



The Winning Force

# ***DURMA***

## **AD-ES** SERIES Electrical Press Brake



- Perfect Precision
- High Capacity
- Low Energy Consumption
- Elegant Design



**High Capacity  
Low Energy  
Consumption**





# **DURMA** The Winning Force







As a total supplier for sheet metal manufacturing with almost 60 years of experience, Durma understands and recognizes the challenges, requirements and expectations of the industry. We strive to satisfy the ever higher demands of our customers by continuously improving our products and processes while researching and implementing the latest technologies.

In our three production plants with a total of 150.000 m<sup>2</sup>, we dedicate 1,000 employees to delivering high quality manufacturing solutions at the best performance-to-price ratio in the market.

From the innovations developed at our Research & Development Center to the technical support given by our worldwide distributors, we all have one common mission: to be your preferred partner.

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



1

High technology,  
modern production  
lines



3

High quality  
machines designed  
in R&D Centre

2

Top quality  
components





# AD-ES Series Electrical Press Brake

## Environment Friendly

DURMA AD-ES CNC PRESS BRAKE series can provide the production starting from 1250 mm table width to 2050 table width. It is also possible to apply different sizes in line with customer demands.

Welding is performed on the machine body and upper table and all waste is prevented by stress relieving and appropriate processing technologies. Reducer drive system, precision ball screw, and nut connection, high torque-resistant bearing cylinder provide high precision bending results.



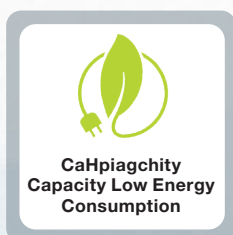


# Environment Friendly Low Cost High Gain

Precise bending results

Minimum tool change and adjustment time

Maximum speed and safety



**High  
Capacity**

**Robust  
Body**

**Perfect  
Precision**

**Winning**

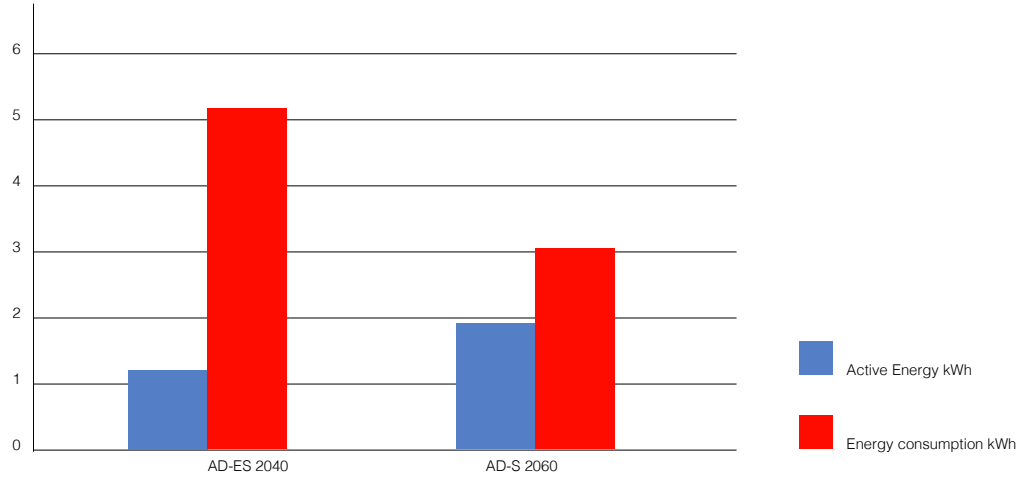
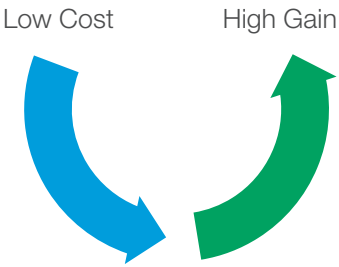
**Ergonomic**

