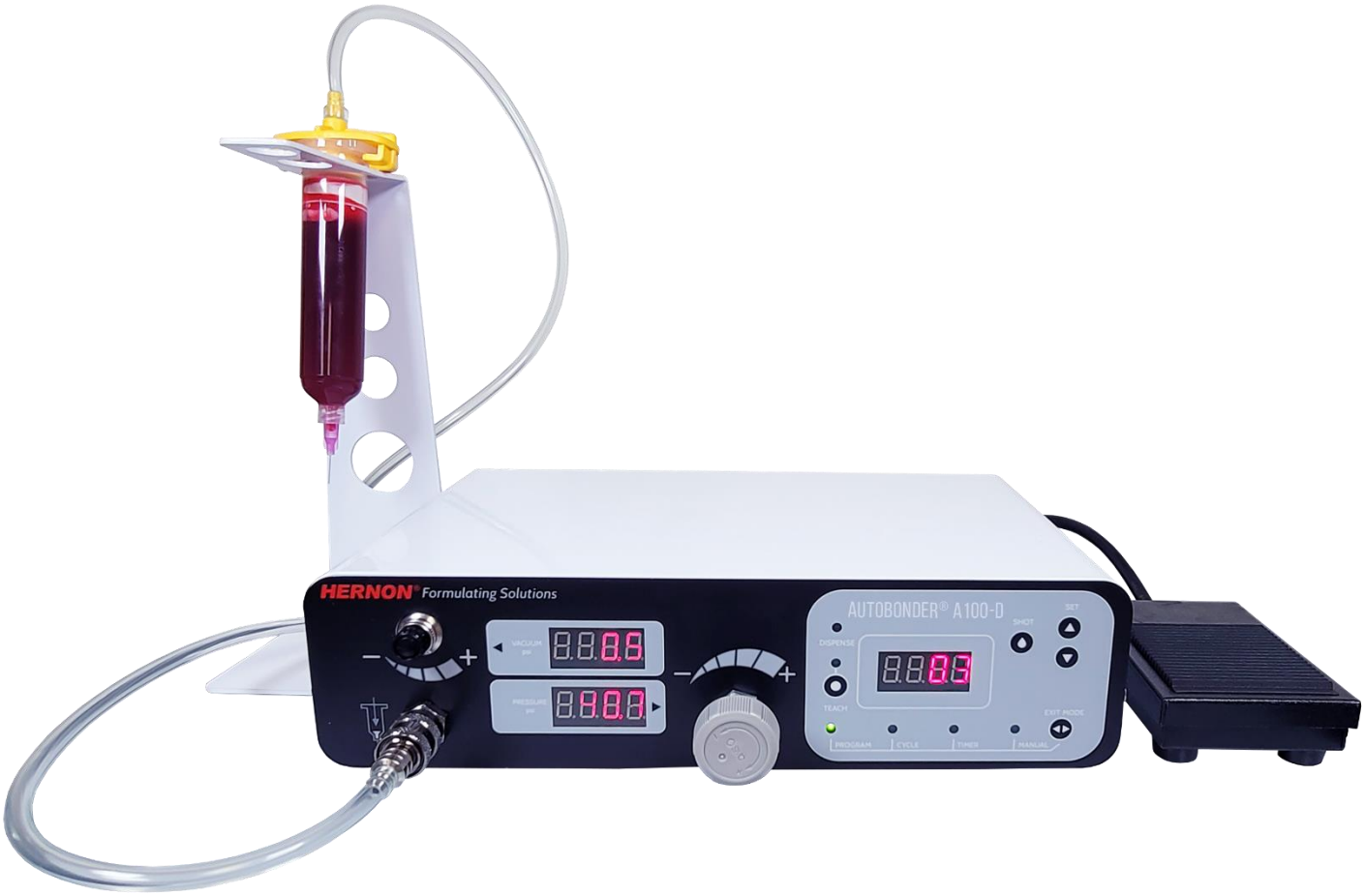
HERNON®
Formulating Solutions

PART #: 110020194

AUTOBONDER® A100-D USER MANUAL



HERNON®
121 Tech Drive
Sanford, FL 32771
www.Hernon.com
Phone: (407) 322-4000 Fax: (407) 321-9700

Thank you for purchasing Hernon's Autobonder® A100-D. We are confident you'll find this device to be the ideal solution to your needs. Hernon® Manufacturing products are built using high quality components with proven reliability. If you have any problems or concerns, please contact your Hernon® account representative or email us at customerservice@hernon.com. Thank you for choosing Hernon®, a trusted partner since 1978.

