Durma Press Brakes

Durma press brakes guarantee precision, low maintenance costs, low operating cost, and longterm reliability . These features along with large investments in moldern manufacturing equipment have made Durma the largest volume press brake producer in the world.

All Durma press brakes are produced with modern design technology and incorporate rigid stress relieved frames to increase your productivity with accurate part production. Demanding applications are easily achieved.

A broad offering of sizes and features satisfy nearly all economical requirements.

AD-R Series

Real Innovation

Value oriented press brakes with large strokes, daylights, and gaps to allow cost effective production of simple to complex large shaped that require large dimensions for handling and removal. A simple to use control reduces the required operator level.

AD-S Series

Superior

Unlimited possibilities and features providing faster and quicker setups and part production. Large daylight opening and working areas
Outboard mounted long ram guides provide stabiity while allowing full length between the frame acute angle bending
Stable and fast ac servo motor driven backgauge system
3D Graphical Controller and Offline Software
Automatic table crowning
Automatic sheet following systems

AD SERVO Series

Eco-friendly press brake for clean energy saving operations.
Lower cost, Energy Efficient, Accurate ,Speed and Quiet .

FBS Flexible Bending Solutions

Durma's advanced technology in the bending of large format parts has; for the automated and reduced labor bending of large sheet and plate parts. diversifed uses in the different industries while avoiding long, expensive welding operations which even takes the risk of material stability.
Reduced material handling

- *Compensation for high spring-back sheets*
- *Reduced setup times by automated loading and unloading*
- *Increasesed employee saftey*
- *On higher tonnage press brakes Durma utililizes and unique "box construction" which provides the most stable machine frame in the industry.*

Durma provides the latest technology in "large format" bending and automation.

AD-R SERIES

- *Real Innovation*
- *Combination of Performance, Value and Simplicity*
- *Best performance/price ratio CNC press brake of the world*
- *Easy to use CNC controller*
- *Specially designed control unit and software serve you simplicity and lean operations even for inexperienced operators.*
- *Perfect bending results , easy input the angle and operate the machine*
- *Introduction to Durma Press Brakes*
- *Robust construction,Same solid foundation of all Durma Press Brakes*
- *Working with AD-R's all range easy and comfortable in all respects.Large daylight opening and large space enables the machine to be put to optimum use along its entire working length.*
- *Designed and manufactured to meet the challange of " Cost down" manufacturing culture*
- *Provides standardly 3 axis Y1 Y2 X and R manually adjustable.*

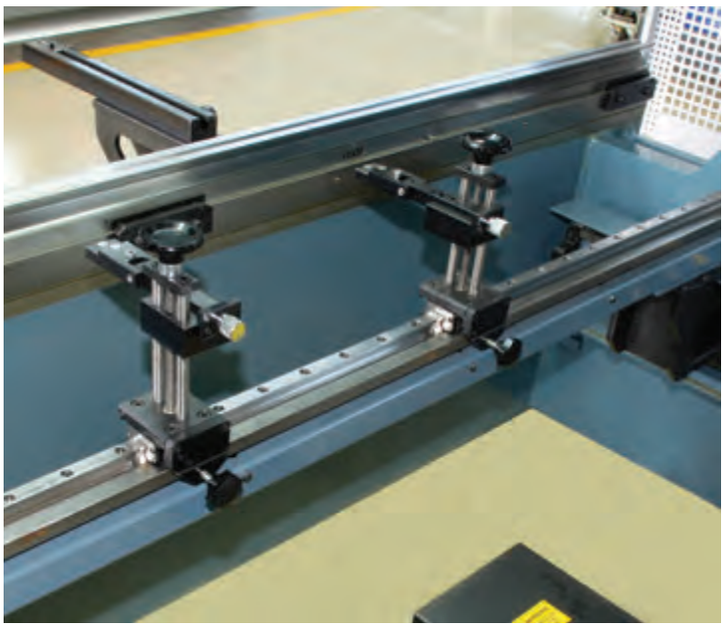
FEATURES

Top beam guiding

Double guides are long and accurate for easy sliding of top beam

High Stroke - Daylight - Throat
High working space

AD-R machines offers wide spaces for ease of operation also reduces cycle times.



Back Gauge

X axis motorized CNC controlled
R axis manually height adjustable finger block

Fingers` depth is calculated by CNC controller and executes X axis.Retraction is also a standard feature to acquire accurate parts. Back gauge fingers are easily adjusted on linear guides by ball integrated motion system.

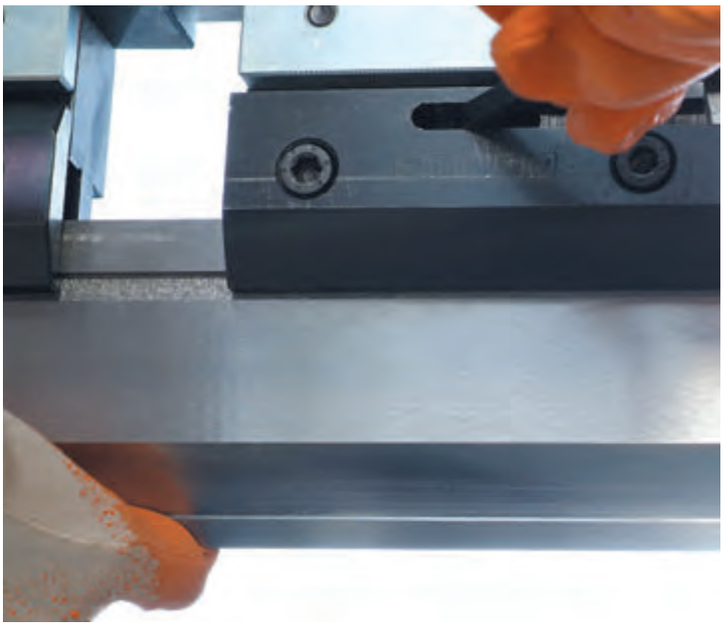
Sliding Front Arms

Quickset support arms are mounted on a linear quide way and ball bearing system that allows "finger tip" lateral adjustment of the front support arms. Vertically adjustment is also easily achieved.

Tool Holders

Euro style Multi-V

Euro style tool holders offers precise tool setup by their ground surfaces.



Quick Release Clamping

Safety Systems for CE Countries

AD-R can be fully comply with European CE regulations.
System respects to the latest CE regulations by its laser protection, guards and hydraulics and electronics safety protects operators and the machine itself.

CNC Control Units

Durma CNC Advantage

2D graphic display (7,4") & work piece in programming page
Easy bend function
Automatic bending sequence
Part calculation
Safety guard PLC communication
Offline software (programming and edit features)
Motorized crowning
Diagnose of I/O
USB interface for backup and restore programs/tools/parameters
Maintainence- free
85 programs (up to 12 steps each program); 12x85 = 1020 step
32 Punches & Dies
Programs, Punches, Dies and Parameters can be copied using USB Disk or
Off-Line software
Wide language options
Easy upgrade possibility to color graphic control unit

Durma GT10 - Touch

10" TFT colors touch screen
Auto bending sequence
Easy bend function
2D Graphic display and multi-simulation
Linux operating system
Offline software available
Tandem working
Connection to external devices through USB port for software updating and data backup.
Wide language options
Ergonomic panel design

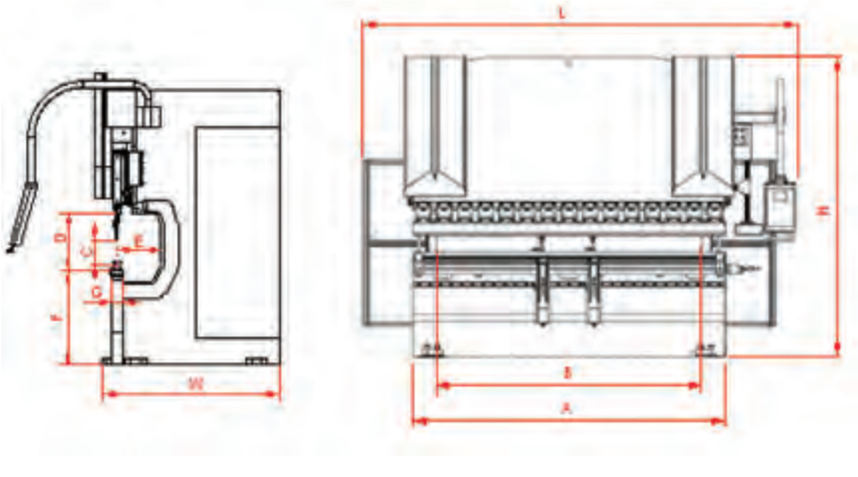
DNC 880s - CNC 2D

The DNC 880S numerical control is intended specifically for sheet-metal bending.
According to the software installed, it will be used on synchronized or conventional press brakes with mechanical or hydraulic end stops
The Dnc 880S is a high performance, competitively priced product in a compact and slim design
10" TFT color screen
Graphic 2D display and multi-simulation capability
Windows XPe for multitasking and file management
Connection to external devices through USB port for software updating and data backup
Over 20 languages available

AD-R Series		Unit	1260	2060	25100	30100	30135	30175
Bending force		ton	60	60	100	100	135	175
Bending length	(A)	mm	1250	2050	2550	3050	3050	3050
Distance between columns	(B)	mm	1050	1700	2200	2600	2600	2600
Y Rapid speed		mm/sec	200	200	180	180	160	120
Y Working speed		mm/sec	10	10	10	10	10	10
Y Return speed		mm/sec	110	110	120	120	120	100
Daylight	(D)	mm	400	400	530	530	530	530
Table width	(G)	mm	104	104	104	104	104	104
Table height	(F)	mm	900	900	900	900	900	900
Stroke 160	(C)	mm	s	s	x	x	x	x
Stroke 265	(C)	mm	o	o	s	s	s	s
Stroke 365	(C)	mm	x	x	x	x	x	x
Throat depth	(E)	mm	350	350	410	410	410	410
Support arms		amount	2	2	2	2	2	2
Back gauge finger blocks		amount	2	2	2	2	2	2
Speed of travel in X-axis		mm/sec	250	250	250	250	250	250
Travel in X-axis		mm	750	650	650	650	650	650
Motor power		kw	7.5	7.5	11	11	15	18.5
Oiltank capacity		lt	100	100	100	100	150	250
Length	(L)	mm	2300	3200	3800	4200	4200	4250
Width	(W)	mm	1200	1200	1670	1670	1680	1700
Height	(H)	mm	2350	2350	2750	2750	2750	2750
Weight approx		kg	3100	3550	8650	9250	10250	11250

STANDARD EQUIPMENTS

- Y1, Y2, X - 3 Axes
- Control Unit - CNC Advantage
- Back gauge - motorised & linear guide & ball bearing system
- Back gauge fingers - height adjustable
- European Clamping system
- Sliding sheet support Arms with T-Canal and Tilting stop
- CNC controlled motorized Crowning (only on 6meters)
- Special designed - worldclass hydraulics blocks & valves
- Worldclass electronics system



s: Standart
o: Optional
x: Not Available

30220	30320	37175	37220	40175	40220	40320	40400	60220	60320	60400
220	320	175	220	175	220	320	400	220	320	400
3050	3050	3700	3700	4050	4050	4050	4050	6050	6050	6050
2600	2600	3100	3100	3600	3600	3600	3400	5100	5100	5100
120	100	120	120	120	120	100	100	100	100	100
10	10	10	10	10	10	10	8	10	10	8
100	100	100	100	100	100	100	80	100	100	80
530	630	530	530	530	530	630	630	530	630	630
104	154	104	104	104	104	154	154	154	154	154
900	900	900	900	900	900	900	1040	1100	1100	1220
x	x	x	x	x	x	x	x	x	x	x
s	x	s	s	s	s	x	x	s	x	x
x	s	x	x	x	x	s	s	x	s	s
410	410	410	410	410	410	410	510	410	410	510
2	2	2	2	2	2	2	2	4	4	4
2	2	2	2	2	2	2	2	4	4	4
250	250	250	250	250	250	250	250	250	250	250
650	650	650	650	650	650	650	750	750	750	750
22	37	18.5	22	18.5	22	37	37	22	37	37
250	250	250	250	250	250	250	450	250	250	500
4250	4300	4950	4950	5250	5250	5300	5750	7500	7500	7500
1770	1820	1700	1770	1700	1770	1910	2110	1770	1910	2110
2900	3230	2900	2900	2750	2900	3230	3540	3250	3450	3710
12250	17250	17250	14100	12850	14750	20750	26750	20590	28250	35750

OPTIONAL EQUIPMENTS
Control Unit - Durma GT10 Touch - 2D Graphic
Control Unit - CNC DNC 880S - 2D Colour Graphic
Control Unit - CNC DELEM DA 52
Control Unit - CNC DELEM DA 56 - 2D Colour Graphic
CE with Manual F.AKAS II M -FPSC-B-C + Safety covers with switch
CE with SICK C 4000- only for tandem + steel protection covers
DFS1 Laser Finger protection (Non CE)
Top tool European (One of them is segmented)
Bottom tool European (One of them is segmented)
Bottom tool Durma
Quick Release Clamping
Manual Crowning
CNC controlled motorized Crowning
Back gauge 1000 mm - Back protection with Light barrier
Oil Coolant
Additional Finger blocks & Sliding front arms
Overseas special packaging
For more options please contact us.

AD-S SERIES

- *High end solution for bending*
- *Represent the latest technology in press brake automation,*
- *Well concieved design*
- *Ultimate productivity when performing precision work*
- *Large daylight opening and working space*
- *The application of highly dynamic hydraulics servo valves*
- *Long double guides in combination with well designed cylinder construction make a large an flexible beam opening possible.*
- *Stable and fast AC Servo motor driven backgauge system*
- *3D Graphical Controller & Offline Software*
- *CNC Controlled crowning*
- *Ensures maximum angle accuracy thus satisfying even the highest demands*
- *Provides standardly 4 axis Y1 Y2 X and R*

FEATURES

Syncro Y1Y2 Axes & CNC Control Motorized Crowning

Independent left and right axes (Y1Y2) controlled by electronics servo valves & electronics linear position controllers.

CNC controlled motorized crowning system homogenizes bending forces every points of the bending parts to acquire straights bents. The need for shimming is eliminated.

Sliding Front Arms

Quickset support arms are mounted on a linear quide way and ball bearing system that allows "finger tip" lateral adjustment of the front support arms. Vertically adjustment is also easily achieved.

X-R Back Gauge

Fingers` depth and height is calculated by CNC controller and executes high speed servo motors produced by Siemens.
Retraction is also a standard feature to acquire accurate parts.
Back gauge fingers are easily adjusted on linear guides by ball integrated motion system.

CNC Control Units

ModEva RA - Standard

Intuitive touch screen interface
Full 3D simulation
Multiple view points while working
Machine components can be individually made invisible for better job examination.
Automatic or interactive solutions for bending sequences, gauging, corner gauging and tool mounting
3D collision detection.
User defined table for bend deduction.
Rapid solution computation.
Almost unlimited quantity of programs and sequences.
Smooth and fast 3D motion.
Windows XP Pro Compact for multitasking and file management.

Delem DA 66T

The DA-66T is the Delem modular press brake controller. All graphics, including product and machine as well as tool setup are also available in 3D. This to visualize the machine situation as accurate as possible. The DA-66W can program 2D products, accurately showing and calculating including sheet thickness and radii. During programming automatically generation of bend sequencers can be used as well as manual selection. The operator can overrule to his own choice. With the DA-66W also special tools for e.g. hemming bends can be programmed. The DA-66W helps the user in programming these bends (with their specific parameters) and also shows the prebend as well as the hemming operation during production.

Delem DA 69T

The DA-69T is 1:1 compatible with the DA-66W and offers next to 2D products also 3D products. 3D products can be programmed with accurate sheet thickness and desired radii. Automatical bend sequence calculation can help finding the optimum bendsequence even from very complex products. Multiple products can programmed in 3D, 2D as well as numerical. Storage is managed on the CF-harddrive. The controllers Windows operating system enabled easy integration in factory networks and due to the real-time capable OS, also instant switch of is possible. The controller will start-up time after time, without annoying booting messages. The DA-66W and DA-69W can also be equipped with an optional touch screen.

High Stroke | Daylight | Throat = High working space

AD-S machines offers wide spaces for ease of operation also reduces cycle times.

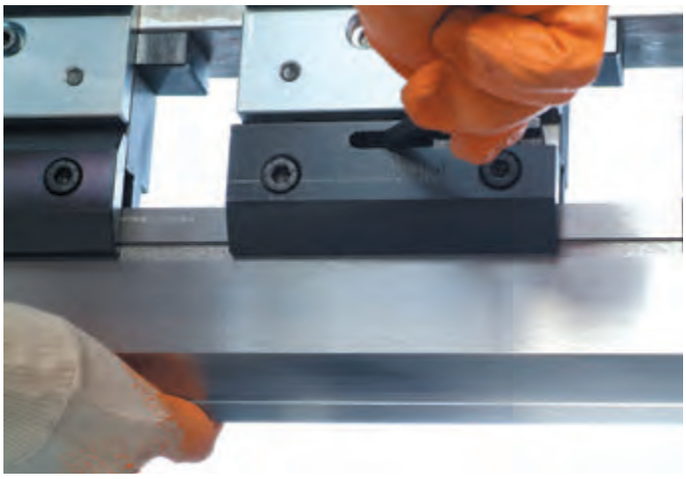
Safety Systems for CE Countries

AD-S can be fully comply with European CE regulations. System respects to the latest CE regulations by its laser protection, guards and hydraulics and electronics safety protects operators and the machine itself.

Tool Holders

Eurostyle Clamping

Eurostyle tool holders offers precise tool setup by their ground surfaces.



Quick Release Clamping

Hydraulic DE-Type Clamping

Hydraulic New Standard Clamping

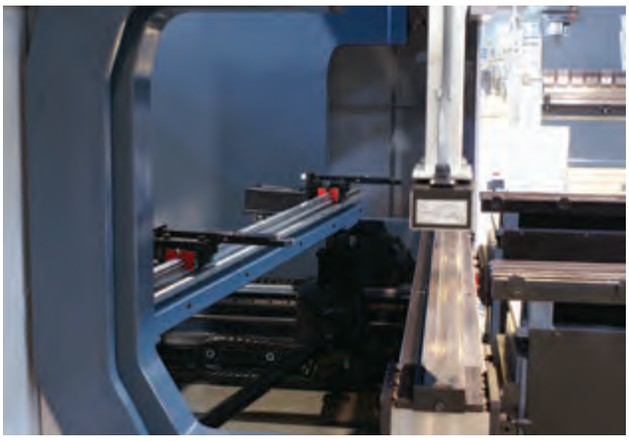
Durma Tool Clamping

Durma D-Type Hydraulic Clamping

Hardening Tools

Back Gauge Options

X, R, Z1 Z2 4 Axes

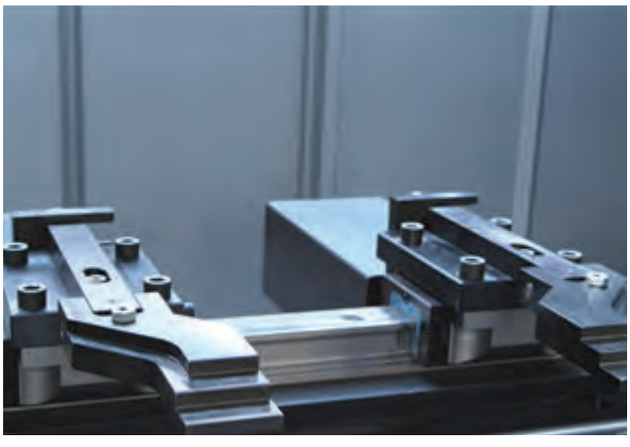


X1, X2, R, Z1, Z2 5 Axes

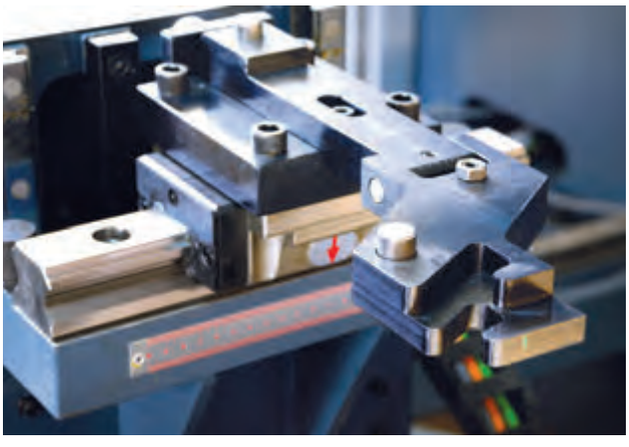
X1, X2, R1, R2, Z1, Z2 6 Axes

Delta X

Back Gauge Fingers



3 Step Finger Blocks

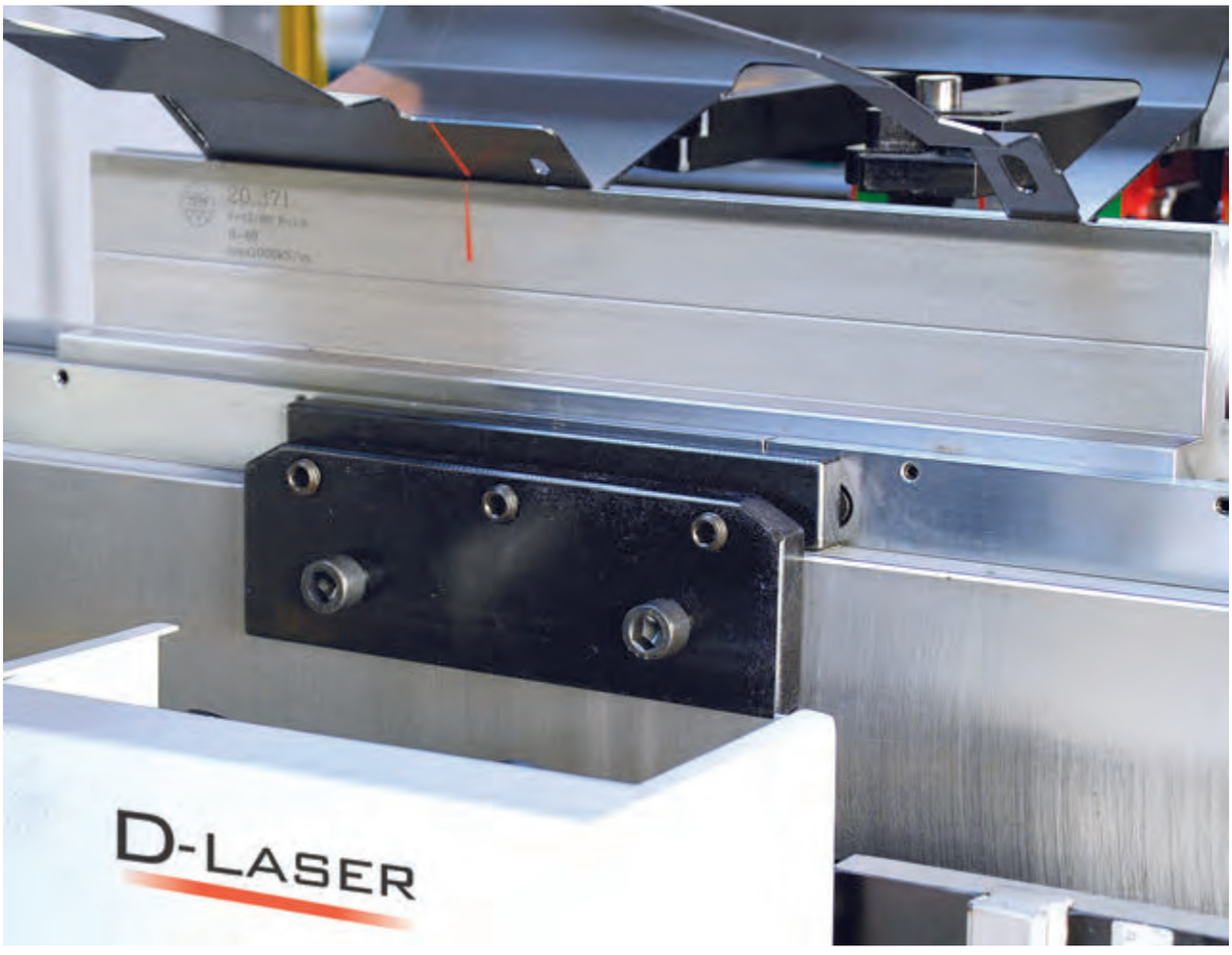


Special Fingers

Bottom Tool Positioning Systems

Pneumatic Positioning System

Motorized Positioning System



Laser Angle Measurement System

Manufacturing sheet metal parts with properly bending angles that are kept constant all times often meets a problem during the actual production process: different parameters in material thickness and stresses. The best solution is laser based bending angle measuring device.

