# BAYKAL

## WELDING SOLUTION

**⚙ SPECIFICATIONS**

### ⚙ H-beam Welding Solution Specs

| | |
|---|---|
| Robot | BR20iA-20 |
| Welding Equipment | Artsen CM 500 welding machine (if the welding requirements are higher, Artsen Pro500P welding machine can be selected), wire feeder, built-in water-cooled welding torch, end anti-collision sensor, torch cleaning station |
| Beam Size | Height of H-beam maximum 600mm<br>Width of H-beam range 350mm-1100mm<br>Standard length 6000mm (can be extended) |
| Gap Tolerances | Maximum 30mm - No Gap Detection (BAYKAL's newly launched H-beam solution was developed with 3D vision in error correction technique. Automatically identified workpiece, even with 30mm position deviation, not any influence on welding result.) |
| Joint Detection | 3D vision system accurately positioned the welding seam of the entire component, and the welding program is automatically generated according to the position in the model and the actual outline. |
| Process and Position | Software Low Splash<br>DC CO2/MAG<br>Short arc pulse MAG/MIG<br>Double pulse<br>Carbon steel<br>Stainless steel<br>Constant Weld penetration<br>USB interface |
| Wire | 1.2 mm in diameter welding wire, all the welding wire brands in the world can be applicable |
| Wire Classification | MCAW: AWS A5.18, A5.18M: E70C-6M H4<br>          CSA W48-06: E491C-6MJ-H4<br>GMAW: AWS A5.18/A5.18M: ER70S-6<br>          CSA W48-06: ER49S-6 |
| Shielding Gas | 85% Argon - 15% $CO_2$ mix |
| Surface Finish | All parts and beam must be clean & dry with low scale level |
| Electrical | 380V  3ph, 50-60Hz, 50 KVA |
| Pneumatic | Pressure 0.8Mpa,<br>Gas volume 0.8m²L/min |
| Ethernet Speed | Upload/Download speed >10Mbs |

# www.baykalrobot.com
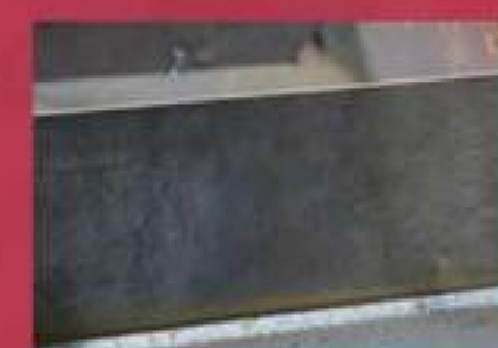
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# H-beam Welding Solution
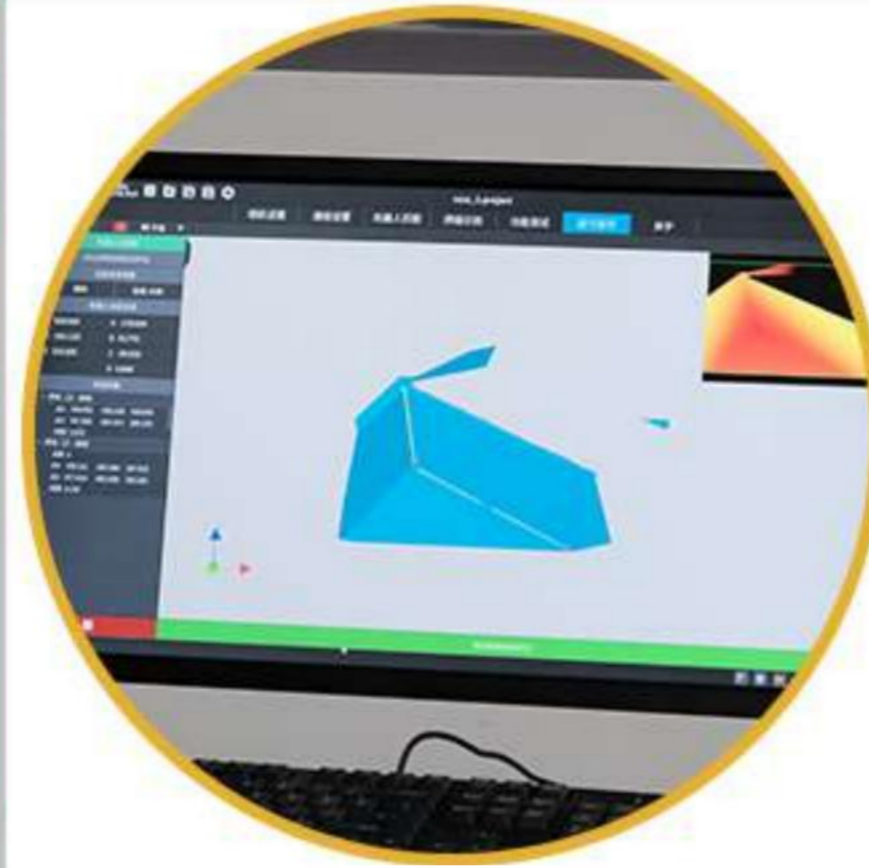
### ROBOTIC WELDER

