

**CDMF110**  
**PINSPOTTER**



# OWNER'S MANUAL



## ***UNIT INSTRUCTIONS***

Please follow all CDMF110 Safety Instructions.

Contact your Duro Dyne Tech Service if you have any operating questions. Please report any problems or malfunctions to Duro Dyne Tech Service.

## ***IMPORTANT***

High Voltage may be present inside CDMF110 case even when disconnected from power source! Do not open or disassemble this unit to trouble shoot or repair. Contact Duro Dyne Tech Service if servicing or trouble shooting of machine is needed.

Duro Dyne Tech Service Contact Information:

Toll Free: 1-800-899-3876

Mon - Fri. 7:00 am - 7:00 PM EST

## ***LIMITED WARRANTY***

Duro Dyne warrants this CDMF110 welding equipment to be in good working order for a period of 6-months from the date of purchase; from Duro Dyne or an authorized Duro Dyne equipment dealer. Should this product fail to be in good working order at any time during the 6-month warranty period, Duro Dyne will at its option, repair or replace the defective component at no additional charge except as set forth below.

Repair parts and replacement products will be furnished on an exchange basis and will be either new, remanufactured or refurbished, at the discretion of Duro Dyne. All replaced parts and products become the property of Duro Dyne.

This limited warranty does not include repair of damage to the product resulting from accident, disaster, misuse, abuse, non Duro Dyne modification of the product, or other events outside Duro Dyne's reasonable control or not arising under normal operation conditions. Limited Warranty service may be obtained by returning the Product during the 6-month warranty period to Duro Dyne by UPS or carrier, to Duro Dyne in accordance with the instructions provided to you by the Tech Service/Customer Service and provide proof of purchase date.

If this product is returned to Duro Dyne, you agree to insure the Product or assume the risk of loss or damage in transit, to prepay shipping charges to the designated warranty service location and to ship the Product in the original shipping container or equivalent. Contact your authorized Duro Dyne customer service representative for further information.

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# ***SAFETY PRECAUTIONS***

## **Users Responsibility**

This equipment will perform in conformity with the description and all the instructions contained in this manual provided. The equipment must be checked periodically. Defective equipment should NEVER be used with parts that are broken, missing, worn, distorted or contaminated and should be replaced immediately.

Should such repair or replacement become necessary, the manufacturer recommends that a telephone or written request for service advice be made to the Authorized Distributor from whom purchased.

**THIS EQUIPMENT OR ANY OF ITS PARTS SHOULD NEVER BE ALTERED WITHOUT THE PRIOR WRITTEN APPROVAL OF THE MANUFACTURER. THE USER OF THIS EQUIPMENT SHALL HAVE THE SOLE RESPONSIBILITY FOR ANY MALFUNCTION WHICH RESULTS FROM IMPROPER USE, FAULTY MAINTENANCE, DAMAGE, IMPROPER REPAIR OR ALTERATIONS BY ANYONE OTHER THEN THE MANUFACTURER OR A SERVICE FACILITY DESIGNATED BY THE MANUFACTURER.**

## **\*\*WARNING\*\***

**These safety precautions are for your protection. They summarize precautionary information listed above. Before performing any installation or operating procedures, be sure to read and follow the safety precautions as well as all other operation instructions in this manual.**

## **FAILURE TO OBSERVE SAFETY PRECAUTIONS AND OPERATING PROCEDURES CAN RESULT IN INJURY OR DEATH.**

**\*\*COMPLY WITH ALL ELECTRICAL, FIRE AND OTHER APPLICABLE CODES OR ORDINANCES IN THE INSTALLATION AND USE OF STUD WELDING SYSTEMS.**

**\*\*REMOVE ALL COMBUSTIBLE OR VOLATILE MATERIALS FROM WELD AREA.** Although weld splatter resulting from stud welding is normally minimal, proper precautions should be taken when welding near or through combustible materials to insure that sparks or weld material does not come in contact with combustible material.

**\*\*RECOMMENDED USE OF PROPER EAR PROTECTION WITH ALL CAPACITOR DISCHARGE STUD WELDING SYSTEMS.** The stud welding operator and anyone working within five feet (5') of the stud welding operation should use ear protection devices.

**\*\*RECOMMENDED USE OF PROPER EYE PROTECTION AT ALL TIMES WHEN WELDING.** Spectacle type frames with Shade No. 3 absorptive and filter lens with side shields are suggested. Never look directly at the weld arc without wearing eye shields.

