

## BACK PRESSURE VALVE

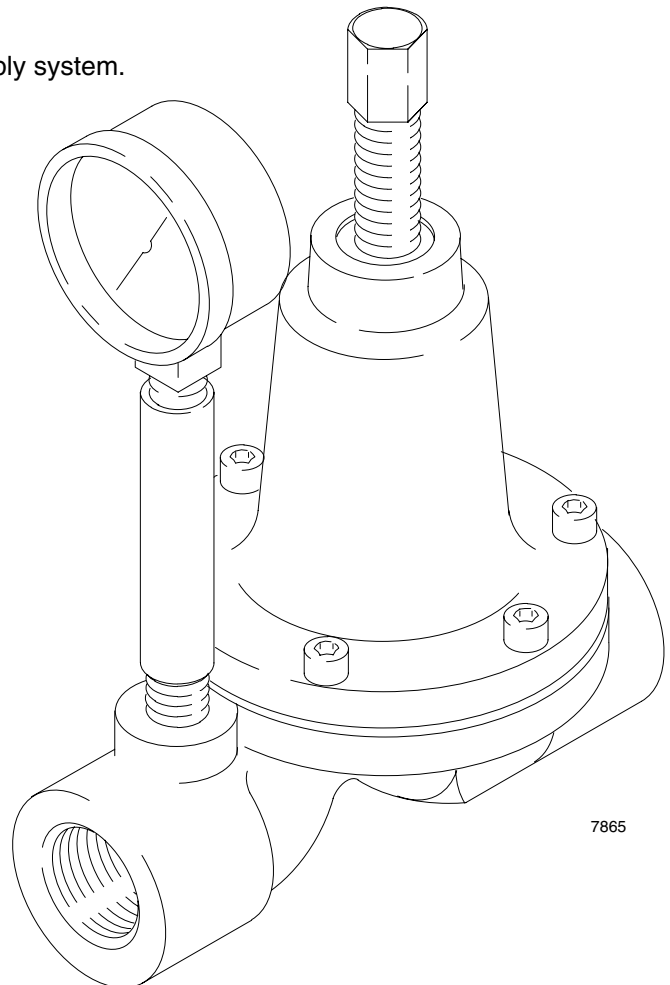
306770J

*300 psi (2.1 MPa, 21 bar) Maximum Inlet Pressure*  
*180 psi (1.2 MPa, 12 bar) Maximum Regulated Pressure*

### **Model 206019, Series F**

For use with Monark, President and 5:1 Bulldog pumps in circulating supply systems.

- Controls line pressures from 0–180 psi (0–1.2 MPa, 0–12 bar).
- Tungsten carbide valve stem and seat.
- Maintains fluid pressure in circulating supply system.



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**Read warnings and instructions.**  
See page 2 for Table of Contents.

**PROVEN QUALITY. LEADING TECHNOLOGY.**

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# 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



## PRESSURIZED EQUIPMENT HAZARD

Spray from the gun, hose leaks, or ruptured components can splash fluid in the eyes or on the skin and cause serious injury.

- Do not stop or deflect fluid leaks with your hand, body, glove, or rag.
- Follow the **Pressure Relief Procedure** for your equipment if the spray tip clogs and before cleaning, checking, or servicing the equipment.
- 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.