- *Any bending angle can be measured.*
- *Very compact, everything in the appliance.*
- *Light influence, light or dark material surfaces play practically no part at all.*

STANDARD EQUIPMENTS

Y1, Y2, X, R - 4-Axes
Control Unit - CNC Cybelec RA
CNC controlled motorized Crowning
CNC controlled Hyd-Mech Crowning (Standard ≥ 800 t)
European Clamping system (Standard ≤ 400 t)
DURMA Clamping system (Standard ≥ 600 t)
Sliding Front Arms with full length linear guide
Back gauge , Servo-motorised & Linear guide & Ball bearing system (X- R)
Sliding sheet support Arms with T-Canal and Tilting stop
Protection covers
Special designed - worldclass hydraulics blocks & valves
Worldclass electronics system

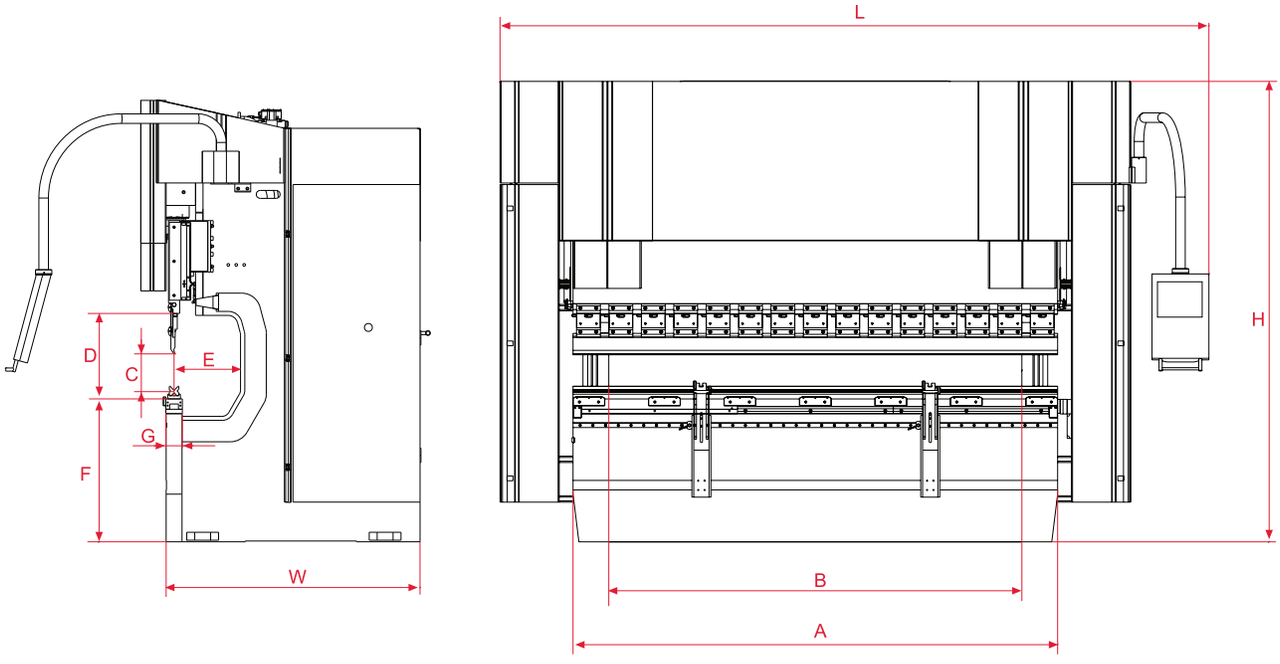
OPTIONAL EQUIPMENTS

Control Unit - Delem 66T / 69T
CE with Manual F.AKAS II M -FPSC-B-C (SAFETY PLC)
CE with FIESSLER AKAS-LC II AKAS-3 M Motorised + FPSC (SAFETY PLC)
CE with SICK C 4000- only for tandem
DFS1 Laser Finger protection (Non CE)
Z1, Z2 Axes
X1, X2 Axes
R1, R2 Axes
Delta X axis, +250mm stroke
X Axis =1000 mm - Back protection with Light barrier
AP3-AP4 Sheet follower with sliding guide- Motorised height adj
Quick Release Clamping
Durma Hydraulic or Mechanical Clamping
Wila Hydraulic or Mechanical Clamping
Tool options (Durma, European, Wila) in tool catalog
Bottom tool seperation system

For other options please contact us.

AD-S Series		Unit	1260	2060	25100	30100	30135	30175	30220	30320	37175	37220	40175	40220
Bending force		ton	60	60	100	100	135	175	220	320	175	220	175	220
Bending length	(A)	mm	1250	2050	2550	3050	3050	3050	3050	3050	3700	3700	4050	4050
Distance between columns	(B)	mm	1050	1700	2200	2600	2600	2600	2600	2600	3100	3100	3600	3600
Y rapid speed		mm/sec	200	200	180	180	160	120	120	100	120	120	120	120
Y working speed		mm/sec	10	10	10	10	10	10	10	10	10	10	10	10
Y return speed		mm/sec	110	110	120	120	120	100	100	100	100	100	100	100
Crowning		-	Mot.	Mot.	Mot.	Mot.	Mot.	Mot.	Mot.	Mot.	Mot.	Mot.	Mot.	Mot.
Daylight	(D)	mm	530	530	530	530	530	530	530	630	530	530	530	530
Table width	(G)	mm	104	104	104	104	104	104	154	104	104	104	104	104
Table height	(F)	mm	900	900	900	900	900	900	900	900	900	900	900	900
Depth of pit	(F1)	mm	-	-	-	-	-	-	-	-	-	-	-	-
Stroke 265	(C)	mm	s	s	s	s	s	s	s	s	s	s	s	s
Stroke 365	(C)	mm	x	x	x	x	x	x	x	x	x	x	x	x
Stroke 400	(C)	mm	x	x	x	x	x	x	x	x	x	x	x	x
Stroke 500	(C)	mm	x	x	x	x	x	x	x	x	x	x	x	x
Stroke 600	(C)	mm	x	x	x	x	x	x	x	x	x	x	x	x
Throat depth	(E)	mm	350	410	410	410	410	410	410	410	410	410	410	410
Support arms		amount	2	2	2	2	2	2	2	2	2	2	2	2
Back gauge finger blocks		amount	2	2	2	2	2	2	2	2	2	2	2	2
Speed of travel in X-axis		mm/sec	500	500	500	500	500	500	500	500	500	500	500	500
Travel in X-axis		mm	750	650	650	650	650	650	650	650	650	650	650	650
Speed of R-axis(max.)		mm/sec	350	350	350	350	350	350	350	350	350	350	350	350
Travel in R-axis		mm	250	250	250	250	250	250	250	250	250	250	250	250
Motor power		kw	7.5	7.5	11	11	15	18.5	22	37	18.5	22	18.5	22
Oiltank capacity		lt	100	100	100	100	150	250	250	250	250	250	250	250
Length	(L)	mm	2300	3200	3800	4200	4200	4250	4250	4300	4950	4950	5250	5250
Width	(W)	mm	1200	1200	1670	1670	1680	1700	1770	1820	1700	1770	1700	1770
Height	(H)	mm	2350	2350	2750	2750	2750	2750	2900	3230	2900	2900	2750	2900
Weight approx		kg	3100	3550	8900	9500	10500	11500	12500	17500	13000	14360	13100t	15000

s: Standart
o: Optional
x: Not Available



40320	40400	40600	60220	60320	60400	60600	60800	70800	701000	701250	80800	801000	801250	801600	802000
320	400	600	220	320	400	600	800	800	1000	1250	800	1000	1250	1600	2000
4050	4050	4050	6050	6050	6050	6050	6050	7050	7050	7050	8050	8050	8050	8100	8100
3600	3400	3100	5100	5100	5100	5100	5100	5100	5100	5100	6400	6400	6400	6400	6400
100	100	80	80	100	100	80	70	80	70	70	80	70	70	70	70
10	8	7	10	10	8	7	6	7	5	7	7	5	7	6	6
100	80	80	100	100	80	80	80	70	60	70	70	60	70	70	60
Mot.	Mot.	Mot.	Mot.	Mot.	Mot.	Mot.	Hyd-Mech	Hyd-Mech	Hyd-Mech	Hyd-Mech	Hyd-Mech	Hyd-Mech	Hyd-Mech	Hyd-Mech	Hyd-Mech
630	630	700	530	630	630	700	700	700	800	800	700	800	800	1000	1000
154	300	300	154	154	300	300	400	400	400	400	400	400	500	500	700
900	1040	990	1100	1100	1220	990	800	800	800	900	800	800	900	900	950
-	-	1200	-	-	-	1200	1300	1300	1500	1700	1300	1600	1800	1800	2100
x	x	x	s	x	x	x	x	x	x	x	x	x	x	x	x
s	s	s	o	s	s	s	x	x	x	x	x	x	x	x	x
x	o	o	o	o	o	o	s	s	x	x	s	x	x	s	x
x	o	o	o	o	o	o	o	o	s	x	o	s	s	o	x
x	o	o	o	o	o	o	o	o	o	s	o	o	o	o	s
410	510	510	410	410	510	510	610	610	610	610	610	610	610	610	750
2	2	2	4	4	4	4	4	4	4	4	4	4	4	4	4
2	2	2	4	4	4	4	4	4	4	4	6	6	6	6	6
500	350	350	350	350	350	350	350	350	300	300	300	300	300	300	300
650	750	750	750	750	750	750	750	750	1000	1000	750	1000	1000	1000	1250
350	300	300	300	300	300	300	300	300	250	250	300	250	250	250	250
250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250
37	37	45	22	37	37	45	55	55	55	90	55	55	90	90	110
250	450	500	250	250	500	500	750	750	1000	1250	750	1000	1250	1250	2000
5300	5750	5650	7500	7500	7500	7600	8050	8700	8800	8800	9800	10000	10000	10100	10500
1910	2110	3250	1770	1910	2110	2650	3200	3200	3250	3250	3200	3250	3250	3500	4350
3230	3540	3825	3250	3450	3710	3850	4250	4250	5900	6400	4250	5900	6400	7000	8100
21000	27000	40500	20840	28500	36000	54000	72000	79500	95500	110000	85000	102000	135000	163000	249000

For other sizes please contact us.

AD-SERVO

- *Increase your competitive forces by %62 lower power consumption*
- *Lower cost per part by ecologic technology*
- *Quiet, Energy Efficient and Accurate*
- *Ram movement is powered by AC Servo motors driving hydraulic oil in line with Variable Speed Pump.*

  New technology allows :
- *Silent bends,*

  Noise level reduced to 63 dbA from 76 dbA
- *Energy save,*

  62% at stand-by

  44% during the press cycle

  60 % in 1 hour with 15 press cycles
- *Supports your production cost efficiency and increases your competitive forces.*
- *Small hydraulic oil tank for Clean environment & Cost reduction*

  Thanks to the new technology reduce hydraulic tank from 200 lt to 2x40 lt
- *Speeds & Accuracy & Syncronisation*

  Beam speeds to 200mm/sec
- *5,6 times better Synchronisation in phase of „High Speed“*

AD-Servo		Unit	25100	30100	30135
Bending force		ton	100	100	135
Bending length	(A)	mm	2550	3050	3050
Distance between columns	(B)	mm	2200	2600	2600
Y rapid speed		mm/sec	200	200	200
Y working speed		mm/sec	10	10	10
Y return speed		mm/sec	200	200	180
Crowning		-	Motorised	Motorized	Motorized
Daylight	(D)	mm	530	530	530
Table width	(G)	mm	104	104	104
Table height	(F)	mm	900	900	900
Depth of pit	(F1)	mm	-	-	-
Stroke	(C)	mm	265	265	265
Throat depth	(E)	mm	410	410	410
Support arms		amount	2	2	2
Back gauge finger blocks		amount	2	2	2
Speed of travel in X-axis		mm/sec	500	250	500
Travel in X-axis		mm	650	650	650
Speed of R-axis(max.)		mm/sec	350	350	350
Travel in R-axis		mm	250	250	250
Motor power		kw	2x4	2x4	2x4
Oiltank capacity		lt	80	80	80
Length	(L)	mm	3800	4200	4200
Width	(W)	mm	1670	1670	1680
Height	(H)	mm	2750	2750	2750
Weight approx.		kg	8900	9500	10500

STANDARD EQUIPMENTS

- Y1, Y2, X, R - 4-Axes
- Control Unit - CNC Cybelec RA
- CNC controlled motorized Crowning
- CNC controlled Hyd-Mech Crowning (Standard ≥ 800 t)
- European Clamping system (Standard ≤ 400 t)
- DURMA Clamping system (Standard ≥ 600 t)
- Sliding Front Arms with full length linear guide
- Back gauge , Servo-motorised & Linear guide & Ball bearing system (X- R)
- Sliding sheet support Arms with T-Canal and Tilting stop
- Protection covers
- Special designed - worldclass hydraulics blocks & valves
- Worldclass electronics system

OPTIONAL EQUIPMENTS

- Control Unit - Delem 66T / 69T
- CE with Manual F.AKAS II M -FPSC-B-C (SAFETY PLC)
- CE with FIESSLER AKAS-LC II AKAS-3 M Motorised + FPSC (SAFETY PLC)
- CE with SICK C 4000- only for tandem
- DFS1 Laser Finger protection (Non CE)
- Z1, Z2 Axes
- X1, X2 Axes
- R1, R2 Axes
- Delta X axis, +250mm stroke
- X Axis =1000 mm - Back protection with Light barrier
- AP3-AP4 Sheet follower with sliding guide- Motorised height adj
- Quick Release Clamping
- Durma Hydraulic or Mechanical Clamping
- Wila Hydraulic or Mechanical Clamping
- Tool options (Durma, European, Wila) in tool catalog
- Bottom tool seperation system

For other options please contact us.

FBS (Flexible Bending Solutions)

- *Advanced Technologies for bending large sheet metal for extremely diversifed uses in the different industries while avoiding long, expensive welding operations which even takes the risk of material stability.*
- *FBS focuses also to minimize the large workpieces' handling before, during and after the bending operations and respects the next process.By this way offers:*
- *Flexibility of bending varies for diversified uses*
- *Accuracy for large & high spring-back sheets*
- *Lowers setup times by automation of loading& unloading*
- *Increases your employees' safety*
- *On high tonnage mega press brakes "box construction" frame is used which is the most stabile machine body in the world utilised technology for press brakes.Stability and rigidity of box constructions is approved by our refences all around the world and finite element analysis on the computers.*
- *Durma can provide you with all the support Flexible Bending Solutions and offer to the turnkey automatic bending cells complete with facility for loading and unloading.*

CUSTOM MADE PROJECTS

AD-S Tandem 812000

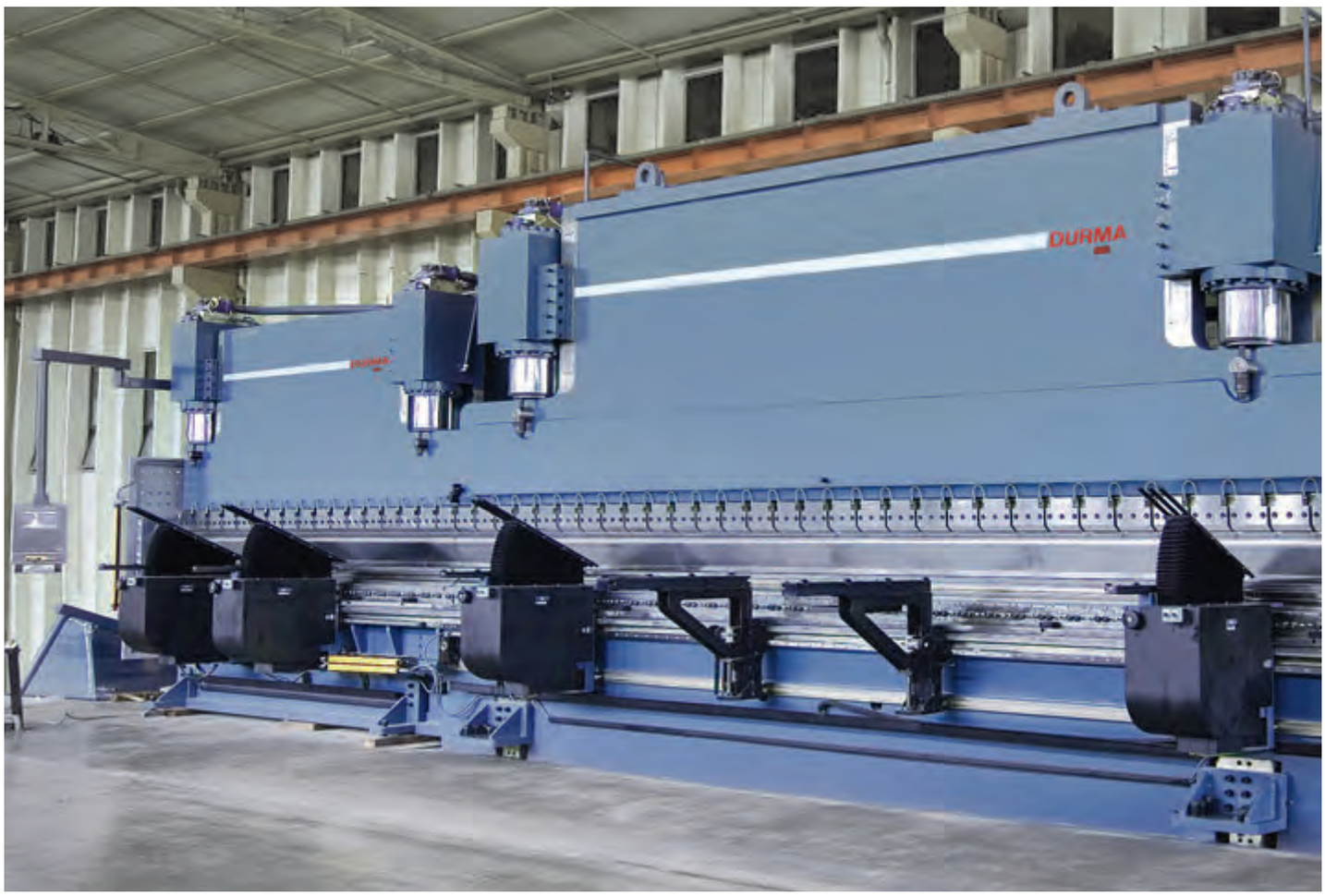
Loading Unloading System
Front Feeding System with Pneumatic Pushers
Light Pole Industry - Unmanned Production

AD-S Tandem 911000

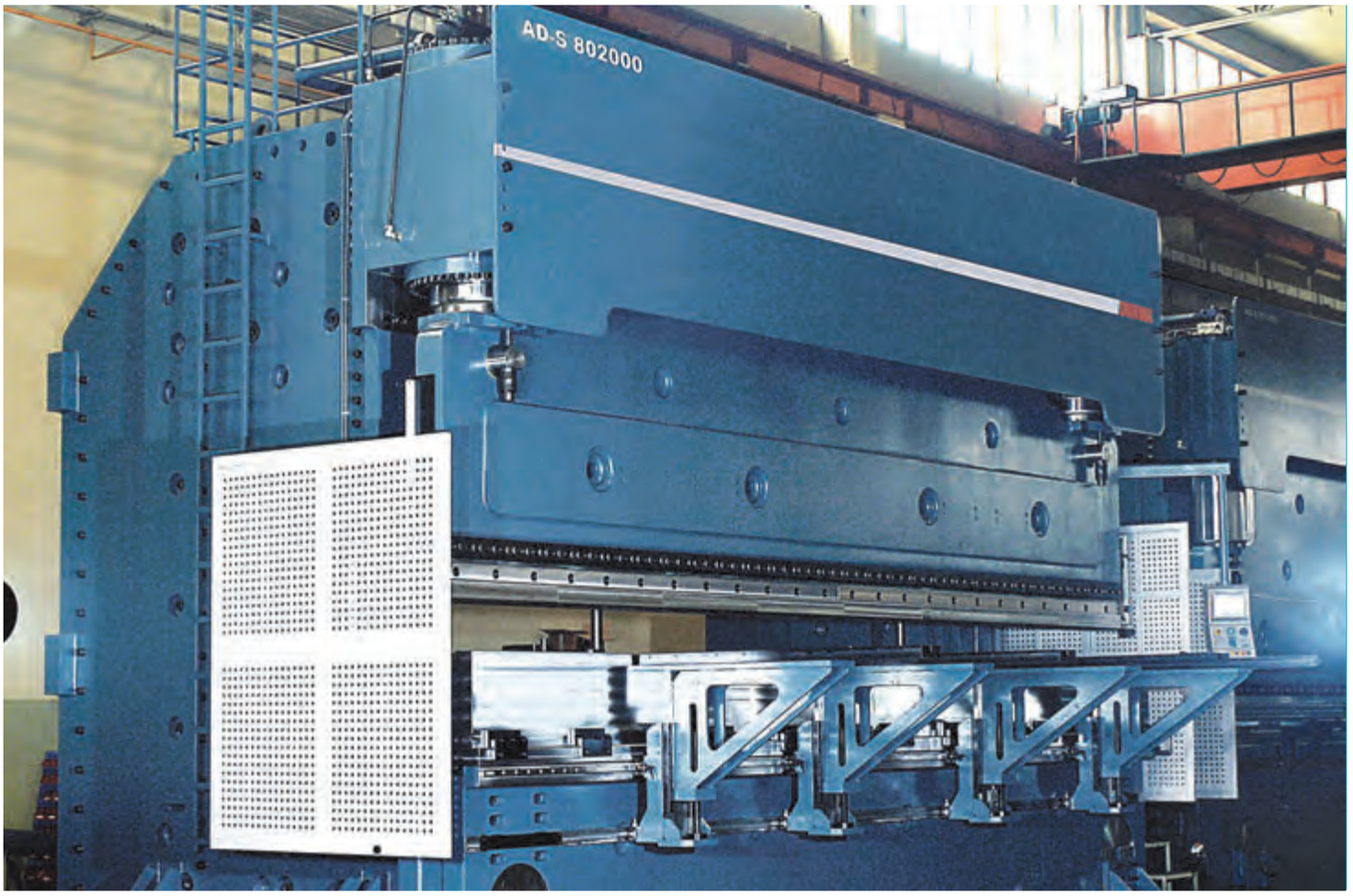
Loading Unloading System
Front Feeding System with Pneumatic Pushers
Light Pole Industry - Unmanned Production

AD-S Tandem 60400

Motorised Front Feeding System
Light Pole Industry



AD-S 80800 & 40400
Truck Dumper Industry



AD-S 802000
Defence Industry

AD-S 1051500
Special Hydraulics Front Support System
Steel Service Industry

AD-S Trio 40400
Steel Service Industry

AD-S Tandem 45220
AP3 AP4 Sheet Followers

Durma Robotised Press Brakes

20mm Thick Special Steel Armox for Defence Industry

FEATURES

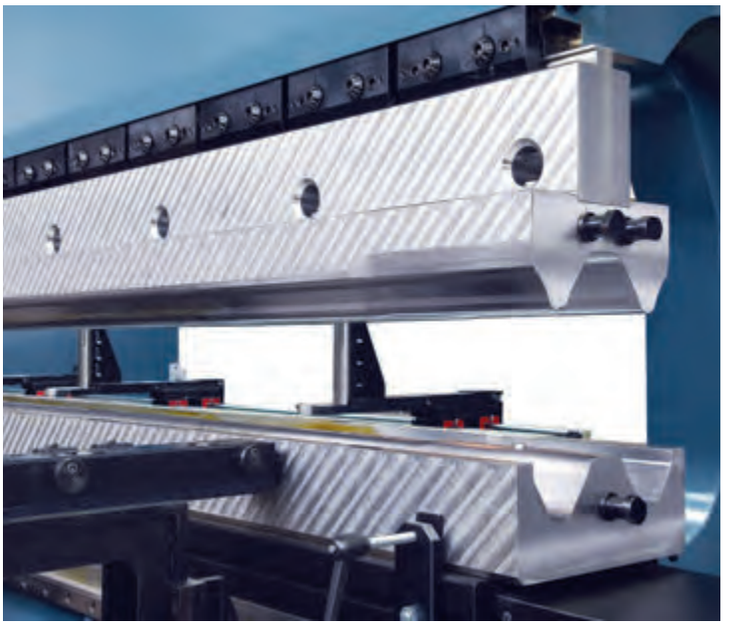
Light Pole Pull-Out Systems

We have 3 solutions for light pole pull out.

