



Avenger[®] Dispense Valves

Air operated, single component dispense valve

3,000 psi (20.7 MPa, 207 bar) Maximum Working Pressure

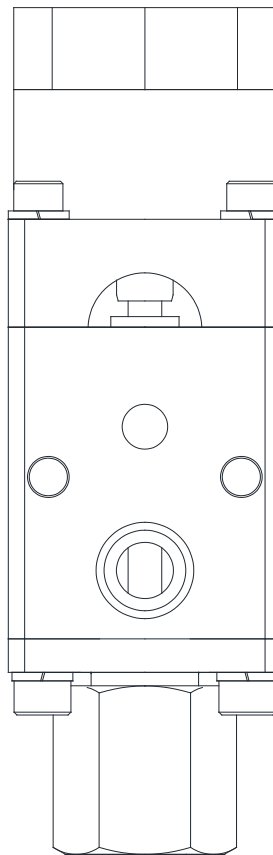
120 psi (0.84 MPa, 8.4 bar) Maximum Air Inlet Pressure



Important Safety Instructions

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

See page 3 for model information



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Avenger[®] Valve Models










226 Series Valves		
Part No.	Maximum Working Pressure Psi (MPa, bar)	Description
226-000	3000 psi (20.7 MPa, 207 bar)	¼" NPT inlet, ¼" NPT outlet
226-001	3000 psi (20.7 MPa, 207 bar)	¼" NPT inlet, flanged nozzle outlet
226-002	3000 psi (20.7 MPa, 207 bar)	¼" NPT inlet, tip seal outlet
226-004	3000 psi (20.7 MPa, 207 bar)	Manifold mount inlet, flanged nozzle outlet
226-005	3000 psi (20.7 MPa, 207 bar)	Manifold mount inlet, ¼" NPT outlet
226-006	3000 psi (20.7 MPa, 207 bar)	Manifold mount inlet, tip seal outlet
226-008	3000 psi (20.7 MPa, 207 bar)	¼" NPT inlet, no outlet, meter inlet valve
226-012	3000 psi (20.7 MPa, 207 bar)	¼" NPT inlet, manifold outlet, meter inlet valve
226-017	3000 psi (20.7 MPa, 207 bar)	¼" NPT inlet, tip seal outlet, with brass sleeve

Features

- The standard valve has a solid carbide needle and seat for longer operating life
- Lightweight construction
- Compact size
- Spring assist closing
- Needle seal cartridge allows for quick repair
- A heat kit can be added to the standard 1/4" npt valves

Warnings

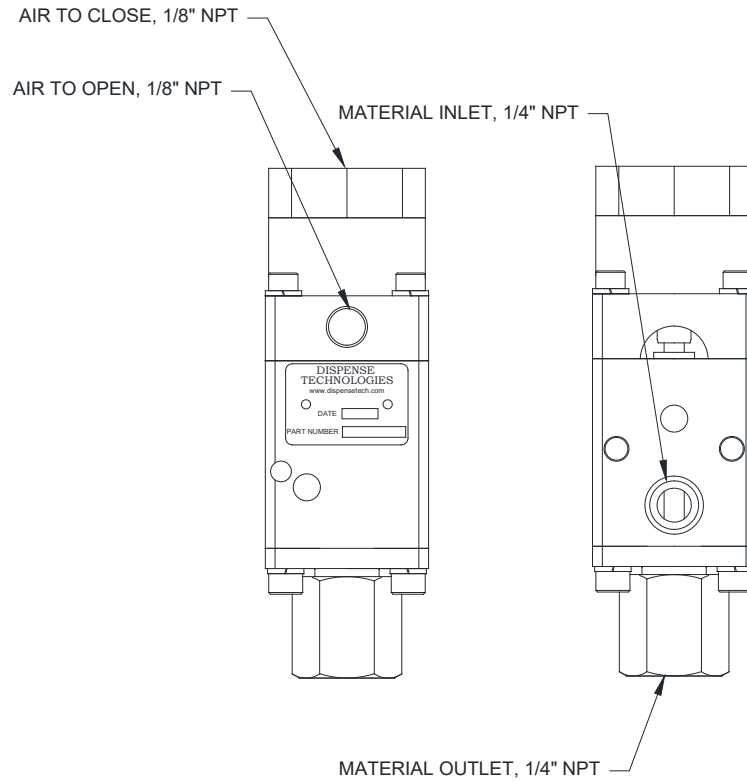
The following warnings are for the setup, use, grounding, maintenance, and repair of this equipment. The exclamation point symbol alerts you to a general warning and the hazard symbol refers to procedure-specific risk. Refer back to these warnings. Additional, product-specific warnings may be found throughout the body of this manual where applicable.

