

Instructions—Parts



Spring-Operated and Air-Operated, High Pressure

Mastic Fluid Regulators 307517 rev.R

*5000 psi (34.4 MPa, 344 bar) Maximum
Inbound Fluid Pressure*

These regulators control downstream pressure for mastic or semi-solid material. Install a regulator ahead of each spray gun or extruder gun in a multiple outlet system. The regulator provides precise pressure control to each spray gun from a common header system. It also dampens flow surges when line valves are opened and during pump stroke changeover.

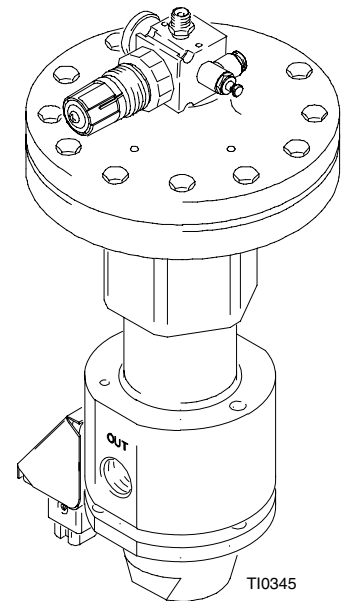


Important Safety Instructions

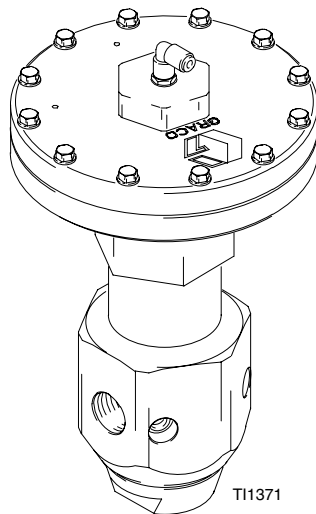
Read all warnings and instructions in this manual.

Save these instructions.

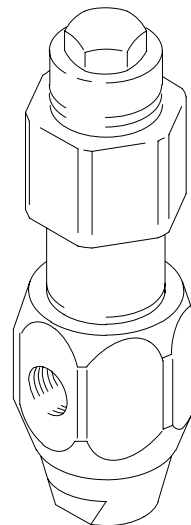
See page 2 for List of Models and Table of Contents.



Model 243700



Model 244740



Model 903958

PROVEN QUALITY. LEADING TECHNOLOGY.

Table of Contents

Warnings	3	Wiring Diagram	31
Installation	6	Technical Data	32
Operation	7	Accessories	33
Maintenance	8	Graco Standard Warranty	34
Parts	10	Graco Information	34
Dimensions	30		

List of Ambient Models

Part No.	Series	Regulator Operation	Regulated Fluid Pressure	Maximum Inbound Air Pressure	Parts Page
903958	Series B	Spring-operated, high range (low range spring is available, see page 33)	1000–4500 psi (7.0–31.0 MPa, 70–310 bar)		12
961635	Series C	Air-operated	250–4500 psi (2.8–31.0 MPa, 17–310 bar)	100 psi (0.7 MPa, 7 bar)	12
244740	Series A	Air-operated	250–4500 psi (2.8–31.0 MPa, 17–310 bar)	100 psi (0.7 MPa, 7 bar)	14
C58318	Series A	Air-operated	250–4500 psi (2.8–31.0 MPa, 17–310 bar)	100 psi (0.7 MPa, 7 bar)	16
246642	Series A	Air-operated	100–4500 psi (0.7–31.0 MPa, 7–310 bar)	100 psi (0.7 MPa, 7 bar)	22
246687	Series A	Air-operated	100–4500 psi (0.7–31.0 MPa, 7–310 bar)	100 psi (0.7 MPa, 7 bar)	24

List of Temperature Conditioned/Heated Models

Part No.	Heat Method	Regulator Operation	Regulated Fluid Pressure	Maximum Inbound Air Pressure	Parts Page
243700	240 VAC	Air-operated	250–3500 psi (1.7–24.1 MPa, 17–241 bar)	65 psi (0.45 MPa, 4.5 bar)	10
C07720	Ambient	Air-operated	250–3500 psi (1.7–24.1 MPa, 17–241 bar)	65 psi (0.45 MPa, 4.5 bar)	18
918447	120 VAC	Air-operated (Mounting Bracket Kit Available)	250–3500 psi (1.7–24.1 MPa, 17–241 bar)	65 psi (0.45 MPa, 4.5 bar)	20
246643	240 VAC	Air-operated	100–3500 psi (0.7–24.1 MPa, 7–241 bar)	65 psi (0.45 MPa, 4.5 bar)	26
246688	240 VAC	Air-operated	100–3500 psi (0.7–24.1 MPa, 7–241 bar)	65 psi (0.45 MPa, 4.5 bar)	28

Symbols

Warning Symbol



This symbol alerts you to the possibility of serious injury or death if you do not follow the instructions.

Caution Symbol



This symbol alerts you to the possibility of damage to or destruction of equipment if you do not follow the corresponding instructions.

WARNING



SKIN INJECTION HAZARD

Spray from the gun, hose leaks, or ruptured components can inject fluid into your body and cause an extremely serious injury, including the need for amputation. Splashing fluid in the eyes or on the skin can also cause a serious injury.

- Fluid injected into the skin might look like just a cut, but it is a serious injury. **Get immediate surgical treatment.**
- Do not point the spray gun/dispensing valve at anyone or at any part of the body.
- Do not put hand or fingers over the spray tip/nozzle.
- Do not stop or deflect fluid leaks with your hand, body, glove, or rag.
- Do not “blow back” fluid; this is not an air spray system.
- Always have the tip guard and the trigger guard on the spray gun/dispensing valve when spraying/dispensing.
- Be sure the gun trigger safety operates before spraying.
- Lock the gun/valve trigger safety when you stop spraying.
- Follow the **Pressure Relief Procedure** in your separate equipment manuals whenever you: are instructed to relieve pressure; stop spraying; clean, check, or service the equipment; and install or clean the spray tip.
- Tighten all the fluid connections before operating the equipment.
- Check the hoses, tubes, and couplings daily. Replace worn, damaged, or loose parts immediately. Permanently coupled hoses cannot be repaired; replace the entire hose.

Warnings are continued on the next page.

WARNING



FIRE AND EXPLOSION HAZARD

Improper grounding, poor air ventilation, open flames, or sparks can cause a hazardous condition and result in fire or explosion and serious injury.

- Ground all equipment in the work area. See **Grounding** in your separate system manual.
- Provide fresh air ventilation to avoid the buildup of flammable fumes from solvent or the fluid being sprayed.
- Extinguish all the open flames or pilot lights in the spray/dispensing area.
- Electrically disconnect all the equipment in the spray/dispensing area.
- Keep the spray/dispensing area free of debris, including solvent, rags, and gasoline.
- Do not turn on or off any light switch in the spray/dispensing area while operating or if fumes are present.
- Do not smoke in the spray/dispensing area.
- Do not operate a gasoline engine in the spray/dispensing area.
- If there is any static sparking while using the equipment, **stop spraying/dispensing immediately**. Identify and correct the problem.
- Keep a fire extinguisher in the work area.



TOXIC FLUID HAZARD

Hazardous fluids or toxic fumes can cause a serious injury or death if splashed in the eyes or on the skin, swallowed, or inhaled.

- Know the specific hazards of the fluid you are using. Read the fluid manufacturer's warnings.
- Store hazardous fluid in an approved container. Dispose of the hazardous fluid according to all local, state, and national guidelines.
- Wear appropriate protective clothing, gloves, eyewear, and respirator.

Warnings are continued on the next page.

WARNING



INSTRUCTIONS



EQUIPMENT MISUSE HAZARD

Equipment misuse can cause the equipment to rupture, malfunction, or start unexpectedly and result in a serious injury.

- This equipment is for professional use only.
- Read all the instruction manuals, tags, and labels before operating the equipment.
- Use the equipment only for its intended purpose. If you are uncertain about usage, call your Graco distributor.
- Do not alter or modify this equipment. Use only genuine Graco parts and accessories.
- Check the equipment daily. Repair or replace worn or damaged parts immediately.
- Do not exceed the maximum working pressure of the lowest rated system component. This equipment has a **5000 psi (34.4 MPa, 344 bar) maximum inbound fluid pressure**.
- Use fluids that are compatible with the equipment wetted parts. See the **Technical Data** section of all the equipment manuals. Read the fluid manufacturer's warnings.
- Route the hoses away from traffic areas, sharp edges, moving parts, and hot surfaces. Do not expose Graco hoses to temperatures above 180°F (82°C) or below -40°F (-40°C).
- Do not kink or over bend the hoses or use the hoses to pull equipment.
- Wear hearing protection when operating this equipment.
- Comply with all applicable local, state, and national fire, electrical, and other safety regulations.
- If your spray or extruder gun has a lower pressure rating than the pump, be sure you adjust its fluid regulator low enough to avoid exceeding the gun's maximum working pressure.



MOVING PARTS HAZARD

Moving parts, such as the air motor piston, can pinch or amputate fingers.

- Do not operate the equipment with the air motor plates removed.
- Keep clear of any moving parts when starting or operating the equipment.



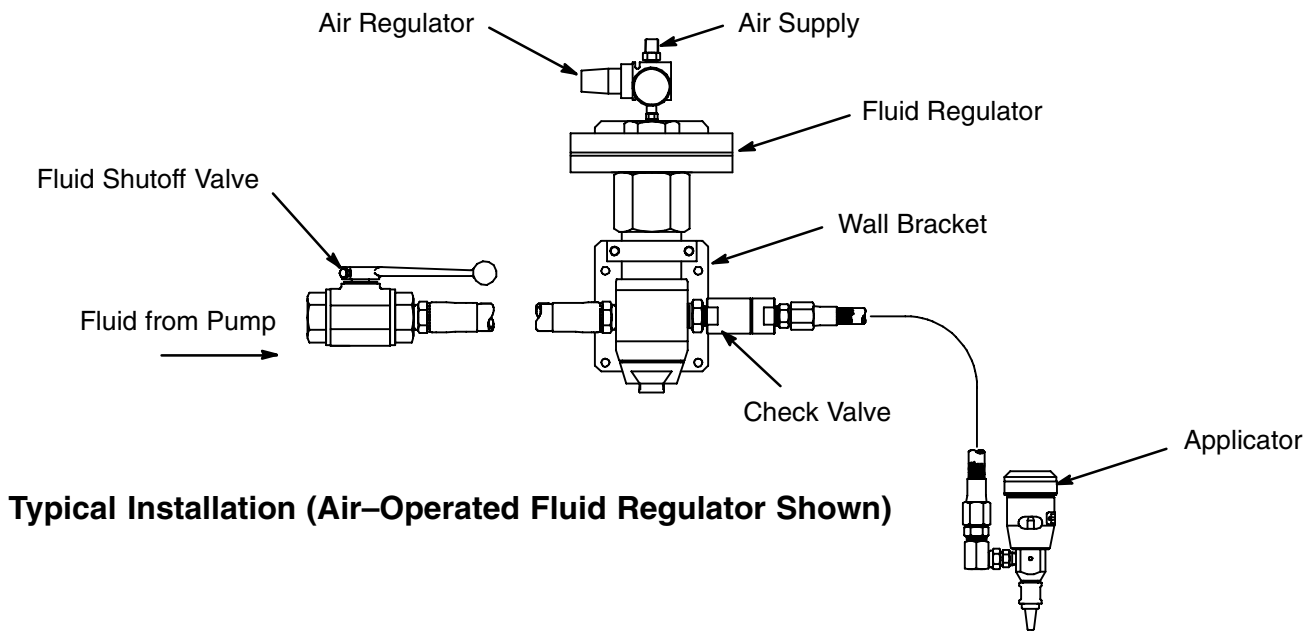
HOT SURFACE AND FLUID HAZARD

Heated fluid can cause severe burns and can cause equipment surfaces to become very hot.

