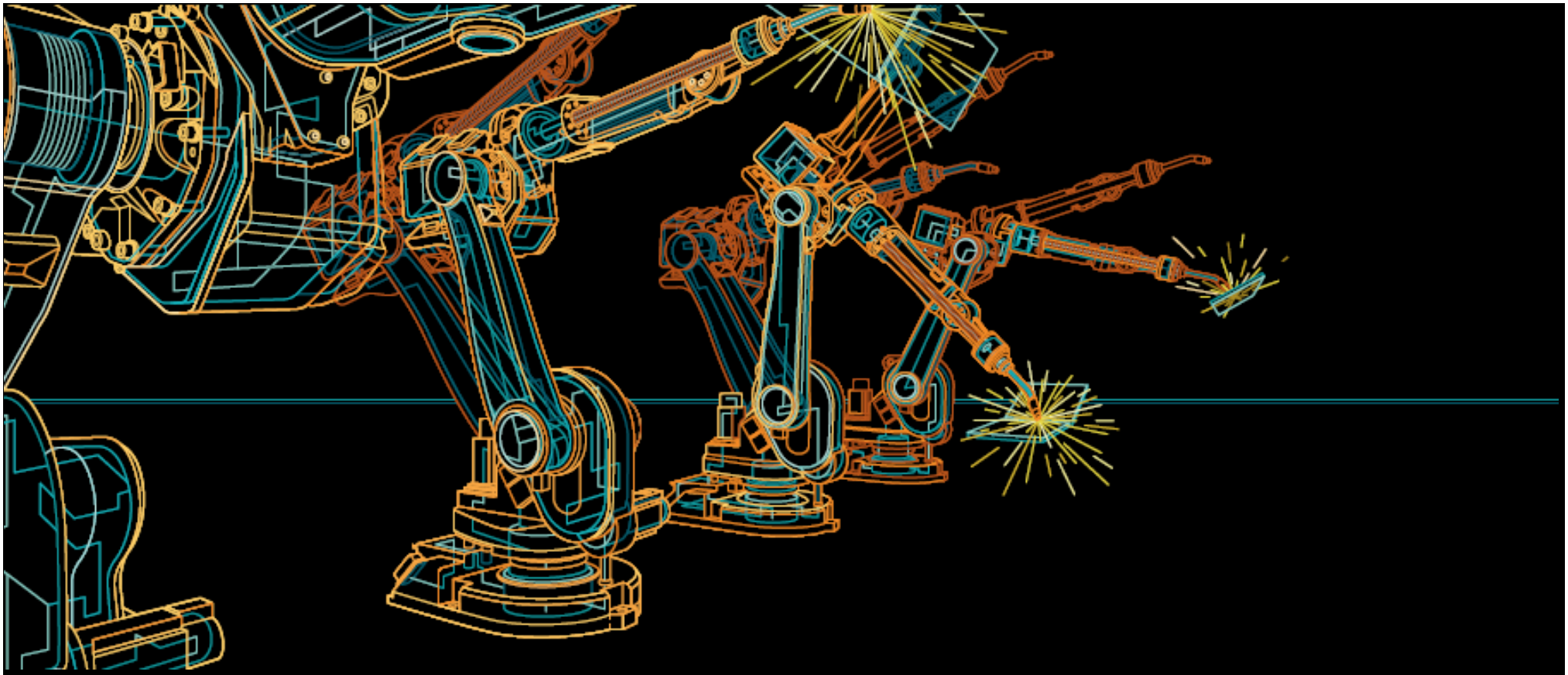
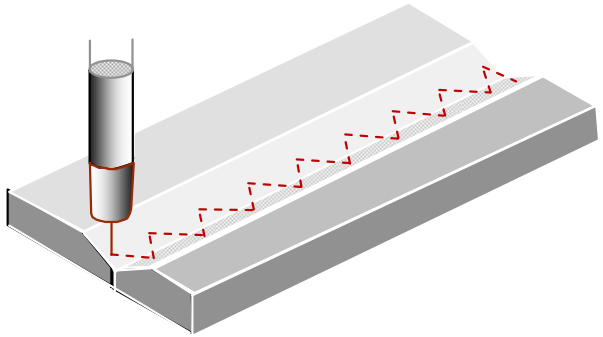


