American Industrial
Heat Transfer Inc.

Manufacturer of Quality Heat Exchangers

ACA SERIES

AIR COOLED

AFTERCOOLERS

For Compressed Gas or Vapor

- Low pressure drop available.
- Standard ports NPT, optional ANSI flange.
- Operating temperature of 400°F & pressure of 150PSI.
- Can be built to ASME Code and Certi ied as an option
- Computer generated data sheet available for any application
- Custom designs to fit your needs.
- Cools: Air, Compressors, Blowers, Steam vapors, Pneumatic systems, Vapor recovery systems etc...

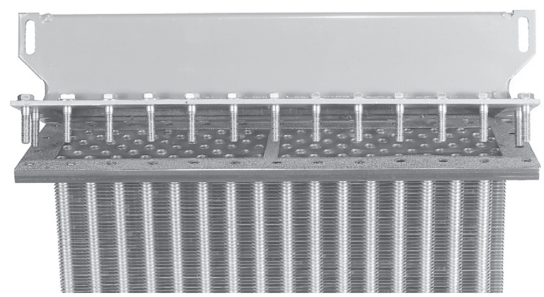
Serviceable Core® Construction

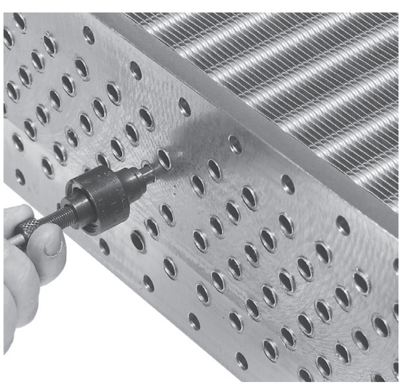
Air coolers are an essential part of any compressed air system, by cooling the air, and condensing water vapor into a liquid state for removal. When air is compressed, the compression induces heat into both the air and the water entrained in the air.

The American Industrial ACA series heat exchanger cools air with air, making it a simple inexpensive way to cool when compared to other water-cooled or refrigerant cooled systems. The unique compact *serviceable core®* design provides efficient cooling and low maintenance under the warmest environmental conditions. By using an ACA series air-cooled after cooler, machine tools will recieve cooler dryer air, provide longer trouble free life, experience less down time, and be cost effective to operate on a continuous basis.

SERVICEABLE CORE®

Core covers disassemble for easy access and cleaning. Repairable design for applications that require limited down time or in the event of a mishap requiring repair. Roller expanded tube to tube-sheet joint. 100% mechanical bond. Positive gasket seal is field replaceable for field maintenance or repair.





SUPERIOR COOLING FINS

Copper tubes are mechanically bonded to highly efficient aluminum cooling fins. Die-formed fin collars provide a durable precision fit for maximum heat transfer. Custom fin design forces air to become turbulent and carry heat away more efficiently than old flat fin designs.

Standard Construction Materials		Standard Unit Ratings	
Tubes	Copper	Operating Pressure	300 psig
Fins	Aluminum	Operating Temperature	300 °F
Cabinet & Pipes	Steel	Consult factory for optional materials and ratings.	
Fan Guard	Zinc Plated Steel		
Manifolds	Steel		

ACA Series *selection*

Compressed Air

Normally air compressors have airflow rates based upon the horsepower. Rotary Screw compressors normally discharge air at 180 ^{o}f - 200 ^{o}f, prior to after-cooling. Reciprocating compressors normally discharge air at 250 ^{o}f - 275 ^{o}f, prior to after-cooling. Compressors are rated in CFM or cubic feet per minute of free air at inlet conditions. For practical purpose we will use sea level at 68 ^{o}f and 36% relative humidity as a norm. Altitude, differing ambient conditions with respect to temperature and humidity will all affect heat exchanger performance to a degree. Moisture content in air actually increases the Btu/hr load requirement for cooling air by adding an additional condensing load to the gas load requirement. As air rapidly cools, moisture in the compressed air stream will condense and separate into droplets, the more humidity present the more condensation will occur.

Sizing

The performance curves provided are for air. However, gases other than air may be applied to this cooler with respect to compatibility by applying a correction factor. Please take time to check the operating specifications thoroughly for material compatibility, pressure, and size before applying an American Industrial heat exchanger into your system.

Terms

Approach Temperature is the desired outlet temperature of the compressed gas minus the inlet ambient air temperature of the external air flowing over the coil.

SCFM (Standard Cubic Feet per Minute)
A cubic foot of air at 68 ^{o}f, 14.696 psia, & 36% relative humidity, per minute.

CFM (Cubic Feet per Minute)
Air at inlet atmospheric conditions.

ACFM (Actual Cubic Feet per Minute)
Air at current pressure, temperature, & humidity conditions without reference to a standard.

To Determine the Heat Load

If the heat load (Btu/hr) is unknown a value can be calculated based upon system operational requirements. To properly calculate the heat load (Btu/hr) to be rejected, several items must be known with certainty (see below).

- Flow rate SCFM (standard cubic feet pr minute)
- Type of gas and its makeup.
- System inlet pressure to the heat exchanger.
- Ambient temperature where the heat exchanger will be located (hotest condition).
- Temperature of the gas at the heat exchanger inlet.
- Temperature of the gas desired at heat exchanger outlet.
- Maximum acceptable pressure loss or cooled gas.

Using The Chart

American Industrial has created a quick reference chart for selecting ACA heat exchangers for Rotary Screw compressors (see page 214) [This chart offers basic information based upon compressor horsepower and average airflow rates. To properly use the chart, select the compressor horsepower at the left or the air flow rate. Next select the approach to ambient that is desired. Where the two columns intersect is shown the proper ACA model number.]

Using The Graphs

American Industrial provides performance graphs for ease of model selection. The following calculation examples (page 213), illustrate formulas to determine model selection sizes. It should be noted that there are some assumptions made when applying the basic principles for calculation in the formula. Altitude, humidity, materials, pressures, etc... all contribute to the final selection. Contact American Industrial for more detailed calculation.

