MORGAN RUSHWORTH
SINCE 1872

BENDING. CUTTING. EXCELLENCE

TPH / TPS CNC Turret Punch Press

The TPH Hydraulic Turret Punch Press is built on decades of proven engineering, incorporating globally recognised electronic and mechanical components into a single, highly capable system. Its design supports a wide range of punching and forming applications on sheet material up to 6 mm thick, maintaining accuracy and consistency across demanding production work.

The Morgan Rushworth TPS Servo Turret Punch Press builds on proven industry experience, offering a hydraulic-free servo drive system that delivers exceptional speed, accuracy, and energy efficiency.

FEATURES AND BENEFITS

- **3000mm Processing Width**
- **1500mm Processing Length**
- **Up to 2,000 Strokes per Minute**
- **88.9mm Maximum Punch Diameter**
- **Up to 33 Tool Stations**
- **30 Tonnes of Punching Force**

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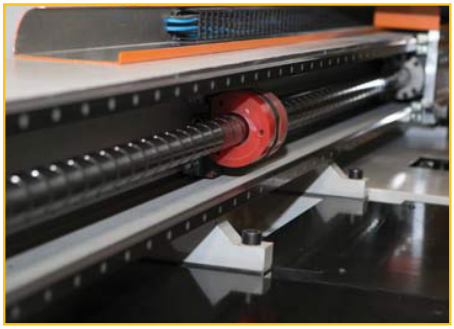
Powerful rigid O-Type Body

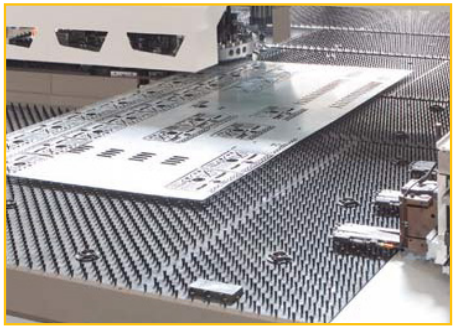
Hardened Tool Holder

TPH MACHINE FEATURES

- User-friendly software
- Clamp safety margins preventing collision around the clamp
- Stroke length adjustment parameters (Form mould, Special mould, etc.)
- Stroke counts in total and for each programme
- Operation hours in total and for each programme
- Stroke counts displayed for each tool
- 33 or 27 stations
- Direct processing without re-positioning for sheet metal up to 1500 × 3000 mm
- 20- and 30-ton high-speed cylinders manufactured by H+L Voith (Germany)
- Three automatic re-positioning clamps
- O-type mono-block rigid body
- Anti-detection at X-axis shaft
- 1500 strokes per minute on average when stamping
- Brush/ball-bearing table to aid sheet loading and unloading
- Safety-margin protection guards preventing clamp collision with the tool
- Hardened tool holders with turret housing
- CNC Controlled automatic tool lubrication system
- Anti-detection system at ball-screw
- Scrap bin with wheels
- Metalix CAD/CAM software



Anti-deflection system is used for machines with axis length 2500mm.



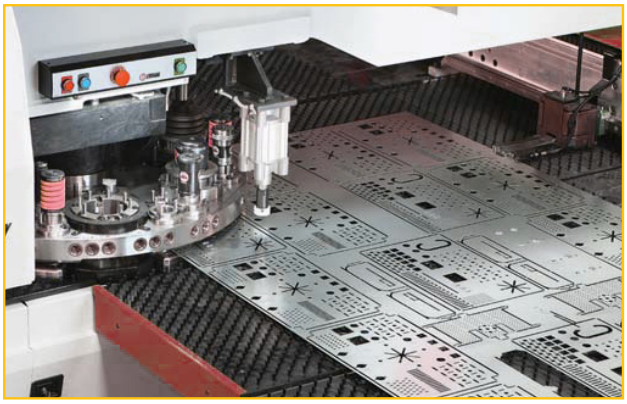
Brush and ball bearing type table facilitates sheet metal loading and unloading.

Precisely machined strong body having dynamic and static rigidity.