Weldguide III
Thru-the-arc Seam Tracking

Weldguide III



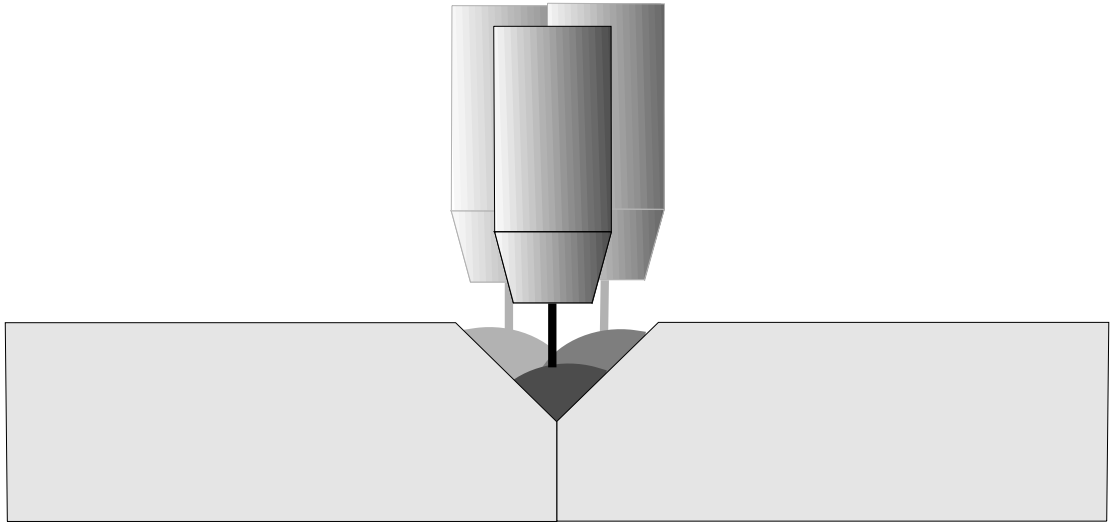
1. **Two external sensors**
   - Welding current and arc voltage
   - Patented technology
2. **Faster path correction**
   - Measurements at 25 kHz
   - Quick and accurate path corrections
3. **Supports different welding modes**
   - Spray-arc
   - Short-arc
   - Pulsed-arc

The most powerful robotic thru-the-arc seam tracking sensor on the market

Weldguide III
FlexPendant User Interface

Weldguide III is seamlessly integrated with the robots IRC5 control system, which makes it easy to program and makes all pertinent information available at your fingertips

Weldguide III
Multi-Pass Welding

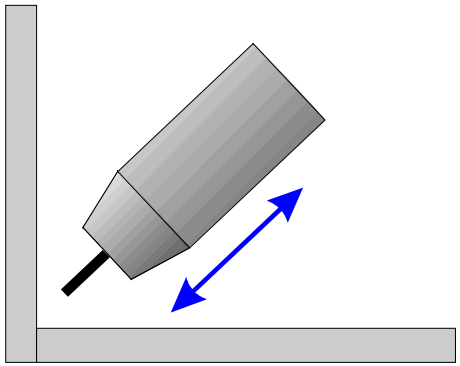


Sometimes multiple weld passes are required due to the required weld size and thickness of the material being joined. Weldguide III makes this easy by tracking the first pass and storing the actual tracked path so it can offset for subsequent passes.

- Root-path memorization
- Path off-sets, both angle and position
- Forward/reverse path replay
- Path length control

