

Instructions – Parts List



Temperature Conditioned Dispense Valve with Snuff Back

310539 rev.E

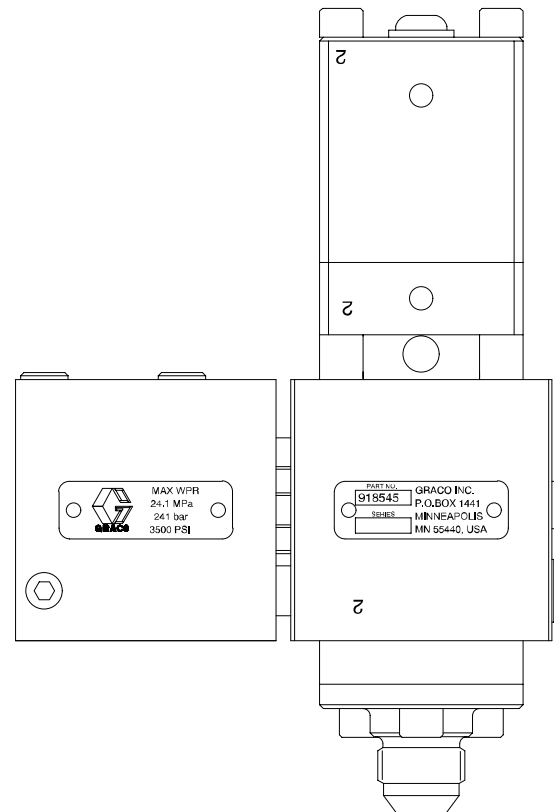
24 MPa (241 bar, 3500 psi) Maximum Fluid Working Pressure
1 MPa (10 bar, 150 psi) Maximum Air Working Pressure
60° C (140° F) Maximum Temperature

Part No. 918545

Dispense Valve Assembly



Read warnings and instructions.
See page 2 for table of contents.



8031A

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Warnings

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 instructions.

! WARNING



INSTRUCTIONS

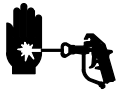


EQUIPMENT MISUSE HAZARD

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

- This equipment is for professional use only.
- Read all instruction manuals, warnings, tags, and labels before operating the equipment.
- Use the equipment only for its intended purpose. If you are uncertain about usage, call Graco your Graco distributor.
- Do not alter or modify this equipment. Use only genuine Graco parts and accessories.
- Check the equipment daily. Repair or replace worn or damaged parts immediately.
- Do not exceed the maximum air working pressure of 1 MPa (10 bar, 150 psi) to the applicator.
- Do not exceed the maximum fluid working pressure of 24 MPa (241 bar, 3500 psi) to the applicator or manifold.
- Never exceed the recommended working pressure or the maximum air inlet pressure stated on your pump or in the **Technical Data** on page 23.
- Be sure that all spray/dispensing equipment and accessories are rated to withstand the maximum working pressure of the pump. Do not exceed the maximum working pressure of any component or accessory used in the system.
- Route hoses away from traffic areas, sharp edges, moving parts, and hot surfaces.
- Do not expose Graco standard hoses to temperatures above 180°F (82°C) or below -40°F (-40°C).
- Do not use the hoses to pull the equipment.
- Use only fluids and solvents that are compatible with the equipment wetted parts. See the **Technical Data** sections of all the equipment manuals. Read the fluid manufacturer's warnings.
- Always wear protective eyewear, gloves, clothing, and respirator as recommended by the fluid and solvent manufacturers.
- Wear hearing protection when operating this equipment.
- Comply with all applicable local, state and national fire, electrical and other safety regulations.

WARNING



INJECTION HAZARD

Spray from the dispense valve, hose 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 might look like just a cut, but it is a serious injury. **Get immediate medical attention.**
- Do not point the dispense valve at anyone or at any part of the body.
- Do not put hand or fingers over the front of the dispense valve.
- Do not stop or deflect fluid leaks with your hand, body, glove, or rag.
- Follow the **Pressure Relief Procedure** on page 11 whenever you are instructed to: relieve pressure; stop dispensing; clean, check, or service the equipment; or install or clean a tip or nozzle.
- 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.
- Always wear eye protection and protective clothing when installing, operating, or servicing this dispensing equipment.
- Do not remove or modify any part of the dispense valve; this can cause a malfunction and result in serious bodily injury.
- Use extreme caution when cleaning or changing tips. If the tip clogs while applying material, Always follow the **Pressure Relief Procedure** on page 11, then remove the tip to clean it.
- Never wipe off build-up around the tip or nozzle until pressure is fully relieved.

WARNING



FIRE, EXPLOSION, AND ELECTRIC SHOCK HAZARD

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

- Ground the equipment and the object being sprayed, and all other electrically conductive objects in the dispense area. Proper grounding dissipates static electricity generated in the equipment. See **Grounding** on page 9.
- Do not use this equipment with flammable liquids.
- Keep the dispense area free of debris, including solvent, rags, and gasoline.
- If there is any static sparking or you feel an electric shock while using the equipment, **stop dispensing immediately**. Do not use the equipment until you have identified and corrected the problem.
- Before operating the equipment, extinguish all open flames or pilot lights in the dispense area.
- Do not smoke in the dispensing area.
- Keep liquids away from the electrical components.
- Disconnect electrical power at the main switch before servicing the equipment.



TOXIC FLUID HAZARD

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

- Provide fresh air ventilation to avoid the buildup of vapors from the fluid being dispensed.
- Know the specific hazards of the fluid you are using.
- Store hazardous fluid in an approved container. Dispose of hazardous fluid according to all local, state and national guidelines.
- Always wear protective eyewear, gloves, clothing and respirator as recommended by the fluid and solvent manufacturer.
- Avoid exposure to heated material fumes.

Installation

Introduction

The Temperature Conditioned Automatic Dispense Valves use a closed loop temperature control system to cool or warm sealant material. Heated or cooled water is introduced into the gun/manifold assembly via conditioning tubes. Material temperature is maintained by circulating the water through the dispense valve body and manifold.

For additional information pertaining to installation and troubleshooting dispense valve 918545, refer to manual 310554.

Connecting the Manifold

You can rotate the mounting angle of the dispense valve in 90° increments in relation to the manifold. The distance between the dispense valve and the object being sprayed depends on your application.

