

# 8002 Nitro-Fuzer® Quick Start Guide



Congratulations on purchasing Polyvance's 8002 nitrogen plastic welder. Prior to powering up the welder, please read and follow the directions outlined in this booklet on the setup and use of your plastic welder. Scan the QR code using your smartphone to watch the Setup and Use video. Failure to read and fully understand these instructions or failure to watch the instructional video will potentially cause damage to your welder, will increase your risk of injury, and may cause the welder to become a fire hazard. Videos are also accessible on our website at: <https://www.polyvance.com/video>

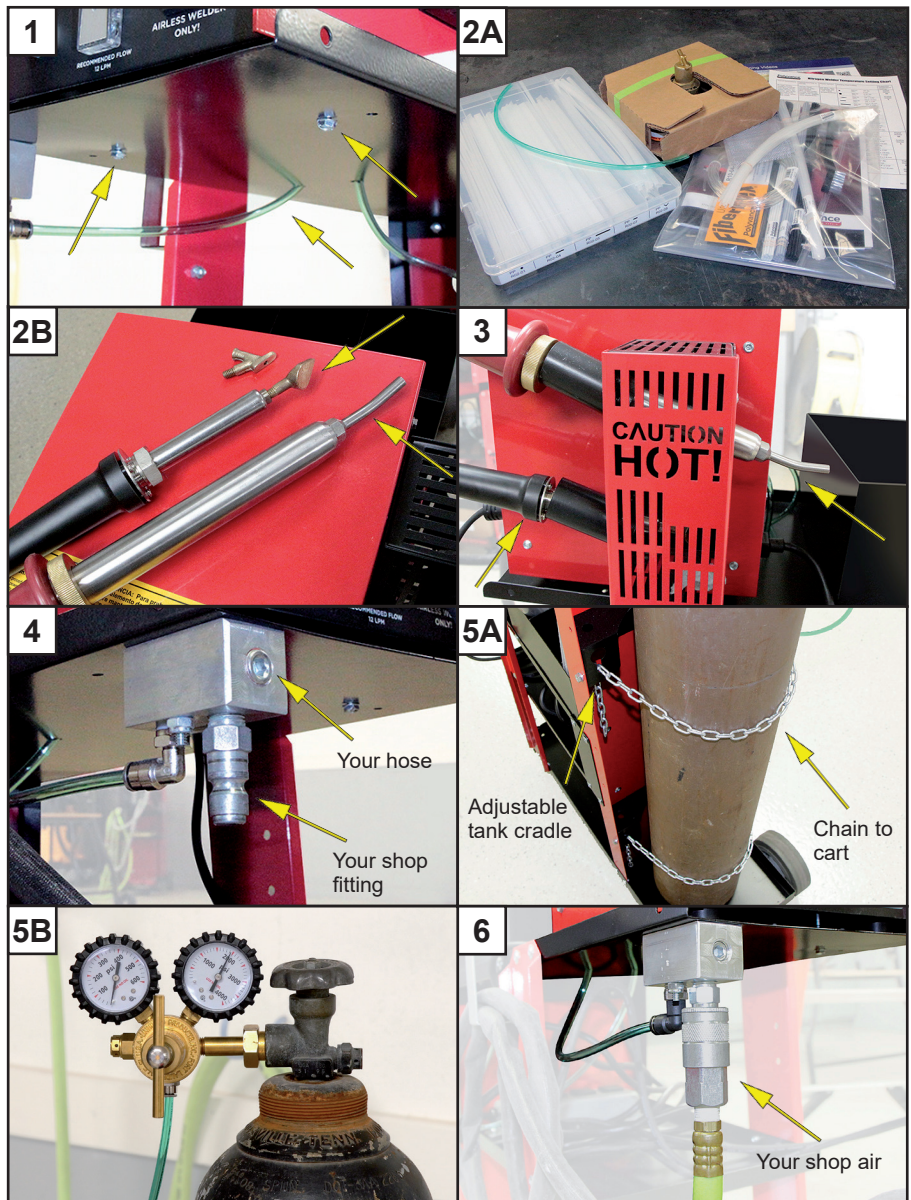


Setup and Use Video

## Getting started:

1. Assemble the welding cart and mount the 8002 welder to the top shelf using 2 sheet metal screws (included). Connect the air manifold to the air inlet on the back of the welder with the green tubing.
2. Unpack the accessories box. Place the welding rod in the bins on top of the cart and thread the welding tips into the appropriate welder.
3. Place the nitrogen welder into the top holster and make sure there is nothing flammable near the hot end of welder. Place the airless welder into the lower holster.
