



Caterpillar
Aurora, IL

INDUSTRY

Off-Road Equipment

PROJECT NAME

Large Wheel Loaders

PARTS

Engine & Non Engine End Frames

YEAR INSTALLED

2007



The IRB 4400L robot welds engine end frames on the drop center H positioner of the robot cell while traveling along the track on a robot rotating tower.

CUSTOMER BENEFITS

- Improve product quality
- Reduce downtime with offline programming
- Obtain consistent production efficiency
- Compensate for variation of part fit-up
- Automated neck changer allows the welding torch to reach into a variety of tight access areas

SYSTEM OVERVIEW

The cell consist of one IRB 4400L robot mounted to a robot rotating tower, with lift elevation, on a travel track system, one Wolf Robotics 25,000kg drop center H positioner, BullsEye® calibration unit, SmarTac™ tactile sensing, AWC advanced weld control, welding gun neck changer, torch cleaner station, and RobotStudio offline programming software. The positioner manipulates the end frames as required so that the robot can access all necessary areas for welding.

An ABB BullsEye® automatic calibration system is used to continually monitor the robot accuracy and adjust the programs as required to maintain optimum repeatability.

SmarTac™ sensing helps detect joint location, AWC adapts the parameters during welding as needed and the RobotStudio™ offline part programming software allows for reduced downtime when creating new weld programs or making production line alterations.

The Wolf Robotics 25000kg positioner has coordinated motion with the robot to maintain the optimum welding positions for all weld locations on the various sizes of end frames.

The robot welding gun neck changer switches to the appropriate angle welding neck required to access certain areas of the front (non-engine end) frames.



A Division of Rimrock Automation

Wolf Robotics
Fort Collins, CO 80525
sales@wolfrobotics.com
wolfrobotics.com

Confidential Information

The concept design / engineered solution exhibited here was created by Wolf Robotics expressly for the company indicated.
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Wolf Robotics Inc., Fort Collins, CO

