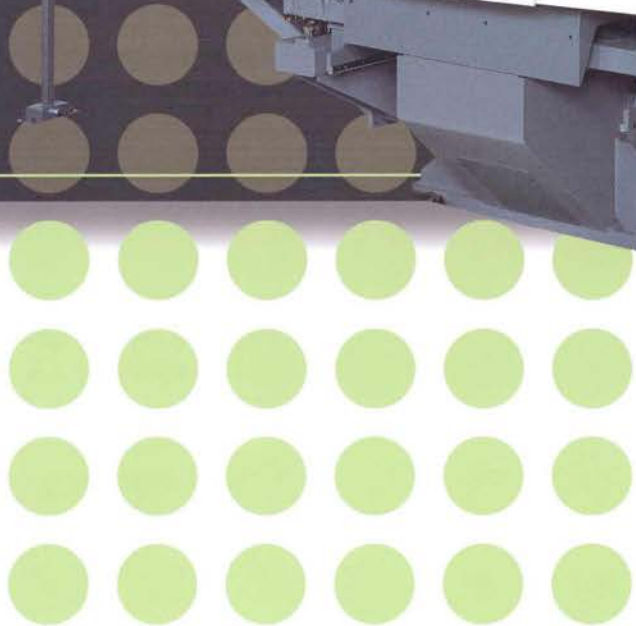




CNC Servo Motor Driven Ram Turret Punch Press

# **MOTORUM Tseries**



**MOTORUM 2558-T**  
**MOTORUM 2548-T**

# MOTORUM Tseries

## Process Integration

- Downward extrusion up to 0.08"
- Servo controlled upward forming
- In turret bending height as high as 0.79"

## Increased power delivers higher processing stability

- Servo motor with 27.5 US tons punching capacity

## Increased speed raises productivity

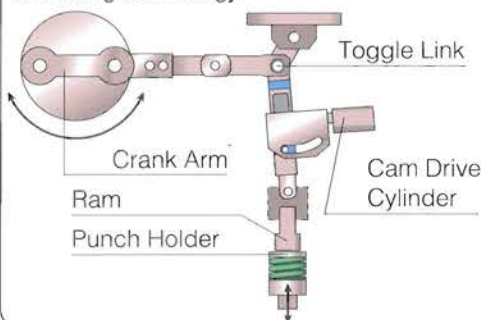
- Higher auto-index speed, to 125 rpm
- Faster hit rate, to 400 hpm



### 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

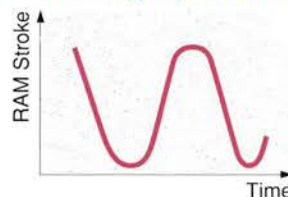
The servo motor drive mechanism delivers precise RAM control. Combined with Muratec application, MOTORUM 2548-T/2558-T enables Ram Operation Patterns ideal for a wide range of processes.

#### 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-T/2558-T 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.

# Servo Drive Pioneer Motorum has evolved to a new level

Functionality!

Power!

Speed!



Note: Photographs in this catalogue include some options.

## Low Noise Operation



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

## Thick Turret Type Tooling

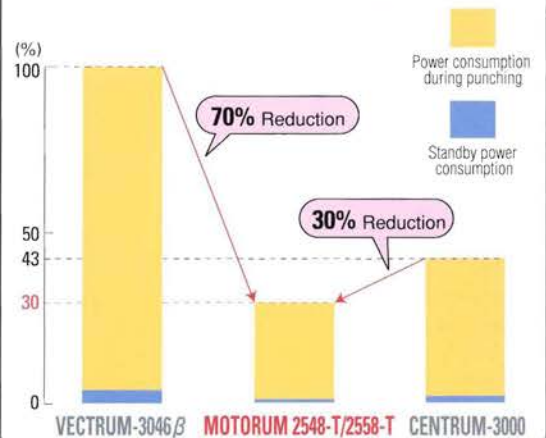


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## Energy Conservation & Low Running Cost

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-T/2558-T provides high speed process of bending, forming, tapping and other processes, to

## 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 0.79".

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

- Process types



- Sheet thickness: 0.02" - 0.06" (Mild Steel)