#### More Efficient More Reliable Robotic Systems

#### Smart H-beam welding solution come to real life

# AUTOMATED WELDING OF ATTACHMENTS

## BAYKAL IS COMING!

- ✓ Compact
- ✓ Efficient
- ✓ Affordable

## FULLY AUTOMATED

The Smart H beam welding solution supports off-line programming, away from the field work; Production and programming synchronization, the robot does not need to stop; High degree of intelligence, low threshold of operation

- ▢ Compact
- ▢ Affordable
- ▢ Versatile
- ▢ Robust
- ▢ Accurate
- ▢ Repeatable
- ▢ Compatible with Tekla & SDS/2
- ▢ Less than the cost of 2 welders

### MASTER COMPUTER

An easy-to-use interface is provided to build production lists and monitor the production output.

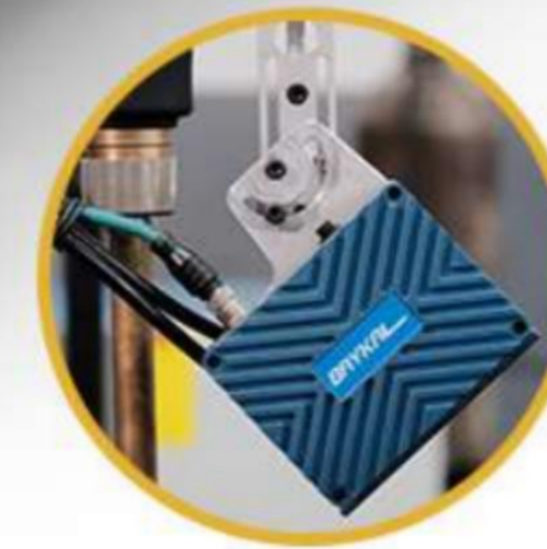### ROBUST WELDING ROBOT

Robots are designed to work in the harshest conditions for years with minimal maintenance.

### 3D VISUAL DESIGN

BAYKAL's newly launched H-beam solution was developed with 3D vision in error correction technique. Automatically identified workpiece, even with 30mm position deviation, not any influence on welding result.

### HEAVY DUTY RAIL

Machine moves along a heavy duty rail while the part to be welded remains stationary.

■ ROBUST WELDING ROBOT

■ ARTSEN CM500 WELDING MACHINE

### THE SOLUTION TO YOUR PROBLEM

With the number of skilled welders available in the workforce dwindling, and the cost of recruiting & retaining them rising, Now is the time to consider automating the welding process.

Typically, a structural steel fabricator spends a substantial amount of time on labor intensive, repetitive operation's work, such as welding. Imagine how much simpler things would be if this part could be completely automated

### A NEW WAY TO INCREASE PROFITS

The Smart H-beam Welding Solution is designed specifically for structural steel fabricators looking to increase production and reduce labor costs. The compact footprint, robotic automation and easy to use software makes it the ideal solution for any size shop striving to be more efficient and cost effective.

■ HEAVY-DUTY RAIL

■ BAYKAL ARC WELD ROBOT BR20IA-20

### OPERATION

The finished Tekla or SDS/2 3-D model is first exported to the computer's auto programming software, which then runs a simulation of each part, noting the location of all the welded attachments, and calculates the robotic arm path to detect and verify and then weld the part. The simulation software provides a full report on the time to weld, completion rates and more. Cortex imports weld information from the model, if given, or the software can auto-generate welds according to your pre-determined criteria.

The operator then loads the part with all the attachments already tacked in place on top of the welding trestles, and pushes the cycle-start button. The robot moves along the heavy-duty rail system to the first attachment to be welded and using a laser, scans and verifies that it is in the correct location, and if so, it then proceeds to weld. If the attachment is not tacked in the correct position, the robot prompts the operator to skip to the next weld.

Once the robot has completed the part it returns to the home position, then remove the completed part and load the next work to be welded.

■ 3D VISUAL DEVIATION CORRECTION AND WELD IDENTIFICATION

■ TORCH CLEANING STATION

■ EASY-TO-USE GRAPHIC INTERFACE

### UNBEATABLE TECH SUPPORT

■ BAYKAL provide you with the support of professional service technicians, multilingual professional engineers perform online machine diagnostics in 24 hours. They have the ability to provide you with direct troubleshooting via the Internet or phone, as well as on-site repair of the machine if necessary.