4. Install your shop's male air fitting in the bottom of the air manifold on the front of the cart. If desired, you may install a hose to the front of the manifold to power air tools.
5. Secure your nitrogen tank to the back of the cart with chains (included), move the top tank cradle as needed. Mount the regulator to the nitrogen bottle. Connect the N<sub>2</sub> inlet on the welder to the regulator with tubing.
6. With the welder off, connect your CLEAN, DRY, and OIL-FREE shop air supply to the manifold.

**CAUTION:** Always use **CLEAN, DRY, and OIL-FREE** air for the nitrogen welder. Water and/or oil inside the heating element will drastically shorten its life span.





7. Adjust the nitrogen regulator on the nitrogen bottle to read between 20 - 50 psi.

8. With the selector valve turned to AIR, use the AIR flow valve on the front of the welder to adjust the flow of air so the flow gauge reads 12 LPM. At this setting, the ball will float halfway between the 10 and 15 LPM lines.

9. With the selector valve turned to N2, use the N2 flow valve on the front of the welder to adjust the flow of nitrogen so the flow gauge reads 12 LPM.

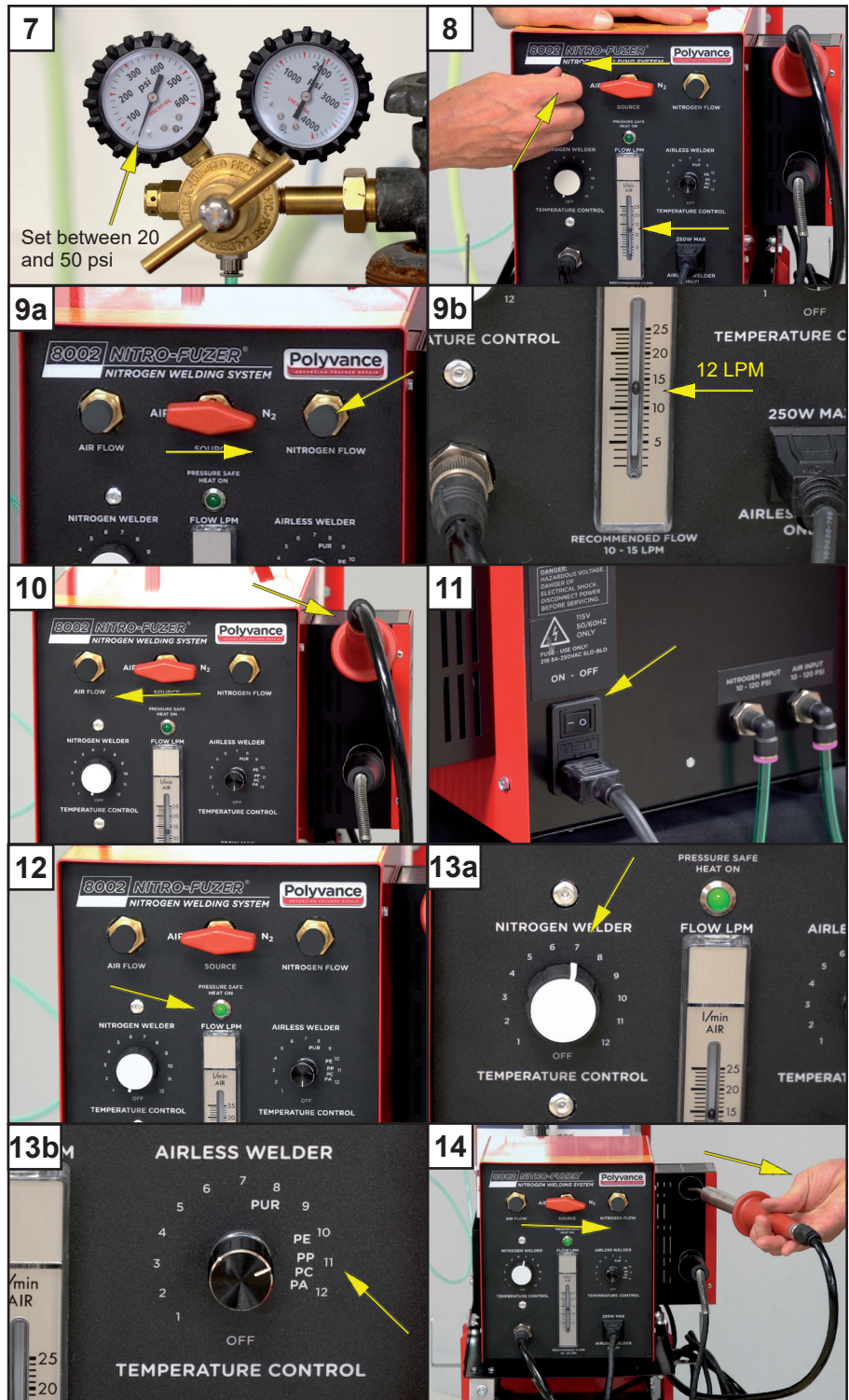
10. Turn the selector valve back to AIR. Always select AIR when the welder is idle to conserve nitrogen!

