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# CNC ELECTRIC SERVOBRAKE



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# ABOUT US



With many years of experience, TEZSAN provides to the world a wide range of sheet metal bending and cutting machines equipped with the latest technology. TEZSAN offers faster fiber laser cutting Machines, fully electrical servo brakes, robust hydraulic press brakes, accurate shearing and plasma cutting machines. With a production facility of 30000 m2, the company is located in Turkey. All TEZSAN machines are manufactured with respect of all European standards and have the ISO 9001 certification. Increase your productivity by lowering your production cost with TEZSAN.

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# TEZSAN SERVOBRAKE



\* Some Optional equipments used on the machine photos

## **tezsan** SERVOBRAKE

Servo Electric Press Brakes are no-hydraulic, flexible, reliable and advance bending machines. This next generation machine idea combines green-eco firendly machines with productivity, accuracy, flexibility and reliability. The new concept offers low power consumption, less maintenance, no hydraulic oil for operation.

Servo Electric Press Brakes come with an advance CNC controller, fast and accurate punch and die clamping, and a multi axis back gauge system. Operators easily make perfect sheet metal parts with very low cost.

TEZSAN utilizes the most stringent manufacturing technologies during the production to manufacture highest quality machines.

## Exceed Your Expectations

MODEL	BENDING CAPACITY (t)	BENDING LENGHT (mm)
DDM-4015	40	1530
DDM-5020	50	2040
DDM-6525	65	2550
DDM-8025	80	2550
DDM-10030	100	3050
DDM-13030	130	3050
DDM-15030	150	3050
DDM-17535	175	3570
DDM-20040	200	4080

**Higher  
Productivity**  
**Faster  
Return of Investment**

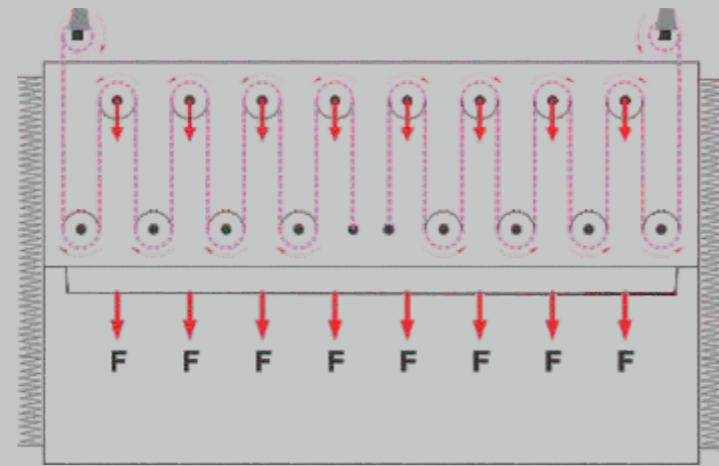


# SERVOBRAKE TECHNOLOGY

## HOW SERVO ELECTRIC PRESS BRAKE WORKS

Servo Brake moves by synchronized dual servo motors that transfer the power by the help of belt and pulleys. During the upper beam down movement, bending force is equally distribute on whole length of upper ram.

**30% Faster Cycle Times**



The return motion of the ram is assisted by mechanical springs located on the sides of the machine.

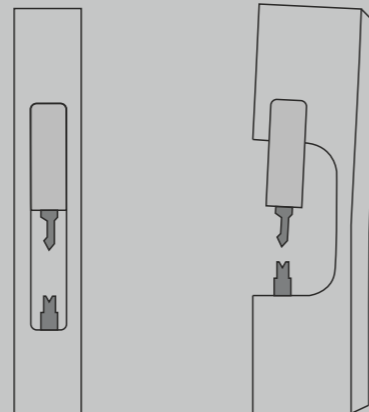
**50% Energy Saving**

The Servo Brake has a closed O-frame system that supplies a rigid frame with no deformation under large forces.

This results in better tool alignment and more accurate bends.

