

TP Series

Turret Punch



Strong

Precise

Efficient

Fast

High
Repeatability



As a total supplier for sheet metal manufacturing with almost 70 years of experience, Durma understands and recognizes the challenges, requirements and expectations of the industry. We strive to satisfy the ever higher demands of our customers by continuously improving our products and processes while researching and implementing the latest technologies

In our three production plants with a total of 150.000 m², we dedicate 1,000 employees to delivering high quality manufacturing solutions at the best performance-to-price ratio in the market.



PRODUCTION IS
MORE EFFECTIVE NOW

From the innovations developed at our Research & Development Center to the technical support given by our worldwide distributors, we all have one common mission: to be your preferred partner.

Durmazlar offers it's machines to the world markets under the Durma brand.



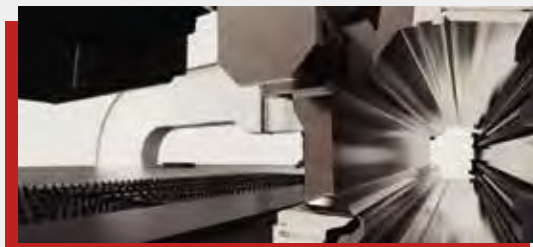
1

High technology,
modern production
lines



2

Top quality
components



3

High quality
machines designed
in R&D Centre

TP

TP SERIES Turret Punch

- Small, medium and large format sheet processing
- Punching, forming, tapping, and wheel technology capabilities
- Stress relieved O frame
- Flexible turret configurations to eliminate tool setups
- Auto lubrication of moving parts
- Rigid guides
- One of the best controller with functionality & flexibility
- Powerful control with user friendly CAD-CAM Software
- Programmable sheet clamping system decreases set-up times and scrap ratio
- Automation can be easily integrated for efficient and lean operations while also
- Increasing operator safety and as well as decreasing operator fatigue.



Production is *More Effective Now.*



■ Precise and High Speed Turret

The punching head stroke rates of 1200 strokes per minute during punching and 3200 per minute during marking. Also can be forming at punching speed. The machine control adjusts stroke travel speed and position.

With its dynamic design, it is possible to obtain speeds of
 116 m/min in X axis
 80 m/min in Y axis
 140 m/min simultaneously
 High acceleration (1g) is possible across the whole working range without any restriction.



■ Intelligent Hydraulics

- Highly dynamic punch drive with closed loop control
- New valve technology DECV: Direct Electronic Copy Valve
- Based on proven Voith H + L copy valve
- Rugged against mechanical stress
- Simple oil filtration is sufficient
- Directly operated, no hydraulic control circuit
- Very fast step response
- Very accurate proportional response
- Predefined machine cycles with programmable stroke parameters
- Process safety by feedback monitoring
- Improved diagnostics by pressure sensors
- Optimized power consumption with load-controlled active "two-pressure-system"

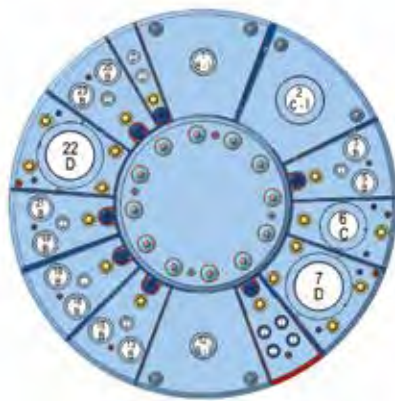


■ High Quality Forming

Simplifies setup of progressive forms, flanges, and embossments. With roller technology are possible not only on straight geometries but also on curved and round areas. This method is of particular interest for sectors such as air conditioning technology. (Wheel tools, tapping tools) High speed marking



■ **Turret**



Station	Sizes	TP6-9	TP-123 TPL-93 TPL 93 Servo
A - fix	0.8 - 12.7 mm	11	11
B - fix	12.8 - 31.7 mm	10	11
C - fix	31.8 - 50.8 mm	1	2
D - fix	50.9 - 88.9 mm	2	1
B - index	12.8 - 31.7 mm	2	-
C - index	31.8 - 50.8 mm	1	-
D - index	50.9 - 88.9 mm	-	3

■ **3 Auto Index Stations**

Provide maximum flexibility by simplifying tooling inventories and reducing tool setup time.

