HEAT & COOL

PCA SERIES AIR COOLED PORTABLE CHILLERS

Compact, Efficient Chillers for Small Industrial Cooling Applications

Leaving Water Temperature Of 30°F (-1°C) to 65°F (18°C)

Off-the-shelf Microprocessor Control

Rugged Design for Years of Dependable Service

- *Capacities from 1/2 to 1 1/2 tons*
- *Ozone-friendly 1/2 and 1 hp models use environmentally safe HFC-134a. 1 1/2 hp model uses R-22*
- *Standard off-the-shelf microprocessor based PID autotuning controller with digital temperature display*
- *Refrigerant sight glass and filter dryer*
- *High/Low refrigerant pressure safeties*
- *Easy-access cabinet design*
- *Compact, space-saving footprint 20" (508 mm) x 26" (660.4 mm)*
- *Hot gas bypass capacity control*
- *Non-ferrous construction*

PCA SERIES PORTABLE CHILLERS

PCA Series air-cooled chillers by AEC are specially engineered for small, demanding industrial applications. Each self-contained unit is designed for immediate hook-up and is ready to supply clean cooling water at constant temperatures. A wide range of economical options are available to meet or exceed the demands of almost any application.

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AEC is committed to a continuing program of product improvement.

Bulletin AE1-125.6

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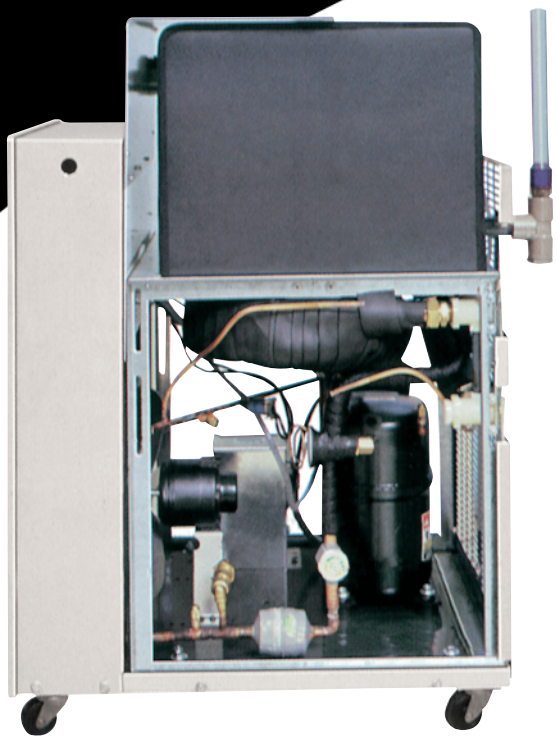
HEAT & COOL

PCA SERIES AIR COOLED PORTABLE CHILLERS



Optional control graphic panel

ADDITIONAL FEATURES

- *Heavy, one-piece 6-gallon polyethylene reservoir*
- *Fill/drain sight glass for easy water level indication and control*
- *Fully accessible NEMA 1-style enclosure with dependable rated components*
- *Efficient, insulated pump and evaporator*
- *Insulated refrigerant lines for increased efficiency*
- *Air-cooled condenser*
- *Convenient chilled water supply and return connections*
- *Process bypass protection*
- *Thermal expansion valve*
- *High and low refrigerant pressure switches*
- *Refrigerant sight glass*
- *Rugged, dependable reciprocating compressor*
- *Filter dryer*
- *Casters*

AVAILABLE OPTIONS

- *High pressure pumps*
- *Water pressure gauge*
- *Power cord*
- *Stainless steel water circuit*
- *High temperature audible/visual alarm*
- *Sight glass guard*
- *Graphic panel with indicators for pump on, compressor on, high or low refrigerant pressure and hot gas bypass (pictured above)*

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HEAT AND COOL

PCA SERIES AIR-COOLED PORTABLE CHILLERS

PCA Series air-cooled portable chillers by AEC are specially engineered for small, demanding industrial applications. Each self-contained unit is designed for immediate hook-up and is ready to supply clean, cooling water at constant temperatures. A wide range of economical options are available to meet or exceed the demands of almost any application.

The off-the-shelf microprocessor-based PID auto-tuning controller features To Process and Set Point LED readout.

PCA Portable Chiller

STANDARD FEATURES

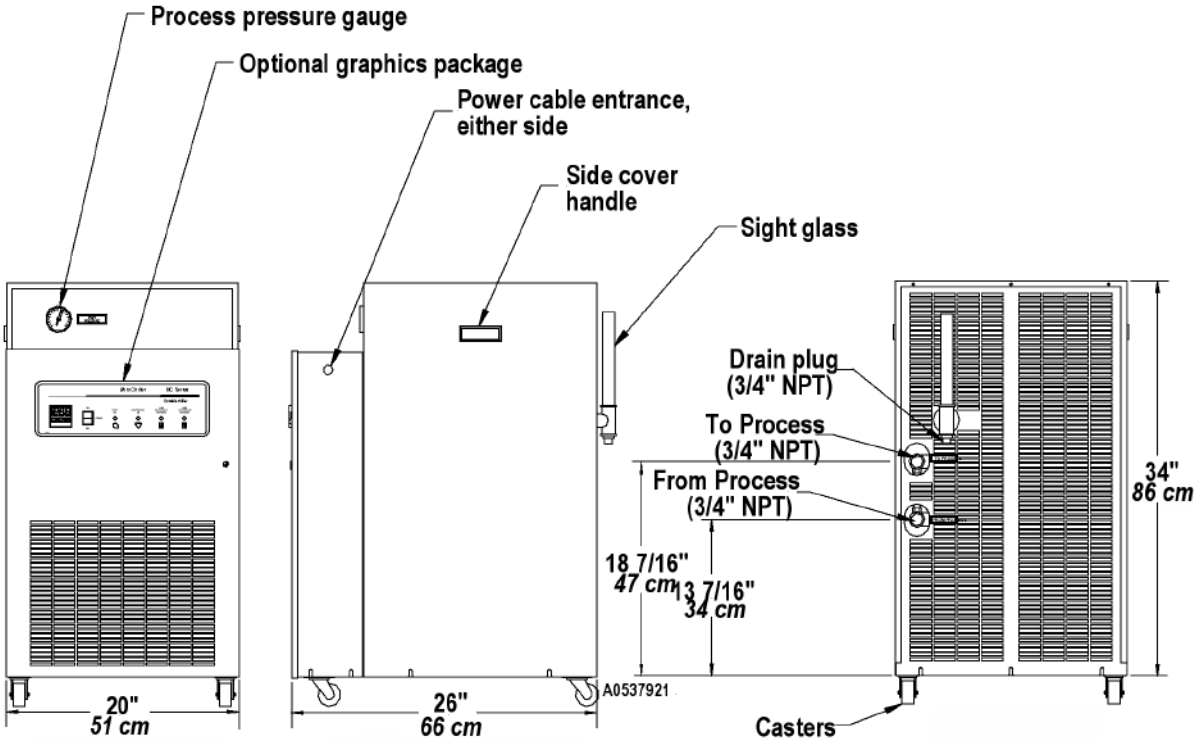
- *Hermetic reciprocating compressor*
- *Tube-in-tube evaporator*
- *Aluminum fin/copper tube condenser*
- *Six gallon polyethylene reservoir w/external fill/drain sight glass*
- *Non-ferrous piping, fully insulated refrigeration and process piping*
- *Regenerative turbine, horizontally-mounted non-ferrous, pump*
- *Fully-accessible NEMA 1-style electrical control enclosure, single-point power and ground connection*
- *Structural steel frame and panels with 2" (51 mm) swivel casters*
- *Pressure-actuated process water bypass valve for system protection only*
- *To Process 2.5" -dia. dual scale liquid-filled water pressure gauge*
- *Patented fixed orifice-plate bypass*
- *1 year compressor and labor warranty; 2 years on parts; 3 year limited warranty on controller*
- *Filter dryer*
- *HFC-134A refrigerant for PCA-050 and PCA-100 models; HCFC-22 refrigerant for PCA-150 models*
- *High and low refrigerant pressure cut-outs, and hot gas bypass capacity control*
- *High-pressure spring-actuated pressure relief valve, and thermal expansion valve*
- *Sight glass*
- *Multiple refrigeration access ports*

OPTIONAL FEATURES

- *Cast iron, 1/3 hp centrifugal pump (does not maintain non-ferrous construction integrity)*
- *Bronze pump (BZ050, BZ100, BZ150 A, B, or C)*
- *Crankcase pressure regulating (CPR) valve (required for a chilled water supply temperature range of 66º F to 75º F; CPR valve prevents compressor motor overloading*
- *Graphic display package: pump on, compressor on, low refrigerant pressure, high refrigerant pressure, hot gas bypass*
- *High temperature audible/visual alarm: 85 dB @ 2 ft audible alarm buzzer/108,000 peak candlepower, 80 flash/min. visual strobe and silence button*
- *Power cord (without plug)*
- *Process piping brass 20 mesh strainer, shipped loose*
- *Sight glass guard*
- *External communications*
- *IEG-1 inhibited ethylene glycol*
- *Four-year additional compressor warranty*

SPECIFICATIONS

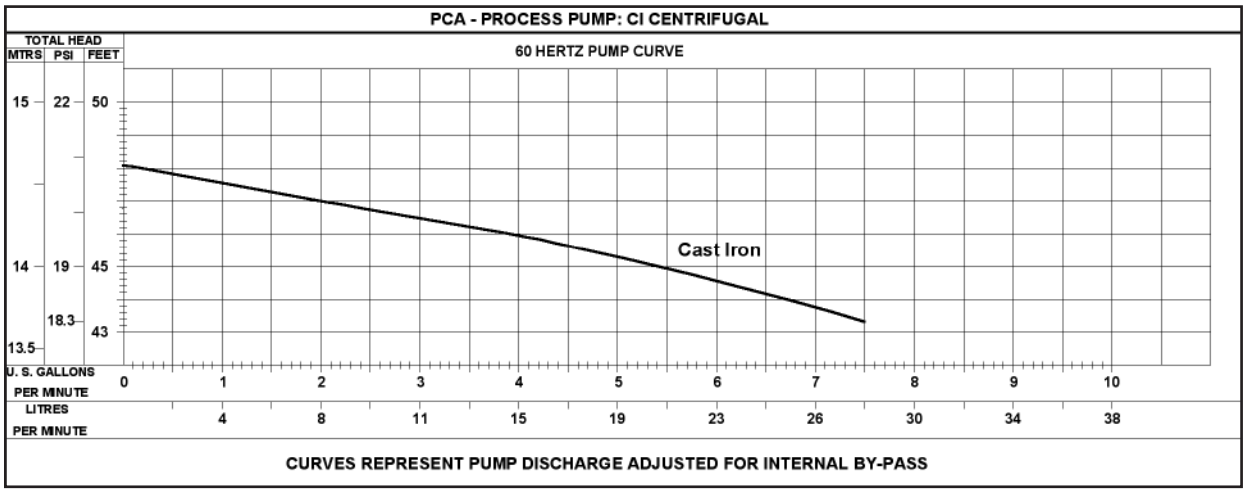
Model	Comp., HP (kW)	Standard pump	Nominal chilled water, gpm (lpm)	Capacity @ 65ºF (18ºC) LWT, 75ºF (24ºC) ambient BTUH (watts)	Capacity @ 50ºF (10ºC) LWT, 90ºF (32ºC) ambient BTUH (watts)	Refrigerant	Process connection, in. NPT	FLA: 208-230/1/60	Oper. weight, lbs. (kg)	Ship. weight, lbs. (kg)
PCA 050	0.5 (0.373)	1.5 gpm @ 24 psig (4.5 lpm @ 207 kPa)	1.2 (4.5)	8100 (2374)	4800 (1407)	HFC 134A	0.75	10A	265 (121)	275 (125)
PCA 100	1 (0.746)	2.4 gpm @ 34 psig (9.0 lpm @ 234 kPa)	2.4 (9.0)	14000 (4103)	9550 (2800)	HFC 134A	0.75	13A	325 (148)	335 (153)
PCA 150	1.5 (1.12)	3.6 gpm @ 24 psig (13.6 lpm @ 07 kPa)	3.6 (13.6)	25400 (7444)	16000 (4690)	HCFC-22	0.75	19A	345 (157)	355 (162)



