THERMAL CARE
PiovanGroup

Accuchiller NQV Portable Chiller

10-ton Air-Cooled Chiller

Standard Features

Variable-Speed Compressor

Chillers usually operate with process heat loads less than 100% of available chiller capacity. With increasing emphasis on energy efficiency, we offer a variable-speed scroll compressor for improved part-load efficiency.

Most chillers use fixed-speed compressors with a hot gas bypass valve that bypasses hot discharge refrigerant gas back into the compressor to simulate 100% load. This keeps the compressor running at full speed all the time.

Our variable-speed scroll compressor technology varies the compressor speed to match the process load. This means the compressor slows down under part load conditions for peak performance and reduced power use.

Our 5, 10, and 15 ton units use one variable-speed compressor. Our 20 ton unit uses a 10 ton variable-speed and a 10 ton fixed-speed compressor and our 30 ton unit uses a 15 ton variable-speed and 15 ton fixed-speed compressor.

Variable-Speed Compressor Payback (Years)

Cap	Hours	Process Load (Percent of Full Capacity)							
		50%	55%	60%	65%	70%	75%	80%	85%
5 ton	4,000	3.4	3.6	3.9	4.3	4.8	5.5	6.7	8.8
	6,000	2.3	2.4	2.6	2.8	3.2	3.7	4.5	5.9
	8,400	1.6	1.7	1.9	2.0	2.3	2.6	3.2	4.2
10 ton	4,000	1.2	1.3	1.4	1.5	1.7	2.0	2.4	3.1
	6,000	0.8	0.9	0.9	1.0	1.1	1.3	1.6	2.1
	8,400	0.6	0.6	0.7	0.7	0.8	0.9	1.1	1.5
15 ton	4,000	1.1	1.2	1.3	1.4	1.6	1.9	2.4	3.5
	6,000	0.7	0.8	0.8	0.9	1.1	1.3	1.6	2.3
	8,400	0.5	0.6	0.6	0.7	0.8	0.9	1.2	1.7
20 ton	4,000	1.1	1.2	1.3	1.4	1.6	1.9	2.4	3.3
	6,000	0.7	0.8	0.9	1.0	1.1	1.3	1.6	2.2
	8,400	0.5	0.6	0.6	0.7	0.8	0.9	1.2	1.6
30 ton	4,000	0.8	0.8	0.9	1.0	1.1	1.3	1.6	2.1
	6,000	0.5	0.6	0.6	0.7	0.8	0.9	1.1	1.4
	8,400	0.4	0.4	0.4	0.5	0.5	0.6	0.8	1.0

Based on $0.10/kWHr power cost

Direct Drive Scroll Compressors

Direct drive hermetically sealed scroll compressors with proven performance in industrial cooling for reliable, low maintenance, and efficient operation.

Stainless Steel Evaporators

High-efficiency stainless steel plates with copper brazing provide maximum performance, long life, and an enhanced level of protection from harsh process conditions.

Stainless Steel Pump

Stainless steel pump selected for peak performance with the utmost in corrosion protection to ensure a long useful life under severe industrial conditions.

Nonferrous Reservoir and Water Lines

The insulated reservoir, fluid lines, pumps, and other components in the process fluid circuit will remain free of rust to provide maximum corrosion protection.

Evaporator Inlet Strainer

The evaporator inlet strainer removes any debris present in the process fluid to prevent costly downtime and repair due to a clogged chiller evaporator.

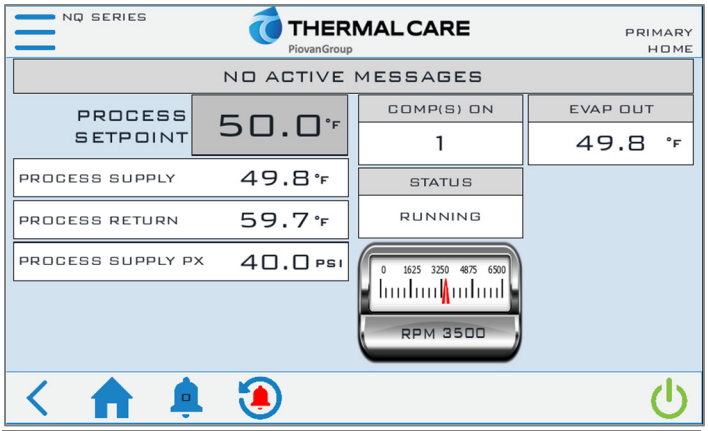
Easy Access Cabinet

Heavy-gauge machine access doors with industrial grade tools-free latches provide quick access to all components for easy operation and maintenance.

