PRO SPOT
QUALITY WELDING SYSTEMS

NP-3
Nitrogen plastic welder

Instruction Manual

MNL-NP-3-1.4

About Pro Spot

Pro Spot International specializes in quality welding and repair products for the collision repair industry. Pro Spot owns three patents for special welding equipment and applications, and works with the largest auto manufacturers in the world. Pro Spot is a proud 'MADE IN THE USA' manufacturer in Carlsbad, CA. The turnkey facility includes Design, Engineering, Machine and Sheet Metal Shops, Powder Coating, Assembly, Training and Customer Support. The Pro Spot equipment line includes resistance spot welders, aluminum & steel dent repair systems, pulse MIG welders, rivet guns and tools, dust-free sanding systems, fume extraction and more.

Pro Spot Training and Services

Pro Spot provides on-going training to all of our distributors and their technicians, therefore, all owners of Pro Spot products receive complete training first hand. Pro Spot has two ASE certified training programs that are I-CAR alliance approved. Pro Spot has a fully equipped training facility at their Headquarters in Carlsbad, CA for groups to come in and train on all products. To stay up-to-date, Pro Spot offers their unique My.prospot.com which includes interactive training courses for shops and technicians to access online.

ASE Continuing Automotive Service Education
CERTIFIED TRAINING PROVIDER

I-CAR INDUSTRY TRAINING ALLIANCE

Pro Spot is constantly striving to improve. Whether that means designing innovative equipment, implementing cutting edge technical support or further improving their already extensive training programs, Pro Spot is always looking for ways to better our customer's experiences.

PRO SPOT
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Technical Support

Training

Documents

Pro Spot wants to personalize your experience.

Come to my.prospot.com and register today! Gain access to exclusive product demonstration videos, training, important product documents, and more. My Pro Spot is a site just for you with an easy to use interface that is custom tailored based on the products you own. This means quicker troubleshooting solutions with less hassle. My Pro Spot is constantly evolving, and we have more exciting features to come.

http://my.prospot.com is where you'll find updates on new related products and features so be sure to come check it out.