The mounting hole threads for the conditioned manifold are: 1/4"-20 x 0.5" (13 mm) deep. Four mounting screws, 1/4"-20 x 1.0" (25 mm), are supplied with the manifold. Your application may require screws of a different length. See **Parts** on page 18 for more information.

Be sure to lubricate all o-rings before using them inside the automatic dispense valve.

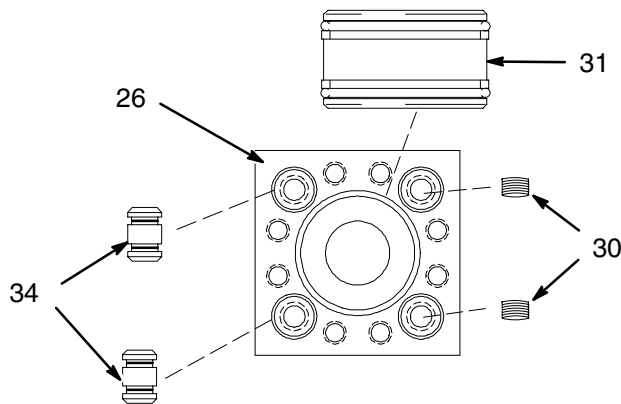


Fig. 1

1. Determine which holes will have connectors (34) and which holes will have plugs (30). Connector and pipe plug placement depends on the orientation at which the manifold is mounted with respect to the dispense valve.
2. Put the two back-up rings (32) on dispense valve connector (31).

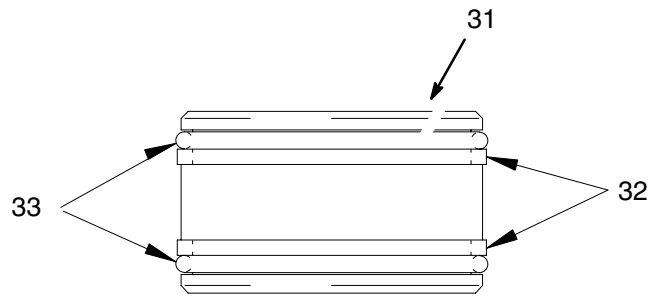


Fig. 2

3. Lubricate, then put two o-rings (33) on dispense valve connector (31).
4. Install connector (31) in manifold (26).
5. Lubricate, then put two o-rings on both small temperature conditioning connectors (34).
6. Install connectors (34) in manifold (26).
7. Install two 1/16"-27 NPT pipe plugs (30) in the conditioning manifold's two unused ports.
8. Carefully push together the dispense valve, connectors, and manifold until they bottom out (Fig. 3). Be careful not to damage the o-rings.

Installation

9. Fasten together the manifold and dispense valve, using the four socket head screws (38) and washers (39). Torque to 17.2 N.m (12.5 ft-lbs).

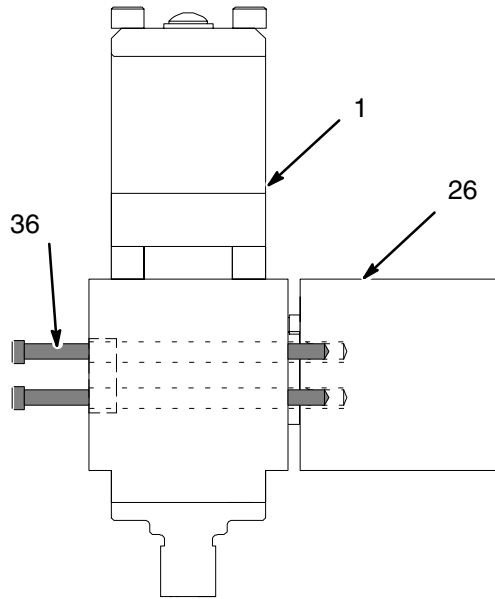


Fig. 3

Attaching Dispense Tip or Nozzle

You have the choice of attaching either a dispense tip and a nozzle adapter, or a nozzle adapter alone to the automatic dispense valve.

Attaching Dispense Tip and Nozzle Adapter

Attach a dispense tip (A) to the dispense valve.

1. Select a nozzle adapter (B) and a dispensing tip (A).
2. Install the tip and then use the nozzle adapter (B) to secure the tip to the seat adapter (C).

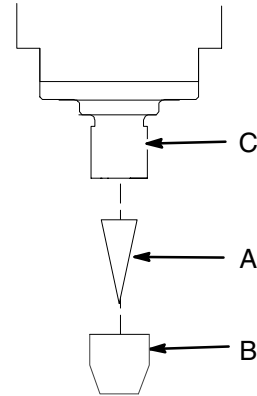


Fig. 4

Attaching Nozzle

Attach a nozzle (D) to the dispense valve.

1. Select a nozzle.
2. Install nozzle adapter (B) on the seat adapter (C).
3. Install nozzle (D) in nozzle adapter.

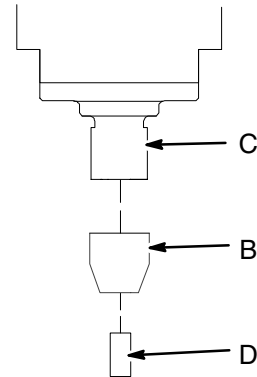


Fig. 5

Installation

Attaching Temperature Conditioning Sensor

You have the option of using a temperature sensor with the dispense valves.

If using a sensor:

1. Remove the plug from the sensor hole (E).
2. Insert the sensor into the sensor hole (E).

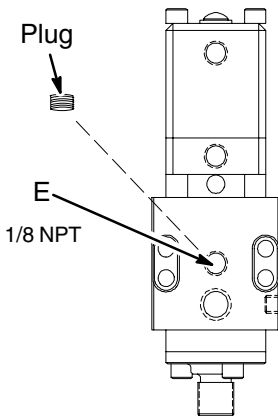


Fig. 6

Mounting Dispense Valve Assemblies

Mount the dispense valve assembly by installing the conditioning manifold on a stationary support or robotic arm using the four socket head cap screws and lock washers. See **Dimensions**, page 22.