11. On the back of the welder, turn on the main power.

12. Check to make sure the green "PRESSURE SAFE / HEAT ON" light is on. The welder will not heat if the light is not on. If the light does NOT illuminate when the airflow is over 10 LPM, contact Polyvance tech support for the adjustment procedure.

13. Turn on the nitrogen and airless welders by rotating their respective control knob clockwise. Start with the nitrogen welder set about halfway up the dial, then allow the welder to warm up for 5 to 10 minutes. If the welder is not hot enough to weld, turn the welder up incrementally, giving it time to preheat before increasing the temperature further. Once a satisfactory temperature is reached, it can be simply turned to the same temperature and airflow setting immediately the next time the welder is used.

14. After the welder has had a chance to preheat, turn the selector valve to N2 to begin welding. Be sure to turn the valve back to AIR when the weld is complete. Forgetting to turn the valve back to AIR will consume a large amount of nitrogen and will empty your nitrogen bottle in a short amount of time.



**CAUTION: ALWAYS maintain adequate airflow through the welder while it is hot or the power is on. Failure to do so will burn out your heating element. Polyvance DOES NOT WARRANT the heating element because its life is completely under YOUR control.**

## Temperature Setting Suggestions\*

Type of Plastic	Melting Temp.	Series of Welding Rod	Recommended Temperature Setting on Nitrogen Welder	Air Flow
Polyurethane (RIM, PUR)	N.A.	R01	8-10 (AIRLESS WELDER ONLY)	N.A.
Polypropylene (PP)	160-166°C (320-331°F)	R02	7	12
ABS	105°C (221°F)	R03	6-7	12
Polyethylene (LDPE)	105-115°C (221-239°F)	R04	7-8	12
TPO	177°C (350°F)	R05	7-8	12
Nylon (PA)	269°C (516°F)	R06	8	12
Polycarbonate (PC)	155°C (311°F)	R07	7-	12
PPE+PS, PPO	260°C (500°F)	R08	7	12
PVC	177°C (350°F)	R09	6+	12
FiberFlex®	N.A.	R10	12 (AIRLESS WELDER ONLY)	N.A.
PBT (Polybutylene Terephthalate)	225°C (437°F)	R11	7-8	12
Polyethylene (HDPE)	190°C (375°F)	R12	7-8	12
PET	254°C (490°F)	R13	8-	12
ASA	220°C (428°F)	R14	6-7	12
GTX (Nylon blend)	275-300°C (527-572°F)	R15	8	12
POM (Acetal, Delrin®)	215°C (419°F)	R16	6+	12
Acrylic/PVC (Kydex®)	<204°C (<400°F)	R17	6-7	12
PP+GF15	160-166°C (320-331°F)	R18	7	12
HDPE+GF15	190°C (375°F)	R19	7-8	12
PC+ABS	155°C (311°F)	R20	7-	12

\* Most welding operations will be at the recommended settings. Welding outside the recommended range may be needed if the plastic being welded is very thin or thick or if a higher or lower airflow is used. Extreme care must be taken to avoid overheating the element.

