



INDUSTRIAL PROCESS AND  
COMMERCIAL VENTILATION SYSTEMS

# HEAVY DUTY PRESSURE BLOWERS

MBO | MBR | MBW



# MBO/MBR/MBW Heavy Duty Pressure Blowers

Many industrial applications call for reliable, heavy duty pressure blowers to handle clean or dirty as well as hot airstreams at very high pressures. The types MBO, MBR and MBW radial blade heavy-duty pressure blowers are designed to fulfill this requirement while offering a high degree of reliability. The MB Series fans are specifically designed to handle relatively low flow and high static pressure without having to reduce wheel widths. The Series MB fans offer properly sized inlets and outlets for the specified airflow as well as relatively low speeds.

Twin City Fan & Blower also offers the Series 900 RBO, RBR, and RBA Industrial Fans to handle airflows to 135,000 CFM and pressures to 45" SP. See Twin City Fan & Blower Bulletin 902 for the Series 900 RB fans.



## Typical Applications

- Material conveying
- Product drying
- Air pollution control
- Fluid bed aeration
- Glass blowing
- Textile fiber stripping
- Combustion air
- Gas boosting
- High pressure industrial-process systems
- Scrubber exhaust

## Major Markets

- Chemical
- Primary metal
- Foundry
- Pulp and paper
- Glass making
- Food processing
- Textile
- Petrochemical

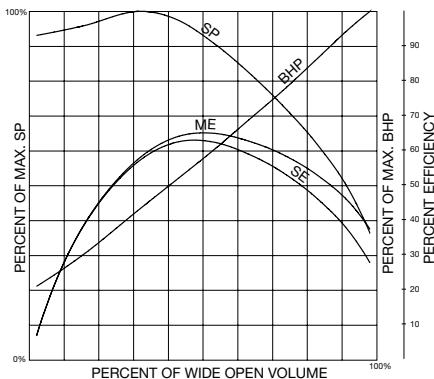
## Capabilities

- Static pressures over 125" SP.
- Airflow volume from 200 CFM to 19,000 CFM.
- Material handling capability.
- High temperature applications to 800°F.

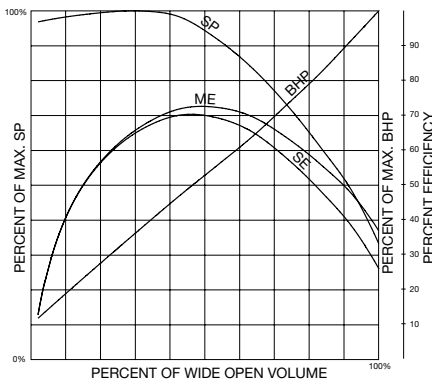
## Standard Features

- All welded heavy gauge housing, non-rotatable, with structural reinforcements to reduce vibration and minimize distortion due to pressure.
- Removable inlet plate for ease of wheel removal from inlet side.
- Lifting lugs.
- Available in mild steel, stainless steel, and other special alloys.
- Bearings selected for long, reliable performance.
- Variation in wheel diameter (95% to 105%) to match specified performance.
- Flanged inlet, flanged outlet.
- Felt type shaft seal (shaft seal does not make fan gas-tight).

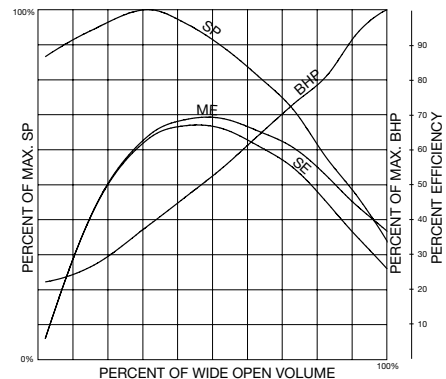
Typical MBO Performance



Typical MBR Performance



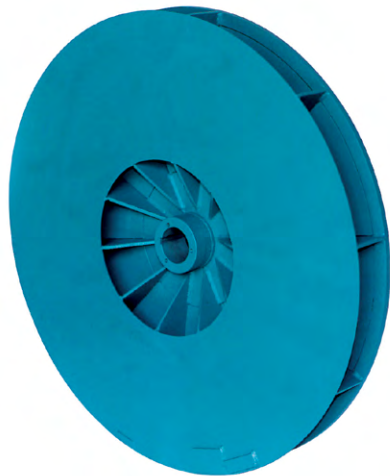
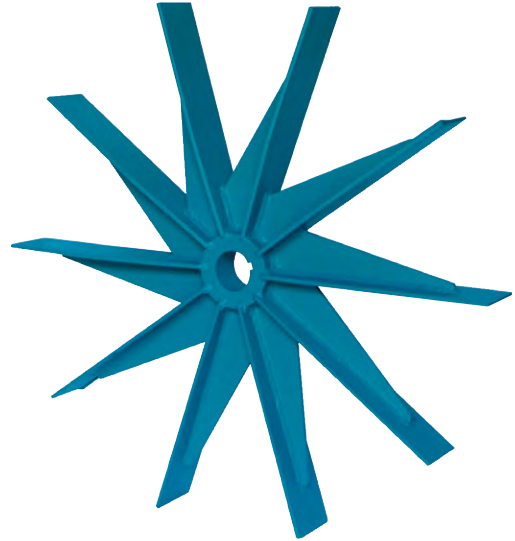
Typical MBW Performance



# Wheel Design

## Type MBO

The MBO wheel has open radial blades supported by heavy gussets. This design offers the maximum in strength and reliability for handling hot, sticky, and abrasive airstreams although at a lower efficiency than the other MB wheels.

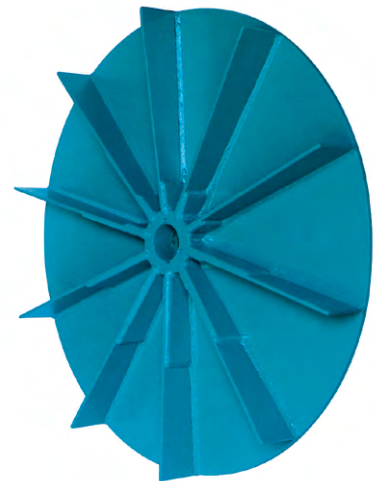


## Type MBR

The MBR wheel features heavy gauge back plate, blades, and wheel flange. The wheel flange matches the fan inlet opening to reduce air entry losses. The MBR design develops the most pressure for a given speed and wheel size and offers the highest efficiency. It is ideal for handling clean, hot or particulate-laden air.

## Type MBW

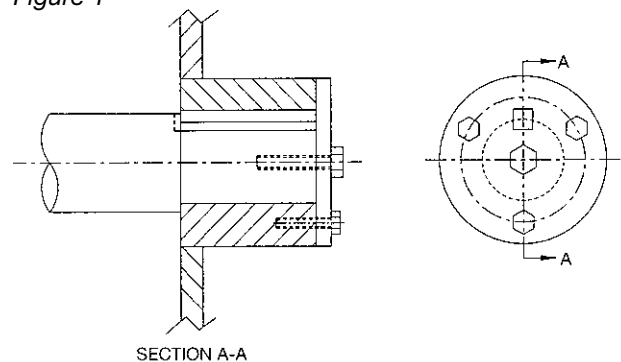
The MBW wheel features a heavy gauge back plate with no front plate. The radial blades are constructed of alloy steel. The MBW is ideal for the handling of long, stringy, or fibrous materials.



Type MB wheels are continuously welded and mounted to the shafts using an interference fit.

Figure 1 depicts wheel attachment for Arr. 1 and Arr. 8 fans. The wheel hub is secured to the shaft by use of an interference fit as well as a key. In addition, a thrust cap is bolted to the shaft and hub to prevent a loss of lock at high speeds and moderate temperature changes.