CONTROLLER

Control panel is easy to operate thanks to its quality, technology and user-friendly interface

- GE Fanuc 31i-PB - Part Program Memory, 256 KB
- Memory C, FROM / SRAM, 16 MB / 2 MB
- CPU CARD, PENTIUM, DRAM 16 MB
- Inch/Metric Conversion - Work piece Coordinate System
- Reader/Puncher Interface 1 - External Message
- Cutter Compensation C
- Part Program Memory, 256 KB
- Registered Programs, 125
- Extended Part Program Editing
- Run Hour & Parts Count Display
- Graphic Display - Multi-Piece Machining
- Multiple Tool Control - Safety Zone Check
- Clamp Zone Avoidance

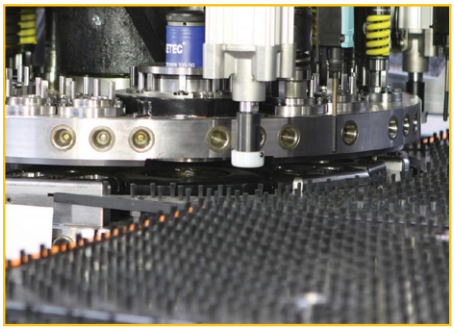


Rigid and Strong Body

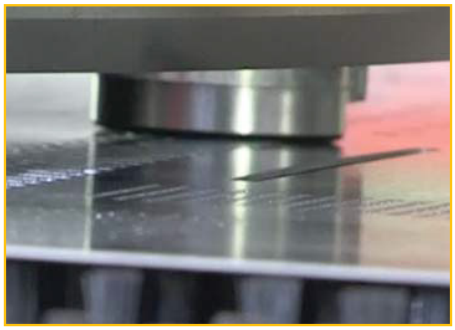
3 automatic repositioning sheet metal holding clamps.

TPS MACHINE FEATURES

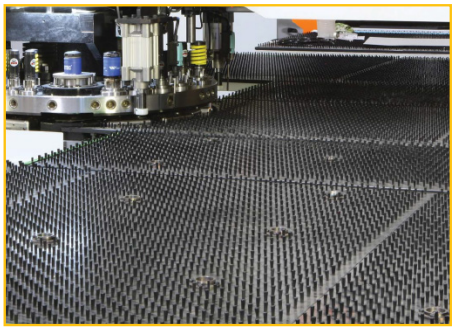
- Maintenance-free oil-free, long service life
- Low energy consumption, minimum 40% power saving
- Problem-free long service life with less mechanical parts thanks to it's unique design
- Speeds and low, medium, top punching positions can be programmed as requested with flexible programmable stroke structure
- All positioning actions are more precise since Servo-Electric hammer system is driven with servo motor
- Always provides maximum torque even at high and low speeds
- Enables stamping and nibbling soft punch, precise forming with wheeled tools
- Motor integrated thermal protection and water cooling system
- Environment friendly because no oil is used
- 2 model with 20 or 30 tons punching power
- IP65 protection grade



Servo-Electric Punching System up to 30 Tonnes.



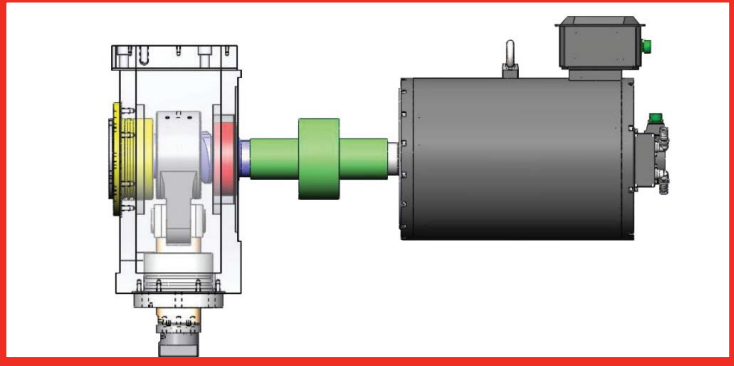
Wearing is minimised by using less mechanical parts thanks to Direct Drive Servo technology.



Minimum oil consumption thanks to servo motor technology.

