Proweld™ Equipment

Operations & Maintenance Manual

Shop 12 Welding Tool

ASAHI/AMERICA®
Your Experts in Plastics™

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Section I - Safety Precautions

1. Keep working area clean and tidy.

2. Keep electrical tools away from moisture. Never use in wet environment or humid conditions. Working area should be well illuminated. Keep tools away from chemicals and other corrosive materials.

3. Keep visitors at a safe distance.

4. Electrical tools not in use should be stored away safely.

5. Do not wear loose clothing or jewelry. They can inadvertently get stuck in the moving parts of the machine, causing injury.

6. Never carry tools by the electric cable. Never unplug by pulling the cable. Keep cables away from oil, heat and sharp edges.

7. Always check that the pipe and fittings are clamped down tightly.

8. The heating element can reach temperatures in excess of 570° F (300° C). Do not touch the surface, and keep non-operating personnel at a safe distance.

9. Keep tools clean and sharpened. They produce better and safer results. Missing and worn-out parts should be replaced immediately. Always assure that the accessories are properly mounted on the machine. Only use factory parts.

10. Always use correct extension cable.

11. Do not use tools and machines when housing or handles, specifically plastic ones, are bent or cracked. Dirt and humidity in any fracture can lead to electrical shock should the insulation in the machine be damaged.

Section II - Welding Conditions

1. The welding environment needs to be protected against unfavorable conditions, (e.g. excessive humidity or temperature below 41° F (5° C).

2. It's necessary to have adequate pipe wall temperature for welding. If necessary, the pipe has to be warmed up or an environmentally-controlled welding tent needs to be set up. If these conditions are met, the welding can be performed at virtually any environmental temperature. It is advisable to verify the weld quality by making some test welds at the given conditions.

3. Should the pipe be irregularly heated by intense sunshine, it may be necessary to cover the pipe ends to be welded so that a balanced temperature is obtained.

4. The pipe ends to be welded must be checked for damage and be free from oil, grease, dirt and other contaminates. Cleaning the pipe ends must be done just prior to welding.

5. The weld must be kept free from external stresses during the weld process until the material has sufficiently cooled.

6. The weld process has to be observed continuously. It is recommended to keep a record of each weld.

7. A stop watch is to be available in order to register the actual times for heating up and cooling down.

8. A heat stick or pyrometer is to be available in order to verify the correct heating element temperature.

9. Welding parameters are available needed for appropriate pipe to be welded.

10. The heating element surfaces should be clean and, above all, free from grease. Therefore, they should be cleaned with lint-free paper and isopropyl alcohol before welding (or if they are dirty).

Section III - Machine Set Up and Operation

1. General Tool Information

A. Size Range: 1½" - 12" (50mm - 315mm)
Amperage: 16 Amp.
Voltage: 110 AC

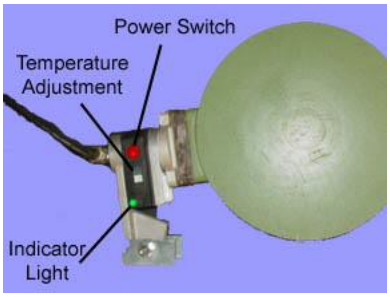
B. Additional Technical Data

Pipe/Fitting Material:	PE, PP, PVDF, ECTFE
Pipe/Fitting Sizes:	1½" - 12" (50mm - 315mm)
Transport box (L x B x H):	37½" x 27" x 41"
Weight:	Approx. 475 lbs.
Fuse:	16 Amp
Voltage Requirement:	110V (+/- 10%)

2. Heating Element Temperature Setting

A. Connect the plug of the heating element to a 110-volt outlet.

B. The thermostat is located in the heating element and can be adjusted by turning thedial located above the handle. Set the thermostat to the appropriate temperature.

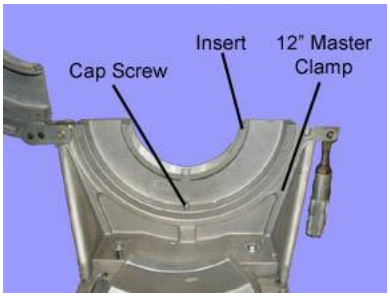


I. HDPE 420° F - 446° F (215° C - 230° C)
II. PP 393° F - 410° F (200°C - 210° C)
III. PVDF 436° F - 456° F (225° C - 235° C)
IV. Halar 527° F - 536° F (275° C - 280° C)

3. Clamping Setup

A. For 12" (250mm) pipe and fittings, use the 12" master clamps.

B. For pipe sizes smaller than 12", place the appropriate clamp insert into the 12" master clamps and fasten with the cap screws.