## **OVERUSE CAN CAUSE OVERHEATING**

**\*\*Allow cooling period; follow rated duty cycle. Reduce current or reduce duty cycle before starting to weld again.**

**\*\*Do not block or filter airflow to unit.**

## **WELD TIP CAN CAUSE INJURY**

**\*\*Do not press weld gun trigger with hands or tools near weld tip or chuck.**

## **PROTECT YOUR EYES**

**\*\*Always wear safety glasses with side shields in any work area.**

## **PROTECT YOUR EARS**

**\*\*Always use ear protection devices.**

# ***SAFETY PRECAUTIONS***

## **FUMES AND GASES**

**\*\*Don't weld in locations near degreasing, cleaning or spraying operations.**

## **FIRES & EXPLOSION HAZARDS**

**\*\*Welding on closed containers, such as tanks, drums or pipes, can cause them to blow up.**

**\*\*Do not weld where flying sparks can strike flammable material.**

**\*\*Do not install or place unit on, over or near combustible surfaces.**

**\*\*Combustible materials include wood, cloth, sawdust, liquid and gas fuels, solvents, paint and coatings, paper, etc.**

**\*\*Do not overload electrical wiring – be sure power supply system is properly sized, rated and protected to handle the unit.**

**\*\*Have appropriate fire extinguishing equipment handy for instant use, such as a garden hose, water pail, sand bucket or portable fire extinguisher. Be sure you are trained for proper use.**

## **ELECTRICAL SHOCK**

Contact with live electrical parts and ground can cause severe injury or death. The electrode (the weld stud or chuck) and work circuit (ground) are electrically live whenever the output is on. The input power circuit and the machine internal circuits are also live whenever power is on. Improperly installed or improperly grounded equipment is a hazard. Therefore:

**\*\*Disconnect power before installing or servicing the equipment.**

**\*\*Do not touch live electrical parts.** Do not touch the electrode (stud) if you are in contact with the work, ground or another electrode from a different machine.

**\*\*Be sure power source frame (chassis) is connected to the ground system of the input power.**

**\*\*When making input connections,** attach proper grounding conductors first and then double-check connections.

**\*\*Always verify the supply ground;** check and be sure that input power cord ground wire is properly connected to ground terminal in disconnect box or that cord plug is connected to a properly grounded receptacle outlet. Do not mistake the work lead for a ground cable, refer to specific grounding recommendations in manual provided.

**\*\*Clamp work cable with good metal-to-metal contact to work piece.** A poor or missing connection can expose you or others to a fatal shock.

**\*\*DO NOT use welding current in damp areas,** if movement is confined or if there is a danger of falling.

**\*\*Properly install and ground this equipment according to this Owner's Manual and national, state and local codes.**

**\*\*Keep everything dry,** including clothing, work area, cables, equipment and power source.

**\*\*Wear dry,** proper body protective equipment before turning on power.

**\*\*Insulate yourself from work and ground** using insulating mats or covers big enough to prevent any physical contact with the work or ground. Don't stand directly on metal or the earth while working in tight quarters or damp area; stand on dry boards or an insulating platform and wear rubber soled shoes.

**\*\*Turn off all equipment when not in use.**

**\*\*Use well maintained equipment.** Frequently inspect input power cord and output weld cables for damage

# ***SAFETY PRECAUTIONS***

or bare wiring. Replace worn or damaged cables immediately; bare wiring can kill. Repair or replace damaged parts at once. Maintain this unit according to the manual provided.

**\*\*Do not use worn, damaged, undersized or poorly spliced cables.**

**\*\*Do not drape cable over your body.**

**\*\*If earth grounding of the work piece is required, use a separate cable.**

**\*\*Wear a safety harness if working above floor level.**

**\*\*Keep all panels and covers securely in place.**

**\*\*Insulate work clamp when not connected to work piece to prevent contact with any metal object.**

**\*\*Don't connect multiple electrodes or work cables to a single weld output terminal.**

## **ELECTRIC AND MAGNETIC FIELDS**

**Electric and Magnetic Fields may be dangerous.** Electric current flowing through any conductor causes localized Electric and Magnetic Fields (EMF). Welding and cutting current creates EMF around welding cables and welding machines. Therefore:

**\*\*Welders having pacemakers should consult their physician before welding.** EMF may interfere with some pacemakers.

**\*\*Exposure to EMF may have other health effects which are unknown.**

**\*\*Welders should use the following procedures to minimize exposure to EMF:**

- Route the electrode and work cables together. Secure them with tape when possible.
- Never coil the work cable around your body.
- Connect the work cable to the work piece as close as possible to the area being welded.
- Keep welding power source and cables as far away from body as possible.
- Do not overload electrical wiring – be sure power supply system is properly sized, rated and protected to handle the unit.

