Operation - Maintenance

Dispensit 1092

332089D

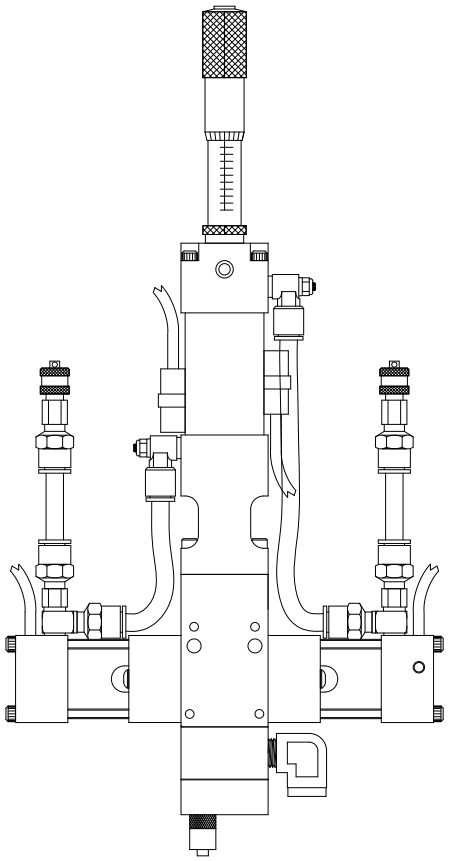
EN

Patented meter and dispense system for precise one-component micro-dispensing.

Dispense Valve

2000 psi (14 MPa, 138 bar) Maximum Outlet Fluid Working Pressure
Metal Sleeves: 1200 psi (8 MPa, 83 bar) Maximum Material Inlet Pressure
Plastic Sleeves: 400 psi (2.8 MPa, 28 bar) Maximum Material Inlet Pressure
100 psi (0.7 MPa, 7 bar) Maximum Air Working Pressure
110°F (43°C) Maximum Ambient Temperature
150°F (65°C) Maximum Operating Temperature

Important Safety Instructions
Read all warnings and instructions in this manual. Save these instructions.



Cycle Detection and Luer Lock Outlet Shown

PROVEN QUALITY. LEADING TECHNOLOGY.

Contents

1092 Valve Models

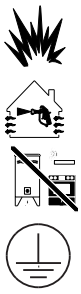
1092 Valves		
Part No.	**Configuration**	**Description**
A2A05051	VALVE, 1092-10A-2RS1-250-V-CD	1 inch stroke, 0.250 diameter rod, nitrided tool steel wetted components, cycle detect
A2A05054	VALVE, 1092-10A-2RS1-375-V-CD	1 inch stroke, 0.375 diameter rod, nitrided tool steel wetted components, cycle detect
A2A05057	VALVE, 1092-10A-2S1-MR.500-CD	1 inch stroke, 0.500 diameter rod, nitrided tool steel wetted components, cycle detect
A2A05011	VALVE, 1092-10A-2RS1-MR.250-V	1 inch stroke, 0.250 diameter rod, nitrided tool steel wetted components
A2A05014	VALVE, 1092-10A-2RS1-375-V, #HWG	1 inch stroke, 0.375 diameter rod, nitrided tool steel wetted components
A2A05017	VALVE, 1092-10A-2RS1-500-V-V, DISPE	1 inch stroke, 0.500 diameter rod, nitrided tool steel wetted components
A2A05069	VALVE, 1092-10A-2TT1-250-V, DISP	1 inch stroke, 0.250 diameter rod, stainless steel wetted components, cycle detect
A2A05075	VALVE, 1092-10A-2TT1-500-V-CD	1 inch stroke, 0.500 diameter rod, stainless steel wetted components, cycle detect
A2A05029	VALVE, 1092-10A-2TT1-250-V, DISP	1 inch stroke, 0.250 diameter rod, stainless steel wetted components
A2A05035	VALVE, 1092-10A-2TT1-500-V, DISP	1 inch stroke, 0.500 diameter rod, stainless steel wetted components
A2A05083	VALVE, 1092-10A-4RS1-375-V-CD	2 inch stroke, 0.375 diameter rod, nitrided tool steel wetted components, cycle detect
A2A05079	VALVE, 1092-10A-4RS1-500-V-CD	2 inch stroke, 0.500 diameter rod, nitrided tool steel wetted components, cycle detect
A2A05093	VALVE, 1092-10A-4RS1-375-V-DISP	2 inch stroke, 0.375 diameter rod, nitrided tool steel wetted components
A2A05039	VALVE, 1092-10A-4RS1-500-V-DISP	2 inch stroke, 0.500 diameter rod, nitrided tool steel wetted components
A2A05080	VALVE, 1092-10A-6RS1-500-V-CD	3 inch stroke, 0.500 diameter rod, nitrided tool steel wetted components, cycle detect
A2A05040	VALVE, 1092-10A-6RS1-500-V, DISP	3 inch stroke, 0.500 diameter rod, nitrided tool steel wetted components

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 symbols refer to procedure-specific risks. When these symbols appear in the body of this manual or on warning labels, refer back to these Warnings. Product-specific hazard symbols and warnings not covered in this section may appear throughout the body of this manual where applicable.

⚠ WARNING	
	**SKIN INJECTION HAZARD** 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. • 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.
	**TOXIC FLUID OR FUMES HAZARD** Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on skin, inhaled, or swallowed. • Read Safety Data Sheets (SDSs) for handling instructions and to know the specific hazards of the fluids you are using, including the effects of long-term exposure. • When spraying, servicing equipment, or when in the work area, always keep work area well-ventilated and always wear appropriate personal protective equipment. See **Personal Protective Equipment** warnings in this manual. • Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.
	**PERSONAL PROTECTIVE EQUIPMENT** Always wear appropriate personal protective equipment and cover all skin when spraying, servicing equipment, or when in the work area. Protective equipment helps prevent serious injury, including long-term exposure; inhalation of toxic fumes, mists or vapors; allergic reaction; burns; eye injury and hearing loss. This protective equipment includes but is not limited to: • A properly fitting respirator, which may include a supplied-air respirator, chemically impermeable gloves, protective clothing and foot coverings as recommended by the fluid manufacturer and local regulatory authority. • Protective eyewear and hearing protection.

⚠ WARNING



FIRE AND EXPLOSION HAZARD

Flammable fumes, such as solvent and paint fumes, in **work area** can ignite or explode. Paint or solvent flowing through the equipment can cause static sparking. To help prevent fire and explosion:

- Use equipment only in well-ventilated area.
- Eliminate all ignition sources; such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static sparking).
- Ground all equipment in the work area. See **Grounding** instructions.
- Never spray or flush solvent at high pressure.
- Keep work area free of debris, including solvent, rags and gasoline.
- Do not plug or unplug power cords, or turn power or light switches on or off when flammable fumes are present.
- Use only grounded hoses.
- Hold gun firmly to side of grounded pail when triggering into pail. Do not use pail liners unless they are anti-static or conductive.
- **Stop operation immediately** if static sparking occurs or you feel a shock**.** Do not use equipment until you identify and correct the problem.
- Keep a working fire extinguisher in the work area.

EQUIPMENT MISUSE HAZARD

Misuse can cause death or serious injury.

- 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.

MOVING PARTS HAZARD

Moving parts can pinch, cut or amputate fingers and other body parts.

- Keep clear of moving parts.
- Do not operate equipment with protective guards or covers removed.
- Pressurized equipment can start without warning. Before checking, moving, or servicing equipment, follow the **Pressure Relief Procedure** and disconnect all power sources.

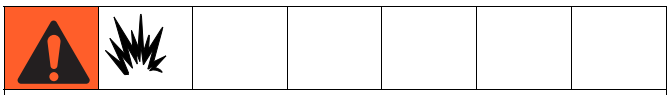
Important Isocyanate (ISO) Information

Isocyanate Conditions

Spraying or dispensing fluids that contain isocyanates
creates potentially harmful mists, vapors, and atomized particulates.

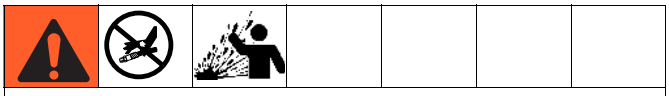
- Read and understand the fluid manufacturer's warnings and Safety Data Sheet (SDS) to know specific hazards and precautions related to isocyanates.
- Use of isocyanates involves potentially hazardous procedures. Do not spray with this equipment unless you are trained, qualified, and have read and understood the information in this manual and in the fluid manufacturer's application instructions and SDS.
- Use of incorrectly maintained or mis-adjusted equipment may result in improperly cured material. Equipment must be carefully maintained and adjusted according to instructions in the manual.
- To prevent inhalation of isocyanate mists, vapors, and atomized particulates, everyone in the work area must wear appropriate respiratory protection. Always wear a properly fitting respirator, which may include a supplied-air respirator. Ventilate the work area according to instructions in the fluid manufacturer's SDS.
- Avoid all skin contact with isocyanates. Everyone in the work area must wear chemically impermeable gloves, protective clothing and foot coverings as recommended by the fluid manufacturer and local regulatory authority. Follow all fluid manufacturer recommendations, including those regarding handling of contaminated clothing. After spraying, wash hands and face before eating or drinking.

Material Self-ignition



Some materials may become self-igniting if applied too thick. Read material manufacturer's warnings and material Safety Data Sheet (SDS).

Keep Components A and B Separate



Cross-contamination can result in cured material in fluid lines which could cause serious injury or damage equipment. To prevent cross-contamination:

- Never interchange component A and component B wetted parts.
- Never use solvent on one side if it has been contaminated from the other side.

Moisture Sensitivity of Isocyanates

Exposure to moisture (such as humidity) will cause ISO to partially cure, forming small, hard, abrasive crystal that become suspended in the fluid. Eventually a film will
form on the surface and the ISO will begin to gel, increasing in viscosity.

NOTICE

Partially cured ISO will reduce performance and the life of all wetted parts.

- Always use a sealed container with a desiccant dryer in the vent, or a nitrogen atmosphere. **Never** store ISO in an open container.
- Keep the ISO pump wet cup or reservoir (if installed) filled with appropriate lubricant. The lubricant creates a barrier between the ISO and the atmosphere.
- Use only moisture-proof hoses compatible with ISO.
- Never use reclaimed solvents, which may contain moisture. Always keep solvent containers closed when not in use.
- Always lubricate threaded parts with an appropriate lubricant when reassembling.

NOTE: The amount of film formation and rate of crystallization varies depending on the blend of ISO, the humidity, and the temperature.

Foam Resins with 245 fa Blowing Agents

Some foam blowing agents will froth at temperatures above 90°F (33°C) when not under pressure, especially if agitated. To reduce frothing, minimize preheating in a circulation system.

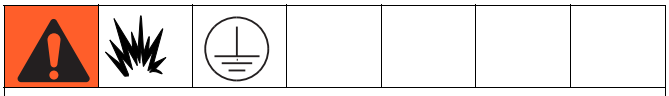
Changing Materials

NOTICE

Changing the material types used in your equipment requires special attention to avoid equipment damage and downtime.

- When changing materials, flush the equipment multiple times to ensure it is thoroughly clean.
- Always clean the fluid inlet strainers after flushing.
- Check with your material manufacturer for chemical compatibility.
- When changing between epoxies and urethanes or polyureas, disassemble and clean all fluid components and change hoses. Epoxies often have amines on the B (hardener) side. Polyureas often have amines on the B (resin) side.

Grounding



The equipment must be grounded to reduce the risk of static sparking. Static sparking can cause fumes to ignite or explode. Grounding provides an escape wire for the electric current.

Metering valve: attach ground wire from grounding lug to true earth ground. See **Component Identification** starting on page 10.

Fluid hoses: use only electrically conductive hoses.

Feed system components: attach ground wire from grounding lug to true earth ground. See feed system manual for grounding points.

Fluid supply container: follow local code.

Solvent pails used when flushing: follow local code. Use only conductive metal pails, placed on a grounded surface. Do not place the pail on a nonconductive surface, such as paper or cardboard, which interrupts grounding continuity.

Overview

This single-component meter and dispense device accurately meters liquid and semi-paste materials.