Tools are rotatable in 0.01° increments enabling the processing of complex shaped parts with the minimum number of tools. Tool change takes less than 3 seconds to complete total turret movement and just 0,6 seconds for single tool. Forming almost at punching speed by closed loop hydraulic by H+L Hydraulic. A variable forming position ensures that forming operations can be carried out with minimal stroke travel. The dies are positioned below the table surface, preventing sheets from being scratched or caught, therefore micro tags can be reduced to minimum for more precision parts.



■ Reposition

It is possible to process sheet length over table length without need to reposition.



■ Workchute

To evacuate parts during punching also with sorting and stacking capacity.

The parts chute, small parts up to 400 x 600 mm can be ejected directly into a parts container. An optional conveyor system. (optional)



■ Motion and Table

A new design of X and Y axis, direct drive technology is used. This will increase the performance and eliminates any loses from belts, gears or any transmission systems.

Ball table mainly easy movement of the sheet, brush table is generally for sensitive and soft material punching for not to scratch the sheet. Both is available according to customer demands.



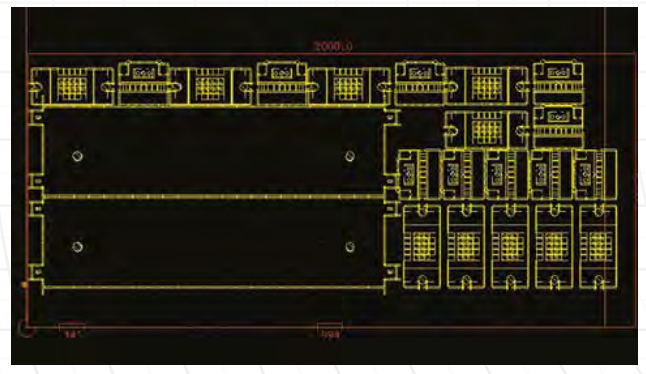
■ Automatic Clamps

When punching thinner material, one of the problem is to control the sheet movement at non clamping area. To eliminate this matter 3 clamps or more is available.



■ Cadcam Software

Programming time minimized by using fast and easy CAD-CAM software (cncKAD) metalix. By choosing the effective position of the tool automatically to use maximum area of the sheet, additional reposition and work strips is eliminated.



■ Control System

Siemens Sinumerik 840 DSL control system is applied for punching . Controls and screen are mounted on a mobile control panel. The control system and other hardware are mounted in a separate cabinet. Machining can be started with just a few steps. Network (ethernet) connection is available as well as programming on the control panel. UPS system prevents the control unit from the voltage fluctuations and cuts.

Integrated online help messages answer all questions at the location they arise. The diagnostic concept provides visual depictions of any function faults. Remote diagnostics is a matter of course over Internet for diagnostics for machine controller.



TP SERVO Turret Punch

Providing energy efficiency, mineral oil does not require, green, Servo control Punch Machines

