



WGW 300





Operating instructions (Translation of the original operating instructions)



Please read operating instructions carefully before use and keep for further reference.

WGW 300



Warning



Danger to life: is electrocution risk due to exposure to live components and connections. Unplug the device from the outlet before opening.. Prior to operating, check the power cord, the plug, and the extension cable for electrical and mechanical damage.



Danger of fire and explosion: If the device is used improperly, there is a risk of fire and/or explosion (e.g., due to the material overheating), particularly in the vicinity of flammable materials and explosive gases.



Risk of burning: Do not touch heating element tube and/or nozzle/hot wedge when they are hot. Allow the device to cool down first. Never point the hot air flow at people or animals.



Connect the device to a **socket with a protective conductor**. Any interruption of the protective conductor inside or outside of the device is dangerous. Only use extension cables with protective conductors.



Caution



The **nominal voltage** specified on the device must match the **local supply voltage**. If the line voltage fails, then the main switch and the drive must be switched off.



If the device is being used on job sites, a **GFI protective switch** must be used to protect site personnel.



The device must be **supervised at all times during operation**. Excess heat can come into contact with flammable materials that are in proximity of tool. Device may be operated **only** by or under their supervision. Children are not permitted to operate the device under any circumstances.



Protect the device from **moisture and wet conditions**.

General Safety Information

The GWG 300 is a high voltage piece of equipment. Always disconnect the power source before performing service and maintenance to the unit. Never pull or carry welder by the power cord or electrical connection. Always keep slack in extension cord while in operation to avoid damage to the power connection. Keep hands and other body parts clear of heating wedge and elements when hot. Do not operate near flammable materials. Do not apply flammable liquids to seam area. Allow unit to cool down for at least 5 minutes before putting back into shipping/storage case. Protect unit from exposure to direct rainfall or standing water. Never attempt to weld in standing water.

Intended Use

For additional product information please refer to the product data sheet. The GWG 300 has been manufactured according to the latest technology and current safety regulations. However, improper use or abuse may lead to hazardous conditions for the user or third party or damage to the unit.

Always have this manual handy at the location where the GWG 300 is being used so that it can be referred to quickly and easily.

The technician assigned to operate this welder must have read through and become familiar with this manual before starting work, particularly the section on safety.

Do not make changes or modifications to the GWG 300 relative to safety without contacting the manufacturer for advice.

Maintenance

Maintenance, inspection and adjustment of the GWG 300 may only be carried out by qualified personnel. Before removing or installing spare parts or performing other repair operations to the GWG 300, consult the manufacturer for advice on proper procedures. This will help insure a safe and successful outcome. Always make sure all screw connections are tight before attempting to operate the unit after maintenance or repair. Also make sure all covers, guards, and other safety devices have been reinstalled before use.

Power Requirements

The voltage requirement of your GWG 300 hot wedge welder depends on voltage specified when ordered. GWG 300 will operate properly at 208VAC to 240VAC.

Note: The above operating voltage ranges refer to actual voltage at point of welder plug-in. In other words, the voltage under load at the welder end of the extension cord. To measure voltage under load, connect the welder to the extension cord and generator that will be used. Start the generator and turn both welder power switches to the on position. While the number 1 indicator light on the temperature controller is illuminated and the wedge is heating, separate the plug at the end of the welders power cord just enough to expose the prongs. Using a digital voltmeter, measure the voltage under load between the hot and neutral prongs.

This procedure should only be performed by a qualified electrician.

Generator Recommendation

If using house power from a building circuit, please contact the manufacturer for advice on plug and cord

configuration. In-field generators should be rated for at least 3500 watts; however, a rating of 5000 watts or more is recommended in order to obtain the best welder performance and temperature control. As a rule, the higher the wattage of the generator, the better the performance of the welder. Keep in mind that the length and wire gauge of the extension cord being used, combined with the capacity of the generator, will ultimately determine the operating voltage reaching the welder.

Extension Cords

Extension cords should be at least 3 x 1.5m² with ground connections.