WATER CIRCUIT PRESSURE DROP TABLE

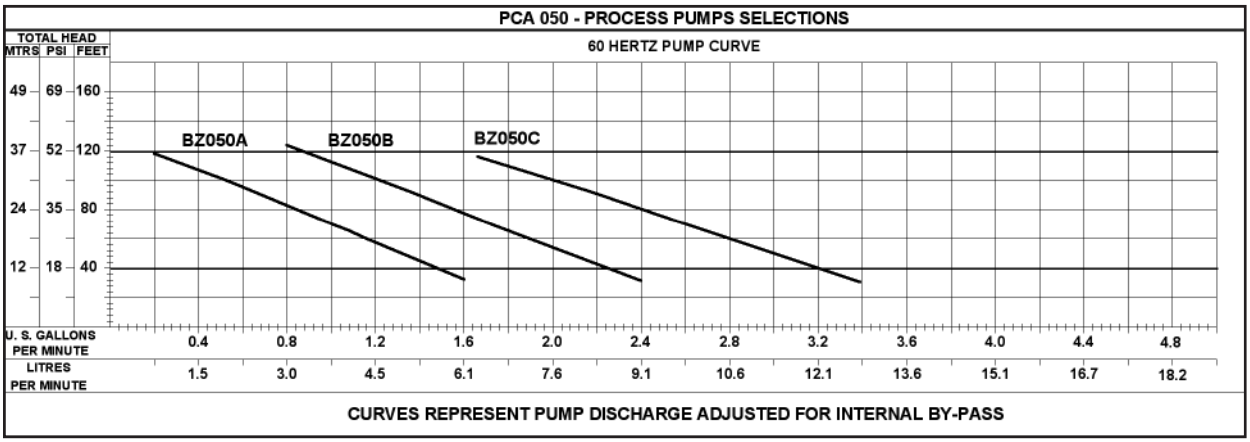
Model	gpm	lpm	ΔP (psig)	ΔP (kPa)	ΔP (bars)
PCA-050	2.0	7.5	2.5	17.3	0.17
	2.4	9.0	4.0	27.6	0.28
	3.6	13.6	7.5	51.8	0.52
	4.8	18.1	12.5	86.2	0.86
PCA-100	2.0	7.5	2.5	17.3	0.17
	2.4	9.0	2.5	17.3	0.17
	3.6	13.6	3.0	20.7	0.21
	4.8	18.1	5.0	34.5	0.35
PCA-150	2.0	7.5	2.5	17.3	0.17
	2.4	9.0	2.5	17.3	0.17
	3.6	13.6	3.0	20.7	0.21
	4.8	18.1	3.5	24.2	0.24

CAST IRON CENTRIFUGAL PUMP CURVE

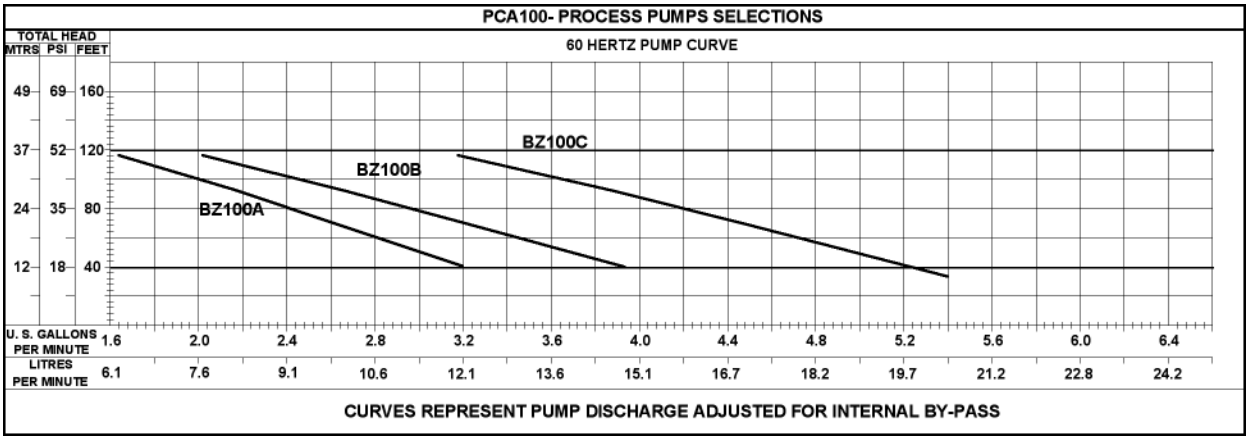


Do not extrapolate pump curves.

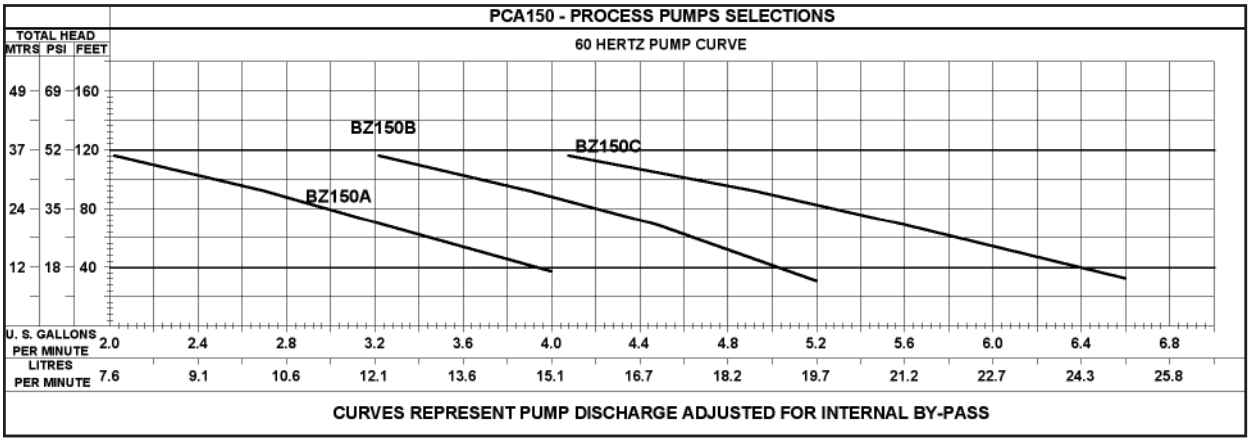
PCA 050 PUMP CURVES



PCA 100 PUMP CURVES



PCA 150 PUMP CURVES



Do not extrapolate pump curves.

HEAT & COOL

PS SERIES 2-40 HP PORTABLE CHILLERS

STANDARD FEATURES

- *Compact footprints*
- *1 year compressor and labor warranty; 2 year parts warranty; 3 year limited controller warranty*
- *NEMA 12 electrical enclosure*
- *Low rpm blower designed to reduce noise (20 - 30 hp)*
- *Non-fused disconnect switch with single point power connection*

MORE STANDARD FEATURES

- *Branch motor fusing*
- *"Y" strainer on process water line to evaporator*
- *1/16 DIN PID auto-tuning, off-the-shelf modular controller is accurate to within +/- 1ºF*
- *Stamped, stainless steel, horizontally mounted pump assures reliability*
- *Leaving water temperature range of 35ºF to 65ºF*
- *Non-ferrous piping (2 - 30 HP)*
- *Air-cooled units feature aluminum fin/copper tube condensers with easy on/off, washable air filters*
- *Water-cooled units equipped with water regulating valves. 2-7.5 hp units have tube-in-tube condensers; 10-40 hp units have shell and tube condensers*
- *No tools necessary to access the mechanical cabinet*
- *Easy-to-read LED display of system operating status, Set Point and To-Process temperature*
- *Mounting rails are in place of casters on the PSR Series Remote Air Cooled Chillers*

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HEAT & COOL

PS SERIES 2-40 HP PORTABLE CHILLERS

Each unit includes external fill/drain/sight glass, valved process water connections, low water flow/pressure switch, hot gas bypass capacity control, and heavy-duty, swivel casters.

Scroll compressors (on 2-30 HP units) offer less rotating mass and internal friction, no suction and discharge valves, low noise and vibration, and high reliability because of fewer moving parts.

20-30 HP units feature dual staging, off-the-shelf, auto-tune compressor controller, which saves energy by staging compressors individually based upon load.

Optional remote condenser offered on 5-40 hp PSR Series Remote Air Cooled Chillers.

Model		2	3.5	5	7.5	10	15	20	25	30	40
Compressor		Hermetic scroll with compressor staging on 20-30 HP tandems									Semi-hermetic discus® with cylinder unloading
Evaporator		Stainless steel copper-brazed plate									Shell and tube
Reservoir		6 gallons		20 gallons		40 gallons		80 gallons polyethylene			80 gallons 304 SS
Pump HP		1HP				2HP		5HP			7.5HP
Height (in.)		PSA-49.66; PSW-28.31		PSA-82.33; PSW and PSR-40.90				PSA-91.43; PSW and PSR-43.30			PSA-N/A; PSW and PSR-43.30
Depth(in.)		41.68		54.74		74.74		100.73			
Width(in.)		22		34							
Weight (lbs.)	PSA	417	440	1047	1097	1570	1653	2605	2648	2910	N/A
	PSW	363	392	787	877	1175	1249	1745	1930	2135	2930
	PSR	N/A	N/A	748	794	1052	1095	1549	1555	1857	2470

Contact factory for detailed information on remote condensers.

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HEAT AND COOL

PSA SERIES AIR-COOLED PORTABLE CHILLERS

PS Series air-cooled portable chillers from AEC provide 2 to 30 ton cooling capacities with very compact footprints. These chillers feature a unique enclosure design that simplifies service and maintenance and conserves valuable production floor space. Incorporate these chillers into your planned or existing production layout easily and effectively.

All PS Series portable chillers have an operating leaving water temperature range of 35ºF to 65ºF (2ºC to 18ºC). For applications outside this range, consult factory. See pages 201-202 for flow and pressure considerations and pump curves.

