WeldScore™ Quality Monitoring Software
From Lincoln Electric

What is Lincoln Electric WeldScore™?
- WeldScore™ is a Lincoln Electric Power Wave® feature that scores each weld based on a trained sample of known welds.
- The scores are an indicator of variations in the weld.
- WeldScore™ dynamically monitors conditions at the arc using a data sampling rate of 120 kHz.

What Will Lincoln Electric WeldScore™ Do?
WeldScore™ calls attention to conditions that can have a negative effect on the weld, including:
- Improper Wire Placement
- Gas Flow Rate Variation
- Gas Mix Variation
- Stick Out Variation
- Tip and Expendable Part Wear

With Lincoln Electric WeldScore™ You Get Real-Time Results:
- You’re in control.
- You set the limits.
- You review the WeldScore™.
- You decide what is acceptable.

How Does Lincoln Electric WeldScore™ Compare?
- Fully embedded in the welding power source:
  - No Extra Cost - Standard on all 3rd generation iARC™ equipped Lincoln Electric Power Wave® models – C300, S350, i400, AC/DC 1000® SD and more to come.
  - No Extra Hardware - No complex third party add-on black boxes or modules.
  - No External Sensors - Through dynamic monitoring systems in the power source, weld issues are detected right at the arc. For example, gas flow sensors at the bottle or manifold may indicate adequate shielding gas flow, while actual performance at the arc may be affected by crosswinds or shop ventilation.

Quality Monitoring Software Benefits
- Great for evaluating the consistency of repeating production welds.
- Delivers an easily understood quality score for each weld.
- Monitors actual conditions at the arc, not at external upstream sensors.
- High-speed real-time monitoring of conditions at the arc at a fast 120 kHz data sampling rate – unlike competing systems.
- Monitor an instantaneous WeldScore™ during the weld and an average WeldScore™ at the end of the weld.
- Training function teaches the system YOUR optimal weld.
- Future integration with Lincoln's Production Monitoring™ software. Train and save up to 32 Training Profiles – that’s 32 separate welding applications.

U.S. Patents - 6,441,342 • 6,624,388 • 6,940,039
6,795,778 • 7,375,304 and patents pending.

Contact your local Lincoln technical sales representative for more details.
There are multiple conditions that can affect weld quality.

Here are just a few examples of some conditions that can affect the weld.

**WIRE PLACEMENT**
Incorrect wire placement or stick out can lead to improper weld bead placement or penetration in the weld joint.

- **Good Weld** - Good penetration along each weld leg and root.

- **Visibly Bad Weld** - Wire position is horizontally out of the joint by 4 mm, resulting in poor penetration along the vertical leg.

- **Good Appearance / Reduced Penetration** - When the wire position is vertically and horizontally pulled away from the joint by 5 mm, the result is excessive stick out. While the visible weld face appearance remains good, a cross section of the weld reveals up to a 25% reduction in penetration along the weld legs and in the root.

**GAS FLOW**
Shielding gas leaks, improper flow or shop drafts can all reduce your gas shielding at the weld.

- **Good Weld** - Proper gas flow and coverage produces a good weld with no porosity.

- **Visibly Bad Weld** - Low gas flow results in obvious porosity.

**GAS MIX**
Improper gas mix ratios and/or incorrect gas types can all lead to poor quality welds.

- **Good Weld** - Correct gas mix yields a good weld with low spatter.

- **Visibly Bad Weld** - Incorrect gas mix yields higher spatter levels.

Lincoln Electric WeldScore™ allows you to score each weld based on a trained sample of known welds.

- Great for Production
- Great for Trade Schools
- Great for Critical Welds

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25 CFH, 90/10 Argon/CO₂, **WeldScore™ 99%**

5 CFH **WeldScore™ 4%**

10 CFH **WeldScore™ 12%**

100% Argon **WeldScore™ 0%**

25 CFH, 90/10 Argon/CO₂, **WeldScore™ 99%**

75/25 Argon/CO₂ **WeldScore™ 15%**

100% Argon **WeldScore™ 0%**