Table of Contents

Safety

Please, read all safety specifications before performing any procedures such as checking products on delivery, storage and transportation, installation, wiring, operation and inspection, or disposal. Be sure to observe these precautions thoroughly.

GENERAL WARNINGS
• **Never** operate with electrical enclosure open. • **Do not** operate this device before reading and understanding the operator's procedures in this manual. • **Safety glasses** must be worn by the operator and any one in the area of operation. W/ #5 Green Shade Goggles. • Hands should never be placed near moving parts. • Use only genuine OEM Hernon replacement parts when servicing this machine tool. Ignoring this warning could cause unintended operation and possible injury.

CAUTION! Risk of Electrical Shock when cover is removed!

CAUTION! Cover is warm to the touch when unit is in operation!

Warranty

CAUTION!

HERNON® CORPORATION RESERVES THE RIGHT TO INVALIDATE ANY WARRANTIES, EXPRESSED OR IMPLIED, DUE TO ANY REPAIRS PERFORMED OR ATTEMPTED ON HERNON® EQUIPMENT WITHOUT WRITTEN AUTHORIZATION FROM HERNON®. THOSE CORRECTIVE ACTIONS LISTED BELOW ARE LIMITED TO THIS AUTHORIZATION.

Hernon® offers a one-year warranty against defects in material and workmanship on all system components with proof of purchase date. Unauthorized repair, modification, or improper use of equipment may void warranty. The use of aftermarket replacement parts not supplied or approved by Hernon® will void any effective warranties and may result in damage to the equipment.

NOTICE!

Hernon® reserves the right to revise this manual at any time without notice, for any reason.

Hernon® is not responsible for damage from shipping – all claims for shipping damage should be made with carrier.

Introduction

The Autobonder® A100-D is a high precision dispensing controller capable of handling many fluids, adhesives, and sealants. The A100-D can deliver controlled beads and accurate dots as well as large volume filling applications at the touch of a button. The A100-D is pneumatically pressurized with digital displays for time, pressure, and vacuum. This system ensures accurate dispense cycles and supports both syringe dispensing and valve dispensing with a reservoir.

System Components and Dimensions

POWER SUPPLY
PT#: 102021134

FOOT SWITCH
PT#: 102021132

FINGER SWITCH
PT#: 102021133

INTERCONNECT TUBE W/ UNIVERSAL FITTING
PT#: 101020309

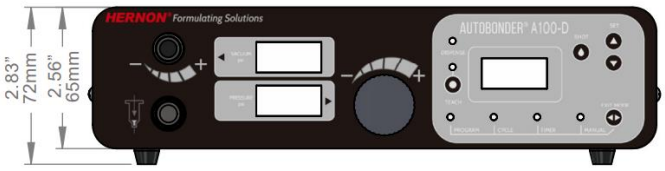
SYRINGE ADAPTER
PT#: 101020306

SYRINGE
PT#: 101020305

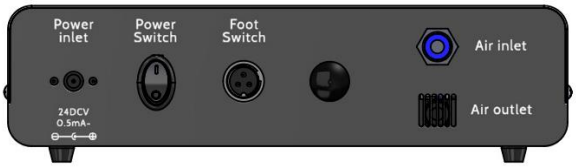
VARIETY OF NEEDLES AND TIPS PT#: 101020305

SYRINGE STAND
PT#: 105020886

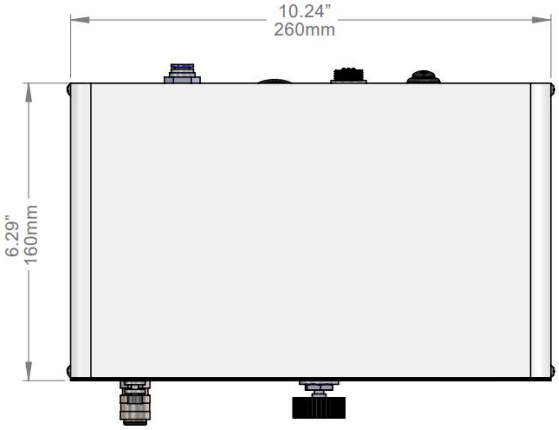
FRONT:



BACK:



TOP:



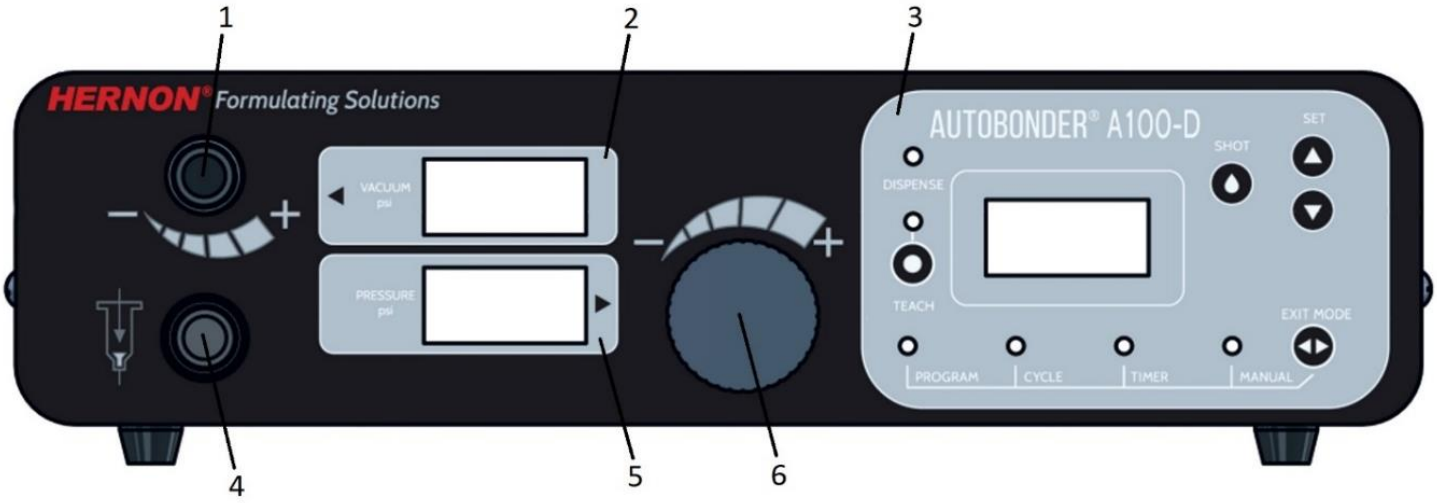
Specifications

General

Housing Dimensions:	10.24” W x 2.56” H x ”6.29 D	**System Warranty:**	1 year from purchase
Max Air Pressure:	100 PSI / 6.8 BAR	**Voltage:**	110 ~ 230 V (auto)
Air Input:	6 mm	**Air Requirements:**	Dry, Filtered Air
Weight:	3.31 pounds (1.5 kg)	**Time Range:**	.01 to 99.99 seconds
Operating Temp:	32° - 104°F (0° - 40°C)	**Relative Humidity:**	20 – 90% (no condensation)

Operation

The Autobonder® A100-D operates by applying pneumatic pressure to actuate devices. The A100-D series has three dispensing modes: Cycle, Timer and Manual modes. Every system has 40 program slots and, in each program, the timing for the Cycle and Timer modes is recorded. The Timer on the Autobonder® A100-D can range from .01 to 99.99 seconds. The air pressure supplied to the syringe is controlled by the Pressure Regulator Knob on the Autobonder® A100-D and the vacuum pressure applied to the syringe is controlled by the Vacuum Adjustment Knob on the A100-D. The Exit Mode button can be used to cycle through Program, Cycle, Timer, and Manual modes of the control panel. The Teach button can be used to program dispensing time and interval time by pressing the Shot button or pushing the foot pedal switch for the desired timing. The Set buttons can be used to manually program the timing incrementally. There are lights for Dispense, Teach, Program, Cycle, Timer, and Manual. These lights are to indicate when those options are currently being used.



ITEM NUMBER	DESCRIPTION
1	VACUUM ADJUSTMENT KNOB
2	VACUUM PRESSURE DISPLAY
3	CONTROL PANEL
4	ACTUATING AIR OUTPUT
5	ACTUATING AIR PRESSURE DISPLAY
6	PRESSURE REGULATOR KNOB

Program Mode

Every system has 40 program slots and, in each program, the timing for the Cycle and Timer modes is recorded. Once the Exit Mode button has been used to cycle through to the Program mode, the operator can then choose the program number between 0 and 39. The program number should be chosen before specifying dispensing times. Once the program number has been decided, then the timing data for the Cycle and Timer modes will be autosaved to the specified program number.

Manual Mode

In this mode, the operator can press and hold either the Shot button or the foot pedal switch for the desired duration of dispensing.

Timer Mode

In this mode, the operator can either set the dispensing time using the Set buttons or the Teach button. The Shot button or the foot pedal switch can be used to start dispensing for the specified dispensing time.

