LOCTITE®
EQUIPMENT
OPERATION MANUAL

#986000

Pump·A·Bead™ II
DISPENSING SYSTEM

Contents

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1 Introduction

The Loctite® Pump-A-Bead™ II Dispensing System will apply continuous beads of traceable Loctite® Gasket Eliminator® Products onto part sealing surfaces under control of automated tracing equipment. Typical of Loctite® Gasket Eliminator® Products are Loctite® product 18005, Loctite® product 18010, and Loctite® product 509. These products are supplied in 850cc cartridges.

The Loctite® Pump-A-Bead™ II Dispensing System is an all-pneumatic system that consists of the following basic components:

1. A cartridge pusher to supply product to a pump.
2. A reciprocating piston pump to increase product pressure.
3. A remote dispensing valve and nozzle.
4. A pneumatic control system for the above (3) items.

Because the system is all-pneumatic, the only utility needed is compressed air. See the specifications on page 20 for the air quality requirements.

The Loctite® Gasket Eliminator® Products are active, fast-curing anaerobic products with viscosities in the range of 500,000 to 1,000,000 cP. Because of these two facts, these products require special dispensing techniques.

The Loctite® Pump-A-Bead™ II Dispensing System develops the higher pressures needed to dispense these products at the rates required by robotic tracing machines.

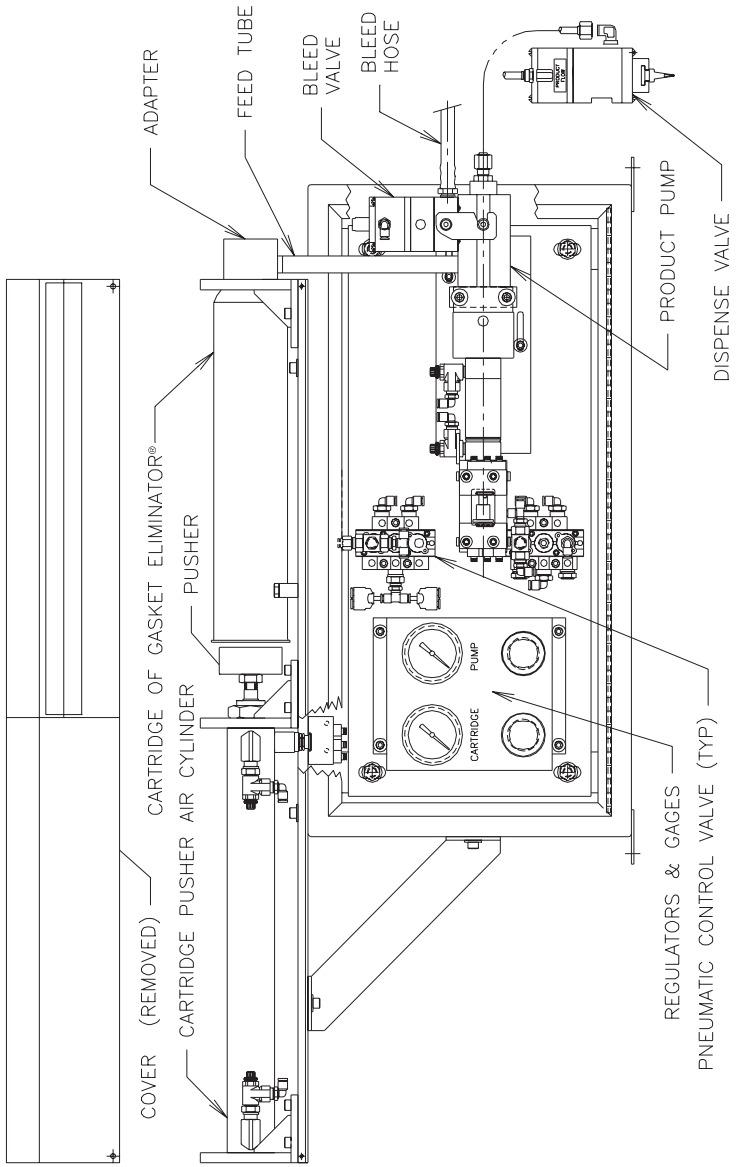
In addition, because anaerobic products are being dispensed, the parts which come in contact with the Loctite® Anaerobic products are made as inert as possible. This helps prevent product curing within the system. In addition, the pumping system and dispense valve are designed with a minimum of dead areas or close clearances where anaerobic curing can start.

Items Supplied

986000 Pump-A-Bead™ II System includes:

Packaging and inserts.
Pneumatic Schematic (Loctite drawing 94487612).
Control enclosure with pneumatic controls, cartridge pusher and pump.
Instruction manual 986002
986300 Dispense Valve Assembly includes:
(1) dispense valve with:
(2) 4 ft. long control air tubing (993234).
(1) 4 ft. long product supply tubing (999488).
(1) instruction manual (986302).
(1) accessory kit (9448768) described below.

