

## Low Volume Air Regulators

308167L  
ENG

Used to ensure consistent air pressure in systems requiring up to a maximum of 90 scfm.

*300 psi (2.1 bar) Maximum Incoming Air Pressure*

- Diaphragm- and Piston-Operated
- Self-Relieving
- Temperature Range: 40-120°F

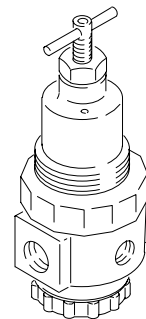


### Important Safety Instructions

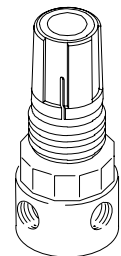
Read all warnings and instructions in this manual. Save these instructions. See page 2 for a list of regulators. Bare regulators are available separately or in the regulator assemblies shown with them. See manual 308168 for higher volume regulators.

### Table of Contents

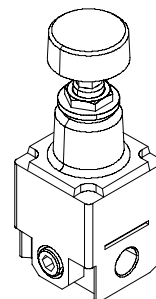
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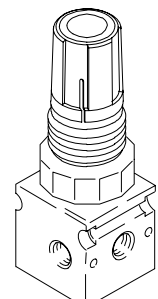
104266, 104267,  
171937, 110234,  
113406



104815  
110318



16G409

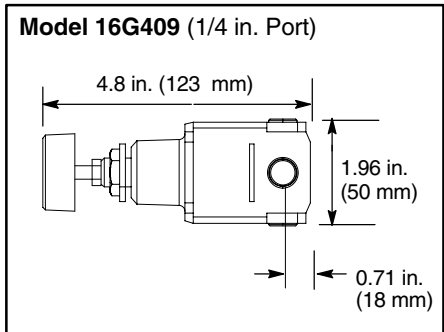
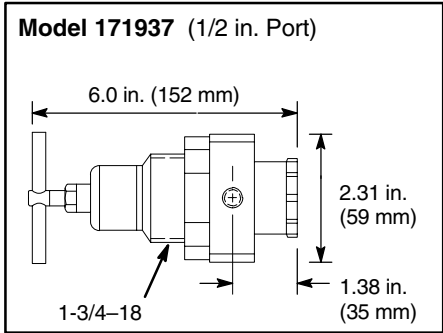
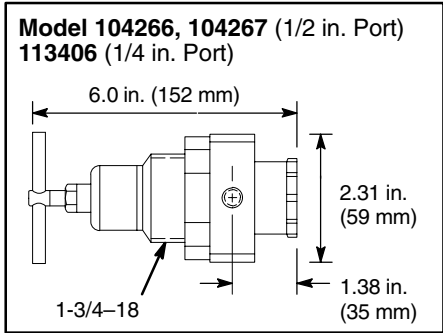
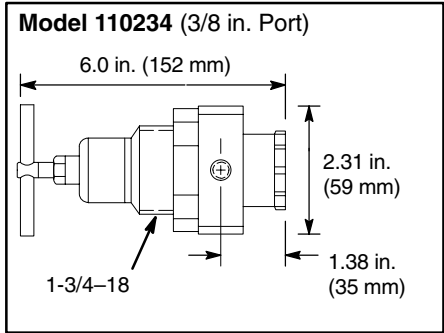
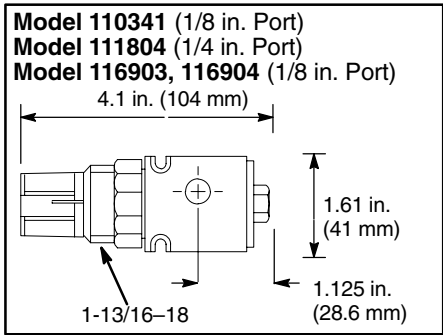
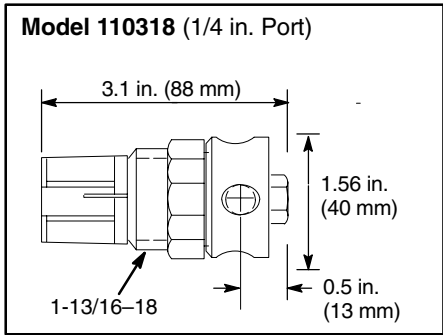
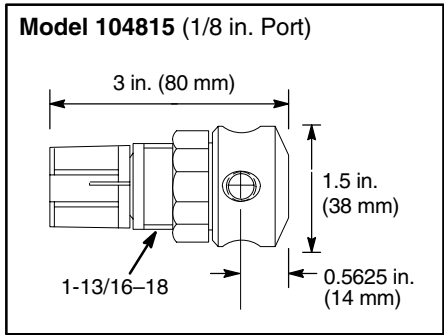


