

Spring-Operated and Air-Operated, High Pressure

Mastic Fluid Regulators

307517ZAE

EN

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. For professional use only.

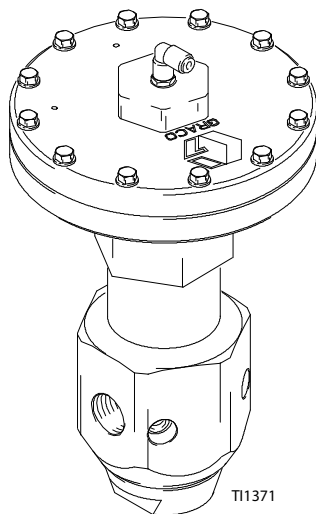
5000 psi (34.4 MPa, 344 bar) Maximum Inbound Fluid Pressure

See page 2 for model information.

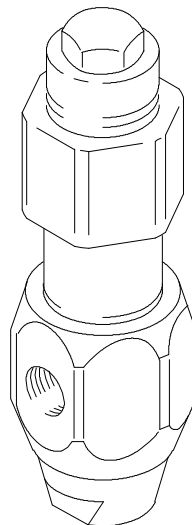


Important Safety Instructions

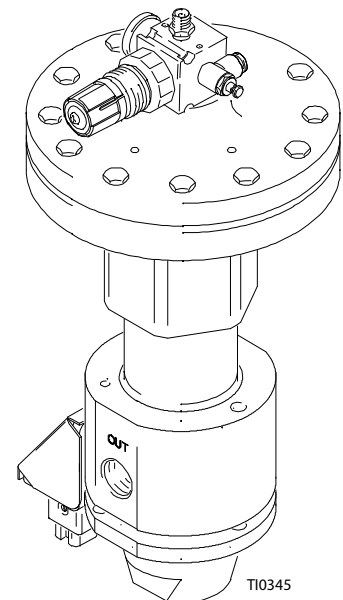
Read all warnings and instructions in this manual. Save these instructions.



Model 244740



Model 903958



Model 243700

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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 29)	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 C	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 C	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
262549	Series A	Air-operated	100--2600 psi (0.7--18.0 MPa, 7--180 bar)	60 psi (0.4 MPa, 4bar)	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
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)	22
246688	240 VAC	Air-operated	100-3500 psi (0.7-24.1 MPa, 7-241 bar)	65 psi (0.45 MPa, 4.5 bar)	24

Warnings

The following warnings are for the setup, use, grounding, maintenance, and repair of this equipment. The exclamation point symbol alerts you to a general warning and the hazard symbols refer to procedure-specific risks. When these symbols appear in the body of this manual or on warning labels, refer back to these Warnings. Product-specific hazard symbols and warnings not covered in this section may appear throughout the body of this manual where applicable.

 <h2 style="margin: 0;">WARNING</h2>	
    	<p>SKIN INJECTION HAZARD</p> <p>High-pressure fluid from gun, hose leaks, or ruptured components will pierce skin. This may look like just a cut, but it is a serious injury that can result in amputation. Get immediate surgical treatment.</p> <ul style="list-style-type: none"> • Do not spray without tip guard and trigger guard installed. • Engage trigger lock when not spraying. • Do not point gun at anyone or at any part of the body. • Do not put your hand over the spray tip. • Do not stop or deflect leaks with your hand, body, glove, or rag. • Follow the Pressure Relief Procedure when you stop spraying and before cleaning, checking, or servicing equipment. • Tighten all fluid connections before operating the equipment. • Check hoses and couplings daily. Replace worn or damaged parts immediately.
   	<p>FIRE AND EXPLOSION HAZARD</p> <p>Flammable fumes, such as solvent and paint fumes, in work area can ignite or explode. Paint or solvent flowing through the equipment can cause static sparking. To help prevent fire and explosion:</p> <ul style="list-style-type: none"> • Use equipment only in well-ventilated area. • Eliminate all ignition sources; such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static sparking). • Ground all equipment in the work area. See Grounding instructions. • Never spray or flush solvent at high pressure. • Keep work area free of debris, including solvent, rags and gasoline. • Do not plug or unplug power cords, or turn power or light switches on or off when flammable fumes are present. • Use only grounded hoses. • Hold gun firmly to side of grounded pail when triggering into pail. Do not use pail liners unless they are anti-static or conductive. • Stop operation immediately if static sparking occurs or you feel a shock. Do not use equipment until you identify and correct the problem. • Keep a working fire extinguisher in the work area.
	<p>TOXIC FLUID OR FUMES HAZARD</p> <p>Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on skin, inhaled, or swallowed.</p> <ul style="list-style-type: none"> • Read Safety Data Sheets (SDSs) to know the specific hazards of the fluids you are using. • Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.



WARNING



EQUIPMENT MISUSE HAZARD

Misuse can cause death or serious injury.

- Do not operate the unit when fatigued or under the influence of drugs or alcohol.
- Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See **Technical Specifications** in all equipment manuals.
- Use fluids and solvents that are compatible with equipment wetted parts. See **Technical Specifications** in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request Safety Data Sheets (SDSs) from distributor or retailer.
- Do not leave the work area while equipment is energized or under pressure.
- Turn off all equipment and follow the **Pressure Relief Procedure** when equipment is not in use.
- Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only.
- Do not alter or modify equipment. Alterations or modifications may void agency approvals and create safety hazards.
- Make sure all equipment is rated and approved for the environment in which you are using it.
- Use equipment only for its intended purpose. Call your distributor for information.
- Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.
- Do not kink or over bend hoses or use hoses to pull equipment.
- Keep children and animals away from work area.
- Comply with all applicable safety regulations.



MOVING PARTS HAZARD

Moving parts can pinch, cut or amputate fingers and other body parts.

- Keep clear of moving parts.
- Do not operate equipment with protective guards or covers removed.
- Pressurized equipment can start without warning. Before checking, moving, or servicing equipment, follow the Pressure Relief Procedure and disconnect all power sources.



BURN HAZARD

Equipment surfaces and fluid that is heated can become very hot during operation. To avoid severe burns:

- Do not touch hot fluid or equipment.

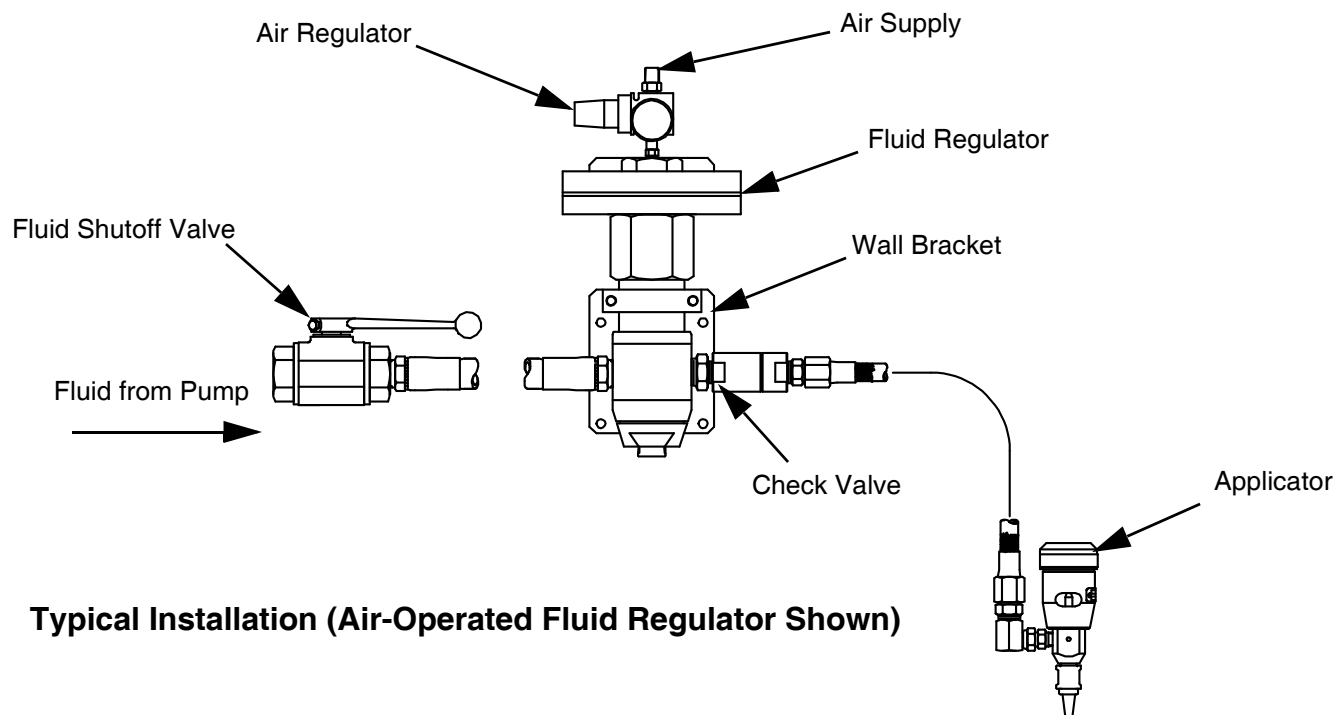


PERSONAL PROTECTIVE EQUIPMENT

Wear appropriate protective equipment when in the work area to help prevent serious injury, including eye injury, hearing loss, inhalation of toxic fumes, and burns. Protective equipment includes but is not limited to:

