



Medical Air Systems: Scroll

GENERAL

The Chemetron® skid mount scroll medical air system is designed to provide medical breathing air for hospital and medical institutions. This system meets NFPA 99 requirements for Level 1 breathing air. Note that larger systems are shipped on 2 or more skids and require connection of clearly labeled wiring and piping between skids once they are mounted on-site.

MEDICAL AIR COMPRESSOR SYSTEM

The package shall include multiple oil-less scroll air compressors and associated equipment, one ASME tank, one medical desiccant air dryer system, one dew point monitor, one carbon monoxide monitor, and one medical control panel. The only field connections required will be system intake, exhaust, and power connection at the control panel. All interconnecting piping and wiring shall be included and operationally tested prior to shipment. Vibration isolation pads are included with the system.

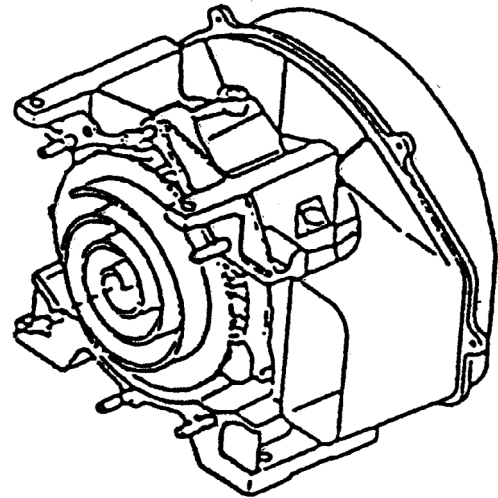
OIL-LESS SCROLL COMPRESSOR PUMP

Each compressor shall be belt driven oil-less rotary scroll single stage air-cooled oil-less construction with absolutely no oil needed for operation. The rotary design shall not require any inlet or exhaust valves and shall be rated for 100% continuous duty. Direct drive compressors shall not be used. Tip seals shall be of a composite PTFE material and be rated for 10,000 hours operation. Compressor bearings shall be external to the air compression chamber and shall all be serviceable for extended compressor life. Bearing maintenance shall not be required until 10,000 run hours. Compressors with bearings that are not accessible for service have a limited life span and shall not be accepted. Compressors shall have an integral radial flow fan for cooling and shall not require any additional electric cooling fans. Each compressor shall have flexible connectors on intake and discharge.

Each compressor pump shall be provided with an electric drive motor, discharge check valve, a diverter isolation valve, an air cooled after-cooler, a moisture separator with automatic drain, and a high discharge temperature shutdown switch.

MOTORS

Each compressor shall be belt driven by a 1750 RPM, ODP, NEMA construction motor. Motors running at speeds higher than 1750 RPM shall not be acceptable. OSHA approved belt guards shall be provided.



AIR RECEIVER

The system shall include an ASME air receiver rated for 200 psi MAWP. The tank shall be equipped with a pressure gauge, safety relief valve, block and by-pass valves, and condensate sight gauge and automatic electronic tank drain with manual override. The receiver shall be internally lined with an FDA approved material for corrosion resistance.

CONTROL PANEL

The system shall include a UL listed control panel in a NEMA 12 enclosure with the following accessories for each pump: H-O-A switch, magnetic starter with 3 leg overload protection, high temperature shutdown with audible and visual alarm, hour meter, and compressor run light.

Standard features also include a PLC controller, a reserve compressor- in-use alarm with visual and audible alarms, an externally operable circuit breaker disconnect, and a redundant control circuit transformers with visual indication of a main transformer failure. All alarms shall have dry contacts on a labeled terminal strip for remote alarm monitoring, and an acknowledge pushbutton for horn silencing. The lag compressor shall be able to start automatically if the lead compressor fails to operate.

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INTAKE FILTERS

The medical air system shall include a dual inlet filter system with one filter on-line and one filter in reserve to enable servicing of the filter elements without shutting down any of the air compressors units or disrupting service to the facility. The inlet filter system shall be located on the compressor package and plumbed up-stream of the compressor pumps.

AIR PURIFICATION PACKAGE

The air purification package shall be sized in conformance with NFPA 99 specifications and consist of the following: dual desiccant air dryers, dual filter and regulator bank with sample ports, dew point and CO monitors with alarms, and all bypass piping. Piping to be brass, stainless, or type K copper, and cleaned for medical air use. All components shall be mounted piped and wired to the air receiver.