Cycle Mode

In this mode, the operator can either set the interval between dispensing cycles using the Set buttons or the Teach button. The Shot button or the foot pedal switch can be used to start dispensing for the dispensing time specified in Timer mode with the interval between dispensing cycles specified in Cycle mode.

Teach Programming

At any point in the programming of the Cycle or Timer modes, the operator can press the Teach button and use either the foot pedal switch or the Shot button and hold for the desired dispensing time. Once the actuating button is released and the Exit Mode button has been pressed to save the time, the dispensed time is recorded and can be used for subsequent dispensing.

Set Programming

The upper arrow key Set button only needs to be held for a couple of seconds before the dispensing time can be modified. By holding the Set buttons, the dispensing time can be increased holistically or the Set buttons can be pressed so that the dispensing time increments for each individual digit of the timer. While the dispensing time is being modified using the Set buttons, the operator can press the Shot button to switch between the digits of the timer. Press the Exit Mode button to save the time.

Pressure Regulator

The Pressure Regulator allows the operator to adjust the air pressure that is actuating the syringe to initiate fluid flow. Higher pressures will dispense more fluid for a given time. To adjust the air pressure, turn the Pressure Regulator Knob counterclockwise until the needle on the pressure gauge reads below the desired pressure setting. Then turn the knob clockwise to bring the needle up to the desire pressure setting.

Setting the Dispensing Pressure

Start with the Pressure Regulator at 0 psi. While the device is in manual mode and the foot pedal is depressed, slowly increase the pressure. Keep increasing the pressure until adequate or desired flow of fluid is reached. Once the desired flow rate and its pressure setting is found, release the foot pedal switch.

Choosing Dispensing Tip

For dots, take the diameter of the dot you are trying to dispense and halve it to get the desired dispense tip's inner diameter. For lines, take the width of the line you are trying to dispense and halve it to get the desired dispense tip's inner diameter.

Vacuum "Pull Back"

The vacuum "pull back" feature applies a constant vacuum pressure when the fluid is not dispensing, preventing fluid drip.

NOTES ON VACUUM CONTROL USE FOR ADHESIVE DISPENSING – READ CAREFULLY BEFORE PROCEEDING!

Before dispensing, Hernon® suggests that the operator begins with water in the syringe to get familiar with the vacuum controls. To start, turn the Vacuum Adjustment Knob very slightly to the left until a slight "hissing" sound from the inside of the Autobonder® A100-D can be heard, which indicates that the vacuum is on. The Vacuum Adjustment Knob can be turned (6) full counterclockwise turns (360° per turn) to be fully on.

With a full syringe, adjust the vacuum as required so that no water drips after a dispense cycle. Repeat this until the operator can hold water in the syringe without dripping or having excessive air bubbles rising through the syringe from the bottom to the top, which is an indicator of having too much vacuum.

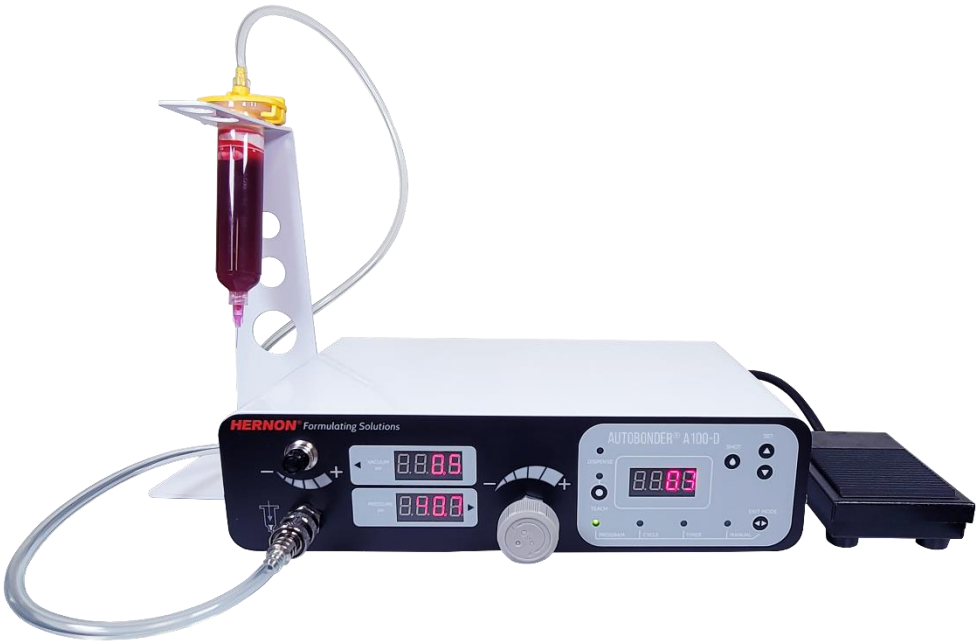
Put a dispense tip on the end of the syringe (using the smallest dispense tips possible – the smaller the dispense tip, the less vacuum required) to begin creating test dots.

