

Pallet Change Systems



Shown with
CE Guarding



Full Line Catalog

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 design, manufacture 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.

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vist our website: www.midaco-corp.com

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.

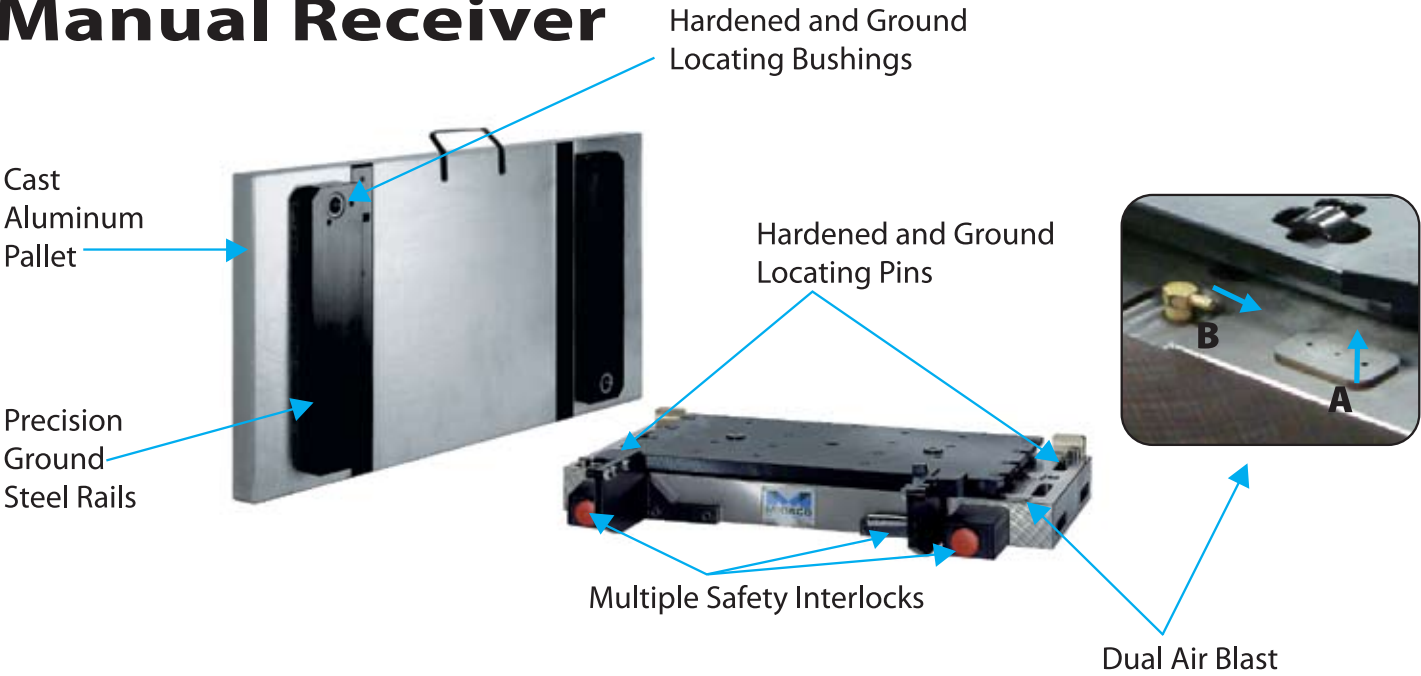


- "Side by Side" Shuttle Systems adapt to a variety of applications:
- Vertical Milling Machines
 - Drill and Tap Centers
 - Surface Grinders
 - Coordinate Measureing Machines
 - Special Machines



- (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.

Manual Receiver



Cast Iron pneumatically powered receiver mounts to the machine table. Standard plain cast aluminum pallets. Optional cast iron, T-Slotted and Tapped hole pallets available. Pallet handle promotes ease of use.

MIDACO's patented "Dual Air Blast" blows air up through (A) and across (B) the contact pads for chip removal (see insert)

"Dual Palm Buttons" activate receiver maximizing operator safety. Repeatability is +/- .0001" (.0025 mm).

Series 10 & 20 Manual Pallet Changer

size 16" x 14" to 22" x 16" (406mm x 356mm to 559mm x 406mm)

Series 16 Automatic Pallet Changers

sizes 22" x 12" to 27" x 15" (559mm x 279mm to 686mm x 381mm)



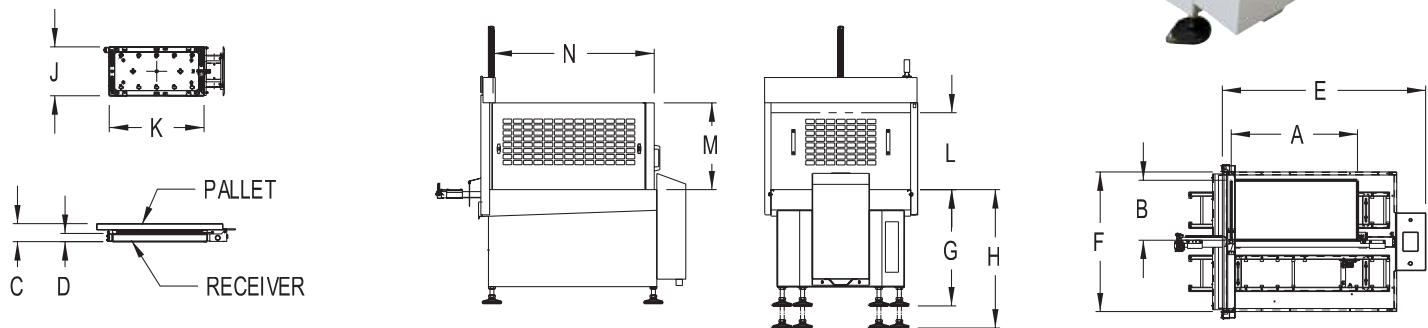
Automatic Pallet Changer

STANDARD SYSTEM includes:

- 1 - Cast Iron Receiver with Airblast for Chip Removal
- 2 - Plain Cast Aluminum Pallets
- 1 - End Mounted Shuttle
- 1 - Custom-Fitted, Automatic Door
- 1 - High-Visibility Indicator Lamp
- 1 - Pallet Clamp Confirmation

OPTIONS:

- Cast Iron, T-Slotted, Tapped-Hole Pallets
- Additional Models, Pallets and Pallet Transfer/Storage Accessories available
- 3 sided CE enclosure is available on all Automatic SD systems



NOTE: Diagram Shows Optional CE Package. Weight capacities shown in lbs (kg) Dimensions shown in inch (mm) *At 100PSI (6.9 bar) **At 120PSI (8.2 bar) Patent Pending Diagram Shows optional CE Package

AUTOMATIC

Series 16SD

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)	22-27	(559-686)
B (Pallet Y Dim)	14-15	(356-381)
C	4.13	(105)
D	2.50	(63)
E	45	(1143)
F	35.2	(894)
G (Min Height)	34.8	(884)
H (Max Height)	44.8	(1138)
I	****	****
J (Receiver)	13	(15.5)
K (Receiver)	18	(457)
L (Door Opening)	16	(406)
M (Optional Pkg)	20	(508)
N (Optional Pkg)	33	(838)

MANUAL

Series 10FL

Clamping Force*	4200	(1905)
Receiver Weight	80	(36)
Pallet Weight	31	(14)
Pallet Thickness	1.00	(25.4)
Pallet Load Cap:**	300	(136)
A (Pallet X Dim)	16	(406)
B (Pallet Y Dim)	14	(356)
C	4.12	(104)
D	80	(2032)
E	20	(508)
F (Min Height)	29	(736)
G (Max Height)	39	(990)
H	****	****
I	30	(762)
J (Receiver)	14	(355)
K (Receiver)	13	(330)
L	2.5	(63.5)
M	6.5	(165)
N	75	(1905)

MANUAL

Series 20FL

Clamping Force*	4200	(1905)
Receiver Weight	80	(36)
Pallet Weight	55-63	(25-29)
Pallet Thickness	1.00	(25.4)
Pallet Load Cap:**	300	(136)
A (Pallet X Dim)	20-22	(508-559)
B (Pallet Y Dim)	16-20	(406-508)
C	4.12	(104)
D	80	(2032)
E	20-23.5	(508-567)
F (Min Height)	29	(736)
G (Max Height)	39	(990)
H	****	****
I	30	(762)
J (Receiver)	14	(355)
K (Receiver)	13	(330)
L	2.5	(63.5)
M	6.5	(165)
N	75	(1905)

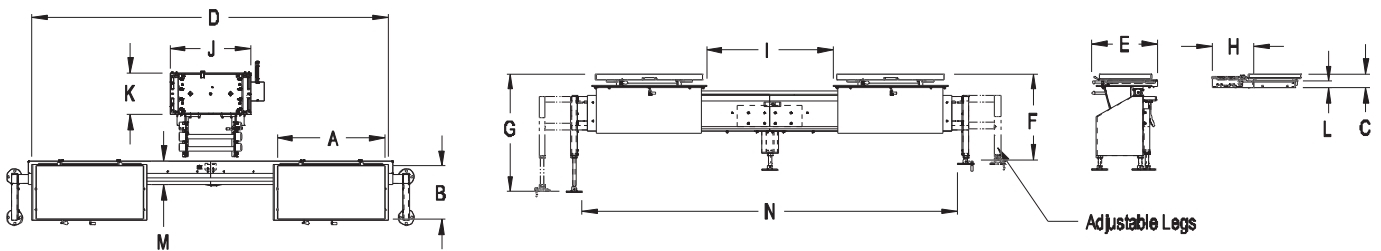
Manual Pallet Changer

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
- "Dual Palm Buttons" for operator safety.

