

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 1.615.000 ft², 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



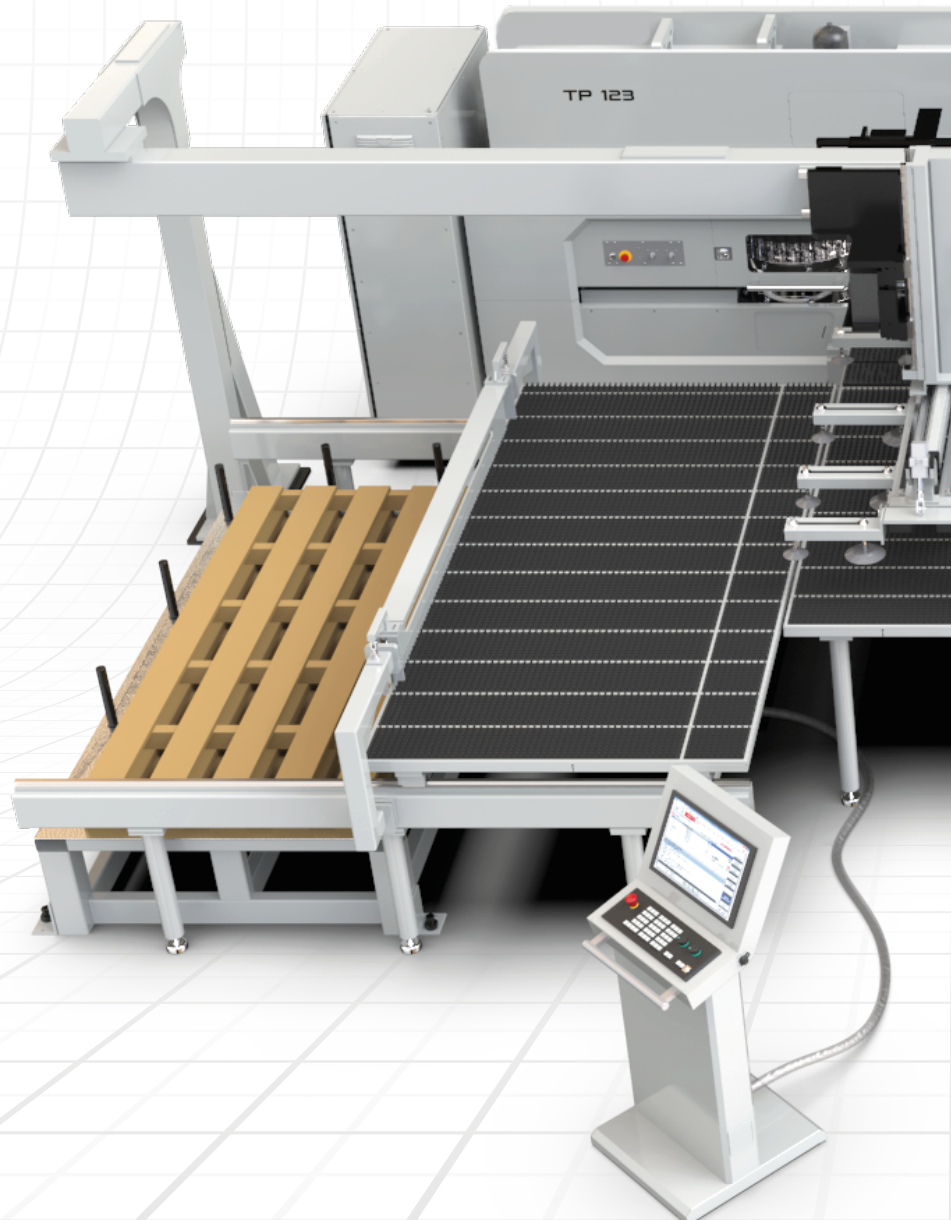
3

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.



