Orion Welders – 200i² Getting Started

Follow these steps before welding. These are also great troubleshooting steps to follow if you feel like your welds are not consistent or not looking the way you think they should.

STEP 1: Check the Gas Pressure

- Gas is at 7 – 9 psi

STEP 2: Shape the Electrode

- Hold the dremel in one hand (close to the body for support) and the electrode in the other hand.
- Place the electrode on the diamond disk and spin it to sharpen.
- Make sure the striations in the electrode are horizontal.



STEP 3: Verify Electrode Length

- The electrode should stick out of the Stylus Cone 4 – 6 mm (1/8 – 1/4"). Make sure the Stylus Cone is pushed in all the way (you will feel it click into place and bottom-out).


STEP 4: Verify the Microscope Setup

- Microscope cable is securely connected to the back of the welder and the microscope.
- Zoom knob is positioned on 1x or 2x (not in between).
- Electrode is centered in your field of view and in focus.
- Microscope/Electrode is at a height where you can rest your hands on the workbench and lift your work piece up with your fingers.





STEP 5: Welder Settings and when to use the Reset Button

- Before beginning, touch the reset button to make sure all settings are at factory defaults.
- Verify Energy, Agitation, Ignition, Waveform, Length, Rate, and Trigger type before beginning a weld. *Settings on p.2
- Push the play button.

STEP6: How to Touch the Electrode to the Work piece

- Clip the alligator clip to the workpiece.
- Rest your hands on the table under the microscope.
- Position the work piece so that it is right under the electrode then look through the microscope.
- Lightly lift your fingers up and touch the work piece to the electrode (the electrode will retract after it is touched).
- Hold the work piece steady after touching the electrode – if you pull the work piece away after touching the electrode, it will not weld. If you follow the electrode with the work piece while it is retracting, the electrode will stick to the work piece.



STEP7: How to Set up the Work pieces for Welding.

- When re-sizing a ring, closing a jump ring, or welding two pieces together; make sure the two sides are pushed together and flush before welding.
- When adding material, touch the wire to the work piece at a 45-degree angle then enter the electrode in at a 90-degree angle. Touch the electrode between the work piece and the wire.




STEP 8: Verify Welder Settings – Tack Screen

- Verify Energy, Length, Trigger type, and make sure one lead is in the negative port and the other in the positive port.

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General Settings for specific metals and applications

Remember:

1. When in doubt, start with your energy lower then work your way up.
2. The image to the right is an example of what a blunt electrode should look like:

3. All settings below are based on the classic waveform

General Settings – 26 AWG wire/chain/jump ring

Metal	Tip Shape	Energy	Length	Agitation	Ignition	Notes
14k Gold	Sharp	9 ws	7.5 ms	None	Standard +	Butt weld with 90 degree electrode angle 
24k Gold	Sharp	8 ws	15 ms	None	Standard +	
Silver	Sharp	10 ws	15 ms	None	Standard +	
Platinum	Sharp	10 ws	7.5 ms	None	Standard +	
Stainless Steel	Sharp	7 ws	15 ms	Sloped	Standard +	
Palladium	Sharp	6 ws	15 ms	Sustained	Standard +	
Titanium	Sharp	7 ws	15 ms	Sloped	Standard +	
Brass	Sharp	9 ws	7.5 ms	None	Standard +	

General Settings – Earring Post

Metal	Tip Shape	Energy	Length	Agitation	Ignition	Notes
14k Gold	Sharp	11 ws	7.5 ms	None	Standard +	T joint with 45 degree electrode angle 
24k Gold	Sharp	10 ws	15 ms	None	Standard +	
Silver	Sharp	12 ws	15 ms	None	Standard +	
Platinum	Sharp	12 ws	7.5 ms	None	Standard +	
Stainless Steel	Sharp	9 ws	15 ms	Sloped	Standard +	
Palladium	Sharp	7 ws	15 ms	Sustained	Standard +	
Titanium	Sharp	9 ws	15 ms	Sloped	Standard +	
Brass	Sharp	11 ws	7.5 ms	None	Standard +	

General Settings – 0.5mm Ring

Metal	Tip Shape	Energy	Length	Agitation	Ignition	Notes
14k Gold	Sharp	12 ws	7.5 ms	None	Standard +	Butt weld with 90 degree electrode angle 
24k Gold	Sharp	11 ws	15 ms	None	Standard +	
Silver	Sharp	17 ws	15 ms	None	Standard +	
Platinum	Sharp	15 ws	7.5 ms	None	Standard +	
Stainless Steel	Sharp	15 ws	15 ms	Sloped	Standard +	
Palladium	Sharp	14 ws	15 ms	Sustained	Standard +	
Titanium	Sharp	13 ws	15 ms	Sloped	Standard +	
Brass	Sharp	15 ws	7.5 ms	None	Standard +	