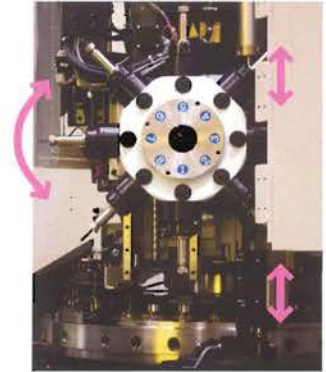


## 8-Station Tapping Unit (Option)

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

- Tap size: M2 ~ M10
- Tapping methods: Machine thread / Rollin
- Max. sheet thickness: 0.25"

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



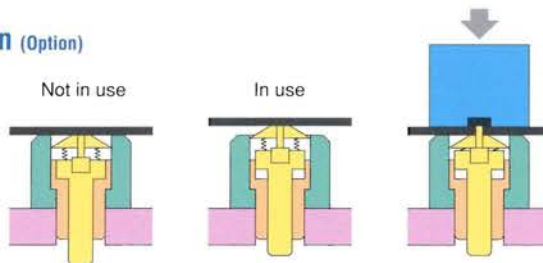
8-Station Tapping Unit (Option)

## 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)

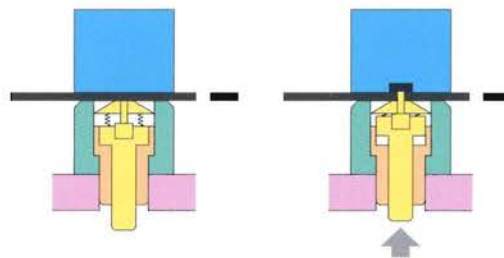
Upward forming tool dies are retracted to die height when not in use. This is to avoid interference of the forming die with the workpiece and workholders. This allows free movement of the sheet without any restrictions and improves quality.



### Programmable up forming (Option together with in turret bending)

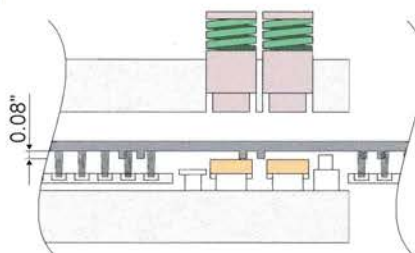
(Option together with in turret bending)

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 tool life counter

If the tapping operation reaches to the presence of the counter, the message is appeared automatically and inform you the timing to change the tool.

## High-Speed A

### High-Speed Indexing

Index tool speed has been raised to 1; multi-tools and marking tools shortens

## Debur



...ing with reliability and accuracy. This machine also raises overall productivity through process integration together with reduction of time needed to setup and program.

# Tapping

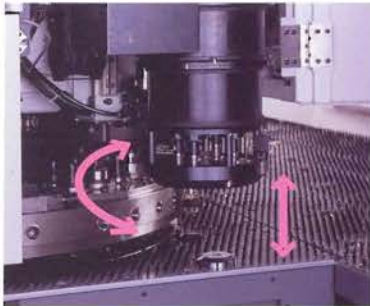


## 4-Station Tapping Unit (Option)

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: 0.13"

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



4-Station Tapping Unit (Option)

## Tapping slug suction unit (Option)

It drastically improves the tapping quality by sucking tapping chip under beneath the tapping tool.

# Auto-Index Mechanism

...5 rpm. Reduction of positioning time for index tool angles, production time.

# Drilling operation

## One tool for all around deburring operation

Deburring is accomplished using a pinching action in a tool manufactured originally by Muratec. Two ball bearings pinch an interior or exterior edge of a part. Moving the part through the ball removes any burr from the upper and lower side of the material.



## Designed for higher productivity, quality and operating ease

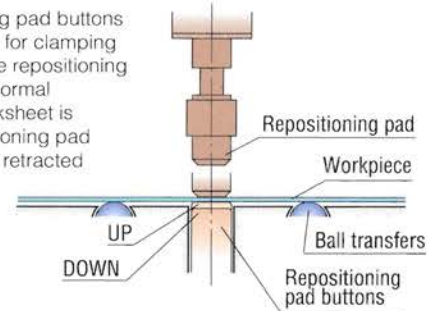
### Brush Table (Option)

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.



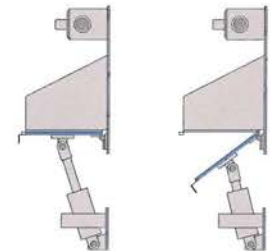
### Retractable Positioning Pad Buttons

Retractable positioning 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: 7.9" (X) x 5.9" (Y)

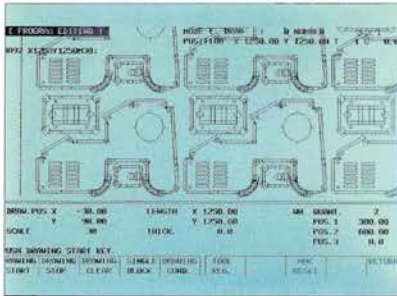


# Sheet Metal Processing Expertise



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.