Compressor Protection Technology

Our compressor protection technology uses start-to-start anti-recycle control logic to limit cycling under low-load operating conditions to extend compressor life.

7-Inch Color Touch Screen



Description of Functions	Availability
Process Fluid Supply and Return Temperatures	●
Evaporator Fluid Leaving Temperature	●
Process Fluid Supply Pressure	●
Compressor Running Hours	●
Pump Running Hours	●
Condenser Fan Running Hours	●
Refrigerant Suction Pressure	●
Refrigerant Suction Temperature & Superheat	●
Refrigerant Liquid Temperature & Subcooling	●
Refrigeration Discharge Pressure	●
Refrigerant Discharge Temperature	●
High Process Fluid Temperature	●
Low Process Fluid Temperature	●
Evaporator Fluid Freeze	●
Evaporator Fluid Low Flow	●
Refrigerant High Pressure	●
Refrigerant Low Pressure	●
Compressor Overload	●
Pump Overload	●
Condenser Fan Overload	●
Reservoir Low Level	●
Process Fluid Supply Temperature (0-10 VDC)	●
Remote Start/Stop	●
Alarm Contact	●
CONNEX4.0 Ready	●
Modbus RTU	●
Modbus TCP/IP	●
BACnet MS/TP	○
BACnet/IP	○

● = standard, ○ = optional

Compressor and Pump Run Hour Displays

The ability to monitor compressor and pump running hours is useful and is an important tool to assist with scheduling maintenance.

Power Monitor

The main power monitoring system protects the chiller from extensive damage to the compressor and pump due to loss of phase or phase reversal in the main supply.

Reservoir Low Level Alarm

Indicates a low process fluid condition and protects the process pump and chiller from expensive damage caused by a critically low operating level in the reservoir.

Master Reset

The master reset function is a quick and easy way to reset and restore the control system to factory default settings if a control parameter is mistakenly changed.

High-Quality 24 VDC Power Supply

The 24-volt DC power supply ensures dependable control circuit power and isolates the control circuit from static interference to ensure stable and precise operation.

Warranty

18 months parts on entire unit
12 months labor

Available Options

- High flow/high pressure pumps
- High flow unit design
- Alarm horn
- Alarm relay
- Rotary non-fused or fused disconnect switch
- C-UL508A industrial control panel construction
- Outdoor-duty construction
- Extended condenser air range (0°F to 110°F) (-18°C to 43°C)
- Low temperature condenser air range (-20°F to 110°F) (-29°C to 43°C)
- Air-cooled condenser coil coating for coastal regions
- Pump and tank deduct
- Oversized reservoirs
- Water circuit designed for use with de-ionized water
- Stainless steel cabinetry
- Automatic electric water make-up valve
- High pressure fans for ducting of discharge air
- Emergency stop button
- Remote HMI with 50 foot wire
- Special color paint

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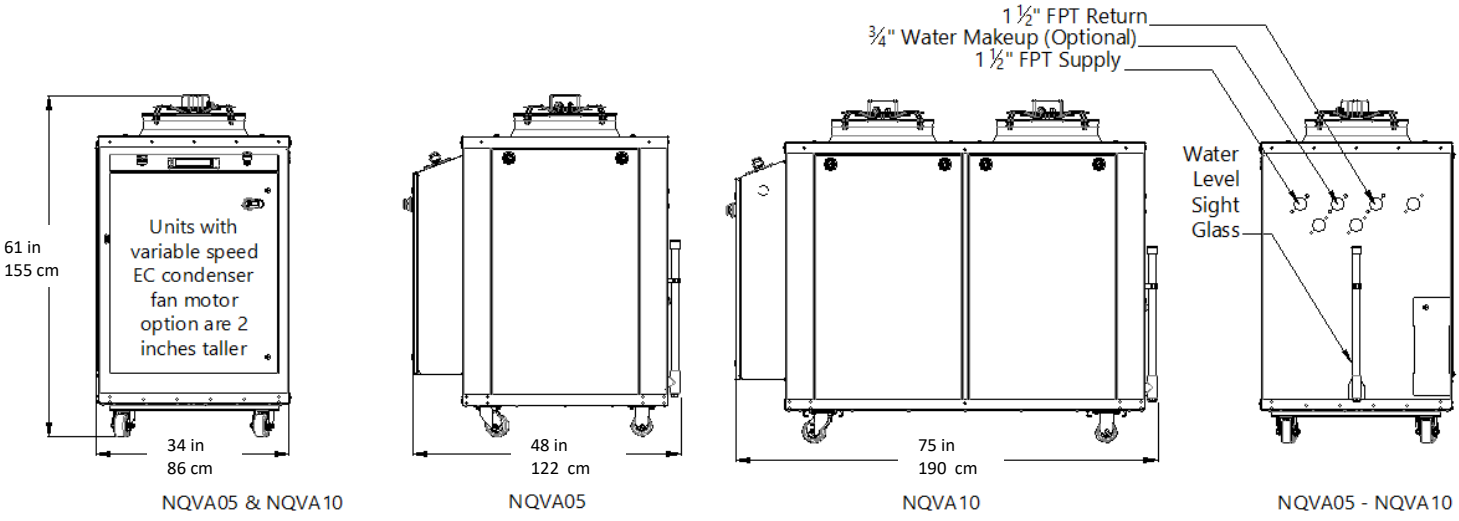
Air-Cooled Condenser Chillers

