

INSTRUCTIONS-PARTS LIST



GRACO

*First choice when
quality counts.™*

306-811

Rev. B
Supersedes Rev A
(Dated 5/74)



This manual contains important
warnings and information.
READ AND KEEP FOR REFERENCE.

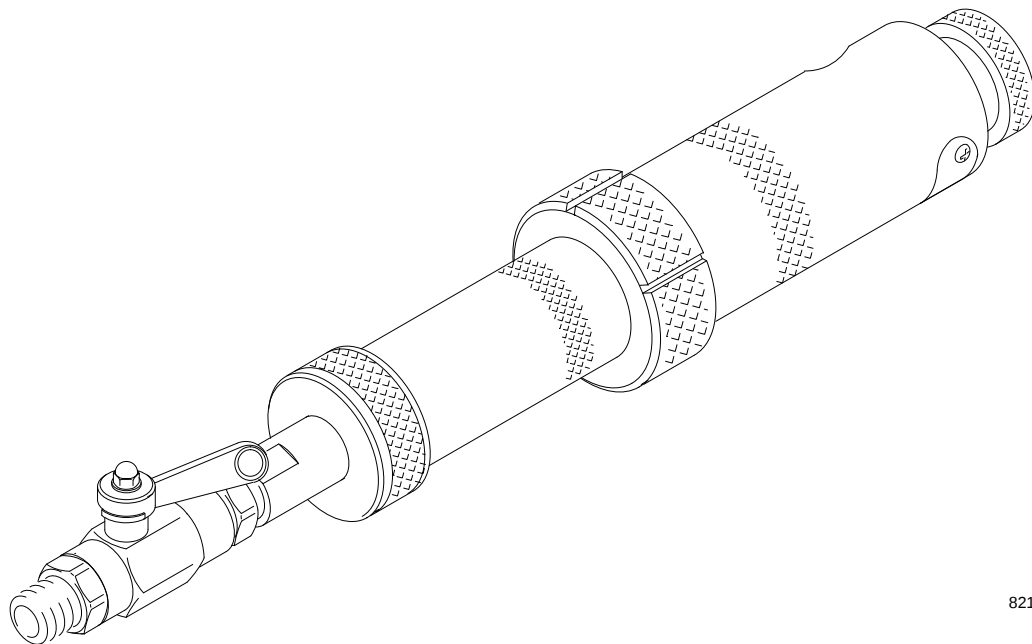
INSTRUCTIONS

Back Pressure Valve for Airless Paint Circulating System

Restrict-A-Flo

3000 psi (21.0 MPa, 207 bar) Maximum Working Pressure

Model 206-115, Series B



8212

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

Graco Inc. is registered to I.S. EN ISO 9001

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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



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 not sure, call your Graco distributor.
- Do not alter or modify this equipment.
- Check equipment daily. Repair or replace worn or damaged parts immediately.
- Do not exceed the maximum working pressure of the lowest rated system component.
- Handle hoses carefully. Do not pull on hoses to move equipment.
- Route hoses away from traffic areas, sharp edges, moving parts, and hot surfaces. Do not expose Graco hoses to temperatures above 66°C (150°F) or below -40°C (-40°F).
- Comply with all applicable local, state, and national fire, electrical, and safety regulations.



INJECTION HAZARD

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

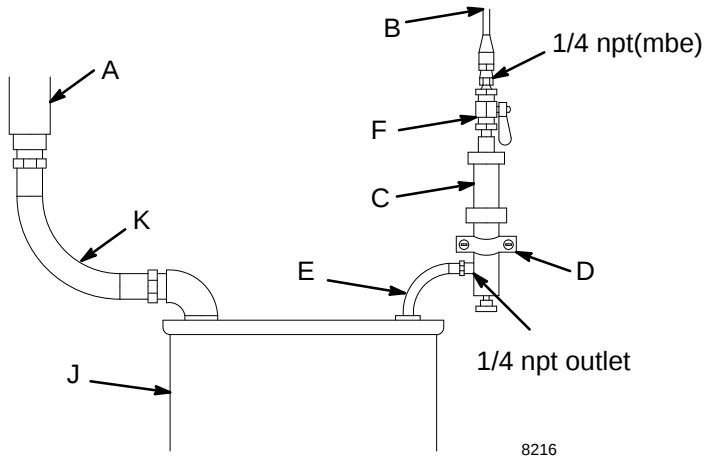
- Fluid injected into the skin is a serious injury. The injury may look like just a cut, but it is a serious injury. **Get immediate medical attention.**
- Do not “blow back” fluid; this is not an air spray system.
- Follow the **Pressure Relief Procedure** on page 4 if the spray tip clogs and before cleaning, checking or servicing the equipment.
- Tighten all fluid connections before operating the equipment.
- Check the hoses, tubes, and couplings daily. Replace worn or damaged parts immediately. Do not repair high pressure couplings; you must replace the entire hose.

