Quincy COMPRESSOR

Refrigerated Air Dryers

HEAT EXCHANGER
10 YEAR WARRANTY

QUINCY QPNC SERIES | NON-CYCLING
QUINCY QRHT SERIES | HIGH TEMP

A Greener Choice

REFRIGERATED AIR DRYERS

NON-CYCLING DESIGNS FOR MAXIMUM SYSTEM EFFICIENCY

NON-CYCLING DRYERS 10 TO 3000 CFM

Quincy refrigerated air dryers are manufactured to exact standards in state-of-the-art production facilities, featuring high capacity, balanced component selection and consistent output. This, combined with a clean, simple design, creates an efficient, reliable and environmentally friendly non cycling refrigerated air dryer.

Quincy refrigerated air dryers allow plant equipment to run efficiently, and processes more reliably, by providing the cleanest compressed air utility possible. Payback starts immediately upon start up.

ENVIRONMENTALLY SAFE REFRIGERANTS

- No CFC's or HCFC's
- EPA/SNAP Compliant
- **Zero Ozone Depletion Potential (ODP)**
- Qualifies for one LEED point
- Higher performance potential
- Higher efficiency potential

A Greener Choice

UNITED STATES • ENVIRONMENTAL PROTECTION AGENCY

QPNC — NON-CYCLING DRYER OPERATION

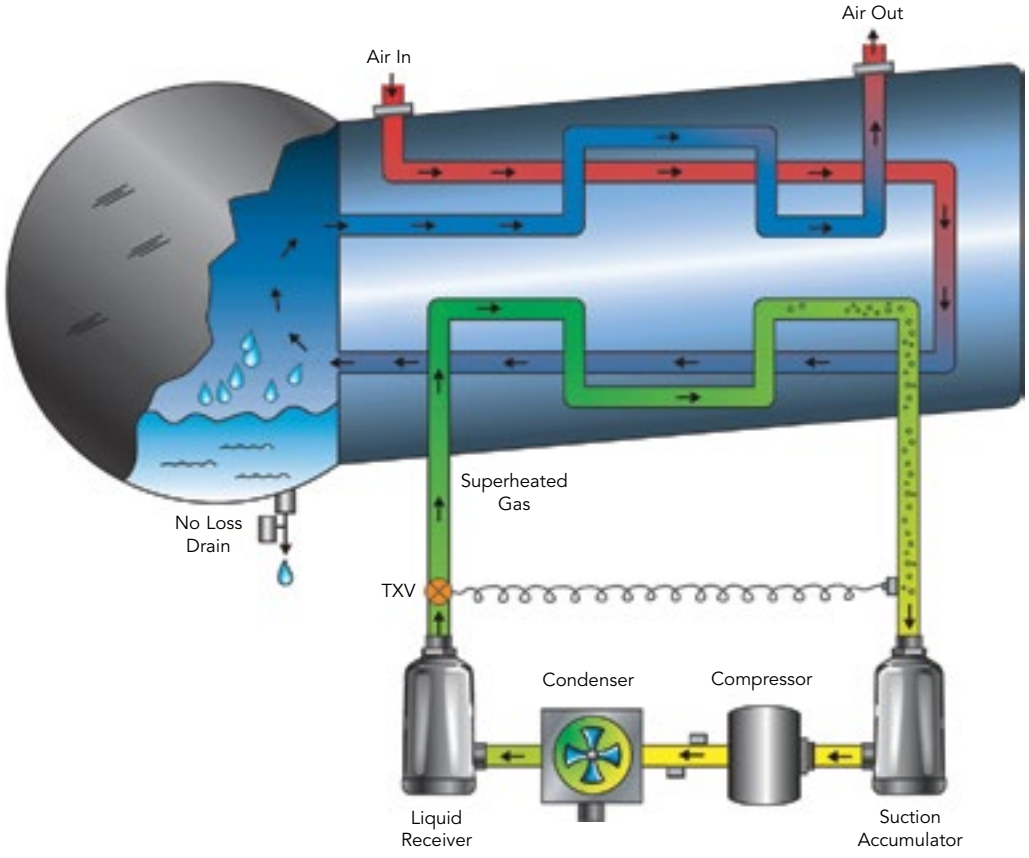
Quincy Non-Cycling dryers use a two-stage heat exchanger system to maintain consistent dew points. Freeze-ups are prevented and optimum performance is maintained by integrating the highest quality components and refrigeration controls into our system.