Model	NQVA05	NQVA10	NQVA15	NQVA20	NQVA30
Cooling Capacity [1]	5 tons 18 kW	11 tons 39 kW	15 tons 53 kW	21 tons 74 kW	31 tons 109 kW
Set Point Range	20 to 80°F -7 to 27°C	20 to 80°F -7 to 27°C	20 to 80°F -7 to 27°C	20 to 80°F -7 to 27°C	20 to 80°F -7 to 27°C
Compressor (qty)	1	1	1	2	2
Sound Pressure @ 1 meter (dBA)	74	76	82	84	86
Pump Motor Size (hp)	2	3	3	5	5
Pump Flow	12 gpm 45 lpm	27 gpm 102 lpm	36 gpm 136 lpm	48 gpm 182 lpm	72 gpm 273 lpm
Net Available Pump Pressure [2]	41 psi 2.8 bar	48 psi 3.3 bar	40 psi 2.8 bar	45 psi 3.1 bar	43 psi 3.0 bar
Reservoir Holding Capacity	14 gal 53 L	30 gal 114 L	60 gal 227 L	60 gal 227 L	67 gal 254 L
Shipping Weight	770 lbs 349 kg	1,245 lbs 565 kg	3,250 lbs 1,474 kg	3,350 lbs 1,520 kg	4,200 lbs 1,905 kg
Operating Weight	860 lbs 390 kg	1,420 lbs 644 kg	3,585 lbs 1,626 kg	3,765 lbs 1,708 kg	4,760 lbs 2,159 kg
MCA @ 460/3/60 (amps)[3]	23	46	86	70	125
MOP @ 460/3/60 (amps)[4]	40	80	150	100	200

[1]Cooling tons based on 12,000 BTU/Hr/ton with 50°F (10°C) leaving coolant and 95°F (35°C) ambient air, R410A refrigerant.
[2]Net available pressure at outlet of chiller is pump discharge pressure less the internal pressure loss through the fluid circuit.
[3]MCA is Minimum Circuit Amps with standard condenser fan(s) and pump under full load, used for minimum wire size requirement.
[4]MOP is Maximum Overcurrent Protection with standard condenser fans(s) and pump, used for sizing main power protection devices.



