

8003 Nitro-Fuzer® Quick Start Guide



Congratulations on purchasing Polyvance's 8003 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 8003 welder to the top shelf using 2 sheet metal screws (included).

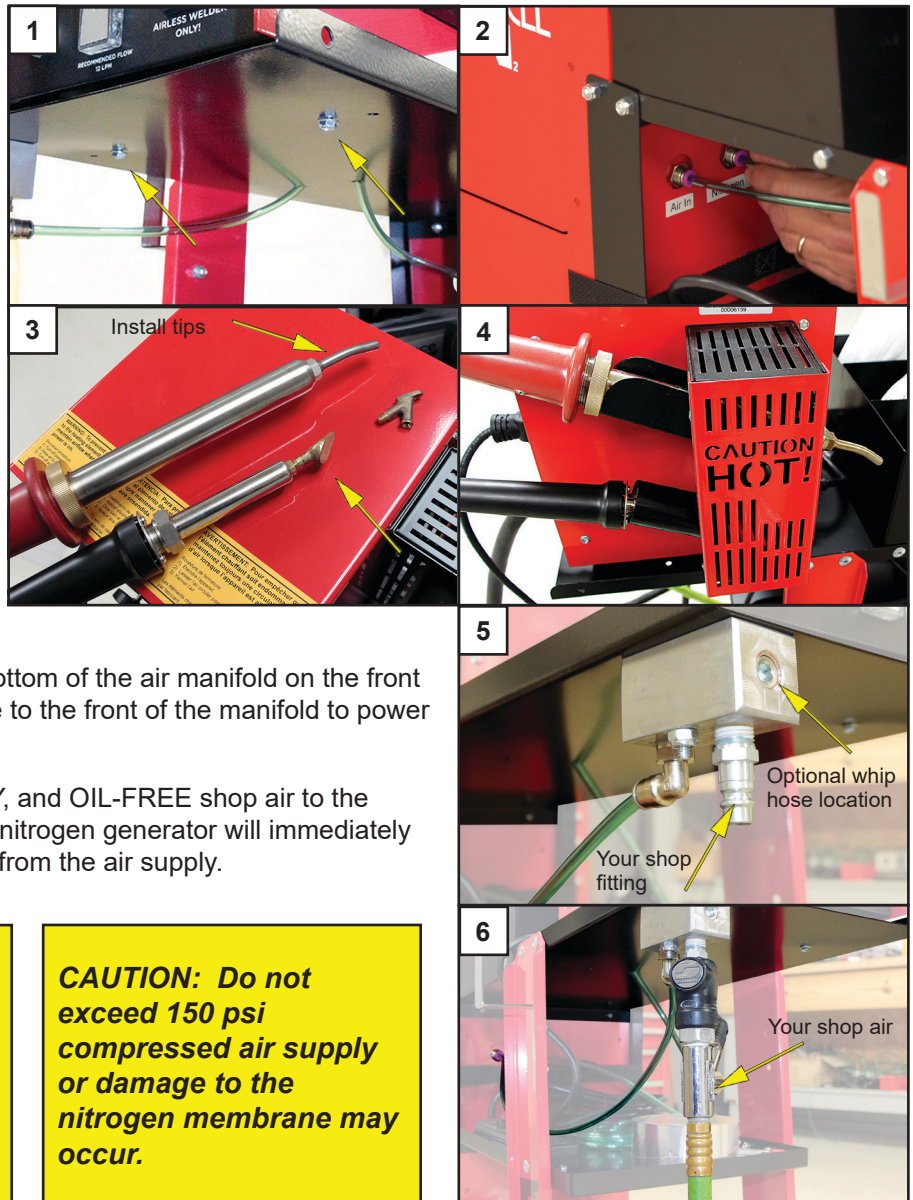
2. Drop the nitrogen generator into place and secure it. Connect the air manifold to the air inlet on the generator with the green tubing. Connect the nitrogen out port with the nitrogen in port on the back of the welder with the green tubing.

3. 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.

4. 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.

5. 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.

6. With the welder off, connect CLEAN, DRY, and OIL-FREE shop air to the manifold. (100-150 psi recommended.) The nitrogen generator will immediately begin to remove oxygen and carbon dioxide from the air supply.



CAUTION: Always use CLEAN, DRY, and OIL-FREE air for the nitrogen welder. Water and/or oil inside the nitrogen generator will permanently damage the membrane. Such damage is NOT covered by warranty.

CAUTION: Do not exceed 150 psi compressed air supply or damage to the nitrogen membrane may occur.

7. Note the location of the three stage, stacked air filter behind the side door of the generator cabinet. Check filter daily for contamination. If any contamination is present, correct the source of the contamination, clean the filter bowl and carefully inspect the filter cartridge. If the filter cartridge appears dirty, wet, or oily replace the filter. Irreversible damage will occur if dirt, water, oil, or oil vapors reach the nitrogen membrane resulting in a significant and permanent loss of nitrogen purity.

8. Should the stacked filter clog, there is an indicator on the top of the filter housing that will turn from green to red when air is connected. If there is any indication that red is showing, stop using the welder and immediately change the filter membrane.