O-Frame

Conventional Frame





## STANDARD EQUIPMENT



ESA S 675 W  
Controller



European Type V Die Holder



European Type Punch Holder



Electrical Cabinet  
AC Cooling System



Linear Guided Front  
Support Arms



X - R Type 2 Axis  
Back Gauge



CE Laser Safety System



Foot Pedal with  
Emergency Stop Button

## OPTIONAL EQUIPMENT



Delem DA 66T-69T  
Controllers



Wila Type Punch  
Clamping System



Wila Type V Die  
Clamping System



CNC Crowning  
Adjustment



X R Z1 ve Z2  
4 Axis Back Gauge



ATF Type X1 X2 R1 R2 Z1 Z2  
Back Gauge



CE Confirmation with  
Light Curtain



Sheet Follower



Servo Electric Press Brake provides energy saving up to 50%  
Servo Electric Press Brake has %50 energy saving compared with hydraulic press brakes.



Servo Electric Press Brake is faster up to 30%  
Servo Electric Press Brake is shown to be up to 30% faster than hydraulic press brake. Shorter response time one of the biggest advantages of servo electric press brake.



Servo Electric Press Brake is eco - friendly machine  
Servo uses 100% electrical power instead of hydraulic oil and hydraulic components. Less pollution - best solution.



Servo Electric Press Brake provides high productivity  
Servo has high acceleration, high deceleration. The quick change of the moving direction is a advantage for high productivity and efficiency. Servo has less maintenance cost.



Servo Electric Press Brake provides advanced bending  
Servo is a flexible, reliable and advance bending machine. Servo Electric Press Brake combines high accuracy, flexibility and reliability. This concept offers low power consumption , less maintenance and no hydraulic oil or components for operation.



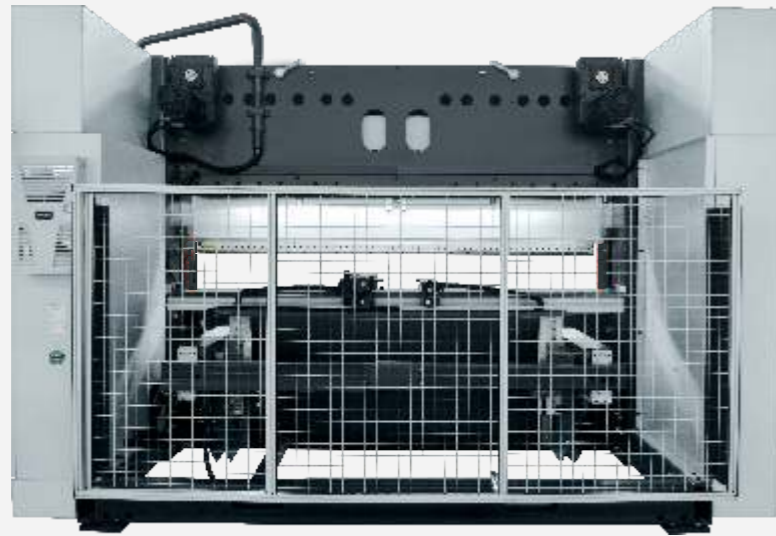
Servo Electric Press Brake works quietly  
Servo working system has no noise and provides silent working conditions.