The system reduces the temperature of the compressed air to approx. +39°F forcing entrained moisture to condense. The mixture of condensed liquids and cold air then flow into the cold point moisture separator where the liquids are collected and removed by a Zero Loss condensate drain. The Zero Loss drain ensures maximum moisture removal while saving energy.

Once liquids have been removed, the cold dry compressed air returns through the cold side of the first stage heat exchanger where it is reheated by the warm incoming air. Pipe sweating is avoided and air volume is increased by reheating.

The compressed air is now considered treated and ready for delivery to downstream products.

Non-Cycling Flow Schematic



REFRIGERATED AIR DRYERS

EASE OF OPERATION

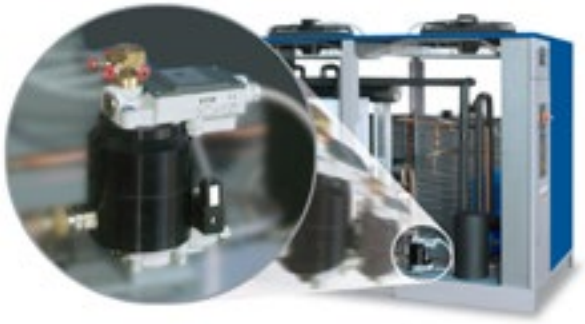
Non-cycling Control Panel 10–250 cfm

Non-cycling Control Panel 360–3000 cfm

- Refrigerant System Flow
- Run & Alarm Indicator Lights
- Analyzer Gauge
- Schematic
- Stop / Start Switch with Lock Out

SAVING ENERGY

Quincy QPNC dryers from 10 to 3000 cfm come standard with the most energy efficient ZERO LOSS DRAINS.



HEAT EXCHANGERS & MOISTURE SEPARATORS

- Low pressure drop
- Cold Air Module (QPNC 75 -3000)
- Brazed Plate (QPNC 10 - 50)
- Integrated Moisture Separator
- Five step centrifugal separation
- 10-Year Heat Exchanger Warranty

QPNC AVAILABLE EQUIPMENT

Available Equipment	Non-Cycling Models (SCFM) 10–50	75–125	150-200	250	300-600	750-3000
Controls:						
Microprocessor	n/a	n/a	n/a	n/a	n/a	n/a
Hot Gas Bypass Valve	S	S	S	S	S	S
Thermostatic Expansion Device	S	S	S	S	S	S
High/Low Refrigerant Shutdown	n/a	n/a	n/a	n/a	n/a	n/a
Refrig. Dual Pressure	n/a	n/a	n/a	n/a	n/a	n/a
Heat Exchangers:						
Three-stage Modular Heat Exchanger w/Integral Cold Point Separation	S	S	S	S	S	S
Separators & Drains:						
High Efficiency Moisture Separator	S	S	S	S	S	S
Electronic No Loss Drain	S	S	S	S	S	S
Electronic Timer Drain	n/a	n/a	n/a	n/a	n/a	n/a
Indicator lights:						
Power On	S	S	S	S	S	S
°F or °C Mode	n/a	n/a	n/a	n/a	n/a	n/a
Alarm	S	S	S	S	S	S
Drain Light	n/a	n/a	n/a	n/a	n/a	n/a
Compressor Running	n/a	n/a	n/a	n/a	n/a	n/a
Service Due	n/a	n/a	n/a	n/a	n/a	n/a
Instrumentation:						
Air In Temperature	n/a	n/a	n/a	n/a	n/a	n/a
Air Out Temperature	n/a	n/a	n/a	n/a	n/a	n/a
Air In Pressure	n/a	n/a	n/a	n/a	n/a	n/a
Air Out Pressure	n/a	n/a	n/a	n/a	n/a	n/a
Ambient/Cooling Water Temp	n/a	n/a	n/a	n/a	n/a	n/a
Refrigerant Suction Temperature	n/a	n/a	n/a	n/a	n/a	n/a
Refrigeration Suction Pressure	S	S	S	S	S	S
Refrigeration Discharge Pressure	n/a	n/a	n/a	n/a	n/a	n/a
6' Single Phase Power Cord	S	S	S	S	S	S
NEMA 1	S	S	S	S	S	S
NEMA 4	n/a	n/a	n/a	n/a	n/a	n/a
Cooling:						
Air	S	S	S	S	S	S
Enclosures:						
Powder Coated Cabinet	S	S	S	S	S	S
Filters:						
Particulate	O	O	O	O	O	O
Coalescer	O	O	O	O	O	O
Mist Eliminator	O	O	O	O	O	O

S = Standard GP = Gauge Package Option
O = Optional n/a = Not Applicable

QRHT — HIGH TEMPERATURE REFRIGERATED DRYER

SPACE SAVING REFRIGERATED DRYER

QRHT Series Total Air System High Temperature Dryers integrate five different components that perform separate functions. An air-cooled aftercooler, refrigerated dryer, moisture separator, Zero Loss drain, and coalescing filter. These five components work in harmony to ensure clean dry, filtered compressed air.

