

Dispensit 1053-10C

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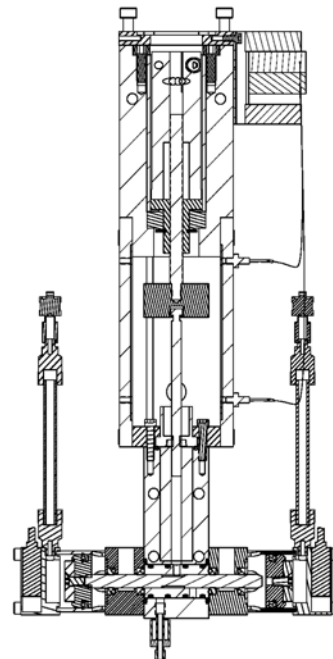
Patented meter and dispense system for precise one-component micro-dispensing.

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.



Valve shown is with controls/motor integrated

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Related Manuals

Component manuals in U.S. English.

Part	Description
3A0261	1053/1093 Control Box





1053-10C Valve Models






1053-10C Valves		
Part No.	Configuration	Description
A2A10300	1053-10C-4RS1-062-V-NEMA23 2 INCH	2 inch stroke, .062 diameter rod, nitrided tool steel wetted components, NEMA 23 motor ready
A2A10302	1053-10C-4RS1-188-V-NEMA23 2 INCH	2 inch stroke, .188 diameter rod, nitrided tool steel wetted components, NEMA 23 motor ready
A2A10303	1053-10C-4RS1-250-V-NEMA23 2 INCH	2 inch stroke, .250 diameter rod, nitrided tool steel wetted components, NEMA 23 motor ready
A2A10304	1053-10C-4RS1-375-V-NEMA23 2 INCH	2 inch stroke, .375 diameter rod, nitrided tool steel wetted components, NEMA 23 motor ready
A2A10305	1053-10C-4TT1-062-V-NEMA23 2 INCH	2 inch stroke, .062 diameter rod, stainless steel wetted components, NEMA 23 motor ready
A2A10306	1053-10C-4TT1-125-V-NEMA23 2 INCH	2 inch stroke, .125 diameter rod, stainless steel wetted components, NEMA 23 motor ready
A2A10307	1053-10C-4TT1-188-V-NEMA23 2 INCH	2 inch stroke, .188 diameter rod, stainless steel wetted components, NEMA 23 motor ready

1053-10C Valves		
Part No.	Configuration	Description
A2A10308	1053-10C-4TT1-250-V-NEMA23 2 INCH	2 inch stroke, .250 diameter rod, stainless steel wetted components, NEMA 23 motor ready
A2A10309	1053-10C-4TT1-375-V-NEMA23 2 INCH	2 inch stroke, .375 diameter rod, stainless steel wetted components, NEMA 23 motor ready

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	
	<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.
	<p>TOXIC FLUID OR FUMES HAZARD</p> <p>Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on skin, inhaled, or swallowed.</p> <ul style="list-style-type: none"> • 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.
	<p>PERSONAL PROTECTIVE EQUIPMENT</p> <p>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:</p> <ul style="list-style-type: none"> • 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	
	<p>FIRE AND EXPLOSION HAZARD</p> <p>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:</p> <ul style="list-style-type: none"> • 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.
	<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>MOVING PARTS HAZARD</p> <p>Moving parts can pinch, cut or amputate fingers and other body parts.</p> <ul style="list-style-type: none"> • 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.
	<p>BURN HAZARD</p> <p>Equipment surfaces and fluid that is heated can become very hot during operation. To avoid severe burns:</p> <ul style="list-style-type: none"> • Do not touch hot fluid or equipment.

Important Isocyanate (ISO) Information




Isocyanate Conditions

						
<p>Spraying or dispensing fluids that contain isocyanates creates potentially harmful mists, vapors, and atomized particulates.</p> <ul style="list-style-type: none"> • 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

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

Keep Components A and B Separate

						
<p>Cross-contamination can result in cured material in fluid lines which could cause serious injury or damage equipment. To prevent cross-contamination:</p> <ul style="list-style-type: none"> • 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						
<p>Partially cured ISO will reduce performance and the life of all wetted parts.</p> <ul style="list-style-type: none"> • 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

						
<p>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.</p>						

Metering valve: attach ground wire from grounding lug to true earth ground. See **Component Identification** starting on page 9.

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 designed for application that require very small and precisely dispensed beads and/or dots of material at a wide range of material inlet pressures.

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

The complete system is enclosed. See **Sequence of Operation** on page 17.

Cycle Detection Spool Sensors

The spool sensors are magnetic reed switches and must be connected to an electrical control. An LED on the switch illuminates to indicate the shifting of the spool.