 <h2 style="margin: 0;">WARNING</h2>	
 	<p>EQUIPMENT MISUSE HAZARD</p> <p>Misuse can cause death or serious injury.</p> <ul style="list-style-type: none"> 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.
	<p>PERSONAL PROTECTIVE EQUIPMENT</p> <p>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:</p> <ul style="list-style-type: none"> Protective eyewear, and hearing protection. Respirators, protective clothing, and gloves as recommended by the fluid and solvent manufacturer.
    	<p>SKIN INJECTION HAZARD</p> <p>High-pressure fluid from dispensing device, 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 point dispensing device at anyone or at any part of the body. Do not put your hand over the fluid outlet. Do not stop or deflect leaks with your hand, body, glove, or rag. Follow the Pressure Relief Procedure when you stop dispensing 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.

Installation and Operation

Connections

- The fluid inlet is 1/4" npt(f) or manifold mount
- The fluid outlet is 1/4" npt(f), 5/8-18 unf(m) for flange mount nozzles, or manifold mount
- Air to open, air to close ports are 1/8" npt(f)



226-000 Shown

Operation

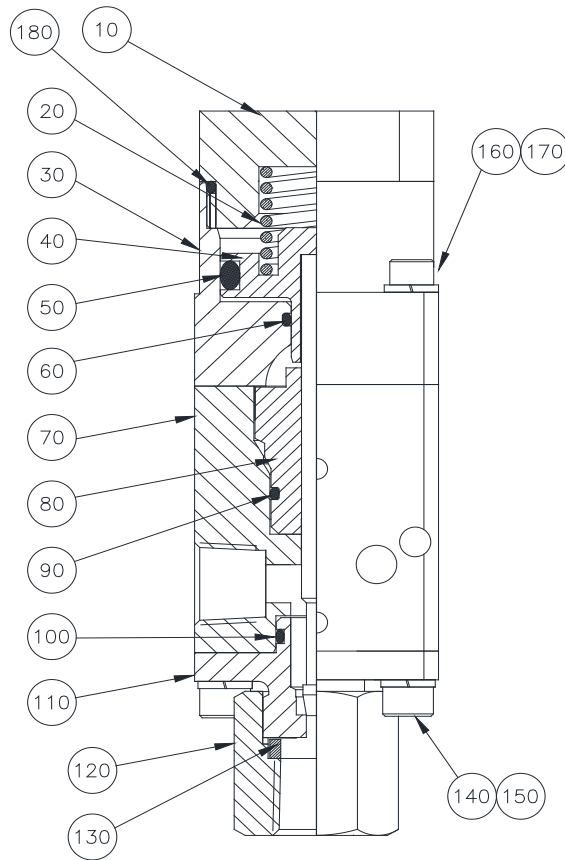
Install a remote 4-way air control valve to operate the valve. Connect the air open signal air line to the 1/8 npt(f) OPEN port. Connect the air close signal air line to the 1/8 npt(f) CLOSE port.

- Be sure the air supply lines are connected to the OPEN and CLOSE valve air ports
- To open the valve and maintain the open status, a minimum of 60 psi (.41 kPa, 4.2 bar) air pressure must be supplied and maintained at the OPEN port
- To close the valve, remove air from the OPEN port and supply air to the CLOSE port. The valve is also spring assist closed. The valve will close when air is removed from the valve.