- Protective eyewear, and hearing protection.
- Respirators, protective clothing, and gloves as recommended by the fluid and solvent manufacturer.

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 26.

! 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 10.

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	26.6

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

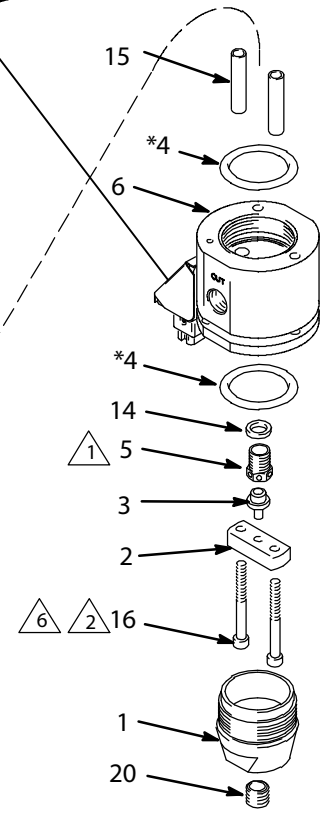
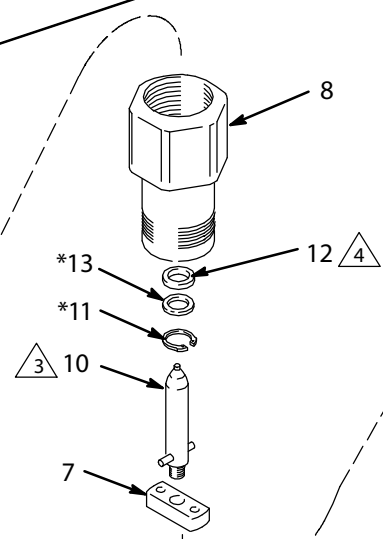
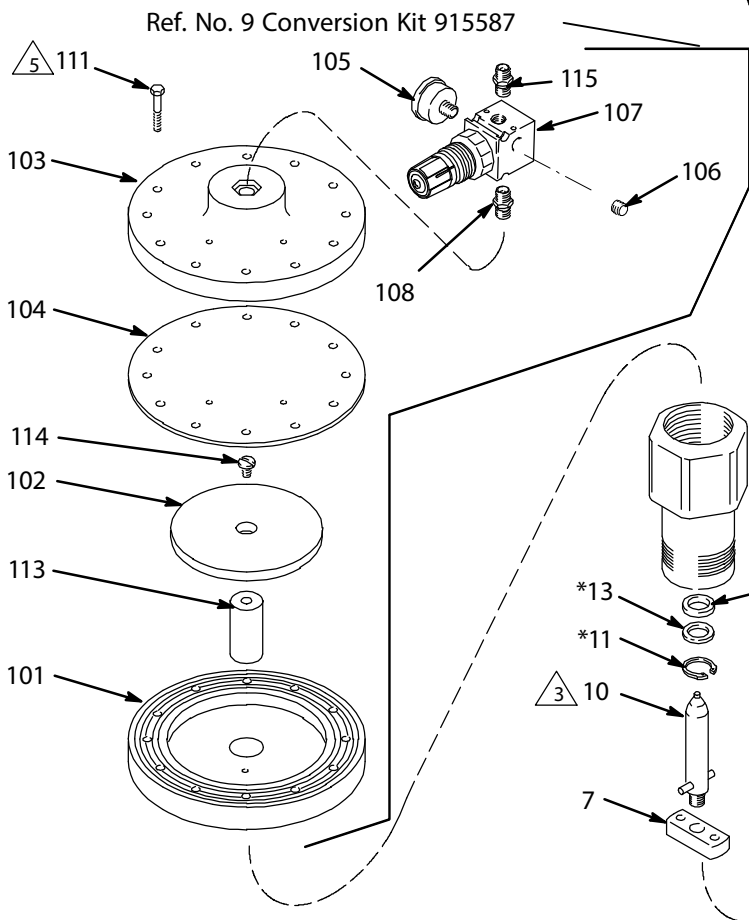
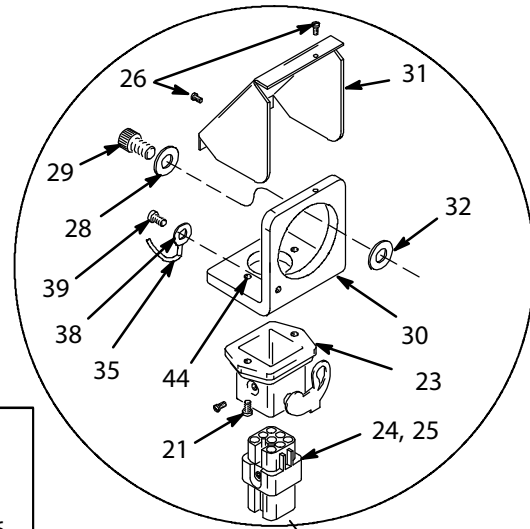
Flush the regulator if possible, relieve fluid pressure, and remove the regulator from the system.

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.

Parts

Model 243700 240 Volt Heated Regulator

- ⚠ 1 Torque to 35-40 ft-lb (47-54 N•m)
- ⚠ 2 Use Loctite® 680 on threads
- ⚠ 3 Use Loctite® 680 on threads.
Torque to 15-25 ft-lb (20-34 N•m)
- ⚠ 4 Lips must face retaining ring (11)
- ⚠ 5 First torque to 30-33 in-lb (3.4-3.7 N•m) in alternating pattern, then torque to 68-72 in-lb (7.7-8.7 N•m) in alternating pattern.
- ⚠ 6 Torque to 12 +/- 2 ft-lb (16 +/- 2.7 N•m)



Model 243700 230 Volt Heated Regulator

Ref.	Part	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 27 electrical diagram	1
34	198600	CARTRIDGE, heater See page 27 electrical diagram	2
35	065345	WIRE, copper electrical (16AWG); 0.5 ft (0.15 m)	1
38	101674	TERMINAL, ring See page 27 electrical diagram	1
39	112144	SCREW, mach pan hd See page 27 electrical diagram	1
44	102974	NUT, hex	2

Diaphragm Housing / Conversion Kit 915587

Includes items 101-115

Ref.	Part	Description	Qty.
101◆	---	HOUSING, diaphragm	1
102	180978	WASHER, support	1
103◆	---	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	SCREW, machine	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 16P596.