Technical Data WGW 300

Voltage	V~	230V
Power	W	1750W
Dimension	mm	445 x 323 x 315
Weight	kg	15
Temperature	°C	~450
Speed	m/min	0 ~ 8.5
Weldable materials		HD-PE, LD-PE, PP, PE

Technical data and specifications are subject to change without prior notice

Material Set-up

The WGW 300 is designed to weld a wide range of material types and thickness from very thin PE and PP to very thick materials such as 1,5-2,5mm HDPE. The WGW 300 uses a spring-loaded upper contour roller system and "floating" wedge design that allows the operator to weld several different thicknesses of material without resetting the adjustments. However, for best results on all materials, the following set-up procedure can be used.

Important! Unit must be cooled down before attempting adjustments.

Please refer to the parts identification photos as instructed throughout the set up procedure.

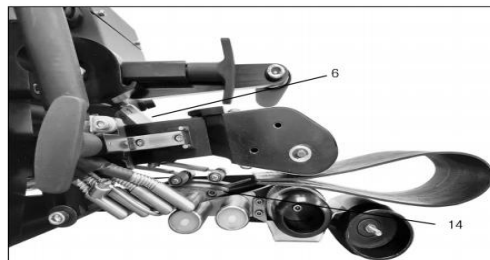


Figure 1

Set-up Nip Pressure Adjustment:

Adjustment Location:

The nip pressure adjustment is located between the nip lever and upper nip arm; it is a hex shaped turnbuckle style nut (#6, Figure 1).

The correct amount of nip pressure is needed to get a good weld. It is also important that the nip rollers are providing enough traction to keep the WGW 300 from "burning out". This can happen when the nip rollers lose traction and spin on the material, causing the WGW 300 to stop in the seam and burn a hole in the material.

Note: Pressure Adjustment for thin material and geotextiles:

These materials require less nip pressure. Too much pressure can cause the material to perforate at the edge of the seam causing a "zipper" effect.

- Make sure the heating wedge (#14, Figure 1) is in the disengaged position.
- Turn the nip pressure adjustment hex nut clockwise while looking down from above several turns, raising the nip arm up to give a fresh starting point for this adjustment. **(Loosen set screw(s) on hex nut first if present to avoid damaging threads on eye bolts)**
- Place one end (one thickness) of your adjustment material between the nip rollers and into the unit about 1" inch. Engage nip rollers by pushing down on the nip lever until it has "clicked" into place and is held in position by the lock pin. At this point the material should move around freely between the nip rollers.
- Turn the hex nut (#6, Figure 1) counter clockwise until the nip rollers begin to pinch down on the material and you cannot turn the nut by hand anymore. This zeroes the adjustment.
- Disengage nip rollers and turn the hex nut counter clockwise one full rotation.
- Insert the adjustment material (the opposite end of the fold, two thicknesses) between the nip rollers and engage nip rollers together until the lock pin clicks into its detent as shown on the Figure 1. Check pressure by attempting to move the material side to side. If you are able to move the material or pull the material straight out without the nip rollers turning, disengage the nip pressure and turn adjustment nut (#6, Figure 1) counter clockwise ¼ turn at a time until the desired pressure is reached. Remember to tighten the set screw(s) on the adjustment nut after you have completed adjustment of the nip pressure to prevent the pressure from backing off while welding.

Note: When the nip pressure adjustment is set correctly, engaging the nip pressure lever should take some effort but it should feel like a smooth motion. Again, it is important that you are getting enough traction to avoid burning out and at the same time providing enough nip pressure to create a good weld. Keep in mind that the thicker the material being welded and especially textured material, the greater the pressure should be.

Set-up Upper Contour Roller Configurations:

Location:

The upper contour roller (#15, Figure 2) assembly is located above the heating wedge and is fixed to the bottom of the nip arm assembly.

Note: There are two types of springs, one that the roller axle mounts to and one that is used as a stiffener or "back up spring". There are also two mounting locations on the mount plate, one for the rear roller set (closest to the nip rollers) and one for the front roller set (furthest from the nip rollers).