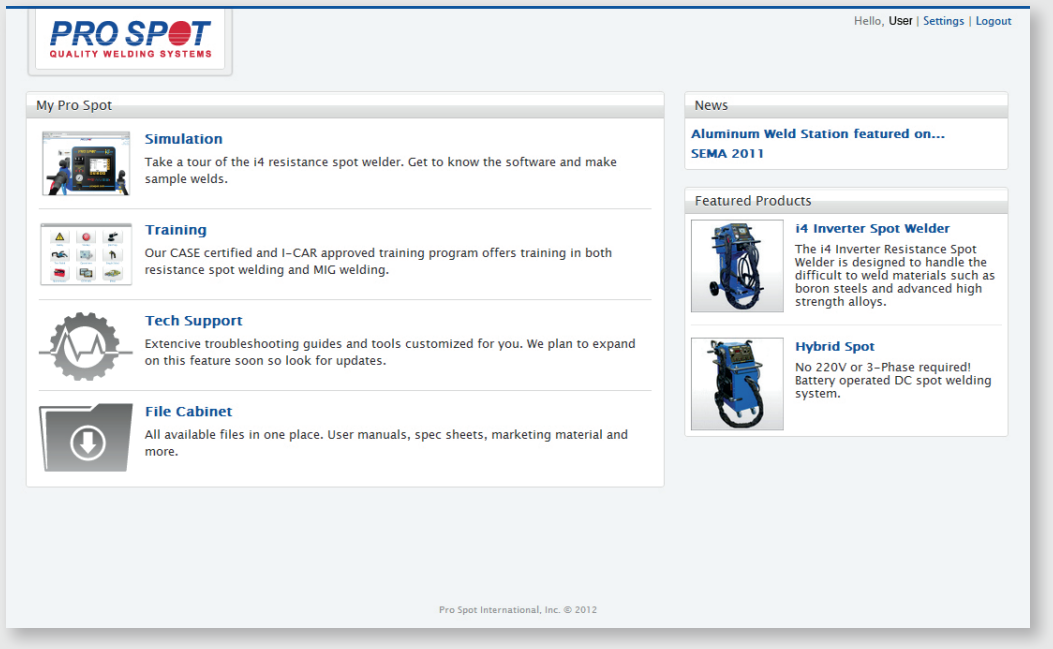
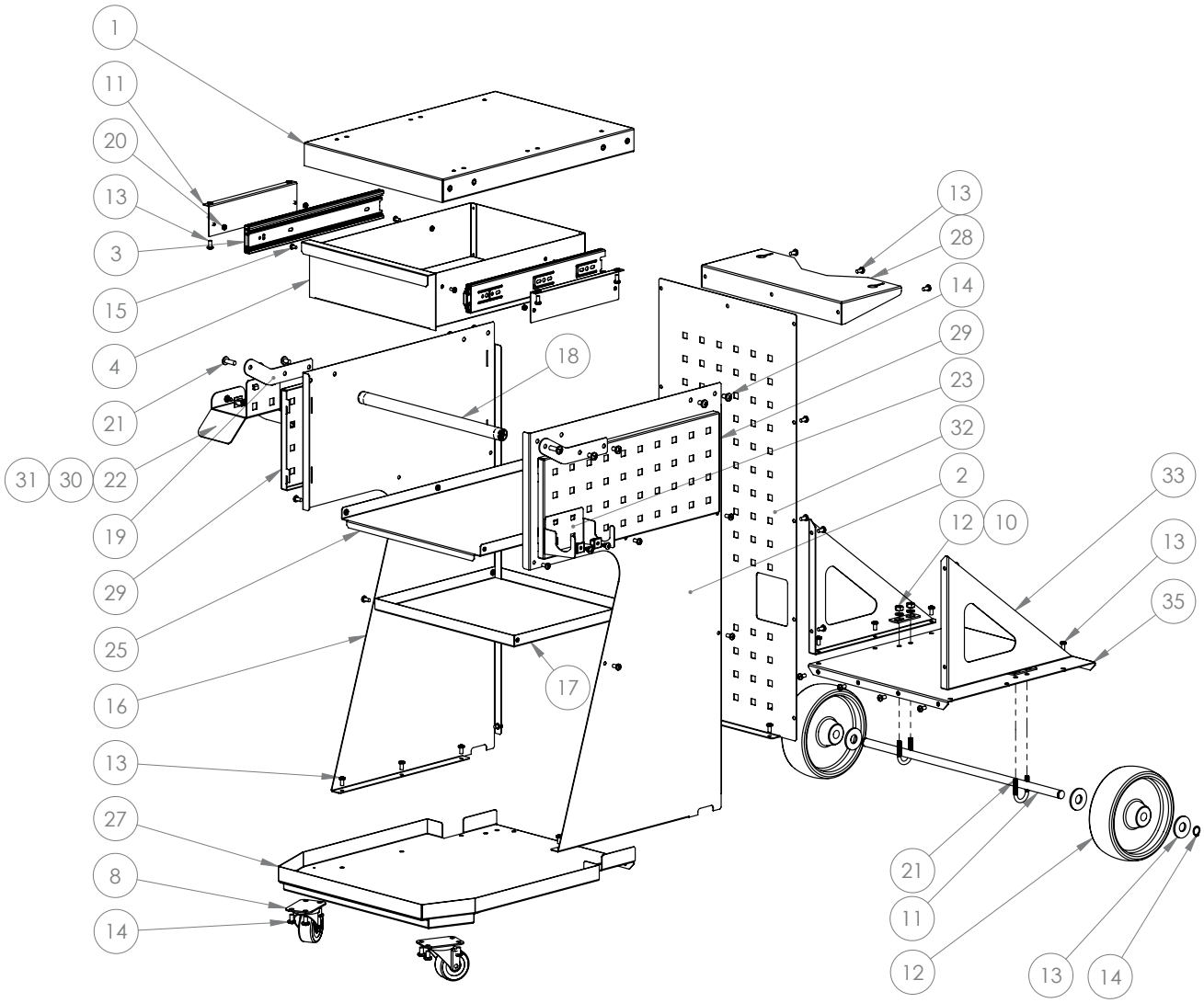