Selection

The selection process is important, many considerations should be made when selecting a heat exchanger. Once the proper Fs requirement is calculated, it is time to apply the data to the graph and make a selection.

1) Find the Flow rate in SCFM located at the bottom of the graph. Follow the graph line up until it matches the calculated Fs from your calculations. If the point falls just above one of the model graphed lines, select the next larger size. If the point is on a line select it as your choice.

2) Check carefully the pressure differential. Units with operating pressures from 70+ psig will have no greater than 2.0 psid within the published flow range. For lower inlet pressure see the pressure drop curves for more detail.

3) Calculate a Nozzle size using the nozzle size calculation to verify your selection has the proper port sizes for your required inlet pressure.

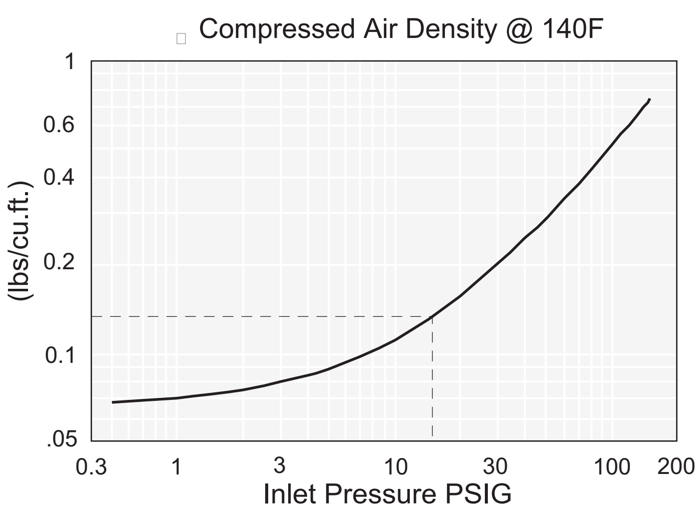
Formula: Nozzle Calculation

$$\text{Nozzle Size} = \sqrt{\frac{\left[\dfrac{(\text{SCFM} \times 4.512)}{(270{,}000 \times d)} \times 144\right]}{.7854}}$$

All numbers in equation are constants except for SCFM and (d) "density".

Example:
Flow rate = 200 SCFM
Pressure = 15 psig
Density = (d) from Compressed Air Density Graph

$$\sqrt{\frac{\left[\dfrac{(200 \times 4.512)}{(270{,}000 \times .14)} \times 144\right]}{.7854}} = 2.09\text{" or (2" Nozzle)}$$



Examples: (Note: All air flow rates must be converted to SCFM)

Application 1 Air Rotary Screw Compressor

Determine the heat load "Q" =Btu/hr — $Q = [SCFM \times CF \times (T_1 - T_2)]$ or $[350 \times 1.13 \times 105^o] = 41{,}528$ Btu/hr

T_1 = Inlet gas temperature: 200ºf

T_2 = Outlet gas temperature: Ambient + 10ºf= (95ºf) — Determine the Fs = $\frac{Btu/hr}{T_2 - T_a}$ or $\frac{41{,}528}{10}$ = **4,153 Fs** (Refer to graph example on page 215)

T_a = Ambient temperature: 85ºf

Airflow rate: 350 SCFM

PSIG = Operating Pressure 100 psig

CF = Correction factor: 1.13 — CF = (.0753 x S x C x60) or (.0753 x 1.0 x .25 x 60) = 1.13

S = Specific gravity with air being 1.0

C = Specific heat (Btu/Lb ºf): .25

Model Selection - ACA-4362

$$\sqrt{\frac{\left[\frac{(350 \times 4.512)}{(270{,}000 \times .50)} \times 144\right]}{.7854}} = 1.46\text{" or (1.5" minimum nozzle)}$$

Application 2 Methane Gas

Determine the heat load "Q" = Btu/hr — $Q = [SCFM \times CF \times (T_1 - T_2)]$ or $[500 \times 1.428 \times 210^o] = 149{,}940$ Btu/hr

T_1 = Inlet gas temperature: 300ºf

T_2 = Outlet gas temperature: 90ºf — Determine the Fs = $\frac{Btu/hr}{T_2 - T_a}$ or $\frac{149{,}940}{30}$ = **4,998 Fs** (Refer to graph example on page 215)

T_a = Ambient temperature: 60ºf

Gas flow rate: 500 SCFM

PSIG = Operating pressure: 150 psig

CF = Correction factor: 1.428 — CF = (.0753 x S x C x 60) or (.0753 x .55 x .575 x 60) = 1.428

S = Specific gravity with air being 1.0: .55

C = Specific heat (Btu/Lb ºf)

Model Selection - ACA-6421

$$\sqrt{\frac{\left[\frac{(500 \times 4.512)}{(270{,}000 \times .74)} \times 144\right]}{.7854}} = 1.44\text{" or (1.5" minimum nozzle)}$$

Application 3 Low Pressure Blower

Determine the heat load "Q" = Btu/hr — $Q = [SCFM \times CF \times (T_1 - T_2)]$ or $[76 \times 1.13 \times 150^o] = 12{,}882$ Btu/hr

T_1 = Inlet gas temperature: 250ºf

T_2 = Outlet gas temperature: 100ºf — Determine the Fs = $\frac{Btu/hr}{T_2 - T_a}$ or $\frac{12{,}882}{10}$ = **1,288 Fs** (Refer to graph example on page 215)

T_a = Ambient temperature: 90ºf

CF = Correction Factor: 1.13

PSIG = Operating pressure: 2 psig

Airflow rate: 90 ACFM

To Convert ACFM to SCFM = $\frac{ACFM \times (PSIG + 14.7) \times 528}{(T_1 + 460) \times 14.7} = \frac{90 \times 16.7 \times 528}{710 \times 14.7} = 76$ SCFM