The machine is ideal for a single-component application requiring very small and precise shots.

The ratio of the pneumatic cylinder area to pump shaft area provides the adjustable pressure intensification needed to move the liquids through the needle with a flow rate suitable for production requirements.

The complete system is enclosed. See **Sequence of Operation** on page 18.

Optional Cycle Detection Sensors

The sensors are magnetic reed switches and must be connected to an electrical control package. The sensors wires are #24 awg and have 9 foot (2.7 meters) flying leads. An LED on the sensor illuminates to indicate a change in state.

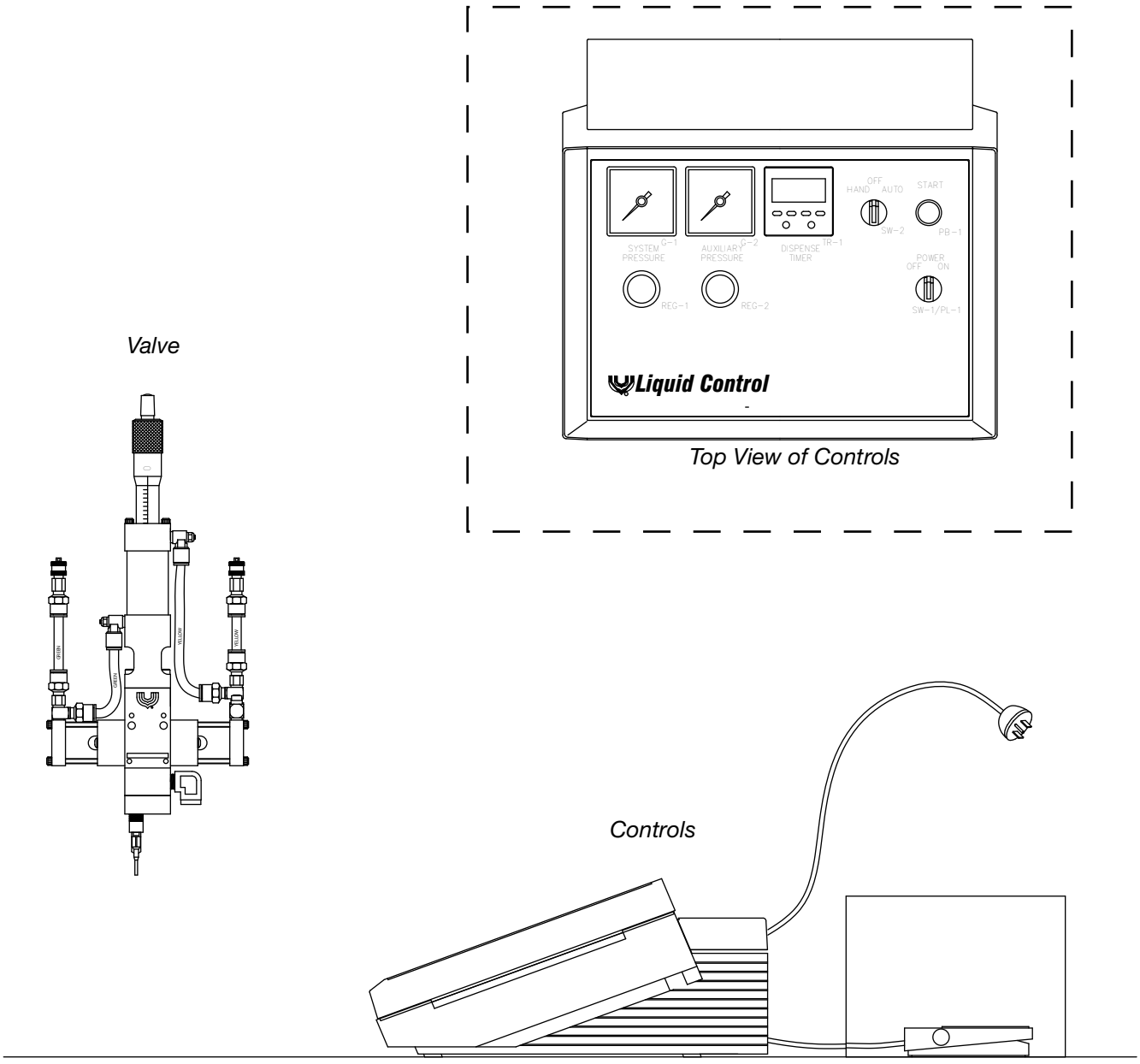
Suggested Sequence of Operation (See page 18).

- The Valve Inputs are listed in FIG. 8, page 36.
- The Valve Outputs (supplied by others) consisting of two power valves or one dual power valve [Solenoid-Close Spool Valve/RETract (Green Tube 1/4 in. OD) and Solenoid-Open Spool Valve/EXTend (Yellow Tube 1/4 in.OD)]. Connect each Quick Disconnect (5/16-24 fitting) to respective power valve port.
- Other needed Input would include some type of Start device (Foot Switch or Control Box) (supplied by others)

1. Home (Reload) Position
    a. Solenoid-Close Spool Valve/RETract is activated.
    b. Solenoid-Open Spool Valve/EXTend is deactivated.
    c. PX-EXT and PX-CSV signal have been made.
    d. PX-RET and PX-OSV signal is not made.
    e. Metering Rod is Retracted.
2. Shot Procedure
    a. Start device signal is made.
    b. Solenoid-Close Spool Valve/RETract is deactivated.
    c. Solenoid-Open Spool Valve/EXTend is activated.
    d. PX-EXT and PX-CSV signal drops off.
    e. Spool shifts from the Reload Position to the Dispense Position.
    f. PX-OSV signal is made.
    g. Metering Rod Extends downward (Dispensing Material).
    h. PX-RET signal is made and Metering Rod is down (Dispense Material Complete).
    i. Solenoid-Open Spool Valve/EXTend is deactivated.
    j. Solenoid-Close Spool Valve/RETract is activated.
    k. PX-OSV signal drops Spool shifts from the Dispense Position to the Reload Position and Metering Rod Retracts upward (Reloading Material).
    l. PX-CSV signal is made.
    m. PX-EXT signal is made.
    n. Dispense Valve is ready for next Start device signal.

Component Identification

Typical System Configurations



System shown with optional 4104A controls

FIG. 1

Typical Feed System Components

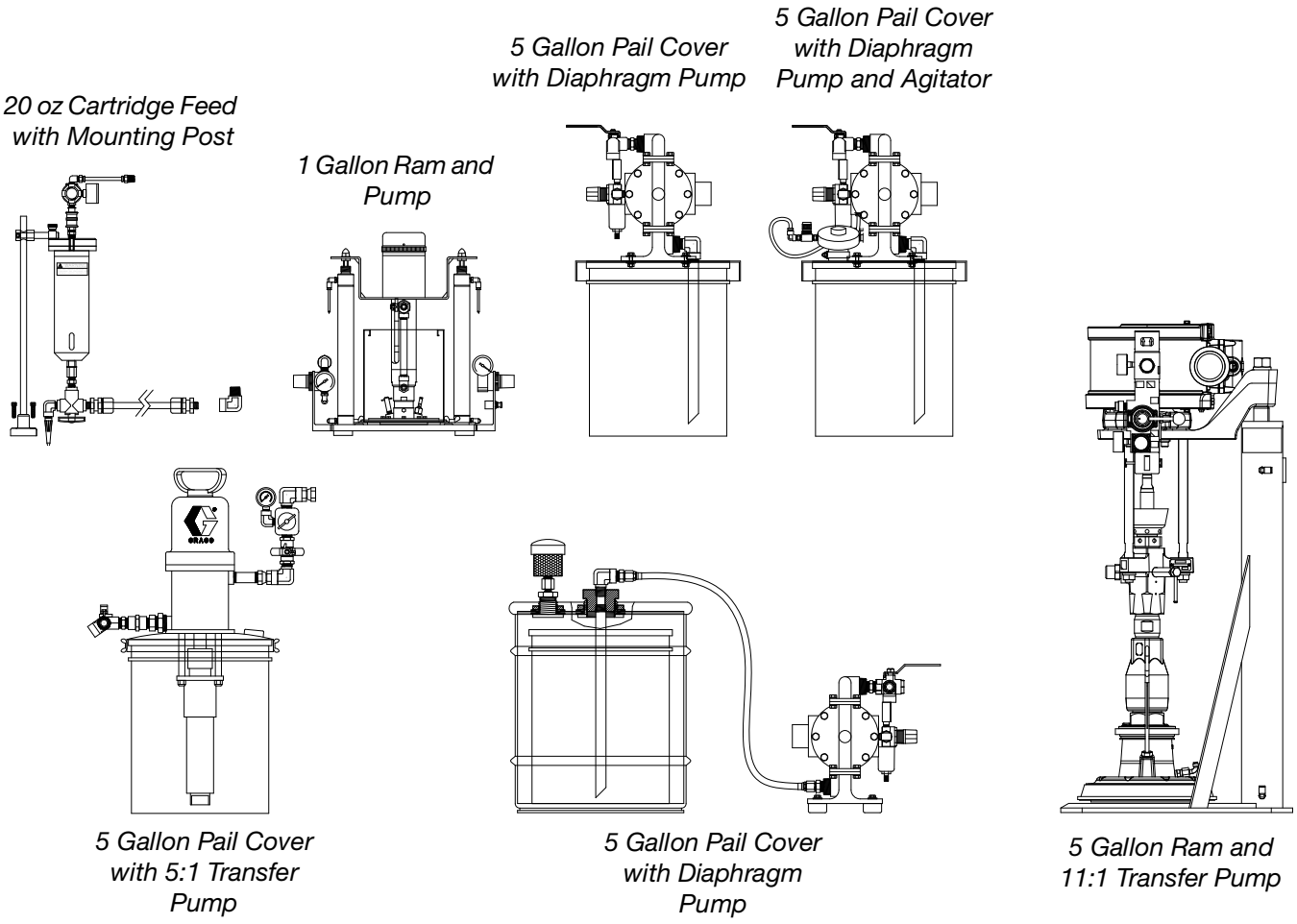
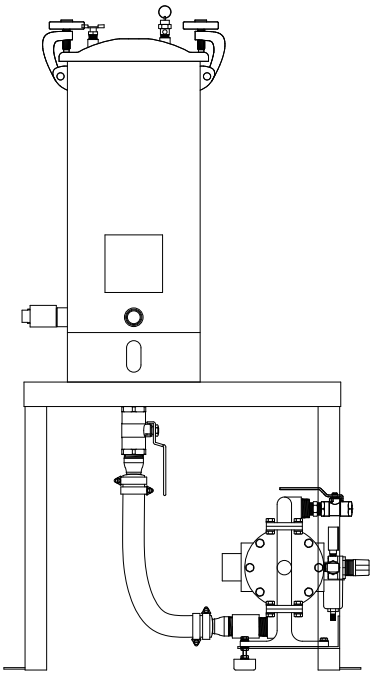
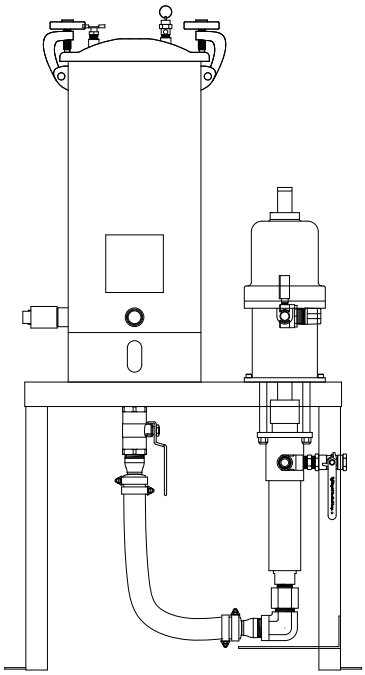


