

# **RH MACH 70**

## **PLATINUM EDITION**

**ROLLING HEAD  
PINSPOTTER  
ITEM# 27182**



**MACHINERY  
DIVISION**

RED RIVER MACHINERY  
1-800-229-0759  
<https://www.redrivermachinery.com>

**OWNER'S  
MANUAL**

**DURO  
DYNE**

**MACHINERY  
DIVISION**



# INTRODUCTION

The Rolling Head Mach 70 was designed utilizing the best current technology to provide greater insulation fastening power and reliability.

The inherent minimal material handling combined with the utilization of welded fasteners will insure your shop of a cost efficient, quality product.

Trouble free service is the foundation on which all Duro Dyne Pinspotters are built. Proven solid state components located for easy access. Duro Dyne continues this concept and brings the RH Mach 70 Rolling Head to a new and higher level of reliability, serviceability and efficiency.

This Guide is designed to help you set up and operate your Rolling Head Mach 70 at peak performance for years to come.

# IMPORTANT

Always follow manufacturer's recommendations for proper safety and handling procedures for all materials used in conjunction with this machine as outlined in Manufacturer's Safety Data Sheet (MSDS) for each product.

# LIMITED WARRANTY

Duro Dyne Machinery is manufactured by skilled mechanics, utilizing the latest production techniques. Each unit has been rigorously tested prior to packaging and shipment in order to ensure trouble-free operation.

Your Duro Dyne machine has a two year warranty against defects in material. Any component found to be defective will be repaired or replaced (at the manufacturer's discretion) at no cost if the faulty component is returned freight prepaid to the nearest Duro Dyne Service Department. The warranty does not apply to expendable parts or repairs and service due to improper maintenance or operation procedures.

Duro Dyne products have been engineered to maximize operator safety. Unauthorized modification of this product will void the warranty.

All warranty claims must be accompanied by a serial number, date of purchase and the name and address of the distributor it was purchased from.

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# PARTS LOCATION

17391 Actuator Swival Bolt

17283 Trigger Actuator Assembly

17284 Trigger Actuator Switch

17291 Rear Bumper Stop

17278 Steel Track

44063 Lower Ground Bar

17191 Upper Weld Tip

17189 Upper Replacement Plates (5/pkg)

17192 Lower Weld Tip

18032 Lower Replacement Plates (5/pkg)

17376 Lower Mandrel

See page 11 for more details.