DESICCANT AIR DRYERS

Each twin-tower desiccant dryer shall be sized for the peak calculated system demand to provide a pressure dew point of zero degrees F. Dryer controls shall include a re-pressurization cycle to prevent shocking of the desiccant bed prior to switching towers. An integral purge saving control system shall be provided and shall suspend the purge air loss during periods of low demand. When the dryer is in purge control mode, the tower switching valves shall not operate, and only one desiccant tower shall be on-line. Dryers that continue to operate the switching valves on a fixed cycle, while in purge control mode shall not be acceptable.

FILTRATION AND PRESSURE REDUCING STATION

The filtration systems shall consist of 2 stages of filtration, two pressure reducing valves with pressure gauges, a 75 psig final line safety valve, and a sample air port. The first stage of filtration shall include dual .01 micron coalescing pre-filters with element change indicators and automatic condensate drains and installed up-stream of the air dryers. The second stage shall include dual 1 micron particulate filters with element change indicators and installed downstream of the air dryers. A dual set of pressure reducing valves with pressure gauges shall be installed downstream of the final filters and shall be adjusted to an outlet pressure of 55 psig.

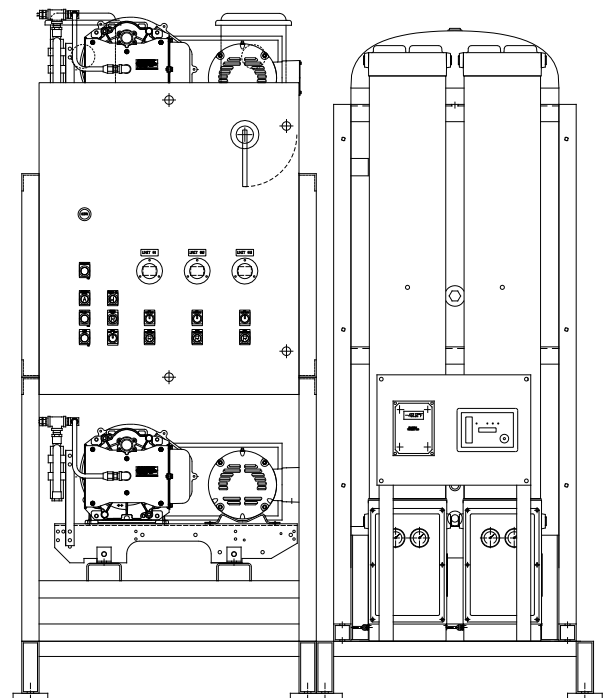
Each filter/dryer/regulator assembly shall be plumbed with bypass valves to enable service without disrupting air flow to the facility.

DEW POINT MONITOR

The system-integrated hygrometer shall be equipped with an LCD dew point display and high dew point alarm with dry contacts for remote monitoring. The dew point sensor (probe) shall be installed so that the monitored air-flow is downstream of the pressure regulator assembly. The sensor shall include an auto calibration feature to ensure the accuracy of the dew point measurement.

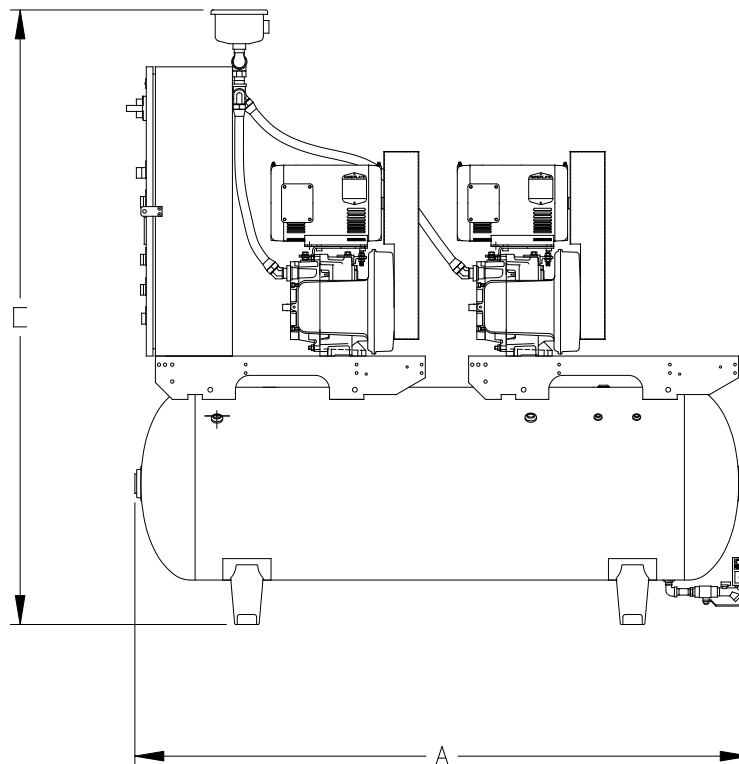
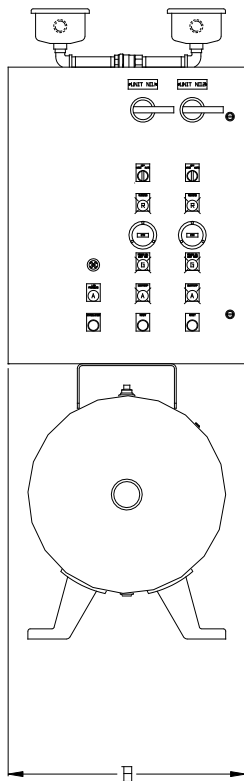
CARBON MONOXIDE MONITOR