INSTRUCTIONS

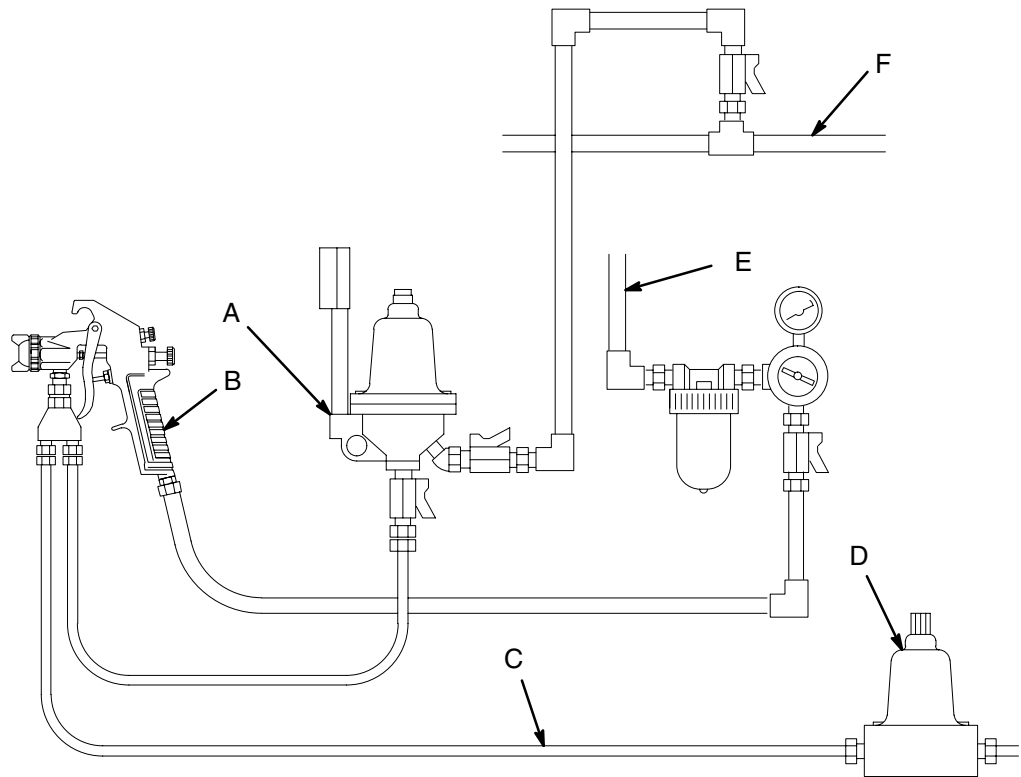
## EQUIPMENT MISUSE HAZARD

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

- This equipment is for professional use only.
- Read all 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 equipment daily. Repair or replace worn or damaged parts immediately.
- Do not exceed the maximum working pressure of the lowest rated system component. Refer to the **Technical Data** on page 7 for the maximum working pressure of this equipment.
- Use fluids and solvents that are compatible with the equipment wetted parts. Refer to the **Technical Data** section of all equipment manuals. Read the fluid and solvent manufacturer's warnings.
- Do not exceed the maximum working pressure of the lowest rated system component. This equipment has a **300 psi (2.1 MPa, 21 bar) maximum inlet pressure**.
- Do not use hoses to pull equipment.
- Route hoses away from traffic areas, sharp edges, moving parts, and hot surfaces. Do not expose Graco hoses to temperatures above 82°C (180°F) or below -40°C (-40°F).
- Wear hearing protection when operating this equipment.
- Do not lift pressurized equipment.
- Comply with all applicable local, state, and national fire, electrical, and safety regulations.
- Never use 1.1.1-trichloroethane, methylene chloride, other halogenated hydrocarbon solvents or fluids containing such solvents in pressurized aluminum equipment. Such use could result in a chemical reaction, with the possibility of explosion.

# Installation

## Typical Installation



### KEY

- A Fluid Pressure Regulator
- B Air Spray Gun
- C Fluid Return Line
- D Back Pressure Valve
- E Air Supply Line
- F Fluid Supply Line

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## CAUTION

Before installing the valve, check the tightness of the capscrews (4). The screws might be loose before the valve is installed and put under pressure. See the **Parts Drawing** for the tightening sequence and torque value. After 24 hours, or if the valve leaks during operation, check and torque the screws again.

Install the valve in the spray gun return line (See the **Typical Installation**). Connect the line to the 1 in. npt(f) inlet and outlet. Make sure flow agrees with IN and OUT markings on the valve body.

