DURMA

TP SERIES
Turret Punch

- Strong
- Precies
- Efficient
- Fast
- High Repeatability

durmazlar

DURMA The Winning Force

durmazlar

As a total supplier for sheet metal manufacturing with almost 60 years of experience, Durma understands and recognizes the cha lenges, 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 79398.5 yd^2 , we ded cate 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 elimimate 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 opertor fatique.


TP CELL
RMA
3000 KG

Precise and High Speed Turret

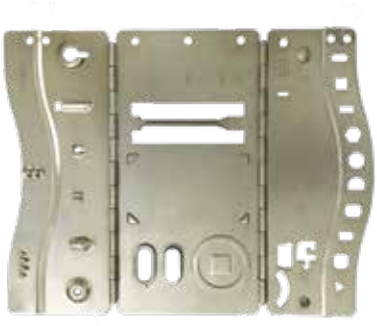
The punching head stroke rates of 1200 strokes per minute during punching and 3200 per minute during marking. Also can be forming at punching speed. The machine control adjusts stroke travel speed and position. With its dynamic design, it is possible to obtain speeds of 4566.99 inches/min in X axis 3149.6 inches/min in Y axis 5511.81inches/min vsimultaneously High acceleration (1g) is possible across the whole working range without any restriction.

IIntelligent Hydraulics

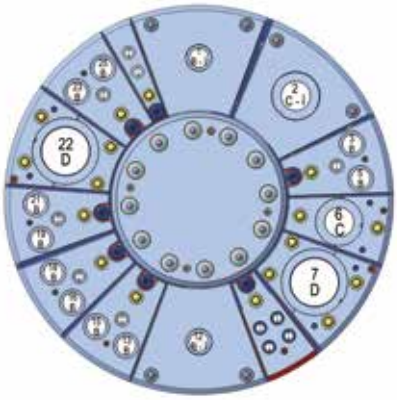
- Highly dynamic punch drive with closed loop control
- New valve technology DECV: Direct Electronic Copy Valve
- Based on proven Voith H + L copy valve
- Rugged against mechanical stress
- Simple oil filtration is sufficient
- Directly operated, no hydraulic control circuit
- Very fast step response
- 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

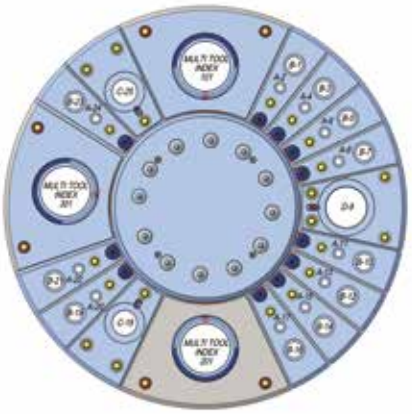
High Quality Forming

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





Tool Station	Sizes	TP9	TPL93-TP123-TP123 Servo
A - fix	0,031- 0,5 inches	11	11
B - fix	0.503-1.248 inches	10	11
C - fix	1.251- 2 inches	1	2
D - fix	2.003- 3.5 inches	2	1
B - index	0.503 -1.248 inches	2	-
C- index	1.251-2 inches	1	-
D - index	2,003 - 3.5 inches	-	3

3 Auto Index Stations

Provide maximum flexibility by simplifying toolin 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.

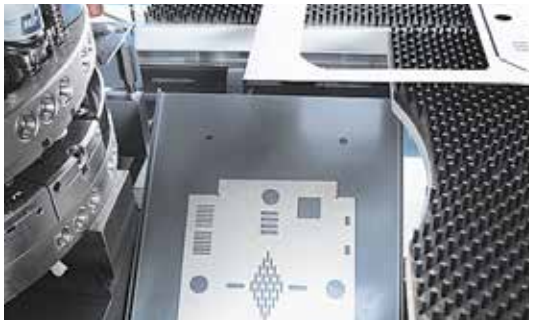
Reposition

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

Workchute

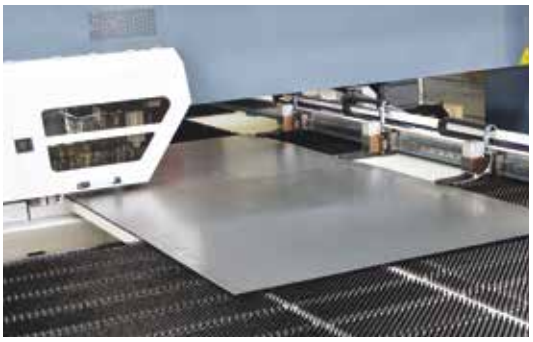
To evacuate parts during punching also with sorting and stacking capacity.