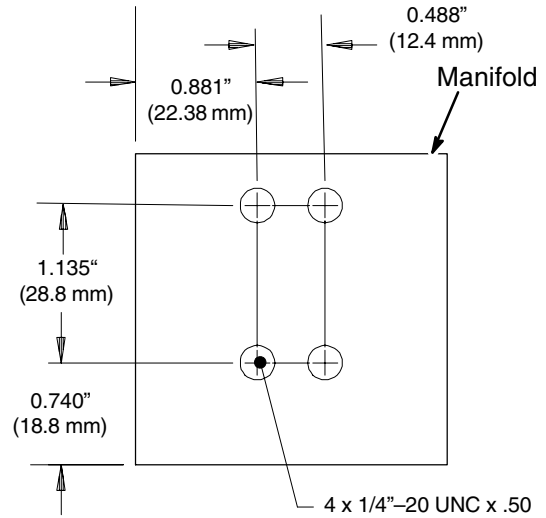


Fig. 7

Installation

Connecting Conditioning Tubes

Securely connect conditioning fluid tubes to the conditioning fluid inlet (NO TAG) and the conditioning fluid outlets (NO TAG). See Fig. 8.

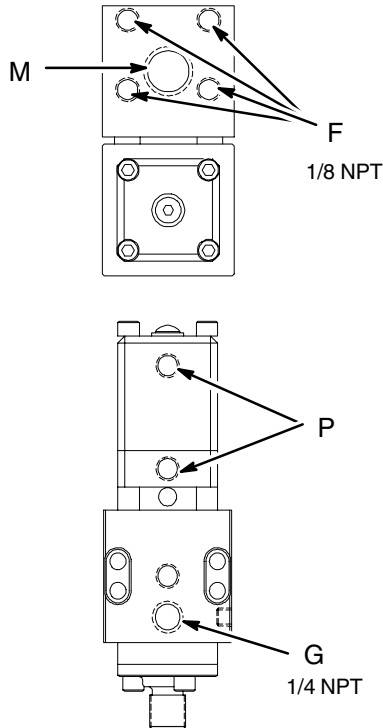


Fig. 8

Connecting Air Lines

⚠ CAUTION

Only use air fittings that are rated at a temperature equal to or higher than the operating temperature of your fluid dispensing system. Lower rated air fittings could melt and cause damage to the dispense valve.

Securely connect air lines to dispense valve air ports (P). Make sure to connect the appropriate air lines to the appropriate ports. See **Dimensions**, page 22.

Connecting Material Hose

Securely connect the material hose to the dispense valve material inlet port (M) on the manifold.

Grounding

⚠ WARNING



FIRE, EXPLOSION, AND ELECTRIC SHOCK HAZARD

To reduce the risk of fire, explosion, or electric shock:



- The power source conduit is not an adequate ground for the system. The unit must be grounded to either the building ground or a true earth ground.
- A qualified electrician must complete all grounding and wiring connections and check the resistance.
- Refer to your local code for the requirements for a "true earth ground" in your area.
- Also read and follow the warnings on page 5.

Troubleshooting

Some solutions require disassembling the automatic dispense valve. Always relieve system pressure before performing these procedures.

⚠ WARNING



To reduce the risk of serious injury whenever you are instructed to relieve pressure, always follow the **Pressure Relief Procedure** (page 11).

See Fig. 18 on page 19 for the parts that need to be serviced.

Problem	Cause(s)	Solution(s)
Air leaks from dispense valve	Loose air connections	Check air connections.
	Worn o-rings	Replace o-rings (15) and (16) in cylinder base, and o-ring (12) on piston.
	Worn piston ring	Replace piston ring (13).
Material leaks from front of dispense valve	Seal, seal support, or retaining ring is worn	Replace rod seal (23), seal support (24), and retaining ring (25).
	Obstruction inside dispense valve	Remove adapter seat. Check and replace if necessary, rod seal (23), seal support (24), and retaining ring (25).
	Worn needle	Check and replace needle (17), if necessary. If replacing needle, you must disassemble dispense valve.
Water leaks from dispense valve assembly	Loose water conditioner connections	Check o-rings (35) and water connections (F) and (G) in Fig. 8, and connectors (34).
	Worn o-rings	
Material leaks from dispense valve body	Seal not installed correctly	Check o-ring (20) and seal (24) and replace if necessary.
	Seal is worn	
Dispense valve does not shut off	Loose air connections	Check air connections.
	Worn needle-seal interface	Check and replace, if necessary, needle (17), rod seal (23), seal support (24), and retaining ring (25). If replacing needle, you must disassemble dispense valve.
	Spring broken or not installed correctly	Disassemble dispense valve (1). Check and replace, if necessary, spring (14).
Dispense valve does not heat material properly.	Water passages blocked	Clear water passages.
	Temperature conditioning unit not adequately preheated, or not adequately adjusted	See temperature conditioning unit documentation.
	Temperature sensor not working properly	See temperature sensor documentation.

Service

Pressure Relief Procedure

WARNING



INJECTION HAZARD

The system pressure must be manually relieved to prevent the system from starting or spraying accidentally. 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 spraying/dispensing
- Install or clean the nozzle
- Check or service any of the system equipment



PRESSURIZED FLUID HAZARD

High pressures can cause serious personal injury. Be sure to **open the dispense valve during system warm-up** to alleviate pressure which might occur in the system due to material expansion.

See your supply unit or system documentation for instructions on relieving pressure for the entire dispensing system.

1. Shut off the material supply.
2. Shut off the dispense valve.
3. Close all air bleed valves for supply unit.
4. Have a container ready to catch the drainage, then bleed off material pressure by actuating the automatic dispense valve.
5. Shut off air supply to valve.

NOTE: *If you suspect that the nozzle or hose is completely clogged, or that pressure has not been fully relieved after following the steps above, **very slowly** loosen the tip guard, retaining nut or hose end coupling to relieve pressure gradually, then loosen completely. Then clear the tip/nozzle or hose.*

Inspection Frequency

Dispense Valve

Inspect dispense valve at least once every two weeks for leakage or other visible damage.

Check specifically for:

- Material leaks
- Air leaks
- Conditioning tube leaks
- Conditioned valve manifold leaks

Hoses/Tubes

Inspect hoses/tubes at least once every two weeks for leakage or other visible damage.

- Material hose
- Air hoses
- Conditioning tubes

Service

Preparing to Service Dispense Valve Assembly

Perform this procedure before servicing the dispense valve assembly.

1. Relieve the system pressure.

WARNING

To reduce the risk of serious injury, whenever you are instructed to relieve pressure, always follow the **Pressure Relief Procedure** (page 11).

