

PALLET CHANGE SYSTEMS

AUTOMATIC • MANUAL • Y-AXIS SHIFT • FLEXIBLE

For

DMG

MORI SEIKI

QUALIFIED PRODUCTS



SINCE 1969...

... **MIDACO** has been a leader in providing innovative and quality solutions to improve manufacturing efficiency for companies worldwide.

Our Mission

We strive to be the premier innovator in the designing and manufacturing of quality pallet systems and machine tool accessories for the machining industry.

Technology

We employ advanced design methods in product development and incorporate the latest state-of-the-art technologies.

Product Innovation

It is our customers who are driving the design of new products and thanks to their needs we are successfully designing and developing products to fulfill their future requirements.



m i d a c o - c o r p . c o m

2000 East Touhy Avenue, Elk Grove Village, IL 60007 USA
ph: 847.593.8420 • email: midaco@midaco-corp.com

CONTENTS

NVX SERIES

NVX 5060 & NVX 5080 (A3020SD & M3020FL Pallet Changer).....	2-3
NVX 5100 (A4020SD & M4020FL Pallet Changer).....	4-5

NVD SERIES

NVD 4000 DCG (A2216SD Pallet Changer).....	6
NVD 5000α1A/40 (A3020SD Pallet Changer).....	7
NVD 5000α1B/40.....	8
NVD 6000 DCG (A4020SD Pallet Changer).....	9

NV SERIES

NV 7000 (A6030SD & M6030FL Pallet Changer).....	10-11
---	-------

DURA VERTICAL SERIES

Dura Vertical 5060 & 5080 (A3020SD & M3020FL Pallet Changer).....	12-13
Dura Vertical 5100 (A4020SD & M4020FL Pallet Changer).....	14-15

MIDACO PRODUCTS

Flexible Pallet System.....	16-17
Robotic Part Loading and Unloading System.....	18-19
Manual Rotary Pallet System (M216RPC for NVD 1500 DCG).....	20-21
Micro Pallet System MPS31.....	22
Manual Pallet System.....	23
Automatic Pallet System.....	24
Dual Pallet System and CE Enclosure.....	25

NVX 5060 (travels: 23.6" x 20.9") & NVX 5080 (travels: 31.5" x 20.9")



shown NVX 5060

...uses Pallet Changer Model

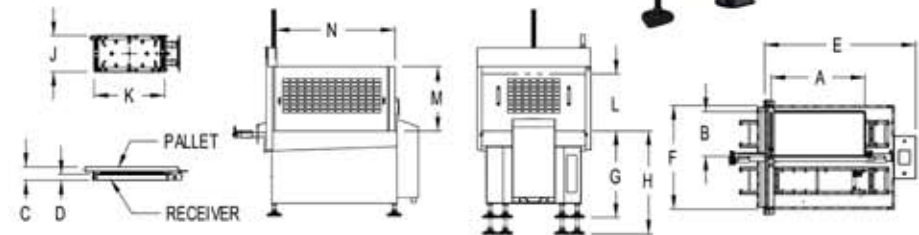
Automatic Pallet Changer

- STANDARD SYSTEM includes:**
- 1 - Cast Iron Receiver with Airblast for Chip Removal
 - 2 - Plain Cast Aluminum Pallets
 - 1 - End Mounted Shuttle
 - 1 - Automatic Door
 - 1 - High-Visibility Indicator Lamp

- OPTIONS:**
- CE/CHIP Containment Enclosure
 - Plain Cast Iron and T-Slotted Cast Iron Pallets
 - Additional Models, Pallets and Pallet Transfer/Storage Accessories Available



Series A30SD



NOTE: Diagram Shows Optional CE Package
Automatic systems require 2 M functions and 230 volt, 3 phase, 30 amp electric service for installation.

AUTOMATIC A3020SD

MANUAL M3020FL

Clamping Force*	5200/7500***	(2360/3410)
Receiver Weight	243	(110)
Pallet Weight	140	(64)
Pallet Thickness:	1.50	(38.1)
Pallet Load Cap:**	1000/2000***	(454/908)
A (Pallet X Dim)	30	(762)
B (Pallet Y Dim)	19	(482)
C	5.17	(132)
D	2.56	(65)
E	54.5	(1384)
F	45	(1143)
G (Min Height)	38	(965)
H (Max Height)	49	(1245)
I	****	****
J (Receiver)	15.5	(394)
K (Receiver)	30	(762)
L (Door Opening)	20	(508)
M (Optional Pkg)	24	(528)
N (Optional Pkg)	42	(1067)

