

A-4000 Series Oil Removal and Pressure-Reducing Stations and Air Compressor Accessories

Product Bulletin

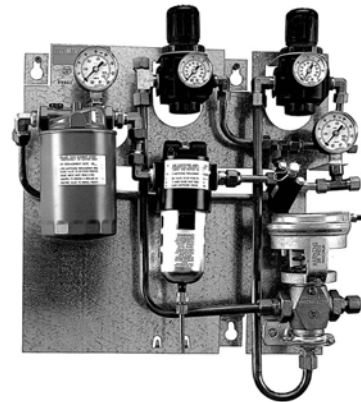
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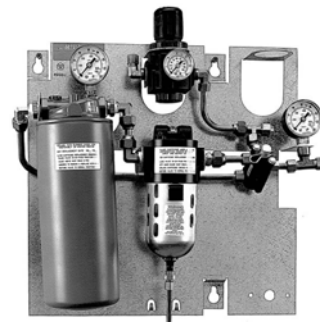
The A-4000 Series Oil Removal and Pressure-Reducing Stations (see Figure 1, Figure 2, Figure 3, and Figure 4) are available in single or dual PRV models in 10 or 20 scfm (4.7 or 9.4 l/s) maximum flow capacities. In addition, each unit features a four-way bypass valve, coalescing and activated charcoal oil removing filters, and is completely piped with copper tubing, which reduces friction, allows higher flow rates, and meets fire codes in mechanical equipment rooms. The filter combination removes oil aerosols and vapors to provide clean, oil-free air for pneumatic control systems. All models provide maximum performance for a period of 1 year, at which time the coalescing and activated charcoal filter elements need to be replaced. Gauges are provided to monitor system operations and performance. All models can provide filtered, high-pressure air to remote PRV stations. All models have a maximum input pressure rating of 150 psig (1,050 kPa) and an upper temperature limit of 125°F (52°C).



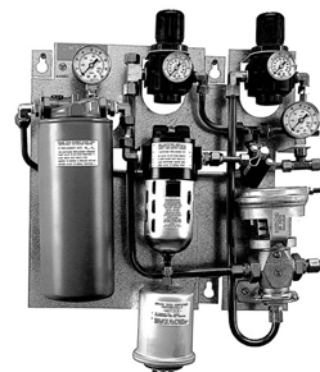
**Figure 1: A-4000-139, 10 scfm,
Single PRV Station
(Shown with Optional Oil Reservoir)**



**Figure 2: A-4000-140, 10 scfm,
Dual PRV Station**



**Figure 3: A-4000-141, 20 scfm,
Single PRV Station**



**Figure 4: A-4000-142, 20 scfm,
Dual PRV Station
(Shown with Optional Oil Reservoir)**

Single PRV models are factory-set for approximately 20 psig (140 kPa), and dual PRV models are factory-set for approximately 15 and 20 psig (105 and 140 kPa). Dual 10 scfm units have a maximum of 1 psi (7 kPa) pressure drop with a 10 scfm flow from the PRVs through the three-way air valve; dual 20 scfm units have a maximum of 2 psi (14 kPa) pressure drop. The three-way air valve is equipped with a 1/2 in. O.D. compression fitting to furnish the dual supply air to the system. A 1/2 in. connection is furnished to provide a constant 20 psig (140 kPa) supply to local control panels, and a 3/8 in. connection is furnished to provide filtered high-pressure air to remote PRV stations.

Note: All A-4000 Series Oil Removal and Pressure-Reducing Stations are shipped from the factory with the activated charcoal filter packaged separately in the carton. The filter must be reinstalled by screwing it onto the threaded pipe of the filter head. Tighten the filter to the point where the white label faces the front of the unit.

Table 1: Models

Flow Consumption	Compressor Horsepower (50% Running Time)	PRVs	Code Number
Up to a Maximum of 10 scfm (4.7 l/s)	Johnson Controls® 7-1/2 hp and Under	Single	A-4000-139
		Dual	A-4000-140
10 to 20 scfm Maximum (4.7 to 9.4 l/s)	Other Manufacturers 7-1/2 hp and Over	Single	A-4000-141
		Dual	A-4000-142

Table 2: Repair Parts

Description		Code Number
Charcoal Filter Elements	10 scfm (4.7 l/s)	A-4000-632
	20 scfm (9.4 l/s)	A-4000-633
Coalescing Filter Elements	10 scfm (4.7 l/s)	A-4110-604
	20 scfm (9.4 l/s)	A-4000-604
3/8 in. Pressure Regulator with Bracket, Gage, and Safety Relief Valve		A-4000-138
Four-Way Bypass Valve with 3/8 in. Compression Fittings		A-4110-601

