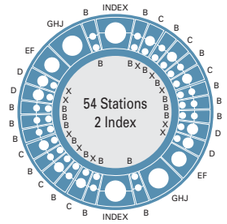
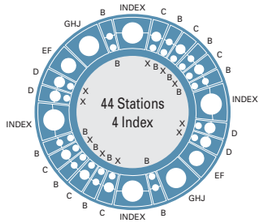
MOTORUM 2548/2558

CNC Servo Motor Driven Ram Turret Punch Press

Turret Layout





Tooling range

Range	Round punch	No. of Stations	
		54ST/2 I/T	44ST/4 I/T
X	～12.7 mm [0.5"]	10	10
B	～25.0 mm [1.0"]	28	16
C	～38.0 mm [1.5"]	6	6
D	～50.0 mm [2.0"]	4	4
E	～64.0 mm [2.5"]	2	2
F	～75.0 mm [3.0"]		
G	～89.0 mm [3.5"]	2	2
H	～105.0 mm [4.0"]		
J	～120.0 mm [4.75"]		
INDEX	～75.0 mm [3.0"]	2	4
VT	12 Stations		
VM	20,40 Characters		

* With Auto-index stations, Index tool (I/T), VARITOOL (VT) or VARIMARK (VM) can be selected as options in desired combination.

Specifications

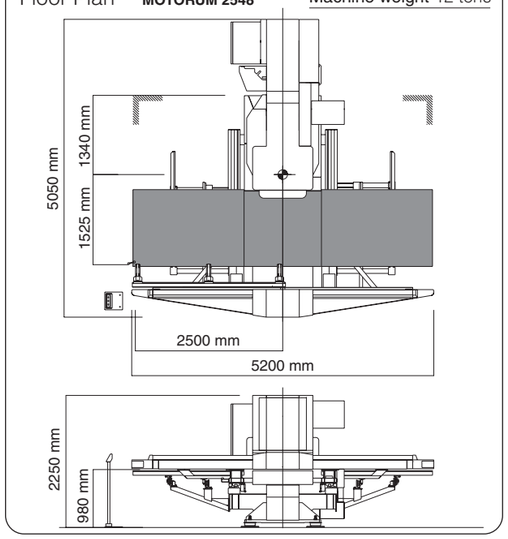
		MOTORUM 2548	MOTORUM 2558
Punching capacity		25 ton (245 KN)	
Maximum sheet thickness		6.35 mm (Steel ball table)	
Y-axis stroke		1600 mm	1635 mm
X-axis stroke		2550 mm	
Maximum sheet size (YxX)	Without repositioning	1250 mm × 2500 mm	1525 mm × 2500 mm
	With one reposition	1250 mm × 5000 mm	1525 mm × 5000 mm
Throat depth		1340 mm	1620 mm
Feed clearance		25 mm	
Maximum allowable sheet weight		150 kg	
Hit rate 1.0 t 8.3 mm stroke	25 mm pitch	X: 400 hpm / Y: 300 hpm	
	1 mm pitch	X: 800 hpm / Y: 700 hpm	
Simultaneous axis speed		125 m/min	
Punching accuracy		± 0.1 mm	
Turret index speed		40 rpm	
Index tool speed		180 rpm	
Compressed air	Quantity	100 NL/min	
	Pressure	0.5 MPa	
Power supply		23 KVA	