9. Using the flow valve on the front of the welder, adjust the flow of nitrogen so the flow gauge reads 12 LPM. At this setting, the ball on the flow gauge will float halfway between the 10 and 15 LPM lines. Note: As long as compressed air is connected to the welder, nitrogen will flow even with the main power off.

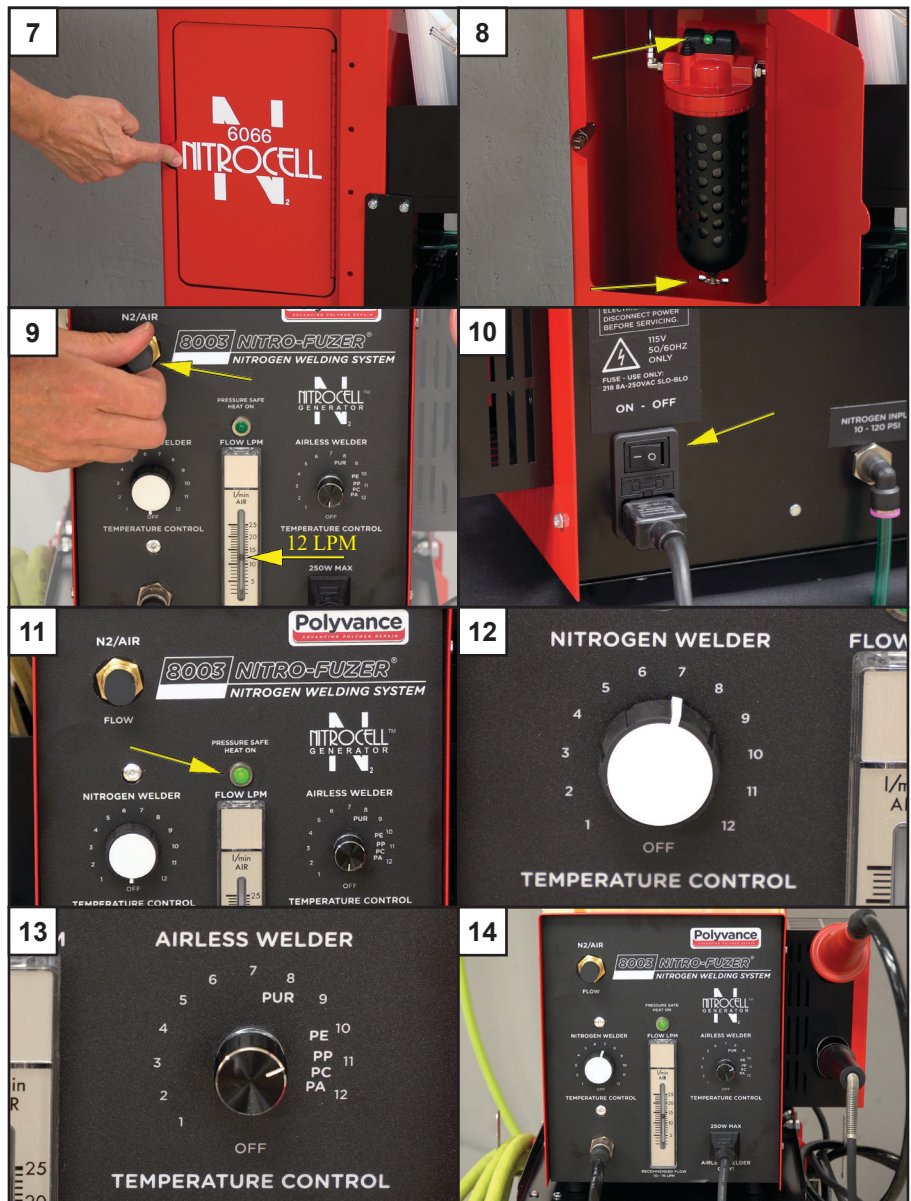
10. On the back of the welder, turn on the main power.

11. 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.

12. With the flow at 12 and the green light on, turn on the nitrogen welder by rotating the control knob clockwise to between 6 and 7.

13. Turn the airless welder to the desired setting on the dial.

14. Allow both welders to warm up completely (5 to 10 minutes) before welding. If either welder is not hot enough to weld after 10 minutes, turn it up incrementally, allowing it to preheat a few more minutes before increasing the temperature further. Once a satisfactory temperature is reached, the same temperature and airflow can be set immediately the next time the welder is used.



CAUTION: ALWAYS maintain 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 using the factory pre-set temperature settings with the air/nitrogen flow set at 12 LPM, however the chart above may be used to aid in fine-tuning the nitrogen welder for use on different materials.

