

Air Cooled Aftercoolers 35 to 4000 SCFM (56 to 6430 nm³/hr.)



PNEUMATIC PRODUCTS CORPORATION

Improved Performance for your Compressed Air and Gas System

Description

The Pneumatic Products ACA Aftercooler line is made up of two types of air cooled heat exchangers, our traditional fin and tube models, for flow rates up to 640 SCFM (1029 nm³/hr), and our advanced, state-of-the-art, plate core design for flows of 400 to 3500 SCFM (643-5625 nm³/hr). Both types are rated to 400°F and 250 psig (204°C, 17.0 bar g), with a maximum pressure drop of 3 psi. Selection criteria is provided for approach temperatures of 10 to 20°F (5.6-11°C).

Applications

ACA Aftercoolers lower the temperature of compressed air or gas to within 10°F of ambient air temperature. By eliminating the high temperatures resulting from the compression process, our ACA Aftercoolers prevent thermal damage to downstream equipment and condense most of the water vapor contained in the system.

Used in conjunction with a Pneumatic Products Separator and Automatic Drain Valve, over 90% of the water will be removed. This is the first necessary step in a properly functioning compressed air purification system.

Features and Benefits

ACAF-Fin and Tube Models

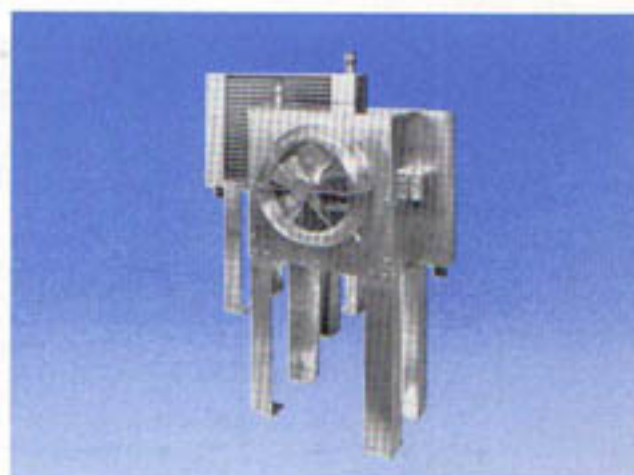
- High strength convoluted aluminum fins and copper tubes for maximum resistance to external damage and optimized heat transfer.
- Galvanized cabinets for long service life.
- Heavy duty multi-wing aluminum fan for long blade life and enhanced fatigue resistance.
- Optimized fin spacing for minimum static resistance for efficient operation.
- Modular construction for ease of service.

ACAP-Plate Core Models

- Rugged, unitized, aluminum plate core design for long life in extreme duty applications.
- High density core for low first cost, low energy consumption and small footprint.
- Unitized construction for high vibration resistance and maximum heat transfer.
- Optional core coatings for highly corrosive environments.
- Reversible variable pitch fan for "push" or "pull" cooling air flow.
- Horizontal or vertical mounting for maximum application flexibility.



ACAP Model



ACAF Model

Both Models

- Maximized annular area for high cooling air flow with minimum energy expended.
- Fan-duty rated motors with enhanced thrust bearings for long motor life.
- Optional NEMA 4 enclosure and TEFC motor for outdoor placement.

Sizing and Selection

Determine the inlet temperature, the desired approach temperature and read horizontally across the line to the column for the maximum SCFM the aftercooler will be required to cool.

Example: Two stage reciprocating compressor with 750 SCFM output and discharge temperature of approximately 250°F, with a required approach temperature of 10°F.

use 250°F 10° Row, and read across to 750 SCFM Column;
select Model Number ACAP-2837