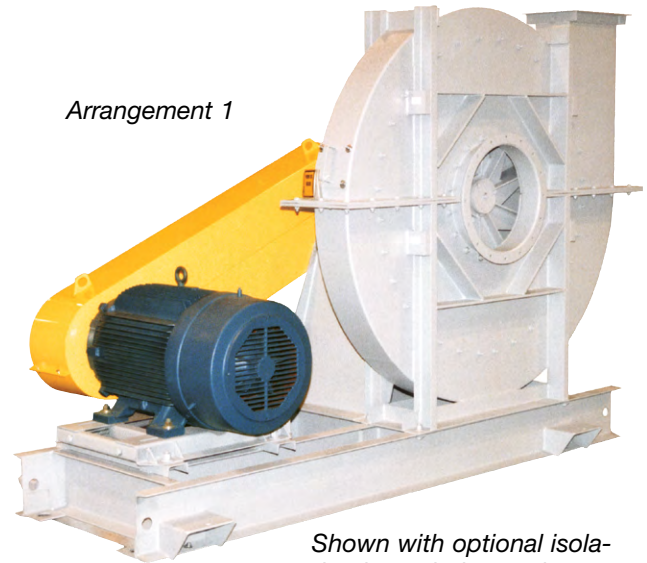
Figure 1



# Arrangements

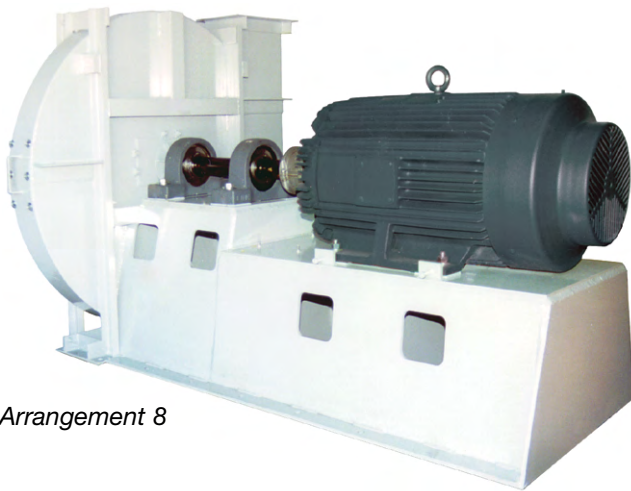
## Arrangement 1

V-belt drive fans are available in arrangement 1 only. Maximum RPM and HP for arrangement 1 fans can be found in Table 2 on page 6.



Arrangement 1

*Shown with optional isolation base, belt guard, access door, and split housing.*



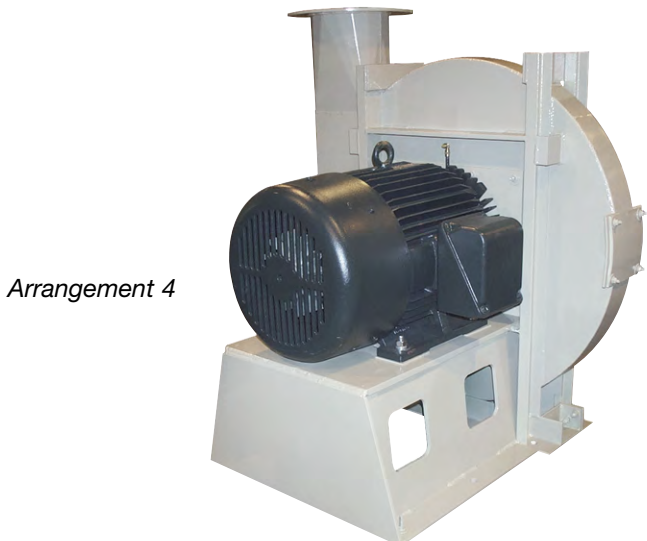
Arrangement 8

## Arrangement 8

Arrangement 8 is a direct drive unit with the bearing pedestal extended to accommodate the motor. MBO, MBR, and MBW arrangement 8 fans feature motor positioners (shown below) to facilitate easy alignment of the shaft. Maximum RPM and HP for arrangement 8 fans can be found in Table 2 on page 6.

## Arrangement 4

Arrangement 4 is a direct drive fan with the wheel mounted on the motor shaft. Arrangement 4 fans are suitable for temperatures to 180°F. Maximum RPM and HP for arrangement 4 fans can be found in Table 2 on page 6.



Arrangement 4

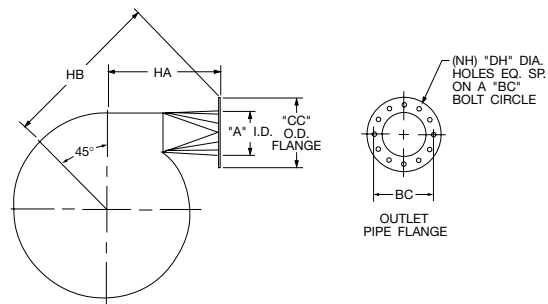


# Accessories

## Evasé / Round Outlet

Type MB fans are furnished with a rectangular outlet as standard. However, the performance shown in the bulletin is for fans with an optional Evasé to provide static regain and improved static efficiency. TCF offers a Rectangular Evasé or less expensive Round Outlet (built-in evasé). For Round Outlet, the fan housing is specially constructed with built-in square-to-round transition, offering a larger outlet area. The table at the right illustrates dimensional changes when units are ordered with the optional round outlet.

MBO/MBR/MBW Optional Round Outlet Expansion and Pipe Flange



## Inlet Bell

On installations with an open inlet, an inlet bell (venturi) is required to achieve the catalog performance. Inlet bell is provided with screen.

## Bolted or Raised Access Door

Due to the high pressures involved, a quick-opening or hinged type door is not recommended and thus not available.

## Bearings

Heavy duty ball bearings are standard. Considering the high speeds associated with the MB Series fans, Twin City Fan & Blower does not recommend split roller bearings. Consult factory for mono block type bearings.

SIZE	A	BC	CC	DH	HA	HB	NH (No.)	ROUND OUTLET AREA (FT <sup>2</sup> )
196	6.00	9.50	11.00	0.44	14.31	22.13	8	0.20
224	8.00	11.75	13.50	0.44	20.50	28.50	8	0.35
252	8.00	11.75	13.50	0.44	19.69	29.13	8	0.35
280	10.00	14.25	16.00	0.44	26.56	36.06	12	0.55
308	10.00	14.25	16.00	0.44	25.50	36.44	12	0.55
336	12.00	17.00	19.00	0.56	32.06	43.25	12	0.78
365	12.00	17.00	19.00	0.56	30.69	43.44	12	0.78
421	14.00	18.75	21.00	0.56	36.06	50.31	12	1.07
477	16.00	21.25	23.50	0.56	41.13	57.13	16	1.40
533	18.00	22.75	25.00	0.56	46.50	63.75	16	1.77
589	20.00	25.00	27.50	0.56	51.63	70.56	20	2.18

NOTE: Dimensions in inches unless otherwise indicated.

## Additional Accessories

Additional accessories include shaft guard, V-belt drive guard, coupling guard, inlet screen, drain, inlet and outlet silencers, and insulated fan housing.

# Optional Construction

## Spark Resistant Construction

The MB Series fans are available in AMCA Type "C" construction using spark-resistant material. Type "C" construction is available to 800°F. Please consult AMCA Standard 99-0401-86 or the factory for other requirements.

## Abrasion and Corrosion Resistant Alloys and Coatings

Optional construction includes abrasion resistant steel blades, back plate, and fan housing. Construction materials include Corten, stainless steel, Monel, Hastelloy, and other alloys. Construction from heavier than standard gauges is available. Special corrosion resistant coatings of various types are available.

## Split Housing

Fan sizes 365 and larger are available with horizontal or pie-shaped split housing construction.

## High Temperature Modifications

Standard designs are suitable to 180°F for Arr. 4 and 300°F for Arr. 1 and Arr. 8 fans. Units in Arr. 1 and Arr. 8 can be modified, in both steel and stainless steel, to suit applications to 800°F.

Operation at temperatures higher than 70°F adversely affects the strength of fan wheels. As a result, the maximum safe speed from Table 1 on page 6 must be derated as shown in the table below.

Derating Factors for Safe Wheel Speed

TEMP. (°F)	ALLOY STEEL	STAINLESS STEEL
70	1.00	1.00
200	0.98	0.95
250	0.97	0.93
300	0.96	0.91
400	0.94	0.88
500	0.92	0.84
600	0.89	0.81
700	0.87	0.77
800	0.72	0.75

**Table 1. Safe Wheel RPMs for MBO, MBR, and MBW @ 70°F  
(Use for Temperature Derating of Wheel ONLY)**

FAN SIZE	MBO		MBR		MBW	
	ALLOY STEEL	STAINLESS STEEL	ALLOY STEEL	STAINLESS STEEL	ALLOY STEEL	STAINLESS STEEL
196	8292	6409	7095	5484	7790	4845
224	7504	5800	6123	4732	6545	4071
252	6500	5023	5284	4084	5876	3655
280	6109	4721	4762	3681	5255	3269
308	5193	4014	4364	3373	6440	4006
336	4874	3768	3993	3086	5963	3709
365	4589	3547	3784	2925	5264	3274
421	3831	2961	4153	2540	4629	2879
477	3406	2633	2882	2227	3022	1880
533	3098	2394	2588	2000	2678	1666
589	2792	2158	2334	1804	2546	1584

**NOTE:** The maximum RPMs in Table 1 are to be used for temperature derating of wheel only. Refer to Table 2 for maximum fan RPM.

