

Membrane Air Drying System

309920C

Model 234418

Maximum Working Pressure 160 psi (1.1 MPa, 11 bar)

Maximum Temperature 150° F (65° C)



Important Safety Instructions

Read all warnings and instructions in this manual.
Save these instructions



Includes:

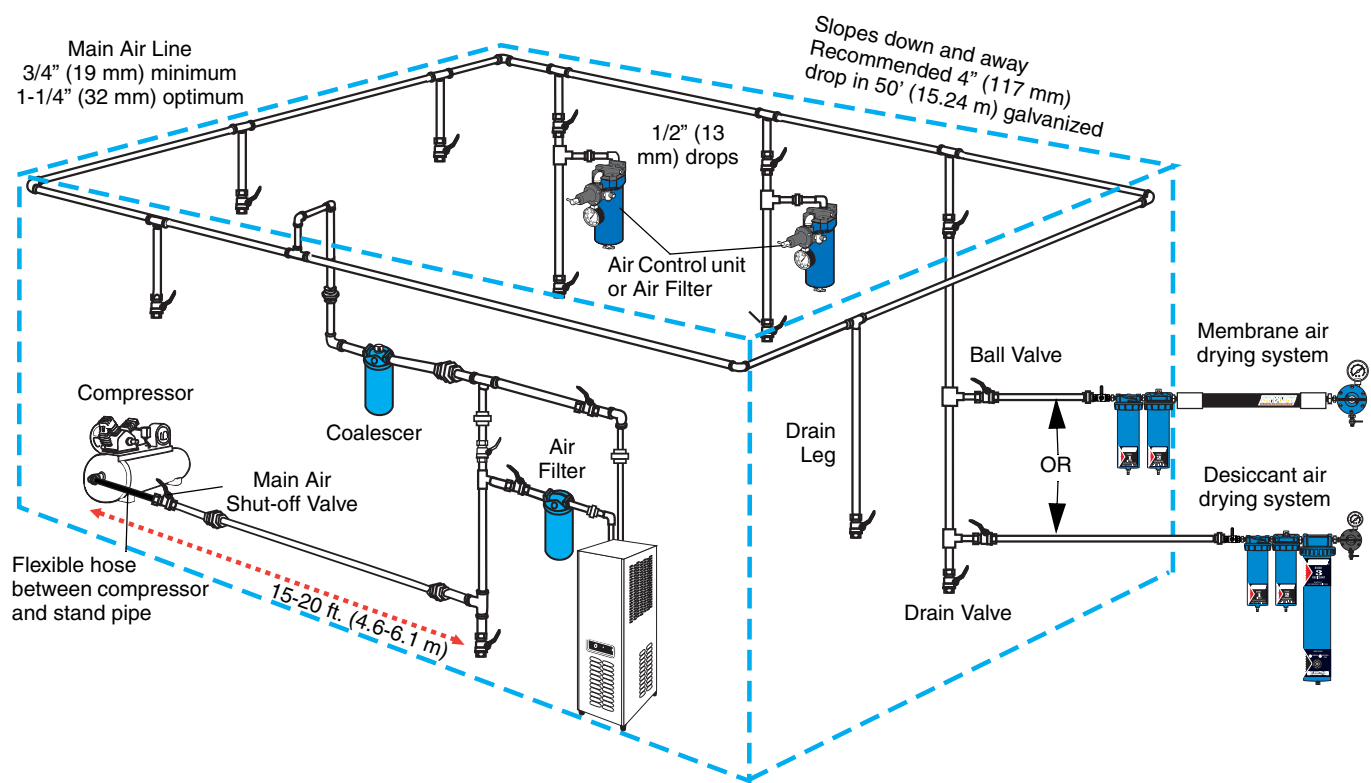
Part No.	Description	Air Inlet npt(f)	Air Outlet npt(f)	Air Flow Capacity	Maximum Operating Pressure
234402	Stage 1 - Air Filter with auto drain Removes water and contaminants down to 5 microns.	1/2"	1/2"	108 CFM	175 psi (1.2 MPa, 12 bar)
234397	Stage 2 - Coalescer with auto drain Removes oil and sub-micronic particles down to .01 microns.	1/2"	1/2"	70 CFM	175 psi (1.2 MPa, 12 bar)
118560	Stage 3 - Membrane Air Dryer Removes uncondensed moisture.	1/2"	1/2"	30 CFM	175 psi (1.2 MPa, 12 bar)
234394	Self Relieving Air Regulator	3/8"	1/4"	100 CFM	160 psi 1.1 MPa, 11 bar)
288798	Shut-off Valve				