Troubleshooting

PROBLEM	CAUSE	SOLUTION
Valve does not open	Insufficient air pressure	Turn on or turn up air pressure.
	Air not exhausted from behind air cylinder piston	Use four-way, relieving-type air valve operator.
	Shaft adjustment too far closed	Adjust the shaft stroke as instructed on page 9.
Valve does not close (leaks)	Insufficient air pressure	Turn on or turn up air pressure.
	Air not exhausted from behind air cylinder piston	Use four-way, relieving-type air valve operator.
	Blockage between needle and seat	Remove and clean needle and seat.
	Bad or missing gasket between seat and housing	Replace gasket (38).
	Needle worn out	Replace needle and seat.
Higher than normal back-pressure	Nosepiece plugging up	Remove and clean.

Repair



Disassembly

CAUTION: The needle assembly is solid carbide and may be damaged if dropped or sideloaded during disassembly

1. Remove 4 screws and lock washers (items 160 & 170) from the rear of the valve.
2. Remove air cylinder / shaft assembly from valve body by pulling straight out.
3. Remove seal cartridge (item 80) from valve body and discard.
4. Remove nozzle adaptor (item 120), discard seal (item 130).
5. Remove seat assembly (item 110) by removing 4 screws and lock washers (items 140 & 150), discard O-ring (item 100).
6. Remove threaded cap (item 10) from air cylinder / shaft assembly, Discard O-Ring (item 180).
7. Remove spring (item 20) and shaft/piston assembly (item 40) from the air cylinder; discard seal (item 50). Check for wear on shaft and replace if necessary.
8. Remove and discard the O-ring (item 60) from the air cylinder using an O-ring pick tool.

Repair

Reassembly

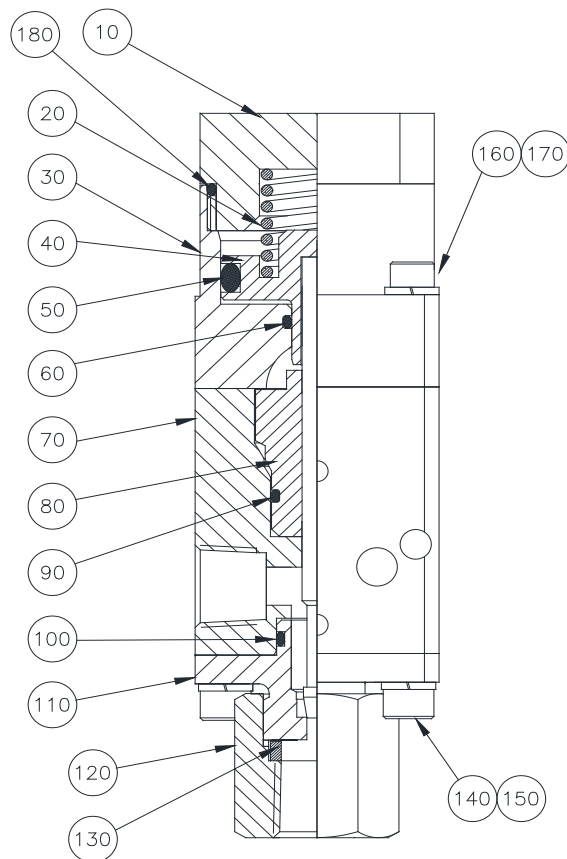
1. Lubricate* and replace the O-ring (item 60) into the air cylinder.
2. Lubricate* and replace the O-ring (item 50) onto the shaft assembly (item 40).
3. Lubricate* the shaft/piston assembly (item 40) and push the shaft in the air cylinder item (30).
4. Lubricate* and replace the O-ring (item 180) onto the cylinder cap (item 10).
5. Insert the spring (item 20) and replace the air cylinder cap (item 10) onto the air cylinder (item 30).
6. Lubricate* the seal (item 90) and install and tighten the seal cartridge (item 80) onto the valve body (item 70).
7. Install the air cylinder / shaft assembly into the valve body by pushing straight in and replace 4 screws and lock washers (items 160 & 170).
8. Lubricate* and place the O-ring (item 100) onto the seat assembly (item 110), replace onto valve body with 4 screws and lock washers (items 140 & 150).
9. Replace seal (item 130) into nozzle adaptor (item 120), and screw onto seat assembly (item 110).