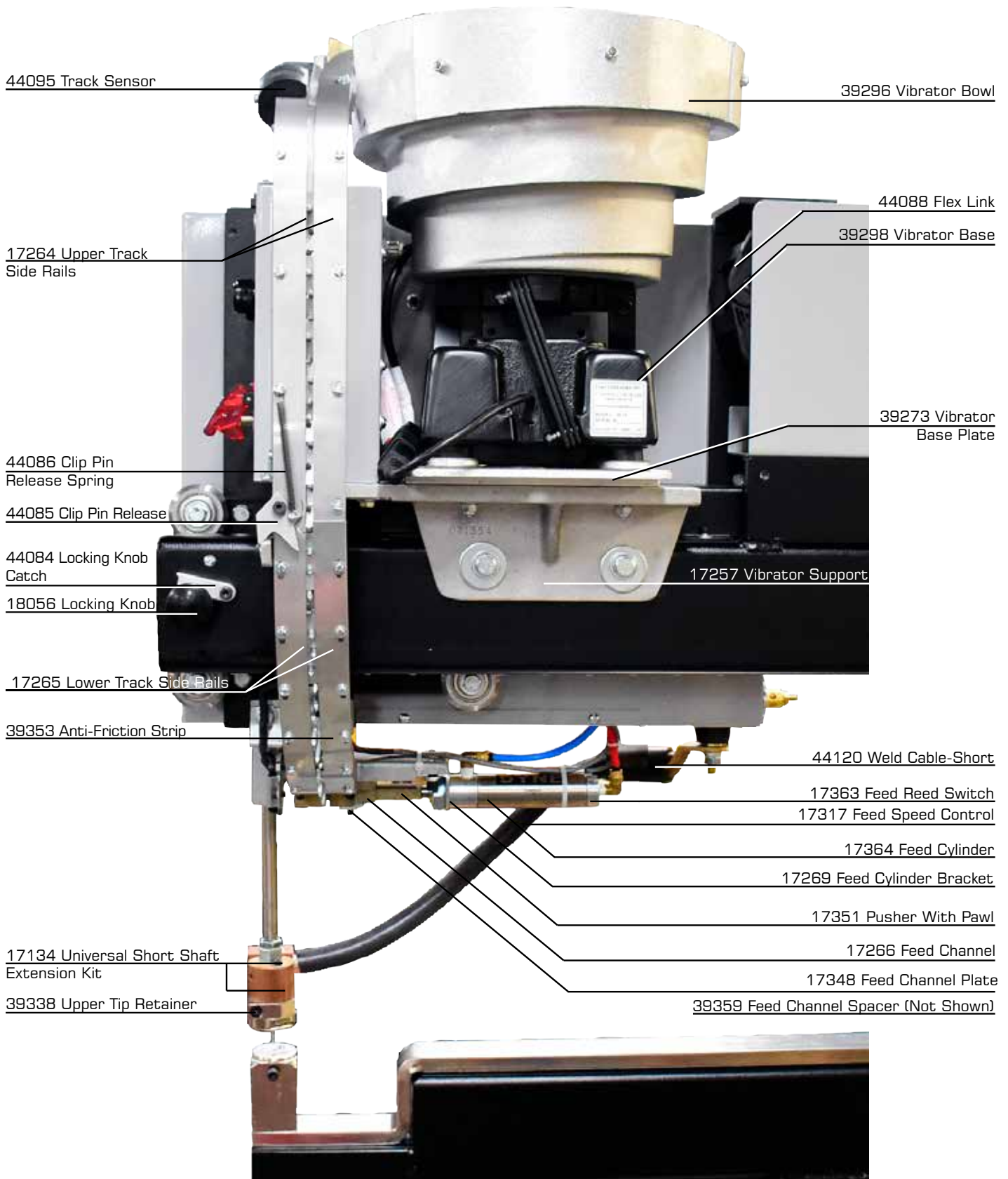
17135 Lift Kit

17372 Footswitch

17281 Hand Gun & Ground Set

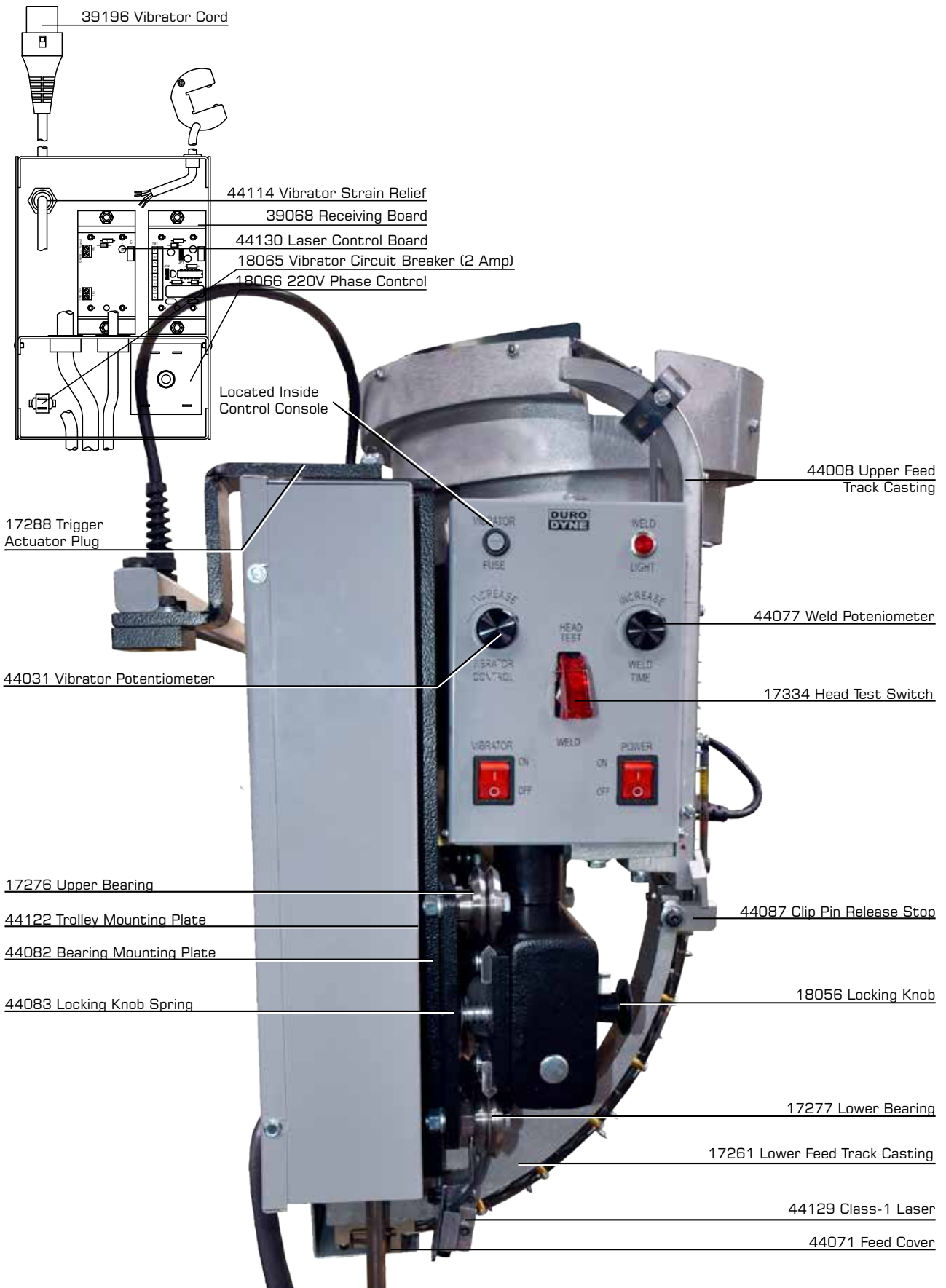
## FRAME ASSEMBLY

# PARTS LOCATION



## DWELL & FEED ASSEMBLY

# PARTS LOCATION



## CONTROL CONSOLE AND FRONT END ASSEMBLY

# PARTS LOCATION

(A) Feed Adj. Muffler

(B) Dwell Retract Adj. Muffler (Up)

