

POWER PINNER RAPID FIRE 7005 RF OPERATOR'S MANUAL



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INTRODUCTION

The Gripnail 7005 RF automatic pin welding machine was designed to require minimum maintenance. It has evolved from the previous models; taking all of the best features and addressing the customers' issue of adjustments and maintenance. This model uses a proximity sensor to detect the transfer block location. The sensor is connected to quick disconnect cables that indicate the sensor's operating state. This feature saves valuable time if troubleshooting is necessary. All hose connections between valves and cylinders use push-fit type fittings. These fittings save maintenance time if lubrication or replacement is required on any item.

OPERATOR SAFETY

Proper safety precautions must be observed with any piece of equipment. This section contains several guidelines designed to ensure operator safety. Follow these directions at all times.

REMEMBER—SAFETY FIRST!

FIVE SAFETY RULES

1. **DO NOT OPERATE** this machine without all covers and guards in place.
2. **DISCONNECT** all electrical power and compressed air sources before servicing.
Follow OSHA standard 1910.147 "CONTROL of HAZARDOUS ENERGY (LOCKOUT/TAGOUT)"
3. **TROUBLESHOOTING** should be done by qualified personnel only.
4. **THE OPERATOR** should always wear the personal protective equipment as outlined by his/her employer, such as eye and ear protection, to avoid injury.
5. **MAINTAIN** the equipment in good operating condition.

SYSTEM REQUIREMENTS

ELECTRICAL: 190, 208, 230 VAC/60 HZ/1Ø
31.0, 28.4, 25.5 AMPS
(Recommend using a 50 Amp. Slow blow Disconnect)

PNEUMATIC: 40-55 PSI @ 1 CFM

INSTALLATION INSTRUCTIONS

1. Place machine on a hard, flat, level surface. If the surface is irregular and shimming is required, use steel (sheet metal) to make shims. Normal vibratory parts feeder operation requires the machine to be stable and solidly supported. **DO NOT USE** cardboard, plywood, particle board, other composite wood products or soft materials as shim stock.
2. Place bowl feeder on machine into spaces provided, noting location of bowl exit. Wire the bowl feeder to Wires 2, 5 & GND located in the Junction Box on the top of the machine. (See Figure 1)
3. Ensure a 1/8 inch clearance gap exists between the feeder bowl exit and the entrance to the track assembly.
4. Attach the 1/4 inch wing nut and washer to the 2-1/2 inch screw to retain the lower guard.
5. Install the front guard using the four (4) 1/4 inch truss head screws provided.
6. Connect air. Safety Note: Quick disconnect air fittings are recommended. **ALWAYS** install the *free flowing* MALE connector onto the machine. This will permit immediate exhausting of air from the machine when disconnected from the shop supply.
7. Connect electricity to the disconnect switch located inside the Electrical Enclosure on the door. (See Figure 2) Measure the voltage at the customer supplied fused disconnect. Set the jumper on the terminal strip (190, 208 or 230) to match the incoming voltage.