**Model 903958, Series B
Spring-Operated Regulator**

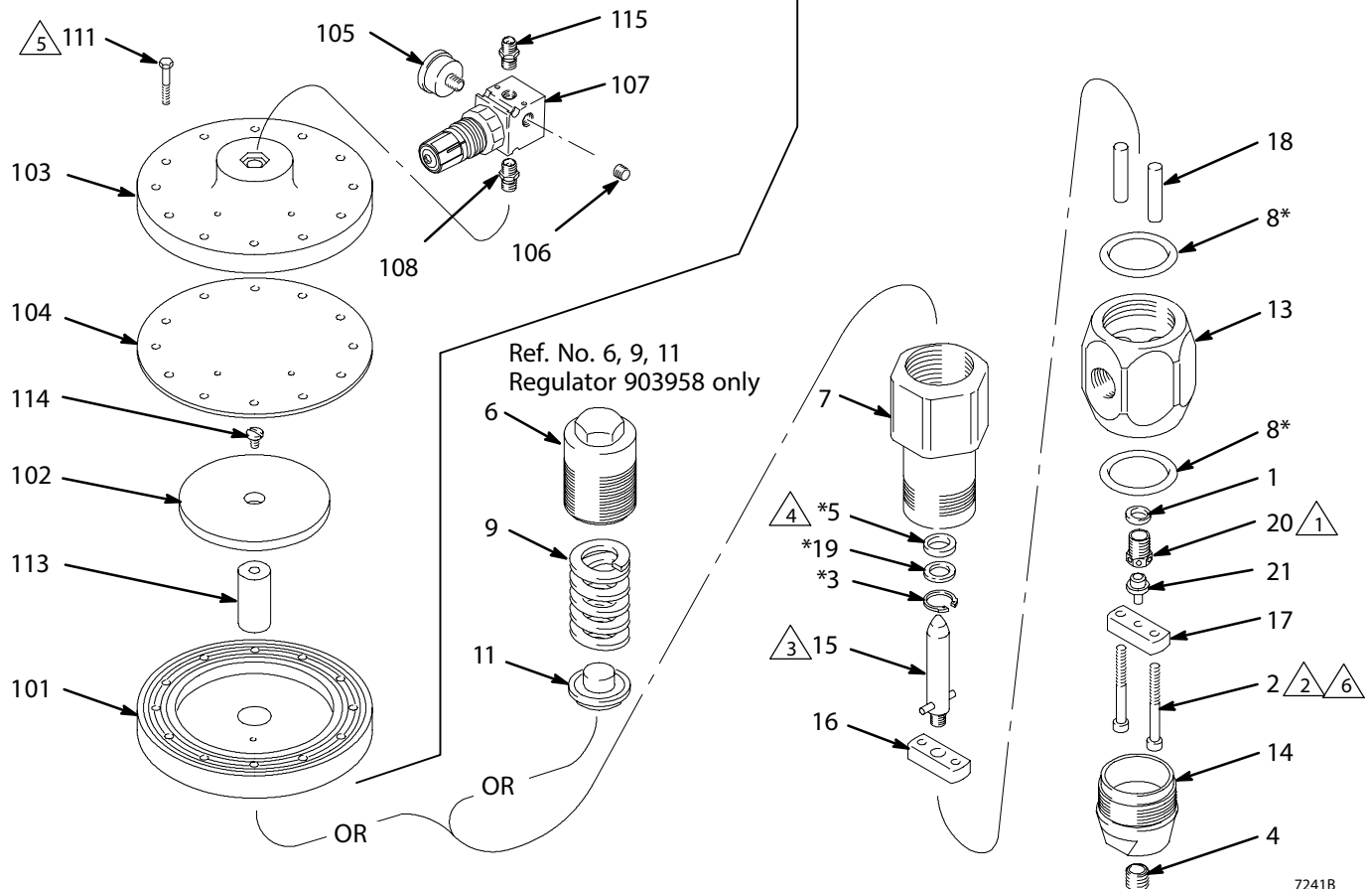
Includes items 1-21

**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® 680 on threads
- ⚠️ 3 Use Loctite® 680 on threads.
Torque to 15-25 ft-lb (20-34 N•m)
- ⚠️ 4 Lips must face retaining ring (3)
- ⚠️ 5 First torque to 30-33 in-lb (3.4-3.7 N•m) in alternating pattern, then torque to 68-72 in-lb (7.7-8.7 N•m) in alternating pattern.
- ⚠️ 6 Torque to 12 +/- 2 ft-lb (16 +/- 2.7 N•m)

Ref. No. 22 Conversion Kit 915587
Regulator 961635 only



7241B

**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.	Part	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*	115938	PACKING, o-ring; fluoroelastomer	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.	Part	Description	Qty.
101◆	---	HOUSING, diaphragm	1
102	180978	WASHER, support	1
103◆	---	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	SCREW, machine	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 29.

◆ Included in Repair Kit 16P596.

Model 244740, Series C Air-Operated Regulator

Includes items 1-37

⚠️ Torque to 30-40 ft-lb
(41-54 N•m)

⚠️ Torque to 75-80 in-lb
(8.5-9 N•m)

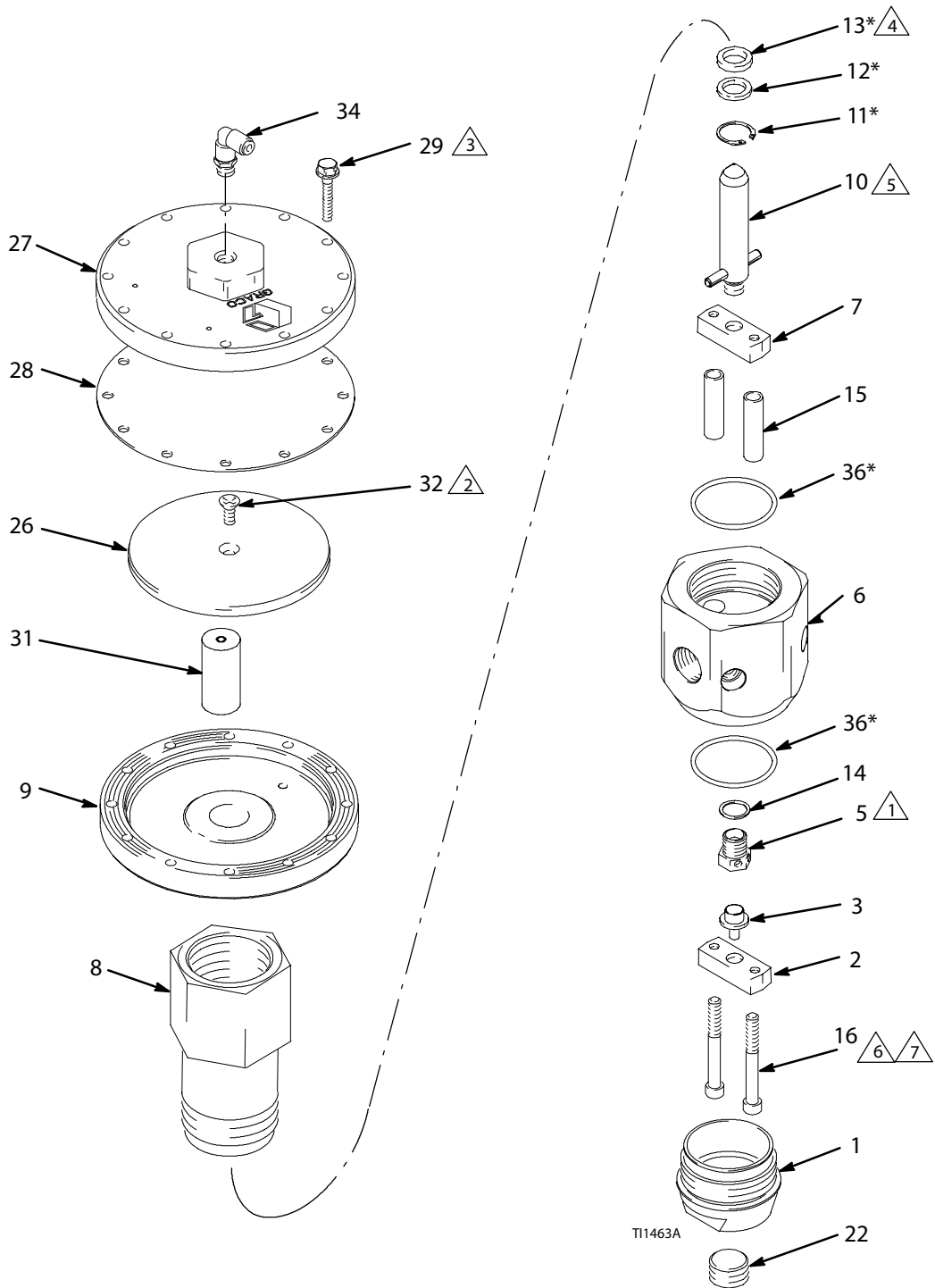
⚠️ First torque to 30-33 in-lb
(3.4-3.7 N•m) in
alternating pattern, then
torque to 68-72 in-lb
(7.7-8.7 N•m) in
alternating pattern.

