8202 Nitro-Fuzer® Quick Start Guide

Polyvance®
ADVANCING POLYMER REPAIR

Congratulations on purchasing Polyvance's 8202 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. Unpack the accessories box. Place the welding rod boxes onto the large compartment on the top of the cart and thread the welding tips into the appropriate welder.

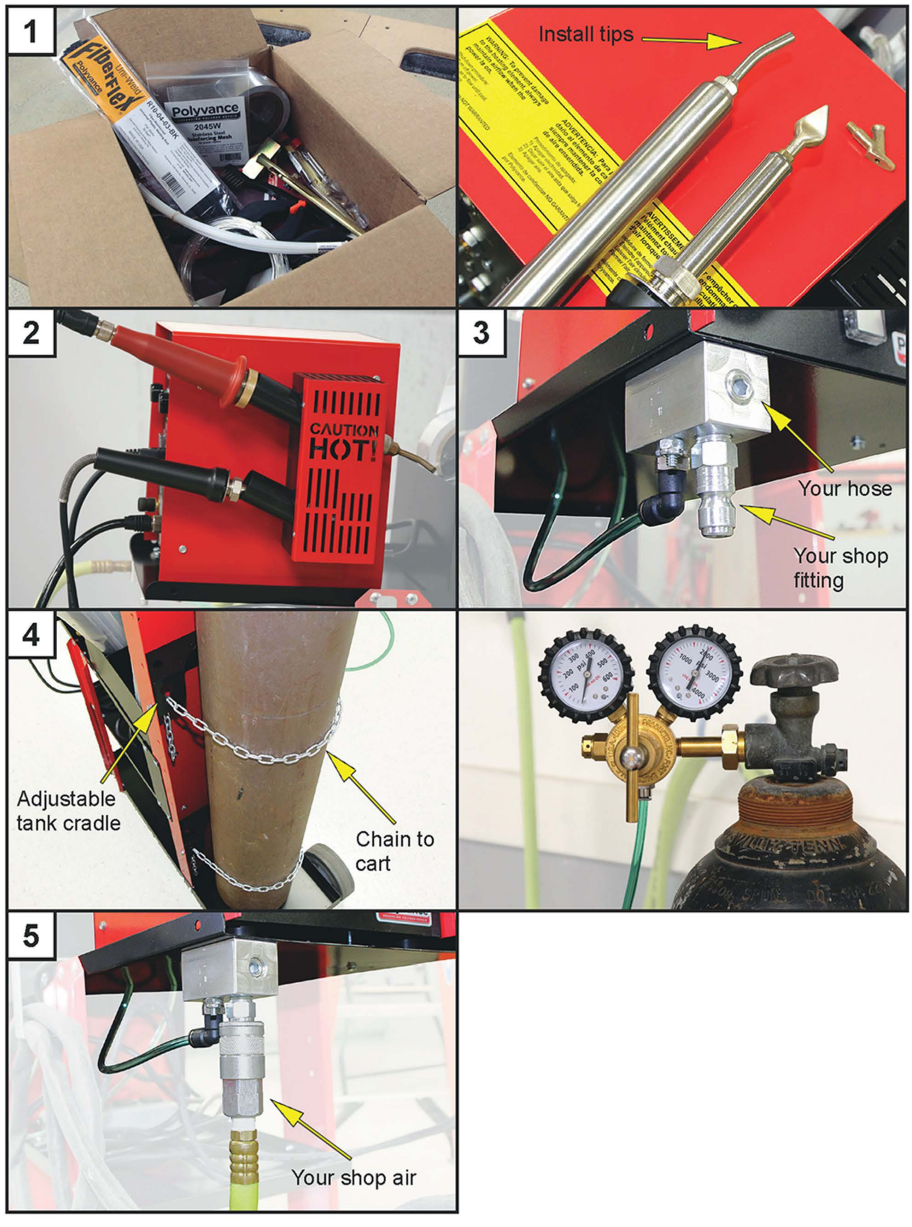
2. Place the welders into the holster on the right side of the welder. Be sure to place the nitrogen welder into the rectangular top tray and make sure there is nothing flammable near the holster.

