



Foundry Equipment by Design

AVAILABLE SEPTEMBER 1, 2020

DS 2424 Shell Core Machine – Refurbished

We are pleased to announce the availability of a newly refurbished Dual Station 2424 Shell Core Machine.

EMI recently acquired the assets of Harrison Equipment. Over the years, EMI has acquired industry leading brands including Osborn, SPO, Sutter, Herman, and Brock Match Plate. Purchasing Harrison Equipment is part of EMI's strategy to continue our growth to build, service and support a wider range of foundry equipment and products.

Harrison Equipment is well-known for producing versatile and productive core and molding machines, as well as ancillary support equipment such as sand transport systems. Harrison began in the 1950's and has sold thousands of pieces of foundry equipment throughout North America with a special emphasis on reducing energy and increasing productivity with a cost-effective machine. EMI not only builds this equipment, but we also provide support, engineering, service, and OEM replacement parts from our headquarters and factory in Cleveland, Ohio.

We acquired this machine on trade early this year and have thoroughly inspected, cleaned, and replaced all worn items with new components. The machine is in outstanding condition – ready for production.



***Note:** a DS-1818 is in process now and expected to become available in November. Contact your EMI representative for information about this future machine*

Equipment Manufacturers International, Inc.

16151 Puritas Ave. / Cleveland, Ohio 44135 / Phone: 216.651.6700 / Fax: 215.651.6331 / emi-inc.com



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Dual Station Shell Core Machine Specifications Model 2424-GA

Volume/Blow max	878 in ³ /14.3ltr
Weight/Blow max	55 lbs/25kg
Blow Time, variable min. increment	0.05 sec
Blow Pressure, variable in 1psi increments:	
Minimum	20 psi/1.38bar
Maximum	Service Pressure
Blow Plate, Standard-Aluminum or Hi-Temp Rubber Bonded to Steel:	
Width	12 in/25.4cm
Depth (Length)	24 in/60.1cm
Thickness	0.5 in/1.27cm
Blow Holes/Side, on 1.125in/2.86cm centers:	
Number	1 to 21
Diameter	0.75 in/1.91cm
Hole Pattern Spread, max	22.5 in/57.15cm
Vise Opening:	
Minimum	5 in/12.7cm
Minimum	23 in/58.4cm
Ejection Stroke (optional)	0.0 to 0.5 in/0.0 to 0.63cm
Clamping Force, Core Box Close (at 100psi/6.9bar)	5,000 lbs/2.28tfm
Core Box Split	Vertical
Core Box Capacity:	
Width	24 in/61cm
Height	24 in/61cm
Thickness, plus (2) 1.0in/2.54cm thick mounting plates:	
Minimum	3.0 in/7.6cm
Maximum	11.0 in/27.9cm
Maximum Core Cross Section	8.5 in/21.5cm
Weight, Core Box max. with mounting plates	650 lbs/296kg
Machine Time, for 2 station cycle without single longest cure and blow time	21 sec
Core Box Change time:	
Standard Mounting, incl. Blow Hole Insert (calculated avg.)	20 min
Quick Change System (optional), incl. Blow Hole Insert (calculated avg.)	8 min
Unload Time: internal to cycle if cure time > unload time	Manual
Top Hopper Sand Capacity	350 lbs/159kg
Machine Size:	
Width (side to side)	202 in/513cm
Depth (front to back)	63 in/160cm
Height	135 in/341cm
Weight	6,000 lbs/2728kg
Utilities Requirements:	
Electrical	120V 1Ph 60Hz/50Hz 15Amp
Flow Rate Liquid Cooled Blow Head	1 gpm/3.78lpm
Compressed Air	100 psi/6.9bar @ 95°F/35°C:
Average	43 scfm/122dlpm
Maximum	70 scfm/198dlpm
Natural Gas:	
Low Flame	8 oz/3.4cbar pressure:
High Flame	8 scfh/23dlph
High Flame	16 scfh/45dlph
BTU/Hr Capacity/Station	1,474,200

Note: Specifications are subject to change without notice.