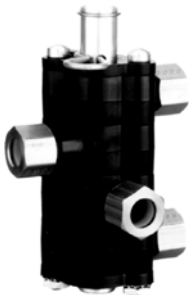


Figure 5: A-4110-601 Four-Way Bypass Valve

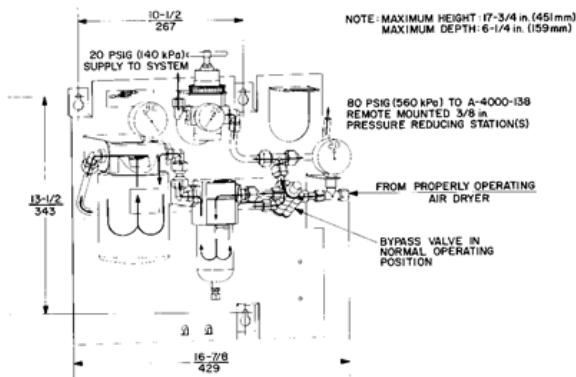


Figure 6: Flow Path with Bypass Valve in Normal Operating Position (Applies to all Models) Dimensions, in./mm

Remote-Mounted 3/8 in. Pressure-Reducing Station

The A-4000-138 Remote-Mounted 3/8 in. Pressure-Reducing Station (see Figure 7) comes completely assembled with a wall mounting bracket, 0 to 30 psig gauge, safety relief valve, and 3/8 in. O.D. compression elbow fittings on the high- and low-pressure sides. The desired output pressure can be easily adjusted between 0 and 30 psig using the black knob. The factory-set safety relief valve relieves overpressures exceeding 25 psig (175 kPa). Pressure adjustments up to 50 psig (350 kPa) can be made; however, the 0 to 30 psig gauge must be replaced with one having a higher scale, and the safety relief valve must be readjusted to the required higher value. Designed to handle input pressures up to 300 psig (2,100 kPa) at air flows exceeding 20 scfm (9.4 l/s), this pressure-reducing station regulates an output pressure within a 0.2 psi (1.4 kPa) variation with a 20 psi (140 kPa) variation in input pressure.

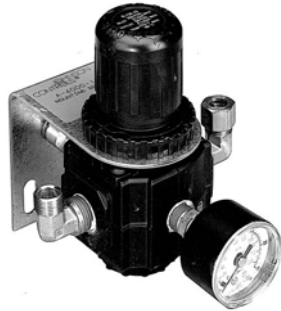


Figure 7: A-4000-138 Remote-Mounted 3/8 in. Pressure-Reducing Station

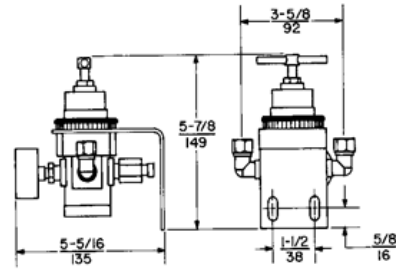


Figure 8: A-4000-138 Dimensions, in./mm

Table 3: Repair Parts

Description	Code Number
1/4 in. NPT, 25 psig Safety Relief Valve (Not ASME Coded)	A-4000-144
Replacement Bracket	A-4000-143



Figure 9: A-4000-144 Safety Relief Valve

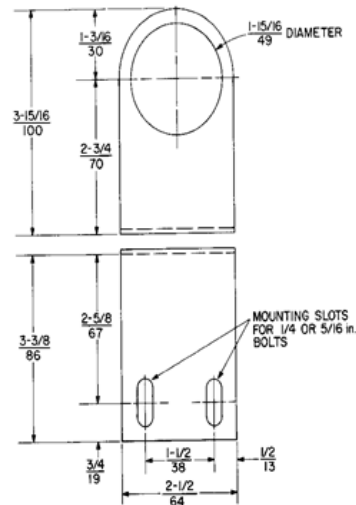


Figure 10: A-4000-143 Mounting Bracket Dimensions, in./mm

Oil Reservoir

The A-4000-145 Oil Reservoir (see Figure 11) provides a means of identifying excess oil pumping (compressor maintenance) as well as water entrainment (air dryer maintenance). If either occurs, replacement of the oil removal elements is required. The oil reservoir also provides a means of collecting the coalesced oil for proper disposal.



Figure 11: A-4000-145 Oil Reservoir and Bracket Assembly

Oil Removal Filters

The combination of coalescing and activated charcoal filters (see Figure 12) in series removes both oil aerosols and vapors to provide clean, oil-free air for pneumatic control systems. These filters have a maximum input pressure rating of 150 psig (1,050 kPa) and an upper temperature limit of 125°F (52°C).