FIG. 2

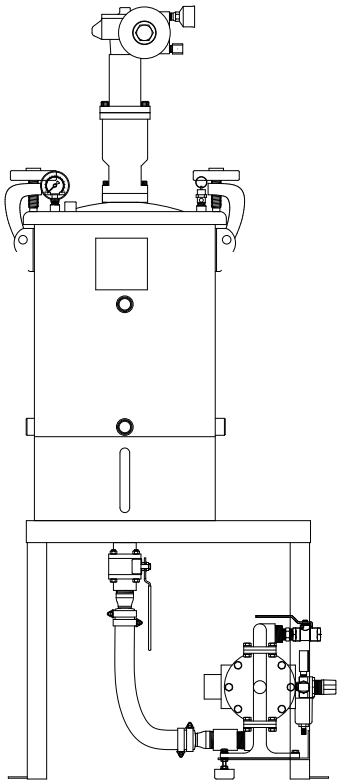
Typical Feed System Components (continued)



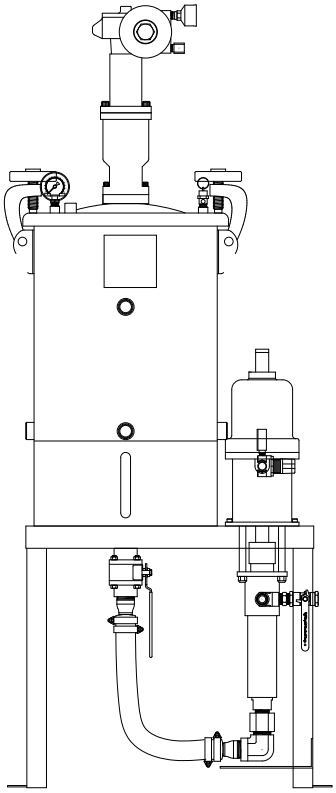
5 Gallon Tank with Diaphragm Pump and Stand



5 Gallon Tank with 5:1 Pump and Stand



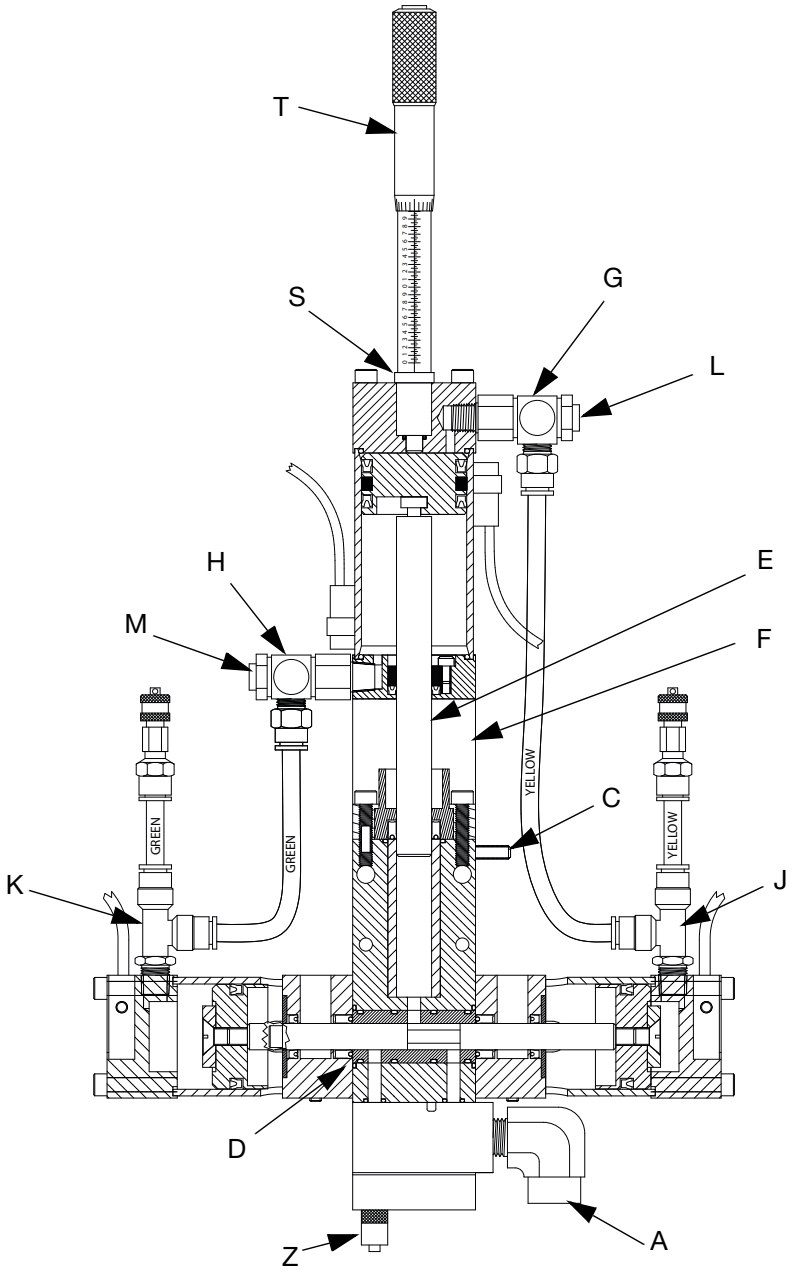
10 Gallon Tank with Diaphragm Pump, Agitator, Vacuum, and Stand



10 Gallon Tank with 5:1 Pump, Agitator, Vacuum, and Stand

FIG. 3

Metering Valve

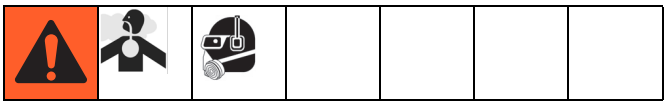


Key:

A	Material Inlet	K	Reload Air Inlet
C	Grounding Lug	L	Extend Air Flow Adjustment Knob
D	Spool	M	Retract Air Flow Adjustment Knob
E	Metering Rod	S	Shot Size Locking Ring
F	Oil Cup Retaining Block	T	Shot Size Adjuster
G	Extend Air Inlet	Z	Luer Lock Outlet
H	Retract Air Inlet		
J	Dispense Air Inlet		

FIG. 4

Setup



NOTE: See **Typical Installation** diagram.

3. Perform Setup procedure for feed system components. See feed system manual(s).

4. Place an in-line air pressure regulator, air-water separator/filter, and shut-off/bleed valve between the air supply and the control solenoids.

5. Connect each 1/4 in. outside diameter supplied air line to the corresponding control solenoid. See **Component Identification** starting on page 10.

6. Connect chemical lines from feed system to metering valve material inlets. See **Component Identification** starting on page 10.

Typical Installation

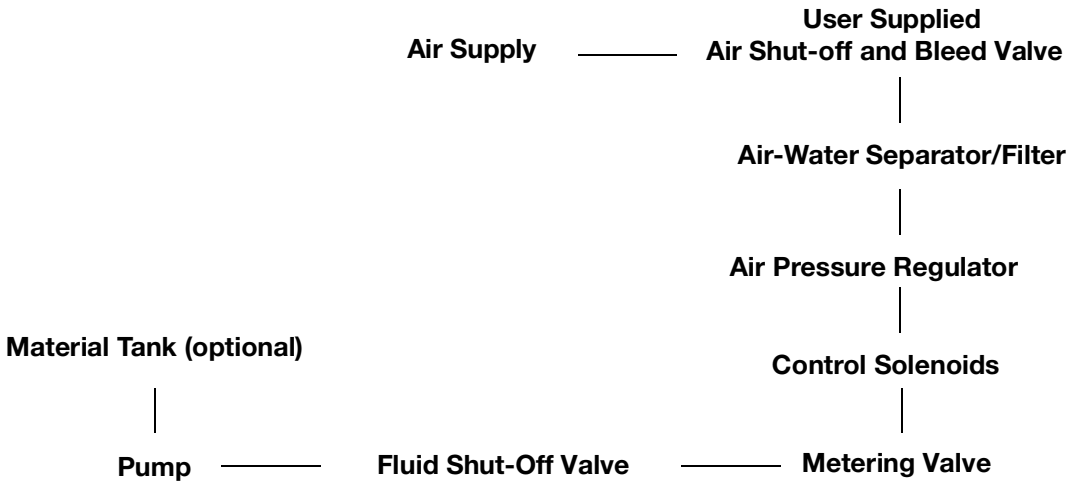


FIG. 5

Valve Mounting Diagram

As desired, use the following diagram to mount the metering valve.

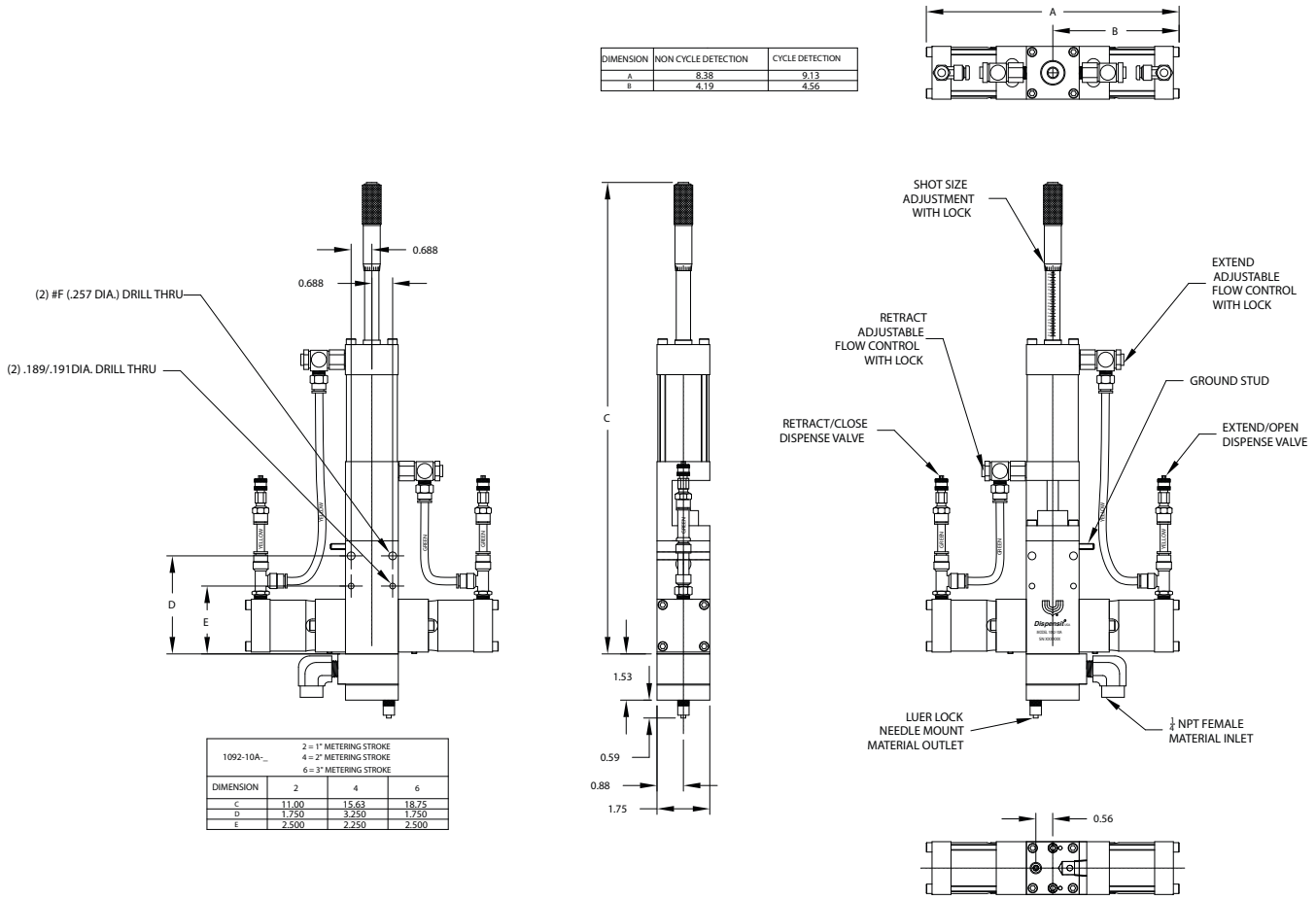


FIG. 6

Startup

1. Lubricate the metering rod port in the oil cup retaining block and fill the spool valve ports with compatible lubricant such as mesamoll or silicone oil.