110341, 111804,  
116903, 116904

# List of Regulators

| BARE REGULATOR Part No. | REGULATOR ASSEMBLY Part No.                              | Max. SCFM (m <sup>3</sup> /min) | Pump/System Application   | Inlet/Outlet Port (npt) | Gage Ports (2) (npt) | Handle Type | Regulated Pressure Range                 | Diaphragm Material |
|-------------------------|--|---------------------------------|---|-------------------------|----------------------|-------------|--|--------------------|
| 104815                  |  | 15<br>(0.4)                     | Pressure Cup, Prince  | 1/8                     | 1/8                  | Knob        | 0–60 psi<br>(0–4.2 bar,<br>0–0.42 MPa)   | Nitrile Rubber     |
| 110318                  | 110147   | 15<br>(0.4)                     | Mini-Flo, Standard & Fast-Ball  | 1/4                     | 1/8                  | Knob        | 0–180 psi<br>(0–11 bar,<br>0–1.1 MPa)    | Nitrile Rubber     |
| 110341                  |  | 39<br>(1.1)                     | Husky 715, Prince<br>Husky 1030   | 1/8                     | 1/8                  | Knob        | 0–125 psi<br>(0–9 bar,<br>0–0.9 MPa)     | None–piston type   |
| 111804                  |  | 39<br>(1.1)                     | Husky 715, Prince<br>Husky 1030,<br>2.5 gal. Pressure Tank<br>PRO/Delta Spray Pack-<br>ages | 1/4                     | 1/8                  | Knob        | 0–125 psi<br>(0–9 bar,<br>0–0.9 MPa)     | None–piston type   |
| 110234                  | 109075<br>224512<br>224024                               | 90<br>(2.5)                     | Standard,<br>Monark®, Fireball®,<br>President®  | 3/8                     | 1/4                  | Tee         | 0–250 psi<br>(0–17.5 bar,<br>0–1.75 MPa) | Nitrile Rubber     |
| 104266                  | 206849<br>203716<br>202156<br>202858<br>244844<br>248829 | 90<br>(2.5)                     | Monark, President<br>Lube Ranger  | 1/2                     | 1/4                  | Tee         | 0–250 psi<br>(0–17.5 bar,<br>0–1.75 MPa) | Nitrile Rubber     |
| 104267                  | 206237   | 90<br>(2.5)                     | Monark, President,<br>Husky 1030, Glutton   | 1/2                     | 1/4                  | Tee         | 0–125 psi<br>(0–9 bar,<br>0–0.9 MPa)     | Nitrile Rubber     |
| 171937                  |  | 90<br>(2.5)                     | Pressure Tanks  | 1/2                     | 1/4                  | Tee         | 0–125 psi<br>(0–9 bar,<br>0–0.9 MPa)     | PET                |
| 113406                  |  | 90<br>(2.5)                     | Pressure Tanks  | 1/4                     | 1/4                  | Tee         | 0–125 psi<br>(0–9 bar,<br>0–0.9 MPa)     | Nitrile Rubber     |
| 116903                  |  | 39<br>(1.1)                     | Pressure Cup  | 1/8                     | 1/8                  | Knob        | 0–60 psi<br>(0–4.2 bar,<br>0–0.4 MPa)    | None–piston type   |
| 116904                  |  | 39<br>(1.1)                     | Pressure Cup  | 1/8                     | 1/8                  | Knob        | 0–25 psi<br>(0–1.8 bar)<br>(0–0.2 MPa)   | None–piston type   |
| 16G409                  |  | 141<br>(4)                      | Fluid Pressure Regulator  | 1/4                     | 1/8                  | Knob        | 0–58 psi<br>(0– 3.9 bar)<br>(0– 0.3 MPa) | Nitrile Rubber     |

# Dimensions



# Installation

Before installing any air line components, blow out the pipe line to remove scale and other debris. Use pipe compound or tape sparingly and only on male threads. Install the regulator in the pipe line so the flow is in the direction of the arrow stamped on the body. Locate the regulator as close as possible to the equipment it serves.

Mounting brackets and nuts are available. See page 10.