## Welding Basics:

1. Most bumper repairs can be done with the air/nitrogen flow set at 12 LPM, but up to 15 LPM is commonly used. The chart above may be used as a general guide for welding various materials. Using settings outside the range on the chart is generally not needed, unless you are welding unusually thin or thick material or if the material you are welding has an unusually high or low melting point.

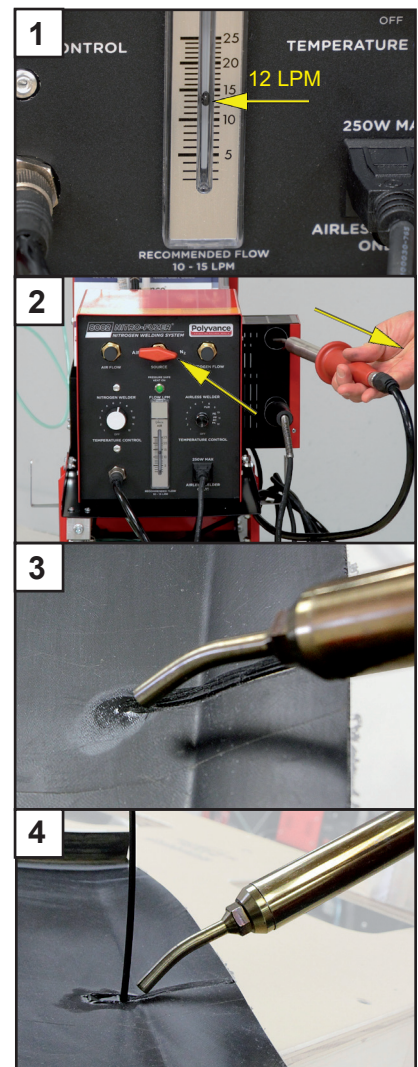
It's important to note that when increasing the temperature without increasing the airflow, the heating element can be over-heated easily, causing a dramatic reduction in the life-span of the element. Over-heating is indicated by a glowing outer steel torch barrel. If this happens, immediately turn down the temperature and turn up the air and nitrogen flow. If an over-heat condition continues uncorrected, the heating element will burn out and the handle may be destroyed by the excessive heat becoming a potential fire hazard.

2. To change from air to nitrogen, simply turn the selector valve to the desired source. Be sure to switch back to the air setting when the weld is complete to avoid using excess nitrogen.

3. Once the welder has warmed up, welding is accomplished by directing the heated nitrogen at the intersection of the area to be repaired on the base material and the welding rod. The welding rod should be applied perpendicular to the base material with the welder aimed at approximately a 45° angle between the two.

4. The substrate should begin to gloss over in 3 to 5 seconds after applying the heat. At this point, begin pressing the rod downward onto the surface, rolling it towards the heat. Be sure the surface of the rod and the surface of the substrate are both melted when pushing the two materials together.

For more information on welding plastic, please watch the instructional videos found at [www.polyvance.com](http://www.polyvance.com).