The carbon monoxide (CO) monitor is provided in an enclosure with LCD display of CO concentrations. The monitor shall continuously display the CO content of the discharge air and shall provide audible and visual high CO alarms. High alarm is set at 10 ppm per NFPA 99. Dry contacts are provided for remote monitoring of the high CO alarm.



Duplex Tankmount Less ATC 2 - 5 hp

| DIMENSIONS | | | | | |
|------------|-----------|-----------|-----------|--------------|---------------|
| MODEL | DIM. A | DIM. B | DIM. C | Inlet x 2 | Outlet x 1 |
| DOS020-80T | 64" | 24" | 64" | 3/4" | 1/2" |
| DOS030-80T | 64" | 24" | 64" | 3/4" | 1/2" |
| DOS050-80T | 64" | 24" | 64" | 3/4" | 1/2" |



| Duplex Tankmount Less ATC | | | | | | | | | | |
|---------------------------|-----------------|----------------------|---|--------------|---------------------|-----------------------------|---------------|------|------|------------------|
| MODEL | HP ¹ | CFM @ 50 PSI Each | NFPA System Capacity ¹ | TANK SIZE | BTU/HR ² | dB(A) LEVEL ³ | SYSTEM F.L.A. | | | SYSTEM WEIGHT |
| | | | | | | | 208V | 230V | 460V | |
| DOS020-80T | 2 | 7.5 | 7.5 | 80 | 5,082 | 70 | 17 | 16 | 9 | 745 |
| DOS030-80T | 3 | 11.5 | 11.5 | 80 | 7,638 | 70 | 23 | 21 | 11 | 745 |
| DOS050-80T | 5 | 19.3 | 19.3 | 80 | 12,730 | 72 | 35 | 32 | 15 | 845 |

Notes:

1 - HP and NFPA System Capacity are shown with one or more pumps in reserve per NFPA 99