Option

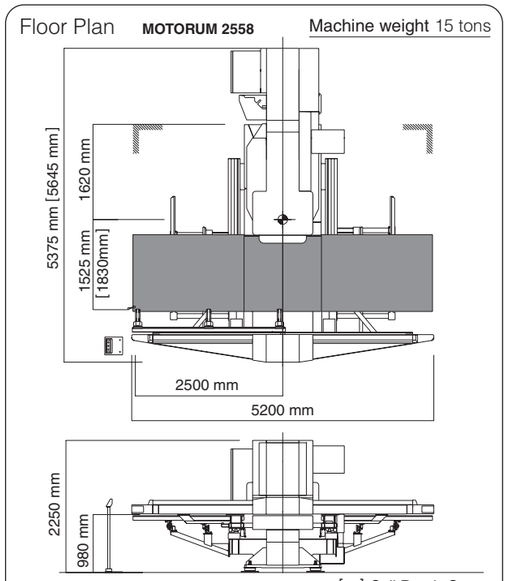
- Varitool
- Varimark
- Brush table
- 4-Station Tapping
- 8-Station Tapping
- Retractable Die-holder function
- Programmable up forming
- In turret bending
- Slug suction unit
- Downward extrusion protection
- Programmable positioning workholder
- Cell ready

■Safety Specification
Machines built with CE-safety conformity is available as option.

Floor Plan **MOTORUM 2548** Machine weight 12 tons



Floor Plan **MOTORUM 2558** Machine weight 15 tons



[ ]:Cell Ready Spec.

* Machine appearance may differ to that shown in the catalogue pictures.
* All specifications are subject to change without advance notice.

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ISO 9001
ISO 14001
BUREAU VERITAS
Certification

CAT. NO. 22P1032 J 11-01-1(X-TU)

muratec

CNC Servo Motor Driven Ram Turret Punch Press

MOTORUM 2548/2558

MURATA MACHINERY, LTD.

CNC Servo Motor Driven Ram Turret Punch Press

MOTORUM 2548/2558

Servo Drive Pioneer Motorum has evolved to a new level

Process Integration

- Downward extrusion up to 2mm
- Servo controlled upward forming
- In turret bending height as high as 20mm

Increased power delivers higher processing stability

- Servo motor with 25 metric ton punching capacity

Increased speed raises productivity

- Higher auto-index speed, to 180rpm
- Faster punching rate, to 400hpm

Functionality!
Power!
Speed!

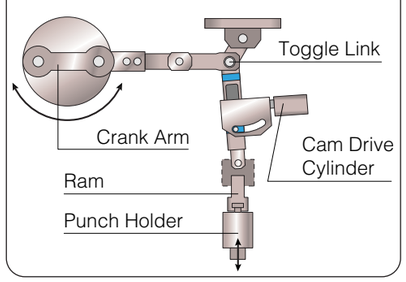
Note: Photographs in this catalogue include some options.

Muratec has been contributing to protect environment byproducing ECO friendly machine.
MOTORUM 2548/2558 has been certified MF Eco machine admitted by Japan Forming Machinery Association.

Approved Machines
MOTORUM 2548/2558

The Servo Motor Driven Punching Mechanism

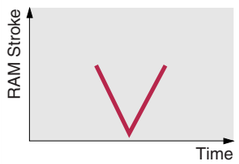
The MURATEC ram drive technology incorporates a toggle mechanism driven by an AC servo motor. This innovative technology has resulted in achieving higher productivity, an environment friendly operation, and energy efficient production. A single rotation of the crank arm gives two punching strokes.
By utilizing a mechanical advantage, the servo driven ram technology provides greater punching force while generating less heat and using less energy.



Ram Operation Patterns

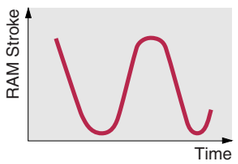
The servo motor drive mechanism delivers precise RAM control. Combined with Muratec application, MOTORUM 2548/2558 enables Ram Operation Patterns ideal for a wide range of processes.

High Speed Punching



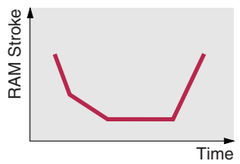
The servo motor is driven alternately in clockwise and counter clockwise directions to swing the toggle mechanism between two top dead centres and a bottom dead centre. The two top dead centres are automatically adjusted to suit the sheet thickness data to achieve the shortest ram stroke and thus high speed punching and productivity.

Nibbling Operation



The servo motor is driven continuously in one direction to swing the toggle between two top dead centres and bottom dead centre repeatedly for high speed nibbling operation.