PSA 20-30

STANDARD FEATURES

- *Non-ferrous piping*
- *External fill/drain/sight glass*
- *Valved Process water connections*
- *Low Process water: pressure switch 2-3.5 hp, flow switch 5-30 hp*
- *NEMA-rated ODP fan motors*
- *Swivel casters: 2.5" (2-3.5 hp), 4" (5-15 hp), 5" w/lock (optional on 5-15 hp, standard on 20-30 hp)*
- *Single pump models only: Pressure-actuated Process water bypass valve for system protection*
- *To Process 2.5" dual scale liquid-filled pressure gauge*
- *Fully insulated refrigeration and process piping*
- *High and low refrigerant pressure cut-outs*
- *High-discharge temperature cut-out (2-10 hp models)*
- *High pressure spring-actuated relief valve*
- *Filter dryer, sight glass, balanced-port thermal expansion valve, multiple refrigeration access ports*
- *Hot gas bypass capacity control*
- *Hot gas bypass and liquid line shutoff valves (5-30 hp)*
- *Scroll compressors (2-30 hp)*
- *Fan/blower cycling switch (5-30 hp)*
- *R-22 refrigerant*
- *1 year warranty on compressor and labor*
- *2 year parts warranty, 3 year limited warranty on controller*

OPTIONAL FEATURES

- *Automatic water makeup valve[1]*
- *Process water sidestream 50µ filter w/ flowmeter[1]*
- *General fault indicator, 85 dB @ 2 ft with audible alarm buzzer and silence button or 100 dB @ 10 ft audible alarm horn/108,000 peak candle-power, 80 flash/min visual alarm strobe and silence button. Alarm conditions include high and low water temperature, low water flow, and high and low refrigerant pressure[1]*
- *Compressor hour meter[1]*
- *RS232 or RS485 communications*
- *Recirculation pump (not available on 2 and 3.5 hp)*
- *High pressure fans; provides additional 0.3" WG static pressure on fan discharge (5-15 hp only), required where exiting air is exhausted through ductwork*
- *Crankcase pressure regulating (CPR) valve to prevent compressor motor overloading, required for process water leaving temperature of 66ºF to 75º F*
- *304 SS reservoir tank (not available on 2 and 3.5 hp)*
- *Mounting rails and/or mounting feet (not available on 2 and 3.5 hp)*
- *UL-Labeled electrical subpanel*
- *380/3/50 or 575/3/60 operating voltage[2]*
- *Variable-speed fans (low ambient), provides sound attenuation in ambient temperatures below 95ºF[2] (5-15 hp only)*
- *NEMA-12 control access window[2]*

1 Field-retrofit option
2 Additional lead time

SPECIFICATIONS

Model	Compressor, HP	Compressor type	Evaporator type	Condenser type	Reservoir, gallons	Pumps	Discharge air openings	Discharge air, cfm
PSA 2	2	Hermetic scroll, with compressor staging on 20-30 hp tandems	SS copper-brazed plate	Aluminum fin/copper tube with washable filters	6 (polyethylene)	1 hp, 304 SS	1 @ 18.5"	1475
PSA 3.5	3.5				6 (polyethylene)	1 hp, 304 SS	1 @ 18.5"	2350
PSA 5	5				20 (polyethylene)	1 hp, 304 SS	1 @ 27"	3400
PSA 7.5	7.5				20 (polyethylene)	1 hp, 304 SS	1 @ 27"	5100
PSA 10	10				40 (polyethylene)	2 hp, 304 SS	2 @ 27"	5800
PSA 15	15				40 (polyethylene)	2 hp, 304 SS	2 @ 27"	10000
PSA 20	2 @ 10				80 (polyethylene)	5 hp, 304 SS	25" x 18.5"	10200
PSA 25	2 @ 13				80 (polyethylene)	5 hp, 304 SS	25" x 18.5	13300
PSA 30	2 @ 15				80 (polyethylene)	5 hp, 304 SS	25" x 18.5	18150

NOTE: Nominal operating parameters for PSA air-cooled chillers are 50ºF leaving water temperature at 2.4 gpm per ton, with 95ºF ambient air. For 50 Hz applications, multiply capacity by 0.83. Nominal 60 Hz flow rate must be maintained.

Model	Nominal cooling cap., tons[1]			Process connections, in. NPT				Water flow, gpm[2]	FLA 1 pump[3]		FLA 2 pumps[3]	
	No pump	1 pump	2 pump	1 pump	2 pump	no pump/ no tank	1 pump/ no tank		Rated	Running	Rated	Running
PSA2	1.9	1.7	n.a.	1	n.a.	n.a.	n.a.	4.6	8.0	6.9	n.a.	n.a.
PSA3.5	3.3	3.1	n.a.	1	n.a.	n.a.	n.a.	7.9	10.9	8.8	n.a.	n.a.
PSA5	4.8	4.6	4.5	1.5/2.0	2.0	1.5	1.5/2.0	11.1	14.0	11.0	14.9	11.9
PSA 7.5	6.6	6.4	6.3	1.5/2.0	2.0	1.5	1.5/2.0	15.2	18.2	14.6	19.1	15.5
PSA 10	9.9	9.5	9.4	1.5/3.0	2.0/3.0	1.5	1.5/2.0	22.8	26.1	21.8	27.8	23.5
PSA 15	14.5	14.1	14.0	2.0/3.0	2.5/3.0	2.0	2.0/3.0	33.9	33.3	27.5	35.0	29.2
PSA 20	19.4	18.4	18.0	2.0/3.0	2.5/3.0	2.0	2.0/3.0	46.5	48.3	42.0	51.4	45.1
PSA 25	23.9	22.8	22.4	2.0/3.0	2.5/3.0	2.0	2.0/3.0	57.2	62.1	48.3	65.2	51.4
PSA 30	29.2	28.2	27.8	2.0/3.0	2.5/3.0	2.0	2.0/3.0	70.2	74.1	64.4	77.2	67.5

1 Based on 50ºF (10ºC) chilled water supply temperature and 95ºF (35ºC) ambient air. Optional additional process pump hp (kW) reduces chiller capacity by 0.2 tons per hp (0.703 kW ref. cap. per 0.746 kW pump power)

2 Based on 2.4 gpm per ton (9.1 lpm per 3.517 kW) nominal 1 pump.

3 FLA at 460/3/60. Multiply 460/3/60 amperage by 2.0 for 208-230/3/60 amperage (0.8 for 575/3/60). An optional oversized process pump adds to the total rated or running chiller amperage. To find the new total chiller amperage, subtract the standard process pump amperage from the optional pump amperage (see table below) and add it to the rated or running amperage.

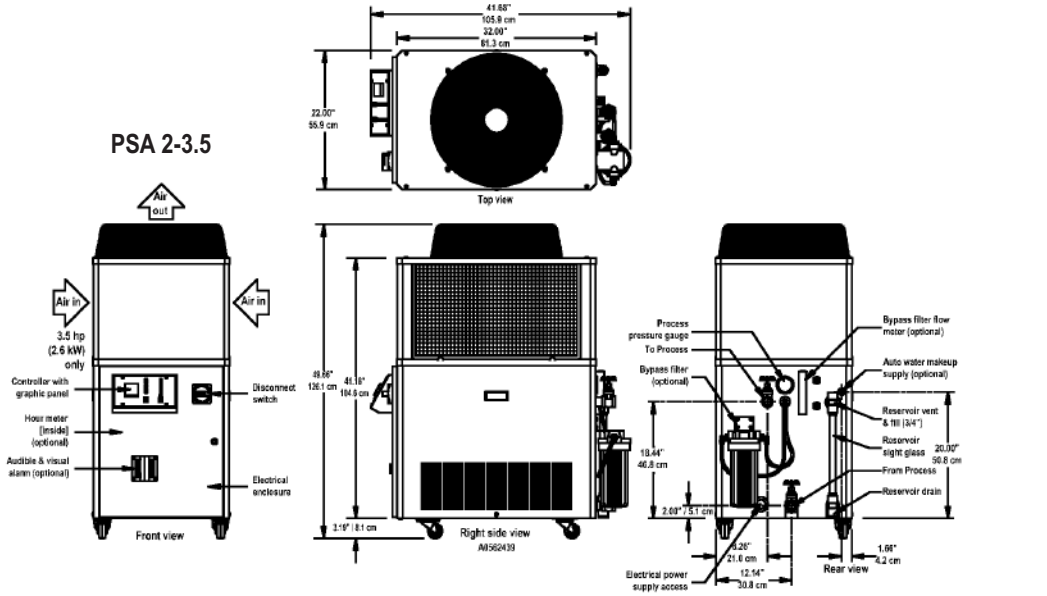
PUMP OPTIONS

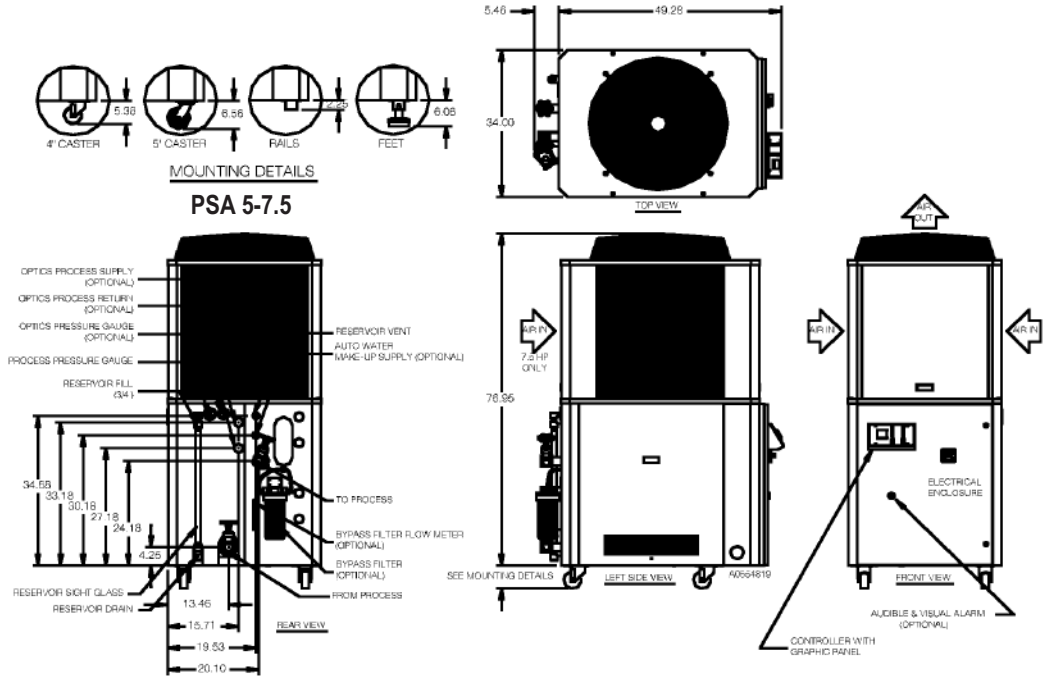
Optional Pump	FLA @ 208-230/1/60	FLA @ 460/3/60	Availability
0.75 hp bronze turbine	5.4	1.5	2 and 3.5 hp models
1 hp SS	6.4	1.8	standard on 2-7.5 hp models
1.5 hp SS	7.5	2.3	2 and 3.5 hp models
2 hp SS	9.6	3.1	2-15 hp models (standard on 10-15 hp)
2 hp SS dual stage	n.a.	2.7	5-7.5 hp models
3 hp SS	12.7	4.2	2-15 hp models
3 hp SS dual stage	n.a.	4.5	5-15 hp models
5 hp SS	n.a.	6.2	5-30 hp models (standard on 20-30 hp)
5 hp SS dual stage	n.a.	6.6	5-15 hp models
7.5 hp bronze	n.a.	9.0	5-15 hp models
7.5 hp SS	n.a.	9.8	20-30 hp models
10 hp SS	n.a.	13.2	10-30 hp models
15 hp SS	n.a.	19.0	20-30 hp models

ELECTRICAL CONTROL FEATURES

- *Fully accessible NEMA 12 enclosure*
- *Non-fused disconnect switch with branch fusing*
- *Single-point power and ground wiring connection*
- *Off-the-shelf microprocessor-based PID auto-tuning controller with To Process and Set Point LED readout*
- *Low and high process water temperature electronic cut-out switch with LCD display*
- *Graphic control panel w/status lights*