Table of Contents

NP-3 CART ASSEMBLY INSTRUCTIONS

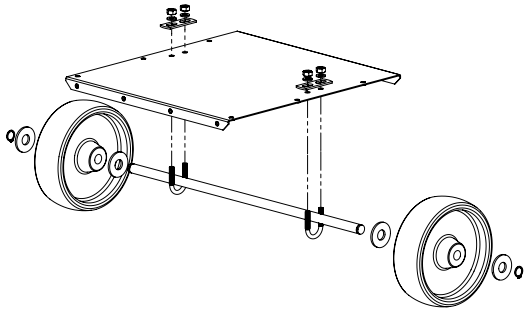
ITEM NO.	DESCRIPTION	QTY.
1	90-0508 : TOP SHELF	1
2	90-0509 : CART SIDE 1	1
3	51-0008 : SLIDE RAIL (SET)	2
4	90-0511 : DRAWER	1
5	61-0003 : 6" SOLID WHEEL	2
6	W-82 : 1/2" FLAT WASHER	4
7	SR-07 : 1/2" EXTERNAL SNAP RING	2
8	P2-09 : 2" SWIVEL CASTER	2
9	P-05 : 1/4-20 U-BOLT	2
10	W-20 : 1/4" LOCK WASHER	4
11	90-0515 : 1 DRAWER BRACKET	2
12	N-06 : 1/4-20 HEX NUT	4
13	S-209 : M5 X 10 PHMS	43
14	S-43 : M6 X 10 PHMS	16
15	S-97 : M1 X 8 PHMS	8
16	90-0516CARTSIDE 2	1
17	90-0516 : SHELF	1
18	90-0528 : FRONT HANDLE	1

19	90-0530 : HANDLE BRACKET	2
20	N-33 : M4 HEX NUT	4
21	S-266 : 1/4-20 X 3/4 PHMS	2
22	90-0243 : CABLE HOOK	1
23	90-0199 : GUN HOOK	1
24	M-88 : TANK CHAIN, 27.5" (NOT SHOWN)	1
25	90-0551 : UPPER SHELF	1
26	90-0571 : UNIVERSAL CART AXLE	1
27	90-0513 : BOTTOM TRAY, SHORT	1
28	90-0517 : BOTTLE BRACKET	1
29	90-0572 : 4 X 10 TOOL BOARD	2
30	52-3211 : LICENSE PLATE NUT	4
31	S-1212 : #12 X 1/2 PHSMS	4
32	90-0611 : BACK SIDE, NON-COMBI	1
33	90-0557 : BOTTLE BRACE 1	1
34	90-0558 : BOTTLE BRACE 2	1
35	90-0605 : TANK TROLLEY	1



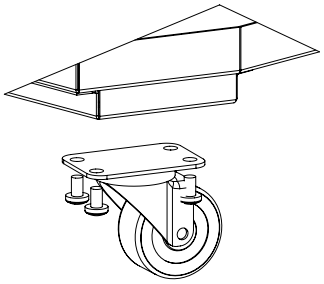
PRO SPOT

STEP 1: BASE ASSEMBLY



STEP 1A: ATTACH WHEELS TO AXLE WITH 1/2" FLAT WASHERS AND 1/2" EXTERNAL SNAP RING.

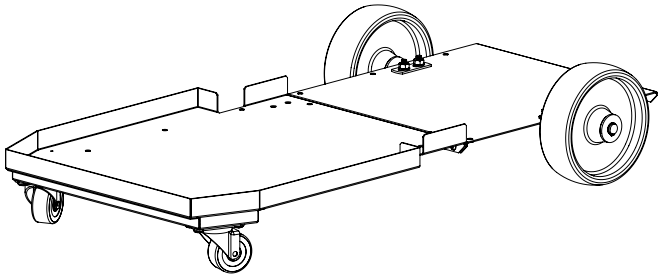
STEP 1B: FASTEN AXLE TO TANK TROLLEY USING UBOLTS, PLATES, 1/4" LOCK WASHERS, AND 1/4-20 HEX NUTS. TIGHTEN FIRMLY BUT DO NOT OVER TIGHTEN