## **WARNING**

To reduce the risk of serious bodily injury, including fluid injection, splashing fluid in the eyes or on the skin, or injury from the pump starting unexpectedly, **be sure your system includes a bleed-type master air valve.**

Install the air valve between the air regulator outlet and the device the regulator is serving. When relieving system air pressure, close the bleed-type master air valve to fully relieve air pressure.

To provide the user with a variety of assembly options, a bleed-type master air valve is not included with all regulator assemblies. See ACCESSORIES to order this valve. Another bleed-type master air valve may also be installed upstream from the air controls to isolate them for servicing.

Be sure the air to the regulator is clean. Erratic regulator operation or loss of regulation is usually caused by dirt in the disc area. To clean the regulator, see the REPAIR section on page 6.

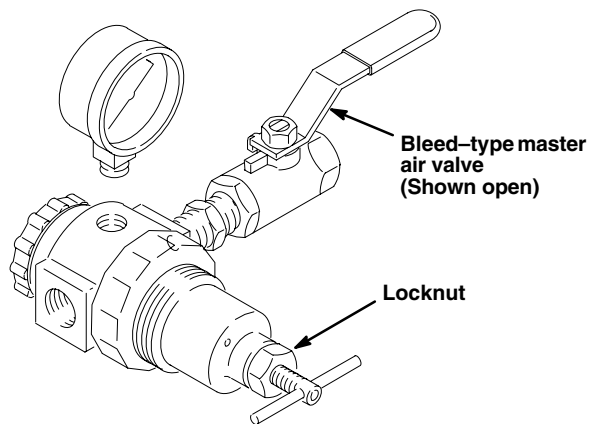
# Adjustment

## Relieving Pressure

1. Close the bleed-type master air valve to bleed air between the valve to the device it is serving.
2. Trigger the gun or dispense valve and open any fluid drain valves to relieve fluid pressure.

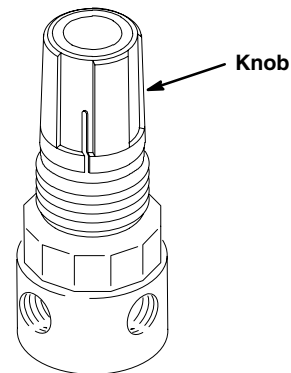
## Adjusting Pressure with a T-Handle Regulator

3. Loosen the locknut.
4. **To increase the regulated air pressure**, turn the T-handle clockwise.
5. **To decrease the regulated air pressure**, turn the T-handle counterclockwise.
6. Tighten the locknut to lock in the adjustment.



## Adjusting Pressure with a Knob-type Regulator

1. **If the knob does not have a screw**, pull the knob up to adjust. When the adjustment is complete, push the knob down to lock it in place.
2. **If the knob has a cross-head screw**, loosen the screw 1/4 turn and then adjust the knob. Tighten the screw to lock in the adjustment.
3. **To increase the regulated air pressure**, turn the knob clockwise.
4. **To decrease the regulated air pressure**, turn the knob counterclockwise.



# Repair

## ⚠ WARNING

Relieve air and fluid pressure before servicing the regulator.

To reduce the risk of serious bodily injury, fluid injection, splashing in the eyes or skin, injury from moving parts, ALWAYS open the bleed-type master air valve (required) to relieve system air pressure and trigger the gun or dispense valve and open any fluid drain valves to relieve fluid pressure.

Wash the parts with household soap and water or denatured alcohol. Wipe the parts dry with a clean, soft, dry rag. Use compressed air to blow dirt and contaminants out of the regulator body.

## ⚠ CAUTION

Do not use trichloroethylene, acetone or similar solvents to clean the regulator. These solvents could damage the regulator parts.

Inspect all parts for wear or damage. Replace damaged parts.

Lubricate the bearing area, adjusting screw threads, and spring ends with No. 2 lithium-base grease. Reassemble the regulator.

When installing the diaphragm, be sure the disc is firmly in place. Install the disc stem in the center hole of the diaphragm. Torque the spring housing to 45 in-lb (51 N.m).

If the regulator fails to operate, operates roughly, vibrates, etc., follow the WARNING above. Remove the regulator and service it as follows.

Disassemble the regulator. See the drawings on page 7.