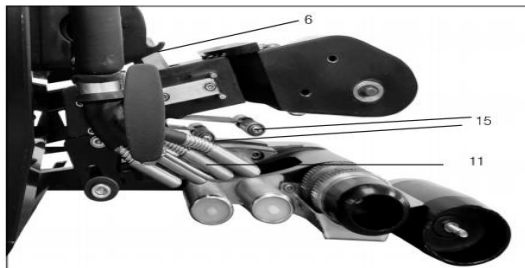


Figure 2

Removing-upper contour roller assembly:

- Remove screw from the end of the shaft that the material guide plate pivots on, then slide material guide off of shaft and set aside.
- Remove the two Phillips head screws that attach the upper contour roller assembly mount plate to the nip arm and remove contour assembly from the unit. You may need to move the heating wedge fore or aft for access with screwdriver.

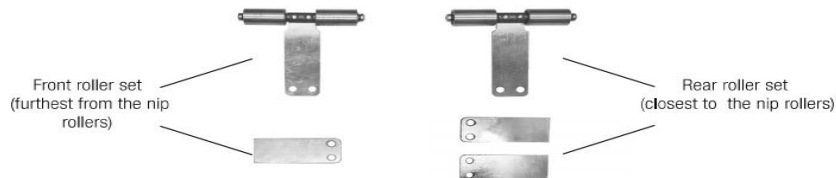


Figure 3

Set-up Lower Contour Roller Adjustment

Location:

The lower contour rollers (#12, #13, Figure 4) are located below the heating wedge and are mounted to the lower frame directly in front of the lower nip roller. For this adjustment you will need a 13mm open end wrench and a 4mm and 6mm Allen wrench.

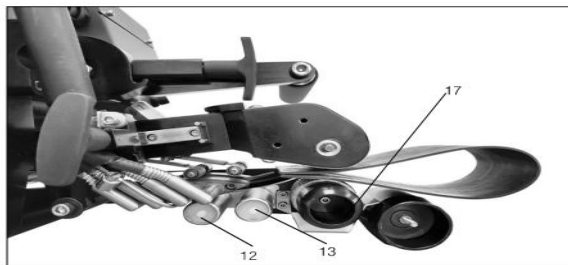


Figure 4

- With the nip pressure lever in the up position and the wedge in the disengaged position, insert the adjustment material that you cut earlier from the template into the WGW 300 as shown in Figure 4 above:
- Insert just enough in so that about 70mm of material is protruding out of the nip rollers from the point where the nip rollers pinch down on the material. Slide the wedge to its engaged position until it locks into its detent. Then lock the nip pressure lever down on to the material.
- With a Phillips screw driver remove lower frame chain cover (#7, Figure 7) to expose the lockdown bolt for the front lower contour roller.

Note 1:

- Please pull out rubber plugs before adjusting the both rollers (#12 and #13 in Figure 4) and insert them back to original position after adjustment finished.
- Using a 6mm Allen wrench, loosen the lockdown bolt and then temporarily adjust the front lower contour roller down, clockwise, away from the wedge using a 4mm Allen wrench on the end of the roller (this will give you a fresh starting point and you will make a final adjustment on this roller later).
- Using a 13mm open end wrench, loosen the lockdown bolt (hex head) for the rear lower contour roller (#13, Figure 4). You can now adjust the height of the wedge by adjusting the rear lower contour roller up or down with a 4mm Allen wrench at the end of the roller. Once the desired position has been achieved, tighten the lockdown bolt (hex head) then check the adjustment again to make sure it did not move when tightened.
- The most important adjustment is the positioning of the wedge in relationship to the lower nip roller (#17, Figure 4). The distance between the lower tip of the heating wedge and the lower nip roller should be slightly more than the thickness of the material you will be welding. The distance is set by adjusting the rear lower contour roller (#13, Figure 4) up or down.

Note 2: When adjusting the lower contour rollers (#12) and (#13) rotate them both to the right (counterclockwise) and up so that in their adjusted positions the rollers are closest to the nip roller (#17). Also because the rear contour roller (#13) is forcing the wedge up against the upper contour roller spring tension, you may notice the roller will still spin with your fingers. This is normal. The amount of resistance of the roller when turning it with your fingers does not matter.