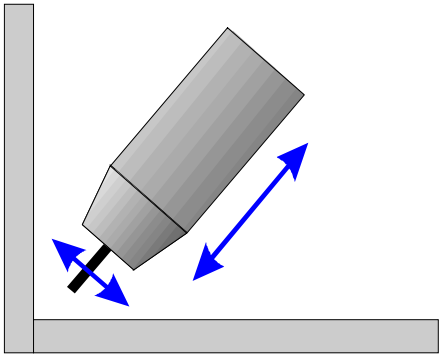
Weldguide III
Basic Tracking Modes

Torch to Work Mode



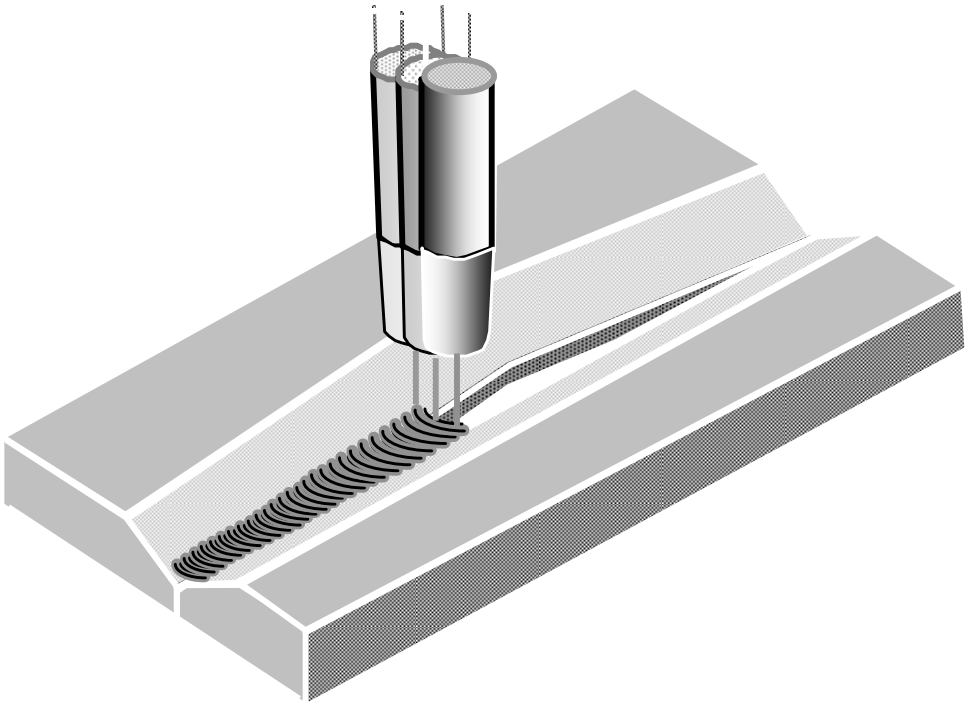
Torch to Work mode is a height-sensing value where the torch-to-work distance is maintained by measuring the target current and adjusting the height to maintain the setting.

Centerline Mode



Centerline mode is used in weaving where the impedance is measured as the torch moves side-to-side. The position of the weld can be adjusted side to side using the bias parameter

Weldguide III
Advanced Tracking Modes



Adaptive Fill Mode enables the robot to identify and adjust for variations in joint tolerances. If the joint changes in width, the robot's weave will increase or decrease and the travel speed will be adjusted accordingly

Comparison
Weldguide III vs. AWC

	Weldguide III Basic	Weldguide III Advanced	AWC
FlexPendant User Interface	✓	✓	
Height Sensing	✓	✓	✓
Centerline Tracking	✓	✓	✓
Multipass	✓	✓	✓
Adaptive Fill		✓	✓
Singleside Tracking		✓	✓
	Release 10.1 Q2 2010	Release 10.2 Q4 2010	Phased-out 2010