2 - BTU/HR levels are shown with reserve pump(s) on standby

3 - dB(A) is shown with one pump in reserve per NFPA 99

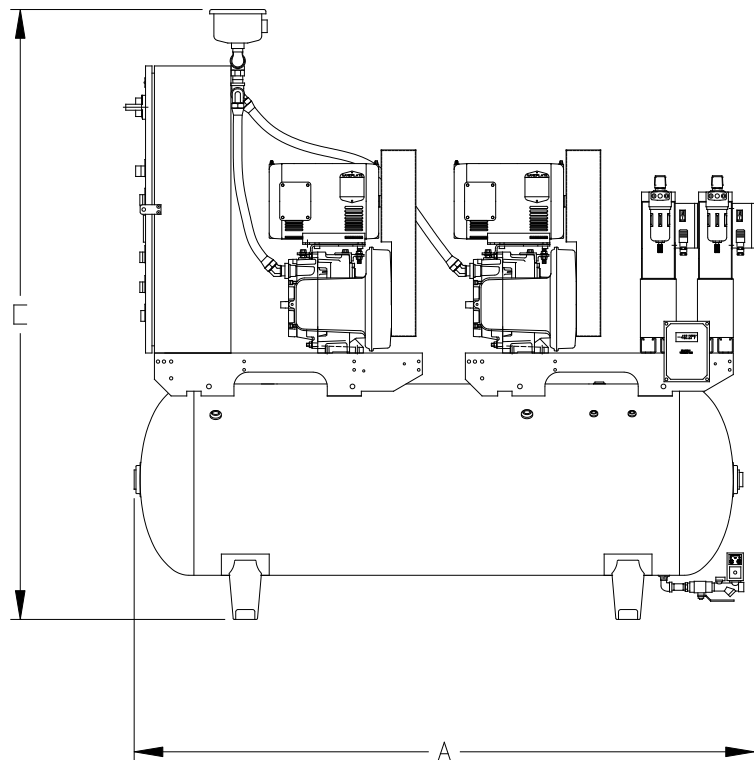
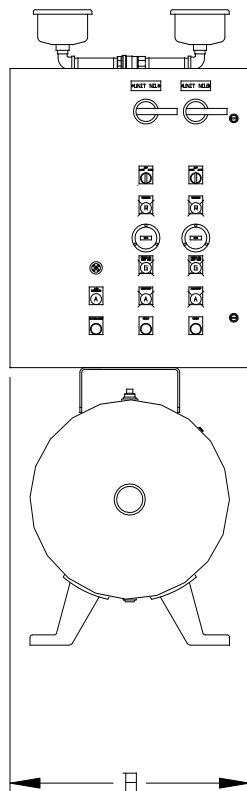
Product Specification

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Duplex Tankmount with ATC 2 - 5 hp

| DIMENSIONS | | | | | |
|--------------|-----------|-----------|-----------|--------------|---------------|
| MODEL | DIM. A | DIM. B | DIM. C | Inlet x 2 | Outlet x 1 |
| DOS020-80TDD | 64" | 24" | 64" | 3/4" | 1/2" |
| DOS030-80TDD | 64" | 24" | 64" | 3/4" | 1/2" |
| DOS050-80TDD | 64" | 24" | 64" | 3/4" | 1/2" |

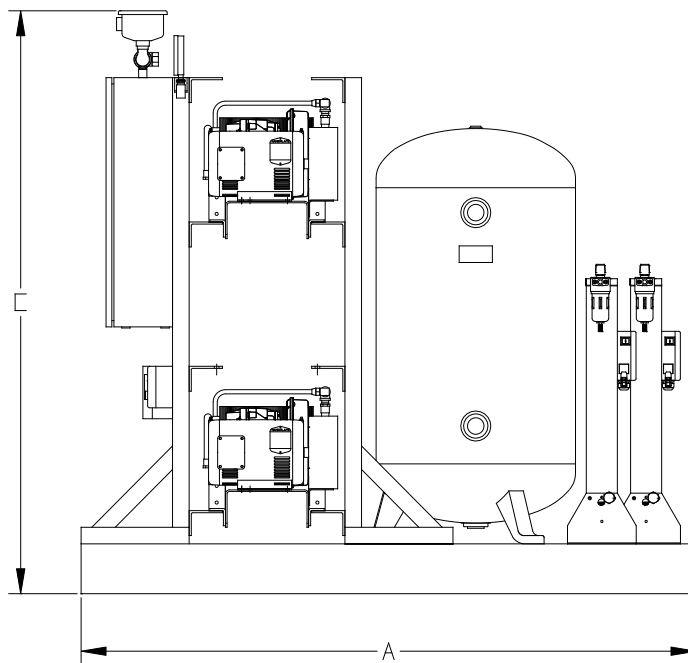
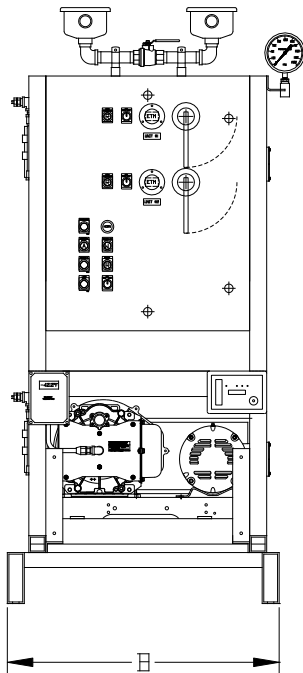