S = Specific gravity with air being 1.0

C = Specific heat (Btu/lb ºf): .25

△P = 5" water column or less (example pg. 220)

Model Selection - ACA-3302

$$\sqrt{\frac{\left[\frac{(76 \times 4.512)}{(270{,}000 \times .075)} \times 144\right]}{.7854}} = 1.76\text{" or (2.0" minimum nozzle)}$$

Pressure Drop (see page 220 for graphs)

Since gas is compressible the density of the gas changes from one temperature or pressure to the next. While the mass flow rate may not change, the pressure differential across the heat exchanger will change dramatically from high (70-125 psig) to low (1-5 psig) pressure. A low pressure condition requires larger carrying lines to move flow than does the same gas rate under a higher pressure. At lower pressures the differential pressure across the heat exchanger can be quite high compared to the same flow rate at a higher pressure. For that reason it is suggested that the pressure differential graphs on page 220 be consulted prior to making your final selection.

The ACA series heat exchanger is designed to be easily modified to accept larger port sizes in the event your system pressure requires larger nozzles. Consult our engineering department for more exacting information regarding pressure differential issues.

ACA Series *selection*

ROTARY SCREW COMPRESSORS
(200°F @125 PSI & 36% relative humidity)

Compressor Horse Power (HP)	Average Air Discharge Cubic feet per minute (SCFM)	Model Size Selection *Approach Temperature °F (T_2 - T_a)			
		5°F	10°F	15°F	20°F
15	60	ACA - 3302	ACA - 3242	ACA - 3242	ACA - 3182
20	80	ACA - 3302	ACA - 3242	ACA - 3242	ACA - 3182
30	130	ACA - 3362	ACA - 3302	ACA - 3242	ACA - 3242
40	165	ACA - 3362	ACA - 3302	ACA - 3302	ACA - 3242
60	250	ACA - 4362	ACA - 3362	ACA - 3302	ACA - 3302
75	350	ACA - 6362	ACA - 4362	ACA - 3362	ACA - 3302
100	470	ACA - 6362	ACA - 6362	ACA - 3362	ACA - 3362
125	590	ACA - 6422	ACA - 6362	ACA - 4362	ACA - 3362
150	710	ACA - 6422	ACA - 6362	ACA - 6362	ACA - 4362
200	945	ACA - 6482	ACA - 6422	ACA - 6362	ACA - 6362
250	1160	ACA - 6482	ACA - 6422	ACA - 6362	ACA - 6362
300	1450	ACA - 6542	ACA - 6482	ACA - 6422	ACA - 6362
350	1630	ACA - 6542	ACA - 6482	ACA - 6422	ACA - 6362
400	1830	ACA - 6602	ACA - 6482	ACA - 6422	ACA - 6422
500	2150	ACA - 6602	ACA - 6542	ACA - 6482	ACA - 6422

***Approach Temperature**
the desired outlet temperature of the compressed gas minus the inlet ambient air temperature of the external air flowing over the coil.

T_2 - Outlet gas temperature

T_a - Ambient temperature

Example of a model:

ACA - 3242 - 3 - __ -____ - ____

Model
ACA

Size

Number of Passes
1P = 1 pass
2P = 2 pass

Drive Type
N = no motor
1 = single phase
3 = three phase
1EXP = single phase
3EXP = three phase
5 = 575 Volt

Connections
Blank = NPT
A = ANSI 150#RF Flange

Tubing
Blank = Copper
U = 90/10 Cu Ni
C = Carbon Steel
SS = Stainless Steel

Coating
Blank = Enamel (standard)
G = Galvanize (cabinet)
T = Heresite (core)
X = Epoxy (core & cabinet)
STS = Stainless Steel

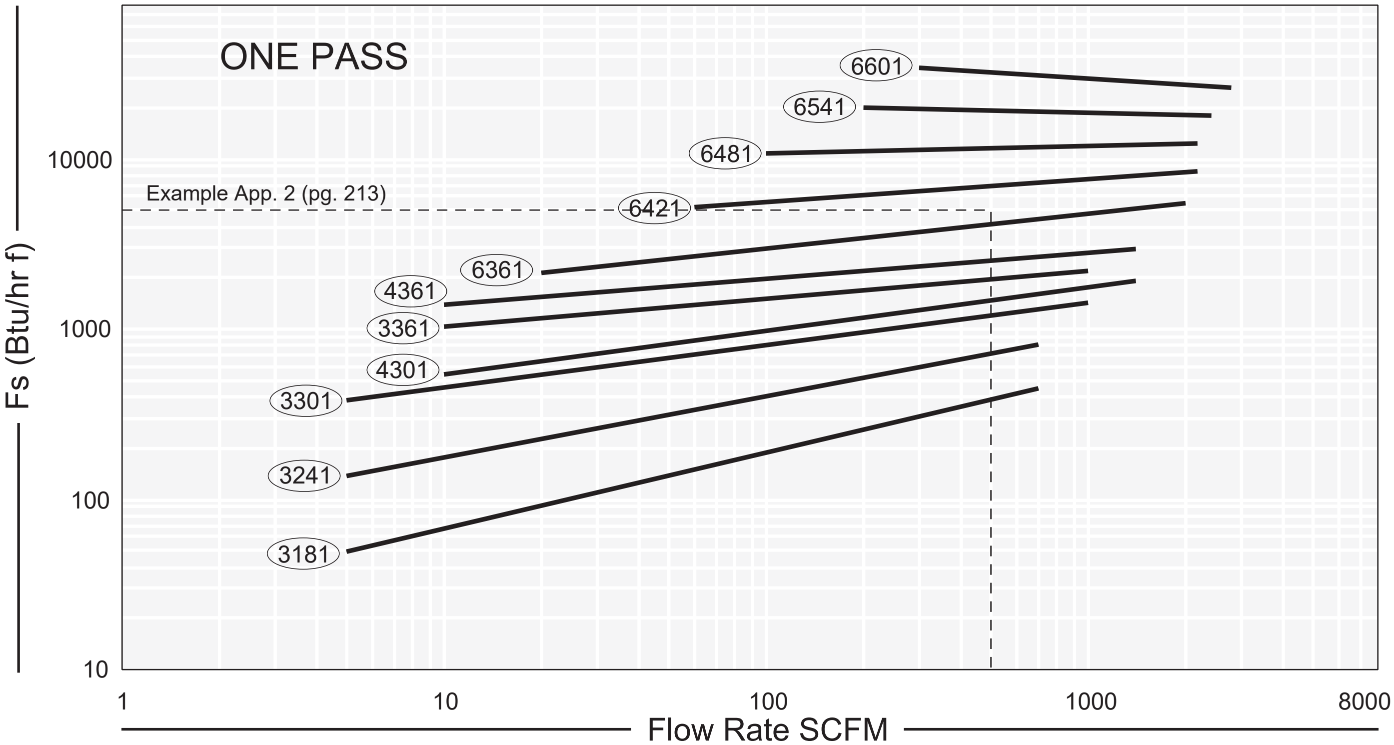
Using the performance graphs (see page 230)

