

The Winning Force

**DURMA**

# TP SERIES Turret Punch



- Strong
- Precise
- Efficient
- Fast
- High Repeatability



# **DURMA** The Winning Force



As a total supplier for sheet metal manufacturing with almost 60 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 m<sup>2</sup>, we dedicate 1,000 employees to delivering high quality manufacturing solutions at the best performance-to-price ratio in the market.

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.

Present Durmazlar machines with **DURMA** name to the world.



1  
High technology,  
modern production  
lines



2  
Top quality  
components



3  
High quality  
machines designed  
in R&D Centre

# 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.



### 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.



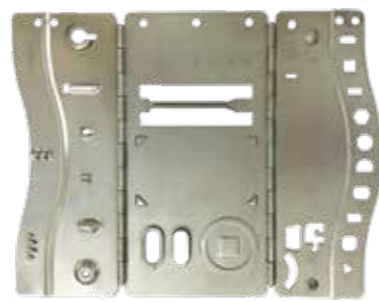
### Intelligent Hydraulics

- 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"

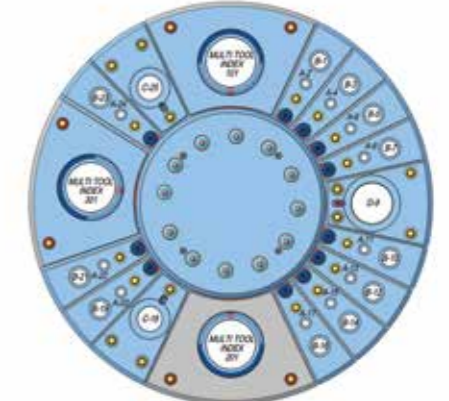
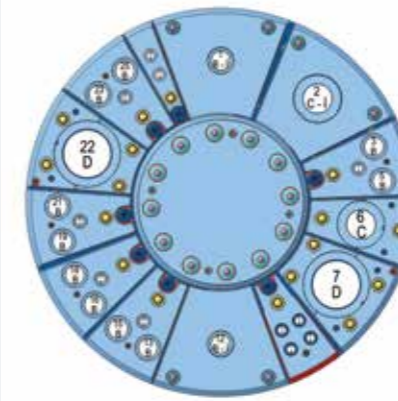


### High Quality Forming

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	TP63-93-123 TPL63-93 TP-TPL 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.



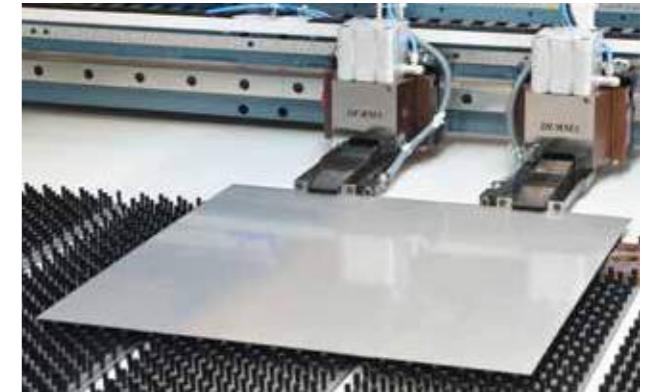
## Reposition

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



## 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.



## Workchute

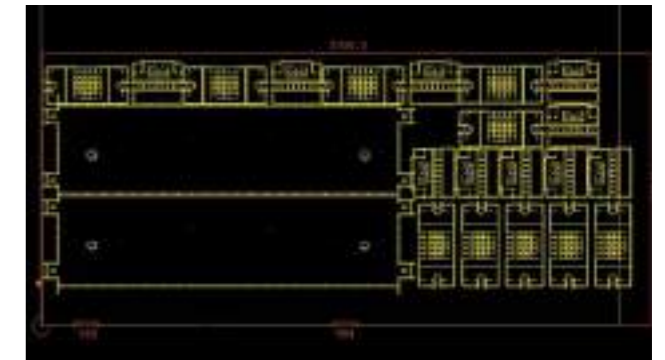
To evacuate parts during punching also with sorting and stacking capacity.

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



## Cadcam Software

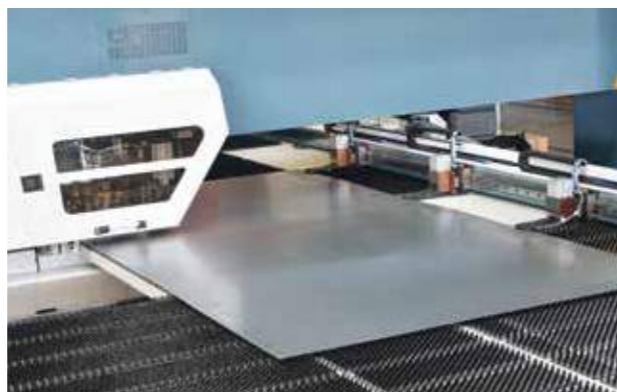
Programming time minimized by using fast and easy CAD-CAM software (cncKAD) metalix. By choosing the effective position of the tool automatically to use maximum area of the sheet, additional reposition and work strips is eliminated.