Component Identification

Typical System Configurations

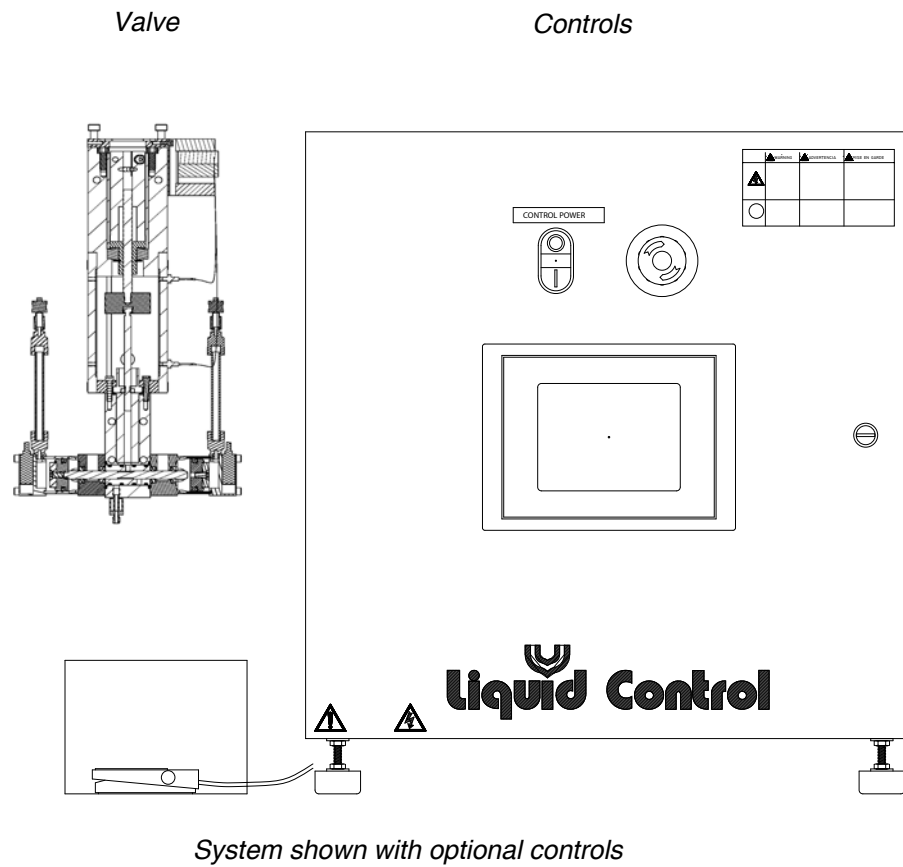


FIG. 1

Typical Feed System Components

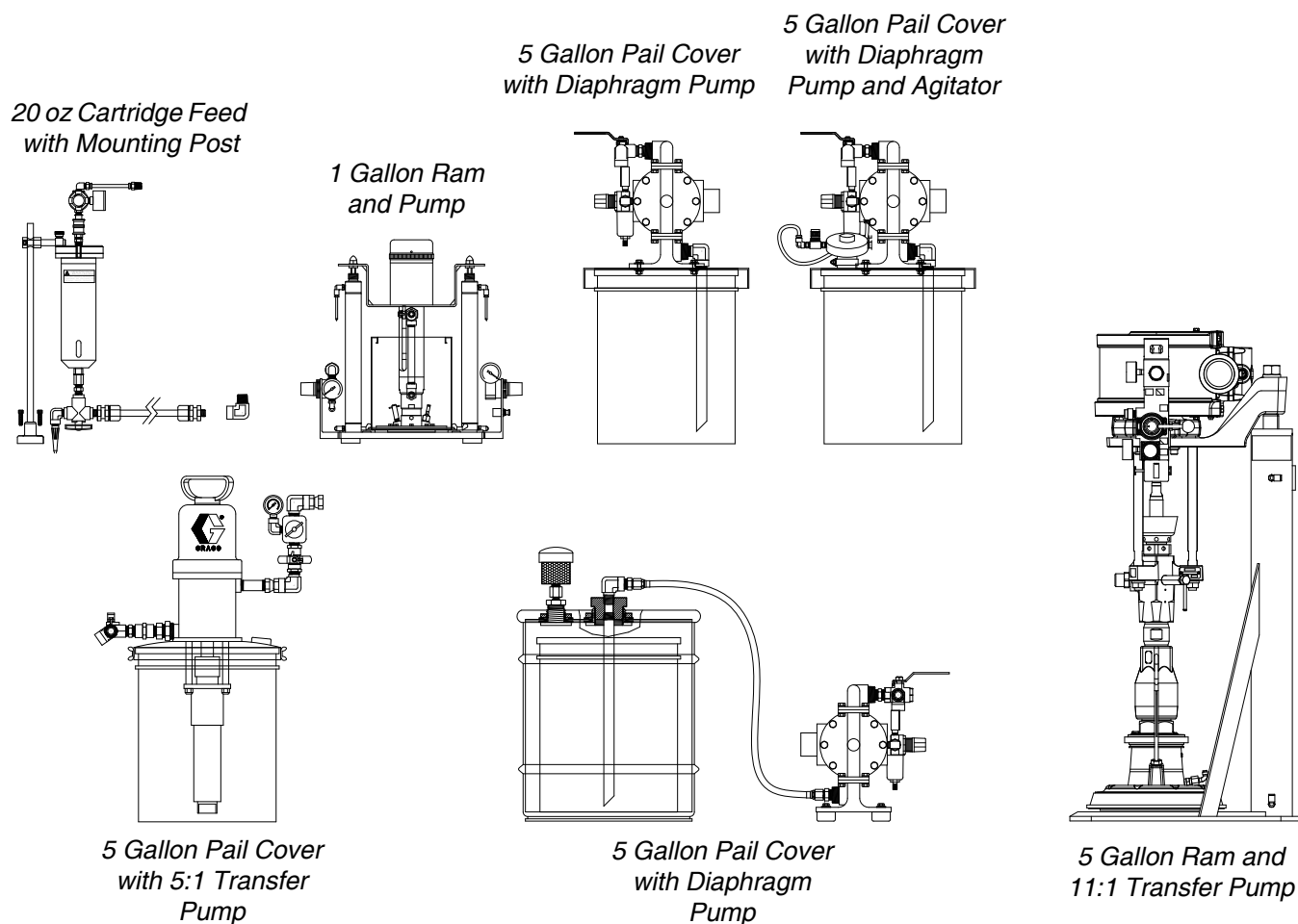
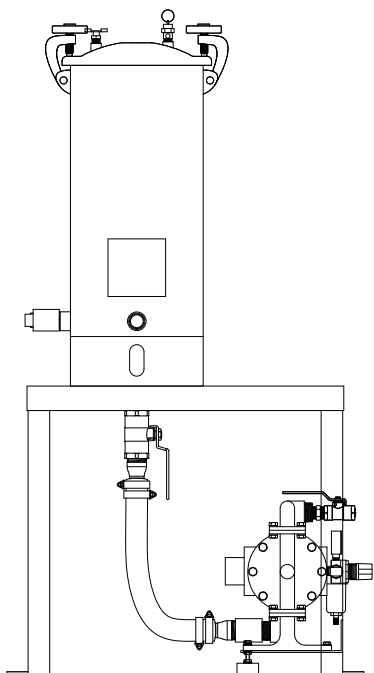
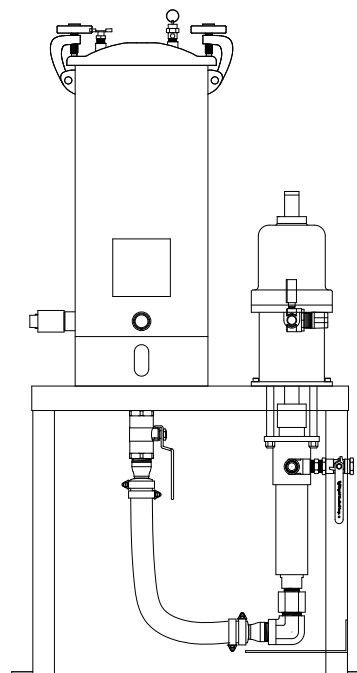


FIG. 2

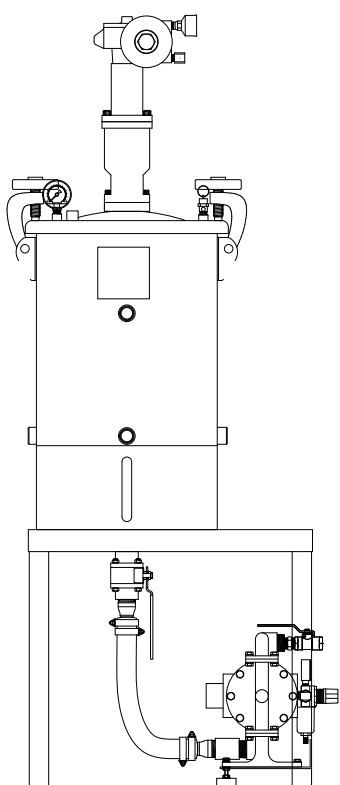
Typical Feed System Components (continued)



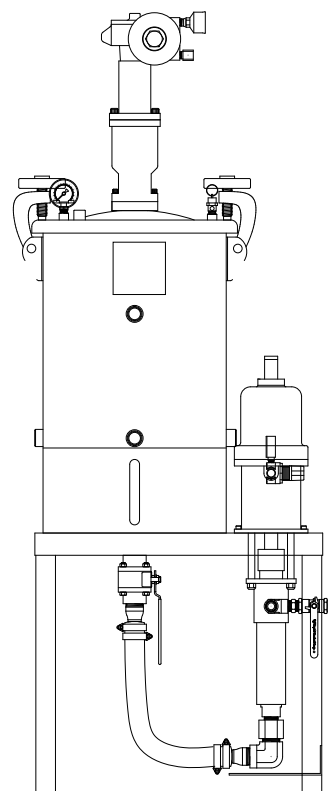
5 Gallon Tank with Diaphragm Pump and Stand