Items in 9448768 Accessory Kit		Accessory Kit Item Repurchase Information	
Item	Description	Repurchase as Loctite Part No.	Repurchase Qty.
1	Fitting, Luer-Lok Adapter	982903	Each
2	Nozzle Assembly, Bayonet, .025 in. id.	986025	Each
3	Nozzle Assembly, Bayonet, .035 in. id.	986035	Each
4	Nozzle Assembly, Bayonet, .062 in. id.	986060	Each
5	Needle, Luer-Lok, 15 ga. (0.052 id x 0.072 od x 0.5 long) 304 sst cannula.	97225	Box of 50
6	Needle, Luer-Lok, 20 ga. (0.023 id x 0.036 od x 0.5 long) 304 sst cannula.	97227	Box of 50
7	Needle, Luer-Lok, 15 ga. (0.049 id x 0.062 od x 1.5 long) polypropylene cannula.	97229	Box of 50
8	Needle, Luer-Lok, 15 ga. (0.060 id x 0.093 od x 0.87 long) one piece polypropylene cannula & hub.	97261	Box of 50
9	Grease, silicone, 6g Tube	997569	Each



OVERVIEW OF PUMP–A–BEAD™ II

Fig. 1

2 Theory of Operation

The Loctite® Pump-A-Bead™ II Dispensing System is an all-pneumatic system that consists of the following basic components:

1. A cartridge pusher to supply product to a pump.
2. A reciprocating piston pump to increase product pressure.
3. A remote dispensing valve and nozzle.
4. A pneumatic control system for the above (3) items.

Loctite® Gasket Eliminator® Products are supplied in 850cc cartridges.

The cartridge is placed into the Pump-A-Bead™ II.

The ram of the cartridge pusher moves the follower inside the 850cc cartridge forward, supplying pressurized product to the inlet of the piston pump.

When an external pneumatic signal supplied from a customer supplied 3-way valve is received by the Pump-A-Bead™ II control circuit, (2) things happen:

1. The Piston Pump begins reciprocating, increasing the product pressure in the product output supply tubing.
2. The Dispense Valve opens and product flows from the pump outlet through the product supply tubing, then through the dispense valve and finally out of the nozzle onto the customer part.

When the external pneumatic signal is removed, the dispense valve closes and the pump piston returns to the fully retracted position.

When the product level in the cartridge is low (the cartridge pusher ram fully extended), a “low level” signal changes a pneumatic indicator color from green to red.

The rate of product dispense is controlled by the following:

1. The air pressure to the piston pump (higher pressure, more product flow).
2. The piston pump reciprocating rate (faster rate, more product flow).
3. The nozzle outlet diameter (larger diameter, more product flow).

See Loctite Manual part number 986302 (included with the Dispense Valve supplied with the Pump-A-Bead™ II) for information on the Loctite Dispense Valve part number 986300.

3 Instructions

Safety Precautions:

Read and observe before operating this device !!

Wear protective gear (safety glasses, gloves, aprons, etc.) as required.

Do not operate the Cartridge Pusher with the protective cover open. Close the cover before operating the Cartridge Pusher.

Before servicing this unit, make sure control air pressure is zero and that air is “off” and that no compressed air is trapped in the air lines.

Before servicing this unit, make sure product pressure is zero and that no product under pressure is trapped in the product supply lines or within the unit.

Product under high pressure can penetrate skin and other organs. Always position the dispense nozzle so that it will not discharge in a dangerous manner.

Likewise, position any disconnected hoses so that they will not discharge in a dangerous manner.

Position the Bleed Hose so that it discharges into a suitable container.

Installation:

Inspection before installation:
The Loctite® Pump-A-Bead™ II was inspected before shipment. Check the items in the shipping container against the list on page 2 of this Manual.
After removing the items from the shipping container, inspect them for visible damage. Report any such damage to both the shipper and your Loctite representative.

Installation:
Locate the control enclosure so that:

1. Dispense Valve motion is within range of the product and control tubing.
2. There is enough clearance to allow opening the top cover for cartridge changing. See Fig. 2 below.
3. There is enough clearance to allow opening the enclosure door for pressure and flow control adjustments. See Fig. 2 below.

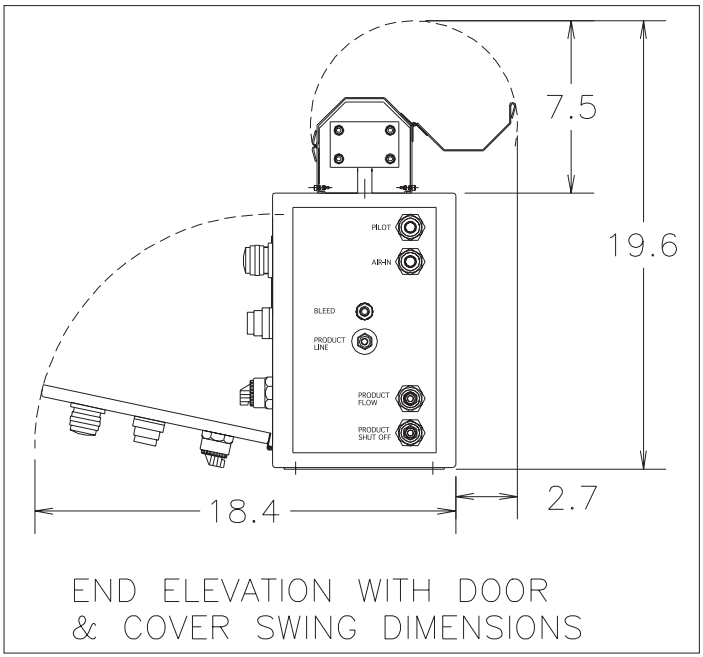


Fig. 2

Secure the control enclosure to a horizontal surface using 1/4 inch dia. threaded fasteners through the (4) 9/32 dia. clearance holes in the enclosure base.
See Fig. 7 on page 19 for the mounting hole pattern.