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Dual Station Shell Core Machine Features and Benefits

Shell Core Machines –

Dual Station Productivity and Utilization

- Increases Operator Output: One operator runs two jobs at the same time
- Quick Change Core Box Mounting System: available, change boxes in just a few minutes
- Production During Heat-Up: run full production on one station while the other station's box is heating up – also have optional tooling pre-heaters that get you to quality cores faster.
- High Speed Operation: high efficiency pneumatics enable faster cycle times

Shell Core Machines –

Dual Station Unparalleled Flexibility

Suit the needs of a constantly changing industry:

- Rollover System: makes hollow cores, ON/OFF selector switches at each station allow program selection shell or oscillate modes with timers and automatic vibration
- Three-piece box capability
- Large core on one station, small cores on other station
- Automatically runs multiple short cycles on one station or long cycles on the other station
- Long run on one station and jobbing work on other station
- Hollow cores on one station and solid on the other station, or same on both stations
- Small box on one station and large on the other station, or same on both stations

- Reduced energy and emissions
- Superior productivity, utilization, and flexibility: equal fewer Harrison machines are required to meet capacity demand
- Fewer machines equal less core making energy used
- Lower energy usage equals less related energy consumption emissions
- Lower emissions equal less cost for regulations compliance and lower remediation expenses
- Higher productivity and fewer machines means more cores per energy and labor unit equals lower operating cost
- Lower COST-per-CORE equals a quick payback and higher margins equal an increased competitive advantage

Continuous Improvement Features on all new Dual Station Machines

We've listened to prior Harrison customers suggestions and have instituted various improvements all designed to improve uptime reliability, ease maintenance, improve performance and quality. Some of the current improvements include:

- Lower sand collection and screening system
- [Robust new sand pump](#) (available as retrofit to for existing pumps and machines)
- Hardened rails and rollers
- Easily adjusted rollover rack system
- User friendly HMI and eliminated control towers

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Scope of Supply

One (1) Refurbished DS-2424 Dual Station Shell Core Machine

1. Painted carbon steel base frame assembly with two (2) core production stations and one (1) operator station centered between production stations.
2. One (1) top sand hopper including:
 - a. Two (2) dual purpose Sand Level Sensors
 - b. Top cover with filtered pressure relief
3. Two (2) lower sand collection and return hoppers (on each side) incorporating the following:
 - a. Primary screening system (to catch large debris)
 - b. Sand pump (standard design – [consider upgrade to our new design](#))
 - c. Flexible hose from pump to top sand hopper
 - d. Solenoid air control and adjustable timers for sand flow control
4. One (1) Dual center sand investment
5. One (1) sand blow head with two rows blow holes
 - a. Individual blow pressure regulators
6. Cast platens with Standard “L” Clamp for core box mounting
 - a. Four (4) wedge type mounting plates (consider optional wedge mounting system for your tooling)
 - b. Two (2) pneumatic vibrators per core station
 - c. Burners with replaceable gas tips and capable of blocking gas ports
 - d. Four (4) guide rods on each core station for precise and smooth movement
7. Pneumatic operation of all machine movements
8. Hi-Lo Flame Control System, independent for each heater platen
 - a. One (1) Burner Ignition Wand for manual lighting of each burner
 - b. Main gas train with manual shut-off valves, filter strainer, emergency shut-off solenoid valve
 - c. Thermocouple for proof of flame in each burner platen (4 total)
 - d. Plug in thermocouples (2 per core box, 4 total)
9. Control System – Mounted in a powder coated NEMA-12 enclosure located in the center of the machine
 - a. Allen-Bradley MicroLogix 1500 PLC
 - b. PanelView Plus 700 HMI
 - c. Manual operations via two (2) control towers. One control tower per production center.
 - d. Safety light curtains on each production center
 - e. Standard expanded steel guards around cylinders
10. Ventilation Hood on each production center

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Improve your productivity with these popular equipment options

The Quick-Change Wedge Type Box Mounting System provides fast and accurate change-overs, includes (2) sets of universal ribbed mounting plates which stay on the machine all the time. A universal wedge is attached to the top back of each box half. A set of Lifting Pins is recommended for attachment to the upper sides of each box section to eliminate time spent with the old Eye Bolts.

