Intelligent Robot Solutions

FANUC Robotics

Application: Extract and Metal Ladling System Package

Process: **Die Casting Shot Extraction and Metal Ladling**

Parts: **Automotive and General Industries, Castings under 100 lbs.**

System Elements: **M-710*i*B/70 kg, Auxiliary Axis Control of Advance Products Ladler**

Extract and Metal Ladling System Package
(*i*Pendant Human / Machine Interface)

This system package provides more reliable shot size control, improved uptime and decreased maintenance costs over the previous (non-FANUC) stand-alone ladling process.

Challenges:

- Decrease our die casting customers' ladle system maintenance costs due to failures of non-FANUC control systems
- Decrease our die casting customers' frequency of both planned and unplanned mechanical maintenance of their ladle systems
- Requires no detailed knowledge for teaching and adjusting point positions (e.g. must be easy to operate and maintain)
- Harsh die casting environment (i.e. heat, die lube, soot)
- Minimal floor space available
- Tight tolerances for volume of metal ladled (e.g. must minimize waste of material)
- Aggressive cycle time
- Need to handle shot capacity of up to 100 lbs.

Solution:

- System package combines the reliability of FANUC Robotics controls and the Advance Products Model SL-1500 mechanical ladle arm increasing uptime, reducing maintenance costs and minimizing floor space
- This system as shown utilizes two FANUC Alpha 8/3000 motors in an auxiliary axis package integrated to the M-710*i*B extract robot to control the SL-1500 allowing shot loads of up to 25 lbs. (Note: four ladle models available with capacity of up to 100 lbs.)
- The system easily meets our customers' biscuit length and cycle time requirements
- Utilizes a transparent human/machine interface for the ladler using the *i*Pendant of an extract robot and custom control software that mirrors the "touch and feel" of the stand-alone ladling equipment
- The extract robot is integrated with the Severe Liquid and Dust Protection Package, a standard biscuit extract end-of-arm-tool, Collision Guard™ and Soft Float™ software in combination with custom robot application software to accommodate shot variance and enhance extraction reliability