# NO

NOISE  
HYDRAULIC OIL  
HYDRAULIC FILTER  
HYDRAULIC SEALS  
VALVES  
CYLINDERS  
DWELL TIMES







\* Some Optional equipments used on the machine photos



SERVO ELECTRIC PRESS BRAKE



# BACK GAUGES

Standart



X-R  
Back Gauge

Optional



X - R - Z1 - Z2  
Back Gauge

Optional

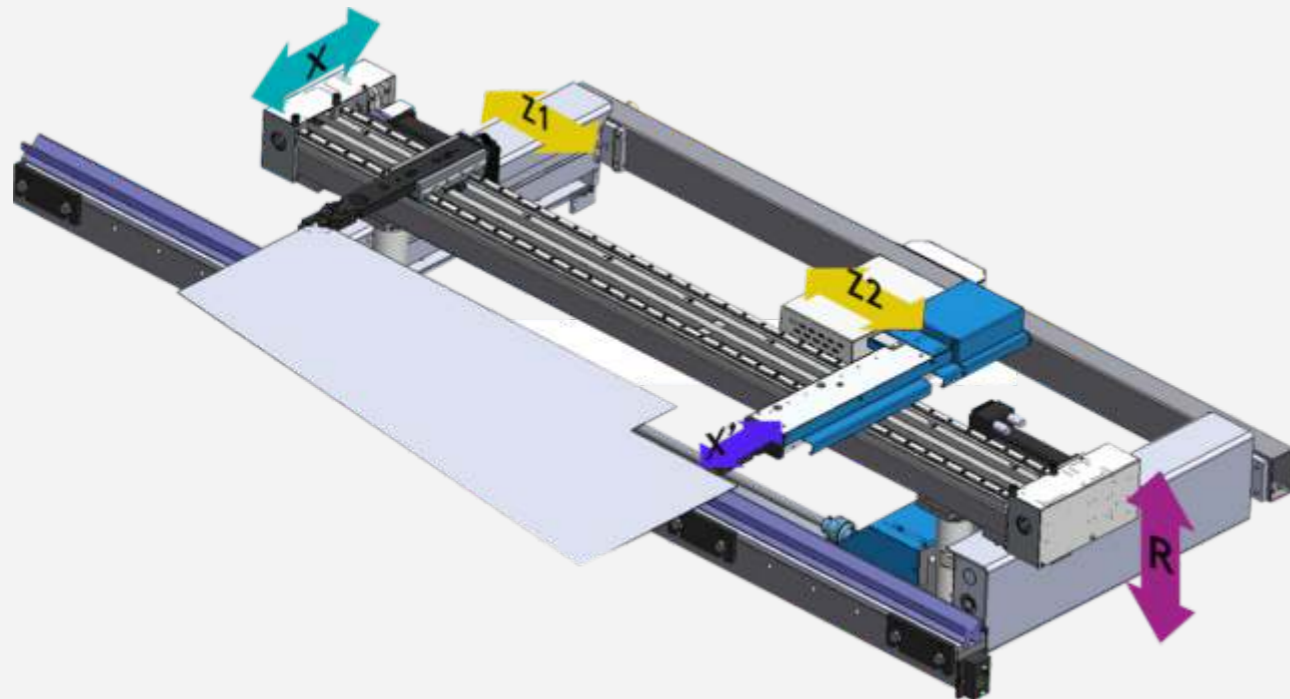


X, R, Z1, Z2 + X PRIME  
Back Gauge

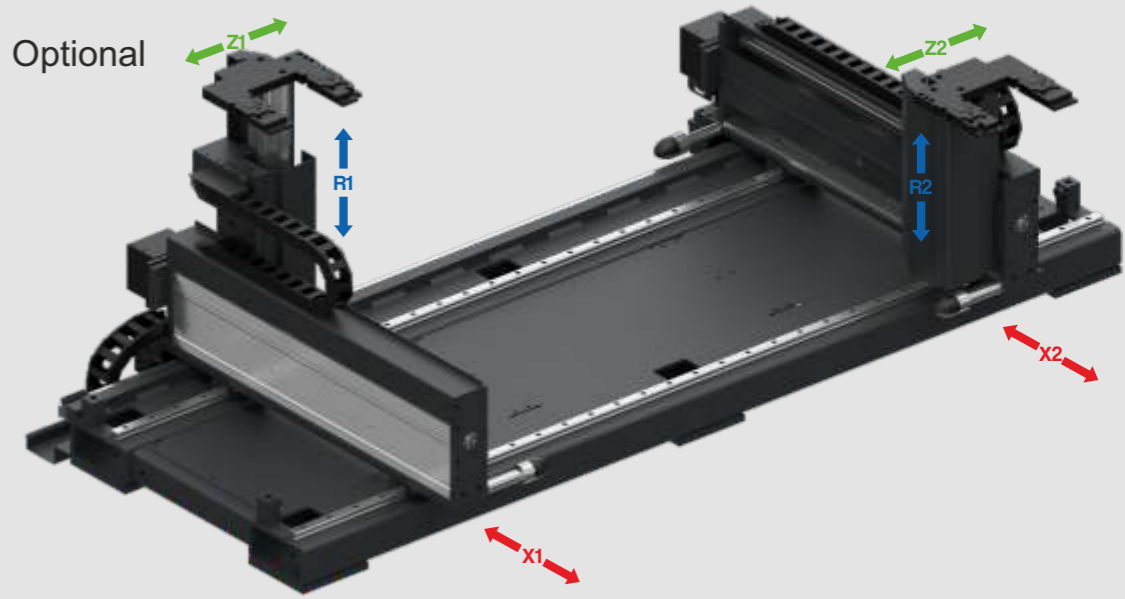
Gauging is a main concern for press brake operators. Whether you require complex part multi station bending, single bending, or production of taper bends, Servo Electric Press Brake offers solutions with six different back gauge options. Depending on the geometry of the parts and their complexity, all back gauge models are specially designed and manufactured to reach high precision and high speeds.