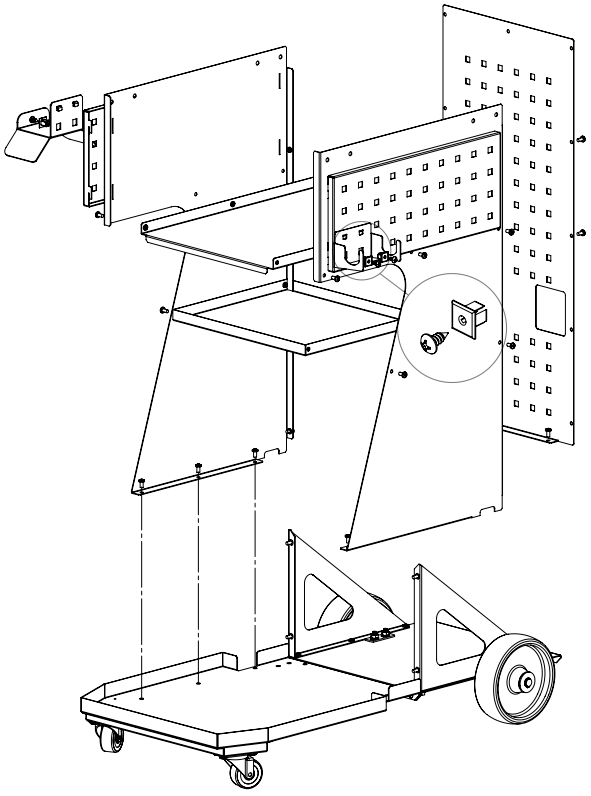
STEP 1C: ATTACH SWIVEL CASTORS TO FRONT HALF OF BASE WITH M6 X 10 PHMS.

STEP 1D: ATTACH TANK TROLLEY TO BASE WITH M5 X 10 PHMS.

STEP 1 COMPLETE.



STEP 2: CHASSIS ASSEMBLY



STEP 2A: ATTACH SIDE PANELS TO BOTTOM TRAY WITH M5 X 10 PHMS.

STEP 2B: ATTACH BACK PANEL TO BOTTOM TRAY AND SIDE PANELS WITH M5 X 10 PHMS.

STEP 2C: ATTACH SHELVES AND BOTTLE BRACES WITH M5 X 10 PHMS.

STEP 2D: SNAP IN TOOL PANELS.

STEP 2E: SECURE HOOKS TO TOOL PANELS WITH #12 X 1/2 PHSMS AND BLACK PLASTIC LICENSE PLATE NUTS.

STEP 3: DRAWER ASSEMBLY

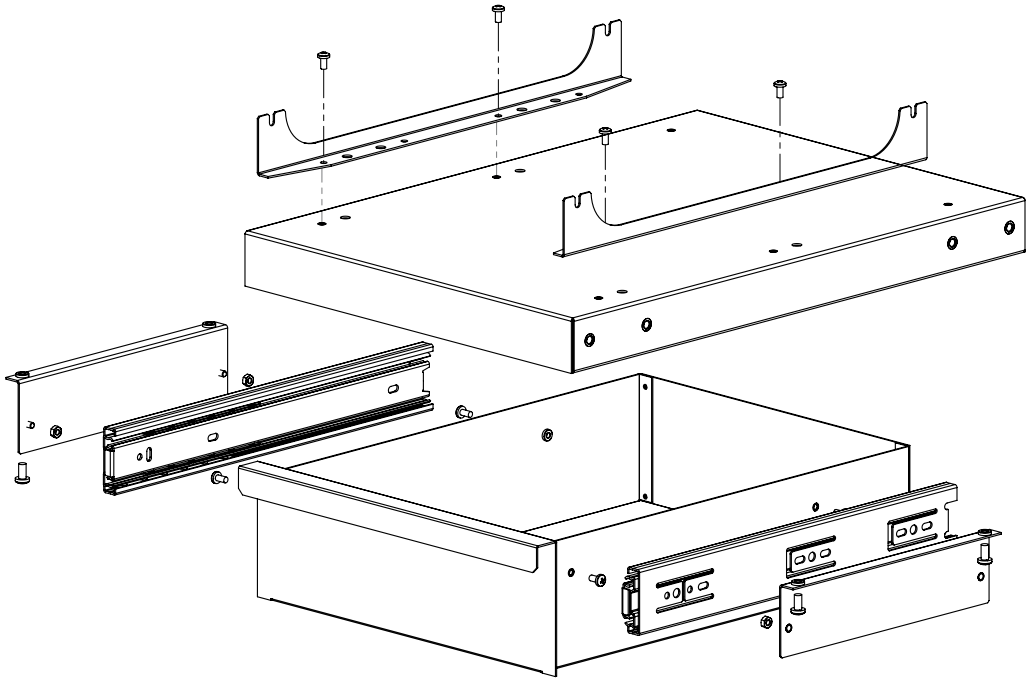
STEP 3A: ATTACH NP-3 MOUNT BRACKETS WITH M4 X 8 PHMS.