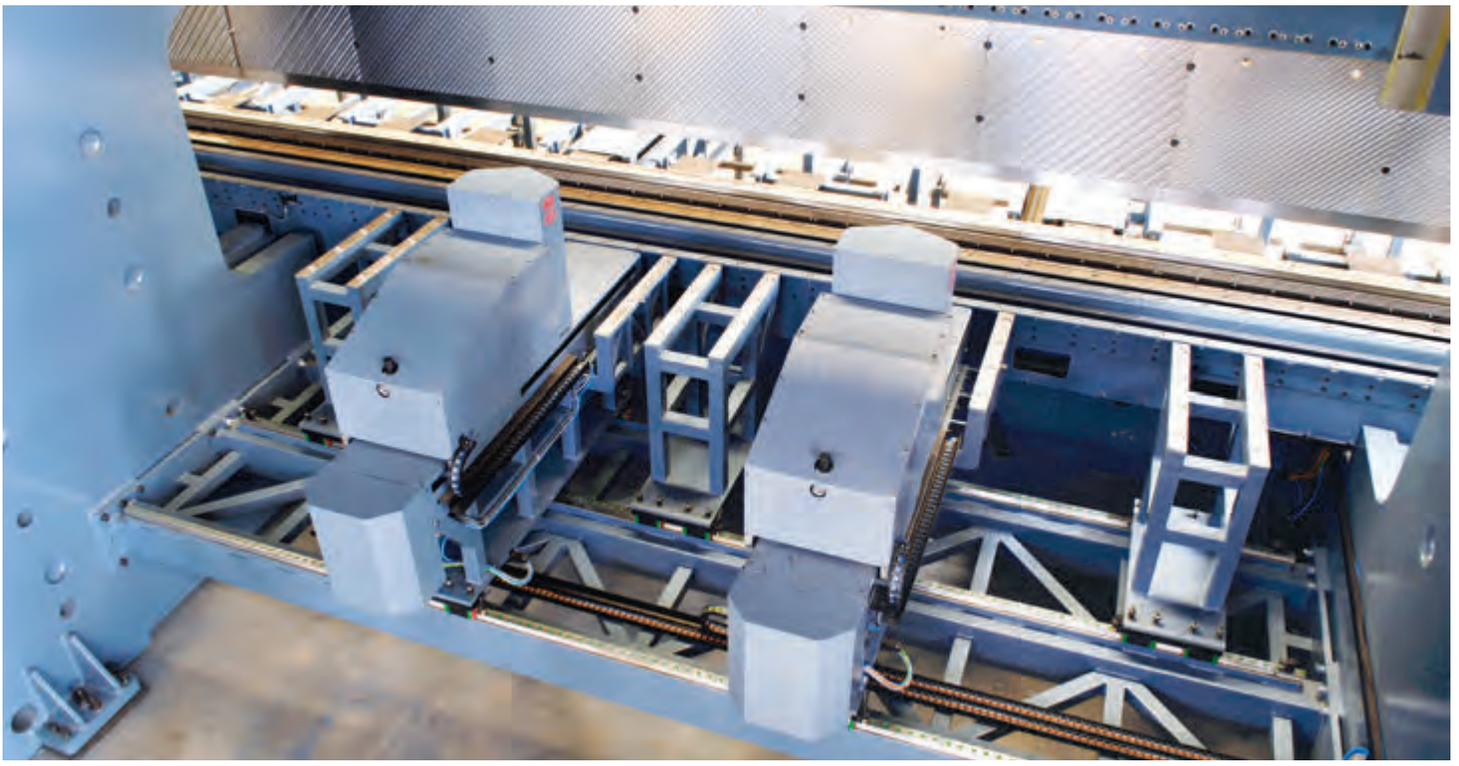
System 1 From Side

System 2 From Bottom

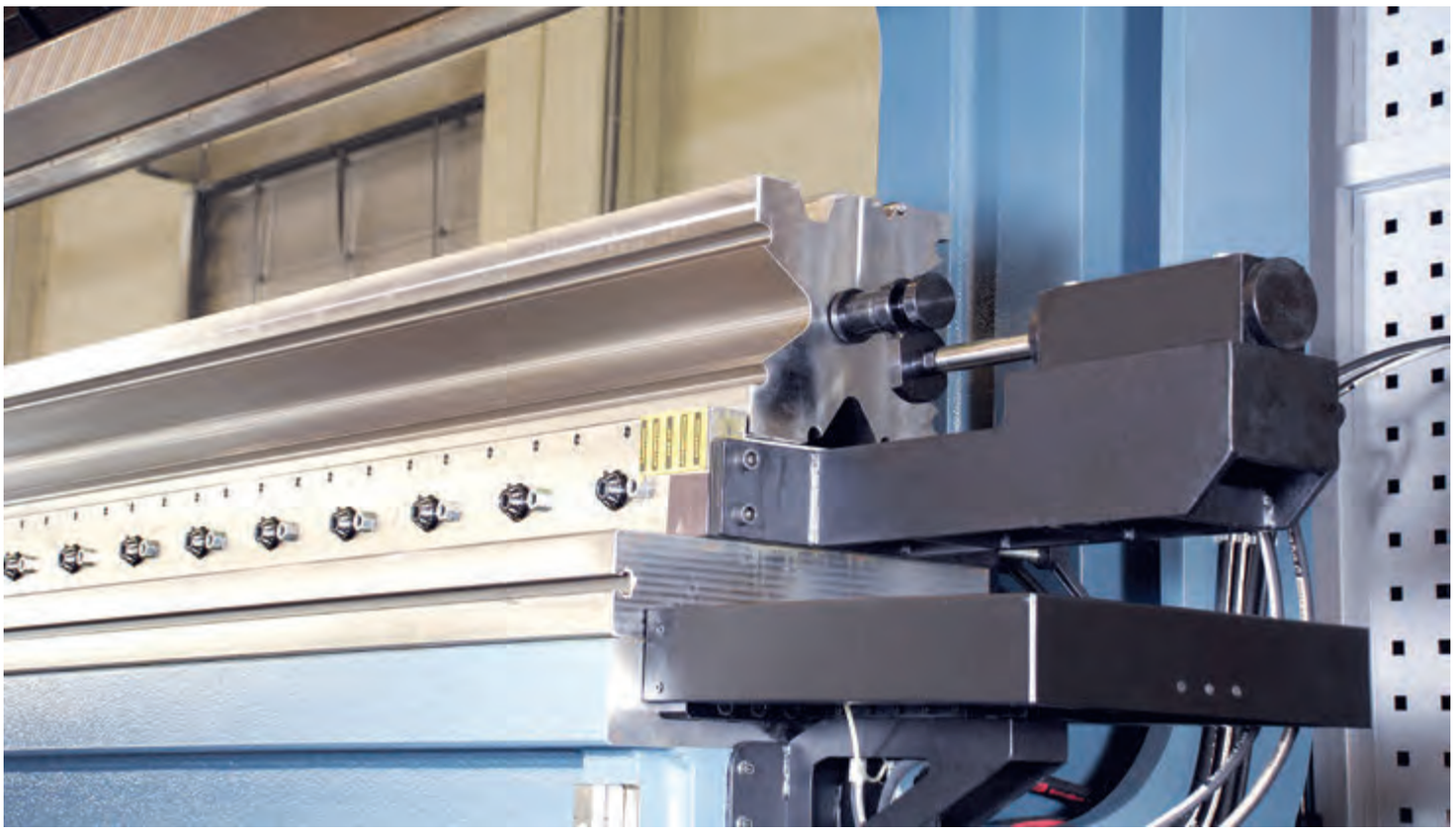
Special Hydraulics Front Support System



Road Barriers Industry

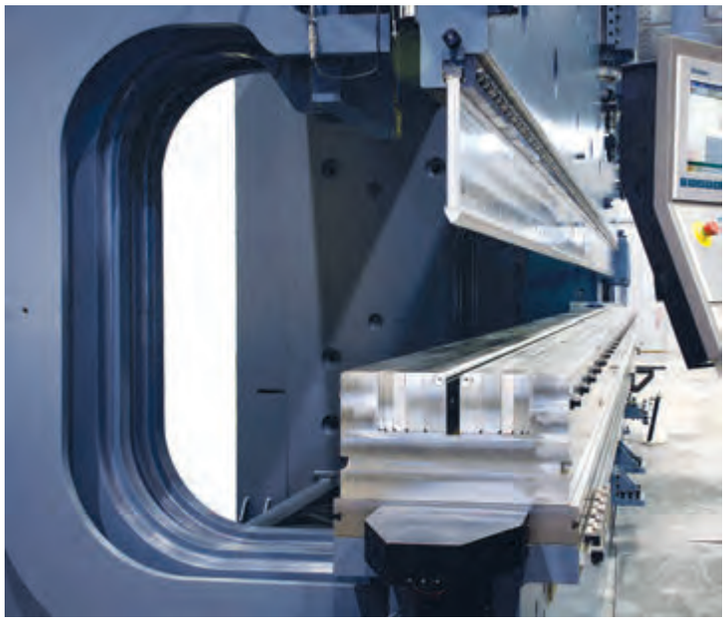


Special Back Gauge X1 X2
with Pneumatics Pushers



Hydraulics Bottom Tool Seperation System

Bottom Tool Adjustable Systems



Bottom Tool Lamel Adjustable System

Bottom Tool Motorised Adjustable System

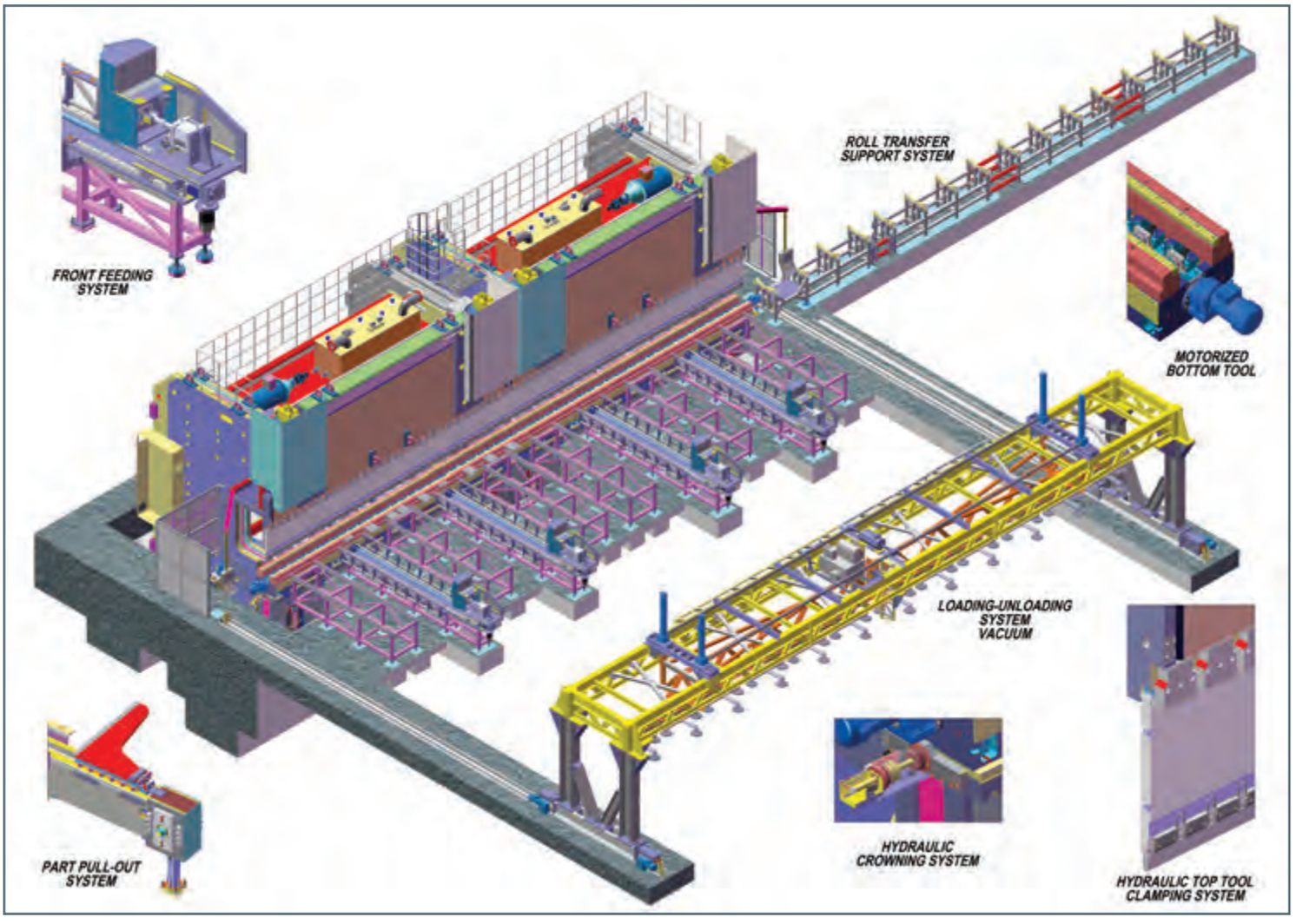
Bottom Tool Manual Adjustable System

Robust Box Construction

On high tonnage mega press brakes "box construction" frame is used which is the most stabile machine body in the world utilised technology for press brakes.Stability and rigidity of box constructions is approved by our refences all around the world and finite element analysis on the computers.

Piston Production

Hydraulic pistons are produced with precise CNC machining centers in one shot without reposition.



Frame Machining Tandem - Trio Tetra Press Brakes

Cnc precise processing applied for all frames at one time without repositioning for tandem, trio and tetra press brakes.

AD-S 801000 Top Beam Machining

Durma Shears

Durma shears have been manufactured since 1956 and are installed and working in a wide variety of sheet metal cutting operations for many industries. Years of customer application experience has helped us develop durable, low distortion and precise cutting machines.

Even large shears are machine frames are machined with our respositioning on the maching centers. Resulting in parallel and square services.

Automatic adjustment of the holddown pressure in our hydraulic shears firmly secures thick or thin sheet prior to the actual cutting.

VS Series

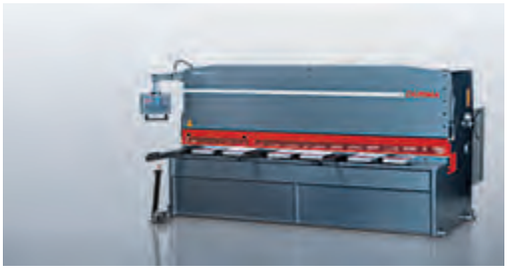
Variable Rake CNC Shear

Cutting angle and blade gap Automatically CNC adjusted for flexible and precise cutting processes

SBT Series

Swing Beam Touch Shear

Heavy duty, robust swing beam cutting for optimised cutting parameters

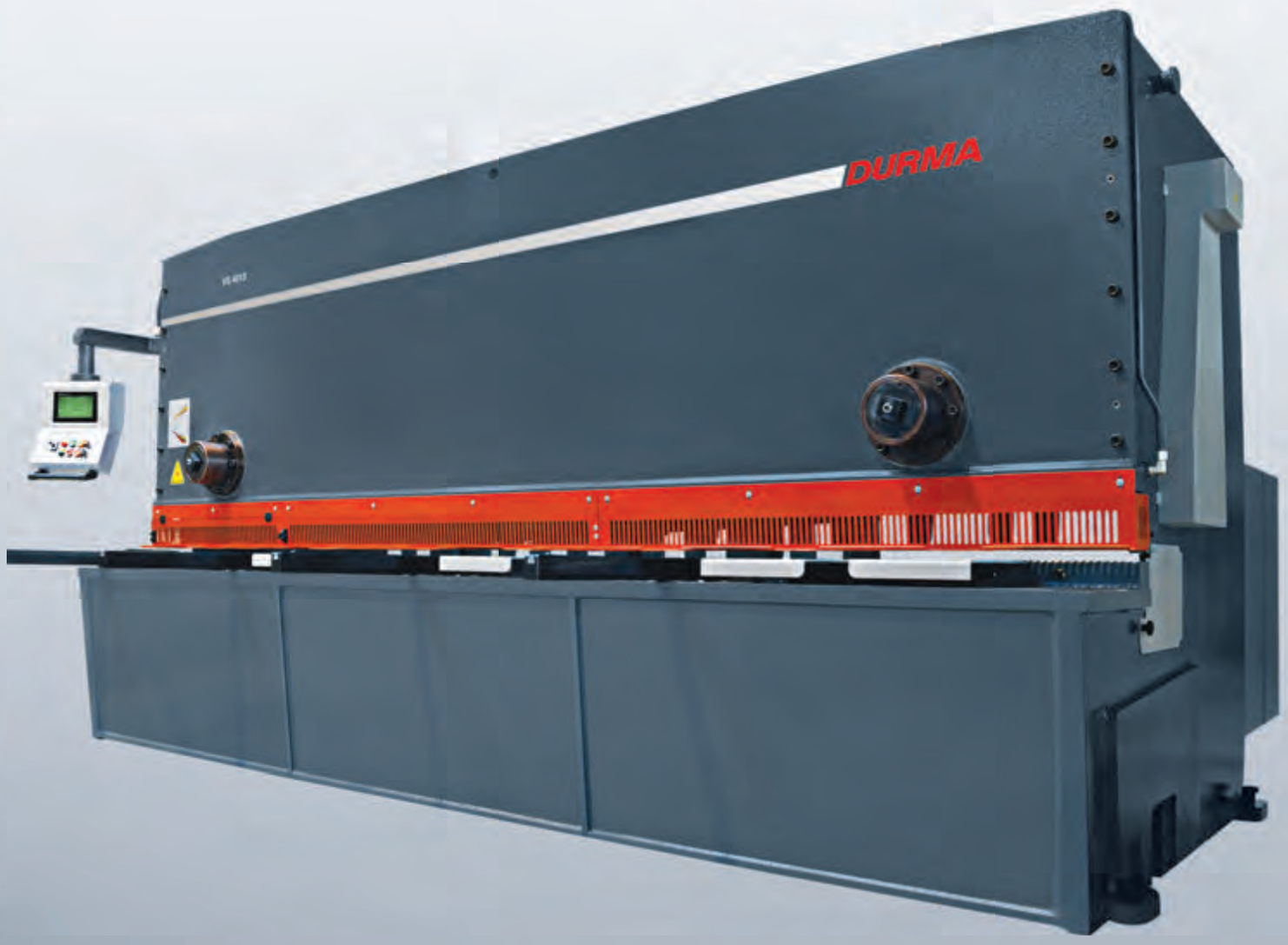


MS Series

Power Operated Shear

All-in: Hi-Speed, Accurate, Efficient, Performance

VS SERIES



Variable Rake CNC Shear

- *Solid design & durable body for precise cutting results*
- *Blade clearance and cutting angle automatically adjusted by CNC controller*
- *Userfriendly CNC Touchscreen control unit*
- *Flexibility for thin or thick, narrow or wide sheets*
- *For more sophisticated usage ; automatic swing-up back gauge, sheet support systems, return to sender, automatic feeding and conveyor systems are easily integrated*
- *For sheet handling and ease of operations ; standard t-slotted sheet support arms and tabetop ball transfers easy feeding of the sheet*
- *Fast cycle times for thick or thin sheets*

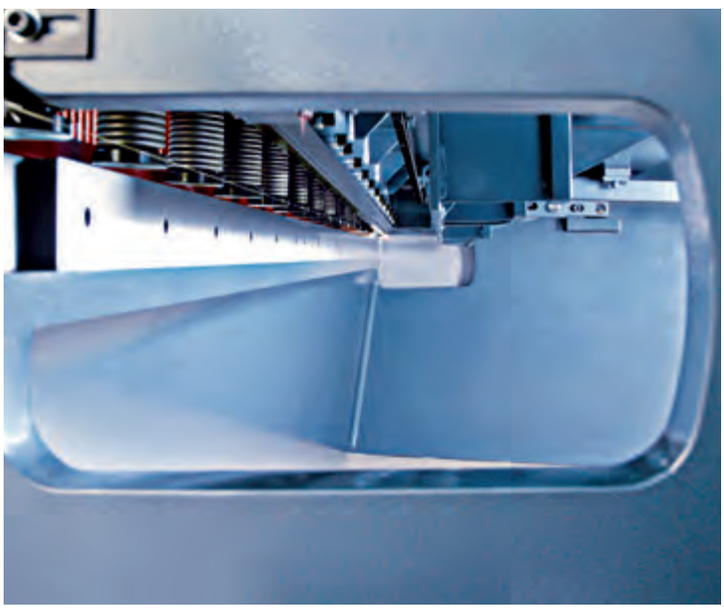
VS Series Features

Finger Guard, Ball Transfers & Holddowns

The first one meter of the finger guard can be flipped up out of the way for easy viewing of the work piece at the point of cut. Holddowns are provided to ensure that the plate is held firmly along the length of the cutting area. The holddowns are distributed in such a way that more are closer at each end of the table. This guarantees not only safer operation at the beginning and end of the cut but also the accuracy for narrow (short) plates at each end of the machine. Each independently acting holddown is capable of applying high pressure to hold the material being cut at the same time preventing thin and delicate materials from being marked.