Connecting tubing to components:

Check that the main air supply is off.

Set the “Air/Pilot” selector switch on the enclosure door to the “Off” position.

Connect the (2) pneumatic control tubes from the dispense valve to the corresponding ports on the end of the Pump-A-Bead™ II control enclosure. “Product Flow” and “Product Shut Off” ports are labeled on both the control enclosure and the dispense valve.

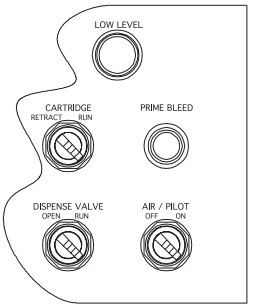
Connect the Product Line from the dispense valve to the “Product Line” port on the control enclosure.

Connect the pneumatic control tube from the normally non-passing port or closed port of the customer supplied 3-way valve to the “Pilot” port on the control enclosure.

Connect a tube from the main air supply tube to the “Air In” port on the control enclosure.

Explanation of Controls:

The operating controls are located on the control enclosure door. The controls consist of (3) selector switches, (1) push button and (1) indicator. See Fig. 3 and Table 1 below. Symbols refer to the symbols used in the pneumatic diagrams on page 21 and 22.



OPERATING CONTROLS IN ENCLOSURE DOOR

Fig. 3

Table 1 Operating Controls in Enclosure Door

Label/Symbol	Device	Function
AIR/PILOT SS-1	Maintained selector valve	On-Off control for incoming air supply from both main air and pilot.
DISPENSE VALVE SS-2	Maintained selector valve	Controls Dispense Valve. In “Run” position, the Dispense Valve operates under control of the Pilot Signal. In “Open” position, SS-2 opens Dispense Valve; this feature is used during idle time to reduce curing in the Dispense Valve.
PRIME/BLEED PB-1	Momentary push button valve	Controls Prime / Bleed valve. The Prime / Bleed valve remains open as long as the push button is depressed.
CARTRIDGE SS-3	Maintained selector valve	Controls Cartridge Pusher air cylinder. “Retract” position causes the air cylinder to retract, allowing cartridge replacement. “Run” position advances the air cylinder, applying force to the follower in the product cartridge. This force pressurizes the product in the cartridge, causing it to flow into the pump inlet.
LOW LEVEL IND1	Pneumatic indicator	Cartridge Pusher air cylinder near full stroke causes color change from “Green” to “Red” signaling that about 30cc of product is left in the cartridge. Indicator also “Red” when main air supply is “Off”.

Explanation of Controls: (cont.)

The controls listed in Table 2 are used to adjust the rate of product flow. The controls are located inside the control enclosure as shown in Fig. 4.

Table 2 Controls to Adjust Product Flow

Symbol	Device	Function
R1, G1	Pressure regulator and gage	Controls and indicates air pressure in cartridge pusher cylinder (CYL 3).
R2, G2	Pressure regulator and gage	Controls and indicates air pressure in product pump cylinder (CYL 2).
FC 1	Flow control	Controls the retract speed of the product pump piston.
FC 2	Flow Control	Controls the advance speed of the product pump piston.

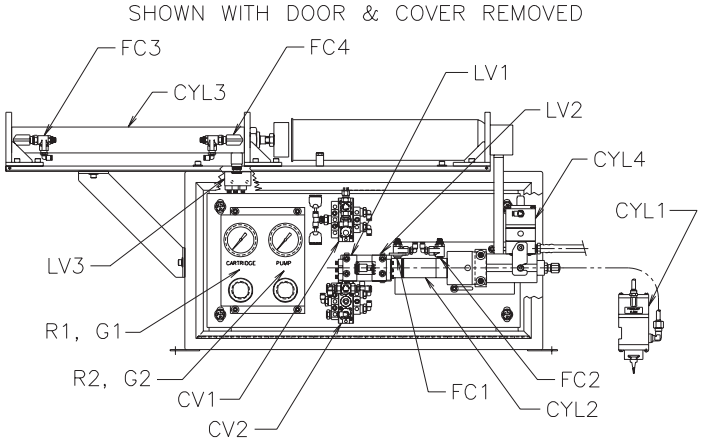


Fig. 4

See Table 3 on the next page for explanation of more controls.

Explanation of Controls: (cont.)

Table 3 Pneumatic Controls

Symbol	Device	Function
LV1	Limit Valve	Indicates pump cylinder (CYL2) is fully retracted. Supplies pilot signal to port 12 of CV2 to start CYL2 advance. This limit valve is factory preset for full pump stroke, and set point should not be changed.
LV2	Limit Valve	Indicates pump cylinder (CYL2) is fully advanced. Supplies pilot signal to port 14 of CV2 to start CYL2 retract. This limit valve is factory preset for full pump stroke, and set point should not be changed.
LV3	Limit Valve	Indicates cartridge pusher cylinder (CYL3) is fully advanced and that product cartridge is empty. Operates low product level indicator (IND1). This limit valve is factory preset, and set point should not be changed.
FC3	Flow Control	Controls the retract speed of the cartridge pusher cylinder (CYL3). This flow control is factory preset, and the set point should not be changed.
FC4	Flow Control	Controls the advance speed of the cartridge pusher cylinder (CYL3). This flow control is factory preset, and the set point should not be changed.
CV1	4-way air pilot spring return valve.	Controls the opening and closing of the product dispense valve through CYL1. Pilot operated by external customer supplied 3-way valve or SS2.
CV2	4-way double air pilot valve.	Controls advance-retract of product pump piston through CYL2. Pilots operated by LV1, LV2.
CYL1	Double acting air cylinder	Dispense valve operating cylinder.
CYL2	Double acting air cylinder	Product pump operating cylinder.
CYL3	Double acting air cylinder	Cartridge pusher operating cylinder.
CYL4	Double acting air cylinder	Bleed valve operating cylinder.