Clamping Force*	5200/7500***	(2360/3410)
Receiver Weight	243	(110)
Pallet Weight	140	(64)
Pallet Thickness:	1.50	(38)
Pallet Load Cap:**	1000/2000***	(454/908)
A (Pallet X Dim)	30	(762)
B (Pallet Y Dim)	20	(508)
C	5.17	(132)
D	109	(2770)
E	25	(635)
F (Min Height)	34.5	(876)
G (Max Height)	44	(1117)
H	****	****
I	39	(990)
J (Receiver)	30	(762)
K (Receiver)	15.5	(394)
L	2.56	(65)
M	10.2	(260)
N	104	(2642)

Weight capacities shown in lbs (kgs). Dimensions shown in inch (mm) *At 100PSI (6.9 bar)

At 120PSI (8.2 bar) *Optional 2000lb (909kg) load capacity ****Manufactured to fit specific VMC application

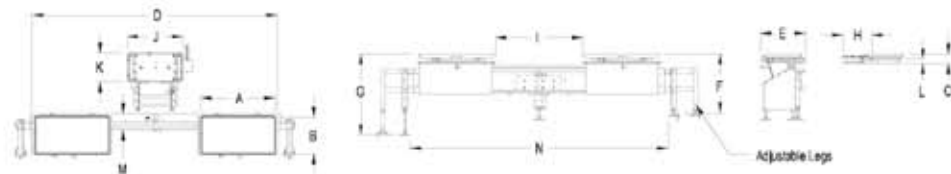
Manual Pallet Changer

- STANDARD SYSTEM includes:**
- 1 - Cast Iron Receiver with Airblast for Chip Removal
 - 2 - Plain Cast Aluminum Pallets
 - 1 - Front Mounted Side-By-Side Shuttle
 - 1 - Pallet Clamp Confirmation Switch

- OPTIONS:**
- Plain Cast Iron and T-Slotted Cast Iron Pallets
 - Additional Models, Pallets and Pallet Transfer/Storage Accessories Available



Series M30FL



Midaco pallet systems are designed for machines with stationary guarding. Some machines require options or customization. Additional pallet systems for traveling column or special applications available. Contact your sales representative to confirm model and specifications for all applications.

NVD 4000 DCG (travels: 23.6" x 15.7")



...uses Pallet Changer Model A2216SD

NVD 5000α1A/40 (travels: 31.5" x 20.1")



...uses Pallet Changer Model A3020SD

AUTOMATIC

A2216SD

Clamping Force*	4500	(2043)
Receiver Weight	95	(43)
Pallet Weight	48	(22)
Pallet Thickness:	1.00	(25.4)
Pallet Load Cap: **	500	(227)
A (Pallet X Dim)	22	(559)
B (Pallet Y Dim)	15	(381)
C	4.13	(105)
D	2.50	(63)
E	45	(1143)
F	35.2	(894)
G (Min Height)	32.5	(826)
H (Max Height)	44.8	(1138)
I	****	****
J (Receiver)	13	(330)
K (Receiver)	18	(457)
L (Door Opening)	16	(406)
M (Optional Pkg)	20	(508)
N (Optional Pkg)	33	(838)

A3020SD

Clamping Force*	5200/7500***	(2360/3410)
Receiver Weight	243	(110)
Pallet Weight	140	(64)
Pallet Thickness:	1.50	(38.1)
Pallet Load Cap: **	1000/2000***	(454/908)
A (Pallet X Dim)	30	(762)
B (Pallet Y Dim)	19	(482)
C	5.17	(132)
D	2.56	(65)
E	54.5	(1384)
F	45	(1143)
G (Min Height)	38	(965)
H (Max Height)	49	(1245)
I	****	****
J (Receiver)	15.5	(394)
K (Receiver)	30	(762)
L (Door Opening)	20	(508)
M (Optional Pkg)	24	(528)
N (Optional Pkg)	42	(1067)

Weight capacities shown in lbs (kgs). Dimensions shown in inch (mm)

*At 100PSI (6.9 bar) **At 120PSI (8.2 bar) ***Manufactured to fit specific VMC application

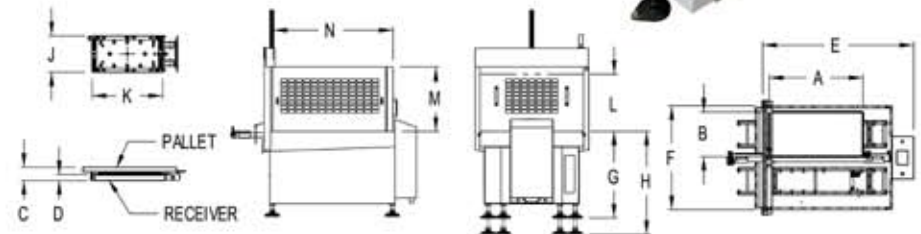
Automatic Pallet Changer

STANDARD SYSTEM includes:

- 1 - Cast Iron Receiver with Airblast for Chip Removal
- 2 - Plain Cast Aluminum Pallets
- 1 - End Mounted Shuttle
- 1 - Automatic Door
- 1 - High-Visibility Indicator Lamp

OPTIONS:

- CE/CHIP Containment Enclosure
- Plain Cast Iron and T-Slotted Cast Iron Pallets
- Additional Models, Pallets and Pallet Transfer/Storage Accessories Available



NOTE: Diagram Shows Optional CE Package

Automatic systems require 2 M functions and 230 volt, 3 phase, 30 amp electric service for installation.