3. 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.

4. Secure your nitrogen tank to the back of the cart with the included chains and adjust the top tank cradle if needed. Install the nitrogen regulator securely to the nitrogen bottle.

5. 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.



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

7. Turn on the main power switch to the welder. Both welders will show "OFF." Do not turn them on until the air/nitrogen flow is set correctly.

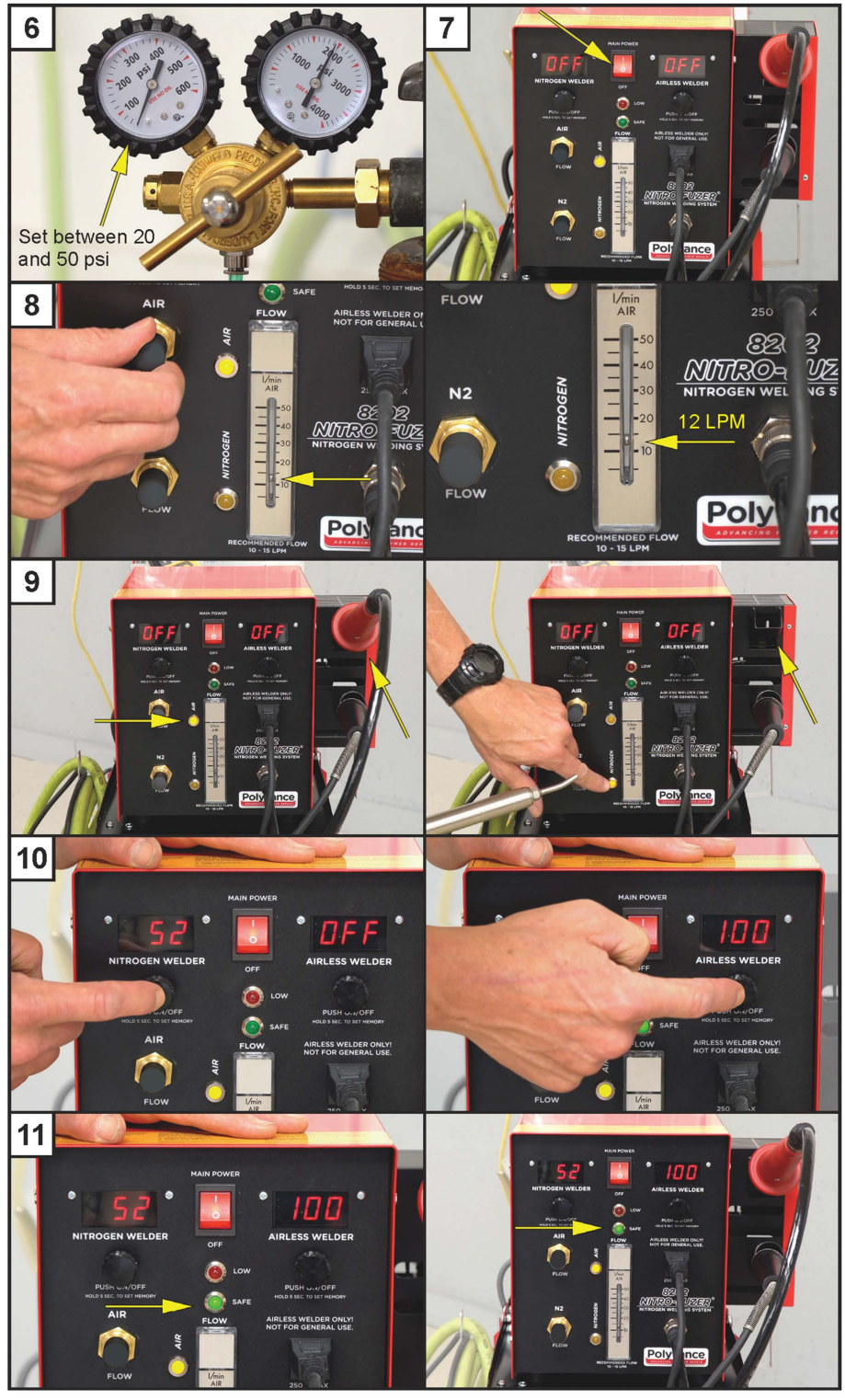
8. Adjust the flow of the AIR using the top regulator on the front of the welder so the flow gauge reads 12 LPM. At this setting, the ball will float halfway between the 10 and 15 LPM lines. (Note: if the main power is OFF, compressed air will continue to flow through the welder.)