\*\*\*\*\*  
**Protective clothing is suggested.** Clothing will vary as to application, weld position and stud welding equipment being used; in all cases clothing should be fire resistant and sufficient to protect welding operator from weld splatter and material.

**Keep hands, clothing, etc., away from the weld stud, chuck and all other parts in contact with them during the weld cycle.**

**Keep weld cable and connectors in good condition.**

**Inspect periodically for broken insulation and/or electrical hazards.**

**Do not operate with worn or poorly connected cables.** Inspect cables often for bare or exposed wires, broken insulation layers and/or loose connections. Repair all such connections before welding use.

**Do not stand in water or on damp surfaces while welding.** Avoid wearing wet or sweaty clothes. Do not weld in the rain.

# ***SAFETY PRECAUTIONS***

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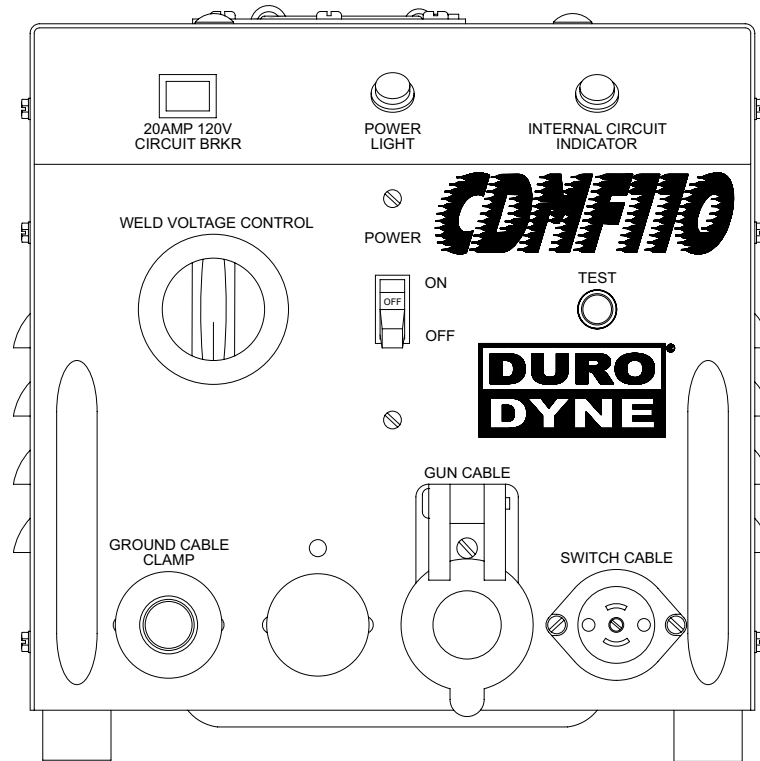
## **EQUIPMENT MAINTENANCE**

**Faulty or improperly maintained equipment can cause injury or death. Therefore:**

- Always have qualified personnel perform the installation, troubleshooting and maintenance work.**  
Do not perform any electrical work.
- Maintain cables, grounding wire, connections, power cord and power supply in safe working order; bare wiring can kill.** Do not operate equipment in faulty condition.
- Do not abuse any equipment or accessories.** Keep equipment away from:
  - heat sources such as furnaces
  - wet conditions such as water puddles and inclement weather
  - corrosive atmospheres
- Keep all safety devices and cabinet covers in position and in good repair.**
- Use equipment only for its intended purpose. Do not modify it in any manner.**

# FRONT PANEL CONTROLS

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**POWER SWITCH:** The POWER switch applies AC voltage to the power supply and causes the weld capacitors to charge to a voltage level determined by the setting of the WELD VOLTAGE CONTROL. Also, the charge time is dependent on the setting of the WELD VOLTAGE CONTROL, ranging from 1 to 3 seconds.