17356 Adjustable Mufflers

17236 Dwell Cylinder Bracket

17363 Dwell Reed Switch

44102 Dwell Cylinder

17363 First Pulse Reed Switch

17286 Actuator Mounting Plate  
(Not Shown)

17230 Brake Cylinder

17290 Brake Pad (not shown)

17236 Dwell Cylinder Bracket

17355 Quick Exhaust Valve

17122 RH-IV 28-14 12-Position Terminal Block

17240 Dwell Solenoid

17327 Actuator Receptacle

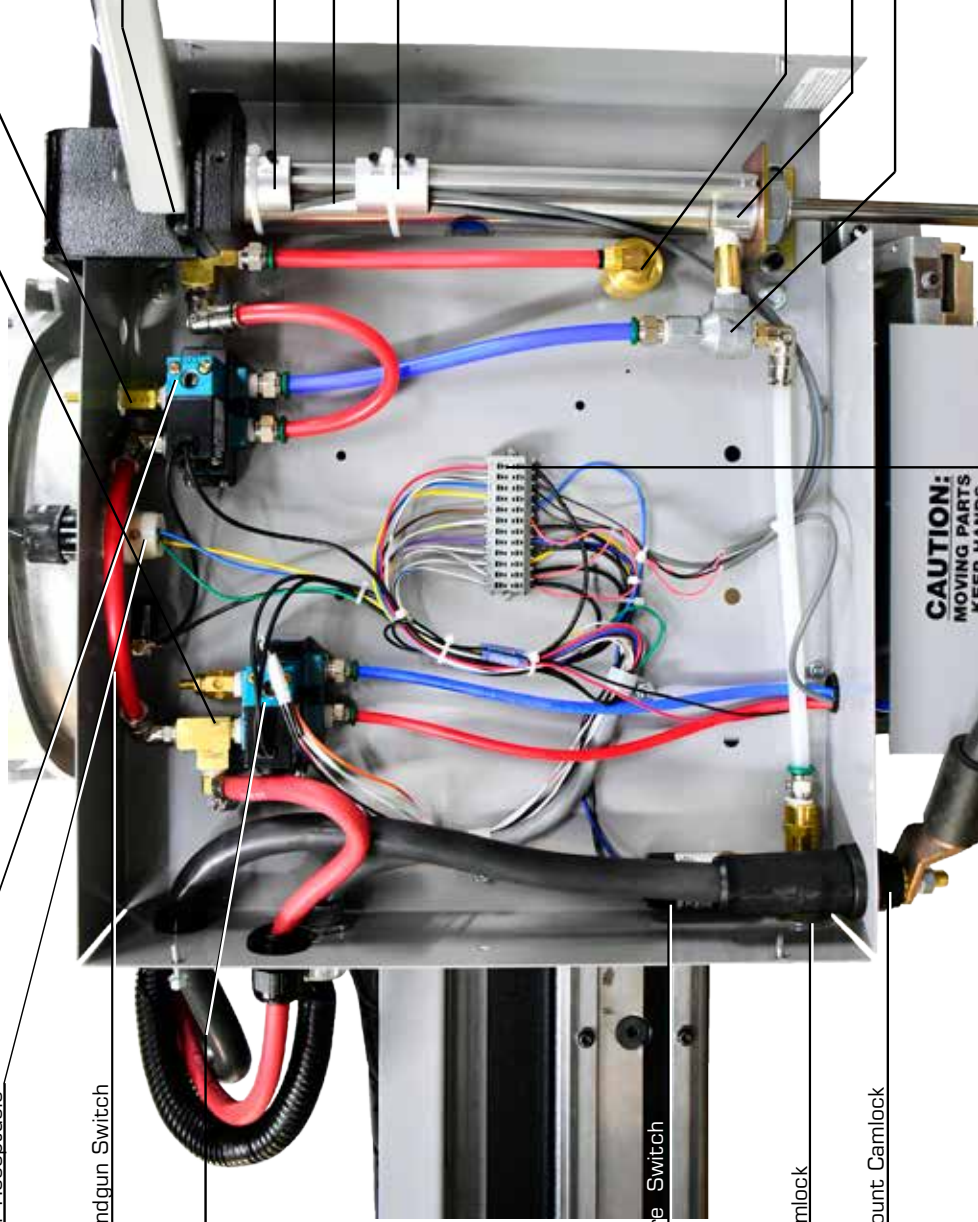
17334 Auto/Handgun Switch

17239  
Feed Solenoid

17325 Pressure Switch

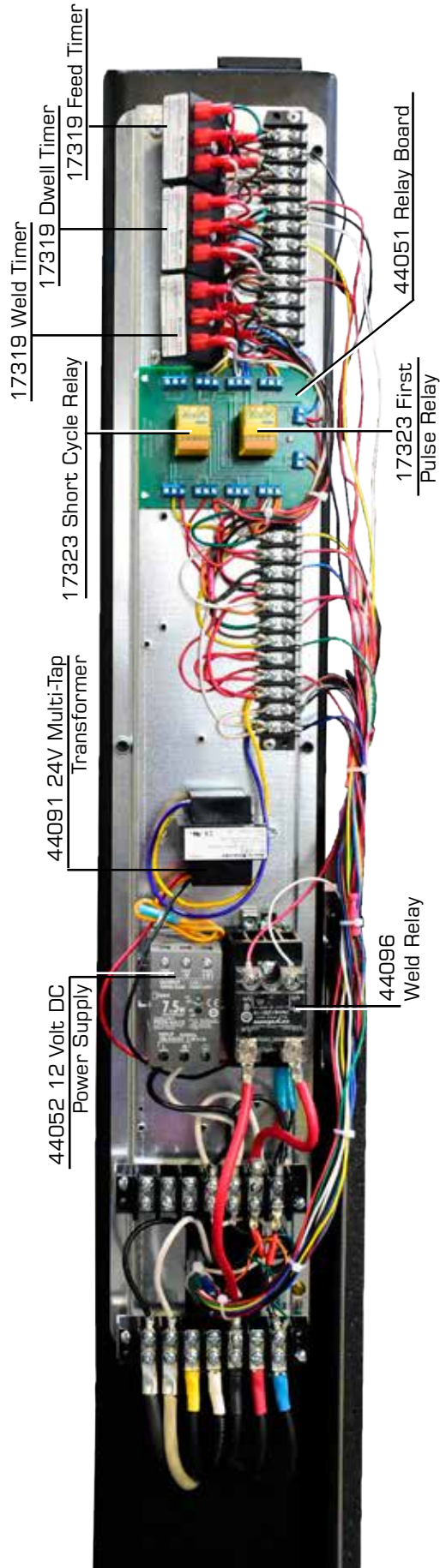
17085 Male Camlock

27213 Flush Mount Camlock



**TROLLEY**

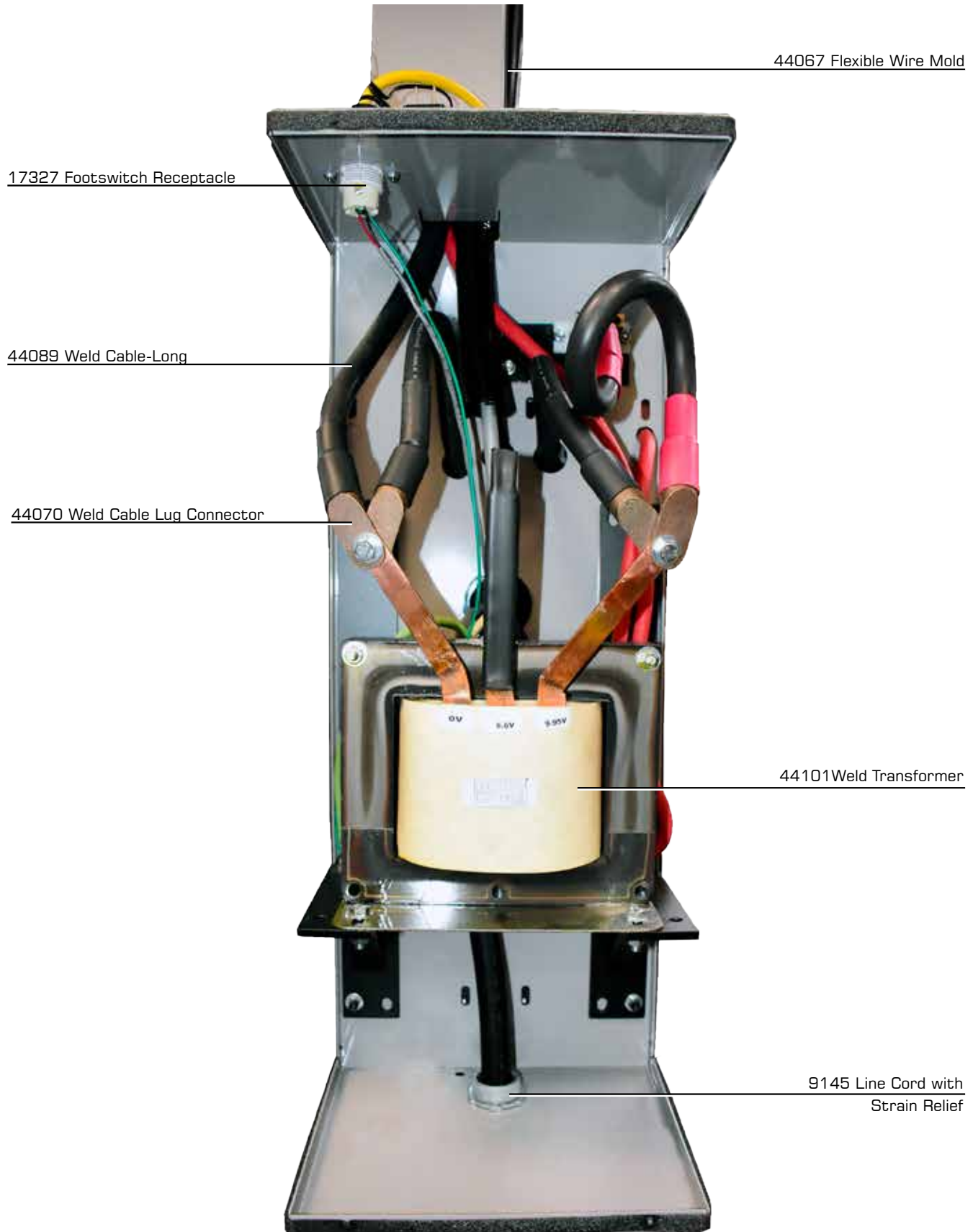
# PARTS LOCATION



**LEFT LEG CONSOLE**

# PARTS LOCATION

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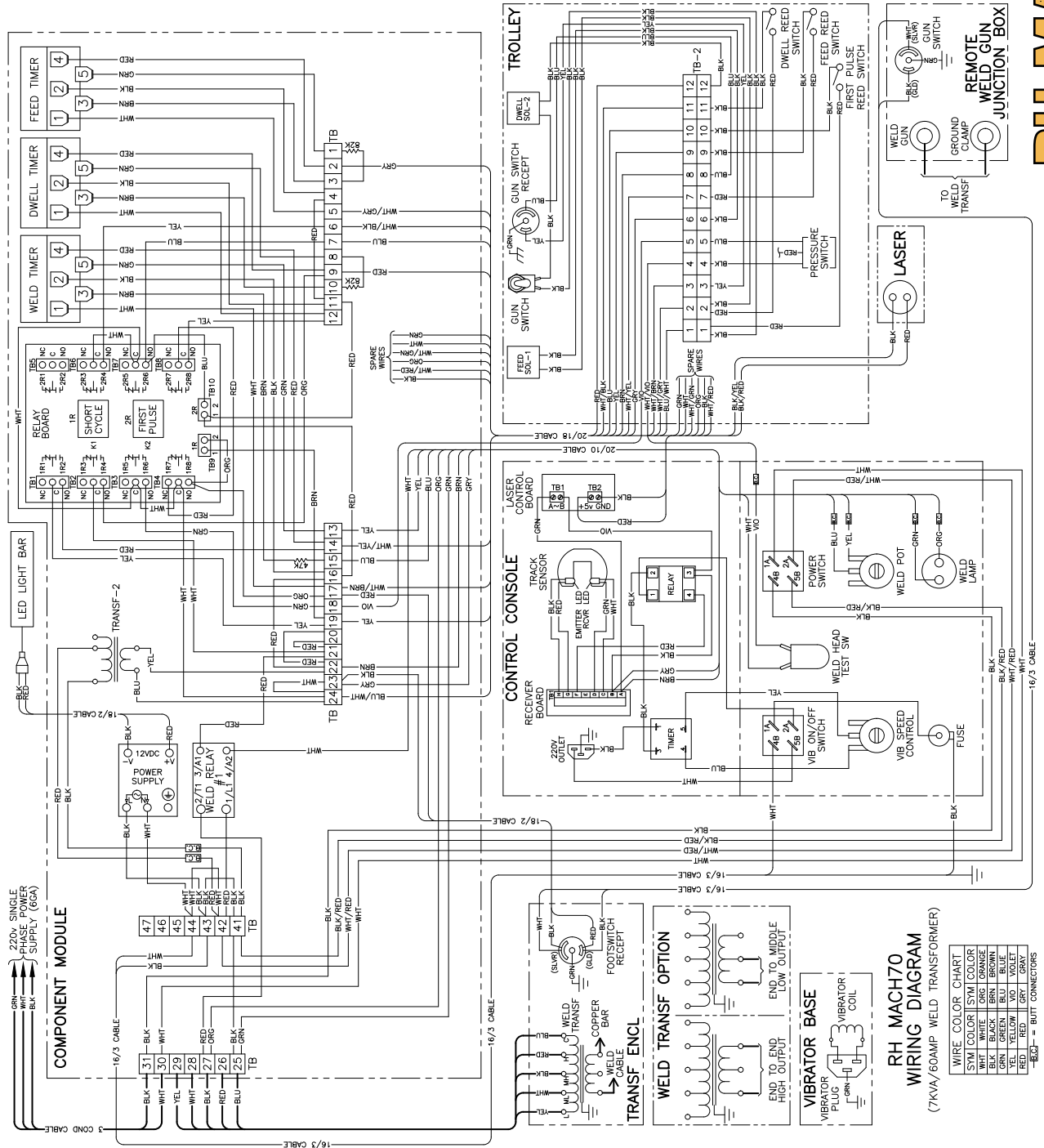
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## TRANSFORMER ENCLOSURE



# WIRING DIAGRAM

10-27-22/NL



# RH MACH 70

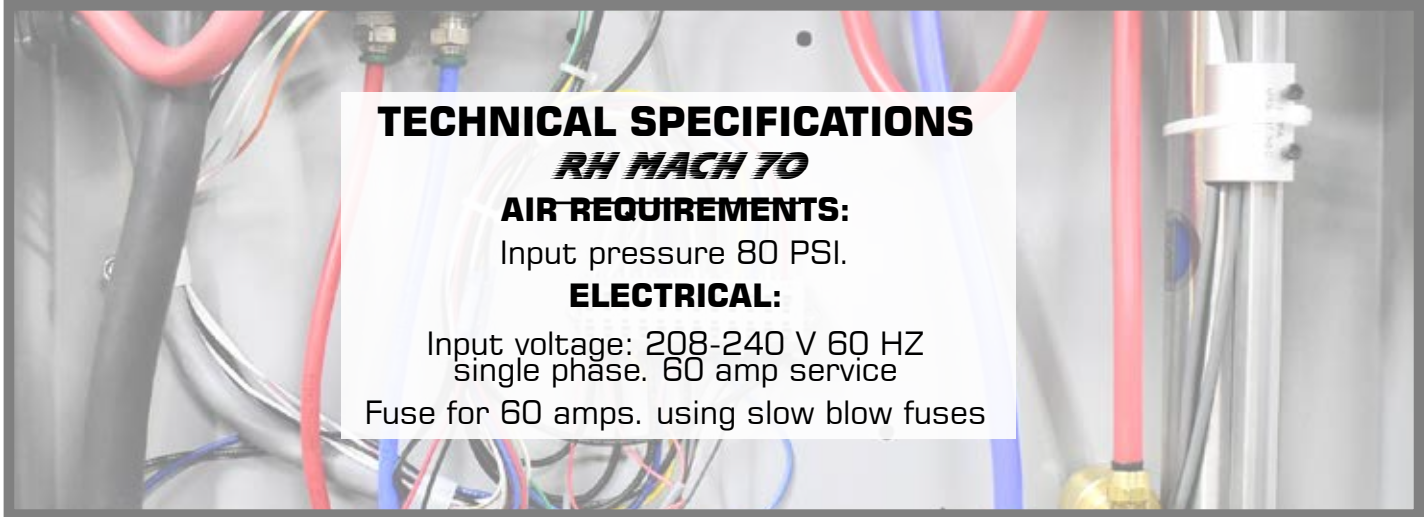
# INSTALLATION INSTRUCTIONS

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## 1) For the Mach 70-

Connect the Power Pack to a source of 208-240V 60 Amp. power. This service should be connected to a 60 amp disconnect box fitted with 60 amp slow blow fuses. The Power supply line to the power pack pigtail should be #6 (or heavier) wire to minimize voltage losses. The black and white wires are the power, the green is ground. Select 208V or 240V at the voltage switch in the console on left leg to the closest match to the power supply voltage.

- 2) Attach the Actuator Arm to the socket on the top of the Trolley.
- 3) Connect the air line to the Regulator. Adjust the regulator pressure to 80-85 PSI.
- 4) Plug the Vibrator Power Plug into the socket on the rear of the Control Panel.



# OPERATION

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## Mach 70 INITIAL ADJUSTMENTS

- 1) Turn the power switch to "ON".
- 2) Turn the vibrator switch to "ON".
- 3) Add the weld pins to the hopper (Vibrator Bowl).
- 4) Adjust the vibrator speed so that the weld pins climb the spiral track inside the vibrator bowl without vibrating off.
- 5) When the weld pins fill the track up to the Vibrator Sensor, the vibrator automatically shuts off.
- 6) Flip the HEAD TEST Switch to either the "WELD #1" or "WELD #2" position.