OPTIONS:

- Cast Iron, T-Slotted, Tapped-Hole 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.

Series 30 Pallet Changers

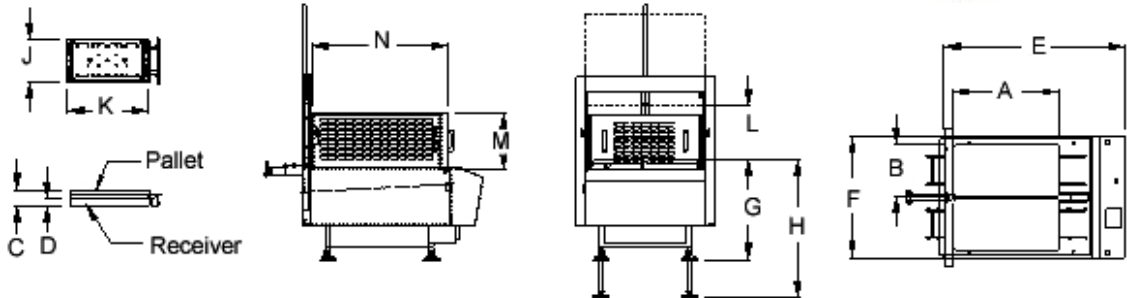
sizes 30" x 16" to 30" x 20" (762mm x 406mm to 762mm x 508mm)



Automatic Pallet Changer

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

- OPTIONS:**
- Cast Iron, T-Slotted, Tapped-Hole Pallets
 - Additional Models, Pallets and Pallet Transfer/Storage Accessories available
 - 3 sided CE enclosure is available on all Automatic SD systems



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

AUTOMATIC Series 30SD

Clamping Force*	5200/7500***	(2360/3410)
Receiver Weight	243	(110)
Pallet Weight	140	(64)
Pallet Thickness:	1.5	(38.1)
Pallet Load Cap:**	1000/2000***	(454/908)
A (Pallet X Dim)	30	(762)
B (Pallet Y Dim)	15.5-19	(394-482)
C	5.17	(132)
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)	30	(762)
N (Optional Pkg)	42	(1067)

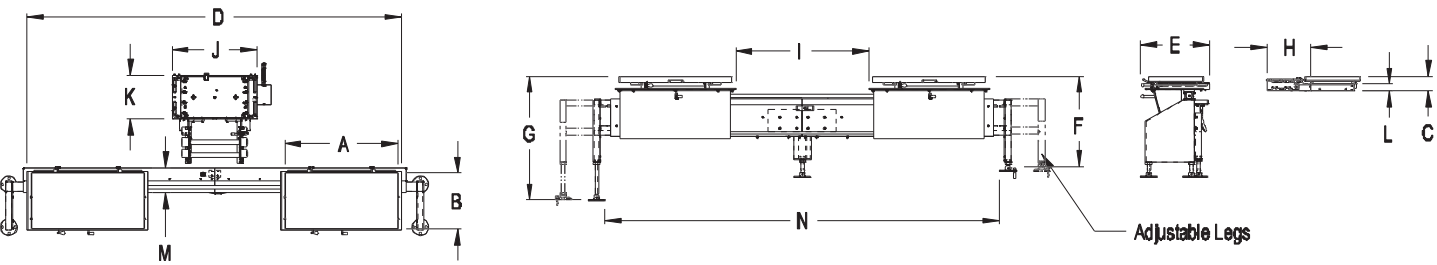
MANUAL Series 30FL

Clamping Force*	5200/7500***	(2360/3410)
Receiver Weight	243	(160)
Pallet Weight	140	(64)
Pallet Thickness:	1.5	(38)
Pallet Load Cap:**	1000/2000***	(454/908)
A (Pallet X Dim)	30	(762)
B (Pallet Y Dim)	16-20	(406-508)
C	5.17	(162)
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 Dual Airblast for Chip Removal
 - 2 - Plain Cast Aluminum Pallets
 - 1 - Front Mounted Side-By-Side Shuttle
 - 1 - Pallet Clamp Confirmation
- "Dual Palm Buttons" for operator safety.

- OPTIONS:**
- Cast Iron, T-Slotted, Tapped-Hole 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) **At 120PSI (8.2 bar)
Optional 2000 Lb. (909 kgs) pallet load capacity *Manufactured to fit specific VMC application

Series 40 Pallet Changers

sizes 40" x 20" to 40" x 25" (1016mm x 508mm to 1016mm x 635mm)

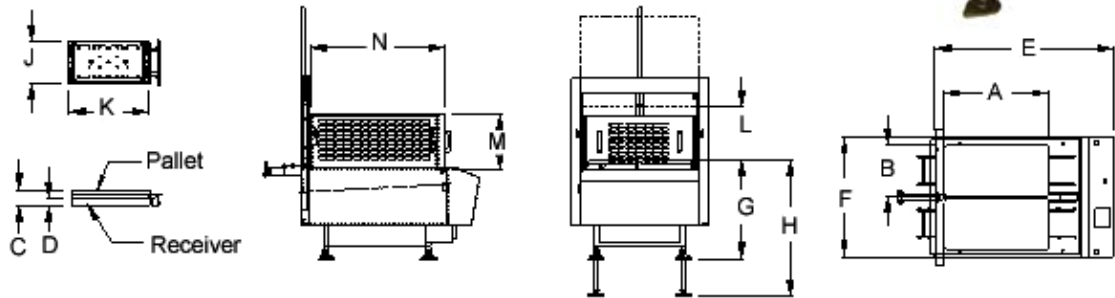
* Stretch 45" x 25" and Stretch 50" x 20"/25" only available on Automatic System



Automatic Pallet Changer

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

- OPTIONS:**
- Cast Iron, T-Slotted, Tapped-Hole Pallets
 - Additional Models, Pallets and Pallet Transfer/Storage Accessories available
 - 3 sided CE enclosure is available on all Automatic SD systems



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

AUTOMATIC

Series 40SD

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 - "S"50	(1016 - "S"1270)
B (Pallet Y Dim)	19-24	(482-609.8)
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)	30	(762)
N (Optional Pkg)	51	(1295)

MANUAL

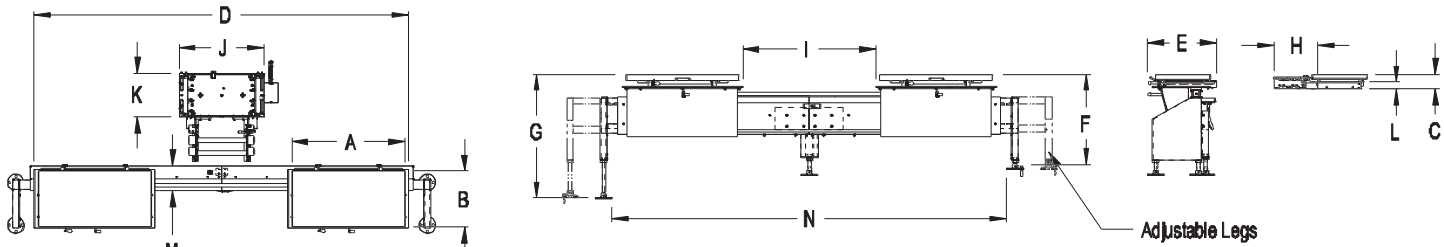
Series 40FL

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)	20-25	(508-635)
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)

Manual Pallet Changer

- STANDARD SYSTEM includes:**
- 1 - Cast Iron Receiver with Dual Airblast for Chip Removal
 - 2 - Plain Cast Aluminum Pallets
 - 1 - Front Mounted Side-By-Side Shuttle
 - 1 - Pallet Clamp Confirmation
- "Dual Palm Buttons" for operator safety.

