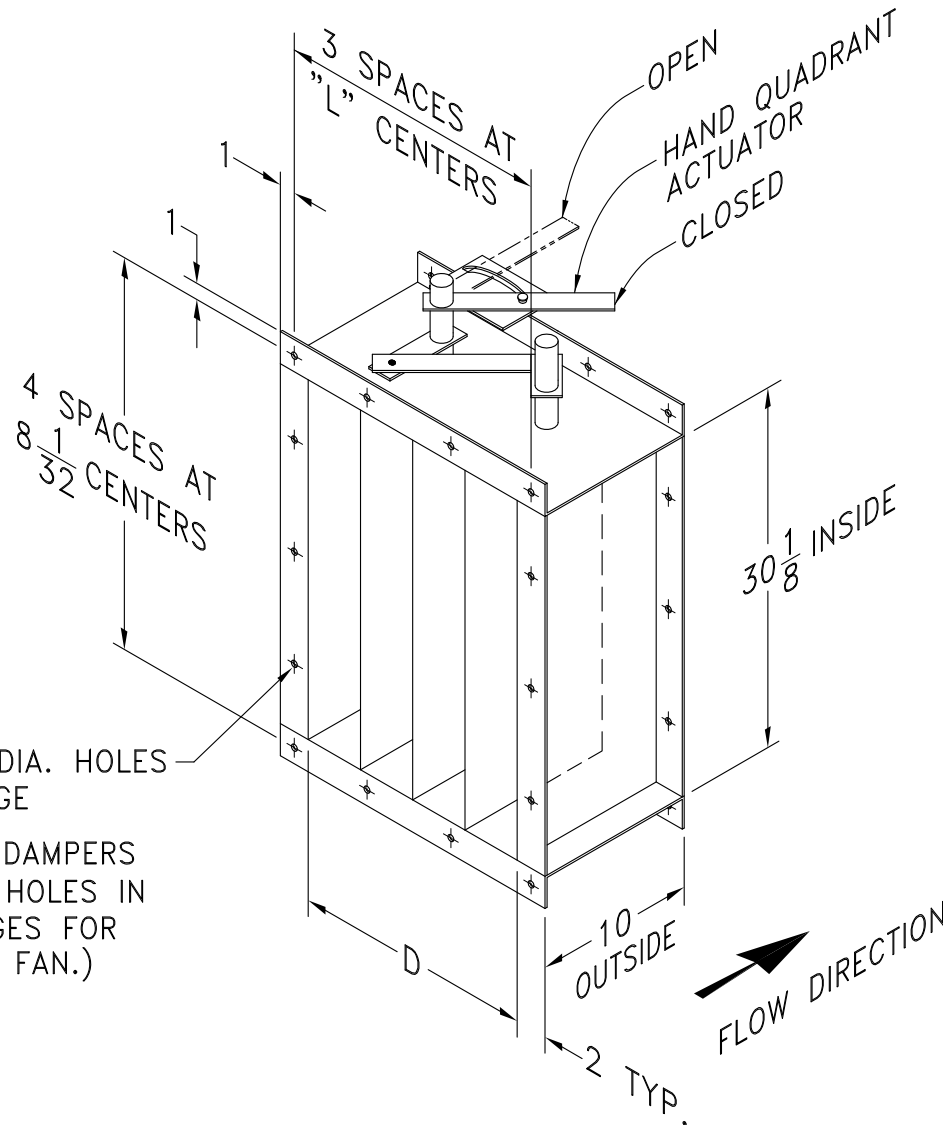
INLET FLANGE  
"N" HOLES, "P" DIA.