## Advantages

- High Energy Saving
- Decrease in operating costs
- Easy Cooling
- Operational reliability
- High availability
- Low investment cost
- System reliability
- Compliance with current technology
- Significant decrease in noise level
- Less measurement needing
- Ease of integration of control functions
- Low maintenance cost
- Compliance with European Union standards



# Energy Consumption Comparisons of Press Brakes



## Main Components

Servo-motor  
Reducer  
Ball screw and nut  
Mechanical Roller Bearing  
Software

## Physical Features

Position Control  
Press/Load Press Control

## Efficiency

40% Less energy consumption  
17% more productivity

Technical Data	AD-ES 2040	AD-S 2060
Motor Power	7.2 kW	7.5 kW
Power Consumption	3.1 kWh	5.2 kWh
Oil Capacity	-	100 lt
Approach Speed	115	200
Bending Speed	10	10
Rotation Speed	115	110



# High Increase in Production Efficiency

Our AD-ES series solutions provide high energy savings to our business with speed, efficiency, quality and low power consumption.



Energy saving

Same consistency in each cycle

Economic

Repeatability at high speed



# Fast, Efficient, Modern



## General Specifications

- Precision reducer system
- Upper table suitable for EURO / Wila type tools.
- Robust body structure with long life and high performance
- Electric Panels creating a safer working environment
- Servo motors providing high speed and high precision
- Ball screw and nut connection providing excellent power and motion transmission
- Back support system with Japanese Yaskawa motor and rigid aluminum body
- AP1-AP2 system with high mobility and aluminum miter
- CE Norm Safety Standards





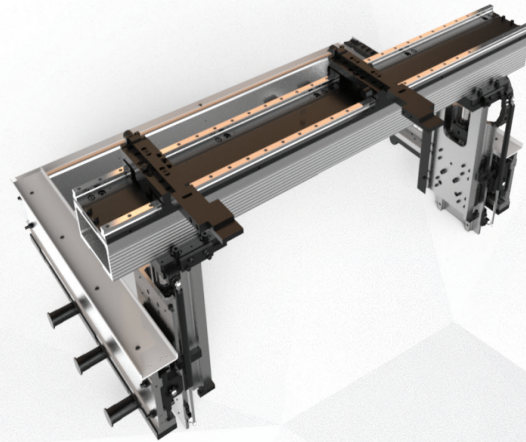
# Strong Back Gauge System

Precise

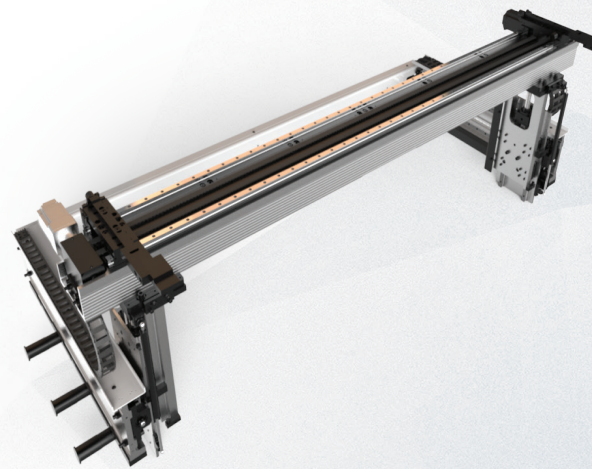
Reliable

Strong

- Fast and high accuracy
- Safe movement
- Long-life linear motion elements
- No maintenance required
- Simple to use, easy to maintain



X 650 X R (AL) Back Gauge



X 650 X R Z1 Z2 (AL) Back Gauge

## Why DURMA Back Gauge?

The most important factor that affects bending quality is the stability and the design of the back gauge.

Perfect bending, perfect product is possible with a stable and precise back gauge. High speed back gauge system moving with ballscrew is also supported with linear guides. Thus, long life, precision and strength against collisions are provided.

Back gauge finger is designed to achieve all types of bendings in the maximum stability.