3 Operation

Initial Setup:

1. Check that Main Air Supply quality meets specifications under Utilities on page 20.
2. Set Cartridge selector switch to “Retract” position.
3. Set Dispense Valve selector switch to “Run” position.
4. Turn Main Air to “ON”.
5. Adjust the “Cartridge” air pressure to 50 psi.
6. Adjust the “Pump” air pressure to 35 psi.

Loading a Cartridge into the Pump-A-Bead™ II:

1. Open the hinged cover on the Pump-A-Bead™ II cartridge pusher.
2. Remove the outlet cap from a 850cc cartridge.
3. Apply a light coat of Loctite® part no. 997569 silicone grease to the cartridge outlet OD.
4. Remove the cover from the base of the 850cc cartridge.
5. Hold the cartridge with the outlet pointing up.
6. Gently push on the follower in the cartridge until product just appears at the end of the outlet. This step minimizes the amount of air trapped in the product during cartridge loading.
7. Place the cartridge on the cartridge holder, and push the cartridge forward so that the nozzle is seated in the Cartridge to Feed Tube Adapter. The OD of the cartridge seals on an O-ring in the adapter.
8. Close the hinged cover on the Pump-A-Bead™ II cartridge pusher.
9. Set the Cartridge selector switch to the “Run” position. This causes the Cartridge Pusher Air Cylinder to advance. This forces product from the cartridge into the pump inlet.
10. Direct the tube attached to the Bleed Port into a suitable container.
11. Depress the Prime/Bleed push button. This opens the Prime/Bleed valve, allowing product to flow through the pump and out of the tube attached to the bleed port.
12. Keep the Prime/Bleed push button depressed until the product stream coming out of the bleed tube is free of air bubbles. This generally takes about 45 seconds.
13. When the product stream is air-free, release the Prime/Bleed push button.
14. If this is a first-time installation, actuate the pilot signal to the Pump-A-Bead™ II to start the pump and open the dispense valve. This will fill the Product Line and Dispense Valve with product.
15. When Product flows out of the Dispense Valve nozzle, remove the pilot signal.
16. Cartridge Loading procedure is now complete.

Adjusting the Product Flow Rate:

There are (3) adjustments to control product flow rate:

1. The setting of FC1 flow control for the product pump advance speed
2. Setting of FC2 flow control for the product pump retract speed
3. Setting of R2,G2 pressure regulator and gage for the product pump cylinder

The goal is the slowest, smoothest pump speed and the lowest pump pressure which will give the flow rate to dispense the required volume of product.

The pilot signal causes the dispense valve to open and the pump to start reciprocating.

When operating under control of the pilot signal:
The dispense valve closes when the pilot signal is removed.
The pump returns to the fully retracted position when the pilot signal is removed.

The pump delivers about 0.5cc (0.03 cubic inch) of product per stroke.

Example 1:

The volume of product required per dispense is less than 1 pump stroke.
Set pump pressure at 35 psi.
Set FC1 so that the pump dispenses the needed volume in the available dispense time. Set FC2 so that the pump retract speed is about equal to the pump advance speed.

Fine tune the dispense volume by adjusting the pump pressure.

Example 2:

The volume of product required per dispense is greater than 1 pump stroke.
Set pump pressure at 35 psi.
Set FC1 so that the pump dispenses the needed product volume with a whole number of strokes plus a fraction of a stroke in the available time. Set FC2 so that the pump retract speed is about equal to the pump advance speed.
Fine tune the dispense volume by adjusting the pump pressure.

Example 3:

Dispensing small dots of product.
The pump pressure may be set as low as 25 psi.
Set FC1 so that the pump dispenses the needed volume in the available dispense time. Set FC2 so that the pump retract speed is about equal to the pump advance speed.
Fine tune the dispense volume by adjusting the pump pressure.

Low Level Indicator:

The Low Level Indicator is operated by a limit valve (LV3) which is in turn operated by the Cartridge Pusher air cylinder as it nears the forward end of its stroke. The indicator changes color from “Green” to “Red” when activated. Immediately after color change, there is about 30cc of product remaining in the cartridge.

NOTE:
This is an indicator only.
It does not shut down the Pump-A-Bead™ II or provide a low level signal.

The Low Level indicator will also display “Red” when the main air supply is “Off”.

Shutdown Procedure:

Idle Time (weekends, holidays, etc.)

With an uncontaminated pumping system and dispense valve, the system can remain idle for up to (60) days at 68°F while filled with Loctite® Gasket Eliminator® Products.

System shutdown for these intervals is as follows;

Move the “Dispense Valve” selector to the “Open” position. This opens the Dispense Valve, moving its poppet off its seat. This reduces the chances of product curing in the valve.
Move the “Cartridge” selector to the “Retract” position. This removes pressure from the product in the cartridge.
Move the “Air/Pilot” selector to the “Off” position. This removes the compressed air supply from the Pump-A-Bead™ II. The Low Level Indicator will show “Red” with no compressed air supply.