* Use lubricant supplied in the 226 series repair kit

Parts

Models 226-000, 226-001, 226-004, 226-005

Ref	Part No.	Description	Qty
10	210-115	Air Cap	1
20	215-041	Spring	1
30	210-116	Air Cylinder	1
40	240-028	Needle/Piston	1
50*	265-213V	O-Ring	1
60*	265-011V	O-Ring	1
70		Body	1
	210-117	Models 226-000, 226-001	
	210-117-1	Models 226-004, 226-005	
80*	240-029	Seal Cartridge, Fluorocarbon/Viton™	1
	240-029-1	Optional – Polymyte™	
90*	265-013V	O-Ring	1
100*	265-012V	O-Ring	1
110	210-107	Outlet Adaptor/Seat	1
120		Nozzle Adaptor/Retainer	1
	210-060-1	Models 226-000, 226-005	
	210-051-2	Models 226-001, 226-004	
130*		Gasket	1
	260-015	Models 226-000, 226-005	
	N/A	Models 226-001, 226-004	
140	231-047	Screw	4
150	232-045	Lock washer	4
160	231-015	Screw	4
170	232-046	Lock washer	4
180*	265-024V	O-Ring	1



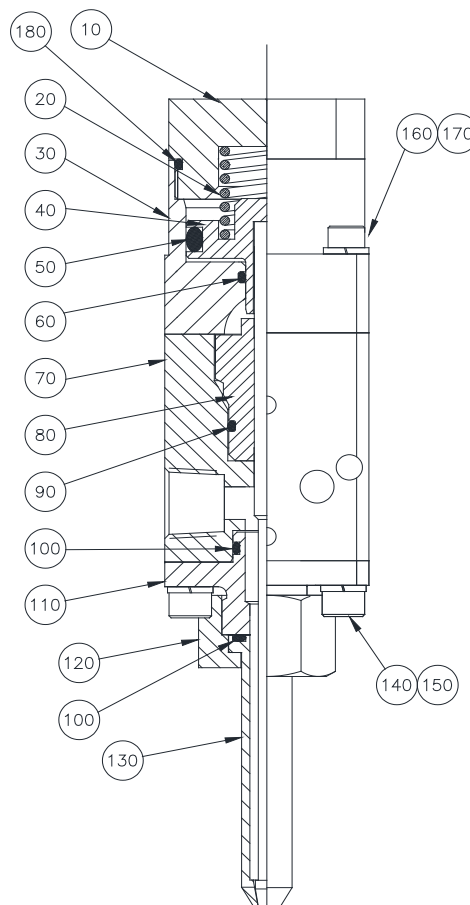
* Included in repair kit

Valve	Standard Repair Kit, Fluorocarbon/Viton™	Optional Repair Kit, Polymyte™
226-000	226-000-RK	226-000-RK1
226-001	226-001-RK	226-001-RK1
226-004	226-001-RK	226-001-RK1
226-005	226-000-RK	226-000-RK1

Parts

Models 226-002, 226-006, 226-017

Ref	Part No.	Description	Qty
10	210-115	Air Cap	1
20	215-041	Spring	1
30	210-116	Air Cylinder	1
40	240-028-1	Needle/Piston	1
50*	265-213V	O-Ring	1
60*	265-011V	O-Ring	1
70		Body	1
	210-117	Models 226-002, 226-017	
	210-117-1	Models 226-006	
80*	240-029	Seal Cartridge, Fluorocarbon/Viton™	1
	240-029-1	Optional – Polymyte™	
90*	265-013V	O-Ring	1
100*	265-012V	O-Ring	2
110	210-107-1	Outlet Adaptor	1
120		Nozzle Adaptor/Retainer	1
	210-051-2	Models 226-002, 226-006	
	210-051	Models 226-017	
130	210-024	Seat	1
140	231-047	Screw	4
150	232-045	Lock washer	4
160	231-015	Screw	4
170	232-046	Lock washer	4
180*	265-024V	O-Ring	1