CAUTION:

1. Use as little vacuum as necessary. Different vacuum levels are required for different fluids. It is possible that no vacuum is needed at all.
2. The vacuum control is independent of the Power Switch. When turning the Autobonder® A100-D off, close the vacuum by turning the Vacuum Adjustment Knob fully clockwise.
3. Too much vacuum will cause fluid to travel back into the Autobonder® A100-D and will cause damage.
4. Never lay the syringe or cartridge down on the work surface or turn it upside down – always use the included Syringe Stand.
5. Always use the Syringe Adapter as a barrier to prevent foreign matter from entering the syringe.

To begin dispensing fluid, manually pour fluid into the syringe while there is a dispense tip on the end.

Syringe Dispensing System



Syringe System Assembly and Setup Procedure

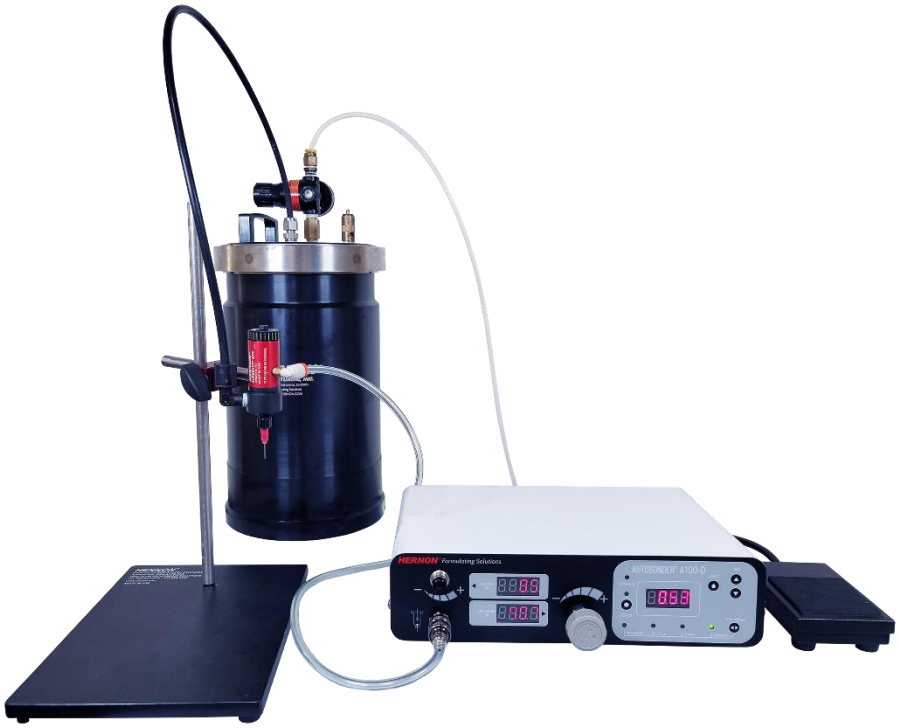
1. Take the interconnect tubing with the male connector on one end and the Syringe Adapter on the other end. Twist-lock the Syringe Adapter onto the top of the syringe.
2. Place syringe in syringe stand. Never lay the syringe or cartridge down on the work surface or turn it upside down – always use the included Syringe Stand.
3. Take the male connector end of the interconnect tubing and insert the male connector into the Autobonder® A100-D's Actuating Air Output.
4. Connect dry, filtered air to the Autobonder® A100-D's Air Input on the back face of the device.
5. While the Power Switch on the back face of the device is in the off position (the "O" position), insert Power Cord into Power Supply Input labeled "POWER INLET" on the back face of the Autobonder® A100-D and plug in the Power Cord into a grounded wall outlet.
6. Insert the foot pedal switch's DIN connector into the Foot Pedal Switch Input labeled "FOOT SWITCH" on the back face of the Autobonder® A100-D.
7. Twist-lock the desired dispense tip onto the Luer Lock at the tip of the syringe.
8. Once all prior steps have been completed, power on the Autobonder® A100-D by setting the Power Switch on the back face of the device to the "I" position.
9. Before dispensing, purge the fluid through the syringe until the fluid comes out without any air bubbles.