4 Troubleshooting

Because of the complex steps in, the chemicals required for, and the safe handling and disposal of these chemicals, Loctite does not recommend field rebuilding of the pump for this system.

Loctite Corporation has a Pump Rebuild Program and can ship a rebuilt and tested Pump to the customer generally within (1) day of receipt of a faulty Pump.

If you have a critical application, we recommend that you keep a new or rebuilt Pump in stock so that your downtime will be limited to the time that it takes to change out a Pump.

Use Loctite® product tubing and fittings to reduce chances of product curing in tubing and fittings.

Use only Loctite® part no. 997569 silicone grease on fittings and O-rings so that they can be removed easily.

Contamination is the enemy of this system. Dirt, metals, metal chips, grinding dust, lubricants (except Loctite® silicone grease as noted above) can cause product curing.

Before starting a major troubleshooting project, make sure that all the basics are in place:

Check that:

1. Control air tubing and connections are correct, i.e. tubing connected to correct ports, fittings and tubing are leak-free, tubing is not pinched or kinked.
2. Main air supply is on and at recommended pressure.
3. Pilot air is available and at recommended pressure.
4. A cartridge with sufficient Loctite Product is installed in the Pump-A-Bead™ II.
5. The dispense valve nozzle is not plugged.
6. Cartridge pusher pressure regulator is at recommended setting.
7. Cartridge Pusher air cylinder is operating and developing enough force to move Product into the Pump.
8. Pump pressure regulator is at recommended setting.

Solutions to the above (8) items are obvious. With these items checked, proceed to Table 4 on page 15.

Table 4 Troubleshooting

Problem	Cause	Proposed Solution
No Product Dispensed. Pump reciprocates at a fast rate.	Pump is air bound. This is indicated by the pump reciprocating at a fast rate.	With “Cartridge” selector in “Run” position, depress “Prime/Bleed” push button to expel entrapped air from the pump through the Bleed Valve.
No Product flow from tube at Bleed Valve outlet.	Tube or outlet fitting is plugged.	Remove fitting and tube, and check for Product flow. If there is flow, replace fitting (982901) or tube (981984).
	Bleed Valve not operating or plugged.	Check air signal to Bleed Valve (tube # 7 & 8 on pneumatic diagram page 21 or 22). If air signal is O.K., it means that the Bleed Valve is faulty or no Product is getting to the Bleed Valve. If the Bleed Valve is faulty, the Pump should be replaced. See page 16.
	No Product getting to the Bleed Valve.	Faulty Cartridge Pusher. Repair or replace.
		Pump is blocked. Replace Pump. See page 16.
		Pump Adapter and Feed Tube blocked. Replace Pump. See page 16.
No Product dispensed. Pump “deadheads”. Bleed Valve operates O.K.	Pump outlet fitting or outlet tubing plugged.	Replace outlet fitting (9448748) or outlet tubing (999488).
	Dispense Valve faulty.	Check air signal to Dispense Valve (tube # 12 & 13 on pneumatic diagram page 21 or 22). If air signal is O.K., it means that the Dispense Valve is faulty. Replace Dispense Valve.
Amount of Product dispensed decreases over a long period of time (several months) with no change in control settings.	Pump is worn out.	Replace Pump. See page 16.
Product appears at observation port in Pump.	Pump Seal is leaking.	Replace Pump. See page 16.

Pump Replacement Procedure:

See Fig. 5 for part identification.

Removing the Pump:

1. Observe safety precautions on Page 5 of this manual.
2. Move “Cartridge” selector to “Retract” position, removing pressure on product within the cartridge.
3. Move “Dispense Valve” selector to “Open” position, opening dispense valve.
4. Move “Air/Pilot” selector to “Off” position, removing air pressure from Pump-A-Bead™ II controls.
5. Check that there is neither residual air pressure nor product pressure in the system, then proceed.
6. Remove Product Cartridge from cartridge pusher.
7. Disconnect product tube from pump outlet.
8. Disconnect bleed tube from bleed valve outlet.
9. Remove control air tubes #7,8,14,16,21,22,24,&27 from the pump.
10. Remove (4) 1/4-20 x 1 socket head cap screws that hold the Adapter to the cartridge Pusher.
11. Lift up on the Adapter to remove it from the Feed Tube.
12. Lift up on the Feed Tube to remove it from the Pump inlet.
13. Rotate the Pump Flow Controls to give access to one of the #10-32 x 1/2 socket head cap screws, and remove the (3) screws and washers holding the Pump Assembly to the enclosure panel.
14. Remove the Pump assembly from the enclosure.
15. Note: Place the Pump assembly, including the Feed Tube and the Adapter, in a polyethylene bag and return to Loctite for rebuild. Send all three items. Over time, the Adapter and Feed Tube can become contaminated and lead to early Pump failure, so it is important that all three items are rebuilt.