- OPTIONS:**
- Cast Iron, T-Slotted, Tapped-Hole 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) **At 120PSI (8.2 bar)
***Optional 2000 Lb. (909 kgs) pallet load capacity includes 2" (50.8mm) pallets on 40 Series
****Manufactured to fit specific VMC application

Series 50 Pallet Changers

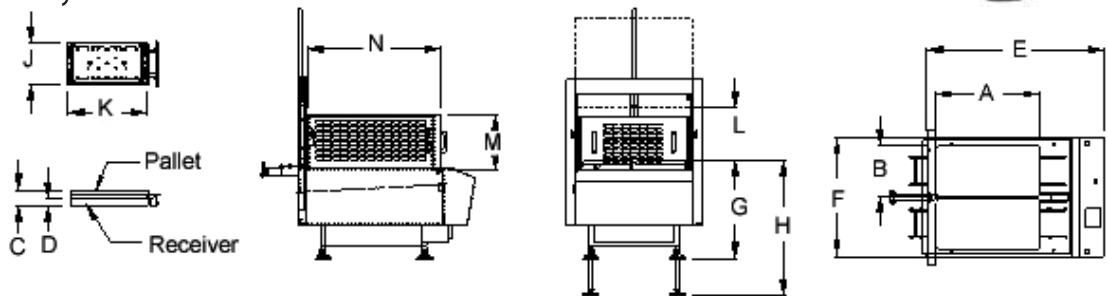
sizes 45" x 25" to 50" x 30" (1143mm x 635mm to 1270mm x 762mm)



Automatic Pallet Changer

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

- OPTIONS:**
- Cast Iron, T-Slotted, Tapped-Hole Pallets
 - Additional Models, Pallets and Pallet Transfer/Storage Accessories available
 - 3 sided CE enclosure is available on all Automatic SD systems



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

AUTOMATIC Series 50SD

Clamping Force*	15400	(7000)
Receiver Weight	513	(234)
Pallet Weight	340	(155)
Pallet Thickness:	2.0	(50.8)
Pallet Load Cap:**	4000	(1818)
A (Pallet X Dim)	45-50	(1143-1270)
B (Pallet Y Dim)	19.5-24	(495-610)
C	6.85	(174)
D	3.75	(95)
E	78	(1980)
F	57	(1448)
G (Min Height)	38	(965)
H (Max Height)	52	(1321)
I	****	****
J (Receiver)	19.5	(495)
K (Receiver)	40	(1016)
L (Door Opening)	28	(711)
M (Optional Pkg)	30	(762)
N (Optional Pkg)	61	(1549)

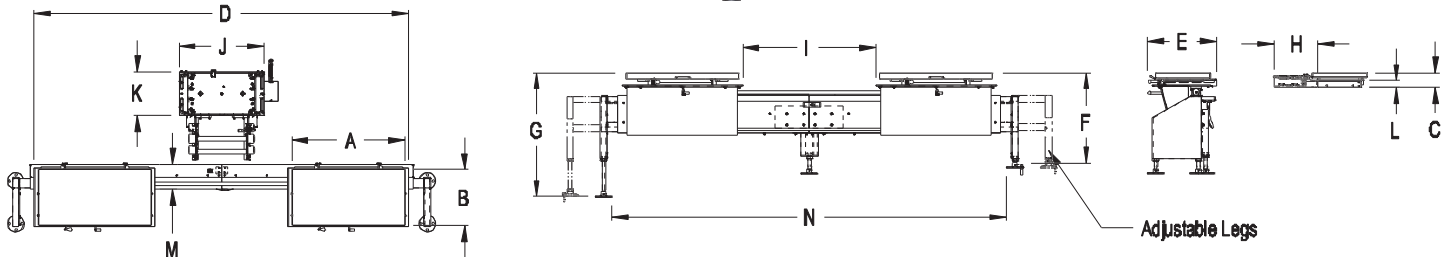
MANUAL Series 50FL

Clamping Force*	5200/7500***	(2360/3410)
Receiver Weight	243	(110)
Pallet Weight	252	(115)
Pallet Thickness:	2.0	(50.8)
Pallet Load Cap:**	500/2000***	(227/908)
A (Pallet X Dim)	45-50	(1143-1270)
B (Pallet Y Dim)	20-30	(508-762)
C	5.67	(144)
D	162	(4115)
E	25	(635)
F (Min Height)	40	(1016)
G (Max Height)	51	(1295)
H	****	****
I	58	(1473)
J (Receiver)	30	(762)
K (Receiver)	15.5	(394)
L	2.56	(65)
M	10.2	(260)
N	163	(4140)

Manual Pallet Changer

- STANDARD SYSTEM includes:**
- 1 - Cast Iron Receiver with Dual Airblast for Chip Removal
 - 2 - Plain Cast Aluminum Pallets
 - 1 - Front Mounted Side-By-Side Shuttle
 - 1 - Pallet Clamp Confirmation
- "Dual Palm Buttons" for operator safety.

- OPTIONS:**
- Cast Iron, T-Slotted, Tapped-Hole 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.

Series 60 Pallet Changers

sizes 60" x 25" to 64" x 40" (1524mm x 762mm to 1626mm x 1016mm)



Automatic Pallet Changer

STANDARD SYSTEM includes:

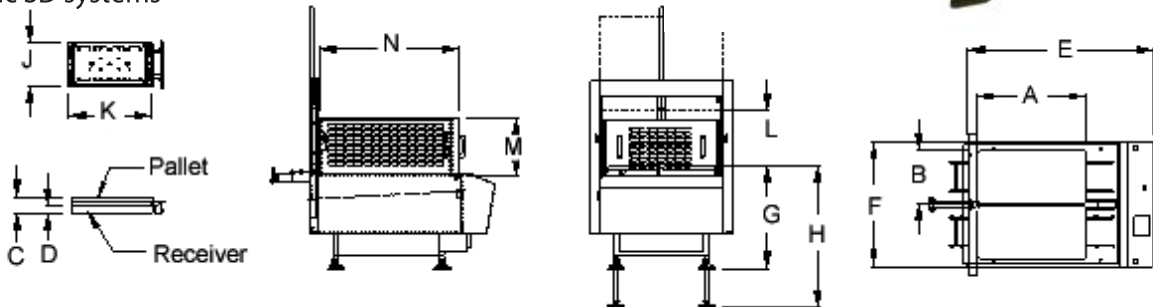
- 1 - Cast Iron Receiver with Dual Airblast for Chip Removal
- 2 - Plain Cast Aluminum Pallets
- 1 - End Mounted Shuttle
- 1 - Custom-Fitted, Automatic Door
- 1 - High-Visibility Indicator Lamp
- 1 - Pallet Clamp Confirmation

OPTIONS:

- Cast Iron, T-Slotted, Tapped-Hole Pallets
- Additional Models, Pallets and Pallet Transfer/Storage Accessories available
- 3 sided CE enclosure is available on all Automatic SD systems



Series 60SD shown with CE guarding



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

AUTOMATIC Series 60SD

Clamping Force*	15400	(7000)
Receiver Weight	513	(234)
Pallet Weight	455	(207)
Pallet Thickness:	2.0	(50.8)
Pallet Load Cap:**	4000	(1818)
A (Pallet X Dim)	60-64	(1524-1626)
B (Pallet Y Dim)	24-39	(610-991)
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)	40	(1016)
L (Door Opening)	28	(711)
M (Optional Pkg)	30	(762)
N (Optional Pkg)	71	(1803)

MANUAL Series 60FL

Clamping Force*	5200/7500***	(2360/3410)
Receiver Weight	243	(110)
Pallet Weight	435	(198)
Pallet Thickness:	2.0	(50.8)
Pallet Load Cap:**	500/2000***	(227/908)
A (Pallet X Dim)	60	(1524)
B (Pallet Y Dim)	25-30	(762-737)
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)

Manual Pallet Changer

STANDARD SYSTEM includes:

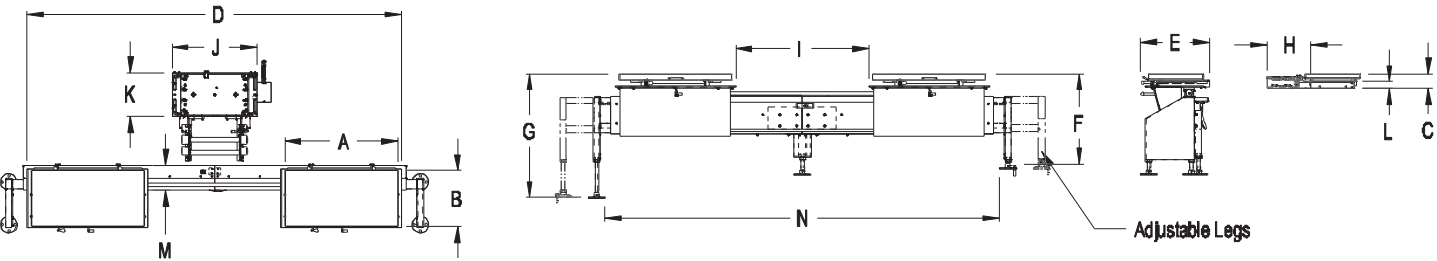
- 1 - Cast Iron Receiver with Dual Airblast for Chip Removal
- 2 - Plain Cast Aluminum Pallets
- 1 - Front Mounted Side-By-Side Shuttle
- 1 - Pallet Clamp Confirmation
- "Dual Palm Buttons" for operator safety.

OPTIONS:

- Cast Iron, T-Slotted, Tapped-Hole Pallets
- Additional Models, Pallets and Pallet Transfer/Storage Accessories available



Series 60FL



♦ 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.

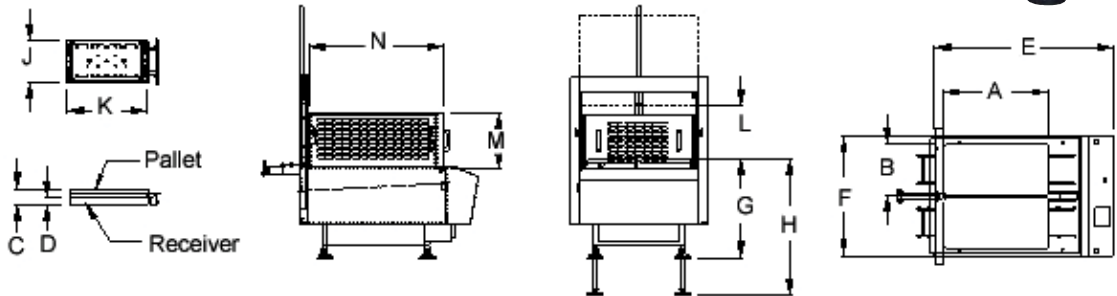
Series 70 Manual size 72" x 30" (1829mm x 762mm)
& Series 80 Automatic size 80" x 30" to 84" x 40"
Pallet Changers (2032mm x 762mm to 2133mm x 1016mm)



Automatic Pallet Changer

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

- OPTIONS:**
- Cast Iron, T-Slotted, Tapped-Hole Pallets
 - Additional Models, Pallets and Pallet Transfer/Storage Accessories available
 - 3 sided CE enclosure is available on all Automatic SD systems



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

AUTOMATIC
Series 80SD

Clamping Force*	20000	(9060)
Receiver Weight	1600	(725)
Pallet Weight	790	(359)
Pallet Thickness:	2.5	(63.5)
Pallet Load Cap:**	8000	(3636)
A (Pallet X Dim)	80-84	(2032-2133)
B (Pallet Y Dim)	29-39	(737-990)
C	8.11	(206)
D	4.24	(108)
E	116	(2946)
F	73	(1854)
G (Min Height)	40	(1016)
H (Max Height)	60	(1524)
I	****	****
J (Receiver)	25.5	(648)
K (Receiver)	75	(1905)
L (Door Opening)	32	(813)
M (Optional Pkg)	30	(762)
N (Optional Pkg)	91	(2311)

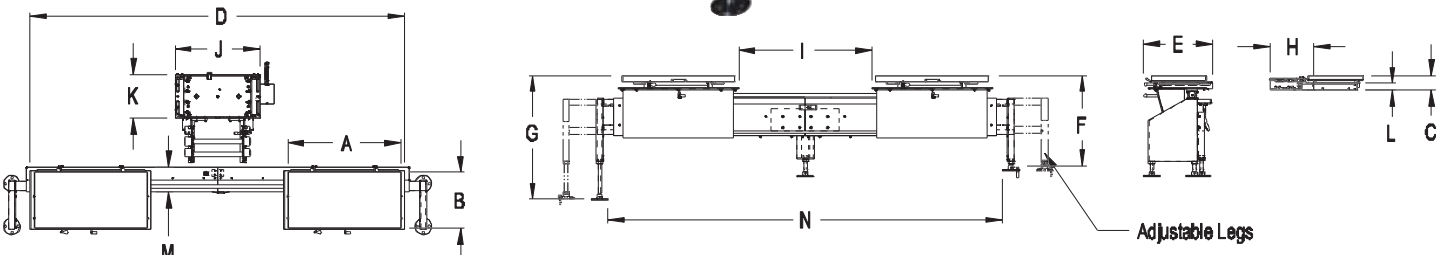
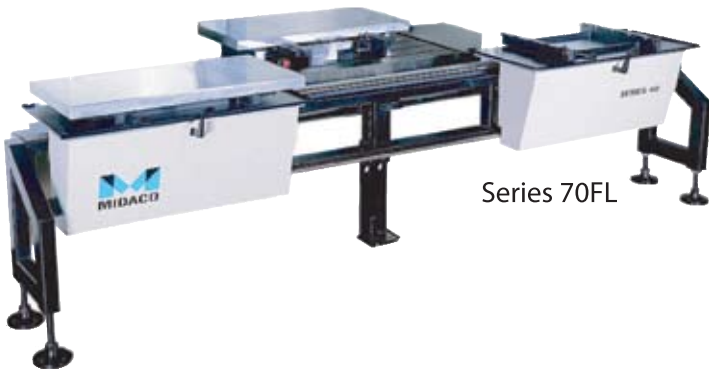
MANUAL
Series 70FL

Clamping Force*	5200/7500***	(2360/3410)
Receiver Weight	243	(110)
Pallet Weight	510	(232)
Pallet Thickness:	2.0	(50.8)
Pallet Load Cap:**	500/2000***	(227/908)
A (Pallet X Dim)	72	(1829)
B (Pallet Y Dim)	30	(762)
C	5.67	(144)
D	228	(5791)
E	34	(864)
F (Min Height)	40	(1016)
G (Max Height)	54	(1372)
H	****	****
I	74	(1880)
J (Receiver)	30	(762)
K (Receiver)	15.5	(394)
L	2.56	(65)
M	13.25	(337)
N	230	(5842)

Manual Pallet Changer

- STANDARD SYSTEM includes:**
- 1 - Cast Iron Receiver with Dual Airblast for Chip Removal
 - 2 - Plain Cast Aluminum Pallets
 - 1 - Front Mounted Side-By-Side Shuttle
 - 1 - Pallet Clamp Confirmation
- "Dual Palm Buttons" for operator safety.

- OPTIONS:**
- Cast Iron, T-Slotted, Tapped-Hole 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) **At 120PSI (8.2 bar) ***Optional 2000 Lb. (909 kgs) pallet load capacity ****Manufactured to fit specific VMC application

Series 120 Pallet Changers

sizes 120" x 30" to 120" x 40" (2032mm x 762mm to 2032mm x 1016mm)



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



Automatic Pallet System

State of the Art Versatility

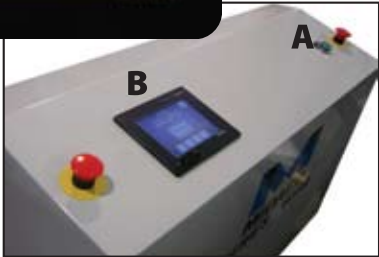
MIDACO's PLC is fully integrated with the machine.

While the alternate pallet is in 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.

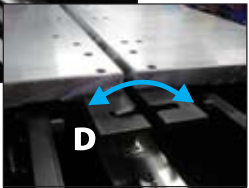
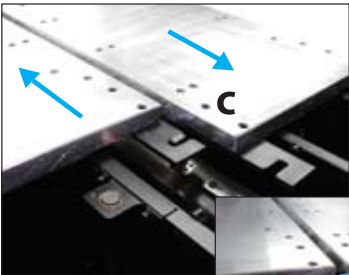
The PLC allows the operator to program pallet acceleration and deceleration according to the weight of the fixture to optimize performance.

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.



- Keypad (B) Provides:**
- 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

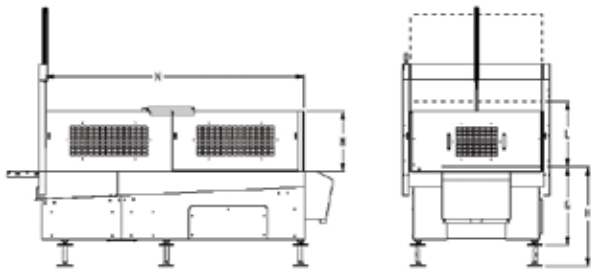
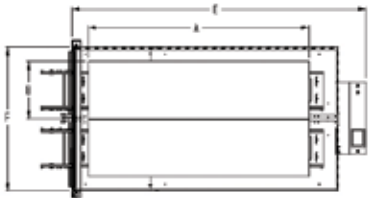


AUTOMATIC

Series 120SD

Clamping Force*	20000	(9060)
Receiver Weight	1600	(725)
Pallet Weight	1100	(498)
Pallet Thickness:	2.5	(63.5)
Pallet Load Cap:**	8000	(3636)
A (Pallet X Dim)	120	(2032)
B (Pallet Y Dim)	29-39	(736-991)
C	8.11	(206)
D	4.24	(108)
E	161	(2946)
F	73	(1854)
G (Min Height)	40	(1016)
H (Max Height)	60	(1524)
I	****	****
J (Receiver)	25.5	(648)
K (Receiver)	75	(1905)
L (Door Opening)	32	(813)
M (Optional Pkg)	30	(762)
N (Optional Pkg)	140	(3556)