**Table 2. Fan RPM and HP Limits**

FAN SIZE	DIRECT DRIVE — ARR. 4 & 8		BELT DRIVEN — ARR. 1	
	RPM LIMIT	HP LIMIT	RPM LIMIT	HP LIMIT
196	3600	10	4000	15
224	3600	20	3500	20
252	3600	30	3000	20
280	3600	50	2500	25
308	3600	75	2500	40
336	3600	125	2500	50
365	3600	200	2500	75
421	3600	400	2500	125
477	1800	75	1800	150
533	1800	150	1800	150
589	1800	250	1800	150

**Table 3. Material Specifications**

FAN SIZE	WHEEL DIA.	SHAFT DIA.		HOUSING		MBO		MBR			MBW	
		ARR. 1	ARR. 8	SIDES	SCROLL	BLADE	BLADE SUPPORT	BLADE	FRONT PLATE	BACK PLATE	BLADE	BACK PLATE
196	19.63	1.687	1.437	0.18	0.18	0.18	0.25	0.18	0.18	0.25	0.18	0.25
224	22.44	1.937	1.437	0.18	0.18	0.18	0.25	0.18	0.18	0.25	0.18	0.25
252	25.25	1.937	1.437	0.18	0.18	0.25	0.38	0.25	0.18	0.25	0.25	0.25
280	28.06	2.187	1.687	0.25	0.25	0.25	0.38	0.25	0.18	0.25	0.25	0.25
308	30.88	2.187	1.687	0.25	0.25	0.25	0.50	0.25	0.18	0.25	0.25	0.25
336	33.69	2.187	2.187	0.25	0.25	0.25	0.50	0.25	0.18	0.25	0.25	0.25
365	36.50	2.437	2.437	0.31	0.25	0.25	0.50	0.25	0.25	0.25	0.25	0.25
421	42.13	3.437	2.937	0.31	0.25	0.25	0.50	0.25	0.25	0.31	0.25	0.25
477	47.75	3.437	2.187	0.31	0.25	0.25	0.50	0.25	0.25	0.31	0.25	0.25
533	53.38	3.437	2.187	0.31	0.25	0.25	0.50	0.25	0.25	0.31	0.25	0.25
589	58.94	3.437	2.687	0.31	0.25	0.25	0.50	0.25	0.25	0.31	0.25	0.31

**Table 4. Wheel Weights and WR<sup>2</sup> (moment of inertia in lb-ft<sup>2</sup>)**

FAN SIZE	MBO		MBR		MBW	
	LBS.	LB-FT <sup>2</sup>	LBS.	LB-FT <sup>2</sup>	LBS.	LB-FT <sup>2</sup>
196	19	4	51	17	34	9
224	26	7	66	28	45	16
252	46	14	88	50	65	28
280	58	22	108	76	80	43
308	79	33	138	114	97	63
336	96	47	164	160	117	89
365	111	63	211	239	137	123
421	155	112	305	460	187	218
477	201	182	392	757	241	359
533	260	285	490	1177	308	562
589	320	420	599	1755	427	984

**Table 5. MBO, MBR, MBW Direct Drive Minimum Horsepower Required to Start**

FAN SIZE	RPM	MINIMUM HP		
		MBO	MBR	MBW
196	3550	2	7½	5
224	3550	3	20	7½
252	3550	7½	30	20
280	3550	15	50	25
308	3550	20	75	40
336	3550	30	100	60
365	3550	40	200	100
421	3550	75	300	200
	1750	20	50	30
477	1750	25	100	50
533	1750	40	150	100
589	1750	50	200	125

**Table 6. Outlet Area (ft<sup>2</sup>)**

FAN SIZE	STANDARD RECTANGULAR OUTLET	OPTIONAL ROUND OUTLET	OPTIONAL RECTANGULAR EVASÉ
196	0.14	0.20	0.20
224	0.18	0.35	0.35
252	0.21	0.35	0.35
280	0.25	0.55	0.55
308	0.30	0.55	0.55
336	0.36	0.78	0.78
365	0.42	0.78	0.78
421	0.55	1.07	1.07
477	0.70	1.40	1.40
533	0.86	1.77	1.77
589	1.04	2.18	2.18

The MB Series wheels, especially Type MBR, are relatively heavy. For **direct drive fans**, the starting time may often dictate the motor size. Please select minimum motor HP per the chart at left. In some cases it may be possible to select a smaller motor depending on the motor design – consult factory.

**Table 7. Bare Fan Weights (lbs.)**

FAN SIZE	ARR. 1			ARR. 4			ARR. 8		
	MBO	MBR	MBW	MBO	MBR	MBW	MBO	MBR	MBW
196	307	343	324	255	291	272	388	424	405
224	382	427	403	316	361	337	490	535	511
252	587	636	609	483	532	505	746	795	768
280	762	820	787	630	688	655	991	1049	1016
308	938	1006	959	767	835	788	1278	1346	1299
336	1109	1187	1133	917	995	941	1578	1656	1602
365	1391	1506	1421	1157	1272	1187	2008	2123	2038
421	1856	2029	1893	1463	1636	1500	2697	2870	2734
477	2419	2639	2465	1867	2087	1913	3069	3289	3115
533	2858	3122	2913	2212	2476	2267	3442	3706	3497
589	3650	3970	3773	2753	3073	2876	4487	4807	4610