⚠️ Lips must face retaining
ring (11)

⚠️ Use Loctite® 680 on
threads. Torque to 15-25
ft-lb (20-34 N•m)

⚠️ Torque to 12 +/- 2 ft-lb
(16 +/- 2.7 N•m)

⚠️ Use Loctite® 680 on
threads.



Model 244740, Series C Air-Operated Regulator

Includes items 1-37

Ref.	Part	Description	Qty.	Ref.	Part	Description	Qty.
1	607499	CAP, end	1	26	180978	WASHER, support	1
2	607498	BAR, support bottom	1	27◆	---	COVER, diaphragm	1
3	904029	BALL, seat	1	28◆	180979	DIAPHRAGM	1
5	904030	SEAT, regulator; 0.312 in. (8 mm) dia.	1	29◆	114104	SCREW, machine	12
6	198007	HOUSING, regulator	1	31	180975	ROD, piston	1
7	607497	BAR, support top	1	32	103263	SCREW, machine; 1/4-20 x 3/4 in.	1
8	607500	CYLINDER, valve	1	34	198171	ELBOW	1
9◆	---	HOUSING, diaphragm	1	35	198241	PLUG, port, pressure (not shown)	4
10	220899	PISTON, regulator	1	36*	115938	PACKING, o-ring	2
11*	102386	RING, retaining	1	37	111457	PACKING, o-ring, pressure port (not shown)	4
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				
22	102726	PLUG, pipe, 3/4 in. npt	1				

* Included in Repair Kit 918448.

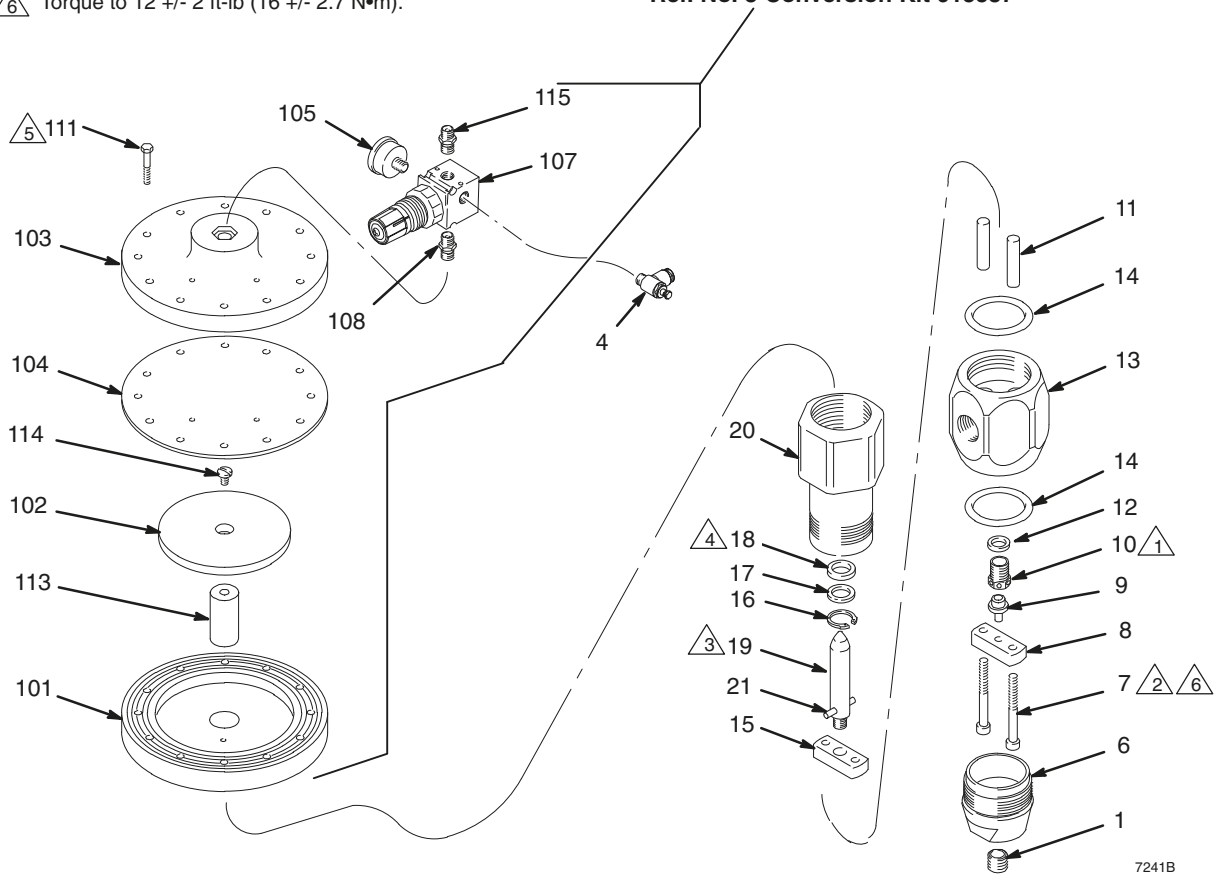
◆ Included in Repair Kit 16P596.

Model C58318

Stainless Steel, Air-Operated Regulator

- △1 Torque to 35–40 ft-lb (47–54 N•m).
- △2 Use Loctite® 680 on threads.
- △3 Use Loctite® 680 on threads.
Torque to 15–25 ft-lb (20–34 N•m).
- △4 Lips must face retaining ring (16).
- △5 First torque to 30–33 in-lb (3.4–3.7 N•m) in alternating pattern, then torque to 68–72 in-lb (7.7–8.7 N•m) in alternating pattern.
- △6 Torque to 12 +/- 2 ft-lb (16 +/- 2.7 N•m).

Ref. No. 3 Conversion Kit 915587



7241B

**Model C58318
Stainless Steel, Air-Operated Regulator**

Ref.	Part	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	115938	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

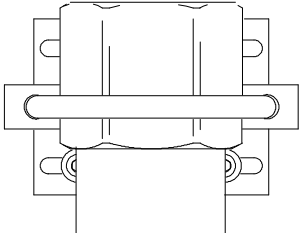
Ref.	Part	Description	Qty.
101◆	---	HOUSING, diaphragm	1
102	180978	WASHER, support	1
103◆	---	COVER, diaphragm	1
104◆	180979	DIAPHRAGM	1
105	108190	GAUGE, air pressure; 0-100 psi (0-0.7 MPa, 0-7 bar) range	1
106	100403	PLUG, pipe; 1/8-27 npt(f) (not shown)	1
107	110341	REGULATOR, air, relieving; see manual 308167	1
108	103656	NIPPLE, pipe, hex; 1/8-27 npt	1
111◆	114104	SCREW, machine	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

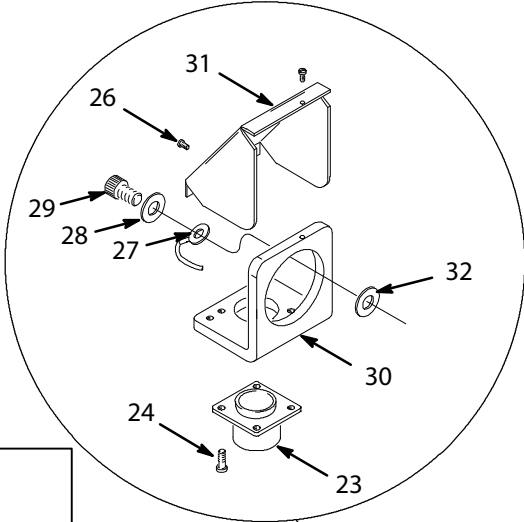
◆ Included in Repair Kit 16P596.