## Optional Back Gauge Systems

- X, R, Z1, Z2
- X, R, Z1, Z2 + X Prime
- X1, X2, R, Z1, Z2
- X1, X2, R1, R2, Z1, Z2 (ATF TYPE)



Optional



X1-X2-R1-R2-Z1-Z2 ATF Back Gauge

Optional



X1-X2-R-Z1-Z2 Type Back Gauge

## STANDARD BACK GAUGE CONFIGURATION

X - R servo motorized back gauge

Ball Screw for X axis, linear guided X axis, more X and R axis stroke.

Positioning accuracy: +0,03 mm

Repeat accuracy: +0,03

2 Pcs back gauge finger manual lateral movement on linear guides.



# CONTROL UNITS

## ESA S 675 W (Standard)

- 3D and 2D graphics touch screen programming mode
- 3D and 2D imaging in simulation and production
- 21" high resolution colour touch screen
- Full-featured Windows application
- ESA offline software
- USB flash memory drive
- Hard disk for more than 1.000.000 part programs
- 2D and 3D automatic bending sequence calculation
- Graphical product and tool selection



## DELEM DA 66T (Optional)

- 2D graphics touch screen programming mode
- 17" high resolution colour TFT screen
- Full-featured Windows application
- Delem modusys compatibility
- USB, peripheral interfacing
- User specific application support with in the controllers
- Multitasking environment
- Sensor bending & correction interface



## DELEM DA 69T (Optional)

- 3D and 2D graphics touch screen programming mode
- 3D and 2D imaging in simulation and production
- 17" high resolution colour TFT screen
- Full-featured Windows application
- Profile-T3D offline software
- 1 GB memory
- Emergency stop button
- 2D and 3D automatic bending sequence calculation
- Graphical product and tool selection



## OFFLINE PROGRAMMING

ESA 675, DELEM 66t and DELEM 69t are standard with offline programming. Programming a press brake off-line gives many advantages regarding productivity and economy. The main areas where your benefit are:

### Drastic reduction of machine down time

Instead of occupying the machine when programming on the controller, you produce parts while new programs are created on a PC.