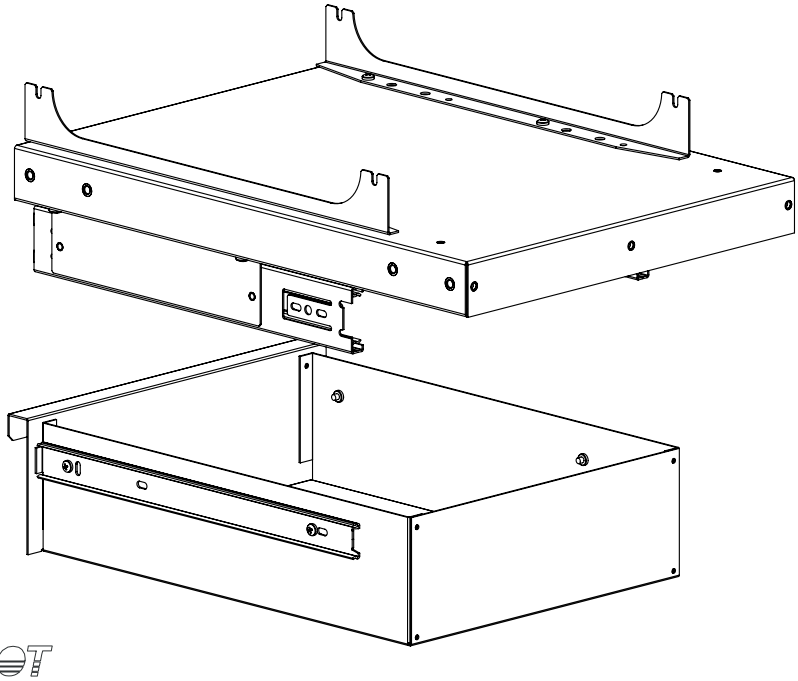
IF YOU DO NOT HAVE THE NP3 MOUNTING BRACKET TO ATTACH TO THE TOP SHELF.
SCREW ON YOUR NP3 THROUGH THE BOTTOM OF THE TOP SHELF WITH M6 X 30 PHMS.

STEP 3B: ATTACH OUTER SLIDE RAILS TO THE DRAWER BRACKETS WITH M4 HEX NUTS.

STEP 3C: ATTACH DRAWER BRACKETS TO THE TOP SHELF WITH M5 X 10 PHMS.

STEP 3D: ATTACH INNER SLIDE RAILS TO DRAWER WITH M4 X 8 PHMS.





