

Increase productivity and eliminate idle time by changing parts **OUTSIDE** the VMC on a Pallet Changer while the spindle is cutting.



Retrofits to **NEW** or **EXISTING**  
**MAKINO** Vertical Machining Centers

## AUTOMATIC 2-PALLET SYSTEMS

It all comes down to... "Is your VMC spindle running?"



- Pallets easily interchanged between machines or departments.
- Heavy/large workpieces easily loaded without obstruction.
- Up to 1000 lb (454 kg) capacity (2000 lb optional on A40SD).
- Exchange pallet with +/- .0001" (.0025 mm) repeatability.
- Increase machine and operator productivity.
- Reduce set up time on repeat jobs with dedicated pallets.

### One Shuttle - One Receiver - TWO Pallets

Set up parts while the alternate pallet is in the machine.

MAKINO	MIDACO	Pallet Size - inches (mm)
PS65	A3020SD	30" x 19" (762 x 482.6 mm)
PS105	A4020SD	40" x 19" (1016 x 482.6 mm)

## FULLY INTEGRATED WITH VMC



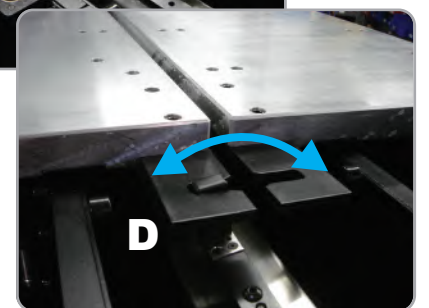
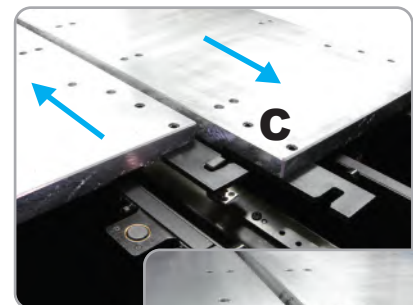
- MIDACO's PLC is fully integrated with the machine tool using M-functions.
- While the alternate pallet is in the machine, the operator sets up the next pallet. Once ready, the operator pushes the "Pallet Ready" button (A) and walks away to attend other activities. When the pallet in the machine is 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.

### Keypad (B) Provides:

- Password protected access
- Parameters page access
- Manual functions access
- Current I/O status
- Diagnostic pages

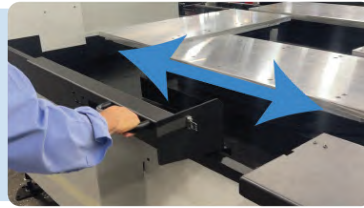
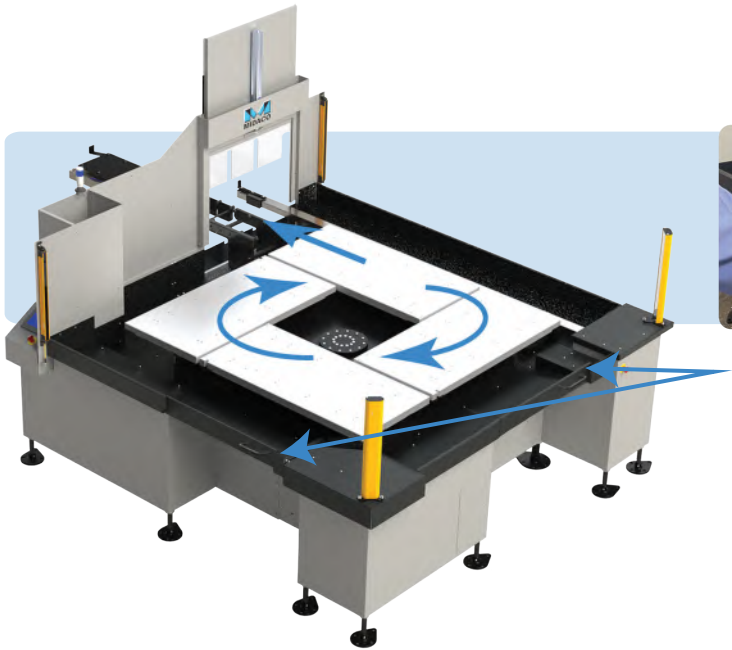
### Electric Servo Drive Provides Proven Reliability

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.

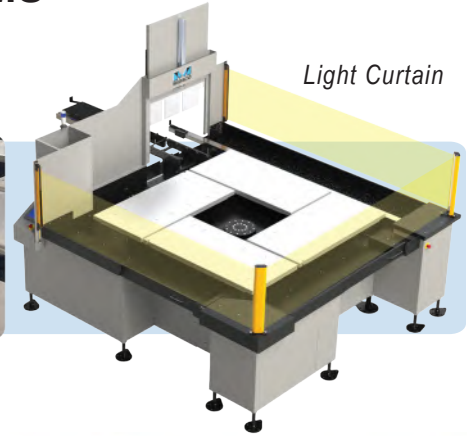




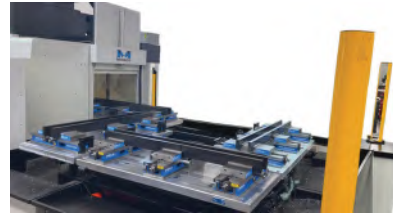
## AUTOMATIC 4-PALLET SYSTEMS



Loading stations on 2 sides



Light Curtain



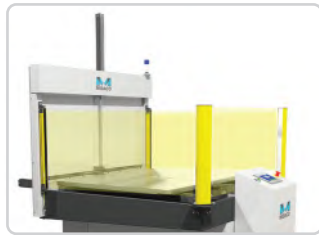
- Four aluminum pallets, One cast iron receiver.
- One shuttle with 360 degrees rotation.
- Up to 1000 lb (454 kg) capacity (2000 lb optional on A40SDR).
- Convenient loading stations on two sides.
- Three-sided light curtain guarding is standard.
- NO overhead obstruction for crane loading.

### One Shuttle - One Receiver - FOUR Pallets

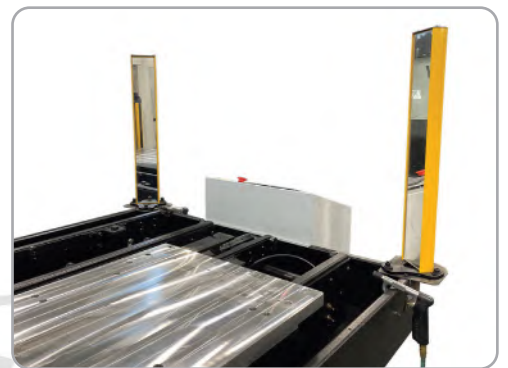
Ready to feed your VMC for multiple hours of unattended machining.

MAKINO	MIDACO	Pallet Size - inches (mm)
PS65	A3020SDR4	30" x 19" (762 x 482.6 mm)
PS105	A4020SDR4	40" x 19" (1016 x 482.6 mm)

## LIGHT CURTAIN GUARDING



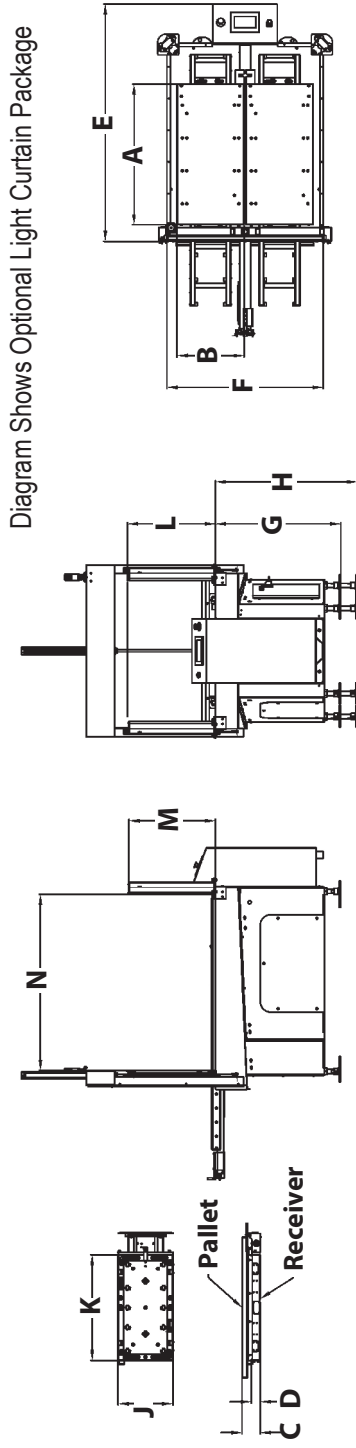
- All models of the Automatic Pallet Changer System are available with **Light Curtain Guarding** meeting international CE and UKCA compliance.
- With 3-sided guarding via a light emitter, mirrors and sensors, a pallet change will not occur if the invisible light beams surrounding the shuttle system are breached.