### Reduced programming time

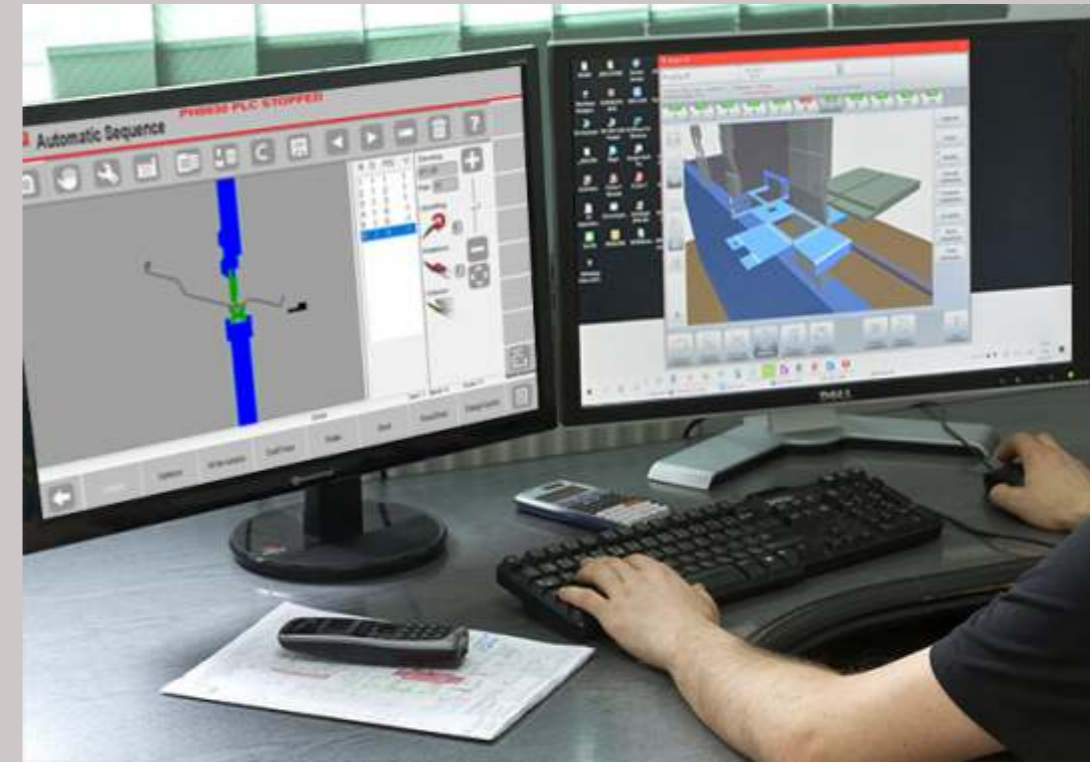
Programming off-line does not only help you avoid down time, it is also faster.

### Quicker machine set-up

With well documented and clear production reports, machine preparation and tool rigging is more efficient.

### Less scrap

With extremely accurate flat pattern calculation, due to AutoPOLs unique methods, initial scrap parts are heavily reduced. Get the first piece right!!!



### Validate productivity

Thanks to off-line programming you can discover and avoid potential manufacturing problems before the part is taken into production. Finding out in "mid-production" costs a lot of money...

### Optimize production

With smart and highly visual interface it is easy to create more efficient programs. More helpful back gauging, smart auto-sequencing and optimized set-ups. All of the above benefits are achieved through the use of offline programming.

## IMPROVE PRODUCTIVITY

Industry 4.0 indicates the use of cyber-physical systems (CPS) and digital technologies (cloud, IoT, Big Data) for improving work conditions and increasing the productivity and productive quality of plants, creating a collaboration between all aspects involved in the productive process, i.e. the operator, machines and instruments.

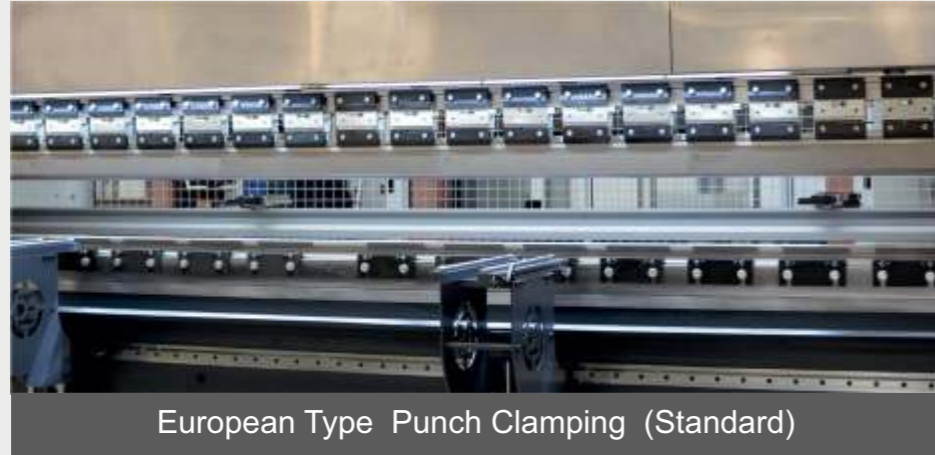
The machines are interconnected and adaptive, able to exchange high level information among each other and with the external environment.

ESA 675, DELEM 66t and DELEM 69t are ready to connect to any Industry 4.0 program and Exchange data. The needed extra software is optional and can be offered separately.