2. Shut off material flow.
3. Shut off system air.
4. Wait for the dispense valve to cool thoroughly before servicing it.

Servicing the Dispense Valve Assembly

Refer to the figures and information provided in **Parts**, page 18 and **Dimensions**, page 22, while servicing the dispense valve assembly:

Detaching Dispense Valve from Mounting

This procedure requires a waste container for catching excess material when you disconnect the air lines and material hose from the dispense valve.

1. Remove the dispense valve (1) assembly from its mounting (Fig. 9) as follows:
 - a. Unscrew and remove four cap screws (38) and lockwashers (39) to remove dispense valve from its mounting.

- b. Disconnect air lines from dispense valve air ports.
- c. Disconnect material hose from 1/2 NPT material inlet port.
- d. Put a waste container for catching excess material from the dispense valve.

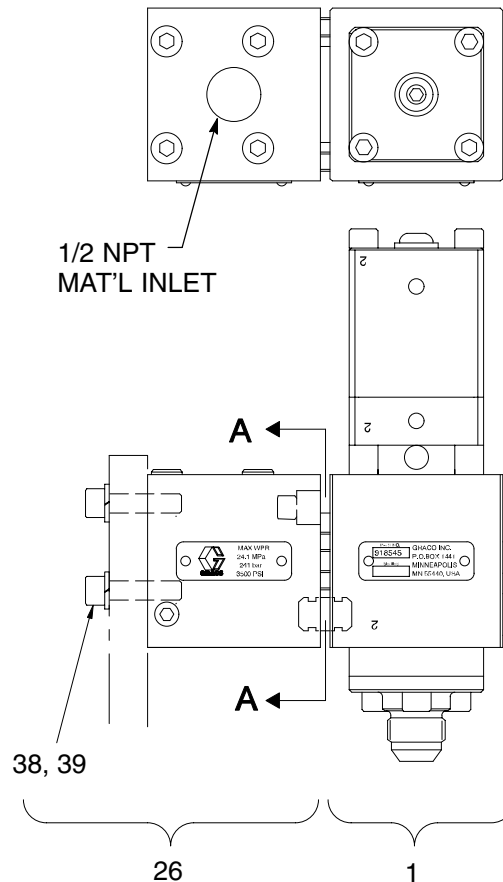


Fig. 9

Service

Detaching Dispense Valve from Manifold Assembly

1. Remove four socket head screws (36) and washers (37). See Fig. 10.

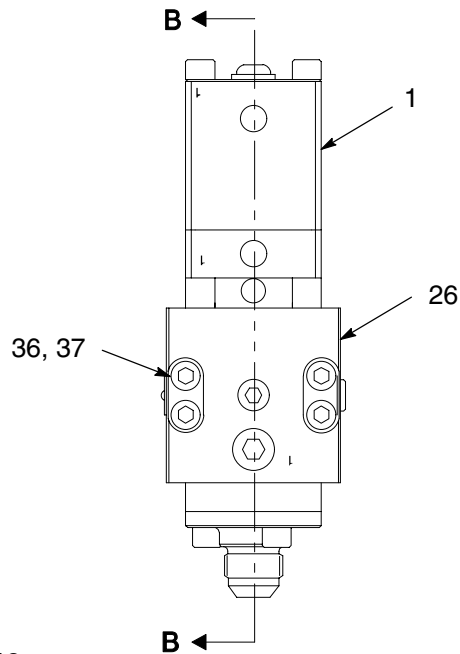


Fig. 10

2. Pull dispense valve assembly (1) and manifold assembly (26) apart. See Fig. 9.

NOTE: Pipe plug (30), material valve connector (31), backup rings (32), o-rings (33), two conditioning fluid connectors (34), and four o-rings (35) are part of the manifold assembly. See Fig. 11.

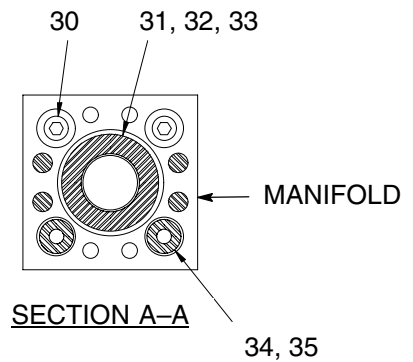


Fig. 11

Service

Disassembling Dispense Valve Assembly

1. Make sure you have removed the dispense valve from its mounting.
2. Remove four socket head screws (4) to separate cylinder cap (5) from cylinder base (6). See Fig. 12.
3. Pull cylinder cap (5), cylinder base (6), and spacers (7) from the dispense valve assembly (1). The piston needle (17), o-ring (12), and piston ring (13) may remain with the cap or base when pulled apart.
4. Remove cylinder cap (5) from cylinder base (6).
5. Remove piston (17) and spring (14).
6. Using an o-ring pick, remove seal (22) from valve body.
7. Disassemble nozzle adapter from valve body:
 - a. Remove three socket head screws (11) from valve body and separate nozzle adapter (21) from valve body.
 - b. Remove retaining ring (25) from nozzle adapter.
 - c. Remove seal (23) and seal support (24) from nozzle adapter.
 - d. Remove o-ring (20) from nozzle adapter.