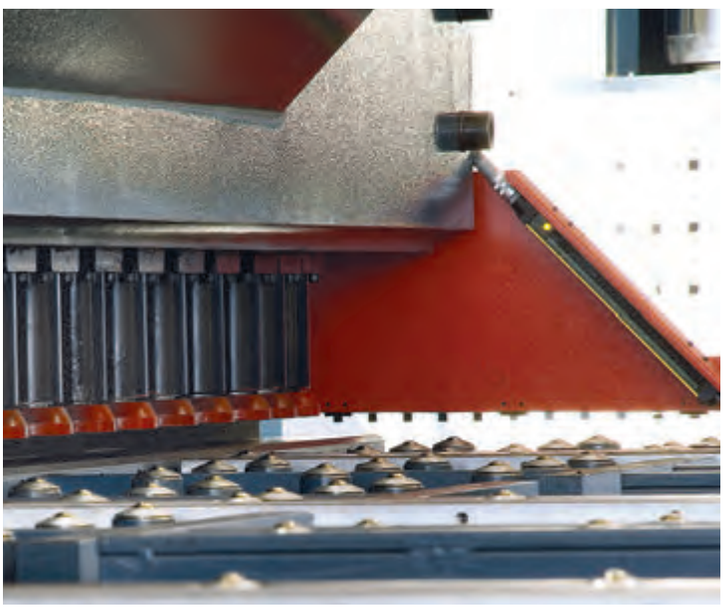
Back Gauge

The backguage adjustment, standart range 1000 mm, has play free straight guides and re-circulating ball spindles; it has speed of 200 mm/sec, a setting accuracy of 0,1 mm and a repetitive accuracy of +/-0,1 mm (by means of a closed loop control). A standard feature of the backgague is clearance compensation and it retracts automatically when cutting narrow strips.
Back gauge can swing away at the end of its travel to allow the shearing of unlimited length drop pieces.



Throat Depth

Throat Depth (minimum 350 mm) in the side frames allow shearing of sheets longer than the blade length.



Light Curtain fo finger protection

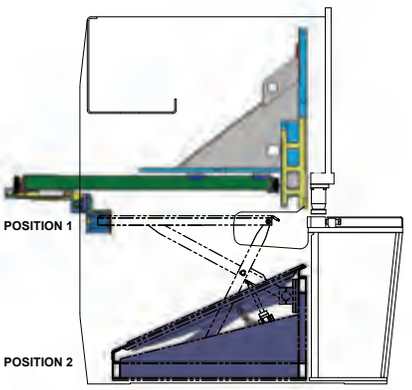
Simple, secure handling

CNC Control Units

D-Touch 7

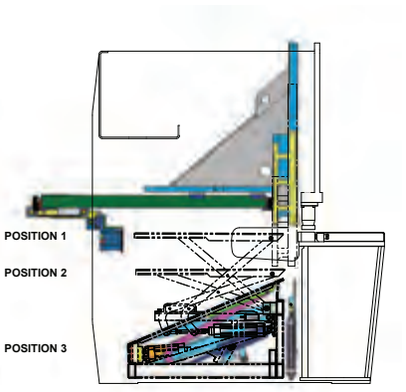
Large Color Touch Screen, Lcd: 7", 800 X 480 Tft Lcd Display
Rapid data input
Automatic blade gap
Automatic cutting angle
Automatic cutting length
Easy communication, USB Port: Usb port for user usb flash memory
Ethernet: RJ-45 10/100M
Operating System: Windows CE
User Program and Steps: Unlimited
Material Type: Unlimited

Pneumatic Sheet Support Devices

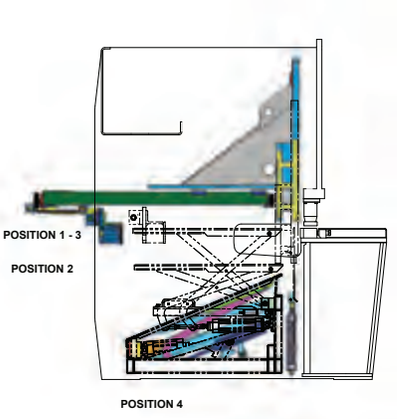


Durma 1

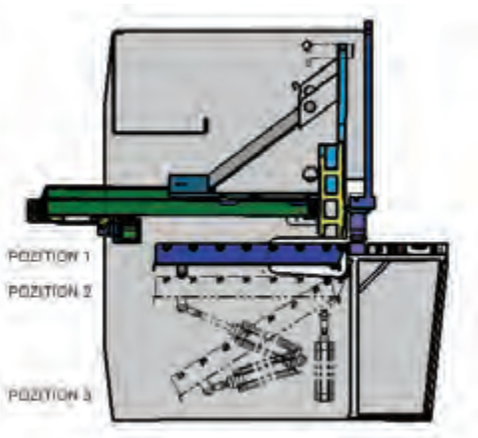
Durma 3



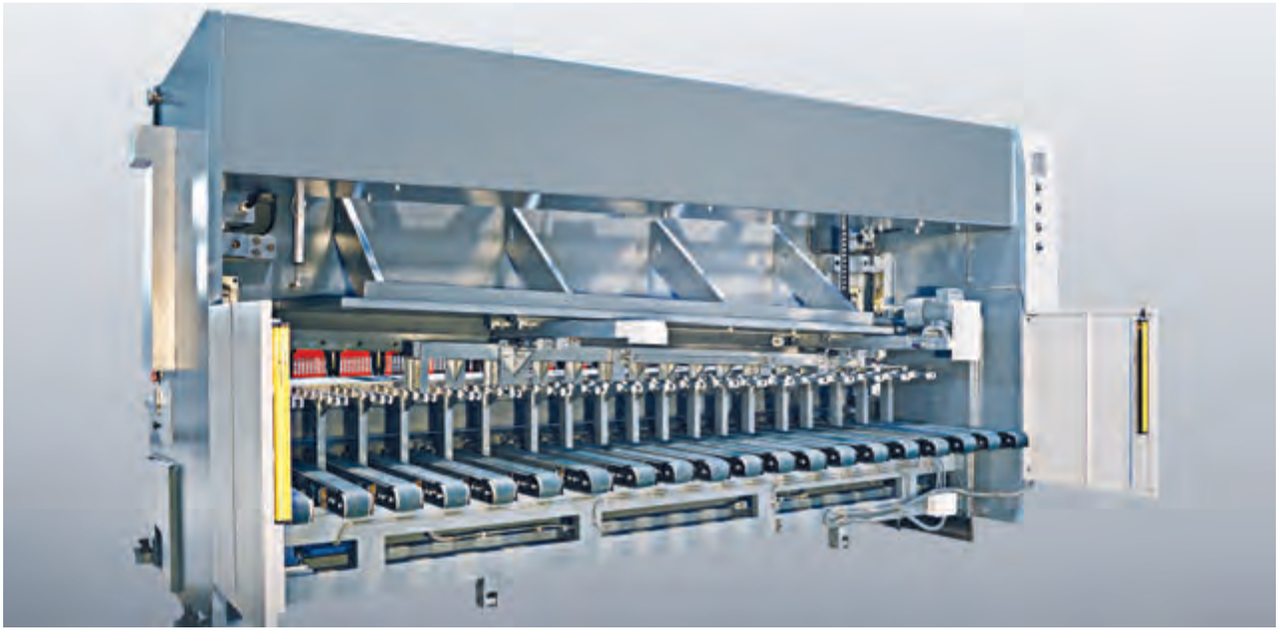
Anti twisting



Return to sender



Durma 4



Sheet Support Devices with Conveyor and Scrap Container

Scrap + Stacker + Alignment System

Front Feeding System

VS

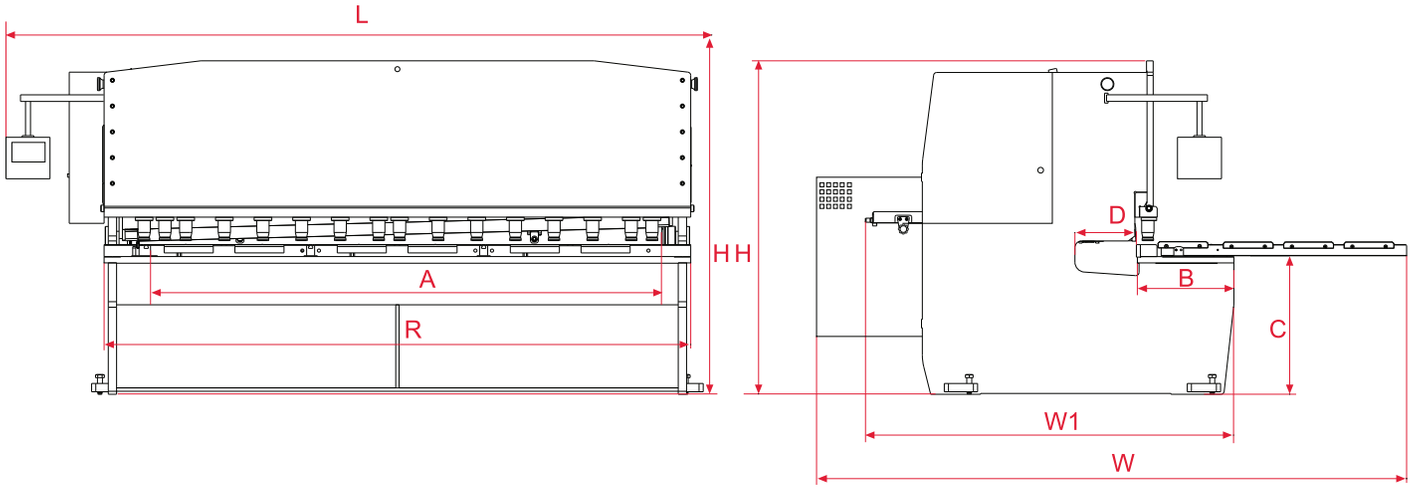
STANDARD EQUIPMENTS

- Heavy duty St 44 steel construction & Stress relieved frame
- Userfriendly CNC Touchscreen control unit - D-Touch 7
- Automatically adjusted rake angle by CNC
- Automatically adjusted blade gap by CNC
- Automatically adjusted cutting length by CNC
- Ball integrated front tables
- Ballscrew back gauge, 1000 mm
- 1 mt flip-up finger guards
- Squaring arm with scale & T-Slot & Tilting stop (L= 1500 mm)
- Support arms T-Slot & Tilting stop (L=1000 mm)
- Illumination & Shadow line
- Throat depth with 350 mm
- Automatically pressure adjusted solid holddowns
- Top and Bottom blades with 4 sides
- Foot pedal
- High performance hydraulics & electronics components
- CE-Norm for EU

OPTIONAL EQUIPMENTS

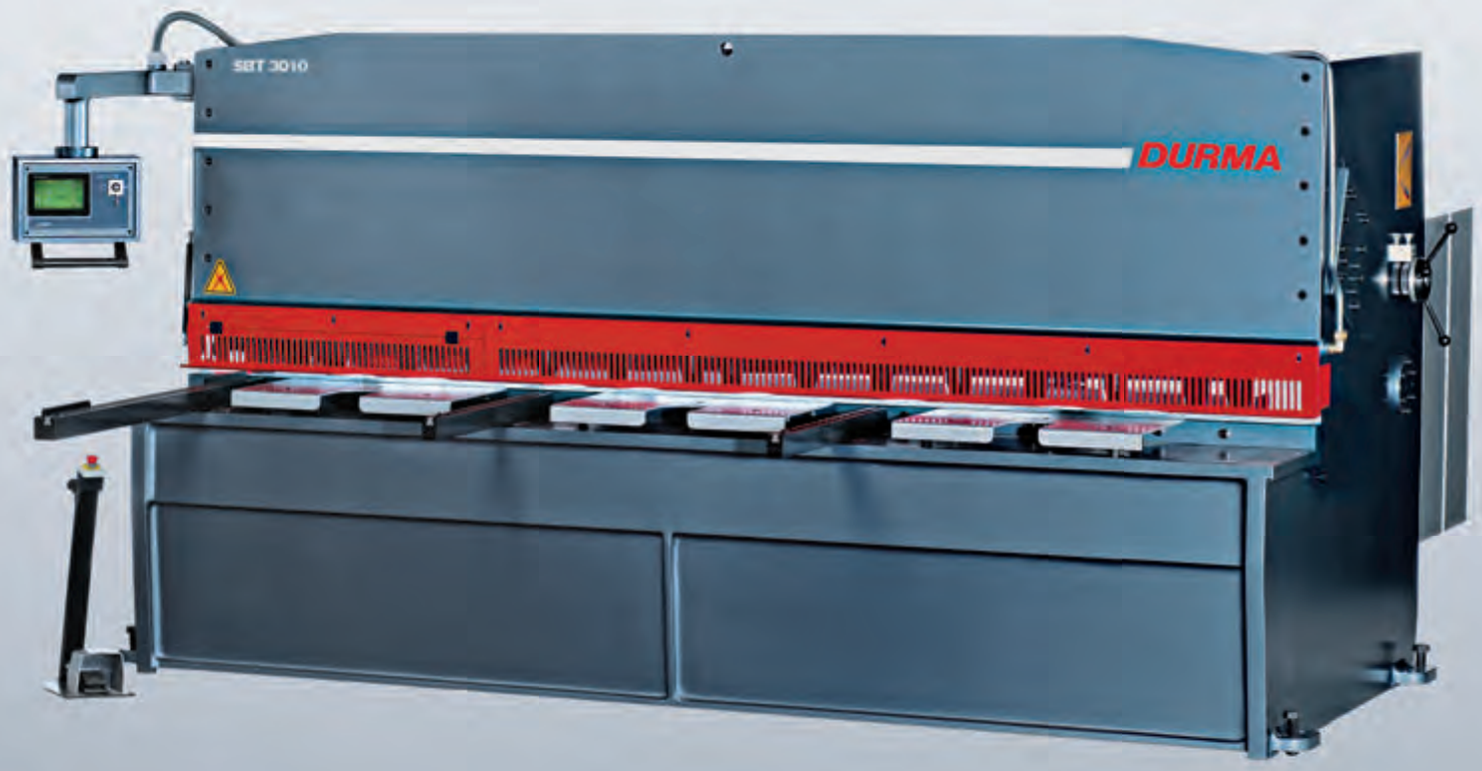
- DNC 61 Control Unit
- Laser Cutting Line
- Light Curtains for Finger Protection
- Pneumatic sheet support device standart - Durma I
- Pneumatic sheet support device with return to sender - Durma III
- Pneumatic sheet support device Durma IV
- Sheet Support device with conveyor belt and scrap container
- Stacker + Aligment Cylinder
- CNC Front Feeding System
- Hydraulic anti-twist device
- Special Throat Depth
- Backgauge 1250 mm
- X1, X2 Axis
- Hydraulic swing-up back gauge
- Adjustable holddown pressure
- Oil Coolant
- Central lubrıcation manual
- Central lubrıcation motorised
- Adjustable Angle stop 0-180°
- Add. Support Arms
- Special blades
- Special color
- Control Panel on opposite position
- Temperature measurement
- Overseas special packaging

VS Series		Unit		3006	3010	3013	3016	3020	4006	4013	4016
Cutting Length		mm	(A)	3080	3080	3080	3080	3080	4080	4080	4080
Cutting Capacity	MS (450 N/mm²)	mm		6	10	13	16	20	6	13	16
	SS (700 N/mm²)	mm		4	7.5	10	12	15.5	4	10	15
Stroke per min.		Min 1/min		12	10	9	7	6	10	7	9
		Max 1/min		20	20	17	12	12	20	13	10
Cutting Angle	Min	Degree		0°30′	0°30′	0°30′	0°30′	0°30′	0°30′	0°30′	0°30′
	Max	Degree		2°	2°	2°30′	2°30′	2°30′	2°	2°30′	2°30′
Number of Holddowns		Units		16	16	17	14	14	20	20	20
Holddown Force		Min-ton		4	4	8	11	17	4	10	17
		Max-ton		20	20	40	55	83	20	48	50
Backgauge course		min		1000	1000	1000	1000	1000	1000	1000	1000
Backgauge speed		mm/sec		200	200	200	200	200	200	200	200
Motor Power		kW		11	22	30	45	45	11	30	45
Oil Capacity		lt		125	180	300	450	500	125	330	400
Throat Depth		mm	(D)	350	350	350	350	350	350	350	350
Front Arms		Units		3	3	3	3	3	4	4	4
Table Height		mm	(C)	820	820	835	840	840	820	835	1000
Table Width		mm	(B)	494	554	559	554	580	494	589	630
Table Length		mm	(R)	3280	3360	3380	3420	3460	4400	4400	4385
Length		mm	(L)	4100	3800	4200	4130	4100	5150	5200	5890
Width		mm	(W1)	2050	2050	2100	2210	2300	2100	2150	2100
Total Width		mm	(W)	3650	3550	3560	3820	3700	3550	3560	3625
Height		mm	(H)	1950	2150	2450	2570	2650	2050	2550	2950
Weight		~kg		7500	9300	12900	18000	21500	12000	16500	23600



4020	6006	6013	6016	6020	6025	8010	10013
4080	6080	6080	6080	6080	6100	8100	10100
20	6	13	16	20	25	10	13
15.5	4	10	12	15.5	19	7.5	10
4	6	5	4	3	3	3	3
8	10	10	10	6	6	6	6
0°30′	0°30′	0°30′	0°30′	0°30′	0°30′	0°30′	0°30′
2°30′	2°	2°30′	2°30′	3°15′	3°25′	2°	2°12′
21	29	29	29	29	30	40	52
50	10	29	29	48	150	40	60
100	20	58	58	100	250	60	81
1000	1000	1000	1000	1000	1000	1000	1500
200	200	200	200	200	200	200	200
45	22	37	45	45	55	30	45
500	200	400	550	700	750	550	650
350	350	350	350	350	350	500	750
4	6	6	6	6	6	7	9
1000	900	950	950	1000	1000	1220	1210
630	630	650	650	800	900	850	860
4405	6370	6375	6375	6595	6750	8545	10630
5900	7300	7400	7400	8100	7850	9100	11500
2200	2150	2200	2200	2800	2900	3350	3400
3775	3400	3700	3790	4100	4250	4200	4240
2950	2750	2900	2950	3530	3400	3280	3800
29000	25300	33800	38700	61000	72000	87000	147000

SBT SERIES



Swing Beam Touch Shear

- *World's heaviest and most robust swing beam shear construction*
- *Proven reliable design frame with rigid swing style upper beam*
- *Optimized cutting angle for minimized distortion*
- *Oversized roller bearing guides and box constructed swing beam for constant blade gap over full cutting length contribute to straight cuts*
- *Easy and low maintainence operation*

FEATURES

CNC Touch Screen Control Unit

D-Touch 7

Large Color Touch Screen, Lcd: 7", 800 X 480 Tft Lcd Display
Rapid data input
Easy communication, USB Port: Usb port for user usb flash memory
Ethernet: RJ-45 10/100M
Operating System: Windows CE
User Program and Steps: Unlimited
Material Type: Unlimited

Single Point Blade Clearance

A Quickset single point blade gap adjustment is conveniently located on the side frame of the machine. The operator can easily and quickly change this setting, as the material type and thickness demands, for a high quality blank.

Swing Up Or Away Back Gauge

Back gauge can swing away at the end of its travel to allow the shearing of unlimited lenght drop pieces. Also available is a swing up style, which swings up and out of the way when the back gauge reaches the end of its range. Both styles allow shearing sheets of an unlimited length.

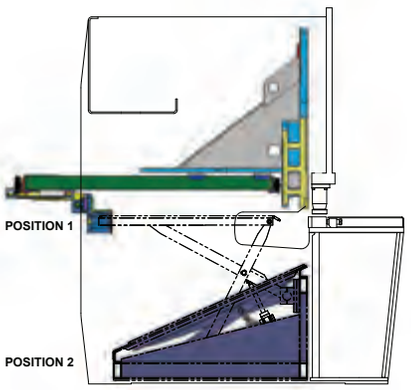
Finger Guard, Ball Transfers & Holddowns

The first one meter of the finger guard can be flipped up out of the way for easy viewing of the work piece at the point of cut. Holddowns are provided to ensure that the plate is held firmly along the length of the cutting area. The holddowns are distributed in such a way that more are closer at each end of the table. This guarantees not only safer operation at the beginning and end of the cut but also the accuracy for narrow (short) plates at each end of the machine. Each independenty acting holddown is capable of applying high pressure to hold the material being cut at the same time preventing thin and delicate materials from being marked.

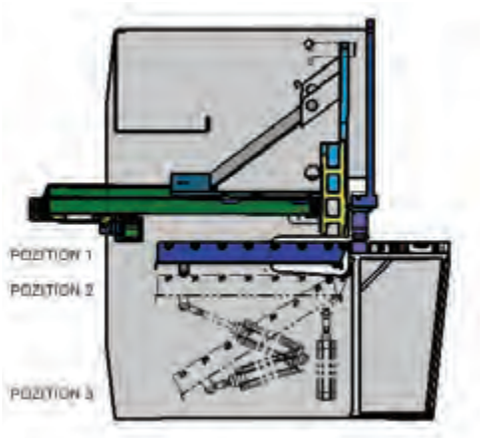
Rear Sheet Support Systm

When shearing long drop pieces of thin material the sheet can droop before it reaches the gauge bar, therefore making it impo ssible to gauge or, at least gauge accurately. In this system support arms which are pneumatically activated support the sheet while gauging and then automatically move away for shearing after the sheet is securely clamped and gauged. This also eliminates the need to front gauge and he need for the operator or additional personel, to manually support the sheet from the rear side of the machine, which is not only costly, but unsafe.