**Since 1969, MIDACO has been a leader in providing innovative and quality solutions to improve manufacturing efficiency for companies worldwide.**

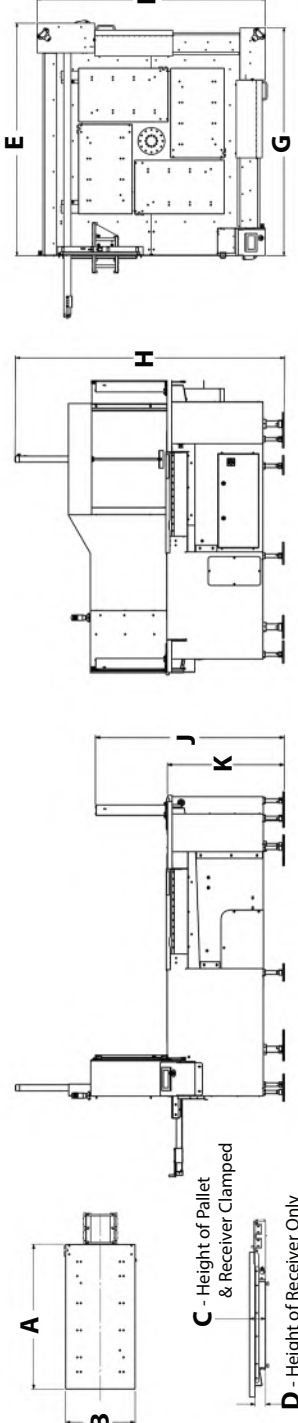
# AUTOMATIC PALLET SYSTEM SPECIFICATIONS

Automatic Pallet Changer	A3020SD		A4020SD	
Specifications	lbs. / in	kg / mm	lbs. / in	kg / mm
Clamping Force*	5200	2358.7	5200	2358.7
Receiver Weight	223	101.2	239	108.4
Pallet Thickness	1.5	38.1	1.5	38.1
Pallet Load Cap**	1000 †	454	1000 †	454
A (Pallet X Dim)	30	762	40	1016
B (Pallet Y Dim)	19	483	19.0	482.6
C (Pallet & Receiver Clamped)	5.2	131.3	5.2	131.3
D (Receiver only)	2.6	65	2.6	65
E	57	1448	68	1727
F	44	1123	44	1123
G (Min Height)	38	965.2	38	965.2
H (Max Height)	49	1244.6	49	1244.6
J (Receiver)	15.5	393.7	15.5	393.7
K (Receiver)	30	762	30	762
L (Door Opening)	20	508	20	508
M (LC Height)	24	621	24	621
N (LC Opening)	39.9	1014	49.9	1267



Light Curtain is Standard on Automatic 4-Pallet Rotary

Automatic 4-Pallet Rotary	A3020SDR4		A4020SDR4	
Specifications	lbs. / in	kg / mm	lbs. / in	kg / mm
Clamping Force*	5200	2358.7	5200	2358.7
Receiver Weight	223	101.2	239	108.4
Pallet Thickness	1.5	38.1	1.5	38.1
Pallet Load Cap**	1000	454	1000 †	454
A (Pallet X Dim)	30	762	40	1016
B (Pallet Y Dim)	19.0	483.0	19.0	482.6
C (Height of Pallet & Receiver)	5.2	131.3	5.2	131.3
D (Height of Receiver Only)	2.6	65	2.6	65
E	78.1	1983.7	103.6	2631.4
F	80.8	2052.3	101.7	2583.2
G	72.8	1849.1	101.5	2578.1
H (Height - Adjustable)	76.4	1940.6	92.7	2354.6
Receiver X Dim	15.5	393.7	15.5	393.7
Receiver Y Dim	30	762	30	762
J (Height of Table w/ LC - Adjustable)	74.0	1879.6	65.0	1651.0
K (Height of Table Only - Adjustable)	38.5	621.0	40.0	621.0



**NOTE: Pallet load capacity is based on the weight of the parts evenly distributed on pallet.**



\*At 100PSI (6.9 bar) \*\*At 120PSI (8.2 bar) with weight evenly distributed on pallets. † Optional 2000 lb (907kg) Pallet Load Capacity with weight evenly distributed on pallets. Patented. Specifications subject to change without notice. MIDACO pallet systems are designed for machines with stationary guarding. Some machines require options or customization. Contact your sales representative to confirm model and specifications for all applications.

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**MIDACO CORPORATION**  
 2000 Touhy Avenue  
 Elk Grove Village, IL 60007 USA  
 phone: (855) 593-5668  
 fax: (847) 593-8451  
 email: sales@midaco-corp.com



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