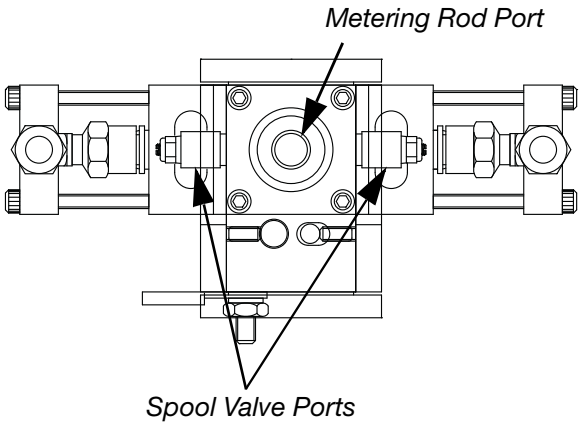


FIG. 7: Top View of Metering Valve with Top Section Removed

2. Pressurize the feed systems connected to the metering valve to prime the system. See **Technical Data** on page 37 for maximum inlet feed pressure.

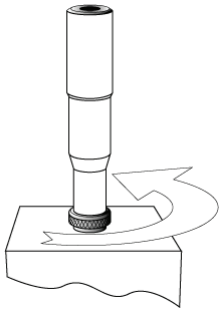
3. Dispense several full stroke shots until material is air-free and has good shut-off at the nose.

NOTE: Very viscous, compressible materials may continue to droll after system is primed. Reduce flow rate as required to produce air-free dispense.

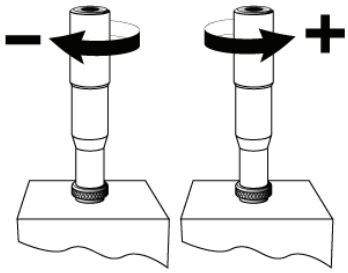
NOTE: Very thin materials may require tilting the valve greater than 45 degrees and dispensing shots until material is air-free. Remove oil from cups before proceeding.

Adjusting the Shot Size

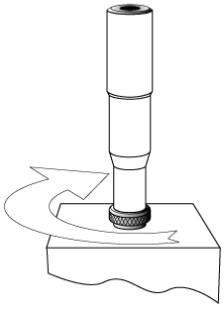
1. Rotate the shot size locking ring counterclockwise to loosen.



2. Rotate the shot size adjuster to adjust shot size.



3. Rotate the shot size locking ring clockwise to tighten.



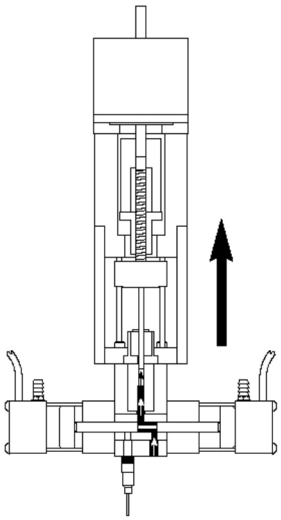
4. Dispense into waste container to test shot size.
5. Repeat until desired shot size is achieved.

Operation

The operation of the 1092 metering valve is controlled by an external source. If a 4104A Control Box was purchased, see the 4104A Control Box manual for operation instructions.

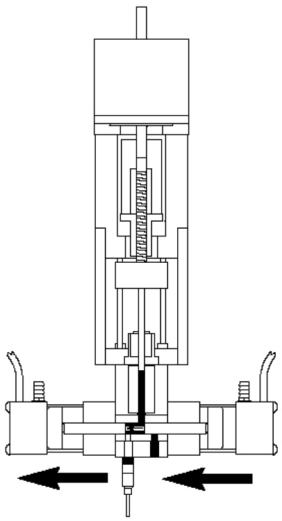
Sequence of Operation

Step 1: Reload



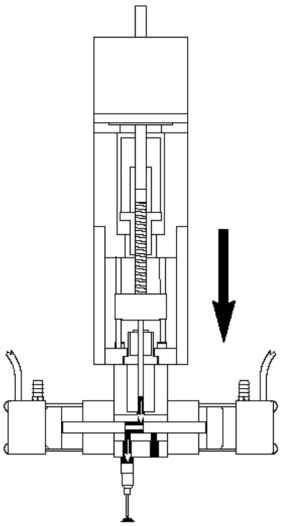
- Spool shifts to the right
- Material feed inlet is opened
- Material is transferred into the metering chambers by a pressurized feed system
- Outlet port is blocked
- Metering rod is retracted to a precise position determining the volume of each material

Step 2: Shift



- The balanced spool shifts to the dispense position
- Material path to the needle is opened
- Material feed inlet port is blocked
- Metering rod remains in the retracted position

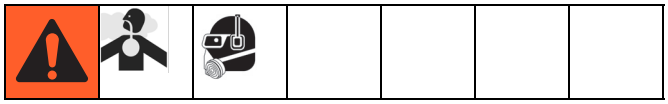
Step 3: Dispense



- Metering rod extends
- Material is dispensed from the metering chamber into the needle

Upon completion of the dispense stroke, the metering rod and spool shifts back to the reload position.

Pressure Relief Procedure

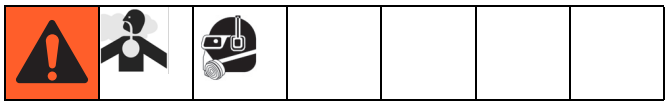


1. Retract the metering rods. See the 4104A Control Box manual.
2. Close the fluid shut-off valve.
3. Remove needle.
4. Dispense 5 shots. Shots should be at least 75% of the full stroke.
5. Extend the metering rod into the tubes. If Graco controls are provided with the system, see the 4104A Controls manual.
6. Close the incoming air shut-off/bleed valve that supplies air to the metering valve.
7. Close the incoming air shut-off/bleed valve that supplies the feed system. Refer to feed system manual for pressure relief procedure.

Shutdown

1. Perform **Pressure Relief Procedure**.
2. Inspect the metering rod for material buildup. Clean as necessary.
3. Lubricate the metering rod with compatible lubricant such as mesamoll or silicone oil.
4. Remove needle and replace with an airtight cap.

Maintenance



Perform the following procedures once a shift.

NOTE: If material is leaking, see **Troubleshooting** on page 20.

Material Reservoirs

Check material levels and refill as necessary. Ensure that the material reservoirs are properly vented.

Air Dryer

Check the condition of the desiccant air dryer. Replace as necessary.

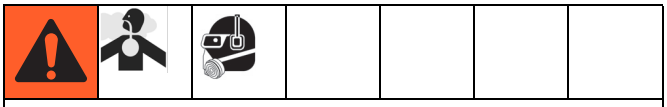
Metering Rod Port

Lubricate with compatible lubricant such as mesamoll or silicone oil. See FIG. 7 on page 16.

Spool Valve Port

Fill with compatible lubricant such as mesamoll or silicone oil. See FIG. 7 on page 16.

Troubleshooting



Perform **Pressure Relief Procedure** before performing any troubleshooting procedure.

Problem	Cause	Solution
Metering valve stalling and no material being dispensed despite adequate input pressure	Blocked needle	Check needle for cured material, replace as required
	Flow control valve closed	Open needle
Metering valve not discharging normal or full volume	Low material level in reservoirs	Fill material reservoirs and prime the machine
	Air in material tank	Fill reservoir and prime machine
Material leaks past spool valve	Spool valve worn or damaged	Replace the spool valve
Spool will not actuate	Low air pressure	Increase air pressure to approximately 20-30 psi
	Cured material on spool	Check spool for cured material, replace as required
	Seals are worn	Replace seals

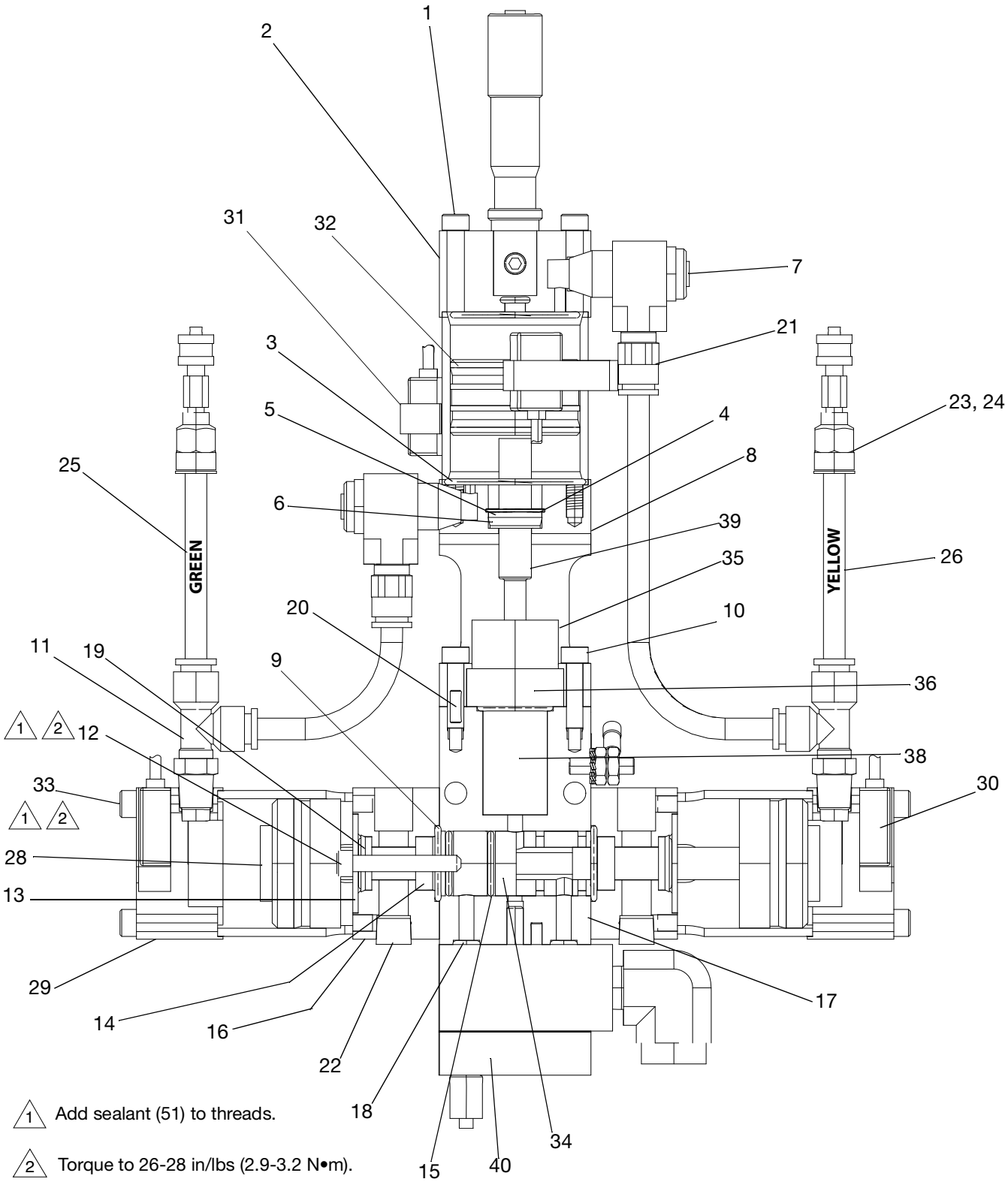
Schematics

For standard machines, the schematics will be included in the 4104A Parts manual.

For custom machines, the schematics will be included in the assembly drawings manual.