Coalescing Filter



Charcoal Filter

Figure 12: Oil Removal Filters

Table 4: Models

Description		Efficiency Rating	Code Number
Coalescing	10 scfm (4.7 l/s)	99.999+% Efficient for Particles 0.025 microns in Size and Larger	A-4000-1048
	20 scfm (9.4 l/s)		A-4000-1049
	40 scfm (18.9 l/s)		A-4000-6001
Carbon	10 scfm (4.7 l/s)	100% Efficient for Particles as Small as 0.025 microns in Size	A-4000-147
	20 scfm (9.4 l/s)		A-4000-146

Table 5: Repair Parts

Description		Code Number
Coalescing Filter Elements	10 scfm (4.7 l/s)	A-4110-604
	20 scfm (9.4 l/s)	A-4000-604
	40 scfm (18.9 l/s)	A-4000-605
Charcoal Filter Elements	10 scfm (4.7 l/s)	A-4000-632
	20 scfm (9.4 l/s)	A-4000-633
Filter Auto-Drain Kit (All Coalescing Filters)		A-4000-6010

Service Procedure for Coalescing Filters

All coalescing filters are equipped with an automatic drain from which accumulations of entrapped liquids are automatically blown out. The filter element should be replaced when the leaving air pressure gauge (mounted on the PRV station charcoal filter head) indicates less than 50 psig (350 kPa) the differential pressure between the leaving and input gauges is 15 psi (105 kPa) or more, or after one year of service—whichever occurs first.

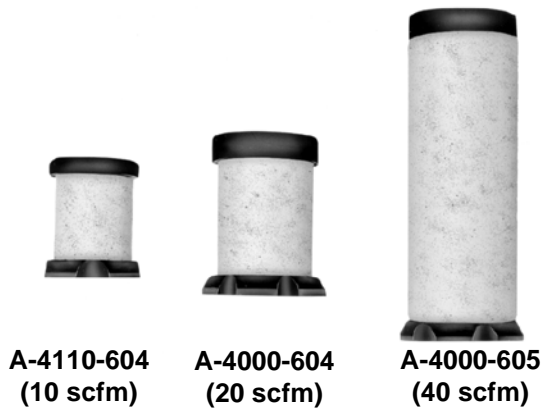


Figure 13: Coalescing Filter Elements

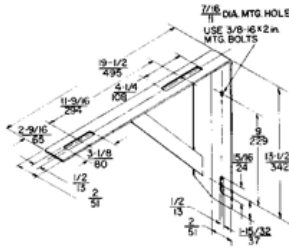


A-4000-633 (20 scfm) A-4000-632 (10 scfm)

Figure 14: Charcoal Filter Elements

Wall Bracket for Small, Horizontal, Single Compressors and Tanks

Rugged 1/8 in. A-4000-108 Angle Iron Brackets (see Figure 15) may be used to mount a compressor on a wall where floor space is limited. These brackets may be used for single compressors with up to 30-gallon tanks.



**Figure 15: A-4000-108 Wall Bracket
(1/8 in. Plate Metal)
Dimensions, in./mm**

Floor Legs for Horizontal Tanks

A-4000-109 Floor Legs (made from U-channel, see Figure 16) for mounting horizontal tanks 12 in. off the floor are available to meet building requirements and facilitate cleaning under the compressor.

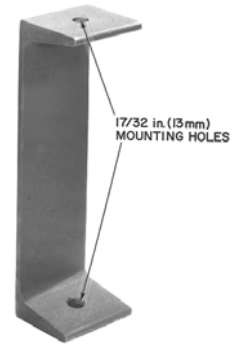


Figure 16: A-4000-109 Floor Leg

Intake Air Filter

The dry-type intake air filters (see Figure 17) are rated 99% efficient at a 10 micron rating, regardless of air demands or temperature variations. A steel housing with baked enamel finish makes these filters suitable for either outside or inside locations.



Figure 17: Intake Air Filters

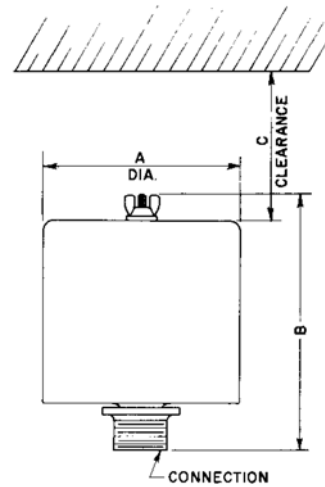


Figure 18: Dimensions, in./mm
(See Table 6)

Table 6: Dimensions

Code Number	Capacity	Connection	Dimensions, in. (mm)		
			A	B	C
A-4000-612	15 scfm (7.1 l/s)	3/4 in. NPT	6 (152)	4 (102)	4-1/4 (108)
A-4000-613	30 scfm (14.2 l/s)	1-1/4 in. NPT	6 (152)	6-3/4 (172)	7 (178)
A-4000-635	5 scfm (2.4 l/s)	1/2 in. NPT	2-1/2 (64)	3 (76)	2-7/8 (73)

Table 7: Replacement Filter for A-4000-115

Code Number	Description
F-1000-232	Replacement filter for the discontinued A-4000-115, 5 scfm (2.4 l/s), 1/2 in. NPT connection



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