The parts chute, small parts up to 15.747 x 23.622 inches 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 technolog 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.

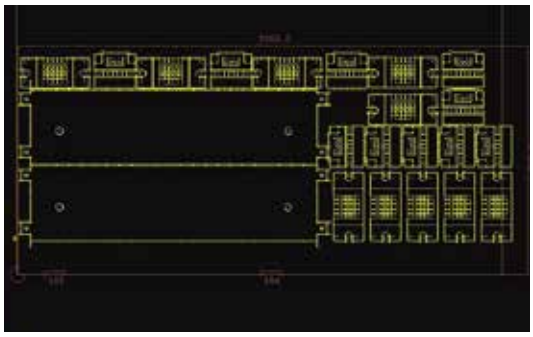


Automatic Clamps

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.

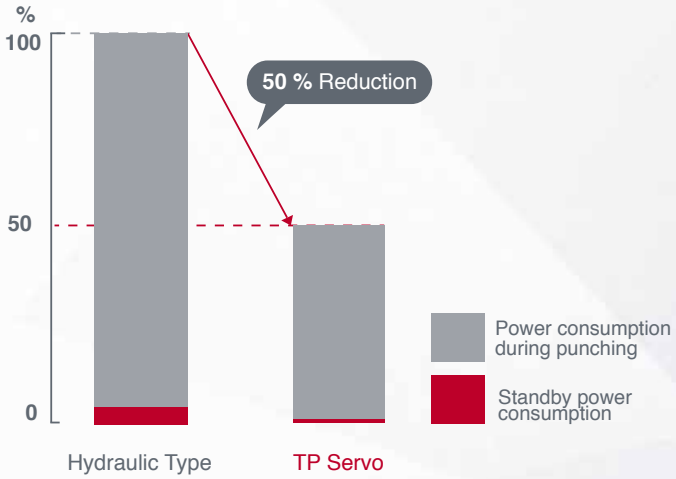
TP SERVO Turret Punch

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

- TP Servo series utilizes an two servo lineer 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 TP9)
Alignment Tools for Index Stations (D Station) - (for 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 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
Transformator
UPS for machine (30KvA - 10 min)
Additional allignment tool

Technical Details

TP Series	Unit	TP9	TP123	TPL93	TP Servo
Maximum tonnage	us	23**	33**	33**	23**
Frame type	-	O frame	O frame	O frame	O frame
X axis movement	inch	79"+ R	98,5"+ R	118"+ R	98,5"+ R
Y axis movement with single tool	inch	49,2	49,2	59	49,2
Automatic Repositioning range *	inch	393,7*	393,7*	393,7*	393,7*
Speed of Y axis	inch/min	2755,9	3149,606	2362,2	3149,6
Speed of X axis	inch/min	3543,3	4566,92	2755,9	4566,92
Lateral speed Y + X	inch/min	4488,18	5511,81	4724,4	5511,81
Max. Hit rate (1 inch pitch, 0,39inch thickness)	1/min	375	1200	1200	535
Max. Hit rate (25 inch pitch, 0,39inch thickness)	1/min	2800	425	325	325
Max. Hit rate : Marking	1/min	1,6	3200	3200	820
Main cylinder stroke	inch	1	1,6	1,6	1,6
Maximum punching stroke	inch	0,2	1	1	1
Max. cutting thickness (Fixed Station)	Mild Steel Stainless Steel	0,1 0,1	0,2 0,1	0,2 0,1	0,2 0,1
Max. cutting thickness (Index Station)	Mild Steel Stainless Steel	0,06	0,1 0,06	0,1 0,06	0,1 0,06
Positioning accuracy	inch	± 0,004	± 0,004	± 0,004	± 0,004
Repeatable accuracy	inch	± 0,002	± 0,002	± 0,002	± 0,002
Turret rotation speed	rpm	30	22	22	22
Auto index rotational speed	rpm	150	150	150	150
Max. weight of sheet	lbs	220,5	265	441	265
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
Height (H)	inch	91	91	91	86
Width (without light barrier) (W)	inch	165	211	211	207
Width (with light barrier)	inch	244	290	323	286
Length (without light barrier) (L)	inch	220,5	226	262	207
Length (with light barrier)	inch	260	266	301	246,5
Table height	inch	37	37	37	37
Weight approx.	lbs	24255	28577	43000	30870
Hydraulic System Motor	kw	7.5	15	15	-
Oil tank	gallon	47,5	63,5	63,5	-
Air pressure	psi	80	80	80	80
Number of Clamps	pcs.	2	3	4	3
Holding force of clamps	lbs	2205	2205	2205	2205
Table type		Brush	Brush	Brush	Brush
Energy Consunption	Kw/h	7	11	15	4.5
A - fix 1/2 inch	Qty	11	11	11	11
B - fix 1 1/4 inch	pcs	10	11	11	11
C - fix 2 inch	pcs	1	2	2	2
D - fix 3 1/2 inch	pcs	2	1	1	1
B - indeks 1 1/4 inch	pcs	2	-	-	-
C- indeks 2 inch	pcs	1	-	-	-
D- indeks 3 1/2 inch	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