Servo Motor Specifications

- High torque even at low speeds
- More power up to 3 times more load
- IP65
- Water cooling
- High durability
- Built-in thermal protection
- Built-in absolute encoder system



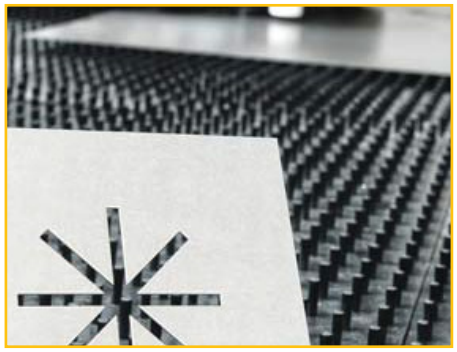
OPTIONAL EQUIPMENT

- Cutting and forming tools in various dimensions and forms
- Pilot calibration tools
- Coatings for cutting stainless material (TIN, TiCN, TiCN Plus, MOVIC)
- 3 and 8 multi-tool stations
- Tool grinding machine
- Adaptors for various stations (B, C, D)
- Additional sheet metal holder clamps
- Work-chute table
- Stainless ball bearing table
- Automatic loading - unloading system
- Extra hydraulic oil cooling system
- Automatic central lubrication system
- Scrap suction unit
- Automatic positioning and second usage license for CAD/CAM Software
- Automatic part drop system

TOOL GRINDING MACHINE

Tool grinding machine provides sharpening of worn out tools. Sharper tools, maximises the efficient operating hours of the press and extended tool service life is guaranteed.

3 automatic re-positioning powerful clamps on table enables easy movement of sheet metal on table. (Standard)



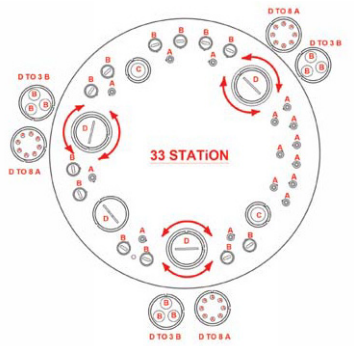
Parts cut off will not fall onto sheet metal thanks to part drop system, thus part deformation will be prevented. (Optional)

Foot pedal and button panel gives the advantage to operate the machine remotely. (Standard)

TURRET HEAD - GENERAL SPECIFICATION

The Morgan Rushworth TPS and TPH Turret Punch Press range is available with either 33-station or 27-station turret configurations. In the 33-station version, three of the D-station positions are fully indexable, and optional multi-tool sets—such as 8A, 3B or 1C—can be fitted on request. This allows the total tool capacity to increase to as many as 54 tools, providing exceptional flexibility for varied production requirements.

A hardened, steel-coated tool adaptor system ensures long, maintenance-free service life, while the turret design supports a wide selection of functional tooling. Multiple forming operations can be performed with ease, enabling the production of different diameters, shapes, and surface details as required.



TURRET 33 STATION TOOL LAYOUT

- 15 x A stations 1/2” fixed 1.6 - 12.7mm round
- 12 x B stations 1-1/4” fixed 12.8 - 31.7mm round
- 2 x C stations 2” fixed 31.8 - 50.8mm round
- 1 x D stations 3-1/2” fixed 50.9 - 88.9mm round
- 3 x D stations 3-1/2” index 50.9 - 88.9mm round

TURRET 27 STATION TOOL LAYOUT

- 11 x A stations 1/2” fixed 1.6 - 12.7mm round
- 10 x B stations 1-1/4” fixed 12.8 - 31.7mm round
- 1 x C stations 2” fixed 31.8 - 50.8mm round
- 2 x D stations 3-1/2” fixed 50.9 - 88.9mm round
- 2 x B stations 1-1/4” index 12.8 - 31.7mm round
- 1 x C station 2” index 31.8 - 50.8mm round

Different contours at required angles can be punched with 3 automatic index stations and these stations may include 8A, 3B or 1C station tools upon customers request and so a wide range of tooling combinations are possible. Index positioning accuracy is 0.01 degrees.

900 strokes punching speed and 1500 strokes stamping speed Speed depending on X+Y axis is 120 m/min. and positioning accuracy is ± 0.1 mm, repetition accuracy is ± 0.05 mm.