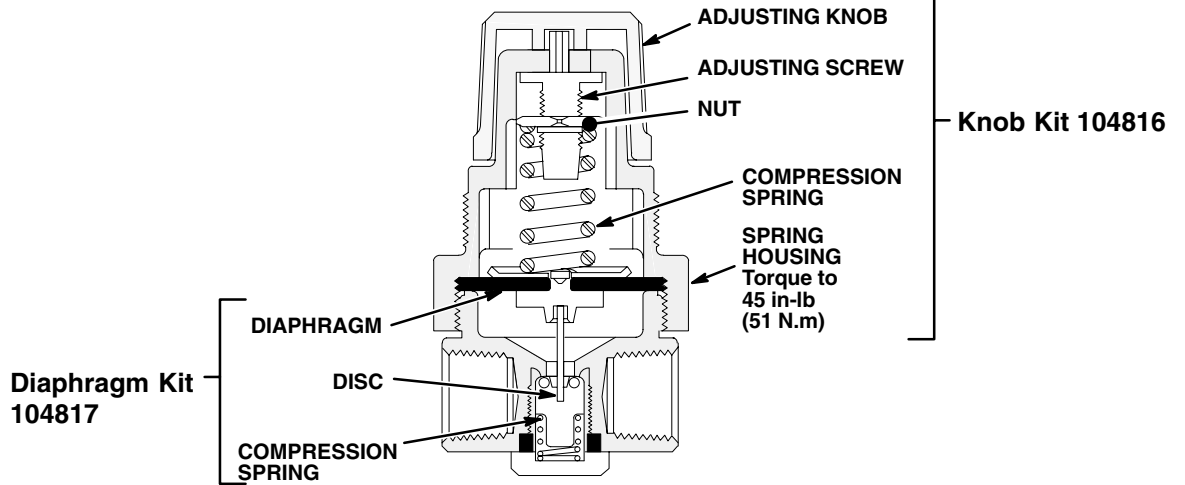
## Repair Kit Chart

This chart identifies the available repair kits for the regulators covered in this manual. The cutaway drawings shown on page 7 show the contents.

| BARE<br>REGULATOR<br>Part No. | REPAIR KITS         |                    |                          |                          |                                    |                          |                              |                    |                |
|-------------------------------|---------------------|--------------------|--------------------------|--------------------------|------------------------------------|--------------------------|------------------------------|--------------------|----------------|
|                               | 104816<br>1/8" Knob | 106173<br>T-Handle | 180780<br>1/2" Diaphragm | 180781<br>1/2" Diaphragm | 180782<br>3/8" & 1/2"<br>Diaphragm | 104817<br>1/8" Diaphragm | 223164<br>1/8" & 1/4" Piston | 104695<br>1/2" Cap | 112351<br>Disc |
| 104266                        |                     | X                  |                          |                          | X                                  |                          |                              | X                  | X              |
| 104267                        |                     | X                  | X                        |                          |                                    |                          |                              | X                  |                |
| 171937                        |                     | X                  |                          | X                        |                                    |                          |                              | X                  |                |
| 110234                        |                     | X                  |                          |                          | X                                  |                          |                              |                    |                |
| 104815                        | X                   |                    |                          |                          |                                    | X                        |                              |                    |                |
| 110341                        |                     |                    |                          |                          |                                    |                          | X                            |                    |                |
| 111804                        |                     |                    |                          |                          |                                    |                          | X                            |                    |                |
| 110318                        | X                   |                    |                          |                          |                                    | X                        |                              |                    |                |
| 113406                        |                     | X                  | X                        |                          |                                    |                          |                              | X                  |                |
| 116903                        |                     |                    |                          |                          |                                    |                          | X                            |                    |                |
| 116904                        |                     |                    |                          |                          |                                    |                          | X                            |                    |                |

# Repair Kit Drawings

FOR REGULATORS 104815, 110318



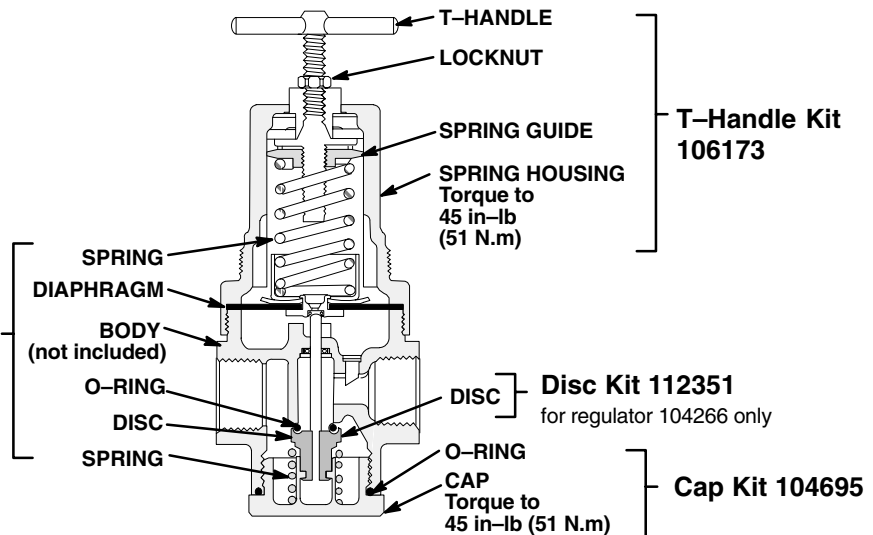
FOR REGULATORS  
104267, 171937,  
104266, 110234,  
113406