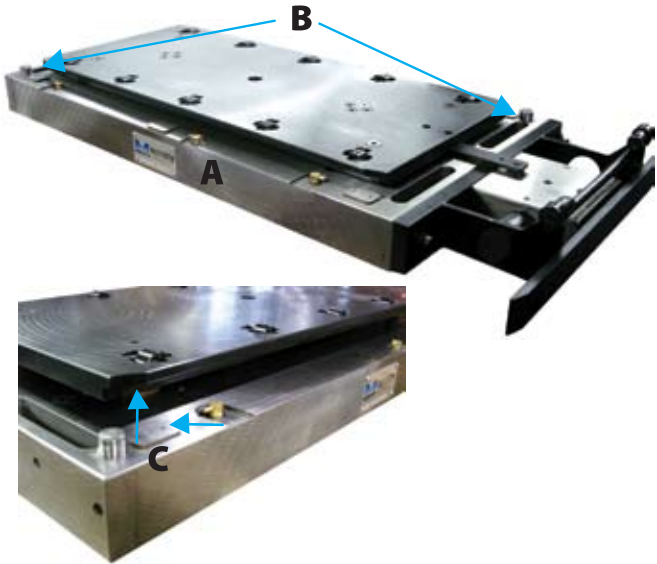
- OPTIONS:**
- Cast Iron, T-Slotted, Tapped-Hole Pallets
 - Additional Models, Pallets and Pallet Transfer/Storage Accessories available
 - 3 sided CE enclosure is available on all Automatic SD systems



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

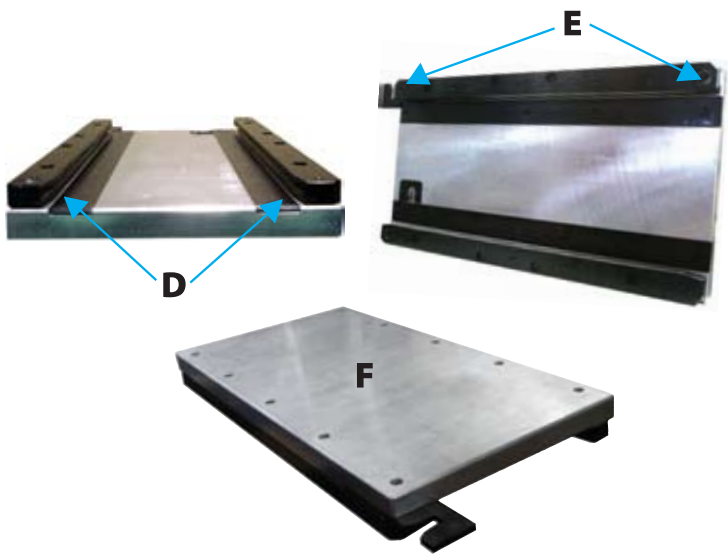
Weight capacities shown in lbs (kgs). Dimensions shown in inch (mm) *At 100PSI (6.9 bar) **At 120PSI (8.2 bar)
****Manufactured to fit specific VMC application

RECEIVER



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

PALLET



- Precision ground steel rails (D) include hardened and ground bushings (E) to assure accuracy and durability.
- Standard Plain cast aluminum pallets (F) offer extreme versatility.
- T-Slotted, Tapped Hole and custom pallets are optional.

Y-Axis Automatic Pallet Systems

sizes 60" x 25" to 150" x 50"
(1524mm x 635 to 3810mm x 1270)



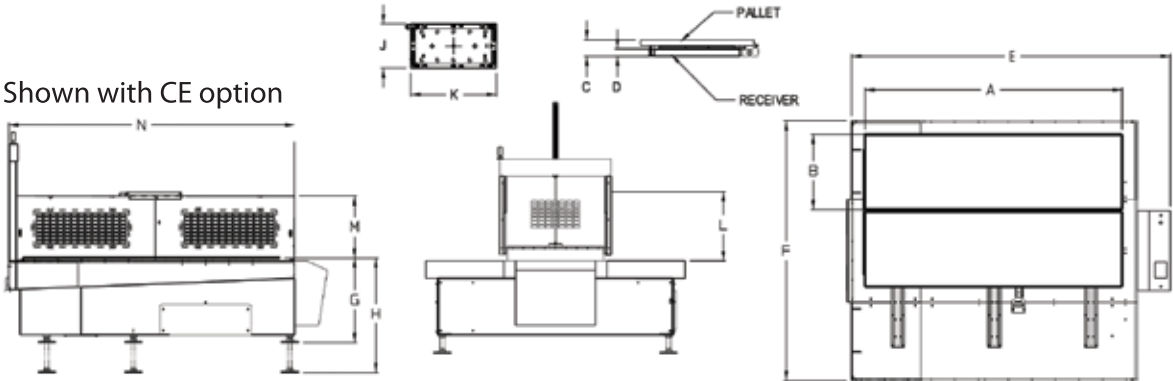
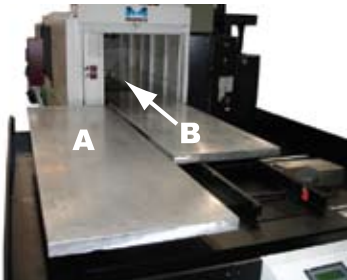
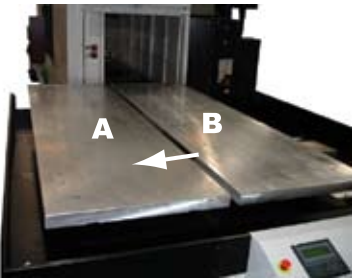
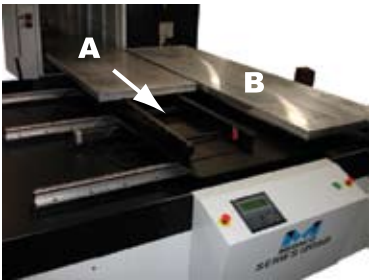
- STANDARD SYSTEM includes:**
- 1 - Cast Iron Receiver with Dual Airblast for Chip Removal
 - 2 - Plain Cast Aluminum Pallets
 - 1 - End Mounted Shuttle
 - 1 - Custom-Fitted, Automatic Door
 - 1 - High-Visibility Indicator Lamp
 - 1 - Pallet Clamp Confirmation



- OPTIONS:**
- Cast Iron, T-Slotted, Tapped-Hole Pallets
 - Additional Models, Pallets and Pallet Transfer/Storage Accessories available
 - 3 sided CE enclosure is available on all Automatic SD systems

For Traveling Column Machines Where the Table Does Not Move in "Y"

When Pallet **A** comes out of the machine the shuttle moves to put Pallet **B** in position and sends Pallet **B** into the machine. This operation is reversed for the next pallet change.



AUTOMATIC

Series 60SDY™

Clamping Force*	15400	(7000)
Receiver Weight	513	(234)
Pallet Weight	400-625	(180-284)
Pallet Thickness:	2.00	(50.8)
Pallet Load Cap:**	4000	(1818)
A (Pallet X Dim)	60	(1524)
B (Pallet Y Dim)	25-40	(635-1016)
C	6.85	(174)
D	3.75	(95)
E	89	(2260)
F	87-132	(2210-3353)
G (Min Height)	43	(1092)
H (Max Height)	57	(1448)
I	****	****
J (Receiver)	19.5	(495)
K (Receiver)	40	(1016)
L (Door Opening)	28	(711)
M (Optional Pkg)	30	(762)
N (Optional Pkg)	74	(1880)

AUTOMATIC

Series 80SDY™

Clamping Force*	20500	(9318)
Receiver Weight	1260	(572)
Pallet Weight	790-1350	(359-614)
Pallet Thickness:	2.5	(63.5)
Pallet Load Cap:**	8000	(3636)
A (Pallet X Dim)	80	(2032)
B (Pallet Y Dim)	30-45	(762-1143)
C	8.10	(205)
D	4.25	(108)
E	109	(2768)
F	102-147	(2590-3734)
G (Min Height)	43	(1092)
H (Max Height)	57	(1448)
I	****	****
J (Receiver)	25.5	(648)
K (Receiver)	75	(1905)
L (Door Opening)	30	(762)
M (Optional Pkg)	30	(762)
N (Optional Pkg)	95	(2413)

AUTOMATIC

Series 120SDY™

Clamping Force*	20500	(9318)
Receiver Weight	1260	(572)
Pallet Weight	1185-1580	(538-718)
Pallet Thickness:	2.5	(63.5)
Pallet Load Cap:**	7500-8000	(3409-3636)
A (Pallet X Dim)	120	(3048)
B (Pallet Y Dim)	30-40	(762-1016)
C	8.10	(205)
D	4.25	(108)
E	154	(3911)
F	102-132	(2590-3353)
G (Min Height)	43	(1092)
H (Max Height)	57	(1448)
I	****	****
J (Receiver)	25.5	(648)
K (Receiver)	75	(1905)
L (Door Opening)	30	(762)
M (Optional Pkg)	30	(762)
N (Optional Pkg)	133	(3378)