TECHNICAL SPECIFICATIONS - TPH (HYDRAULIC) MODELS

SPECIFICATION	TPH 1500×3000	TPH 1500×2500	TPH 1250×2500	TPH 1250×2000
Maximum Tonnage (tons)	30	30	20	20
Maximum Capacity (X,Y) mm	3,000 × 1,500	2,500 × 1,500	2,500 × 1,250	2,000 × 1,250
Station Qty on Turret	33	33	27	27
Maximum Punch Diameter (1 mm sheet)	88.9 mm (3.5 in)	88.9 mm (3.5 in)	88.9 mm (3.5 in)	88.9 mm (3.5 in)
X-Axis Travel / Speed	3,000 mm / 80 m/min	2,500 mm / 80 m/min	2,500 mm / 120 m/min	2,000 mm / 120 m/min
Y-Axis Travel / Speed	1,500 mm / 80 m/min	1,500 mm / 80 m/min	1,250 mm / 120 m/min	1,250 mm / 120 m/min
X+Y Dependent Speed	114 m/min	114 m/min	170 m/min	170 m/min
Turret Rotation Speed	20 rpm	20 rpm	27 rpm	27 rpm
Auto Index Rotation Speed	65 rpm	65 rpm	65 rpm	65 rpm
Max Punch Stroke (1 mm marking)	2,000 stroke/min	2,000 stroke/min	2,000 stroke/min	2,000 stroke/min
Max Punch Stroke (1 mm step X/Y)	900 stroke/min	900 stroke/min	900 stroke/min	900 stroke/min
Max Punch Stroke (25 mm step X/Y)	600 stroke/min	600 stroke/min	350 stroke/min	350 stroke/min
Max Cutting Thickness, Fixed Station (Mild Steel)	6.35 mm	6.35 mm	6.35 mm	6.35 mm
Max Cutting Thickness, Fixed Station (Stainless)	3 mm	3 mm	3 mm	3 mm
Max Cutting Thickness, Auto Index (Mild Steel)	4 mm	4 mm	4 mm	4 mm
Max Cutting Thickness, Auto Index (Stainless)	2.5 mm	2.5 mm	2.5 mm	2.5 mm
Repetition Accuracy / Positioning Accuracy	±0.05 mm / ±0.1 mm	±0.05 mm / ±0.1 mm	±0.05 mm / ±0.1 mm	±0.05 mm / ±0.1 mm
Index Positioning Accuracy	0.01°	0.01°	0.01°	0.01°
Multi-Tool Change Time	3 sec	3 sec	3 sec	3 sec
Maximum Burden Capacity	225 kg	200 kg	137 kg	125 kg
Motor	11 kW	11 kW	7.5 kW	7.5 kW
Oil Capacity	280 L	280 L	180 L	180 L
Air Pressure	6–7 bar	6–7 bar	6–7 bar	6–7 bar
Maximum Stroke	40 mm	40 mm	40 mm	40 mm
Sheet Clamping (Auto Repositioning) / Force	3 clamps / 1200 kg	3 clamps / 1200 kg	3 clamps / 1200 kg	3 clamps / 1200 kg
Power Supply	25 kW	25 kW	25 kW	25 kW
Air Supply	2.5 L/min	2.5 L/min	2.5 L/min	2.5 L/min
Working Height	950 mm (34.4 in)	950 mm (34.4 in)	950 mm (34.4 in)	950 mm (34.4 in)
Table Type	Brushed / Ball / Brushed & Ball	Brushed / Ball / Brushed & Ball	Brushed / Ball / Brushed & Ball	Brushed / Ball / Brushed & Ball
Machine Length	5,520 mm (217.3 in)	5,520 mm (217.3 in)	5,140 mm (202.3 in)	5,140 mm (202.3)
Machine Width	6,660 mm (262.2 in)	5,000 mm (196.3 in)	5,000 mm (168.9 in)	4,290 mm (168.9)
Machine Height	2,220 mm (87.4 in)	2,220 mm (87.4 in)	2,220 mm (87.4 in)	2,220 mm (87.4 in)
Weight	22,000 mm (44,092 in)	18,500 mm (40,792 in)	15,500 mm (34,171 in)	14,000 mm (30,870 in)
CAD/CAM Software	Metalix - One license, Postprocessor	Metalix - One license, Postprocessor	Metalix - One license, Postprocessor	Metalix - One license, Postprocessor
Position Control	Voith Turbo H + L Hydraulics	Voith Turbo H + L Hydraulics	Voith Turbo H + L Hydraulics	Voith Turbo H + L Hydraulics
Linear Axes (X & Y)	Y1 + Y2 axis of the Ballscrew Direct Drive Fanuc Servo Motor X Axis of a rack and pinion + Reducer Fanuc Servo Motor	All axes absolute Ballscrew with Fanuc servo motor		

