Increase Productivity and Profits with MIDACO Pallet Systems

MIDACO Pallet Changers can improve output of all brands of New and Existing Vertical and Horizontal Machining Centers.

Manufacturing statistics show the greatest profitability loss is **SPINDLE DOWNTIME**
Major Causes of VMC Spindle Downtime

- Part Load/Unload time
- First article inspection
- "Emergency Job" set up
- Job set-up and Debugging tasks

When you combine all this downtime it can be estimated that today's average VMC spindle is idle up to 40% of the time. That's up to 3.2 hours of non productivity per each 8-hour shift. This changeover downtime quickly adds up to a significant loss in profits.
Cost Justification and Payback

Over a 5-year period 4 hours of downtime per day can add up to over $750,000 (150,000 x 5 years) in lost profits.

<table>
<thead>
<tr>
<th>HOURS OF IDLE SPINDLE PER 8 HOUR SHIFT</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>TIMES x 250 WORKDAYS PER YEAR = EQUALS</td>
<td>250</td>
<td>500</td>
<td>750</td>
<td>1000</td>
</tr>
<tr>
<td>Number of idle hours per year</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

TIMES X MACHINE SHOP'S HOURLY RATE =

<table>
<thead>
<tr>
<th>HOURLY RATE</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>$40.00 / HOUR SHOP RATE</td>
<td>$10,000</td>
<td>$20,000</td>
<td>$30,000</td>
<td>$40,000</td>
</tr>
<tr>
<td>$50.00 / HOUR SHOP RATE</td>
<td>$12,500</td>
<td>$25,000</td>
<td>$37,500</td>
<td>$50,000</td>
</tr>
<tr>
<td>$60.00 / HOUR SHOP RATE</td>
<td>$15,000</td>
<td>$30,000</td>
<td>$45,000</td>
<td>$60,000</td>
</tr>
<tr>
<td>$75.00 / HOUR SHOP RATE</td>
<td>$18,750</td>
<td>$37,500</td>
<td>$56,250</td>
<td>$75,000</td>
</tr>
<tr>
<td>$100.00 / HOUR SHOP RATE</td>
<td>$25,000</td>
<td>$50,000</td>
<td>$75,000</td>
<td>$100,000</td>
</tr>
<tr>
<td>$150.00 / HOUR SHOP RATE</td>
<td>$37,500</td>
<td>$75,000</td>
<td>$112,500</td>
<td>$150,000</td>
</tr>
</tbody>
</table>
Today’s Business Challenge

To make more money and eliminate waste…
… “Don’t accept the Status Quo.”

Continually Review and Improve
the “PROCESS” to…

- REDUCE LABOR, HANDLING COSTS
- MAXIMIZE MACHINE OUTPUT
- MAXIMIZE OPERATOR PRODUCTIVITY
3 Target Areas Of Attack

1. MACHINE EFFICIENCY
   - Higher Speeds, Faster Performance
   - Quick change features
   - More efficient Work Holding, Work Handling

2. OPERATOR EFFICIENCY
   - Analysis and reduction of unnecessary actions
   - Implement Automation where ever possible
   - Operator can manage more machines

3. SPINDLE (CAPACITY) EFFICIENCY
   - More parts under the spindle
   - More sides of the parts exposed for machining
   - Minimize part handling time

Protect your capital investment…make your machines WORK harder for your customer.
Weapons To Attack Spindle Downtime

- Dedicated Fixtures
- Multi-part Vise and Work Holding Systems
- Modular Tooling Systems
- Precision Fixture/Plate Location Products
- Quick Change Work Holding Chucks, Collets
- Indexers, Rotary Tables
- Low Profile, Clamping Components
- Magnetic and Other Work Holding Products
- and MIDACO PALLET CHANGER SYSTEMS
Pallet System Benefits

- Fixtures/pallets are exchanged in only seconds
- +/- .0001” accuracy
- Parts loaded offline while machine works
- Pallets easily interchanged between different machines
- Jobs on pallets can be easily interrupted

- Operator can manage more machines
- Shorter lead times
- Lower cost per part
- Right hand or left hand mounting, promotes flexibility, efficient cell layout.
- Dual pallet system on one machine (Offers a 4 pallet system)
MIDACO Pallet Change Systems
Adapt to New and Existing Machines

- Vertical Milling Machine
- Drill and Tap Centers
- Horizontal Machine Centers (HMC)
- Surface Grinders
- Coordinate Measuring Machines (CMM)
- Laser Machines
- Welding and other applications
Manual Pallet Change Shuttle Systems

- 2 Pallets from 16” x 14” to 72” x 30”
- Up to 2,000 lb capacity
- Linear guide rails for easy movement
Automatic Pallet Change Systems

- 2 Pallets from 22” x 15” to 150” x 32”
- For machines where the table moves in the “Y” Axis
- Operator need not be present for exchange of pallets to occur via “Pallet Ready” button
- One operator can run 2 or more machines
Introducing the NEW Automatic A16SD Series Pallet System