INDUSTRY 4.0



# CLAMPING SYSTEMS OPTIONAL



European Type Punch Clamping (Standard)



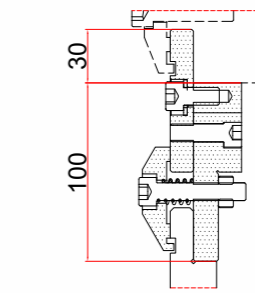
European Type Pneumatic Punch Clamping (Optional)



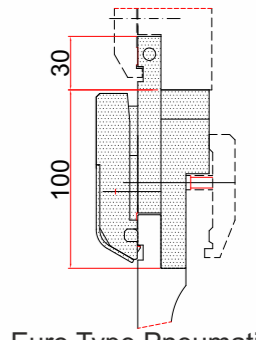
Wilson Hydraulic Punch and Die Clamping (Optional)



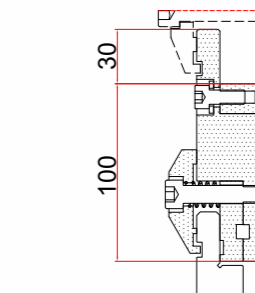
American Type Punch Clamping (Optional)



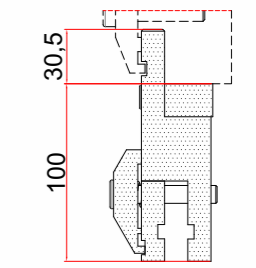
Euro Type Mechanical Punch Clamping



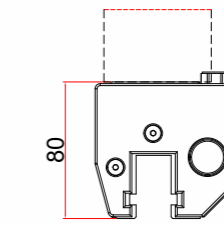
Euro Type Pneumatic Punch Clamping



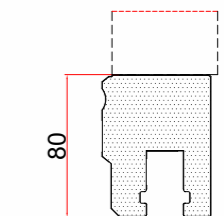
Euro American Type Mechanical Punch Clamping



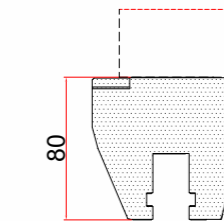
American Type Mechanical Punch Clamping



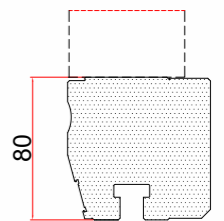
Wilson Hydraulic Automatic Punch Clamping



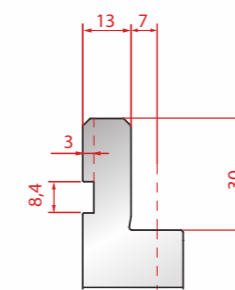
Wilson American Type Mechanical Punch Clamping



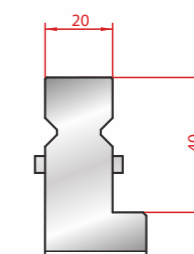
Wila Hydraulic New Standard Automatic Punch Clamping



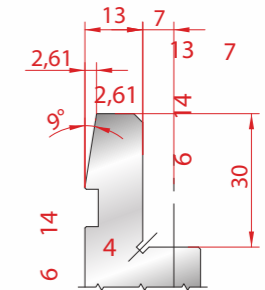
Wila American Type Hydraulic Punch Clamping