* Included in repair kit

Valve	Standard Repair Kit, Fluorocarbon/Viton™	Optional Repair Kit, Polymyte™
226-002	226-001-RK	226-001-RK1
226-006	226-001-RK	226-001-RK1
226-017	226-001-RK	226-001-RK1

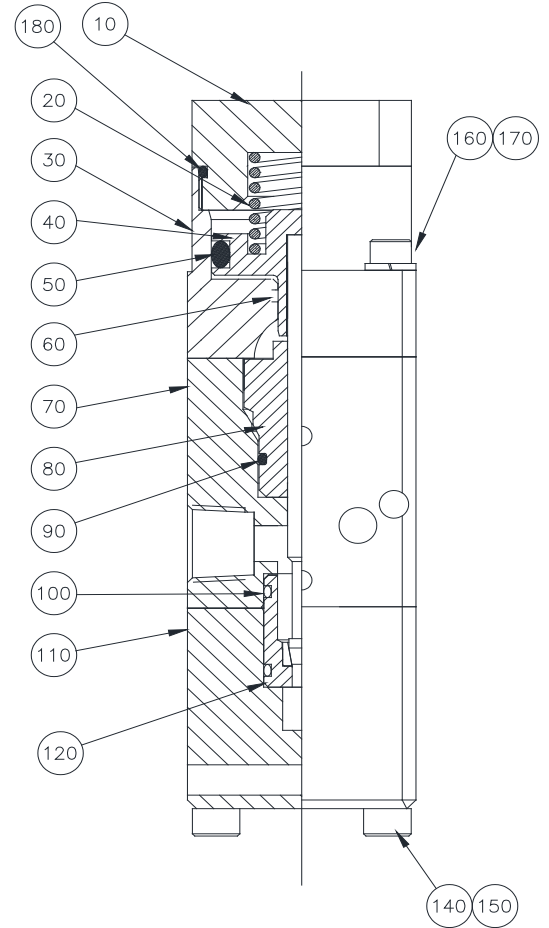
Parts

Model 226-012

Ref	Part No.	Description	Qty
10	210-115	Air Cap	1
20	215-041	Spring	1
30	210-116	Air Cylinder	1
40	240-028-1	Needle/Piston	1
50*	265-213V	O-Ring	1
60*	265-011V	O-Ring	1
70	210-117	Body	1
80*	240-029	Seal Cartridge, Fluorocarbon/Viton™	1
90*	265-013V	O-Ring	1
100*	265-012V	O-Ring	2
110	210-022-1	Outlet Adaptor	1
120	240-037	Seat	1
140	231-054	Screw	4
150	232-045	Lock washer	4
160	231-015	Screw	4
170	232-046	Lock washer	4
180*	265-024V	O-Ring	1

* Included in repair kit

Valve	Repair Kit, Fluorocarbon/Viton™
226-012	226-012-RK



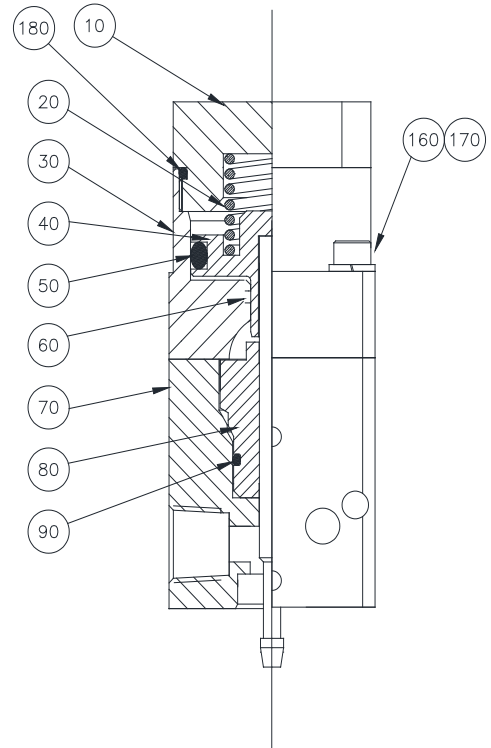
Parts

Model 226-008

Ref	Part No.	Description	Qty
10	210-115	Air Cap	1
20	215-041	Spring	1
30	210-116	Air Cylinder	1
40	240-028-1	Needle/Piston	1
50*	265-213V	O-Ring	1
60*	265-011V	O-Ring	1
70	210-117	Body	1
80*	240-029	Seal Cartridge, Fluorocarbon/Viton™	1
90*	265-013V	O-Ring	1
160	231-015	Screw	4
170	232-046	Lock washer	4
180*	265-024V	O-Ring	1

