



In-line Air Filters and Coalescers

309919D

Maximum Working Pressure 175 psi (1.2 MPa, 12 bar)

Maximum Temperature 150° F (65° C)



Important Safety Instructions

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

Part No.	Description	Air Inlet npt(f)	Air Outlet npt(f)	Air Flow Capacity at 100 psi (0.7 MPa, 7 bar)
234397	Air Filter with auto drain Removes liquids and contaminants down to .01microns.	1/2"	1/2"	70 CFM
234402	Stage 1 - Air Filter with auto drain Removes water and contaminants down to 5 microns.	1/2"	1/2"	115 CFM
234403	Stage 2 - Coalescer with auto drain Removes oil and sub-micronic particles down to .01 microns.	1/2"	1/2"	35 CFM
234405	Includes Air Filter 234406 and Coalescer 234407, see below	1/2"	1/2"	70 CFM
234406	Stage 1 - Air Filter with auto drain Removes water and contaminants down to 5 microns.	1/2"	1/2"	108 CFM
234407	Stage 2 - Coalescer with auto drain Removes oil and sub-micronic particles down to .01 microns.	1/2"	1/2"	70 CFM
234408	Air Filter with auto drain Removes liquids and contaminants down to 5 microns.	3/4"	3/4"	300 CFM
234409	Coalescer with auto drain Removes oil and sub-micronic particles down to .01 microns.	3/4"	3/4"	115 CFM

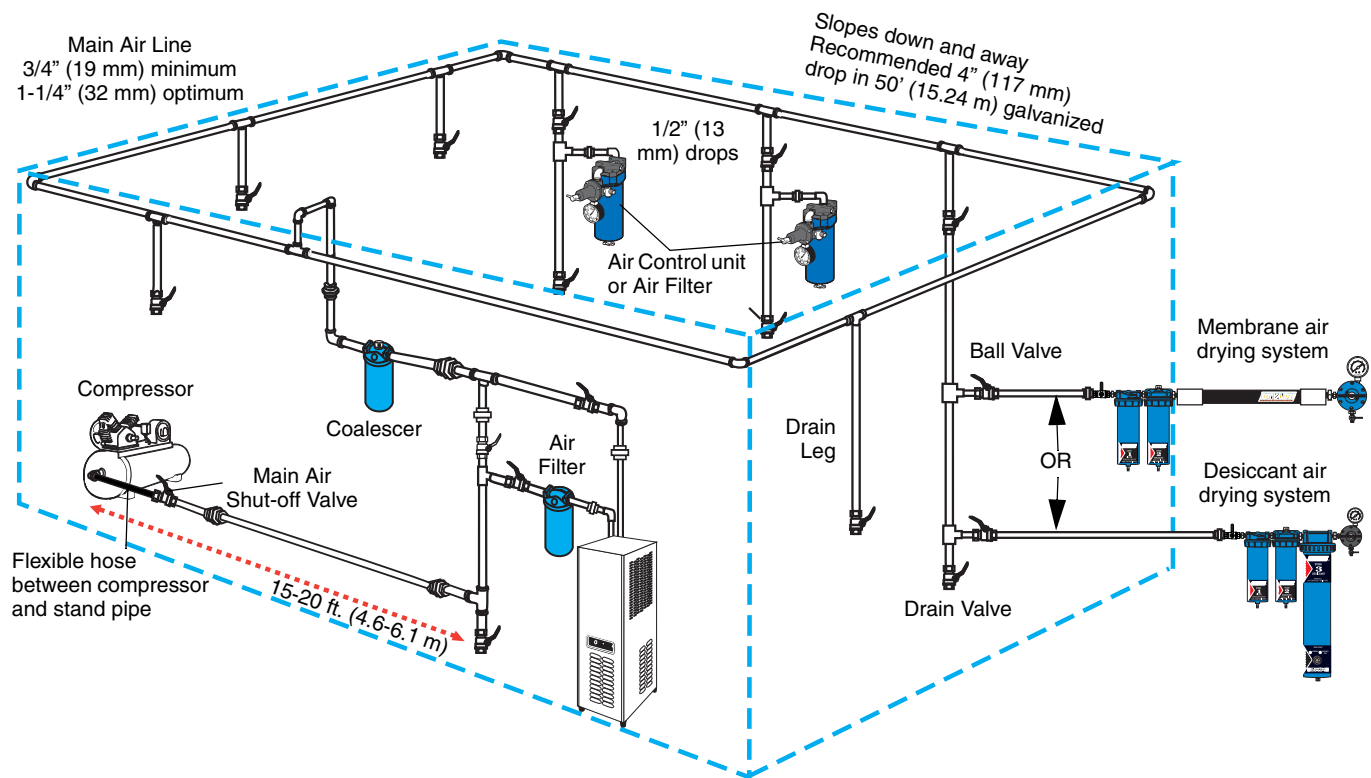
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Installation