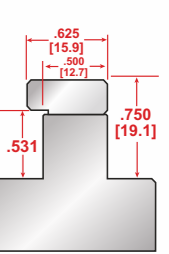
Euro Type Punch



Wila New Standard Punch



One Touch Punch

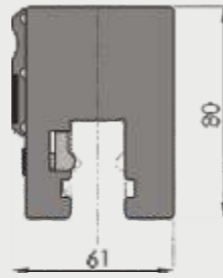


American Style Punch

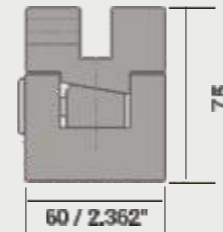


# CLAMPING SYSTEMS OPTIONAL

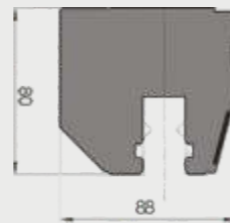
NSCL-I-MC/UPB



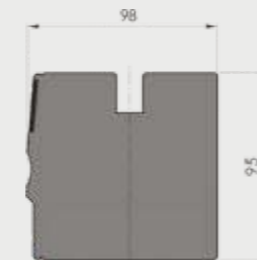
OB-I-MC-TY/ES IV



NSCL-I-HC/UPB



NSCL-I-HC-CNC/UPB



Extremely fast tool changes.  
 Maximum control of vertical tolerances during the bending process.  
 Extremely accurate clamping, positioning and alignment.  
 Individual clamping pins for each tool segment for superior clamping force.  
 Vertical and horizontal tool loading and unloading for maximum speed and safety.  
 Professional finish, including a slide rule for ease of tool positioning.  
 Provides maximum productivity.





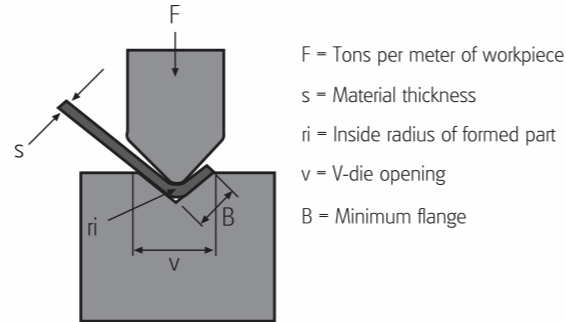
# AIR BENDING TONNAGE CHART

Required press force at 90° air bending, force in t/m.

The charts below give the appropriate tonnage to air bend mild steel.

Bending force for other metals:

- Soft aluminum : Tons per unit length x 50%
- Aluminum alloys heat treated : Tons per unit length x 100%
- Stainless : Tons per unit length x 150%
- Bottoming : Tonnage requirements are three to five times greater than for air bending.



## Metric

V (mm)	4	6	8	10	12	16	20	24	30	40	50	60	80	100	120	160
V (inch)	0.157"	0.236"	0.315"	0.394"	0.472"	0.630"	0.787"	0.945"	1.181"	1.575"	1.969"	2.362"	3.150"	3.937"	4.724"	6.299"
B (outside mm)	2.8	4.2	5.6	7	8.6	11.5	14.4	17	21	29	36	42.4	56.5	71	85	114
ri (mm)	0.6	1	1.2	1.5	1.8	2.4	3	3.6	4.5	6	7.5	9	12	15	18	24

Material Thickness  
mm

0.5	4	2																
1	10	8	5.5	4.5														
1.2	16	12	9	7														
1.5		20	14	11	6													
2				22	8	6												
2.5					25	19	15	11										
3						28	22	17	12									
4							44	33	22.5	17								
5								55	37	29	22							
6									58	42	34							
8										83	65	45	35					
10											110	75	57	45				
12												116	85	68				
14													121	91	68			
15														143	112	79		
16															168	131	90	
18																172	119	
20																	222	150
25																		254