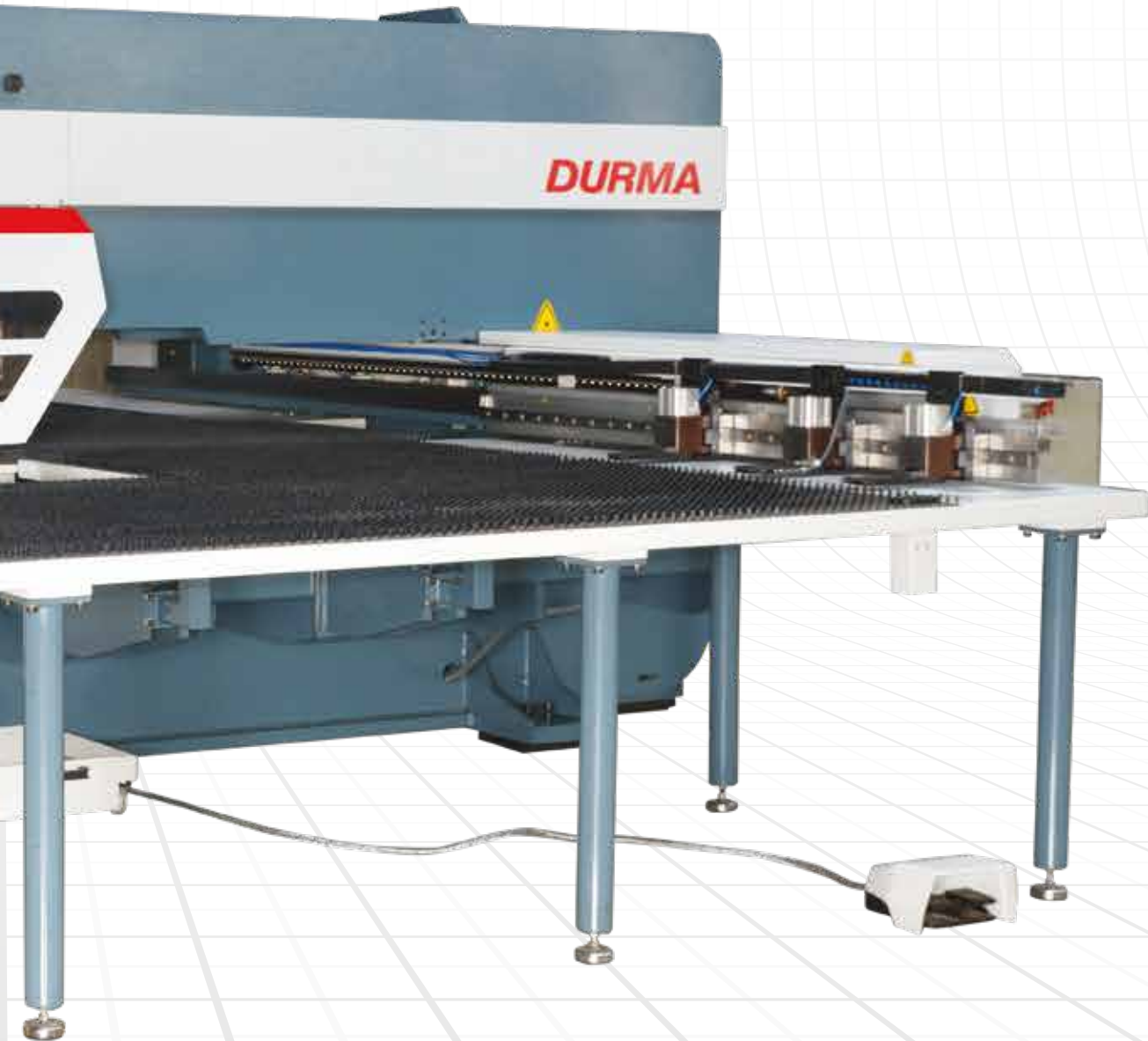
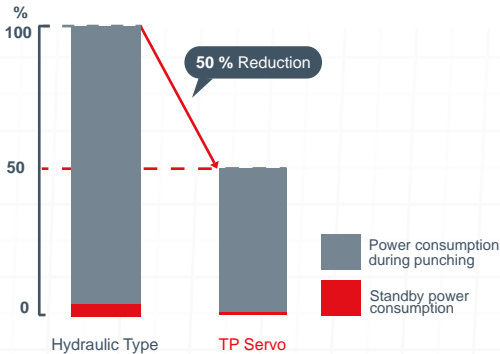
- TP Servo series utilizes an two servo linear motor to drive the ram
- (eliminating the hydraulic power supply and chiller).
- Electrical consumption is less than one-half of comparable hydraulic machines.
- TP Servo offers significantly faster punching speeds than mechanical turrets.
- Space-saving design makes the most of valuable floor space.