If more than one spray station is used, the back pressure valve should be installed in the supply line after the last station to maintain proper circulating pressures in the system.

# Operation

The valve is adjustable to control fluid pressures in a circulating system from 0–180 psi (0–1.2 MPa, 0–12 bar).

The back pressure valve controls pressure ahead of its intake.

Turn the adjusting screw (16) **CLOCKWISE** to increase pressure, and **COUNTERCLOCKWISE** to decrease pressure.

Adjust the pump pressure and back pressure valve for best spraying combination and for proper circulation of fluid.

Flush the valve with a compatible solvent whenever the rest of the system or unit (pump, spray valve, etc.) is being flushed. Open the valve before flushing (turn the screw counterclockwise).

# Service

## **WARNING**

Always open the valve and relieve the system pressure before servicing.

Regular cleaning and inspection of the valve, based upon the degree and kind of service, is essential.

Shut off the pump and relieve the line pressure by turning the valve adjusting screw counterclockwise until no spring tension is felt.

To clean and inspect the valve, remove it from the line, disassemble, and clean with a compatible solvent.

## **CAUTION**

Use special care in handling the valve to avoid damaging the diaphragm (11) and the hard carbide valve stem (15) and seat (19).

Carefully inspect the diaphragm (11) for cracks or other damage. Before reassembling, check for chips or other dirt that could puncture the diaphragm. Check also to see if the gasket (12) needs to be replaced. Reinstall the diaphragm parts in reverse order. Torque the retaining nut (9) to 12–15 ft-lb (16–20 N•m).

Carefully inspect the seat (19) for damage or wear. Obstructing dirt could cause regulated pressure to creep. Replace if necessary.

Replace the seat gasket (14) when replacing the seat (19). Torque the seat to 15–20 ft-lb (21–27 N•m).

To remove or install the gauge (2), use a wrench on the square portion of the gauge stud only. Use thread sealer sparingly on the male threads of the gauge when installing to prevent plugging the gauge.

Reassemble the remainder of the parts in reverse order. Tighten valve capscrews (4) per sequence shown on page 6. Check the torque after 24 hours, and re-torque if necessary or if leaking occurs. Reinstall the back pressure valve in the line.