Parts

1092 Valve 1” CD



1092 Valve Shared Components, 1” Stroke

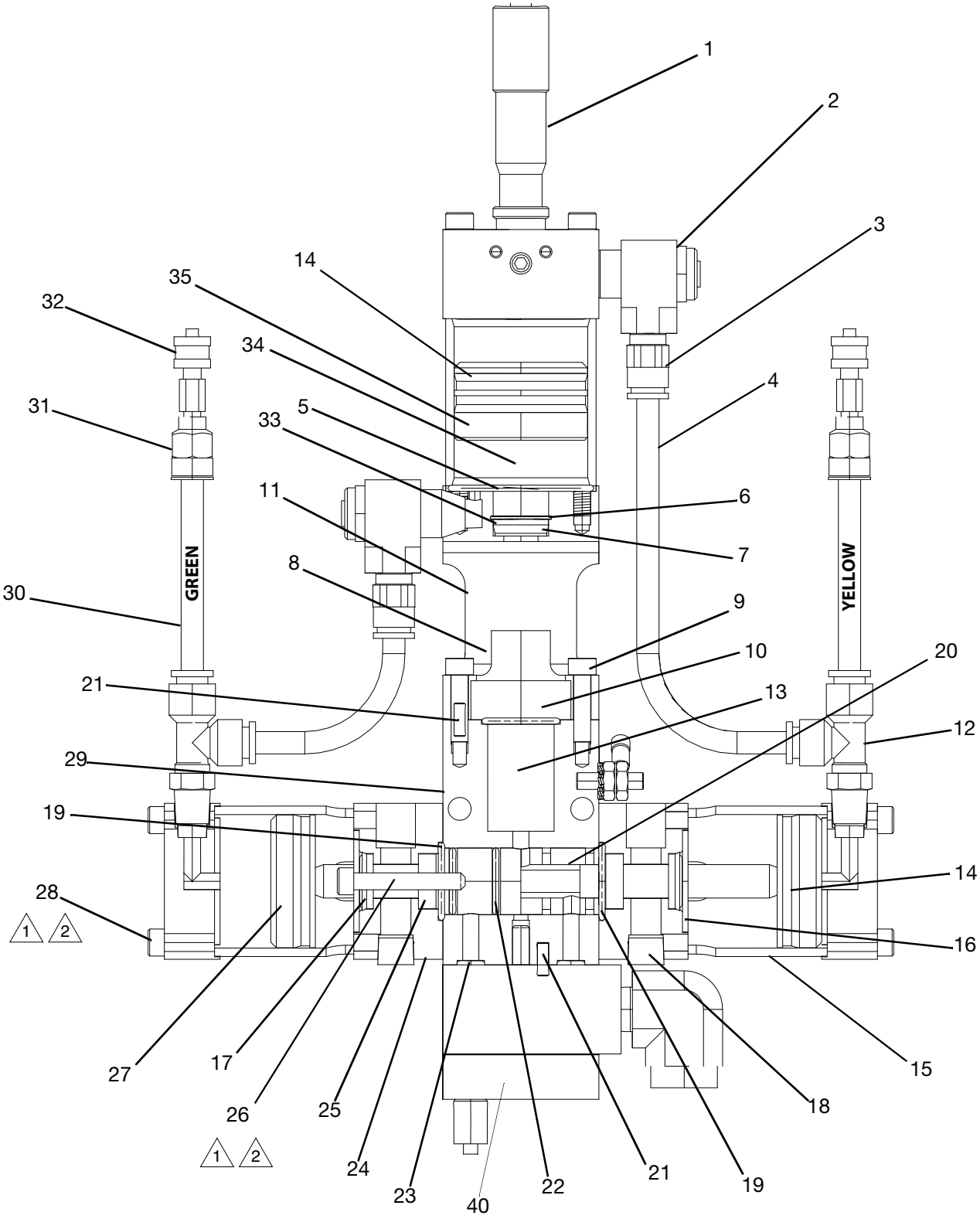
Ref	Part	Description	Qty
1	96/0596/98	SCREW, shc	4
2	A2010186	KIT, 1092, drive cyl assy	1
3	D1000007	O-RING, buna	1
4	96/0425/99	RING, ret, int	1
5	A2000021	WASHER, 1092, nylon	1
7	82/0223/11	VALVE, cntl, flow	2
8	A2000020	BLOCK, 1092, divorced sect, A	1
9	95/0903/00	O-RING, vit	3
10	120961	SCREW	2
11	94/0708/96	FITTING, tee, run	2
12	B4000023	SCREW, shc	4
13	A2000007	RETAINER, 1092, seal	2
14	D2000040	SEAL, pospk	2
15	95/0909/00	O-RING, vit	4
16	A2000006	CUP, 1092, seal plate	2
17	A2000163	HOUSING, 1092	1
18	95/0503/00	O-RING	2
19	95/0849/11	SEAL, posipak	2
20	J1000002	PIN, roll	3
21	94/0702/96	FITTING	2
22	J6300019	PLUG	4
23	94/0740-B/99	CONNECTOR	2
24	940170/99	FITTING, conn	2
25	61/2904-GN/11	TUBE	4
26	61/2904-YL/11	TUBE	4
28	A2010087	PISTON, 1092, assy, spool, magnet	2
29	A2010101	CAP, 1092, end, mag piston	2
30	F0200043	SWITCH, reed	4
31	F0200104	CLAMP, reed, clamp, tie-rod	2
32	A2010164	PISTON, 1092, magnetic drive assy	1
33	96/0332/99	SCREW, shc	8
40	A2010029	NEEDLE, 1092, adapter assembly	1
51	070311	SEALANT, thread, removable, purple	1

CD

1092 Valve Variable Components With 1” Stroke, CD

Ref. No.	Description	RS 250	RS 375	RS 500	TT 250	TT500	Qty
		A2A05051	A2A05054	A2A05057	A2A05069	A2A05075	
34	SPOOL, 1092	A2010014	A2010014	A2010014	A2010013	A2010013	1
35	SEAL, 1092	A2000017	A2000018	A2000019	A2000017	A2000019	1
36	SEAL, pospk	D2000042	D2000040	95/0873/11	D2000042	95/0873/11	1
37	KIT, seal, 1092-10A	D5000009	D5000010	D5000011	D5000009	D5000011	1
38	SLEEVE, 1092	A2000012	A2000014	A2000016	A2000504	A2000506	1
39	ROD, 1092, meter	A2000025	A2000026	A2000027	A2000287	A2000289	1
41	LABEL, decal	84/1050-1200/11	84/1050-1200/11	84/1050-1200/11	84/1050-400/11	84/1050-400/11	1

1092 Valve 1” Without CD



1 Add sealant (51) to threads.

2 Torque to 26-28 in/lbs (2.9-3.2 N•m).

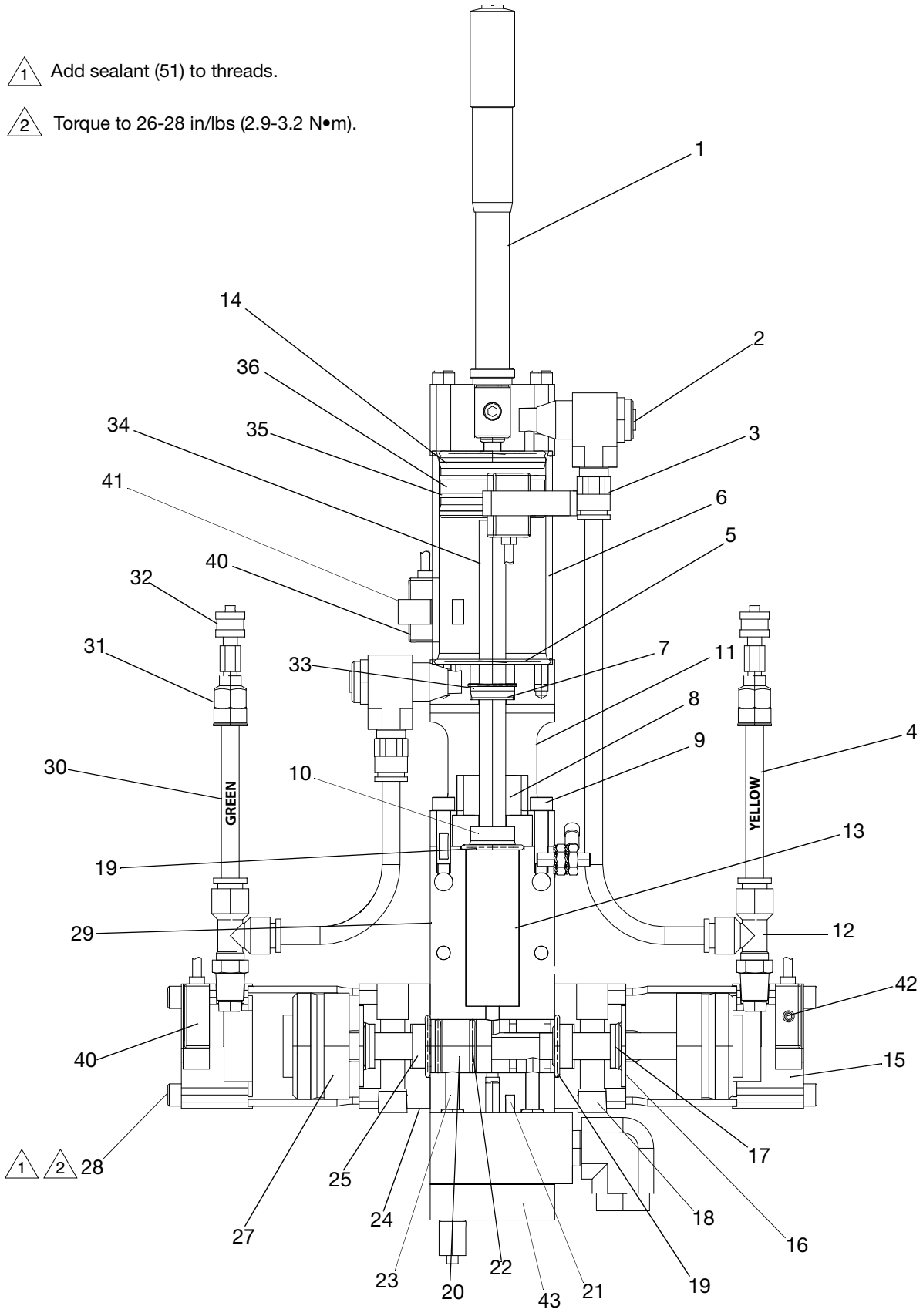
1092 Valve Shared Components, 1” Stroke

Ref	Part	Description	Qty
1	A2010186	KIT, 1092, drive cyl assy	1
2	82/0223/11	VALVE, cntl, flow	2
3	94/0702/96	FITTING	2
4	61/2904-YL/11	TUBE	4
6	96/0425/99	RING, ret, int	1
7	95/0600/01	SEAL, u-cup	1
9	120961	SCREW, shc	2
11	A2000020	BLOCK, 1092, divorced sect, a	1
12	94/0708/96	FITTING, tee, run	2
14	95/0601/01	SEAL, u-cup	2
15	A2010015	CAP, 1092, end cap assy, spool	2
16	A2000007	RETAINER, 1092, seal	2
17	95/0849/11	SEAL, posipak	2
18	J6300019	PLUG	4
19	95/0903/00	O-RING, vit	3
21	J1000002	PIN, roll	3
22	95/0909/00	O-RING, vit	4
23	95/0503/00	O-RING, vit	2
24	A2000006	CUP, 1092, seal plate	2
25	D2000040	SEAL, pospk	2
26	B4000023	SCREW, shc	4
27	A2000009	PISTON, 1092, spool notes	2
28	96/0509/98	SCREW, shc	8
29	A2000163	HOUSING, 1092	1
30	61/2904-GN/11	TUBE	4
31	94/0740-B/99	CONNECTOR	2
32	94/0170/99	FITTING, conn	2
33	A2000021	WASHER, 1092, nylon	1
35	A2000030	PISTON, 1092, disp, non-magnet	1
40	A2010029	NEEDLE, 1092, adapter assembly	1
51	070311	SEALANT, thread, removable, purple	1