DIMENSIONS: PSA 2 - 7.5



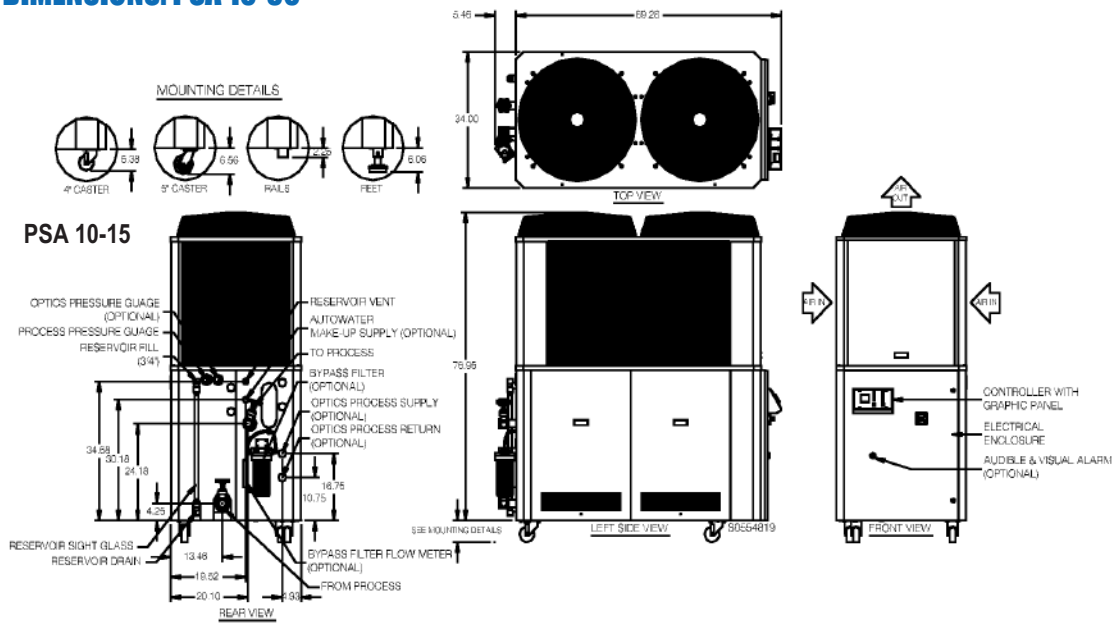


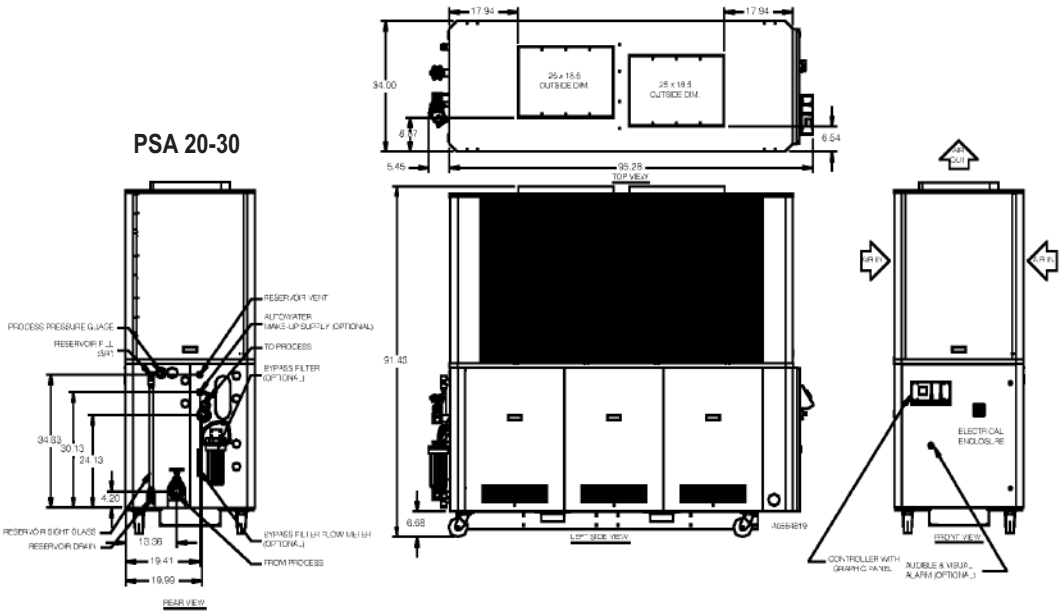
WEIGHTS: PSA 2 - 7.5

Model	Dry weight, lbs.	Ship. weight, lbs.	Oper. weight, lbs.
PSA 2	387	417	437
PSA 3.5	410	440	460
PSA 5	872	1047	1205
PSA 7.5	922	1097	1255

NOTES: Weights are for standard chiller. Some optional features will increase weight.
Operating weight is with a full reservoir tank of water.

DIMENSIONS: PSA 10-30





WEIGHTS: PSA 10-30

Model	Dry weight, lbs.	Ship. weight, lbs.	Oper. weight, lbs.
PSA 10	1305	1570	1637
PSA 15	1388	1653	1720
PSA 20	2305	2605	2971
PSA 25	2348	2648	3014
PSA 30	2610	2910	3276

NOTES: Weights are for standard chiller. Some optional features will increase weight.
Operating weight is with a full reservoir tank of water.

HEAT AND COOL

PSW SERIES WATER-COOLED PORTABLE CHILLERS

PS Series water-cooled portable chillers from AEC provide 2 to 40 ton cooling capacities with very compact footprints. These chillers feature a unique enclosure design that simplifies service and maintenance and conserves valuable production floor space. Incorporate these chillers into your planned or existing production layout easily and effectively.

All PS Series portable chillers have an operating leaving water temperature range of 35ºF to 65ºF (2ºC to 18ºC). For applications outside this range, consult factory. See pages 201-202 for flow and pressure considerations and pump curves.

PSW 20-30

STANDARD FEATURES

- *Non-ferrous piping*
- *External fill/drain/sight glass*
- *Valved Process water connections*
- *Low Process water: pressure switch 2-3.5 hp, flow switch 5-40 hp*
- *Swivel casters: 2.5" (2-3.5 hp), 4" (5-15 hp), 5" w/lock (optional on 5-15 hp, standard on 20-40 hp)*
- *Single pump models only: Pressure-actuated Process water bypass valve for system protection*
- *To Process 2.5" dual scale liquid-filled pressure gauge*
- *Fully insulated refrigeration and process piping*
- *High and low refrigerant pressure cut-outs*
- *High-discharge temperature cut-out (2-10 hp models)*
- *High pressure spring-actuated relief valve*
- *Filter dryer, sight glass, balanced-port thermal expansion valve, multiple refrigeration access ports*
- *Hot gas bypass capacity control*
- *Hot gas bypass and liquid line shutoff valves (5 to 30 hp)*
- *Scroll compressors (2-30 hp)*
  Reciprocating compressors (40 hp)
- *R-22 refrigerant*
- *1 year warranty on compressor and labor*
- *2 year parts warranty, 3 year limited warranty on controller*

OPTIONAL FEATURES

- *Automatic water makeup valve[1]*
- *Process water sidestream 50µ filter w/ flowmeter[1]*
- *General fault indicator, 85 dB @ 2 ft with audible alarm buzzer and silence button or 100 dB @ 10 ft audible alarm horn/108,000 peak candle-power, 80 flash/min visual alarm strobe and silence button. Alarm conditions include high and low water temperature, low water flow, and high and low refrigerant pressure[1]*
- *Compressor hour meter[1]*
- *RS232 or RS485 communications*
- *Recirculation pump (not available on 2 and 3.5 hp)*
- *High pressure fans; provides additional 0.3" WG static pressure on fan discharge (5-15, 40 hp), required where exiting air is exhausted through ductwork*
- *Crankcase pressure regulating (CPR) valve to prevent compressor motor overloading, required for process water leaving temperature of 66ºF to 75º F*
- *304 SS reservoir tank (std on 40 hp, not available on 2 and 3.5 hp)*
- *Mounting rails and/or mounting feet (5-15 hp only)*
- *UL-Labeled electrical subpanel*
- *380/3/50 or 575/3/60 operating voltage[2]*
- *NEMA-12 control access window[2]*

1 Field-retrofit option
2 Additional lead time

SPECIFICATIONS

Model	Compressor, HP	Compressor type	Evaporator type	Condenser type[1]	Reservoir, gallons	Nominal pump	Condenser water		
							Tower water[2] flow, gpm	City water[3] flow, gpm	Water conn., in. NPT
PSW 2	2	Hermetic scroll, with compressor staging on 20-30 hp tandems	SS copper-brazed plate	Tube-in tube	6 (polyethylene)	1 hp, 304 SS	6.2	4.2	1.0
PSW 3.5	3.5				6 (polyethylene)	1 hp, 304 SS	10.5	7.2	1.0
PSW 5	5				20 (polyethylene)	1 hp, 304 SS	15.7	7.9	1.0
PSW 7.5	7.5				20 (polyethylene)	1 hp, 304 SS	21.3	10.7	1.0
PSW 10	10			Cleanable shell and tube	40 (polyethylene)	2 hp, 304 SS	32.2	16.1	1.5
PSW 15	15				40 (polyethylene)	2 hp, 304 SS	47.6	23.8	2.0
PSW 20	2 @ 10				80 (polyethylene)	5 hp, 304 SS	61.7	31.5	2.0
PSW 25	2 @ 13				80 (polyethylene)	5 hp, 304 SS	75.9	38.6	2.0
PSW 30	2 @ 15				80 (polyethylene)	5 hp, 304 SS	93.9	47.6	2.5
PSW 40	40	Semi-hermetic discus with cylinder unloading	Shell & tube		80 (304 SS)	7.5 hp, 304 SS	123.0	61.5	3

NOTE: Nominal operating parameters for PSA air-cooled chillers are 50ºF leaving water temperature at 2.4 gpm per ton, with 85ºF tower water. For 50 Hz applications, multiply capacity by 0.83. Nominal 60 Hz flow rate must be maintained.

1 With cooling water regulating valves; select between tower or city (5-40 hp models)
2 Based on availability of 85º F (29ºC) tower water at 25 psi (172.4 kPa/1.7 bars) minimum
3 Based on availability of 70º F (21ºC) city water at 25 psi (172.4 kPa/1.7 bars) minimum

Model	Nominal cooling cap., tons[4]			Process connections, in. NPT				Water flow, gpm[5]	FLA 1 pump[6]		FLA 2 pumps[6]	
	No pump	1 pump	2 pump	1 pump	2 pump	no pump/ no tank	1 pump/ no tank		Rated	Running	Rated	Running
PSW2	2.1	1.9	n.a.	1	n.a.	n.a.	n.a.	5.1	12.2	8.3	n.a.	n.a.
PSW3.5	3.6	3.4	n.a.	1	n.a.	n.a.	n.a.	8.6	16.4	11.8	n.a.	n.a.
PSW5	5.2	5.0	4.9	1.5/2.0	2.0	1.5	1.5/2.0	12.1	12.2	8.3	13.1	9.2
PSW 7.5	7.1	6.9	6.8	1.5/2.0	2.0	1.5	1.5/2.0	16.6	16.4	11.8	17.3	12.7
PSW 10	10.7	10.3	10.2	1.5/3.0	2.0/3.0	1.5	1.5/2.0	24.8	22.5	16.7	24.2	18.4
PSW 15	15.9	15.5	15.3	2.0/3.0	2.5/3.0	2.0	2.0/3.0	37.1	29.7	21.6	31.4	23.3
PSW 20	21.0	20.0	19.6	2.0/3.0	2.5/3.0	2.0	2.0/3.0	50.4	43.9	34.7	47.0	37.8
PSW 25	25.7	24.7	24.3	2.0/3.0	2.5/3.0	2.0	2.0/3.0	61.7	55.9	38.2	59.0	41.3
PSW 30	31.8	30.8	30.4	2.0/3.0	2.5/3.0	2.0	2.0/3.0	76.2	60.1	45.3	63..2	48.4
PSW 40	41.0	39.5	39.1	2.5/3.0	2.5/3.0	2.5	2.5/3.0	98.4	81.9	63.1	85.0	66.2

4 Based on 50ºF (10ºC) chilled water supply temperature and 85ºF (29ºC) tower water. Optional additional process pump hp (kW) reduces chiller capacity by 0.2 tons per hp (0.703 kW ref. cap. per 0.746 kW pump power)

5 Based on 2.4 gpm per ton (9.1 lpm per 3.517 kW) nominal 1 pump.

6 FLA at 460/3/60. Multiply 460/3/60 amperage by 2.0 for 208-230/3/60 amperage (0.8 for 575/3/60). An optional oversized process pump adds to the total rated or running chiller amperage. To find the new total chiller amperage, subtract the standard process pump amperage from the optional pump amperage (see table on next page) and add it to the rated or running amperage.