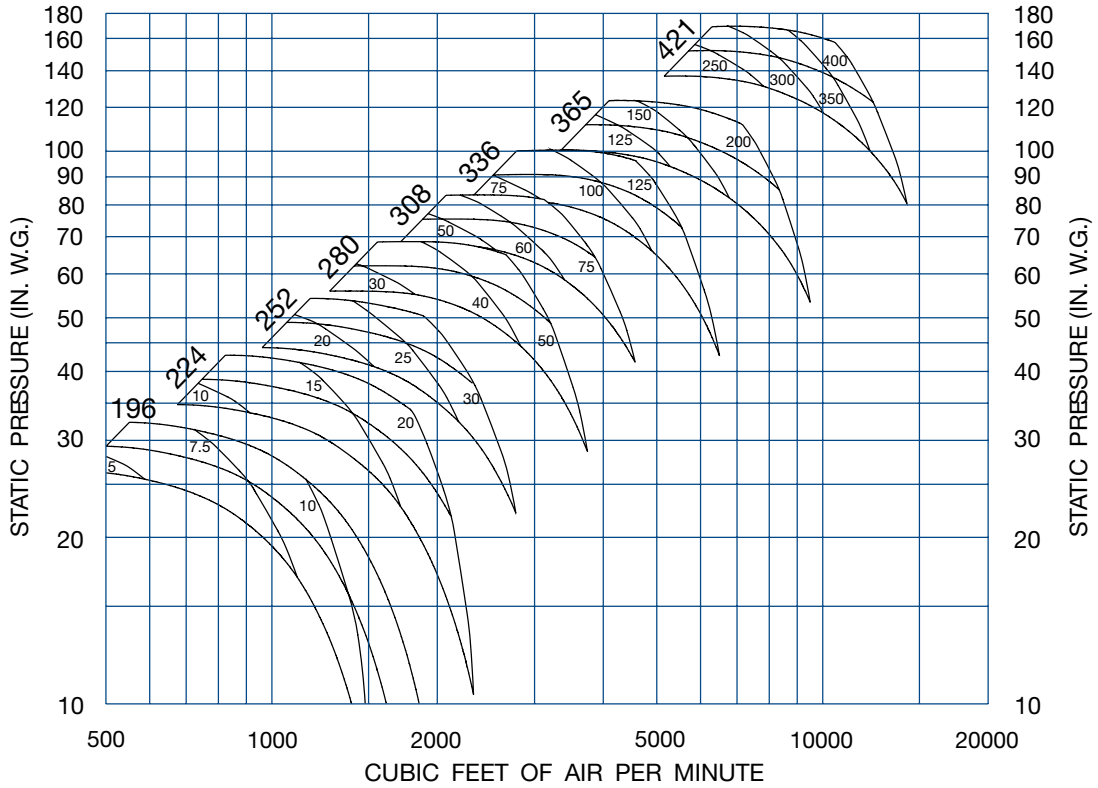




# Performance Curves - MBO

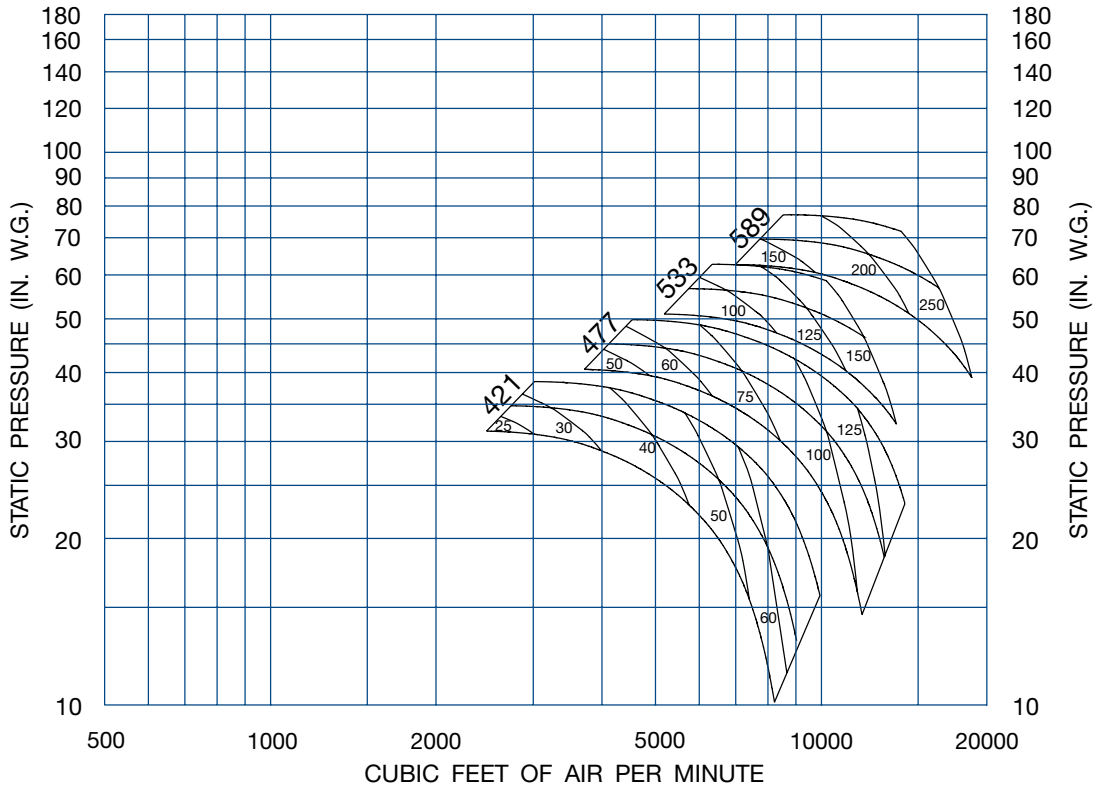
## MBO Sizes 196 to 421

**3550 RPM**



## MBO Sizes 421 to 589

**1750 RPM**

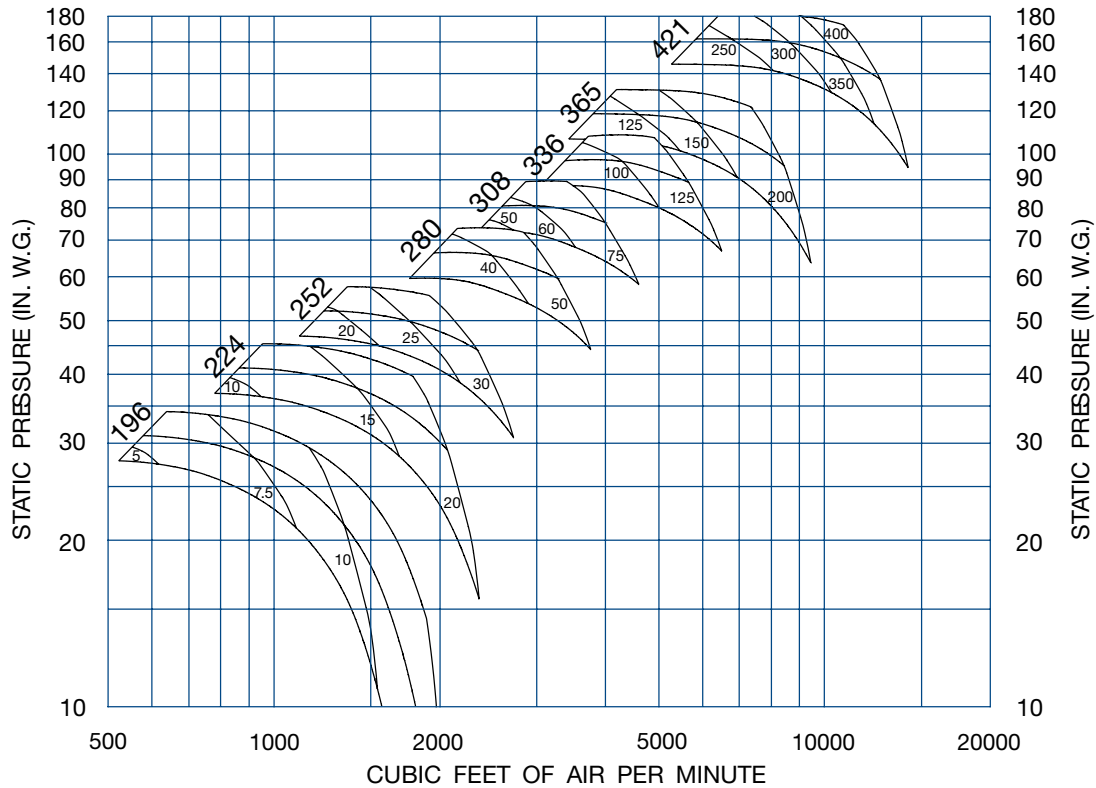


Performance shown in curves is for fans with an optional evasé or round outlet.

