



UNI-8100

Nitro-Weld™



Operator Manual

Nitrogen Gas / Hot Air / Hot Iron Plastic Repair System

March 2024 Version 4.0

Thank you very much for choosing the **Nitro-Weld** plastic repair system. System is designed with **built-in air compressor** for operation without noisy shop air or bulky hoses on floor. Additionally, compressor is designed to flow “air” through torch during set-up, saving nitrogen gas for repairs.

This product is designed specifically to repair automotive, truck & motorcycle plastic panels, covers and other articles of plastic (i.e.: head lamp & tail lamp assemblies) on vehicles.

Please read this instruction manual carefully before using and keep with unit for reference.

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1. SAFETY AND HANDLING PRECAUTIONS

WARNING

This system uses high temperature heating of materials to mend (melt) plastic materials. If operated incorrectly, it may cause burns, blindness and/or create a fire hazard.

- Wear protective clothing and eye protection when working with this system.
- Before installing hot staple or gas tip on torch heads, make sure that torch head is cool.
- Do not touch or contact hot staple or gas tip with bare hands or skin when it is set in the torch head
- Do not use system near any combustible materials
- Due to high temperature operation, make certain all persons in area are protected.
- Must be operated in DRY conditions. Do not use with wet hands or around water.
- Do not use in wet locations.
- When you suspend work, be certain to flip power switch “OFF” and make sure that the torch tips have fully cooled before leaving unit unattended.
- Repairing objects require high temperatures; however, care must be taken not to burn plastic.

Please observe the following notes to avoid accident or damage unit.

*This product was designated for plastic repair. Do not use it for purposes other than the original usage.

*The device should be used only with factory supplied or authorized components and/or materials.

*Do not depress heating iron trigger for longer than 3 minutes continuous.

*Never disassemble torches, cables or power supply.

*Do not use in wet location or in environment where water may contact any part of the system.

*When you plug or disconnect power cord, hold the plug itself. (Do not pull the cable.)

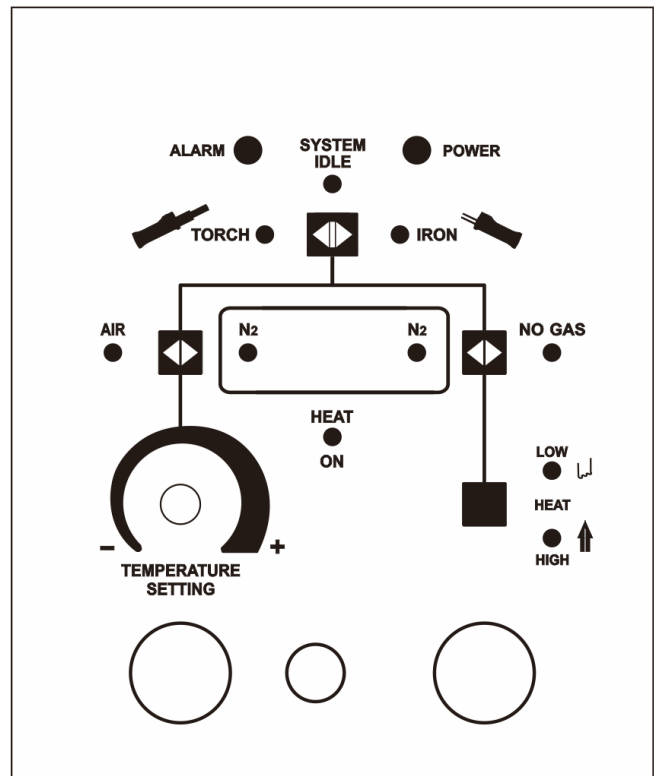
2. SPECIFICATIONS

DESCRIPTION NAME:	Nitrogen Gas & Hot Iron Plastic Repair System
MODEL NO.:	Nitro-Weld™
INPUT VOLTAGE:	115VAC, 50/60Hz Single-phase
INPUT CURRENT:	3 Amps
OUTPUT CURRENT:	5-75 Amps @ 4.6 Volts
GAS MAX TEMP:	950° F (500°C)
DIMENSIONS :	360x220x250mm

NOTE: Design and specifications are subject to change without notice.

3. CONTROL FUNCTIONS

- 1) POWER INDICATOR:
When illuminated power is "ON"
- 2) ALARM INDICATOR:
When illuminated DO NOT OPERATE.
No gas pressure or other problem.
- 3) GAS/OFF/IRON SWITCH:
Select "gas" or "hot iron" function.
- 4) AIR N2 SWITCH: (Gas selected)
Choose air or N2 for gas welding
- 5) N2 INDICATORS:
When illuminated, N2 gas is flowing
- 6) TEMPERATURE SETTING GAS:
Adjust temperature of gas (+ / -)
400 - 950F (200 – 500C)
- 7) IRON N2 SWITCH: Nitrogen to iron torch
- 8) IRON LOW/HIGH SWITCH:
Select LOW for staple
Select HIGH for iron

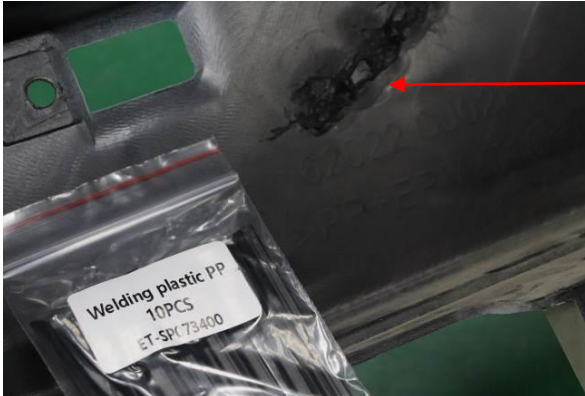


4. HOW TO OPERATE

- 1) Confirm electrical outlet provides 115VAC power and accepts NEMA5-15 plug.
- 2) Connect gas hose to machine input and regulator making certain hose clamps are tightened properly.
- 3) Connect CGA580 input gas regulator to nitrogen cylinder and open cylinder valve.
- 4) **Set gas flow rate on regulator gauge to 32-42 CFH (15-20 L/Min)**
- 5) Plug power cord into outlet and turn on the machine.
- 6) Check control panel settings as follows:
- 7) Select **GAS** or **IRON** function.
- 8) **NITROGEN GAS OPERATION:**
- 9) **Select AIR to allow for torch pre-heating** and adjust to desired temperature. (Saves N2 gas)
- 10) Select N2 when ready to repair. Gas will flow to torch unless low N2 level and **ALARM** illuminates. (Confirm N2 cylinder valve is open and/or cylinder has adequate level in tank).
- 11) Clean any loose material from split or cracked area to be repaired with wire brush or other abrasives.



- 12) Use sharp knife or wheel cutter to slightly bevel the inside edges of the split area.



“PP” Material

Note: Filler plastic rod must “match” the material of panel to be repaired.

- 13) Select the “matching” type of filler plastic rod to the panel to be repaired.



- 14) Preheat the filler rod with nitrogen gas before placing end at top of tear and “pushing” heated rod into torn area. Be sure to keep hot gas equally distributed between “filler” and “base” for good adhesion.



15) Nozzle+ Rod Adaptor use together. Operation is the same as step 14)



16) Continue filling completely off the edge of panel and allow to cool before cutting-off excess rod.



IRON OPERATION

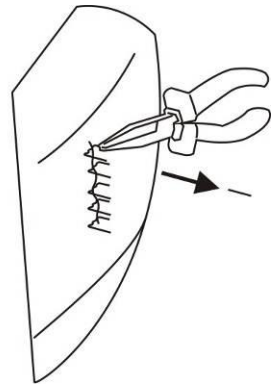
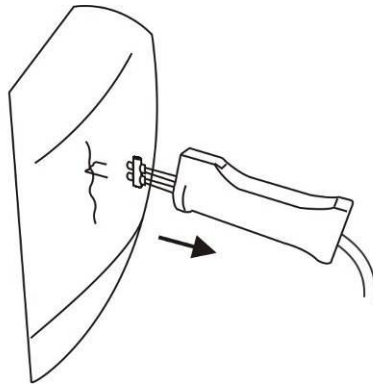
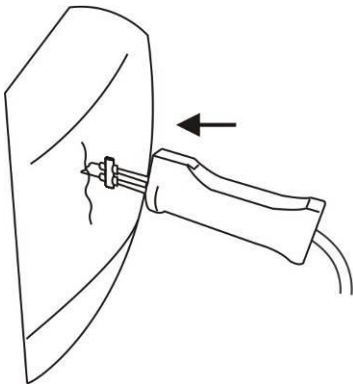
17) Install “curved” or “straight blade and select IRON set to HIGH power to cut or re-flow plastics.

18) **Select “N2” ON or OFF** depending on desire to use nitrogen gas or heated air. Nitrogen will shield all contamination (visible as “smoke”) from the welding area and provide for smoke-free repair.

STAPLE OPERATION

19) Install hot staple tip holder over torch prongs. (Must remove iron heat blades)

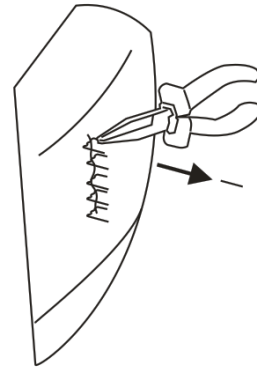
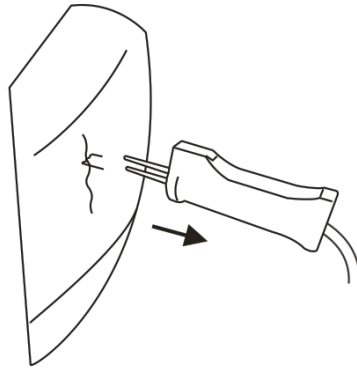
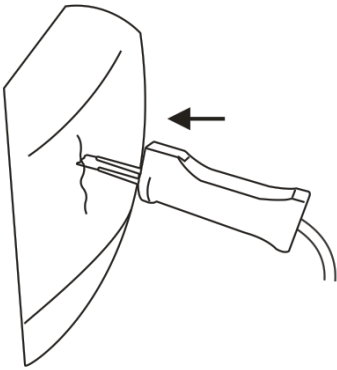
20) Insert best hot staple type into torch tip and place staple directly on surfaces, across tear to be joined.



Depress trigger 10 seconds and **push staple** to $\frac{1}{2}$ thickness of panel.

Release trigger, turn staple 15° to secure and **hold** 5 seconds

After cooling, use pliers to break off staple legs below surface



Insert desired knife blade onto torch for cut or re-flow

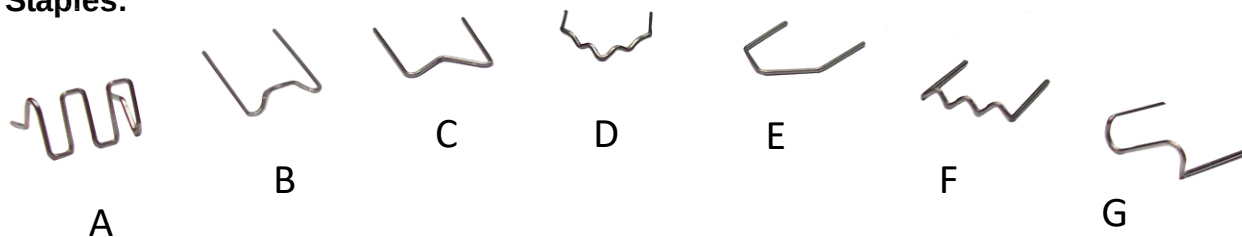
Curved blade for re-flowing plastic over set staple

Straight blade for cutting material prior to re-flow

5. COMPONENT LIST

Item	Code	Description
1	UNI-8037	Welding plastic PP 7mm Flat
2	UNI-8047	Welding plastic PE 7mm Flat
3	UNI-8055	Welding plastic ABS 5mm Flat
4	UNI-8033	Welding plastic PP 3mm
5	UNI-8035	Welding plastic PP 5mm
6	UNI-8039	Welding plastic PP 12mm
A	UNI-8013	Flat square wave
C	UNI-8010	Outside corner no wave
D	UNI-8012	Inside corner small wave
F	UNI-8011	Flat small wave
4	UNI-8017	Aluminum seamer tape
5	UNI-8020	Melt knife blade - Curved
6	UNI-8021	Melt knife blade - Straight
7	UNI-8140	Nozzle 4.0 Extended M6
8	UNI-7805	Vice clamp hand seamer tool
9	UNI-8141	Nozzle 4.0 Standard M6
10	UNI-8112	Rod Adaptor

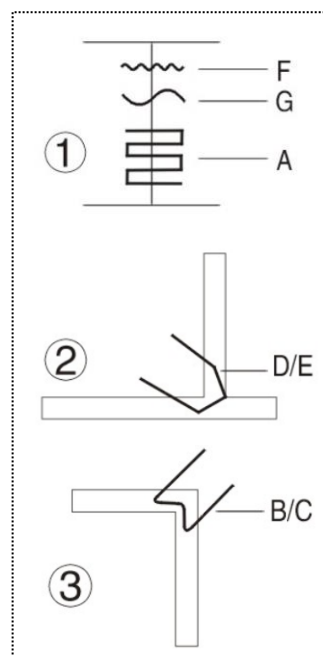
Staples:



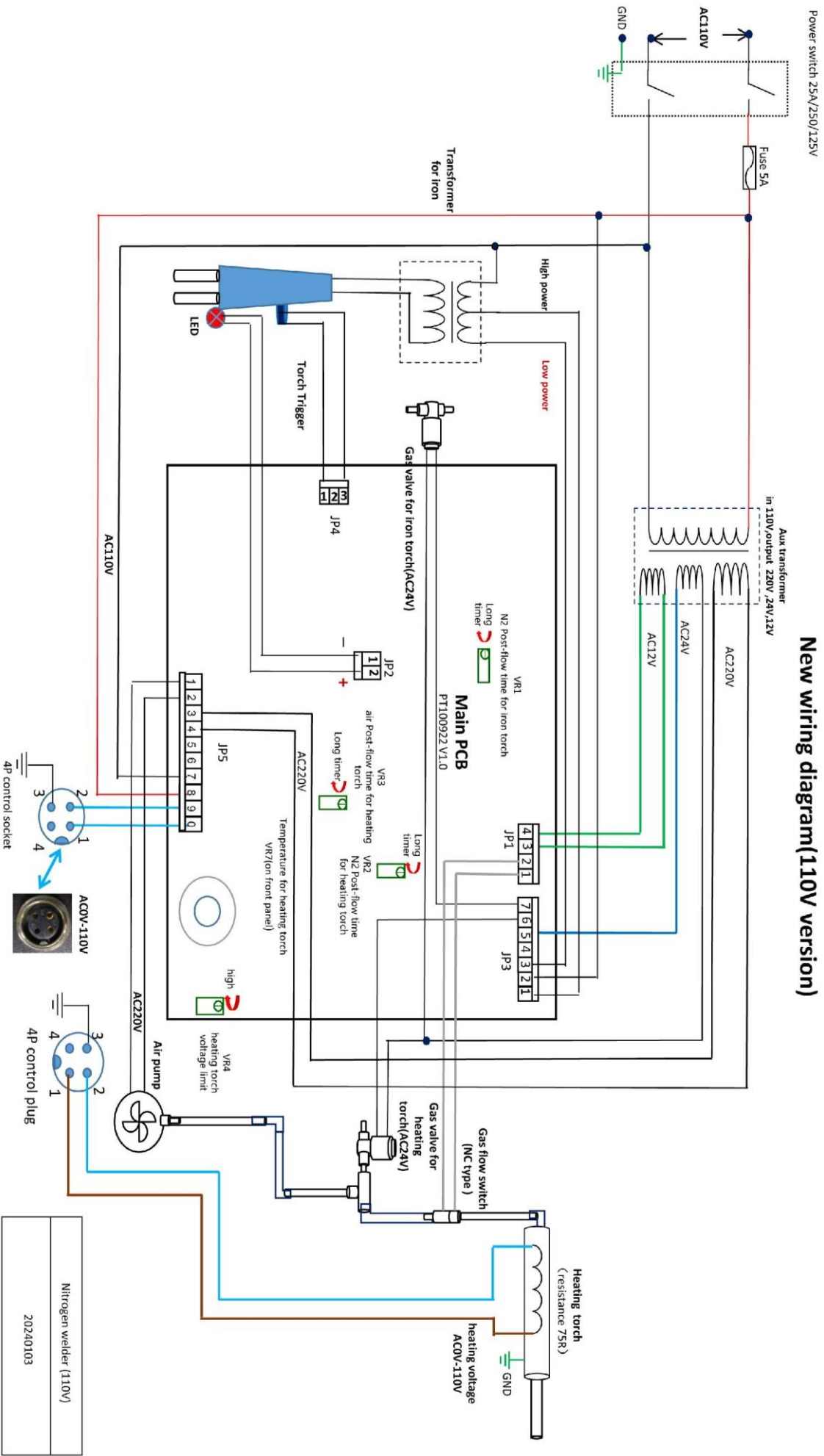
Components:



Staple Selection Guide

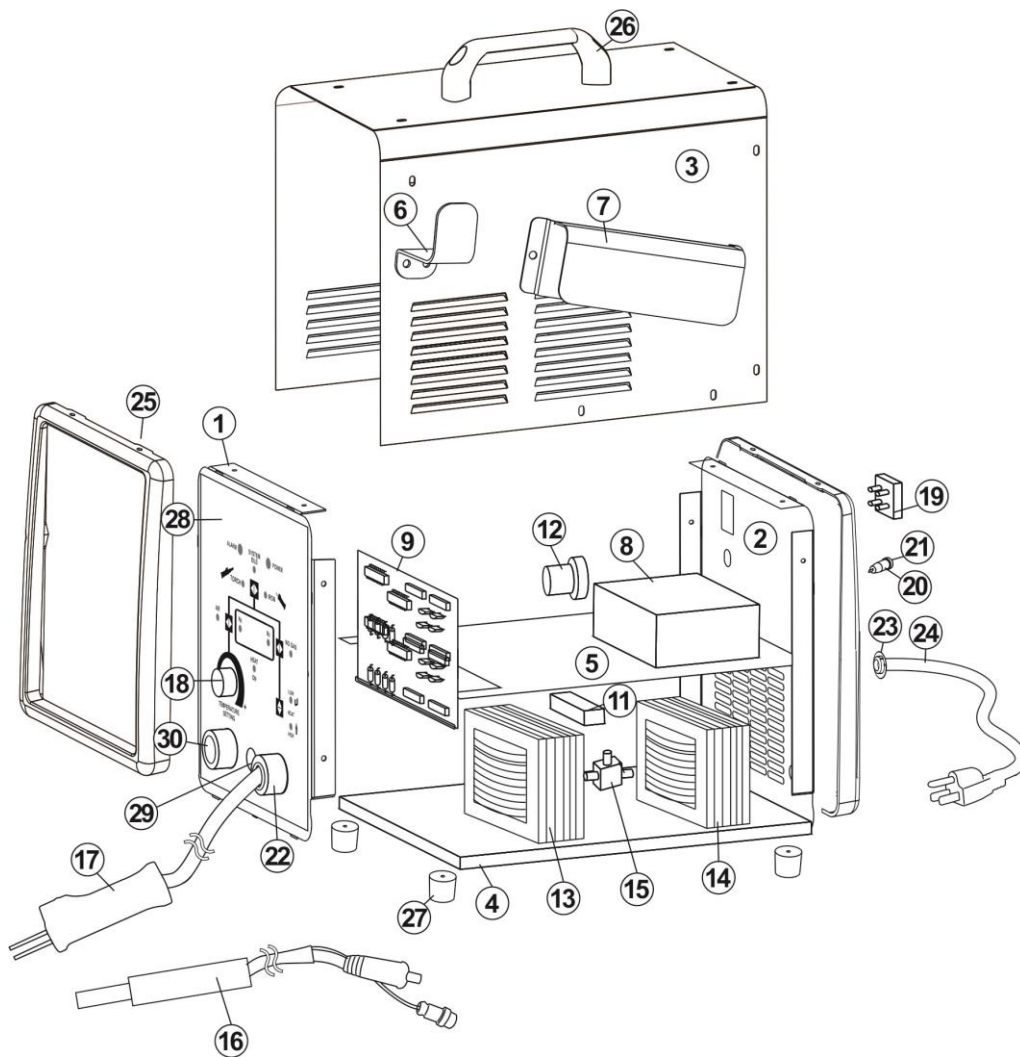


6. OPERATION / WIRING DIAGRAM (UNI-8100-04)



7. UNI-8100-04 EXPLODED PARTS LIST

NO.	Code	Describe	NO.	Code	Describe
1	EY19276Q0201B1	front panel	17	UNI-8119	iron torch complete
2	EY19276H0101B1	back panel	18	597N5981	knob
3	EY19276S0201G5	top cover	19	530.0020	main switch
4	EY19276X0101G5	bottom panel	20	526.0034	Fuse 5A
5	EY19276Z0101B1	inside baffle	21	525.0025	fuse holder
6	EY19276P0401B1	torch holder	22	707.0175	Strain relief - Large
7	EY19276P0502B1	torch cover	23	707.0172	Strain relief - Small
8	UNI-8117	air compressor	24	ELE-2110	power cord (115 volt)
9	UNI-8144	main control PCB 4.0	25	597N5312	plastic frame (2x)
11	709.0116	gas valve 24V (2x)	26	530.0018	handle
12	UNI-8113	gas pressure switch	27	530.0025	rubber foot 4x
13	UNI-8114	main transformer 115V	28	ST100850	Front label
14	UNI-8130	V.4 transformer combined with Aux.transformer and voltage booste	29	175N9038	control receptacle 4-pin
15	UNI-8116	gas flow valve	30	511N0012	torch receptacle ½" gas
16	UNI-8143	gas torch 4.0 with plug			



TECHNICAL SUPPORT: 704-935-5242