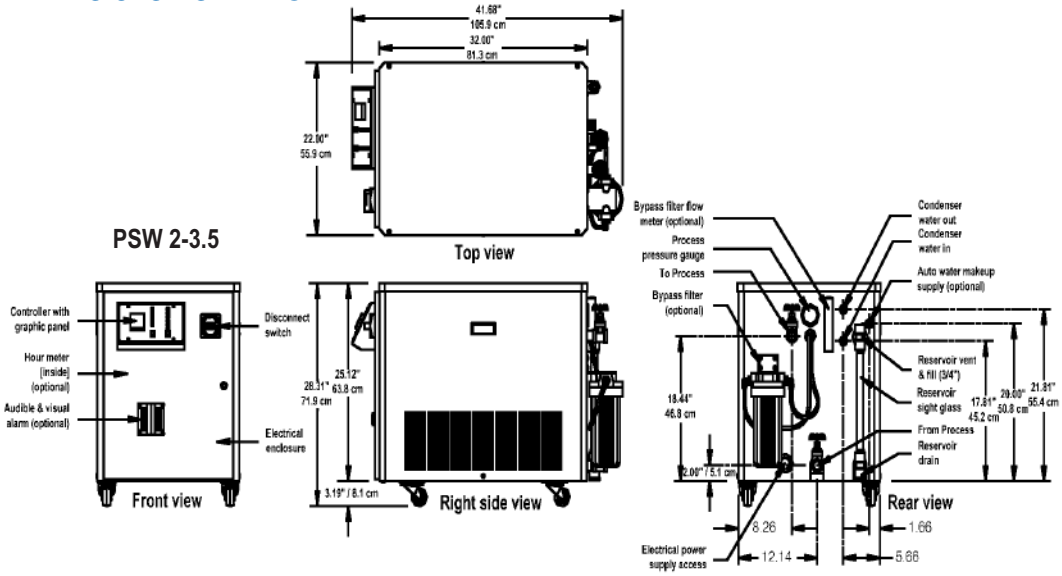
PUMP OPTIONS

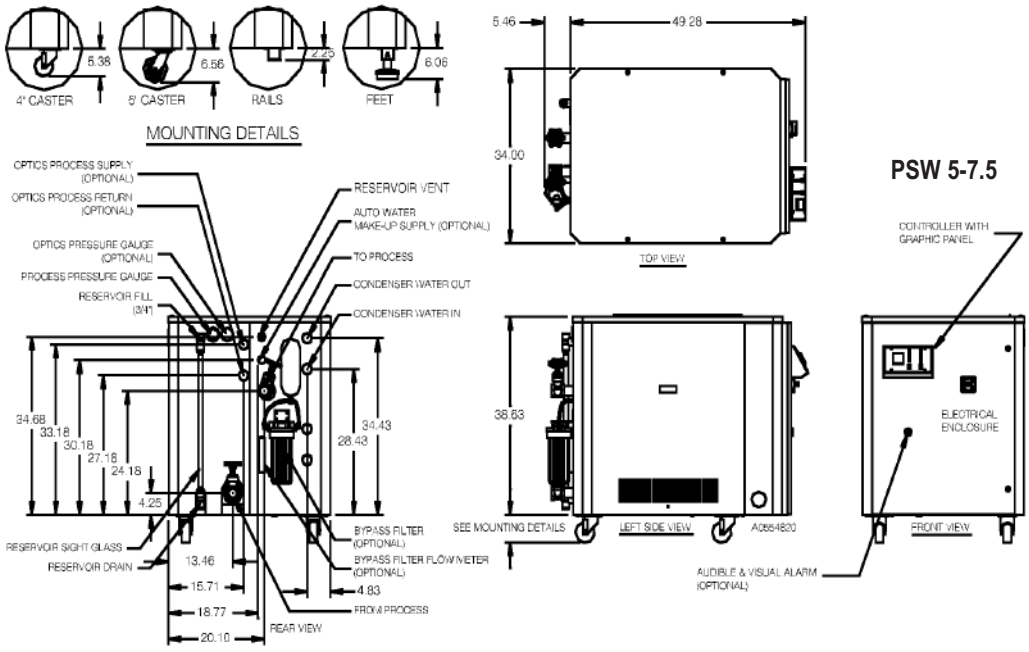
Optional Pump	FLA @ 208-230/1/60	FLA @ 460/3/60	Availability
0.75 hp bronze turbine	5.4	1.5	2 and 3.5 hp models
1 hp SS	6.4	1.8	standard on 2-7.5 hp models
1.5 hp SS	7.5	2.3	2 and 3.5 hp models
2 hp SS	9.6	3.1	2-15 hp models (standard on 10-15 hp)
2 hp SS dual stage	n.a.	2.7	5-7.5 hp models
3 hp SS	12.7	4.2	2-15 hp models
3 hp SS dual stage	n.a	4.5	5-15 hp models
5 hp SS	n.a	6.2	5-30 hp models (standard on 20-30 hp)
5 hp SS dual stage	n.a	6.6	5-15 hp models
7.5 hp bronze	n.a	9.0	5-15 hp models
7.5 hp SS	n.a	9.8	20-30 hp models (standard on 40 hp)
10 hp SS	n.a	13.2	10-30 hp models
15 hp SS	n.a	19.0	20-30 hp models

ELECTRICAL CONTROL FEATURES

- *Fully accessible NEMA 12 enclosure*
- *Non-fused disconnect switch with branch fusing*
- *Single-point power and ground wiring connection*
- *Off-the-shelf microprocessor-based PID auto-tuning controller with To Process and Set Point LED readout*
- *Low and high process water temperature electronic cut-out switch with LCD display*
- *Graphic control panel w/status lights*

DIMENSIONS: PSW 2-7.5



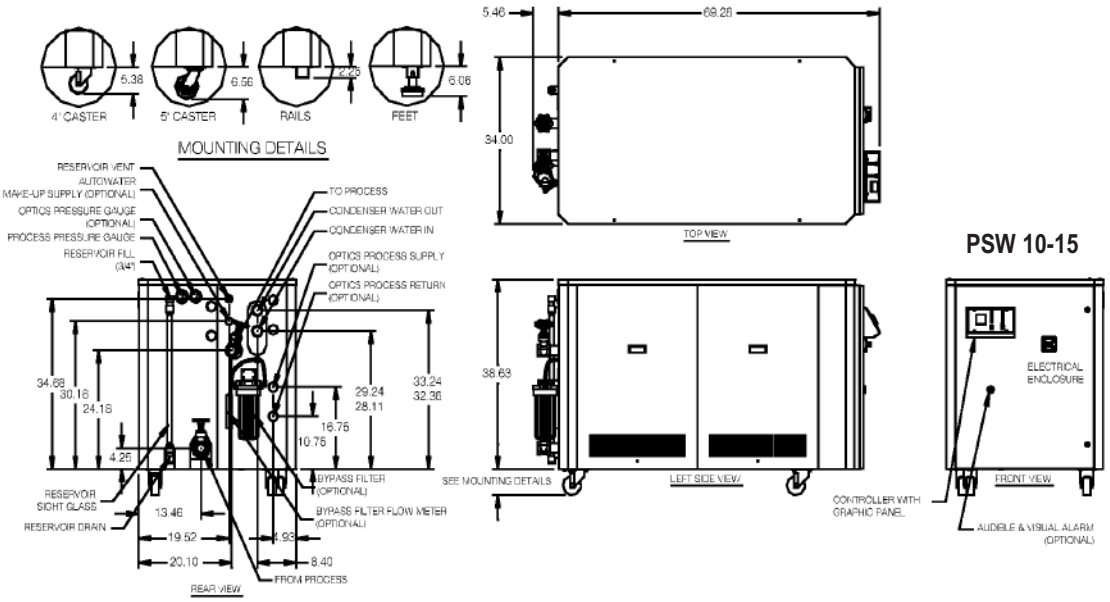


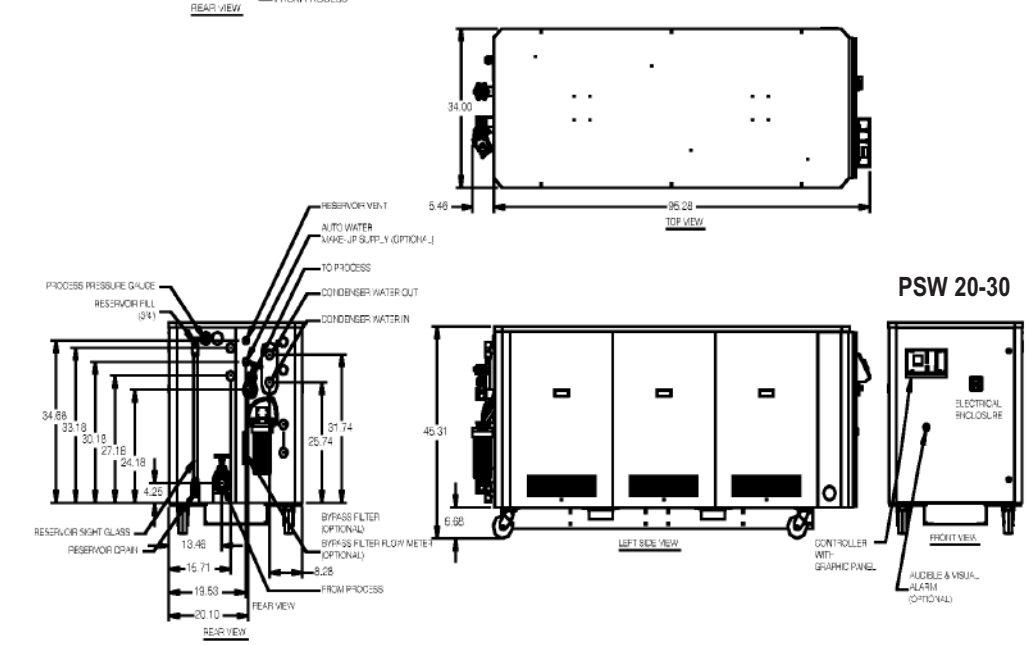
WEIGHTS: PSW 2-7.5

Model	Dry weight, lbs.	Ship. weight, lbs.	Oper. weight, lbs.
PSW 2	333	363	383
PSW3.5	362	392	412
PSW 5	637	787	970
PSW 7.5	727	877	1060

NOTES: Weights are for standard chiller. Some optional features will increase weight.
Operating weight is with a full reservoir tank of water.