9. No power is flowing to the heating elements yet, but the indicator light showing "AIR" is flowing should be on. To make nitrogen flow, remove the hot air welder from the holster. The indicator light will switch to "NITROGEN" and an electronically controlled valve inside the welder will switch the flow from "AIR" to "NITROGEN". With the "NITROGEN" light illuminated, use the lower regulator on the front of the welder to adjust the nitrogen flow to the same setting as the air flow (12 LPM), then place the welder back into the holster. The indicator light will automatically change back to "AIR." To see if both of your flow setting match, toggle the "AIR" and "NITROGEN" flows by lifting the welder from the holster and setting it back in. The floating ball should remain at 12 LPM regardless of which gas supply is indicated.

10. Turn on the nitrogen and airless welders by pushing their respective control knobs once. The nitrogen welder is pre-set to 52 and the airless welder is pre-set to 100. These temperature settings are suitable for most polypropylene welding with the air flow set at 12 LPM.

11. Check to make sure the green "SAFE" light is <u>flashing</u>. If it does NOT illuminate when the airflow is over 10 LPM, contact Polyvance tech support for adjustment procedure.

12. With the green light flashing, allow the welders to warm up completely (5 to 10 minutes) before welding. Note: the airless welder's heat is not dependent on the green "SAFE" light.



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 <u>DOES NOT WARRANT</u> 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	70-100 (AIRLESS WELDER ONLY)	N.A.
Polypropylene (PP)	160-166°C (320-331°F)	R02	52-64	12
ABS	105°C (221°F)	R03	44-56	12
Polyethylene (LDPE)	105-115°C (221-239°F)	R04	48-60	12
TPO	177°C (350°F)	R05	52-64	12
Nylon (PA)	269°C (516°F)	R06	60-68	12
Polycarbonate (PC)	155°C (311°F)	R07	44-56	12
PPE+PS, PPO	260°C (500°F)	R08	60-68	12
PVC	177°C (350°F)	R09	48-56	12
FiberFlex®	N.A.	R10	100 (AIRLESS WELDER ONLY)	N.A.
PBT (Polybutylene Terephthalate)	225°C (437°F)	R11	48-56	12
Polyethylene (HDPE)	190°C (375°F)	R12	48-60	12
PET	254°C (490°F)	R13	56-64	12
ASA	220°C (428°F)	R14	52-60	12
GTX (Nylon blend)	275-300°C (527-572°F)	R15	60-68	12
POM (Acetal, Delrin®)	215°C (419°F)	R16	52-60	12
Acrylic/PVC (Kydex®)	<204°C (<400°F)	R17	52-60	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 fine-tune the nitrogen welder for use on different materials.

Note: Going outside the range on the chart is generally not needed, nor recommended 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 for any length of time, a fire hazard will result, the heating element will eventually burn out, and the handle of the torch may be destroyed by the excessive heat.

2. Changing the airflow from air to nitrogen is automatic when the torch is removed from the holster.

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.

