



**Settings for I-CAR® Aluminum (GMA) MIG Welding (WCA03): 1.2mm 5554 Alloy Aluminum Wire Test Welds with the HTP® Pro Pulse™ 200 & the HTP Pro Pulse® 220 MTS**

**General Setup & Settings**

- Install the drive roll with the 1.2A label facing you
- Install the PVC spacer
- Install the wire coming off the spool at 6 o'clock going East
- Loosen the wire brake on the spindle a little bit by turning counter-clockwise
- Install the gun labeled ER260
- Install a .045" contact tip for light-duty work or a .052" contact tip for light- to heavy-duty work
- When welding, hold the MIG gun about 3/4 to 1" away from the work piece (2 times or a little more than you typically do when welding steel!)
- Set the Start Speed to 45%
- Set the Start Time to 0.3 Sec
- Set Burn Back to 004
- Set Pinch to 100%
- Set T2 to 0.1 Sec
- Set Pre-Flow to 0.3 Sec
- Set Post-Flow to 1.5 Sec
- Set the flow rate on your tank to 40-50cfh

<b>1. BUTT JOINT WITH BACKING, HEAVY-HEAVY-HEAVY</b>
<b>Position: Vertical</b>
<b>Pro Pulse 200 &amp; Pro Pulse 220 MTS Program Name: Al 5554 3/64 100%AR PULSE</b>
Amps: 95
Volts: 19.8
Thickness: 2.0mm
Wire Feed Speed: 6.5 m/min
Line up, lengthwise, two pieces of aluminum, leaving a space of about 5 to 7.5mm between the two pieces. Place over a third piece of aluminum and weld.
Inspection: Your weld should measure no less than 57mm long and no more than 76mm long, as well as no less than 10mm wide and no more than 16mm wide.
Testing the weld in a destructive manner: Bend the metal back and forth until it breaks; the weld should tear out of the parent metal but the weld itself should remain undamaged.

<b>2. FILLET, LIGHT-HEAVY</b>
<b>Position: Vertical</b>
<b>Pro Pulse 200 &amp; Pro Pulse 220 MTS Program Name: Al 5554 3/64 100%AR PULSE</b>
Amps: 83 – 91
Volts: 19.4 – 19.7
Thickness: 2.0mm
Wire Feed Speed: 5.8 – 6.3 m/min
Place a thin piece of aluminum on top of a thick piece of aluminum, overlapping the thick piece of aluminum halfway, and weld.
Inspection: Your weld should measure no less than 57mm long and no more than 76mm long, as well as no less than 5mm wide and no more than 10mm wide.
Testing the weld in a destructive manner: Bend the metal back and forth until it breaks; the weld should tear out of the parent metal but the weld itself should remain undamaged.
<b>Note:</b> The amperage, voltage, and wire feed speed settings depend on operator preference.

<b>3. BUTT JOINT WITH BACKING, LIGHT-LIGHT-LIGHT</b>
<b>Position: Vertical</b>
<b>Pro Pulse 200 &amp; Pro Pulse 220 MTS Program Name: Al 5554 3/64 100%AR PAW</b>
Amps: 56
Volts: 16
Thickness: 1.3mm
Wire Feed Speed: 3.6 m/min
Line up, lengthwise, two pieces of aluminum, leaving a space of about 5 to 7.5mm between the two pieces. Place over a third piece of aluminum and weld.
Inspection: Your weld should measure no less than 57mm long and no more than 76mm long, as well as no less than 5mm wide and no more than 10mm wide.
Testing the weld in a destructive manner: Bend the metal back and forth until it breaks; the weld should tear out of the parent metal but the weld itself should remain undamaged.

<b>4. PLUG, LIGHT-LIGHT</b>
<b>Position: Vertical</b>
<b>Pro Pulse 200 &amp; Pro Pulse 220 MTS Program Name: Al 5554 3/64 100%AR PULSE</b>
Amps: 71
Volts: 18.3
Thickness: 1.7mm
Wire Feed Speed: 4.7 m/min
Place a thin piece of aluminum with an 8mm hole on a 90-degree angle over another thin piece of aluminum without any holes. Clamp pieces together and weld.
Inspection: The weld nugget should measure no less than 11mm in diameter and no more than 15mm in diameter.
Testing the weld in a destructive manner: Twist the top aluminum piece until a hole tears out of the bottom piece of aluminum. The hole should measure at least 5mm in diameter.

<b>5. BUTT JOINT WITH BACKING, HEAVY-HEAVY-HEAVY</b>
<b>Position: Overhead</b>
<b>Pro Pulse 200 &amp; Pro Pulse 220 MTS Program Name: Al 5554 3/64 100%AR PULSE</b>
Amps: 95
Volts: 19.8
Thickness: 2.0mm
Wire Feed Speed: 6.5 m/min
Line up, lengthwise, two pieces of aluminum, leaving a space of about 5 to 7.5mm between the two pieces. Place over a third piece of aluminum and weld.
Inspection: Your weld should measure no less than 57mm long and no more than 76mm long, as well as no less than 10mm wide and no more than 16mm wide.
Testing the weld in a destructive manner: Bend the metal back and forth until it breaks; the weld should tear out of the parent metal but the weld itself should remain undamaged.

<b>6. FILLET, LIGHT-HEAVY</b>
<b>Position: Overhead</b>
<b>Pro Pulse 200 &amp; Pro Pulse 220 MTS Program Name: Al 5554 3/64 100%AR PULSE</b>
Amps: 83 - 91
Volts: 19.4 – 19.7
Thickness: 2.0mm
Wire Feed Speed: 5.8 – 6.3 m/min
Place a thin piece of aluminum on top of a thick piece of aluminum, overlapping the thick piece of aluminum halfway, and weld.
Inspection: Your weld should measure no less than 57mm long and no more than 76mm long, as well as no less than 5mm wide and no more than 10mm wide.
Testing the weld in a destructive manner: Bend the metal back and forth until it breaks; the weld should tear out of the parent metal but the weld should remain undamaged.
<b>Note:</b> The amperage, voltage, and wire feed speed settings depend on operator preference.

<b>7. BUTT JOINT WITH BACKING, LIGHT-LIGHT-LIGHT</b>
<b>Position: Overhead</b>
<b>Pro Pulse 200 &amp; Pro Pulse 220 MTS Program Name: Al 5554 3/64 100%AR PULSE</b>
Amps: 56
Volts: 16
Thickness: 1.3mm
Wire Feed Speed: 3.6 m/min
Line up, lengthwise, two pieces of aluminum, leaving a space of about 5 to 7.5mm between the two pieces. Place over a third piece of aluminum and weld.
Inspection: Your weld should measure no less than 57mm long and no more than 76mm long, as well as no less than 5mm wide and no more than 10mm wide.
Testing the weld in a destructive manner: Bend the metal back and forth until it breaks; the weld should tear out of the parent metal but the weld should remain undamaged.

Please Note: The material thickness value shown on the Pro Pulse 200 and the Pro Pulse 220 MTS display is an approximation. The actual material thickness is likely somewhat different from what is shown in the display. These discrepancies are inherent with aluminum welding due to the size, temperature, and alloy (5000 Series aluminum sheets and 6000 Series aluminum sheets weld differently from one another and require more or less heat) of the material you are welding on, as well as operator preference, gun manipulation, etc.