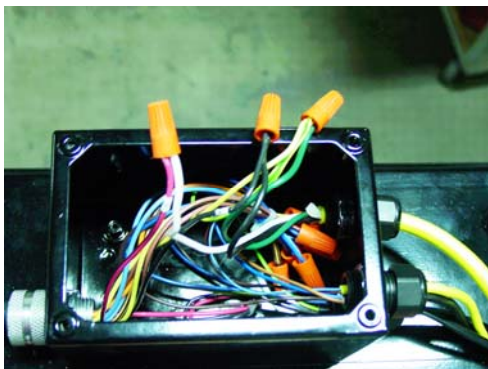


Figure 1

INCOMING
POWER
CONNECTION

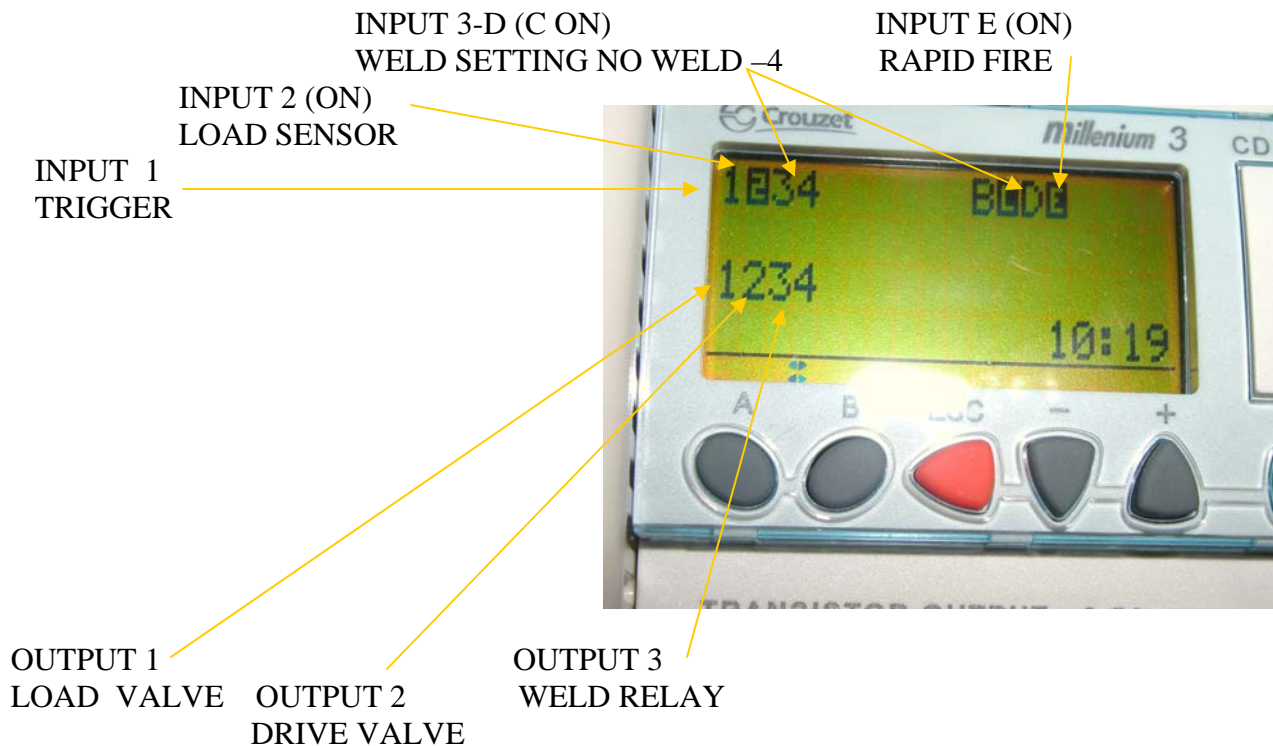


Figure 2

MAINTENANCE

1. DRAIN water from filter/regulator assembly DAILY.
2. REMOVE accumulated fiberglass and adhesive buildup from the magnetic driver and track daily or as required.
3. Check for loose hardware and tighten as required.

PLC INPUTS & OUTPUTS



SEQUENCE OF OPERATION

1. Input 2 (Load Sensor) AND Input 3 OR 4 OR B OR C OR D MUST be on.
2. Input 1 (Foot or Trigger) is activated momentarily or continuously held.
3. Output 2 (Drive) turns on.
4. Output 3 (Weld Relay) turns on and stays on based on the time setting from Input 3-D.
5. Output 3 (Weld Relay) turns off.
6. Output 2 (Drive) turns off.
7. Output 1 (Load) turns on.
8. Input 2 (Load Sensor) turns off.
9. Output 1 (Load) turns off.
10. Input 2 (Load Sensor) turns on.
11. Input 1 (Foot or Trigger) must be off after Step 9 to restart the sequence (if RAPID FIRE off).

TROUBLESHOOTING

A. Drive head doesn't operate after foot pedal is depressed.

1. Check incoming power connection and ON switch. Page 12.
2. Is air connection and/or shop supply valve open?
3. Is the load proximity sensor indicator lights ON? Page 10.
 - a. If not ON, check for loose cable connections or components.
 - b. If not ON, check 24 Volt DC power supply in control box. Page 11.
4. Check drive valve fuse #3.
5. Is the foot pedal input light (I1) and drive valve output light (O2) ON when the foot pedal is depressed. Page 11.
6. Check internal connections in foot pedal and external cable condition. Page 15.

B. New weld pins do not load onto drive head.

1. Check the drive cylinder and magnetic driver. If either is discovered loose, readjust and tighten. See page 8.
2. Check load valve fuse #4.
3. Turn OFF all power and air, then manually check load cylinder for binding.

C. Vibratory feeder bowl doesn't operate.

1. Check the position of the speed control setting.
2. Check the sensor on track.
3. Check the feeder bowl control fuse (3 amp). Page 11.

D. Improper weld.

1. Adjust weld setting. Page 12.
2. Clean upper and lower weld tips.
3. Check the weld transformer is set on the correct taps to match incoming voltage.

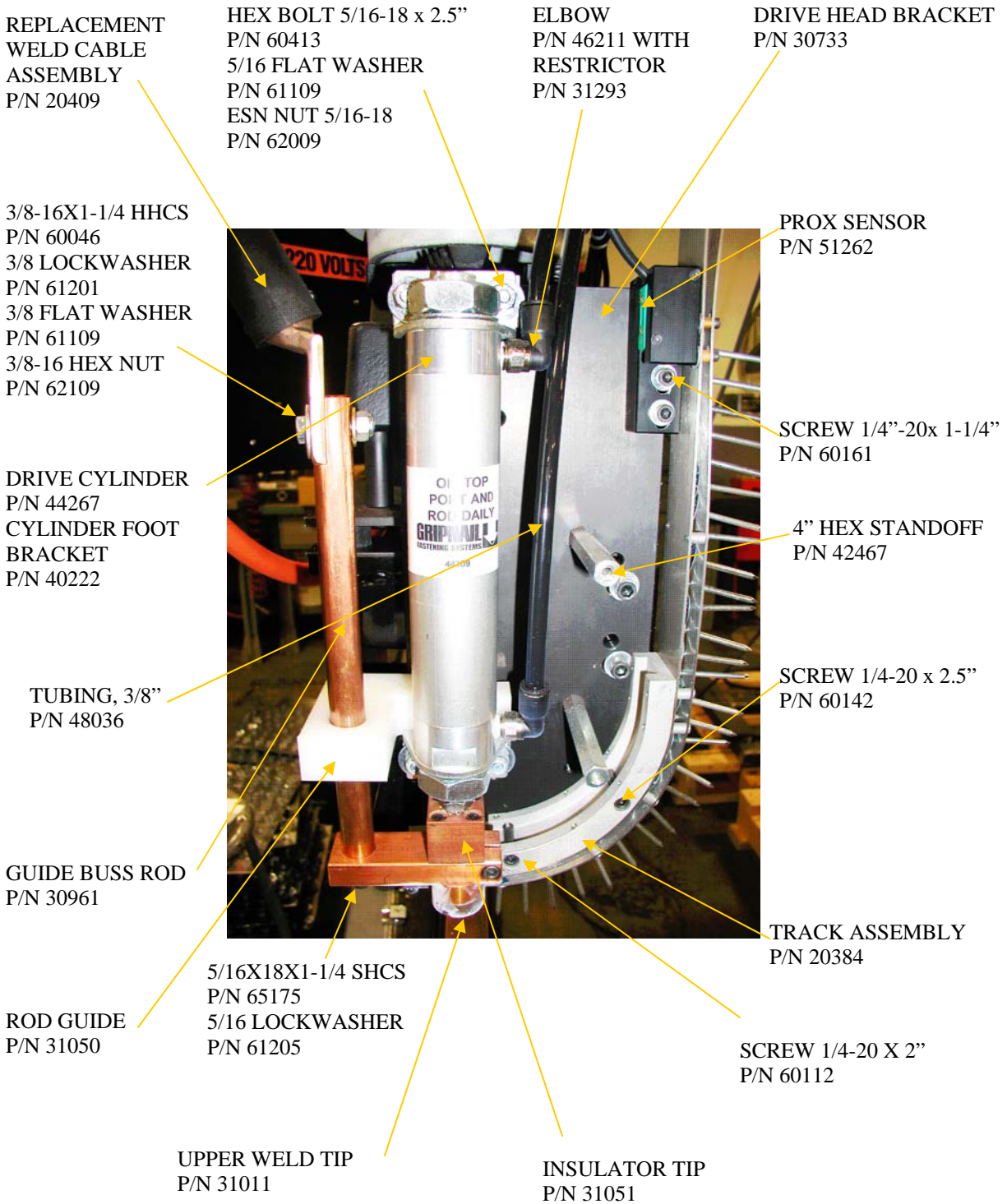
WELD SETTING ADJUSTMENTS

1. With the power “ON”, set the WELD SETTING switch to correspond to the pin being fastened. (Note: These setting are reference starting points only.)

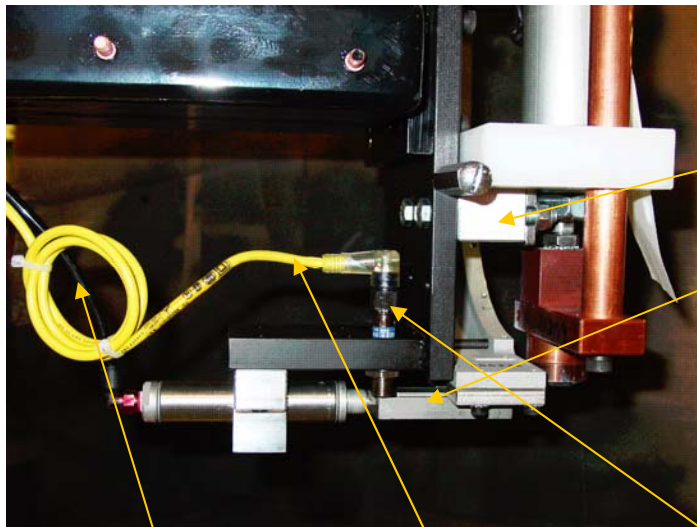
| PIN | SETTING |
|-----|---------|
| 57 | 1 |
| 107 | 1-2 |
| 127 | 2 |
| 137 | 2-3 |
| 157 | 3 |
| 207 | 4 |

2. Place the sheet metal flat on the lower electrode and press the foot pedal.
3. Make several test welds to insure uniform and proper welds.
4. The WELD SETTING switch also has a NO WELD position. This disables the weld circuit to test functions of the rest of the machine cycle.

DRIVE HEAD ASSEMBLY



LOAD CYLINDER ASSEMBLY



CYLINDER SPACER
BLOCK
P/N 31049

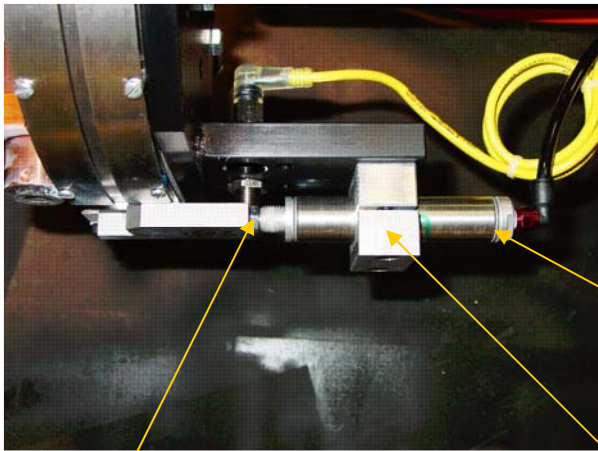
TRANSFER BLOCK
P/N 20364

FRONT GUARD
P/N 31038
NOT SHOWN

1/4" TUBE
P/N 48025

PROXIMITY SENSOR CABLE
P/N 51269

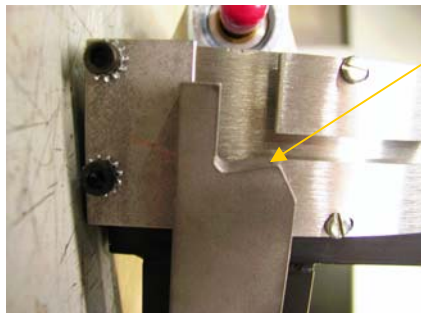
PROXIMITY SENSOR
P/N 51268



LOAD CYLINDER
P/N 44257

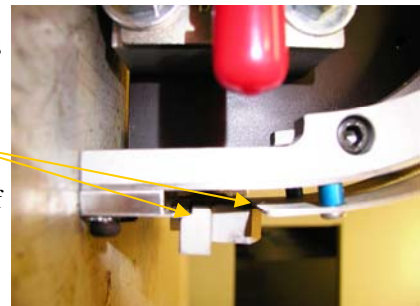
JAM NUT 1/4"-28
P/N 62202

LOAD CYLINDER PLATE P/N 30126



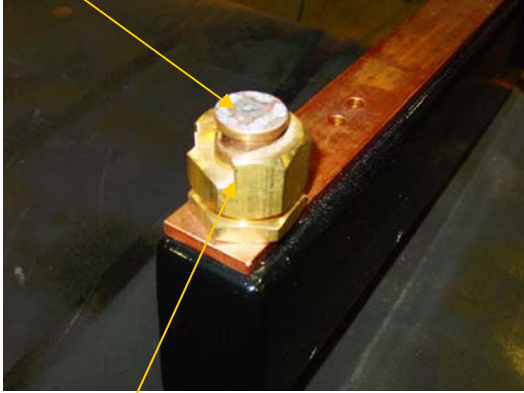
Position the Transfer Block so this point intrudes on the Pin path by approximately 1/32".

Rotate the Transfer Block to horizontal, to assure the top key section equally engages the bottom of the Track .

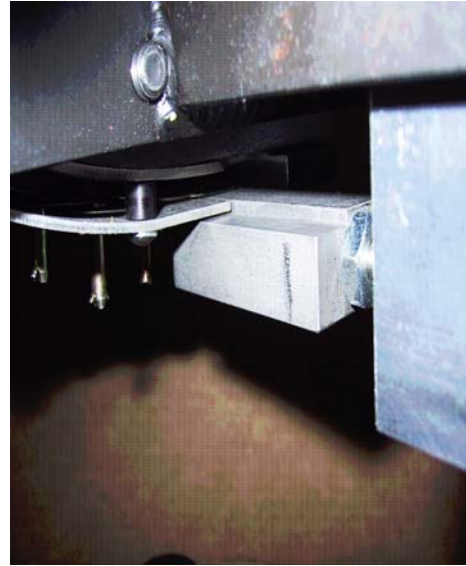


GRIPNAIL MODEL 7005 RF RAPID FIRE AUTOMATIC PIN WELDER

LOWER WELD TIP
P/N 31032

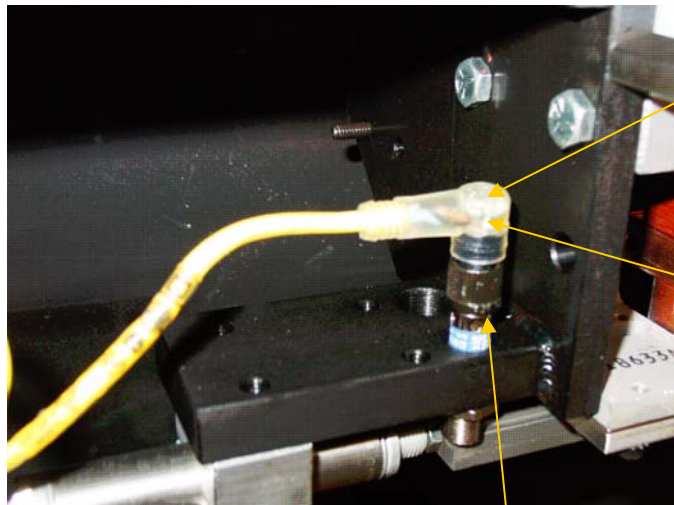


The transfer block fits into the track for easy alignment.



ELECTRODE
NUT
P/N 31278

The sensor cables, shown below, contain two (2) light emitting diodes (LED's). The GREEN indicates the power is ON. The YELLOW indicates the sensor is activated by its target. This will help troubleshooting in the event a miss adjustment or other service requirement.



GREEN
LED

YELLOW
LED

LOAD RETURN
SENSOR

ELECTRICAL ASSEMBLY

IMAIN POWER
35 A MP FUSES
P/N 51299
FUSE 1&2

REPLACEMENT
POWER CABLE
ASSEMBLY
P/N 20415

REPLACEMENT
GROUND CABLE
ASSEMBLY
P/N 20418

WELD RELAY
P/N 51301

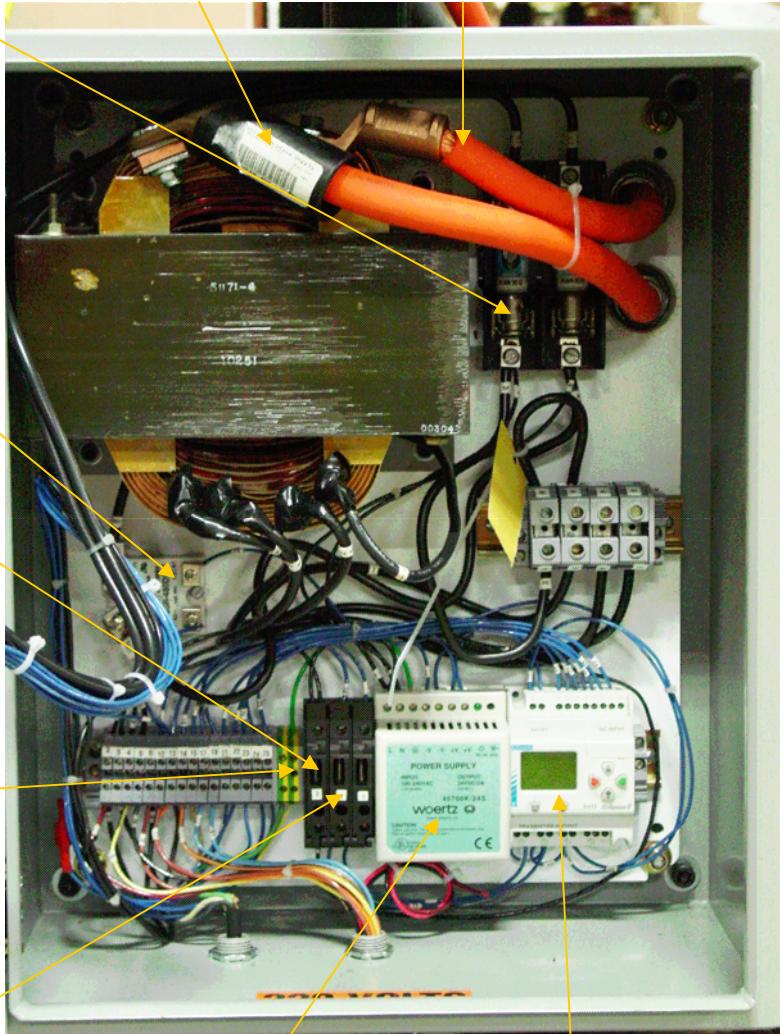
FEEDER BOWL CONTROL
3 AMP FUSE
P/N 51274
FUSE 3

GROUND TERMINAL
BLOCK
P/N 51235

VALVES
1 AMP FUSE
P/N 51273
FUSE 4— DRIVE VALVE
FUSE 5— LOAD VALVE

24 VDC POWER SUPPLY
P/N 51272

CONTROLLER
P/N 51270



GRIPNAIL MODEL 7005 RF RAPID FIRE AUTOMATIC PIN WELDER

Pictured below are the machine's electrical controls.

The vibratory feeder speed control is used to optimism the bowl feed rate.

The digital volt meter monitors the incoming voltage.

The weld setting switch is adjusted based on weld pin and gauge.

The main disconnect switch applies power to the machine, and also provides a means for LO/TO for the electrical power.

- RAPID FIRE SWITCH
P/N 51313
- RAPID FIRE INDICATOR LIGHT
P/N 51337
- DIGITAL VOLT METER
P/N 51293
- REPLACEMENT
WELD SETTING
SWITCH
P/N 20421
- VIBRATORY FEEDER
SPEED CONTROL
P/N 51282-2



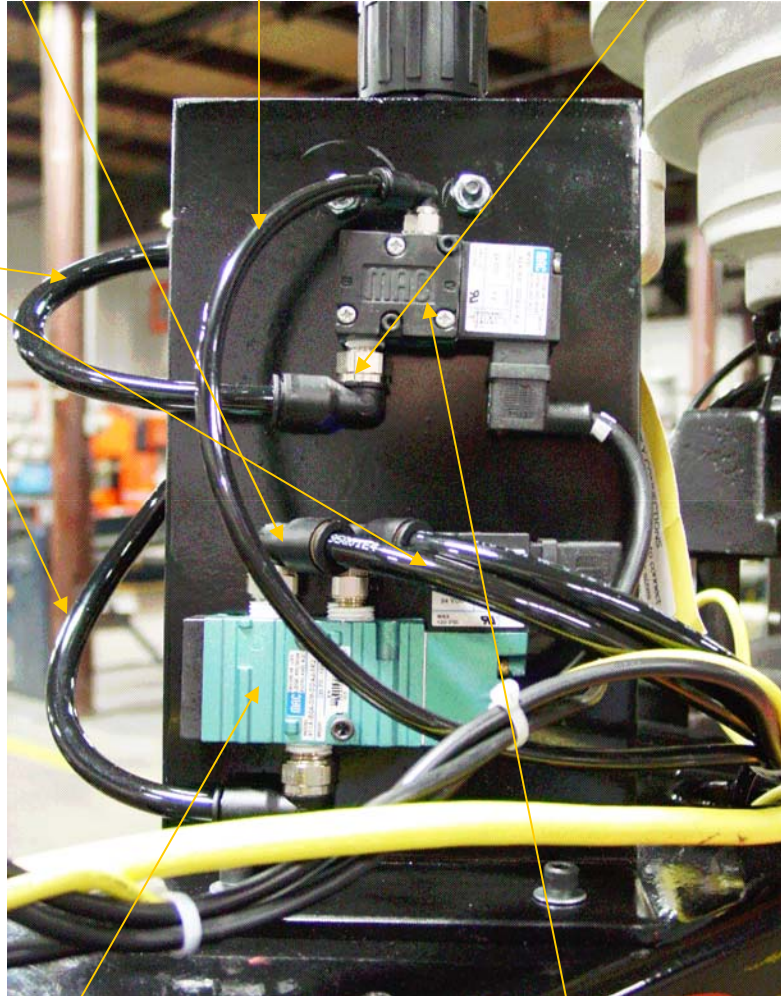
DRIVE and LOAD VALVES

ELBOW
3/8 TUBE x 1/4 NPT
P/N 46211

1/4" TUBING
P/N 48025

ELBOW
1/4 TUBE x 1/8 NPT
P/N 46209

3/8" TUBING
P/N 48036

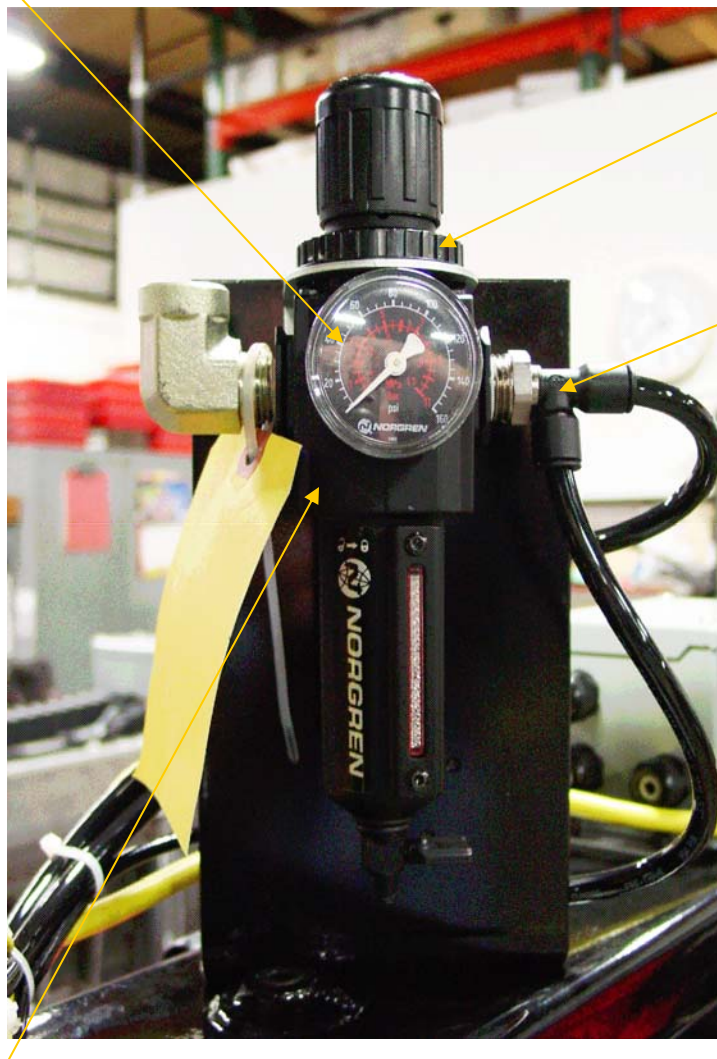


DRIVE VALVE
P/N 44240
CORD SET
P/N 51227

LOAD VALVE
P/N 44251
CORD SET
P/N 51227

PRESSURE REGULATOR

REGULATOR
GAGE
P/N 44120



BRACKET W/ NUT
P/N 42445

TEE FITTING
P/N 46262

FILTER/ REGULATOR
P/N 40206

GRIPNAIL MODEL 7005 RF RAPID FIRE AUTOMATIC PIN WELDER

FOOT PEDAL

NOTE: RELEASE pedal completely after each cycle. Both air and electrical power must be on to operate foot pedal.