The TP Servo series turret punch press is packed with a wide variety of standard features to help produce parts faster, easier and more economically.



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Power Consumption Comparison



STANDARD & OPTIONAL EQUIPMENT

Standard Equipment

Command pedal
CAD-CAM software & Activator(Dongle)
Control unit, Siemens Sinumerik 840 D SL Windows 7 operating system
Remote diagnostic function
Programming on the control panel
Automatic clamp positioning.
Sheet set switches on clamps
Network, Ethernet communication.
Automatic tool lubrication
UPS for control panel
Movable scrap box
Brush table
Oil Cooler
USB Driver
Reposition on X axis
Alignment Tools for Index Stations (C+B Station) - (for TP6, TP9)
Alignment Tools for Index Stations (D Station) - (for TP63, TPL63, TP93, TPL93, TP123, TP Servo, TPL Servo)
Manual nesting
Light barriers for CE

Optional Equipment

Additional clamps
Table (brush&ball)
Tools, Tool holders, reducers
CAD-CAM SW Second activator (dongle)
SW for Autonesting, Wheel and Tapping tools
Sheet deformation alert switch
Turret cover for perforated sheets
Vacuum slug remover
Workchute
Automatic lubrication for the machine
Air condition for electrical box
Loading- Unloading preparation
Loading- Unloading system
Additional table
Special table
Transformer
UPS for machine (30 kVA - 10 min)
Additional alignment tool

Technical Details

TP Series	Unit	TP9	TP123	TPL93	TP Servo
Maximum tonnage	Ton	20**	30**	30**	20**
Frame type	-	O frame	O frame	O frame	O frame
X axis movement	mm	2000 + R	2500 + R	3000 + R	2500 + R
Y axis movement with single tool	mm	1250	1250	1500	1250
Automatic Repositioning range *	mm	10000*	10000*	10000*	10000*
Speed of Y axis	m/min	70	80	60	80
Speed of X axis	m/min	90	116	70	116
Lateral speed Y + X	m/min	114	140	120	140
Max. Hit rate (1mm pitch, 1mm thickness)	1/min	1100	1200	1200	535
Max. Hit rate (25mm pitch, 1mm thickness)	1/min	375	425	325	325
Max. Hit rate : Marking	1/min	2800	3200	2800	820
Main cylinder stroke	mm	40	40	40	40
Maximum punching stroke	mm	25	25	25	25
Max. cutting thickness (Fixed Station)	Mild Steel	6	6	6	6
	Stainless Steel	3	3	3	3
Max. cutting thickness (Index Station)	Mild Steel	3	3	3	3
	Stainless Steel	1,5	1,5	1,5	1,5
Positioning accuracy	mm	± 0,1	± 0,1	± 0,1	± 0,1
Repeatable accuracy	mm	± 0,05	± 0,05	± 0,05	± 0,05
Turret rotation speed	rpm	30	22	22	22
Auto index rotational speed	rpm	150	150	150	150
Max. weight of sheet	kg	100	120	200	120
Hard disk	Gbyte	80	80	80	80
RAM	Gb SDRAM	4	4	4	4
Network system	-	Windows 7	Windows 7	Windows 7	Windows 7
Interactive Flat Panel	inch	19"	19"	19"	19"
USB	-	2	2	2	2
Ethernet	-	10/100	10/100	10/100	10/100
Dimensions					
Height (H)	mm	2310	2310	2310	2135
Width (without light barrier) (W)	mm	4200	5360	6300	5260
Width (with light barrier)	mm	6200	7360	8300	6260
Length (without light barrier) (L)	mm	5600	5750	6650	5260
Length (with light barrier)	mm	6600	6800	7650	6260
Table height	mm	940	940	940	940
Weight approx.	kg	11000	12960	18250	14000
Hydraulic System Motor	kw	7.5	15	15	-
Oil tank	lt	180	240	180	-
Air pressure	bar	6	6	6	6
Number of Clamps	pcs.	2	3	4	3
Holding force of clamps	-	1000	1000	1000	1000
Table type		Brush	Brush	Brush	Brush
Energy Consumption	Kw/h	7,5	15	15	6,21
Options					
A - fix 0.8-12.7 mm	Qty	11	11	11	11
B - fix 12.8-31.7 mm	pcs	10	11	11	11
C - fix 31.8-50.8 mm	pcs	1	2	2	2
D - fix 50.9-88.9 mm	pcs	2	1	1	1
B - indeks 12.8-31.7 mm	pcs	2	-	-	-
C - indeks 31.8-50.8 mm	pcs	1	-	-	-
D - indeks 50.9-88.9 mm	pcs	-	3	3	3