General Settings – 1mm Ring

Metal	Tip Shape	Energy	Length	Agitation	Ignition	Notes
14k Gold	Sharp	22 ws	7.5 ms	None	Standard +	Butt weld with 90 degree electrode angle 
24k Gold	Sharp	20 ws	15 ms	None	Standard +	
Silver	Semi Blunt	45 ws	15 ms	None	Standard +	
Platinum	Sharp	24 ws	7.5 ms	None	Standard +	
Stainless Steel	Sharp	22 ws	15 ms	Sloped	Standard +	
Palladium	Sharp	20 ws	15 ms	Sustained	Standard +	
Titanium	Sharp	22 ws	15 ms	Sloped	Standard +	
Brass	Sharp	26 ws	7.5 ms	None	Standard +	

General Settings – 2mm thick Ring

Metal	Tip Shape	Energy	Length	Agitation	Ignition	Notes
14k Gold	Sharp	50 ws	60 ms	None	Standard +	Butt weld with 90 degree electrode angle 
24k Gold	Sharp	45 ws	60 ms	None	Standard +	
Silver	Blunt	80 ws	60 ms	None	Standard +	
Platinum	Sharp	60 ws	60 ms	None	Standard +	
Stainless Steel	Sharp	45 ws	60 ms	Sloped	Standard +	
Palladium	Sharp	40 ws	60 ms	Sustained	Standard +	
Titanium	Sharp	45 ws	60 ms	Sloped	Standard +	
Brass	Sharp	55 ws	60 ms	None	Standard +	

General Settings – Add Material (30 AWG laser wire)

Metal	Tip Shape	Energy	Length	Agitation	Ignition	Notes
14k Gold	Sharp	13 ws	7.5 ms	None	Standard +	Wire at 45 degree angle. Electrode touching work piece next to wire. 
24k Gold	Sharp	12 ws	15 ms	None	Standard +	
Silver	Sharp	14 ws	15 ms	None	Standard +	
Platinum	Sharp	8 ws	7.5 ms	None	Standard +	
Stainless Steel	Sharp	10 ws	15 ms	Sloped	Standard +	
Palladium	Sharp	8 ws	15 ms	Sustained	Standard +	
Titanium	Sharp	10 ws	15 ms	Sloped	Standard +	
Brass	Sharp	13 ws	7.5 ms	None	Standard +	

General Settings – Add Material (24 AWG wire)

Metal	Tip Shape	Energy	Length	Agitation	Ignition	Notes
14k Gold	Sharp	17 ws	7.5 ms	None	Standard +	Wire at 45 degree angle. Electrode touching work piece next to wire. 
24k Gold	Sharp	16 ws	15 ms	None	Standard +	
Silver	Sharp	18 ws	15 ms	None	Standard +	
Platinum	Sharp	18 ws	7.5 ms	None	Standard +	
Stainless Steel	Sharp	15 ws	15 ms	Sloped	Standard +	
Palladium	Sharp	13 ws	15 ms	Sustained	Standard +	
Titanium	Sharp	15 ws	15 ms	Sloped	Standard +	
Brass	Sharp	17 ws	7.5 ms	None	Standard +	

General Settings – Retip Prong (26 AWG wire)

Metal	Tip Shape	Energy	Length	Agitation	Ignition	Notes
14k Gold	Sharp	9 ws	7.5 ms	None	Standard +	Butt weld with 90 degree electrode angle 
24k Gold	Sharp	8 ws	15 ms	None	Standard +	
Silver	Sharp	10 ws	15 ms	None	Standard +	
Platinum	Sharp	10 ws	7.5 ms	None	Standard +	
Stainless Steel	Sharp	7 ws	15 ms	Sloped	Standard +	
Palladium	Sharp	6 ws	15 ms	Sustained	Standard +	
Titanium	Sharp	7 ws	15 ms	Sloped	Standard +	
Brass	Sharp	9 ws	7.5 ms	None	Standard +	

The above method will allow the user to attach the wire to the prong tip. If the user desires to add metal to the tip without the wire staying attched, use a 30 AWG wire and position the electrode and 30 AWG wire as seen in the picture to the right. This method will allow the user to add a little bit of metal at a time, covering the top of the prong with every weld.

Wire at 45 degree angle. Electrode touching work piece next to wire.

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