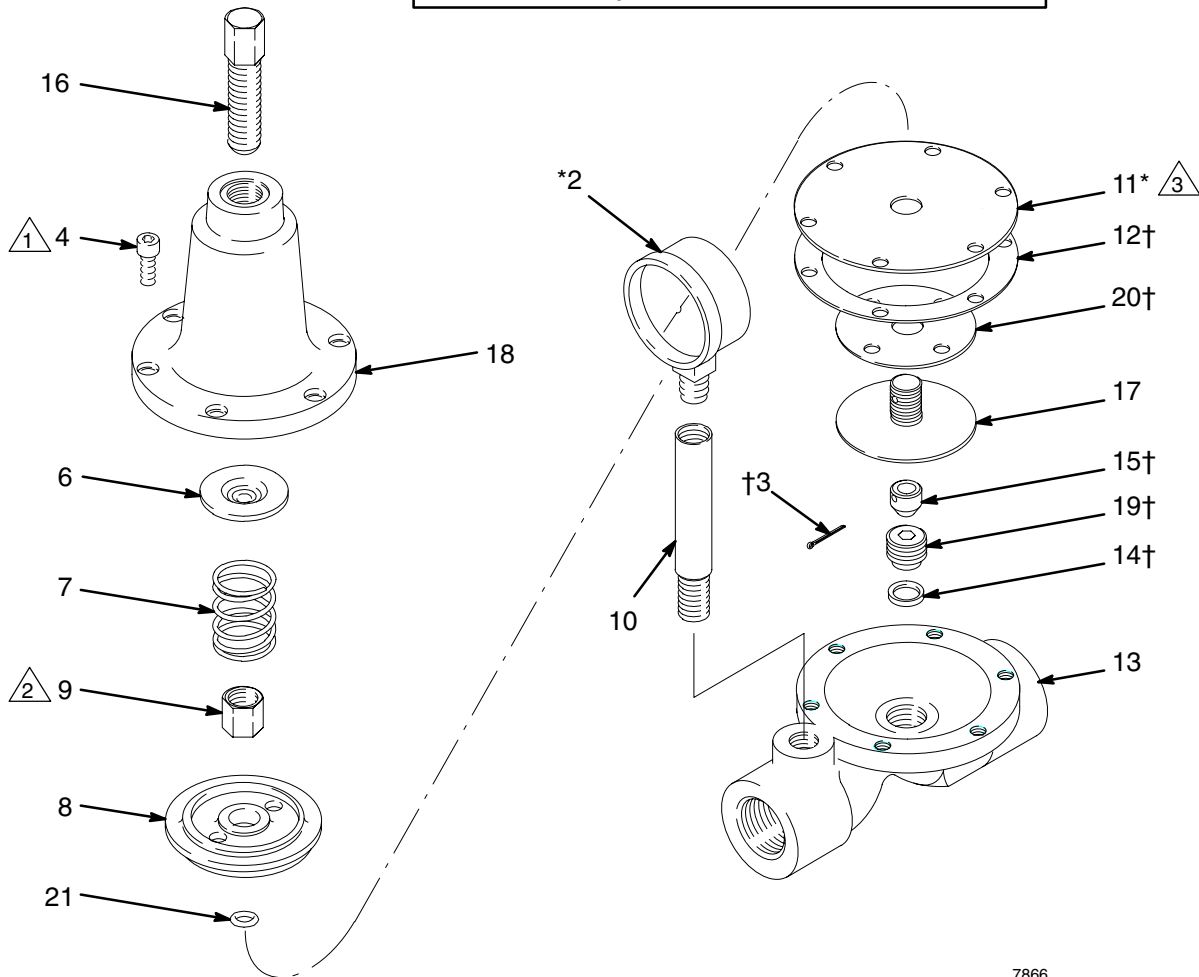
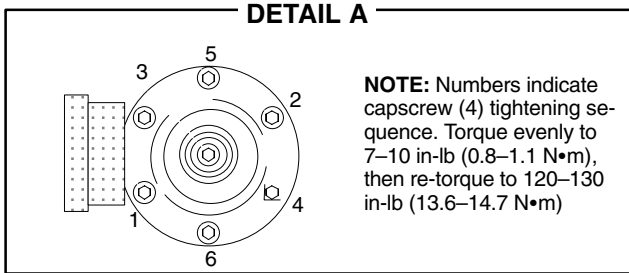
# Parts