## 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.



## 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.



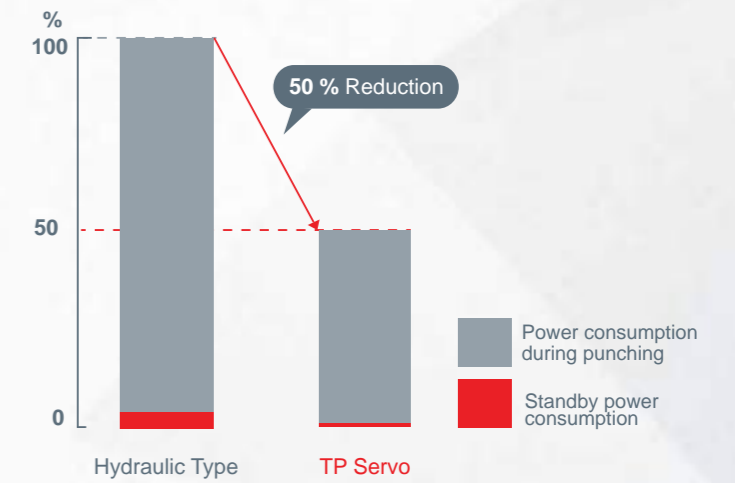
# TP SERVO Turret Punch

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.

### Power Consumption Comparison



# TP Series Standard & Optional Equipment

## Standard Equipments

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 Equipments

Additional clamps  
 Table (brush&ball)  
 Tools, Tool holders, reducers  
 CAD-CAM SW Second activator (dongle)  
 SW for Autoneesting, 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  
 Transformator  
 UPS for machine ( 30KvA - 10 min )  
 Additional allignment tool

# Technical Details

TP Series	Unit	TP9	TP93	TP123	TPL93	TP 123 Servo	TPL 93 Servo
Maximum tonnage	Ton	20**	20**	30**	30**	20**	20**
Frame type	-	O frame	O frame	O frame	O frame	O frame	O frame
X axis movement	mm	2000+ R	2500+ R	2500+ R	3000+ R	2500+ R	3000+ R
Y axis movement with single tool	mm	1250	1250	1250	1500	1250	1500
Automatic Repositioning range *	mm	10000*	10000*	10000*	10000*	10000*	10000*
Speed of Y axis	m/min	70	75	80	60	80	60
Speed of X axis	m/min	90	100	116	70	116	70
Lateral speed Y + X	m/min	114	125	140	120	140	92
Max. Hit rate (1mm pitch, 1mm thickness)	1/min	1100	1100	1200	1200	535	535
Max. Hit rate (25mm pitch, 1mm thickness)	1/min	375	375	425	325	325	325
Max. Hit rate : Marking	1/min	2800	2800	3200	2800	820	820
Main cylinder stroke	mm	40	40	40	40	40	40
Maximum punching stroke	mm	25	25	25	25	25	25
Max. cutting thickness (Fixed Station)	Mild Steel	6	6	6	6	6	6
	Stainless Steel	3	3	3	3	3	3
Max. cutting thickness (Index Station)	Mild Steel	3	3	3	3	3	3
	Stainless Steel	1,5	1,5	1,5	1,5	1,5	1,5
Positioning accuracy	mm	± 0,1	± 0,1	± 0,1	± 0,1	± 0,1	± 0,1
Repeatable accuracy	mm	± 0,05	± 0,05	± 0,05	± 0,05	± 0,05	± 0,05
Turret rotation speed	rpm	30	22	22	22	22	22
Auto index rotational speed	rpm	150	150	150	150	150	150
Max. weight of sheet	kg	100	120	120	200	120	200
Hard disk	Gbyte	80	80	80	80	80	80
RAM	Gb SDRAM	4	4	4	4	4	4
Network system	-	Windows 7	Windows 7	Windows 7	Windows 7	Windows 7	Windows 7
Interactive Flat Panel	inch	19"	19"	19"	19"	19"	19"
USB	-	2	2	2	2	2	2
Ethernet	-	10/100	10/100	10/100	10/100	10/100	10/100
Height (H)	mm	2310	2310	2310	2310	2135	2310
Width (without light barrier) (W)	mm	4200	5360	5360	6300	5260	6160
Width (with light barrier)	mm	6200	7360	7360	8300	6260	6260
Length (without light barrier) (L)	mm	5600	5750	5750	6650	5260	6210
Length (with light barrier)	mm	6600	6800	6800	7650	6260	7210
Table height	mm	940	940	940	940	940	940
Weight approx.	kg	11000	12960	12960	18250	14000	21500
Hydraulic System Motor	kw	7.5	7.5	15	15	-	-
Oil tank	lt	180	180	240	180	-	-
Air pressure	bar	6	6	6	6	6	6
Number of Clamps	pcs.	2	3	3	4	3	4
Holding force of clamps	-	1000	1000	1000	1000	1000	1000
Table type		Brush	Brush	Brush	Brush	Brush	Brush
Energy Consumption	Kw/h	7,5	7,5	15	15	6,21	6,21
A - fix 0.8-12.7 mm	Qty	11	11	11	11	11	11
B - fix 12.8-31.7 mm	pcs	10	11	11	11	11	11
C - fix 31.8-50.8 mm	pcs	1	2	2	2	2	2
D - fix 50.9-88.9 mm	pcs	2	1	1	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	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.

# 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.



## 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.



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

## 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.



Technical Specification	Unit	TPL Cell
Positioning accuracy	mm	± 0,1
Repeatable accuracy	mm	± 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



Consultancy



Spare Parts



R&D Center



After Sales Service



Service Agreements



Software



Training



Flexible Solution



PANEL BENDER



PUNCH



PRESS BRAKE



VARIABLE RAKE SHEAR



PLASMA



L ANGLE PROCESSING CENTER



LASER CUTTING



FIBER LASER



IRON WORKER



POWER OPERATED SHEAR



ROLL BENDING



PROFILE BENDING



CORNER NOTCHER

# DURMA

Today, Tomorrow, Forever...

**TP** SERIES  
Turret Punch

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