RAPID SELECTION CHART

ACA-		SCFM (nm ³ /Hr)																		
		25 (40.2)	35 (56)	50 (80.4)	100 (161)	150 (241)	225 (362)	300 (482)	400 (643)	500 (804)	600 (964)	750 (1206)	900 (1447)	1200 (1929)	1600 (2572)	2000 (3215)	2400 (3858)	3000 (4822)	3400 (5465)	4000 (6430)
INLET & APPROACH TEMPERATURE	200°F Inlet (93°C)	ACA-(model)																		
	10°F (5.6°C)	F3201	F3202	F3203	F4502	F4850	F5256 P1935	F7856 P1935	F9256 P2435	F9256 P2435	P2835	P2835	P2837	P3637	P4537	P5437	P5837			
	15°F (8.3°C)	F3201	F3201	F3202	F4501	F4503	F4850 P1935	F5256 P1935	F7856 P1935	F7856 P2435	F9256 P2435	P2435	P2835	P2837	P3637	P4037	P4537	P5437	P5837	
	20°F (11.1°C)	F3201	F3201	F3201	F3204	F4502	F4850 P1935	F4850 P1935	F5256 P1935	F7856 P1935	F7856 P2435	F9256 P2435	F9256 P2835	P2837	P3637	P4037	P4037	P4537	P5437	P5837
	250°F Inlet (121°C)																			
	10°F (5.6°C)	F3201	F3202	F3204	F4503	F4850	F7856 P1935	F7856 P1935	F9256 P2435	P2435	P2835	P2837	P2837	P3637	P4537	P5437	P5837			
	15°F (8.3°C)	F3201	F3201	F3202	F4501	F4503	F4850 P1935	F5256 P1935	F7856 P1935	F9256 P2435	F9256 P2435	P2835	P2835	P2837	P3637	P4037	P4537	P5437	P5837	
	20°F (11.1°C)	F3201	F3201	F3202	F3204	F4502	F4850 P1935	F4850 P1935	F7856 P1935	F7856 P2435	F9256 P2435	F9256 P2435	F9256 P2835	P2837	P3637	P4037	P4537	P5437	P5837	P5837
	300°F Inlet (149°C)																			
	10°F (5.6°C)	F3202	F3203	F3204	F4850	F5256	F7856 P1935	F9256 P2435	F9256 P2435	P2835	P2837	P3637	P3637	P4037	P5437	P5837				
	15°F (8.3°C)	F3201	F3202	F3203	F4502	F4850	F5256 P1935	F7856 P1935	F9256 P2435	F9256 P2435	P2435	P2835	P2837	P3637	P4537	P5437	P5837			
	20°F (11.1°C)	F3201	F3201	F3202	F4501	F4503	F4850 P1935	F5256 P1935	F7856 P2435	F9256 P2435	F9256 P2435	P2835	P2835	P3637	P4037	P4537	P5437	P5837		
	350°F Inlet (177°C)																			
	10°F (5.6°C)	F3202	F3203	F4501	F4850	F5256	F7856 P1935	F9256 P2435	P2435	P2835	P2837	P3637	P4037	P4537	P5837					
	15°F (8.3°C)	F3201	F3202	F3203	F4503	F4850	F5256 P1935	F7856 P1935	F9256 P2435	F9256 P2435	P2835	P2837	P3637	P4037	P4537	P5437				
	20°F (11.1°C)	F3201	F3202	F3203	F4501	F4850	F4850 P1935	F5256 P1935	F7856 P2435	F9256 P2435	F9256 P2435	P2835	P2837	P3637	P4037	P5437	P5837			

F denotes ACAF
P denotes ACAP

Contact Factory for selection if a 5°F approach temperature is required

*Approach Temperature is the difference in temperature between the Air Outlet temperature and the Cooling Water Inlet temperature.