* Included in repair kit

Valve	Repair Kit, Fluorocarbon/Viton™
226-008	226-000-RK



Accessories

Push-to-Connect Air Fittings

Tube OD	1/8 npt (M)	1/8 npt (M) 90 Deg Swivel
1/8 in	236-015	236-015-1
5/32 in	236-016	236-016-1
1/4 in	236-017	236-017-1

Polyurethane Tubing for Air Signal Lines

Part No.	Description
215-214-300	1/8 in OD, 25 ft roll
215-215-300	5/32 in OD, 25 ft roll
215-216-300	1/4 in OD, 25 ft roll

Fluid Nozzles

1/4" NPT(M)

Part No.	Orifice	Length	Material
C08182	0.079 in (2 mm)	1.73 in (44 mm)	C.R.S. Black Oxide
C08176	0.098 in (2.5 mm)	1.73 in (44mm)	C.R.S. Black Oxide
C08088	0.157 in (4 mm)	3 in (76 mm)	C.R.S. Black Oxide
C08188	0.125 in (3.17 mm)	2 in (50 mm)	C.R.S. Black Oxide
C32003	0.125 in (3.17 mm)	3 in (76 mm)	C.R.S. Black Oxide
250-017-3	.062 in (1.59 mm)	1.8 in (45.7 mm)	17-4 SS
218-000	0.062 in (1.59 mm)	2.5 in (63.5 mm)	Polyethylene
218-000-1	0.062 in (1.59 mm)	4 in (101.6 mm)	Polyethylene
218-000-2	0.062 in (1.59 mm)	6 in (152.4 mm)	Polyethylene
218-000-3	0.125 (3.18 mm)	2.5 in (63.5 mm)	Polyethylene
218-000-4	0.125 (3.18 mm)	4 in (101.6 mm)	Polyethylene
218-008-5	0.125 (3.18 mm)	6 in (152.4 mm)	Polyethylene

Fluid Nozzles

Flange Mount

Part No.	Orifice	Length	Material
250-017-1	.059 in (1.5 mm)	1 in (25.4 mm)	17-4 SS
250-017-6	.059 in (1.5 mm)	1.25 in (31.8 mm)	Brass
250-033	0.10 in (2.5 mm)	1.75 in (44.5 mm)	Chrome plated steel
250-033-0	0.10 in (2.5 mm)	0.75 in (19 mm)	Chrome plated steel
250-033-5	0.10 in (2.5 mm)	3.5 in (88.9 mm)	Chrome plated steel

Accessories

Other Accessories

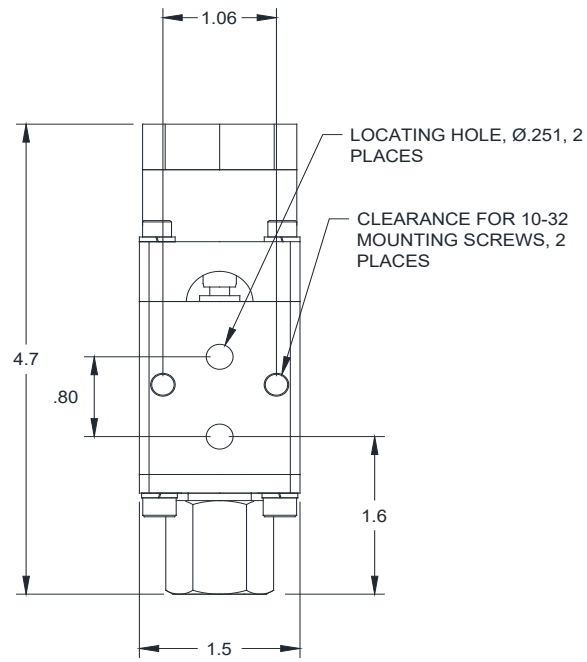
Part No.	Description
210-051	Brass sleeve for tip seal seat, 210-024
210-051-3	Brass sleeve for nozzle 250-033
210-001	Connector, used for manifold mount valves
215-209	Exhaust restrictor, used to slow down opening or closing of valve, 1/8 npt(m) outlet, 1/4 in push-to-connect female inlet
104661	Quick Exhaust Valve, used to speed up opening or closing of valve, 1/8 npt(f) inlet and outlet
115-011	Heat Kit, 240V AC, 100 watt, 8-pin Harting style square connector, used with Graco Therm-O-Flow heated hoses