NVD 5000 α 1B/40 (travels: 40.2" x 20.1")



...uses Pallet Changer Model

NVD 6000 DCG (travels: 35.4" x 20.1")



...uses Pallet Changer Model

AUTOMATIC A4020SD

Clamping Force*	5200/7500***	(2360/3410)
Receiver Weight	243	(110)
Pallet Weight	170	(80)
Pallet Thickness:	1.5/2.0***	(38.1/50.8)
Pallet Load Cap: **	1000/2000***	(454/908)
A (Pallet X Dim)	40	(1016)
B (Pallet Y Dim)	19	(482)
C	5.17/5.67***	(132/144)
D	2.56	(65)
E	68	(1727)
F	45	(1143)
G (Min Height)	38	(965)
H (Max Height)	49	(1245)
I	****	****
J (Receiver)	15.5	(394)
K (Receiver)	30	(762)
L (Door Opening)	20	(508)
M (Optional Pkg)	24	(528)
N (Optional Pkg)	51	(1295)

Weight capacities shown in lbs (kgs). Dimensions shown in inch (mm) *At 100PSI (6.9 bar)

At 120PSI (8.2 bar) *Optional 2000lb (909kg) load capacity ****Manufactured to fit specific VMC application

Automatic Pallet Changer

STANDARD SYSTEM includes:

- 1 - Cast Iron Receiver with Airblast for Chip Removal
- 2 - Plain Cast Aluminum Pallets
- 1 - End Mounted Shuttle
- 1 - Automatic Door
- 1 - High-Visibility Indicator Lamp

OPTIONS:

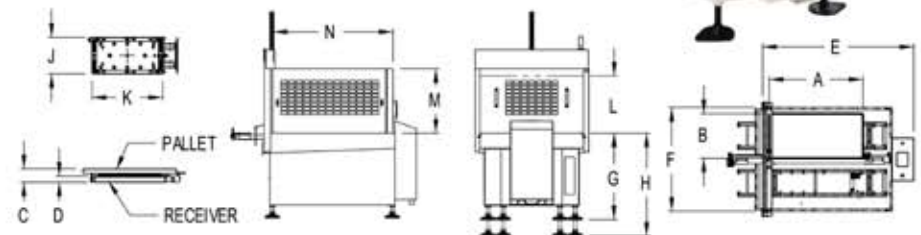
- CE/CHIP Containment Enclosure
- Plain Cast Iron and T-Slotted Cast Iron Pallets
- Additional Models, Pallets and Pallet Transfer/Storage Accessories Available

Series A40SD



Shown with CE Guarding

see pg. 25 for CE info.



NOTE: Diagram Shows Optional CE Package

Automatic systems require 2 M functions and 230 volt, 3 phase, 30 amp electric service for installation.

NV 7000 (travels: 60.2" x 26")



...uses Pallet Changer Model

Automatic Pallet Changer

STANDARD SYSTEM includes:

- 1 - Cast Iron Receiver with Airblast for Chip Removal
- 2 - Plain Cast Aluminum Pallets
- 1 - End Mounted Shuttle
- 1 - Automatic Door
- 1 - High-Visibility Indicator Lamp

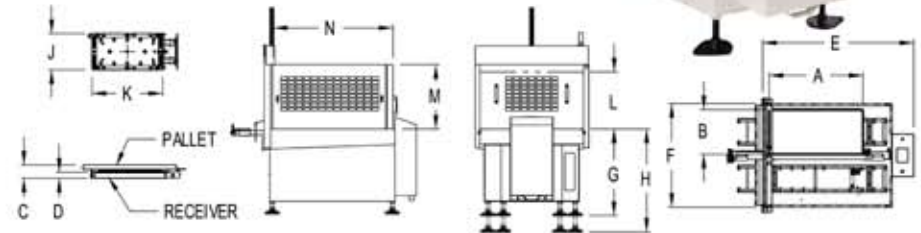
OPTIONS:

- CE/CHIP Containment Enclosure
- Plain Cast Iron and T-Slotted Cast Iron Pallets
- Additional Models, Pallets and Pallet Transfer/Storage Accessories Available

Series A60SD



see pg. 25 for CE info.