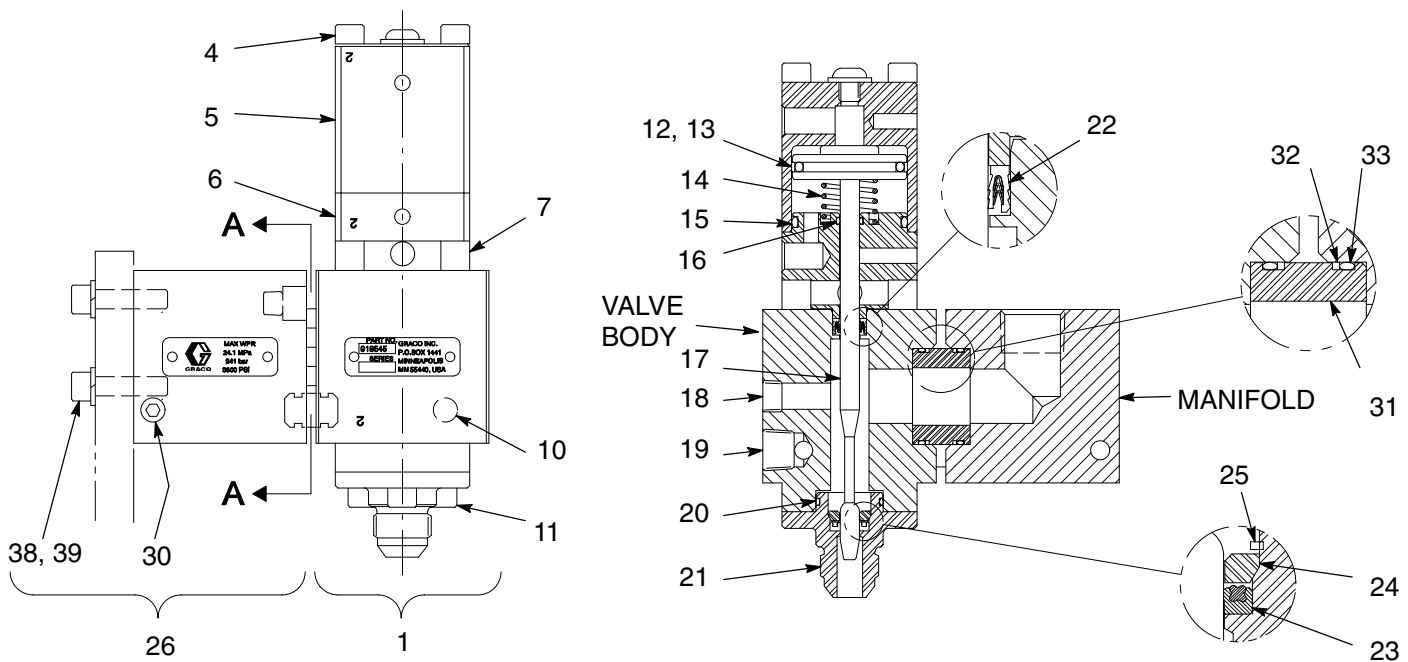


Fig. 12

Service

Disassembling Manifold Assembly

See Fig. 13.

1. Remove material connector (31) with backup rings (32) and o-ring (33) from manifold.
2. Remove two conditioning fluid connectors (34) with o-rings (35) from the manifold.

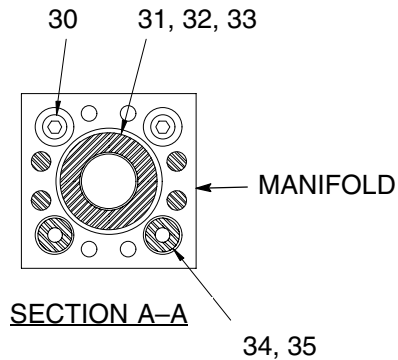


Fig. 13

Reassembling Manifold Assembly

Prior to installation, lubricate all seals and o-rings with PARKER O LUBE™ or an equivalent lubricant. Check with the material supplier for a compatible lubricant.

Reference Fig. 13.

1. Install four o-rings (35) to two conditioning fluid connectors (34).
2. Install backup rings (32) and o-rings (33) to material connector (31).
3. Install material connector (31) and conditioning fluid connectors (34) in the manifold.

Reassembling Dispense Valve Assembly

Prior to installation, lubricate all seals and o-rings with PARKER O LUBE™ or an equivalent lubricant. Check with the material supplier for a compatible lubricant.

See Fig. 14.

1. Make sure all parts are free of solid material residue.
2. Reassemble nozzle adapter (21) onto valve body:
 - a. Lubricate and replace o-ring (20) in adapter seat.
 - b. Lubricate and replace seal (23) and seal support (24) in adapter seat. Make sure seal is oriented as shown.
 - c. Replace retaining ring (25) in nozzle adapter (21).
 - d. Assemble nozzle adapter (21) to valve body with three screws (11).
3. Lubricate then replace seal (22) in valve body. Make sure seal energizer faces toward material pressure.

Service

4. Reassemble cylinder cap (5) and cylinder base (6), as follows: See Fig. 14.
 - a. Lubricate o-ring (12) and piston ring (13).
 - b. Insert o-ring (12) into piston needle (17) groove.
 - c. Slide piston ring (13) on top of o-ring (12).
 - d. Lubricate, then replace o-rings (15) and (16).
 - e. Insert piston/needle (17) into cylinder cap (5).
 - f. Slide cylinder base (6) over the piston needle (17) into the cylinder cap (5). Seat spring (14) in groove on cylinder base .
5. Put spacers (7) between cylinder base (6) and valve body .
6. Secure cylinder cap (5) and cylinder base (6) to the valve body, using four socket head screws (4).

