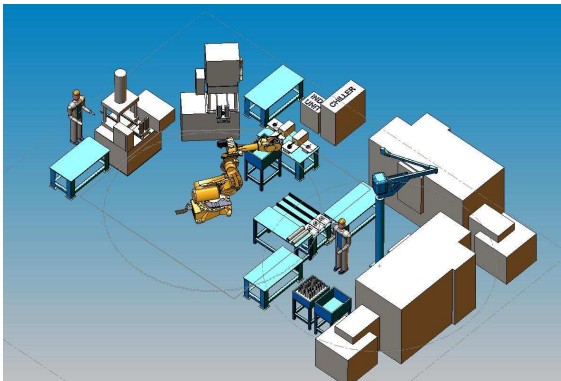


Case Study – Rotor Load Unload

The customer manufactures specialty pumps for oil field use. The AC motors, shafts, pump housings and other key pump components are manufactured in house. This cell loads and unloads presses and induction heaters for the assembly of the AC motor rotors used with the pumps.

System Requirements

- To allow the operators to enter raw rotors without shafts from several locations
- To process two types of rotors among two presses and induction heater coils as needed to each robot recipe
- To hand off finished rotors to the operators tending the lathes used to turn the outer diameters to a tight tolerance prior to assembly
- To provide consistent material handling of the robots in various forms





Description of the Solution

- ✚ TEC designed and built multiple infeed shuttles with part-specific locating details to infeed first and second step rotors.
- ✚ TEC integrated the induction heater and its coil fixture, the press controls and mechanical fixtures - including consultation on the press fixture changes needed to accommodate the automation – as well as the robotic automation into one cohesive package.
- ✚ The robotic end-of-arm tool included a robot outside diameter gripper with non-marking inserts.
- ✚ Finished rotors left the cell via powered chain conveyors.
- ✚ No external PLC was used; the CS8 controller internal PLC provided the traffic control.
- ✚ TEC used the Staubli RX260 6-axis floor mounted robot with the CS8 controller, Schunk gripper.

Customer Benefits

- Consistent throughput realized
- One or two human touches (depending on part being run), down from dozens in the previous manual operation
- No reduction in operator judgments
- Work in process in the area was reduced by 50%
- Elimination of any idea that this process step would be a bottleneck to the plant



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