NOTE: Diagram Shows Optional CE Package

Automatic systems require 2 M functions and 230 volt, 3 phase, 30 amp electric service for installation.

AUTOMATIC A6030SD

MANUAL M6030FL

Clamping Force*	15400	(7000)
Receiver Weight	610	(277)
Pallet Weight	455	(207)
Pallet Thickness:	2.0	(50.8)
Pallet Load Cap:**	4000	(1818)
A (Pallet X Dim)	60	(1524)
B (Pallet Y Dim)	29	(736)
C	6.85	(174)
D	3.75	(95)
E	88	(2235)
F	67	(1702)
G (Min Height)	38	(965)
H (Max Height)	52	(1321)
I	****	****
J (Receiver)	19.5	(495)
K (Receiver)	50	(1270)
L (Door Opening)	28	(711)
M (Optional Pkg)	30	(762)
N (Optional Pkg)	71	(1803)

Clamping Force*	5200/7500***	(2360/3410)
Receiver Weight	243	(110)
Pallet Weight	435	(198)
Pallet Thickness:	2.0	(50.8)
Pallet Load Cap:**	1000/2000***	(454/908)
A (Pallet X Dim)	60	(1524)
B (Pallet Y Dim)	30	(762)
C	5.67	(144)
D	192	(4877)
E	34	(864)
F (Min Height)	40	(1016)
G (Max Height)	51	(1295)
H	****	****
I	68	(1727)
J (Receiver)	30	(762)
K (Receiver)	15.5	(394)
L	2.56	(65)
M	13.25	(337)
N	193	(4902)

Weight capacities shown in lbs (kgs). Dimensions shown in inch (mm) *At 100PSI (6.9 bar)

10 **At 120PSI (8.2 bar) ***Optional 2000lb (909kg) load capacity ****Manufactured to fit specific VMC application

Manual Pallet Changer

STANDARD SYSTEM includes:

- 1 - Cast Iron Receiver with Airblast for Chip Removal
- 2 - Plain Cast Aluminum Pallets
- 1 - Front Mounted Side-By-Side Shuttle
- 1 - Pallet Clamp Confirmation Switch

OPTIONS:

- Plain Cast Iron and T-Slotted Cast Iron Pallets
- Additional Models, Pallets and Pallet Transfer/Storage Accessories Available



Series M60FL



◆ Midaco pallet systems are designed for machines with stationary guarding. Some machines require options or customization. Additional pallet systems for traveling column or special applications available. Contact your sales representative to confirm model and specifications for all applications.

Dura Vertical 5060 (travels: 23.6" x 20.9") & Dura Vertical 5080 (travels: 31.5" x 20.9")



shown Dura Vertical 5060

...uses Pallet Changer Model

Automatic Pallet Changer

STANDARD SYSTEM includes:

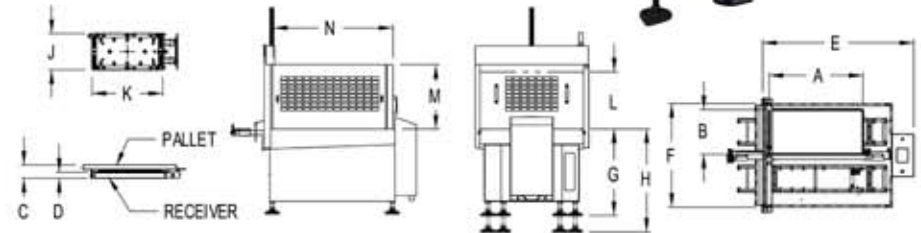
- 1 - Cast Iron Receiver with Airblast for Chip Removal
- 2 - Plain Cast Aluminum Pallets
- 1 - End Mounted Shuttle
- 1 - Automatic Door
- 1 - High-Visibility Indicator Lamp

OPTIONS:

- CE/CHIP Containment Enclosure
- Plain Cast Iron and T-Slotted Cast Iron Pallets
- Additional Models, Pallets and Pallet Transfer/Storage Accessories Available



see pg. 25 for CE info.



NOTE: Diagram Shows Optional CE Package

Automatic systems require 2 M functions and 230 volt, 3 phase, 30 amp electric service for installation.