PALLET CHANGE IN 6.5 SECONDS!
Dual Automatic Pallet Change Systems

- 4 Pallets from 22” x 15” to 150” x 32”
- Up to 8,000 lb capacity on larger systems
Automatic Y-Axis Pallet Change Systems

- 2 Pallets from 40” x 20” to 150” x 50”
- For Traveling Column, stationary table machines and other CNC’s where table DOES not move in Y-Axis
- Up to 8,000 lb capacity on larger systems
When Pallet A comes out of the machine the shuttle moves to put Pallet B into position and sends Pallet B into the machine. This operation is reversed for the next pallet change.
CE Option Available on All Automatic Systems

- Chip-containment
- Housekeeping benefits
- Pallet change will not occur if any of the 3 doors are opened.
Main Components of a Pallet System

- Low profile, cast iron receiver
- Precision ground locating pins and bushings
- Interchangeable pallets
Steel Wear Strip and Pallet Rails
Hardened Bushing with +/- .0001 Repeatability
Dovetail Design Pallet Rail for Clamping Rigidity
Hardened Lock Pin Plate
Hardened Lock Pin
Receiver
Lift Capacity from 150 lbs. to 8000 lbs.
(67.5 kg to 3600 kg)
Hardened Dowel Pins with +/- .0001 Repeatability and Dual Air Blast
Dovetail Design Draw Plate
Servo Drive Engaging Pallet
Moving Pallet Into Position
Servo Motor
Touch Screen for Easy Operation
Troubleshooting Simplicity
Receiver in the VMC
Pallet on the Receiver
Custom T-slot Pallets are Available
Custom T-Slot Design
Robot Load / Unload Systems

- Self contained robot cabinet with safety shields mounted on roll away slide system for ease of operator set up.
- Retrofits to any new or existing CNC lathe or machining center.
- One unit can load and unload 1 or 2 machines.
Automatic Door Opener System

- Automatic Door Opener/Closer for Mills, Lathes and other Machinery
- Improve ergonomics by eliminating manual door opening/closing tasks
- Ideal for robotic applications
- For Double and Single doors
Manual “Lift-Off” Pallet Change Systems

MICRO PALLET MP31
(mechanically operated, no airline required)

M1614FLR/2P Pneumatic Model
Manual Rotary Pallet Change Systems
MRPC

For Lathes, 4th or 5th axis Rotary Table, Indexers, Machining Centers, Mills, and CMM’s

Sizes: 8.5” dia (215.9mm), 10” dia (254mm), 12” dia (304.8mm)
Flexible Pallet Change Systems

- 20” round or 17” square pallets
- Unlimited Additions of Pallet Stations
- Up to 300 lb capacity
Flexible Pallet Change System
Flexible Pallet Loading Station - Outside
Communication Cable
Optional Bracket for Existing Tool Setter
Multiple Pallets for Repeat Jobs
AUTOMATIC SYSTEMS
- Servo Drive System
- 22” x 15” up to 150” x 50” pallet
  (559mm x 381mm to 3048mm x 1016mm)
- up to 8,000 lbs (3636 kg) per pallet capacity

MANUAL SYSTEMS
- Linear Guide Rails
- 10” x 12” up to 72” x 30” pallets
  (254mm x 304mm to 1828mm x 762mm)
- up to 2,000 lbs, (900 kg) pallet capacity

+/-.0001” (.0025MM) REPEATABILITY

MODULAR PRODUCT LINE

OPTIONS and ACCESSORIES
- Cast Aluminum, Cast Iron, T slot and Tapped Hole Pallets
- Transfer Carts
- Storage Systems
- Flip Down Transfer Bridge
- Spare Parts Kit
- Additional Warranty

ESTABLISHED IN 1969

USA MADE QUALITY

FULL WARRANTY

WORLDWIDE SUPPORT
Tactics For Success

- Increase the Value of your Machining Center Package by quoting either a MIDACO Automatic or Manual Pallet System on all new applications as an “ADD-ON SALE”
  - On all of your standard quotes, please, add Automatic and Manual Pallet Changer as standard option (MIDACO Pricing available on MIDACO-CORP.COM)
  - “Add-On to the Add-On Sale”. Quote other accessories with the pallet system, such as extra pallets, Transfer Carts and Storage Rack, at the time of initial sale to add value and additional profits.
  - Add MIDACO Pallet System Photos and Brochures to your Mailings, website, etc.. (All available per request, please advise format required)

- Quote and retrofit your current customers existing machining centers, even if you did not sell the original machine center

- Conduct individual or joint sales calls with local or factory rep

- Demonstrate MIDACO’s Advantages to your prospects – (“Seeing is Believing”)
  - Order a MIDACO Pallet System for display in your Showroom and/or Trade Show Booth
  - Display “MIDACO Sign/ Banner” in showroom and during “Open House” Trade Shows or similar events.