* : Special table must be added to the machine and the light barriers must be located the correct position. Max.weight 100 kg.

** : Please pay attention to tool's spring forces while considering about machine tonnage.

Loading & Unloading System

TP CELL automates efficiently raw material loading and unloading of ready components along with skeleton. TP CELL allows mixing of automatic and manual operations as needed from production point of view.

■ Sheet Thickness Measurement System

Precision measurement system that preventing multi sheet loads.



■ Sheet Separation System

Effective sheet separation system, separating sheets from each other.



■ Sheet Loading System

The Loading system, enables the reliable , therefore gets precision reference for 0,5 -6 mm sheet thicknesses while loading sheet metals.



■ Sheet Unloading System

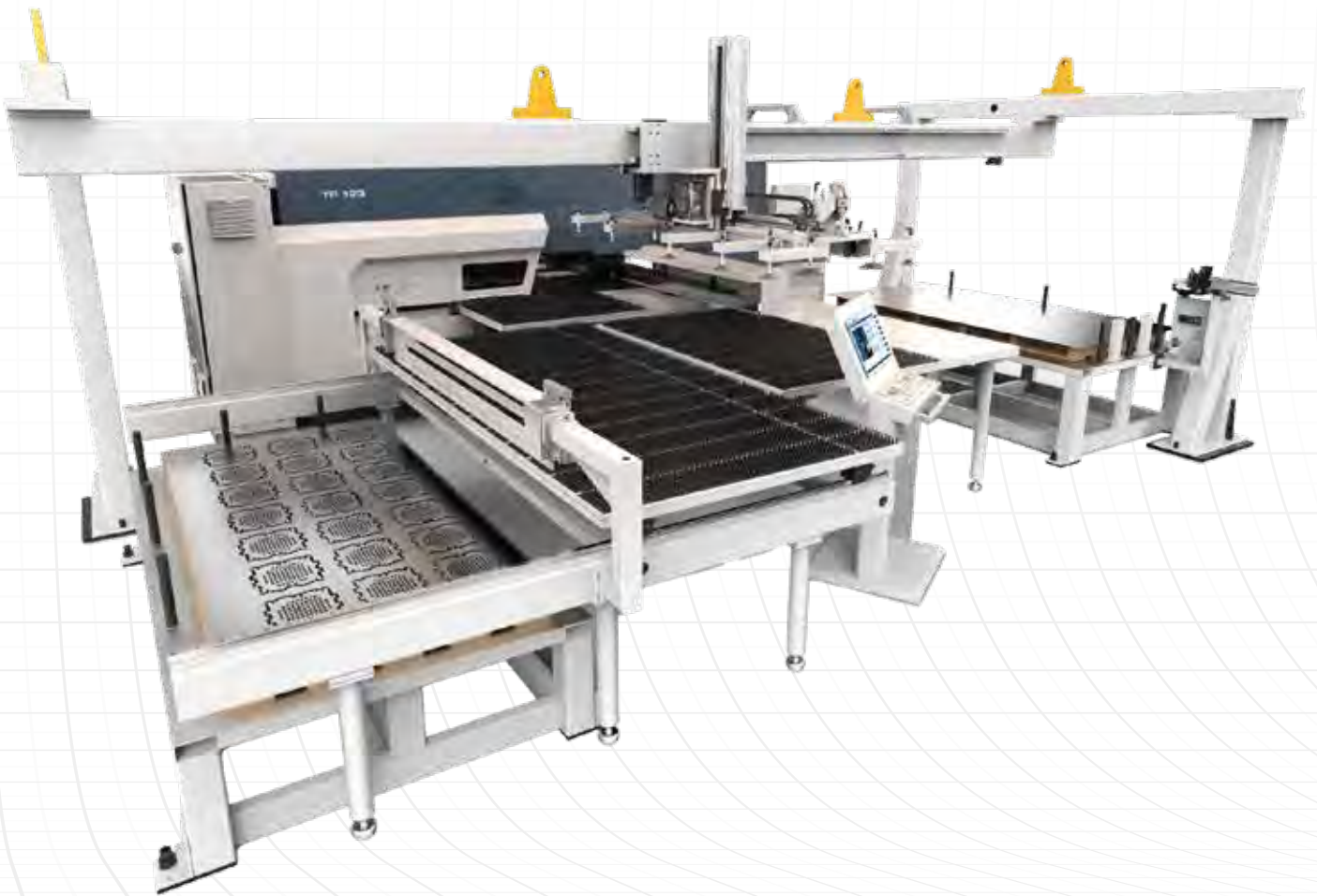
Stacking up together in the same position of produced sheet metals due that handle up to simple carrying.