Welder Shutdown Procedure:

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To shut off individual welders:

Airless Welder:
Press the airless welder control knob one time.

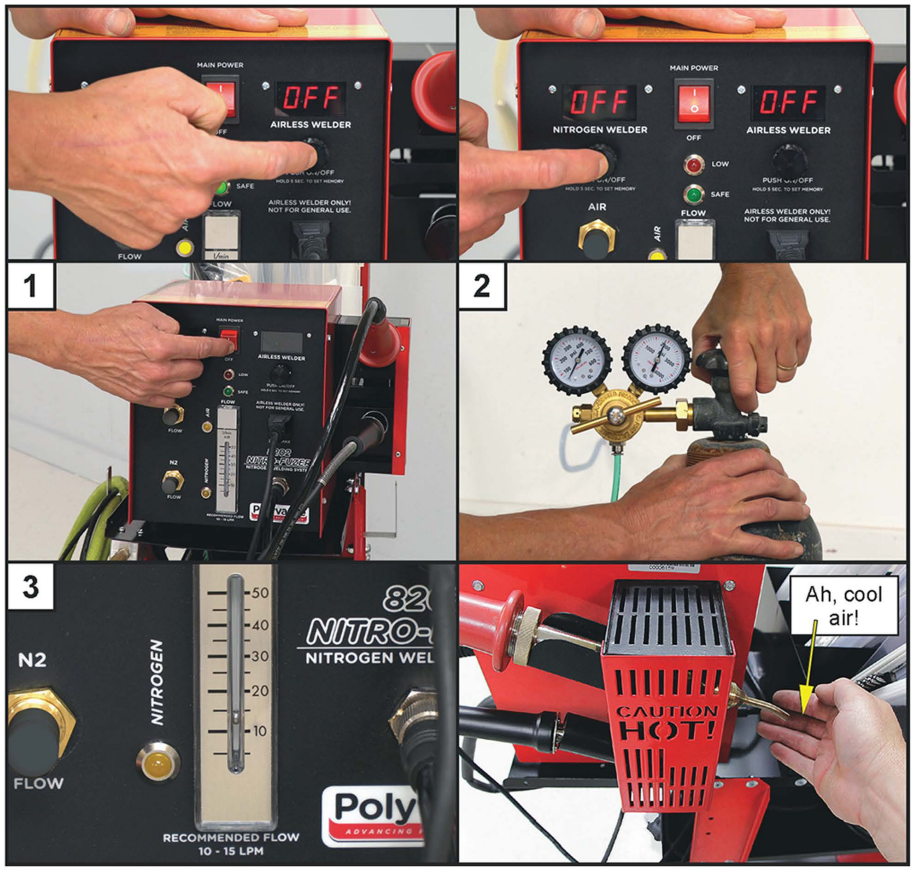
Nitrogen Welder:
Place welder into the top holster and press the nitrogen welder control knob one time. “OFF” will show on the display.

System Shutdown:

1. Shut off main power.

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:

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.

Welder will not turn on.

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

Circuit breaker trips.

- 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 circuit breaker continues to trip, 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, it’s safe to assume the fault lies within the last element installed.

Nitrogen welder does not heat or is not hot enough.

- Turn the controller power “ON” by pushing the control knob once.
- Check air flow to hot air welder. If the green “safe” light does not illuminate, power will not be sent to the Nitrogen welder. Increase airflow until the green light illuminates. (It should illuminate at approximately 10 LPM. If it does not, contact Polyvance.)
- Check the temperature setting. If the airflow is at 12, set the temp to 52.
- If it still does not heat, check resistance of the heating element. (see above)
- If no faults are found, contact Polyvance.

Airless welder does not heat.

- Turn the controller power “ON” by pushing the control knob once.
- Check the temperature setting, set the temp to 100. Low settings will produce very little heat.
- If still no heat, check resistance of the heating element (see above).
- If no faults are found, contact Polyvance.

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