Warning! If the rear lower contour roller is adjusted too high, there will not be enough clearance for the top sheet to travel through the welder and it will be pinched between the top of the heating wedge and the upper nip frame. This will result in loss of welding nip pressure and an inconsistent weld.

- Figure 4 until it just comes in contact with the material. The roller should have a slight amount of resistance as you rotate it. If you adjust it to tight it will rock the wedge and change the rear roller (#13) adjustment.

Note 3: If you are setting up the WGW 300 to weld thin material or in very hot ambient conditions the front contour roller (#12) adjustment should be set very loose or backed off completely to reduce material dwell time (over heating material) and minimize the possibility of burn outs.

• Step 4: Set-up Wedge Fore/Aft Adjustment

The fore/aft adjustment sets the limit of travel of the heating wedge in its fully engaged position. In other words, how close the tip of the wedge is to the nip rollers. If the tip of the wedge is too close to the nip rollers they will pinch down on the wedge when pressure is engaged, reducing the amount of nip pressure on the heated material. This can also cause damage to the tip of the wedge when running out of the end of the seam.

Adjustment procedures for lock mount assemblies (Figure 5):

- With the material set-up piece in place and with the nip lever and wedge engaged as shown on Figure 5, use a 5mm Allen wrench to loosen the wedge mount bolt that connects the wedge hex mount to the wedge slide lock mount (#18, Figure 5).
- Using a 3mm Allen wrench, loosen the two lock screws that hold the lower piece of the assembly to the upper piece. You will need to insert the 3mm Allen wrench between the cartridge heater lead wires to access one of the screws.
- Move the heating wedge forward or backward (left or right) so that there is plenty of clearance between the tip of the wedge and the upper and lower nip rollers. When adjusting WGW 300 for welding HDPE the tip of the wedge should have the same clearance as shown in Figure 4.
- Tighten lock screws to set adjustment. Re-check all adjustments to make sure they are correct before disengaging nip lever and wedge and removing material set-up piece.



Figure 5

Welding Procedure

Power Up

Connect the WGW 300 power cord to power source making sure that the voltage is correct for the model of welder you have.

Flip the main power toggle switch (#1, Figure 6) to the "on" position (up). The main power switch is located on the right of the control box, below the front handle. After a 3 second delay, the temperature control unit (#5, Figure 6) located on top of the control box should light up and display current wedge temperature.

Turn on the drive motor with the motor switch (#3, Figure 6), located on the top of the control box. It is recommended that the drive motor remain on at all times while the welder is plugged in. This helps to eliminate hot spots on the nip rollers and makes starting a weld quicker and easier.

Setting Wedge Temperature

- OMRON Controller (5 button style)

Temperature controller has a dual display. The current wedge temperature set point is displayed on the right side of the display. The actual wedge temperature is displayed on the left side of the display.

To adjust the wedge temperature set point, press the up arrow button to increase the set point or the down arrow button to decrease the set point. Flip the heating switch (#4, Figure 6) to the "on" position, heating start to work immediately.

Setting Weld Speed

To set weld speed, use the knob directly (#3, Figure 6) located on top of control box, next to temperature control unit. Please refer the chart on the top of control box to get the correct speed value.

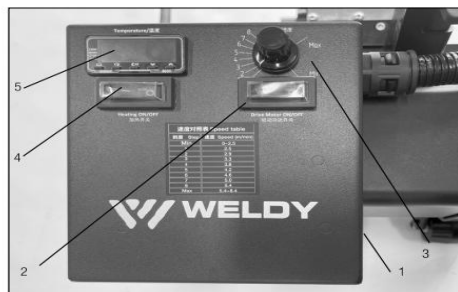


Figure 6

Starting a Weld

To start a weld, you must first make sure that the material to be welded is set at the proper overlap. The optimum overlap is 12.7-15.2cm for field welds.

Start the loading process with the nip lever in the “up” or disengaged position, the heating wedge in the “forward” or disengaged position (Figure 8), and the motor on with the nip rollers turning.