# Performance Curves - MBR

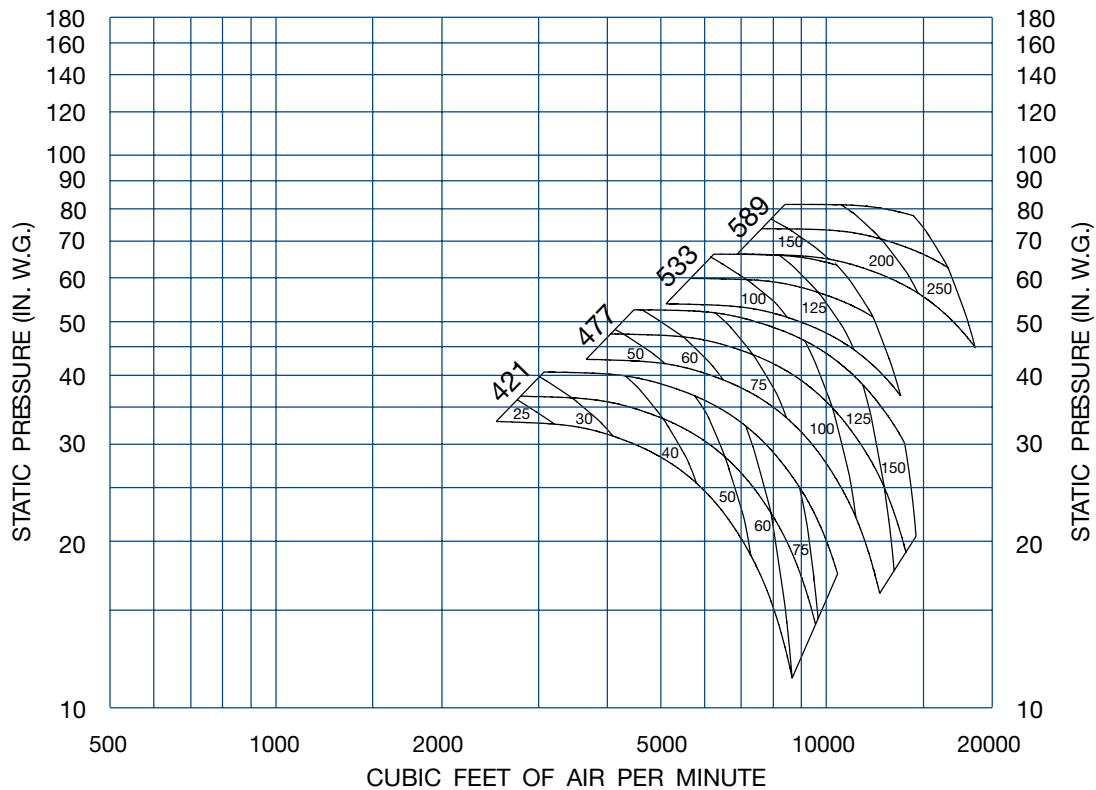
## MBR Sizes 196 to 421

**3550 RPM**



## MBR Sizes 421 to 589

**1750 RPM**

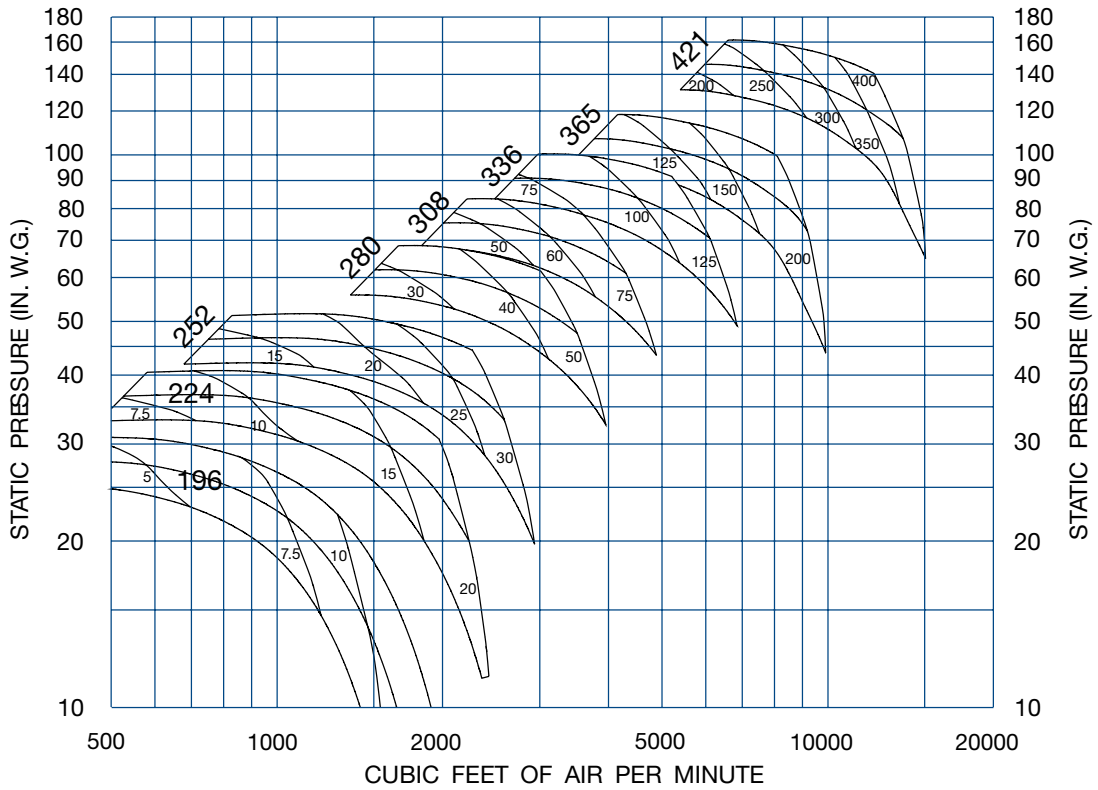


Performance shown in curves is for fans with an optional evasé or round outlet.

# Performance Curves - MBW

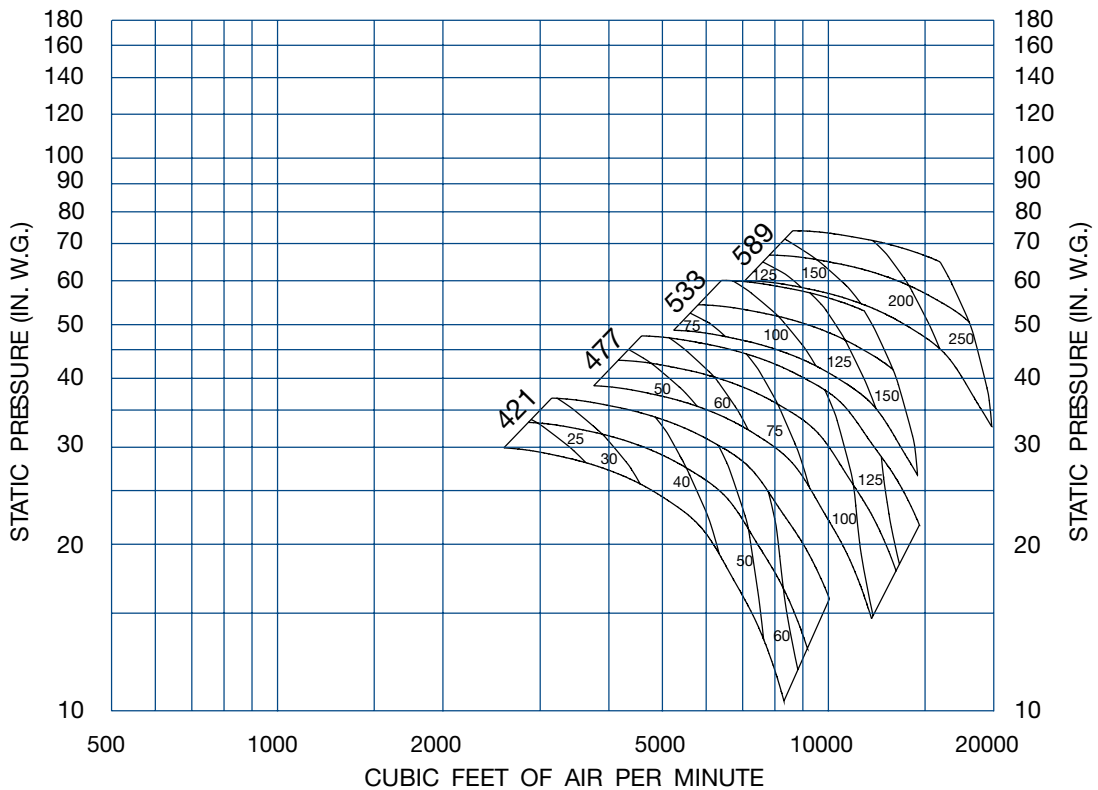
## MBW Sizes 196 to 421

**3550 RPM**



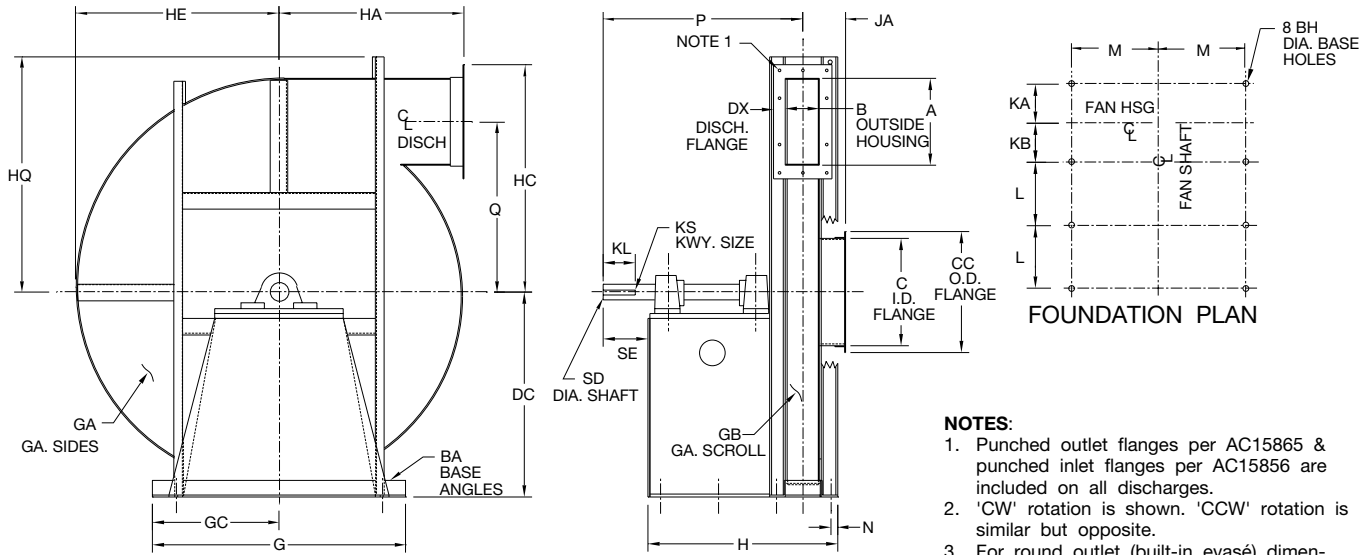
## MBW Sizes 421 to 589

**1750 RPM**



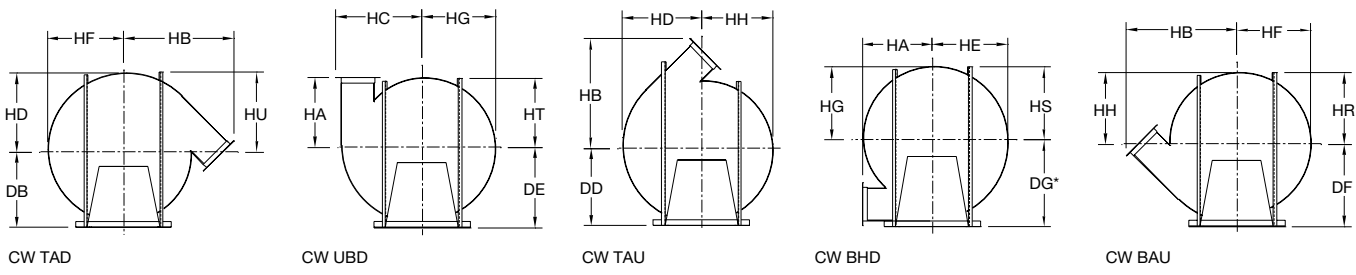
Performance shown in curves is for fans with an optional evasé or round outlet.