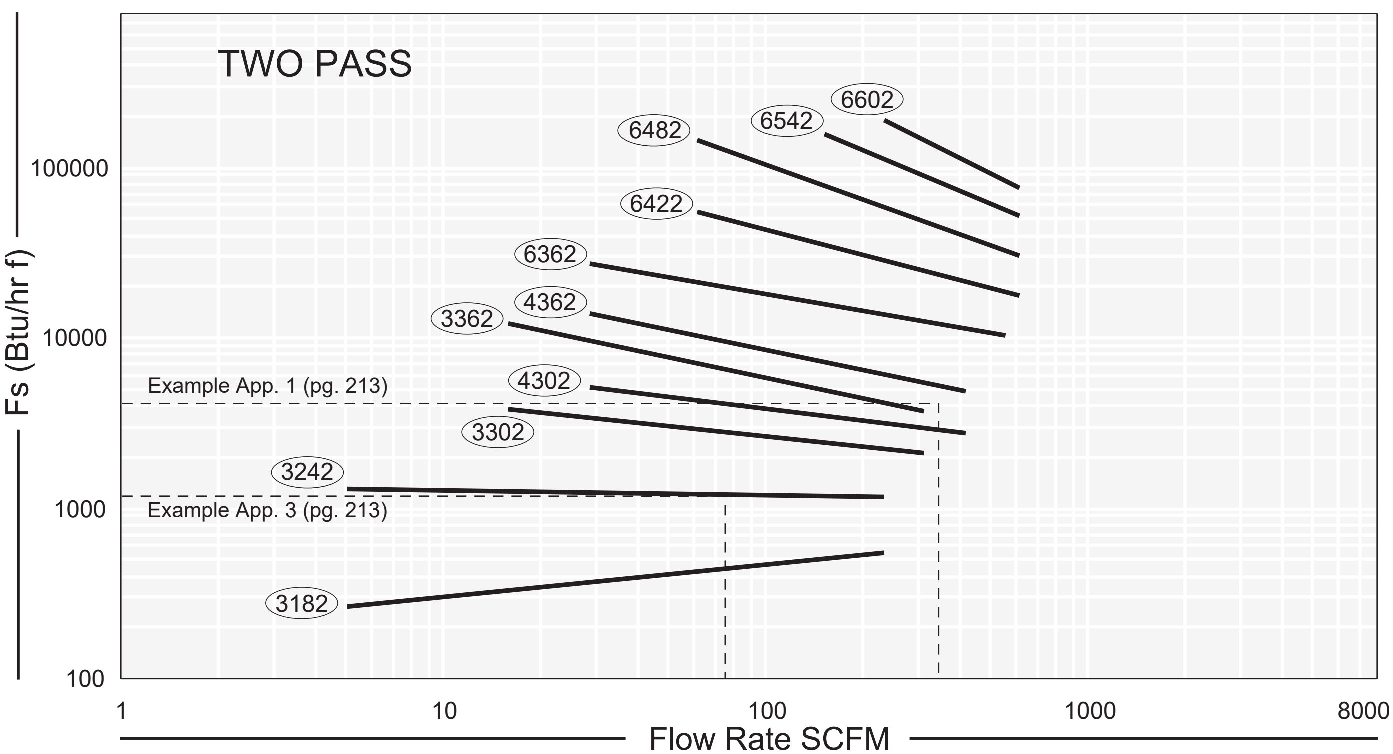
The Flow vs. Fs graph is calculated based upon SCFM units.

To convert volumetric Actual Cubic Feet per Minute (ACFM) into Standard Cubic Feet per Minute (SCFM) see page 213 application 3.

To select a model, locate the flow rate in SCFM located at the bottom of the graph. Proceed upward on the graph until the SCFM flow rate intersects with the calculated Fs. The curve closest, on or above the intersection point is the proper selection.

Using the one pass graph or two-pass graph depends upon pressure differential, flow, and performance requirements. The actual surface area for one or Two Pass units is the same. However, the airflow velocity in the tubes increases with the number of passes giving slightly higher pressure differentials and better cooling performance.