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 unit as close as possible to the equipment it serves.
3. Install a main air shut-off valve upstream from the air controls to isolate them 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.

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 push the piston stem on the bottom of the bowl to manually drain it.

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.

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**, page 4.
- Check system at least once per shift to ensure proper drainage.
- To maintain maximum filtering efficiency and avoid excessive pressure drop, filters must be kept clean.

Air Filters with Auto Drain

Cleaning

You do not need to remove the complete filter from the line to clean it.

1. Follow the **Pressure Relief Procedure**, page 4.
2. Clean all parts with cleaning solvent and blow out filter body.
3. Wash filter element in cleaning solvent. Blow the filter out from the inside.

Coalescers with Auto Drain



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.

Cleaning

You do not need to remove the complete coalescer from the line to clean it.

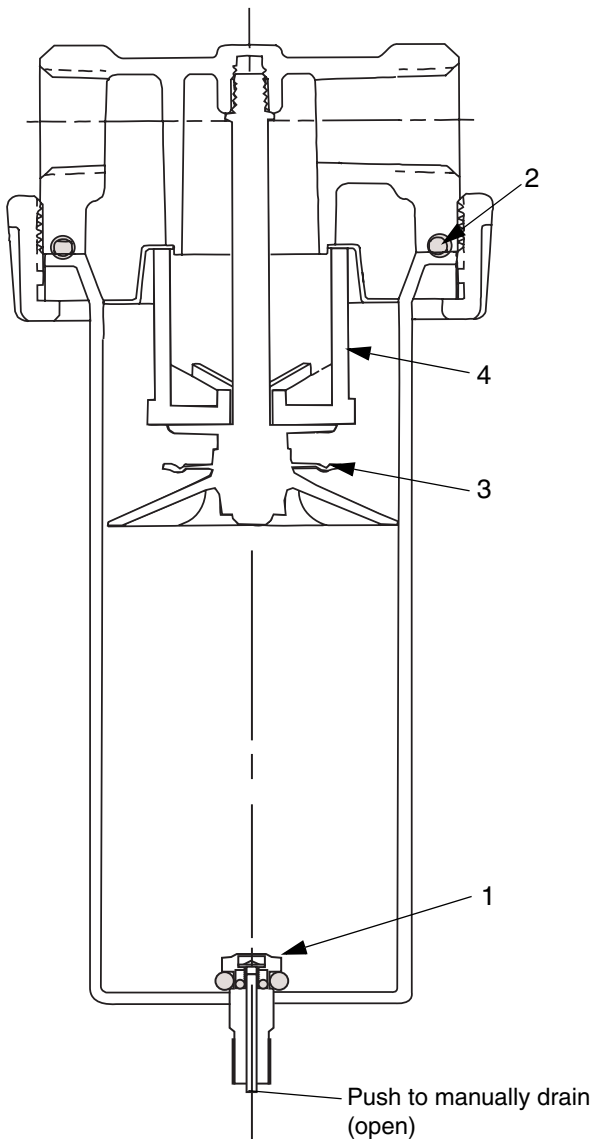
1. Follow the **Pressure Relief Procedure**, page 4. Be sure to shut off the air supply and depressurize the filter.
2. Clean all parts with cleaning solvent and blow out coalescer body.
3. Replace coalescer element.

Parts

Air Filter and Coalescer Assembly 234405

Includes Air Filter 234406 (below) and Coalescer 234407 (page 7).