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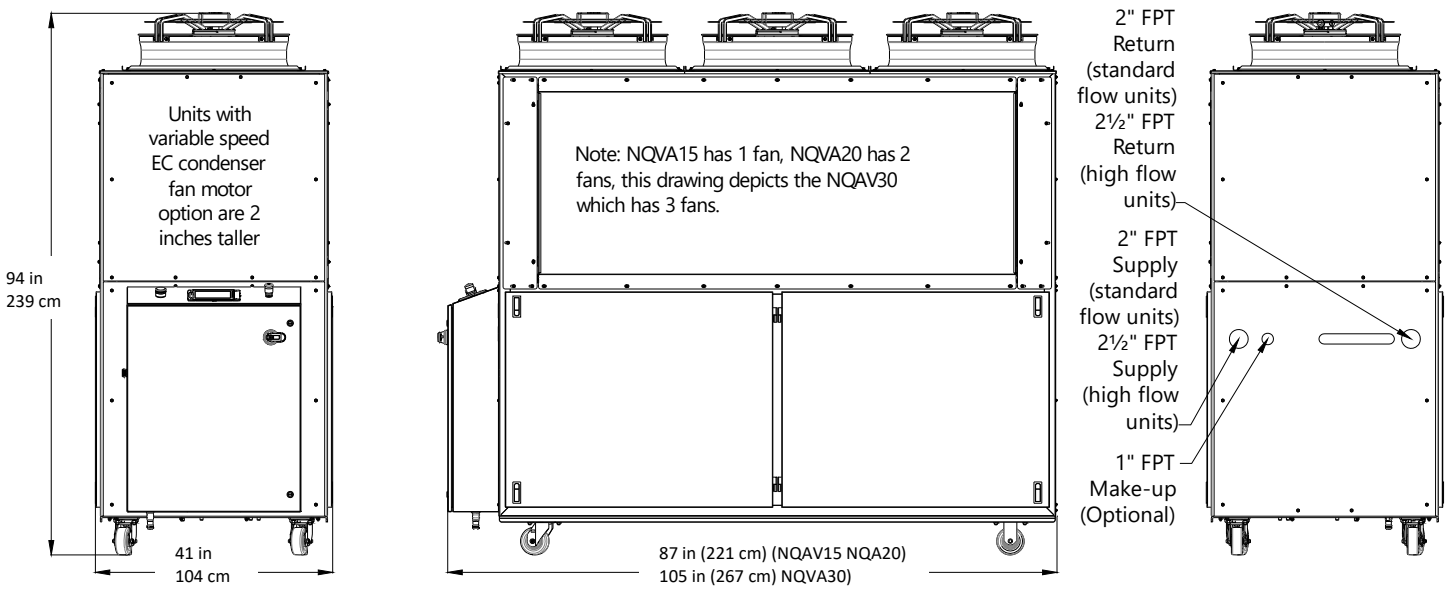
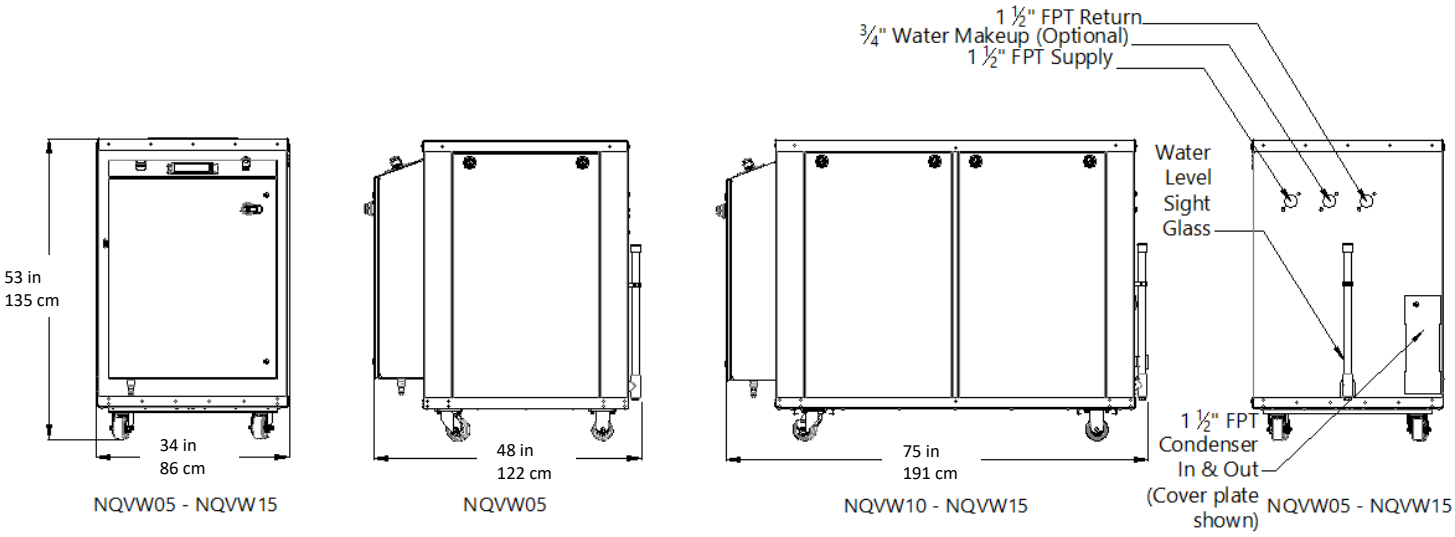