- 180°F Inlet Temperature
- 3-in-1 Design
- Eliminates Water, Oil and Dirt from Air
- Prevents Damage to Pneumatic Tools
- Fewer Finished Product Defects
- Prevents "Fisheye" Paint Splotches
- Reduces Operational Downtime
- Increase Profitability and Productivity
- Eliminates Air Line Purging

QRHT — SPECIFICATIONS & ENGINEERING DATA

High Temperature Model	cfm @ 100 psig	Voltage	Power Consumption Kw	Max psig	Refrigerant	Dimensions L In.	W In.	H In.	Approx Wt. lb.	Connections In.
QRHT 25	25	115/1/60	42	232	R134a	21	14	18	57	1/2 " NPT
QRHT 50	50	115/1/60	84	232	R404A	23	19	31	108	1 NPT
QRHT 75	75	115/1/60	169	232	R404A	23	19	31	168	3/4" NPT
QRHT 100	100	115/1/60	163	232	R404A	23	19	41	231	3/4" NPT
QRHT 125	125	115/1/60	203	232	R404A	23	19	41	236	3/4" NPT

Notes: Instrumentation includes; On/off switch, refrigerant suction pressure gauge and drain test button. Coalescing filter is supplied for all models.

Inlet Flow SCFM Model	50°F PDP	40°F PDP
QRHT 25	25	20
QRHT 50	50	40
QRHT 75	75	60
QRHT 100	100	80
QRHT 125	125	100

SCFM flow is rated at 180°F max. inlet, 100 psig and 100°F ambient

QPNC — SPECIFICATIONS & ENGINEERING DATA

Non-Cycling

Model	cfm @ 100 psig	m³/hr 7 bar	Standard Electrics — Volts/Phase Hertz	Full Load kW	Pressure — Max psig	Nominal ΔP	Dimensions — L In.	W In.	H In.	Approximate Shipping Wt. lb.	Connections In/Out	Refrigerant Gas
QPNC 10	10	17	115/1/60	0.2	230	1.5	21	14	20	57	0.5" NPT (M)	R134a
QPNC 15	15	25	115/1/60	0.2	230	2.2	21	14	20	59	0.5" NPT (M)	R134a
QPNC 25	25	42	115/1/60	0.3	230	2.9	21	14	20	70	0.5" NPT (M)	R134a
QPNC 35	35	59	115/1/60	0.3	230	2.9	21	14	20	75	0.5" NPT (M)	R134a
QPNC 50	50	85	115/1/60	0.4	230	2.9	21	14	20	75	0.5" NPT (M)	R134a
QPNC 75	75	127	115/1/60	0.7	230	2.9	23	18	31	112	1" NPT (F)	R404A
QPNC 100	100	170	115/1/60	0.9	200	2.2	25	19	32	134	1.5" NPT (F)	R404A
QPNC 125	125	212	115/1/60	1.0	200	2.9	25	19	32	150	1.5" NPT (F)	R404A
QPNC 150	150	255	208-230/1/60	1.5	200	1.5	26	23	36	198	1.5" NPT (F)	R404A
QPNC 200	200	340	208-230/1/60	1.6	200	2.9	26	23	36	198	1.5" NPT (F)	R404A
QPNC 250	250	425	460/3/60	1.9	200	3.6	26	23	36	198	1.5" NPT (F)	R404A
QPNC 300	300	510	460/3/60	2.3	188	3.6	38	29	40	282	2" NPT (F)	R410A
QPNC 360	360	612	460/3/60	2.6	188	4.3	38	29	40	322	2" NPT (F)	R410A
QPNC 500	500	850	460/3/60	3.2	188	4.3	38	29	40	348	2" NPT (F)	R410A
QPNC 600	600	1020	460/3/60	4.3	188	4.3	38	29	40	364	2" NPT (F)	R410A
QPNC 750	750	1275	460/3/60	5.4	188	3.6	41	41	61	717	3" NPT (M)	R404A
QPNC 1000	1000	1700	460/3/60	5.8	188	4.3	41	41	61	739	3" NPT (M)	R404A
QPNC 1250	1250	2125	460/3/60	7.3	188	5.0	41	81	61	772	3" NPT (M)	R404A
QPNC 1600	1600	2720	460/3/60	12.7	188	4.3	40	83	61	1213	6" Flange	R404A
QPNC 1800	1800	3060	460/3/60	13.7	188	4.3	40	83	61	1235	6" Flange	R404A
QPNC 2200	2200	3740	460/3/60	19.2	188	3.6	40	83	61	1323	6" Flange	R404A
QPNC 2500	2500	4250	460/3/60	19.2	188	3.6	40	83	61	1323	6" Flange	R404A
QPNC 3000	3000	5097	460/3/60	22.3	188	3.7	40	83	61	1433	6" Flange	R404A