- Wear protective gloves and clothing when operating this equipment in a heated system.
- Do not touch the metal heat sink when the surface is hot.
- Allow the equipment to cool thoroughly before servicing.

Some heated systems are designed to dispense Polyurethane (PUR) heated materials. PUR systems are supplied with ventilation hoods, and require proper ventilation and specially designed system components.

Installation



Typical Installation (Air-Operated Fluid Regulator Shown)

General Information

NOTES:

- Reference numbers and letters in parentheses in the text refer to the callouts in the figures and the parts drawing.
- The **Typical Installation** shows a typical dead-end hookup. Regulators should be mounted close to the dispense point. The whip hose and nozzle must provide enough back pressure to stay within the adjustable range of the regulator. The majority of this restriction should be provided by the nozzle, to prevent static head pressure from increasing when the valve closes.

The regulators have one 3/4 npt(f) inlet port and two 3/4 npt(f) outlet ports for straight through or right angle flow. Install one regulator upstream from each gun on the line. A fluid pressure gauge can be installed in the second outlet port for precise monitoring of outlet pressure. Plug the port when not in use. See the **Typical Installation**, above, and the **Dimensions** section on page 30.

! WARNING

When the second outlet port is not used, it must be plugged with a steel plug, supplied, to prevent high pressure fluid from being emitted from the port. High pressure fluid can cause serious injury.

For an air-operated regulator, connect a grounded air supply hose to the 1/4 npt(m) adapter at the inlet of the air regulator.

Conversion Kit Installation

- To relieve fluid pressure, shut off the power to the pump, trigger the gun to relieve pressure, and open any system bleed or drain valves. Remove the regulator from the line.
- If installing a new spring*, unscrew and remove the adjusting screw (6) and spring (9). Install the new spring and reinstall the screw.
- If converting to an air-operated regulator*, unscrew and remove the adjusting screw (6), spring (9), and spring guide (11) from the valve cylinder (7). Apply lubricant to the threads of the conversion kit diaphragm housing (101). Screw the housing into the valve cylinder, torque to 20 in-lb (2.25 N•m). See the Parts Drawing on page 12.

Operation

Adjusting the Regulator Outlet Pressure

WARNING

To reduce the risk of serious injury, never remove the adjusting screw or diaphragm housing when the valve is under pressure.

For a spring-operated regulator, turn the adjusting screw (6) counterclockwise to decrease and clockwise to increase pressure to the spray gun or extruder gun.

For an air-operated regulator, adjust the air regulator on top of the diaphragm (or other upstream air regulation device), to adjust the downstream fluid pressure up or down. See the chart at right for air vs. fluid pressure.

Adjust the pump air pressure and the mastic regulator pressure for the best dispensing combination. For the optimum performance, the inbound fluid pressure should be at least 600 psi (4.1 MPa, 41 bar) above the regulated fluid pressure.

NOTE: When using a fluid pressure gauge in the regulator outlet, partially relieve pressure by triggering the gun while reducing the regulator pressure. This helps ensure a correct gauge reading. For high accuracy applications, add a C06234 bleed fitting. This adjustable flow control replaces an outlet plug in the regulator. This allows the air regulator to hold a more accurate set point. Model C58318 comes with this bleed valve.

NOTE: Model 244740 is equipped with inlet and outlet pressure sensor ports. Pressure Sensor Kit 198082 can be used to monitor inlet and/or outlet pressures.

This chart shows the approximate air pressure needed to regulate the air-operated regulator to a given fluid outlet pressure.

Air Pressure			Regulated Fluid Outlet Pressure		
psi	bar	kPa	psi	bar	MPa
10	0.7	70	500	35	3.5
15	1.0	100	800	55	5.5
20	1.4	140	1100	76	7.6
25	1.7	170	1300	90	9.0
30	2.1	210	1600	110	11.0
40	2.8	280	2100	145	14.5
50	3.5	350	2700	186	18.6
60	4.2	420	3200	221	22.1
70	4.9	490	3800	262	26.2
80	5.6	560	4300	296	29.6

Maintenance

WARNING

To reduce the risk of serious injury, including fluid injection, or splashing in the eyes or on the skin, always relieve the air and fluid pressure in the system before adjusting, repairing, or removing the regulator from the system.

Flushing

- Flush before changing colors, before fluid can dry in the equipment, at the end of the day, before storing, and before repairing equipment.
 - Flush at the lowest pressure possible. Check connectors for leaks and tighten as necessary.
 - Flush with a fluid that is compatible with the fluid being dispensed and the equipment wetted parts.
1. Record the pressure adjustment setting of the fluid regulator before flushing.
 2. Shut off the pump and relieve fluid pressure in the system by triggering the gun and opening the back pressure regulator or other bypass valve.
 3. Never exceed the maximum working pressure of the lowest rated system component. Remove the gauge if the flushing pressure will exceed the gauge range.
 4. Open the fluid regulator fully.
 - a. *Spring Operated Regulators Only.* Open the fluid regulator by turning the adjusting screw (6) fully *clockwise*.
 - b. *Air Operated Regulator Only.* Increase the air regulator setting to fully open the fluid regulator. You will have to reset the fluid regulator's pressure setting after flushing.
 5. Supply solvent to the system. Set pump to the lowest possible pressure, and start pump.
 6. Flush until thoroughly clean.
 7. Adjust the fluid regulator to the desired setting.
 - a. *Spring Operated Regulators Only:* Turn the adjustment screw (6) *counterclockwise* to return to the desired pressure setting.
 - b. *Air Operated Regulator Only.* Adjust the air regulator to return to the desired fluid pressure setting.

Repair

Flush the regulator if possible, relieve fluid pressure, and remove the regulator from the system.

Disassemble the regulator. See the Parts Drawing on page 10. You do not have to disassemble the diaphragm housing of the air-operated regulator unless a problem is suspected.

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Parts

Model 243700 240 Volt Heated Regulator

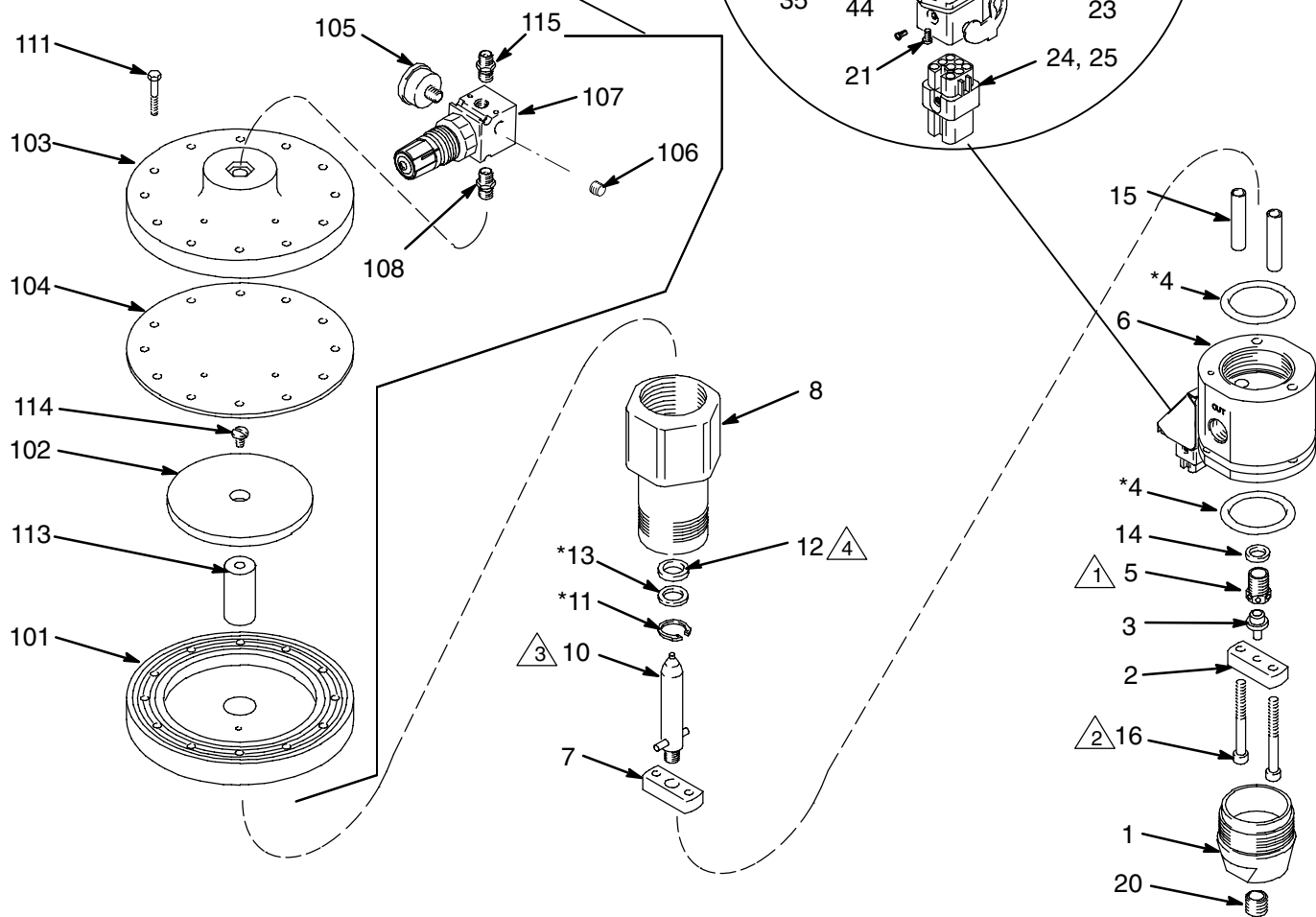
△1 Torque to 35–40 ft-lb (47–54 N•m)

△2 Use Loctite® TL-242 on threads

△3 Use Loctite® 601 on threads.
Torque to 15–25 ft-lb (20–34 N•m)

△4 Lips must face retaining ring (11)

Ref. No. 9 Conversion Kit 915587



T10342

Parts

Model 243700 230 Volt Heated Regulator

Ref No.	Part No.	Description	Qty.
1	607499	CAP, end	1
2	607498	BAR, support bottom	1
3	904029	BALL, seat	1
4*	115938	PACKING, o-ring; fluoroelastomer	2
5	904030	SEAT, regulator	1
6	617434	HOUSING, regulator	1
7	607497	SUPPORT, piston	1
8	607500	CYLINDER, valve	1
9	915587	HOUSING, diaphragm (See separate parts list)	1
10	220899	PISTON, regulator	1
11*	102386	RING, retaining	1
12*	115939	SEAL, mastic reg. fluoroelastomer	1
13*	607495	WASHER	1
14	607718	WASHER, seal	1
15	607496	SPACER	2
16	503143	SCREW, socket head; 5/16–18 x 2.75 in.	2
20	102726	PLUG, pipe, 3/4 in. npt	1
21	100171	SCREW, machine pnh	2
23	115861	BULKHEAD, housing	1
24	115860	INSERT, male	1
25	115862	CONNECTOR, male	5
26	C19269	SCREW, machine, slotted	2
28	C19197	WASHER, plain	2
29	C19800	SCREW, cap, socket hd	2
30	C34043	BRACKET	1
31	C34040	COVER	1
32	C19721	WASHER	1
33	C32255	SENSOR, temperature See page 31 electrical diagram	1
34	198600	CARTRIDGE, heater See page 31 electrical diagram	2
35	065345	WIRE, copper electrical (16AWG); 0.5 ft (0.15 m) See page 31 electrical diagram	1
38	101674	TERMINAL, ring See page 31 electrical diagram	1
39	112144	SCREW, mach pan hd See page 31 electrical diagram	1
44	102974	NUT, hex	2

Diaphragm Housing / Conversion Kit 915587

Includes items 101–115

Ref No.	Part No.	Description	Qty.
101	180980	HOUSING, diaphragm	1
102	180978	WASHER, support	1
103	180981	COVER, diaphragm	1
104	180979	DIAPHRAGM	1
105	108190	GAUGE, air pressure; 0–100 psi (0–0.7 MPa, 0–7 bar) range	1
106	100403	PLUG, pipe; 1/8–27 npt(f)	1
107	110341	REGULATOR, air, relieving; see manual 308167	1
108	103656	NIPPLE, pipe, hex; 1/8–27 npt	1
111	114104	CAPSCREW, hex washer hd; 1/4–20 x 1.5	12
113	180975	ROD, piston	1
114	103263	SCREW, mach; 1/4–20 x 3/4 in.	1
115	151519	NIPPLE, 1/4 x 1/8 npt	1

* Included in Repair Kit 233131.