Model 918447 Heated Regulator

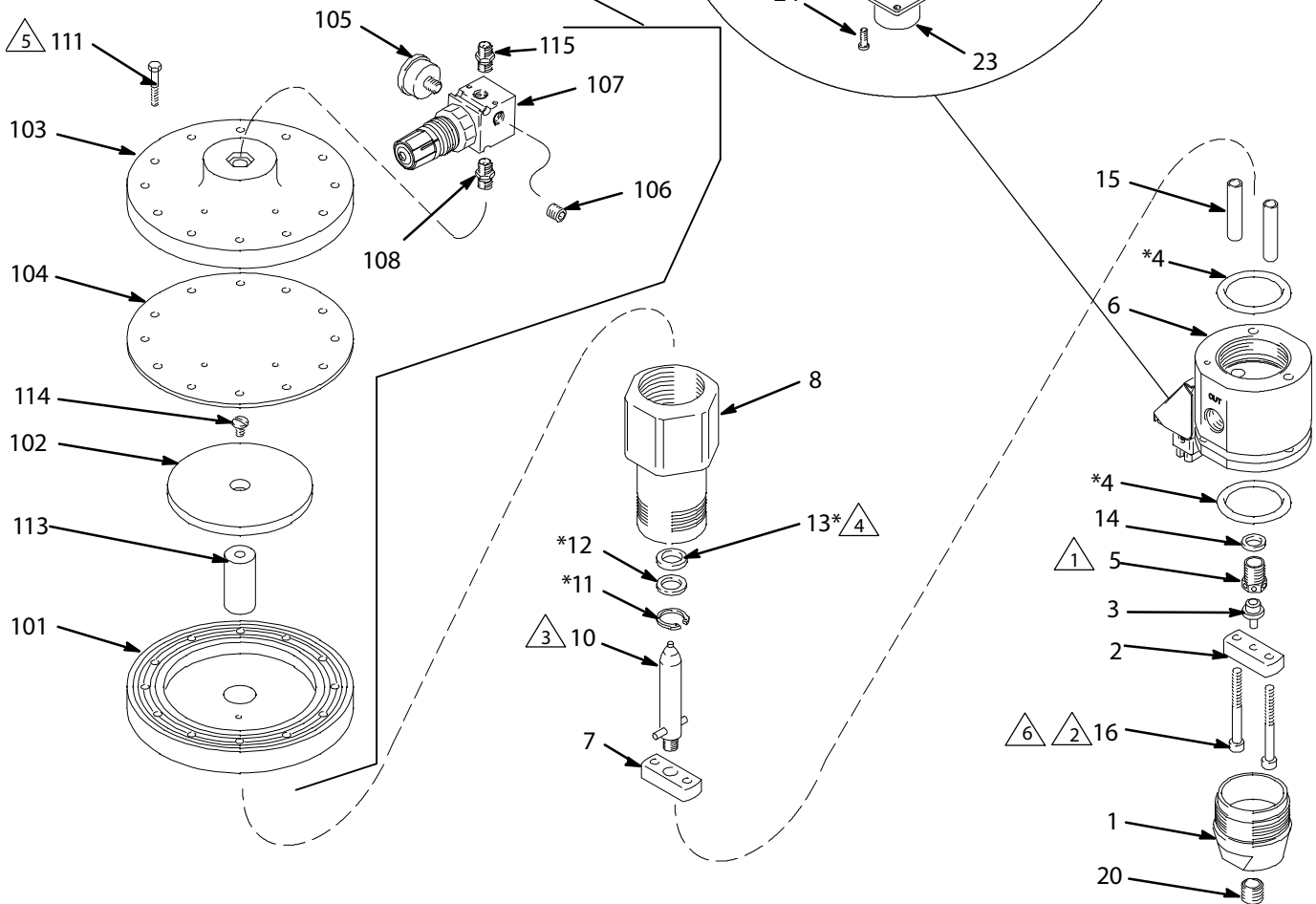
- 1 Torque to 35-40 ft-lb (47-54 N•m)
- 2 Use Loctite® 680 on threads
- 3 Use Loctite® 680 on threads. Torque to 15-25 ft-lb (20-34 N•m)
- 4 Lips must face retaining ring (11)
- 5 First torque to 30-33 in-lb (3.4-3.7 N•m) in alternating pattern, then torque to 68-72 in-lb (7.7-8.7 N•m) in alternating pattern.
- 6 Torque to 12 +/- 2 ft-lb (16 +/- 2.7 N•m)

Mounting B racket Kit 247157
Available for Model 918447 only.
Purchase separately.
See page 31.





Ref. No. 9 Conversion Kit 915587



Model 918447 Heated Regulator

Ref.	Part	Description	Qty.
1	607499	CAP, end	1
2	607498	BAR, support	1
3	904029	BALL, seat	1
4*	115938	PACKING, o-ring	2
5	904030	SEAT, regulator	1
6	617434	HOUSING, heated, 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*	115939	SEAL, rod, .750 ID, fluoroelastomer	1
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 27 electrical diagram	1
34	C31034	HEATER, cartridge See page 27 electrical diagram	2

Diaphragm Housing / Conversion Kit 915587

Includes items 101-115

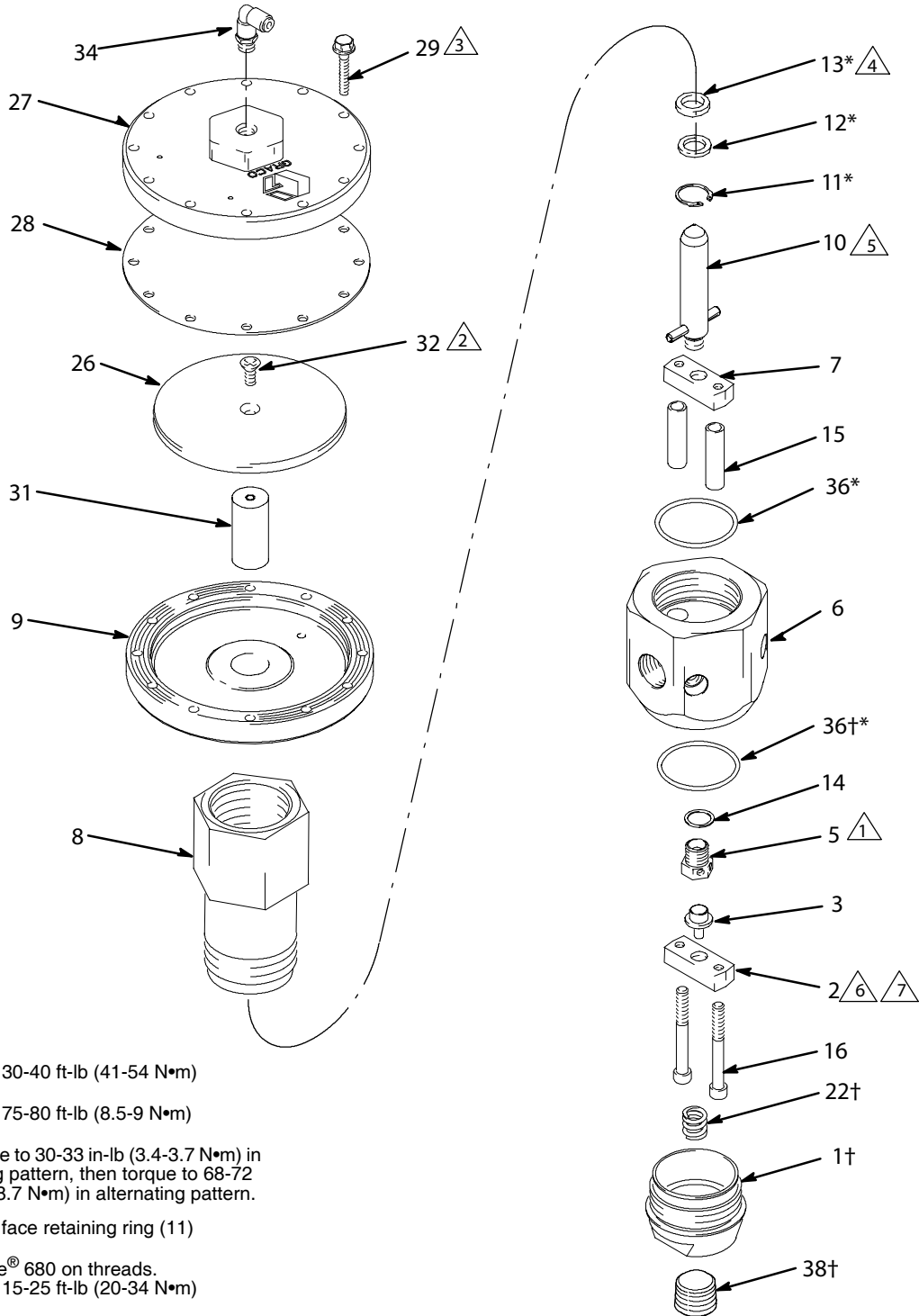
Ref.	Part	Description	Qty.
101◆	---	HOUSING, diaphragm	1
102	180978	WASHER, support	1
103◆	---	COVER, diaphragm	1
104◆	180979	DIAPHRAGM	1
105	108190	GAUGE, air pressure; 0-100 psi (0-0.7 MPa, 0-7 bar) range	1
106	100403	PLUG, pipe; 1/8-27 npt(f)	1
107	110341	REGULATOR, air, relieving; see manual 308167	1
108	103656	NIPPLE, pipe, hex; 1/8-27 npt	1
111◆	114104	SCREW, machine	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 16P596.