**Valve Kits**

**180780**  
for regulator 104267,  
113406

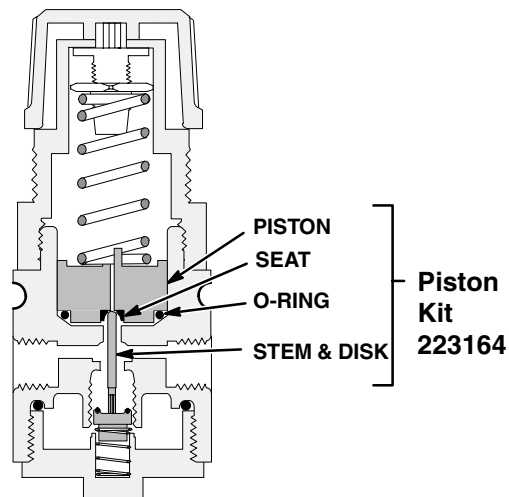
**180781**  
for regulator 171937

**180782**  
for regulators 104266,  
110234

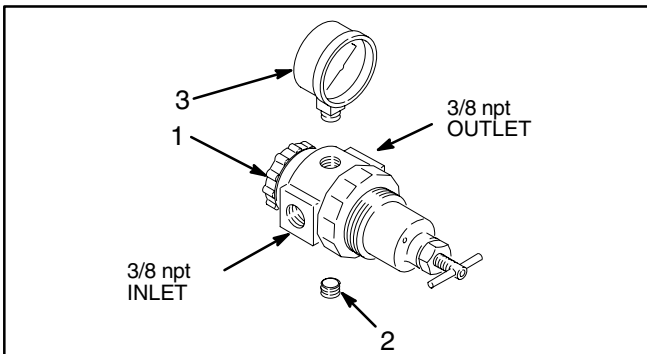


0926

FOR REGULATORS  
110341, 111804,  
116903, 116904



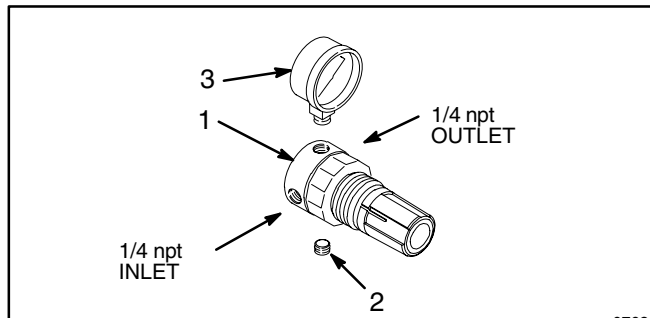
# Parts



**Model 109075**

0761

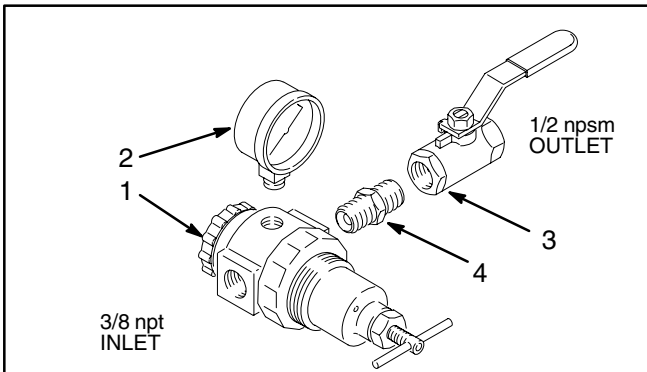
| Ref No. | Part No. | Description                 | Qty |
|---------|----------|-----------------------------|-----|
| 1       | 110234   | 3/8" AIR REGULATOR          | 1   |
| 2       | 100721   | PLUG, pipe, 1/4 npt         | 1   |
| 3       | 100960   | GAUGE, 0-200 psi (0-14 bar) | 1   |