AUTOMATIC A3020SD

MANUAL M3020FL

Clamping Force*	5200/7500***	(2360/3410)
Receiver Weight	243	(110)
Pallet Weight	140	(64)
Pallet Thickness:	1.50	(38.1)
Pallet Load Cap:**	1000/2000***	(454/908)
A (Pallet X Dim)	30	(762)
B (Pallet Y Dim)	19	(482)
C	5.17	(132)
D	2.56	(65)
E	54.5	(1384)
F	45	(1143)
G (Min Height)	38	(965)
H (Max Height)	49	(1245)
I	****	****
J (Receiver)	15.5	(394)
K (Receiver)	30	(762)
L (Door Opening)	20	(508)
M (Optional Pkg)	24	(528)
N (Optional Pkg)	42	(1067)

Clamping Force*	5200/7500***	(2360/3410)
Receiver Weight	243	(110)
Pallet Weight	140	(64)
Pallet Thickness:	1.50	(38)
Pallet Load Cap:**	1000/2000***	(454/908)
A (Pallet X Dim)	30	(762)
B (Pallet Y Dim)	20	(508)
C	5.17	(132)
D	109	(2770)
E	25	(635)
F (Min Height)	34.5	(876)
G (Max Height)	44	(1117)
H	****	****
I	39	(990)
J (Receiver)	30	(762)
K (Receiver)	15.5	(394)
L	2.56	(65)
M	10.2	(260)
N	104	(2642)

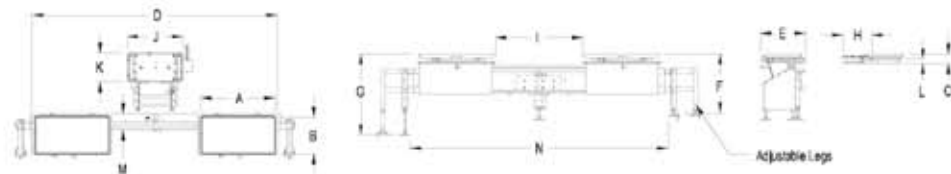
Manual Pallet Changer

STANDARD SYSTEM includes:

- 1 - Cast Iron Receiver with Airblast for Chip Removal
- 2 - Plain Cast Aluminum Pallets
- 1 - Front Mounted Side-By-Side Shuttle
- 1 - Pallet Clamp Confirmation Switch

OPTIONS:

- Plain Cast Iron and T-Slotted Cast Iron Pallets
- Additional Models, Pallets and Pallet Transfer/Storage Accessories Available



◆ Midaco pallet systems are designed for machines with stationary guarding. Some machines require options or customization. Additional pallet systems for traveling column or special applications available. Contact your sales representative to confirm model and specifications for all applications.

Weight capacities shown in lbs (kgs). Dimensions shown in inch (mm) *At 100PSI (6.9 bar)

12 **At 120PSI (8.2 bar) ***Optional 2000lb (909kg) load capacity ****Manufactured to fit specific VMC application

Dura Vertical 5100 (travels: 41.3" x 20.9")



...uses Pallet Changer Model

Automatic Pallet Changer

STANDARD SYSTEM includes:

- 1 - Cast Iron Receiver with Airblast for Chip Removal
- 2 - Plain Cast Aluminum Pallets
- 1 - End Mounted Shuttle
- 1 - Automatic Door
- 1 - High-Visibility Indicator Lamp

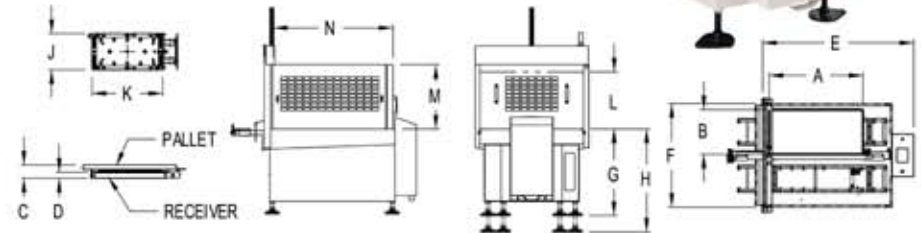
OPTIONS:

- CE/CHIP Containment Enclosure
- Plain Cast Iron and T-Slotted Cast Iron Pallets
- Additional Models, Pallets and Pallet Transfer/Storage Accessories Available

Series A40SD



see pg. 25 for CE info.



NOTE: Diagram Shows Optional CE Package

Automatic systems require 2 M functions and 230 volt, 3 phase, 30 amp electric service for installation.

AUTOMATIC A4020SD

MANUAL M4020FL

Clamping Force*	5200/7500***	(2360/3410)
Receiver Weight	243	(110)
Pallet Weight	170	(80)
Pallet Thickness:	1.5/2.0***	(38.1/50.8)
Pallet Load Cap:**	1000/2000***	(454/908)
A (Pallet X Dim)	40	(1016)
B (Pallet Y Dim)	19	(482)
C	5.17/5.67***	(132/144)
D	2.56	(65)
E	68	(1727)
F	45	(1143)
G (Min Height)	38	(965)
H (Max Height)	49	(1245)
I	****	****
J (Receiver)	15.5	(394)
K (Receiver)	30	(762)
L (Door Opening)	20	(508)
M (Optional Pkg)	24	(528)
N (Optional Pkg)	51	(1295)

Clamping Force*	5200/7500***	(2360/3410)
Receiver Weight	243	(110)
Pallet Weight	170/212***	(80/96)
Pallet Thickness:	1.5/2.0***	(38.1/50.8)
Pallet Load Cap:**	1000/2000***	(454/908)
A (Pallet X Dim)	40	(1016)
B (Pallet Y Dim)	20	(508)
C	5.17/5.67***	(132/144)
D	133	(3378)
E	25	(635)
F (Min Height)	35	(889)
G (Max Height)	45	(1143)
H	****	****
I	47	(1194)
J (Receiver)	30	(762)
K (Receiver)	15.5	(394)
L	2.56	(65)
M	10.2	(260)
N	133	(3378)

Weight capacities shown in lbs (kgs). Dimensions shown in inch (mm) *At 100PSI (6.9 bar)

14 **At 120PSI (8.2 bar) ***Optional 2000lb (909kg) load capacity ****Manufactured to fit specific VMC application

Manual Pallet Changer

STANDARD SYSTEM includes:

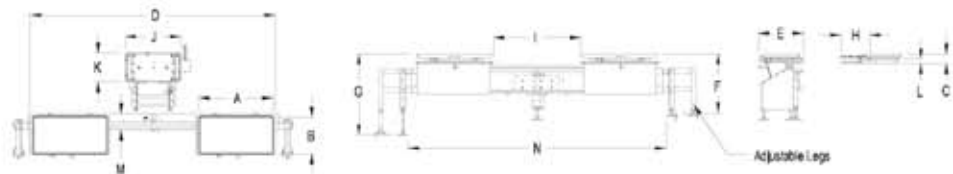
- 1 - Cast Iron Receiver with Airblast for Chip Removal
- 2 - Plain Cast Aluminum Pallets
- 1 - Front Mounted Side-By-Side Shuttle
- 1 - Pallet Clamp Confirmation Switch

OPTIONS:

- Plain Cast Iron and T-Slotted Cast Iron Pallets
- Additional Models, Pallets and Pallet Transfer/Storage Accessories Available



Series M40FL



◆ Midaco pallet systems are designed for machines with stationary guarding. Some machines require options or customization. Additional pallet systems for traveling column or special applications available. Contact your sales representative to confirm model and specifications for all applications.

Flexible Pallet System

for 5-Axis Trunnion, Horizontal and Vertical Machining Centers



4-Pallet system can be expanded in 2-Pallet increments

Receiver With Pallet



The patented receiver utilizes a mechanical clamping system that **DOES NOT REQUIRE ANY AIR, HYDRAULIC OR POWER LINES** and has a clamping force of over 21,000 lbs (9450 kgs)

- Cast Iron receiver mounts directly to the machine table.
- Hardened and ground locating pins assure +/- .0001" (.0025 mm) repeatability.
- MIDACO's "Air Blast" blows air across the contact pads for chip removal.
- Z- height is only 3.875" (98.425 mm) in the clamped position.
- Cast aluminum pallets are standard, cast iron pallets are optional.

PALLET DELIVERY SYSTEM



Linear guided pallet delivery system is shown loading pallet onto receiver.

STATE OF THE ART VERSATILITY



MIDACO's control fully integrates with your machine.

The versatile Touch-Screen graphic control allows monitoring of pallet positions as well as controlling of automatic and manual functions.

Full servo drive provides proven reliability.

- Operator Interface Provides:**
- Optional modem for online diagnostics or upgrades
 - Password protected access
 - Parameter page access
 - Manual function access
 - Single block function
 - Current I/O status
 - Alarm Display

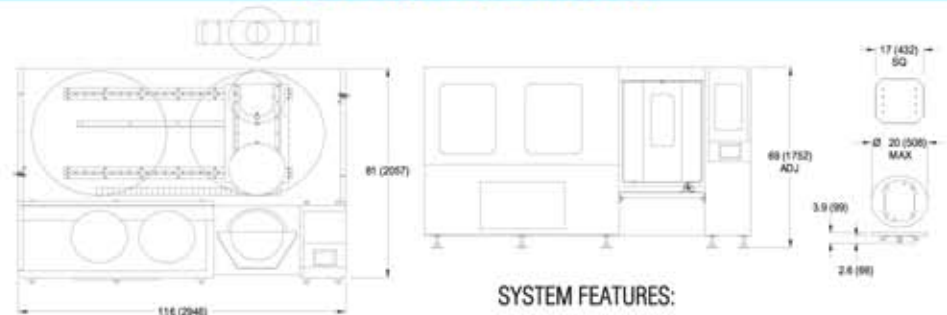
Set-Up Station
Manually indexable at 90° increments for ease of part loading and unloading. (shown with open door)



- Expandability**
- Totally Enclosed.
 - Access doors on both sides.
 - Unlimited expandability in increments of 2 pallets.
 - Linear guided pallet delivery system is Servo Driven.