5 Gallon Tank with 5:1 Pump and Stand



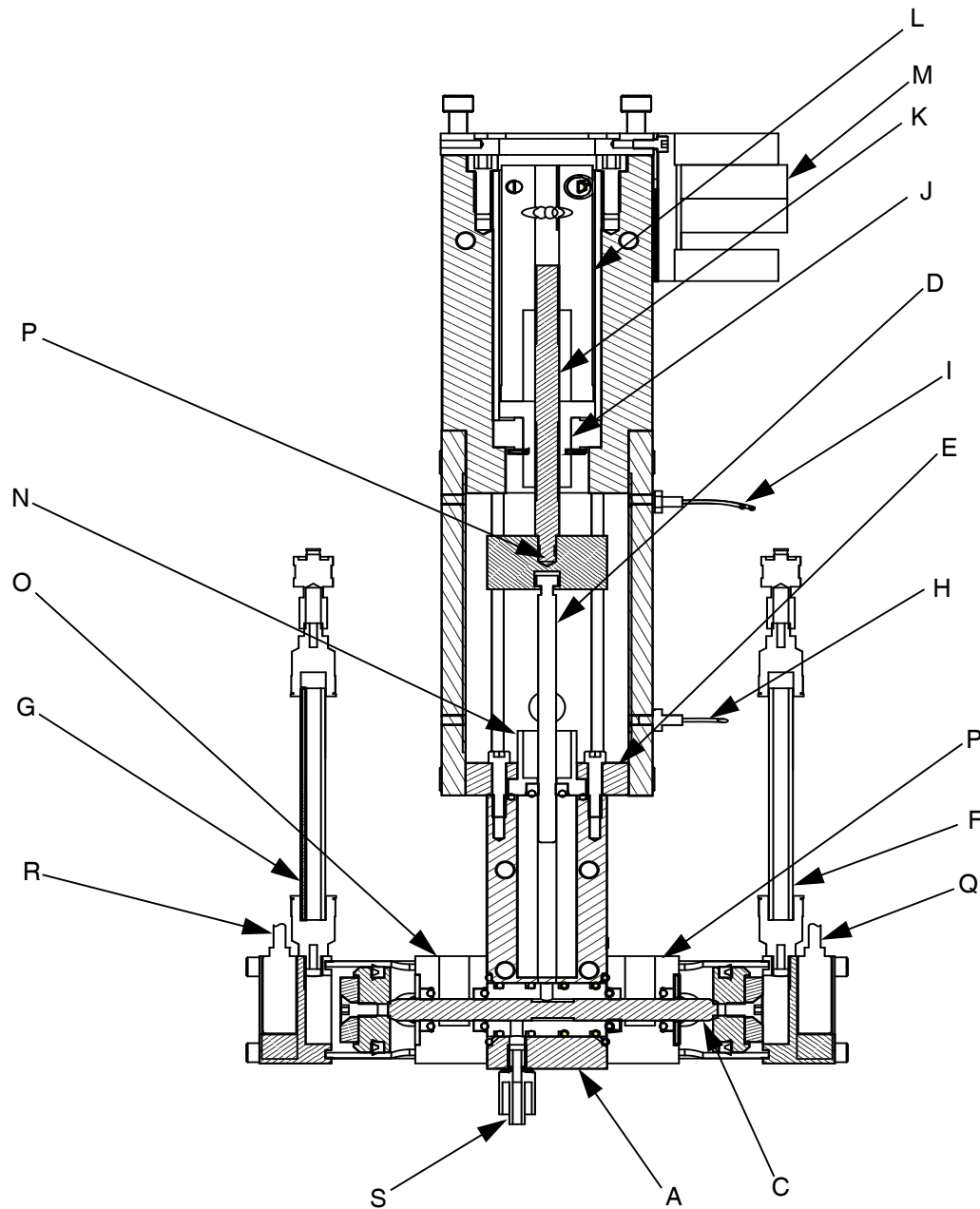
10 Gallon Tank with Diaphragm Pump, Agitator, Vacuum, and Stand



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

FIG. 3

Metering Valve



Key:

A	Material Inlet	F	Dispense Air Inlet	L	Drive Coupling	R	Spool Sensor Open
B	Grounding Lug	G	Reload Air Inlet	M	Sensor Amplifiers	S	Needle with Adapter
C	Spool	H	Lower Sensor	N	Oil Cup		
D	Metering Rod	I	Upper Sensor	O	Wet Cups		
E	Oil Cup Retaining Block	J	Drive Nut	P	Drive Locking Screw		
		K	Drive Screw	Q	Spool Sensor Close		

FIG. 4

Setup



NOTE: See **Typical Installation** diagram.

1.

Perform Setup procedure for feed system components. See feed system manual(s).
2.

Place an in-line air pressure regulator, air-water separator/filter, and shut-off/bleed valve between the air supply and the control solenoids.
3.

Connect each 1/4 in. outside diameter supplied air line to the corresponding control solenoid. See **Component Identification** starting on page 9.
4.

Connect chemical lines from feed system to metering valve material inlets. See **Component Identification** starting on page 9.

Typical Installation

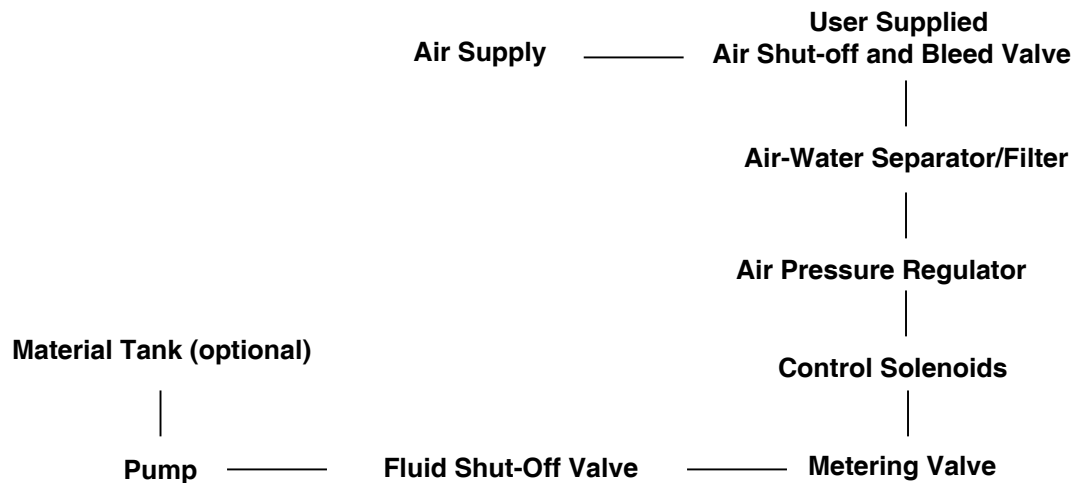
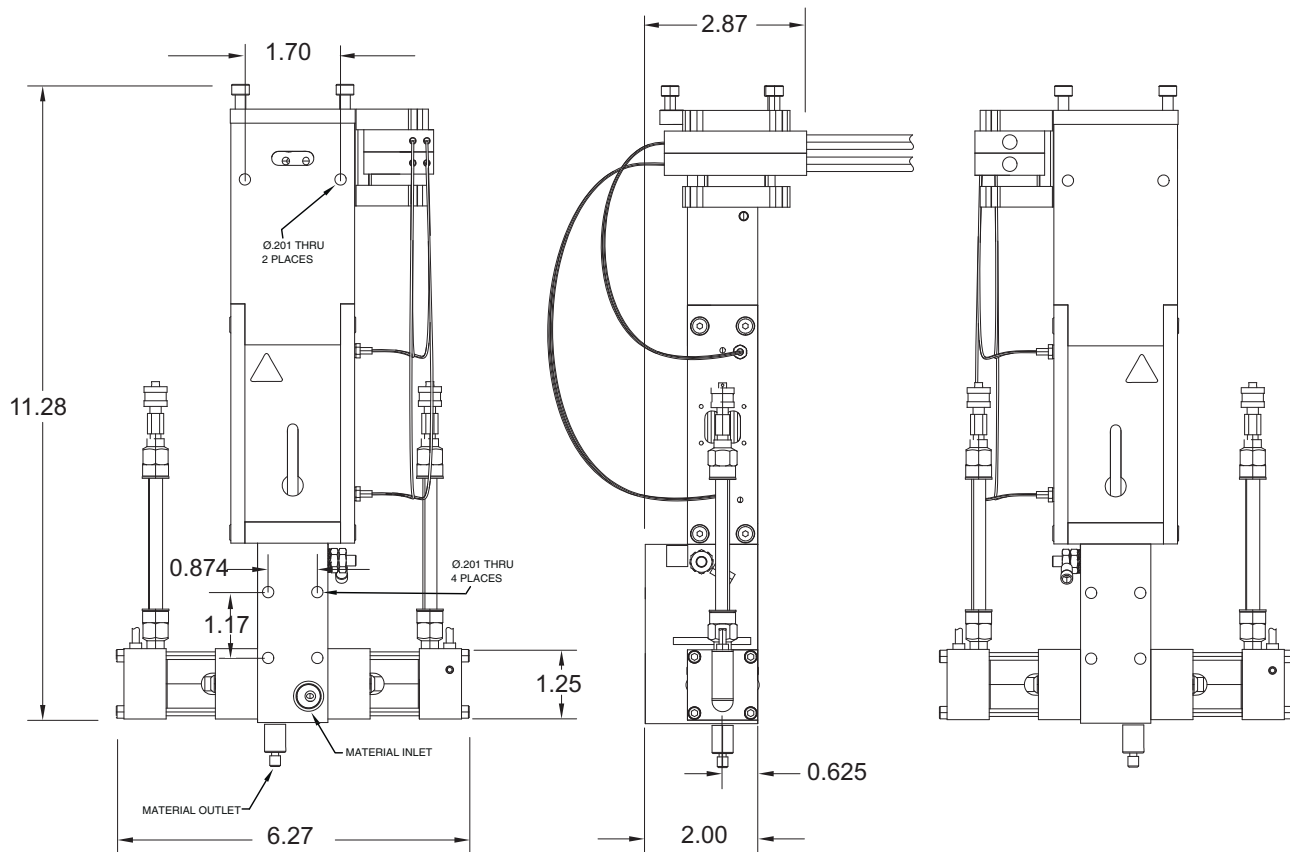