# Dimensional Data – Arr. 1



- NOTES:**
1. Punched outlet flanges per AC15865 & punched inlet flanges per AC15856 are included on all discharges.
  2. 'CW' rotation is shown. 'CCW' rotation is similar but opposite.
  3. For round outlet (built-in evasé) dimensions see page 5 or drawing AC15949.
  - \*4. Centerline height = 'DG' + 'DT' when evasé, round outlet is used on BHD.

CLOCKWISE ROTATION, TOP HORIZONTAL DISCHARGE 'CW THD'



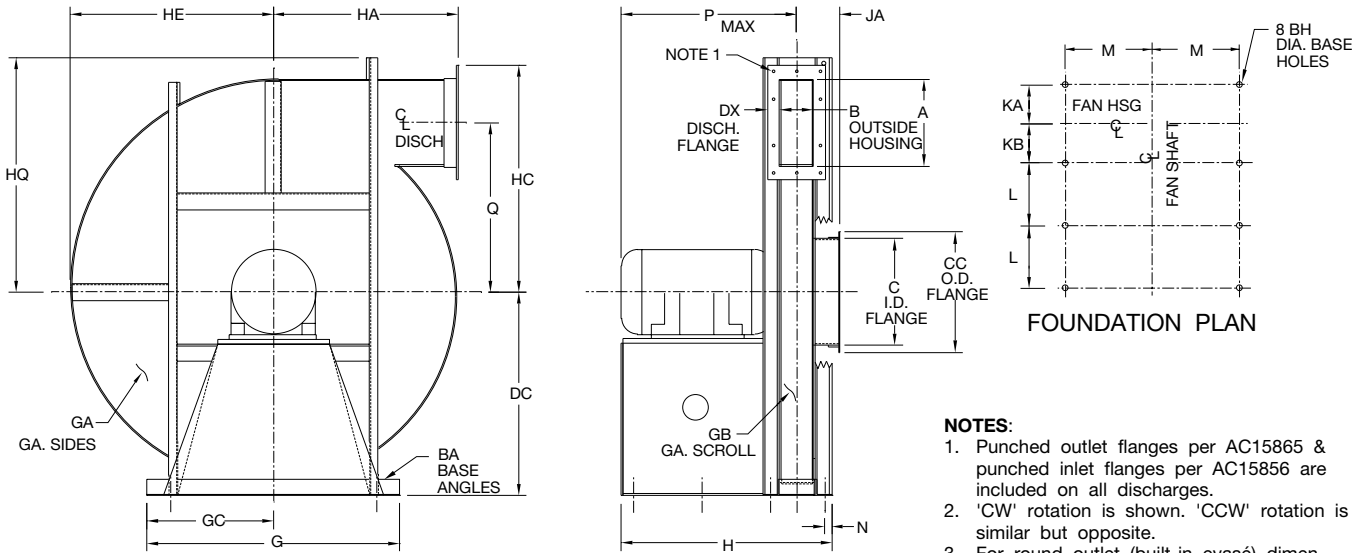
SIZE	A	B	BA	BH	C	CC	DB	DC	DD	DE	DF	DG	DT	DX	G	GA	GB	GC	H	HA	HB	HC	HD
196	6.06	3.44	2 x 2	0.69	7.13	9.38	14.31	14.44	14.75	15.06	15.44	16.50	2.44	1.50	20.50	7	7	10.25	23.31	14.63	21.63	16.00	14.19
224	6.88	3.69	2 x 2	0.69	8.13	10.38	16.06	16.19	16.63	17.00	17.38	18.50	3.31	1.50	22.50	7	7	11.25	23.81	16.00	24.06	18.00	16.13
252	7.69	3.94	3 x 3	0.81	9.13	11.63	18.69	19.13	19.56	20.00	20.44	21.56	1.94	1.50	26.88	7	7	13.44	26.06	18.69	27.44	20.06	18.19
280	8.63	4.25	3 x 3	0.81	10.13	12.75	20.50	21.00	21.44	21.94	22.44	23.69	1.19	1.50	28.88	0.25	0.25	14.44	26.69	20.13	29.94	22.19	20.19
308	9.44	4.63	3 x 3	0.81	11.13	13.88	22.38	22.88	23.38	23.94	25.50	25.75	2.25	1.50	30.38	0.25	0.25	15.44	27.75	21.56	32.38	24.25	22.25
336	10.25	5.00	3 x 3	0.81	12.13	15.00	24.13	24.69	25.25	25.88	26.44	27.75	3.38	2.00	35.38	0.25	0.25	17.69	30.13	21.81	34.38	26.75	24.19
365	11.06	5.50	3 x 3	0.81	13.13	16.06	25.69	26.31	26.94	27.63	28.25	29.88	2.94	2.00	37.50	0.31	0.25	18.75	31.00	23.56	37.06	28.88	26.25
421	12.69	6.25	3 x 3	0.81	15.13	18.06	29.31	30.06	30.75	31.50	32.25	33.94	3.13	2.50	38.88	0.31	0.25	19.44	34.75	27.13	42.81	33.44	30.25
477	14.31	7.00	3 x 4	1.06	17.13	20.19	32.94	33.75	34.56	35.38	36.19	38.06	3.56	2.50	45.63	0.31	0.25	22.88	36.50	30.63	48.19	37.50	34.19
533	15.94	7.75	3 x 4	1.06	19.13	22.19	36.50	37.44	38.38	39.25	40.19	42.13	3.50	2.50	46.50	0.31	0.25	23.25	37.25	34.19	53.63	41.63	38.19
589	17.56	8.50	3.5 x 5	1.06	21.13	24.19	40.63	41.63	42.69	43.69	44.69	46.69	3.44	2.50	49.50	0.31	0.25	24.75	39.00	37.75	59.00	45.69	42.19

SIZE	HE	HF	HG	HH	HQ	HR	HS	HT	HU	JA	KA	KB	KL	KS	L	M	N	P	Q	SD	SE
196	13.81	13.50	13.19	12.81	16.50	13.13	13.50	12.69	14.63	4.94	3.00	2.88	4.50	0.38 x 0.19	6.50	8.75	0.88	24.19	11.50	1.687	4.75
224	15.75	15.38	14.94	14.56	18.50	14.63	15.00	14.13	16.38	5.06	3.13	3.00	4.50	0.50 x 0.25	6.63	9.75	0.88	24.56	13.13	1.937	4.75
252	17.75	17.31	16.88	16.44	21.56	17.44	17.88	16.88	19.38	6.19	3.75	3.63	4.50	0.50 x 0.25	7.38	10.50	1.38	25.69	14.75	1.937	4.75
280	19.69	19.25	18.75	18.25	23.69	19.00	19.50	18.38	21.19	6.38	4.00	3.75	4.50	0.50 x 0.25	7.50	11.50	1.38	26.06	16.38	2.187	4.75
308	21.69	21.19	20.63	20.13	25.75	20.56	21.13	19.94	22.94	6.56	4.19	3.94	6.00	0.50 x 0.25	7.50	12.50	1.38	28.38	18.00	2.187	6.19
336	23.63	23.06	22.44	21.88	27.75	21.31	22.00	20.63	24.06	6.75	4.38	4.13	6.00	0.50 x 0.25	8.50	14.75	1.38	30.56	19.63	2.187	6.19
365	25.63	24.94	24.31	23.69	29.88	22.88	23.56	22.06	25.81	7.06	4.69	4.38	6.00	0.63 x 0.31	8.50	15.81	1.38	31.25	21.31	2.437	6.31
421	29.50	28.75	28.06	27.31	33.94	26.75	27.50	25.88	30.06	7.44	5.06	4.75	6.00	0.88 x 0.44	9.75	16.50	1.38	34.69	24.63	3.437	6.38
477	33.38	32.56	31.75	30.94	39.06	30.75	31.63	29.69	34.50	8.81	5.94	5.63	6.00	0.88 x 0.44	9.75	19.19	1.88	35.06	27.88	3.437	6.38
533	37.25	36.38	35.44	34.50	43.13	34.69	35.63	33.56	38.75	9.19	6.31	6.00	6.00	0.88 x 0.44	9.75	19.63	1.88	35.44	31.13	3.437	6.38
589	41.19	40.19	39.13	38.13	48.19	39.56	40.63	38.38	44.00	10.56	7.19	6.88	6.00	0.88 x 0.44	9.63	20.00	2.38	35.81	34.38	3.437	6.38

BC15911C

DIMENSIONS ARE SUBJECT TO CHANGE. CERTIFIED DRAWINGS AVAILABLE UPON REQUEST.