Average Inlet Air Temperatures

Compressor Type

Single Stage
Reciprocating
300-350° F

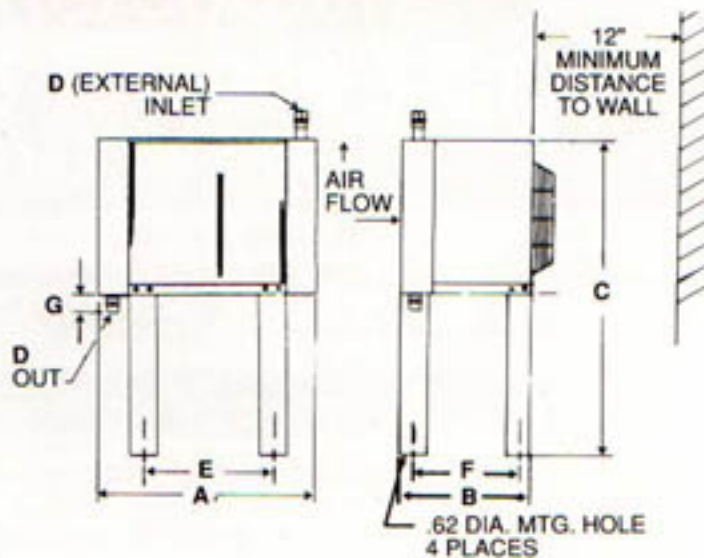
Two Stage
Reciprocating
250°F

Rotary
Screw
150-200°F

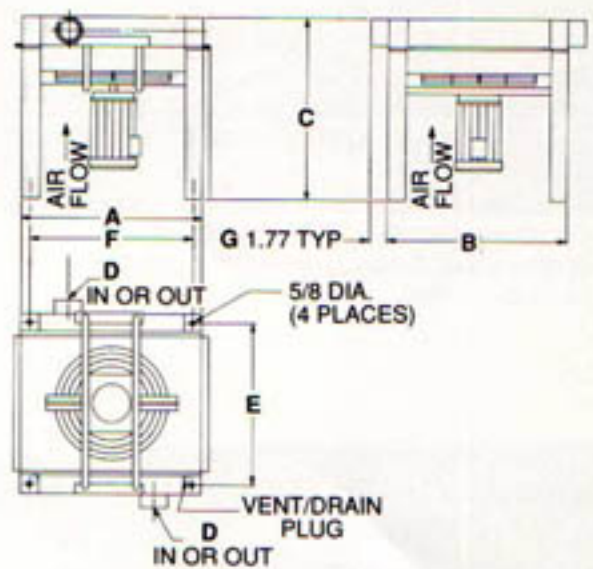
Centrifugal
250°F

The above table represents average discharge values. For accurate selection, measure your compressor discharge temperature.