FIG. 5

Valve Mounting Diagram

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

NOTE: Valve shown is for controls/motor integrated. For valve without controls/motor integrated, mounting pattern is the same just less LS-Home, solenoid open/close and all the wires terminated at a plug.

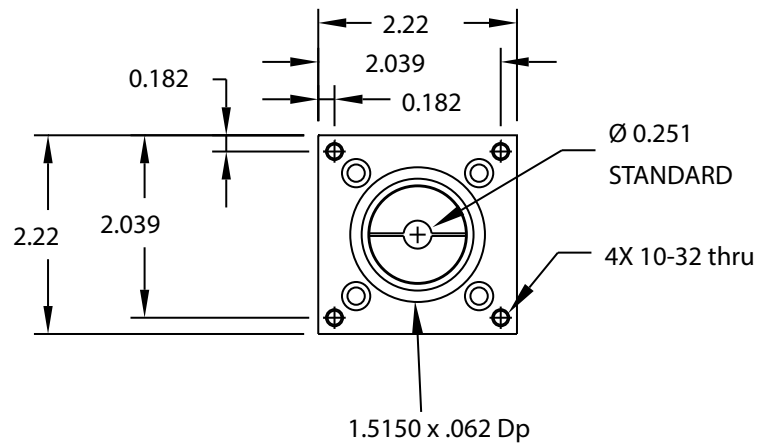


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FIG. 6

Motor Mounting Diagram

If using a non-Graco motor with the dispense valve, use the following diagram to install the non-Graco motor onto the valve. See **Motor Specifications** on page 29.



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.

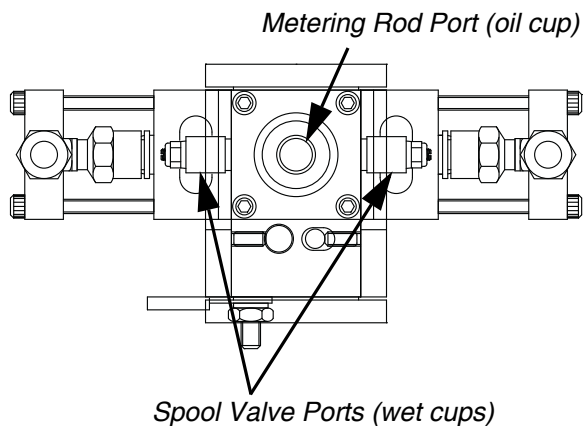


FIG. 7: Top View of Metering Valve with Top Section Removed

2. Pressurize the feed systems connected to the metering valve to prime the system. See **Technical Data** on page 29 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.

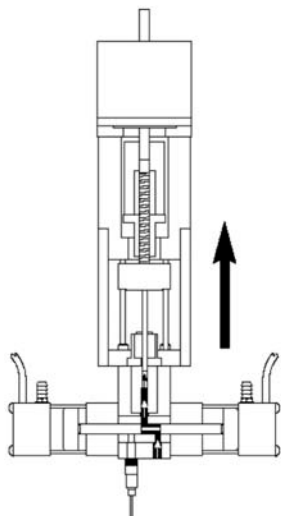
NOTE: Very thin materials may require tilting the valve greater than 45 degrees and dispensing shots until material is air-free. Remove oil from cups before proceeding.

Operation

The operation of the 1053 metering valve is controlled by an external source. If a Control Box was purchased, see the Control Box manual for operation instructions. See **Related Manuals** on page 2.

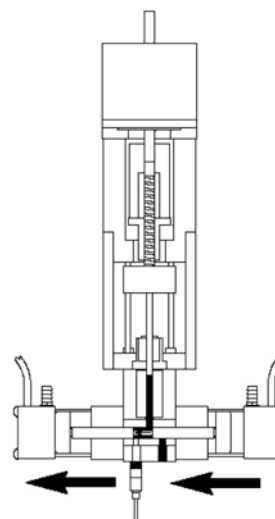
Sequence of Operation

Step 1: Reload



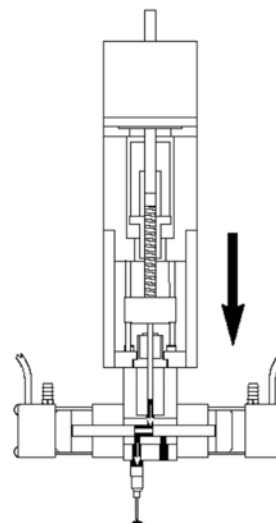
- Spool shifts to the right
- Material feed inlet is opened
- Material is transferred into the metering chambers by a pressurized feed system
- Outlet port is blocked
- Metering rod is retracted to a precise position determining the volume of each material

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

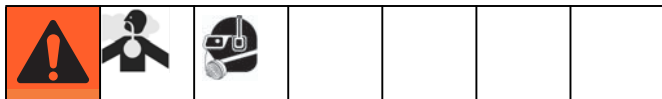
Step 3: Dispense



- 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



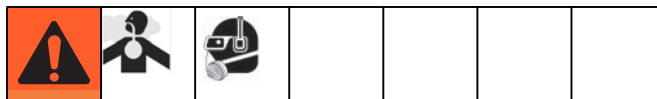
1. Retract the metering rods. See the Control Box manual. See **Related Manuals** on page 2.
2. Close the fluid shut-off valve.
3. Remove needle.
4. Dispense 5 shots. Shots should be at least 75% of the full stroke.
5. Extend the metering rod into the tubes. If Graco controls are provided with the system, see the Controls manual. See **Related Manuals** on page 2.
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 adapter and replace with 10-32 set screw.

Maintenance



Perform the following procedures once a shift.

NOTE: If material is leaking, see **Troubleshooting** on page 19.