Syringe System Dispensing

1. Ensure that all Assembly and Setup Procedure steps have been completed.
2. Use the smallest possible dispense tip at the end of the syringe.
3. Fill the syringe up to half full with fluid and reattach Syringe Adapter.
4. Turn the Vacuum Adjustment Knob all the way off (clockwise). If the fluid begins to drip from the end of the dispense tip, turn the Vacuum Adjustment Knob slowly to the left until the dripping stops.
   NOTE: Turning the Vacuum Adjustment Knob beyond this point can potentially damage the Autobonder® A100-D.
5. On the back face of the Autobonder® A100-D, turn the Power Switch on to the "I" position and push the Exit Mode button till the Manual mode is selected.
6. Set the desired air pressure using the Autobonder® A100-D's Pressure Regulator Knob.
7. Depress the foot pedal switch until fluid flow is established. If no fluid comes out of the dispense tip, increase the air pressure in 3-4 PSI increments until fluid flow is established. Adjust as required.
8. Test out the Timer and Cycle modes.
   a. Depress the foot pedal switch to dispense "dots". Increase the time on the Timer as desired for larger "dots".

   NOTE: For highest repeatability, adjust the time on the Timer before adjusting the air pressure.

Precision Dispensing System



Precision System Assembly and Setup Procedure

1. Ensure that the vacuum is not being used and that the vacuum adjustment knob is turned fully clockwise.
2. Using pneumatic tubing, connect the Sureshot® valve's Air Input with the Autobonder® A100-D's Actuating Air Output. See the System Components section of your Sureshot® valve's User Manual to learn more about the valve's important locations.
3. Connect the fluid supply line from the reservoir to the Sureshot® valve's Fluid Input. See the guidelines in your reservoir's User Manual for proper setup of fluid supply.
4. Connect dry, filtered air to the Autobonder® A100-D's Air Input on the back face of the device.
5. Connect dry, filtered air to the Air Input on the reservoir's Pressure Regulator.
6. While the Power Switch on the front face of the device is in the off position, insert Power Cord into Power Supply Input labeled "POWER INLET" on the back face of the A100-D and plug in the Power Cord into a grounded wall outlet.
7. Insert the foot pedal switch's DIN connector into the Foot Pedal Switch Input labeled "FOOT SWITCH" on the back face of the Autobonder® A100-D.
8. Twist-lock the desired dispense tip onto the Sureshot® valve.
9. Once all prior steps have been completed, power on the Autobonder® A100-D by setting the Power Switch on the front face of the device to the "I" position.
10. Before dispensing, purge the fluid through the Sureshot® valve until the fluid comes out without any air bubbles.

Precision System Dispensing

1. Ensure that all Assembly and Setup Procedure steps have been completed.
2. On the front face of the Autobonder® A100-D, turn the Power Switch to the "I" position and push the Exit Mode button till the Manual mode is selected.
3. Set the desired dispense air pressure using the Autobonder® A100-D's Pressure Regulator's Adjustment Knob.
4. Adjust the reservoir's pressure regulator to the desired fluid pressure.
5. Depress the foot pedal switch until fluid flow is established. If no fluid comes out of the dispense tip, increase the air pressure in 3-4 PSI increments until fluid flow is established. Adjust as required. Make sure the air pressure and fluid pressure do not exceed the maximum of the Sureshot® valve outlined in its User Manual.
6. Test out the Timer and Cycle modes.
    a. Depress the foot pedal switch to dispense "dots". Increase the time on the Timer as desired for larger "dots".

NOTE: For highest repeatability, adjust the time on the Timer before adjusting the air pressure.

Validation

Prior to production, Hernon® advices customers to conduct testing to determine the desired dispense levels. When switching between fluids of different viscosities, air and vacuum pressure will have to be adjusted and a different dispense tip will be required. The Autobonder® A030-D configurations with maximum air pressures of 30 PSI (Hernon® PN 110020193) will have limited ability to handle higher viscosity fluids.

Maintenance

The Autobonder® A100-D is designed with minimal maintenance required. All maintenance typically involves other components of the system. To learn more about the maintenance, troubleshooting, and frequently asked questions about your Hernon® valves and reservoirs, check out their User Manuals or contact your Hernon® account representative.