When the POWER switch is placed in the OFF position, the weld capacitors will begin to discharge and continue until the charge voltage reaches zero. The discharge time will vary depending on the setting of the WELD VOLTAGE CONTROL, the maximum time to discharge to the minimum of 0 on the WELD VOLTAGE dial is about 6 seconds.

**WELD VOLTAGE:** This control sets the voltage level that the weld capacitors will charge to. Because the charge circuitry is electronically regulated, this voltage is completely independent of any variation due to AC input line voltage variations.

To increase the WELD VOLTAGE level, it is only necessary to rotate this control to a higher number. **NOTE:** The numbers shown on the dial scale are not intended to equal the actual voltage, but rather for reference only!

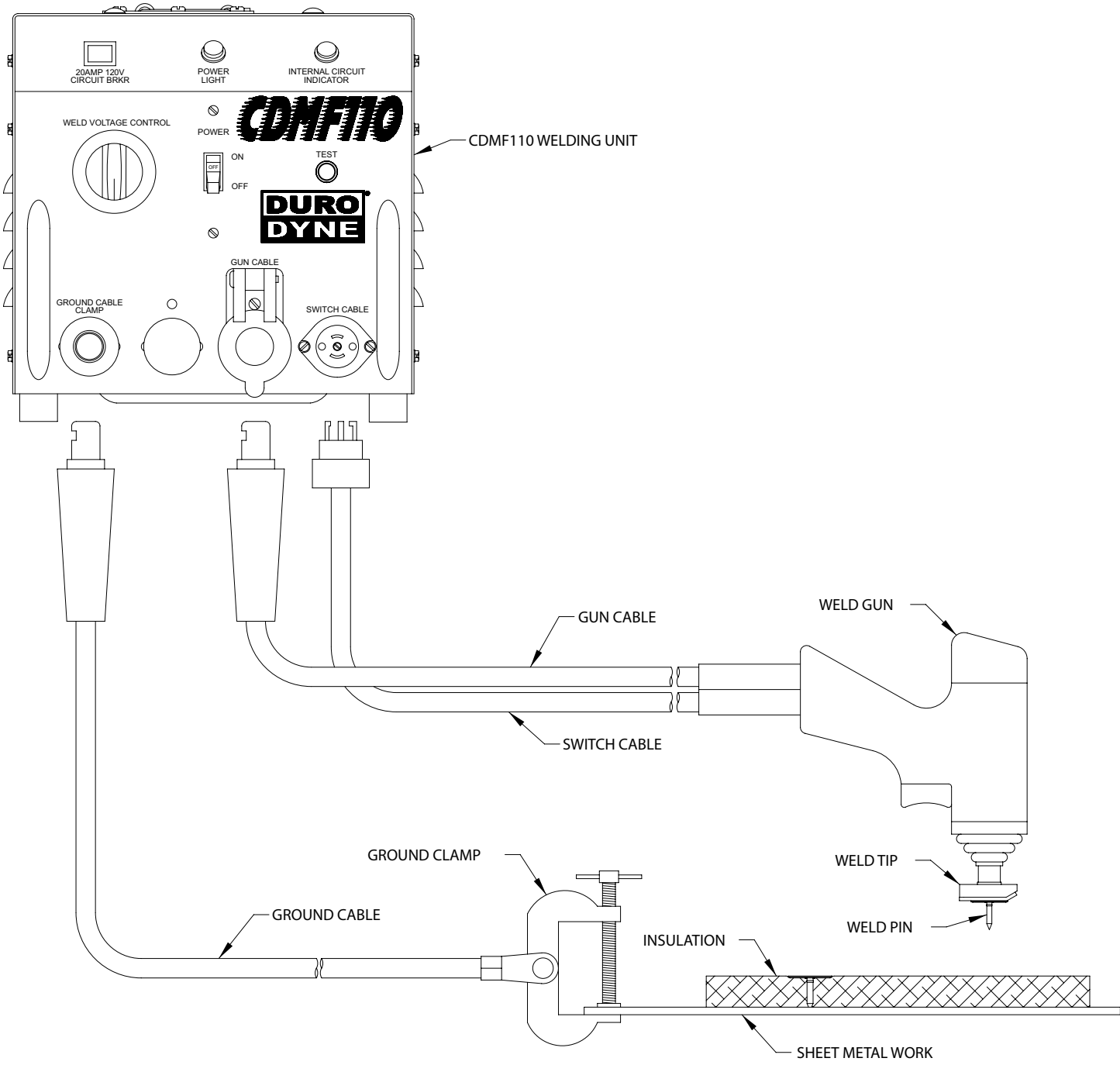
To decrease the WELD VOLTAGE level, it is necessary to switch the POWER switch off as described above. After the WELD VOLTAGE CONTROL is reduced to the desired lower voltage, place the POWER switch in the off position for about 6 to 10 seconds before switching back on.