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 (oil cup)

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

Spool Valve Port (wet cups)

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
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
The 1053 valve will not cycle	Cycle detection sensors not working	Check connections or replace as needed
The 1053 valve cycles slowly	Oil cup/wet cups are not supplied with lubrication	Add lubrication. Note: Lubrication must be compatible with all seals.
The 1053 valve drools or leaks	Air is trapped in the valve	Prime the valve until air/free material is visible
	Seals are worn	Replace seals
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

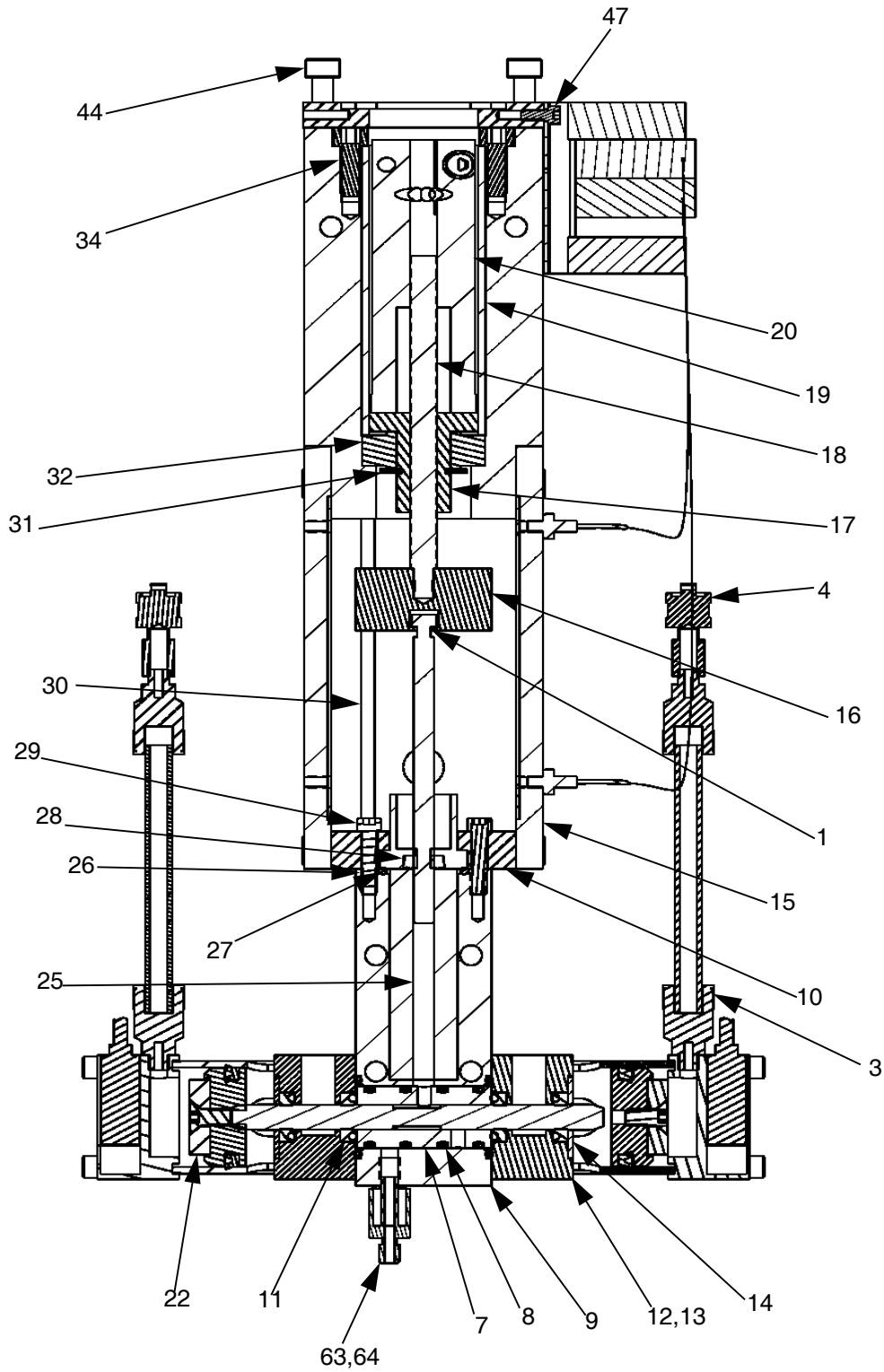
Schematics

For standard machines, the schematics will be included in the Controls Parts manual. See **Related Manuals** on page 2.

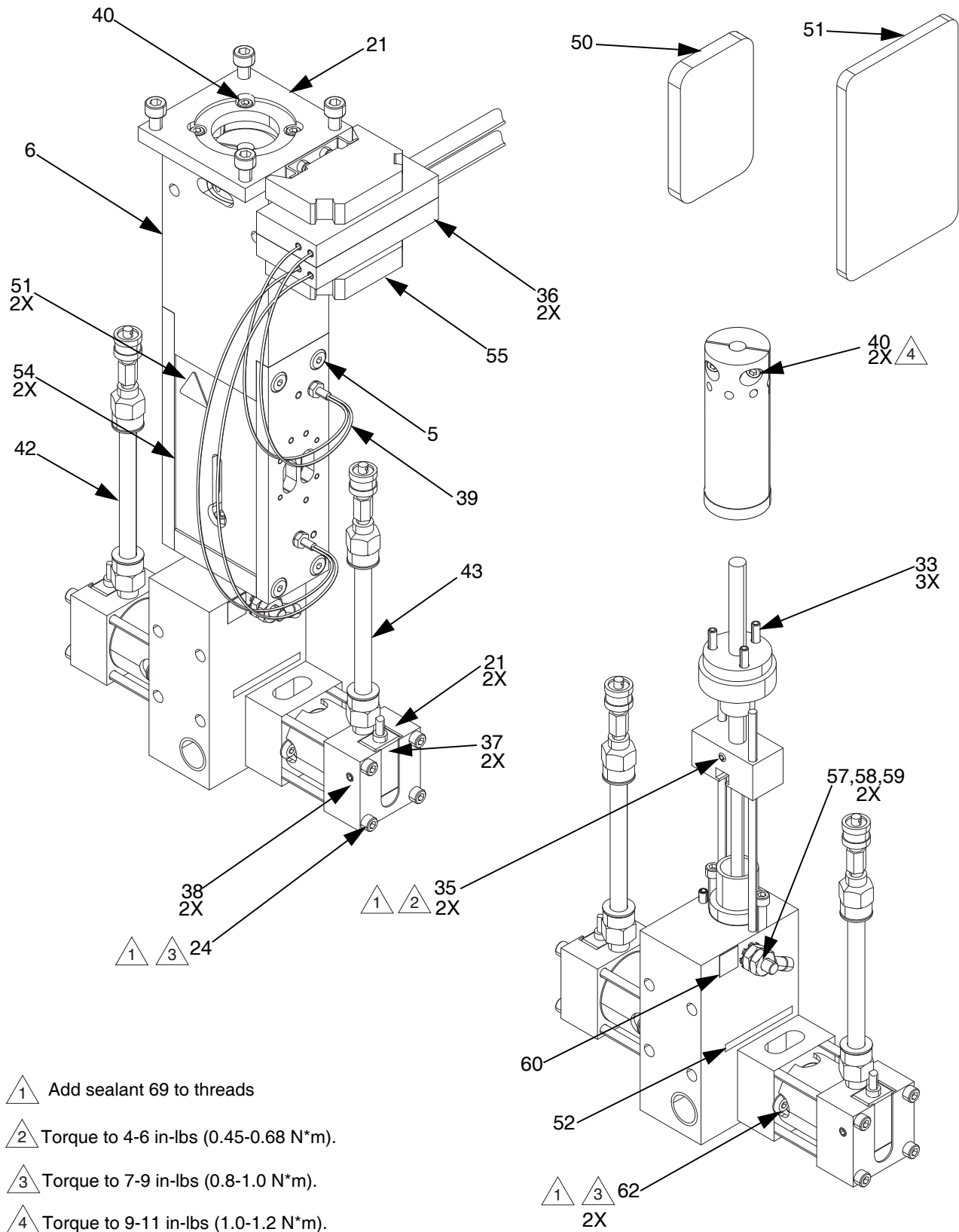
For custom machines, the schematics will be included in the assembly drawings manual.