Replacement Parts

Description	Hernon® PN
Interconnect Tubing and Universal Connector	101020309
Power Adapter	102021134
30cc Dispensing Syringes and Needle Variety Pack	101020305
UV Resistant 30cc Dispensing Syringes	104 – 025
30/50cc Syringe Adapter	101020306
Syringe Stand	105020886
Foot Pedal Switch	102021132
Finger Switch	102021133

Troubleshooting

Unit Does Not Power On

Ensure that the power cord is fully inserted into the power supply input on the back face of the device.

Unit Powers On, But Does Not Dispense

Ensure that dry, filtered air is connected to the device's 6mm Air Inlet.

Frequently Asked Questions

Q: How do I clean my system?

A: Cleaning your Hernon® device is dependent on the chemical makeup of the formula the operator is dispensing. Hernon® recommends using a solvent that will safely dissolve your dispensing fluid and flush chemicals from wetted surfaces. Dispense valve, dispense circuit, and wetted surfaces may require disassembly and mechanical cleaning. Dispense tubing may be difficult to flush with solvents and require replacement. If additional information is required, please contact your Hernon account representative.

Q: Why is fluid getting sucked back into the air output tube?

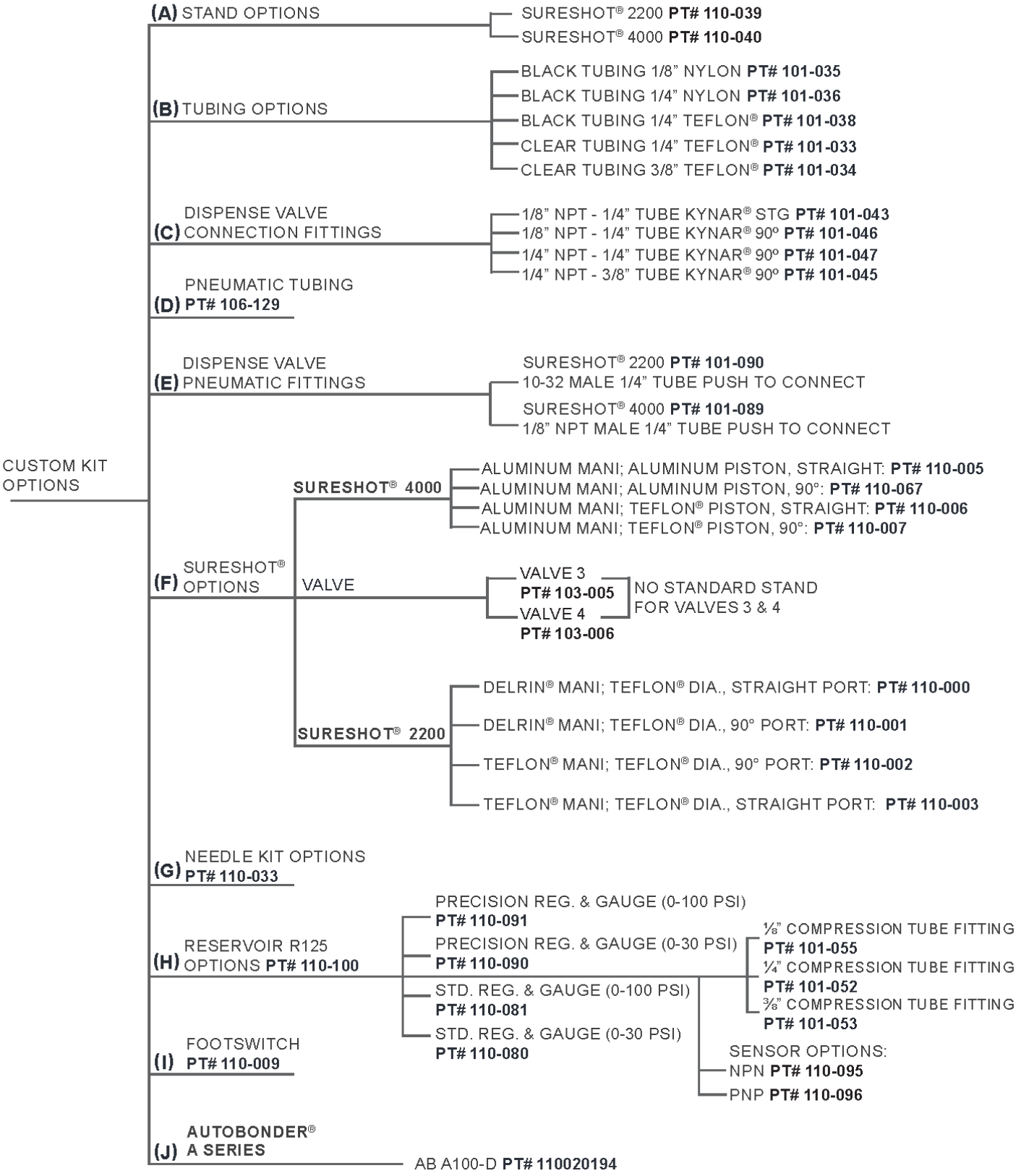
A: The vacuum is likely too high. Adjust vacuum down by turning the "VACUUM" knob clockwise.