Installation

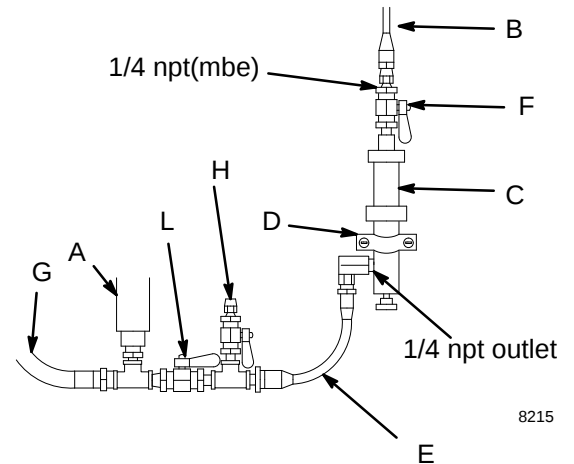
KEY

A Pump Intake
B Return Line
C Restrict-A-Flo
D Clamp
E Material Hose
F Shutoff Valve

G Supply Line
H Bleeder Valve
J Supply Container
K Suction Line
L Shutoff Valve



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Connecting the Restrict-A-Flo

1. Mount the Restrict-A-Flo in a position for adjustment to suit the type of installation planned. Dimensions of the Restrict-A-Flo are given on page 10 for customer prepared mounting.
2. Connect the end of the circulating system return line (B) to the 1/4" male pipe threads of the shutoff valve (F).
3. Connect a suitable material hose (E) from the 1/4 npt outlet at the Restrict-A-Flo (C) to the material supply container (J) or intake valve of the pump (A) with suitable adapters.

NOTES:

- When the hose is to be connected to an intake valve (A) (making a completely closed system), valves (H) must be used to bleed air from the system. All air must be removed to prevent system air lock, or spitting at the spray gun.
- When a particular material requires more restriction (consequently less flow rate) than normally produced by this Restrict-A-Flo, see your Graco distributor for installation recommendations.

Operation

Pressure Relief Procedure

WARNING



INJECTION HAZARD

Fluid under high pressure can be injected through the skin and cause serious injury. To reduce the risk of an injury from injection, splashing fluid, or moving parts, follow the **Pressure Relief Procedure** whenever you:

- are instructed to relieve the pressure,
- stop dispensing,
- check or service any of the system equipment,
- or install or clean dispensing devices.

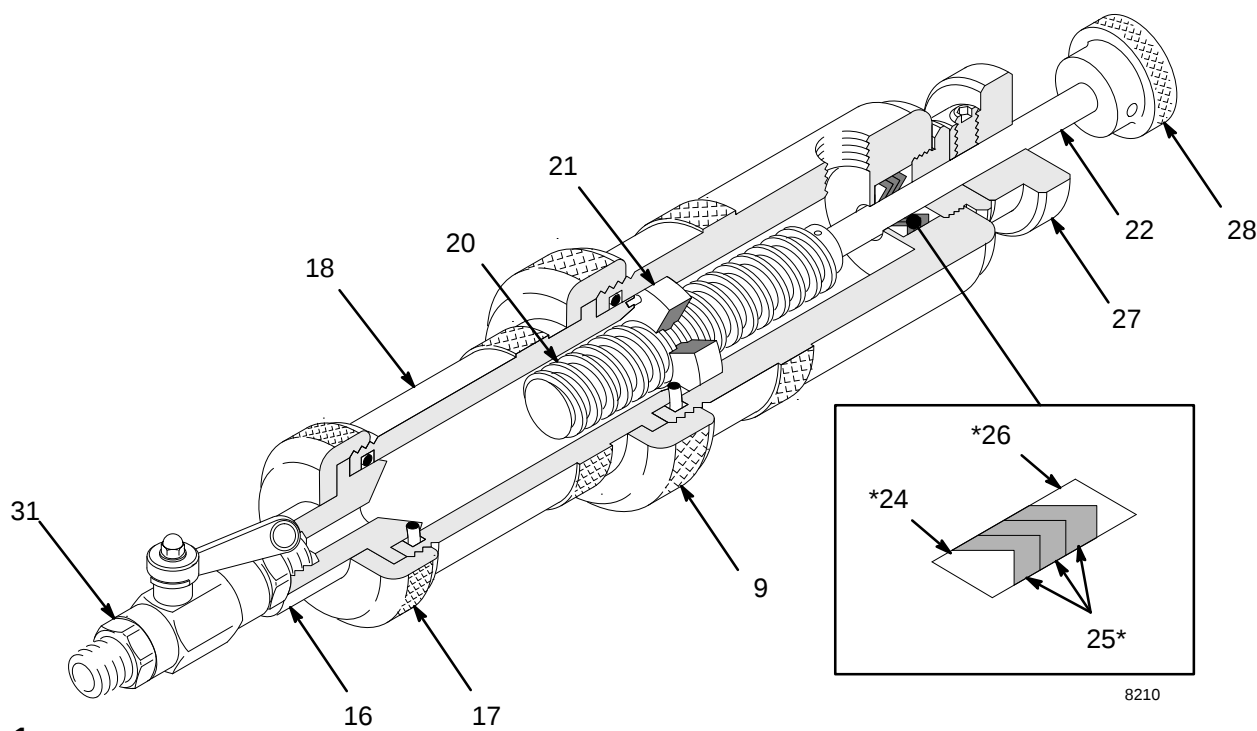
1. Engage the spray gun safety latch and any other equipment safety locks.
2. Turn off the power to the pump.
3. Disengage the gun safety latch and trigger the spray gun to relieve pressure.
4. Engage the spray gun safety latch and slowly open the system drain valve(s). Keep hands away from the end of the drain valve when opening it.
5. Leave the drain valve(s) open until you are ready to use the system again.

Regulating Line Pressure

1. Close the shutoff valve at the Restrict-A-Flo inlet by turning the handle perpendicular to the body.
2. Fully open the Restrict-A-Flo by backing out its adjusting knob as far as possible. See Fig. 1.
3. Open the shutoff valve (31) and adjust the air input pressure to the pump until it operates at the recommended speed.
4. Close the shutoff valve (31) and turn in the adjusting knob (28) 10 turns for a trial, half-closed setting.
5. Open the shutoff valve (31) and increase air input pressure to pump until it is again operating at its recommended speed.
6. Open the spray gun (or all guns at once in a multiple gun setup) and test spray pattern(s) for full atomization and required mil thickness. Adjust the Restrict-A-Flo and pump speed until there is sufficient line pressure and volume to obtain the desired spray pattern(s). **DO NOT ADJUST THE RESTRICT-A-FLO WHILE IT IS UNDER PRESSURE.** In multiple gun systems, once main circulating line pressure has been adjusted as explained above, adjust the pressure to each spray gun with the separate fluid regulator to obtain the desired spray pattern.

NOTE: Variations in paint viscosities, length of line, number of spray outlets, and other factors will affect the system so that the settings of the pump air regulator and Restrict-A-Flo will have to be adjusted to meet the conditions for each particular system.

Operation



Maintenance

Cleaning

WARNING

To reduce the risk of serious injury whenever you are instructed to relieve pressure, always follow the **Pressure Relief Procedure** on page 4.

The frequency with which this system should be cleaned depends upon the type or types of coating material sprayed, general operating conditions, and usage of unit. In most cases it is necessary to clean the Restrict-A-Flo and system daily. Under no circumstances should the material be permitted to set-up, settle-out, or dry within the Restrict-A-Flo, etc. Clean thoroughly with recommended solvent.

1. **Relieve the pressure.**
2. Remove or disconnect the pump from the material supply and then pump air to remove material from the system.
3. Introduce solvent into the system and pump solvent through the system to clean.
4. **Relieve the pressure** and remove the Restrict-A-Flo from the line.
5. Unscrew both ring nuts (9, 17), and pull the inlet adapter (16) from the restrictor housing and housing body. See Fig. 1. Be sure to pull straight away to prevent scoring the sealing surfaces on the adapter and housing.
6. Loosen the setscrew (1) and remove the adjusting knob (28). Loosen the packing nut (27) and pull the restrictor (20) and control from the body. See Fig. 1. Unscrew the restrictor nut (21) from the restrictor and carefully clean with a brush and solvent.
7. Reassemble in the reverse order of disassembly. Hand tighten the ring nuts after making sure the housing and adapter are pushed all the way into position.

Servicing the Restrict-A-Flo

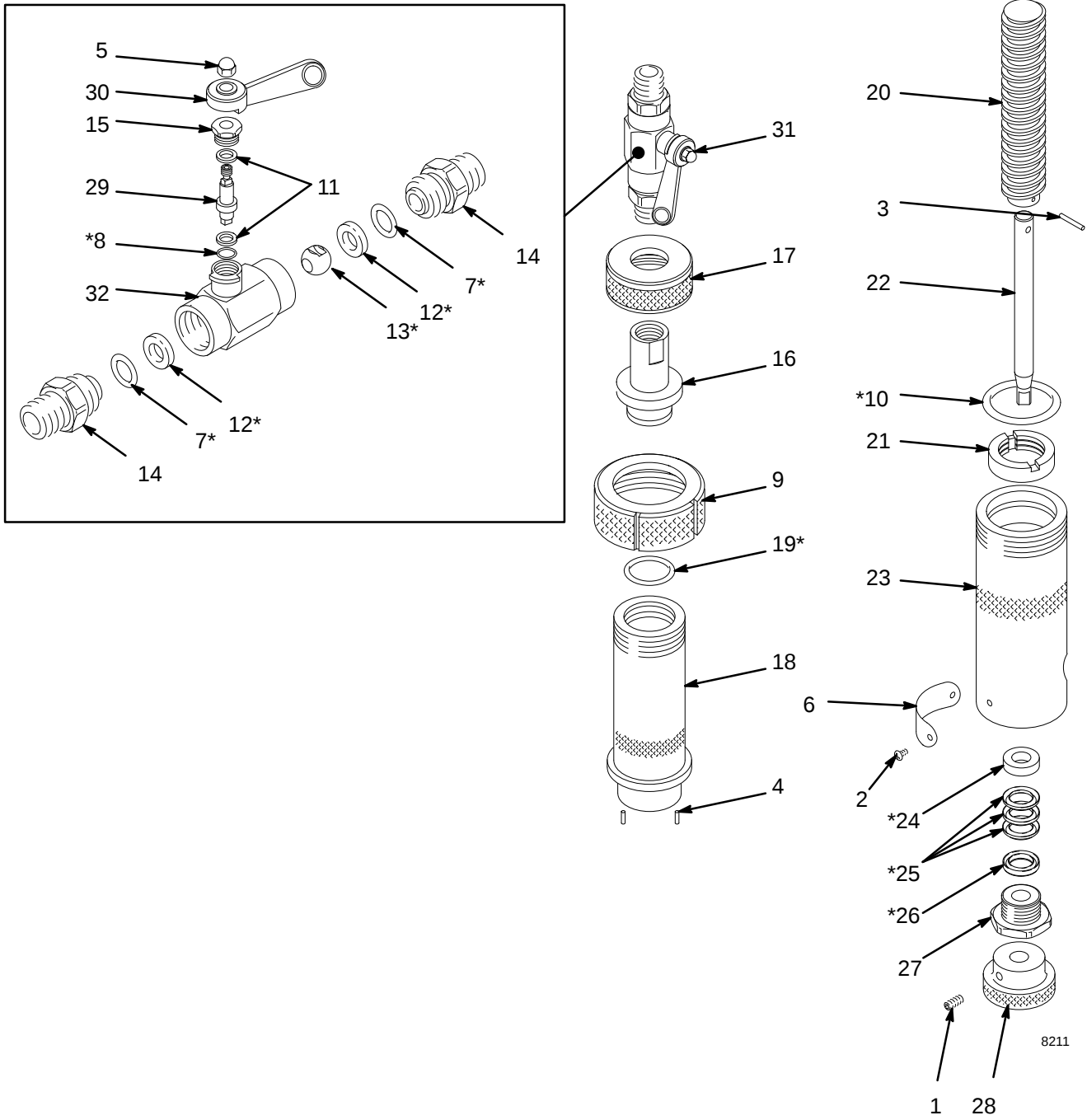
WARNING

To reduce the risk of serious injury whenever you are instructed to relieve pressure, always follow the **Pressure Relief Procedure** on page 4.

1. If leakage around the control rod is not stopped by tightening the packing nut, **relieve the pressure**, disassemble and clean the Restrict-A-Flo as described under **Cleaning**, and remove the packing nut (27), glands (24*, 26*), and v-packings (25*).
2. Carefully inspect all parts for damage or wear and replace as necessary. Replace glands (24*, 26*) when replacing the v-packings (25*). Reassemble.
3. If the shutoff valve requires service, refer to the parts drawing of the valve for relative position of the parts.

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Parts

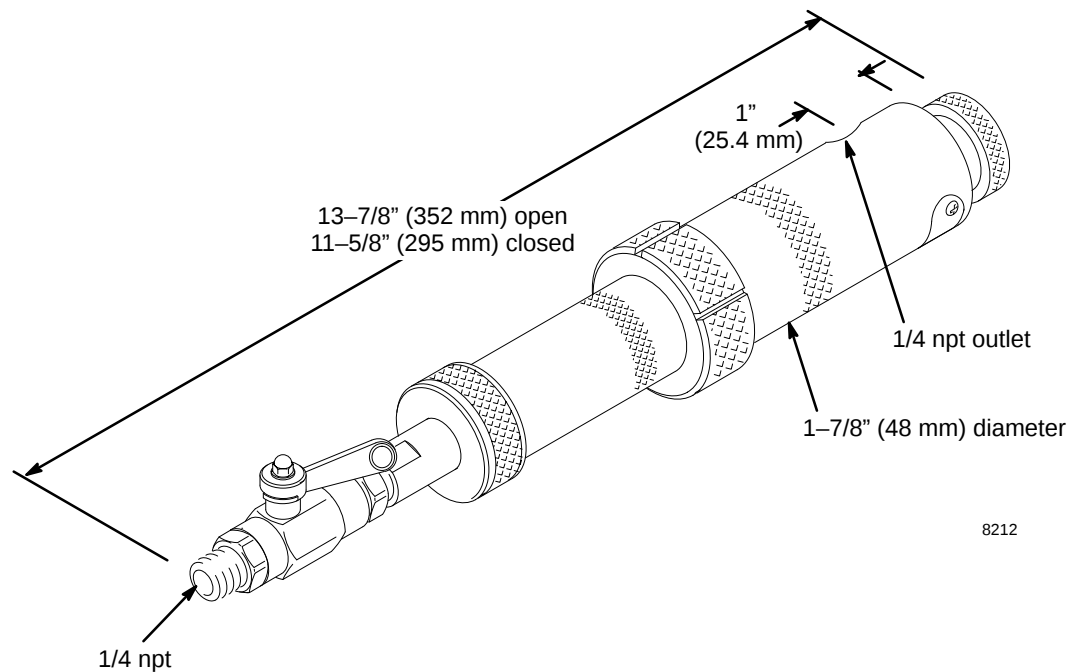


Parts

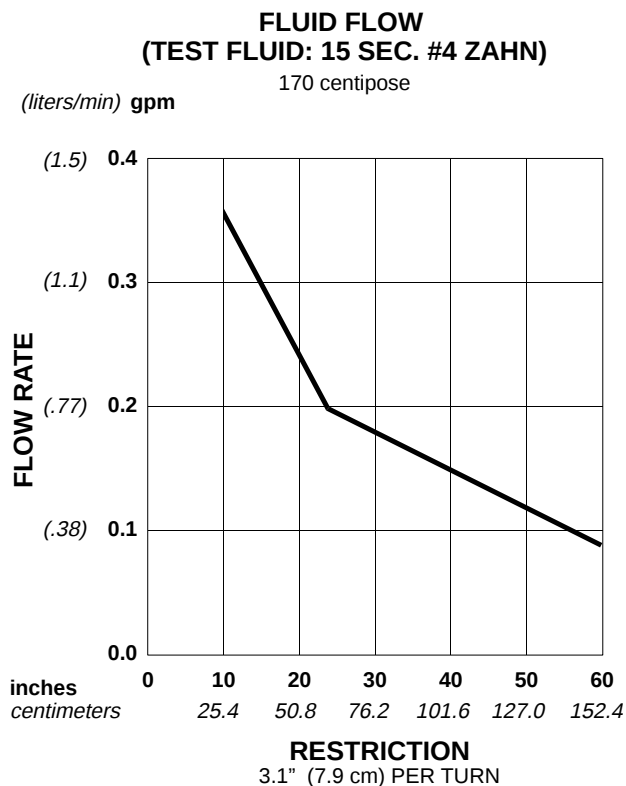
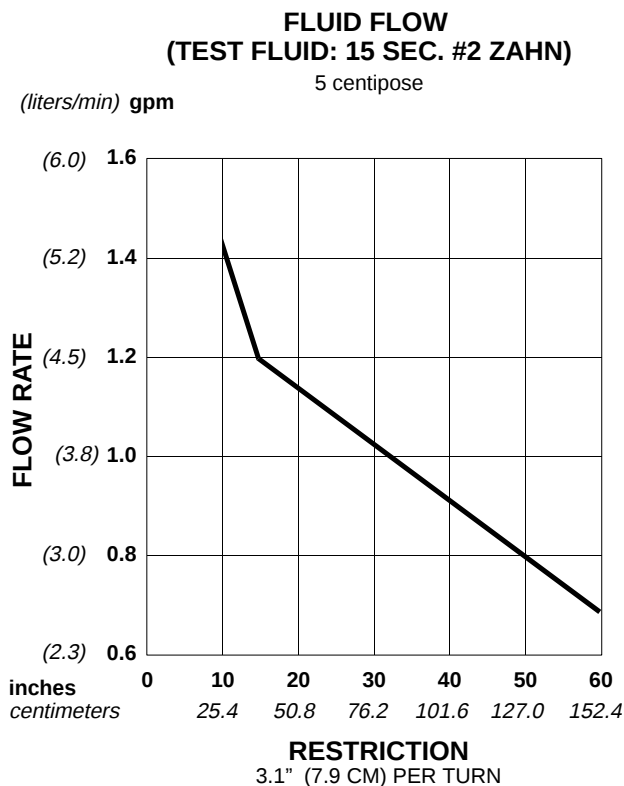
Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
1	100-002	SCREW, soc hd set; 1/4-20 x 1/4	1	20	166-208	RESTRICTOR; restrictor housing	1
2	100-055	SCREW, type u drive; no. 6 x 1/4	2	21	166-209	NUT, restrictor; body	1
3	101-579	PIN, roll; 1/8 dia; 3/4 lg	1	22	166-210	ROD, control; body	1
4	102-232	PIN, roll; 3/32 dia; 1/4 lg	2	23	166-211	BODY, Restrict-A-Flo	1
5	102-310	NUT, cap; No. 10-32	1	24*	166-212	GLAND, male; body	1
6	150-707	PLATE, serial	1	25*	166-213	V-PACKING, PTFE- body	3
7*	154-771	SEAL, o-ring; Buna-N; valve packing stud	2	26*	166-214	GLAND, female; body	1
8*	156-454	PACKING; o-ring; Buna-N; valve stem	1	27	166-215	NUT, packing, body	1