FOOT PEDAL
P/N 51264



FOOT PEDAL INTERNAL CONNECTIONS
USE NORMALLY OPEN TERMINALS

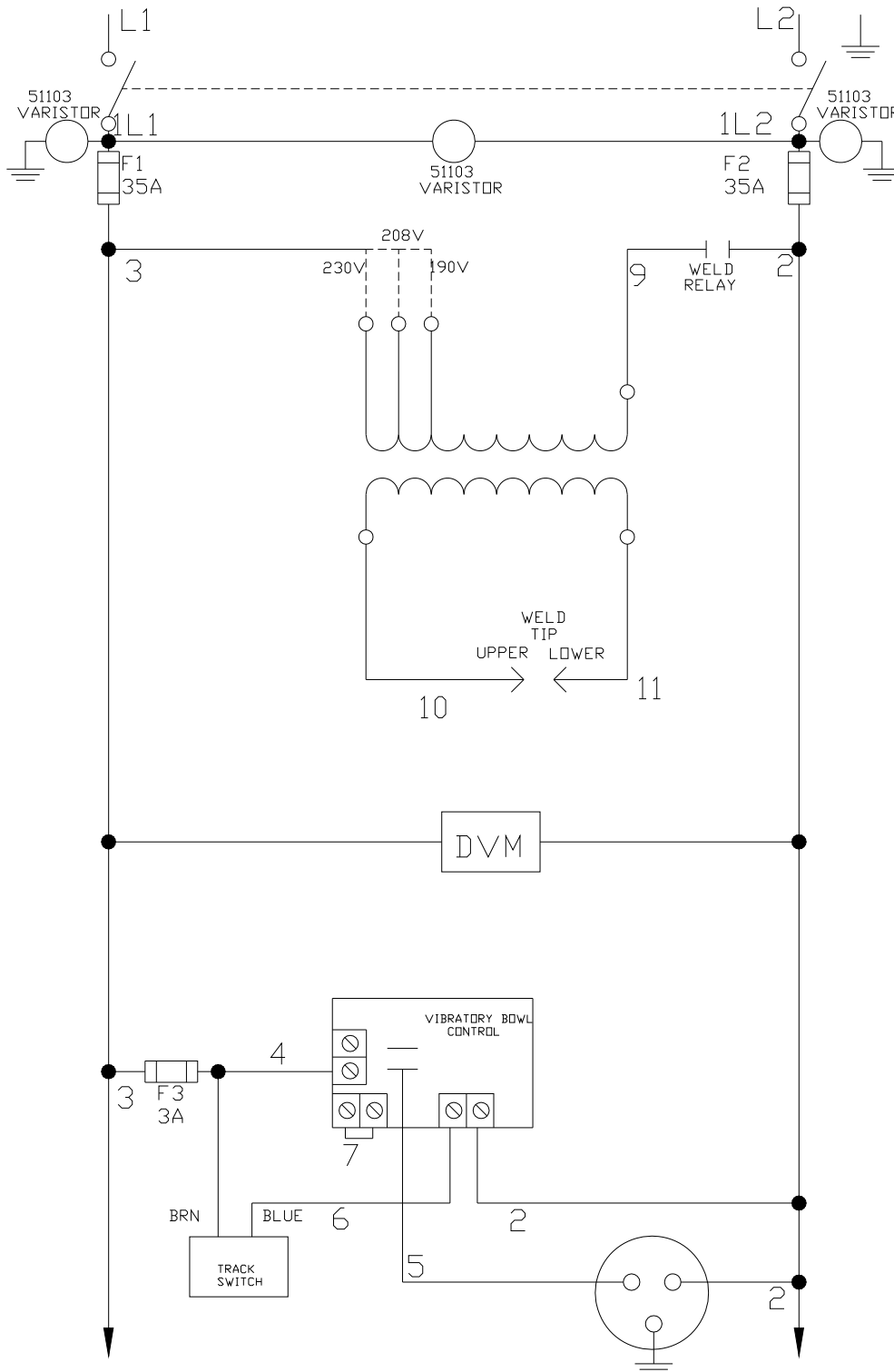
TERMINAL
CONNECTER
P/N 50093



GROUND
WIRE

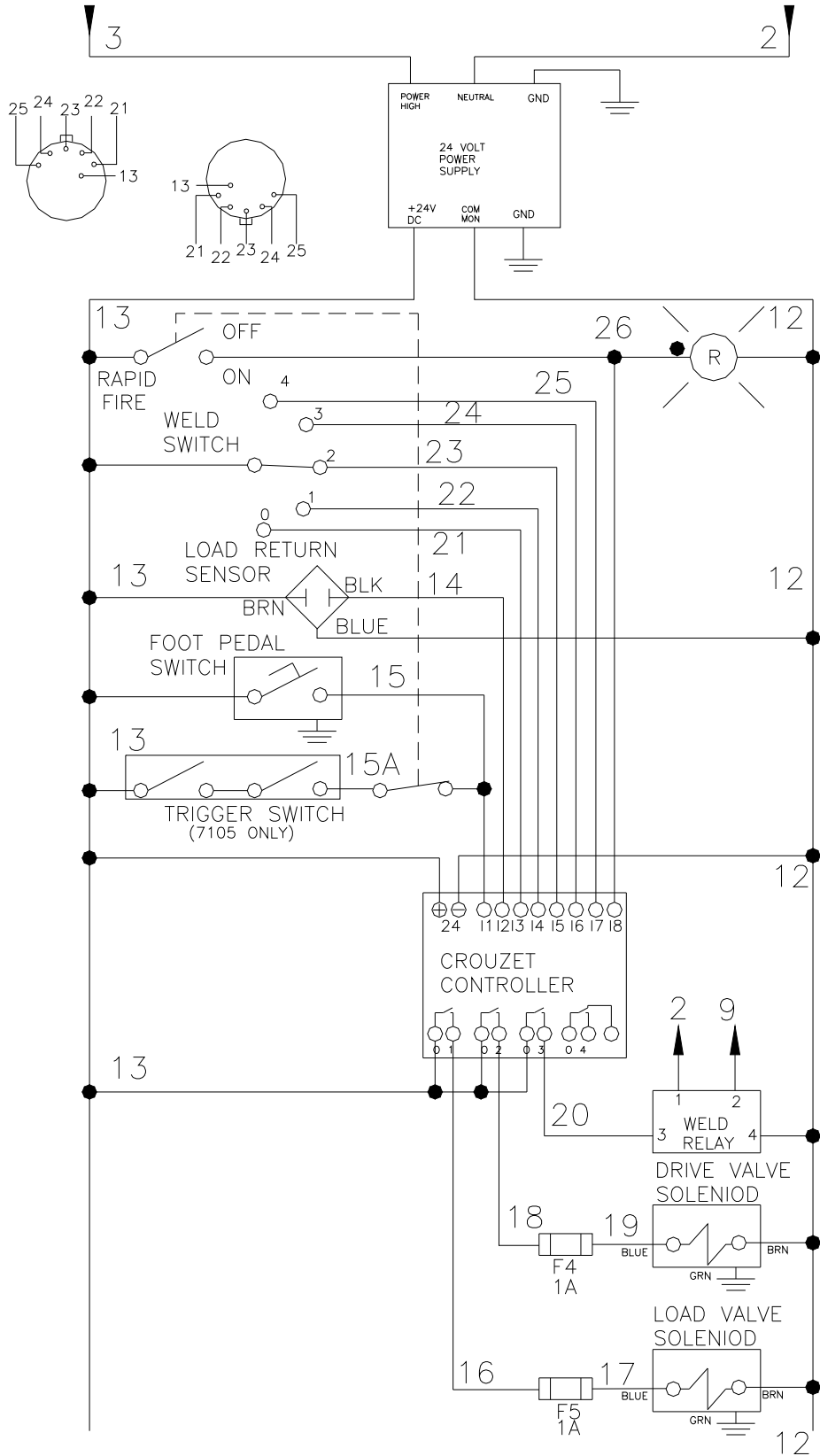
ELECTRICAL SCHEMATIC

190/208/230VAC-60HZ-1Ø-31.0/28.4/25.5AMP

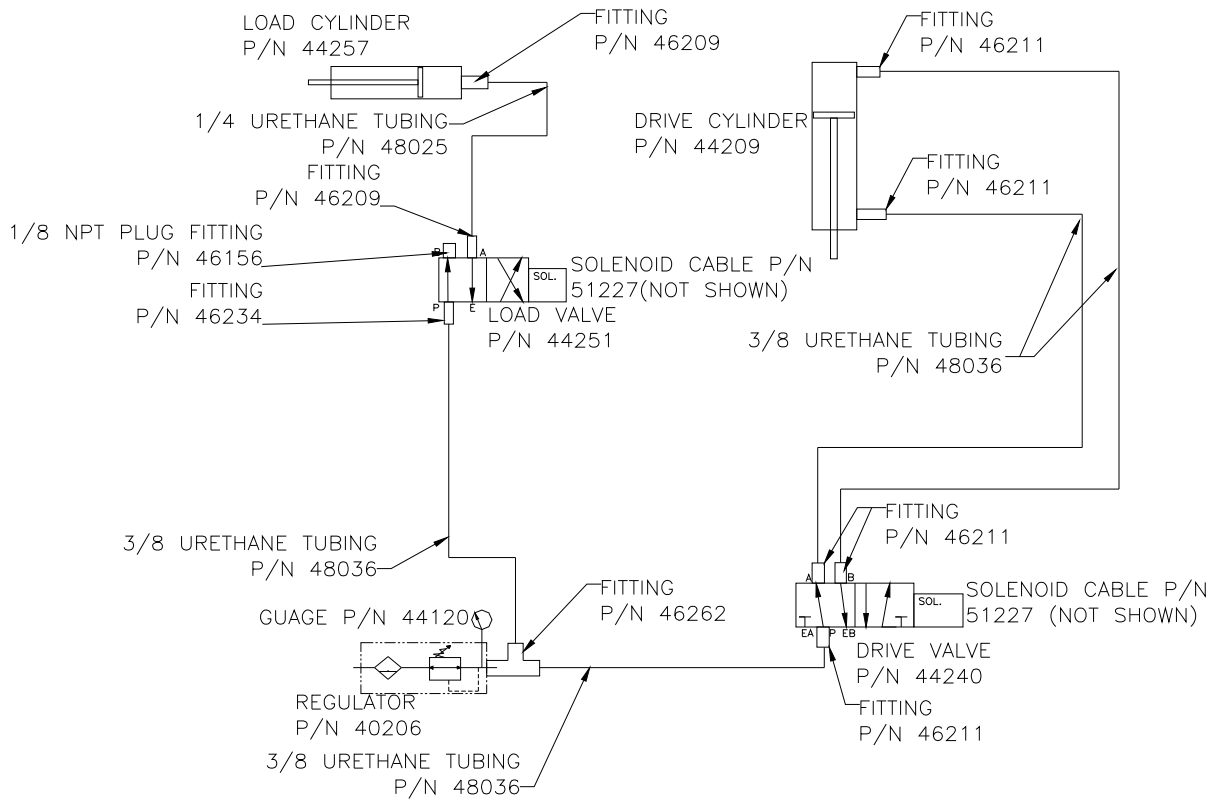


GRIPNAIL MODEL 7005 RF RAPID FIRE AUTOMATIC PIN WELDER

ELECTRICAL SCHEMATIC



PNEUMATIC DIAGRAM



REPLACEMENT PARTS LIST

| ITEM# | PART# | DESCRIPTION | QTY (EA OR FT) |
|--------------|--------------|--|-----------------------|
| 1 | 31247 | Load cylinder & sensor guard | 1 |
| 2 | 62016 | Nut, wing 1/4"-20 | 3 |
| 3 | 31038 | Front guard | 1 |
| 4 | 31278 | Electrode nut | 1 |
| 5 | 31032 | Lower Weld Tip | 1 |
| 6 | 31011 | Upper Weld Tip | 1 |
| 7 | 48025 | Tubing, 1/4" urethane, black | 10 |
| 8 | 48036 | Tubing, 3/8" urethane, black | 10 |
| 9 | 20384 | Track assembly | 1 |
| 10 | 44267 | Drive cylinder | 1 |
| 11 | 44257 | Load cylinder | 1 |
| 12 | 20364 | Transfer block | 1 |
| 13 | 46211 | Elbow, 1/4npt x 3/8 tube | 5 |
| 14 | 20277 | Feeder bowl assembly | 1 |
| 15 | 42361-7 | Feeder base 60 HZ | 1 |
| 16 | 42361-6 | Feeder base 50 HZ | 1 |
| 17 | 40206 | Filter/ Regulator 1/2 npt | 1 |
| 18 | 44120 | Gage, regulator 1/4 npt, 0-160 psi | 1 |
| 19 | 46262 | Tee, 3/8" tube (2) x 1/2 npt | 1 |