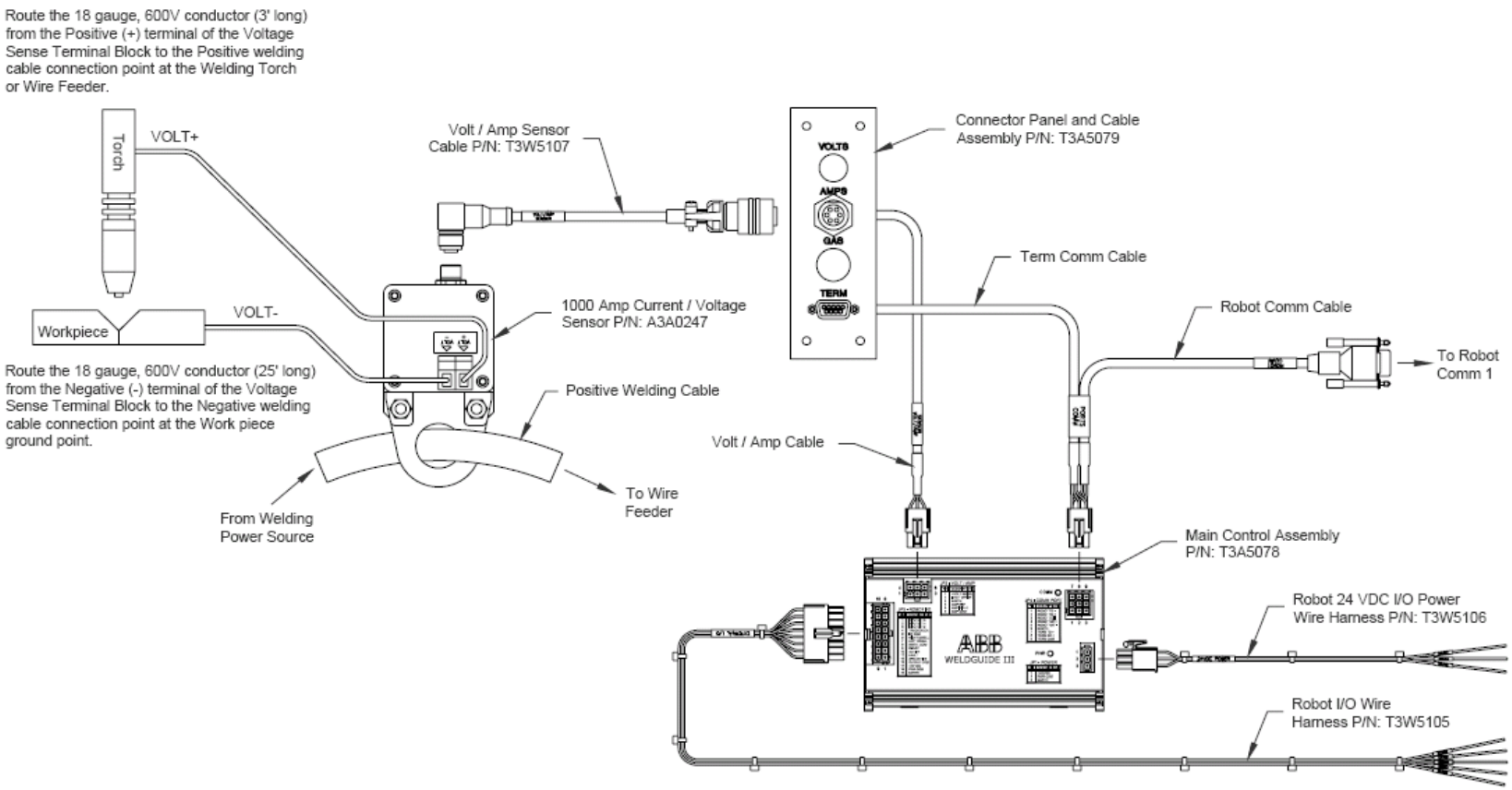


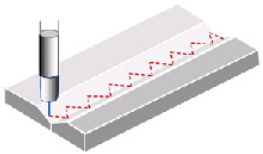
Figure 1: Weldguide III Installation Diagram

For more information ...

Robotics

Weldguide III

The most powerful robotic Thru-the-Arc joint tracking on the market.



Application Areas

To perform accurate welding it is important not only to see the arc, but also to listen to the sound of the welding process. You can say that a skilled welder can hear when the welding is performed successfully. We had this in mind when developing the new thru-the-arc tracking sensor Weldguide III . It is using two sensor inputs - the welding current and the arc voltage, which means that we both "look and listen".

The measurements are synchronized with the weave pattern of the robot along the weld seam and provides both vertical and horizontal correction signals to the robot controller, to ensure consistent location of the welding arc along the seam. In heavy welding applications this is of utmost importance.

The Weldguide III sensor reads the real values from the welding arc 25,000 times per second, which means it is up to 25 times faster than traditional tracking methods. Needless to say this ensures faster path corrections and better welding results. The combination of voltage and current is called impedance, and this measuring method is based on patented technology.

Welding modes

Modern power sources are providing many different welding modes. The common goal when controlling these welding processes is trying to keep a constant level of the welding current. This means that it is becoming more and more difficult to use the measured current directly from the power source as the only input to a seam tracking system. By using an external current sensor and an additional sensor for arc voltage at a much higher measurement frequency. Weldguide III can perform thru-the-arc tracking in several different welding modes such as spray-arc, short-arc and pulsed-arc.

Tracking modes available

Basic (standard)
- Torch to work (height sensing)
- Centerline

Advanced (optional)
- Single side tracking
- Inversed tracking
- Adaptive fill (constant fill height)

MultiPass (standard for heavy welding)
- Root-path memorization

User friendly interface

Weldguide III is seamlessly integrated with the IRC5 control system of the robot which gives advantages like:.
- Easy to program
- Pertinent information available at your fingertips
- Path off-sets, both angle and position
- Forward/reverse path replay
- Path length control

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