**Model 110147**

0762

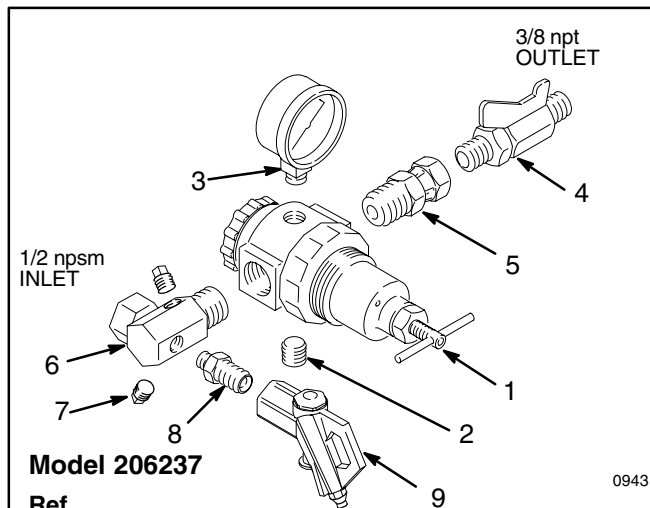
| Ref No. | Part No. | Description                 | Qty |
|---------|----------|-----------------------------|-----|
| 1       | 110318   | 1/4" AIR REGULATOR          | 1   |
| 2       | 100403   | PLUG, pipe, 1/8 npt         | 1   |
| 3       | 110319   | GAUGE, 0-200 psi (0-14 bar) | 1   |



**Model 224512**

0944

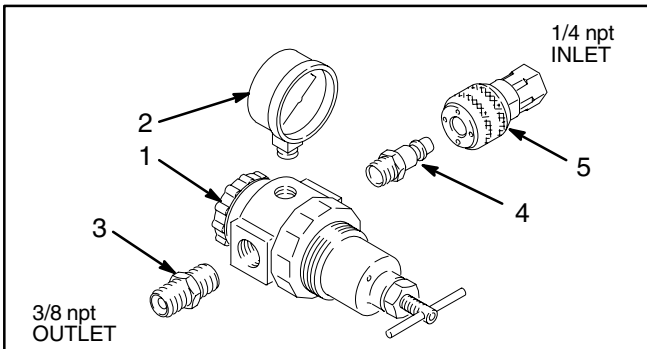
| Ref No. | Part No. | Description                 | Qty |
|---------|----------|-----------------------------|-----|
| 1       | 110234   | 3/8" AIR REGULATOR          | 1   |
| 2       | 100960   | GAUGE, 0-200 psi (0-14 bar) | 1   |
| 3       | 110224   | BALL VALVE, 3/8-18 npt(f)   | 1   |
| 4       | 156849   | NIPPLE, 3/8-18 npt          | 1   |



**Model 206237**

0943

| Ref No. | Part No. | Description   | Qty |
|---------|----------|---|-----|
| 1       | 104267   | 1/2" AIR REGULATOR  | 1   |
| 2       | 100721   | PLUG, pipe, 1/4 npt   | 1   |
| 3       | 101180   | GAUGE, 0-200 psi (0-14 bar)                                     | 1   |
| 4       | 208393   | BALL VALVE, 3/8-18 npt  | 1   |
| 5       | 158256   | UNION, swivel,  | 1   |
| 6       | 162376   | MANIFOLD, 1/2 npt(f) swivel, x 1/2 npt(m), two 1/8-27 npt ports | 1   |
| 7       | 100403   | PLUG, 1/8-27 npt  | 2   |
| 8       | 151519   | NIPPLE, 1/4-18 x 1/8-27 npt                                     | 1   |
| 9       | 208625   | AIR BLOW GUN  | 1   |



**Model 224024**

| Ref No. | Part No. | Description                   | Qty |
|---------|----------|-------------------------------|-----|
| 1       | 110234   | 3/8" AIR REGULATOR            | 1   |
| 2       | 100960   | GAUGE, 0-200 psi (0-14 bar)   | 1   |
| 3       | 156849   | NIPPLE, 3/8-18 npt            | 1   |
| 4       | 169970   | FITTING, air line, 1/4 npt(m) | 1   |
| 5       | 208536   | COUPLER, air line             | 1   |