| 20 | 42445 | Bracket, wall, with nut | 1 |
| 21 | 46209 | Elbow, 1/8 npt x 1/4" tube | 1 |
| 22 | 44251 | Valve, load | 1 |
| 23 | 44240 | Valve, drive | 1 |
| 24 | 51227 | Cord set, valve | 2 |
| 25 | 51264 | Foot pedal | 1 |
| 26 | 51268 | Proximity sensor | 1 |
| 27 | 51269 | Proximity sensor cable | 1 |
| 28 | 51270 | Crouzet controller | 1 |
| 29 | 51272 | Power supply—24 volts, 2.5 amps | 1 |
| 30 | 51282-2 | Control, feeder base | 1 |
| 31 | 51273 | Fuse 1A, MDL-1 | 2 |
| 32 | 51299 | Fuse 35A, FRN-R-35A | 2 |
| 33 | 51274 | Fuse, 3A, MDL-3 | 1 |
| 34 | 50103 | Cord, 16/3 SJO | 7 |
| 35 | 51301 | Weld relay | 1 |
| 36 | 20409 | Replacement Weld Cable Assembly | 1 |
| 37 | 20415 | Replacement Weld Power Cable Assembly | 1 |
| 38 | 20418 | Replacement Weld Ground Cable Assembly | 1 |
| 39 | 20421 | Replacement Weld Setting Switch Ass'y | 1 |
| 40 | 51313 | Rapid Fire ON/OFF Switch | 1 |
| 41 | 51337 | Rapid Fire Indicator Light | 1 |

SERVICE POLICY

Proper operation of your machine is a top priority with the Gripnail Corporation. 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.

All Gripnail machines are covered under a one year New Machine Warranty (see Warranty next page). Replacement parts covered by the warranty are supplied free of charge, provided the original parts are returned to Gripnail and do not show signs of abuse.

At the end of the new machine warranty period, the buyer has the option of purchasing a Limited Extended Parts Warranty. This warranty covers specified machine parts only. Call Gripnail for full details.

All warranties on Gripnail machines 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 machine or if you have any questions regarding service and warranty policy, please call, fax, or write:

Gripnail Customer Service Department
Gripnail Corporation
97 Dexter Road
East Providence, Rhode Island 02914
Phone: (800) 474-7624
(401) 431-1791
Fax (401) 438-8520
Email: gripnail@gripnail.com
Website: www.gripnail.com

WARRANTY

All Gripnail Fastening Equipment is thoroughly inspected and tested before leaving the factory. Gripnail Corporation warrants its equipment to be free from defects in workmanship and materials under normal and proper use for a period of one (1) year 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 Corporation'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 Corporation shall not be liable for contingent damages or delays caused by defective materials or any other means beyond our control.

Gripnail Customer Service Department

Gripnail Corporation

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