**NOTE:** The Rolling Head Mach 70 Pinspotter has two redundant weld circuits. In the event that the solid state relay controlling the weld fails you may simply flip the switch to the other circuit and continue production. A replacement Weld Relay should then be ordered through your local Duro Dyne wholesaler.

## STARTING OPERATION

- 1) Never actuate the unit without metal over the mandrel or lower copper ground bar. For maximum weld quality, the metal should be in flat contact with the ground bar and mandrel. An adjacent table or roller on which the sheet metal rests must be either exactly flush with, or slightly below, the top of the ground bar and mandrel.
- 2) The WELD TIME knob controls the weld quality of the pinspotter. It is recommended that an initial setting right in the middle be used and then adjust up or down accordingly in reference to the quality of welds.

## STARTING OPERATION (continued)

Weld time is the length of time the welding transformers are on. A fraction of a second is generally all the time needed for a quality weld. Unnecessary weld time not only wastes energy but can also burn up the pins. (If the pins glow red up to the washer, the weld time is set too high.) Always set the weld timer to the minimum time required for a good weld.

- 3) Before beginning production, always “pre-test” with smaller pieces of the same gauge sheet metal thickness and the liner density you intend to use in the final production. The different densities and thicknesses of the liner may require adjustments of the weld timer setting. For example: heavier gauge steel, thicker liner, higher density liner and/or longer weld pins may require longer weld time. To make sure, always pre-test any adjustment before you begin “final production.” However, only change the weld timer settings when a change in the materials results in inefficient welding or a poor quality weld.

## MAINTENANCE

- 1) To prolong the weld tip life and improve the weld quality, it is imperative that the weld tips and lower ground bar always be kept clean. For best results, use a solvent to remove any built-up adhesive; a wire brush to remove any galvanizing deposits; and a fine emory cloth to smooth the tip and ground bar surfaces.
- 2) When lower weld tip becomes worn in one area, loosen the locking cap screw and rotate the point of wear away from the point of contact. Additional lower weld plates can be ordered from your local distributor.
- 3) Depending on usage and maintenance, the upper welding tip plate will have to be periodically replaced. Replacement weld tip plates can be ordered from your local distributor. To replace the upper weld tip, loosen the locking cap screw and remove the weld tip. Remove the plate by loosening three (3) brass screws. Throw away the screws and attach the new plate to the tip using the three brass screws supplied. Be sure to align the angled section of the plate so it faces the feed mechanism. Then lock the tip in place. Cycle the machine to check the feeding.
- 4) If feeding is erratic, re-adjust the upper weld tip height by loosening the lock nut on bottom of the dwell cylinder shaft and then turning the dwell cylinder shaft clockwise to raise the tip; counter-clockwise to lower the tip. Lock the tip in place with the locking nut.

## EXTERNAL HAND-HELD WELD GUN & GROUND CABLE

The RH Mach 70 Pinspotter is provided with a Junction Box to accommodate an External Hand-Held Weld Gun & Ground Cable (sold separately).



# SERVICING

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## A SIMPLIFIED STEP-BY-STEP PROCEDURE

Duro Dyne has called upon its many years of pinspotting experience in designing the Mach 70 Rolling Head. Your unit has been rigorously factory tested and inspected to provide many years of dependable service.

### WHAT TO DO BEFORE YOU BEGIN TROUBLESHOOTING:

#### CONSULT THE MANUAL.

Most of the functional problems that occur are due to an oversight in the set-up, operational or normal maintenance procedures. Therefore, you should re-check all "Set Up", "Initial Adjustment", "Operation" and "Maintenance" procedures.

### INSPECT THE UNIT

If the problem still persists, the next step is careful visual inspection. Turn off the electricity - that is, disconnect your Pinspotter from its power supply and carefully check the control box for loose, broken or disconnected wires. Also check the air circuit for leaky air connections or cut hoses.

### HOW TO IDENTIFY WELD QUALITY PROBLEMS

By weld we mean that the Weld Transformer is energized, sending a pulse of electricity through the weld pin, causing it to begin to fuse to the sheet metal.

To properly troubleshoot the weld quality problems, you must first pinpoint the symptom by test welding the pins to bare sheet metal. The symptom will then show up in one of four categories:

- 1) The pins weld to bare metal but not on lined work.
- 2) The pins weld to bare metal but can easily be removed.
- 3) Pins weld to bare metal but remain on the weld tip as it retracts.
- 4) The pins do not weld at all.