| Duplex Tankmount With ATC | | | | | | | | | | |
|---------------------------|-----------------|----------------------|---|--------------|---------------------|-----------------------------|---------------|------|------|------------------|
| MODEL | HP ¹ | CFM @ 50 PSI Each | NFPA System Capacity ¹ | TANK SIZE | BTU/HR ² | dB(A) LEVEL ³ | SYSTEM F.L.A. | | | SYSTEM WEIGHT |
| | | | | | | | 208V | 230V | 460V | |
| DOS020-80TDD | 2 | 7.5 | 7.5 | 80 | 5,082 | 70 | 17 | 16 | 9 | 745 |
| DOS030-80TDD | 3 | 11.5 | 11.5 | 80 | 7,638 | 70 | 23 | 21 | 11 | 745 |
| DOS050-80TDD | 5 | 19.3 | 19.3 | 80 | 12,730 | 72 | 35 | 32 | 15 | 845 |

- Notes:
- 1- HP and NFPA System Capacity are shown with one or more pumps in reserve per NFPA 99
 - 2 - BTU/HR Levels are shown with reserve pump(s) on standby
 - 3 - dB(A) is shown with one pump in reserve per NFPA 99

Duplex Basemount with ATC 2 - 15 hp

| DIMENSIONS | | | | | |
|---------------|-----------|-----------|-----------|--------------|---------------|
| MODEL | DIM. A | DIM. B | DIM. C | Inlet x 2 | Outlet x 1 |
| DOS020-80BDD | 74" | 32" | 72" | 3/4" | 1/2" |
| DOS030-80BDD | 74" | 32" | 72" | 3/4" | 1/2" |
| DOS050-80BDD | 74" | 32" | 72" | 3/4" | 1/2" |
| DOS100-120BDD | 74" | 32" | 77" | 1-1/2" | 3/4" |
| DOS150-120BDD | 86" | 66" | 77" | 1-1/2" | 1" |



| Duplex Basemount With ATC | | | | | | | | | | |
|---------------------------|-----------------|----------------------|---|--------------|---------------------|-----------------------------|---------------|------|------|------------------|
| MODEL | HP ¹ | CFM @ 50 PSI Each | NFPA System Capacity ¹ | TANK SIZE | BTU/HR ² | dB(A) LEVEL ³ | SYSTEM F.L.A. | | | SYSTEM WEIGHT |
| | | | | | | | 208V | 230V | 460V | |
| DOS020-80BDD | 2 | 7.5 | 7.5 | 80 | 5,082 | 70 | 17 | 16 | 9 | 1,325 |
| DOS030-80BDD | 3 | 11.5 | 11.5 | 80 | 7,638 | 70 | 23 | 21 | 11 | 1,325 |
| DOS050-80BDD | 5 | 19.3 | 19.3 | 80 | 12,730 | 72 | 35 | 32 | 15 | 1,425 |
| DOS100-120BDD | 10 | 38.6 | 38.6 | 120 | 25,460 | 75 | 65 | 58 | 30 | 2,175 |
| DOS150-120BDD | 15 | 57.9 | 57.9 | 120 | 38,190 | 77 | 94 | 86 | 44 | 3,550 |

Notes:

1- HP and NFPA System Capacity are shown with one or more pumps in reserve per NFPA 99