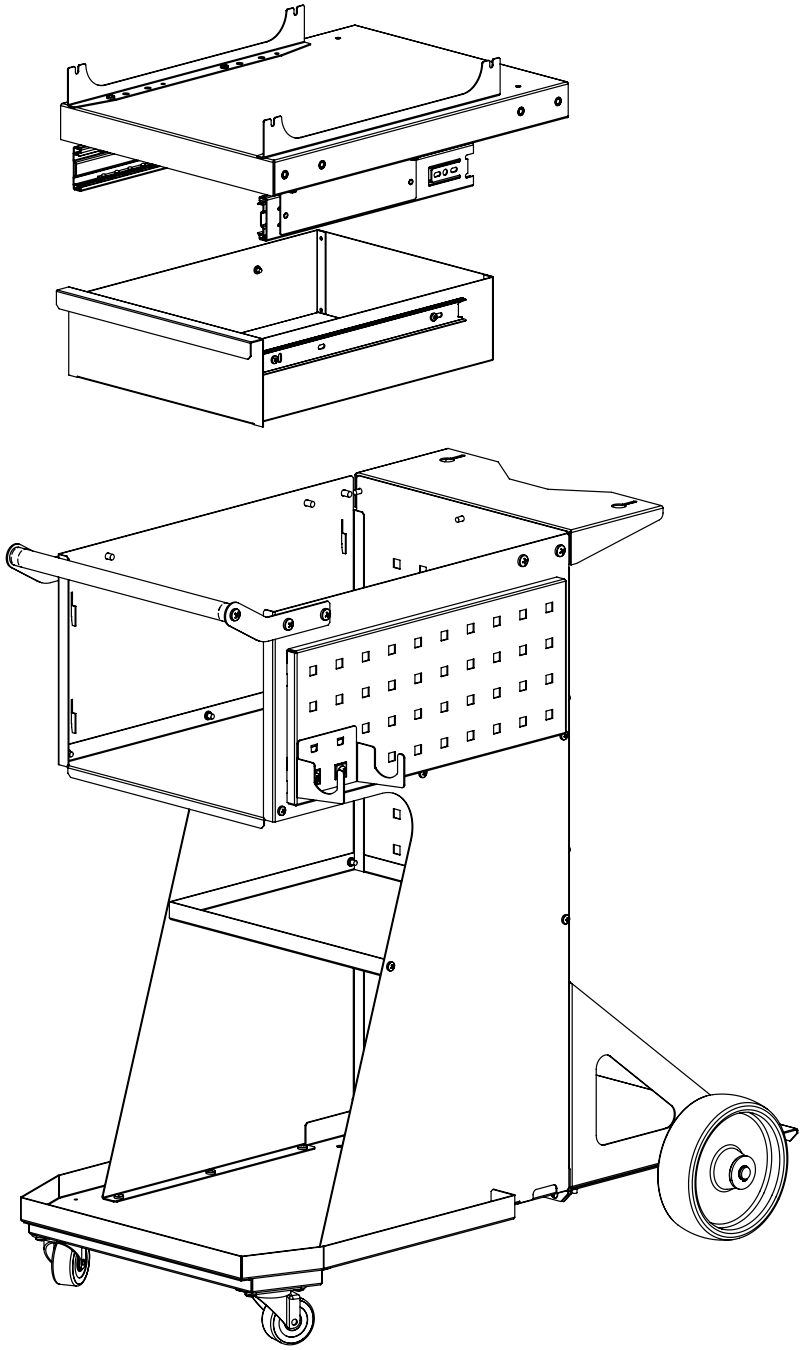
STEP 4: FINAL ASSEMBLY

STEP 4A: ATTACH TOP SHELF AND HANDLE BRACKETS TO SIDE PANELS WITH M6 X 10 PHMS.

STEP 4B: ATTACH BOTTLE BRACKET TO BACK PANEL WITH M5 X 10 PHMS.

STEP 4C: MATE SLIDE RAILS TOGETHER AND SLIDE ALL THE WAY IN.

STEP 4D: SCREW FRONT HANDLE TO HANDLE BRACKETS WITH 1/4-20 X 3/4 PHMS.



CART COMPLETE

Safety

1. Refer to OSHA for recommended PPE.

2. If any melted plastic comes in contact with your skin, wash with borax soap and water or alcohol.

3. Make sure you are working in a well ventilated area.

4. Keep chemicals such as gasoline, brake fluids and other solvents out of the work area.

5. PVC plastics can produce poison gas when burned and should be kept away from excess heat and flames.

6. Avoid any contact with your skin when using hot air welders and airless welders as they can produce very high temperatures when in use.

7. Identify a fire extinguisher close enough to use if necessary.

8. Always turn off all welding equipment when repair procedures are complete.

System Setup

1. Connect 120V power cable to the back of the unit.
2. Thread 1/4" male coupler plug to air inlet on the back of the unit.
3. Connect air to male coupler plug.

Warning: Incoming Air Pressure must not exceed 130 psi.

4. Thread the Nitrogen regulator into the nitrogen tank.
5. Connect the gas hose from Nitrogen regulator to the barb fitting on the back of the unit.

6. Open the Nitrogen tank valve and set the regulator output pressure to roughly 80 psi.

User Interface Setup

Welcome Screen:

Home Screen:

1. Switch on the power. You will be presented with a welcome screen and then the system home screen.

Air Press - The compressed air pressure set by the Air Control dial. The air keeps the heating element cool while the hot air gun is not in use.