Water-Cooled Condenser Chillers

Model	NQVW05	NQVW10	NQVW15	NQVW20	NQVW30
Cooling Capacity [1]	6 tons 21 kW	12 tons 42 kW	17 tons 60 kW	23 tons 81 kW	33 tons 116 kW
Set Point Range	20 to 80°F -7 to 27°C	20 to 80°F -7 to 27°C	20 to 80°F -7 to 27°C	20 to 80°F -7 to 27°C	20 to 80°F -7 to 27°C
Compressor (qty)	1	1	1	2	2
Sound Pressure @ 1 meter (dBA)	70	71	73	74	75
Pump Motor Size (hp)	2	3	3	5	5
Pump Flow	13 gpm 49 lpm	29 gpm 110 lpm	39 gpm 148 lpm	54 gpm 204 lpm	79 gpm 299 lpm
Net Available Pump Pressure [2]	40 psi 2.8 bar	46 psi 3.2 bar	35 psi 2.4 bar	41 psi 2.8 bar	39 psi 2.7 bar
Reservoir Holding Capacity	14 gal 53 L	30 gal 114 L	30 gal 114 L	60 gal 227 L	67 gal 254 L
Shipping Weight	770 lbs 349 kg	1,245 lbs 565 kg	1,365 lbs 619 kg	1,950 lbs 885 kg	2,300 lbs 1,043
Operating Weight (lbs)	860 lbs 390 kg	1,420 lbs 644 kg	1,550 lbs 703 kg	2,365 lbs 1,073 kg	2,860 lbs 1,297
MCA @ 460/3/60 (amps)[3]	21	42	81	61	111
MOP @ 460/3/60 (amps)[4]	35	80	150	100	175

[1]Cooling tons based on 12,000 BTU/Hr/ton with 50°F (10°C) leaving coolant and 85°F (29°C) condenser water, R410A refrigerant.
[2]Net available pressure at outlet of chiller is pump discharge pressure less the internal pressure loss through the fluid circuit.
[3]MCA is Minimum Circuit Amps with standard pump under full load, used for minimum wire size requirement.
[4]MOP is Maximum Overcurrent Protection with standard pump, used for sizing main power protection device.

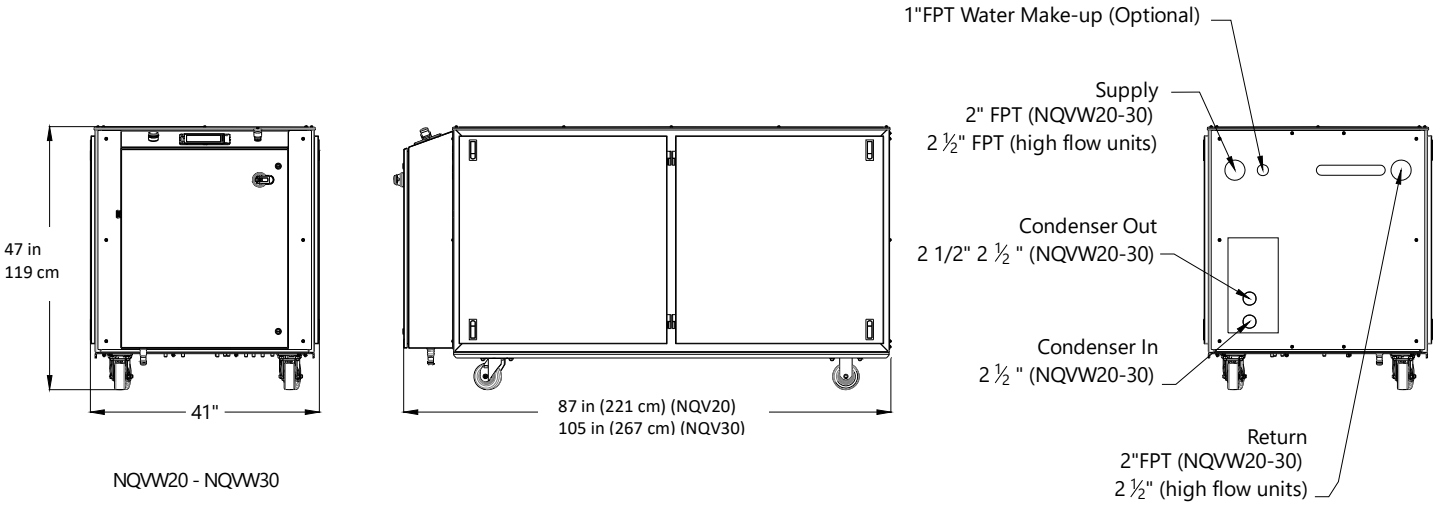


NQVW05 - NQVW15

NQVW05

NQVW10 - NQVW15

NQVW05 - NQVW15



NQVW20 - NQVW30

THERMAL CARE
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Thermal Care is ISO 9001 Certified
Manufacturer reserve the right to change specification
or design without notification or obligation
NQV Specification 08