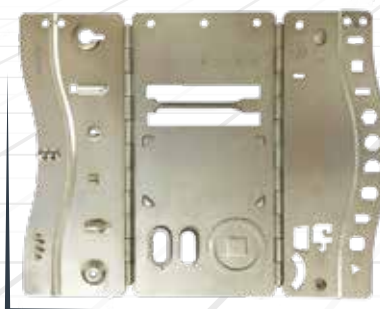
■ Intelligent Hydraulics

- 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"

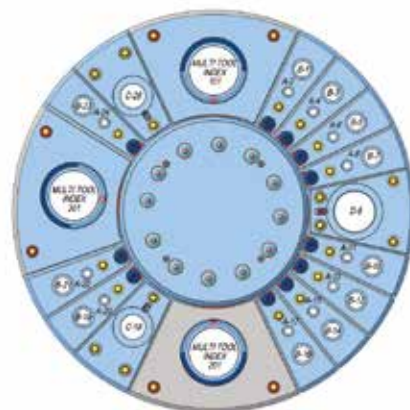
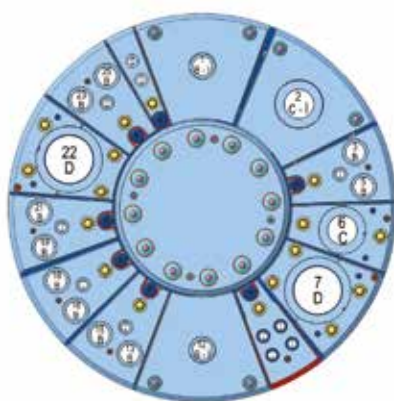


■ High Quality Forming

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



Sizes

A - fix	0,031- 0,5 inch	11	11
B - fix	0.503-1.248 inch	10	11
C - fix	1.251- 2 inch	1	2
D - fix	2.003- 3.5 inch	2	1
B - index	0.503 -1.248 inch	2	-
C- index	1.251-2 inch	1	-
D - index	2,003 - 3.5 inch	-	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 15,75 x 23,62 inch 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 losses 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

The 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. The UPS system protects the control unit against voltage fluctuations and power cuts.

Integrated online help messages answer all questions at the point where they arise. The diagnostic concept provides visual representations of any functional faults. Remote diagnostics is available over the internet for machine controller diagnostics as a standard feature.



TP



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STANDARD & OPTIONAL EQUIPMENT

Standard Equipment

- Command pedal
- CAD-CAM software & Activator(Dongle)
- Control unit, 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 TPL93, TP123)
- 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
Maximum tonnage	us	23**	33**	33**
Frame type	-	O frame	O frame	O frame
X axis movement	inch	79"+ R	98,5"+ R	118"+ R
Y axis movement with single tool	inch	49,2	49,2	59
Automatic Repositioning range *	inch	393,7*	393,7*	393,7*
Speed of Y axis	inch/min	2755,9	3149,606	2362,2
Speed of X axis	inch/min	3543,3	4566,92	2755,9
Lateral speed Y + X	inch/min	4488,18	5511,81	4724,4
Max. Hit rate (1 inch pitch, 0,39inch thickness)	1/min	375	1200	1200
Max. Hit rate (25 inch pitch, 0,39inch thickness)	1/min	2800	425	325
Max. Hit rate : Marking	1/min	1,6	3200	3200
Main cylinder stroke	inch	1	1,6	1,6
Maximum punching stroke	inch	0,2	1	1
Max. cutting thickness (Fixed Station)	Mild Steel	0,1	0,2	0,2
	Stainless Steel	0,1	0,1	0,1
Max. cutting thickness (Index Station)	Mild Steel	0,06	0,1	0,1
	Stainless Steel		0,06	0,06
Positioning accuracy	inch	± 0,004	± 0,004	± 0,004
Repeatable accuracy	inch	± 0,002	± 0,002	± 0,002
Turret rotation speed	rpm	30	22	22
Auto index rotational speed	rpm	150	150	150
Max. weight of sheet	lbs	220,5	265	441
Hard disk	Gbyte	80	80	80
RAM	Gb SDRAM	4	4	4
Network system	-	Windows 7	Windows 7	Windows 7
Interactive Flat Panel	inch	19"	19"	19"
USB	-	2	2	2
Ethernet	-	10/100	10/100	10/100
Height (H)	inch	91	91	91
Width (without light barrier) (W)	inch	165	211	211
Width (with light barrier)	inch	244	290	323
Length (without light barrier) (L)	inch	220,5	226	262
Length (with light barrier)	inch	260	266	301
Table height	inch	37	37	37
Weight approx.	lbs	24255	28577	43000
Hydraulic System Motor	kw	7.5	15	15
Oil tank	gallon	47,5	63,5	63,5
Air pressure	psi	80	80	80
Number of Clamps	pcs.	2	3	4
Holding force of clamps	lbs	2205	2205	2205
Table type		Brush	Brush	Brush
Energy Consumption	Kw/h	7	11	15
A - fix 0,031 - 0,5 inch	Qty	11	11	11
B - fix 0,503 - 1.248 inch	pcs	10	11	11
C - fix 1.251 - 2 inch	pcs	1	2	2
D - fix 2.003 - 3,5 inch	pcs	2	1	1
B - indeks 0,503 - 1.248 inch	pcs	2	-	-
C- indeks 1.251 - 2 inch	pcs	1	-	-
D- indeks 2.003 - 3,5 inch	pcs	-	3	3

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

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 Seperation System

Effective sheet seperation 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.