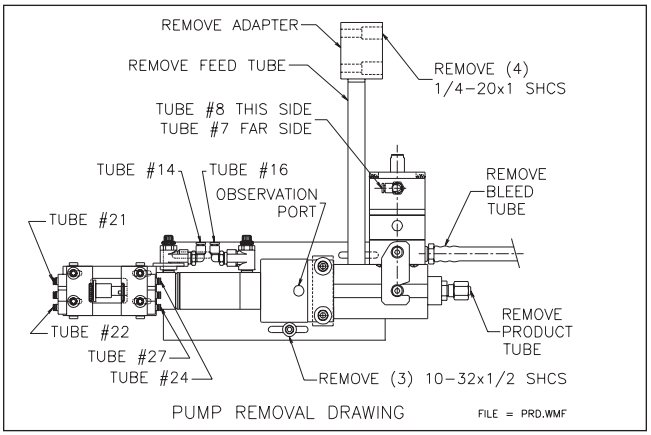


Fig. 5

Pump Replacement Procedure: (cont.)

Pump Installation:

Pump installation is essentially the reverse of the removal steps.

1. Observe safety precautions on Page 5 of this manual.
2. Check that there is neither residual air pressure nor product pressure in the system, then proceed.
3. Attach the Pump assembly to the panel using the #10-32 socket head cap screws and washers tightened hand tight only at this time.
4. Apply silicone grease (Loctite® part 997569) to the O-rings on the feed tube and in the adapter block.
5. Install Feed Tube (ref Fig. 5) through the hole in the top of the enclosure into the pump body.
6. Install the Adapter (ref. Fig. 5) onto the feed tube.
7. Insert the alignment tool (Loctite part 983280, supplied with Pump-A-Bead™ II) through the front bracket of the cartridge pusher assembly. See Fig. 6.
8. Install the (4) 1/4-20 x 1 socket head cap screws hand tight thru the adapter into the front bracket.
9. Adjust the position of the pump so that the feed tube is aligned with both the adapter and pump.
10. Tighten the #10-32 pump mounting screws to 50 ±5 inch pounds.
11. Tighten the 1/4-20 adapter mounting screws to 50 ±5 inch pounds.
12. Connect control air tubes #7,8,14,16,21,22,24,&27 to the pump (ref. Fig. 5).
13. Connect product tube to pump outlet.
14. Connect bleed tube to bleed valve outlet.
15. Restart the Pump-A-Bead™ II per instructions on page 11 of this manual.

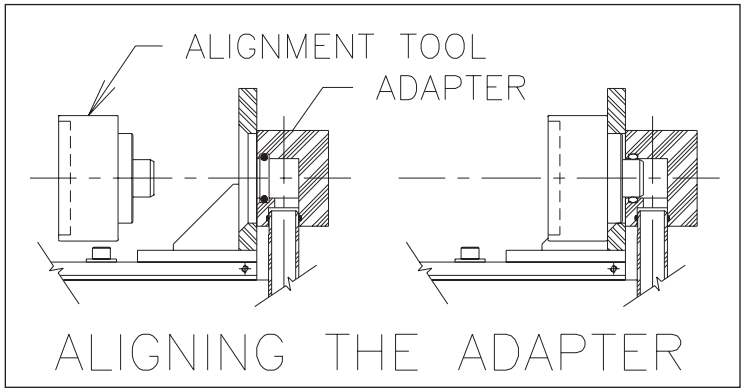


Fig. 6

Spare Parts:

Table 5 Replacement Parts

Item	Loctite Part Number	Description and Quantity
1	983255	Pump Assembly, complete (each).
2	986300	Dispense Valve (each).
3	981984	Bleed tubing (10 meters).
4	9448748	Pump outlet fitting (each).
5	999488	Product tubing (order continuous length needed).
6	982901	Bleed valve outlet fitting (each).
7	997569	Silicone grease, 6 gram tube (each).
8	94487230	Airline control tubing 5/32 OD (order continuous length needed).
9	986025	Nozzle Assembly, Bayonet, .025 in. id. (each).
10	986035	Nozzle Assembly, Bayonet, .035 in. id. (each).
11	986060	Nozzle Assembly, Bayonet, .062 in. id. (each).

Phone Numbers for Help:

Questions regarding installation, operation, or safety should be addressed to:
Loctite Corporation
Technical Information Department
1001 Trout Brook Crossing
Rocky Hill, Connecticut 06067
U.S.A.
Telephone: 1-800-LOCTITE (1-800-562-8483) or 860-571-5100.

5 Specifications

Dimensions

Pattern for mounting fasteners given in Fig. 7 below. Dimensions in inches.

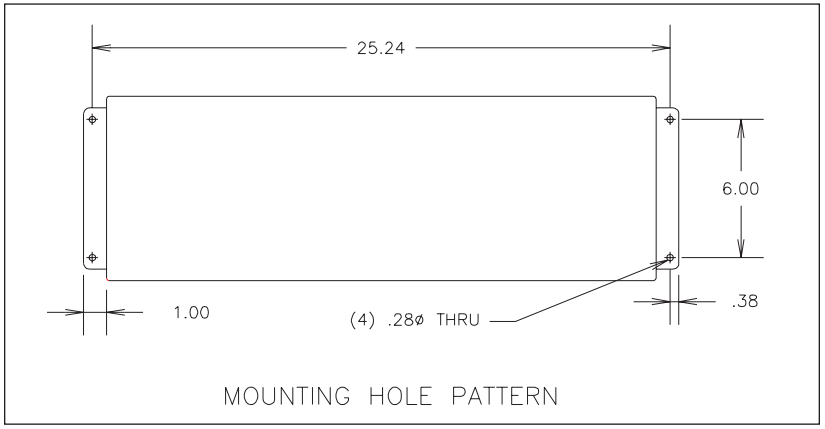


Fig. 7

Overall Pump-A-Bead™ II dimensions given below in Fig. 8. Dimensions in inches. See Fig. 2 on page 6 for clearance dimensions needed to open both door and cover.