PROVEN QUALITY. LEADING TECHNOLOGY.

Installation

1. Before installing air line components, blow out the pipe line to remove debris. Be sure air to the regulator is clean. Erratic operation or loss of regulation is usually caused by dirt in the regulator.
2. Install the Air Drying System as close as possible to the equipment it serves.
3. Install air shut-off valve 288798 upstream from the air system to isolate it for service.
4. Install system so air flows through filters in the direction noted on top of filter.
5. A minimum 1/2" npt piping is recommended. Avoid using too many fittings, couplings, etc., which will restrict air flow.

Shop Air Piping Layout



- Main Air Line stand pipe should not be smaller than compressor outlet size.
- A minimum of 25 ft. (7.62 m) from compressor to first filter outlet is required to cool air [50 ft. (15.24 m) optimum]

Minimum Pipe Size Recommendations			
Compressor		Main Air Line	
Size	Capacity	Length	Size
1-1/2 - 2 HP	6 - 9 CFM	any	3/4" (19 mm)
3 - 5 HP	12 - 20 CFM	Up to 200 ft. (61 m)	3/4" (19 mm)
		Over 200 ft. (61 m)	1" (25.4 mm))
5 - 10 HP	20 - 40 CFM	Up to 100 ft. (30.5)	3/4" (19 mm)
		Over 100-200ft. (30.5-61 m)	1" (25.4 mm)
		Over 200 ft. (61 m)	1-1/4" (31.8 mm)
10 - 15 HP	40 - 60 CFM	Up to 100 ft. (30.5)	3/4" (19 mm)
		Over 100-200ft. (30.5-61 m)	1-1/4" (31.8)
		Over 200 ft. (61 m)	1-1/2" (38.1)

Air Pressure Drop Through Hose, by hose length and ID psi (Kpa, bar)						
Air Hose Inside Diameter	4 ft. (1.22 m)	10 ft. (3.05 m)	15 ft. (4.6 m)	20 ft. (6.1 m)	25 ft. (7.62 m)	50 ft. (15.24 m)
1/4 in. (6.4 mm)						
40 psi (276 kPa, 2.8 bar)	6 (41, .4)	8 (55, .6)	9.5 (66, .7)	11 (76, .8)	12.75 (88, 0.9)	24 (165, 1.7)
50 psi (345 kPa, 3.4 bar)	7.5 (52, .5)	10 (69, .7)	12 (83, .8)	14 (97, 1)	16 (110, 1.1)	28 (193, 1.9)
60 psi (414 kPa, 4.1 bar)	9 (62, .6)	12.5 (86, .9)	14.5 (100, .1)	16.75 (115, 1.2)	19 (131, 1.3)	31 (214, 2.1)
70 psi (483 kPa, 4.8 bar)	10.75 (74, .7)	14.5 (100, 1)	17 (117, 1.2)	19.5 (134, 1.3)	22.5 (155, 1.6)	34 (234, 2.3)
80 psi (552 kPa, 5.5 bar)	12.25 (84, .8)	16.5 (114, 1.1)	19.5 (134, 1.3)	22.5 (155, 1.6)	25.5 (176, 1.8)	37 (255, 2.6)
90 psi (621 kPa, 6.2 bar)	14 (97, 1)	18.75 (129, 1.3)	22 (152, 1.5)	25.25 (172, 1.7)	29 (200, 2)	39.5 (169, 2.7)
5/16 in. (7.9 mm)						
40 psi (276 kPa, 2.8 bar)	2.25 (16, .2)	2.75 (19, .2)	3.25 (22, .2)	3.5 (24, .2)	4 (28, .3)	8.5 (59, .6)
50 psi (345 kPa, 3.4 bar)	3 (21, .2)	3.5 (24, .2)	4 (28, .3)	4.5 (31, .3)	5 (34, .3)	10 (69, .7)
60 psi (414 kPa, 4.1 bar)	3.75 (26, .3)	4.5 (31, .3)	5 (34, .3)	5.5 (38, .4)	6 (41, .4)	11.5 (79, .8)
70 psi (483 kPa, 4.8 bar)	4.5 (31, .3)	5.25 (36, .4)	6 (41, .4)	6.75 (47, .5)	7.25 (50, .5)	13 (90, .9)
80 psi (552 kPa, 5.5 bar)	5.5 (38, .4)	6.25 (43, .4)	7 (48, .5)	8 (55, .6)	8.75 (60, .6)	14.5 (100, 1)
90 psi (621 kPa, 6.2 bar)	6.5 (45, .4)	7.5 (52, .5)	8.5 (59, .6)	9.5 (66, .7)	10.5 (72, .7)	16 (110, 1.1)