Forming Operation



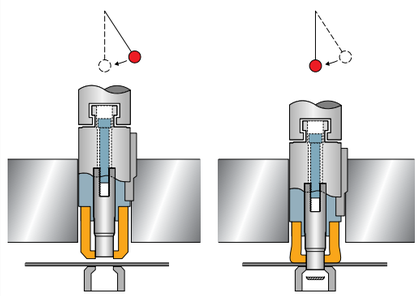
By swinging the toggle mechanism between first top dead centre and bottom dead centre positions and by adjusting the length of stroke, the top and bottom dead centre can be controlled to obtain the best results in forming tool operations. The most important benefit of this operation in MOTORUM 2548/2558 punch press is that you can set the length of dwell time at bottom dead centre that will allow the form tools to be kept together allowing material flow, filling the form tool cavities. Precise control over ram operation enables excellent forming repeatability.

Low Noise Operation

Full control of the ram speed is maintained within one punching cycle to achieve the ultimate reduction in noise and vibration.

Punch-in, Pull-Out Type Wiedemann Tooling

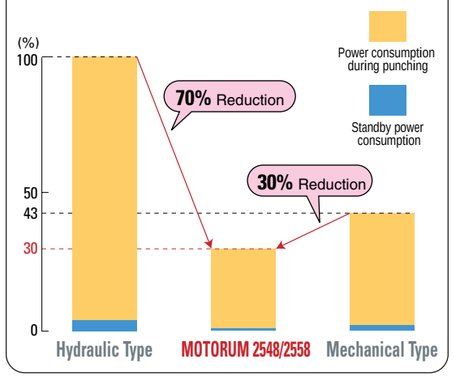
The positive Punch-in and Pull-out design of the ram, which is mechanically linked to the punch holder during the punching cycle, guarantees positive punching. This design has already been field proven for its high strength, precision and simplicity of tooling.
By combining this feature with the newly innovated servo motor driven ram, the reliability of the machine has been greatly enhanced.



Energy Conservation & Low Running Cost

An environment-friendly eco-machine, Motorum uses the energy it needs only at the time of punching, thanks to the servo motor drive mechanism.

Power Consumption Comparison



The Key to Reduced Lead Time

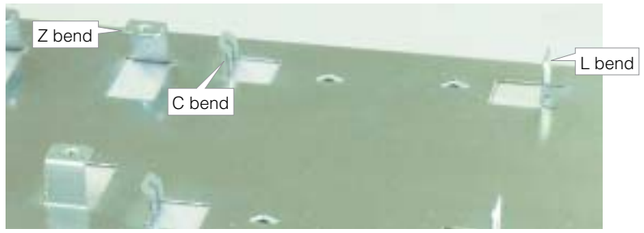
Motorum 2548/2558 provides high speed processing with reliability and accuracy. This machine also raises overall productivity through process integration of bending, forming, tapping and other processes, together with reduction of time needed to setup and program.

In Turret Bending (Option)

The servo drive allows precise stop positioning of the RAM punch, which in turn gives accurate angle control, for Z-bending via index-station processing. Increase in turret feed clearance takes the in turret bending height to a maximum of 20mm.

- Stations used:
  Auto-index (F-Station)
- Process types

- Sheet thickness: 0.5-1.6mm (Mild Steel)



Forming

Optimum control of RAM speed leads to fast and accurate forming of the highest quality, with minimal distortion of the workpiece.

Retractable forming die function (Option)

Upward forming tool dies are retracted to die height when not in use. This is to avoid interference of the forming die with the workpiece and workholders. This allows free movement of the sheet without any restrictions and improves quality.

Programmable up forming
(Option together with in turret bending)

After lowering the punch onto the material, the servo controlled upward forming stroke will not lift the material. This improves accuracy on extrusion and other high precision forming processes.

Downward extrusion protection (Option)

Conventional turret punch presses have long had difficulty with downward extrusion. As the formed work is lifted off the upper surface of the die during table/sheet movement, this option eliminates degradation of the form stemming from interference with the die.