AUTOMATIC

Series 140SDY™

Clamping Force*	20500	(9318)
Receiver Weight	1260	(572)
Pallet Weight	1850	(840)
Pallet Thickness:	2.5	(63.5)
Pallet Load Cap:**	7000	(3181)
A (Pallet X Dim)	140	(3556)
B (Pallet Y Dim)	40	(1016)
C	8.10	(205)
D	4.25	(108)
E	154	(3911)
F	132	(3353)
G (Min Height)	43	(1092)
H (Max Height)	57	(1448)
I	****	****
J (Receiver)	25.5	(648)
K (Receiver)	75	(1905)
L (Door Opening)	30	(762)
M (Optional Pkg)	30	(762)
N (Optional Pkg)	153	(3886)

AUTOMATIC

Series 150SDY™

Clamping Force*	20500	(9318)
Receiver Weight	1260	(572)
Pallet Weight	2468	(1121)
Pallet Thickness:	2.5	(63.5)
Pallet Load Cap:**	7000	(3181)
A (Pallet X Dim)	150	(3810)
B (Pallet Y Dim)	50	(1270)
C	8.10	(205)
D	4.25	(108)
E	184	(4673)
F	162	(4115)
G (Min Height)	43	(1092)
H (Max Height)	57	(1448)
I	****	****
J (Receiver)	25.5	(648)
K (Receiver)	75	(1905)
L (Door Opening)	30	(762)
M (Optional Pkg)	30	(762)
N (Optional Pkg)	163	(4140)

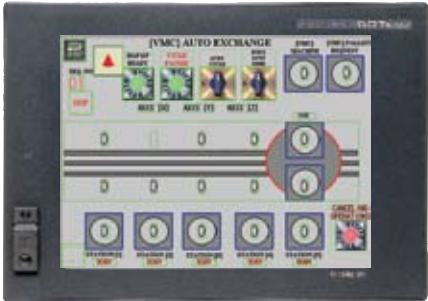
FLEXIBLE PALLET SYSTEM

For 5-Axis Trunnion, Horizontal and Vertical Machining Centers



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

STATE OF THE ART VERSATILITY



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

EXPANDABILITY

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

MIDACO's control fully integrates with your machine.

Only 5 M-Functions for a 4-Pallet System
(add one M-Function for each additional pallet)

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

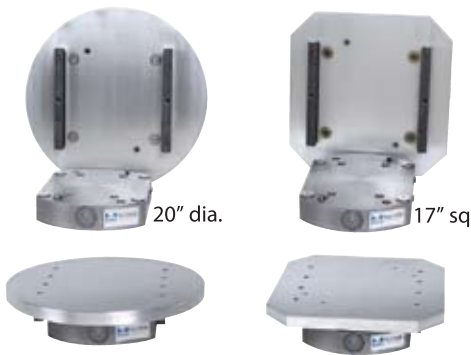
Full servo drive provides proven reliability.

Set-Up Station

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



RECEIVER WITH PALLET



- 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 contactpads 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.

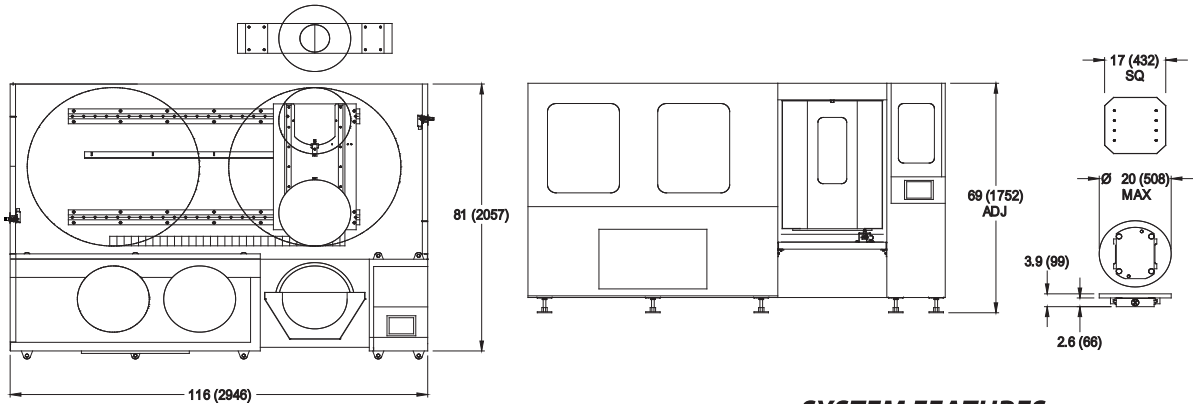
The patented receiver utilizes a mechanical clamping system that **DOES NOT REQUIRE ANY AIR, HYDRAULIC OR POWER LINES**, and has a clamping force of over 21,000 lbs (9450 kgs).

PALLET DELIVERY SYSTEM



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

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



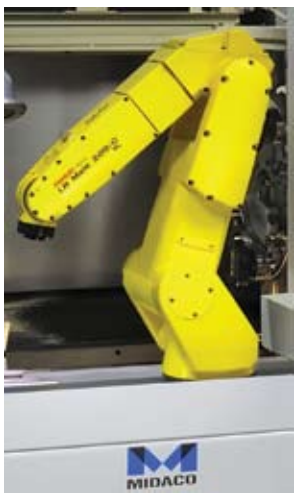
The Robotic System is available with your choice of Articulated Arm



ABB



Staubli



Fanuc



Mitsubishi

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

FANUC Robotics R-30iA Mate Controller with I-Pendant

Controller Features:

- Highly reliable industry-proven multi-axis FANUC control technology
- Housed in industrial enclosure
- Capable of storing large number of programs for quick changeover
- iR Vision™ ready; integrated plug-and-play vision capability for highest flexibility robot guidance and error-proofing (optional)
- Choose RIA (US) or CEMark (Europe) compliant controller,
- CSA (Canada) certification available
- 200-220VAC single-phase (110VAC/15amp optional)
- Up to 24 axes of servo control
- Integrated PMC processor (soft ladder logic optional)
- Ethernet Port, 1 PCMCIA slot, RS232C standard, and 2 option slots standard
- 4m robot connection cables standard (7 & 14m optional)
- Web server
- Standard Digital I/O: 28in/24out 24VDC
- Optional Digital I/O: point-to-point (Model A) or remote (Model B) 512in/512out Max

- Optional Network I/O:
- Ethernet I/O (EIP and EGD)
 - DeviceNet (slave)
 - Profibus (master/slave)
 - FANUC I/O Link
 - CC Link



I-Pendant Features:

- Bright, full-color, multi-window teach pendant (touch screen optional)
- On-board diagnostics with common-cause & remedy troubleshooting
- On-board help with robot operations manual access
- 10m connection cable
- Web-enabled programmable display
- Panel Wizard on-board for custom HMI screens
- HTML 3.2 & Javascript 1.1 for more advanced HMI screens
- Graphical display of production and cycle data
- Remote access for "echo" (standard) or full browsing access (optional)
- Ladder display and hot-edit for de-bugging (optional)

- 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

MANUAL ROTARY PALLET SYSTEM

Easily adapts to virtually any 5-axis, 4-axis, rotary table, lathe, turning center, CMM and EDM.



QUICK CHANGE:

- Switch pallets in 15 seconds.
- Easy to flip handle locks down pallet.
- Handle can only be removed while in locked position

NO AIR OR HYDRAULICS REQUIRED

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 254 mm dia., or 304.8 mm dia.)

The Manual Rotary Pallet System fits on all trunnion machines.