Parts

1053C Valve, 2" Stroke



1053C Valve, 2" Stroke



1053C Valve Shared Components, 2" Stroke

Ref	Part	Description	Qty
3	94/0740-B/99	CONNECTOR, CONNECTOR	4
4	94/0170/99	FITTING	2
5	B7000021	SCREW, SHC, SHDR	8
6	A2000669	BLOCK, 1053, TOP, DIV SECT	1
8	95/0515/00	O-RING	4
9	A2000606	BLOCK, 1053C, MAIN BLK, ASSY, ETCH	1
10	A2000527	BLOCK, 1053, DIVORCED	1
11	95/0850/11	SEAL, POSPK	4
12	A2000186	CUP, 1052, SEAL, PLATE, ALUM	2
14	A2000098	RETAINER, 1052, SEAL, OIL CUP, SS	2
15	A2000620	PLATE, 1053, SIDE, DIV, 2"	2
16	A2000529	BLOCK, 1053, CONNECTING, M ROD	1
17	A2000434	NUT, LEADSCREW	1
18	A2000603	SCREW, 1053, LEAD, MOD	1
19	A2000670	BEARING, RET. SLEEVE~2" STRK	1
20	A2000667	COUPLER, 1053B, CPLR, MTR, 4S VER, 2"	1
21	A2000345	PLATE, 1053, ADAPTER, MOTOR	1
22	A2010112	PISTON, 1052, ASSY, SPOOL, MAGNET, AL	2
23	A2010097	CAP, 1052, END, MAG PISTON, CLR, A	2
24	B3000006	SCREW, SHC	8
26	J1000002	PIN, ROLL	2
27	95/0017/00	O-RING	3
29	B3000028	SCREW, SHC	2
30	A2000599	ROD, 1053, GUIDE, DIV SECT	2
31	96/0370/99	RING, RET, EXT	1
32	84/0210/11	BEARING	1
33	96/0206/98	PIN, ROLL	3
34	B4000010	SCREW, SHC	2
35	96/0522/98	SCREW, SHS	2
36	16D050	AMPLIFIER, 1CHAN, PHOTO, PNP, 24VDC	2
37	F0200043	SWITCH, REED, 5-120VAC/DC, LED&MOV,	2
38	B3500049	SCREW, SHS	2
39	F0200075	CABLE, PROX-PHOTO, REFLCT, M3 THRE	2
40	B3000023	SCREW, SHC	6
42	61/2904-GN/11	TUBE	3
43	61/2904-YL/11	TUBE	3
44	B4000022	SCREW, SHC	4
47	96/0360/99	FASTENER, SHC	2
50	J0000313	DRYER, VCI, PLASTIC TAB 1x3	1
54	A2000707	GUARD, 1053, DIV SECT, CE	2
55	24D589	RAIL, AMPLIFYER, 1-3	1
57	96/0005-2/99	WASHER, LOCK	2
58	96/0124/99	NUT, HEX	2
59	81/9997-M/11	TERMINAL, TONGUE, 16-22AWG, #10 STUD	1
60	84/0130-25/11	LABEL, PROT EARTH (GRND) .375X.375	1
61	84/0130-22/11	LABEL, CAUTION, CRUSH, ISO	2
62	116195	SCREW, BHSC	4
63	J6100011	GASKET, NYLON, 10-32	
64	94/0860/96	ADAPTER, NDLL, LL, 10-32, M, CHROME PLT	
69	070311	SEALANT, THREAD, REMOVABLE, PURPLE	1

1053C Valve, 2" Stroke



Ref. No.	Description	RS 062	RS 188	RS 250	RS 375	Qty
		A2A10300	A2A10302	A2A10303	A2A10304	
1	ROD, 1053	A2000950	A2000952	A2000953	A2000624	1
2	SEAL, 1052, cup	A2000582	A2000168	A2000169	A2000170	1
7	SPOOL, 1053C	A2010127	A2010127	A2010127	A2010127	1
25	SLEEVE, 1053	A2000980	A2000982	A2000983	A2000600	1
28	SEAL, pospk	95/0893/11	95/0884/11	95/0850/11	95/0849/11	1
51	KIT, seal	D5000160	D5000162	D5000163	D5000164	1
52	LABEL, decal	84/1050-1200/11	84/1050-1200/11	84/1050-1200/11	84/1050-1200/11	1

Ref. No.	Description	TT 062	TT 125	TT 188	TT 250	TT 375	Qty
		A2A10305	A2A10306	A2A10307	A2A10308	A2A10309	
1	ROD, 1053	A2000955	A2000956	A2000957	A2000958	A2000635	1
2	SEAL, 1052, cup	A2000582	A2000500	A2000168	A2000169	A2000170	1
7	SPOOL, 1053C	A2010177	A2010177	A2010177	A2010177	A2010177	1
25	SLEEVE, 1053	A2000985	A2000986	A2000987	A2000988	A2000844	1
28	SEAL, pospk	95/0893/11	95/0883/11	95/0884/11	95/0850/11	95/0849/11	1
51	KIT, seal	D5000160	D5000161	D5000162	D5000163	D5000164	1
52	LABEL, decal	84/1050-400/11	84/1050-400/11	84/1050-400/11	84/1050-400/11	84/1050-400/11	1

Rebuild

Before proceeding, remove material feed line and pump material out of the valve. Shut power off from control panel and disconnect main power. Disconnect the motor wire harness from the system. Loosen the home and spool sensor set screws. Note the position of the sensors and slide them out of the valve. Disconnect the air lines.

Disassembly

						
<p>To reduce the risk of electric shock, turn off and disconnect power at main switch before disconnecting any cables and before servicing or installing equipment.</p>						

Disconnect electrical power before servicing the motor and motor coupling assembly. Refer to the illustrations shown on page 27.

Refer to the drawings in the back of this manual for your exact model.

Disassembly Of 1053 Valve Section

1. Remove motor from 1053 Motor Adapter Plate (21).
2. Remove mounting screws to remove valve from its support.
3. On the right side of the valve, remove 1053 Mag Piston End Cap (23). The 1052 Magnet Spool Assembly Piston (22) will be inside the end cap.

NOTE: If necessary, remove The 1052 Magnet Spool Assembly Piston (22) from 1052 Magnet Piston End Cap (23) by applying low air pressure through valve to push out the 1052 Magnet Spool Assembly Piston (22).

4. Remove 1052 Seal Plate Cup (12).
5. Repeat steps 3 and 4 with the left side of the valve.
6. Push the 1053C Spool (7) out with a finger. If it does not slide out, tap it gently using a wood or plastic dowel. *A worn spool and sleeve assembly must be replaced with a new (matched) assembly. If you are rebuilding multiple valves be sure to keep the spools and sleeves matched.*

7. Remove 1053 Side Plates (15) from 1053 Divorced Block (10) and 1053 Top Divorced Section Block (6).
8. Remove 1053C Main Assembly Block (9) from 1053 Divorced Block (10) by removing Socket Head Screws (29).
9. Remove 1053 Sleeve (25) from 1053C Main Assembly Block (9).
10. Slide 1053 Divorced Block (10) away from Metering Rod (1) and Guide Rods (30).
11. Remove 1052 Seal Cup (2) from 1053 Divorced Block (10). Remove Posipak Seal (28) from 1052 Seal Cup (2).
12. Slide 1053 Divorce Section Guide Rods (30) out of 1053 Rod Connection Block (16).
13. Remove 1053 Rod (1) from Connection Block (16).

NOTE: Only perform the steps below if the Motor Coupling Section needs rebuilt.

Disassembly Of Motor Coupling Section

14. Loosen Socket Head Screws (35) to disconnect 1053 Rod Connection Block (16) from 1053 Lead Screw (18).
15. Remove 1053 Motor Adapter Plate (21) from 1053 Top Divorced Section Block (6).
16. Remove Socket Head Screws (34) from 1053 Top Divorced Section Block (6).
17. Remove 2 in. Bearing Retaining Sleeve (19) from 1053 Top Divorced Section Block (6).
18. Remove 1053 Lead Screw (18) and Lead Screw Nut (17) from 1053 Top Divorced Section Block (6).

Assembly

Before proceeding, remove any old o-rings or seals from the valve and discard, clean the valve parts with an appropriate solvent and replace o-rings and seals with new parts from seal kit. Use Krytox 203GPL (part number 84/0200-K3/11) for lubricating valve parts including seals and o-rings.

Assembly Of 1053 Valve Section

NOTE: Check the 1053 Rod (1), 1053 Sleeve (25), and 1053C Spool (7) for wear and if they are worn secure replacements before proceeding.

NOTE: Use caution as you 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.

1. Lubricate spool outer diameter.
2. Insert 1053C Spool (7) carefully into the 1053C Main Assembly Block (9), rocking it to ease it into place.