Technical Data

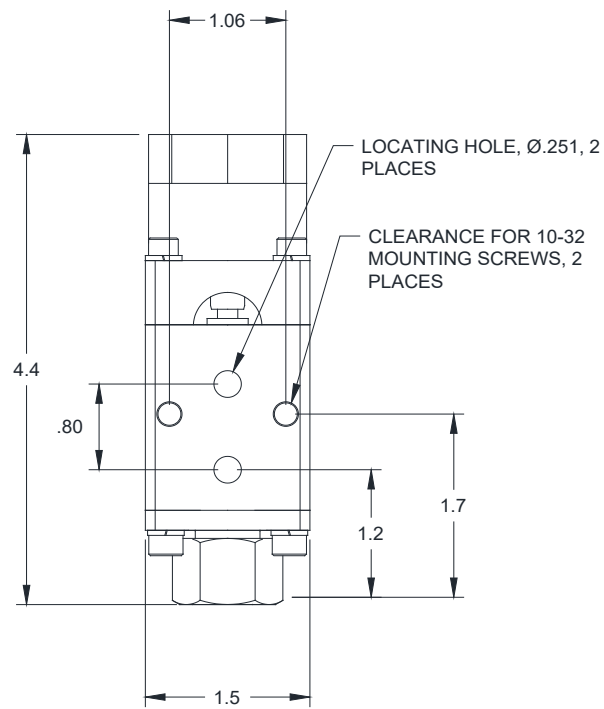
Category	Data
Maximum Fluid Pressure	3000 psi (20.7 MPa, 207 bar)
Maximum Cylinder Air Pressure	120 psi (0.84 MPa, 8.4 bar)
Air Inlets (open and close ports)	1/8 npt(f)
Fluid Inlet	1/4 npt(f) or manifold mount
Fluid Outlet	1/4 npt(f) or 5/8-18 unf(m)
Fluid Viscosity Range	5,000 cps to 1 million cps
Weight	1 lb (.45 kg), ref 226-000
Temperature Rating	400 Deg F (204 Deg C) with standard Fluorocarbon/Viton™ shaft seal 275 Deg F (135 Deg C) with optional Polymyte™ shaft seal
Wetted Parts – Common	aluminum, NI carbide, 12L14 carbon steel, 360 brass, fluorocarbon, Viton™, A2 Tool Steel
Standard Shaft Seal	Fluorocarbon/Viton™
Optional Shaft Seal	Parker Polymyte™