Specifications & Dimensions



ACAF Models



ACAP Models

Model No.	Fan CFM nm ³ /Hr	Fan Size Dia. in. (cm)	Motor H.P.	Standard Power (optional)	Approx. Shipping Weight lbs (kg)	A Width in (cm)	B Depth in (cm)	C Height in (cm)	D Air NPT in (cm)	E Mount in (cm)	F Mount in (cm)	G (1) Outlet Offset in (cm)
ACAF-3201	1375 (2210)	12 (30)	1/4	115/1/60 (a) (b)	105 (48)	30.50 (77.5)	14.75 (37.5)	46.50 (118)	1.0 (2.5)	19.09 (48.5)	10.75 (27.3)	2.00 (5)
ACAF-3202	1375 (2210)	12 (30)	1/4	115/1/60 (a) (b)	105 (51)	30.50 (77.5)	14.75 (37.5)	46.50 (118)	1.0 (3.8)	19.09 (48.5)	10.75 (27.3)	2.00 (6.35)
ACAF-3203	1375 (2210)	12 (30)	1/4	115/1/60 (a) (b)	112 (51)	30.50 (77.5)	14.75 (37.5)	46.50 (118)	1.5 (3.8)	19.09 (48.5)	10.75 (27.3)	2.50 (6.35)
ACAF-3204	1375 (2210)	12 (30)	1/4	115/1/60 (a) (b)	120 (54)	30.50 (77.5)	14.75 (37.5)	46.50 (118)	1.5 (3.8)	19.09 (48.5)	10.75 (27.3)	2.50 (6.35)
ACAF-4501	2450 (3938)	14 (36)	1/4	115/1/60 (a) (b)	135 (61)	43.50 (110)	14.75 (37.5)	46.50 (118)	1.5 (3.8)	32.09 (81.5)	10.75 (27.3)	2.50 (6.35)
ACAF-4502	2450 (3938)	14 (36)	1/4	115/1/60 (a) (b)	137 (62)	43.50 (110)	14.75 (37.5)	46.50 (118)	1.5 (3.8)	32.09 (81.5)	10.75 (27.3)	2.50 (6.35)
ACAF-4503	2350 (3777)	14 (36)	1/4	115/1/60 (a) (b)	150 (68)	43.50 (110)	14.75 (37.5)	46.50 (118)	1.5 (3.8)	32.09 (81.5)	10.75 (27.3)	2.00 (5)
ACAF-4850	4600 (7394)	(2) 14 (36)	(2) 1/4	115/1/60 (a) (b)	225 (102)	47.83 (121)	14.75 (37.5)	49.50 (126)	2.0 (5)	32.09 (81.5)	10.75 (27.3)	2.00 (5)
ACAF-5256	4700 (7555)	(2) 14 (36)	(2) 1/4	115/1/60 (a) (b)	305 (138)	51.68 (131)	14.75 (37.5)	55.50 (141)	2.0 (5)	36.09 (91.7)	10.75 (27.3)	2.00 (5)
ACAF-7856	4800 (7715)	(2) 14 (36)	(2) 1/4	115/1/60 (a) (b)	405 (184)	77.56 (147)	14.75 (37.5)	55.50 (141)	2.0 (5)	62.09 (158)	10.75 (27.3)	2.50 (6.35)
ACAF-9256	7250 (11654)	(3) 14 (36)	(3) 1/4	115/1/60 (a) (b)	500 (227)	91.75 (233)	14.75 (37.5)	55.50 (141)	2.5 (6.3)	76.09 (193)	10.75 (27.3)	3.75 (9.53)
ACAP-1935	2200 (3536)	16 (41)	3/4	208-230/460/3/60 (b)	105 (48)	18.92 (48)	22.44 (57)	34.20 (87)	2.0 (5)	18.44 (46.8)	12.92 (32.8)	1.77 (4.5)
ACAP-2435	3600 (5787)	20 (51)	1.0	208-230/460/3/60 (b)	140 (64)	23.34 (59)	30.32 (77)	34.20 (87)	2.5 (6.3)	26.32 (66.8)	17.34 (44.0)	1.77 (4.5)
ACAP-2835	4700 (7555)	24 (61)	1.5	208-230/460/3/60 (b)	425 (193)	27.75 (70.5)	37.00 (94)	34.20 (87)	2.5 (6.3)	33.00 (83.8)	21.75 (55.2)	1.77 (4.5)
ACAP-2837	7000 (11252)	24 (61)	3.0	208-230/460/3/60 (b)	481 (218)	27.75 (70.5)	40.95 (104)	36.01 (91)	2.5 (6.3)	36.95 (93.8)	21.75 (55.2)	1.77 (4.5)
ACAP-3637	9700 (15592)	28 (66)	5.0	208-230/460/3/60 (b)	595 (270)	35.86 (91)	40.95 (104)	36.01 (91)	4.0 (10)	36.95 (93.8)	29.86 (75.8)	1.77 (4.5)
ACAP-4037	11000 (17682)	36 (91)	7.5	230/460/3/60 (c)	700 (317)	38.85 (98)	50.80 (129)	36.01 (91)	4.0 (10)	46.80 (118.9)	32.85 (83.4)	1.77 (4.5)
ACAP-4537	14000 (22504)	36 (91)	7.5	230/460/3/60 (c)	735 (333)	44.86 (114)	48.83 (124)	36.01 (91)	4.0 (10)	44.83 (113.9)	38.68 (98.2)	1.77 (4.5)
ACAP-5437	17500 (28129)	42 (107)	10.0	230/460/3/60 (c)	795 (361)	53.50 (135)	50.80 (129)	36.01 (91)	4.0 (10)	46.80 (118.9)	47.50 (120.6)	1.77 (4.5)
ACAP-5837	17500 (28129)	42 (107)	10.0	230/460/3/60 (c)	825 (374)	57.28 (145)	50.80 (129)	36.01 (91)	4.0 (10)	46.80 (118.9)	51.28 (130.2)	1.77 (4.5)