Install the Seal Plates on the Main Body

3. Install a lubricated O-ring (27) on the left side of the 1053C Main Assembly Block (9) next to the sleeve part of the 1053C Spool (7).
4. Install two lubricated Posipak Seals (11) in the left 1052 Seal Plate Cup (12) so that the O-ring side of both Posipaks will be facing the 1053C Main Assembly Block (9). Be sure to tuck the lip of the Posipak into its cavity to avoid tearing it.
5. Position the left 1052 Seal Plate Cup (12) with the oil cup upwards and slide it over the Spool part of the 1053C Spool (7) with the counterbore for the 1052 Seal Oil Cup Retainer (14) facing out. Slide the 1052 Seal Oil Cup Retainer (14) over the Spool and install two Screws (62) using purple thread locker. Torque fasteners to 9-11 in-lbs (1.0-1.2 N*m).
6. Repeat steps 3, 4 and 5 for the right side Seal Plates.

Install the Dispense Sleeve and Connect the Motor & Motor Coupling Assembly

7. Lubricate the dispense sleeve bore in the 1053C Main Assembly Block (9). Insert the 1053 Sleeve (25) into the Valve Body (89). 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.
 8. Place lubricated O-ring (27) over the 1053 Sleeve (25) and against the 1053C Main Assembly Block (9).
 9. Insert the 1052 Seal Cup (2) into the 1053 Divorced Block (10).
 10. Slide a lubricated Posipak Seal (28) into the 1052 Seal Cup (2) with the o-ring side facing down.
 11. Lubricate the 1053 Rod (1) and slide it carefully through the Posipak Seal (28), 1052 Seal Cup (2) and 1053 Divorced Block (10) so that it projects about 1/2" through this assembly.
 12. Using the projecting 1053 Rod (1) to guide the assembly into the 1053 Sleeve (25), slide the 1053 Divorced Block (10) down against the 1053C Main Assembly Block (9) and secure with Socket Head Screws (29).
 13. Pull the 1053 Rod (1) away from the 1053C Main Assembly Block (9) so that the end of it is only slightly in the 1053 Sleeve (25).
 14. Slide the key slot in the 1053 Rod Connection Block (16) over the end of the 1053 Rod (1).
 15. Insert the 1053 Divorce Section Guide Rods (30) through the 1053 Rod Connection Block (16) and into the 1053 Divorced Block (10).
- NOTE:** If the Motor and Motor Coupling Assembly had been disassembled, then reassemble per the instructions below before proceeding with these next steps.
16. Position the Motor and Motor Coupling Assembly above the Valve Body Assembly and bring them together so that the 1053 Divorce Section Guide Rods (30) enter their holes in the 1053 Top Divorced Section Block (6) and the end of the Lead Screw (18) seats in the 1053 Rod Connection Block (16).
 17. Install the Socket Head Screws (35) into the 1053 Rod Connection Block (16) against the groove in the 1053 Mod Lead Screw (18).

18. Install both 1053 Side Plates (15) with Screws (5). Insert the clear plastic Guards (not shown) into the slots in the left 1053 Side Plate (15) so that the access hole in the guard is toward the top of the valve. Similarly, Install the right 1053 Side Plate (15) so that the Guard seats in the slots and secure with Screws (5).

Mount the Valve End Caps to the Seal Plate Cups

19. Install a lubricated U-cup Seal into the groove of the 1052 Spool Magnet Piston Assembly (22). The piston is thicker on one side of the groove. The lip of the seal must be facing the thicker section.
20. Lubricate the bore in the 1053 Mag Piston End Cap (23). Slide the 1052 Spool Magnet Piston Assembly (22) 1053 Mag Piston End Cap (23) tucking the lip of the U-cup seal into the 1053 Mag Piston End Cap (23) carefully.
21. Install the Piston/End Cap onto the 1052 Aluminum Cup Seal Plate (12) using four Socket Head Screws (24). Torque fasteners to 7-9 in-lbs (0.8-1.0 N*m). Tighten the Socket Head Screws in a cross pattern gradually to prevent binding due to misalignment (like you would tighten lug nuts on a car tire).
22. Push the Spool Rod (7) into the left side until it contacts the piston. Repeat steps 19 - 21 for the right side.
23. Install any removable needles that were previously removed.
24. 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 over tighten the set screws as the sensors may be damaged.

25. Connect the air lines.

Motor and Motor Coupling Assembly

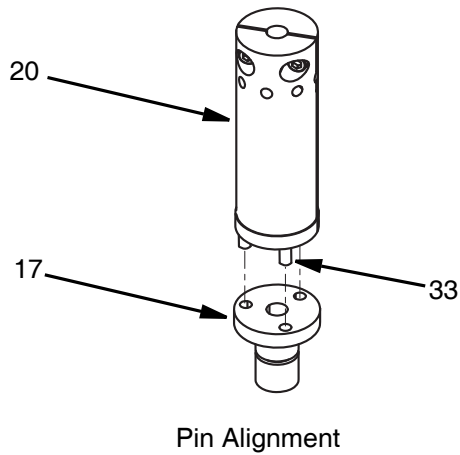
1. Assemble 1053B Motor Coupler (20) by inserting Roll Pins (33) and Socket Head Screws (40).

NOTE: This step is only required if the motor coupler has been disassembled for service or removed from the motor.

2. Assemble Lead Screw Nut (17) with Bearing (32) and E-ring (31).

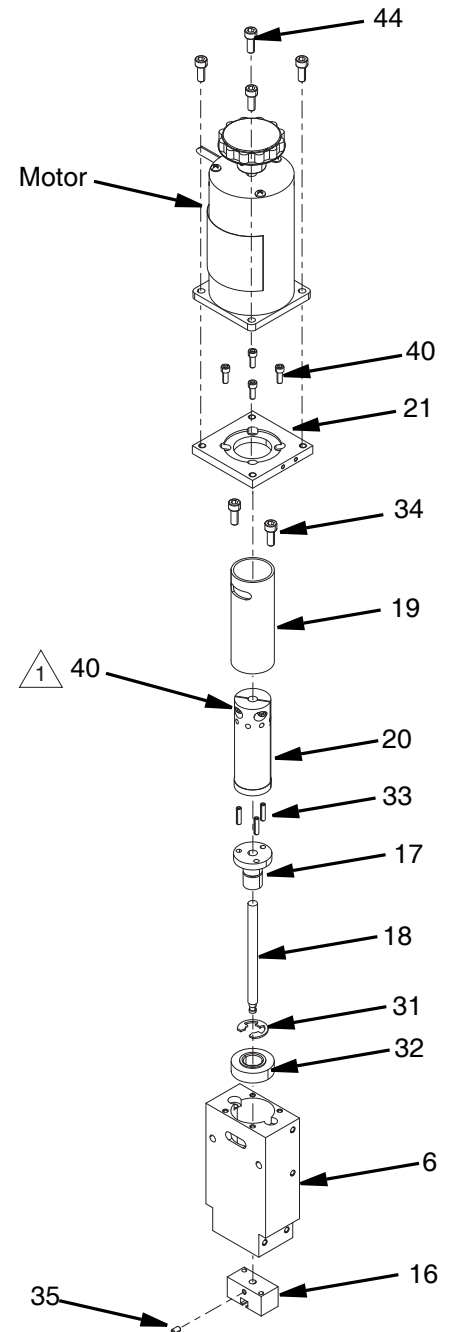
3. Thread 1053 Mod Lead Screw (18) into Lead Screw Nut assembly until Lead Screw is flush with top of nut.
 4. Slide Lead Screw & Nut Assembly into 1053 Top Divorced Section Block (6).
 5. Slide Bearing Retaining Sleeve (19) into 1053 Top Divorced Section Block (6) taking care to line up the slots in the two pieces. Secure in place with Socket Head Screws (34).
 6. Secure 1053 Motor Adapter Plate (21) to 1053 Top Divorced Section Block (6) using Socket Head Screws (40).
 7. Place 1053B Motor Coupler (20) on motor shaft and torque the Socket Head Screws (40) to 9-11 in-lbs (1.0-1.2 N*M) leaving about ½" of motor shaft visible between Motor Coupler and motor. Insert 1053B Motor Coupler (20) through 1053 Motor Adapter Plate (21), align three Roll Pins (33) and insert into Lead Screw Nut (17) and gently seat the motor.
- NOTE:** This step is only required if the motor coupler has been disassembled for service or removed from the motor.
8. Remove motor and motor coupler, tighten Socket Head Screws (40) and reassemble securing motor to Motor Mounting Plate using Socket Head Screws (44).