TP CELL

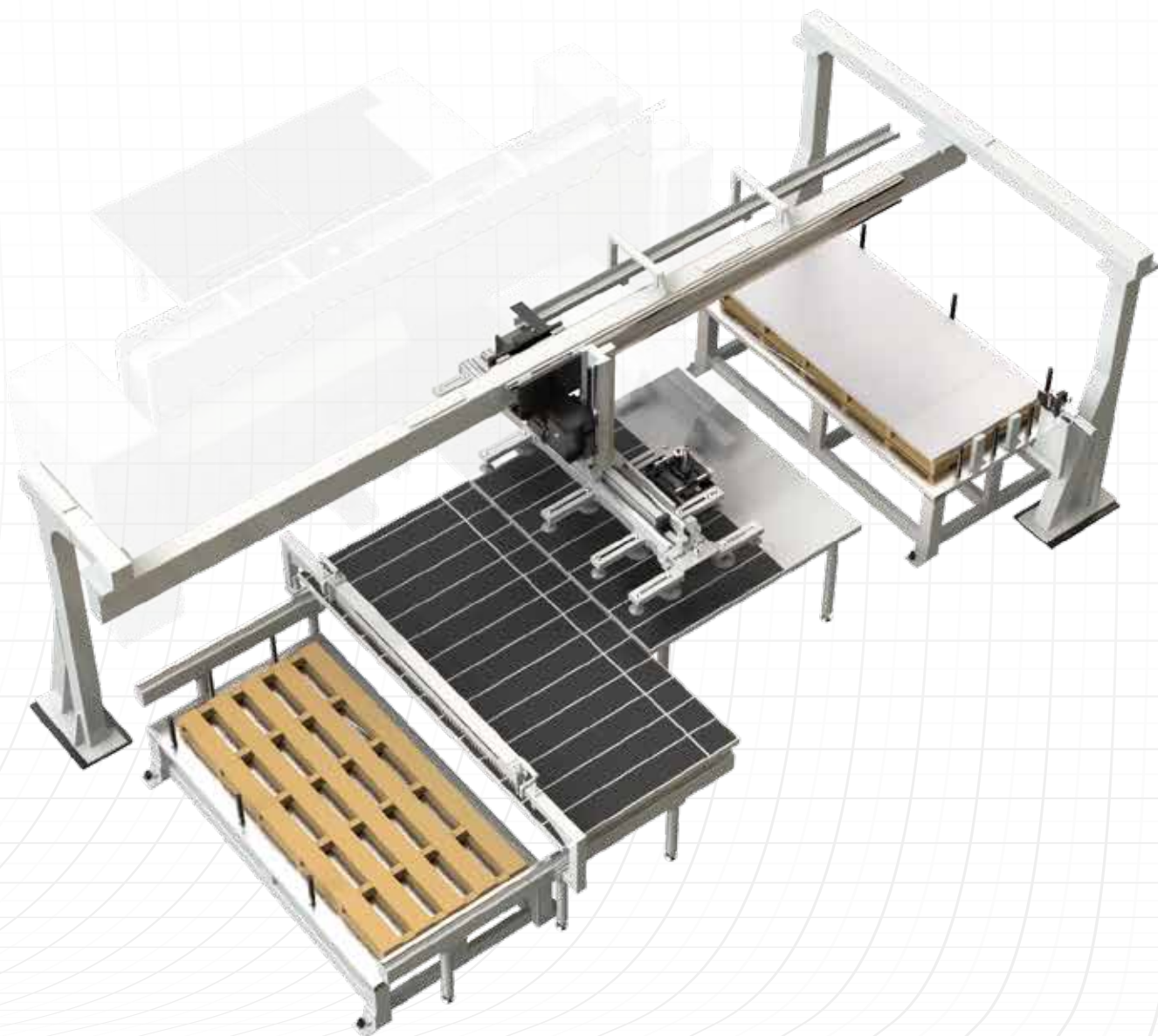
- Compact layout
- Process efficiency
- Unmanned production
- Automatic material loading and unloading of part along with skeleton
- Allows full manual process with machine as with stand-alone solutions.