Dimensions

Models 226-000, 226-005

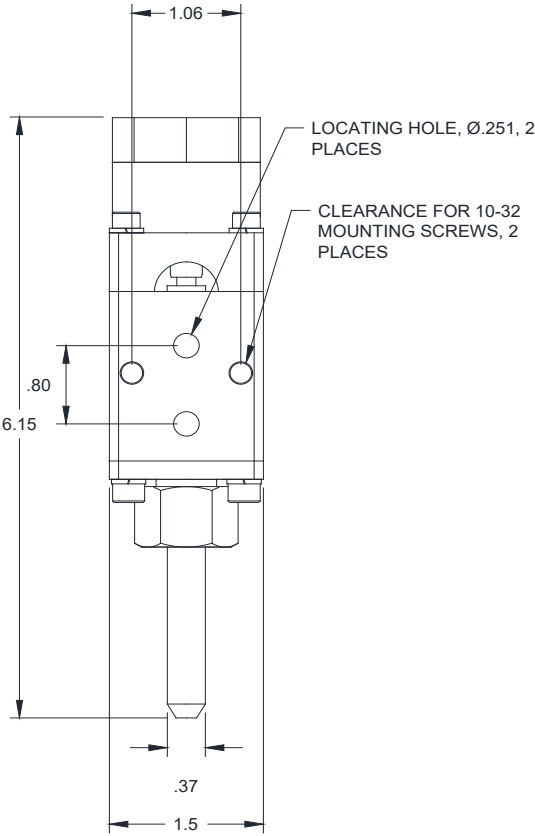


Models 226-001, 226-004

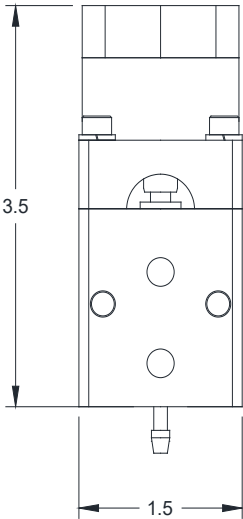


Dimensions

Models 226-002, 226-006, 226-017

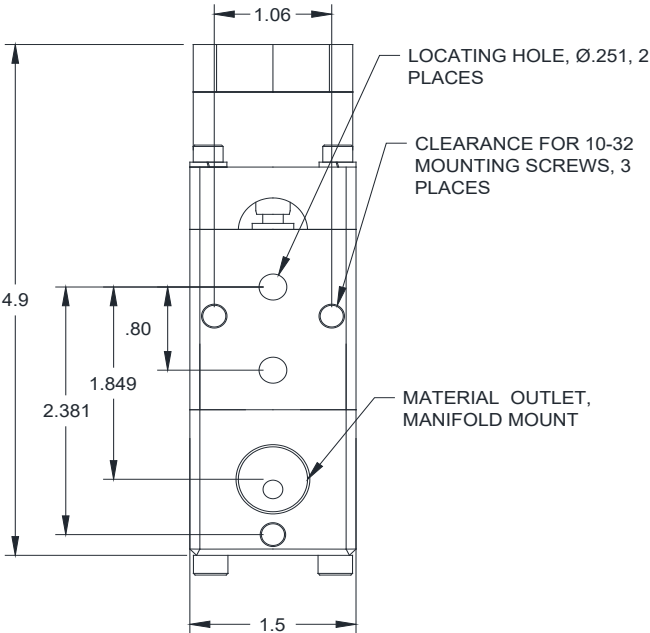


Model 226-008



Dimensions

Models 226-012



Dispense Technologies Standard Warranty

Dispense Technologies warrants all equipment referenced in this document which is manufactured by Dispense Technologies 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 Dispense Technologies, Dispense Technologies will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Dispense Technologies to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Dispense Technologies' written recommendations.

This warranty does not cover and Dispense Technologies 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-Dispense Technologies component parts. Nor shall Dispense Technologies be liable for malfunction, damage or wear caused by the incompatibility of Dispense Technologies equipment with structures, accessories, equipment or materials not supplied by Dispense Technologies, or the improper design, manufacture, installation, operation or maintenance of structures, accessories, equipment or materials not supplied by Dispense Technologies.

This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized Dispense Technologies distributor for verification of the claimed defect. If the claimed defect is verified, Dispense Technologies 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.

Dispense Technologies' 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.

DISPENSE TECHNOLOGIES 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 DISPENSE TECHNOLOGIES. These items sold, but not manufactured by Dispense Technologies (such as electric motors, switches, hose, etc.), are subject to the warranty, if any, of their manufacturer. Dispense Technologies will provide purchaser with reasonable assistance in making any claim for breach of these warranties.

In no event will Dispense Technologies be liable for indirect, incidental, special or consequential damages resulting from Dispense Technologies 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 Dispense Technologies, or otherwise.

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