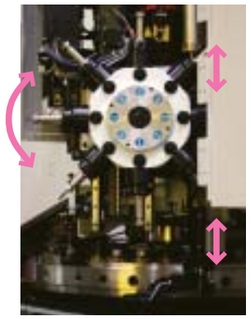
Tapping

8-Station Tapping Unit (Option)

A full-scale rigid tapping unit using with synchronization of RPM and feed speed by the servo motor.

- Tap size: M2～M10
- Tapping methods:
  Machine thread / Rolling thread
- Max. sheet thickness: 6mm

*Specifications vary, depending on type of material, hole diameter, etc.



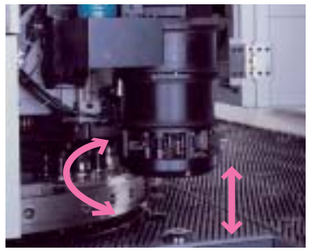
8-Station Tapping Unit(Option)

4-Station Tapping Unit (Option)

This tapping unit uses the floating method with dual cylinder feeding for a preset RPM.

- Tap size: M2.6～M8
- Tapping methods:
  Machine thread / Rolling thread
- Max. sheet thickness: 3.2mm

*Specifications vary, depending on type of material, hole diameter, etc.



4-Station Tapping Unit(Option)

High-Speed Auto-Index Mechanism

Index tool speed has been raised to 180RPM. Reduction of positioning time for index tool angles, multi-tools and marking tools shortens production time.

High-Speed Indexing

Fast indexing any angle shortens production of needed for complex forms.

Varitool (Option)

The VARITOOL is available in 12 tool configurations. Using VARITOOL in the Auto-index station increases the turret tool capacity. The 12-station tool configuration has tool sizes up to 12.7 mm dia.

Varitool
12-station type
(Option)

Varimark (Option)

The VARIMARK is built-in with 20 or 40 standard alphanumeric and punctuation characters for stamping on the worksheet.

Varimark
(Option)

Stamping Character Size:
2.1 mm x 3.2 mm (40 characters)
3.2 mm x 5.0 mm (20 characters)

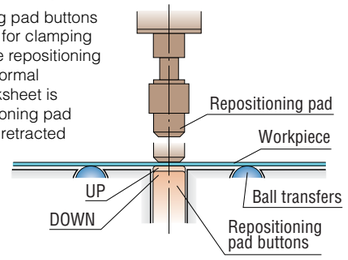
Designed for higher productivity, quality and operating ease

Brush Table (Option)

While reducing scratching on the back of the worksheet, the brush table also gives stable movement of the worksheet. The brush table reduces noise during worksheet movement and eliminate scratches to the back of worksheet.

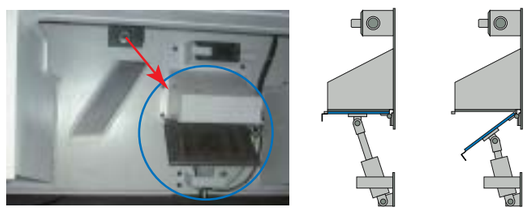
Retractable Repositioning Pad Buttons

Retractable repositioning pad buttons are raised automatically for clamping the worksheet during the repositioning operation only. During normal punching when the worksheet is moving over the repositioning pad buttons, the buttons are retracted downward which eliminates scratches on the under side of the worksheet. This enhances the quality of the finished worksheet.



Slug Suction Unit (Option)

The slug suction unit enables better punching quality and minimizes slug pull-back problem for thin worksheets. This function is extremely useful while processing worksheets having scratch prevention films. The air suction helps to detach cut films from the workpiece.