Q: How do I choose components for my system?

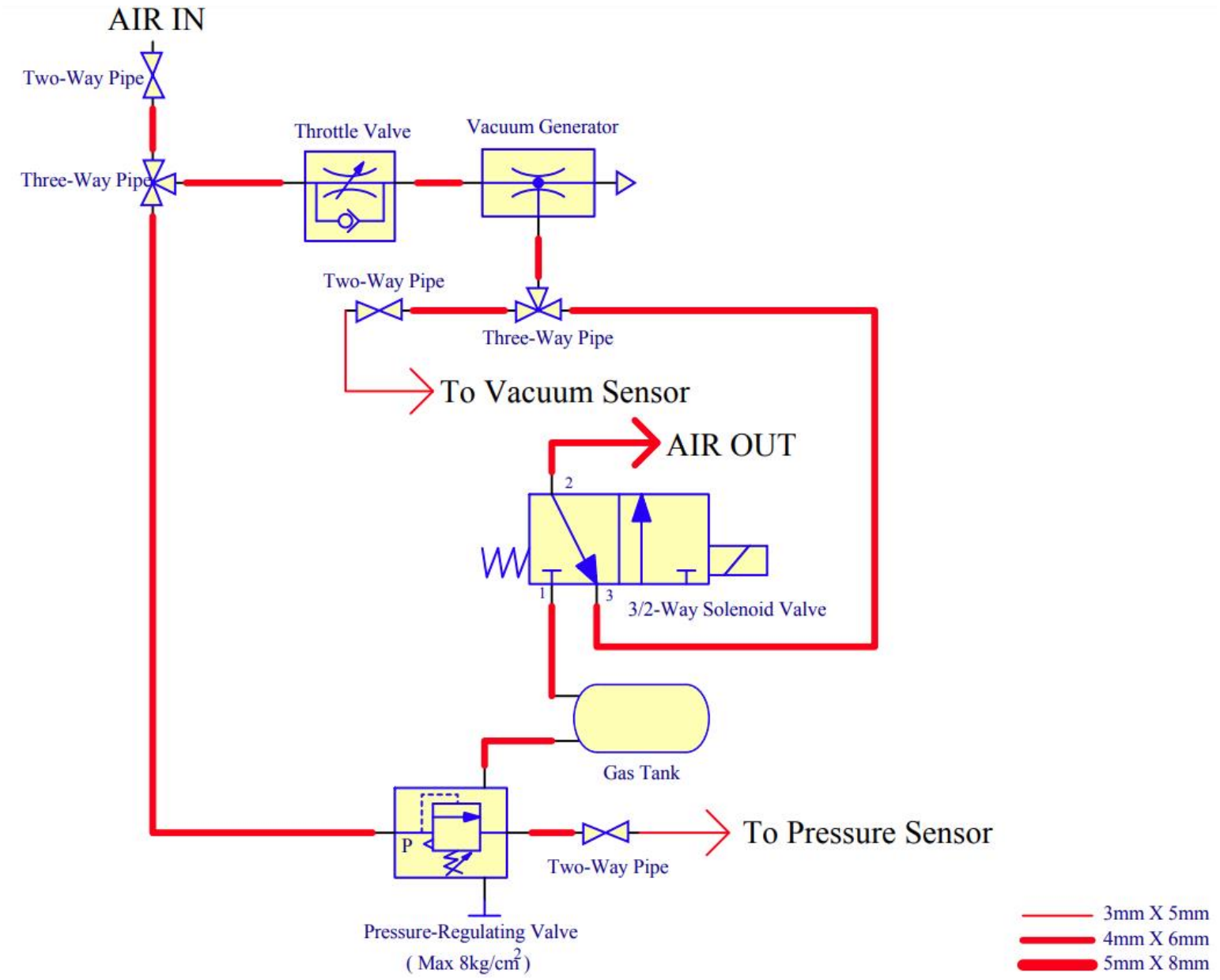
A: Please check out the reference guide on the next page to find components compatible with the Autobonder® A100-D.

HERNON®

AUTOBONDER® A SERIES KIT SELECTION GUIDE



Pneumatic Schematic



Notes: