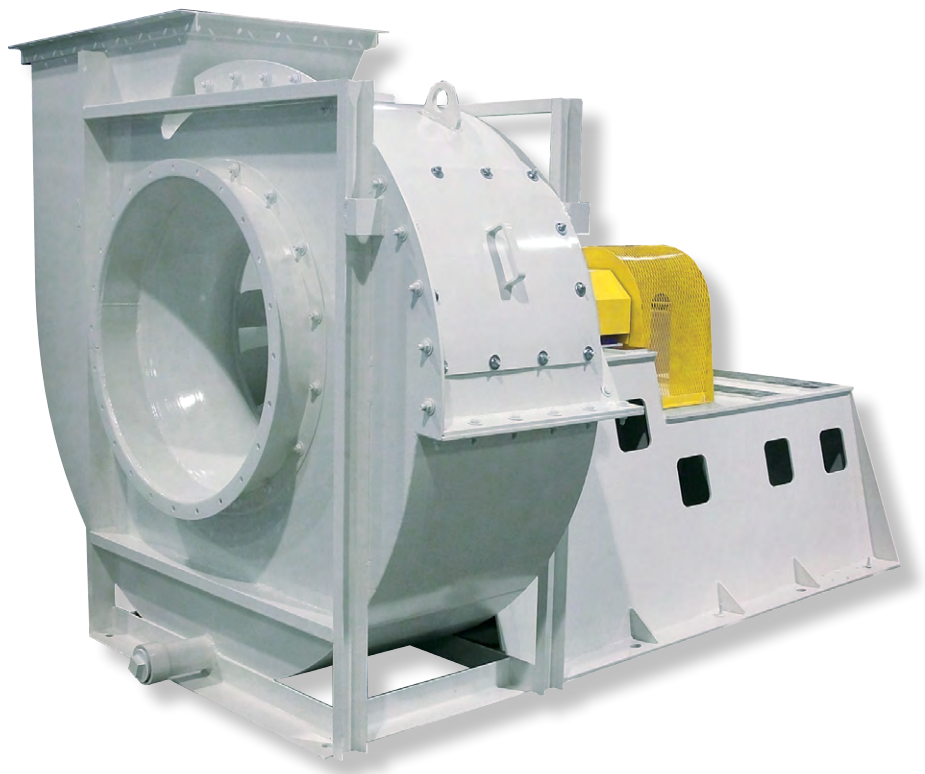




INDUSTRIAL PROCESS AND
COMMERCIAL VENTILATION SYSTEMS

RADIAL TIP FANS

MODEL HRT



HRT Radial Tip Fans

Twin City Fan & Blower's Type HRT Industrial Duty Radial Tip Fan line is engineered for higher specific speeds. It offers a high efficiency selection across a wider range on the fan curve with a peak static efficiency reaching 77%. This is accomplished with a new fan wheel design coupled with an enlarged fan housing. This design shifts the peak efficiencies to higher flow rates at a given pressure which allows selection of a smaller more efficient fan for a given application.

Applications

Radial Tip Fans are of a heavy duty, rugged design suitable for applications involving large volumes of gas streams at moderate to high pressures. Designed to handle clean or dirty airstreams, they are widely used to exhaust gases from bag-type collectors, precipitators, scrubbers, cyclones and other industrial applications. This type of fan is also used for induced draft on boilers, incinerators, and kiln exhaust. Steel, air pollution, dryer, petrochemical, cement, furnaces and ovens, solvent recovery, sewage sludge, and solid waste incineration industries have found the Radial Tip design particularly suitable for their applications.



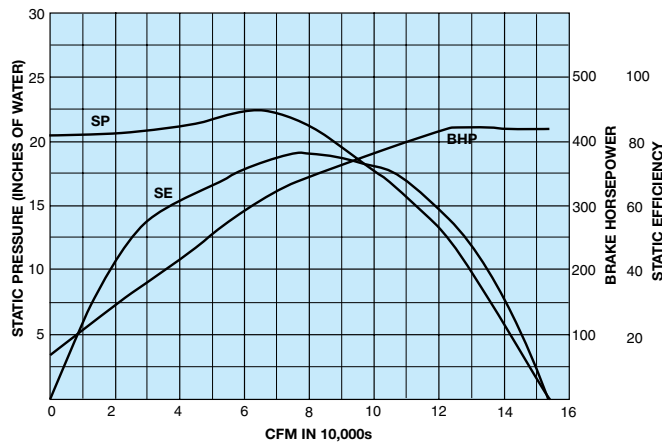
Choice of Construction

HRT offers two choices of construction:

- HRT 19: Suitable to 19,000 FPM tip speed
Pressures to 22" w.g.
- HRT 23: Suitable to 23,000 FPM tip speed
Pressures to 32" w.g.

For higher static pressure applications refer to Bulletin 950, Type RTF Radial Tip fans.

Typical HRT Curve



600 HRT
1175 RPM Density: 0.0750 lbs/ft³

The performance ratings shown in this bulletin have been tested and rated in accordance with industry accepted test codes and are guaranteed by Twin City Fan & Blower to deliver rated performances.

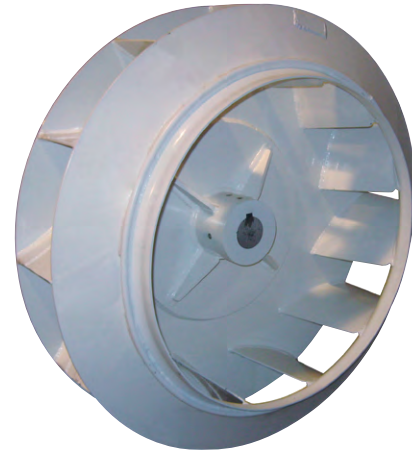
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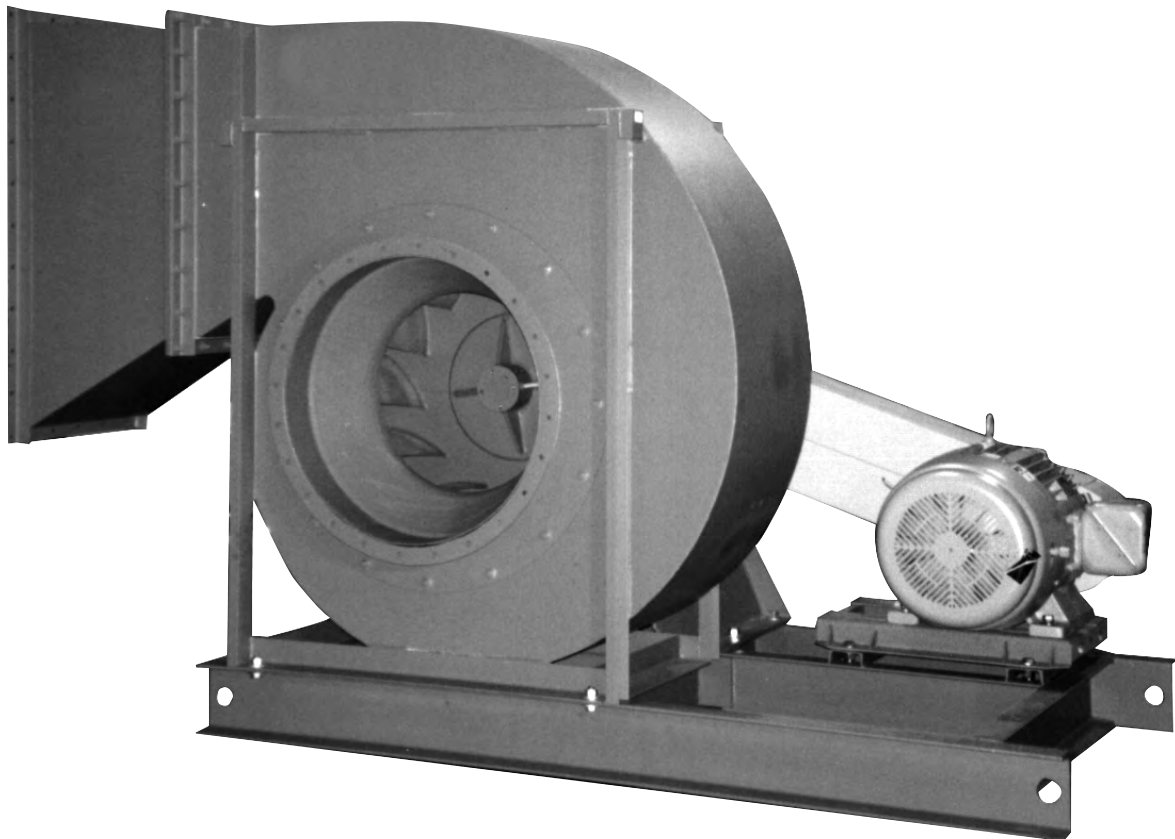


Construction Features

- Higher specific speed and efficient wheel design allows selection of fan with lower initial and operating cost.
- Radial Tip wheel designed for demanding applications.
- All wheels supplied with welded wear pads on the blades. Partial blade liners cover approximately 25% of blade area.
- Heavy-gauge reinforced, continuously welded housing and rigid pedestal for vibration-free service.
- Statically and dynamically balanced rotor assembly. Mechanical run test and final balance check of all fans prior to shipment.
- Interference (shrink) fit between wheel and shaft to ensure trouble-free operation at high speed, high temperature and under vibratory load conditions.
- Shaft of AISI 1040 or equal, close tolerances, turned, ground and polished.



- Anti-friction spherical roller bearings with split pillow block housings on all fans. Typically, L-10 bearing life exceeds 40,000 hours on V-belt drive and 100,000 hours on direct drive selections.
- Flanged inlet and flanged outlet, housing drain, ceramic felt type shaft seal (not gas tight) and lifting lugs are standard accessories on all fans.



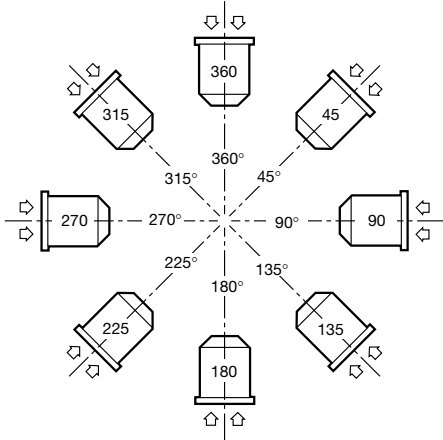
Arrangement 1 HRT fan with optional easé and unitary base for the fan and motor.

Accessories

Inlet Boxes

Bolt-on (detached) or attached (integral) type, generously designed to minimize pressure drop. Same heavy-gauge construction as fan housing. Drain and bolted access door are standard inlet box accessories. Specify inlet box position referring to AMCA Standard 2405-66 shown below.

Inlet Box Positions For Centrifugal Fans



INLET BOX POSITIONS AND DESCRIPTIONS	
45	Angular Down Intake
90	Horizontal Right Intake
135	Angular Up Intake
180	Bottom Up Intake
225	Angular Up Intake
270	Horizontal Left Intake
315	Angular Down Intake
360	Top Down Intake

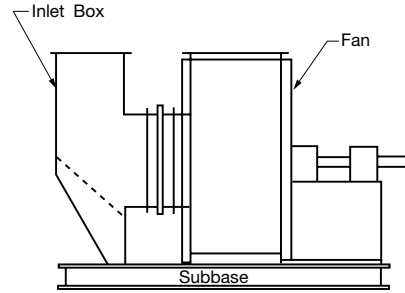
Reference line is the Top Vertical Axis through center of fan shaft.

Position of inlet box and air entry to inlet box is determined from drive side of fan.

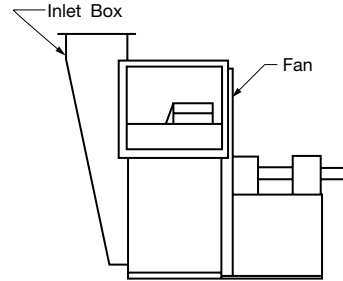
Position of inlet box is designated in degrees clockwise from Top Vertical Axis as shown.

Positions 135° to 225° in some cases interfere seriously with floor structure.

Inlet Box Arrangements

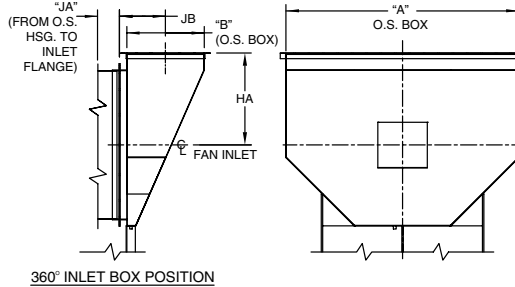
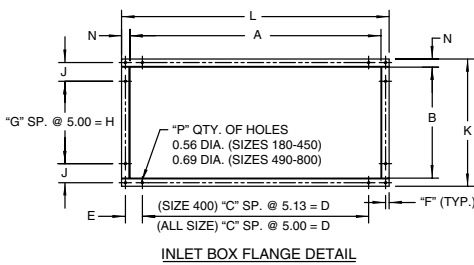


Fan with bolt-on (detached) inlet box (shown with optional subbase). Available on Arrangements 1, 4, 8 and 9F.



Fan with attached or integral inlet box. Available on Arrangements 1, 4, 8 and 9F. Included on Arrangements 3SI and 7SI.

Typical Inlet Box Dimensions



Notes:

1. For inlet box positions 90° to 270°, fan centerline height may change. Consult factory for centerline height.
2. Consult factory for foundation mounting location.

SIZE	A	B	C	D	E	F	G	H	J	K	L	N	P	HA	JA	JB
270	42.50	14.38	7	35.00	4.63	0.63	2	10	3.06	17.38	45.50	1.50	26	18.00	7.00	9.19
300	46.88	15.88	8	40.00	4.31	0.63	2	10	3.81	18.88	49.88	1.50	28	19.00	7.00	9.94
330	52.13	17.88	9	45.00	4.69	0.88	2	10	5.06	21.88	56.13	2.00	30	20.50	7.00	10.94
360	57.38	19.38	10	50.00	4.81	0.88	3	15	3.31	23.38	61.38	2.00	34	22.00	8.00	11.69
400	63.38	21.38	11	56.38	4.88	1.13	3	15	4.56	26.38	68.38	2.50	36	23.50	10.00	12.69
450	69.38	23.38	12	60.00	6.06	1.13	3	15	5.56	28.38	74.38	2.50	38	25.50	10.00	13.69
490	76.88	25.88	14	70.00	4.81	1.13	4	20	4.31	30.88	81.88	2.50	44	27.50	9.00	15.94
540	84.50	28.50	15	75.00	6.13	1.13	4	20	5.63	33.50	89.50	2.50	46	29.50	12.00	17.25
600	93.50	31.50	17	85.00	6.13	1.63	5	25	5.13	38.50	100.50	3.50	52	32.00	12.00	18.75
660	103.50	34.88	19	95.00	6.13	1.63	6	30	4.31	41.88	110.50	3.50	58	34.50	12.00	20.44
730	114.50	38.50	22	110.00	4.13	1.63	7	35	3.63	45.50	121.50	3.50	66	37.50	12.00	23.25
800	126.50	42.50	24	120.00	5.13	1.63	7	35	5.63	49.50	133.50	3.50	70	41.00	14.00	25.25

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Accessories

Access Doors

Bolted, quick opening, and raised bolted access doors are available for wheel inspection or maintenance.

Drain

3/4" NPT coupling welded to the lowest point in the housing scroll. All fans come with a weep hole in the bottom of the housing.

Shaft Seal

The standard shaft seal is constructed of non-asbestos woven fibrous materials (ceramic felt) compressed between an aluminum cover plate and the fan housing. The standard shaft seal is included as a standard accessory. The ceramic felt shaft seal does not make the fan gas tight. Special seals are available for low leakage applications requiring more positive protection. Consult factory for availability.

Shaft Cooler or Heat Slinger

A cast aluminum shaft cooler is recommended to dissipate the heat and protect the fan bearings for all applications over 300°F.

Inlet/Outlet Companion Flanges

Companion flanges are used for installing the fan to flexible sleeve connections and are punched to match the fan's inlet or outlet.

OSHA Belt Guard

Belt guard protects personnel from moving drive parts. Both standard and quick access guards feature solid sides and back and ventilated front. Quick access guards are only available in W & Z motor positions.

Shaft & Bearing Guard

Shaft and bearing guard covers both shaft and bearings from incidental contact. Provided with holes for ease of bearing lubrication. When fan is provided with shaft cooler, guard extends to cover the shaft cooler.

Shaft guard covers only the shaft between the bearings exposing the bearing to the ambient conditions.

Evasé

Often fabricated by customer as a part of ductwork. Fan outlet must be expanded to equal evasé area shown in the



catalog to obtain rated performance. Same gauge as fan housing when purchased from the factory.

Pie-Shaped Split Housing

Available for wheel removal without disturbing inlet or outlet duct. All fans are designed for removal of wheels through inlet as standard. Where access to inlet is limited or for fans with inlet box, pie-shaped split housing is recommended. Other split housing options available. Consult factory for options.

Variable Inlet Vanes

Used for efficient volume control for part load conditions. Recommended for use in relatively clean air applications. Twin City Fan & Blower offers both space saving nested type (vaned arranged inside the inlet cone) or bolt-on external type (vaned mounted inside a cylindrical housing for bolting to the flange) design. Standard design is suitable for 300°F and clean air. Construction available for temperatures up to 600°F is available.

Inlet Box Dampers

Pre-spin design, parallel blade type, heavy-duty construction. The damper will spin the air in the direction of wheel rotation resulting in a savings in horsepower at reduced loads.

Outlet Dampers

Double surface airfoil blades. Parallel blade construction as standard with opposed blade construction available as an option. Available for fan outlet or evasé outlet.

Unitary Base

A structural steel base provides common support to fan, motor and drive including guards. This style of base is designed for use without isolators and requires adequate foundation integrity for proper operation.

Isolation Bases

Heavy structural base for fan, motor and drive is designed for use with spring isolators. Use of flexible connectors at inlet and outlet is required on fans with isolators. Available in Arrangements 1, 4, 7SI, 8 and 9F.

Temperature and Vibration Detectors

Thermocouples or RTDs can be installed on the bearings. Various types of vibration switches are available.

Optional Construction

High Temperature Construction

- 301 to 500°F: Requires addition of shaft cooler and high temperature grease bearings.
- 501 to 600°F: Above modifications plus high temperature aluminum paint.
- 601 to 800°F: Above plus modified pedestal design.

Special Width & Diameter Construction

Variations in wheel widths (50% to 105%) and wheel diameters (98% to 102%) are available to match designed performance at motor speeds for the greatest efficiency for any given application.

Abrasion and Corrosion Resistant Alloys & Coatings

Optional construction includes an abrasion resistant steel blade and backplate. Construction materials include Corten, stainless steel, Monel, aluminum, Hastelloy and other alloys. Special corrosion resistant coatings of various types are available.

Scroll Liners

7-gauge AR steel material welded in place. Bolted liners are not recommended. Liners are made out of T-1 steel. Hard surface overlay type as manufactured by Tapco or Chamfer available on request.

Side (Cheek) Liners

Covers approximately 25% of the housing sides. Made of 7 gauge AR steel and welded to housing sides.

Heavier Gauge Construction

Heavier than standard gauge construction is available, consult factory.

Spark Resistant Construction

Fan applications may involve the handling of potentially explosive or flammable particles, fumes or vapors. Such applications require careful consideration by the system designer to insure the safe handling of such gases. Twin City Fan & Blower offers the following classifications of spark resistant construction per AMCA Standard 99-0401-86. It is the specifier or the user's responsibility to specify the type of spark resistant construction with full recognition of the potential hazards and the degree of protection required.

- Type A Consult factory for construction details.
- Type B Consult factory for construction details.
- Type C The fan shall be so constructed that the shift of the wheel or shaft will not permit two ferrous parts of the fan to rub or strike. This is accomplished with an aluminum inlet cone and rub ring. This construction is limited to 500°F. Construction to 800°F is available using a steel inlet cone with copper/bronze lining.

Notes:

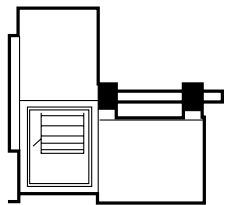
- Bearings shall be placed outside the airstream. Therefore, do not use Arrangement 3 or 7.
- The user shall electrically ground all fan parts.

Refer to the above listed AMCA standard for full details.

Arrangements

Arrangement 1

The usual choice for many V-belt drive applications. Wheel is overhung. Steel bearing pedestal. Check with the factory for V-belt drive applications larger than 300 HP.

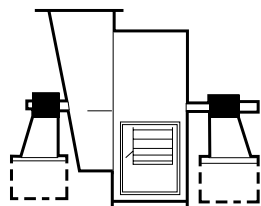


Arrangement 9F

Floor mount. Similar to Arrangement 1 with the fan base extended to mount motor in a horizontal position.

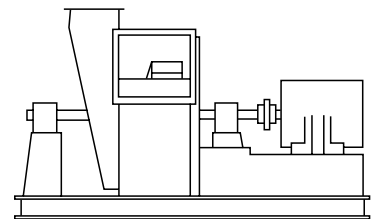
Arrangement 3 SI

SWSI fan with integral inlet box and independent bearing pedestals. The wheel is supported between two bearings.



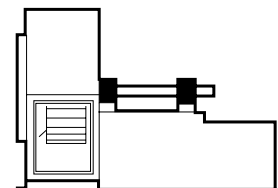
Arrangement 7 SI

Direct coupled with a flexible coupling. A single-width, single-inlet fan with an integral inlet box and independent bearing pedestal and bearing/motor pedestal installed on a common base. The wheel is supported between two bearings.



Arrangement 8

Direct coupled with a flexible coupling. The motor pedestal can be custom fabricated out of steel.



Material and Mechanical Specifications

FAN SIZE	DESIGN	SHAFT DIA.	MAX. HP V-BELT DRIVE*	MIN. SHEAVE DIA.*	MAX. HP DIRECT DRIVE	MAX. RPM**	WHEEL GAUGES			WR ² VALUE LB-FT ²	HOUSING GAUGE
							BACK PLATE	BLADES	SHROUD		
270	19	2.437	75	8.5	100	2688	0.31	10	7	80	7
	23	2.937	125	7.2	150	3254	0.31	10	7	82	7
300	19	2.437	75	9.6	125	2419	0.31	10	7	118	7
	23	2.937	150	8.5	200	2928	0.31	10	7	123	7
330	19	2.687	100	10.3	150	2199	0.31	10	7	175	7
	23	2.937	150	8.6	250	2662	0.31	10	7	181	7
360	19	2.937	150	13.1	200	1988	0.31	10	7	251	7
	23	3.437	250	9.5	300	2407	0.31	10	7	259	1/4
400	19	3.437	200	13.1	200	1803	0.38	10	7	443	7
	23	3.937	300	10.5	400	2183	0.38	7	7	513	1/4
450	19	3.437	200	8.7	250	1631	0.38	10	7	628	7
	23	3.937	300	11.6	450	1974	0.38	7	7	728	1/4
490	19	3.937	250	14.0	300	1481	0.50	7	1/4	1289	7
	23	3.937	300	12.8	550	1793	0.50	7	1/4	1366	1/4
540	19	3.937	300	17.0	400	1338	0.50	7	1/4	2061	7
	23	3.937	300	14.0	650	1619	0.50	7	1/4	2176	1/4
600	19	3.937	300	20.0	450	1210	0.50	7	1/4	2920	1/4
	23	3.937	300	15.7	850	1464	0.50	7	1/4	3093	1/4
660	19	4.437	300	20.8	550	1100	0.63	7	1/4	4595	1/4
	23	4.437	300	17.2	1000	1331	0.63	7	1/4	4846	1/4
730	19	4.437	300	21.9	700	994	0.63	7	1/4	6713	1/4
	23	4.437	300	19.0	1200	1203	0.63	7	1/4	7095	1/4
800	19	4.437	300	22.6	850	899	0.63	7	1/4	9895	1/4
	23	4.437	300	21.0	1500	1088	0.63	7	1/4	10458	1/4

NOTES:

* Minimum sheave diameter when using maximum horsepower motor. Check with factory on applications over 250 HP.

** Maximum fan RPM listed is for carbon steel construction. For stainless steel construction, contact the factory.

Bare Fan Weights (Lbs.)

FAN SIZE	CLASS 19				CLASS 23			
	ARR. 1	ARR. 4	ARR. 8	ARR. 9F	ARR. 1	ARR. 4	ARR. 8	ARR. 9F
270	1230	1230	1600	1290	1290	1290	1675	1355
300	1435	1435	1865	1505	1485	1485	1930	1560
330	1670	1670	2170	1755	1720	1720	2235	1805
360	2100	2100	2730	2205	2480	2480	3225	2605
400	2610	2610	3395	2740	3030	3030	3940	3180
450	3150	3150	4095	3310	3710	3710	4825	3895
490	3970	—	5160	4170	4550	—	5915	4780
540	4860	—	6320	5105	5680	—	7385	5965
600	6580	—	8555	6910	6740	—	8760	7075
660	7520	—	9775	7895	7950	—	10335	8350
730	9110	—	11845	9565	9620	—	12505	10100
800	10852	—	—	—	11562	—	—	—

Size 800 HRT is not supplied with a conventional bearing pedestal. Instead, channel subbases are supplied. The subbase is to be mounted on concrete pedestal in the field. Concrete pedestal to be supplied by others. Fan weights include weight of channel subbase.

Wheel Weights (Lbs.)

FAN SIZE	CLASS	
	19	23
270	144	147
300	165	171
330	205	210
360	232	238
400	362	397
450	406	447
490	634	659
540	912	943
600	1030	1068
660	1272	1317
730	1471	1527
800	1715	1783



Performance Correction for Temperature and Altitude

The performance tables in this catalog are based on fans handling standard air at a density of 0.075 pounds per cubic foot. This is equivalent to 70°F at sea level (29.92 Hg barometric pressure). When specified performance is at a density different than standard, it must be converted to the equivalent standard conditions before entering the performance tables. The equivalent standard conditions can be calculated by using the “Temperature and Altitude Density Ratios” from the table below.

Temperature and Altitude Density Ratios

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	0.964	0.930	0.896	0.864	0.832	0.801	0.772	0.743	0.714	0.688	0.564	0.460
100	0.946	0.912	0.880	0.848	0.818	0.787	0.758	0.730	0.703	0.676	0.651	0.534	0.435
150	0.869	0.838	0.808	0.770	0.751	0.723	0.696	0.671	0.646	0.620	0.598	0.490	0.400
200	0.803	0.774	0.747	0.720	0.694	0.668	0.643	0.620	0.596	0.573	0.552	0.453	0.360
250	0.747	0.720	0.694	0.669	0.645	0.622	0.598	0.576	0.555	0.533	0.514	0.421	0.344
300	0.697	0.672	0.648	0.624	0.604	0.580	0.558	0.538	0.518	0.498	0.480	0.393	0.321
350	0.654	0.631	0.608	0.586	0.565	0.544	0.524	0.505	0.486	0.467	0.450	0.369	0.301
400	0.616	0.594	0.573	0.552	0.532	0.513	0.493	0.476	0.458	0.440	0.424	0.347	0.283
450	0.582	0.561	0.542	0.522	0.503	0.484	0.466	0.449	0.433	0.416	0.401	0.328	0.268
500	0.552	0.532	0.513	0.495	0.477	0.459	0.442	0.426	0.410	0.394	0.380	0.311	0.254
550	0.525	0.506	0.488	0.470	0.454	0.437	0.421	0.405	0.390	0.375	0.361	0.296	0.242
600	0.500	0.482	0.469	0.448	0.432	0.416	0.400	0.386	0.372	0.352	0.344	0.282	0.230
650	0.477	0.460	0.444	0.427	0.412	0.397	0.382	0.368	0.354	0.341	0.328	0.269	0.219
700	0.457	0.441	0.425	0.410	0.395	0.380	0.366	0.353	0.340	0.326	0.315	0.258	0.210
800	0.420	0.404	0.389	0.375	0.362	0.350	0.336	0.323	0.311	0.300	0.290	0.237	0.193

*Minimum sheave diameter when using maximum HP motor. Check with the factory on applications over 300 HP.

Example:

Assume a Model HRT 540 to handle 66,500 CFM at 12" SP at 400°F at an altitude of 1,000 feet.

1. Knowing the operating conditions are 400°F and 1,000 feet altitude, the correction factor can be found in the table above to be 0.594.
2. Divide the operating SP by this factor:

$$12" \div 0.594 = 20.2" \text{ SP}$$

This is the equivalent SP at standard air density.

3. Enter the HRT 540 performance table with 66,500 CFM and 20" SP to find the fan RPM and BHP.

The fan RPM is 1273. The brake horsepower is 270.45 BHP at standard conditions (270.45 BHP is also referred to as “cold” or “starting” brake horsepower).

To determine the BHP at operating conditions, multiply the BHP at standard conditions by the correction factor from the table above. The BHP at operating conditions is $270.45 \times 0.594 = 160.65$.

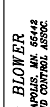
Derating Factors For High Temperature

TEMP. (°F)	DERATING FACTOR		
	STD. STEEL	304 STAINLESS	316 STAINLESS
70	1.000	CONSULT FACTORY	CONSULT FACTORY
200	0.968		
300	0.949		
400	0.929		
500	0.901		
600	0.873		
700	0.844		
800	0.814		

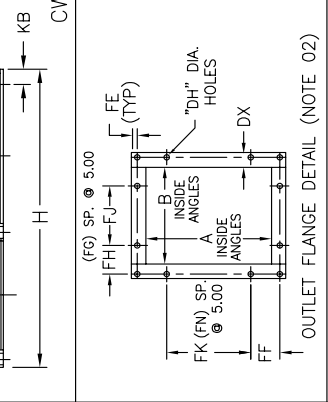
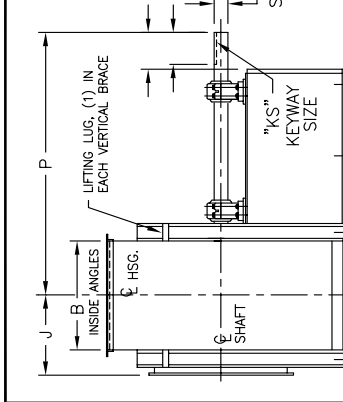
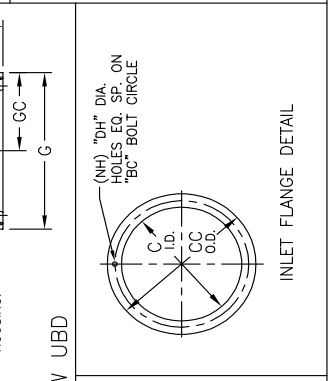
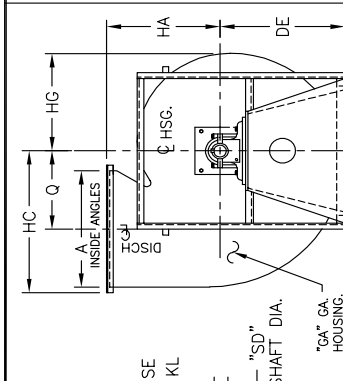
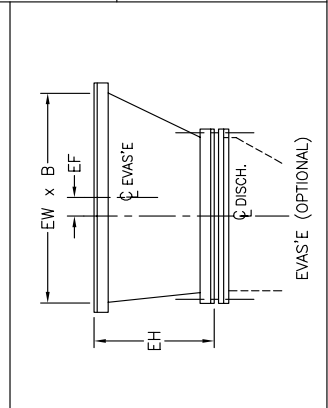
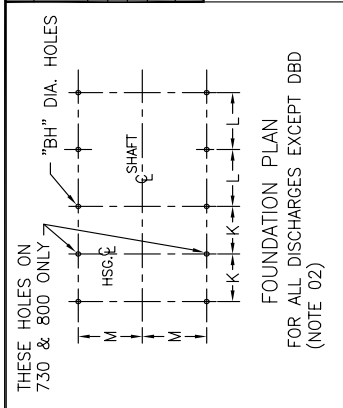
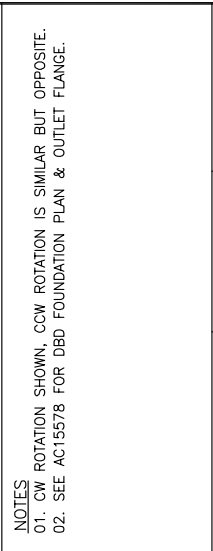
Standard steel construction is suitable for use in gas temperatures to 800°F. Aluminum wheels are suitable for temperatures to 250°F only.

When a fan operates at temperatures higher than 70°F, the maximum RPMs allowable from the table on page 7 must be adjusted according to the derating factor found in the table at the left.

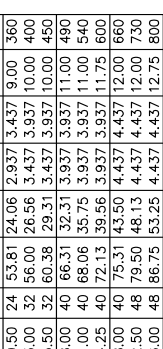
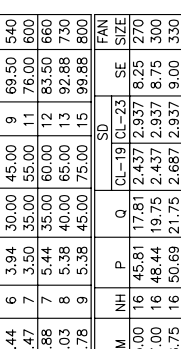
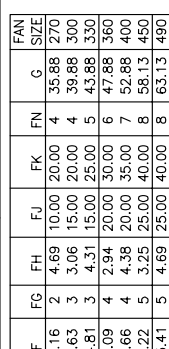
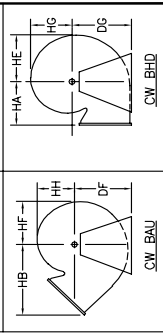
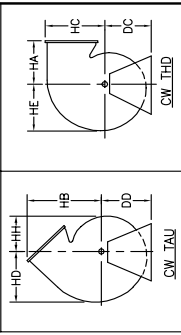
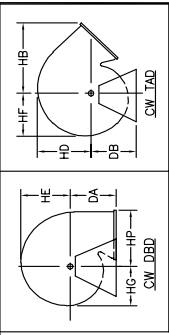
Stainless steel wheels must be derated even at ambient operating temperatures. Please consult factory for stainless steel derating factors.

HRT ARRANGEMENT NO. 1, SWSI		DRAWN: 5/30/96	
 TWIN CITY FAN & BLOWER 669 PENNY LANE, MINNEAPOLIS, MN 55442 MEMBER OF AIR MOVEMENT AND CONTROL ASSOC.		REV. 1/31/07	
JOB		DWG NO. BC15576A	
CONT		ENG/ARCH	
LOC	ENG/ARCH	TAG	MOTOR
S.O. NO.	CLASS	ROT	DISCH
SIZE	SP	RPM	TS
CFM	OV	BHP	OV

ACCESSORIES REQ'D.
 01. HOUSING DRAIN
 02. SHAFT SEAL
 03. INLET FLANGE (PUNCHED)
 04. OUTLET FLANGE (PUNCHED)



FAN SIZE	A	B	BC	BH	C	CC	CD	CE	CF	CG	CH	CI	CK	CL	CM	CN	CO	CP	CQ	CR	CS	CT	CU	CV	CW	DX	DH	DG	DF	DE	DD	DC	DB	DA	EA	EB	EC	ED	EE	EF	EG	EH	EH	EW	FE	FF	FG	FH	FJ	FK	FN	G	FAN SIZE
270	26.56	17.63	25.75	0.81	23.50	27.50	24.50	20.50	23.00	25.00	27.00	29.50	34.06	0.56	1.50	3.63	17.19	35.75	0.63	4.16	2	4.69	10.00	20.00	4	35.88	270																										
300	29.50	19.38	28.00	0.81	25.75	29.50	27.00	23.00	25.50	27.50	30.00	33.00	37.50	0.56	1.50	3.88	18.25	39.38	0.63	5.63	3	3.06	15.00	20.00	4	39.88	300																										
330	32.38	21.38	30.75	0.81	28.50	32.50	30.00	25.00	28.00	30.50	33.00	36.25	40.94	0.56	2.00	4.38	21.19	43.50	0.88	4.81	3	4.31	15.00	25.00	5	43.88	330																										
360	35.94	23.63	33.75	1.06	31.63	35.63	33.00	28.00	31.00	34.00	36.50	40.00	45.00	0.56	2.00	4.88	23.00	48.25	0.88	4.09	4	2.94	20.00	30.00	6	47.88	360																										
400	39.36	26.00	37.00	1.06	34.88	38.88	36.00	31.00	34.00	37.00	40.50	44.00	49.75	0.56	2.50	5.38	26.13	53.25	1.13	3.22	5	4.38	20.00	35.00	7	52.88	400																										
450	43.69	28.75	40.63	1.06	38.50	42.50	40.00	34.00	37.00	41.00	44.50	48.50	54.63	0.56	2.50	6.00	28.44	58.88	1.13	3.22	5	3.25	25.00	40.00	8	58.13	450																										
490	48.06	31.63	45.00	1.06	42.50	48.50	44.00	37.00	41.00	45.00	49.00	53.00	59.75	0.69	2.50	6.56	30.75	64.75	1.13	5.41	5	4.69	25.00	40.00	8	63.13	490																										
540	53.13	35.13	50.50	1.06	47.00	53.00	48.50	41.00	45.00	50.00	54.00	58.50	65.81	0.69	2.50	7.25	33.56	71.63	1.13	5.44	6	3.94	30.00	45.00	9	69.50	540																										
600	58.69	38.75	55.50	1.06	52.00	58.00	53.50	45.00	50.00	55.00	60.00	65.00	73.00	0.69	3.00	8.06	37.75	79.25	1.38	3.47	7	3.50	35.00	55.00	11	76.00	600																										
660	64.50	42.63	60.75	1.06	57.25	63.25	59.00	50.00	55.00	60.50	65.50	71.25	79.50	0.69	3.00	8.94	41.13	87.25	1.38	3.88	7	5.44	35.00	60.00	12	83.50	660																										
730	71.31	47.00	67.75	1.06	63.25	71.25	65.00	55.00	61.00	67.50	73.50	78.88	88.38	0.69	3.50	9.88	45.75	96.63	1.63	5.03	8	5.38	40.00	65.00	13	92.88	730																										
800	78.81	52.00	74.50	1.06	70.00	78.00	72.00	61.00	68.00	74.00	80.50	86.88	97.50	0.69	3.50	10.94	50.00	106.63	1.63	3.78	9	5.38	45.00	75.00	15	99.88	800																										



NOTES
 01. CW ROTATION SHOWN, CW ROTATION IS SIMILAR BUT OPPOSITE.
 02. SEE AC15578 FOR DBD FOUNDATION PLAN & OUTLET FLANGE.

DIMENSIONS NOT TO BE USED FOR CONSTRUCTION. CERTIFIED DRAWINGS AVAILABLE UPON REQUEST.

Typical Specifications

Furnish and install as shown on the plans, Type HRT Radial Tip Fan as manufactured by Twin City Fan & Blower, Minneapolis, Minnesota. The fan shall conform to the following requirements.

WHEEL — Blade design shall be forward curved at the entering edge to meet air at the correct angle of entry for high efficiency, and radial at the tip of the leaving edge providing a self-cleaning characteristic. Blades shall be die-formed of special alloy material for strength and accuracy of contour and continuously welded to the wheel cone and backplate. All wheels shall be supplied with welded wear pads. A heavy cast iron or fabricated steel hub shall be provided. Wheels shall be shrunk fit on the shafts and hubs shall include puller holes for use in wheel removal. All wheels shall be statically and dynamically balanced on precision electronic machines, as well as balance tuned after complete assembly.

HOUSING — Casings shall be made of heavy-gauge steel with continuously welded construction and braced with structural shapes to eliminate any resonant vibration and provide smooth operation. Flanged inlet and outlet, shaft seal, and drain shall be provided as standard equipment.

SHAFT — Shafts shall 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 must be supplied with heavy-duty, self-aligning grease or oil lubricated anti-friction spherical roller bearings with split pillow block housings to provide long bearing life.

FACTORY TEST RUN — All Arrangement 1 and Arrangement 9F fans shall be completely assembled and test run as a unit at operating speed or at the maximum RPM allowed for the particular construction type. Balance shall be taken by electronic equipment and records maintained of the readings of axial, vertical, and horizontal direction on each of the bearings. A written copy of this record shall be available upon request by the customer.

GUARANTEE — Manufacturer shall guarantee the workmanship and materials for its Radial Tip 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



TWIN CITY FAN & BLOWER
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