Model 246642, Series C Air-Operated Regulator

Includes items 1-38



- ⚠ Torque to 30-40 ft-lb (41-54 N•m)
- ⚠ Torque to 75-80 ft-lb (8.5-9 N•m)
- ⚠ First torque to 30-33 in-lb (3.4-3.7 N•m) in alternating pattern, then torque to 68-72 in-lb (7.7-8.7 N•m) in alternating pattern.
- ⚠ Lips must face retaining ring (11)
- ⚠ Use Loctite® 680 on threads. Torque to 15-25 ft-lb (20-34 N•m)
- ⚠ Use Loctite® 680 on threads.
- ⚠ Torque to 12 +/- 2 ft-lb (16 +/- 2.7 N•m)

Model 246642, Series C Air-Operated Regulator

Includes items 1-37

Ref.	Part	Description	Qty.	Ref.	Part	Description	Qty.
1†	15C280	CAP, end	1	26	180978	WASHER, support	1
2	607498	BAR, support bottom	1	27◆	---	COVER, diaphragm	1
3	904029	BALL, seat	1	28◆	180979	DIAPHRAGM	1
5	904030	SEAT, regulator; 0.312 in. (8 mm) dia.	1	29◆	114104	SCREW, machine	12
6	198007	HOUSING, regulator	1	31	180975	ROD, piston	1
7	607497	BAR, support top	1	32	103263	SCREW, machine; 1/4-20 x 3/4 in.	1
8	607500	CYLINDER, valve	1	34	198171	ELBOW	1
9◆	---	HOUSING, diaphragm	1	35	198241	PLUG, port, pressure (not shown)	4
10	220899	PISTON, regulator	1	36†*	115938	PACKING, o-ring	2
11*	102386	RING, retaining	1	37	111457	PACKING, o-ring, pressure port (not shown)	4
12*	607495	WASHER	1	38†	100721	PLUG, pipe	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				
22†	15C281	SPRING, compression	1				

* Included in Repair Kit 918448.

† Included in Repair Kit 246728.

◆ Included in Repair Kit 16P596.

**Model 246687 and 262549, Series A
Air-Operated Regulator**

Ref.	Part	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†	15C281	SPRING, compression	1
5*	503140	SEAL, mastic reg., urethane	1
7	607500	CYLINDER, valve	1
8*†	115938	PACKING, o-ring; fluoroelastomer	2
13	607502	HOUSING, regulator	1
14†	15C280	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 (See parts list at right)	1
23†	100721	PLUG, pipe	1

**Diaphragm Housing / Conversion Kit
915587**







Ref.	Part	Description	Qty.
101◆	---	HOUSING, diaphragm	1
102	180978	WASHER, support	1
103◆	---	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; model 246687 only, see manual 308167	1
	16G409	REGULATOR, air, relieving; model 262549 only, see manual 308167	
108	156971	NIPPLE, 1/4-18 npt (for 262549)	1
111◆	114104	SCREW, washer	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

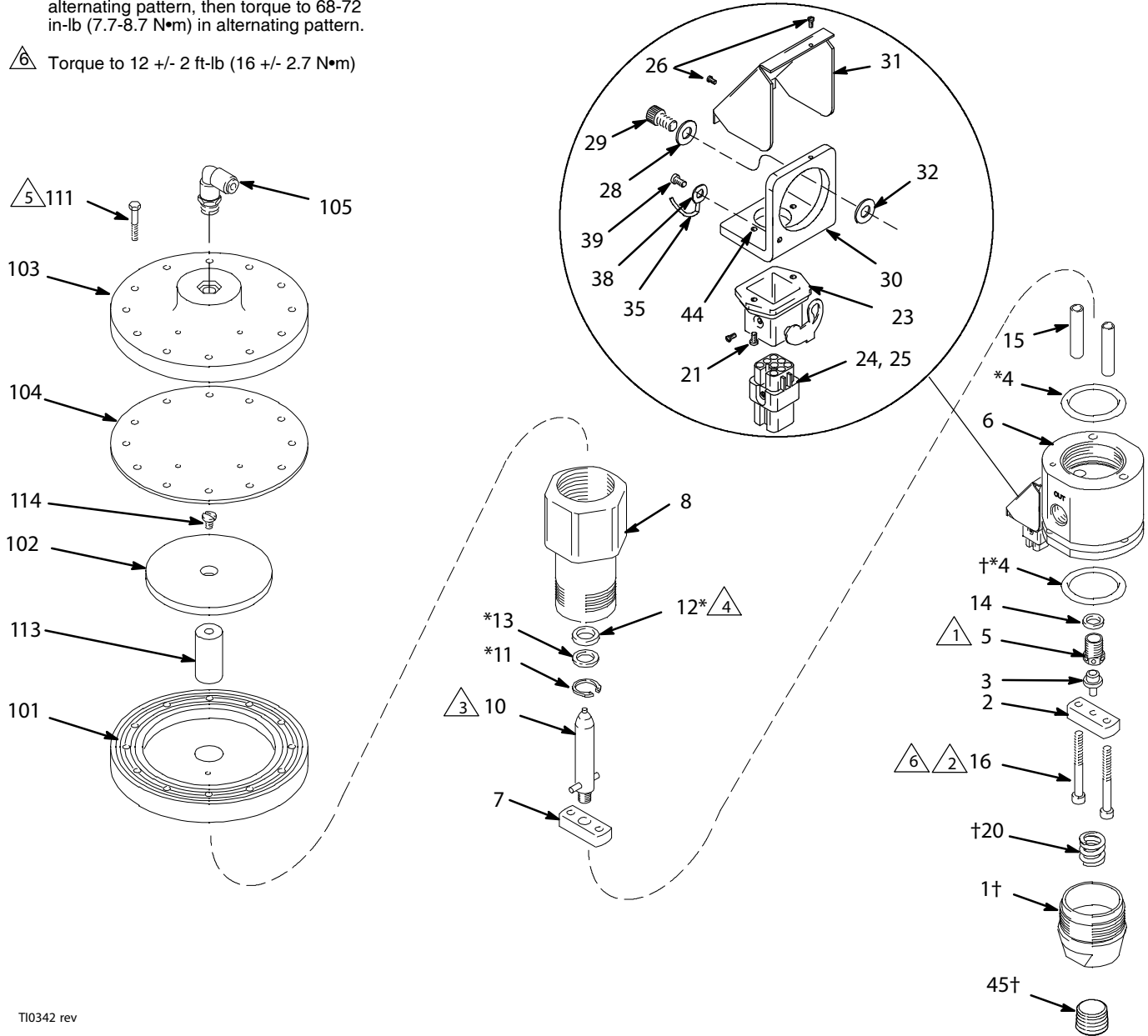
* Included in Repair Kit 918448.

† Included in Repair Kit 246728.

◆ Included in Repair Kit 16P596.