DIMENSIONS: PSW 10-30



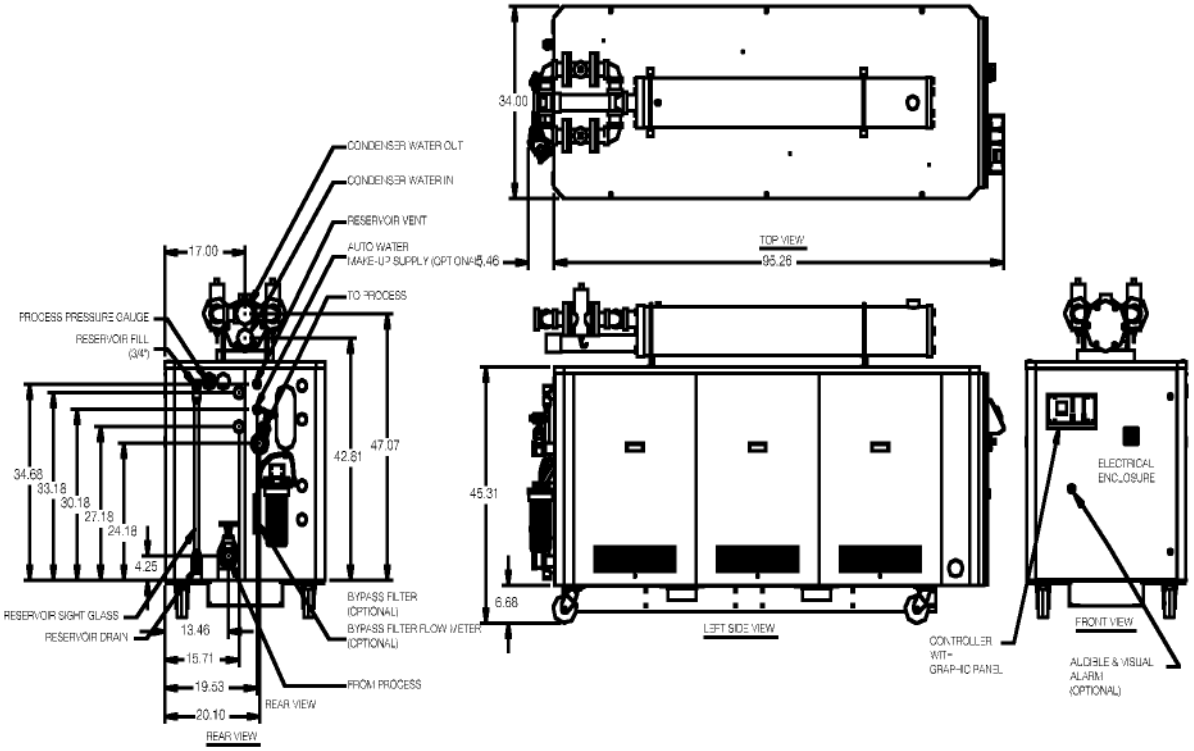


WEIGHTS: PSW 10-30

Model	Dry weight, lbs.	Ship. weight, lbs.	Oper. weight, lbs.
PSW 10	950	1175	1282
PSW 15	1024	1249	1365
PSW 20	1495	1745	2161
PSW 25	1680	1930	2346
PSW 30	1885	2135	2551

NOTES: Weights are for standard chiller. Some optional features will increase weight.
Operating weight is with a full reservoir tank of water.

DIMENSIONS: PSW 40



WEIGHTS: PSW 40

Model	Dry weight, lbs.	Ship. weight, lbs.	Oper. weight, lbs.
PSW 40	2680	2930	3369

NOTES: Weights are for standard chiller. Some optional features will increase weight.
Operating weight is with a full reservoir tank of water.

HEAT AND COOL

PSR REMOTE AIR-COOLED PORTABLE CHILLERS

PS Series remote air-cooled portable chillers from AEC provide 5 to 40 ton cooling capacities with very compact footprints. These chillers feature a unique enclosure design that simplifies service and maintenance and conserves valuable production floor space. Incorporate these chillers into your planned or existing production layout easily and effectively.

All PS Series portable chillers have an operating leaving water temperature range of 35ºF to 65ºF (2ºC to 18ºC). For applications outside this range, consult factory. PSR chillers are charged with 25 psi nitrogen for shipping purposes.

Note: Remote condensers are not designed to be used indoors.

PSR 20-30

STANDARD FEATURES

- *Non-ferrous piping*
- *External fill/drain/sight glass*
- *Valved Process water connections*
- *Low Process water: pressure switch 2-3.5 hp, flow switch 5-40 hp*
- *Mounting rails*
- *Single pump models only: Pressure-actuated Process water bypass valve for system protection*
- *To Process 2.5" dual scale liquid-filled pressure gauge*
- *Fully insulated refrigeration and process piping*
- *High and low refrigerant pressure cut-outs*
- *High-discharge temperature cut-out (5-10 hp models)*
- *High pressure spring-actuated relief valve*
- *Filter dryer, sight glass, balanced-port thermal expansion valve, multiple refrigeration access ports*
- *Hot gas bypass capacity control*
- *Hot gas bypass and liquid line shutoff valves (5 to 30 hp)*
- *Scroll compressors (2-30 hp)*
  Reciprocating compressors (40 hp)
- *R-22 refrigerant*
- *1 year warranty on compressor and labor*
- *2 year parts warranty, 3 year limited warranty on controller*

OPTIONAL FEATURES

- *Automatic water makeup valve[1]*
- *Process water sidestream 50µ filter w/ flowmeter[1]*
- *General fault indicator, 85 dB @ 2 ft with audible alarm buzzer and silence button or 100 dB @ 10 ft audible alarm horn/108,000 peak candle-power, 80 flash/min visual alarm strobe and silence button. Alarm conditions include high and low water temperature, low water flow, and high and low refrigerant pressure[1]*
- *Compressor hour meter[1]*
- *RS232 or RS485 communications*
- *Recirculation pump*
- *High pressure fans; provides additional 0.3" WG static pressure on fan discharge (5-15, 40 hp), required where exiting air is exhausted through ductwork*
- *Crankcase pressure regulating (CPR) valve to prevent compressor motor overloading, required for process water leaving temperature of 66ºF to 75º F*
- *304 SS reservoir tank (std on 40 hp)*
- *Mounting rails and/or mounting feet (5-15 hp only)*
- *UL-Labeled electrical subpanel*
- *380/3/50 or 575/3/60 operating voltage[2]*
- *NEMA-12 control access window[2]*
- *Start-up available: remote condenser units must be installed, evacuated, and precharged before AEC arrives on-site*

1 Field-retrofit option
2 Additional lead time

SPECIFICATIONS

Model	Compressor, HP	Compressor type	Evaporator type	Condenser type	Reservoir, gallons	Nominal pump	Refrigeration connections	
							Discharge, in. dia. ODS	Liquid, in. dia. ODS
PSR 5	5	Hermetic scroll, with compressor staging on 20-30 hp tandems	SS copper-brazed plate	Aluminum fin/copper tube (optional)	20 (polyethylene)	1 hp, 304 SS	0.625	0.625
PSR 7.5	7.5				20 (polyethylene)	1 hp, 304 SS	0.875	0.625
PSR 10	10				40 (polyethylene)	2 hp, 304 SS	1.125	0.625
PSR 15	15				40 (polyethylene)	2 hp, 304 SS	1.125	0.625
PSR 20	2 @ 10				80 (polyethylene)	5 hp, 304 SS	1.375	0.875
PSR 25	2 @ 13				80 (polyethylene)	5 hp, 304 SS	1.375	0.875
PSR 30	2 @ 15				80 (polyethylene)	5 hp, 304 SS	1.375	0.875
PSR 40	40	semi-hermetic discus w/ cylinder unloading	shell & tube		80 (304 SS)	7.5 hp, 304 SS	1.625	1.125

NOTE: Nominal operating parameters for PSA air-cooled chillers are 50ºF leaving water temperature at 2.4 gpm per ton, with 95ºF ambient air. For 50 Hz applications, multiply capacity by 0.83. Nominal 60 Hz flow rate must be maintained.

Model	Nominal cooling cap., tons[1]			Process connections, in. NPT				Water flow, gpm[2]	FLA 1 pump[3]		FLA 2 pumps[3]	
	No pump	1 pump	2 pump	1 pump	2 pump	no pump/ no tank	1 pump/ no tank		Rated	Running	Rated	Running
PSR5	4.8	4.6	4.5	1.5	2.0	1.5	1.5/2.0	11.1	12.2	9.2	13.1	10.1
PSR 7.5	6.6	6.4	6.3	1.5	2.0	1.5	1.5/2.0	15.3	16.2	12.8	17.3	13.7
PSR 10	9.9	9.5	9.4	1.5	2.0	1.5	1.5/2.0	22.8	22.5	18.2	24.2	19.9
PSR 15	14.5	14.1	14.0	2.0	2.5	2.0	2.0/3.0	33.9	29.7	23.9	31.4	25.6
PSR 20	19.4	18.4	18.0	2.0/3.0	2.5/3.0	2.0	2.0/3.0	46.5	43.9	37.6	47.0	40.7
PSR 25	23.8	22.8	27.8	2.0/3.0	2.5/3.0	2.0	2.0/3.0	57.2	55.9	42.1	59.0	45.2
PSR 30	29.2	28.2	27.8	2.0/3.0	2.5/3.0	2.0	2.0/3.0	70.2	60.0	50.4	63..2	53.5
PSR 40	36.9	35.4	35.0	2.5/3.0	2.5/3.0	2.5	2.5/3.0	88.6	81.9	68.8	85.0	58.0

1 Based on 50ºF (10ºC) chilled water supply temperature and 95ºF (35ºC) ambient air. Optional additional process pump hp (kW) reduces chiller capacity by 0.2 tons per hp (0.703 kW ref. cap. per 0.746 kW pump power)

2 Based on 2.4 gpm per ton (9.1 lpm per 3.517 kW) nominal 1 pump.

3 FLA at 460/3/60. Multiply 460/3/60 amperage by 2.0 for 208-230/3/60 amperage (0.8 for 575/3/60). An optional oversized process pump adds to the total rated or running chiller amperage. To find the new total chiller amperage, subtract the standard process pump amperage from the optional pump amperage (see table on next page) and add it to the rated or running amperage.

HEAT AND COOL

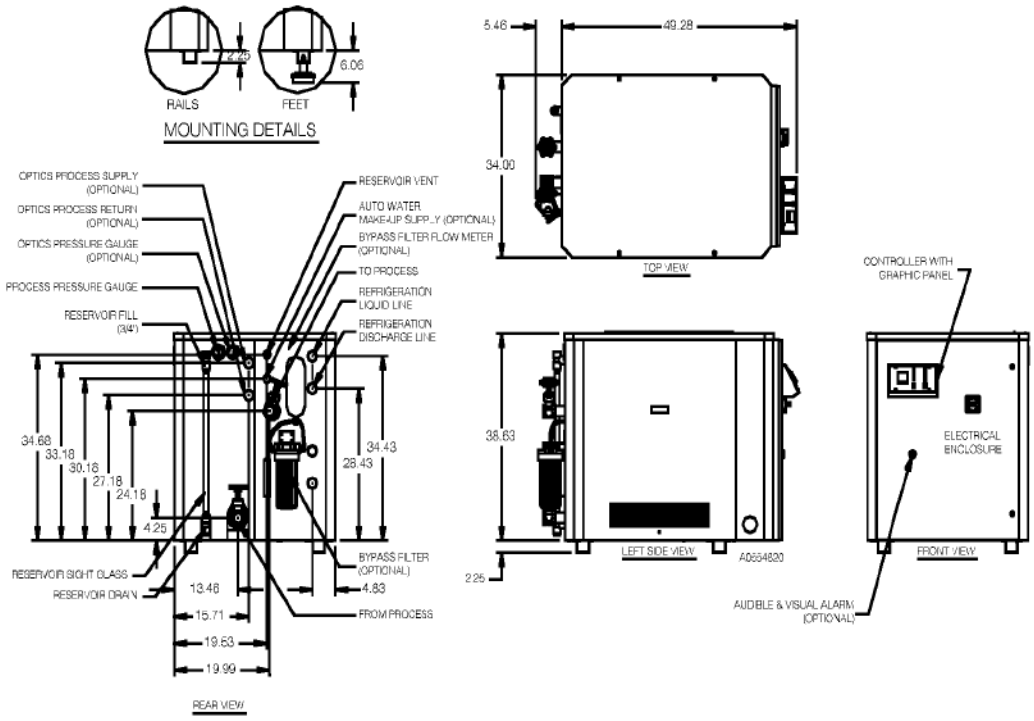
PUMP OPTIONS

Optional Pump	FLA @ 208-230/1/60	FLA @ 460/3/60	Availability
0.75 hp bronze turbine	5.4	1.5	2 and 3.5 hp models
1 hp SS	6.4	1.8	standard on 2-7.5 hp models
1.5 hp SS	7.5	2.3	2 and 3.5 hp models
2 hp SS	9.6	3.1	2-15 hp models (standard on 10-15 hp)
2 hp SS dual stage	n.a.	2.7	5-7.5 hp models
3 hp SS	12.7	4.2	2-15 hp models
3 hp SS dual stage	n.a	4.5	5-15 hp models
5 hp SS	n.a	6.2	5-30 hp models (standard on 20-30 hp)
5 hp SS dual stage	n.a	6.6	5-15 hp models
7.5 hp bronze	n.a	9.0	5-15 hp models
7.5 hp SS	n.a	9.8	20-30 hp models (standard on 40 hp)
10 hp SS	n.a	13.2	10-30 hp models
15 hp SS	n.a	19.0	20-30 hp models