Operation



WARNING

Do not exceed the Maximum Incoming Air Pressure of the equipment. Over pressurizing can cause component rupture and serious injury.

1. Attach air hose(s) to air regulator outlet valve 289165.
2. Open main shut-off valve 288798.
3. Turn the T-hand adjusting screw in or out to adjust regulator to desired setting.
4. Open outlet valve 289165 to supply air to spray guns or tool.
5. With air flowing, readjust air pressure regulator if necessary.
6. Turn off unit when not in use. Follow **Pressure Relief Procedure**, page 5.

Coalescer Pressure Drop Indicator

The differential pressure drop indicator provides early detection of a clogged coalescing filter element. As the filter element becomes clogged, the red indicator starts to rise while air is flowing through the unit. When the pressure drop across the element reaches 10-12 psi

(69-83 kPa, 0.7-0.8 bar), the red indicator will be in full view, and the element should be replaced. Failure to replace the element when the pressure drop exceeds 10 psi (69 kPa, 0.7 bar) will affect your air quality and tool efficiency.

Auto Drain

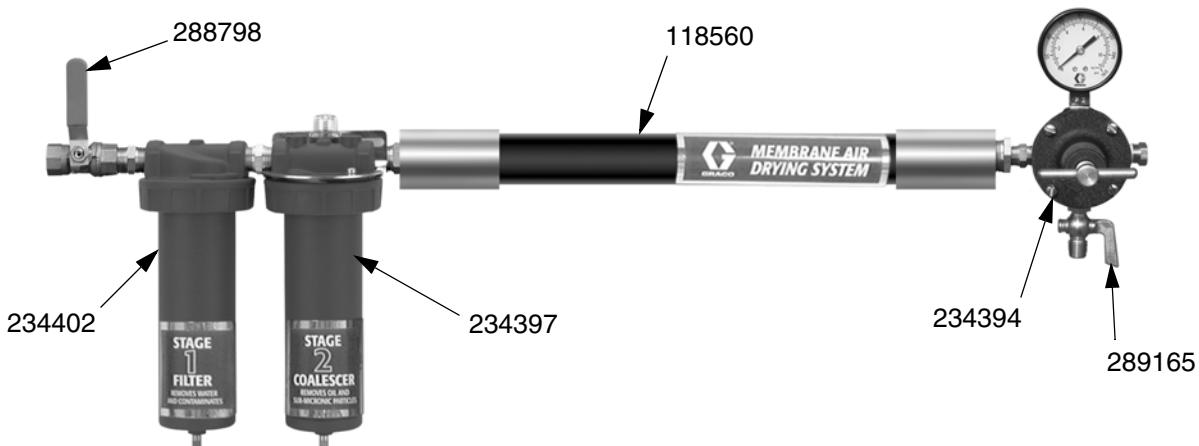
When the bowl is pressurized, the piston travels down against the spring and closes the drain opening. When the bowl is depressurized (i.e., overnight when system is shut down), the spring lifts the piston from the seal, allowing the bowl to drain.