Parts

Model 903958, Series B Spring-Operated Regulator

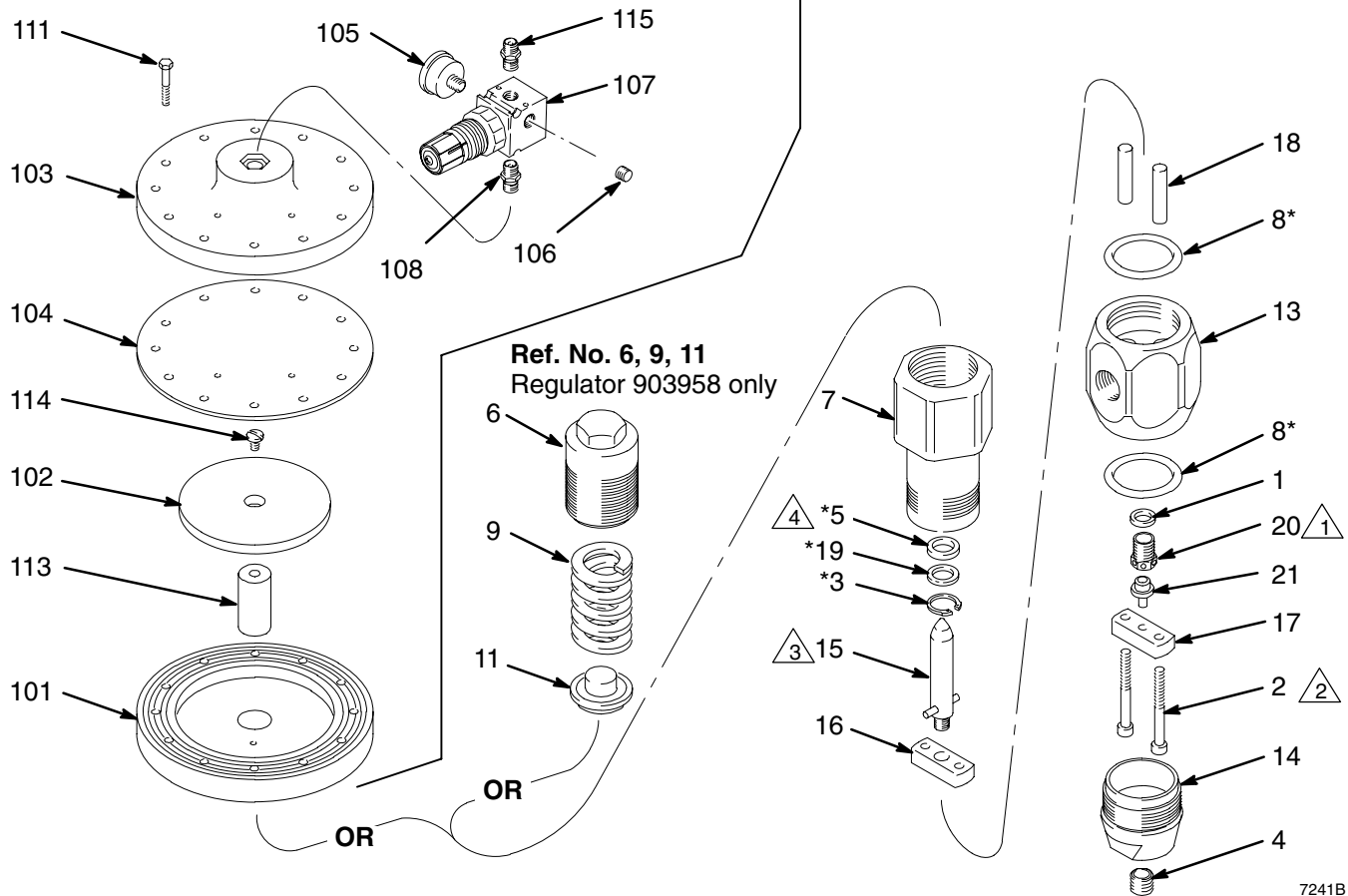
Includes items 1–21

Model 961635, Series C Air-Operated Regulator

Includes items 1–5, 7, 8, 13–22

- 1 Torque to 35–40 ft-lb (47–54 N•m)
- 2 Use Loctite® TL-242 on threads
- 3 Use Loctite® 601 on threads.
Torque to 15–25 ft-lb (20–34 N•m)
- 4 Lips must face retaining ring (3)

Ref. No. 22 Conversion Kit 915587
Regulator 961635 only



Parts

Model 903958, Series B Spring-Operated Regulator Includes items 1–21

Model 961635, Series C Air-Operated Regulator Includes items 1–5, 7, 8, 13–22

Ref No.	Part No.	Description	Qty.
1	607718	WASHER, seal	1
2	503143	SCREW, socket head; 5/16–18 x 2.75 in.	2
3*	102386	RING, retaining	1
4	102726	PLUG, pipe, 3/4 in. npt	1
5*	503140	SEAL, mastic reg., urethane	1
6	607501	SCREW, adjusting; Model 903958 only	1
7	607500	CYLINDER, valve	1
8*	162841	PACKING, o-ring; buna-N	2
9†	503141	SPRING, high range; Model 903958 only	1
11	607493	GUIDE, spring; Model 903958 only	1
13	607502	HOUSING, regulator	1
14	607499	CAP, end	1
15	220899	PISTON, regulator	1
16	607497	BAR, support top	1
17	607498	BAR, support bottom	1
18	607496	SPACER	2
19*	607495	WASHER	1
20	904030	SEAT, regulator; 0.312 in. (8 mm) dia.	1
21	904029	BALL, seat	1
22	915587	HOUSING, diaphragm; Model 961635 only (See separate parts list)	1

Diaphragm Housing / Conversion Kit 915587

Includes items 101–115

Ref No.	Part No.	Description	Qty.
101	180980	HOUSING, diaphragm	1
102	180978	WASHER, support	1
103	180981	COVER, diaphragm	1
104	180979	DIAPHRAGM	1
105	108190	GAUGE, air pressure; 0–100 psi (0–0.7 MPa, 0–7 bar) range	1
106	100403	PLUG, pipe; 1/8–27 npt(f)	1
107	110341	REGULATOR, air, relieving; see manual 308167	1
108	103656	NIPPLE, pipe, hex; 1/8–27 npt	1
111	114104	CAPSCREW, hex washer hd; 1/4–20 x 1.5	12
113	180975	ROD, piston	1
114	103263	SCREW, mach; 1/4–20 x 3/4 in.	1
115	151519	NIPPLE, 1/4 x 1/8 npt	1

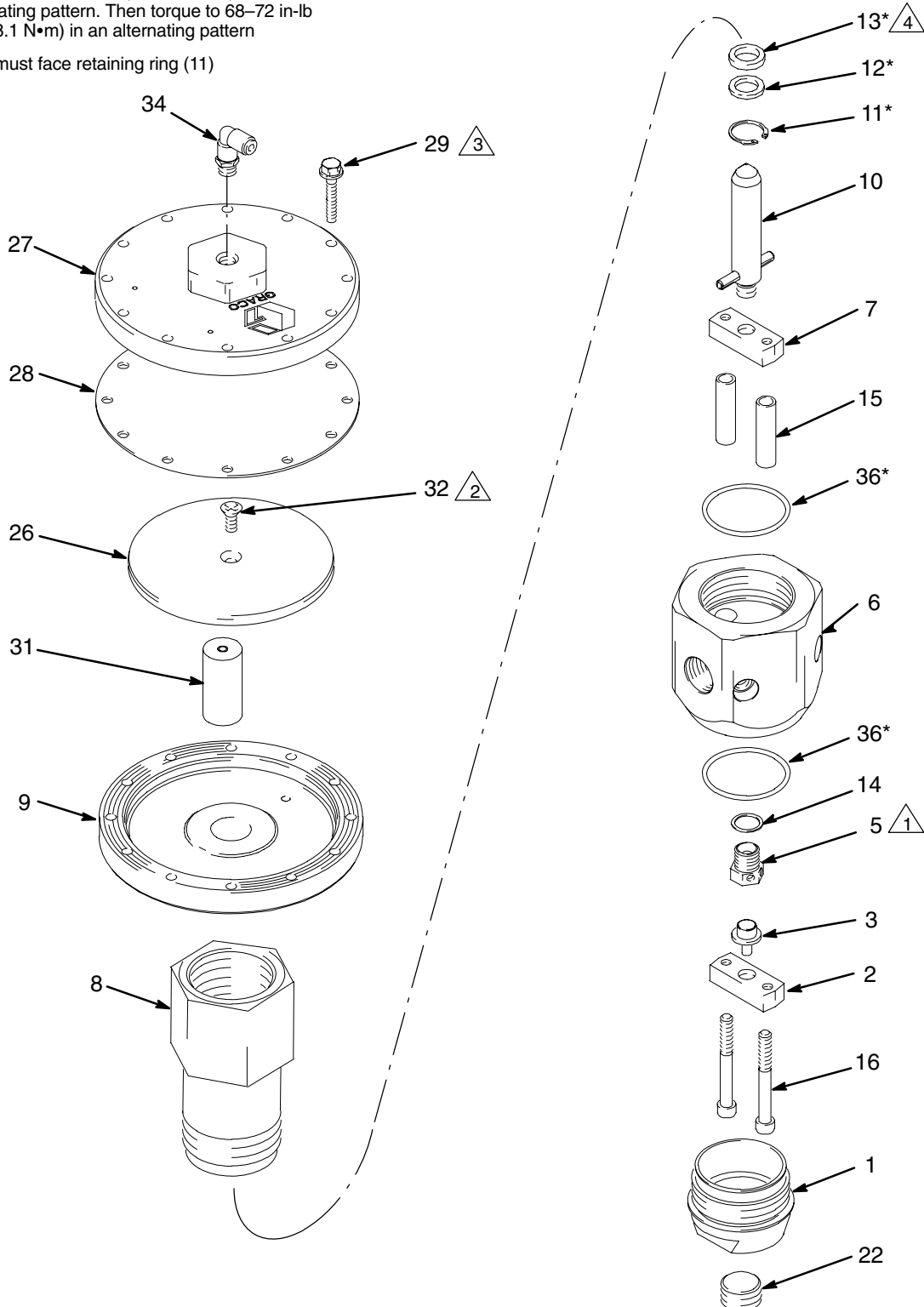
* Included in Repair Kit 918448.

† 521079 Low Range Spring is available. See page 33.