ELECTRICAL CONTROL FEATURES

- *Fully accessible NEMA 12 enclosure*
- *Non-fused disconnect switch with branch fusing*
- *Single-point power and ground wiring connection*
- *Off-the-shelf microprocessor-based PID auto-tuning controller with To Process and Set Point LED readout*
- *Low and high process water temperature electronic cut-out switch with LCD display*
- *Graphic control panel w/status lights*

DIMENSIONS: PSR 5-7.5



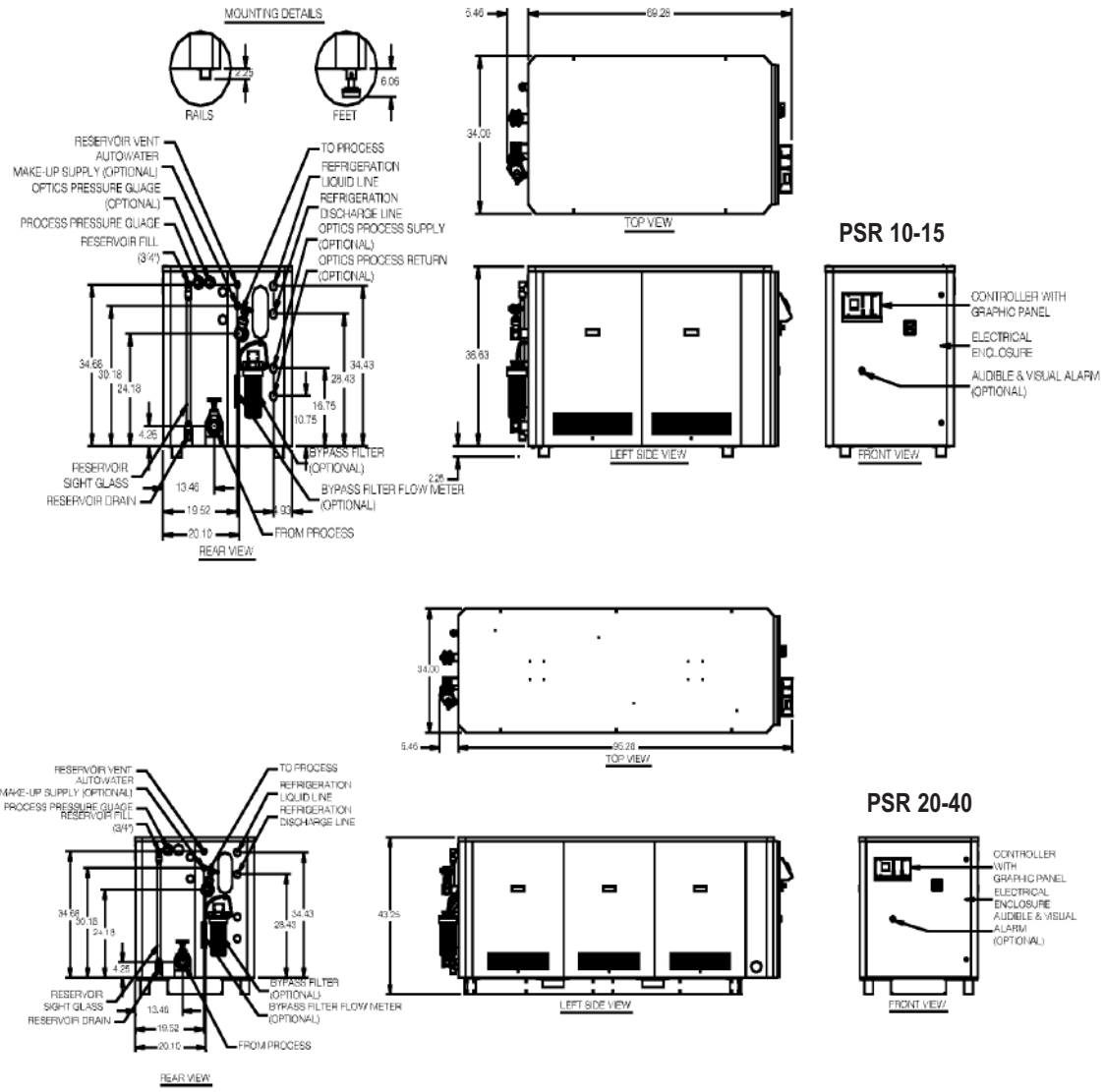
WEIGHTS: PSR 5-7.5

Model	Dry weight, lbs.	Ship. weight, lbs.	Oper. weight, lbs.
PSR 5	597	748	930
PSR 7.5	644	794	977

NOTES: Weights are for standard chiller. Some optional features will increase weight.
Operating weight is with a full reservoir tank of water.

HEAT AND COOL

DIMENSIONS: PSR 10-40



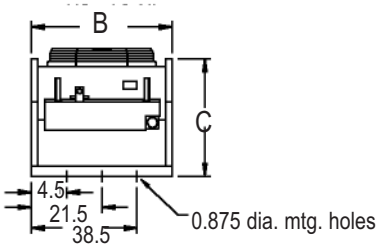
WEIGHTS: PSR 10-40

Model	Dry weight, lbs.	Ship. weight, lbs.	Oper. weight, lbs.
PSR 10	827	1052	1159
PSR 15	870	1095	1202
PSR 20	1299	1549	1965
PSR 25	1305	1555	1971
PSR 30	1607	1857	2273
PSR 40	2243	2470	2909

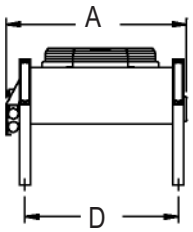
NOTES: Weights are for standard chiller. Some optional features will increase weight.
Operating weight is with a full reservoir tank of water.

REMOTE CONDENSER ASSEMBLY MODELS

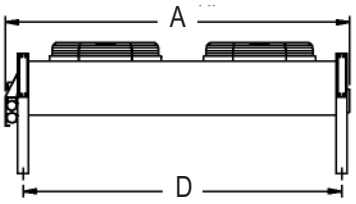
End View
PSR 5 - 10 hp



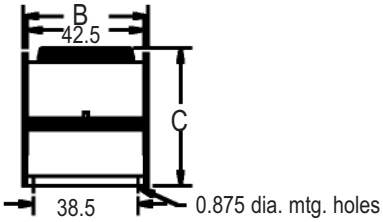
Side View
PSR 5 - 7.5 hp



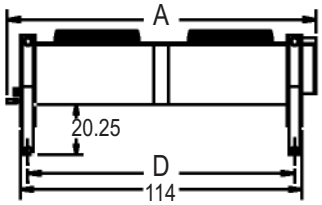
Side View
PSR 10 hp



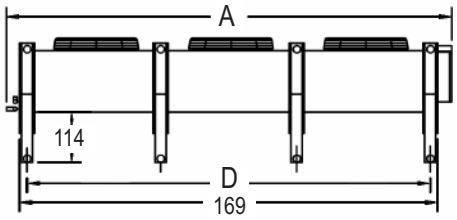
End View
PSR 15 - 40 hp



Side View
PSR 15 - 30 hp



Side View
PSR 40 hp



Model	Fans[1]						Remote condenser overall dimensions, in.				Refrigeration[2]		
	Each			Totals							Connections		Charge R-22 lbs.
	Dia., in.	Motor, hp (phase)	Amps, 460 V	Fans	Air flow, cfm	Net wt., lbs.	Length (A)	Width (B)	Height (C)	Mtg. (D)	Discharge, ODS, in.	Liquid ODS, in.	
PSR5	26	0.75, 1 ph	2.4	1	6450	390	49.8	43.0	40.5	40.0	1.125	0.875	9.0
PSR7.5	26	0.75, 1 ph	2.4	1	6450	390	49.8	43.0	40.5	40.0	1.125	0.875	9.0
PSR10	26	0.33, 3 ph	3.7	2	12400	520	69.8	43.0	40.5	60.0	(2) 1.125	(2) 0.875	9.5
PSR15	30	1.5, 3 ph	5.9	2	23000	790	125.0	45.5	50.0	108.0	1.375	1.375	8.0
PSR20	30	1.5, 3 ph	5.9	2	23000	800	125.0	45.5	50.0	108.0	1.375	1.375	8.0
PSR25	30	1.5, 3 ph	5.9	2	21900	860	125.0	45.5	50.0	108.0	1.625	1.625	12.0
PSR30	30	1.5, 3 ph	5.9	2	20700	950	125.0	45.5	50.0	108.0	1.625	1.625	15.0
PSR40	30	1.5, 3 ph	9.4	3	32900	1,300	180.0	45.5	50.0	163.0	2.125	2.125	19.0

1 All motors are 1140 rpm. All first fan motors (header side) are 0.75 hp single phase variable speed.
2 Refrigeration charge is for remote condenser only.

HEAT AND COOL

MIN. AND MAX. FLOW RATES

PS 2				PS 3.5				PS 5				PS 7.5			
Flow		Pressure drop ΔP		Flow		Pressure drop ΔP		Flow		Pressure drop ΔP		Flow		Pressure drop ΔP	
gpm	lpm	psig	kPa	gpm	lpm	psig	kPa	gpm	lpm	psig	kPa	gpm	lpm	psig	kPa
4.06	15.4	3.5	24.1	8.03	30.4	4.0	27.6	10.0	37.9	1.5	10.5	12.0	45.4	2.3	16.1
6.01	22.8	7.0	48.3	10.00	37.9	6.5	44.8	12.0	45.4	2.2	14.8	16.0	60.6	2.9	20.1
8.02	30.4	11.5	79.3	12.00	45.4	10.0	69.	18.0	68.1	4.7	32.1	20.0	75.7	5.0	34.5
10.00	37.9	18.0	124.1	14.00	53.0	13.0	89.6	24.0	90.8	7.3	50.2	24.0	90.8	6.9	47.4
				16.0	60.6	18.0	124.1					28.0	106.0	9.6	65.9
												33.0	124.9	12.7	87.8

PS 10				PS 15				PS 20				PS 25			
Flow		Pressure drop ΔP		Flow		Pressure drop ΔP		Flow		Pressure drop ΔP		Flow		Pressure drop ΔP	
gpm	lpm	psig	kPa	gpm	lpm	psig	kPa	gpm	lpm	psig	kPa	gpm	lpm	psig	kPa
22.0	83.3	4.7	32.6	30.0	113.6	4.5	31.3	40.0	151.4	4.0	27.6	55.0	208.2	5.5	37.9
30.0	113.6	8.28	57.1	40.0	151.4	7.5	51.7	45.0	170.3	4.0	27.6	58.0	219.5	5.8	40.0
38.0	143.8	12.91	89.0	50.0	189.3	12.4	85.2	50.0	189.3	5.0	34.5	61.0	230.9	6.0	41.4
46.0	174.1	16.77	115.6	60.0	227.1	17.8	122.8	52.0	196.8	6.0	41.4	70.0	264.9	8.5	58.6
50.0	189.3	20.00	137.9	70.0	264.9	24.2	166.6	55.0	208.2	6.5	44.8				