Model 246643, 240 Volt Heated Regulator

-  Torque to 35-40 ft-lb (47-54 N•m)
-  Use Loctite® 680 on threads
-  Use Loctite® 680 on threads.
Torque to 15-25 ft-lb (20-34 N•m)
-  Lips must face retaining ring (11)
-  First torque to 30-33 in-lb (3.4-3.7 N•m) in alternating pattern, then torque to 68-72 in-lb (7.7-8.7 N•m) in alternating pattern.
-  Torque to 12 +/- 2 ft-lb (16 +/- 2.7 N•m)



T10342 rev

Model 246643, 240 Volt Heated Regulator







Ref.	Part	Description	Qty.	Ref.	Part	Description	Qty.
1†	15C280	CAP, end	1	101◆	---	HOUSING, diaphragm	1
2	607498	BAR, support bottom	1	102	180978	WASHER, support	1
3	904029	BALL, seat	1	103◆	---	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	SCREW, machine	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 27 electrical diagram	1				
34	198600	CARTRIDGE, heater See page 27 electrical diagram	2				
35	065345	WIRE, copper electrical (16AWG); 0.5 ft (0.15 m) See page 27 electrical diagram	1				
38	101674	TERMINAL, ring See page 27 electrical diagram	1				
39	112144	SCREW, mach pan hd See page 27 electrical diagram	1				
44	102974	NUT, hex	2				
45†	100721	PLUG, pipe	1				

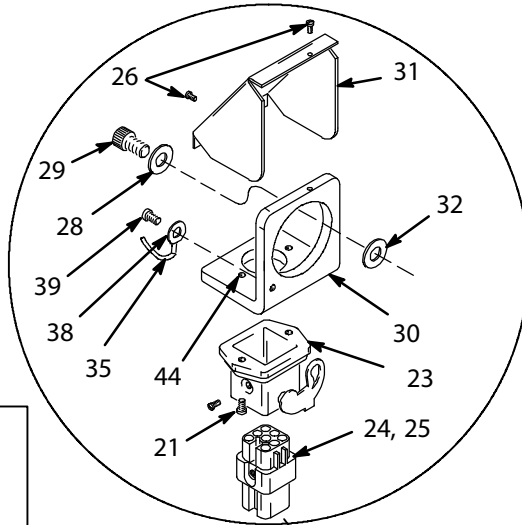
* Included in Repair Kit 233131.

† Included in Repair Kit 246728.

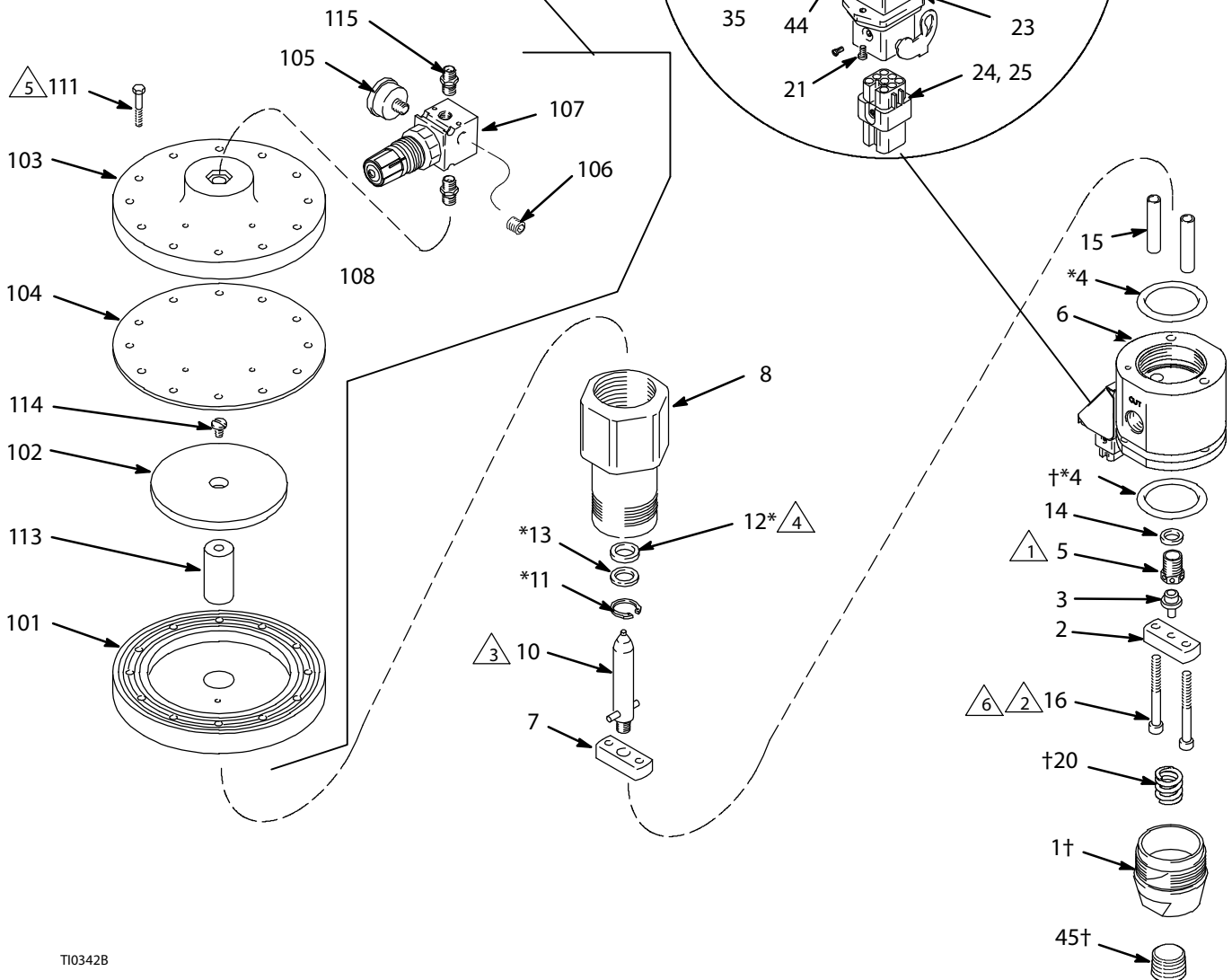
◆ Included in Repair Kit 16P596.

Model 246688, 240 Volt Heated Regulator

-  Torque to 35-40 ft-lb (47-54 N•m)
-  Use Loctite® 680 on threads
-  Use Loctite® 680 on threads.
Torque to 15-25 ft-lb (20-34 N•m)
-  Lips must face retaining ring (11)
-  First torque to 30-33 in-lb (3.4-3.7 N•m) in alternating pattern, then torque to 68-72 in-lb (7.7-8.7 N•m) in alternating pattern.
-  Torque to 12 +/- 2 ft-lb (16 +/- 2.7 N•m)



Ref. No. 9 Conversion Kit 915587



T10342B

Model 246688, 240 Volt Heated Regulator

Ref.	Part	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 27 electrical diagram	1
34	198600	CARTRIDGE, heater See page 27 electrical diagram	2
35	065345	WIRE, copper electrical (16AWG); 0.5 ft (0.15 m) See page 27 electrical diagram	1
38	101674	TERMINAL, ring See page 27 electrical diagram	1
39	112144	SCREW, mach pan hd See page 27 electrical diagram	1
44	102974	NUT, hex	2
45†	100721	PLUG, pipe	1