Pneumatic Sheet Support Devices

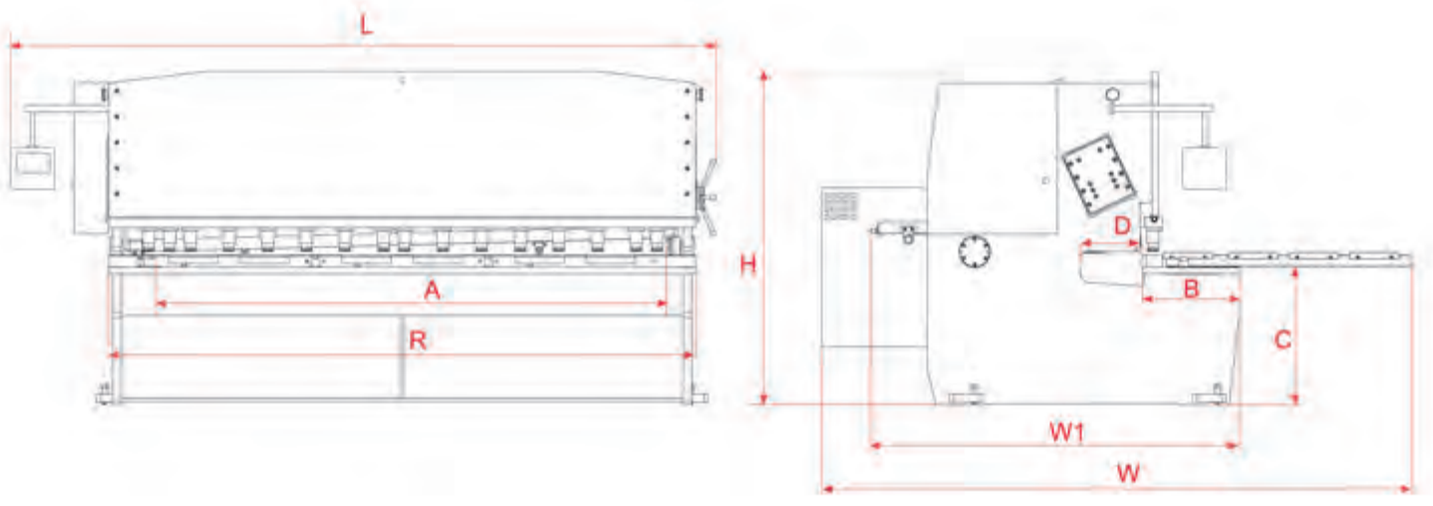


Durma 1



Durma 4

SBT Series				3006	3010	3013	3016	3020	4006	4013
Cutting Length		(A)	mm	3100	3100	3100	3100	3100	4100	4100
Cutting Capacity	MS (450 N/mm²)		mm	6	10	13	16	20	6	13
	SS (700 N/mm²)		mm	4	6	8	10	13	4	8
Throat Depth		(D)	mm	50	50	50	350	350	50	350
Strok /Min			1/min	15	13	13	10	6	12	8
Cutting Angle			Degree	1°30′	1°30′	1°45′	2°	2°	1°30′	1°45′
Numbers of Holddown			Unit	16	16	16	14	14	20	18
Holddown Force			ton	14	22	37	61	77	17	62
Backgauge Range			mm	1000	1000	1000	1000	1000	1000	1000
Back Gauge Power			kw	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Back Gauge Speed			mm/min	120	120	120	120	120	120	120
Motor Power			kw	15	22	30	37	45	15	30
Oil Capacity			lt	200	200	330	410	450	200	330
Number of Sheet Supports			Unit	2	2	2	2	2	3	3
Table Height		(C)	mm	865	865	845	818	886	865	818
Table Width		(B)	mm	500	580	600	550	570	580	550
Table Length		(R)	mm	3515	3515	3550	3580	3670	4510	4520
Length		(L)	mm	4110	4200	4280	4550	4450	5230	5350
Width		(W1)	mm	2200	2250	2300	2250	2260	2300	2250
Total Width		(W)	mm	3700	3600	3600	3825	3400	3600	3850
Height		(H)	mm	2100	2100	2350	2250	2450	2150	2250
Weight			~kg	7650	9300	12500	15000	21700	11750	16300



SBT

STANDARD EQUIPMENTS

- Heavy duty St 44 steel construction & Stress relieved frame
- Userfriendly CNC Touchscreen control unit D-Touch 7
- Easy blade gap adjustment
- Ball integrated front tables
- Ballscrew back gauge, 1000 mm & Automatic swing-up
- Squaring arm with scale & T-Slot & Tilting stop (L= 1500 mm)
- Support arms T-Slot & Tilting stop (L=1000 mm)
- Illumination & Shadow line
- 1 mt flip-up finger guards
- Automatically pressure adjusted solid holddowns
- Top and Bottom blades with 4 sides
- Foot pedal
- High performance hydraulics & electronics components
- Swing-up back gauge

OPTIONAL EQUIPMENTS

- CE-Norm for EU
- Motorized blade gap adjustment
- Laser Cutting Line
- Light Curtains for Finger Protection
- Pneumatic sheet support device standart - Durma I
- Pneumatic sheet support device standart - Durma IV
- Hydraulic anti-twist device
- Special Throat Depth
- Backgauge 1250 mm
- Add. Support Arms
- Adjustable holddown pressure
- Special blades
- Oil Coolant
- Adjustable Angle stop 0-180°
- Special color
- Control Panel on opposite position
- Temperature measurement
- Overseas special packaging

Durma Punch Presses

Thousands of Durma Punch Presses all around the world is verifying the quality, reliability and stability of machines ; their stres relieved steel construction, modern design, state of art control system,software and quality proven hydraulics are other distinctive characteristics. Auto clamping, strong and flexible turret structure, simple and perfectly designed standardised supplementary equipments and with its user friendly CAD/CAM software; machines offer perfect full package to our clients.
Possible software and parameter problems can be check via " Remote diagnostic" function of the control unit
Loading and unloading systems can be integrated for efficient and lean operations
High performance/price ratio
Low maintainence costs
Durma Punch Presses are designed and produced for value add operations' for long lifetime.

RP Series

Rotational - Head Punch
Durable punching operation for cost effective processes

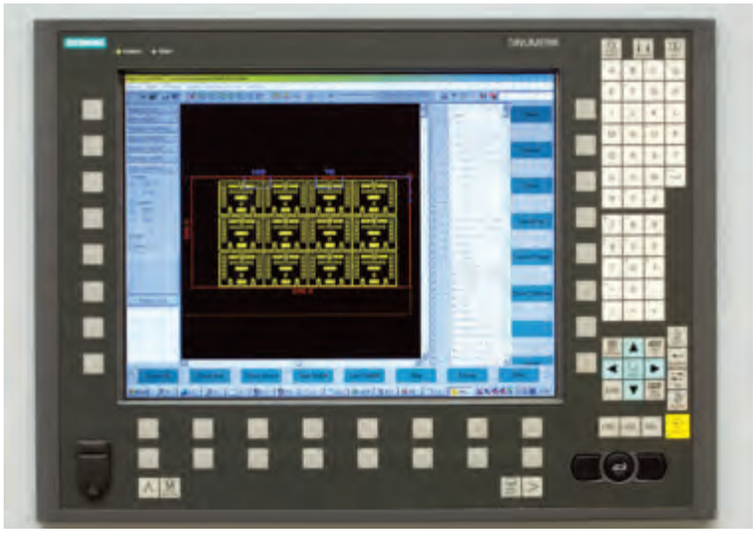
TP Series

Turret Punch
Flexible and strong punching processes for each sheet formats

RP SERIES

- *Single rotational head machines with versatile C frame construction*
- *Stress relieved steel construction*
- *Powerful Siemens controller with user friendly CAD-CAM Software*
- *Fast and simple operation*
- *High quality and well known hydraulic and electronic components*

FEATURES



Control System

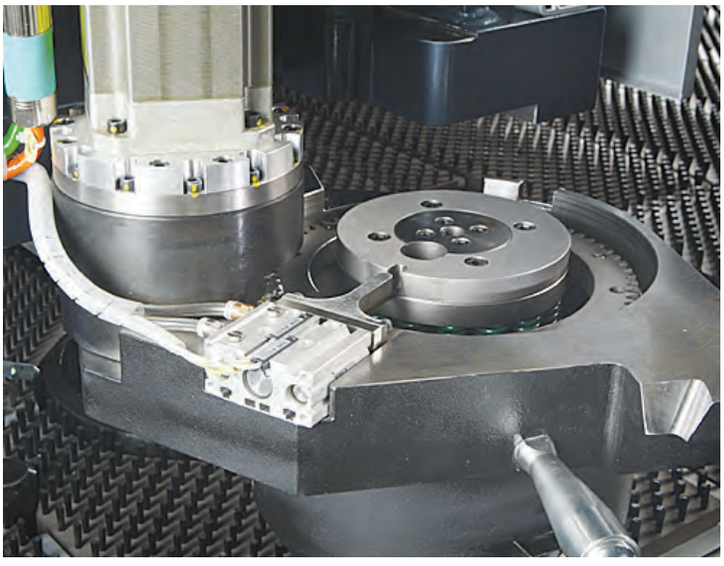
Siemens Sinumerik 840 DSL control system is applied for punching with strategic alliance with Siemens. Controls and screen are mounted on a mobile control panel. The control system and other hardware are mounted in a separate cabinet. Machining can be started with just a few steps. Network (ethernet) 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.

The control ensures that optimal acceleration values can be attained at every stage of machining, depending on the actual masses that need to be moved.

Multi Tooling

Durma rotation punch press machine top and bottom tools work synchronize to obtain all required angular pitch can be ± 0,02°. Upper and lower index groups have no mechanical connections which means they can be perfectly aligned, even defect into the tools can be adjusted. It has a wide tooling usage capacity with 3, 6, 8, 10 tools multi tool selection.

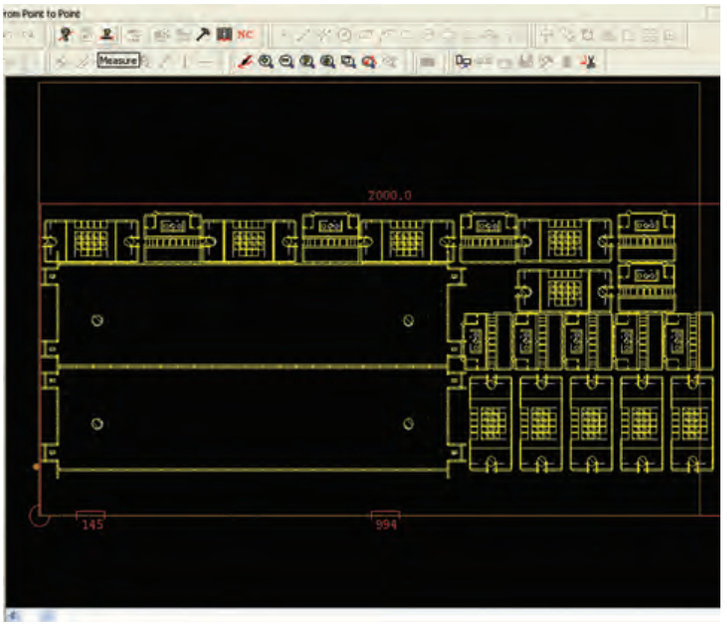


Rotational Head

High rotational speed 40 rpm makes the machine fast.
By using zero backlash Harmonic Drive Gear system for index position punching.
Automatic reposition in the X axis enables to punch longer than 2 meters and eliminate the death area on the sheet.

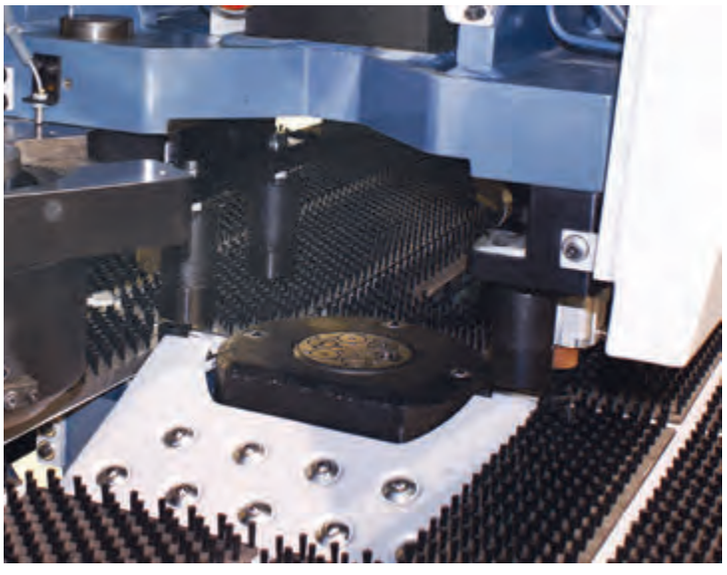
Auto Clamps

Automatic clamps (standard with RP6 - RP9) position according to the CAM program, sheet remove sensors at clamps detects the sheet hold, in case any possible release machine stops to protect working environment.



Cadcam Software

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



Workchute

Discharges processed small workpieces without interruption or small manual manipulation. (Optional with RP9)

DURMA Punch Press is equipped with infra-red barrier system according to CE conformity.

RP Series	Unit	RP6	RP9
Maximum tonnage	ton	30	20
X axis movement	mm	2000 + R	2000 + R
Y axis movement with multiple tool	mm	1250	1250
Y axis movement with single tool	mm	1285	1285
Max. Cutting thickness	mm	6	6
Automatic positioning range *	mm	10000	10000
Speed of Y axis	m/min	50	75
Speed of X axis	m/min	60	96
Speed of C axis index	rpm	40	40
Lateral speed Y + X	m/min	75	120
Max. Hit rate (1 mm pitch, 1mm thickness)	1/min	600	850
Max. Hit rate (25 mm pitch, 1mm thickness)	1/min	280	320
Max. Hit rate : Marking	Stroke/min	900	1250
Accuracy for positioning	mm	± 0.1	± 0.1
Max. weight of sheet	kg	120	120
Hard disk	Gbyte	40	40
RAM	Mb EDO	256	256
Network system	-	Windows XP	Windows XP
LCD colorscreen Super VGA	-	12.1"	12.1"
Working height	mm	980	980
Table width	mm	2400 x 3600	2400 x 3600
Machine sizes	mm	3600 x 4100 x 2450	3600 x 4100 x 2450
Motor	kw	11	7.5
Oil tank	lt	200	200
Weight approx.	kg	12000	12000
Main cylinder stroke	mm	30	30
Maximum punching diameter (for Multitool)	mm	24	24
Number of Clamps	pcs.	2	2
Holding force of clamps	kg	1000	1000
Automatic Clamp Positioning	-	-	Standard
Table type	-	Brush	Brush

RP

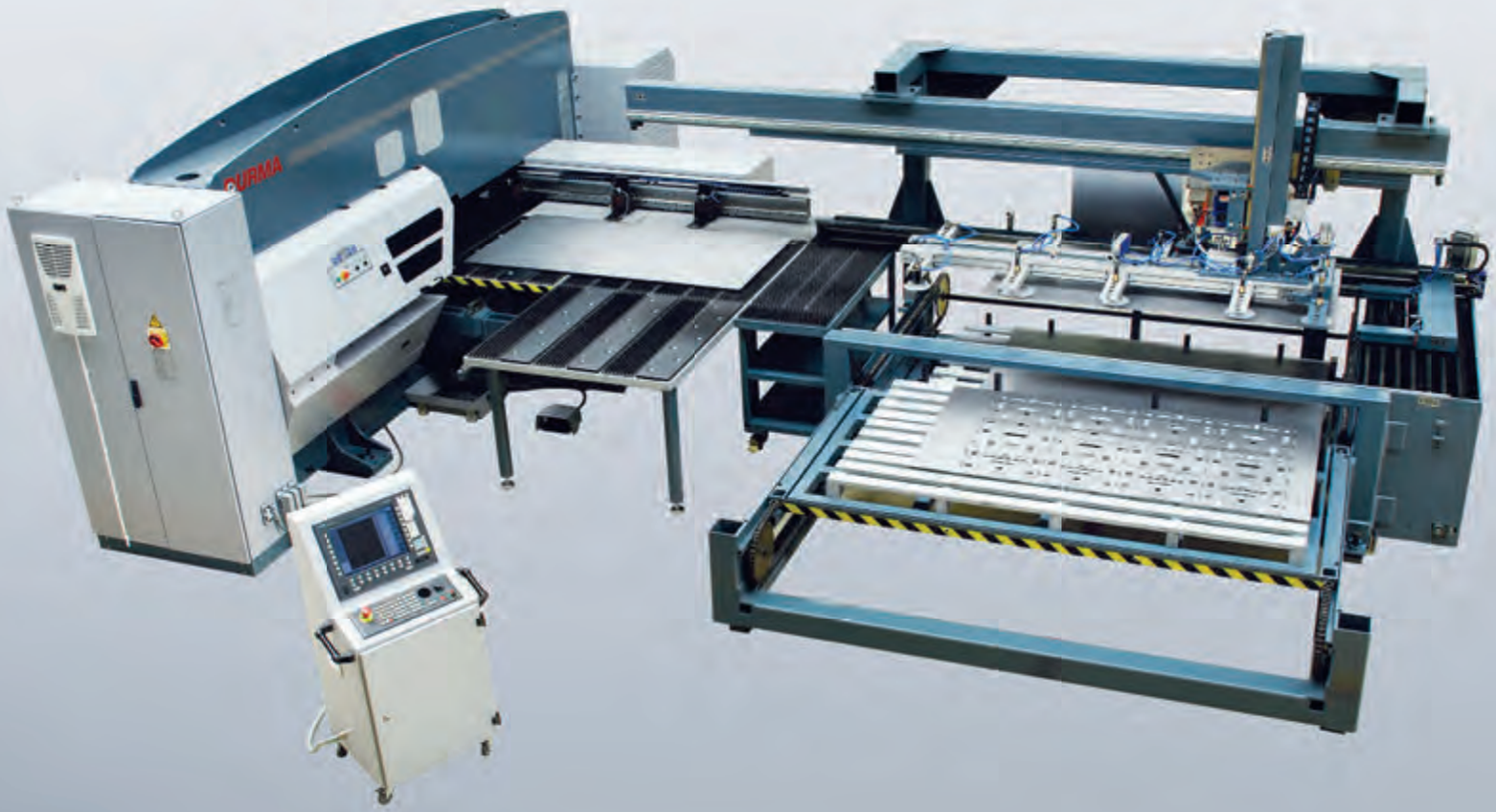
STANDARD EQUIPMENTS

- Command pedal
- CAD-CAM software & Activator
- Control unit, Siemens Sinumerik 840 D SL Windows XP operating system
- Remote diagnostic function
- Programming on the control panel
- Automatic clamp positioning (RP6 - RP9)
- Sheet set switches on clamps (RP6 - RP9)
- Network, Ethernet communication.
- standart 6multi tool with punch and dies
- 6 pieces Durma tool and guide(gap 0.3 mm)
- round Ø8
- round Ø10
- round Ø20
- rectangle 4 x 20
- square 7
- square 17
- Automatic tool lubrication
- Alignment Tools for Index Stations (D Station)
- Movable scrap box
- UPS for control panel
- USB driver
- Brush table
- Control panel
- Oil Cooler
- Reposition on X axis
- Web cam for service
- Manuel nesting

OPTIONAL EQUIPMENTS

- Light barriers for CE
- Additional clamps
- Special table
- Tools, Tool holders, reducers
- CAD-CAM SW Second activator (dongle)
- SW for Autonesting & Wheel tools
- Additional table
- Air condition for electrical box
- Additional oil cooler
- Warning lamp
- Sheet deformation alert switch
- Workchute for RP6 - RP9
- Automatic lubrication for the machine
- UPS for machine (30KvA - 10 min)
- Transformator
- Auto Nesting and wheel soft

TP SERIES



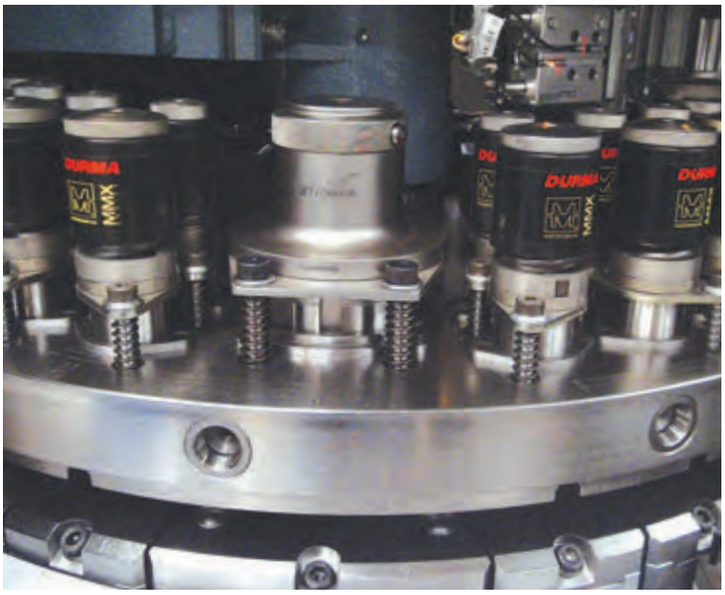
- *Small, medium and large format sheet processing*
- *Punching,forming,tapping, and wheel technology capabilities*
- *Stress relieved O frame*
- *Flexible turret configurations to elimimate tool setups*
- *Auto lubrication of moving parts*
- *Rigid guides*
- *One of the best controller with functionality & 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.*

FEATURES

Precise and High Speed Turret

The punching head stroke rates of 1200 strokes per minute during punching and 1800 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
96 m/min in X axis
80 m/min in Y axis
124 m/min simultaneously
High acceleration (1g) is possible across the whole working range without any restriction.

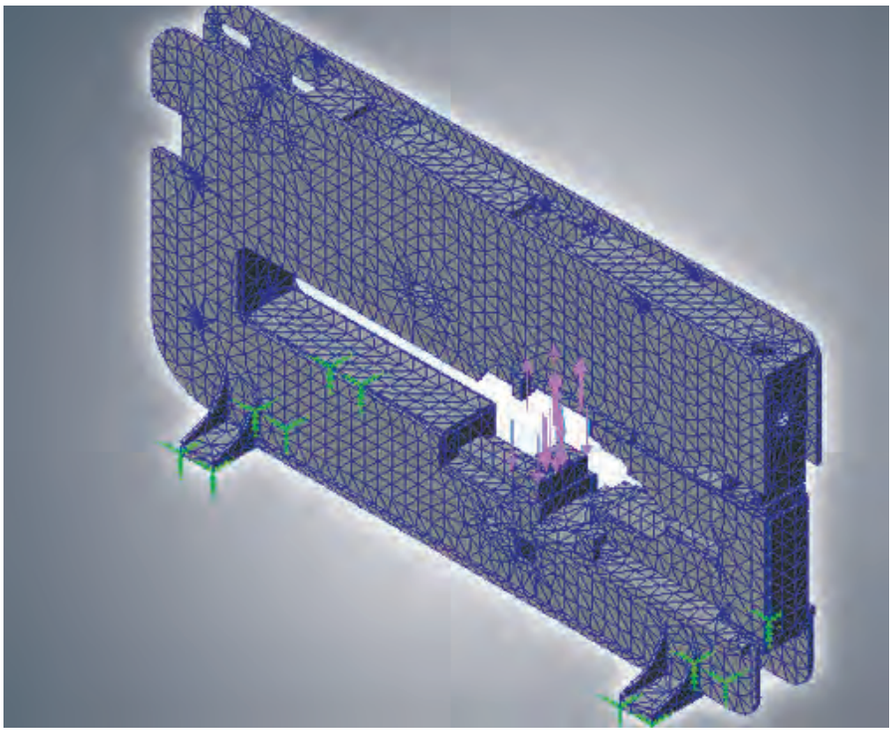


Intelligent Hydraulics

Advanced ram positioning control by closed loop hydraulic Hartmann Lammle, table axis drive by Siemens servo motors acquire ± 0,1 mm positioning accuracy and ± 0,5 mm repeatable accuracy. Accurate index incremental (0,01°) is provided by very precision bevel gears. Upper and lower angular synchronization is acquired by backlash free 2 servo motor & 2 reducers.