Production is *More Effective Now.*

TP CELL

- Compact layout
- Process efficiency
- Unmanned production
- Automatic material loading and unloading of part along with skeleton
- Allows full manual process with machine as with stand-alone solutions.



Technical Specifications	Unit	TP Cell
Positioning Accuracy	mm	± 0,1
Repeatable Accuracy	mm	± 0,1
Max. Weight Of Sheet	kg	120
Air Pressure	bar	6
Cycle Time For Loading And Unloading	sec	32
Max. Size Of Sheet	mm	1250x6x2500



TPL CELL



Technical Specification	Unit	TPL Cell
Positioning accuracy	mm	$\pm 0,1$
Repeatable accuracy	mm	$\pm 0,1$
Max. weight of sheet	kg	200
Air pressure	bar	6
Cycle time for loading and unloading	sec.	32
Max. size of sheet	mm	1500x6x3000

Production is *More Effective Now.*

FAST ON SERVICE AND SPARE PARTS

DURMA provides the best level of service and spare parts with qualified personnel and spare parts in stock. Our experienced and professional service personnel are always ready at your service. Our professional training and application enriched courses will give you an advantage to use our machinery.



Vertrauen Sie auf über 70 Jahre Erfahrung!

Die Firma HESSE+CO wurde 1947 als Hersteller von Blechbearbeitungsmaschinen gegründet. Seit 1980 sind wir auf den Handel mit neuen sowie gebrauchten Blechbearbeitungs- und Werkzeugmaschinen spezialisiert. Wir haben ständig etwa 300 Maschinen in unserer 2.000 m² großen Ausstellungshalle, die nur 20 Minuten vom internationalen Flughafen Wien entfernt ist.

Trust in more than 70 years of experience!

HESSE+CO was established in 1947 as a manufacturer of sheet metal working machines. Since 1980 we are specialized in dealing with new and second hand sheet metal processing machines and machine tools. We always have approximately 300 machines available in our 2.000 m² showroom, which is located only 20 minutes from the Vienna International Airport, waiting for your inspection.

www.hesse-maschinen.com