The Wedge type box mounting system provides fast and accurate core box change-overs and includes (in lieu of standard mounting system):

1. Two (2) sets of wedge type mounting plates which stay on the machine all the time.
2. Two (2) sets of core box wedges
3. One (1) drill template for mounting wedges on your core boxes
4. Eight (8) pin lift sets

Additional Wedges and pin lifts are available.

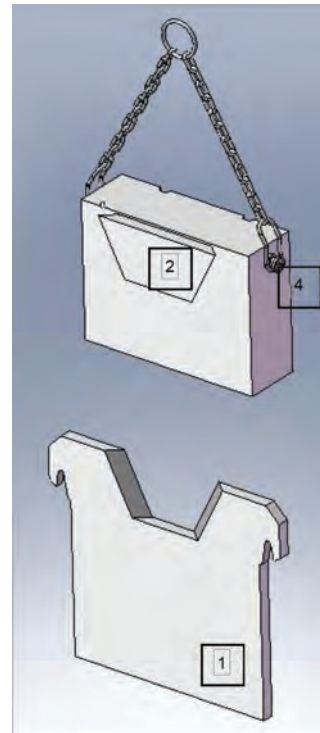
Auto Strike Off:

(On each station) – automatically scrapes off the top of each core box after each blow.

1. Replaceable non-metallic scraper blades
2. Adjustable blade height
3. Table wipers

Full Barrier Guarding

1. Equipped with interlocks and casters for ease of access and cleaning. (Furnished with wire mesh panels, not plexiglass)



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Gas Fired Core Box Preheater

A stand-alone, natural gas or electric tooling pre-heater. Shell machines setup time can be reduced up to 75% by eliminating on machine heat up; increasing core machine production capacity. One stand-alone tooling pre-heater can service multiple core machines. The next job can be heated up while the core machine is still in production.

A wide core box size range can be accommodated using the optional carrier type mounting system or the wedge quick-change type mounting system.

Preheater includes:

1. Capacity for up to a 24" H x 24" W x 12" T tool on standard mounting plates.
 - a. Optional quick change wedge system
2. One (1) Hi-Lo temperature control
3. One (1) thermocouple sensor (to mount into the tooling)
4. Two (2) platen heater shut-off valves per platen (to shut or open gas to burner tips, for different size boxes)
5. Universal platen design for mounting several types of mounting plates
6. Manual box width adjustment
7. Clamping screw 18" stroke
8. Easy Access Hinged and Removable Guards



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Quotation

Refurbished Dual Station 2424 Shell Core Machine.....**\$85,600.00**

Popular Options..... Contact your EMI representative for pricing and technical details

Delivery

Equipment can be prepared for shipment within one week of purchase order.

Shipment

FOB EMI Factory, Cleveland Ohio

Terms

90% prior to shipment

10% net 30 days after shipment

Warranty:

This machine is in such good condition, we are offering our [popular Remanufactured Warranty](#).

Startup and Operator Training

Startup and operator training can be provided by a qualified Service Technician. Please contact your EMI sales representative for additional information.

Additional Equipment and Services

EMI offers complete core room turnkey design and installation services. Depending on the exact needs of the foundry, EMI can support your core room with sand storage and delivery systems, equipment startup and operator training, and on-going maintenance.

Beyond the core room, we specialize in green sand molding solutions, sand preparation plants, mold handling systems, and automation solutions. We welcome the opportunity to discuss any challenges you might be facing.

Thank you again for your interest in EMI and the equipment and services we bring to the foundry industry.

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