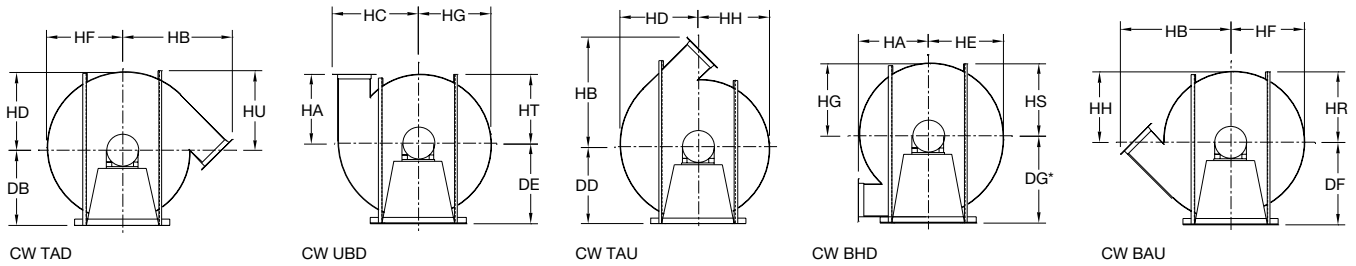
# Dimensional Data – Arr. 4



CLOCKWISE ROTATION, TOP HORIZONTAL DISCHARGE 'CW THD'

**NOTES:**

1. Punched outlet flanges per AC15865 & punched inlet flanges per AC15856 are included on all discharges.
2. 'CW' rotation is shown. 'CCW' rotation is similar but opposite.
3. For round outlet (built-in evasé) dimensions see page 5 or drawing AC15949.
- \*4. Centerline height = 'DG' + 'DT' when evasé, round outlet is used on BHD.
5. Dim. 'FR' is max. motor frame.



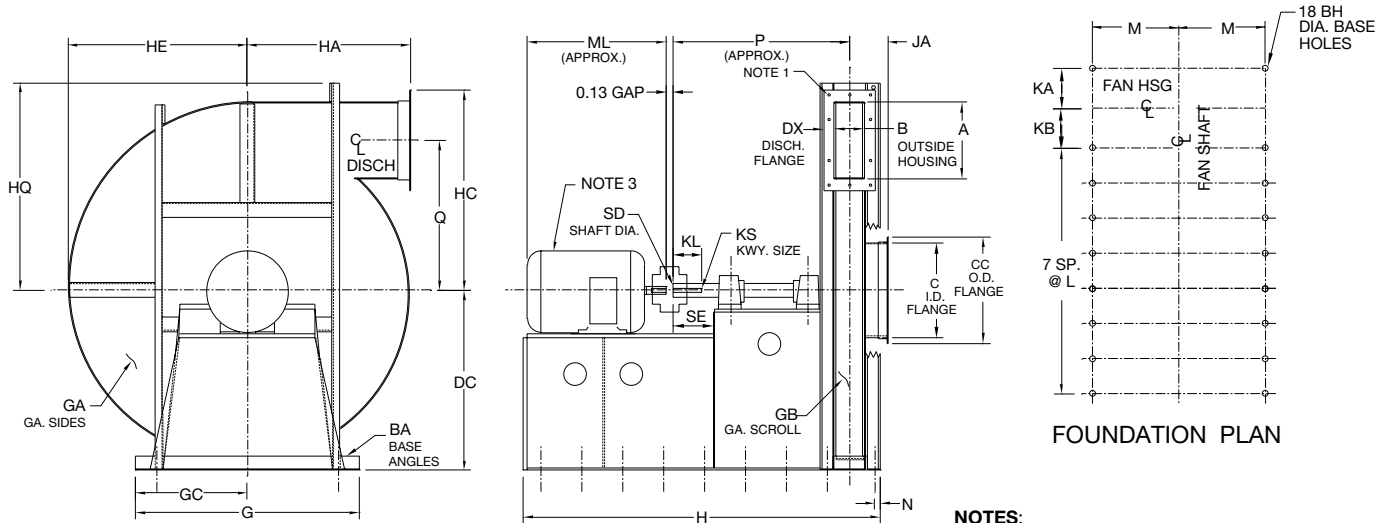
SIZE	A	B	BA	BH	C	CC	DB	DC	DD	DE	DF	DG	DT	DX	FR	G	GA	GB	GC	H	HA
196	6.06	3.44	2 x 2	0.69	7.13	9.38	14.31	14.44	14.75	15.06	15.44	16.50	2.44	1.50	215T	20.50	7	7	10.25	22.63	14.63
224	6.88	3.69	2 x 2	0.69	8.13	10.38	16.06	16.19	16.63	17.00	17.38	18.50	3.31	1.50	256T	22.50	7	7	11.25	26.88	16.00
252	7.69	3.94	3 x 3	0.81	9.13	11.63	18.69	19.13	19.56	20.00	20.44	21.56	1.94	1.50	286TS	26.88	7	7	13.44	30.13	18.69
280	8.63	4.25	3 x 3	0.81	10.13	12.75	20.50	21.00	21.44	21.94	22.44	23.69	1.19	1.50	326TS	28.88	0.25	0.25	14.44	32.50	20.13
308	9.44	4.63	3 x 3	0.81	11.13	13.88	22.38	22.88	23.38	23.94	25.50	25.75	2.25	1.50	365TS	30.88	0.25	0.25	15.44	35.88	21.56
336	10.25	5.00	3 x 3	0.81	12.13	15.00	24.13	24.69	25.25	25.88	26.44	27.75	3.38	2.00	445TS	35.38	0.25	0.25	17.69	43.25	21.81
365	11.06	5.50	3 x 3	0.81	13.13	16.06	25.69	26.31	26.94	27.63	28.25	29.88	2.94	2.00	445TS	37.50	0.31	0.25	18.75	43.81	23.56

SIZE	HB	HC	HD	HE	HF	HG	HH	HQ	HR	HS	HT	HU	JA	KA	KB	L	M	N	P	Q
196	21.63	16.00	14.19	13.81	13.50	13.19	12.81	16.50	13.13	13.50	12.69	14.63	4.94	3.00	2.88	7.00	8.75	0.88	19.88	11.50
224	24.06	18.00	16.13	15.75	15.38	14.94	14.56	18.50	14.63	15.00	14.13	16.38	5.06	3.13	3.00	9.00	9.75	0.88	25.31	13.13
252	27.44	20.06	18.19	17.75	17.31	16.88	16.44	21.56	17.44	17.88	16.88	19.38	6.19	3.75	3.63	9.75	10.50	1.38	27.75	14.75
280	29.94	22.19	20.19	19.69	19.25	18.75	18.25	23.69	19.00	19.50	18.38	21.19	6.38	4.00	3.75	10.75	11.50	1.38	30.19	16.38
308	32.38	24.25	22.25	21.69	21.19	20.63	20.13	25.75	20.56	21.13	19.94	22.94	6.56	4.19	3.94	12.25	12.50	1.38	31.69	18.00
336	34.38	26.75	24.19	23.63	23.06	22.44	21.88	27.75	21.31	22.00	20.63	24.06	6.75	4.38	4.13	15.75	14.75	1.38	44.69	19.63
365	37.06	28.88	26.25	25.63	24.94	24.31	23.69	29.88	22.88	23.56	22.06	25.81	7.06	4.69	4.38	15.75	15.81	1.38	44.69	21.31

BC16053B

DIMENSIONS ARE SUBJECT TO CHANGE. CERTIFIED DRAWINGS AVAILABLE UPON REQUEST.

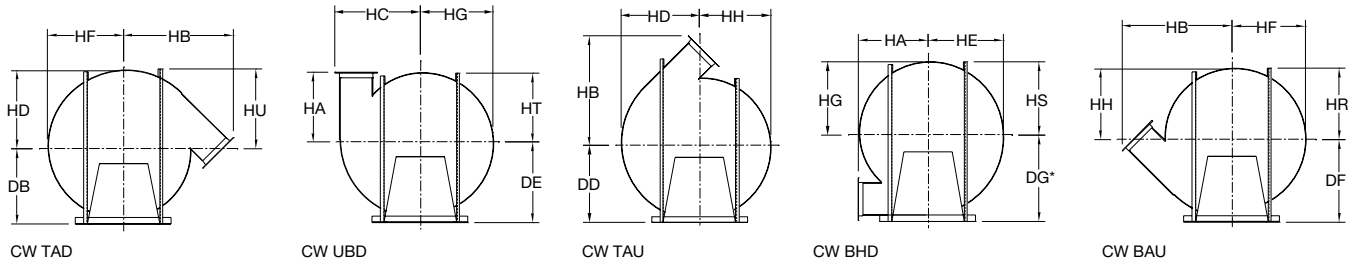
# Dimensional Data – Arr. 8



CLOCKWISE ROTATION, TOP HORIZONTAL DISCHARGE 'CW THD'

**NOTES:**

1. Punched outlet flanges per AC15865 & punched inlet flanges per AC15856 are included on all discharges.
2. 'CW' rotation is shown. 'CCW' rotation is similar but opposite.
3. Dim 'FR' equals max. motor size.
4. Use TS frame when possible.
5. For round outlet (built-in evasé) dimensions see page 5 or drawing AC15949.
- \*6. Centerline height = 'DG' + 'DT' when evasé, round outlet is used on BHD.