Parts

Model 244740, Series A Air-Operated Regulator Includes items 1–37

-  1 Torque to 30–40 ft-lb (41–54 N•m)
-  2 Torque to 75–80 in-lb (8.5–9 N•m)
-  3 Torque to 30–33 in-lb (3.4–3.7 N•m) in an alternating pattern. Then torque to 68–72 in-lb (7.7–8.1 N•m) in an alternating pattern
-  4 Lips must face retaining ring (11)



Parts

Model 244740, Series A

Air-Operated Regulator

Includes items 1–37

Ref No.	Part No.	Description	Qty.	Ref No.	Part No.	Description	Qty.
1	607499	CAP, end	1	16	503143	SCREW, socket head; 5/16–18 x 2.75 in.	2
2	607498	BAR, support bottom	1	22	102726	PLUG, pipe, 3/4 in. npt	1
3	904029	BALL, seat	1	26	180978	WASHER, support	1
5	904030	SEAT, regulator; 0.312 in. (8 mm) dia.	1	27	180981	COVER, diaphragm	1
6	198007	HOUSING, regulator	1	28	180979	DIAPHRAGM	1
7	607497	BAR, support top	1	29	114104	CAPSCREW, hex washer head; 1/4–20 x 1.5	12
8	607500	CYLINDER, valve	1	31	180975	ROD, piston	1
9	180980	HOUSING, diaphragm	1	32	103263	SCREW, machine; 1/4–20 x 3/4 in.	1
10	220899	PISTON, regulator	1	34	198171	ELBOW	1
11*	102386	RING, retaining	1	35	198241	PLUG, port, pressure (not shown)	4
12*	607495	WASHER	1	36*	162841	PACKING, o–ring	2
13*	503140	SEAL, mastic reg., urethane	1	37	111457	PACKING, o–ring, pressure port (not shown)	4
14	607718	WASHER, seal	1				
15	607496	SPACER	2				

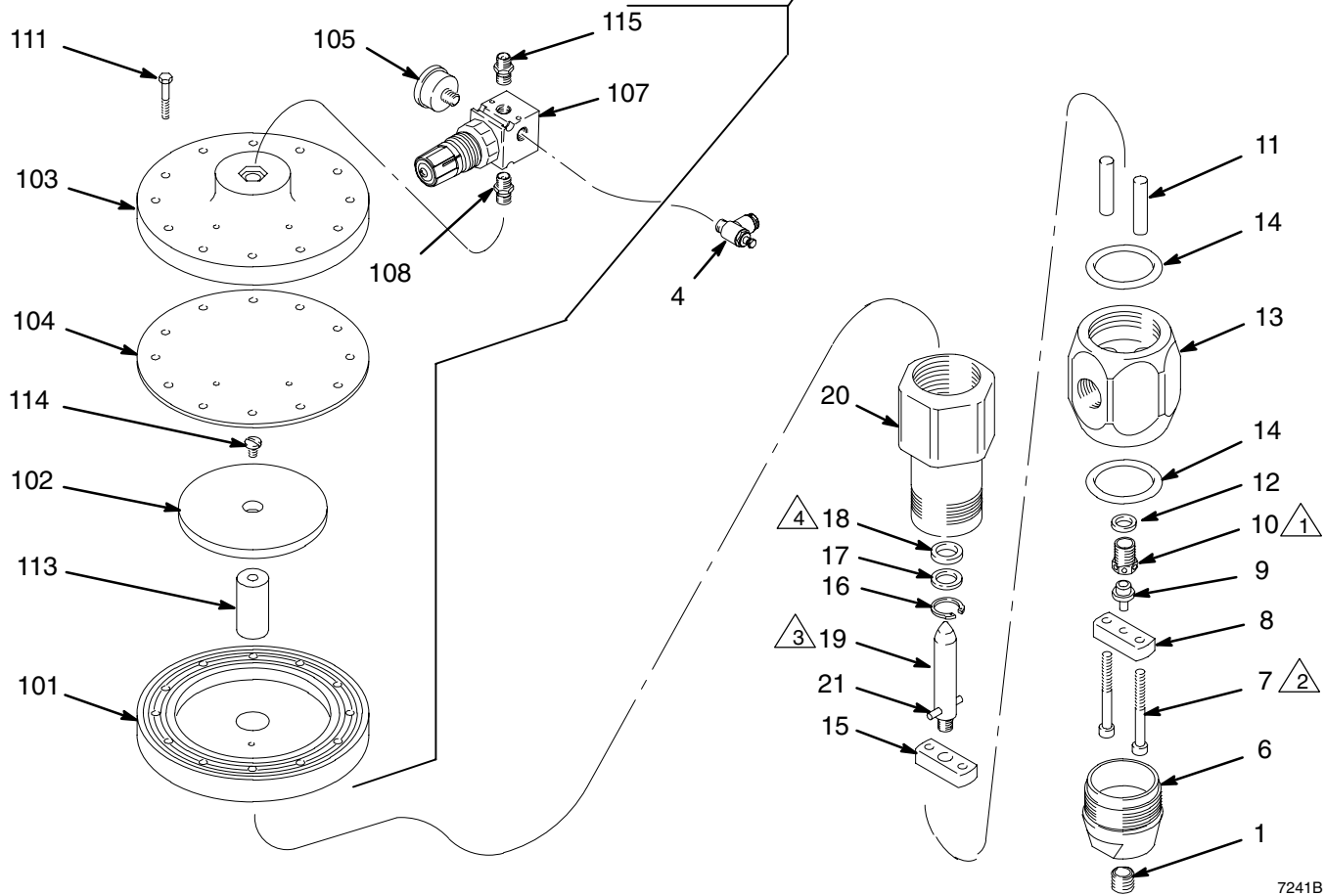
* Included in Repair Kit 918448.

Parts

Model C58318 Stainless Steel, Air Operated Regulator

- △1 Torque to 35–40 ft-lb (47–54 N•m)
- △2 Use Loctite® TL-242 on threads
- △3 Use Loctite® 601 on threads.
Torque to 15–25 ft-lb (20–34 N•m)
- △4 Lips must face retaining ring (16)

Ref. No. 3 Conversion Kit 915587



7241B

Parts

Model C58318 Stainless Steel, Air Operated Regulator

Ref No.	Part No.	Description	Qty.
1	111384	PLUG, pipe	1
3	915587	HOUSING, diaphragm (See separate parts list)	1
4	C06234	VALVE, flow control	1
6	607499	CAP, end	1
7	C55143	SCREW, cap, socket head	2
8	C55136	SUPPORT, piston, bottom	1
9	C55140	STEM, valve assy	1
10	C55139	SEAT, regulator, assy	1
11	C55137	SPACER	2
12	C55133	WASHER, seal	1
13	C55134	HOUSING, regulator	1
14	C38296	PACKING, o-ring	2
15	C55135	SUPPORT, piston, top	1
16	C20385	RING, retaining, internal	1
17	C58314	SUPPORT, seal	1
18	515716	PACKING, u-cup	1
19	C55141	PISTON, regulator	1
20	C58312	CYLINDER, regulator	1
21	C55142	PIN, str, spring	1

Diaphragm Housing / Conversion Kit 915587 Includes items 101–115

Ref No.	Part No.	Description	Qty.
101	180980	HOUSING, diaphragm	1
102	180978	WASHER, support	1
103	180981	COVER, diaphragm	1
104	180979	DIAPHRAGM	1
105	108190	GAUGE, air pressure; 0–100 psi (0–0.7 MPa, 0–7 bar) range	1
106	100403	PLUG, pipe; 1/8–27 npt(f) (not shown)	1
107	110341	REGULATOR, air, relieving; see manual 308167	1
108	103656	NIPPLE, pipe, hex; 1/8–27 npt	1
111	114104	CAPSCREW, hex washer hd; 1/4–20 x 1.5	12
113	180975	ROD, piston	1
114	103263	SCREW, mach; 1/4–20 x 3/4 in.	1
115	151519	NIPPLE, 1/4 x 1/8 npt	1

Parts

Model C07720 Water Conditioned Regulator

Includes items 1–20

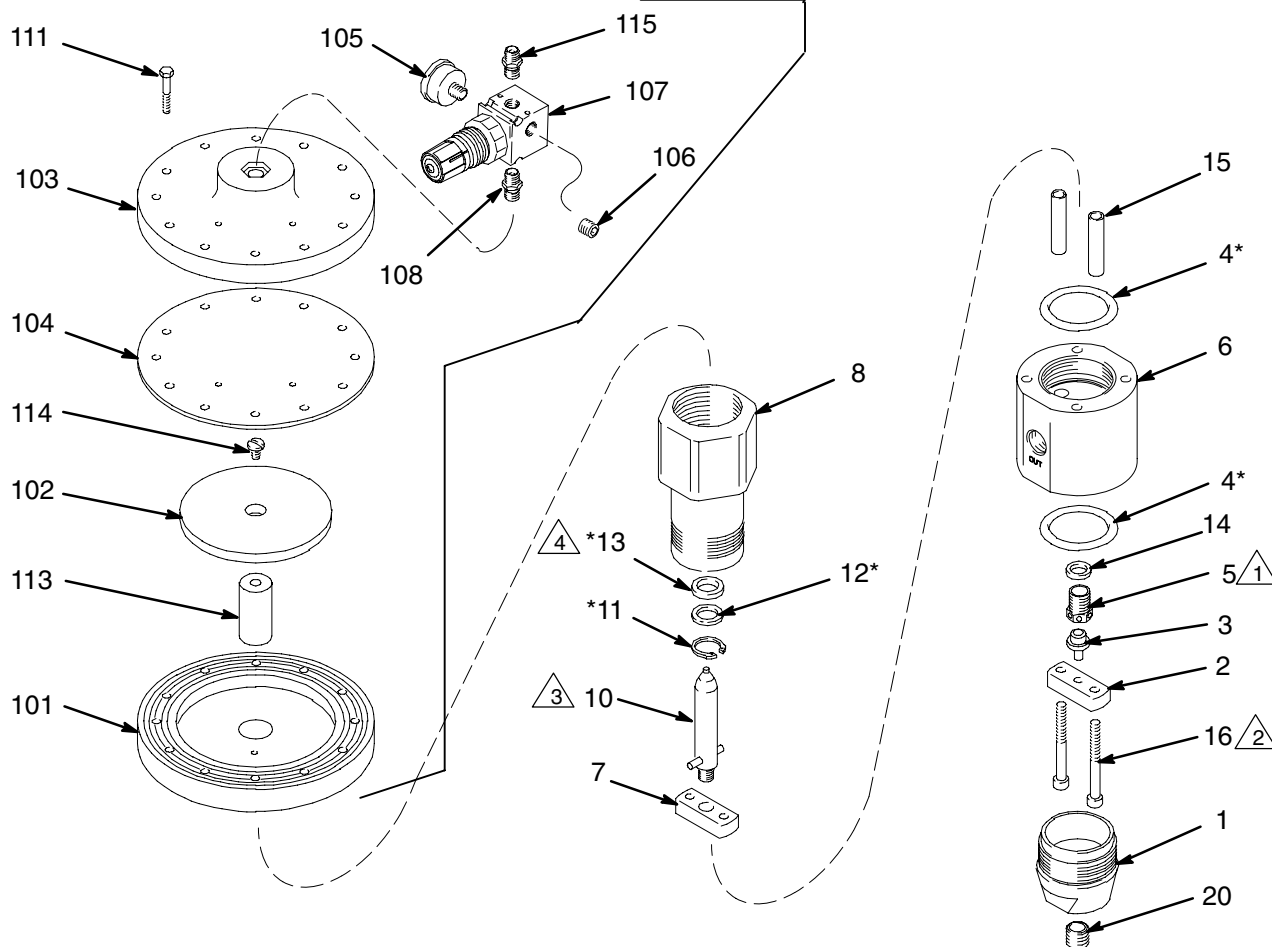
1 Torque to 35–40 ft-lb (47–54 N•m)

