Robotics

Aluminium Ingot Stacking
Case study: Foundry/Die casting

Customer Objects, to obtain an IRB6400R Robot Palletising System to grip and palletise layers of ingots directly onto the output conveyor.

Process description
– An operator uses the robot Teach Pendant LCD Screen to start, stop and reset the robot cycle.
– A complete layer of ingots is presented on the infeed conveyor (by others) to the IRB6400R robot. The robot is then signalled by the conveyor controls to say the ingots are present. It is assumed for the purposes of this proposal that the layers are presented pre assembled and are consistently located for robot handling.
– The IRB6400R robot equipped with a parallel clamping type gripper to grip a complete single layer of ingots in one continuous motion.

– The IRB6400R robot will check to ensure that it has successfully gripped the ingot layer. If the grip is not successful, then the robot will try with a regrip. If the re-grip is not successful, then the robot set an output and wait for a ok to proceed signal.
– The ABB IRB6400R robot rotates to the outfeed conveyor build position and smoothly places it directly on the conveyor.
– The next layer is placed by the robot at 90 degrees to the previous layer.
– Automatic operation continues until the stack is complete.
– The outfeed conveyor control is signalled by the IRB6400R robot and the stack is conveyed away.
– The robot receives a signal from the conveyor control when the outfeed is clear and ready for ingots again.
The cycle repeats......

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Aluminium Ingot Stacking

Scope of Supply

– One ABB IRB6400R/6 axis/2.8m 200Kg capacity Robot.
– ABB programmable Robot Controller.
– One Ingot Stacking Gripper similar to those already
  supplied by ABB
– System Programming and Engineering.

Key technical issues:

Ability to pick up a layer of Aluminium Ingots at
120kg per layer and Palletise them at 90°
to the previous layer.

Main customer benefits:

– Increased production Rates.
– Minimal Supervision

Performances of the system:

25 Ton / Hour

Country

Australia

Purchase reasons:

Increase in Production Rates

Benefits

– Higher efficiency on subsequent operations.
– Great flexibility to treat different part types.
– The solution is a local development and has local support.
– The automated development of subsequent
– operations increases part quality.

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