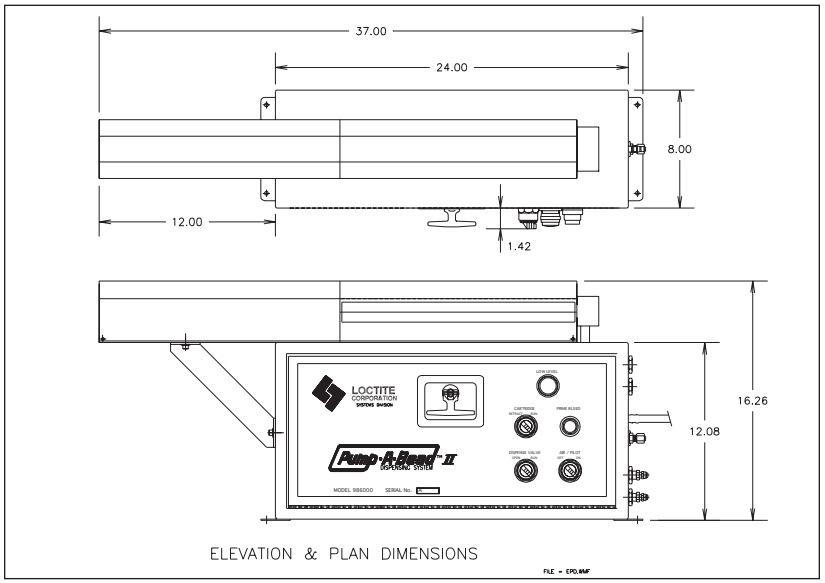


Fig. 8

Weights:

Table 6 Pump-A-Bead™ II Weights

Item	Description	Weight lbs. (kg)
1	Pump-A-Bead™ II control enclosure	91 lbs. (42 kg)
2	Dispense valve 986300	1.3 lbs. (0.6 kg)

Utilities Required:

Compressed air:

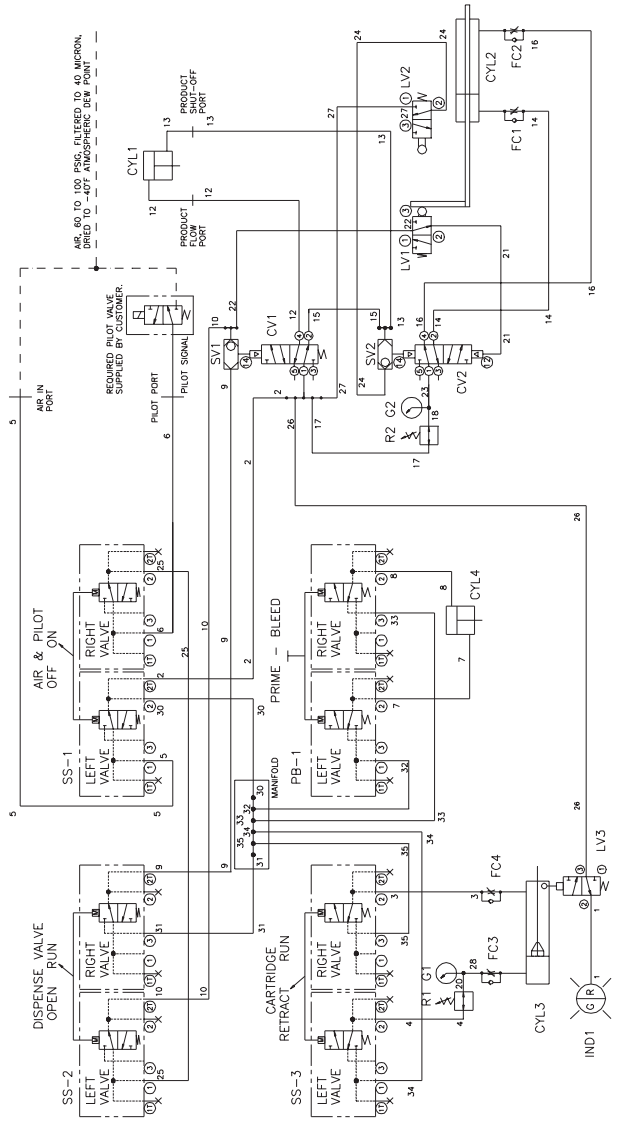
60 to 100 psig, filtered to 40 microns, dried to -40°F dewpoint, 2 scfm rate.

Note: both Main Air and Pilot Air must be at the same condition.