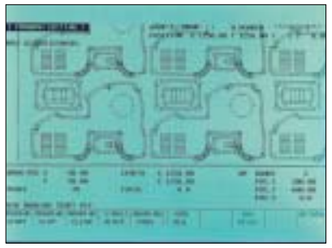
Built-in Turret Parts Chute (Option)

A part chute is provided underneath the inner track punch centre for efficient discharge of small parts, to enable micro jointless parts production. The parts discharge port is located at CNC control side of the press frame.
Maximum part size:
200 mm (X) x 150 mm (Y)
Minimum part size :
30 mm (X) x 80 mm (Y)

Sheet Metal Processing Expertise

The operator should be able to output a high level of processing know-how without having to think about how to do it, and this is the control concept of MOTORUM.

Conversational NC Programming and Editing



Program Creation & Background Editing

Programs can be created using the conversational mode.
Background editing of programs is also possible.

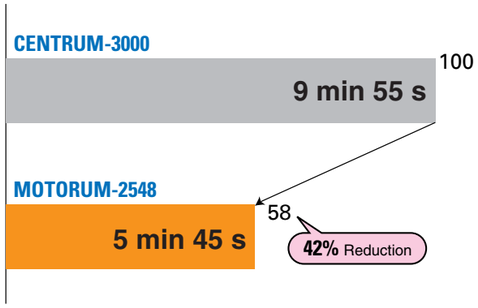
Tool Alignment Confirmation Function

The MOTORUM servo ram control features a ram motor torque monitoring system that enables the operator to detect punch and die nonalignment, avoiding damages to the punch and die.

Tool Life Monitor Function

The MOTORUM incorporates a programmable auto tool life monitor function, that when tool life has reached a set hit number the "Tool Life Caution" message is displayed to capture the operator's attention to carry out the punch and die regrinding.

Benchmark



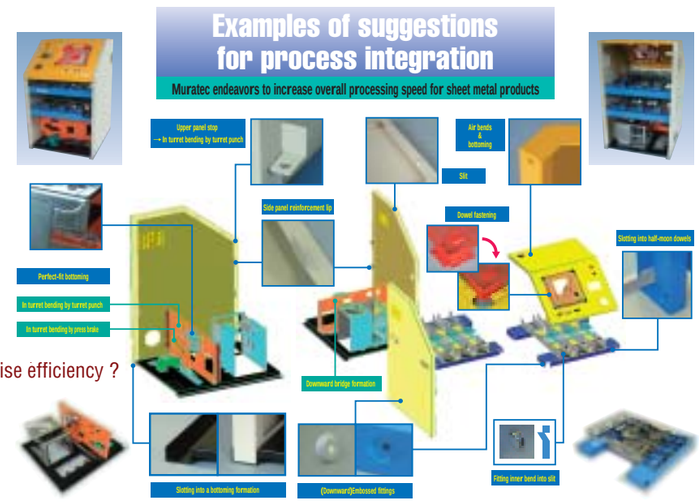
Worksheet example Mild Steel 1.2t 4′ x 8′

Process Innovation

In addition to improving processing ability, Muratec works with customers in revising production processes for sheet metal products and offers suggestions for improvement of industrial techniques.

Do you

- Want to raise production speed ?
- Want to consolidate processes and reduce holding time for work-in-process ?
- Want to decrease the number of welded parts and raise efficiency ?
- Want to reduce the number of parts ?
- Want to reduce the number of actual parts ?
- Want to improve the production processes ?



Automated Cell Systems

Applying the rich delivery results and expertise of sheet metal FMS, Muratec offers automated cell systems ideal for client needs.

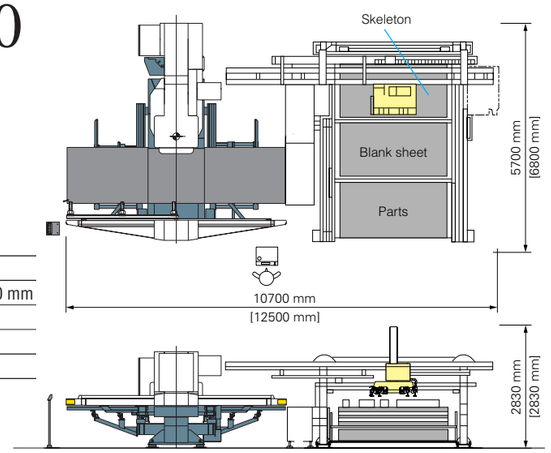
FG-1250/FG-1500

Features

- Micro jointless parts production
- Flexible stacking system reduces
- Post-process operations and parts handling
- Manual blank sheet loading operation is possible
- Effective parts handling of small size and hole intensive parts
- NC-type loader unit control & scheduler