# Welder Shutdown Procedure:

REV: 10-2020

## To shut off individual welders:

### *Airless Welder:*

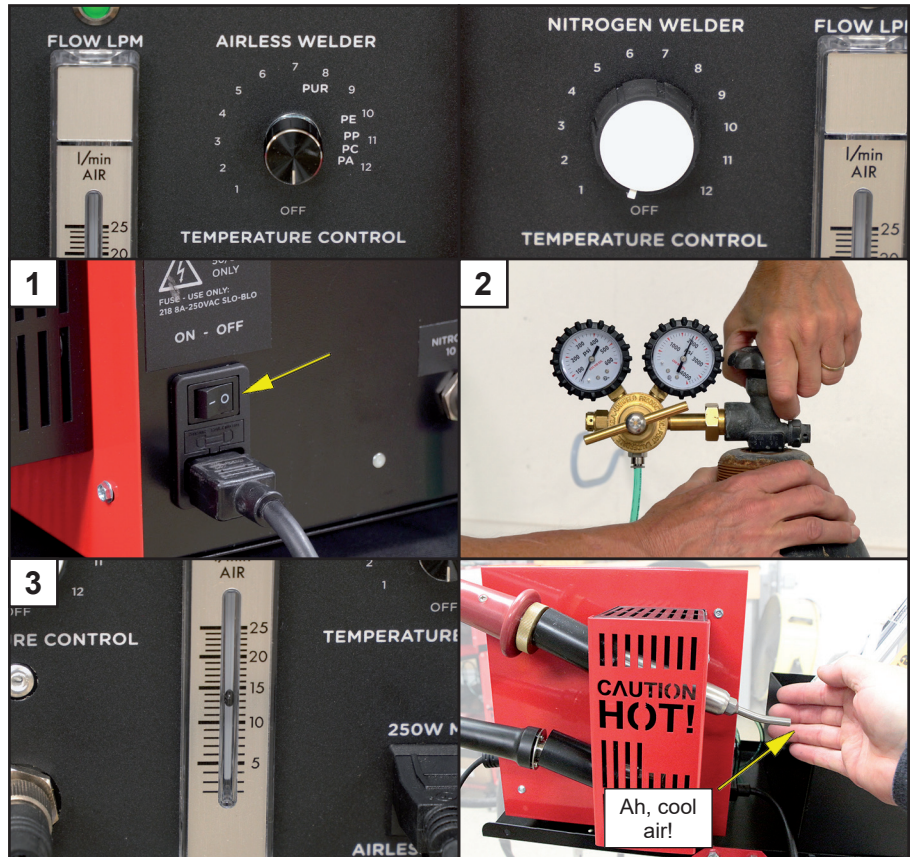
Turn the airless welder control knob counterclockwise until it clicks.

### *Nitrogen Welder:*

Place welder into the top holster and turn the nitrogen welder control knob counterclockwise until it clicks.

## System Shutdown:

1. Shut off main power on the back of the welder.
2. Close the valve on the nitrogen bottle, but leave the compressed air connected and on.
3. Allow the welder to completely cool before disconnecting the air supply.



## Diagnostics:

### **Welder will not turn on.**

- Check power supply to welder.
- Check wall outlet for 120V.
- Make sure power strip is on.
- Turn on the main power switch.
- Check that all cords going to the welder are plugged in.
- Check fuse on the back of the welder.

### **Fuse blows.**

- Check heating elements for shorts. Remove the hot air element\* and unplug the airless welder from the control panel. Check the resistance of the elements using an Ohm meter.
  - Hot air welder:  $26.0 \pm 1.0$  Ohm
  - Airless welder:  $53 \pm 3.0$  Ohms
- If out of range, or an open circuit is indicated, replace the faulty heating element.
- If elements check OK, turn the unit on with no elements installed. If the fuse continues to blow, contact Polyvance. If unit appears to function normally without the elements installed, plug in the airless welder only and test. If unit continues to operate normally, shut power off, then reinstall the hot air element and test. If unit trips circuit during either test, its safe to assume the fault lies within the last element installed.

### **Nitrogen welder does not heat or is not hot enough.**

- Turn the main power switch on.
- Set the temperature to "7" and the airflow to 12 LPM.
- Observe the green "safe" light. If the light does not come on, power will not be sent to the heating element. If the light is not illuminated at 12 LPM, call Polyvance.
- If it still does not heat, check resistance of the heating element. (See above.)
- If no faults are found, call Polyvance.

### **Airless welder does not heat.**

- Turn the main power switch on.
- Set the temperature to "12." Low settings will produce very little heat.
- If still no heat, check resistance of the heating element (see above) or plug directly into a wall outlet. If it does not get hot, the element is faulty; if it gets hot, the switch is faulty.

**The shutdown procedure is VERY IMPORTANT for maximizing the life of your heating element. You MUST maintain airflow through the heating element until it is completely cool. You are in control of your heating element's life! Polyvance cannot warrant the heating elements for this reason.**

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