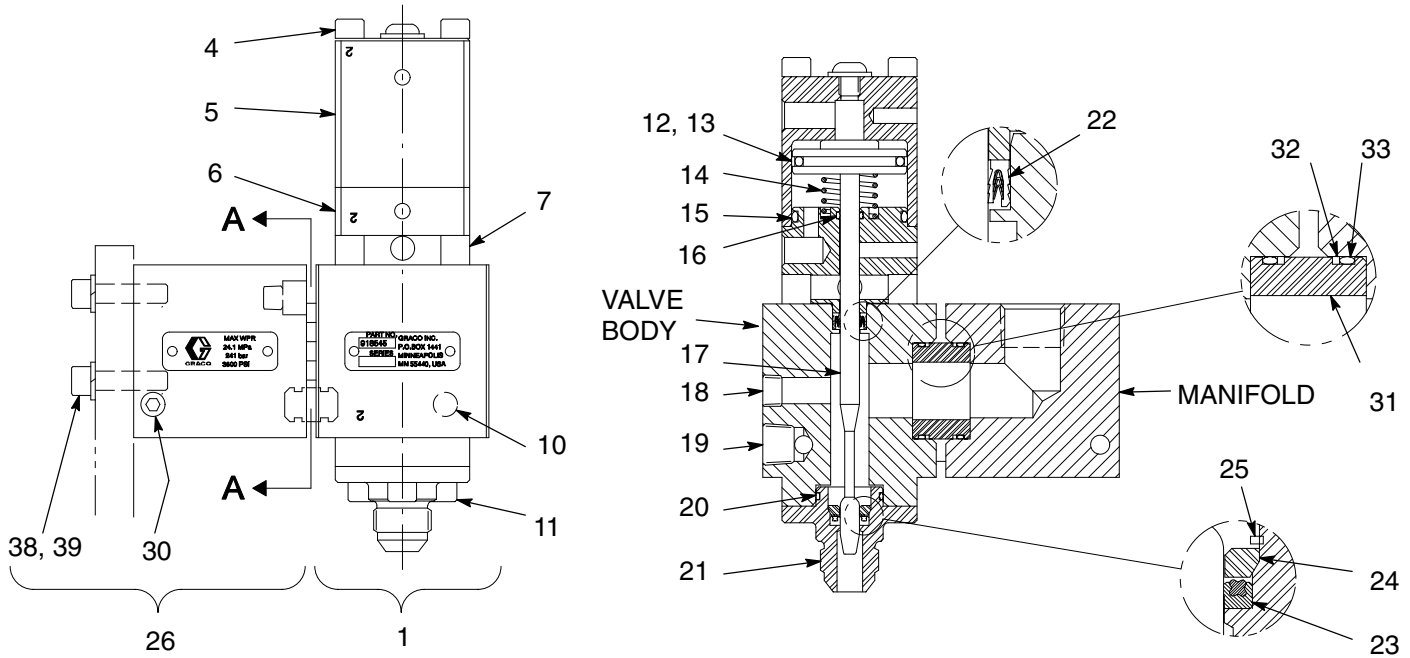


Fig. 14

Service

Reattaching Dispense Valve Assembly to Manifold

Prior to installation, lubricate all seals and o-rings with PARKER O LUBE™ or an equivalent lubricant. Check with the material supplier for a compatible lubricant.

1. Install two 1/16"–27 pipe plugs (30) in the manifold's two unused ports.

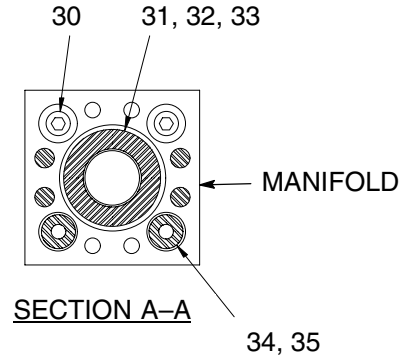


Fig. 16

2. Carefully push together the dispense valve and manifold. Be careful not to damage the o-rings.
3. Fasten together the manifold (26) and dispense valve (1) using the four socket head screws (36) and washers (37). See Fig. 17.

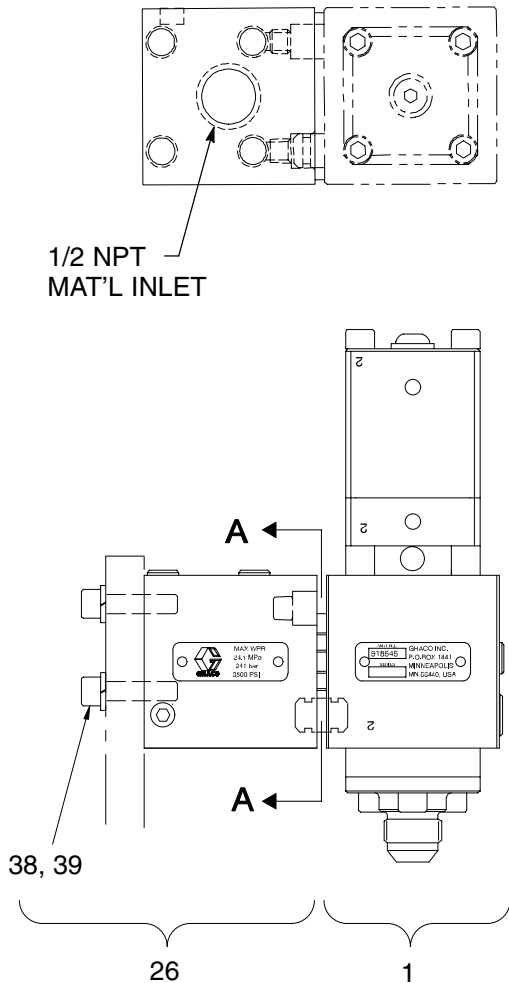


Fig. 15

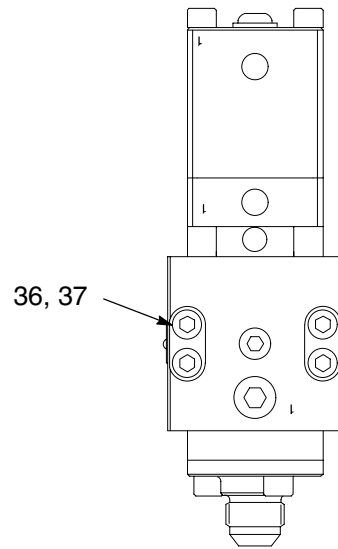


Fig. 17

4. Install the dispense valve (1) assembly on its mounting using four cap screws (38) and lock-washers (39). See Fig. 15.
5. Reconnect air lines to dispense valve air ports.
6. Reconnect material hose to 1/2 NPT material inlet port.

Parts

Model 918545, Dispense Valve Assembly

Ref No.	Part No.	Description	Qty	Ref No.	Part No.	Description	Qty
1	918544	VALVE, dispense Includes items 2 through 25	1	26	918525	MANIFOLD ASSEMBLY, Conditioned Valve Includes items 27 through 39	1
2	112925	. SCREW, button head, 1/4"-20 x 0.375	1	27	C19263	. PLUG, pipe, flush, 1/8 NPT	5
3✓	C20521	. SEAL, thread, 1/4	1	30	103147	. PLUG, pipe, flush 1/16-27 NPT	3
4	104594	. SCREW, soc. hd. cap, 1/4"-20 x 3.25	4	31	617573	. CONNECTOR, material	1
5	C34028	. CAP, cylinder	1	32†	C38330	. RING, back up, split, PTFE	2
6	617603	. BASE, cylinder	1	33†	177156	. O-RING, Viton	2
7	C34030	. SPACER	4	34	617572	. CONNECTOR, conditioning fluid	2
10	103147	. PLUG, pipe, flush, 1/16-27 NPT	1	35†	111710	. O-RING, Viton	4
11	C19800	. SCREW, soc. hd. cap, 1/4"-20 x 0.50	3	36	C19818	. SCREW, soc. hd. cap, 1/4-20 x 2.50	4
12✓	103649	. O-RING, Viton	1	37	105510	. WASHER, lock, hi-collar, 1/4	4
13✓	C32088	. RING, piston	1	38	100643	. SCREW, soc. hd. cap, 1/4-20 x 1	4
14✓	105933	. SPRING	1	39	100016	. WASHER, lock, 1/4	4
15✓	113944	. O-RING, Viton	1	✓ These parts are included in Repair Kit 918523, which may be purchased separately.			
16✓	103337	. O-RING, Viton	1				
17*	918514	. NEEDLE/PISTON ASSEMBLY	1	* Recommended spare part to reduce down time.			
18	C19263	. PLUG, pipe, 1/8 NPT	5				
19	100721	. PLUG, pipe, 1/4 NPT	1	† These parts are included in Repair Kit 918524, which may be purchased separately.			
20✓	722834	. O-RING, Viton	1				
21	617690	. ADAPTER, Nozzle	1				
22✓	617584	. SEAL, 0.250 I.D. UHMWPE	1				
23✓	617493	. SEAL, 0.250 I.D. Hytrel/Viton	1				
24	617480	. SUPPORT, seal	1				
25✓	111209	. RING, retaining	1				