**NOTE:** If this procedure is not followed, the weld capacitors will not be discharged to the lower level until after the next weld. This will give the impression that there has been no change in the voltage level.

**CIRCUIT BREAKER:** This is primarily intended to protect the power supply from fire in the event of an internal short circuit. On occasion, depending on room temperature and frequency of usage, this breaker may actuate. If this should happen, shut the POWER switch off and wait about one minute before resetting the breaker. If this problem should continue with frequency, stop and call for service.

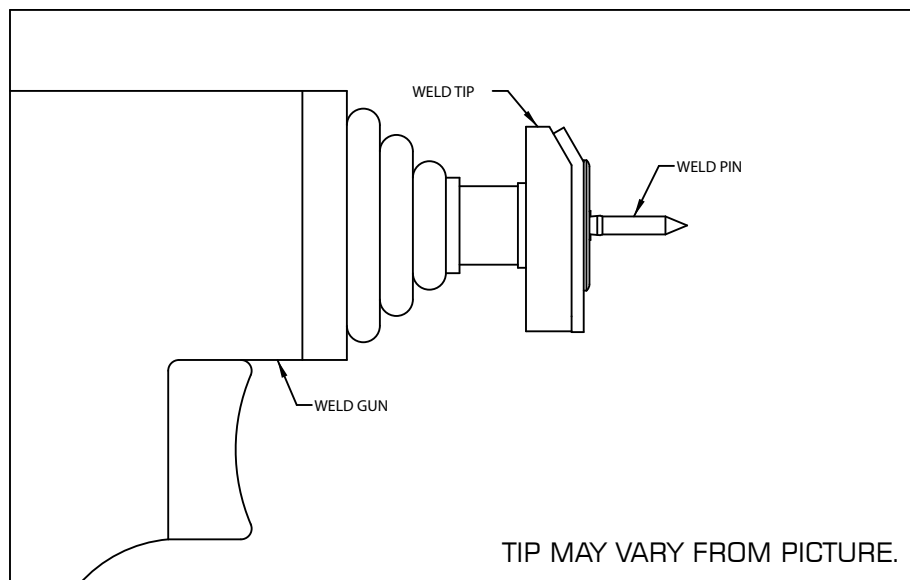
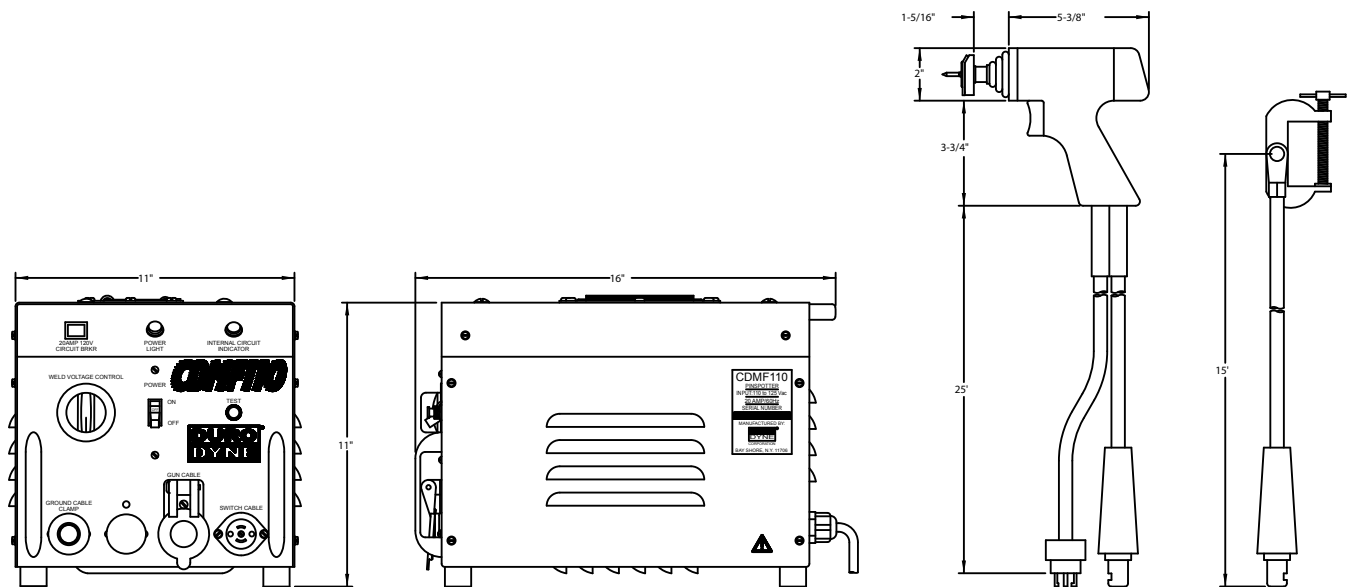
**POWER LIGHT:** This indicator is probably the easiest to recognize, indicating when the power supply is on.