High Quality Forming

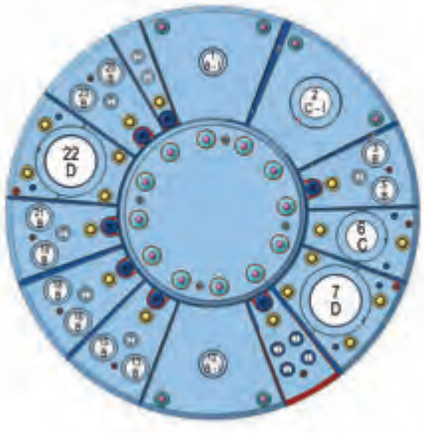
Variable dwell time at bottom of stroke provides high quality, forming, often eliminating secondary processing Electronic adjustment simplifies setup of progressive forms, flanges, and embossments.
With roller technology are possible not only on straight geometries but also on curved and round areas. This method is of particular interest for sectors such as air conditioning technology. (Wheel tools, tapping tools)
High speed marking

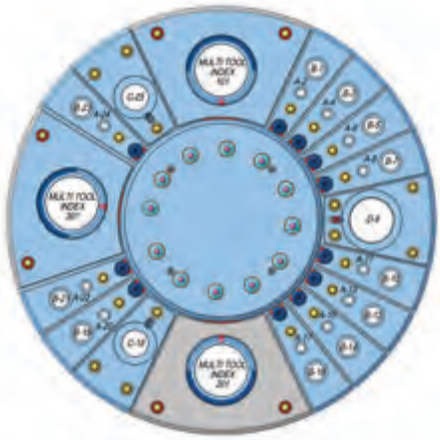


Robust Body Frame

Portal (O) type body frame consists of two fully enclosed box fabrications. Finite element analysis on high performance computers was used to simulate the design and thoroughly minimize openings, twist, deflection and shift of the frame. Body frame is also treated by high load and stress relieve during and after the welding.
The result is rigid frame that keeps vibration to minimum, allowing greater precision in punching, while substantially reducing tool wears and lowering noise levels.
The body is robust and very strong, consists of two different parts. Because of its special design, the turret and tools are not affected from punching force even at maximum tonnage. No deflection occurs on the turret and tools, so the tool life become longer.

Turret





Station	Sizes	TP6-9	TP93-123
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

Reposition

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

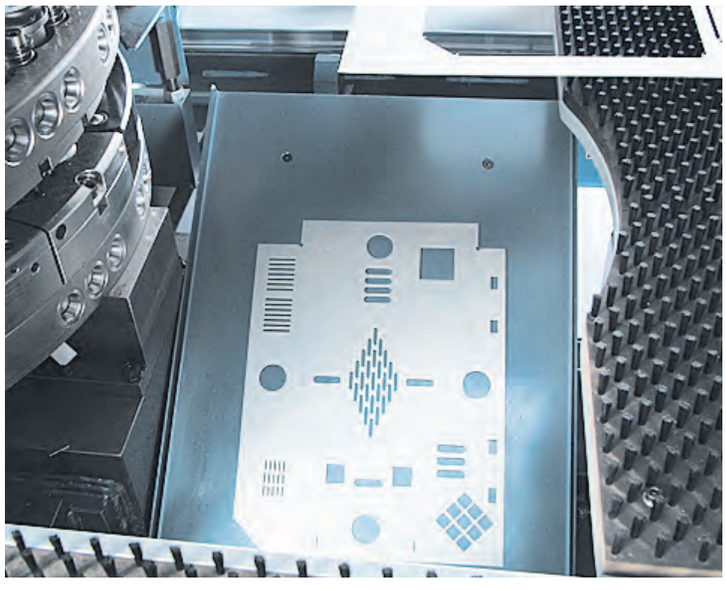
3 Auto Index Stations

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 Bosch - Rexroth. 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.



Workchute

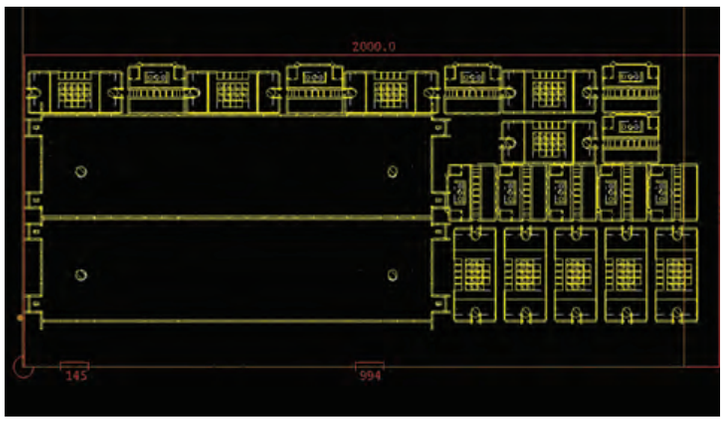
To evacuate parts during punching also with sorting and stacking capacity.

The parts chute, small parts up to 400 x 600 mm can be ejected directly into a parts container. An optional conveyor system.(TP6, TP9 standard, rest optional)

Motion and Table

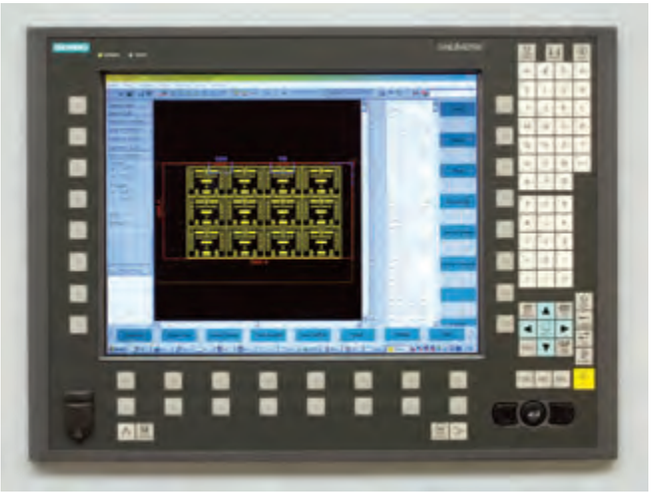
A new design of X and Y axis, direct drive technology is used. This will increase the performance and eliminates any loses from belts, gears or any transmission systems.

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 or LanTek. 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 Series	Birim	TP6	TP9	TP63	TP93	TP123	TPL63	TPL93
Maximum tonnage	ton	30	20	30	20	20	30	20
Frame type	-	O Gövde	O frame	O frame	O frame	O frame	O frame	O frame
X axis movement	mm	2000 + R	2000 + R	2500 + R	2500 + R	2500 + R	3000 + R	3000 + R
Y axis movement with single tool	mm	1250	1250	1250	1250	1250	1500	1500
Automatic Repositioning range *	mm	10000*	10000	10000	10000	10000	10000	10000
Speed of Y axis	m/min	70	70	75	75	80	60	60
Speed of X axis	m/min	90	90	100	100	116	70	70
Lateral speed Y + X	m/min	114	114	125	125	140	92	92
Max. Hit rate (1 mm pitch, 1mm thickness)	1/min	600	900	600	900	1200	600	900
Max. Hit rate (25 mm pitch, 1mm thickness)	1/min	300	350	300	350	400	250	300
Max. Hit rate : Marking	1/min	900	1200	900	1200	1800	900	1200
Main cylinder stroke	mm	40	40	40	40	40	40	40
Maximum punching stroke	mm	25	25	25	25	25	25	25
Max. cutting thickness (Fixed Station)	Mild Steel	6	6	6	6	6	6	6
	Stainless Steel	3	3	3	3	3	3	3
Max. cutting thickness (Index Station)	Mild Steel	3	3	3	3	3	3	3
	Stainless Steel	1.5	1.5	1.5	1.5	1.5	1.5	1.5

Taret (kalıp ve tutucu hariç)	Birim	TP6	TP9	TP63	TP93	TP123	TPL63	TPL93
A - fix 0.8 -12.7 mm		11	11	11	11	11	11	11
B - fix 12.8 - 31.7 mm		10	10	11	11	11	11	11
C - fix 31.8 - 50.8 mm		1	1	2	2	2	2	2
D - fix 50.9 - 88.9 mm		2	2	1	1	1	1	1
B - indeks 12.8 - 31.7 mm		2	2	-	-	-	-	-
C- indeks 31.8- 50.8 mm		1	1	-	-	-	-	-
D- indeks 50.9 mm to 88.9 mm		-	-	3	3	3	3	3

TP Serisi	Birim	TP6	TP9	TP63	TP93	TP123	TPL63	TPL93
Positioning accuracy	mm	± 0.1	± 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	± 0.05
Turret rotation speed	rpm	30	30	22	22	22	22	22
Auto index rotational speed	rpm	150	150	150	150	150	150	150
Max. weight of sheet	kg	100	100	120	120	120	200	200
Hard disk	Gbyte	40	40	40	40	40	40	40
RAM	Mb SDRAM	512	512	512	512	512	512	512
Network system	-	Windows XP	Windows XP	Windows XP	Windows XP	Windows XP	Windows XP	Windows XP
LCD colorscreen Super VGA	-	15"	15"	15"	15"	15"	15"	15"
USB	-	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Ethernet	-	10/100	10/100	10/100	10/100	10/100	10/100	10/100
Machine dimension								
Height (H)	mm	2310	2310	2310	2310	2310	2310	2310
Width (without light barrier) (W)	mm	4200	4200	5360	5360	5360	6300	6300
Width (with light barrier)	mm	6200	6200	7360	7360	7360	8300	8300
Length (without light barrier) (L)	mm	5600	5600	5750	5750	5750	6650	6650
Length (with light barrier)	mm	6600	6600	6800	6800	6800	7650	7650
Table height	mm	940	940	940	940	940	940	940
Weight approx.	kg	11000	11000	12960	12960	12960	19500	19500
Motor	kw	11	7.5	11	7.5	15	11	7.5
Oil tank	lt	180	180	180	180	240	180	180
Air pressure	bar	6	6	6	6	6	6	6
Number of Clamps	pcs.	2	2	3	3	3	4	4
Holding force of clamps	-	Standard	Standard	Standard	Standard	Standard	Standard	Standard
Table type	kg	1000	1000	1000	1000	1000	1000	1000
	-	Fırçalı	Fırçalı	Fırçalı	Fırçalı	Fırçalı	Fırçalı	Fırçalı

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

TP

STANDARD EQUIPMENTS

- Command pedal
- CAD-CAM software & Activator
- Control unit, Siemens Sinumerik 840 D SL Windows XP 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
- Web cam for service
- Reposition on X axis
- Alignment Tools for Index Stations (C+B Station) - (for TP6, TP9)
- Alignment Tools for Index Stations (D Station) - (for TP63, TP93, TPL93, TP123)
- Manual nesting

OPTIONAL EQUIPMENTS

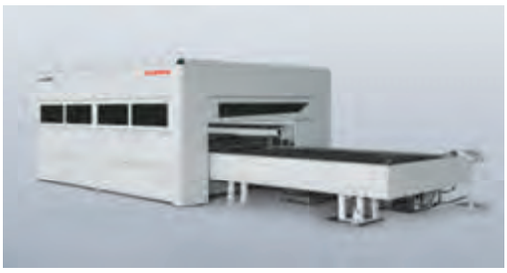
- Light barriers for CE
- Additional clamps
- Table (brush&ball)
- Tools, Tool holders, reducers
- CAD-CAM SW Second activator (dongle)
- SW for Autonesting, Wheel and Tapping tools
- Warning lamp
- Sheet deformation alert switch
- Turret cover for perforated sheets
- Vacuum slug remover
- Workchute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

Durma Laser Cutting Machines

A modular product family of state-of-the-art flying optics laser cutting machines where the cutting head moves accurately and with high dynamics over the work piece. There are solutions for different sheet sizes, with optimal laser technologies for every range of materials and thicknesses, and all are driven by high performance and maintenance free rack and pinion or linear motor motion systems.

HD Series

The HD series of CO2 laser machines allow high-quality cutting of both thin and thick material sections and offers top performances at minimal running costs.



HD-F Series

Machine with fiber laser source which offer very high quality cutting and performance on a wide variety of material types with low energy consumption.

Configuration	3015				
	Fiber			CO_2	
	Rack & Pinion		Linear	Rack & Pinion	Linear
	HDF Smart	HDF 3015	HDFL 3015	HD 3015	HDL 3015
1kW	x	o	-	-	-
2kW	o	x	x	-	-
2.5kW	-	-	-	o	o
3kW	o	o	o	-	-
3.5kW	-	-	-	x	x
4kW	o	o	o	-	-
4.5kW	-	-	-	o	o
Conveyors	o	o	o	o	o
Shuttle table	-	x	x	x	x
Auto-focus head	o	x	x	x	x
Tube cutting	o	o	o	o	o
CELL	-	o	o	o	o

Configuration	4020				6020		8020	
	CO_2		Fiber		Fiber		Fiber	
	Rack & Pinion	Linear	Rack & Pinion	Linear	Rack & Pinion	Linear	Rack & Pinion	Linear
	HD 4020	HDL 4020	HDF 4020	HDFL 4020	HDF 6020	HDFL 6020	HDF 8020	HDFL 8020
1kW	-	-	o	-	o	-	o	-
2kW	-	-	x	x	x	x	x	x
2.5kW	o	o	-	-	-	-	-	-
3kW	-	-	o	o	o	o	o	o
3.5kW	x	x	-	-	-	-	-	-
4kW	-	-	o	o	o	o	o	o
4.5kW	o	o	-	-	-	-	-	-
Conveyors	o	o	o	o	o	o	o	o
Shuttle table	x	x	x	x	x	x	x	x
Auto-focus head	x	x	x	x	x	x	x	x
Tube cutting	-	-	-	-	-	-	-	-
CELL	o	o	o	o	-	-	-	-

(x) Standard (o) Optional (-) Not Available

CO2 LASER TECHNOLOGY

The diffusion cooled laser source provides a high beam quality at laser powers up to 4kW with a minimal running cost compared with other CO2 laser technologies. The laser is immediately ready for use when powering on the machine and consumes no energy when it is in stand-by.

Maintenance

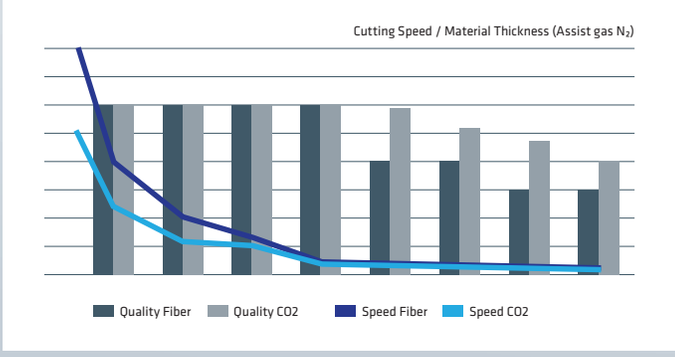
There are no major parts in the laser that are subject to mechanical wear, there is no electrode erosion inside the vacuum chamber that could contaminate internal optics and there is an absence of brittle glass tubes to contain the laser medium. These unique features allow an extremely low routine maintenance: both in part cost and in down-time.

Laser gas

Since the electrodes that provide the power to the electrical discharge in the laser medium are not in contact with the laser gas, the gas does not get contaminated and allows the laser to operate three days without the need of refreshing it.

Beam Delivery System

The laser beam propagates through a completely closed beam delivery system over-pressurized by clean, dry air.
The laser beam preserves its excellent quality and has constant characteristics all over the working area.



FIBER LASER TECHNOLOGY

The laser power source of the HDF series is an all-solid-state fiber laser. This technology reduces further the maintenance requirements, and offers the lowest possible running cost with a wall-plug efficiency of 30% and without the need of any laser gas. When the application requires a broader spectrum of material types to be cut and the maximum thickness range is limited, the fiber laser is the ideal solution: it will cut faster at lower cost than any CO2 laser at the same laser power.

Maintenance

Fiber lasers are all solid state and have no mechanical parts that could suffer from wear or need adjustment. The laser source is therefore truly maintenance free and has an expected life time of > 100,000h.

Laser gas

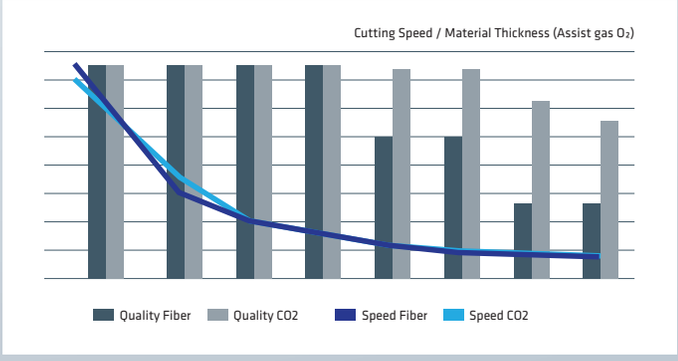
Where CO2 lasers are excited by an electrical discharge in a laser gas medium, fiber lasers are powered by diode lasers and require no gas for their operation.

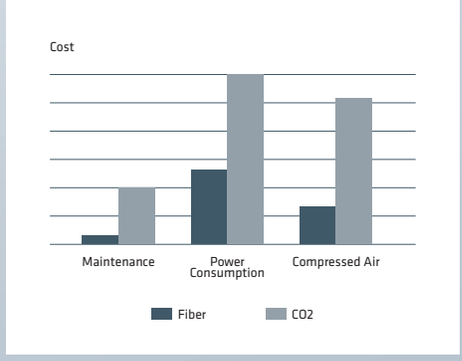
Beam Delivery System

The fiber laser light is brought from the laser source to the cutting head by a flexible glass fiber. There are no mirrors in the beam delivery that require maintenance and adjustment. The light does not travel through air, making a flushing or over-pressurizing with clean air unnecessary.

Reduced power consumption

Not only will fiber lasers cut faster than CO2 lasers with a similar output power, their wall-plug efficiency of 30% is more than double. There is no stand-by electrical consumption and also the cooling requirements are only a fraction of the ones for a CO2 laser.





GENERAL FEATURES

Rigid Frame & Gantry

The foundation basis of all Durma laser machines is a rigid stress-relieved welded steel frame construction upon which a stiff gantry axis system moves the cutting head. The design guarantees accurate parts even when cutting with the fastest speeds and under the highest accelerations.

Shuttle Table

Integrated shuttle tables are incorporated on the laser machine to maximize the productivity and minimize the material handling times. The shuttle table and pallet change system allows convenient loading of new sheets or unloading of finished parts while the machine is cutting another sheet inside the working area .

The available shuttle tables on all machine models are fully electric and maintenance free: there are no hydraulic oils to handle and the table changes take place fast, smooth and energy-efficient.

Scrap conveyor

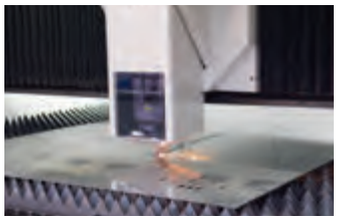
The optional lateral automatic scrap conveyors allow the removal of scrap pieces from the working area without the need to interrupt the cutting process. The sideways operation of the short conveyors allow for easy maintenance and trouble-free running.

Control Unit

Durma laser machines achieve the highest dynamics and the fastest laser processing cycle times thanks to the combination of rigid mechanics and a state-of-the-art numerical control and drive system.

The graphical user interface ensures an easy operation of the machine and the on-board libraries of reference cutting parameters for various materials and thicknesses allow the operator to achieve optimal cutting results in a minimum amount of time.

Programs can be loaded easily into the machine with a USB stick or over a fast Ethernet connection with the company network.

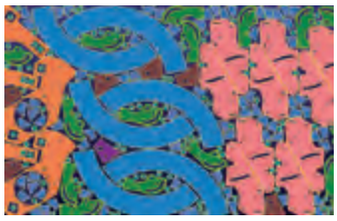


Cutting Head

İn the high-pressure auto-focus cutting head for fiber lasers the cutting lens is shielded from the laser process by an exchangeable low-cost protection window. The 1µm wavelength light of fiber lasers is very sensitive to dust or other contamination produced in the cutting or piercing process, therefore the cutting head is being well protected in an additional cover to ensure that all critical parts remain as clean as possible . The integrated capacitive distance sensor is capable of having the head follow height differences in the sheet even at the extreme high cutting speeds that can be achieved with the fiber laser technology.

Linear motors

State-of-the-art linear motors narrow down further the accuracy of the machine and offer higher dynamics than the rack and pinion system. When the application demands high precision and/or require many positioning movements between complex shaped features, the linear motors will reduce the dead times in the process and increase the productivity.



CAD/CAM Software

The CAD/CAM software provided with the machine has all the tools to import or draw parts, prepare and optimize automatically the different geometries for the laser cutting process and make efficient nests.

NEW GENERATION

HDF SMART 3015

When the requirement is to laser cut with high performance and precision in thin materials, but the automation of the process is not a must, the HDF SMART is our proposal: a straight-forward and entry-level but true fiber laser cutting machine. The work preparations are done manual, but once the HDF SMART is in operation, it works with the same accuracy and quality as the bigger brothers in the laser product family.