#### Before troubleshooting, always check:

- 1) Air pressure for a minimum of 80 PSI during usage of unit.
- 2) The input Voltage for a minimum of 208V.
- 3) The Weld Timer is set properly.
- 4) The Upper and the Lower Weld tips for extreme wear.

It may become necessary to use a voltmeter and/or ohmmeter to perform some servicing procedures. An analog type is best. Our Technical Services Dept will help you if necessary.

# TROUBLESHOOTING

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## NOTES:

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1. The Feed Reed Switch is a safety that will not allow the machine to operate if the feed cylinder is not fully retracted. The Feed Reed Switch is located on the Feed Cylinder. To check that the Feed Reed Switch is positioned properly, loosen the set screws and put an Ohm meter on terminals 7 and 9 in the trolley. Slide the Feed Reed Switch back and forth until continuity is indicated, then tighten the set screws.
2. Check that the Air Regulator is set for 80 psi. Mounted on the top of the Trolley are two Adjustable Exhaust Mufflers. The front one adjust the speed of the Dwell Cylinder moving down and the rear one adjust the speed up. These mufflers can become restricted or loose. If machine is sluggish or starts slamming down, adjust these mufflers accordingly.
3. The First Pulse Reed Switch is located in the middle of the Dwell cylinder.
4. To check that the Dwell Reed Switch is positioned properly, loosen the set screws and put an Ohm meter on terminals 6 and 11. Slide the Dwell Reed Switch up and down until continuity is indicated, then tighten the set screws.
5. Mounted on the Feed Cylinder is a Feed Speed Control. The Feed Speed Control adjusts how fast the Pusher with Pawl moves in and out. If adjusted too fast the pins may be tossed past the tip, if adjusted too slow the pins will not be placed on the tip.

# PARTS LIST

09145	Line Cord w/ Strain Relief	17363	First pulse reed switch
17084	Air hose 3/8" natural	17364	Feed cylinder
17085	Male camlock	17372	Footswitch
17122	RH-IV 28-14 12-Position Terminal Block	17376	Lower Mandrel
17134	Universal Short Shaft Extension Kit	17377	Air regulator
17135	Lift Kit	17391	Actuator swival bolt
17189	Upper weld tip plates (5/pkg)	17394	Short shaft extention
17191	Upper weld tip	17395	Lower ground bar
17192	Lower weld tip	18032	Lower Replacement Plate (5/pkg)
17198	Track casting spacers and screws	18056	Locking knob
17203	Fiber insulator	18065	2Amp Circuit Breaker
17230	Brake cylinder	18066	220V Phase Control
17236	Dwell Cylinder Bracket	27213	Flush mount camlock
17239	Feed solenoid	27343	Socket cover
17240	Dwell solenoid	39068	Receiving Board
17257	Vibrator support casting	39110	Pin feed switch
17261	Lower track casting	39273	Vibrator Base Plate
17264	Upper track side rails	39296	Vibrator Bowl
17265	Lower track side rails	39298	Vibrator Base
17266	Feed channel	39353	Anti-friction strip
17269	Feed cylinder bracket	39359	Feed Channel Spacer
17276	Upper bearing	39691	C Clip
17277	Lower bearing	40102	Air hose 3/8" blue
17278	Steel track	40105	Air hose 1/4" yellow
17281	Hand gun & ground set	40106	Air hose 1/4" blue
17283	Trigger actuator assembly	44008	Upper feed track casting
17284	Trigger actuator switch	44031	Vibrator potentiometer
17286	Actuator mounting plate	44051	Relay Board
17288	Footswitch plug	44052	12 VDC power supply
17288	Trigger actuator plug	44062	Trolley mounting plate
17290	Brake pad	44063	Lower Ground Bar
17291	Rear bumper stop	44064	Weld cable retainer block
17291	Front bumper stop	44067	Flexible wire mold
17317	Feed speed control	44068	Rubber air hose
17319	Weld timer	44070	Weld cable camloc
17319	Dwell timer	44077	Weld potentiometer
17319	Feed timer	44082	Bearing mounting plate
17323	Short cycle relay/First Pulse relay	44083	Locking knob spring
17325	Pressure switch	44084	Locking knob catch
17327	Actuator receptacle	44085	Clip pin release
17327	Footswitch receptacle	44086	Clip pin release spring
17327	Switchcover receptacle	44087	Clip pin release stop
17334	Auto/hand gun switch	44088	Flex link
17334	Head Test switch	44089	Weld cable - long
17348	Feed channel plate	44091	24 volt multi-tap transformer
17351	Pusher and pawl	44095	Track Sensor
17352	Upper tip retainer	44096	Weld Relay
17355	Quick exhaust valve	44101	Weld Transformer
17356	Adjustable muffler	44122	Trolley Mount Plate
17363	Feed reed switch	44129	Class-1 Laser
17363	Dwell reed switch	44130	Laser/Control PC Board
		44131	Laser/Control PC Board Kit