9	164-548	NUT, ring; body	1	28	166-216	KNOB, adjusting	1
10*	164-557	SEAL, o-ring; PTFE ; body	1	29	166-696	STEM, valve	1
11*	164-900	WASHER, backup; valve stem	2	30	205-643	HANDLE, valve	1
12*	164-902	SEAT, ball' valve	2	31	205-757	BALL VALVE ASSY;	
13*	165-273	BALL, valve	1		Series D	1/4 npt(mbe)	1
14	165-274	STUD, valve packing	2	32	205-962	BODY, valve	1
15	165-964	NUT, stem packing; valve	1				
16	166-204	ADAPTER, inlet; restrictor housing	1				
17	166-205	NUT, ring; restrictor housing	1				
18	166-206	HOUSING, restrictor	1				
19*	166-207	SEAL, o-ring; PTFE; restrictor housing	1				

** Suggested tool box spare parts. Keep these parts on hand to reduce down time.*

Dimensions



Performance Chart



Both graphs are based
on an operating pressure of
1600 psi (11.2 MPa, 110 bar)

[illegible]

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 by an authorized Graco distributor 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 Number

TO PLACE AN ORDER, contact your Graco distributor, or call this number to identify the distributor closest to you:
1-800-367-4023 Toll Free.

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Sales Offices: Minneapolis, Detroit, Los Angeles
Foreign Offices: Belgium, Canada, England, Korea, France, Germany, Hong Kong, Japan

GRACO INC. P.O. BOX 1441 MINNEAPOLIS, MN 55440-1441
<http://www.graco.com>

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