1092 Valve Variable Components With 1” Stroke

Ref. No.	Description	RS 250 A2A05011	RS 375 A2A05014	RS 500 A2A05017	TT 250 A2A05029	TT500 A2A05035	Qty
5	O-RING	D1000007	D1000007	95/0504/01	D1000007	D1000007	1
8	SEAL, 1092, cup	A2000017	A2000018	A2000019	A2000017	A2000019	1
10	SEAL, pospk	D2000042	D2000040	95/0873/11	D2000042	95/0873/11	1
13	SLEEVE, 1092, dispense, 0.250, 2T	A2000012	A2000014	A2000016	A2000504	A2000506	1
20	SPOOL, 1092, assy, t type, ss/te	A2010014	A2010014	A2010014	A2010013	A2010013	1
34	ROD, 1092, meter, 2T type, 0.250	A2000025	A2000026	A2000027	A2000287	A2000289	1
38	KIT, seal, 1092-10A-***-250-V	D5000009	D5000010	D5000011	D5000009	D5000011	1
39	LABEL, decal, mat’l, max, bar, clear	84/1050-1200/11	84/1050-1200/11	84/1050-1200/11	84/1050-400/11	84/1050-400/11	1
-	SCREW, shc	96/0332/99	96/0596/98	NA	96/0596/98	96/0596/98	4

1092 Valve 2” CD



1092 Valve Shared Components, 2” Stroke CD

Ref	Part	Description	Qty
1	A2010188	KIT, 1092, drive cyl assy	1
2	82/0223/11	VALVE, cntl, flow	2
3	94/0702-PL/96	CONNECTOR	2
4	61/2904-YL/11	TUBE	4
9	120961	SCREW, shc	2
12	94/0708-PL/96	FITTING, tee, run	2
14	95/0601/01	SEAL, u-cp	2
15	A2010101	CAP, 1092, end, mag piston	2
16	A2000007	RETAINER, 1092, seal	2
17	95/0849/11	SEAL, posipak	2
18	J6300019	PLUG	4
19	95/0903/00	O-RING, vit	3
20	A2010014	SPOOL, 1092	1
21	J1000002	PIN, roll, 1/8 x .38, sst	3
22	95/0909/00	O-RING, vit	4
23	95/0503/00	O-RING, vit	2
24	A2000006	CUP, 1092, seal plate	2
25	D2000040	SEAL, pospk	2
26*	B4000023	SCREW, shc	4
27	A2010087	PISTON, 1092	2
28	96/0332/99	SCREW, shc	8
29	A2000454	BLOCK, 1092	1
30	61/2904-GN/11	TUBE	4
31	94/0740-B/99	CONNECTOR	2
32	94/0170/99	FITTING, conn	2
35	01/2702/97	PISTON, air cyl, rod, pd	1
36	A2000296	MAGNET, 1092, dispense piston	1
39	84/1050-1200/11	LABEL, decal	1
40	F0200043	SWITCH, reed	4
41	F0200104	SWITCH, reed, strap, brkt, mtg	2
42	B3500049	SCREW, shs	2
43	A2010029	NEEDLE, 1092, adapter assembly	1
51	070311	SEALANT, thread, removable, purple	1

* *Not shown.*

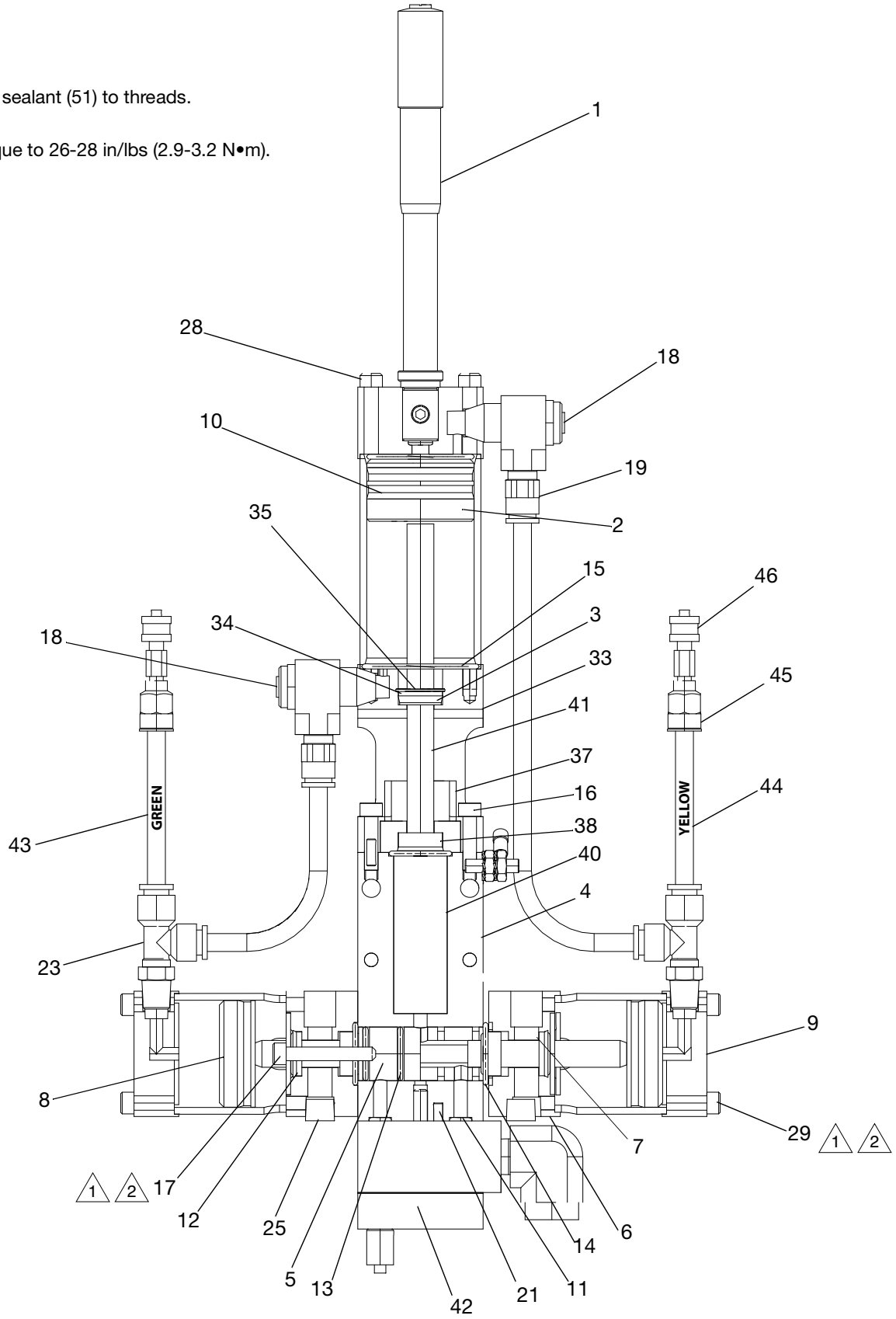
1092 Valve Variable Parts With 2” Stroke, CD

Ref. No.	Description	RS 375 A2A05083	RS 500 A2A05079	Qty
5	O-RING, buna	D1000007	95/0504/01	1
6	SCREW, shc	A2010188S	B3000047	4
7	SEAL, u-cup	95/0600/01	95/0605/01	1
8	SEAL, 1092, cup	A2000018	A2000019	1
10	SEAL, Pospk, xxx, p/vit	D2000040	95/0873/11	1
11	BLOCK, 1092, divorced sect	A2000020	A2000443	1
13	SLEEVE, 1092, dispense	A2000738	A2000452	1
33	WASHER, 1092, nylon	A2000021	A2000444	1
34	ROD, 1092, meter	A2000737	A2000486	1
38	KIT, seal, 1092-10A-***-***-V	D5000010	D5000011	1
-	RING, ret, int	96/0425/99	NA	1

1092 Valve 2” Without CD

1 Add sealant (51) to threads.

2 Torque to 26-28 in/lbs (2.9-3.2 N•m).



1092 Valve Shared Components, 2” Stroke

Ref	Part	Description	Qty
1	A2010188	KIT, 1092, drive cyl assy	1
2	A2000030	PISTON, 1092, disp, non-magnet	1
4	A2000454	BLOCK, 1092	1
5	A2010014	SPOOL, 1092	1
6	A2000006	CUP, 1092, seal plate	2
7	A2000007	RETAINER, 1092, seal	2
8	A2000009	PISTON, 1092, spool notes	2
9	A2010015	CAP, 1092, end cap assy, spool	2
10	95/0601/01	SEAL, u-cp	2
11	95/0503/00	O-RING, vit	2
12	95/0849/11	SEAL, posipak	2
13	95/0909/00	O-RING, vit	4
14	95/0903/00	O-RING, vit	3
15	D1000007	O-RING, buna	1
16	120961	SCREW, shc	2
17	B4000023	SCREW, shc	4
18	82/0223/11	VALVE, cntl, flow	2
19	94/0702/96	FITTING	2
21	J1000002	PIN, roll, 1/8 x .38, sst	3
23	94/0708/96	FITTING, tee, run	2
25	J6300019	PLUG	4
29	96/0509/98	SCREW, shc	8
30	84/1050-1200/11	LABEL, decal	1
38	D2000040	SEAL, pospk	2
42	A2010029	NEEDLE, 1092	1
43	61/2904-GN/11	TUBE	4
44	61/2904-YL/11	TUBE	4
45	---	CONNECTOR	2
46	---	FITTING, conn	2
51	070311	SEALANT, thread, removable, purple	1

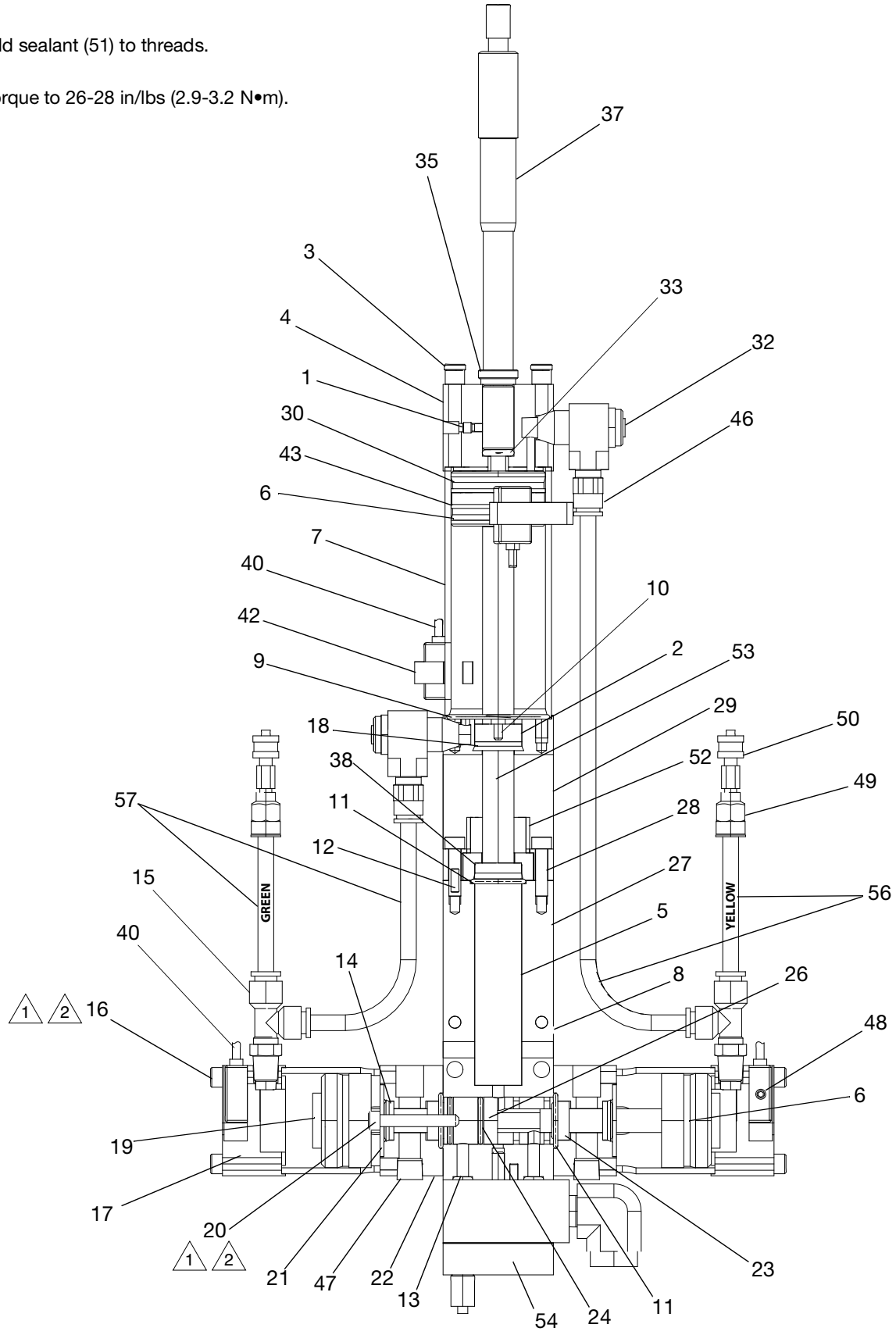
1092 Valve Variable Parts With 2” Stroke