2- BTU/HR levels are shown with reserve pump(s) on standby

3- dB(A) is shown with one pump in reserve per NFPA 99

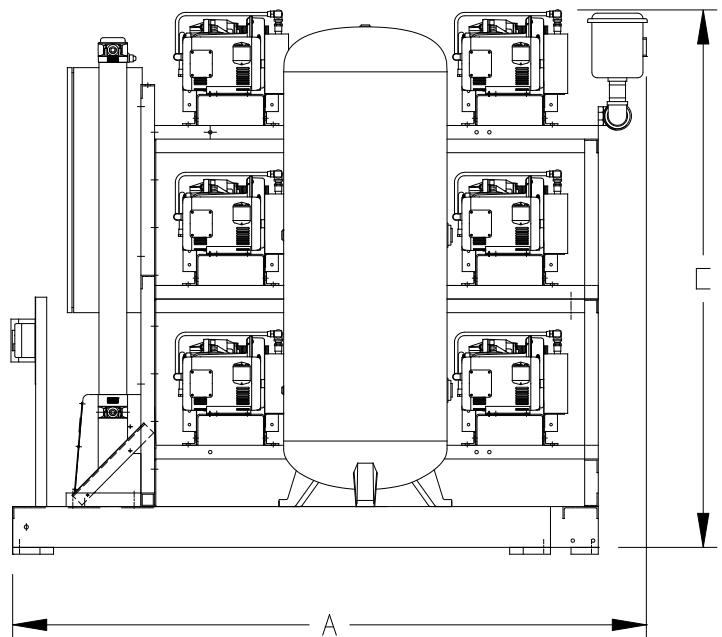
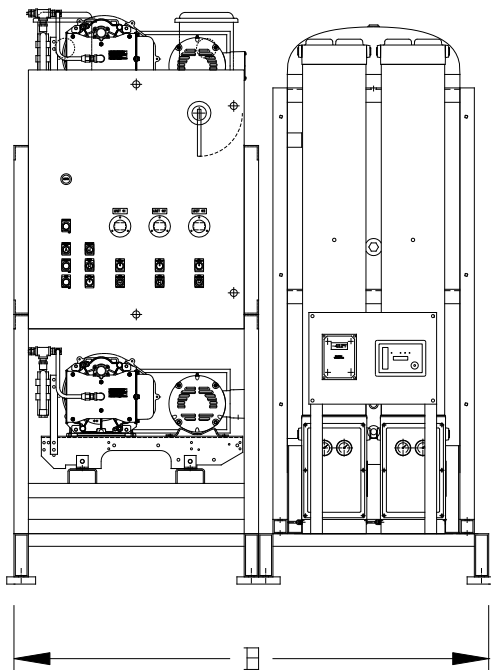
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Triplex Basemount with ATC 5 - 15 hp

| DIMENSIONS | | | | | |
|---------------|-----------|-----------|-----------|--------------|---------------|
| MODEL | DIM. A | DIM. B | DIM. C | Inlet x 2 | Outlet x 1 |
| TOS050-120BDD | 74" | 32" | 77" | 1" | 3/4" |
| TOS100-120BDD | 86" | 66" | 80" | 1-1/2" | 1" |
| TOS150-120BDD | 86" | 66" | 80" | 2" | 1-1/2" |



| Triplex Basemount With ATC | | | | | | | | | | |
|----------------------------|-----------------|----------------------|---|--------------|---------------------|-----------------------------|---------------|------|------|------------------|
| MODEL | HP ¹ | CFM @ 50 PSI Each | NFPA System Capacity ¹ | TANK SIZE | BTU/HR ² | dB(A) LEVEL ³ | SYSTEM F.L.A. | | | SYSTEM WEIGHT |
| | | | | | | | 208V | 230V | 460V | |
| TOS050-120BDD | 5 | 19.3 | 38.6 | 120 | 25,460 | 72 | 52 | 48 | 25 | 1,885 |
| TOS100-120BDD | 10 | 38.6 | 77.2 | 120 | 50,920 | 75 | 95 | 86 | 44 | 3,524 |
| TOS150-120BDD | 15 | 57.9 | 116 | 120 | 76,380 | 77 | 141 | 128 | 65 | 4,626 |

Notes:

1 - HP and NFPA System Capacity are shown with one or more pumps in reserve per NFPA 99