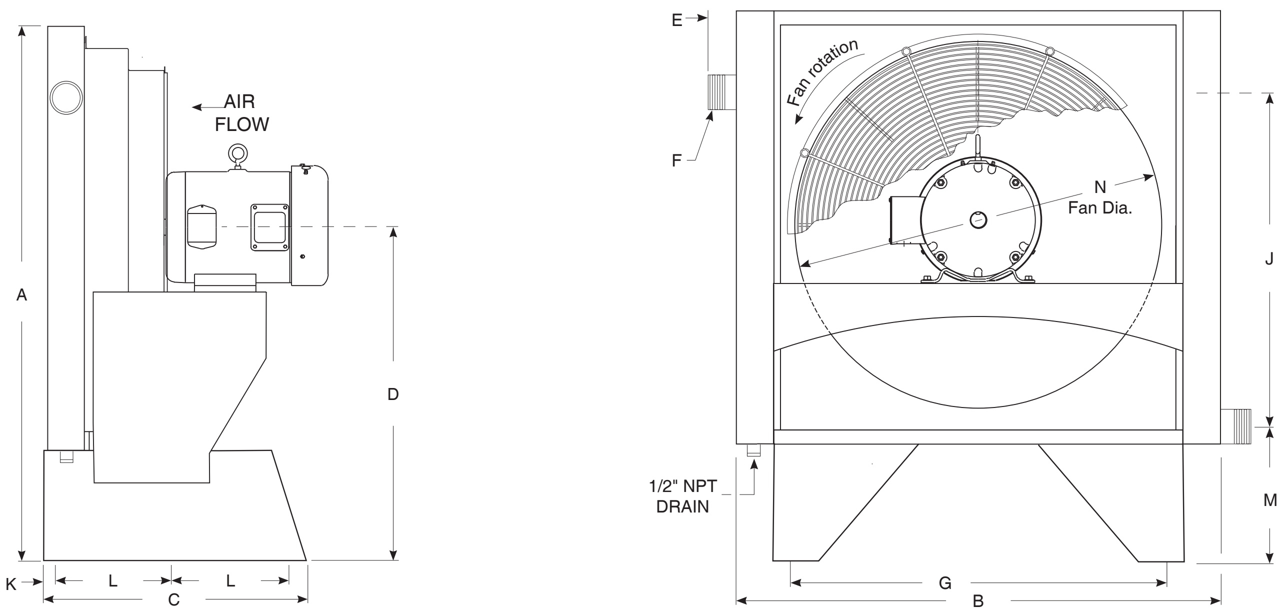
Example

Application #3 (p.5)

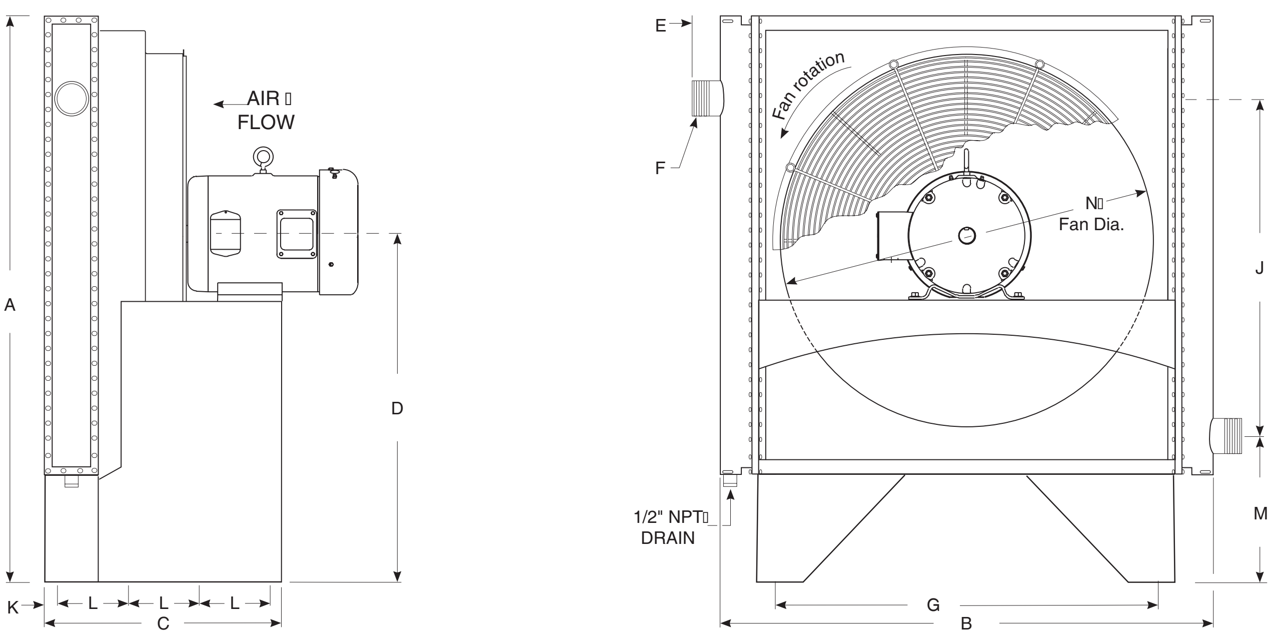
$$Fs = \frac{\text{Heat Load (Btu/hr)}}{\text{Process exiting temperature } (T_2) \text{ from cooler} - \text{Ambient air entering the cooler } (T_a)}$$

SCFM = 76
ÐPSI required = 5" H2O
Model selection = ACA-6421-3
Fs = 1,288 Nozzle check (p.4) = 3.10 or 3"NPT