2 Use Loctite® TL-242 on threads

3 Use Loctite® 601 on threads.
Torque to 15–25 ft-lb (20–34 N•m)

4 Lips must face retaining ring (11)

Ref. No. 9 Conversion Kit 915587



T10344

Parts

Model C07720 Water Conditioned Regulator

Includes items 1–20

Ref No.	Part No.	Description	Qty.
1	607499	CAP, end	1
2	607498	BAR, support bottom	1
3	904029	BALL, seat	1
4*	162841	PACKING, o-ring; buna-N	2
5	904030	SEAT, regulator	1
6	C07719	HOUSING, regulator	1
7	607497	SUPPORT, piston	1
8	607500	CYLINDER, valve	1
9	915587	HOUSING, diaphragm (See separate parts list)	1
10	220899	PISTON, regulator	1
11*	102386	RING, retaining	1
12*	607495	WASHER	1
13*	503140	SEAL, mastic reg., urethane	1
14	607718	WASHER, seal	1
15	607496	SPACER	2
16	503143	SCREW, socket head; 5/16–18 x 2.75 in.	2
20	102726	PLUG, pipe, 3/4 in. npt	1

Diaphragm Housing / Conversion Kit 915587

Includes items 101–115

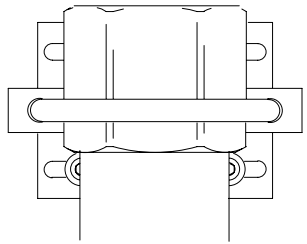
Ref No.	Part No.	Description	Qty.
101	180980	HOUSING, diaphragm	1
102	180978	WASHER, support	1
103	180981	COVER, diaphragm	1
104	180979	DIAPHRAGM	1
105	108190	GAUGE, air pressure; 0–100 psi (0–0.7 MPa, 0–7 bar) range	1
106	100403	PLUG, pipe; 1/8–27 npt(f)	1
107	110341	REGULATOR, air, relieving; see manual 308167	1
108	103656	NIPPLE, pipe, hex; 1/8–27 npt	1
111	114104	CAPSCREW, hex washer hd; 1/4–20 x 1.5	12
113	180975	ROD, piston	1
114	103263	SCREW, mach; 1/4–20 x 3/4 in.	1
115	151519	NIPPLE, 1/4 x 1/8 npt	1

* Included in Repair Kit 918448.

Parts

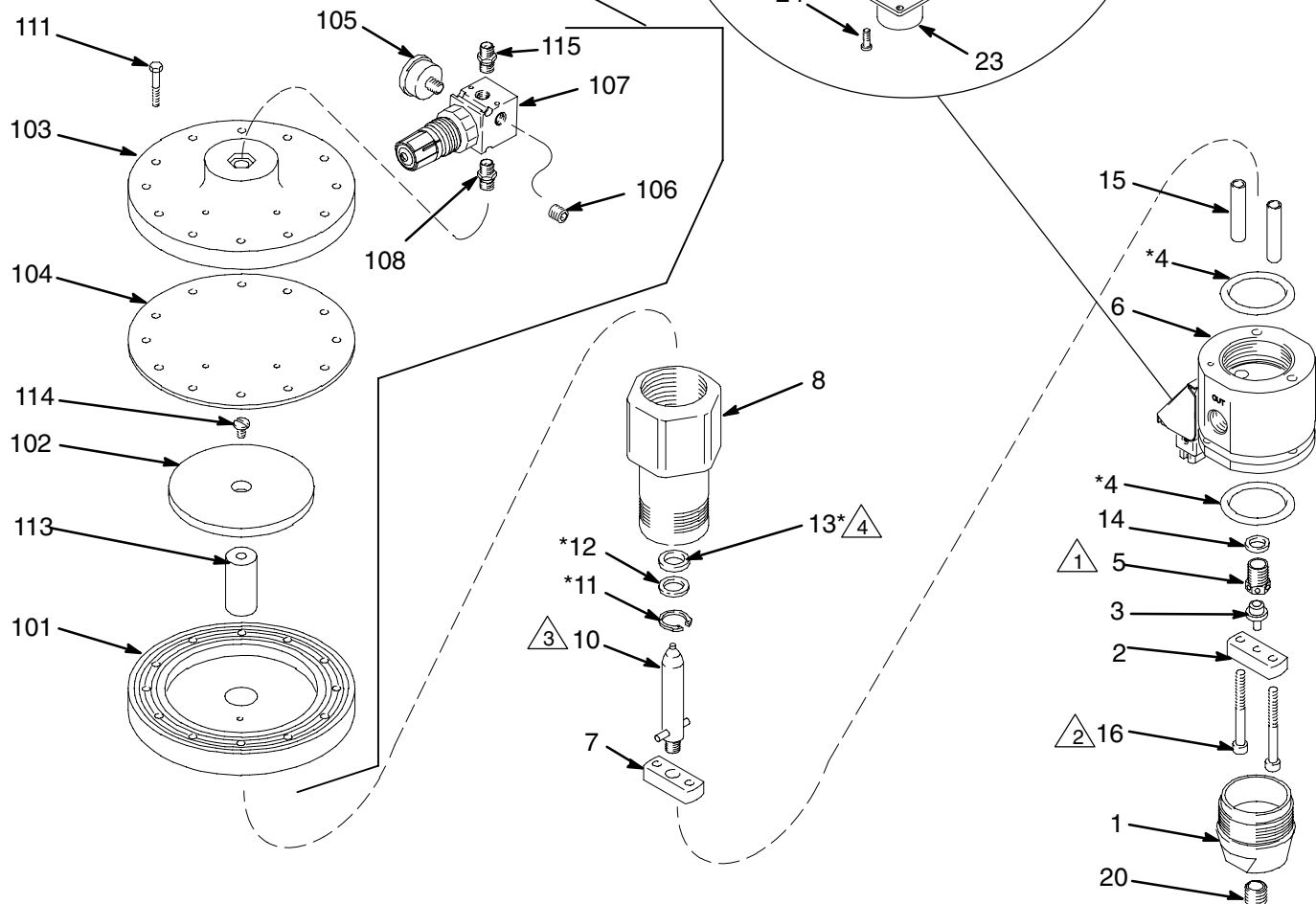
Model 918447 Heated Regulator

Mounting Bracket Kit 247157
Available for Model 918447 only.
Purchase separately.
See page 33.



- 1 Torque to 35–40 ft-lb (47–54 N•m)
- 2 Use Loctite® TL-242 on threads
- 3 Use Loctite® 601 on threads.
Torque to 15–25 ft-lb (20–34 N•m)
- 4 Lips must face retaining ring (11)

Ref. No. 9 Conversion Kit 915587



Parts

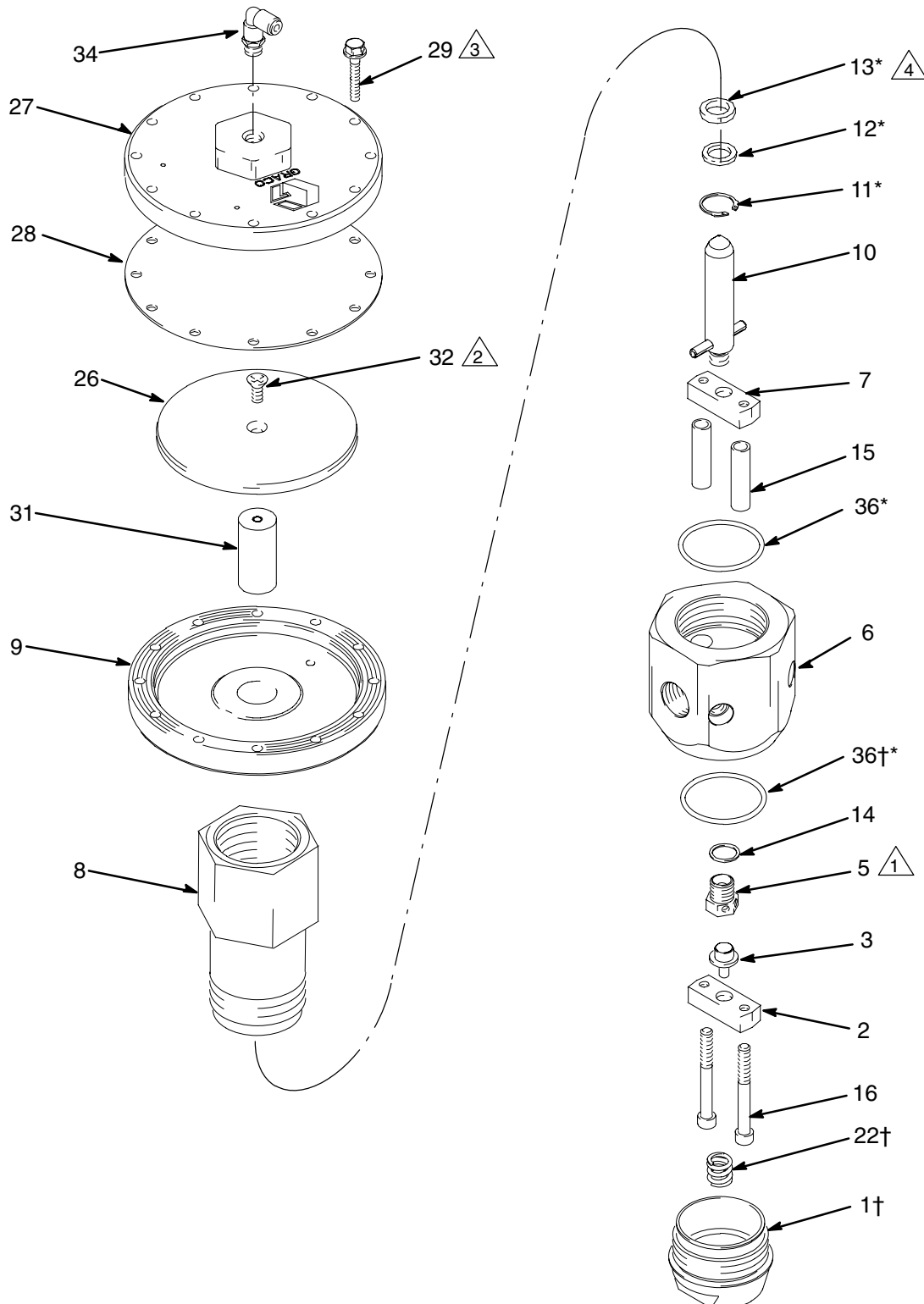
Model 918447 Heated Regulator

Ref No.	Part No.	Description	Qty.	Diaphragm Housing / Conversion Kit 915587 Includes items 101–115			
Ref No.	Part No.	Description	Qty.	Ref No.	Part No.	Description	Qty.
1	607499	CAP, end	1	101	180980	HOUSING, diaphragm	1
2	607498	BAR, support	1	102	180978	WASHER, support	1
3	904029	BALL, seat	1	103	180981	COVER, diaphragm	1
4*	115938	PACKING, o–ring	2	104	180979	DIAPHRAGM	1
5	904030	SEAT, regulator	1	105	108190	GAUGE, air pressure; 0–100 psi (0–0.7 MPa, 0–7 bar) range	1
6	617434	HOUSING, heated, regulator	1	106	100403	PLUG, pipe; 1/8–27 npt(f)	1
7	607497	SUPPORT, piston	1	107	110341	REGULATOR, air, relieving; see manual 308167	1
8	607500	CYLINDER, valve	1	108	103656	NIPPLE, pipe, hex; 1/8–27 npt	1
9	915587	HOUSING, diaphragm (See separate parts list)	1	111	114104	CAPSCREW, hex washer hd; 1/4–20 x 1.5	12
10	220899	PISTON, regulator	1	113	180975	ROD, piston	1
11*	102386	RING, retaining	1	114	103263	SCREW, mach; 1/4–20 x 3/4 in.	1
12*	607495	WASHER	1	115	151519	NIPPLE, 1/4 x 1/8 npt	1
13*	115939	SEAL, rod, .750 ID, fluoroelastomer	1	<i>* Included in Repair Kit 233131.</i>			
14	607718	WASHER, seal	1				
15	607496	SPACER	2				
16	503143	SCREW, cap, sch	2				
20	102726	PLUG, pipe, headless	1				
23	C07329	CONNECTOR, 6–pin gun	1				
24	C19950	SCREW, cap, sch	4				
25	102794	NUT, hex	4				
26	C19269	SCREW, mach, slotted hd	2				
27	C50019	TERMINAL, ring	1				
28	C19197	WASHER, plain	2				
29	C19800	SCREW, cap, socket hd	2				
30	C34043	BRACKET	1				
31	C34040	COVER	1				
32	C19721	WASHER	1				
33	C32255	SENSOR, temperature See page 31 electrical diagram	1				
34	C31034	HEATER, cartridge See page 31 electrical diagram	2				