TECHNICAL SPECIFICATIONS - TPS (SERVO) MODELS

SPECIFICATION	TPS 1500×3000	TPS 1500×2500	TPS 1250×2500	TPS 1250×2000
Maximum Tonnage (tons)	30	30	20	20
Maximum Capacity (X,Y) mm	3,000 × 1,500	2,500 × 1,500	2,500 × 1,250	2,000 × 1,250
Station Qty on Turret	33	33	33	27
Maximum Punch Diameter (1 mm sheet)	88.9 mm (3.5 in)	88.9 mm (3.5 in)	88.9 mm (3.5 in)	88.9 mm (3.5 in)
X-Axis Travel / Speed	3,000 mm / 80 m/min	2,500 mm / 80 m/min	2,500 mm / 80 m/min	2,000 mm / 120 m/min
Y-Axis Travel / Speed	1,500 mm / 80 m/min	1,500 mm / 80 m/min	1,500 mm / 80 m/min	1,500 mm / 120 m/min
X+Y Dependent Speed	114 m/min	114 m/min	114 m/min	170 m/min
Turret Rotation Speed	20 rpm	20 rpm	20 rpm	27 rpm
Auto Index Rotation Speed	65 rpm	65 rpm	65 rpm	65 rpm
Max Punch Stroke (1 mm marking)	2,000 stroke/min	1,200 stroke/min	1,200 stroke/min	1,500 stroke/min
Max Punch Stroke (1 mm step X/Y)	900 stroke/min	900 stroke/min	900 stroke/min	900 stroke/min
Max Punch Stroke (25 mm step X/Y)	600 stroke/min	600 stroke/min	600 stroke/min	350 stroke/min
Max Cutting Thickness, Fixed Station (Mild Steel)	6.35 mm	6.35 mm	6.35 mm	6.35 mm
Max Cutting Thickness, Fixed Station (Stainless)	3 mm	3 mm	3 mm	3 mm
Max Cutting Thickness, Auto Index (Mild Steel)	4 mm	4 mm	4 mm	4 mm
Max Cutting Thickness, Auto Index (Stainless)	2.5 mm	2.5 mm	2.5 mm	2.5 mm
Repetition Accuracy / Positioning Accuracy	±0.05 mm / ±0.1 mm	±0.05 mm / ±0.1 mm	±0.05 mm / ±0.1 mm	±0.05 mm / ±0.1 mm
Index Positioning Accuracy	0.01°	0.01°	0.01°	0.01°
Multi-Tool Change Time	3 sec	3 sec	3 sec	3 sec
Maximum Burden Capacity	225 kg	200 kg	200 kg	125 kg
Air Pressure	6–7 bar	6–7 bar	6–7 bar	6–7 bar
Maximum Stroke	32 mm	32 mm	32 mm	32 mm
Sheet Clamping (Auto Repositioning) / Force	4 clamps / 1200 kg	3 clamps / 1200 kg	3 clamps / 1200 kg	3 clamps / 1200 kg
Power Supply	60 kW	60 kW	60 kW	60 kW
Air Supply	2.5 L/min	2.5 L/min	2.5 L/min	2.5 L/min
Working Height	950 mm (34.4 in)	950 mm (34.4 in)	950 mm (34.4 in)	950 mm (34.4 in)
Table Type	Brushed / Ball / Brushed & Ball	Brushed / Ball / Brushed & Ball	Brushed / Ball / Brushed & Ball	Brushed / Ball / Brushed & Ball
Machine Length	5,520 mm (217.3 in)	5,520 mm (217.3 in)	5,520 mm (217.3 in)	5,520 mm (217.3 in)
Machine Width	6,660 mm (262.2 in)	5,000 mm (196.3 in)	5,000 mm (196.3 in)	4,290 mm (168.9)
Machine Height	2,220 mm (87.4 in)	2,220 mm (87.4 in)	2,220 mm (87.4 in)	2,220 mm (87.4 in)
Weight	22,000 mm (44,092 in)	18,500 mm (40,792 in)	18,500 mm (40,792 in)	16,000 mm (35,270 in)
CAD/CAM Software	Metalix - One license, Postprocessor	Metalix - One license, Postprocessor	Metalix - One license, Postprocessor	Metalix - One license, Postprocessor
Position Control	Servo Mechanical Press 30 Tonne	Servo Mechanical Press 30 Tonne	Servo Mechanical Press 20 Tonne	Servo Mechanical Press 20 Tonne
Linear Axes (X & Y)	Y1 + Y2 axis of the Ballscrew Direct Drive Fanuc Servo Motor X Axis of a rack and pinion + Reducer Fanuc Servo Motor	All axes absolute Ballscrew with Fanuc servo motor