SIZE	A	B	BA	BH	C	CC	DB	DC	DD	DE	DF	DG	DT	DX	FR	G	GA	GB	GC	H	HA	HB	HC	HD
196	6.06	3.44	2 x 2	0.81	7.13	9.38	14.31	14.44	14.75	15.06	15.44	16.50	2.44	1.50	215T	20.50	7	7	10.25	45.69	14.63	21.63	16.00	14.19
224	6.88	3.69	2 x 2	0.81	8.13	10.38	16.06	16.19	16.63	17.00	17.38	18.50	3.31	1.50	256T	22.50	7	7	11.25	50.31	16.00	24.06	18.00	16.13
252	7.69	3.94	3 x 3	0.81	9.13	11.63	18.69	19.13	19.56	20.00	20.44	21.56	1.94	1.50	286TS	26.88	7	7	13.44	54.69	18.69	27.44	20.06	18.19
280	8.63	4.25	3 x 3	0.81	10.13	12.75	20.50	21.00	21.44	21.94	22.44	23.69	1.19	1.50	326TS	28.88	0.25	0.25	14.44	57.63	20.13	29.94	22.19	20.19
308	9.44	4.63	3 x 3	0.81	11.13	13.88	22.38	22.88	23.38	23.94	25.50	25.75	2.25	1.50	365TS	30.88	0.25	0.25	15.44	61.06	21.56	32.38	24.25	22.25
336	10.25	5.00	3 x 3	0.81	12.13	15.00	24.13	24.69	25.25	25.88	26.44	27.75	3.38	2.00	444TS	35.38	0.25	0.25	17.69	72.06	21.81	34.38	26.75	24.19
365	11.06	5.50	3 x 3	0.81	13.13	16.06	25.69	26.31	26.94	27.63	28.25	29.88	2.94	2.00	447TS	37.50	0.31	0.25	18.75	84.44	23.56	37.06	28.88	26.25
421	12.69	6.25	3 x 3	0.81	15.13	18.06	29.31	30.06	30.75	31.50	32.25	33.94	3.13	2.50	449TS	38.88	0.31	0.25	19.44	88.75	27.13	42.81	33.44	30.25
477	14.31	7.00	3 x 4	1.06	17.13	20.19	32.94	33.75	34.56	35.38	36.19	38.06	3.56	2.50	365T	45.63	0.31	0.25	22.81	68.63	30.63	48.19	37.50	34.19
533	15.94	7.75	3 x 4	1.06	19.13	22.19	36.50	37.44	38.38	39.25	40.19	42.13	3.50	2.50	445T	46.50	0.31	0.25	23.25	75.88	34.19	53.63	41.63	38.19
589	17.56	8.50	3.5 x 5	1.06	21.13	24.19	40.63	41.63	42.69	43.69	44.69	46.69	3.44	2.50	449T	49.50	0.31	0.25	24.75	91.38	37.75	59.00	45.69	42.19

SIZE	HE	HF	HG	HH	HQ	HR	HS	HT	HU	JA	KA	KB	KL	KS	L	M	ML	N	P	Q	SD	SE
196	13.81	13.50	13.19	12.81	16.50	13.13	13.50	12.69	14.63	4.94	3.00	2.88	4.50	0.38 x 0.19	5.31	8.75	20.25	0.88	23.81	11.50	1.437	4.75
224	15.75	15.38	14.94	14.56	18.50	14.63	15.00	14.13	16.38	5.06	3.13	3.00	4.50	0.38 x 0.19	5.94	9.75	25.75	0.88	23.94	13.13	1.437	4.75
252	17.75	17.31	16.88	16.44	21.56	17.44	17.88	16.88	19.38	6.19	3.75	3.63	4.50	0.38 x 0.19	6.31	10.50	28.88	1.38	25.06	14.75	1.437	4.75
280	19.69	19.25	18.75	18.25	23.69	19.00	19.50	18.38	21.19	6.38	4.00	3.75	4.50	0.38 x 0.19	6.69	11.50	32.00	1.38	25.56	16.38	1.687	4.69
308	21.69	21.19	20.63	20.13	25.75	20.56	21.13	19.94	22.94	6.56	4.19	3.94	6.00	0.38 x 0.19	7.13	12.50	34.38	1.38	27.25	18.00	1.687	6.13
336	23.63	23.06	22.44	21.88	27.75	21.31	22.00	20.63	24.06	6.75	4.38	4.13	6.00	0.50 x 0.25	8.63	14.75	49.00	1.38	28.56	19.63	2.187	6.13
365	25.63	24.94	24.31	23.69	29.88	22.88	23.56	22.06	25.81	7.06	4.69	4.38	6.00	0.63 x 0.31	10.31	15.81	54.50	1.38	30.63	21.31	2.437	6.31
421	29.50	28.75	28.06	27.31	33.94	26.75	27.51	25.88	30.06	7.44	5.06	4.75	6.00	0.75 x 0.38	10.88	16.50	54.50	1.38	34.44	24.63	2.937	6.25
477	33.38	32.56	31.75	30.94	39.06	30.75	31.63	29.69	34.50	8.81	5.94	5.63	6.00	0.50 x 0.25	7.25	19.19	34.38	1.88	29.56	27.88	2.187	6.13
533	37.25	36.38	35.44	34.50	43.13	34.69	35.63	33.56	38.75	9.19	6.31	6.00	6.00	0.50 x 0.25	8.56	19.63	49.00	1.88	29.94	31.13	2.187	6.13
589	41.19	40.19	39.13	38.13	48.19	39.56	40.63	38.38	44.00	10.56	7.19	6.88	6.00	0.63 x 0.31	10.50	20.00	54.50	2.38	34.06	34.38	2.687	6.31

BC15912D

DIMENSIONS ARE SUBJECT TO CHANGE. CERTIFIED DRAWINGS AVAILABLE UPON REQUEST.



# Typical Specifications

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Furnish and install Type MB Heavy Duty Pressure Blowers as manufactured by Twin City Fan & Blower, Minneapolis, Minnesota. Fans shall be specifically designed to handle specified volume and pressure to ensure rated performance.

**WHEEL** — Wheels shall be of heavy gauge continuously-welded construction; riveted and plug or partially welded wheels are not acceptable. Blades shall be a minimum ¼" thick for wheel diameter 27" and larger. The wheels shall be mounted to the shaft using an interference fit. The selection of wheel design shall be based on the following criteria:

- MBO for handling hot, sticky and abrasive airstreams as well as clean air applications.
- MBR for handling airstreams described above and where efficiency is of paramount importance.
- MBW for handling long, stringy, or fibrous materials.

**HOUSING** — Housings shall be made of a heavy gauge steel with continuously welded construction and braced with structural shapes to eliminate any resonant vibration and provide smooth operation. Housings shall be a minimum of 7 gauge thick for wheel diameters to 27". All others shall be a minimum of ¼" thick. A shaft seal as well as a flanged inlet and outlet shall be provided as standard equipment.

**SHAFT** — Shafts are to be solid material selected for AISI 1040 or 1045 hot rolled steel, accurately turned, ground, polished, and ring gauged for accuracy. Shaft design shall be of sufficient diameter to allow the first critical speed to be at least 1.35 times the maximum fan operating speed.

**BEARINGS** — Fans shall be supplied with heavy duty self-aligning grease lubricated anti-friction ball bearings to provide long bearing life. Bearing support members shall be fabricated of heavy steel shapes to insure maximum rigidity.

**FACTORY TEST RUN UNITS** — All fans up to 200 HP shall be completely assembled and test run as a unit at operating speed at the factory. The fans are to be balanced and records maintained of the readings in the axial, vertical, and horizontal direction on each of the bearings. A written copy of this record shall be available upon request by the customer. Fans larger than 200 HP shall be assembled at the factory and should be field checked for vibration by the customer.

**GUARANTEE** — Manufacturer shall guarantee the workmanship and materials for its MB Series fans for at least one year from startup, or eighteen months from shipment, whichever occurs first.

# INDUSTRIAL PROCESS AND COMMERCIAL VENTILATION SYSTEMS

CENTRIFUGAL FANS | UTILITY SETS | PLENUM & PLUG FANS | INLINE CENTRIFUGAL FANS  
MIXED FLOW FANS | TUBEAXIAL & VANEAXIAL FANS | PROPELLER WALL FANS | PROPELLER ROOF VENTILATORS  
CENTRIFUGAL ROOF & WALL EXHAUSTERS | CEILING VENTILATORS | GRAVITY VENTILATORS | DUCT BLOWERS  
RADIAL BLADED FANS | RADIAL TIP FANS | HIGH EFFICIENCY INDUSTRIAL FANS | PRESSURE BLOWERS  
LABORATORY EXHAUST FANS | FILTERED SUPPLY FANS | MANCOOLERS | FIBERGLASS FANS | CUSTOM FANS



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5959 TRENTON LANE N | MINNEAPOLIS, MN 55442 | PHONE: 763-551-7600 | FAX: 763-551-7601

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