ACA Series *dimensions*

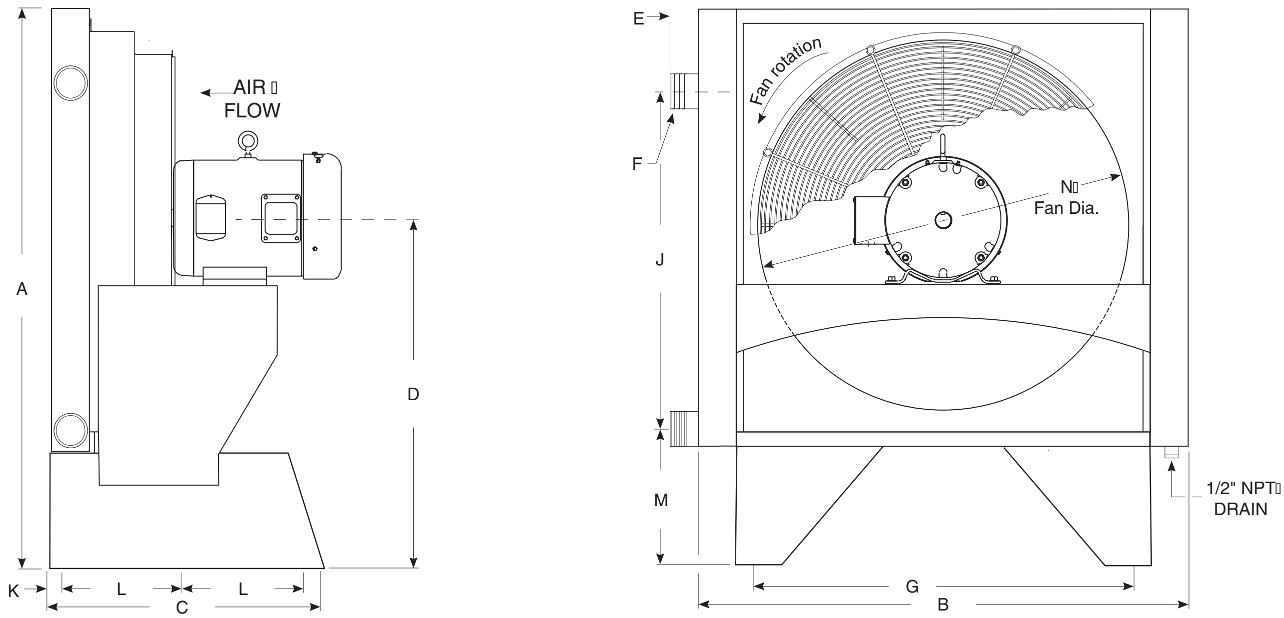


ACA - 3181 through ACA - 4361

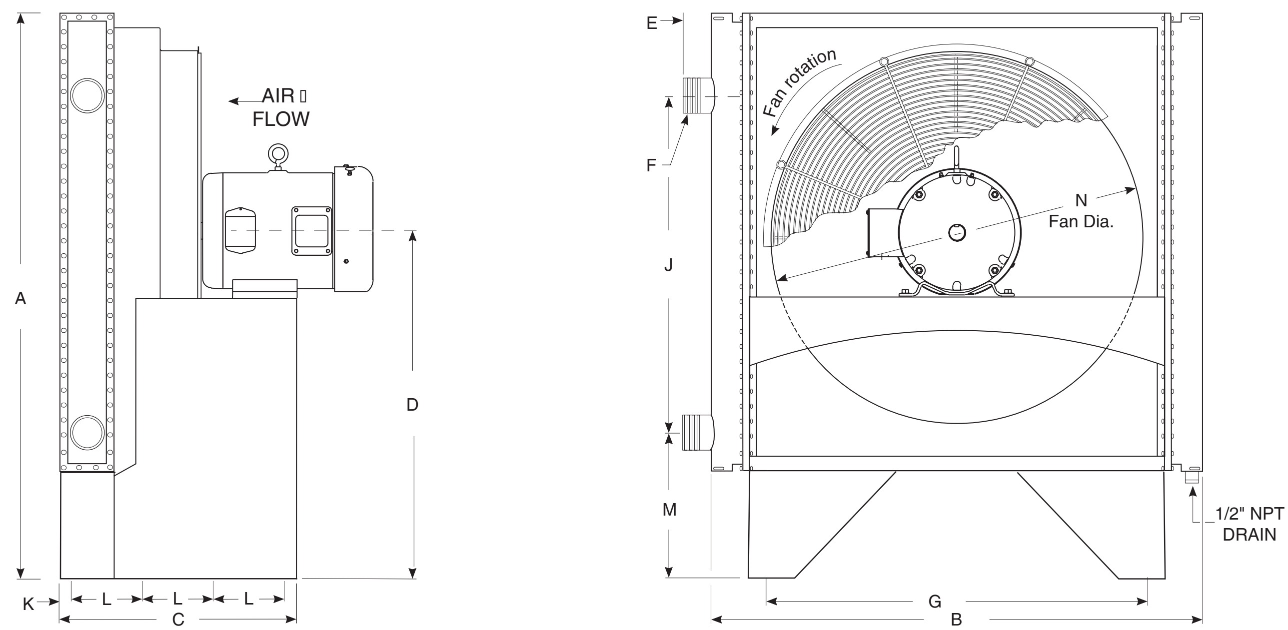


ACA - 6301 through ACA - 6601

DIMENSIONS (inches)												
Model	A	B	C	D	E	F NPT	G	J	K	L	M	N
ACA - 3181	30.6	23.0	19.8	20.25	2.5	1.5	16.3	12.98	1.5	8.38	11.93	14.0
ACA - 3241	36.6	29.0	19.8	23.25	2.5	1.5	22.3	17.48	1.5	8.38	11.93	22.0
ACA - 3301	42.6	35.0	19.8	26.25	2.5	2.0	28.3	21.75	1.5	8.38	12.15	28.0
ACA - 4301	42.6	36.0	19.8	26.25	2.5	2.5	28.3	21.55	1.5	8.38	12.35	28.0
ACA - 6301	42.6	38.8	19.8	26.25	2.5	3.0	28.3	21.07	1.5	8.38	12.98	28.0
ACA - 3361	48.6	41.0	19.8	29.25	2.5	2.0	34.3	26.25	1.5	8.38	12.15	32.0
ACA - 4361	48.6	42.0	19.8	29.25	2.5	2.5	34.4	26.05	1.5	8.38	12.35	32.0
ACA - 6361	48.5	43.9	19.8	29.25	2.5	3.0	34.3	26.0	1.5	8.38	12.7	32.0
ACA - 6421	54.5	50.8	27.36	32.25	2.5	4.0	40.3	29.4	2.0	6.75	13.3	36.0
ACA - 6481	60.6	56.8	27.36	35.25	2.5	4.0	46.3	34.1	2.0	6.75	13.3	42.0
ACA - 6541	66.6	62.8	28.83	38.25	2.5	4.0	52.3	38.6	2.0	6.75	13.3	48.0
ACA - 6601	72.4	67.9	30.6	41.25	2.5	4.0	58.3	43.05	2.0	6.75	13.3	48.0