# PARTS LOCATION





# PARTS LOCATION



# ***INSTALLATION INSTRUCTIONS***

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**1)** Place Power Control Unit in a position convenient to work area.

**2)** Plug Power Cable into any 110-120 Volt, 20 amp service outlet. For uninterrupted operations do not connect any other equipment that may add a heavy load to the same 20 amp service. If a power extension is needed, use only a heavy duty 3 conductor cord of suitable quality.

**3)** Connect the gun control cable plug to the power supply by aligning the pins with those on the receptacle, rotate connector as required to locate key, push in and rotate lock ring clockwise to lock into place.

**4)** For standard (straight) weld cable hookup, connect the ground connector to the ground receptacle and the black gun connector to the gun receptacle. Align the flat on the male end of the connector to the key inside the female receptacle, push in and rotate connector to the key inside the female receptacle push in and rotate connector clockwise until it is tight.

**Note:** If connectors are not locked tightly arcing may occur causing permanent damage to both parts..

**5)** The ground cable is supplied with a ground or work clamp. Any clamping device suitable for welding can be used assuming a good electrical connection can be made and produces sufficient clamping pressure.

**6)** Before any test welding is done, all weld cables should be stretched out in such a manner as to avoid tightly coiled loops, since this will affect the setup parameters resulting in weld quality variation.

## **Safety Requirements**

**1)** Comply with all ventilation, fire and other safety requirements for welding as established for construction and industrial applications.

**2)** The weld stud and all metal parts in contact with it are all electrified while welding. Always avoid contact of these components with any metallic item such as jewelry or other metal part or tools.

**3)** All cables and connections require continual inspection for broken insulation and other electrical hazards. Repair of these items should be done in compliance with the established safety precautions established for electrical equipment repair.

Duro Dyne



## **TECHNICAL SPECIFICATIONS**

### ***CDMF110***

#### **ELECTRICAL:**

Input voltage: 110-120 V

Dedicated Line 60 HZ

20 amp breaker

# ***TROUBLESHOOTING SECTION***

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**DO NOT OPEN CASE!** Contact your Duro Dyne Tech Service. See page 2.

This troubleshooting section has been divided into separate sections depending on the type of malfunction.

**WELDER DOES NOT TURN ON**

**CIRCUIT BREAKER TRIPS EACH TIME THE POWER SUPPLY IS TURNED ON**

**CIRCUIT BREAKER TRIPS WHEN WELD IS MADE**

**WELDER TURNS ON BUT DOES NOT WELD**

**WELD IS TOO HOT REGARDLESS OF VOLTAGE SETTING**

**POOR OR INCONSISTENT WELDS**

After determining the type of problem, go to that section and then follow the instructions in that part of the chart. If further assistance is needed you may call Duro Dyne Technical Services Dept at 1-800-899-3876 between the hours of 7am - 7pm EST.