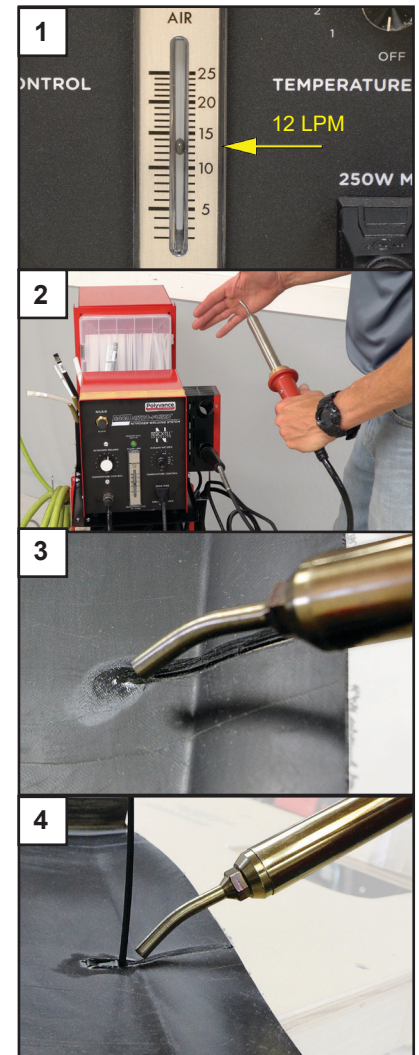
Going outside the range on the chart is generally not needed, unless you are welding unusually thin or thick material or if the material you are welding has an unusually high or low melting point. It's important to note that when increasing the temperature without increasing the nitrogen flow, the heating element can be over-heated, 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 nitrogen flow. If an over-heat condition continues uncorrected for any length of time, a fire hazard will result, the heating element will burn out, and the handle of the torch may be destroyed by the excessive heat.

2. Once the welder has warmed up, remove the torch from the holster.

3. Welding is accomplished by directing the heated nitrogen at the intersection of the base material and the welding rod. Start by melting the tip of the welding rod, then the surface of the substrate. The substrate should begin to gloss over in 3 to 5 seconds after applying the heat. The welding rod should be applied perpendicular to the base material with the welder aimed at approximately a 45° angle between the two.

4. Once the base material glosses over, 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. If the base material or the welding rod surface melts faster than the other, adjust the torch angle so both surfaces melt at the same rate.

For more information on welding plastic, please watch the instructional videos on Polyvance's website at www.polyvance.com.



To shut off individual welders:

Airless Welder:

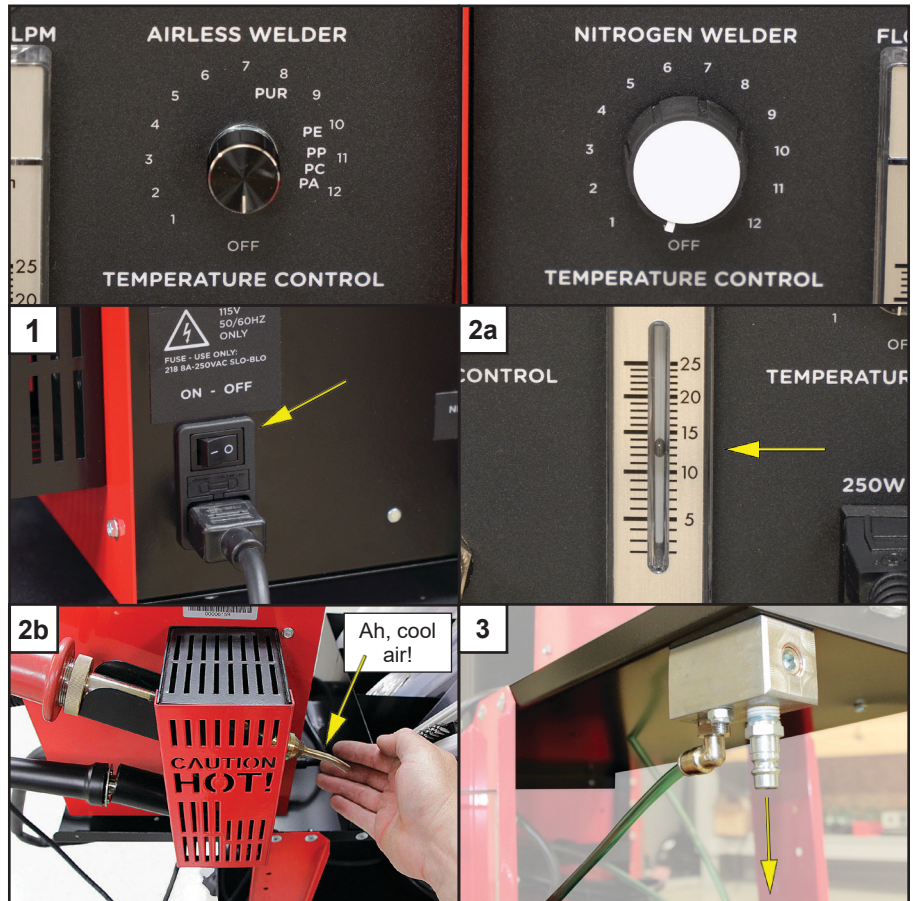
Turn the airless welder control knob counterclockwise until it clicks.

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.
2. Allow the nitrogen welder to completely cool.
3. Disconnect the shop 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 ± 1.0 Ohm
 - Airless welder: 53 ± 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.



1128 Kirk Road, Rainsville, AL 35986
Tech Support: 800-633-3047
email: info@polyvance.com
web: www.polyvance.com