ACA - 3182 through ACA - 4362



ACA - 6302 through ACA - 6602

DIMENSIONS (inches)												
Model	A	B	C	D	E	F NPT	G	J	K	L	M	N
ACA - 3182	30.6	23.0	19.8	20.25	2.5	1.5	16.3	12.98	1.5	8.38	11.93	14.0
ACA - 3242	36.6	29.0	19.8	23.25	2.5	1.5	22.3	17.48	1.5	8.38	11.93	22.0
ACA - 3302	42.6	35.0	19.8	26.25	2.5	2.0	28.3	21.75	1.5	8.38	12.15	28.0
ACA - 4302	42.6	36.0	19.8	26.25	2.5	2.5	28.3	21.55	1.5	8.38	12.35	28.0
ACA - 6302	42.6	38.8	19.8	26.25	2.5	3.0	28.3	21.07	1.5	8.38	12.98	28.0
ACA - 3362	48.6	41.0	19.8	29.25	2.5	2.0	34.3	26.25	1.5	8.38	12.15	32.0
ACA - 4362	48.6	42.0	19.8	29.25	2.5	2.5	34.4	26.05	1.5	8.38	12.35	32.0
ACA - 6362	48.5	43.9	19.8	29.25	2.5	3.0	34.3	26.0	1.5	8.38	12.7	32.0
ACA - 6422	54.5	50.8	27.36	32.25	2.5	4.0	40.3	29.4	2.0	6.75	13.3	36.0
ACA - 6482	60.6	56.8	27.36	35.25	2.5	4.0	46.3	34.1	2.0	6.75	13.3	42.0
ACA - 6542	66.6	62.8	28.83	38.25	2.5	4.0	52.3	38.6	2.0	6.75	13.3	48.0
ACA - 6602	72.4	67.9	30.6	41.25	2.5	4.0	58.3	43.05	2.0	6.75	13.3	48.0

ACA Series *motor data*

ELECTRIC MOTOR DATA

Model	Horse Power	Phase	Hz	Volts	RPM	NEMA Frame	Enclosure Type	Full Load Amperes	Service Factor	Thermal Overload
ACA-3181/2	.25	1	60	115/230	1800	48	TEFC	2.6/1.3	1.15	NO
ACA-3181/2	.25	3	60	230/460	1800	48	TEFC	1.4/.07	1.15	NO
ACA-3181/2	.33	3	60	575	1800	56	TEFC	0.6	1.15	NO
ACA-3241/2	.25	1	60	115/230	1200	56	TEFC	5.2/2.6	1.15	NO
ACA-3241/2	.25	3	60	230/460	1200	56	TEFC	1.4/0.7	1.15	NO
ACA-3241/2	.50	3	60	575	1200	56	TEFC	2.0/1.0	1.15	NO
ACA-3301/2	.50	1	60	115/230	1200	56	TEFC	7.8/3.9	1.15	NO
ACA-3301/2	.50	3	60	230/460	1200	56	TEFC	2.4/1.2	1.15	NO
ACA-3301/2	.50	3	60	575	1200	56	TEFC	1.0	1.15	NO
ACA-4301/2	.50	1	60	115/230	1200	56	TEFC	7.8/3.9	1.15	NO
ACA-4301/2	.50	3	60	230/460	1200	56	TEFC	2.4/1.2	1.15	NO
ACA-4301/2	.50	3	60	575	1200	56	TEFC	1.0	1.15	NO
ACA-6301/2	1.0	3	60	230/460	1200	56	TEFC	3.6/1.8	1.15	NO
ACA-6301/2	1.0	3	60	575	1200	56	TEFC	1.5	1.15	NO
ACA-3361/2	1.0	3	60	230/460	1200	56	TEFC	3.6/1.8	1.15	NO
ACA-3361/2	1.0	3	60	575	1200	56	TEFC	1.5	1.15	NO
ACA-4361/2	1.0	3	60	230/460	1200	56	TEFC	3.6/1.8	1.15	NO
ACA-4361/2	1.0	3	60	575	1200	56	TEFC	1.5	1.15	NO
ACA-6361/2	3.0	3	60	230/460	1800	182T	TEFC	8.4/4.2	1.15	NO
ACA-6361/2	3.0	3	60	575	1800	182T	TEFC	3.05	1.15	NO
ACA-6421/2	5.0	3	60	230/460	1200	213T	TEFC	13.66/6.83	1.15	NO
ACA-6421/2	5.0	3	60	575	1200	213T	TEFC	5.39	1.15	NO
ACA-6481/2	5.0	3	60	230/460	1200	213T	TEFC	13.66/6.83	1.15	NO
ACA-6481/2	5.0	3	60	575	1200	213T	TEFC	5.39	1.15	NO
ACA-6541/2	7.5	3	60	230/460	1200	254T	TEFC	19.96/9.98	1.15	NO
ACA-6541/2	7.5	3	60	575	1200	254T	TEFC	7.99	1.15	NO
ACA-6601/2	10.0	3	60	230/460	1200	256T	TEFC	27.6/13.8	1.15	NO
ACA-6601/2	10.0	3	60	575	1200	256T	TEFC	10.6	1.15	NO

NOTE: All of the ACA Series are available in 50hz upon request as a special

ELECTRIC MOTOR NOTES:

1) All motors are NEMA, high efficiency
2) Motor electrical ratings are an approximate guide and may vary between motor manufacturers. Consult ratings on motor data plate prior to installation and operation.