DISCHARGE FLANGE ①  
"M" 7/16 DIA. HOLES

SIZE	INLET					DISCHARGE								
	A O.D.	B B.C.	N	AA DIA.	P	D	E	F	H	J	K	L	M	DD
120	16	14-3/8	8	13-1/4	7/16	9-3/8	13-3/8	17-11/16	2	7-27/32	2	5-11/16	8	13-3/4
130	17-3/4	15-15/16	8	14-5/8	7/16	10-3/8	14-3/8	19-3/16	2	8-19/32	2	6-3/16	8	15-1/4
150	19-1/4	17-1/2	8	16-1/8	7/16	11-3/8	15-3/8	20-3/4	3	6-1/4	2	6-11/16	10	16-13/16
160	21-1/8	19-3/8	8	18	7/16	12-1/2	16-1/2	22-7/16	3	6-13/16	2	7-1/4	10	18-7/16
180	23-1/2	21-1/2	12	20	7/16	13-7/8	17-7/8	24-1/2	3	7-1/2	2	7-15/16	10	20-3/8
200	25-1/2	23-1/2	12	22	7/16	15-1/4	19-1/4	26-3/8	3	8-1/8	3	5-3/4	12	22-3/8
220	28-1/8	26-1/8	12	24-5/8	7/16	16-7/8	20-15/16	28-7/8	4	6-23/32	3	6-5/16	14	24-7/8
240	30-3/4	28-3/4	16	27	7/16	18-9/16	22-5/8	31-3/8	4	7-11/32	3	6-7/8	14	27-3/8
270	33-3/4	31-5/8	16	30	7/16	20-7/16	24-1/2	34-1/8	4	8-1/32	3	7-1/2	14	30-1/16
300	37-1/4	35-1/4	16	33-1/2	7/16	22-3/4	26-3/4	37-5/8	5	7-1/8	3	8-1/4	16	33-9/16
330	40-3/8	38-3/4	16	36-3/4	1/2	24-7/8	28-7/8	40-7/8	7	5-9/16	5	5-3/8	24	36-3/4
360	43-5/8	42	16	40	1/2	27-1/4	31-1/4	44-1/4	7	6-1/32	5	5-27/32	24	40-1/4

NOTE:  
① NOT AVAILABLE ON ANY MODEL FOR DOWNBLAST, BOTTOM ANGULAR DOWN OR TOP ANGULAR DOWN DISCHARGE POSITIONS.  
DISCHARGE FLANGE IS STANDARD ON SIZES -270 THRU -360.



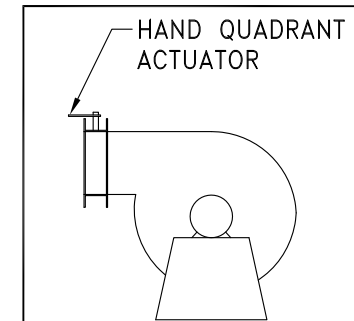
(14) 7/16 DIA. HOLES EACH FLANGE

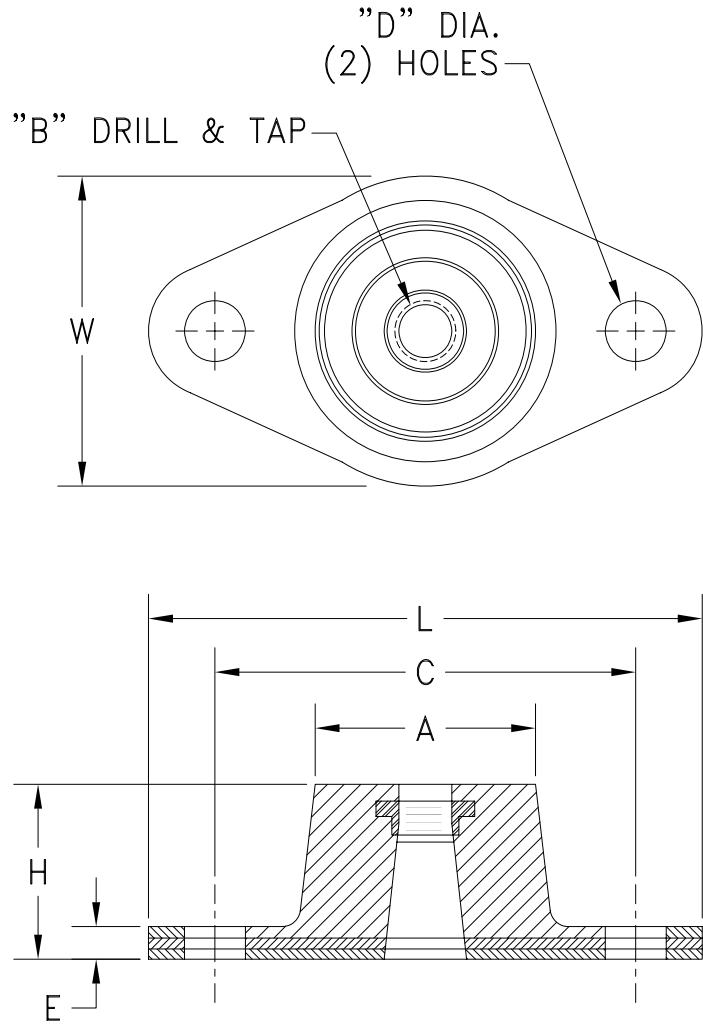
(STANDARD DAMPERS HAVE BOLT HOLES IN BOTH FLANGES FOR BOLTING TO FAN.)

NOTES:

1. OPPOSED BLADE IS STANDARD. □ PARALLEL BLADE IS OPTIONAL.
2. DAMPER BLADES WILL BE PERPENDICULAR TO FAN SHAFT.
3. STANDARD MATERIAL IS CARBON STEEL WITH RUST INHIBITING PRIMER. □ OPTIONAL MATERIAL \_\_\_\_\_.
4. STANDARD CONSTRUCTION MAX. TEMPERATURE: 300° F.  
□ OPTIONAL HIGH TEMPERATURE CONSTRUCTION MAX. TEMPERATURE: 800° F.

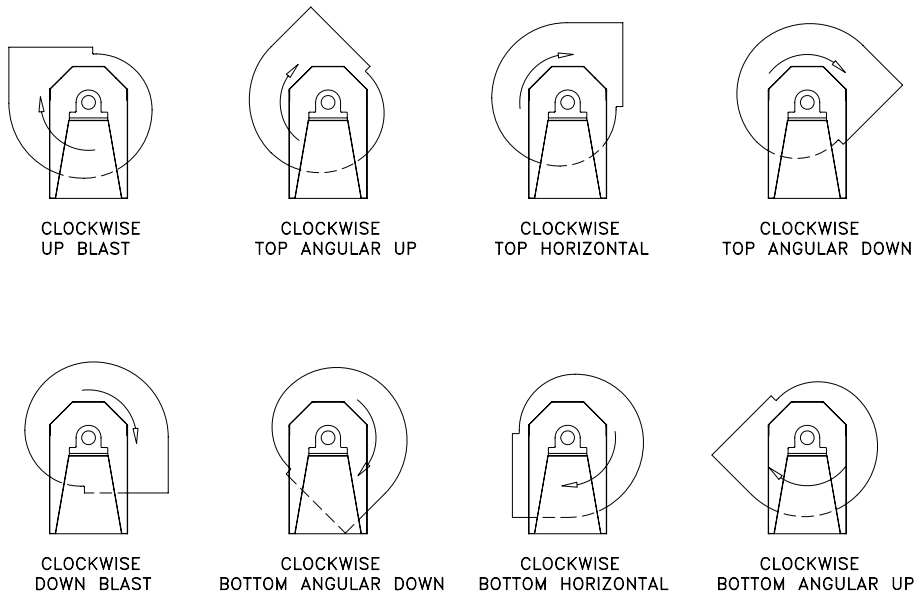
% WIDTH	D	L
100	20-1/2	7-1/2
95	20-1/32	7-11/32
90	19-15/32	7-5/32
85	18-29/32	6-31/32
80	18-11/32	6-25/32
75	17-7/8	6-5/8
70	17-5/16	6-7/16
65	16-27/32	6-9/32
60	16-9/32	6-3/32
55	15-23/32	5-29/32
50	15-5/32	5-23/32
45	14-19/32	5-17/32



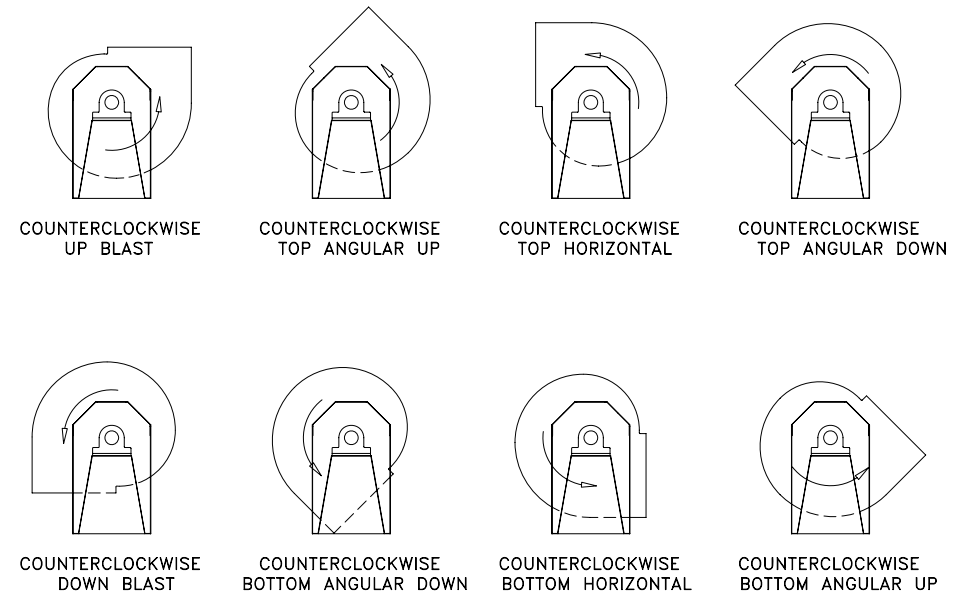


TYPE R NEOPRENE IN SHEAR MOUNTINGS													
TYPE	MAX LOAD EACH LBS.	DEFLECTION IN INCHES	DIMENSIONS IN INCHES										
			R	L	W	H	A	B	C	D	E		
R1	BLUE	35	0.20	$3\frac{1}{8}$	$1\frac{3}{4}$	1	$1\frac{1}{4}$	$5\frac{5}{16}$	18	NC	$2\frac{3}{8}$	$11\frac{11}{32}$	$\frac{3}{16}$
	BLACK	45											
	RED	70											
	GREEN	120											
R2	BLUE	135	0.25	$3\frac{7}{8}$	$2\frac{3}{8}$	$1\frac{1}{4}$	$1\frac{3}{4}$	$3\frac{3}{8}$	16	NC	3	$11\frac{11}{32}$	$\frac{7}{32}$
	BLACK	170											
	RED	240											
	GREEN	380											
R3	BLACK	250	0.25	$5\frac{1}{2}$	$3\frac{3}{8}$	$1\frac{3}{4}$	$2\frac{1}{2}$	$1\frac{1}{2}$	13	NC	$4\frac{1}{8}$	$\frac{9}{16}$	$\frac{1}{4}$
	RED	525											
	GREEN	750											
	GRAY	1100											
R4	BLACK	1500	0.25	$6\frac{1}{2}$	$4\frac{1}{4}$	$1\frac{3}{4}$	$3\frac{3}{4}$	$5\frac{5}{8}$	11	NC	5	$\frac{9}{16}$	$\frac{1}{4}$
	RED	2250											
	GREEN	3000											
	GRAY	4000											

CLOCKWISE ROTATION



COUNTERCLOCKWISE ROTATION



- NOTES:
1. DIRECTION OF ROTATION IS DETERMINED FROM DRIVE SIDE OF FAN.
  2. SAME AS AMCA STANDARD 99-2406-83.