OPTIONAL POWER CHARACTERISTICS

- (a) 115/208-230/1/60
- (b) 208-230/460/3/60
- (c) 230-460/3/60

(1) Inlet Offset
ACAF 4.00 in
(10.2) cm

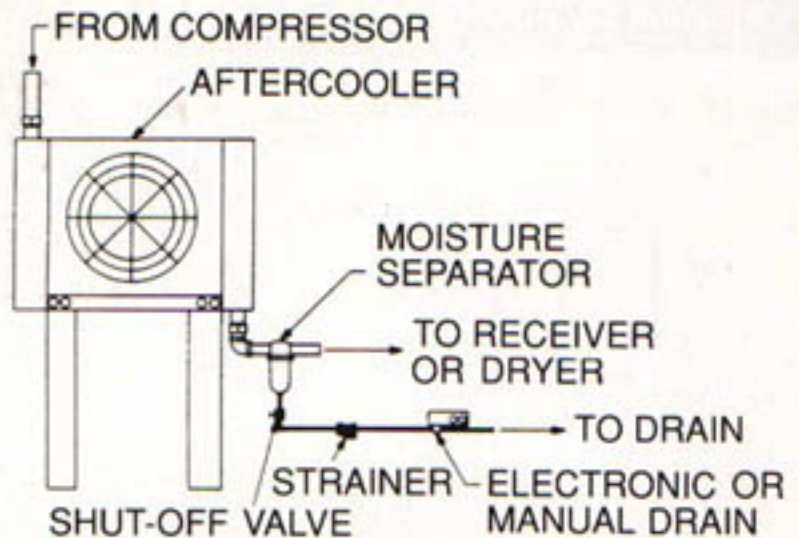
ACAP 1.77 in
(4.5) cm

Leg Height ACAF 24.0 in
(61) cm

ACAP 30.0 in
(76.2) cm

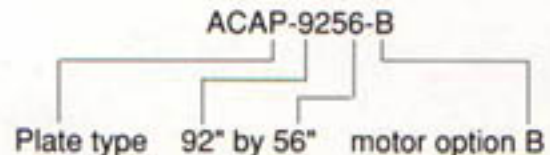
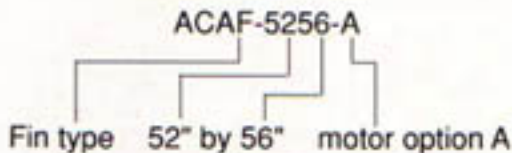
Piping Diagram

Consideration must be given to the installation of an air cooled aftercooler so that the unit is not subject to extreme temperatures or cooling air recirculation. Recirculation of cooling air results in higher outlet temperatures. For proper air flow, a minimum of 12" should be allowed between the aftercooler fan and any walls or obstructions. Cooling air leaving the unit must be unobstructed.



Nomenclature

Typical Model Number



The "F" or "P" following the ACA designator defines whether the Aftercooler is a fin type or plate type air cooled heat exchanger.

The model number relates to the nominal cabinet dimensions, length by width. The maximum overall length and width may be read from the model numbers, except for 3200 (30.5" by 46.5") and 4500 (43.5" by 46.5") series models. These two models use optimized fin spacing and motor combinations to achieve various flow rates through one cabinet size each.

Motor types for ACA Aftercoolers

Designator	Type
A	115 volt, Single Phase, 60 Hz, Open Drip-Proof
B	115 volt, Single Phase, 60 Hz, TEFC
C	208-230 volt, Single Phase, 60 Hz, TEFC
D	208-230 volt, Three Phase, TEFC
E	460 volt, Three Phase, TEFC
F	115/208-230 volt, Single Phase, TEFC
G	208-230/460 volt, Three Phase, TEFC

Explosion Proof and Air Driven Motors are available as options.