2 - BTU/HR Levels are shown with reserve pump(s) on standby

3 - dB(A) is shown with one pump in reserve per NFPA 99

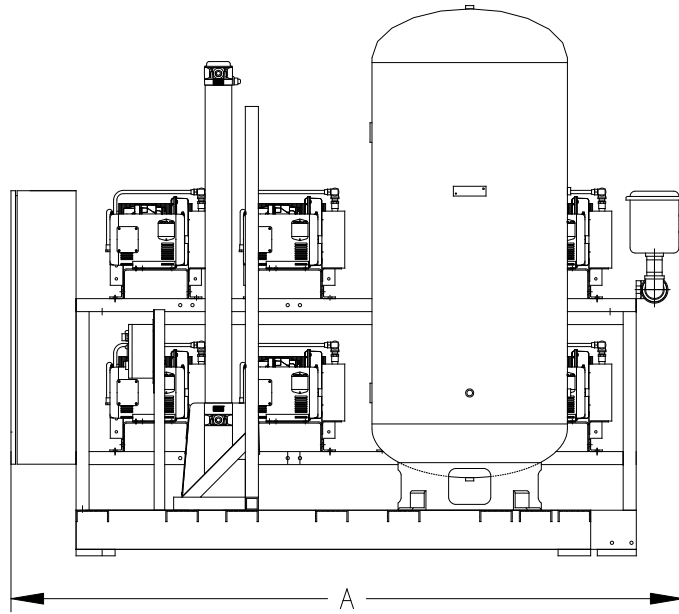
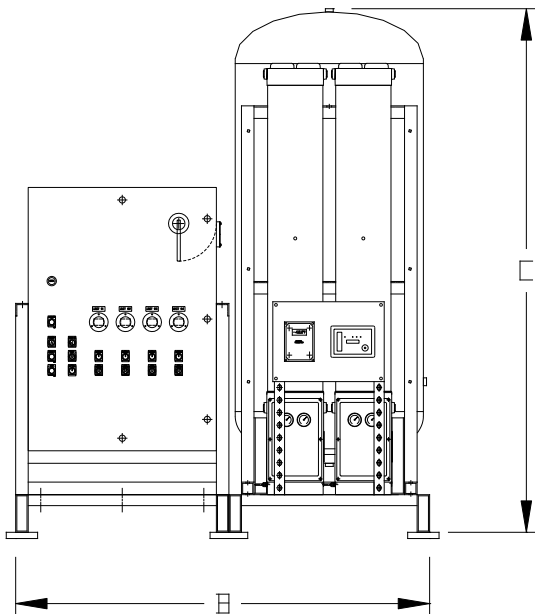


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| DIMENSIONS | | | | | |
|---------------|-----------|-----------|-----------|--------------|---------------|
| MODEL | DIM. A | DIM. B | DIM. C | Inlet x 2 | Outlet x 1 |
| QOS050-120BDD | 74" | 32" | 77" | 1-1/2" | 3/4" |
| QOS100-200BDD | 86" | 66" | 80" | 2" | 1-1/2" |
| QOS150-200BDD | 86" | 66" | 80" | 2" | 1-1/2" |

Quad Basemount with ATC 5 - 15 hp



| Quad Basemount With ATC | | | | | | | | | | |
|-------------------------|-----------------|----------------------|---|--------------|---------------------|-----------------------------|---------------|------|------|------------------|
| MODEL | HP ¹ | CFM @ 50 PSI Each | NFPA System Capacity ¹ | TANK SIZE | BTU/HR ² | dB(A) LEVEL ³ | SYSTEM F.L.A. | | | SYSTEM WEIGHT |
| | | | | | | | 208V | 230V | 460V | |
| QOS050-120BDD | 5 | 19.3 | 57.9 | 120 | 38,190 | 72 | 69 | 63 | 32 | 2,175 |
| QOS100-200BDD | 10 | 38.6 | 115.8 | 200 | 76,380 | 75 | 125 | 114 | 58 | 4,700 |
| QOS150-200BDD | 15 | 57.9 | 174 | 200 | 114,570 | 77 | 187 | 170 | 86 | 5,750 |

Notes:

1- HP and NFPA System Capacity are shown with one or more pumps in reserve per NFPA 99

2 - BTU/HR levels are shown with reserve pump(s) on standby

3 - dB(A) is shown with one pump in reserve per NFPA 99



For over 60 years, Chemetron® has built its name on quality American-made medical gas delivery products with unmatched reliability and durability.

Today our commitment to quality products and expert service remains our top priority.

- ▶ **Chemetron products are still designed for longevity.**
- ▶ **Chemetron products are still manufactured using only the highest quality materials.**
- ▶ **Chemetron products are still manufactured in the USA.**

These values ensure that when you choose Chemetron for your medical gas delivery and monitoring needs, you are investing in quality products that will last a lifetime.

Chemetron ... Your Source for Quality Medical Gas Delivery Products

- | | | |
|------------------------------|-------------------------------|-----------------------|
| • Medical Vacuum Systems | • Zone Valve Boxes | • Gas Tracks |
| • Medical Air Systems | • Medical Gas Control Panels | • Hose Reels |
| • Medical Gas Manifolds | • Area & Master Alarms | • Medical Gas Outlets |
| • Ball Valves & Check Valves | • Ceiling Columns & Pedestals | • Retrofit Upgrades |
-

All specifications are nominal and subject to change without notice.

Warranty: See Allied Statement of Warranties for details.

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Construction Customer Service

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International: 314/268-1683

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ISO 13485: 2003

Product Specification

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