Parts

Model 918545, Dispense Valve Assembly

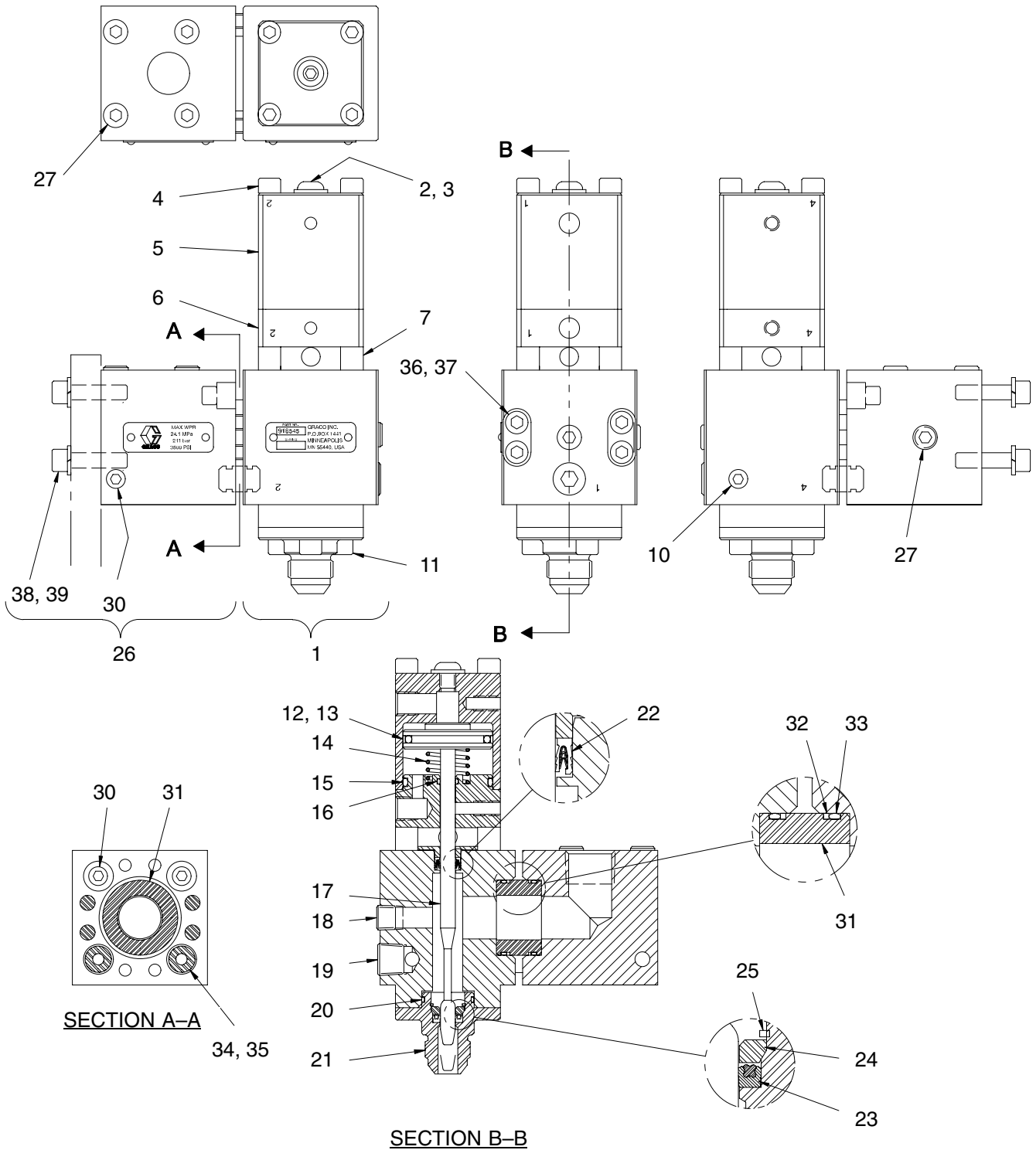


Fig. 18

Accessories

Use Only Genuine Graco Parts and Accessories

Description

Part No.

HOSE FITTINGS

For use with 27000 series hoses. Do not use fittings with temperature ratings that are lower than the operating temperature of your system. Contact your Graco Service Representative for more information.

#8–37° SAE [3/4–16 (m)] x 1/2 NPT male adapter

C20700

#10–37° SAE [7/8–14 (m)] x 1/2 NPT male adapter

C20703

See your Graco Service Representative for information about conditioned material hoses.

EXTRUSION NOZZLE

C32089

Adapts 1/8"–27 NPT (m) nozzles to dispense valve. Accepts the extrusion adapters and nozzles listed below. Contact your Graco Service Representative for more information.

Description	Length	Orifice	Thread	Nozzle Part No.
Adapter		7/64	1/8 NPT	C17007
Nozzle	6–3/16"	Ø 1/8"		C00068
	5–14"	Ø 21/64"		C00073
	2–7/16"	Ø 3/32" x 3/8"		C01025
	1–7/32"	Ø 1/8"		C17009

STREAMING TIP ADAPTERS

617585

Ø 0.469 opening adapter for automatic dispense valve. Use tips listed below. The last 3 digits of the part number indicate the orifice size. Contact your Graco Service Representative for streaming tip selection.