Ref. No.	Description	RS 375 A2A05093	RS 500 A2A05039	Qty
3	SEAL, u-cup	95/0600/01	95/0605/01	1
28	SCREW, shc	A2010188S	122747	4
33	BLOCK, 1092, divorced sect	A2000020	A2000443	1
34	WASHER, 1092, nylon	A2000021	A2000444	1
35	RING, ret	96/0425/99	NA	1
37	SEAL, 1092, cup	A2000018	A2000019	1
39	KIT, seal, 1092-10A-***-***-V	D5000010	D5000011	1
40	SLEEVE, 1092, dispense	A2000738	A2000452	1
41	ROD, 1092, meter	A2000737	A2000486	1
-	LUBRICANT, grease, krytox	NA	84/0200-K3/11	1
-	SEAL, pospk	D2000040	95/0873/11	1

1092 Valve 3” CD

1 Add sealant (51) to threads.

2 Torque to 26-28 in/lbs (2.9-3.2 N•m).



1092 Valve Components, 3” Stroke CD

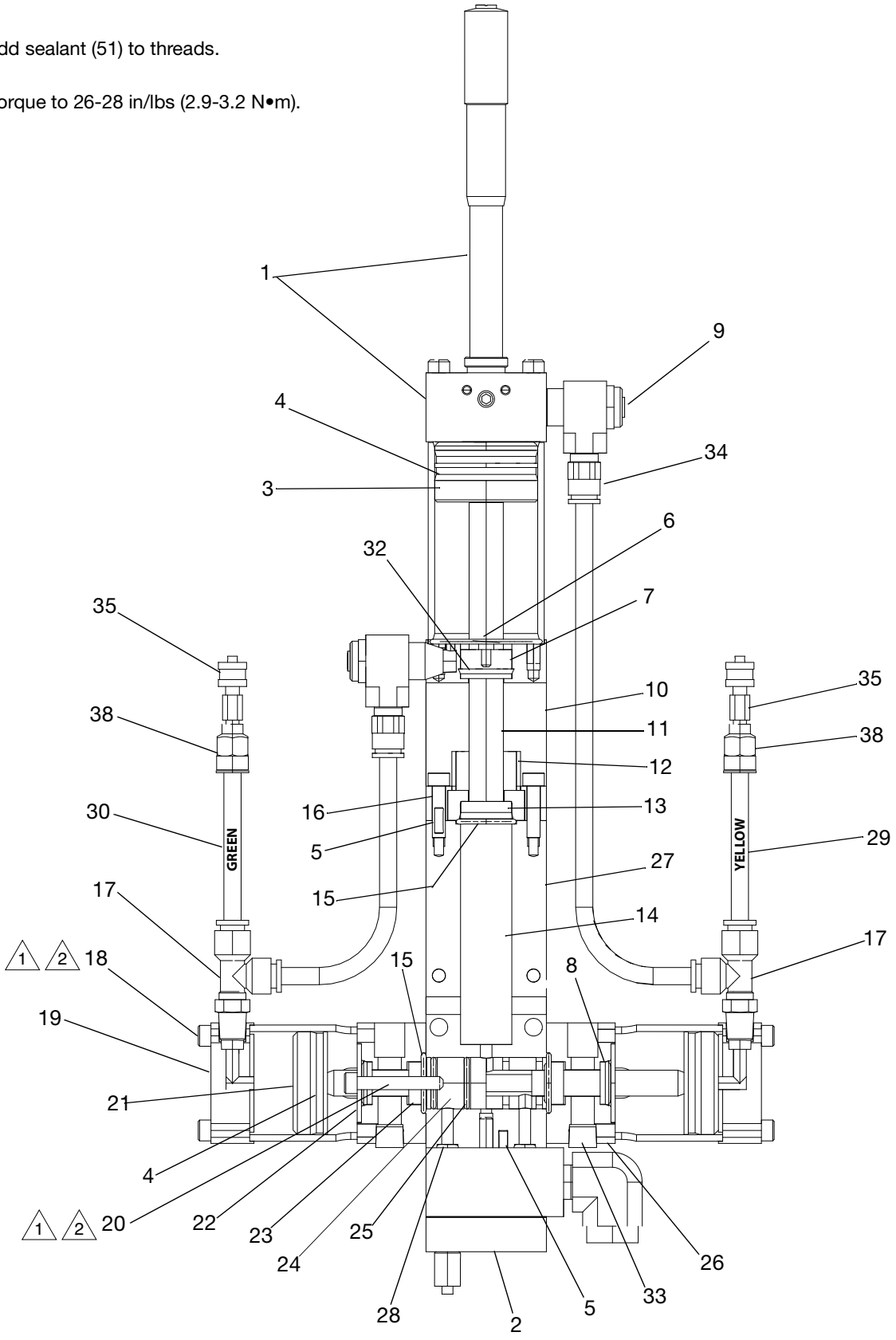
Ref	Part	Description	Qty
1	B3500019	SCREW, shs	1
2	A2000444	WASHER, 1092, retaining cap	1
3	B4050004	NUT, allen	4
4	A2000448	ZEE	1
5	A2000445	SLEEVE, 1092, dispense	1
6	95/0601/01	SEAL, u-cp	4
7	A2000447	MODULE	1
8	84/1050-1200/11	LABEL, decal, mat’l, max, bar, clear	1
9	D1000007	O-RING, buna	1
10	B3000047	SCREW, shc	2
11	95/0903/00	O-RING, vit	3
12	J1000002	PIN, roll	3
13	95/0503/00	O-RING, vit	2
14	95/0849/11	SEAL, posipak	2
15	94/0708/96	FITTING, tee	2
16	96/0332/99	SCREW, shc	8
17	A2010101	CAP, 1092, end, mag piston, clr, a	2
18	95/0605/01	SEAL, u-cup	1
19	A2010087	PISTON, 1092, assy, spool, magnet, al	2
20	B4000023	SCREW, shc	4
21	A2000007	RETAINER, 1092, seal	2
22	A2000006	CUP, 1092, seal plate	2
23	D2000040	SEAL, pospk	2
24	95/0909/00	O-RING, vit	4
25*	A2010013	SPOOL, 1092, assy	1
26	A2010014	SPOOL, 1092, assy	1
27	A2000891	BLOCK, 1092, main blk	1
28	120961	SCREW, shc	2
29	A2000443	BLOCK, 1092, divorced sectio	1
30	01/2702/97	PISTON, air cyl, rod	1
31*	A2010164	PISTON, 1092, magnetic drive assy	1
32	82/0223/11	VALVE, cntl, flow	2
33	95/0502/00	O-RING, vit	1
35	A1000027	SPACER, ptfe	1
37	J2000011	TOOL, micrometer	1
39*	B4000051	FASTENER, all thread	4
40	F0200043	SWITCH, reed	4
41*	F0200094	SWITCH, reed, strap, brkt, mtg, reed	2
42	F0200104	CLAMP, reed, clamp, tie-rod	2
43	A2000296	MAGNET, 1092, dispense piston	1
45*	A2010187	KIT, 1092, drive cyl assy	1
46	J6300002	FITTING, barb	2
47	J6300019	PLUG	4
48	B3500049	SCREW, shs	2
49	94/0740-B/99	CONNECTOR	2
50	94/0170/99	FITTING, conn, qc	2
51	070311	SEALANT, thread, removable, purple	1
52	A2000019	SEAL, 1092, cup	1
53	A2000450	ROD, 1092, meter	1
54	A2010029	NEEDLE, 1092, adptr asy, sngl, tef/	1
55	D5000011	KIT, seal	1
56	61/2904-YL/11	TUBE, yellow	4 ft
57	61/2904-GN/11	TUBE, green	4 ft
58	95/0873/11	SEAL, pospk	1

* *Not shown.*

1092 Valve 3” Without CD

1 Add sealant (51) to threads.

2 Torque to 26-28 in/lbs (2.9-3.2 N•m).



1092 Valve, 3” Stroke Without CD

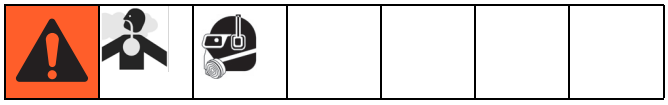
Ref	Part	Description	Qty
1	A2010187	KIT, 1092, drive cyl assy, 3.00	1
2	A2010029	NEEDLE, 1092, adptr asy, sngl, tef/	1
3	A2000030	PISTON, 1092, disp, non-magnet	1
4	95/0601/01	SEAL, u-cp	2
5	J1000002	PIN, roll	3
6	B3000023	SCREW, shc	2
7	A2000444	WASHER, 1092, retaining cap	1
8	95/0849/11	SEAL, posipak	2
9	82/0223/11	VALVE, cntl, flow	2
10	A2000443	BLOCK, 1092, divorced section	1
11	A2000450	ROD, 1092, meter	1
12	A2000019	SEAL, 1092, cup	1
13	95/0873/11	SEAL, pospk	1
14	A2000445	SLEEVE, 1092, dispense	1
15	95/0903/00	O-RING, vit	3
16	127627	SCREW	2
17	94/0708-PL/96	FITTING, tee	2
18	96/0509/98	SCREW, shc	8
19	A2010015	CAP, 1092, end cap assy, spool	2
20	B4000023	SCREW, shc	4
21	A2000009	PISTON, 1092, spool notes	2
22	A2000007	RETAINER, 1092, seal	2
23	D2000040	SEAL, pospk	2
24	A2010014	SPOOL, 1092, assy	1
25	95/0909/00	O-RING, vit	4
26	A2000006	CUP, 1092, seal plate	2
27	A2000891	BLOCK, 1092, main blk	1
28	95/0503/00	O-RING, vit	2
29	61/2904-YL/11	TUBE	4
30	61/2904-GN/11	TUBE	4
31	D5000011	KIT, seal	1
32	95/0605/01	SEAL, u-cup	1
33	J6300019	PLUG	4
34	94/0702-PL/96	CONNECTOR	2
35	94/0170/99	FITTING, conn	2
36	84/0200-K3/11	LUBRICANT, grease, krytox	1
37	84/1050-1200/11	LABEL, decal, mat’l, max, bar, clear	1
38	94/0740-B/99	CONNECTOR	2
51	070311	SEALANT, thread, removable, purple	1

Rebuild

Disassembly

1. **For models with cycle detection sensors,** disconnect the electrical power from the cycle detection sensors. Note the position of the sensors, then remove them by loosening the set screws and sliding them out carefully.
2. Turn off the material inlet pressure to the 1092.
3. Cycle the valve a few times to remove residual material pressure.
4. Turn off the air pressure to the 1092.
5. Remove the air pressure lines from the air supply Tee Fittings (17 & 17). Do not remove the fittings themselves.
6. Remove the material inlet line from the Inlet Block.
7. Remove the dispense valve from its mounting.
8. Remove the Screws, that hold the Needle Block Assembly to the Inlet Block. The Needle Block Assembly may look different than the illustration as it may have multiple needles. If the needle is a removable #10-32 or Luer Lock type consider removing it to protect it.
9. Remove and inspect the gasket. If it is in good condition you can re-use it; otherwise, discard it and secure a replacement.
10. Remove the Screws that attach the Inlet Block to the Main Body (27). If necessary for cleaning, remove any adapter fitting (not shown) that may be installed in the Inlet Block.
11. Remove the o-rings.
12. Remove the four Screws (18) and the End Cap (19) on each side of the valve. Disconnect the short air line sections on each side.
13. Remove the two Spool Shift Pistons (21) from the End Caps (19). They should come out easily but if not use low pressure (less than 2 psi or 0.1 bar) air at the Tee Fitting (17) to move them. Remove the U-cup seals (4) from the Spool Shift Pistons (21).
14. At the top of the valve, remove the four Screws (1) and remove the Drive Cylinder End Cap Assembly (2). Disconnect the air line from the Tee Fitting (17).
15. Separate the Dispense Piston (3) from the Metering Rod (11).
16. Remove the two U-cup seals (4) from the Dispense Piston (3).
17. Remove O-ring (5) from the Divorced Section (10).
18. Remove the Screws (16) that hold the Divorced Section (10) to the Main Body (27) and remove O-ring (15).
19. Remove the Metering Rod (11) and Seal Cup (12) from the Divorced Section (10).
20. Push the Seal Cup (12) off the Metering Rod and remove the Posipak seal (13).
21. Use snap ring pliers to remove Retaining Ring (6) and Washer (7) from the Divorced Section (10). Remove the U-cup seal (8).
22. Remove the Dispense Sleeve (14) from the Main Body (27).
23. Remove the Screws (20) that hold the Seal Plate Cups (26) to each side of the Main Body (27). The Seal Retainer Washers (22), and the Posipak Seals (23) will come off with the Seal Plate Cups.
24. Push the Spool Assembly (24) out with a finger. If it does not slide out, tap it gently using a wood or plastic dowel.