Technical Specifications	Unit	TP Cell
Positioning Accuracy	inch	± 0.0003
Repeatable Accuracy	inch	± 0.0003
Max. Weight Of Sheet	lbs	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	lbs	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

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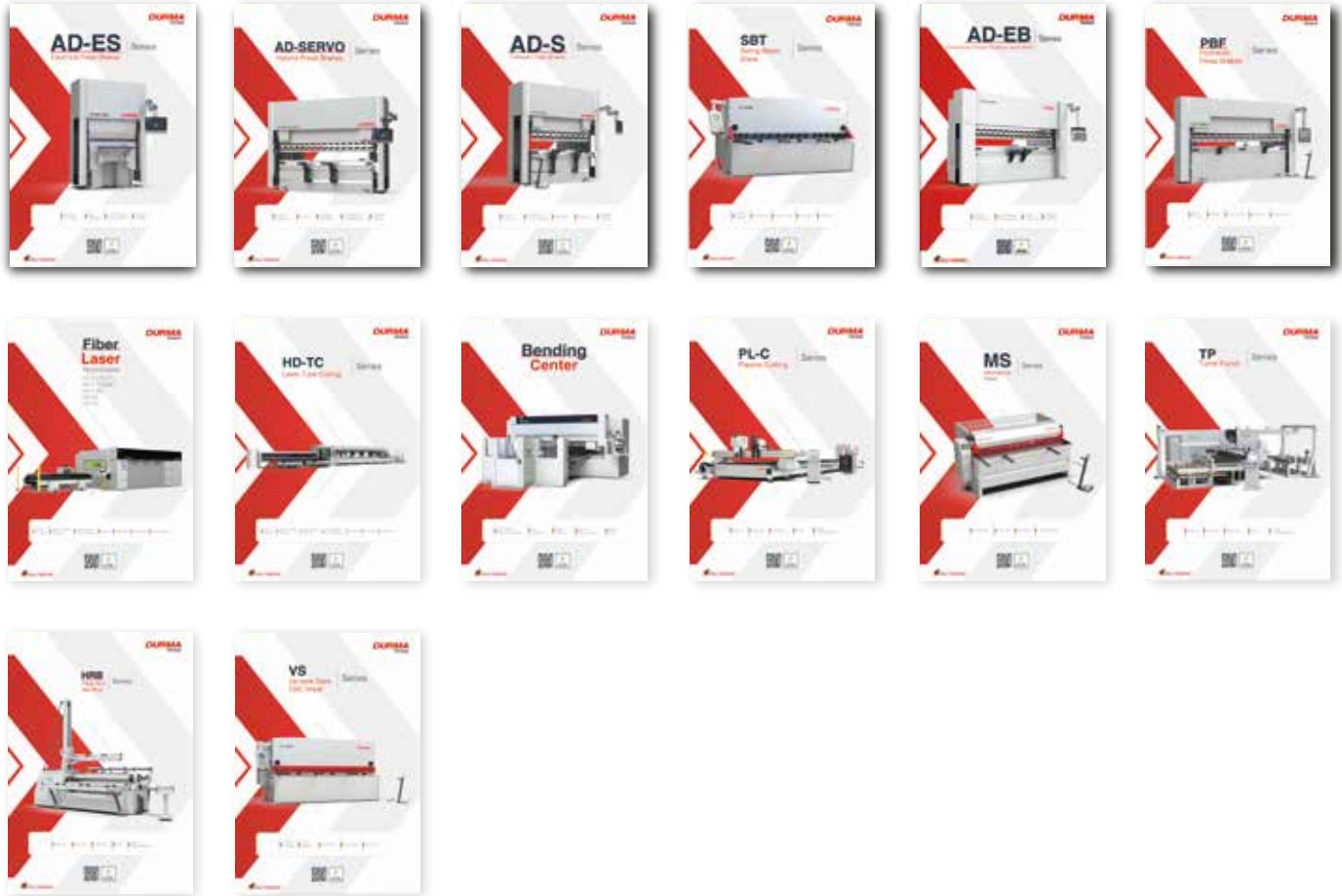
FAST ON SERVICE AND SPARE PARTS

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.



Product Groups

DURMA



Durmazlar Makina San. Tic. A.Ş. has right to change catalogue values and machine technical details without notice.

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