# Parts

**Model 206849** 0758

| Ref No. | Part No. | Description                   | Qty |
|---------|----------|-------------------------------|-----|
| 1       | 104266   | 1/2" AIR REGULATOR            | 1   |
| 2       | 100721   | PLUG, pipe, 1/4 npt           | 1   |
| 3       | 100960   | GAUGE, 0-200 psi (0-14 bar)   | 1   |
| 4       | 159239   | NIPPLE, pipe, 1/2 x 3/8 npt   | 1   |
| 5       | 166999   | ELBOW, 1/2 (m) x 1/4 (f) npt  | 1   |
| 6       | 169970   | FITTING, air line, 1/4 npt(m) | 1   |
| 7       | 208536   | COUPLER, air line             | 1   |

**Model 202156** 0759

| Ref No. | Part No. | Description                   | Qty |
|---------|----------|-------------------------------|-----|
| 1       | 104266   | 1/2" AIR REGULATOR            | 1   |
| 2       | 100721   | PLUG, pipe, 1/4 npt           | 1   |
| 3       | 100960   | GAUGE, 0-200 psi (0-14 bar)   | 1   |
| 4       | 100081   | BUSHING, 1/2(m) x 3/8 (f) npt | 1   |

**Model 203716** 0760

| Ref No. | Part No. | Description  | Qty |
|---------|----------|--|-----|
| 1       | 104266   | 1/2" AIR REGULATOR                                 | 1   |
| 2       | 100721   | PLUG, pipe, 1/4 npt                                | 1   |
| 3       | 101180   | GAUGE, 0-200 psi (0-14 bar)                        | 1   |
| 4       | 159239   | NIPPLE, pipe, 1/2 x 3/8 npt                        | 1   |
| 5       | 207438   | UNION, 90° swivel, 1/2 npt(m) x 1/2 npsm(f) swivel | 1   |

**Model 202858** 0757

| Ref No. | Part No. | Description                                    | Qty |
|---------|----------|--|-----|
| 1       | 104266   | 1/2" AIR REGULATOR                             | 1   |
| 2       | 100721   | PLUG, pipe, 1/4 npt                            | 1   |
| 3       | 100960   | GAUGE, 0-200 psi (0-14 bar)                    | 1   |
| 4       | 159239   | NIPPLE, pipe, 1/2 x 3/8 npt                    | 1   |
| 5       | 156684   | UNION, swivel, 1/2 npt(m) x 1/2 npsm(f) swivel | 1   |

**Model 244844** ti1603b

| Ref No. | Part No. | Description                 | Qty |
|---------|----------|-----------------------------|-----|
| 1       | 104266   | 1/2" AIR REGULATOR          | 1   |
| 2       | 100721   | PLUG, pipe, 1/4 npt         | 1   |
| 3       | 100960   | GAUGE, 0-200 psi (0-14 bar) | 1   |

**Model 248829** T15686

| Ref No. | Part No. | Description                             | Qty |
|---------|----------|---|-----|
| 1       | 104266   | 1/2" AIR REGULATOR                      | 1   |
| 2       | 113333   | VALVE, ball vented, 3/8 npt             | 1   |
| 3       | 101689   | GAUGE, 0-200 psi (0-14 bar)             | 1   |
| 4       | 156849   | NIPPLE, pipe, 3/8 npt                   | 1   |
| 5       | 155494   | UNION, swivel, 3/8 npt(m) x 3/8 npsm(f) | 1   |
| 6       | 169970   | FITTING, line air, 1/4 npt              | 1   |
| 7       | 100081   | BUSHING, pipe, 1/2 x 3/8 npt            | 1   |
| 8       | 100206   | BUSHING, pipe, 1/2 x 1/4 npt            | 1   |

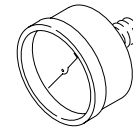
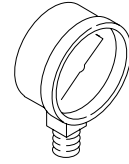
connect to coupler from Kit 248827

# Accessories

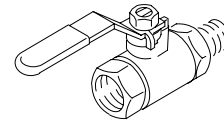
## GAUGES

| Gauge Part Number | Air Pressure Range<br>psi (bar) | Inlet<br>npt(m) | Type of Case<br>(includes ring) | Dial Dia.<br>inch (mm) | Style | Glass P/N |
|-------------------|---------------------------------|-----------------|---------------------------------|------------------------|-------|-----------|
| 160430            | 0-100 (7)                       | 1/4             | Black                           | 2 (51)                 | 1     | 102019    |
| 100960            | 0-200 (14)                      | 1/4             | Black                           | 2 (51)                 | 1     | 102019    |
| 101180            | 0-200 (14)                      | 1/4             | Chrome                          | 2 (51)                 | 1     | 102019    |
| 104655            | 0-60 (4)                        | 1/8             | Black                           | 1.5 (38)               | 1     | N/A       |
| 101689            | 0-200 (14)                      | 1/4             | Chrome                          | 2 (51)                 | 2     | 102019    |
| 108190            | 0-100 (7)                       | 1/8             | Black                           | 1.5 (38)               | 2     | N/A       |
| 110319            | 0-200 (14)                      | 1/8             | Black                           | 1.5 (38)               | 1     | N/A       |