Assembly



Clean all valve parts with an appropriate solvent prior to reassembly. Always install new, lubricated o-rings and seals when assembling the valve. Use Krytox 203GPL (part number 84/0200-K3/11) for lubricating valve parts including seals and o-rings. Check the Metering Rod (11), Dispense Sleeve (14), and Sleeve Assembly (24) for wear and if they are worn secure replacements before proceeding.

Carefully install new U-cup and Posipak seals so that they are not pinched or torn. Do this by making sure they are lubricated, and by tucking the lips of the seal inward before uniformly pushing them into position.

Install the Seal Plate Cups on the Main Body

1. Install a lubricated O-ring (15) on the left side of the Main Body (3) next to the sleeve part of the Spool Assembly (24).

2. Install two lubricated Posipak Seals (23) in the left Seal Plate Cup (26) so that the O-ring side of both Posipaks will be facing the Main Body (27). Be sure to tuck the lip of the Posipak into its cavity to avoid tearing it.

3. Position the left Seal Cup Plate (26) with the oil cup upwards and slide it over the Spool part of the Spool Assembly (24) with the counterbore for the Seal Retainer (22) facing out. Slide the Seal Retainer (22) over the Spool and install two Screws (20) using purple thread locker. Torque fasteners to 26-28 in/lbs (2.9-3.2 N•m).

4. Repeat steps 3, 4 and 5 for the right side Seal Plate Cups.

Build the Divorced Section and Mount to the Main Body

5. Place lubricated U-cup Seal (8) lip side up into the Divorced Section (10). Place the Washer (7) over it, and reinstall the Retaining Ring (6).

6. Lubricate and insert the Metering Rod (11) into the Divorced Section (10) from the bottom and push up carefully through the U-cup seal (8).

7. Install the Seal Cup (12) into the Divorced Section (10) over the Metering Rod (11) and slide the lubricated Posipak Seal (13) over the Metering Rod keeping the O-ring side of the Posipak facing down. The ends of the Metering Rod (11) should be projecting from the upper and lower ends of the Divorced Section.

8. Lubricate the dispense sleeve bore in the Main Body (27). Insert the Dispense Sleeve (14) into the Main Body (27). Check for threads that may be in the inside of the sleeve due to tapping during removal and make sure these are at the top.

9. Install a lubricated O-ring (15) around the Dispense Sleeve (14).

10. Holding the Divorced Section (10) and using the projecting Metering Rod (11) as a guide slide the Metering Rod (11) into the Dispense Sleeve (14) and install the Divorced Section (10) against the Main Body (27). Install the Screws (16).

Mount the Valve End Caps to the Seal Plate Cups

11. Install a lubricated U-cup Seal (4) onto the left Spool Shift Piston (21) with lip side out as shown. Lubricate the bore in the End Cap (19). Slide the piston into the left End Cap (19) tucking the lip of the seal into the End Cap carefully.

12. Install the Piston/End Cap onto the left Seal Plate Cup (26) using four Screws (18). Torque fasteners to 26-28 in/lbs (2.9-3.2 N•m) using purple thread locker. Tighten the screws in a cross pattern gradually to prevent binding due to misalignment (like you would tighten lug nuts on a car tire).

13. Push the Spool into the left side until it contacts the piston.

14. Repeat steps 13 and 14 for the right side.

Install the Drive Cylinder

15. Install lubricated O-ring (5) on top of the Divorced Section (10).

16. Install two lubricated U-cup Seals (4) onto the Dispense Piston (3) with the upper seal lip up and the lower seal lip down as shown.

17. Lubricate the bore of the Drive Cylinder End Cap Assembly (2) and insert the Dispense Piston (3) flush with the end of it, tucking the lip of the upper U-cup Seal (4) so that it is not damaged.

18. Slide the Metering Rod (11) into the key slot on the piston and slide the Drive Cylinder End Cap Assembly (2) down onto the Divorced Section (10) and carefully over the O-ring (5).

19. Align the screw holes in the Drive Cylinder End Cap Assembly (2) with the corresponding holes in the Divorced Section (10) and install the four Screws (1). Tighten the screws in a cross pattern gradually to prevent binding due to misalignment (like you would tighten lug nuts on a car tire).

20. Install the short air lines on the left and right sides of the valve.

Install the Needle Block Assembly

21. Install any removable needles that were previously removed.

22. If your valve has cycle detection, slide the cycle detection sensors into the slots on the end caps and secure with the set screws. Do not overtighten the set screws as the sensors may be damaged.

23. Connect the air lines.

Electrical Requirements (Cycle Detection Option)

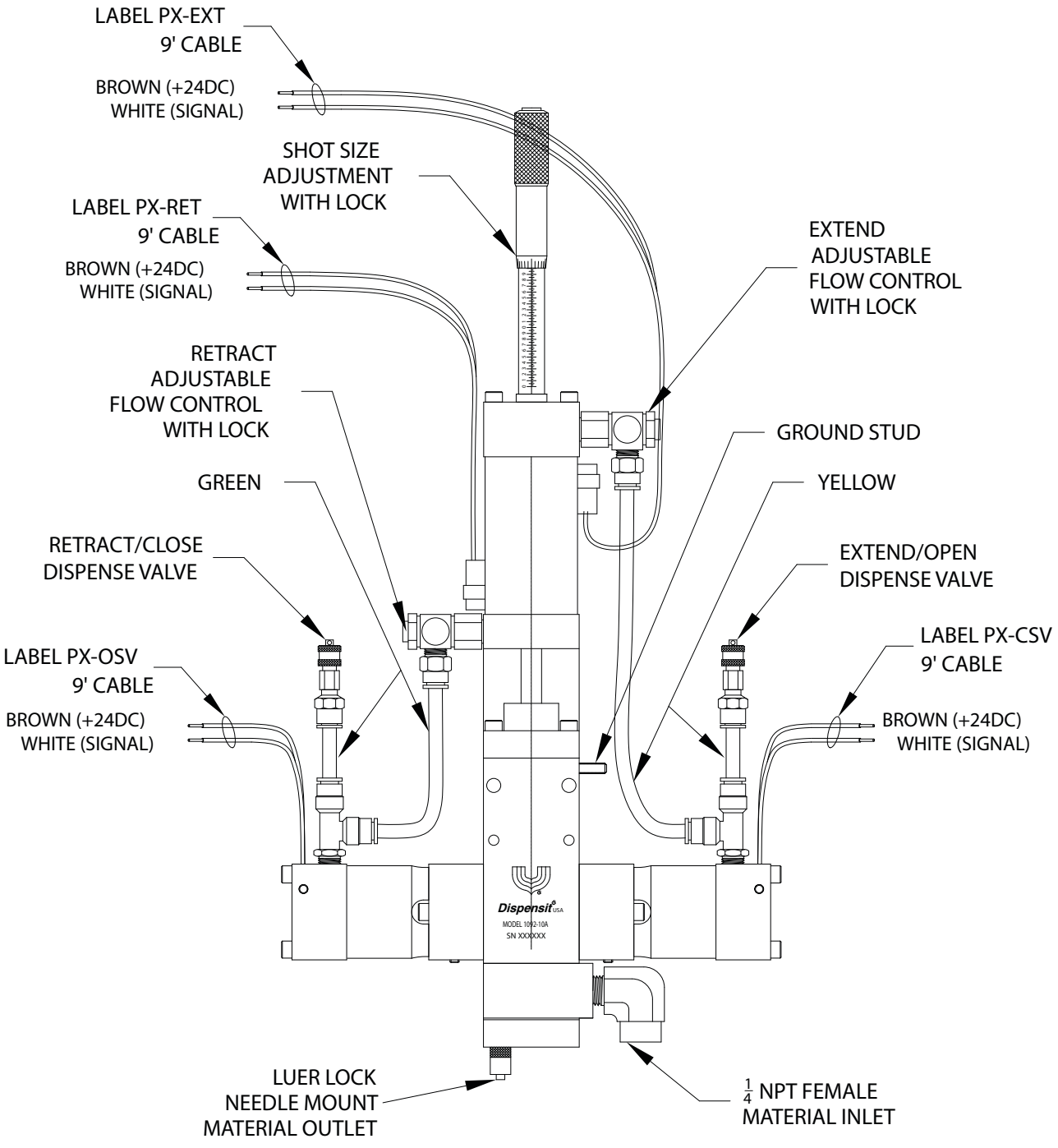


FIG. 8

Technical Data

NOTE: See feed system manuals for dimensions, weights, and wetted parts lists for those components. Dimensions, weights, and wetted parts for components not covered in component feed system manuals and for combined assemblies are listed below.

Maximum Ambient Temperature	110°F (43°C)
Maximum Operating Temp	150°F (65°C)
Maximum Outlet Fluid Working Pressure	2000 psi (14 MPa, 138 bar)
Maximum Air Working Pressure	100 psi (0.7 MPa, 7 bar)
Minimum Air Working Pressure	70 psi (480 kPa, 4.8 bar)
Maximum Material Inlet Pressure	*Metal Sleeves:* 1200 psi (8 MPa, 83 bar) *Plastic Sleeves:* 400 psi (2.8 MPa, 28 bar)
Supplied Air Requirements	1 to 3 cfm at 80 psi to 100 psi
Shot Size Range (depending on metering rods selected)	0.024 cc to 9.600 cc
Maximum Cycle Rate (application dependent, heat required)	Up to 60 cycles per minute
Dimensions:	
Height (to end of material inlet block):	
1092-10A-2	12.53 in. (395 mm)
1092-10A-4	17.16 in. (436 mm)
1092-10A-6	20.28 in. (515 mm)
Length:	
Non Cycle Detection	8.38 in. (213 mm)
Cycle Detection	9.13 in. (232 mm)
Width:	
Single Needle Outlet (Standard)	1.75 in. (45 mm)
	Graco-supplied Feed System Assemblies (depends on selected options): *Smallest:* 22.5 x 10 x 4 in. (572 x 254 x 102 mm) *Largest:* 60 x 28 x 19 in. (1524 x 711 x 483 mm)
Weight	
1092-10A-2	6-7 lb (2.72-3.18 kg)
1092-10A-4	10-11 lb (4.54-4.99 kg)
1092-10A-6	14-15 lb (6.35-6.80 kg)
Wetted Parts	*Metering Valve:* Hardened steel, 303/304, 404, UHMWPE, Tungsten, carbide, fluoroelastomer, EPDM, PTFE, Acetal *Graco-supplied Feed System Hoses and Fittings:* Mild steel, 303/304, PTFE, buna, polyethylene, polypropylene *Graco-supplied Tanks:* Polyethylene, 303/304, mild steel

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Original instructions. This manual contains English. MM 332089

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Revision D, June 2022