## Inch

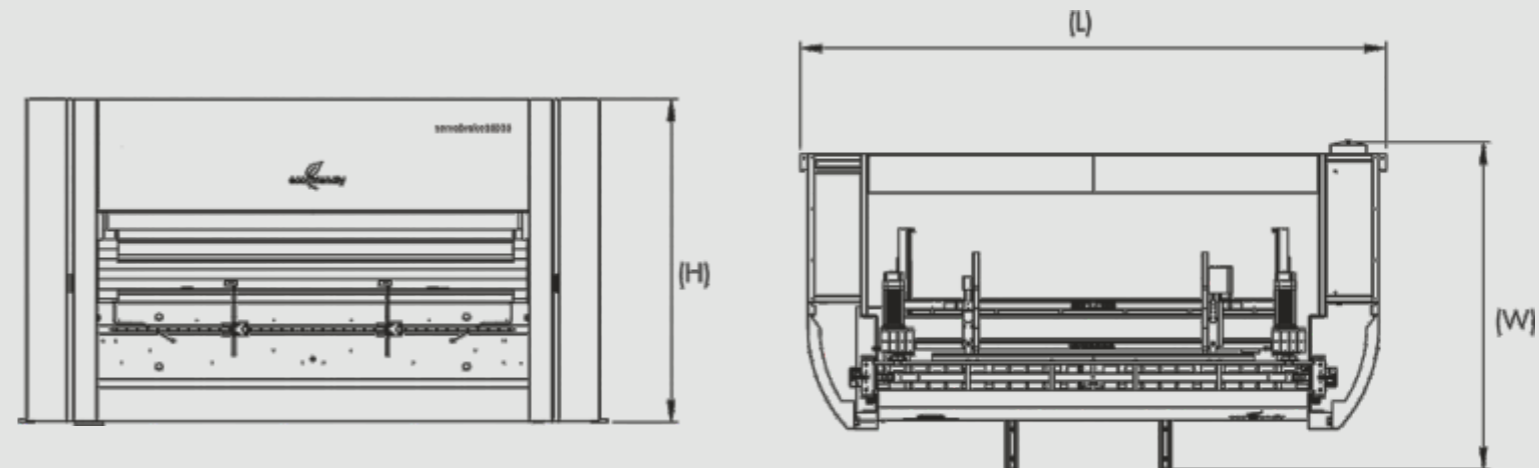
V (mm)	6.4	9.5	12.7	15.9	19.05	22.2	25.4	28.6	31.8	38.1	50.8	63.5	80	100	120	160
V (inch)	0.250"	0.375"	0.500"	0.625"	0.750"	0.875"	1.000"	1.125"	1.250"	1.500"	2.000"	2.500"	3.150"	3.937"	4.724"	6.299"
B (outside inch)	0.167"	0.265"	0.354"	0.442"	0.530"	0.619"	0.707"	0.795"	0.866"	1.06"	1.414"	1.768"	2.224"	2.795"	3.346"	4.488"
ri (inch)	0.038"	0.056"	0.075"	0.094"	0.113"	0.131"	0.150"	0.169"	0.188"	0.225"	0.300"	0.375"	0.472"	0.591"	0.709"	0.945"

Material Thickness  
Gauge Inches

20	0.036"	3.2	2.0																		
18	0.048"	5.1	3.4	2.7	2.4																
16	0.060"		5.8	4.0	3.1	2.5															
14	0.075"			6.9	5.0	4.0	3.5														
12	0.105"					8.3	6.9	5.6													
11	0.120"						9.9	8.2	7.2	5.4											
10	0.135"						11.9	9.9	7.3	7.1	5.8										
3/16"	0.188"										7.5										
1/4"	0.250"											16.5	11.4								
5/16"	0.313"												27	19.7							
3/8"	0.375"													42.3	30.9						
7/16"	0.438"														22.8	16.9					
1/2"	0.500"															32.2	24.3	19.4			
5/8"	0.625"																34.6	27.0	18.3		
3/4"	0.750"																	47.1	32.0		
7/8"	0.875"																		74.2	50.4	
1"	1.000"																			73.9	103.0

# TECHNICAL SPECIFICATIONS

	Bending Length (mm)	Pressure Force (ton)	Max. Stroke (mm)	Q - Distance Between Tables (mm)	Approaching Speed (mm/sec)	Bending Speed (mm/sec)	Return Speed (mm/sec)	Main Motor Power (kw)	Weight (kg)	L - Overall Length (mm)	W - Width (mm)	H - Height (mm)	Max. Height (mm)
DD-M-20040	4080	200	300	660	75	20	75	22	13000	5740	2130	2680	3020
DD-M-17535	3570	175	300	660	90	20	90	22	11500	5340	2100	2680	2950
DD-M-15030	3050	150	300	660	100	20	100	22	9500	4740	2000	2680	2950
DD-M-13030	3050	130	300	660	85	20	85	12,5	8500	4220	1960	2500	2950
DD-M-10030	3050	100	300	660	75	20	75	11	6500	4220	1960	2500	2900
DD-M-8025	2550	80	300	660	90	20	90	11	6100	3680	1960	2500	2900
DD-M-6525	2550	65	300	660	130	20	130	11	5500	3680	1960	2500	2900
DD-M-5020	2040	50	300	660	150	20	150	11	4850	3170	1960	2500	2900
DD-M-4015	1530	40	300	660	170	20	170	11	4600	2660	1960	2500	2900



# NOTES



# NOTES