PS 30				PS 40			
Flow		Pressure drop ΔP		Flow		Pressure drop ΔP	
gpm	lpm	psig	kPa	gpm	lpm	psig	kPa
72.0	272.5	6.0	41.1	44.7	169.2	2.0	13.8
75.0	283.9	6.5	44.8	58.5	221.4	3.4	23.4
80.0	302.8	8.0	55.2	70.9	268.3	4.9	33.8
85.0	321.7	9.5	65.5	81.6	308.8	6.3	43.5
				105.7	400.0	10.3	71.0

FLOW AND PRESSURE CONSIDERATIONS

Model	Design flow		Design Δ P		Standard pump power		To process pressure		
	gpm	lpm	psig	kPa	hp	kW	psi	kPa	bars
PSA2	4.6	17.5	4.4	30.4	1	0.746	34.1	235.3	2.4
PSA3.5	7.9	29.9	4.9	33.7	1	0.746	33.0	227.5	2.3
PSA/R5	11.6	43.8	2.0	13.7	1	0.746	34.9	240.8	2.4
PSA/R7.5	15.7	59.6	2.8	19.0	1	0.746	32.7	225.7	2.3
PSA/R10	23.8	90.1	5.1	35.2	2	1.492	43.4	299.0	3.0
PSA/R15	34.9	132.1	6.1	41.8	2	1.492	38.0	262.1	2.6
PSA/R20	46.5	175.9	7.1	49.0	5	3.73	54.0	372.3	3.7
PSA/R25	57.2	216.4	8.1	55.9	5	3.73	52.0	358.5	3.6
PSA/R30	70.2	265.6	10.5	72.4	5	3.73	47.5	327.5	3.3
PSR40	88.6	335.4	8.2	56.5	7.5	5.59	55.0	379.2	3.8
PSW2	5.1	19.1	5.7	39.1	1	0.746	32.9	226.6	2.3
PSW3.5	8.6	32.7	6.0	41.2	1	0.746	31.7	218.5	2.2
PSW5	12.6	47.7	2.3	16.00	1	0.746	34.3	236.2	2.4
PSW7.5	17.0	64.5	3.1	21.4	1	0.746	32.0	220.3	2.2
PSW10	25.7	97.4	6.3	43.3	2	1.492	41.4	285.3	2.9
PSW15	38.1	144.1	7.0	48.1	2	1.492	35.5	244.4	2.4
PSW20	50.4	190.8	8.8	60.3	5	3.73	52.0	358.5	3.6
PSW25	61.7	233.7	9.0	62.1	5	3.73	49.0	337.9	3.4
PSW30	76.2	288.5	10.8	74.1	5	3.73	43.0	296.5	3.0
PSW40	98.4	372.4	8.2	56.5	7.5	5.59	55.0	379.2	3.8

RECIRCULATION PUMP SPECS

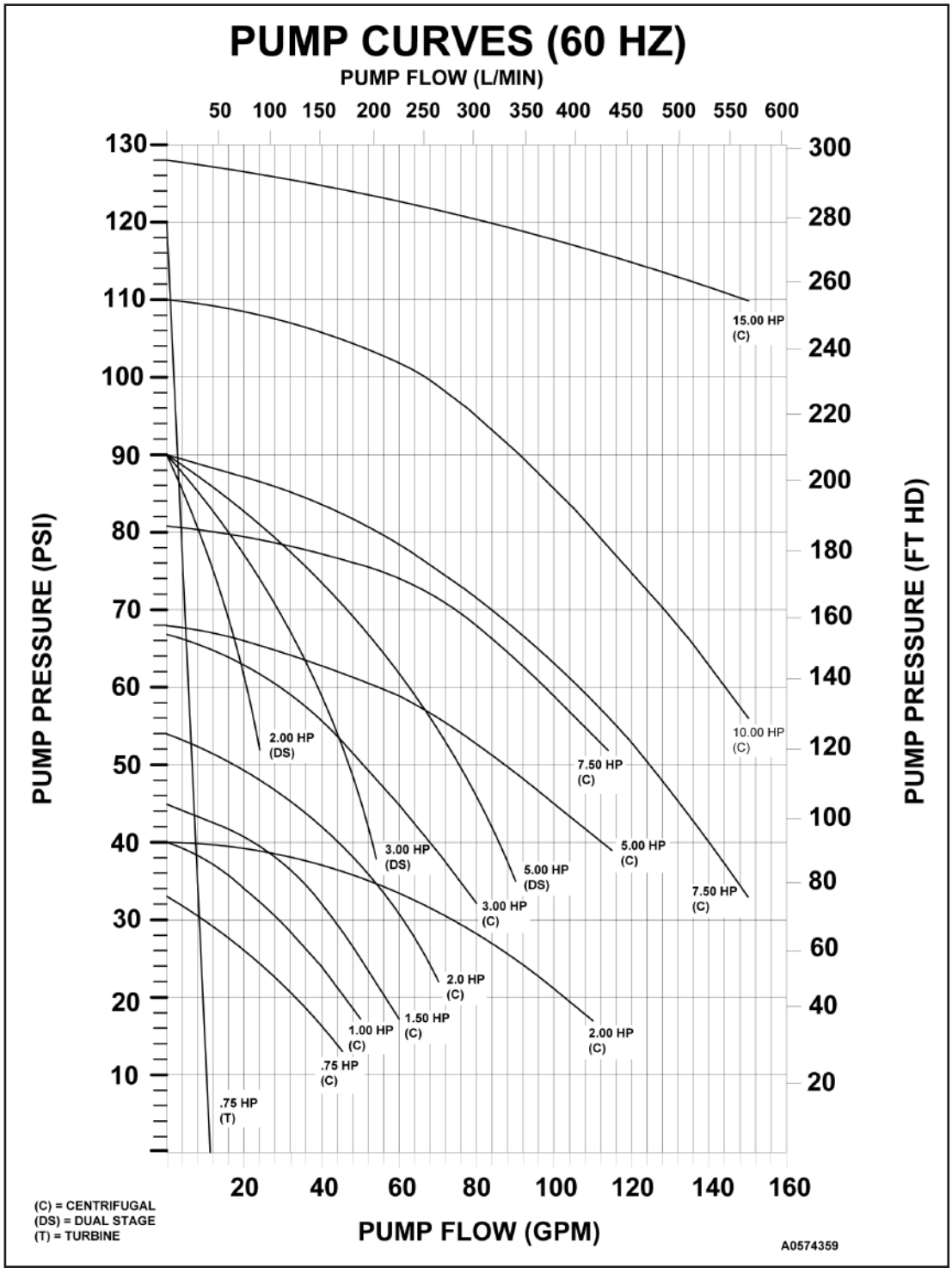
Model	Recirc. power		Flow rate		Δ pressure	
	hp	kW	gpm	lpm	psi	kPa
PS5	0.75	0.373	13.0	49.2	2.3	16.0
PS7.5	0.75	0.373	17.0	64.3	3.1	21.4
PS10	0.75	0.595	26.0	98.4	6.3	43.3
PS15	0.75	0.595	38.0	143.8	7.0	48.0
PS20	2.0	1.492	50.0	189.2	8.8	60.3
PS 25	2.0	1.492	63.0	238.4	9.0	62.0
PS 30	2.0	1.492	76.0	287.6	10.8	74.1
PS 40	3.0	2.238	98.0	370.9	8.2	56.5

NOTES: Pressure drop values are valid for single-pump and no-pump PS Series portable chillers.

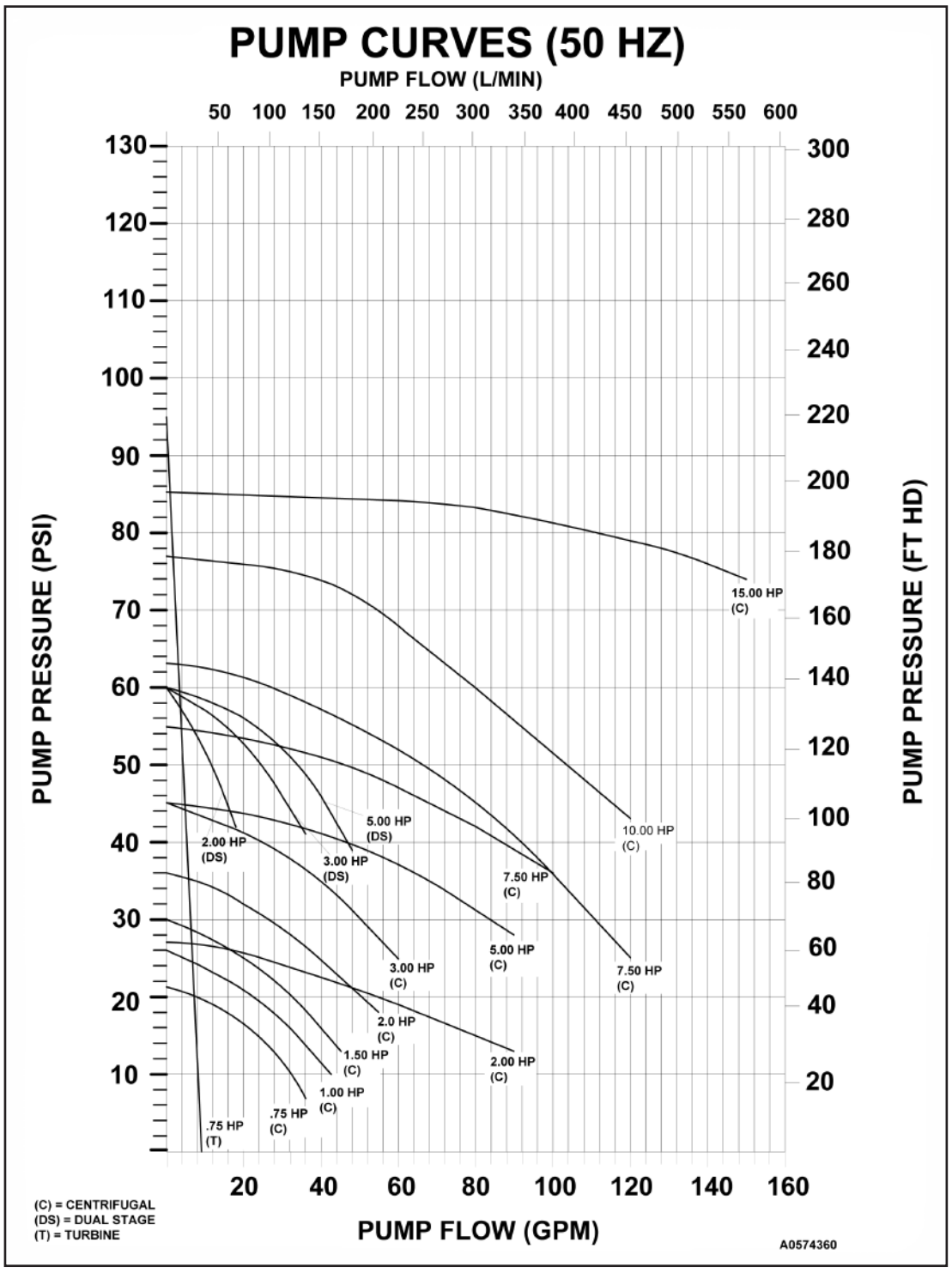
Subtract chiller ΔP from pump curve pressure for actual To Process pressure.

Recirculation pump is required for flow rate values exceeding maximums.

HEAT AND COOL



Important! Pump pressure must be corrected for pressure at chiller 'To Process' connection.



Important! Pump pressure must be corrected for pressure at chiller 'To Process' connection.