



A **CARLISLE** BRAND

# MODEL 7100 PORTABLE PIN WELDER OPERATOR'S MANUAL



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## **Gripnail**

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## **OPERATOR SAFETY**

Our first concern at Gripnail is the safety of the operators using our equipment. As with most types of welding equipment, there is always a potential for serious injury if the equipment is misused. Please familiarize yourself with the equipment before operating. Below is a list of a few safety precautions that should be observed.

1. **READ** this manual before you begin using the equipment.
2. **DO NOT OPERATE** this welder in or near water or damp areas.
3. **DO NOT LOOK** directly at the weld pin while welding. Arcing produced by the welding process could cause flash burns to your eyes and could cause blindness.
4. **WEAR** protective clothing to prevent skin burns from weld slag.
5. **DO NOT TOUCH** the pin or adjacent area after welding until sufficient time is allowed for cooling. Otherwise, serious burns may result.
6. **DO NOT OPERATE** the welder unless all covers are in place.
7. **DO NOT PULL** or move the welder by the attached cables or damage to the cables will result.
8. **CONTACT** the Gripnail Service Department for assistance with replacement parts, repairs, questions or diagnosing a problem with the welder.

### **Gripnail Customer Service Department**

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## DESCRIPTION

The Model 7100 Portable Pin Welder is a solid state resistance welder designed for welding Power-Point Resistance Weld Pins to galvanized sheet metal ductwork. Exceptionally strong welds will be obtained with 24 gage or lighter sheet metal. Acceptable results have been obtained on heavier metal. However, tests should be performed to determine the correct weld time settings and if the weld is acceptable per individual requirements.

The normal, continuous weld rate is 8-12 welds per minute. It is capable of welding at faster rates, but for short durations only. Care should be exercised not to exceed the continuous rate for long periods, otherwise component overheating and damage may occur.

The weld gun has a pistol grip style handle with a trigger switch and extra long cables. Welding current is not available at the gun until the weld pin contacts the sheet metal. The weld relay and weld timer operations may be tested by activating the trigger without the pin touching the sheet metal. The "WELD ON" light will turn ON, as well as the weld transformer, for up to 1.5 seconds, or equal to the weld time control setting.

## SPECIFICATIONS

Input voltage — 190-240 volts AC, 60 Hz, 1 Phase, 30 Amps

Electrical connection — 7 ft, 12/3 power cord terminating with a 4 prong, 30 amp twist-lock plug. Connections used are "ground", "X" and "Y".

Ground cable — 2.5 feet, # 4/0 weld cable, with a spring loaded, copper alloy clamp

Weld gun cable — 10.5 feet, # 3/0 weld cable and # 18/3 control cable

Dimensions — 16" L x 9-5/8" W x 7-1/4" H

Weight (including gun and cables) - 65 lbs.

Weld rate — 8-12 welds per minute (depending on weld time settings).

Gun type — pistol grip

Gun weight (less cables) — 1.6 lbs.

Gun dimensions — 5-1/4" L x 2" diameter

Shipping weight — 80 lbs., crated

## INSTALLATION

The portable pin welder is designed to operate from 190 to 240 volts AC. There are three available tap connections based on supply voltage.

AC Line Voltage	Connect wire, part # 20, to tap number
190-208	2
208-230	3
230-240	4

**ELECTRICIAN'S NOTE:** A 4-wire, 3 phase plug is used on the power cord with connections to "ground", "X" and "Y" terminals. Although the welder is a "single phase" device, this plug permits connection to standard 3 phase receptacles commonly used in most sheet metal fabrication shops.

### CHANGING THE SUPPLY VOLTAGE (transformer) TAP

**CAUTION—** Unplug the welder from the electrical power before removing the cover. After the tap change is completed, fully reassemble cover prior to plugging it into the electrical power source.

1. The voltage tap is factory set for 208-230 volts.
2. Remove the cover and locate wire part number 20 at position #3 on the terminal block. Refer to picture on page 7.
3. Move the wire to terminal #2 OR #4 to match the supply voltage.
4. Replace the cover securely before plugging into power.

## SETUP and OPERATION

1. Attach the spring loaded ground clamp to the work table or directly to the duct. Insure the connection is clean and free of foreign material or weld quality will be compromised.
2. Plug the welder into a proper electrical outlet and adjust the “Weld Time” to number “5”.
3. Use duct liner and a piece of scrap metal of the same gage for the following test.
4. Place a weld pin on the gun’s magnetic weld tip.
5. Press the pin into the liner, making contact with the metal using a twisting motion, then apply moderate pressure prior to activating and throughout the weld cycle.
6. Pull and hold the trigger to start and continue the weld cycle. The green “WELD ON” light will turn ON during the weld cycle and will automatically go OFF.
7. Release the trigger, lift the gun from the metal, then repeat the process with a new pin.
8. Test weld several pins in this manner and adjust the “Weld Time” to the lowest setting required to give good weld results.

## MAINTENANCE

The Model 7100 Portable Pin Welder requires very little maintenance due to it’s solid state circuitry and design. We do, however, recommend the following procedures periodically.

**CAUTION: Turn welder OFF and disconnect from electrical supply before any maintenance or service is performed.**

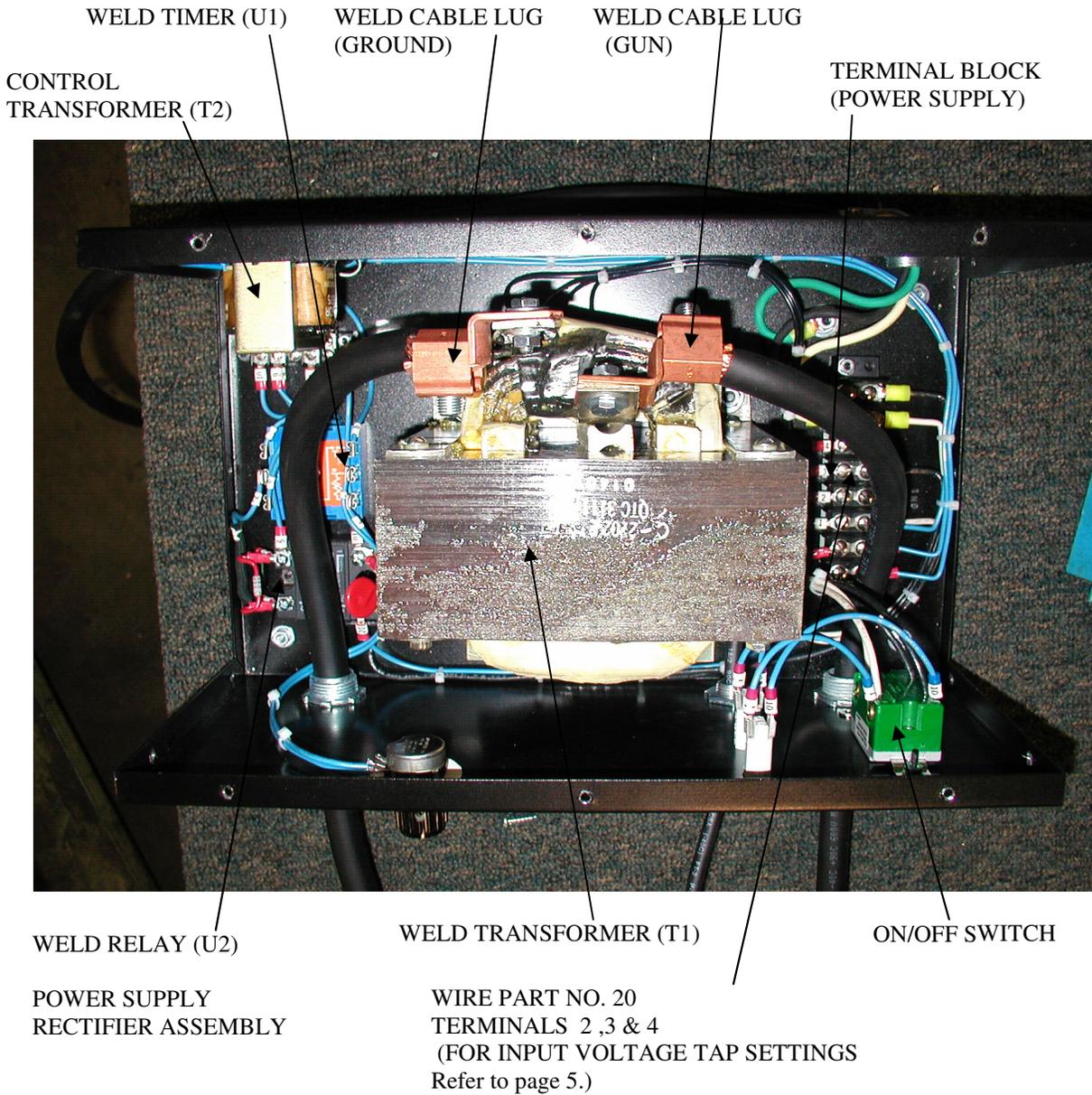
1. Remove all accumulated insulation dust and foreign debris from inside the welder.
2. Tighten all mounting hardware on solid state circuit components, transformers, cable connections to weld transformer, ground clamp, weld gun and control cable.
3. Using a steel wire brush, clean the contact surfaces of the spring loaded ground clamp.
4. Clean and inspect the magnetic weld tip. Replace if badly burned, deeply pitted or if the magnetism is too weak to properly hold a weld pin.
5. Carefully inspect and tighten all cable strain reliefs. **Note:** On the weld gun assembly, the weld cable should take the heavy strain load, not the lighter control cable.

## WARNING

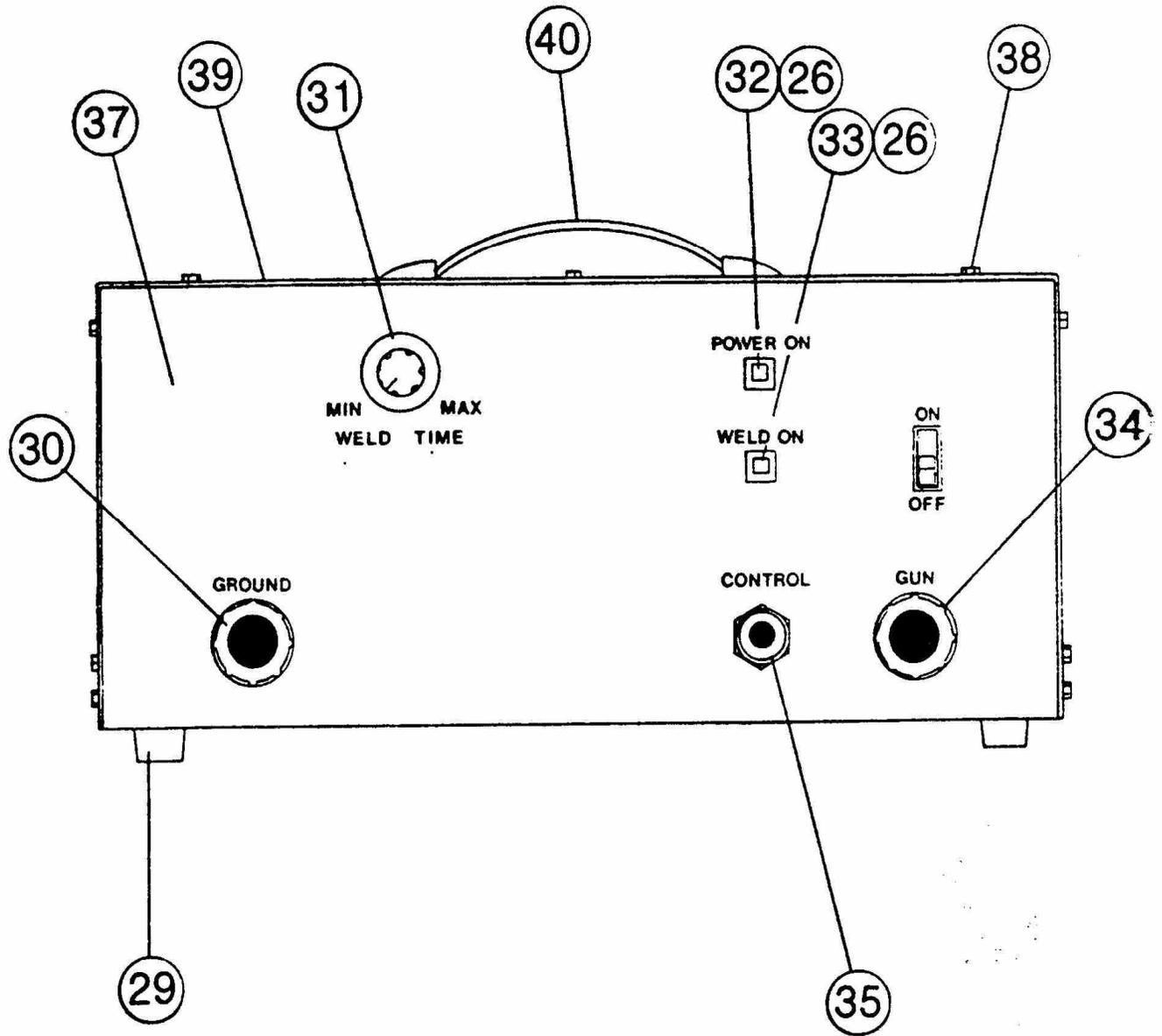
The inside view of the welder is shown below for parts identification purposes only.

**DO NOT OPERATE** the welder with the cover removed.

Possible injury or accidental electrical shock may result.



Model 7100 Portable Pin Welder



## Parts Identification

Item number	Part number	Quantity	Description
1	2742-E	1	Clamp, ground
2	2741-E	3.5'	Cable, weld 4/0
3	2748-E	1	Power supply rectifier assembly
4	1173-M	2	Spacer, threaded
5	1207-M	9	Washer, lock # 6
6	GN P/N 51310	1	Relay, weld (U2)
7	1227-M	7	Nut, hex # 6-32
8	GN P/N 51309	1	Timer, weld (U1)
9	2036-M	2	Nut, hex # 4-40
10	2037-M	2	Washer, lock # 4
11	2738-E	1	Block, 5 terminal
12	2735-E	1	Transformer, control (T2)
13	2702-E	1	Transformer, weld (T1)
14	2744-E	1	Plug, AC line
15	2740-E	2	Lug, weld cable
16	1218-M-0750	2	Bolt, 1/4"-20 x 3/4"
17	1216-M	10	Nut, hex 1/4"-20
18	2039-M	12	Washer, flat 1/4"
19	2029-M	6	Washer, split 1/4"
20	2343-E	7.5'	Cord, 12/3, AC line
21	2732-M	1	Strain relief, AC line
22	1211-M	5	Nut, hex # 10-32
23	1230-M	5	Washer, lock # 10
24	2739-E	1	Block, 8 terminal
25	2734-E	1	Switch, ON/Off (S1)
26	2295-E-SN	2	Nut, speed
27	2887-M	1	Insulator
28	GN P/N 51402	1	Potentiometer
29	2301-M	4	Feet
30	2730-M	1	Strain relief, ground
31	1395-M	1	Knob, potentiometer
32	GN P/N 51422	1	Light, power ON (L1)
33	2295-E	1	Light, weld ON (L2)
34	2731-M	1	Strain relief, gun
35	1126-M	1	Strain relief, control
36	2882-M	4"	Tubing, heat shrink
37	2728-M-A	1	Chassis, painted
38	2066-M-0750	16	Screw, cover
39	2729-M-A	1	Cover assembly w/ handle
40	42610	1	Handle assembly

## PIN WELDING GUN

The magnetic tip must be kept clean during use or weld quality will be compromised. Check the tip condition often for wear and clean with a steel wire brush to remove glue buildup and burning as necessary. Replace when it becomes badly pitted or the magnets fail to hold a pin.

To replace the tip, loosen the two set screws and pull the tip out. Insert the new tip then tighten both screws.



COMPLETE HANDLE ASSEMBLY  
GN P/N 51384

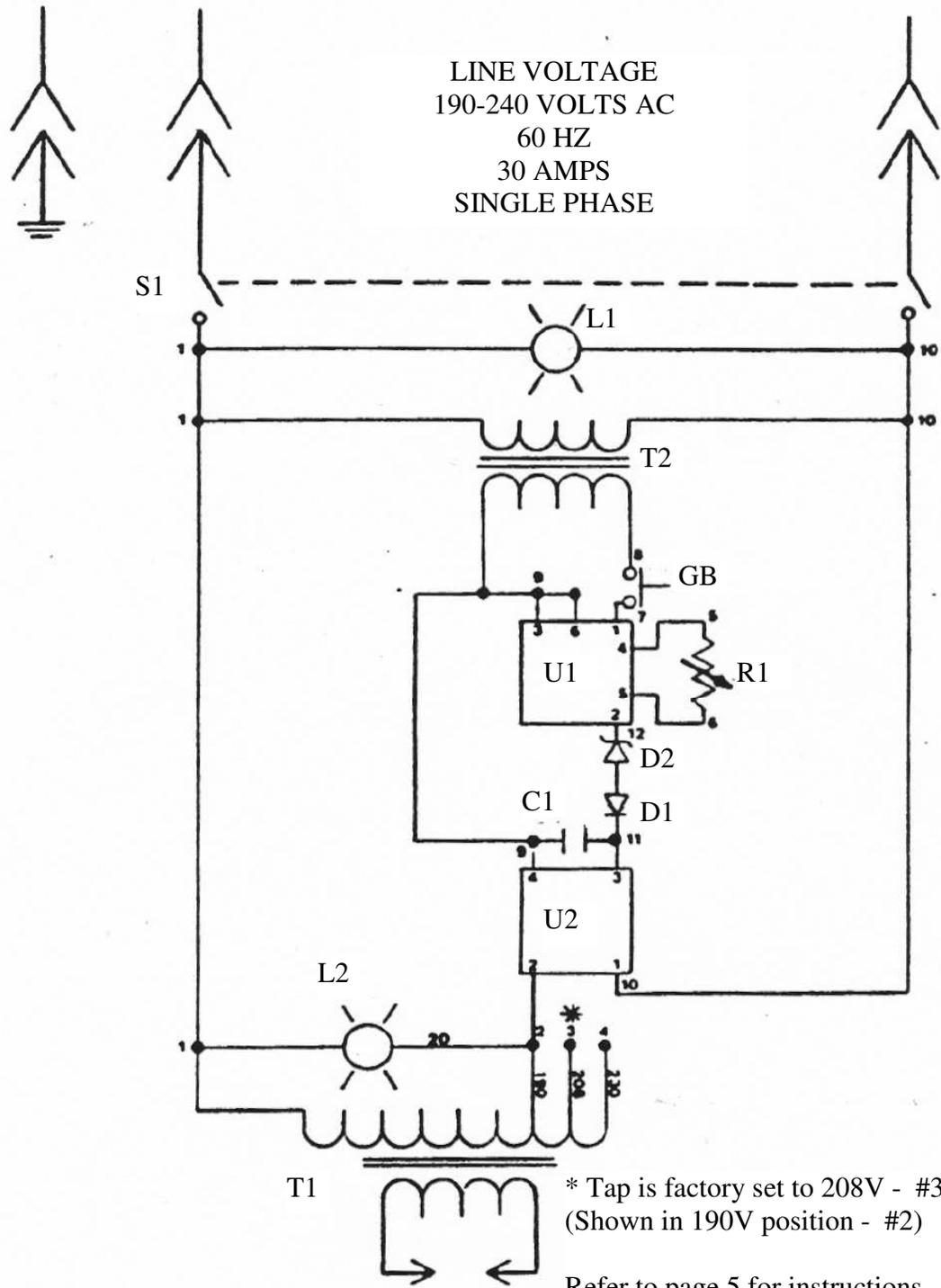
## Parts Identification - Weld Gun

Item number	Part number	Quantity	Description
1	1354-E	11.5'	Wire, control # 18/3
2	2374-M	11	Tie, cable
3	2743-E	11.5'	Cable, weld # 3/0
4	1959-E	2	Nut, wire
5	2215-E-W	1	Switch wire, white
6	2215-E-B	1	Switch wire, black
7	2117-E	1	Switch, gun trigger (GB)
8	2034-M-0500	2	Screw, gun handle
9	1230-M	2	Washer, lock # 10
10	GN P/N 51384	1	Handle, With Item 15
11	GN P/N 51371	1	Shaft, gun
12	1213-M-0250	2	Screw, set
13	2065-M-0500	1	Screw, set
14	GN P/N 51372	1	Housing, gun
15	GN P/N 51384	1	Handle, With Item 10
16	GN P/N 42469	1	Magnetic Tip

## Wiring Diagram Parts Legend

Symbol	Part number	Description
C1	Part of GN P/N 51366	Capacitor, filter
D1	"	Diode
D2	"	Diode, Zener
GB	GN P/N 51308	Switch, gun trigger
L1	GNP/N 51422	Light, power ON
L2	2295-E	Light, weld ON
R1	GN P/N 51402	Potentiometer
S1	GN P/N 51369	Switch, ON/OFF
T1	GN P/N 51365	Transformer, weld
T2	GN P/N 51368	Transformer, control
U1	GN P/N 51309	Timer, weld
U2	GN P/N 51310	Relay, weld

# WIRING DIAGRAM



## **SERVICE POLICY**

Proper operation of your equipment is a top priority with the Gripnail. We will assist you to the best of our abilities to see it is kept in peak operating condition.

In many cases, service needs can be made simply by calling Gripnail Customer Service Department. If it becomes necessary for a service technician to visit your plant, we can make the arrangements.

Gripnail portable welding equipment is covered under a ninety (90) day New Equipment Warranty (see Warranty next page). Replacement parts covered by the warranty are supplied free of charge, provided the original parts are returned to Gripnail for inspection and do not show signs of abuse. Normally replaceable components, such as weld tips, are considered “consumables” and are without warranty.

All warranties on Gripnail equipment are good only if Gripnail fasteners are used. If it is determined that fasteners other than those manufactured by Gripnail have been used, the warranty is voided. At Gripnail, we believe in servicing what we sell for the lifetime of the equipment. If you are having difficulty with your equipment or if you have any questions regarding service and warranty policy, please call, fax, or write:

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## **WARRANTY**

All Gripnail Equipment is thoroughly inspected and tested before leaving the factory. Gripnail warrants its portable welding equipment to be free from defects in material and workmanship, under normal and proper use, for a period of ninety (90) days from date of sale to original end purchaser.

The warranty does not apply when repairs or attempted repairs have been made by persons other than Gripnail's authorized service personnel, or where it is determined by our service personnel that the equipment has been subjected to misuse, negligence or accident. If it is determined that any fasteners other than those manufactured by Gripnail have been used in this machine or tool, the warranty is terminated.

This warranty is not effective unless equipment is properly registered with the factory through the use of warranty information card prior to use. Gripnail shall not be liable for contingent damages or delays caused by defective materials or any other means beyond our control.

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