## ***WELDER DOES NOT TURN ON***

<b>POSSIBLE CAUSES</b>	<b>ACTION</b>
(A) POWER CORD NOT CONNECTED TO A LIVE 115 VAC OUTLET	(1) VERIFY OUTLET IS LIVE (2) INSPECT AC POWER CORD(S) FOR DAMAGE. REPLACE IF NECESSARY
(B) CIRCUIT BREAKER OPEN	(1) VERIFY RESET BUTTON IS IN THE NORMAL POSITION

## ***CIRCUIT TRIPS EACH TIME THE WELDER IS TURNED ON***

<b>POSSIBLE CAUSES</b>	<b>ACTION</b>
n/a	CONTACT DURO DYNE TECH SERVICE - see page 2 - DO NOT OPEN CASE

## ***CIRCUIT BREAKER TRIPS WHEN WELD IS MADE***

<b>POSSIBLE CAUSES</b>	<b>ACTION</b>
n/a	CONTACT DURO DYNE TECH SERVICE - see page 2 - DO NOT OPEN CASE

## ***WELDER TURNS ON, BUT DOES NOT WELD***

<b>POSSIBLE CAUSES</b>	<b>ACTION</b>
n/a	CONTACT DURO DYNE TECH SERVICE - see page 2 - DO NOT OPEN CASE
(A) EXTERNAL CABLES OR WELDGUN CIRCUIT IS OPEN	(1) MAKING SURE THE GROUND, GUN AND TRIGGER CONTROL CABLES ARE PROPERLY CONNECTED. (2) SECURE CONNECTION AS REQUIRED (3) TO TEST CONNECTION INTEGRITY, WITH ALL CABLES CONNECTED AND A FASTENER IN THE GUN CHUCK, PLACE THE GUN IN A WELD POSITION AND ACTUATE THE TRIGGER BUTTON ON THE WELD GUN. IF THE GREEN LAMP LIGHTS, ALL CABLES AND TRIGGER SWITCH ARE OK. (4) IF THE GREEN LIGHT DOES NOT LIGHT, DEPRESS THE WELD CYCLE TEST BUTTON IF THE GREEN LIGHT LIGHTS, CHECK THE TRIGGER CONTROL CABLE, AND CONNECTOR GUN TRIGGER SWITCH

## ***WELD TOO HOT REGARDLESS OF VOLTAGE SETTING***

<b>POSSIBLE CAUSES</b>	<b>ACTION</b>
n/a	CONTACT DURO DYNE TECH SERVICE - see page 2 - DO NOT OPEN CASE

## ***POOR OR INCONSISTANT WELDS***

<b>POSSIBLE CAUSES</b>	<b>ACTION</b>
n/a	CONTACT DURO DYNE TECH SERVICE - see page 2 - DO NOT OPEN CASE
(A) IMPROPER GUN SET UP	(1) REFER TO GUN SET PROCEEDURE (2) IMPROPER CABLE CONNECTIONS (3) INCORRECT POLARITY (4) INCORRECT SPRING INSIDE GUN ( S/B COPPER COLOR ) (5) IMPROPER GUN SPRING PRESSURE AGAINST THE PIN. COMPRESSION AGAINST THE PIN S/B 3/16" TO 1/4" OR WITHIN THE SPRING RANGE. (6) POSSIBLE CIRCUIT BOARD INCONSISTANT CHARGING OF THE CAPS.

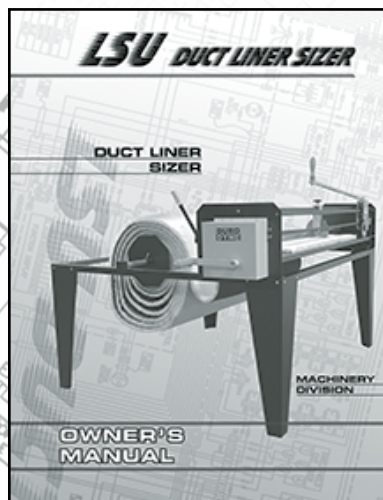
***NOTES***





Please Visit Our Website  
**[www.durodyne.com](http://www.durodyne.com)**  
for the most current product information.

**Products that may also be of interest to you:**



**MACHINERY DIVISION**

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Duro Dyne East Division, Bay Shore, NY  
Duro Dyne Midwest Division, Fairfield, OH  
Duro Dyne West Division, Fontana, CA  
Duro Dyne Canada, Lachine, Quebec, Canada

631-249-9000 Fax: 631-249-8346  
513-870-6000 Fax: 513-870-6005  
562-926-1774 Fax: 562-926-5778  
514-422-9760 Fax: 514-636-0328

[www.durodyne.com](http://www.durodyne.com) E-mail: [durodyne@durodyne.com](mailto:durodyne@durodyne.com)