Air Filters



Air Filter 234402†

Ref. No.	Part No.	Description
1	288788	Auto Drain
2	288791	O-Ring
3	288790	Baffle Kit
4	288809	Filter Element
5	288808	Bracket (not shown)

† Used with both Desiccant 234401 (see Manual 309921) and Membrane 234481 (see Manual 309920) Air Drying Systems.

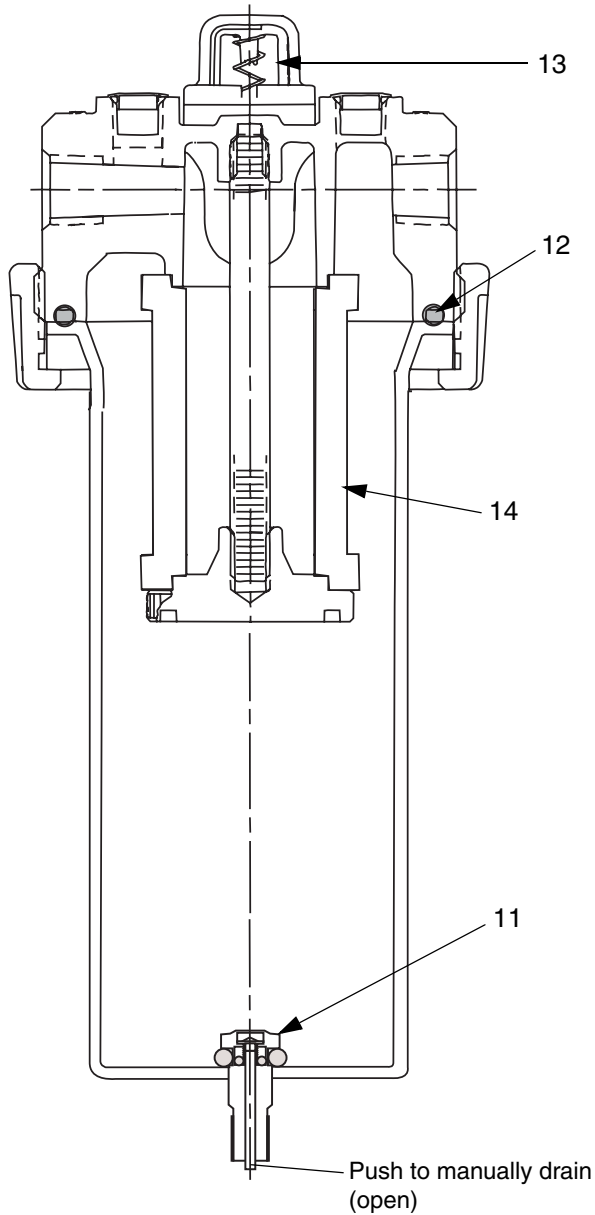
Air Filter 234406

Ref. No.	Part No.	Description
1	289192	Auto Drain
2	288791	O-Ring
3	288790	Baffle Kit
4	288809	Filter Element

Air Filter 234408

Ref. No.	Part No.	Description
1	289192	Auto Drain
2	288791	O-Ring
4	288807	Filter Element

Air Filter/Coalescers



Air Filter 234397**

Ref. No.	Part No.	Description
11	288788	Auto Drain
12	288791	O-Ring
13	288792	Pop-up Indicator Repair Kit
14	289193	Coalescer Element

** Used with Membrane Air Drying System 234418. Refer to Manual 309920.

Coalescer 234403*

Ref. No.	Part No.	Description
11	288788	Auto Drain
12	288791	O-Ring
13	288792	Pop-up Indicator Repair Kit
14	289194	Coalescer Element

* Used with Desiccant Air Drying System 234401. Refer to Manual 309921.

Coalescer 234407

Ref. No.	Part No.	Description
11	289192	Auto Drain
12	288791	O-Ring
13	288792	Pop-up Indicator Repair Kit
14	289193	Coalescer Element

Coalescer 234409

Ref. No.	Part No.	Description
11	289192	Auto Drain
12	288791	O-Ring
13	288792	Pop-up Indicator Repair Kit
14	118559	Coalescer Element

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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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