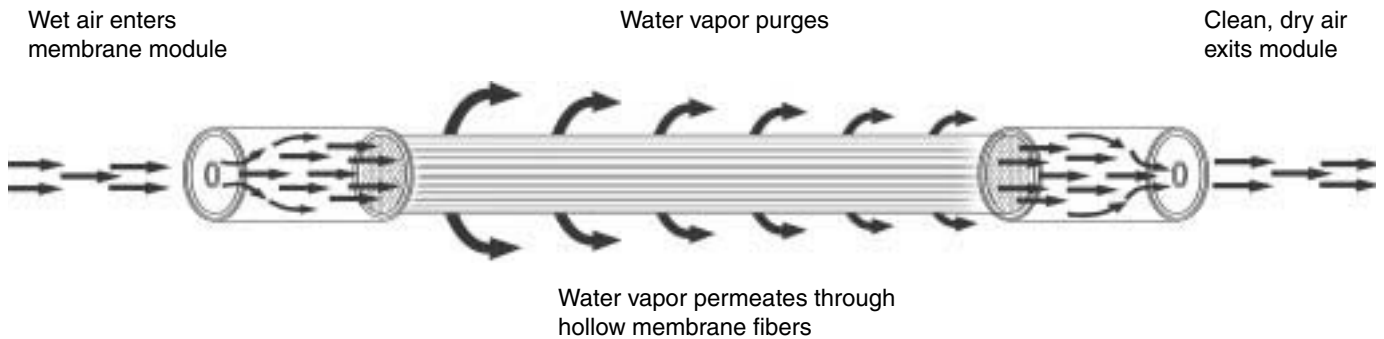
You can also push the piston stem on the bottom of the filter to manually drain the bowl.

Parts

Part No.	Description
234402	Air Filter with auto drain; see manual 309919 for parts information
234397	Coalescer with auto drain; see manual 309919 for parts information
118560	Membrane Air Dryer
234394	Air Regulator; see manual 309924 for parts information
289165	Shut-off Valve
288798	Shut-off Valve



How Membrane Air Dryer Works



Pressure Relief Procedure



WARNING

To avoid injury, relieve air and fluid pressure before checking, cleaning, or repairing the equipment.

The following is a basic pressure relief procedure. Be sure to follow the specific pressure relief procedure in your spray gun and/or fluid supply equipment manuals.

1. Close the main air shut-off valve.
2. Trigger the gun or dispense valve and open any drain valves to relieve pressure.

Maintenance



- Relieve the pressure before cleaning, checking or repairing equipment. Follow **Pressure Relief Procedure**, above.
- Check system at least once per shift to ensure proper drainage.

Air Filter with Auto Drain 234402

To maintain maximum filtering efficiency and avoid excessive pressure drop, the filter must be kept clean. See Manual 309919 for cleaning and parts information.

Coalescer with Auto Drain 234397



It is recommended that Air Filter 234402 be installed upstream of the coalescing filter to remove 5 micron and larger size particles and separate large droplets of moisture from the air line.

CAUTION

Never let the liquid level in the bowl reach the base of the coalescing element.

See Manual 309919 for operation, cleaning, and parts information.

Air Regulator 234394

Be sure air to the regulator is clean. Erratic operation or loss of regulation is usually caused by dirt in the regulator. See Manual 309924 for cleaning and parts information.

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Graco warrants all equipment referenced in this document which is manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Graco, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Graco to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

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