Technologies - Laser sources	0.5kW	1kW	2kW
Wavelength	1070...1080 nm	1070...1080 nm	1070...1080 nm
Power output range	0.05...0.5 kW	0.1...1 kW	0.2...2 kW
Polarization	Random	Random	Random
Max. pulse frequency	5 kHz	5 kHz	5 kHz
Gas consumption	-	-	-
Max. power consumption	2 kW	4 kW	8 kW

Application range	0.5kW	1kW	2kW
Mild steel max. thickness	4 mm	8 mm	15 mm
Stainless steel max. thickness	1.5 mm	3 mm	6 mm
Aluminum max. thickness	1.5 mm	2.5 mm	5 mm
Copper max. thickness	1.5 mm	2.5 mm	5 mm
Brass max. thickness	1.5 mm	3 mm	6 mm

Economic Fast Easy to use

HDF SMART 3015 TECHNICAL DATA

Dimensions

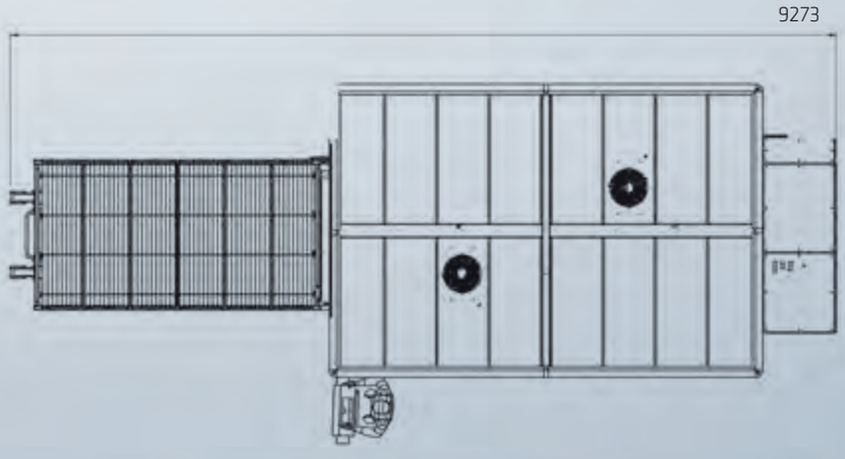
Lay-out area	9700 mm x 5700 mm
Machine height	2420 mm
Machine width	4050 mm
Machine length	9150 mm
Machine weight	9000 kg

Working range

X-axis	3060 mm
Y-axis	1550 mm
Z-axis	200 mm
Max. sheet size	3000 mm x 1500 mm
Max. sheet weight	500 kg

Dynamics

Max. speed X-axis	90 m/min
Max. speed Y-axis	120 m/min
Max. speed simultaneous	150 m/min
Max. acceleration X-axis	10 m/s^2
Max. acceleration Y-axis	10 m/s^2
Max. acceleration simultaneous	14 m/s^2
Positional accuracy	0.05 mm
Repeatability	0.05 mm



NEW GENERATION

FIBER LASER HDF / HDFL 3015

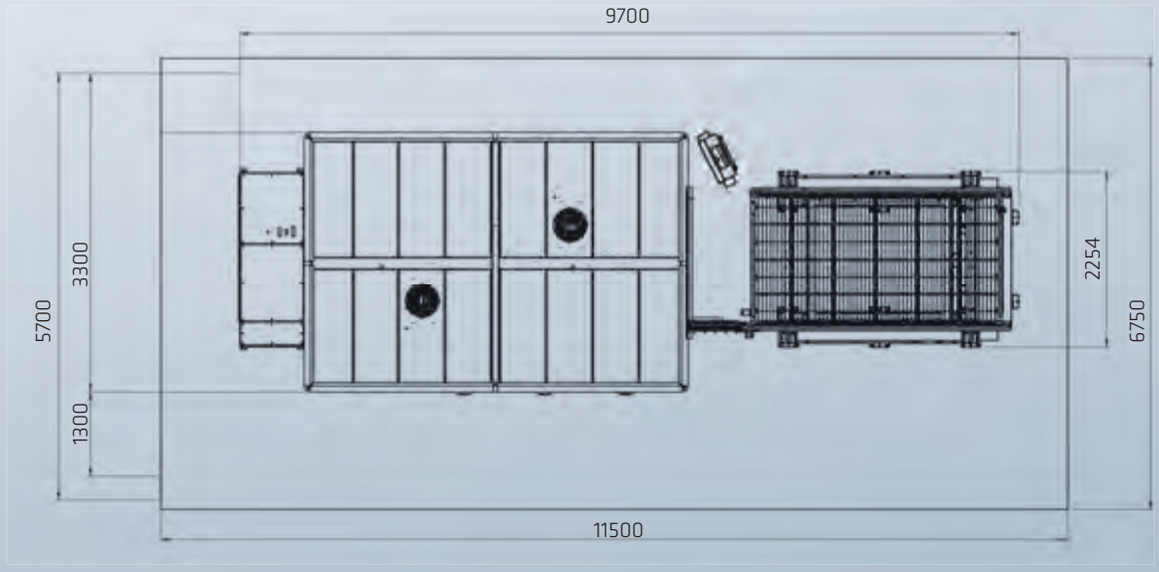
The laser power source of the HDF series is an all-solid-state fiber laser. This technology reduces further the maintenance requirements, and offers the lowest possible running cost with a wall-plug efficiency of 30% and without the need of any laser gas. When the application requires a broader spectrum of material types to be cut and the maximum thickness range is limited, the fiber laser is the ideal solution: it will cut faster at lower cost than any CO2 laser at the same laser power.

Type	HDF	HDF / HDFL		
Technologies - Laser sources	**1kW**	**2kW**	**3kW**	**4kW**
Wavelength	1070...1080 nm	1070...1080 nm	1070...1080 nm	1070...1080 nm
Power output range	0.1...1 kW	0.2...2 kW	0.3...3 kW	0.4...4 kW
Polarization	Random	Random	Random	Random
Max. pulse frequency	5 kHz	5 kHz	5 kHz	5 kHz
Gas consumption	-	-	-	-
Max. power consumption	4 kW	8 kW	12 kW	16 kW
Application range				
Mild steel max. thickness	6 mm	15 mm	20 mm	25 mm
Stainless steel max. thickness	3 mm	6 mm	10 mm	12 mm
Aluminum max. thickness	2.5 mm	5 mm	8 mm	10 mm
Copper max. thickness	2.5 mm	5 mm	8 mm	10 mm
Brass max. thickness	3 mm	6 mm	8 mm	10 mm

Economic Fast Easy to use

HDF / HDFL 3015 TECHNICAL DATA

Dimensions	HDF	HDFL
Lay-out area	9700 mm x 5700 mm	9700 mm x 5700 mm
Machine height	2420 mm	2420 mm
Machine width	4050 mm	4050 mm
Machine length	10150 mm	10150 mm
Machine weight	12000 kg	12000 kg
Working range		
X-axis	3060 mm	3060 mm
Y-axis	1550 mm	1550 mm
Z-axis	200 mm	200 mm
Max. sheet size	3000 mm x 1500 mm	3000 mm x 1500 mm
Max. sheet weight	1000 kg	1000 kg
Dynamics		
Max. speed X-axis	90 m/min	200 m/min
Max. speed Y-axis	120 m/min	200 m/min
Max. speed simultaneous	150 m/min	280 m/min
Max. acceleration X-axis	10 m/s^2	20 m/s^2
Max. acceleration Y-axis	10 m/s^2	20 m/s^2
Max. acceleration simultaneous	14 m/s^2	28 m/s^2
Positional accuracy	0.05 mm	0.02 mm
Repeatability	0.05 mm	0.02 mm



NEW GENERATION

FIBER LASER HDF / HDFL 6020

The laser power source of the HDF series is an all-solid-state fiber laser. This technology reduces further the maintenance requirements, and offers the lowest possible running cost with a wall-plug efficiency of 30% and without the need of any laser gas. When the application requires a broader spectrum of material types to be cut and the maximum thickness range is limited, the fiber laser is the ideal solution: it will cut faster at lower cost than any CO2 laser at the same laser power.

Type	HDF / HDFL		
Technologies - Laser sources	**2kW**	**3kW**	**4kW**
Wavelength	1070...1080 nm	1070...1080 nm	1070...1080 nm
Power output range	0.2...2 kW	0.3...3 kW	0.4...4 kW
Polarization	Random	Random	Random
Max. pulse frequency	5 kHz	5 kHz	5 kHz
Gas consumption	-	-	-
Max. power consumption	8 kW	12 kW	16 kW
Application range			
Mild steel max. thickness	15 mm	20 mm	25 mm
Stainless steel max. thickness	6 mm	10 mm	12 mm
Aluminum max. thickness	5 mm	8 mm	10 mm
Copper max. thickness	5 mm	8 mm	10 mm
Brass max. thickness	6 mm	8 mm	10 mm

Dimensions	HDF	HDFL
Lay-out area	18600 mm x 7500 mm	18600 mm x 7500 mm
Machine height	2530 mm	2530 mm
Machine width	4800 mm	4800 mm
Machine length	17250 mm	17250 mm
Machine weight	26500 kg	26500 kg
Working range		
X-axis	6150 mm	6150 mm
Y-axis	2100 mm	2100 mm
Z-axis	200 mm	200 mm
Max. sheet size	6000 mm x 2000 mm	6000 mm x 2000 mm
Max. sheet weight	2500 kg	2500 kg
Dynamics		
Max. speed X-axis	90 m/min	200 m/min
Max. speed Y-axis	120 m/min	200 m/min
Max. speed simultaneous	150 m/min	280 m/min
Max. acceleration X-axis	10 m/s^2	20 m/s^2
Max. acceleration Y-axis	10 m/s^2	20 m/s^2
Max. acceleration simultaneous	14 m/s^2	28 m/s^2
Positional accuracy	0.05 mm	0.02 mm
Repeatability	0.05 mm	0.02 mm

NEW GENERATION CELL

The Durma Laser CELL for automatic loading and unloading of sheets is probably the most compact solution in the industry, offering a maximum of flexibility on a minimum of required floor-space.

Economic Fast Easy to use

Two different lay-outs are possible and the system can be adapted for integration to automatic storages.

The CELL is a full-functional system expansion of the laser cutting machine: work queues of several sheets are activated by pressing one single button and there is no separate control panel for the loading/unloading unit.

When the productivity of a laser machine needs to be increased or when the material handling and flow in a factory needs to be optimized, the Durma Laser CELL will be the most efficient and most economic solution.

CELL TECHNICAL DATA

Dimensions

Lay-out area	12000 mm x 7500 mm
Machine height	6340 mm
Machine width	4030 mm
Machine length	3500 mm
Machine weight	8000 kg

Working range

Max. sheet dimension	3048 mm
Min. sheet dimension	1534 mm
Max. sheet thickness	25 mm
Min. sheet thickness	0.5 mm
Max. sheet weight	1000 kg
Max. height on unloading table (incl. pallet)	300 mm
Max. weight on unloading table	3000 kg
Max. height on loading table (incl. pallet)	300 mm
Max. weight on loading table	3000 kg

NEW GENERATION

CO2 LASER HD / HDL 3015

The diffusion cooled laser source provides a high beam quality at laser powers up to 4kW with a minimal running cost compared with other CO2 laser technologies. The laser is immediately ready for use when powering on the machine and consumes no energy when it is in stand-by.

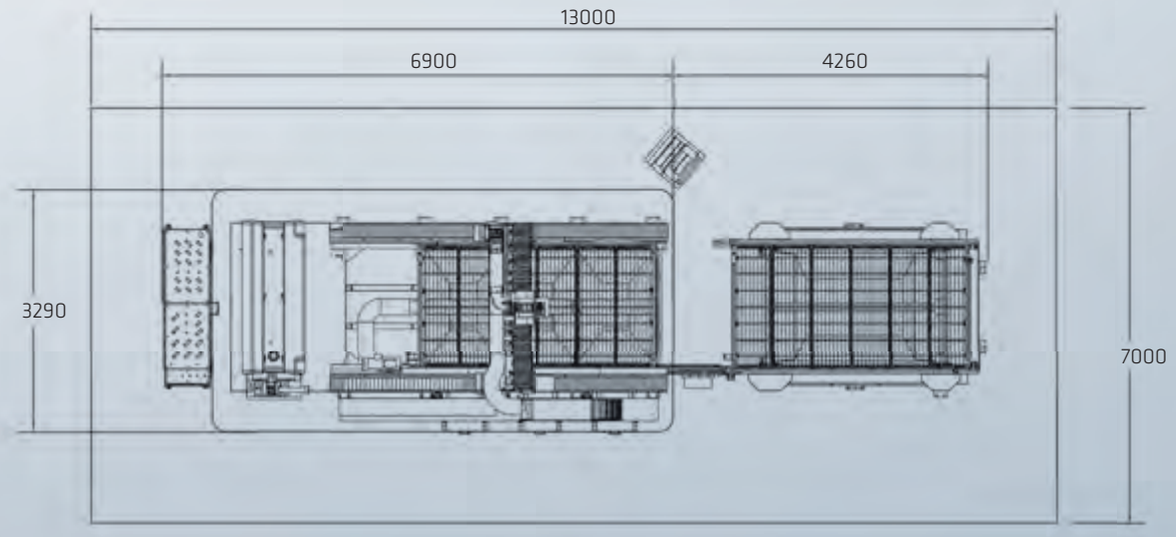
Technologies - Laser sources	2.5kW	3.5kW	4.5kW
Wavelength	10.6 µm	10.6 µm	10.6 µm
Power output range	0.25...2.5 kW	0.35...3.5 kW	0.45...4.5 kW
Polarization	Linear	Linear	Linear
Max. pulse frequency	5 kHz	5 kHz	5 kHz
Gas consumption	0.4 Nl/h	0.4 Nl/h	0.4 Nl/h

Application range			
Mild steel max. thickness	12 mm	20 mm	25 mm
Stainless steel max. thickness	5 mm	10 mm	12 mm
Aluminum max. thickness	4 mm	8 mm	10 mm

Economic Fast Easy to use

HD / HDL 3015 TECHNICAL DATA

Dimensions	HD	HDL
Lay-out area	13000 mm x 7000 mm	13000 mm x 7000 mm
Machine height	2420 mm	2420 mm
Machine width	4050 mm	4050 mm
Machine length	11500 mm	11500 mm
Machine weight	13000 kg	13000 kg
Working range		
X-axis	3060 mm	3060 mm
Y-axis	1550 mm	1550 mm
Z-axis	200 mm	200 mm
Max. sheet size	3000 mm x 1500 mm	3000 mm x 1500 mm
Max. sheet weight	1000 kg	1000 kg
Dynamics		
Max. speed X-axis	90 m/min	200 m/min
Max. speed Y-axis	120 m/min	200 m/min
Max. speed simultaneous	150 m/min	280 m/min
Max. acceleration X-axis	10 m/s^2	20 m/s^2
Max. acceleration Y-axis	10 m/s^2	20 m/s^2
Max. acceleration simultaneous	14 m/s^2	28 m/s^2
Positional accuracy	0.05 mm	0.02 mm
Repeatability	0.05 mm	0.02 mm



Laser Cutting Samples

Correct dimension

Quality Cutting

Clean Cutting

Fast Cutting

Versatile Cutting

Reilable Cutting

DURMA PLASMA CUTTING MACHINES

Plasma machines offer quality, efficiency, lower cutting cost and wide range of cutting of mild steel, stainless steel and aluminium.

High performance machines provide the best cutting angles and long consumable life for the customer's needs by using the world class plasma equipments and control systems.

PL Series

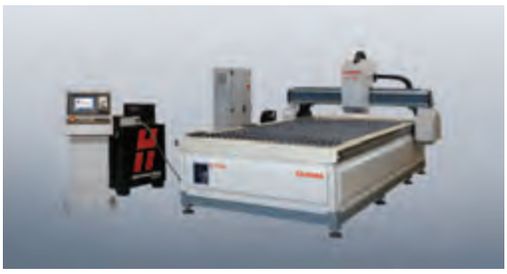
Rail Type Plasma Cutting Machine

High Definition Cutting for Heavy Duty Productivity

PL-C Series

Compact Plasma Cutting Machine

High Definition, Flexible, Small Footprint Cutting Solution



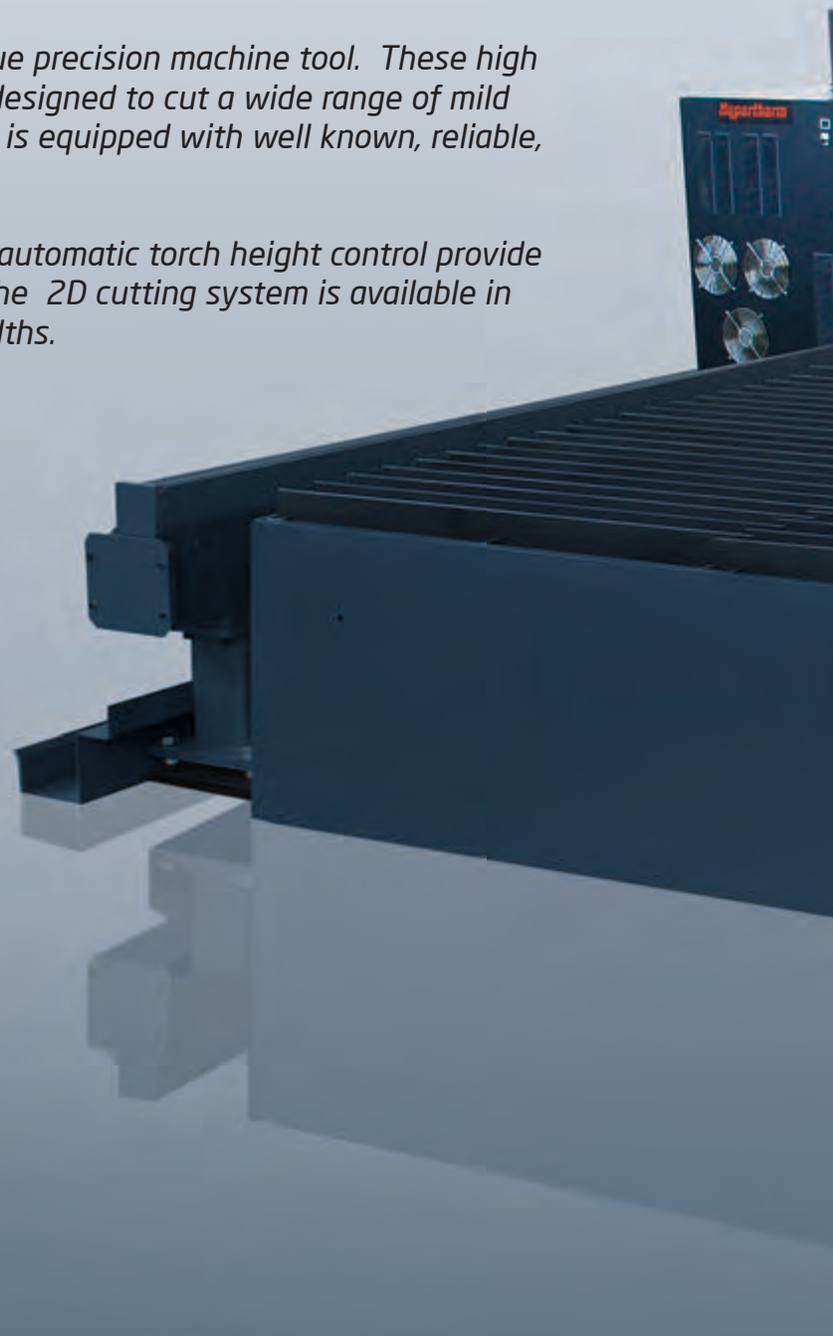
PL SERIES

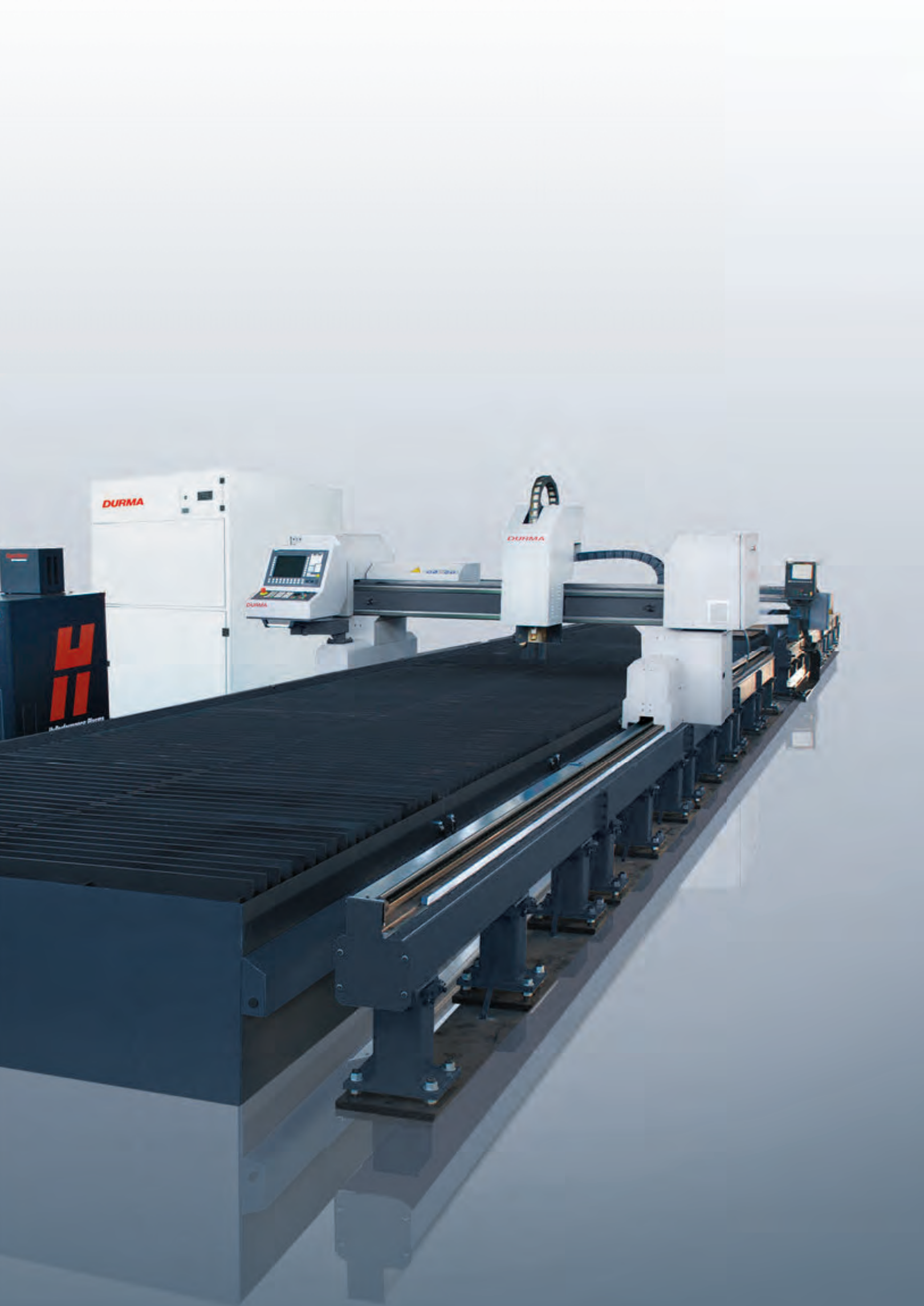
Durma uses only the best in components which include a Siemens motion control system and a Hypertherm supply source. A strong effort has been made to provide the following;

- *Best cut angle*
- *Best edge quality*
- *Precise & fast positioning*
- *Long consumable life*
- *Easy programming*
- *Easy setup*
- *Reliability*
- *Energy efficient*
- *Clean operation*

The PL Series is built manufactured as a true precision machine tool. These high performance plasma cutting machines are designed to cut a wide range of mild steel, stainless steel and aluminum. The PL is equipped with well known, reliable, and readily available components.

High positioning speeds, accelerations and automatic torch height control provide the best in high quality efficient cutting. The 2D cutting system is available in standard as well as custom lengths and widths.