Diaphragm Housing / Conversion Kit 915587

Includes items 101-115

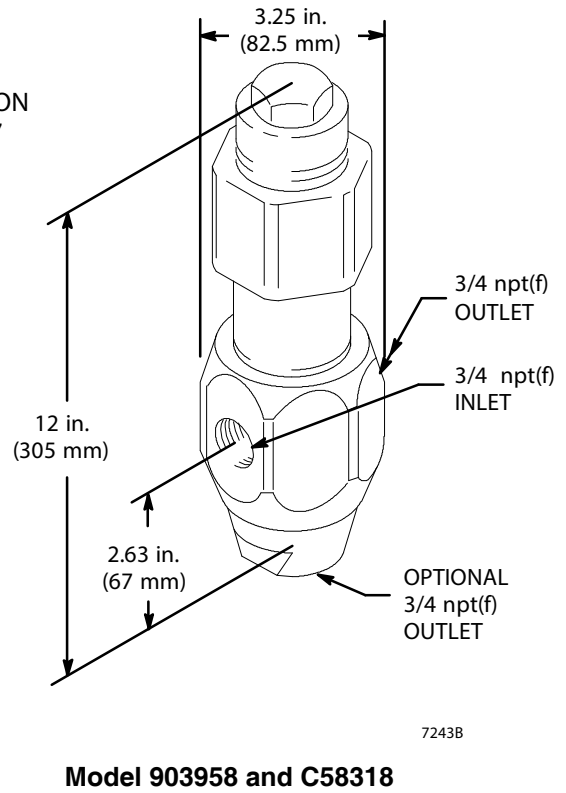
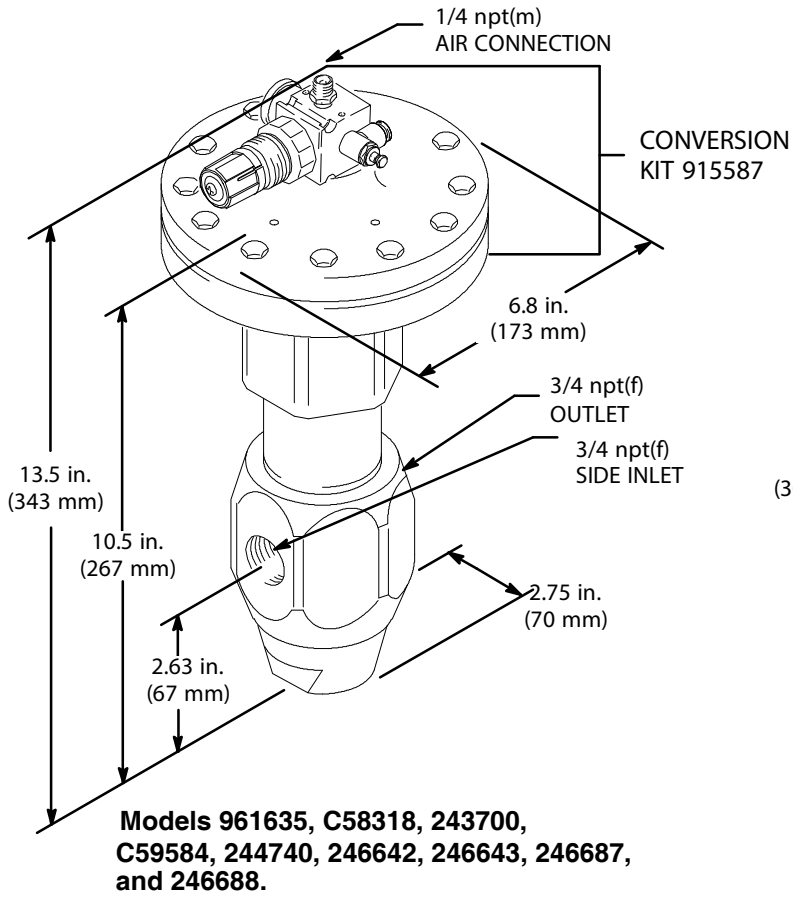
Ref.	Part	Description	Qty.
101◆	---	HOUSING, diaphragm	1
102	180978	WASHER, support	1
103◆	---	COVER, diaphragm	1
104◆	180979	DIAPHRAGM	1
105	108190	GAUGE, air pressure; 0-100 psi (0-0.7 MPa, 0-7 bar) range	1
106	100403	PLUG, pipe; 1/8-27 npt(f)	1
107	110341	REGULATOR, air, relieving; see manual 308167	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.

◆ Included in Repair Kit 16P596.

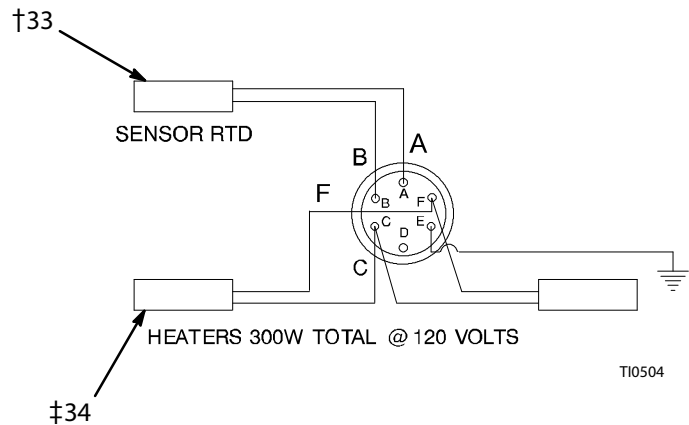
Dimensions



Wiring Diagram

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

120 Volt Models 918447



† 108.2 Ω (+/- 1.1 Ω @ 70°F)

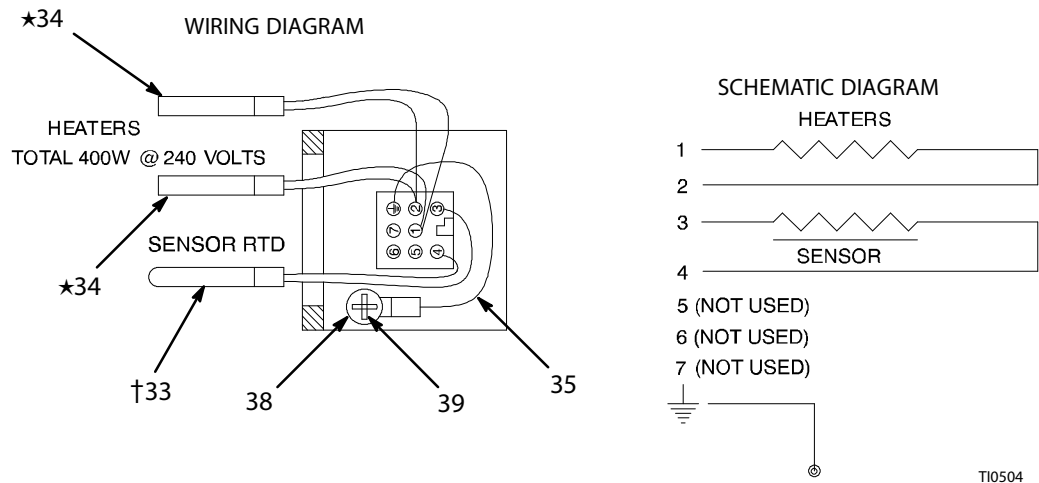
‡ 96 Ω (+9.6 Ω /-14.4 @ Ω each)

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	<p><i>Models 961635, C58318, and 244740</i> 250--4500 psi (1.7--31.0 MPa, 17--310 bar)</p> <p><i>Models 243700 and 918447</i> 250--3500 psi (1.7--24.1 MPa, 17--241 bar)</p> <p><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)</p> <p><i>Models 246642 and 246687</i> 100--4500 psi (0.7--31.0 MPa, 7--310 bar)</p> <p><i>Models 246643 and 246688</i> 100--3500 psi (0.7--24.1 MPa, 7--241 bar)</p>
Maximum Fluid Inlet Pressure	5000 psi (34.4 MPa, 344 bar)
Maximum Fluid Temperatures Ambient or conditioned Heated	<p>140°F (60°C) 400°F (202°C)</p>
Pressure Drop (Measured at 400 psi inlet pressure and 1.5 gpm)	<p>Viscosity of 25,000 CPS: 100 psid Viscosity of 80,000 CPS: 375 psid</p>
Wetted Parts 903958, 961635, 244740, 246642, and 246687	zinc-plated carbon steel, brass, stainless steel, fluoroelastomer, 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, fluoroelastomer, 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, 246688, and 262549.
Weights	<p><i>Air Operated Model 961635: 17.75 lb (7.9 kg)</i> <i>Spring Operated Model 903958: 13.5 lb (6.1 kg)</i></p>

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. O-rings are shipped for all regulator assemblies.

247157 Mounting Bracket Kit

Available for Model 918447 only.

17T131 Silicone Diaphragm

Optional Heavy Duty replacement for 180979.

Graco Standard Warranty

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.

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.

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For patent information, see www.graco.com/patents.

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Original instructions. This manual contains English. MM 307517

Graco Headquarters: Minneapolis

International Offices: Belgium, China, Japan, Korea

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Revision ZAE, October 2018