Style 1 (Bottom Inlet)



Style 2 (Back Inlet)



**Regulator Mounting Bracket & Nut 105252**  
For Regulators

104266 171937  
104267 110234  
113406 111804

**Panel Mounting Bracket & Nut 110321**  
For Regulators

104815 110318  
110341 111804

**Panel Mounting Nut 110209**  
For Regulators

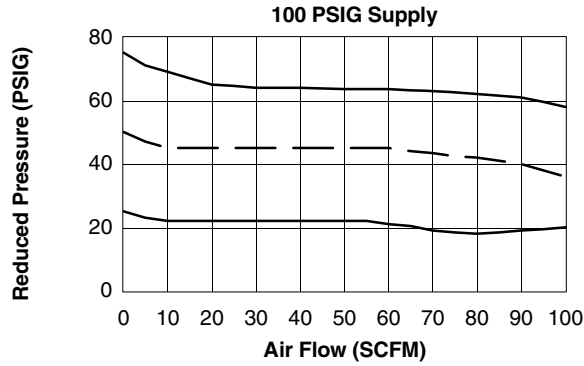
104815 110318  
110341 111804

## BLEED-TYPE MASTER AIR VALVES

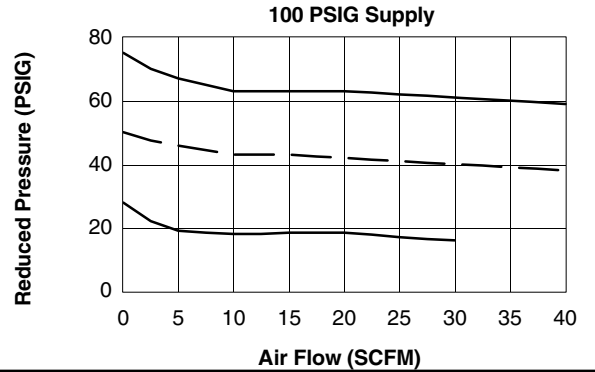
| Part No. | Description      |
|----------|------------------|
| 107141   | 3/4 npt (m x f)  |
| 107142   | 1/2 npt (m x f)  |
| 110223   | 1/4-18 npt (fbe) |
| 110224   | 3/8-18 npt (fbe) |
| 110225   | 1/2-14 npt (fbe) |
| 110226   | 3/4-14 npt (fbe) |

# Flow Curves

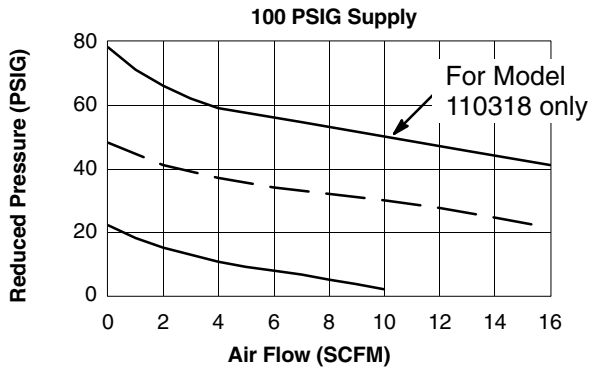
**Model 104266, 104267, 171937** (1/2 in. Port)  
**Model 110234** (3/8 in. Port)  
**Model 113406** (1/4 in. Port)



**Model 110341** (1/8 in. Port)  
**Model 111804** (1/4 in. Port)  
**Model 116903, 116904** (1/8 in. Port)



**Model 104815** (1/8 in. Port)  
**Model 110318** (1/4 in. Port)



# 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

For the latest information about Graco products, visit [www.graco.com](http://www.graco.com).

**TO PLACE AN ORDER**, contact your Graco distributor or call to identify the distributor closest to you:

**Phone:** 612-623-6921 or **Toll Free:** 1-800-328-0211 **Fax:** 612-378-3505

*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.*

Original instructions. This manual contains English. MM 308167

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Revised 10/2010