3) Explosion proof, high temperature, severe duty, chemical, IEC, Canadian Standards Association, and Underwriters Laboratory recognized motors are available upon request.

4) American Industrial reserves the right to enact changes to motor brand, type and ratings regarding horsepower, RPM,FLA,and service factor for standard products without notice. All specific requirements will be honored without change.

5) Fan rotation is clockwise when facing the motor shaft.

6) The above motors contain factory lubricated shielded ball bearings (no additional lubrication is required).

7) **Abbreviation Index**
TEFC...........................Totally Enclosed, Fan Cooled
EXP.............................Explosion Proof

NOTE: Basic electric drive units are supplied with one of the corresponding above listed motors.

CLASS I,DIV.1, GROUP D or CLASS II,DIV.2, GROUP F & G EXPLOSION PROOF MOTOR DATA

Model	Horse Power	Phase	Hz	Volts	RPM	NEMA Frame	Enclosure Type	Full Load Amperes	Service Factor	Thermal Overload
ACA-3181/2-1	.25	1	60	115/230	1800	48	EXP	5.0/2.5	1.0	YES
ACA-3181/2-3	.25	3	60	230/460	1800	48	EXP	0.7/1.4	1.0	YES
ACA-3241/2-1	.33	1	60	115/230	1200	56	EXP	6.8/3.4	1.0	YES
ACA-3241/2-3	.33	3	60	230/460	1200	56	EXP	0.8/1.6	1.0	YES
ACA-3301/2-1	.75	1	60	115/230	1200	56	EXP	10.8/5.4	1.0	YES
ACA-3301/2-3	.75	3	60	230/460	1200	56	EXP	2.8/1.4	1.0	YES
ACA-4301/2-1	.75	1	60	115/230	1200	56	EXP	10.8/5.4	1.0	YES
ACA-4301/2-3	.75	3	60	230/460	1200	56	EXP	2.8/1.4	1.0	YES
ACA-6301/2-3	1.0	3	60	230/460	1200	56	EXP	3.8/1.9	1.0	YES
ACA-3361/2-3	1.0	3	60	230/460	1200	56	EXP	3.8/1.9	1.0	YES
ACA-4361/2-3	1.0	3	60	230/460	1200	56	EXP	3.8/1.9	1.0	YES
ACA-6361/2-3	3.0	3	60	230/460	1800	182T	EXP	7.82/3.91	1.0	YES
ACA-6421/2-3	5.0	3	60	230/460	1200	215T	EXP	13.66/6.83	1.0	YES
ACA-6481/2-3	5.0	3	60	230/460	1200	215T	EXP	13.66/6.83	1.0	YES
ACA-6541/2-3	7.5	3	60	230/460	1200	254T	EXP	19.46/9.73	1.0	YES
ACA-6601/2-3	10.0	3	60	230/460	1200	256T	EXP	26.6/13.3	1.0	YES

NOTE: All of our ACA Series are available in 50hz upon request as a special

COMMON DATA

Model	Air Flow		Sound Level dB(A) @ 7ft	Weight		Serviceable Core
	CFM	m^3/s		w/ motor	w/o motor	
ACA-3181/2	1550	0.731	72	131	111	NO
ACA-3241/2	2900	1.36	76	154	134	NO
ACA-3301/2	4450	2.10	76	184	160	NO
ACA-4301/2	4450	2.10	76	211	187	NO
ACA-6301/2	4450	2.10	76	343	305	YES
ACA-3361/2	6350	2.99	79	243	205	NO
ACA-4361/2	6350	2.99	79	289	251	NO
ACA-6361/2	10500	4.95	91	402	342	YES
ACA-6421/2	14300	6.75	87	636	443	YES
ACA-6481/2	18700	8.82	88	753	560	YES
ACA-6541/2	23350	11.02	91	938	691	YES
ACA-6601/2	29300	13.83	91	1104	835	YES

NOTES:

TEFC = Totally Enclosed, Fan Cooled

To estimate the sound level at distances other than 7 feet (2.1 meters) from the cooler, add 6 db for each halving of distance, or substract 6 db for each doubling of the distance.

Example:
The Sound Level of the ACA-3181/2 is 72 dB at 7ft. At 3.5ft (7ft x 0.5 = 3.5ft) the sound level is 66 dB (72dB - 6dB = 66dB). At 14ft (7ft x 2 = 14ft) the sound level is 78dB (72dB + 6dB = 78dB).

Pressure Drop Graphs (see page 237)

Each graph represents a specific pressure drop at differing flow rates and inlet pressures. The four graphs for each model series size represents the more popular milestone pressure differentials commonly applied.

To use the graphs for selection purposes follw the steps below.

1) Locate the operating pressure at the bottom of the desired pressure drop chart.
2) Locate the flow rate in SCFM at the left end of the chart.
3) Follow the "Pressure" line vertically and the "Flow" line horizontally until they cross, note the location.
4) The curve on, or closest above will be exact or less pressure drop than requested and suitable for the application.
5) There may be several units shown above the intersection point, all of which will produce less than the desired pressure drop at the required flow.

Example: Application 3 Low Pressure Blower

Flow = 76 SCFM • Operating pressure = 2 PSIG • Initial selection from graph page 215 = ACA-3302
Desired pressure drop = 5" H2O or less. (USE the "Pressure Drop 5" H20" curves page 237)
From the pressure drop graph, page 237. Acceptable choice - ACA-3302 is on the line, ACA-3242 is well below the line. The ACA-3302 meets the pressure drop requirement, but exceeds the capacity requirement. However, even though the ACA-3242 exceeds 5" of water pressure drop, other considerations should be made prior to selection such as unit physical size, cost, availability, and port size.

ACA Series *pressure drop graphs*