		FG-1250	FG-1500
Sheet Size: (Y x X)	Max.	1250 mm x 2500 mm	1525 mm x 3050 mm
	Min. [Nested Layout]	1000 mm x 1500 mm	
	[Single Part]	300 mm x 500 mm	
Blank Sheet Thickness:		0.6 mm to 3.2 mm	

*Stocker type is also available



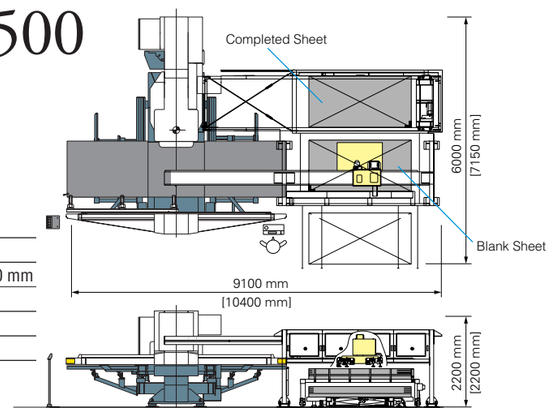
[ ] : FG-1500

F1G-1250/F1G-1500

Features

- Space saving compact design
- Increased productivity through reduced loading cycle time
- Quieter system operation
- Manual blank sheet loading operation is possible
- NC-type loader unit control & scheduler

		F1G-1250	F1G-1500
Sheet Size: (Y x X)	Max.	1250 mm x 2500 mm	1525 mm x 3050 mm
	Min.	300 mm x 750 mm	
Blank Sheet Thickness:		0.6 mm to 4.5 mm	
Loading Cycle Time:		22 seconds	29 seconds



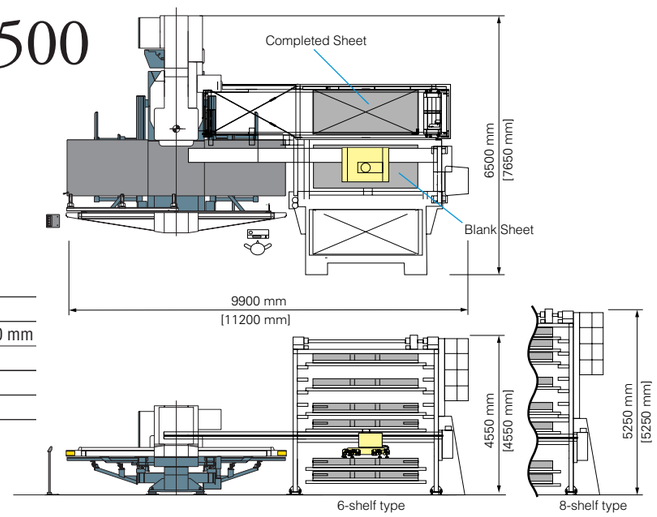
[ ] : F1G-1500

FFG-1250/FFG-1500

Features

- Compact design to store and handle full size blank sheets and finished parts
- Unmanned operation over extended periods for variety of production schedules
- Quieter system operation
- Manual blank sheet loading operation is possible
- NC-type loader unit control & scheduler

		FFG-1250	FFG-1500
Sheet Size: (Y x X)	Max.	1250 mm x 2500 mm	1525 mm x 3050 mm
	Min.	300 mm x 750 mm	
Blank Sheet Thickness:		0.6 mm to 4.5 mm	
Loading / Unloading Cycle Time:		22 seconds	29 seconds



[ ] : FFG-1500