First, peel back the top sheet to expose the bottom sheet. Load bottom sheet of the material into welder, between both lower contour rollers and the bottom of heating wedge, then between the two nip rollers.

Second, insert the top sheet into the welder, between the upper contour roller(s) and the top of the heating wedge, and then between the nip rollers. You may need to roll the welder forward and backward a little for both sheets to settle into the welder.

Third, pull out on the wedge lock handle and slide wedge toward nip rollers until the lock pin slides off the end on the slide rail. Make sure wedge is completely engaged before continuing.

Fourth, engage nip rollers by pushing the nip pressure lever down until it “clicks” and is locked in position. At this time the welder should be moving and welding on its own. If the nip rollers are spinning on the material and burning a hole, quickly disengage nip rollers, roll the welder down the seam a few more inches, past the overheated area, and engage again.

Ending a Weld

Just as the welder is about to run out of the end of the seam, disengage nip rollers, slide welder out of the seam, and then disengage wedge. At this time it is a good idea to tip the WGW 300 up onto the front handle, raising the back of the unit, to prevent a hole being melted in the material from heat radiating from the wedge.

Shut-Down

To shut down the WGW 300, simply turn main switch to the “off” position or unplug unit. After 5-10 minutes, place unit in shipping/storage case provided with welder.

WGW 300 Diagram

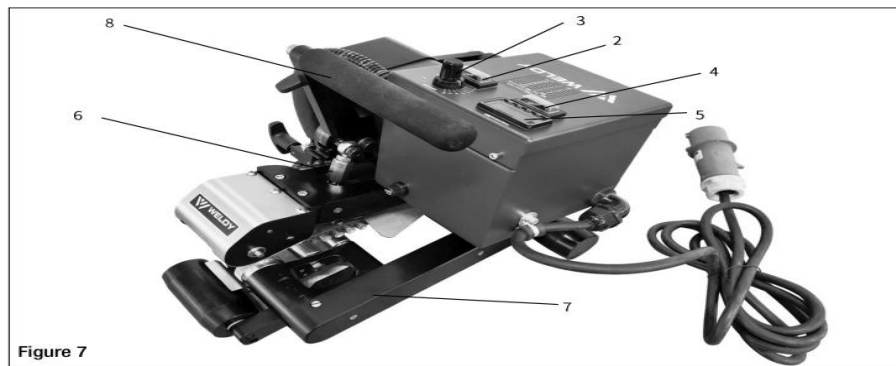


Figure 7

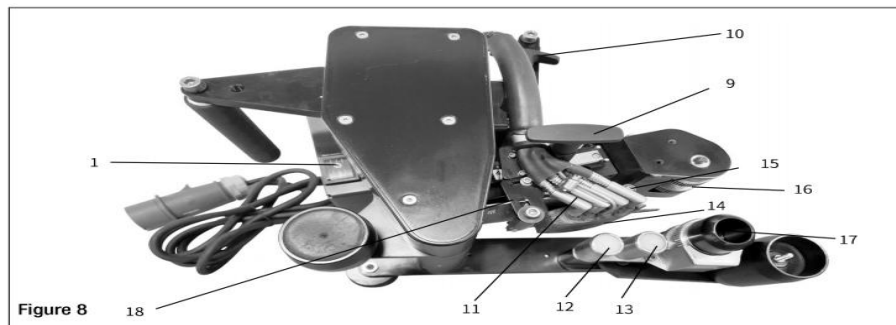


Figure 8

- | | | |
|------------------------------|----------------------------|-------------------------------|
| 1 Main Switch | 2 Drive Motor Switch | 3 Knob Speed Setting |
| 4 Heating Switch | 5 Temperature Control Unit | 6 Pressure Adjustment Hex Nut |
| 7 Lower Frame Chain Cover | 8 Front Handle | 9 Heating Wedge Slide Handle |
| 10 Lock Handle | 11 Heating Cartridge | 12 Front Lower Contour Roller |
| 13 Rear Lower Contour Roller | 14 Heating Wedge | 15 Upper Contour Roller |
| 16 Upper Nip Roller | 17 Lower Nip Roller | 18 Lock Mount |