Gas Press - The nitrogen gas pressure set by the Nitrogen Control dial. The hot air gun trigger activates the nitrogen gas. You have to adjust the gas pressure while holding the trigger.

Air Power - The power delivered to the hot air gun. This determines how hot the hot air gun gets.

Iron Power - The power delivered to the soldering iron. This determines how hot the soldering iron gets.

2. Use a phillips screwdriver to unlock the Air Control dial by turning counter-clockwise until dial is loose. For machines with the push-pull type regulators, pull the Air Control dial to unlock it.

3. Turn the dial until Air Press reads 8 psi.

4. Use a phillips screwdriver to lock the Air Control dial by turning clockwise until dial is tight. For machines with the push-pull type regulators, push the Air Control dial to lock it.

5. Use a phillips screwdriver to unlock the Air Control dial by turning counter-clockwise until dial is loose. For machines with the push-pull type regulators, pull the Nitrogen Control dial to unlock it.

6. Hold the trigger and turn the dial until Gas Press reads 2 psi then release the trigger.

7. Use a phillips screwdriver to lock the Air Control dial by turning clockwise until dial is tight. For machines with the push-pull type regulators, push the Nitrogen Control dial to lock it.

8. Plug the soldering iron into the Iron outlet on the front of the machine.

Warning: Only plug the iron into this outlet. Any other devices may be damaged.

9. Plug the hot air gun into the plastic welder section on the front of the machine.

Basic Welding Instructions

Identifying The Material

The first step in plastic repair is identifying the base material of the repair piece. If you look on the backside of 99.99% of all plastic found in cars, you will find an ISO code. The ISO code is an abbreviation for the type of plastic. For example, a common ISO code found on bumper covers is TPO which is the abbreviation for thermoplastic olefin. If this is the case, retrieve a TPO rod from your accessory drawer. Refer to Appendix A for ISO Code reference.

Preparing The Surface

Surface preparation is very important to create a strong, lasting weld. Use the 80 grit. sandpaper provided to prepare the backside of the repair area surface. Use a rotary tool and conical bit to grind a narrow channel along the surface crack. Use any non-corrosive, degreaser to clean the surface area of any particulate and oils.

Aligning The Damage

We recommend two alignment methods.

1. Hot Staples (preferred method) - Permanent alignment which provides a long-term structural reinforcement. Plug the hot staple welder into the cigarette adaptor on the front of the machine. Follow the illustrated instructions in the hot staple welder kit to align the damage.

2. Aluminum Tape - Temporary alignment which provides no long-term structural backing. Simply lay a strip of aluminum tape along the front side of the damaged area to maintain alignment. Smooth the tape so that it has as much surface contact as possible. This not only guarantees adhesion but it also prevents heat distortion in the bumper.

Nitrogen Plastic Welding

1. Push and hold the Iron Control button.

The LED next to the knob turns green and the soldering iron begins to heat up.

2. Push and hold the Hot Air Control button.

The LED next to the knob turns green and hot air flows out of the gun. If the LED flashes orange, there is not enough compressed air or nitrogen flowing through the gun.

3. Place the rod or ribbon perpendicular to the bumper at the beginning of the tear as shown. →

4. Pull the trigger and angle the gun so the hot nitrogen is directed at both the bumper and the rod or ribbon.

5. Once the rod or ribbon begins to melt into the bumper, apply a very slight downward pressure and begin to work at a backward angle of roughly 45^0 directing the hot nitrogen towards where the rod or ribbon meets the bumper.