SPECIFICATIONS



SYSTEM REQUIREMENTS:

- 100 psi (6.9 bar) Air
- 220/230 Volt, 3Ø, 20 Amp Service

	in/lbs	(mm/kg)
Clamping Force	21000	(9500)
Receiver Weight	80	(32)
Pallet Weight (aluminum)	48	(22)
Pallet Weight (cast iron)	118	(53)
Pallet Thickness:	1.25	(32)
Pallet Load Cap:	300	(135)
Square Pallet	17 sq.	(432)
Round Pallet	20 dia.	(508)
Max Height (floor to table top)	30-60	(762-1524)

SYSTEM FEATURES:

- Standard 4-pallet system
- Expandable in units of Two Pallets
- May be used on 5-axis or vertical machines (height adjustable)
- Pallet scheduling is controlled by the parent machining center
- No air or hydraulics to receiver
- Full freedom of 5-axis movement
- Easy to use touch screen
- Menu driven
- 90° index work load station

Robotic Part Loading & Unloading System



shown on a Dura Vertical 5060

The Robotic System is available with your choice of Articulated Arm



ABB



Staubli



Fanuc



Mitsubishi

Fits to any CNC Lathe or Machining Center

OPTION:

The Robotic Part Loading System can load 1 or 2 machines (call MIDACO for details)

ROBOTIC SYSTEM

- Software based PLC starts automatically when controller is powered on Control system IO using familiar PLC programming interface Ladder-Logic, functional block diagram, Sequential flow chart, Structured text, and illustrated list supported
- SP1 Manual Control Pendant
- Create and modify applications
- Simple cycle start-up and recovery
- 7 meter cable (10m extension optional)
- On-line help
- One hand jogging
- Light weight (700g)
- Left and right hand use
- Display with 16 lines; 40 characters
- Complete alphanumeric keypad
- Mode select switch with four operating mode s
- Intuitive and friendly for browsing and first level troubleshooting
- 1 CDROM Provided with system (Available in English, German, French, Spanish or Italian)



- Articulated arm with 6 degrees of freedom EQUIPMENT for high flexibility
- Spherical work envelope: maximum utilization of cell workspace
- Fully enclosed structure, (IP65) ideal for harsh environment application (seals are protected against metal chips)
- Wrist (IP67) compatible with machine-tool environment
- High speed, high resolution servos with absolute calibration
- Patented JCM Zero Backlash Drive for ultimate rigidity, speed and precision

Accurate cabinet position is ensured by push button pneumatic lock pin



- Std 5 meter Interconnect cable (robot - controller)
- 5 meter interconnect cable, 90° connectors on both sides
- Digital I/O board
- 16 Inputs / 16 Outputs, opto-coupled
- SOFT PLC Runtime – license for controller
- Runtime license for CS8 series controller

NVD 1500 DCG (5.9" x 5.9")



...uses the Manual Rotary Pallet System

Manual Rotary Pallet System

For 4-Axis, 5-Axis, Vertical and Turning Applications



Shown with 8.5 " pallet



Shown with 12 " pallet

NO AIR OR HYDRAULICS REQUIRED

SPECIFICATIONS



Each Standard MRPC Includes:

1 each - Receiver 2.31" x 8" dia. (58.67 mm x 203.2 mm)
 2 each - Cast Aluminum Pallet Tops 1" x 8.5" dia.,
 or 10" dia., or 12" dia. (25.4mm x 216mm dia.,
 or x 254 mm dia., or 304.8 mm dia.)

- M216RPC System - (1) receiver, (2) 8.5" dia pallets
- M254RPC System - (1) receiver, (2) 10" dia. pallets
- M305RPC System - (1) receiver, (2) 12" dia. pallets

	in/lbs	(mm/kg)
Ht. w/ pallet in locked position	3.31"	(84.12 mm)
Receiver Weight	25 lb.	(11.25 kg)
Pallet Weight 1" x 8.5" dia	7.5 lb.	(3.38 kg)
Pallet Weight 1" x 10" dia.	8.5 lb.	(8.83 kg)
Pallet Weight 1" x 12" dia.	9.5 lb.	(4.28 kg)



Shown with 8.5 ", 10" and 12" pallets and with optional pallet holders

Micro Pallet System - MPS31



For productivity on a II types of machining centers, MIDACO's Micro Pallet System™ allows operators to manually change pallets in seconds.

Easy flip handle precisely locks pallet into cast iron receiver.

The low profile receiver does not require air supply making it versatile for horizontal, vertical and special application machines.