DURMA
DURMA
DURMA

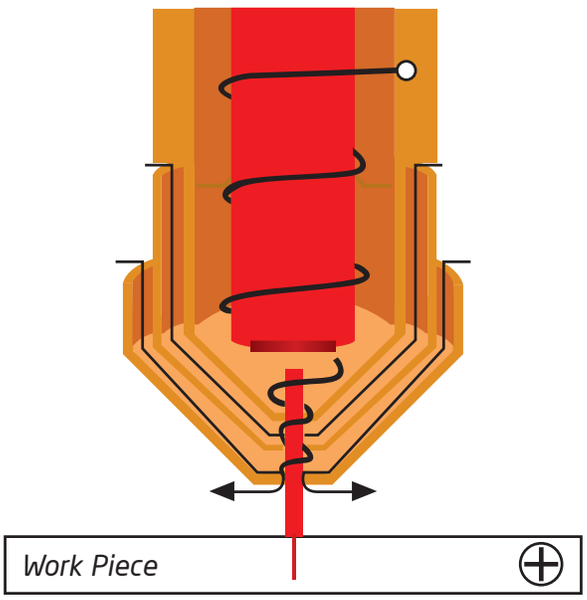
PL-C SERIES

- *The PL-C (compact) Series unitized frame concept, and the PL series which utilizes system where the table is independent of the two guide rails which are floor mounted.*

- *Dual precision rack/pinion guiding for both the Y1, Y2 axis and the gantry (X axis), which houses the cutting torch. The heavy duty machine frame is welded and stress relieved. A synchronized dual side backlash free drive system with high accuracy planetary gears provides for high quality and accurate cutting. The tables are partitioned and zoned for efficient removal of dust. Manual and programmable beveling and oxyfuel cutting heads are several optional features that are available.*

Plasma Source

HPR XD Series is used as the plasma source. It is available in 130,260, and 400 amp capacities.
Manual or Automatic gas control consoles are available to assure the best cutting gas ratio is achieved.
For labeling and identification purposes, a marking feature is included.
The system is supplied with laser locating device. A laser beam is used to locate the x and y coordinates of the sheet. This allows the cutting axis to know exactly where it is with respect to the sheet. Faster setup and more accurate cutting.



Hydefinition Cutting

Patented HyDefinition technology aligns and focuses the plasma arc, improving arc stability and energy for more powerful precision cutting.
Narrow kerf width enables fine feature cutting and minimizes material waste.
Robust, dross-free cutting minimizes part clean-up.
Repeatable cut-edge quality eliminates scrap and rework. Improved hole and internal shape cuts rival laser quality at lower cost.

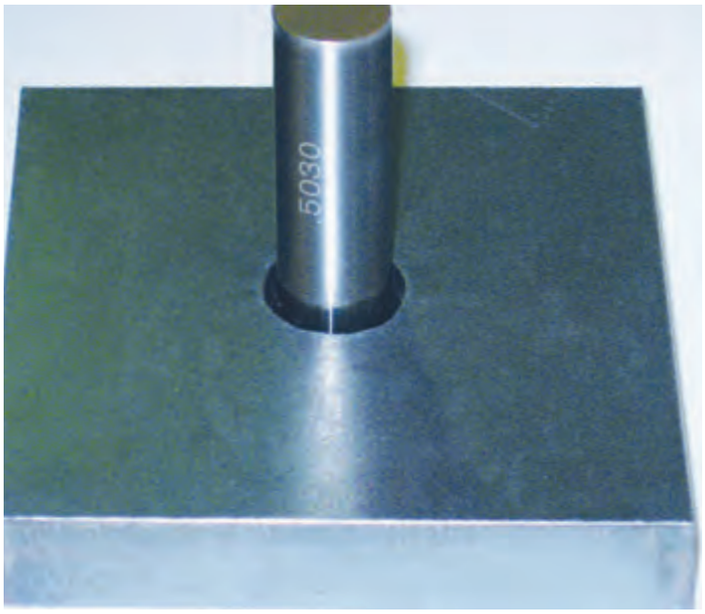
Torch Height Control

Hypertherm's X-Y ARG GLIDE THC is a torch height control system designed for plasma cutting applications on an X-Y cutting table. The system uses the plasma arc voltage to control the physical stand-off (distance) between the torch and workpiece during plasma arc cutting. Initial height sensing (IHS) is accomplished by ohmic contact sensing or by a limited force stall detection method.

Also the used equipment called Breakaway protects the plasma torch against crashing by sending an interrupt signal.

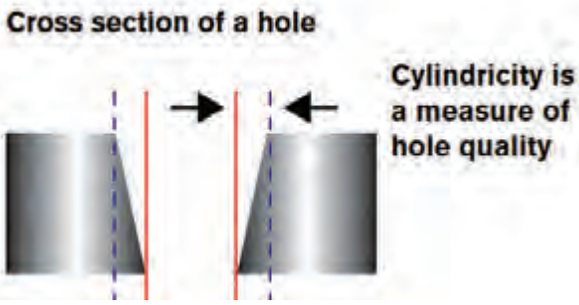
True Hole Technology

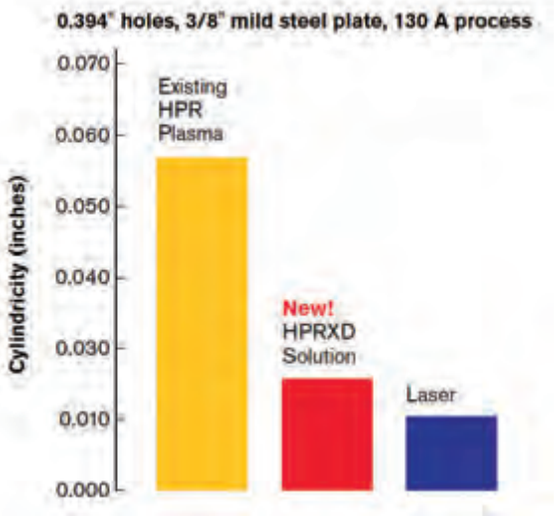
Hypertherm's patent-pending True Hole cutting technology for mild steel produces significantly better hole quality than what has been previously possible using plasma. This is delivered automatically without operator intervention, to produce unmatched hole quality that surpasses the competition.



1 2 hole without True Hole technology cut with HPRXD Plasma

1 2 hole with True Hole technology cut with HPRXD Plasma





Hypertherm's True Hole cutting technology for mild steel is exclusively available for use on Hypertherm's HPRXD auto gas plasma systems and is automatically applied by our cutting optimization and nesting software and CNC software to holes up to 1" with hole diameter to thickness ratios as low as 1:1.

True Hole technology is a specific combination of the following parameters that is linked to a given amperage, material type, material thickness and hole size:

- *Process gas type*
- *Gas flow*
- *Amperage*
- *Piercing methodology*
- *Lead in/out technique*
- *Cut speed*
- *Timing*

True Hole Technology requires a HyPerformance Plasma HPRXD auto gas system along with a True Hole enabled cutting table, nesting software, CNC, and torch height control.

CNC Control Unit

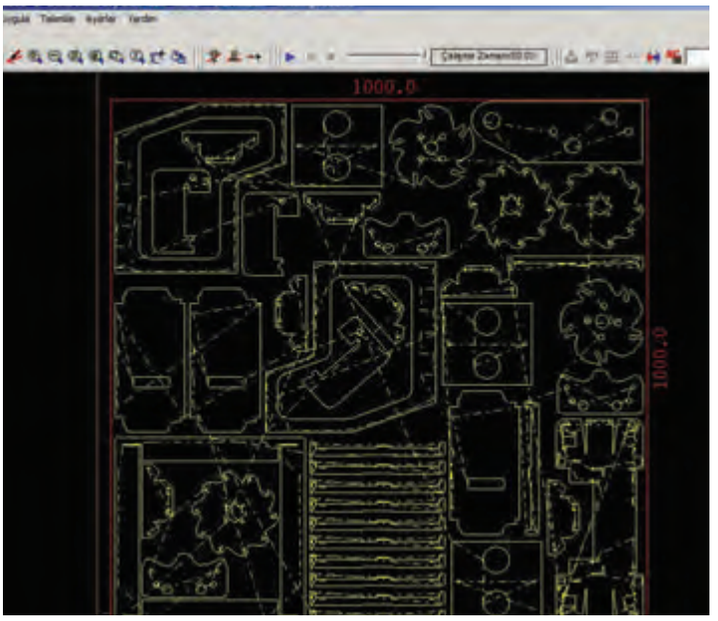
The SINUMERIK 840DisI is a fully PC-integrated numerical control system for up to 20 axes, interworking with the SINAMICS S120 drive system.

The control has open hardware and software functions and is ideally suited for users requiring distributed automation solutions with regard to PLC I/Os and drives and/or prefer a fully PC-integrated control system.

Durma has a own plasma software on Sinumerik controller. The operator can load the operation parameters to the power supply easily. Some simple shapes can be loaded from the included improvable library. The cutting operations is shown on the screen during cutting. Controller can be connected to the computer or a LAN via Ethernet connection point.

If the customers want, they control the plasma filter unit by pressing any button on the control panel or automatically when the cutting starts.

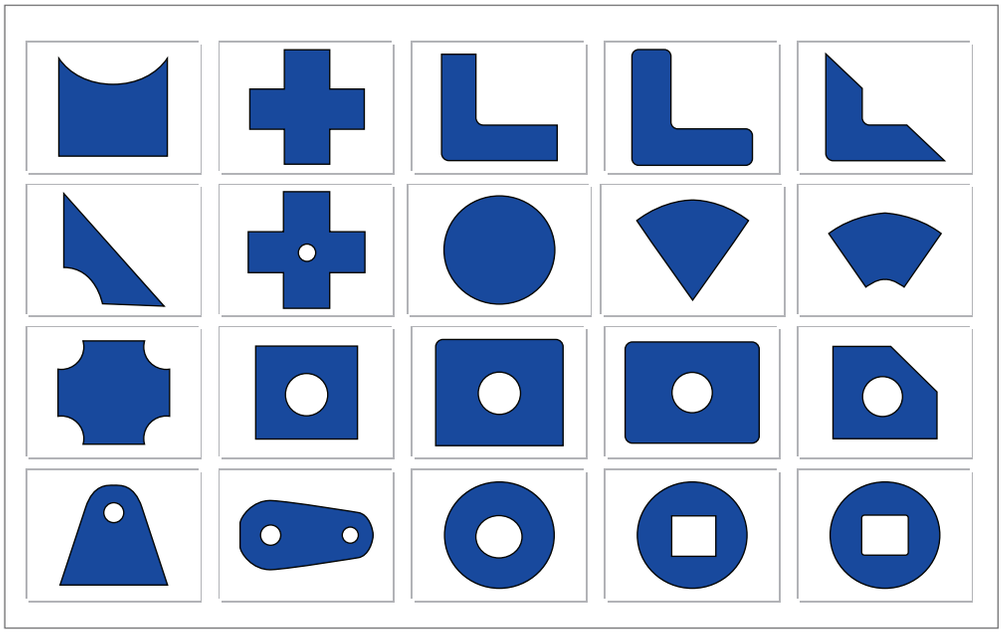
Machine searches the plate, finds the Operation Zero position and calculates the Plate Angle automatically.



CAD Cam Software

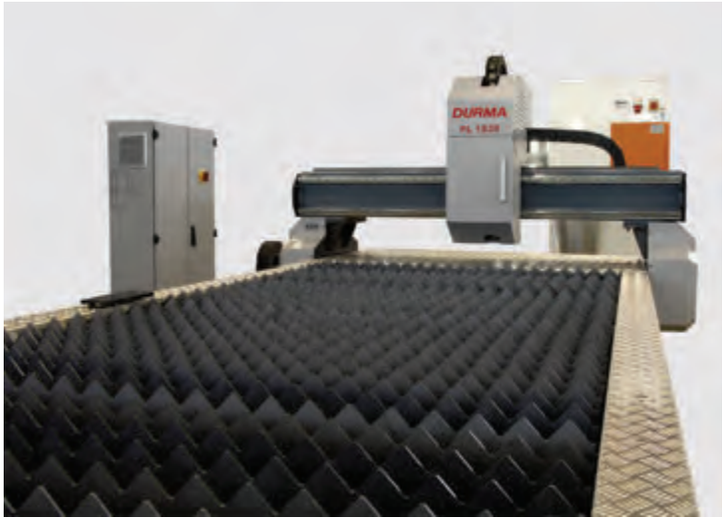
Metalix software is available for easy programming and drawing of parts. It also easily and quickly converts DXF and DWG files to machine language for cutting.

The automatic nesting feature looks at the multiple parts to be cut from the sheet, and then organizes them on the sheet in the most efficient way. Lower material costs.



Fume Extraction System

During the thermal cutting process, a large amount of harmful dust particles are created. This dust is harmful to personnel, the environment, and the machines. Therefore it is important to use a filtration system for optimum extraction of these particles and provide a clean air working environment.



Cutting Tables

All cutting tables are partitioned in to different zones. Each zone is equipped with electro pneumatic switch which are automatically controlled by the CNC when the torch is cutting in that zone. This enhances exhaust capabilities and reduces the size requirement of the filtration system.

OXY Cut

Oxy-fuel cutting heads are available to allow the cutting of thicker mild steel.

Air Dryer

Plasma technology uses air for cutting and/or shield gas. This air must be clean, dry, and oil free. In this case an air dryer must be used.

Longer Consumable Life

Patented LongLife technology significantly improves consumable life. Exceptional cutting speeds produce more finished parts per set of consumables. HyPerformance consumables are engineered for higher quality with lower cost.

Plasma Bevelling Head

Drilling Head

Plasma Cutting Machine with loading unloading system

PL & PL-C

STANDARD EQUIPMENTS

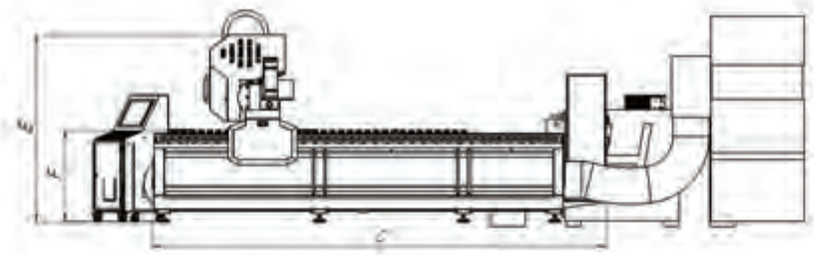
- Siemens 840 D-ISL CNC control Unit
- Solid & CNC machined steel frames
- Robust bridge
- CAD CAM Software with Auto nesting
- Cutting plate alignment function with Laser diode
- Plasma ignition consol
- Command Torch High Control (THC)
- Two side motion control system (low backlash reducers + rack / pinion)
- AC Digital Servomotors on axes
- Marking system
- CNC control outputs/inputs for filter unit
- Spare parts ,consumables starting kit
- High mechanical accuracy to +- 0,1 mm
- Axis positioning speed 35 m/min.
- Torch height control travel with ballscrew on dual linear guides
- Independent cutting tables
- Speed control device
- Table incl PL-C series
- Remote diagnostics via Ethernet
- Rack&Pinion with linear guide (PL-C Series)
- Thick slats on table
- Tables suitable for right suction
- Web cam for service

OPTIONAL EQUIPMENTS

- Table for PL series
- Hypertherm Plasma source
- Automatic gas consol
- Manuel gas consol
- Filter
- Plasma Torch brake away system
- Additional plasma torch (Plasma Torch, Torch High Control (THC), İgnition consol)
- Additional Oxy-fuel Torch (Oxy -fuel torch, Oxy torch high control, Oxy torch high sensor) (max. 2 oxy torch)
- Bridge preparation for additional torch (plazma or oxy)
- Manuel torch tilting system ± 45°
- CNC controlled torch tilting system ± 45°
- 3D Cutting & Rotator
- Safety light barrier
- Fault and Program end signal lamp
- Air dryer
- Arcglide THC Torch Height Control (instead of Command THC)
- Drilling Spindle
- Loading & Unloading systems
- Special applications
- Consumables

	A (mm.)	B (mm.)	C (mm.)	D (mm.)	E (mm.)	F (mm.)	G (mm.)	H (mm.)	WEIGHT (kg)
PL-C 1530	8200	4300	4650	2300	1920	938	3065	1580	5100
PL-C 2040	9950	4900	5650	2784	1928	931	4066	2068	5900
PL-C 2060	11700	4900	7650	2784	1928	931	6105	2068	7800
PL 20120	18250	6500	14200	4110	2200	700-750	12360	2100	12710
PL 2580	14250	7500	10200	5110	2200	700-750	8240	2600	10710
PL 25120	18250	7500	14200	5110	2200	700-750	12360	2600	14410
PL 3080	14250	7500	10200	5110	2200	700-750	8240	3100	11510
PL 30120	18250	7500	14200	5110	2200	700-750	12360	3100	15610
PL 30140	20250	7500	16200	5110	2200	700-750	14420	3100	17550
PL 40120	18250	8500	14200	6110	2200	700-750	12360	4200	21110

HPR Specifications	Unit	HPR130XD	HPR260XD	HPR400XD
Plasma power source		Hypertherm	Hypertherm	Hypertherm
Max High Quality Cutting capacity (MS) (edge start)	mm	38	64	80
Max High Quality Cutting capacity (MS) (pierce capacity)	mm	16	38	50
Maximum Positioning speed X / Y	m/min	35	35	35
Maximum Cutting speed	m/min.	12	12	12
Positioning accuracy	mm	+/-0.1	+/-0.1	+/-0.1
Repeatability	mm	0.1	0.1	0.1
Output current	A	130	260	400
Current regulation range	A	30-130	30-260	30-400
Gas console - automatic	-	O2,N2,H35, F5,Air	O2,N2,H35, F5,Air	O2,N2,H35, F5,Air
Cutting angle	degree	2 - 4	2 - 4	2 - 4
Plasma gas	-	O2,N2,H35, F5,Air	O2,N2,H35, F5,Air	O2,N2,H35, F5,Air
Plasma shield gas	-	O2,N2,Air, H35,	O2,N2,Air, H35,	O2,N2,Air, H35,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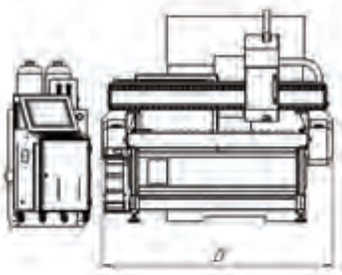
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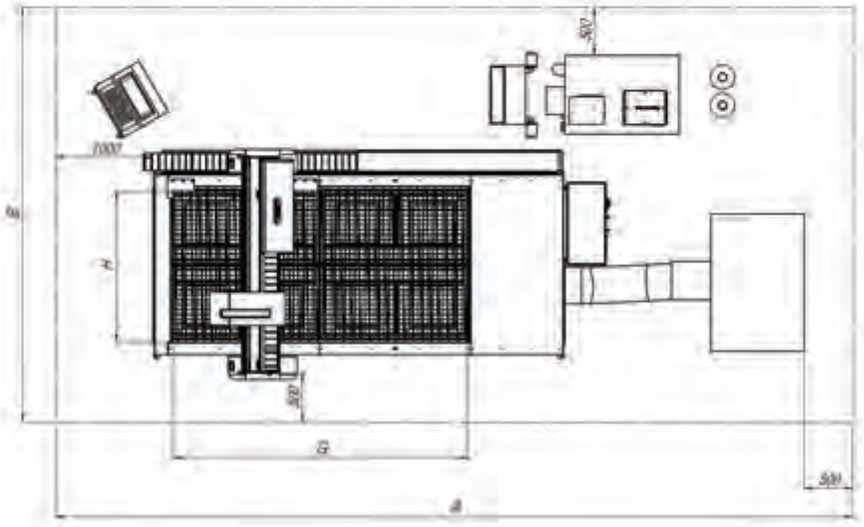
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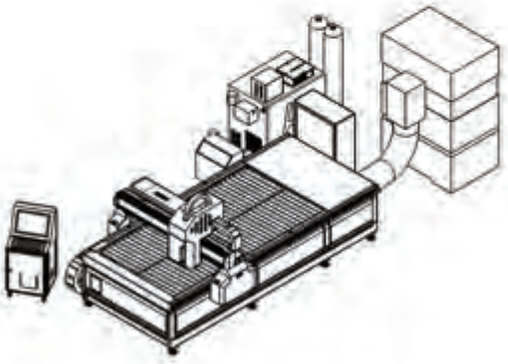

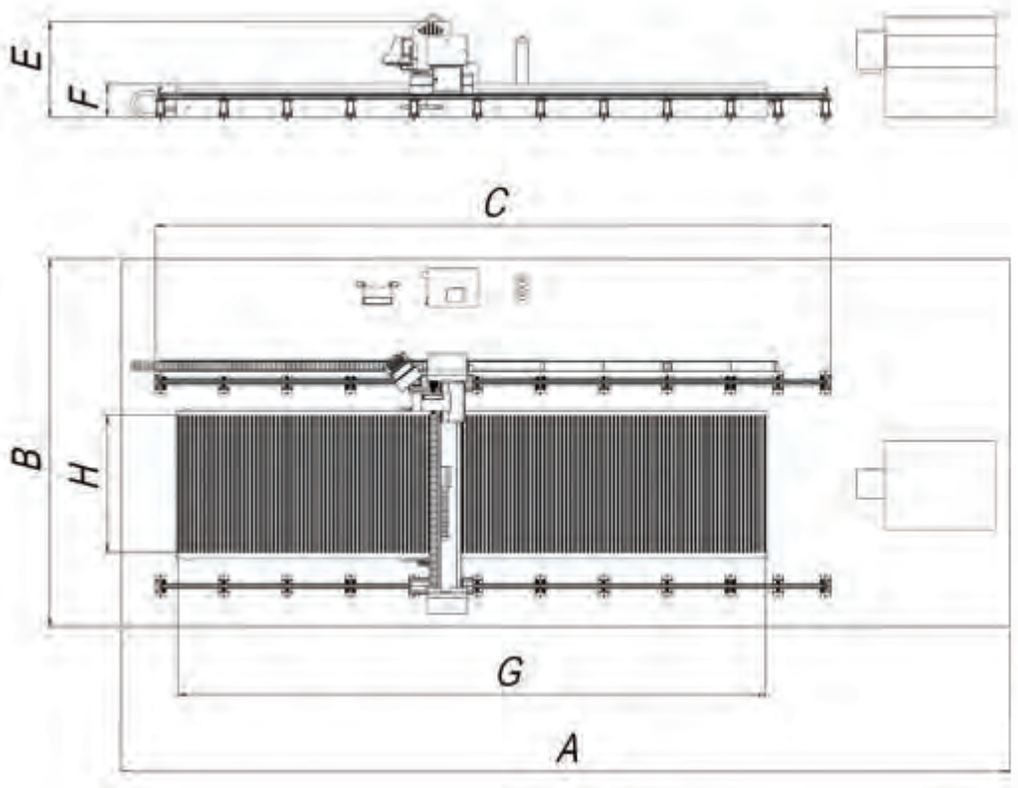
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