Orifice Size (inches)	Tip Part No.	Orifice Size (inches)	Tip Part No.
Odd sizes .025" through .047"		.055	270055
.025	270025	.061	270061
.037	270037	.063	270063
.047	270047	.065	270065
		.067	270067
		.077	270077

Accessories

CONDITIONING HOSE INLET FITTING

Suggested conditioning hose inlet fitting for automatic dispense temperature conditioning inlet ports.

Description	NPT	Tube O.D.	Fitting Part No.
90° elbow	1/4" male	1/2" ferrule	C38327

CONDITIONING HOSE OUTLET FITTINGS

Suggested conditioning hose outlet fittings for automatic dispense valve temperature conditioning outlet ports. Do not use fittings with temperature ratings that are lower than the operating temperature of the automatic dispense valve. Contact your Graco Service Representative for more information.

Description	NPT	Tube	Fitting Part No.
Straight, push-in tube	1/8 male	1/4" O.D.	C19405
90° elbow, push-in tube		1/4" O.D.	597151
straight barbed push-on		1/4" I.D.	C20374
		1/8" I.D.	C20375

AIR FITTINGS

Suggested air fittings for automatic dispense valve air inlet ports. Do not use fittings with temperature ratings that are lower than the operating temperature of the automatic dispense valve. Contact your Graco Service Representative for more information.

Description	NPT	Tube	Fitting Part No.
90° elbow, push-in tube	1/8 male	1/4" O.D.	597151
Straight, push-in tube			C19405

Dimensions

Part No. 918545, Dispense Valve Assembly

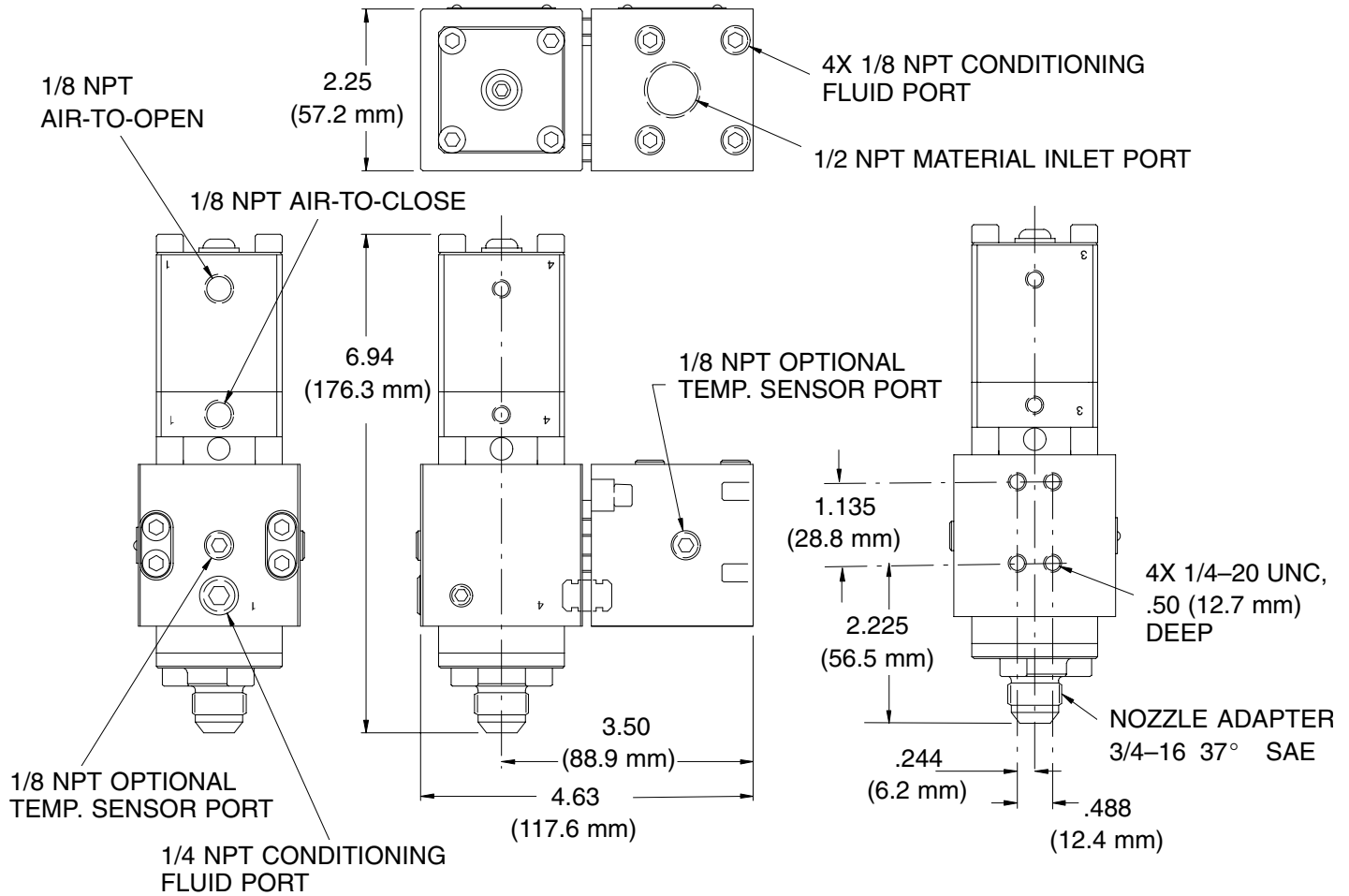


Fig. 19

Technical Data

Description

Maximum fluid working pressure
Maximum working dry air pressure
Material inlet (to conditioning manifold)
Air inlet
Conditioning tube inlet/outlet

Specification

3500 psi (241 bar, 24 MPa)
150 psi (10 bar, 1 MPa)
1/2 NPT
1/8 NPT
outlets, 4 @ 1/8 NPT
inlets, 2 @ 1/4 NPT
Stainless steel, aluminum, UHMWPE, Viton®, Hytrel® elastomer
brass

Temperature rating

140°F (60°C) maximum temperature

Weight

4.4 lbs. (2 kg) approx.

Related Publications

Product

PrecisionSwirl™ Module

Form No.

310554

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PRINTED IN U.S.A. 310554 02/1998, Revised 10/2004