6. At the end of the tear, use the gun nozzle to melt and tear away the rod or ribbon.

7. Return the gun to its holster and take the soldering iron out.

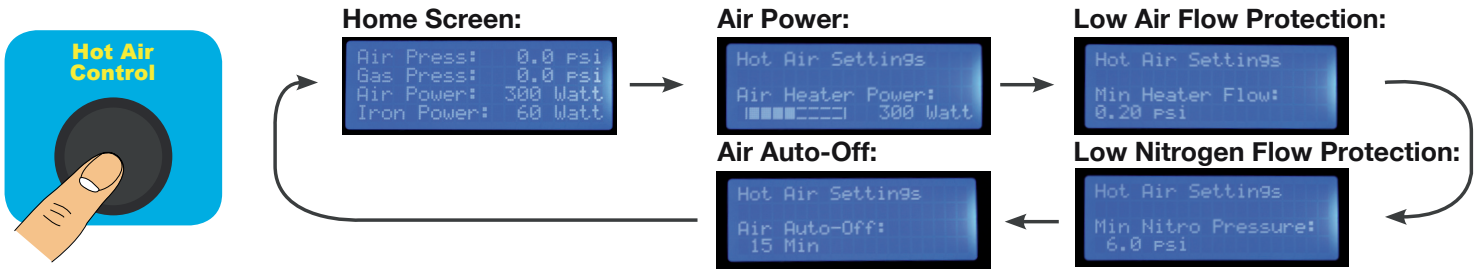
8. Use the soldering iron to smooth the edges of the rod or ribbon into the bumper until there is no visible seam between the two.

9. Allow several minutes for the bumper to cool down.

10. Repeat all steps above on the front side of the tear.

11. Use a 120 grit DA sander at low speed to sand the rod or ribbon so that it is flush with the bumper. If the plastic browns, it means your sander speed is too fast and is burning the plastic.

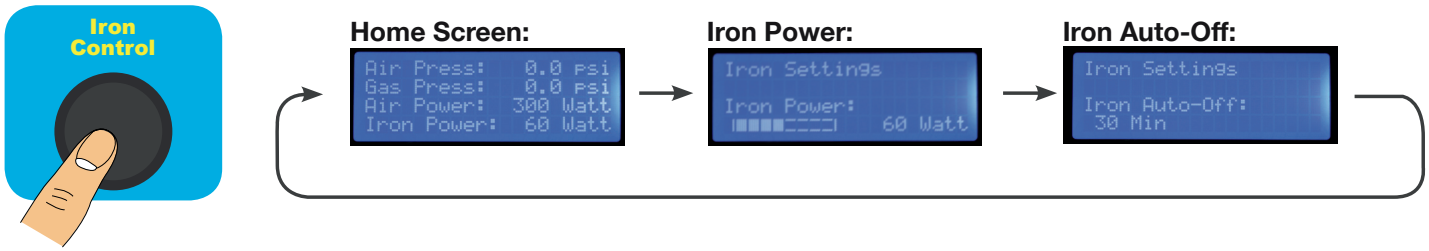
Advanced Gun Settings:



Cycle through advanced hot air settings by pressing the hot air button (as shown in the menu diagram above).

- **Air Heater Power**
  - This setting adjusts the power delivered to the 550W heating element in the hot air gun. The default is set at 300W.
- **Min Heater Flow**
  - This setting adjusts the minimum air flow required to activate the heating element in the hot air gun. If the Min Airflow is not met a “low flow” error message will be displayed on the home screen and the heater will not turn on.
- **Min Nitro Pressure**
  - This setting adjusts the minimum Nitrogen flow required to activate the heating element in the hot air gun. If the Min Nitrogen-flow is not met a “low-flow” error message will be displayed on the home screen and the heater will not turn on.
- **Air Auto-Off**
  - This setting adjusts the not air gun auto shut down timer. This prevents stress on the heating element which can result in a reduced lifespan.

Smoothing Iron Setup:



1. Plug the iron into the outlet on the lower front panel of the NP-3.

2. To turn on the iron, press and hold the “Iron Control” button on the front panel. This can only be done from the home/status screen.

3. adjust iron settings to your liking, the default power is set to 60W this controls the iron’s temperature. Auto-off controls the automatic shut off timer.

Appendix A

Name	Location
Polypropylene (PP)	Bumper covers (usually bvlended with EPDM), inner fenders, radiator shrouds, interior panels, gas tanks
Acrylonitrile Butadiene Styrene (ABS)	Instrument panels, grilles, trim moldings, consoles, armrest supports
Thermoplastic Olefin (TPO)	Bumper covers, air dams, grills, interior parts, instrument panels
Polyurethane (PUR)	Flexible bumper covers, filler panels, rocker panel covers
Polyamide (Nylon or PA)	Radiator tanks, headlamp bezels, exterior trim finish parts
Xenoy (Polycarbonate blend)	Bumper covers
Polyethylene (PE)	Overflow tanks, inner fender panels, valences, interior trim panels, gas tanks

NOTES

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