Parts

Model 246642, Series A
Air-Operated Regulator
 Includes items 1–37

- △1 Torque to 30–40 ft-lb (41–54 N•m)
- △2 Torque to 75–80 in-lb (8.5–9 N•m)
- △3 Torque to 30–33 in-lb (3.4–3.7 N•m) in an alternating pattern. Then torque to 68–72 in-lb (7.7–8.1 N•m) in an alternating pattern
- △4 Lips must face retaining ring (11)



Parts

Model 246642, Series A

Air-Operated Regulator

Includes items 1–37

Ref No.	Part No.	Description	Qty.	Ref No.	Part No.	Description	Qty.
1†	15C280	CAP, end	1	16	503143	SCREW, socket head; 5/16–18 x 2.75 in.	2
2	607498	BAR, support bottom	1	22†	15C281	SPRING, compression	1
3	904029	BALL, seat	1	26	180978	WASHER, support	1
5	904030	SEAT, regulator; 0.312 in. (8 mm) dia.	1	27	180981	COVER, diaphragm	1
6	198007	HOUSING, regulator	1	28	180979	DIAPHRAGM	1
7	607497	BAR, support top	1	29	114104	CAPSCREW, hex washer head; 1/4–20 x 1.5	12
8	607500	CYLINDER, valve	1	31	180975	ROD, piston	1
9	180980	HOUSING, diaphragm	1	32	103263	SCREW, machine; 1/4–20 x 3/4 in.	1
10	220899	PISTON, regulator	1	34	198171	ELBOW	1
11*	102386	RING, retaining	1	35	198241	PLUG, port, pressure (not shown)	4
12*	607495	WASHER	1	36†*	162841	PACKING, o–ring	2
13*	503140	SEAL, mastic reg., urethane	1	37	111457	PACKING, o–ring, pressure port (not shown)	4
14	607718	WASHER, seal	1				
15	607496	SPACER	2				

* Included in Repair Kit 918448.

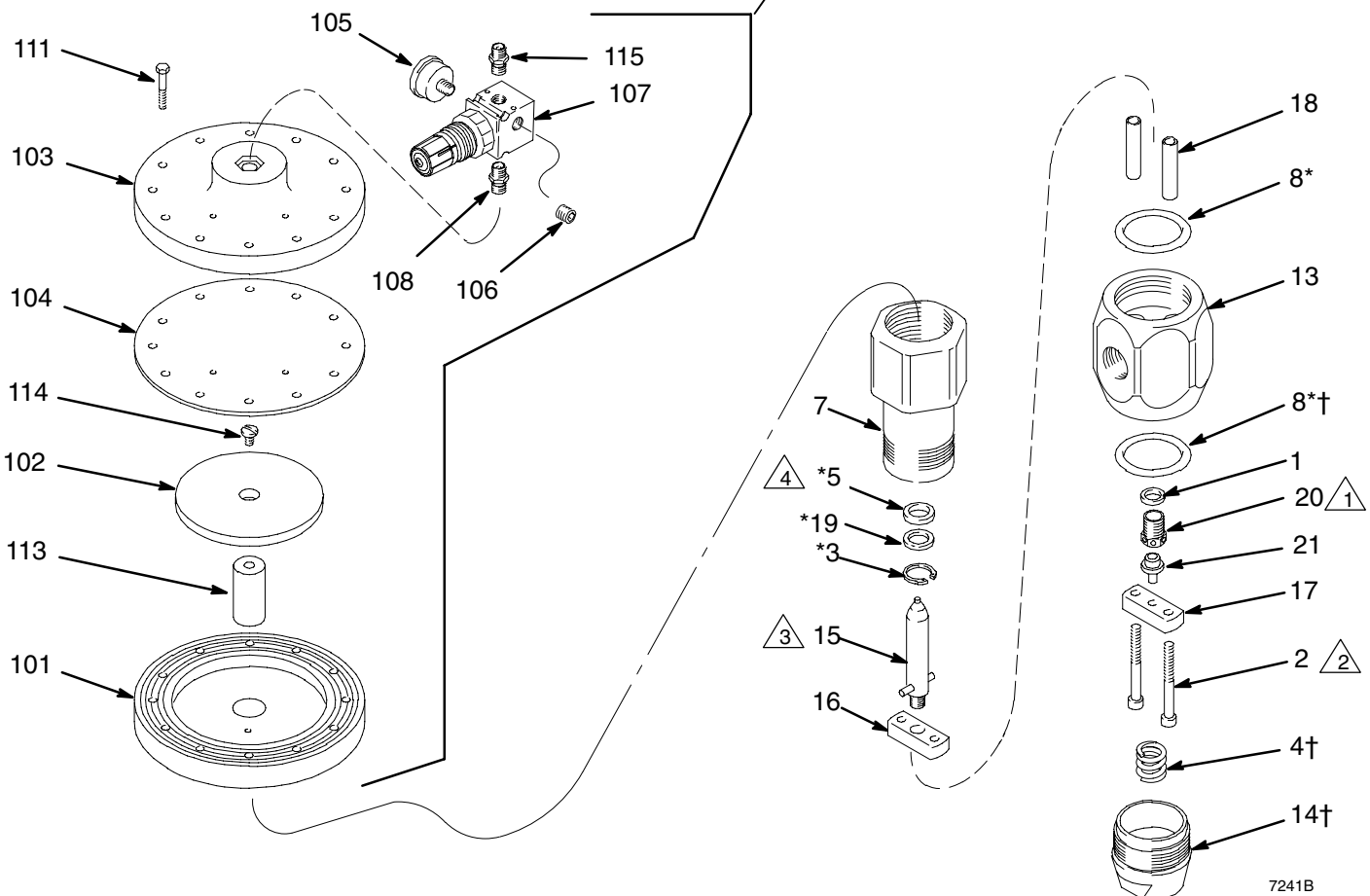
† Included in Repair Kit 246728.

Parts

Model 246687, Series A Air-Operated Regulator

- △1 Torque to 35–40 ft-lb (47–54 N•m)
- △2 Use Loctite® TL-242 on threads
- △3 Use Loctite® 601 on threads.
Torque to 15–25 ft-lb (20–34 N•m)
- △4 Lips must face retaining ring (3)

Ref. No. 22 Conversion Kit 915587



7241B

Parts

Model 246687, Series A Air-Operated Regulator

Diaphragm Housing / Conversion Kit 915587

Ref No.	Part No.	Description	Qty.	Ref No.	Part No.	Description	Qty.
1	607718	WASHER, seal	1	101	180980	HOUSING, diaphragm	1
2	503143	SCREW, socket head; 5/16–18 x 2.75 in.	2	102	180978	WASHER, support	1
3*	102386	RING, retaining	1	103	180981	COVER, diaphragm	1
4†	15C281	SPRING, compression	1	104	180979	DIAPHRAGM	1
5*	503140	SEAL, mastic reg., urethane	1	105	108190	GAUGE, air pressure; 0–100 psi (0–0.7 MPa, 0–7 bar) range	1
7	607500	CYLINDER, valve	1	106	100403	PLUG, pipe; 1/8–27 npt(f)	1
8*†	162841	PACKING, o-ring; buna-N	2	107	110341	REGULATOR, air, relieving; see manual 308167	1
13	607502	HOUSING, regulator	1	108	103656	NIPPLE, pipe, hex; 1/8–27 npt	1
14†	15C280	CAP, end	1	111	114104	CAPSCREW, hex washer hd; 1/4–20 x 1.5	12
15	220899	PISTON, regulator	1	113	180975	ROD, piston	1
16	607497	BAR, support top	1	114	103263	SCREW, mach; 1/4–20 x 3/4 in.	1
17	607498	BAR, support bottom	1	115	151519	NIPPLE, 1/4 x 1/8 npt	1
18	607496	SPACER	2				
19*	607495	WASHER	1				
20	904030	SEAT, regulator; 0.312 in. (8 mm) dia.	1				
21	904029	BALL, seat	1				
22	915587	HOUSING, diaphragm (See parts list at right)	1				

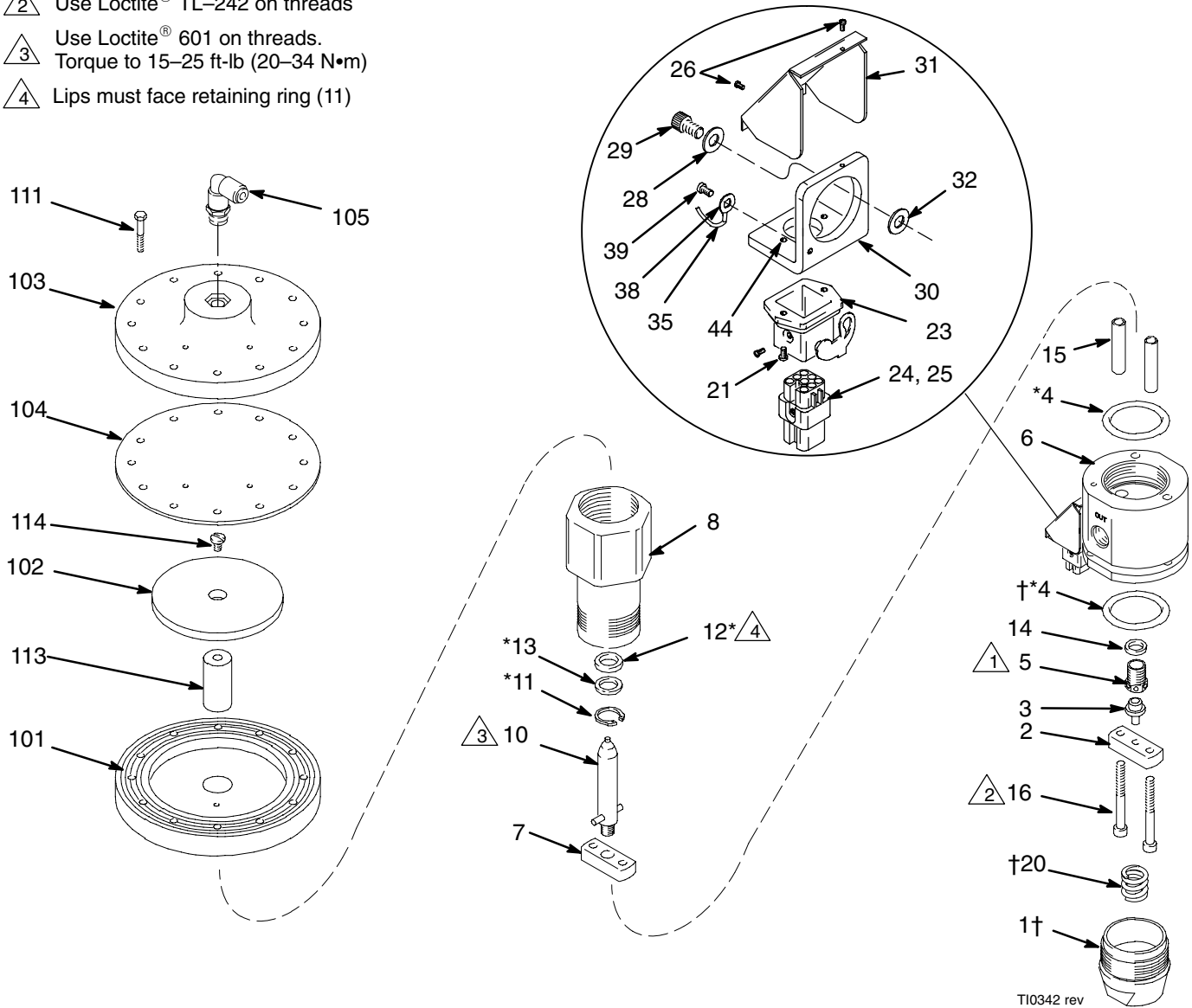
* Included in Repair Kit 918448.