## Model 206019, Series F

1 Torque to 120–130 in-lb (13.6–14.7 N•m).  
See Detail A for torque sequence.

2 Torque to 12–15 ft-lb (16–20 N•m).

3 PTFE side down.



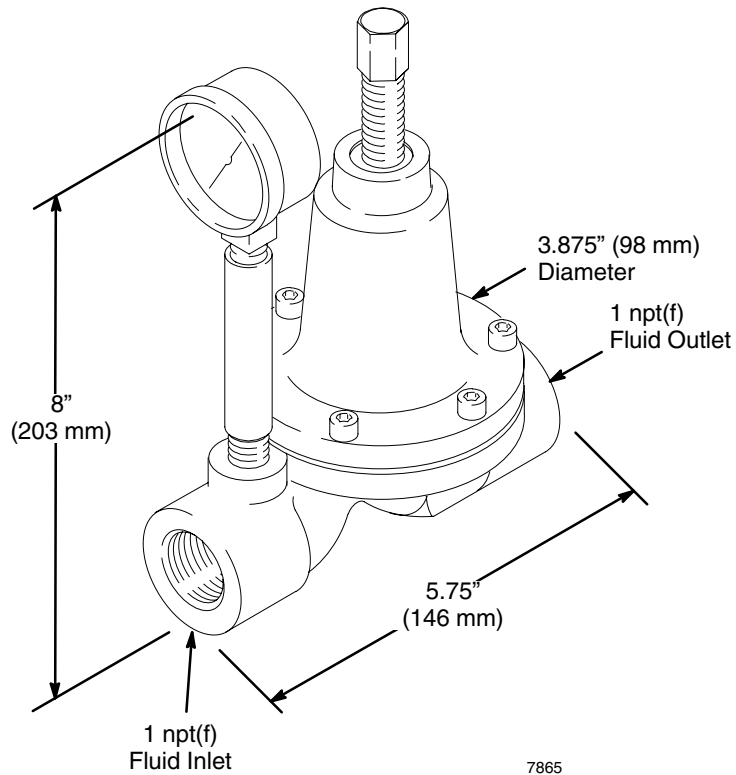
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| Ref No. | Part No. | Description                                       | Qty | Ref No. | Part No. | Description              | Qty |
|---------|----------|---|-----|---------|----------|--------------------------|-----|
| 2*      | 101180   | GAUGE; 0–200 psi (0–1.4 MPa, 0–14 bar)            | 1   | 14†     | 166964   | GASKET, acetal           | 1   |
| 3†      | 104430   | PIN, cotter; 0.06" (1.5 mm) dia, 0.75" (19 mm) lg | 1   | 15†     | 203375   | STEM, valve              | 1   |
| 4       | 101682   | SCREW, soc hd cap; 1/4–20 x 5/8                   | 6   | 16      | 186872   | SCREW, adjusting         | 1   |
| 6       | 160033   | PLATE, spring                                     | 1   | 17      | 203985   | SUPPORT, diaphragm       | 1   |
| 7       | 160034   | SPRING, helical compression                       | 1   | 18      | 209027   | CAP, valve               | 1   |
| 8       | 164864   | PLATE, diaphragm                                  | 1   | 19†     | 206275   | SEAT, valve              | 1   |
| 9       | 160741   | NUT, special lock; diaphragm                      | 1   | 20†     | 171913   | GASKET; cellulose fibre  | 1   |
| 10      | 160745   | TUBE, gauge                                       | 1   | 21      | 157277   | PACKING, o-ring; thiokol | 1   |
| 11†     | 172193   | DIAPHRAGM   | 1   |         |          |                          |     |
| 12†     | 171912   | GASKET; cellulose fibre                           | 1   |         |          |                          |     |
| 13      | 165750   | BODY, valve (electroless nickel plated)           | 1   |         |          |                          |     |
| 6       | 306770   |   |     |         |          |                          |     |

\* Recommended tool box spare parts. Keep on hand to reduce down time.

† Included in Repair Kit 210754.

# Dimensions



# Technical Data

|                              |  |
|------------------------------|--|
| Maximum Inlet Pressure ..... | 300 psi (2.1 MPa, 21 bar)  |
| Pressure Control Range ..... | 0–180 psi (0–1.2 MPa, 0–12 bar)                                    |
| Approx. Maximum Flow .....   | 6 gpm (22.7 liters/min)  |
|                              | with 100 centipose fluid at 60 psi (400 kPa, 4 bar)                |
| Fluid Inlet Port .....       | 1 npt(f)   |
| Fluid Outlet Port .....      | 1 npt(f)   |
| Weight .....                 | 4 lb (1.8 kg)  |
| Wetted Parts .....           | Tungsten Carbide, PTFE, Nylon,<br>Carbon Steel, Aluminum, Thiokol® |

*Thiokol® is a registered trademark of the Thiokol Chemical Corporation.*

# 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.

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# Graco Phone Numbers

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

**1-800-367-4023 Toll Free**

**612-623-6921**

**612-378-3505 Fax**

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PRINTED IN U.S.A. 306770 01/1963, Revised 02/2004