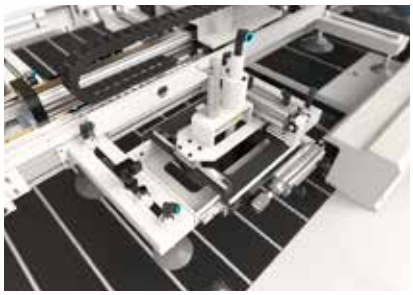
TP CELL automates efficiently raw material loading and unloading of ready components along with skeleton. TP CELL allows mixing of automatic and manual operations as needed from production point of view.

Sheet Thickneess Measurement System

To avoid multiple sheet metal processing, precision sheet thickness measurement system.

Sheet Seperation System

Effective sheet separating system for separating sheets from one another



Sheet Loading System

The Loading system, enables the reliable , therefore gets precision reference for 0,19'' – 0,23'' 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.

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	inch	± 0.0003
Repeatable Accuracy	inch	± 0.0003
Max. Weight Of Sheet	lb	264,55
Air Pressure	psi	87,02
Cycle Time For Loading And Unloading	sec.	32
Max. Size Of Sheet	inch	49,2 x 0,23 x 98,4

TPL CELL

Technical Specification	Unit	TPL Cell
Positioning accuracy	inch	± 0.0003
Repeatable accuracy	inch	± 0.0003
Max. weight of sheet	kg	440,92
Air pressure	bar	87.02
Cycle time for loading and unloading	sec.	32
Max. size of sheet	inch	59.05x 0.23x 118.11

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.

Spare Parts

Consultancy

R&D Center

After Sales Service

DURMA

Solution Center

Service Agreements

Software

Training

Flexible Solution

DURMA

PANEL BENDER

PUNCH

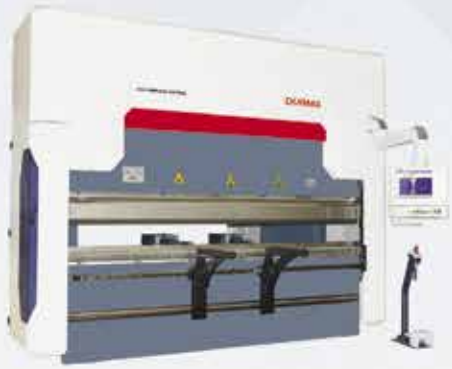
PLASMA

L ANGLE PROCESSING CENTER

IRON WORKER

POWER OPERATED SHEAR

DURMA



PRESS BRAKE

VARIABLE RAKE SHEAR

TUBE LASER CUTTING

FIBER LASER

ROLL BENDING

PROFILE BENDING

CORNER NOTCHER

DURMA

TP SERIES
Turret Punch

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