† Included in Repair Kit 246728.

Parts

Model 246643, 240 Volt Heated Regulator

- △1 Torque to 35–40 ft-lb (47–54 N•m)
- △2 Use Loctite® TL-242 on threads
- △3 Use Loctite® 601 on threads.
Torque to 15–25 ft-lb (20–34 N•m)
- △4 Lips must face retaining ring (11)



Parts

Model 246643, 240 Volt Heated Regulator

Ref No.	Part No.	Description	Qty.	Ref No.	Part No.	Description	Qty.
1†	15C280	CAP, end	1	101	180980	HOUSING, diaphragm	1
2	607498	BAR, support bottom	1	102	180978	WASHER, support	1
3	904029	BALL, seat	1	103	180981	COVER, diaphragm	1
4*†	115938	PACKING, o-ring; fluoroelastomer	2	104	180979	DIAPHRAGM	1
5	904030	SEAT, regulator	1	105	198171	ELBOW	1
6	617434	HOUSING, regulator	1	111	114104	CAPSCREW, hex washer hd; 1/4–20 x 1.5	12
7	607497	SUPPORT, piston	1	113	180975	ROD, piston	1
8	607500	CYLINDER, valve	1	114	103263	SCREW, mach; 1/4–20 x 3/4 in.	1
10	220899	PISTON, regulator	1				
11*	102386	RING, retaining	1				
12*	115939	SEAL, mastic reg. fluoroelastomer	1				
13*	607495	WASHER	1				
14	607718	WASHER, seal	1				
15	607496	SPACER	2				
16	503143	SCREW, socket head; 5/16–18 x 2.75 in.	2				
20†	15C281	SPRING, compression	1				
21	100171	SCREW, machine pnh	2				
23	115861	BULKHEAD, housing	1				
24	115860	INSERT, male	1				
25	115862	CONNECTOR, male	5				
26	C19269	SCREW, machine, slotted	2				
28	C19197	WASHER, plain	2				
29	C19800	SCREW, cap, socket hd	2				
30	C34043	BRACKET	1				
31	C34040	COVER	1				
32	C19721	WASHER	1				
33	C32255	SENSOR, temperature See page 31 electrical diagram	1				
34	198600	CARTRIDGE, heater See page 31 electrical diagram	2				
35	065345	WIRE, copper electrical (16AWG); 0.5 ft (0.15 m) See page 31 electrical diagram	1				
38	101674	TERMINAL, ring See page 31 electrical diagram	1				
39	112144	SCREW, mach pan hd See page 31 electrical diagram	1				
44	102974	NUT, hex	2				

* Included in Repair Kit 233131.

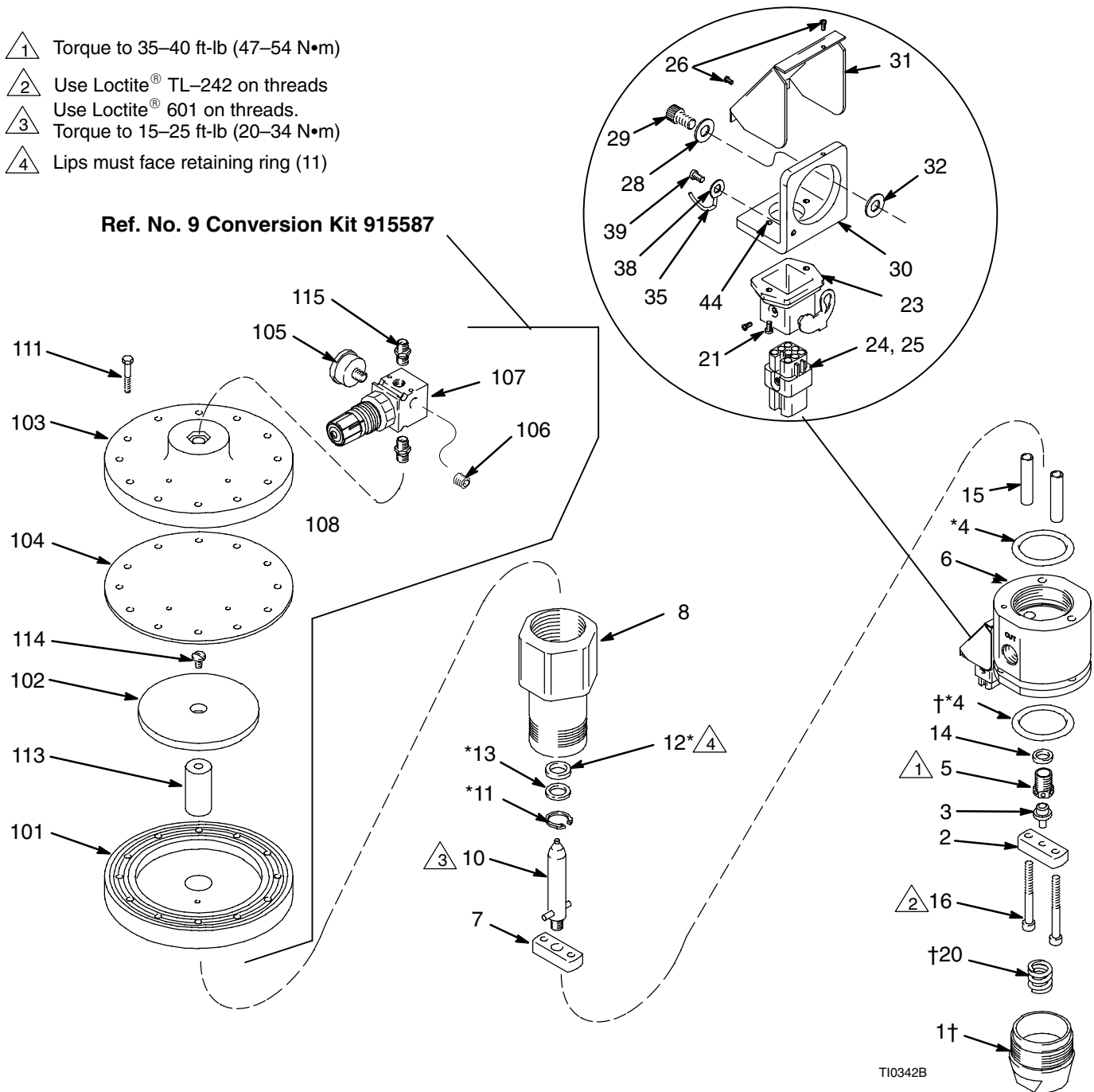
† Included in Repair Kit 246728.

Parts

Model 246688, 240 Volt Heated Regulator

- △1 Torque to 35–40 ft-lb (47–54 N•m)
- △2 Use Loctite® TL-242 on threads
- △3 Use Loctite® 601 on threads.
- △3 Torque to 15–25 ft-lb (20–34 N•m)
- △4 Lips must face retaining ring (11)

Ref. No. 9 Conversion Kit 915587



T10342B

Parts

Model 246688, 240 Volt Heated Regulator

Ref No.	Part No.	Description	Qty.
1†	15C280	CAP, end	1
2	607498	BAR, support bottom	1
3	904029	BALL, seat	1
4*†	115938	PACKING, o-ring; fluoroelastomer	2
5	904030	SEAT, regulator	1
6	617434	HOUSING, regulator	1
7	607497	SUPPORT, piston	1
8	607500	CYLINDER, valve	1
9	915587	HOUSING, diaphragm (See separate parts list)	1
10	220899	PISTON, regulator	1
11*	102386	RING, retaining	1
12*	115939	SEAL, mastic reg. fluoroelastomer	1
13*	607495	WASHER	1
14	607718	WASHER, seal	1
15	607496	SPACER	2
16	503143	SCREW, socket head; 5/16–18 x 2.75 in.	2
20†	15C281	SPRING, compression	1
21	100171	SCREW, machine pnh	2
23	115861	BULKHEAD, housing	1
24	115860	INSERT, male	1
25	115862	CONNECTOR, male	5
26	C19269	SCREW, machine, slotted	2
28	C19197	WASHER, plain	2
29	C19800	SCREW, cap, socket hd	2
30	C34043	BRACKET	1
31	C34040	COVER	1
32	C19721	WASHER	1
33	C32255	SENSOR, temperature See page 31 electrical diagram	1
34	198600	CARTRIDGE, heater See page 31 electrical diagram	2
35	065345	WIRE, copper electrical (16AWG); 0.5 ft (0.15 m) See page 31 electrical diagram	1
38	101674	TERMINAL, ring See page 31 electrical diagram	1
39	112144	SCREW, mach pan hd See page 31 electrical diagram	1
44	102974	NUT, hex	2

Diaphragm Housing / Conversion Kit 915587

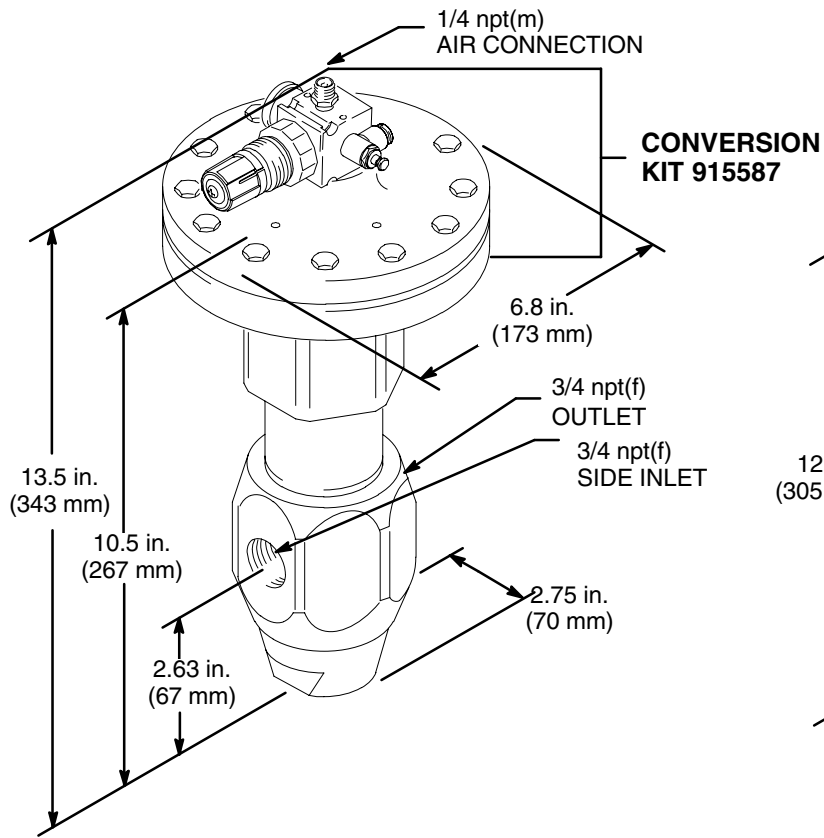
Includes items 101–115

Ref No.	Part No.	Description	Qty.
101	180980	HOUSING, diaphragm	1
102	180978	WASHER, support	1
103	180981	COVER, diaphragm	1
104	180979	DIAPHRAGM	1
105	108190	GAUGE, air pressure; 0–100 psi (0–0.7 MPa, 0–7 bar) range	1
106	100403	PLUG, pipe; 1/8–27 npt(f)	1
107	110341	REGULATOR, air, relieving; see manual 308167	1
108	103656	NIPPLE, pipe, hex; 1/8–27 npt	1
111	114104	CAPSCREW, hex washer hd; 1/4–20 x 1.5	12
113	180975	ROD, piston	1
114	103263	SCREW, mach; 1/4–20 x 3/4 in.	1
115	151519	NIPPLE, 1/4 x 1/8 npt	1