* Water cooled available. Consult factory for data and availability.

Notes: Capacity in accordance with recommended NFPA standards and CAGI standard ADF 100. Ratings based on 100°F inlet temperature, 100 psig inlet pressure and 100°F max ambient.

kW inputs are shown for air cooled models including fan motors.

CORRECTION FACTORS

Inlet Air Pressure Correction

	PSIG	60	80	100	120	140	150	180	200
A	QPNC 10 - 3000 Factor	0.79	0.93	1	1.03	1.07	1.09	1.12	1.14

Ambient Air Temperature Correction

	Temp.°F	80	90	100	110
C	QPNC 10 - 250 Factor	1.12	1.03	1	0.92
	QPNC 325 - 3000 Factor	1.15	1.07	1	0.91

Inlet Air Temperature Correction

	Temp.°F	80	100	110	120
B	QPNC 10 - 250 Factor	1.05	1	0.87	0.67
	QPNC 325 - 3000 Factor	1.05	1	0.84	0.69

Dew Point Correction

	Temp.°F	37–39°F	45–50°F
D	QPNC 10 - 250 Factor	1	1.12
	QPNC 325 - 3000 Factor	1	1.2

Example One: Conditions
Requirement

Capacity	480 cfm
Inlet Pressure	120 psig
Inlet Air Temp.	110°F
Ambient Temp.	100°F
Dew Point	39°F

Example One: Calculations

Dryer Required = $\frac{\text{cfm required}}{\text{(A) x (B) x (C) x (D)}}$

= $\frac{480}{(1.03) \times (.84) \times (1) \times (1)}$

= 555 cfm dryer required

Select QPNC 600 for this application

Example Two: Conditions
QPNC 500 Corrected Flow for:

Inlet Pressure	120 psig
Inlet Air Temp.	110°F
Ambient Temp.	90°F
Dew Point	39°F

Example Two: Calculations

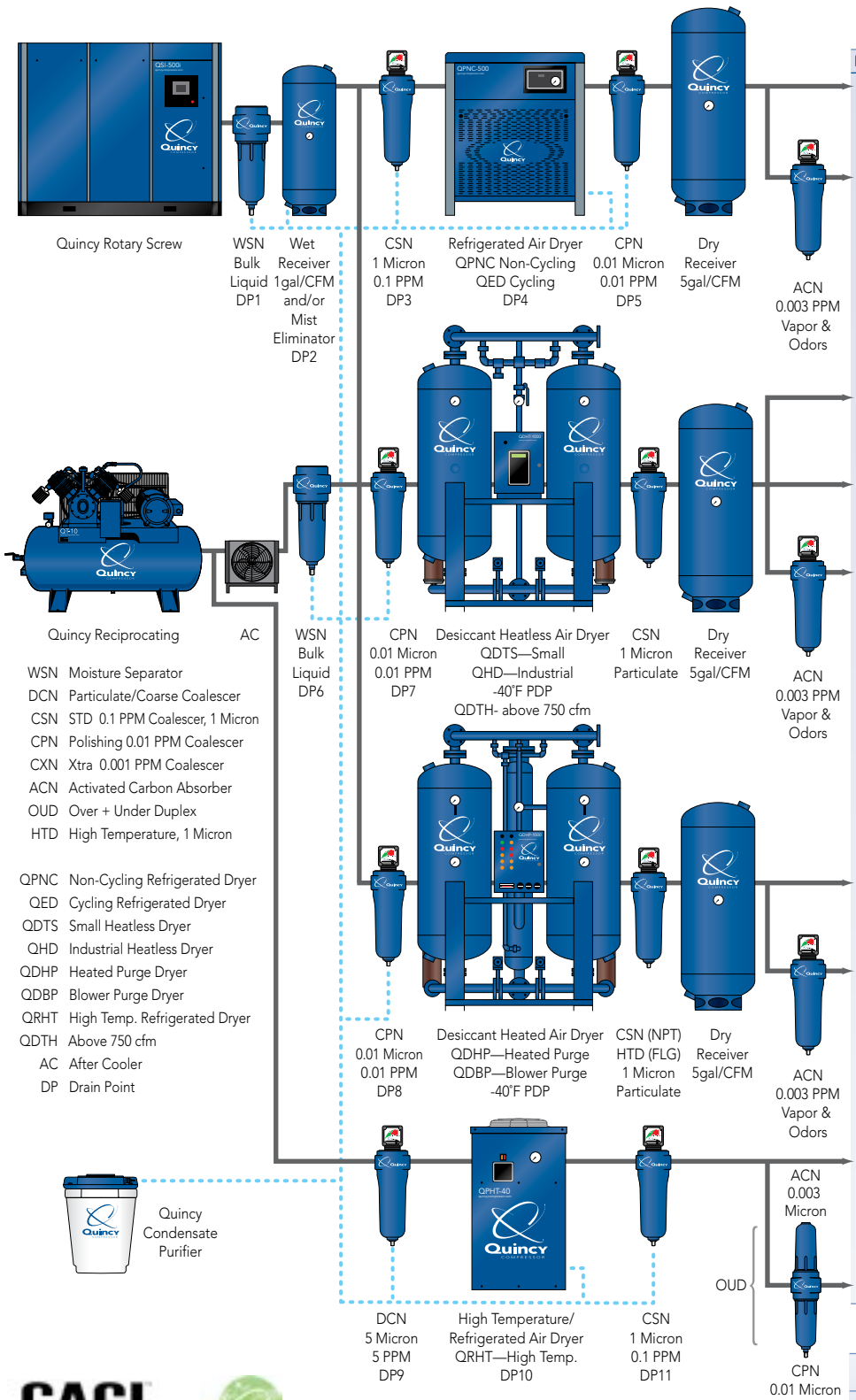
Corrected Capacity = Std. Capacity x (A) x (B) x (C) x (D)

= 500 x (1.03) x (.84) x (1.07) x (1)

= 463 cfm

QPNC-25 Non-Cycling Dryer

COMPRESSED AIR SYSTEMS BEST PRACTICE



WSN Moisture Separator
DCN Particulate/Coarse Coalescer
CSN STD 0.1 PPM Coalescer, 1 Micron
CPN Polishing 0.01 PPM Coalescer
CXN Xtra 0.001 PPM Coalescer
ACN Activated Carbon Absorber
OUD Over + Under Duplex
HTD High Temperature, 1 Micron

QPNC Non-Cycling Refrigerated Dryer
QED Cycling Refrigerated Dryer
QDTS Small Heatless Dryer
QHD Industrial Heatless Dryer
QDHP Heated Purge Dryer
QDBP Blower Purge Dryer
QRHT High Temp. Refrigerated Dryer
QDTH Above 750 cfm
AC After Cooler
DP Drain Point

Air Quality Classification ISO 8573.1						Wet System Avg. ΔP	
Solids		Moisture		Oil			
Micron	ISO	PDP	ISO	PPM	ISO	psi	Mbar
0.01	1	+38°F	4	0.01	1	10.7	738
0.01	1	+38°F	4	0.003	1	11.8	814
0.01	1	-100°F	1	0.001	1	14.2	979
NOTE: Requires CXN (.001 PPM) filter in series with standard CPN prefilter.							
1	2	-40°F	2	0.01	1	9.2	634
0.01	1	-40°F	2	0.003	1	10.3	710
1	2	-40°F	2	0.01	1	9.2	634
0.01	1	-40°F	2	0.003	1	10.3	710
1	2	+50°F	6	0.01	2	7.8	538
0.01	1	+50°F	6	0.003	1	10.0	689

Approximate Liquid Removal
100 CFM, 100 psi, 80°F, 4000 hrs./yr., 2 PPM

Drain Point	Gallons per Year	Drain Point	Gallons per Year	Drain Point	Gallons per Year
1	3000	5	140	9	300
2	2000	6	3000	10	4320
3	305	7	310	11	120
4	1300	8	310		

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