Motor and Motor Coupling Illustration



Motor and Motor Coupling Parts

Ref	PART	DESCRIPTION
6	A2000669	BLOCK, 1053, top, div, sect
16	A2000529	BLOCK, 1053, connecting, m rod
17	A2000434	NUT, leadscrew, 1/4-20, nylon,sn
18	A2000603	SCREW, 1053, lead, mod, J0200031,2s
19	A2000670	BEARING, ret, sleeve ~ 2 in. strk
20	A2000667	COUPLER, 1053B, cplr, mtr, 4S ver, 2 in.
21	A2000345	PLATE, 1053, adapter, motor
31	96/0370/99	RING, ret, ext, 0.396, e ms
32	84/0201/11	BEARING, 1/2id x 1-1/80dx3/8dp
33	96/0206/98	PIN, roll, 1/8 x 0.50 ,ss
34	B4000010	SCREW,sch,10-32 x 0.5,SS,316
35	96/0522/98	SCREW, shs, 6-32 x 0.25, cup pt, ss
40	B3000023	SCREW, shc, 6-32x0.38, ss
44	B4000022	SCREW, SHC



1 Torque to 9-11 in-lbs
(1.0-1.2 N*m).

Motor and Motor Coupling Installation.
Location of the Motor shaft in the Motor Coupling is important for proper electrical control of the dispense valve.

Electrical Requirements

See **Related Manuals** on page 2 for valve with controls/motor integrated.

Valve shown is with controls/motor not integrated. Valve with controls/motor integrated comes with LS-Home, solenoid - OPEN/CLOSE and all wires terminated at a plug.

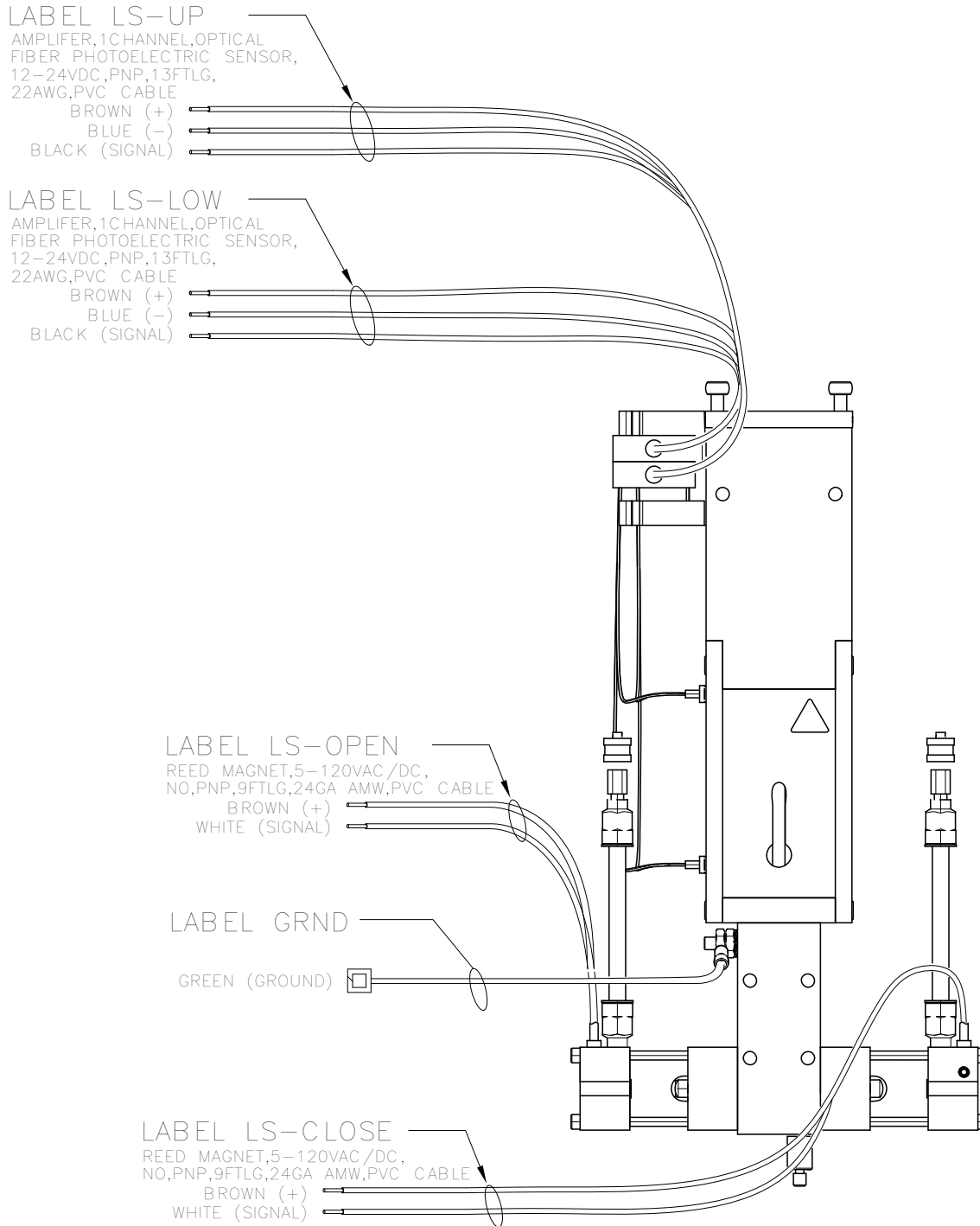


Fig. 8

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)	0.002 cc to 3.150 cc
Maximum Cycle Rate (application dependent, heat required)	Up to 15 cycles per minute (with standard Graco motor)
Dimensions (H x L x W), height to end of material inlet block (less needles)	2 in.: 10.9 x 6.3 x 2.9 in. (277 x 160 x 74 mm) <i>Graco-supplied Feed System Assemblies</i> <i>(depends on selected options):</i> <i>Smallest:</i> 22.5 x 10 x 4 in. (572 x 254 x 102 mm) <i>Largest:</i> 60 x 28 x 19 in. (1524 x 711 x 483 mm)
Weight	<i>Metering Valve:</i> 3 - 5 lb (1.36 - 2.27 kg) <i>with Standard Graco motor:</i> 7-9 lb (3.18 - 4.08 kg)
Wetted Parts	<i>Metering Valve:</i> Hardened steel, 303/304, 404, UHM-WPE, Tungsten, carbide, fluoroelastomer, EPDM, PTFE <i>Graco-supplied Feed System Hoses and Fittings:</i> Mild steel, 303/304, PTFE, buna, polyethylene, polypropylene <i>Graco-supplied Tanks:</i> Polyethylene, 303/304, mild steel

Motor Specifications

Any motor used with the Motor Driven model must meet the following specifications.

Frame: NEMA 23

Torque at Typical Dispense Speed: 180 oz-in. (11.25 in-lb) at 10 revolutions per second (1/2 in. rod travel per second) or less. Above 10 revolutions per second, the power declines.

Torque at Maximum Speed: 117 oz-in (7.3 in-lb) at 20 revolutions per second (1 in. of rod travel per second).

Motor Face Pilot Boss: 1.5 in. diameter by 0.0625 in. projection from motor face flange.

Shaft Size: 0.25 diameter by 0.75 in. projection from motor face pilot boss to end of shaft.

California Proposition 65

CALIFORNIA RESIDENTS

 **WARNING:** Cancer and reproductive harm – www.P65warnings.ca.gov.

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Original instructions. This manual contains English. MM 3A0874

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Revision F, February 2021