

APPLICATION CASE STUDY #140

SIC Code:
3499

Product Handled:
Machining Pallets

Machine Type:
Vertical Lift Cylinder

HANDLING PROCEDURE

Load and unload pallets from a machining center. Pallets are brought into the workcell on carts. Operators must lift them off the carts and reach into the machining center to secure the pallet.

PROBLEM:

Pallets are very heavy, awkward to handle and expensive. Operators are presently using a forklift or hoist to handle the parts. Machining centers have limited space and the forklift restricts the operator's ability to secure the pallet in the machining center. A hoist does not hold the part securely or provide precise placement control. Operators must load and unload several machining centers throughout the day.



MATERIAL HANDLING REQUIREMENT AND WORK AREA RESTRICTIONS

- Tooling that does not restrict the operators' ability to work inside the machining center.
- Tooling that holds the part steady to eliminate damage to part and/or machining center. Tooling must hold part by a special bracket common to all pallets.
- Solution to cover multiple machining centers.
- Variable speed control of lifting device to facilitate transfer speeds and careful placement of part.
- 800 lb. maximum payload capacity
- 25-45" Vertical Lift. 12'10" Overhead Obstruction.

MATERIAL HANDLING SOLUTION

- Pneumatic Vertical Lift Cylinder on a free standing X-Y bridge crane. 360 Degree continuous rotation of lift cylinder.
- Custom designed tool to fit bracket. Pneumatic clamps to trap part on to tooling. Tooling size does not restrict operator's visibility.
- Safety circuitry that does not allow lift unless trap clamps are in proper position.
- Twist Metering Valve for Up/Down control, a motorcycle style metering valve mounted on the T-bar control handle.
- Adjustable "Bleed-Down" speed control to allow operator to gently place the pallet.
- Gripper safety circuitry to prevent actuation of the release circuitry unless the part is fully supported.

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