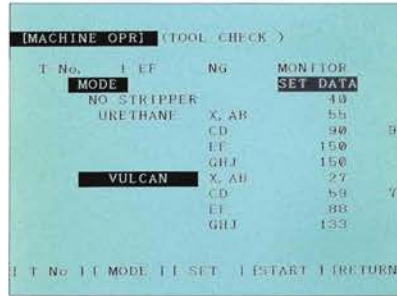
## Conversational NC Programming and Editing



### Program Creation & Background Editing

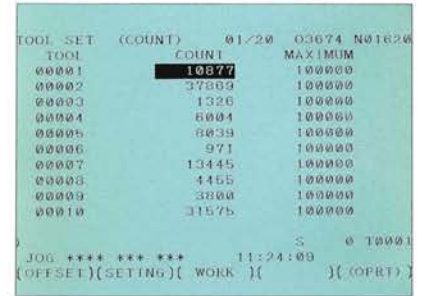
Programs can be created using the conversational mode. Background editing of programs is also possible.

## Tool Alignment Confirmation Function



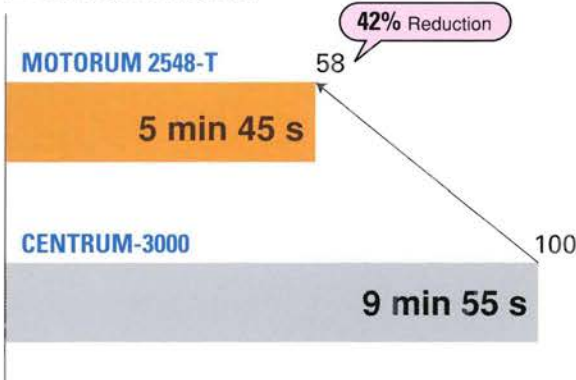
The MOTORUM servo ram control features a ram motor torque monitoring system that enables the operator to detect punch and die nonalignment, avoiding damages to the punch and die.

## Tool Life Monitor Function

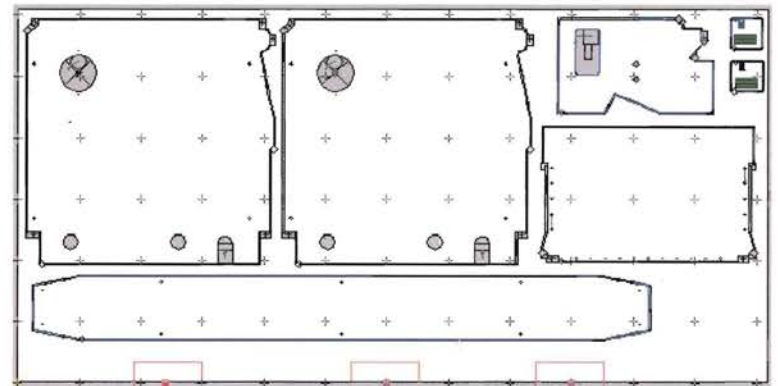


The MOTORUM incorporates a programmable auto tool life monitor function, that when tool life has reached a set hit number the "Tool Life Caution" message is displayed to capture the operator's attention to carry out the punch and die regrinding.

## Benchmark



## Worksheet example Mild Steel 0.05" thick 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

**MOTORUM Tseries**

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



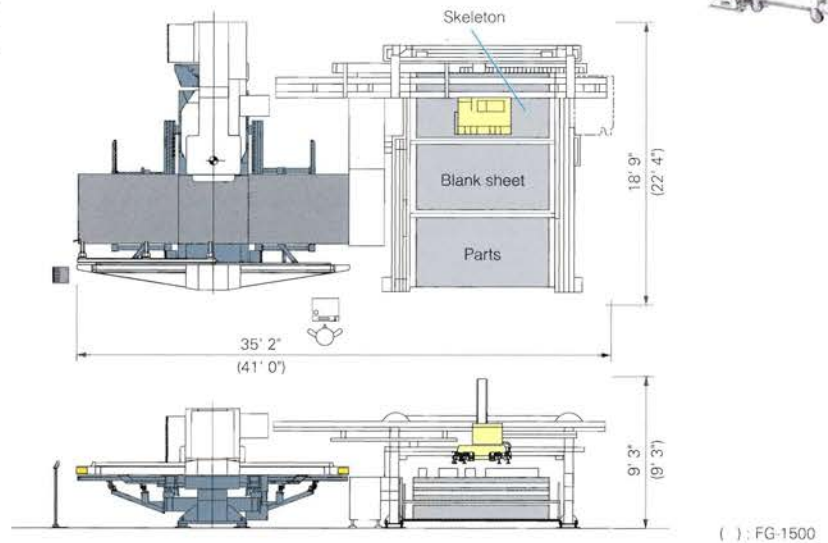
## FG-1250/FG-1500

### 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: Max. (Y x X)	49.2" x 98.4"	60.0" x 120.0"
Min. [Nested Layout]	39.4" x 59.0"	
[Single Part]	11.8" x 19.7"	
Blank Sheet Thickness:	0.02" to 0.13"	

\*Stocker type is also available



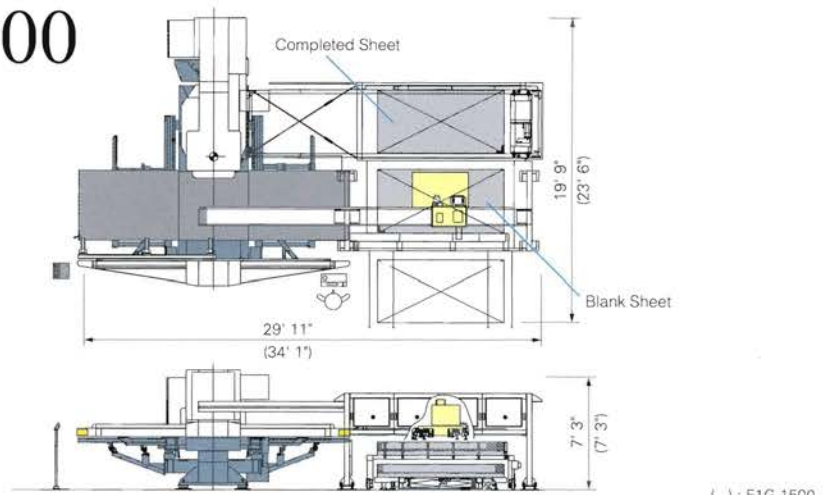
( ) : FG-1500

## 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: Max. (Y x X)	49.2" x 98.4"	60.0" x 120.0"
Min.	11.8" x 29.5"	
Blank Sheet Thickness:	0.02" to 0.18"	
Loading Cycle Time:	22 seconds	29 seconds



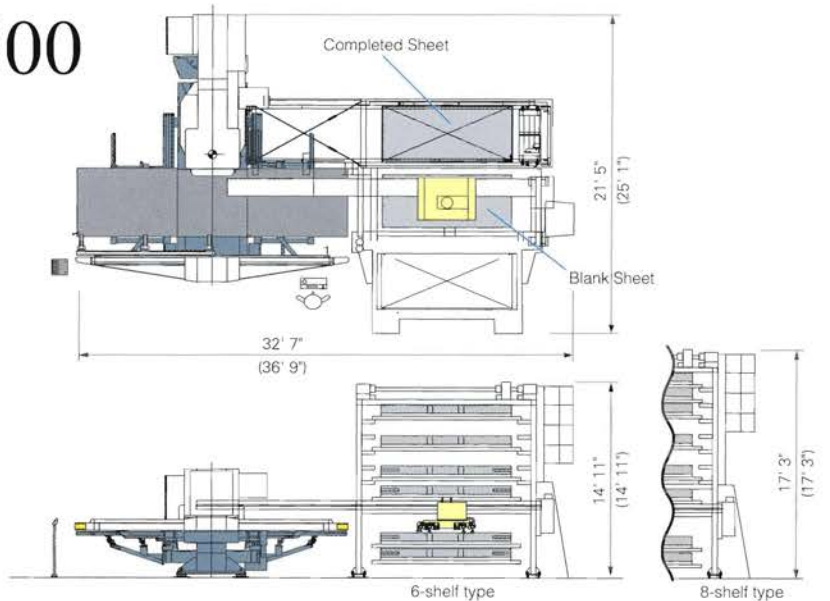
( ) : F1G-1500

## 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: Max. (Y x X)	49.2" x 98.4"	60.0" x 120.0"
Min.	11.8" x 29.5"	
Blank Sheet Thickness:	0.02" to 0.18"	
Loading / Unloading Cycle Time:	22 seconds	29 seconds

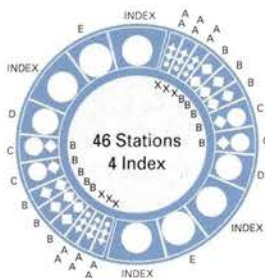


( ) : FFG-1500

# MOTORUM Tseries

CNC Servo Motor Driven Ram Turret Punch Press

## Turret Layout



## Tooling range

Range	Round punch	No. of Stations
		46ST/4 I/T
1/2"	X ~12.7 mm	6
1/2"	A ~12.7 mm	12
1 1/4"	B ~31.7 mm	16
2"	C ~50.8 mm	4
3 1/2"	D ~88.9 mm	2
4 1/2"	E ~114.3 mm	2
3 1/2"	INDEX ~76.0 mm	4

## Specifications

	MOTORUM 2548-T	MOTORUM 2558-T
Punching capacity	27.5 US tons	
Maximum sheet thickness	0.25" (Steel ball table)	
Y-axis stroke	62.99"	75.0"
X-axis stroke	100.39"	
Maximum sheet size (YxX)	Without repositioning 49.21" x 98.43"	60.04" x 98.43"
	With one reposition 49.21" x 196.85"	60.04" x 196.85"
Throat depth	52.05"	63.07"
Feed clearance	0.98"	
Maximum allowable sheet weight	330 lbs	
Hit rate (X/Y)	25 mm pitch 400 hpm / 300 hpm	
8.3 mm stroke, 1.0 t	1 mm pitch 800 hpm / 700 hpm	
Simultaneous axis speed	4920"/min	
Punching accuracy	± 0.004"	
Turret index speed	40 rpm	
Index tool speed	125 rpm	
Compressed air	Quantity 35 ft <sup>3</sup> /min	Pressure 72 lbf/in <sup>2</sup>
Power supply	23 KVA	

## Option

- 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.

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### BEIJING BRANCH

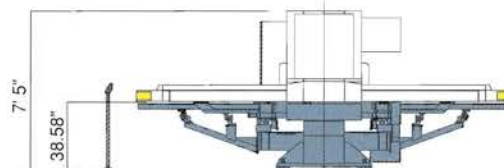
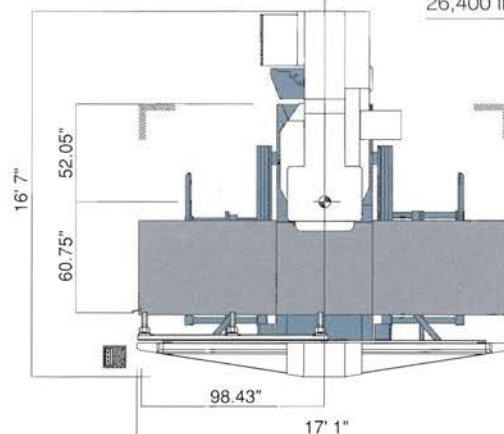
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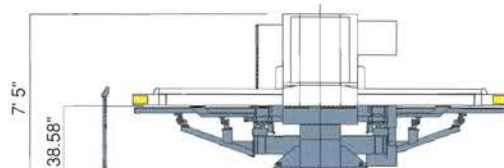
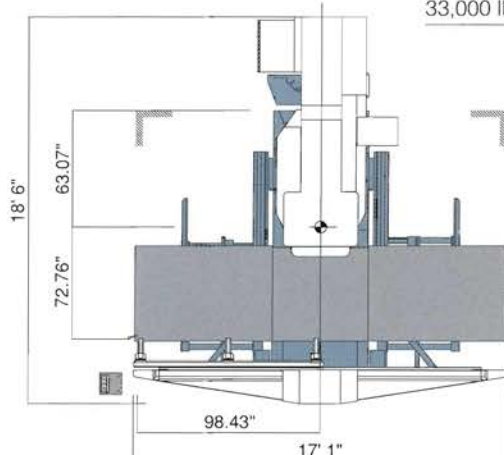
## Floor Plan MOTORUM 2548-T

Machine weight  
26,400 lbs



## Floor Plan MOTORUM 2558-T

Machine weight  
33,000 lbs



\* CELL READY SPECIFICATION

\* Machine appearance may differ to that shown in the catalogue pictures.

\* All specifications are subject to change without advance notice.