Calculated Pressure Ratios for Cartridge Pusher and Product Pump:

Table 7 Calculated Pressure Ratios

Item	Air Cyl. Dia.	Device Dia.	Ratio
Pusher	1.5 inch	2.58 inch (product cartridge)	0.34 : 1
Pump	1.125 inch w/ double 0.3125 inch rod	0.25 inch (pump piston)	18.7 : 1



PNEUMATIC SCHEMATIC
SERIAL NO. 602 AND ABOVE
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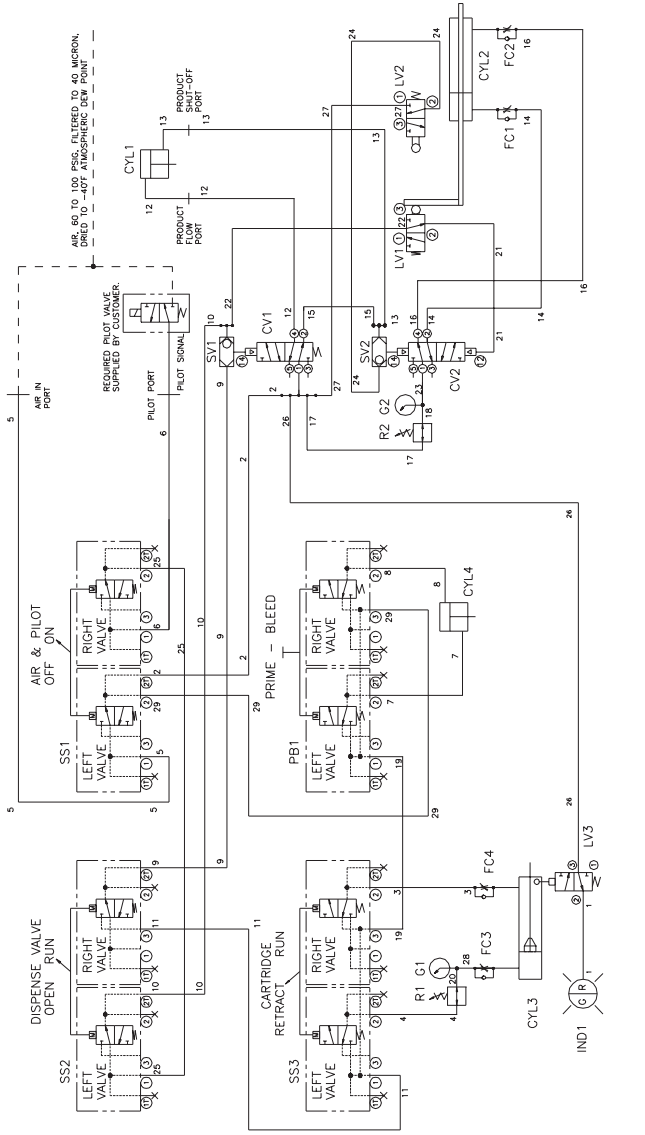
Fig. 9



PNEUMATIC SCHEMATIC
BEFORE SERIAL NO. 602

FILE = OLD_SCHM.WMF

Fig. 10

Differences between the Pneumatic Schematics for serial no. 602 and above and for serial no. before 602:

The units serial no. 602 and above use a manifold to supply air to SS-2, SS-3, and PB-1. The units before serial no. 602 use internal porting in PB-1 to supply air to SS-3 and internal porting in SS-3 to supply air to SS-2. Other than that difference, the schematics show the same operating logic.

Pneumatic Sequence for Pump-A-Bead™ II

(1) Beginning Conditions:
1.1 Incoming Air at 60 to 100 psig.
1.2 SS 1 selector set to “OFF”.
1.3 SS 2 selector set to “OPEN”.
1.4 SS 3 selector set to “RETRACT”.

(2) Move SS 1 selector to “ON”. Both Left and Right Valves become passing.

(3) Move SS2 selector to “RUN”. Pilot 14 of CV1 exhausts, CYL1 retracts, closing Product Dispense Valve (not shown).

(4) SV 2 on Pilot 14 of CV 2 shifts and CV 2 shifts and CYL 2 retracts, moving Product Pump piston out of its cylinder (not shown).

(5) Actuator on CYL 2 shifts LV 1. This connects Pilot 12 of CV 2 to SV 1 branching to SS 2 Left and then to SS 1. This readies the System to accept an External Pilot Signal for dispensing.

(6) Insert Cartridge of Product into Pump-A-Bead™ II per instructions in Manual.

(7) Move SS3 selector to “RUN”. CYL 3 advances, speed controlled by FC4, force controlled by R2,G2. Loctite® Product flows from cartridge into Product Pump.

(8) Depress PB1. CYL4 retracts, opening Bleed Valve. Allow Product to flow from Bleed Port on front of enclosure until no visible bubbles are seen. Release PB1 and close Bleed Valve.

(9) System is now ready to dispense.

Pneumatic Sequence for Pump-A-Bead™ II (cont.)

(10) When External Pilot Signal appears at PILOT PORT, CV1 shifts, advancing CYL1, and opening Product Dispense Valve.
At the same time CV2 shifts and CYL2 advances, moving Product Pump piston into its cylinder and pumping Product to the Dispense Valve and onto part to be gasketed.

(11) CYL2 will continue to advance until either LV2 shifts or the Pilot Signal is removed. If LV2 shifts, CYL2 will retract until LV1 shifts. If the Pilot Signal is still present, CYL2 will advance again. CYL2 will cycle until the Pilot Signal is removed.

(12) When the Pilot Signal is removed, CV1 shifts, CYL1 retracts and the Product Dispense Valve closes. CV2 also shifts, retracting CYL2 and moving Product Pump piston out of its cylinder.

(13) At shutdown, move SS2 selector to “OPEN”. This advances CYL1 and opens the Product Dispense Valve. This step will reduce Loctite® Product curing in the valve when the system is not in use for a period of time.

(14) Move SS1 selector to “OFF”. This will remove air pressure to the unit.

6 Warranty

LOCTITE EQUIPMENT WARRANTY

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