- 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

4 - Axis Turning

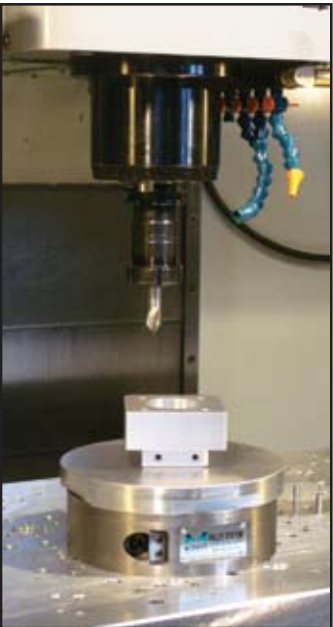


5 - Axis



Shown with 12" pallet

Milling



CMM



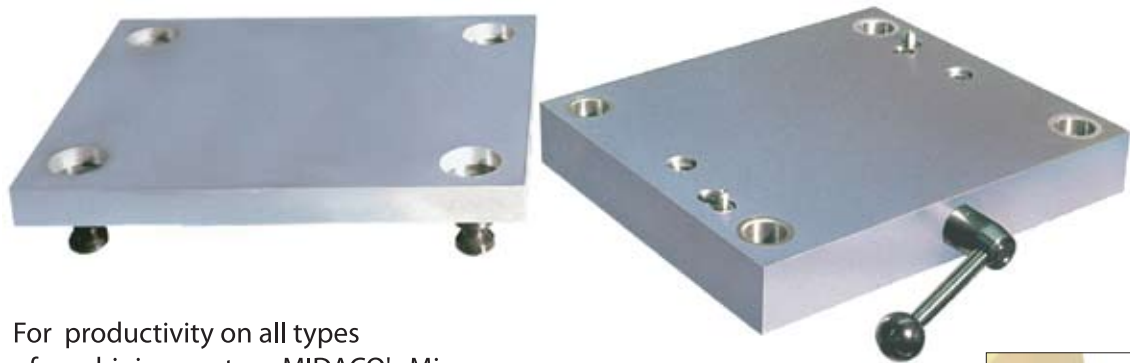
SPECIFICATIONS

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

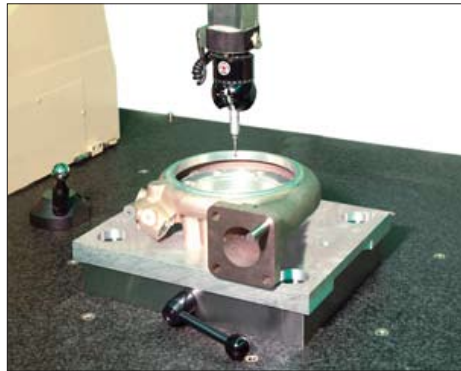
Micro Pallet System - MPS31



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

Easy flip handle precisely locks 12.75" x 10.5" (323.85mm x 266.7mm) pallets into cast iron receiver. Custom sizes are also available.

The low profile 1.75" (44.45mm) receiver does not require air supply making it versatile for horizontal, vertical and special application machines.



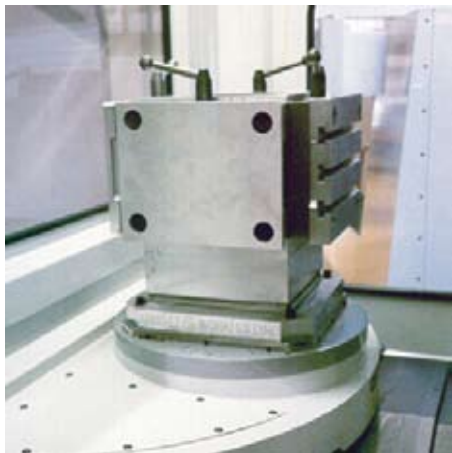
Manual LIFT-OFF Pallet System



Pallet guide rails on the front of the receiver allow safe and easy loading of pallets in only seconds. The operator simply pushes 2 buttons to activate the pneumatic clamping mechanism with a repeatability of +/- .0001" (.0025mm) seconds.



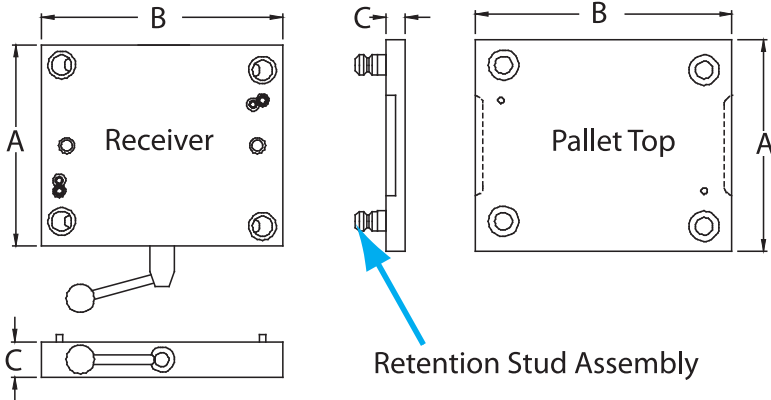
The "Receiver and Pallets Only" System is available with pallets from 16" x 14" (406.4mm x 355.6mm) to 22"x16" (558.8 mm x 406.4 mm).



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 (6.36kgs)
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).



Automatic Door Systems



Single Door Closed



Single Door Opened



Double Door Closed



Double Door Opened

DOOR SYSTEMS are designed to be easily installed with standard supplied hardware by most end users or distributors. If special mounting brackets are required they will be quoted at the time the specific machine information is reviewed by Midaco. Controller interface cable is included. Interface installation is the responsibility of the end user or distributor. Parent machine must be able to supply or receive signal.

- Interface cable included.
 - Ideal for robotic applications.
 - Automatic Door Opener/Closer for mills, lathes and other machinery.
 - Improve safety and ergonomics by eliminating manual door moving tasks.
 - A built in safety feature reverses the door if it meets an obstruction during a door closure.
 - Self-contained system adapts to most single and double door mills and lathes to improve productivity.
 - "Smart" system can be interfaced with machines control - requires 110 vac and shop air for installation.
 - Only 2* M-Functions required
- * when using with a Robot Part Loading System, only 1 M-Function is required

Dual Pallet Systems

Make your VMC MORE productive by adding 4 pallets available for ALL Vertical Machining Centers



Dual 40"x20" Automatic Pallet System A4020SD/40SDS shown on a VMC

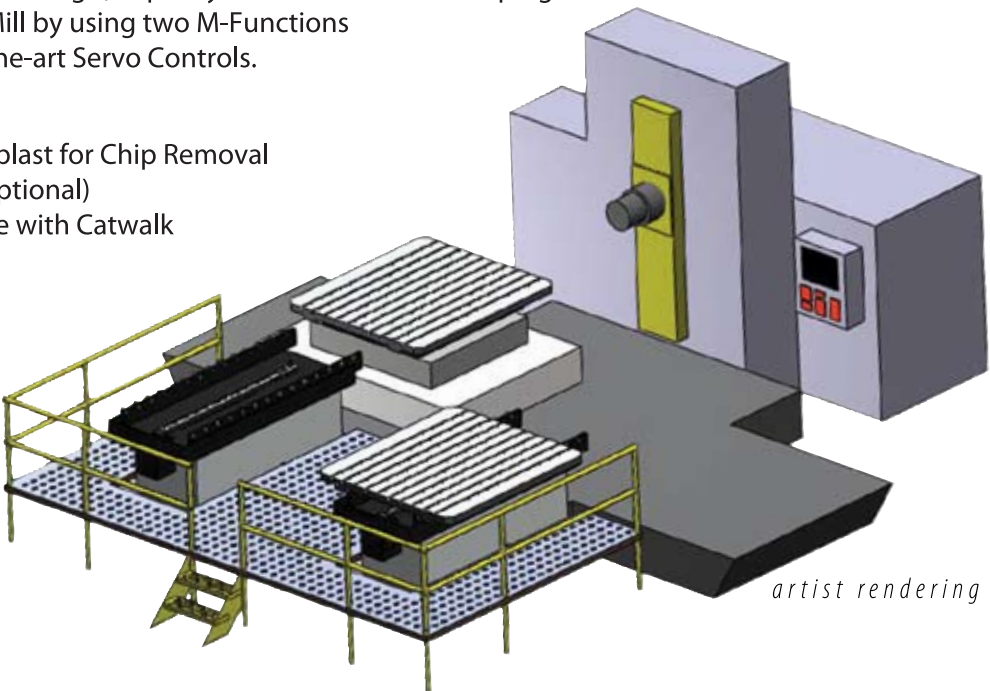
Automatic Pallet System for Horizontal Boring Mill

From 10,000 to 18,000 lbs. (4536 - 8165 kgs.) capacity with HYDRAULIC clamping
Fully integrated with CNC Boring Mill by using two M-Functions
Equipped with the latest state-of-the-art Servo Controls.

STANDARD SYSTEM includes:

- 1 - Cast Iron Receiver with Dual Airblast for Chip Removal
- 2 - Plain Cast Iron Pallets (T-Slots Optional)
- 1 - Front Mounted 2-Station Shuttle with Catwalk

Pallet Size Range	
A" x B"	(Amm x Bmm)
40"x 49"	(1,016mm x 1,244.6mm)
44"x 49"	(1,117.6mm x 1,244.6mm)
49"x 55"	(1,244.6mm x 1,397mm)
55"x 63"	(1,397mm x 1,600.2mm)
63"x 70"	(1,600.2mm x 1,778mm)
70"x 78"	(1,778mm x 1,981.2mm)
other sizes available upon request	



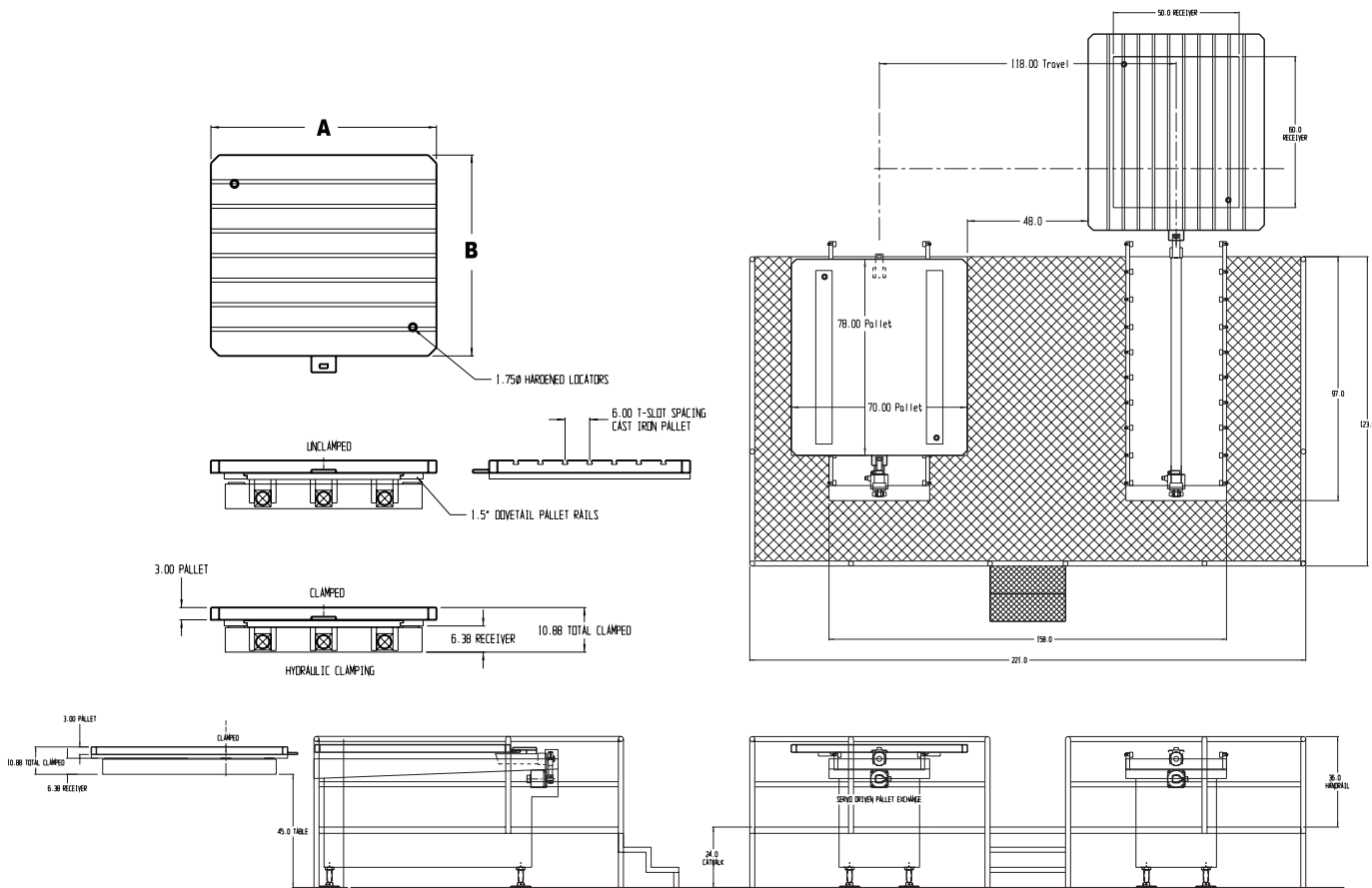
CE Enclosure available on all Automatic Pallet Changers



- 3-sided enclosure includes hinged front and back doors that are lowered 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.

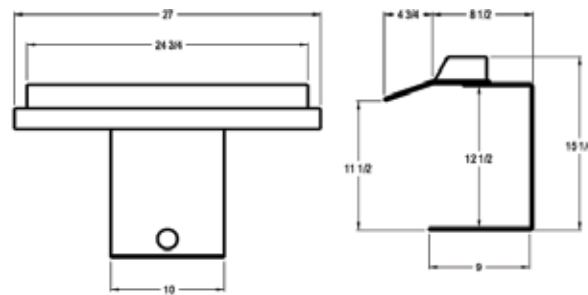


APC for Horizontal Boring Mill



Grinder Guard & Grit Grabber

Reduce Maintenance Costs and Improve Operator Safety



Model #46 fits grinders with up to 7" wheels
Model #46A fits grinders with 8"-12" wheels

Grinder Guard Features:

Features	Advantage	Benefit
27" Full Width Visor	Protects at least 6 times more area (128 sq. inches)	Allows safe viewing from more angles
Replaceable Impact-Resistant Visor	Maximum protection from sparks and dust.	Stays clear longer
Full-Width Fluorescent Light	Increased visibility and operator comfort	Ensures greater accuracy and improves productivity
OSHA Orange	Identifies safety area	Impedes corrosion, lasts longer

Note: Model #46A dimensions are same, except depth is 14 ½ and overall height is 19"
*Unit shipped complete with built in 24" fluorescent light and 7 foot cord.

Grit Grabber Model 2000

Features	Advantage	Benefit
Heavy Duty Motor	Sealed bearing industrial motor offers long term service	Minimizes downtime and maintenance costs
Replaceable Filter Element	Easily replaced filter traps vacuumed debris	Reduces operator hazards, improves shop cleanliness
Universal Hose and Clamps	Durable hose, built to last, fits all models	Easy to retrofit, saves labor and time
Illuminated ON-OFF Switch	Red LED safety light indicates unit is on	Promotes longevity in noisy environments
Compact, Vibration-Free Design	Insulated enclosure operates with low noise level in 70dp (A) range	Utilizes available space and promotes safety
Installation Options	Self leveling feet or stationary mount	Allows multiple department or fixed position usage
CFM Exhaust Level Exceeds OSHA's Minimum	As specified by OSHA ventilation standard 1910.94 up to 10" diameter	Maximizes operator safety and productivity

Grit-Grabber vacuum pedestal fits 5" to 10" diameter wheels. Includes filter, hoses and clamps. 120 Volts, 60Hz (Grinders and guards are additional)

Options:

Replacement Filters

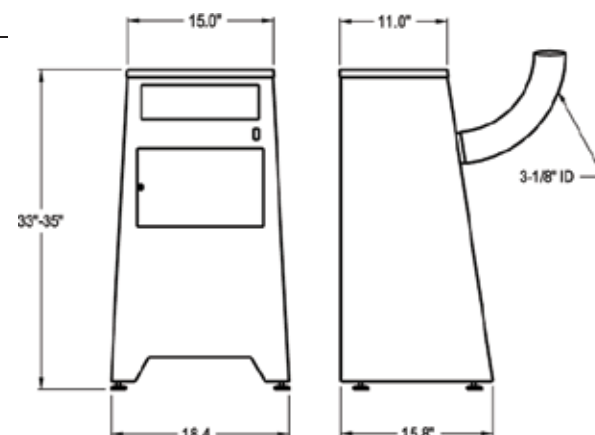
No. GF2006 (6 per case)

Crystal Clear Visor Cleaner

Crystal clear fiber cleaner:
(recommended for polishing Lexan and other eyeshields)

Performance & Durability are the Big Benefits.

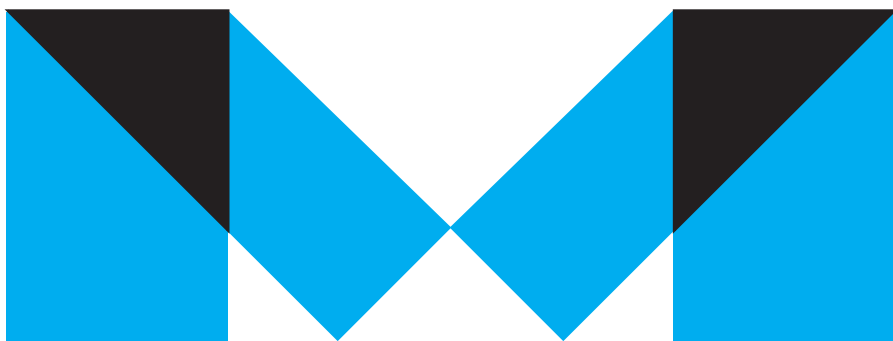
The Grinder Guard from Midaco is designed to fit virtually ALL pedestal or bench grinders which translates into maximum versatility and long shop life. Reduce Liability Exposure and Increase Worker Safety Protection with Midaco's Grinder Guard.



NOTES

[illegible]

Solutions for Your Productivity Needs



MIDACO CORPORATION
2000 East Touhy Avenue
Elk Grove Village IL 60007 USA
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fax: 847.593.8451
email: midaco@midaco-corp.com



...with sales and service WORLDWIDE



See how we fit your application

midaco-corp.com