4. Facing

A. Place the planer between the two ends of the pipe. Lock the planer power switch located on the back handle of the planer to the on position.

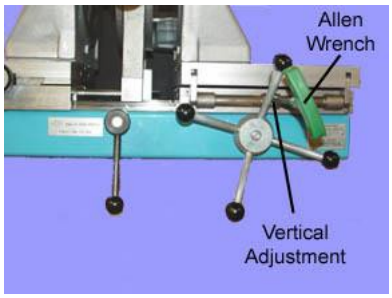
B. Start the planer motor by holding the black button on the front handle of the planer and bring the pipe ends in to the planer face until both ends of the pipe to be welded are smooth. (The planer will automatically lock itself in place). Bring the ends of the pipe away from the planer while the motor is still running.

C. Turn the planer motor off, disengage the locking device, and remove the planer.

5. Alignment

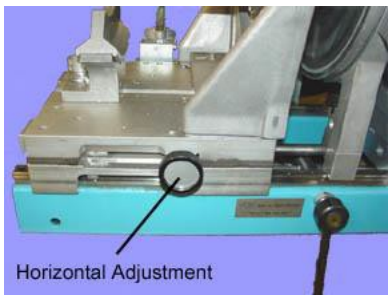
A. Bring the two ends of the pipe together to check alignment, both parallel andaxial.

B. Adjust any vertical misalignment by loosening the cap screw, which holds the vertical adjustment in place using the proper allen wrench. Once the cap screw is loose, the adjustment is made by lifting and lowering the allen wrench. Once the alignment is adjusted, retighten the cap screw. The misalignment of the pipe should not exceed 10% of the wall thickness of the pipe.



C. Adjust any horizontal misalignment by turning the horizontal adjustment knob. The misalignment of the pipe should not exceed 10% of the wall thickness of the pipe.

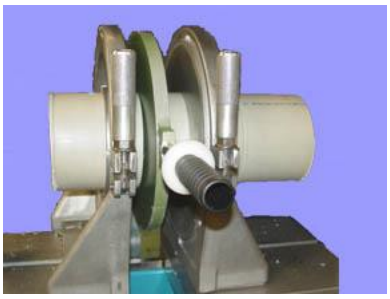
D. Loosening or tightening the clamps can eliminate egg-shaped pipe.



6. Initial Heating

A. Check whether the heating plate has reached the working temperature (see heating element temperature setting or the welding parameters). The working temperature is reached when the control lamp goes out (thermostatically controlled) or if the lamp blinks in short intervals (electronically controlled).

B. Place the heating plate between the two ends the pipe to be welded. Bring the pipe ends against the heater applying the proper initial melt pressure (see charts at the end of this manual for proper welding pressures). Lock the clamps in place with the locking nut.



C. Watch for a continuous bead to form around both pipe ends (see pipe manufacturer or DVS standards for size).

D. Lower pressure until the proper melt pressure is reached (almost zero).

- **Note:** If the clamps are moved too far in this direction, the pipe may move away from the heater, causing a bad weld.

7. Heat Soak

A. With the pressure almost at zero, begin to time the heat soak time (see welding parameters). It is important to assure that the pipe ends remain in full contact with the heating element.

8. Change Over Time

A. Move the pipe ends apart. Remove the heating element and then bring the pipe end back together.

B. Bring the pressure back to the original weld pressure and lock the clamps in place. These steps must be performed within the allowable change over time.

9. Cooling Time

A. Keep the machine under pressure until the cooling time has expired.

B. For PP and HDPE, cooling time can be reduced by 50% under the following conditions:

I. Prefabrication under workshop conditions
II. Low additional pressure when unclamping
III. No additional pressure during further cool down
IV. System will not see pressure until cool down is complete

Section IV - Welding Parameters

Weld parameters are located on a separate document. All rented or purchased tools will include a physical copy of the latest weld parameters.

Parameters can also be accessed in the following ways:

A. Located on our website at www.asahi-america.com under the resources tab of each product page.

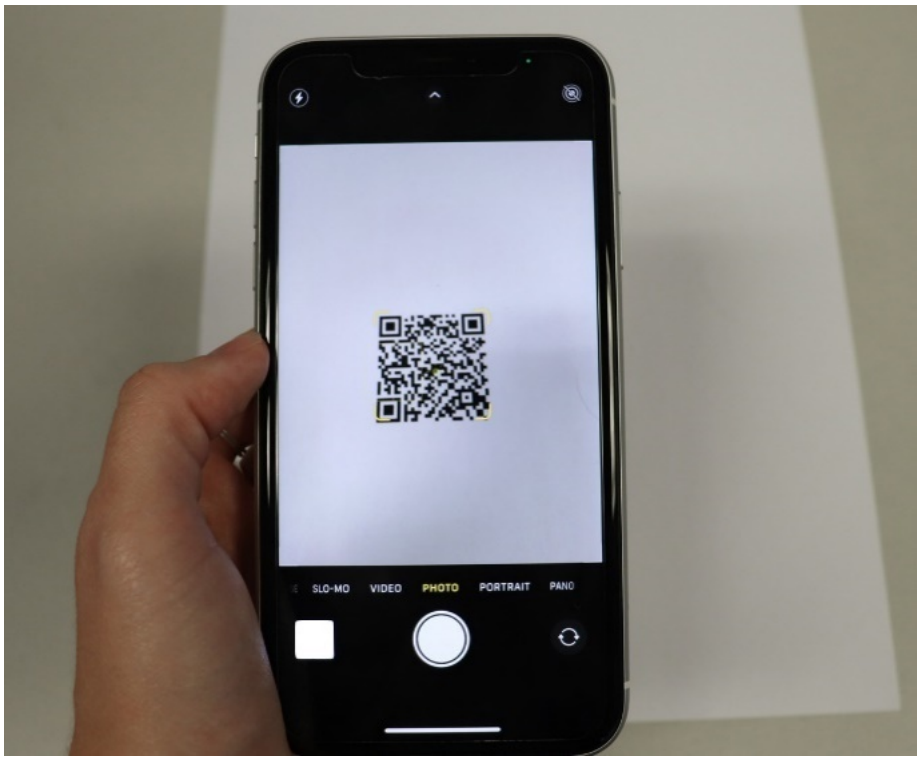
B. Through Asahi/America's welding web app at https://myasahi.asahi-america.com/welding or scan the QR code on the right.

How to scan the QR code:

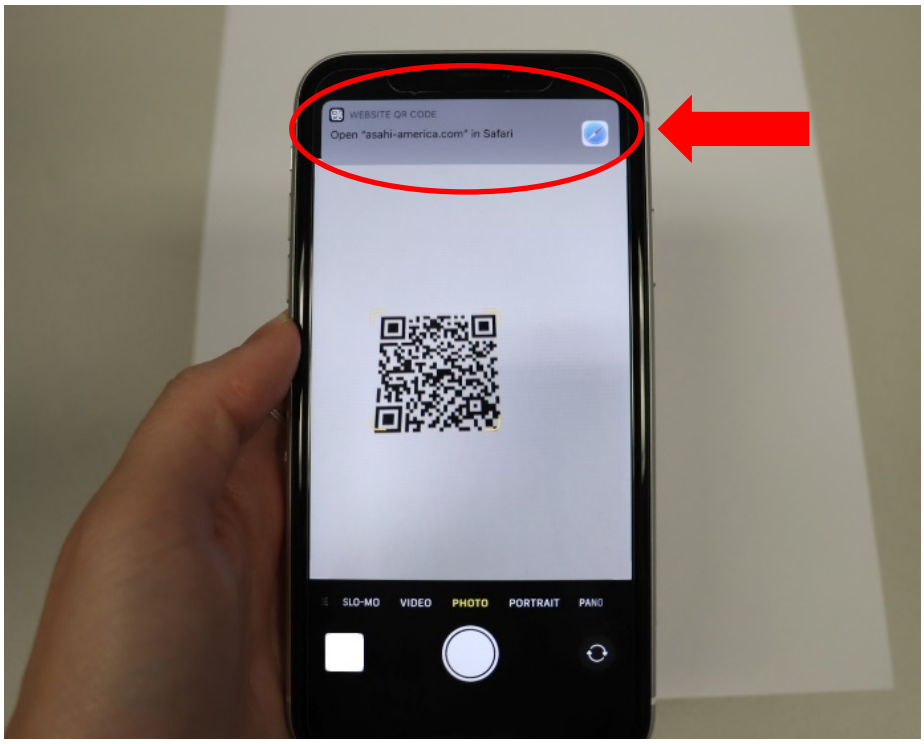
1. Most phones now have the native capability to scan QR codes using the camera on the phone, with no additional QR app required. If you're having trouble with this, there are multiple free QR reader apps available wherever you download your apps.

2. Open up the camera app on your phone or tablet.

3. Hover the camera over the QR code (without taking a photo); focus the camera if needed.

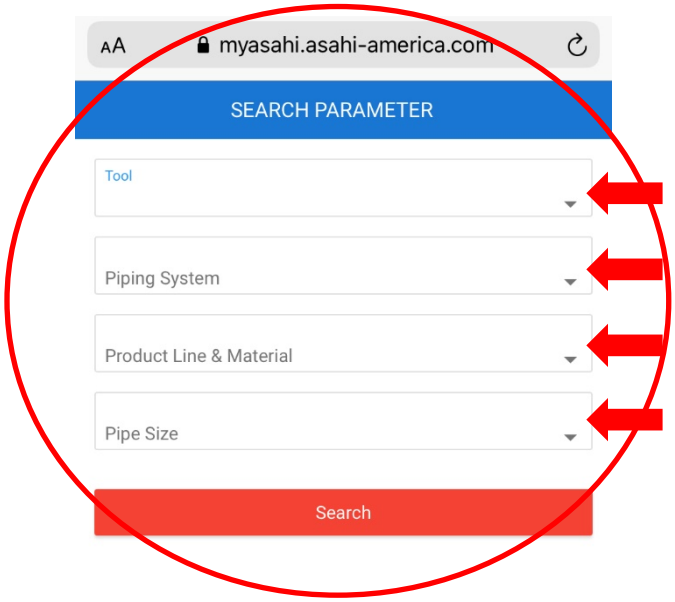


4. Wait for a web address pop-up to appear. Click on the pop-up to take you the weld parameter app.

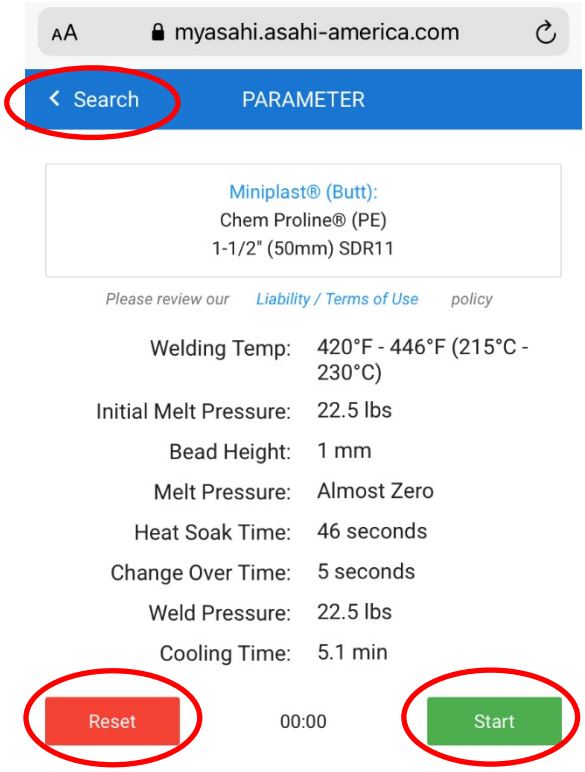


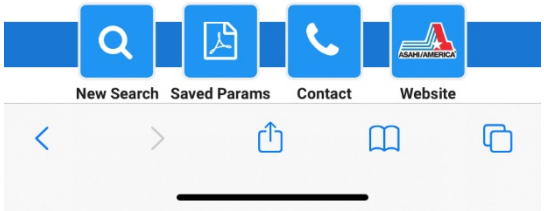
How to use the weld web app:

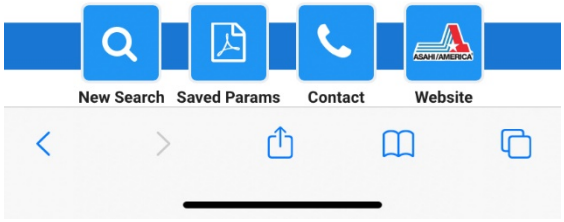
1. To search for a parameter, fill out all four fields: tool, piping system, product line & material, and pipe size from the drop-down options. Then, click ‘search’.



2. The appropriate parameters will appear. Click the ‘start’ and ‘reset’ buttons to use the timer. To search for a different parameter, click ‘search’ in the upper left corner.







Section V - Maintenance

To keep the machine in good working condition, the following should be observed:

1. Keep the guide shafts free of dirt.

2. Assure that the machine is always connected to proper power supply.

3. Keep heating element clean. Whenever necessary, wipe residue off with clean, lint-free cloth, while the element is at operating temperature.

4. Assure that blades are sharp at all times. The blade design allows for reversal to use both sides. If necessary, replace blades.

5. For a long service-life clean and grease regularly the threaded spindles and the joint parts which are used for clamping the pipe.

6. Asahi/America recommends maintenance work after one year for contractor-owned tools.

TOOL DEPARTMENT CONTACTS

Equipment Rental

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781-388-4618
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Rental Administration, Billing & Returns
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Another Corrosion Problem Solved.™

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