Manual Pallet System

The operator simply activates the pneumatic receiver to unclamp the pallet. The completed pallet (A) can be rolled out of the machine to the shuttle. The next pallet (B) can be quickly rolled into the machine and clamped in only seconds.



"Side by Side" Shuttle Systems adapt to a variety of applications:

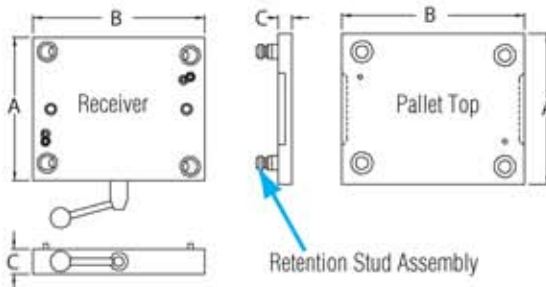
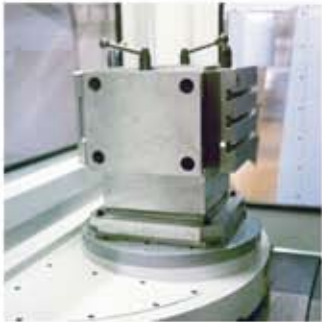
- Vertical Milling Machines
- Drill and Tap Centers
- Surface Grinders
- Coordinate Measuring Machines
- Special Machines

- (C) Precision ground linear guide rails provide smooth and easy transfer of pallets.
- (D) Adjustable legs telescope out allowing access to chip/coolant drawers.
- (E) Full length shuttle drip through captures coolant and chips.

Each Standard Micro Pallet System (model MPS 31) Includes:

	Receiver	Pallet Top
Material:	Cast Iron	Aluminum
Quantity:	One	Two
Weight:	40 lbs (18.18 kgs)	14 lbs (6.36 kgs)
A:	10" (254mm)	10.5" (266.7mm)
B:	12" (304.8mm)	12.75" (323.85mm)
C:	1.75" (44.45mm)	1" (25.4mm)
Retention Stud Assembly - 8 standard		

Weights shown in lbs (kgs) Dimensions shown in inch (mm)



Manual Receiver



- Cast Iron pneumatically powered receiver mounts to the machine table.
- Standard plain cast aluminum pallets.
- Optional cast iron, T-slotted pallets are available.
- Pallet handle promotes ease of use.
- "Air Blast" at each contact pad of pneumatic receiver is standard for chip removal.
- "Dual Palm Buttons" (Series 20 and larger) activate receiver maximizing operator safety.
- Repeatability is +/- .0001" (.0025 mm).

Automatic Pallet System

MIDACO's PLC is Fully Integrated with the Machine

While the alternate pallet is on the machine, the operator sets up the next pallet. Once ready, the operator pushes the "Pallet Ready" button (A) and walks away to attend other activities. When the pallet in the machine is complete, the next pallet shuttles in automatically.

The PLC allows the operator to program pallet acceleration and deceleration according to the weight of the fixture to optimize performance.

Electric Servo Drive Provides Proven Reliability

MIDACO's precision engineered Servo Drive assembly (C) extends into the machining center, tilts and engages with the pallet coupler (D) to remove the pallet from the machining center. The Servo Drive then delivers the next pallet into the machine in seconds.



Touchscreen (B):

- Optional modem for online diagnostics or upgrades
- Password protected access
- Parameters page access
- Manual functions access
- Single block functions
- Current I/O status
- Diagnostic pages

Dual Pallet System

Available for all Vertical Machining Centers



NVD 4000 DCG with Dual 4-Pallet System A2216SD/16SDS, which includes (2) Series 16 End Load Shuttle units, each with automatic door and indicator lamp.

Receiver



- Cast Iron receiver mounts directly to the machine table.
- Hardened and ground locating pins assure +/- .0001" (.0025 mm) repeatability.
- MIDACO's patented "Dual Air Blast" blows air up through and across the contact pads for chip removal.

Pallet



- Precision ground steel rails include hardened and ground bushings to assure accuracy and durability.
- Standard plain cast aluminum pallets offer extreme versatility.
- Custom cast iron and T-Slotted pallets are optional.

CE Enclosure Available on all Automatic Pallet Changers

- 3-sided enclosure includes hinged front and back doors that are opened for easy accessibility.
- End door is removable.
- Pallet change will not occur if any of the 3 doors is opened.
- With no overhead obstructions, an overhead crane can easily load parts.



A30SD and smaller units open DOWN



A40SD and larger units open OUT

Solutions to Increase Productivity



Made at our facility in the USA...



...with sales and support
WORLDWIDE.



m i d a c o - c o r p . c o m

2000 East Touhy Avenue, Elk Grove Village, IL 60007 USA
ph: 847.593.8420 ● email: midaco@midaco-corp.com