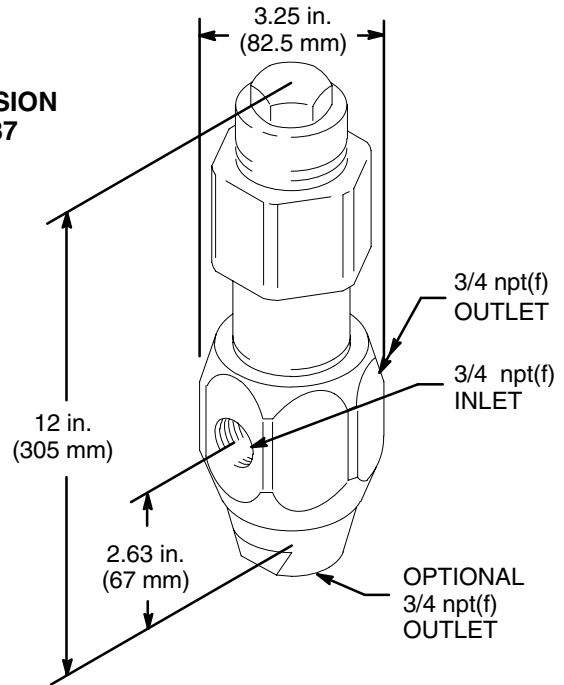
* Included in Repair Kit 233131.

† Included in Repair Kit 246728.

Dimensions



**Models 961635, C58318, 243700,
C59584, 244740, 246642, 246643, 246687,
and 246688.**



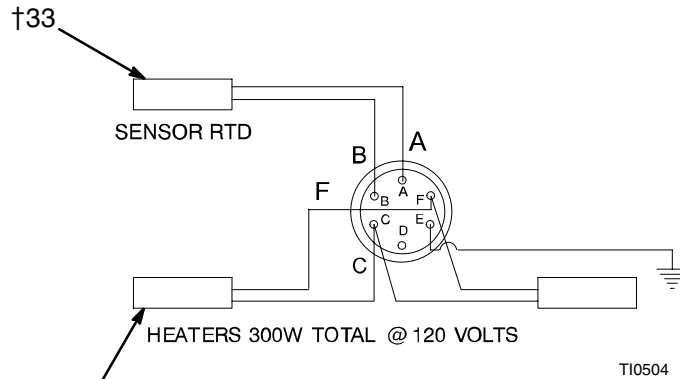
Model 903958 and C58318

7243B

Wiring Diagram

These regulators are controlled by Graco Therm-O-Flow controls.

120 Volt Models 918447



† 108.2 Ω (+/- 1.1 Ω @ 70°F)

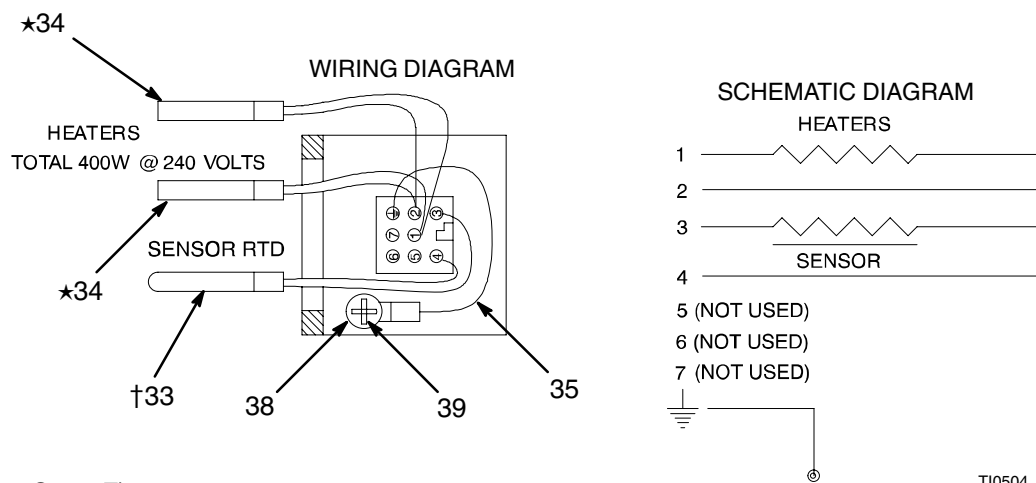
‡ 96 Ω (+9.6 Ω /-14.4 Ω each)

Resistance measurements across pins C and F = 40.8 – 52.8 Ω

NOTE: Allow sufficient lead wire length to be able to rotate connector bracket +/-180°

This regulator is controlled by Graco Therm-O-Flow Plus controls.

240 Volt Model 243700, 246643, and 246688



† 108.2 Ω (+/- 1.1 Ω @ 70°F)

★ 288 Ω (+28.8 Ω /-14.4 Ω each)

Resistance measurements across pins 1 and 2 = 136.8 – 158.4 Ω

Technical Data

Category	Data
Regulated Fluid Pressure Range	<i>Models 961635, C58318, and 244740</i> 250–4500 psi (1.7–31.0 MPa, 17–310 bar) <i>Models 243700 and 918447</i> 250–3500 psi (1.7–24.1 MPa, 17–241 bar) <i>Model 903958</i> High Range: 1000–4500 psi (7.0–31.0 MPa, 70–310 bar) Low Range: 400–1000 psi (2.8–7.0 MPa, 28–70 bar) <i>Models 246642 and 246687</i> 100–4500 psi (0.7–31.0 MPa, 7–310 bar) <i>Model 246643 and 246688</i> 100–3500 psi (0.7–24.1 MPa, 7–241 bar)
Maximum Fluid Inlet Pressure	5000 psi (34.4 MPa, 344 bar)
Maximum Fluid Temperatures Ambient or conditioned Heated	140°F (60°C) 400°F (202°C)
Pressure Drop (Measured at 400 psi inlet pressure and 1.5 gpm)	Viscosity of 25,000 CPS: 100 psid Viscosity of 80,000 CPS: 375 psid
Wetted Parts 903958, 961635, 244740, 246642, and 246687	zinc-plated carbon steel, brass, stainless steel, Buna-N, urethane, tungsten carbide
Wetted Parts 243700, 918447, 246643, and 246688	zinc-plated carbon steel, brass, stainless steel, fluoroelastomer, tungsten carbide
Wetted Parts C58318	303, 304, 316 stainless steel, tungsten carbide, UHMWPE, ethylene propylene, PTFE
Inlet (one)	3/4 npt(f), at side
Outlets (two)	3/4 npt(f), at side and bottom, at side only on 246642, 246643, 246687, and 246688.
Weights	<i>Air Operated Model 961635:</i> 17.75 lb (7.9 kg) <i>Spring Operated Model 903958:</i> 13.5 lb (6.1 kg)

Loctite® is a registered trademark of the Loctite Corporation.

Accessories

113654 Fluid Pressure Gauge

Maximum pressure: 5000 psi (34 MPa, 340 bar).
1/4 npt(m). Requires bushing (100615).

521079 Low Range Conversion Spring

Replaces the original spring in the 903958 regulator when 400–1000 psi (2.8–7.0 MPa, 28–70 bar) regulated pressure range is required.

C06234 Bleed Valve (3/8 NPT)

Adjustable air regulator bleed for improved fluid pressure accuracy. Replaces the plug in air regulator outlet port.

915587 Spring to Air Conversion Kit

Converts an existing 903958 spring-operated regulator to an air-operated regulator

246728 Spring Loaded Fluid Section Conversion Kit

Replaces end cap 607499 with 15C280 and adds spring 15C281. Allows for lower regulated outlet fluid pressure. The appropriate o-ring must be used for the correct regulator. O-rings are shipped for all regulator assemblies. Refer to parts list for your regulator and install the appropriate o-ring.

247157 Mounting Bracket Kit

Available for Model 918447 only.

Graco Standard Warranty

Graco warrants all equipment 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.

This warranty does not cover, and Graco shall not be liable for general wear and tear, or any malfunction, damage or wear caused by faulty installation, misapplication, abrasion, corrosion, inadequate or improper maintenance, negligence, accident, tampering, or substitution of non-Graco component parts. Nor shall Graco be liable for malfunction, damage or wear caused by the incompatibility of Graco equipment with structures, accessories, equipment or materials not supplied by Graco, or the improper design, manufacture, installation, operation or maintenance of structures, accessories, equipment or materials not supplied by Graco.

This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized Graco distributor for verification of the claimed defect. If the claimed defect is verified, Graco will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser transportation prepaid. If inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor, and transportation.

THIS WARRANTY IS EXCLUSIVE, AND IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

Graco's sole obligation and buyer's sole remedy for any breach of warranty shall be as set forth above. The buyer agrees that no other remedy (including, but not limited to, incidental or consequential damages for lost profits, lost sales, injury to person or property, or any other incidental or consequential loss) shall be available. Any action for breach of warranty must be brought within two (2) years of the date of sale.

Graco makes no warranty, and disclaims all implied warranties of merchantability and fitness for a particular purpose in connection with accessories, equipment, materials or components sold but not manufactured by Graco. These items sold, but not manufactured by Graco (such as electric motors, switches, hose, etc.), are subject to the warranty, if any, of their manufacturer. Graco will provide purchaser with reasonable assistance in making any claim for breach of these warranties.

In no event will Graco be liable for indirect, incidental, special or consequential damages resulting from Graco supplying equipment hereunder, or the furnishing, performance, or use of any products or other goods sold hereto, whether due to a breach of contract, breach of warranty, the negligence of Graco, or otherwise.

FOR GRACO CANADA CUSTOMERS

The parties acknowledge that they have required that the present document, as well as all documents, notices and legal proceedings entered into, given or instituted pursuant hereto or relating directly or indirectly hereto, be drawn up in English. Les parties reconnaissent avoir convenu que la rédaction du présente document sera en Anglais, ainsi que tous documents, avis et procédures judiciaires exécutés, donnés ou intentés à la suite de ou en rapport, directement ou indirectement, avec les procédures concernées.

Graco Information

TO PLACE AN ORDER, contact your Graco distributor, or call one of the following numbers to identify the distributor closest to you:

1-800-328-0211 Toll Free

612-623-6921

612-378-3505 Fax

*All written and visual data contained in this document reflects the latest product information available at the time of publication.
Graco reserves the right to make changes at any time without notice.*

MM 307517

Graco Headquarters: Minneapolis

International Offices: Belgium, China, Japan, Korea

GRACO INC. P.O. BOX 1441 MINNEAPOLIS, MN 55440-1441

www.graco.com

307517 08/1981 Revised 7/2006