- AD-ES back gauge systems are long-life, precise and strength against collisions.
- High speed back gauge system moving with ballscrew is also supported with linear guides.



# Tool Holders and Tools

The bending performance of the machine is increased by using High Quality European type clamping system and ease of use is provided. The lower body is designed as narrow for Z type bending and designed in accordance with European type tool holding system.

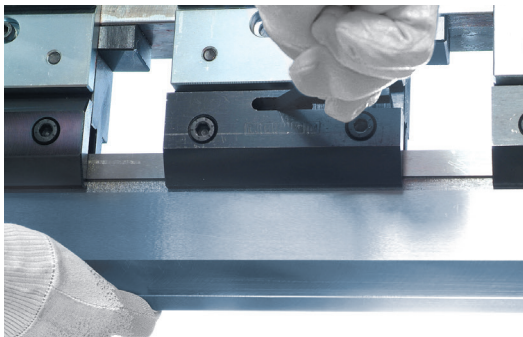
DURMA is your solution partner with various tool options.



European Type Standard Clamping System



European Type Tool and Holder (4V Bottom Tool)  
Quick Clamping



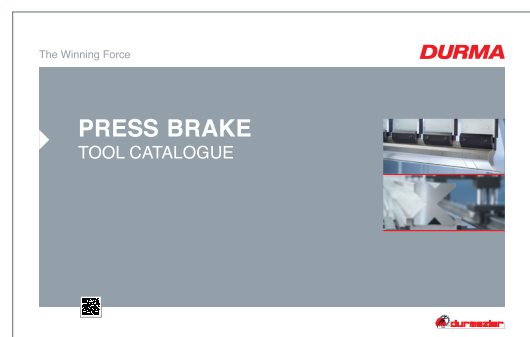
Quick Clamping System



Wila Bottom Tool Holder



Wila Top Tool Holder







# Safe and Accurate Bends with Top Quality Equipments

## Crowning System

CNC controlled, motorized crowning system provides perfect result in each point of bending. Your bending differences arising from the material or other factors are calculated by motorized CNC crowning system and the perfect result is achieved.



CNC Crowning System

## CE Safety Systems

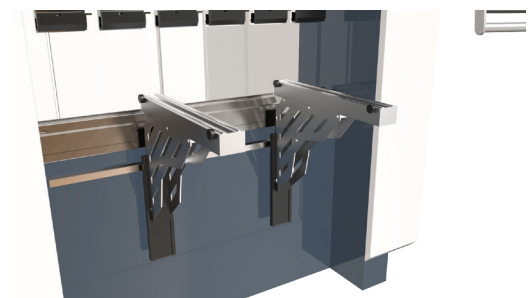
Our machines are designed in accordance with European CE standards and directives in order to ensure your safety with hydraulic, electric, appropriate height covers and laser light curtains. CE safety in tandem machines are provided with light barriers.



CE Laser Safety Systems

## Aluminum Sheet Support System

Strong front arm can be moved to the right and left and fixed at the desired position with linear slide and roller system. With aluminum miter and bar support, the sheet material can be easily moved to the machine.



Front Sheet Support System with Linear Slide, Aluminum Miter



# Now Bending is More Easy

On the control unit's powerful simulation screen, the bending position can be monitored instantaneously and the bending parameters can be interfered. The blanking of the parts to be bent in CNC, back gauge positions, bending order, the compatibility of the bending parts with the stroke and the dies required for bending angles are automatically performed by the control unit on condition that the material information is defined. There is also the possibility to monitor the bends in three dimensions according to the type of the control unit and whether there is any collision during the bending or not.

## SKY - 22



- Automatic bending order
- Perfect control of electrical servo systems
- Archiving user bendings
- 2D/3D color graphics display and multi-simulation Windows 10 operating system
- D-Bend offline software
- Tandem applications
- 21.5" TFT color touch screen with USB port and backup
- Network interface
- X1 - X2 - R1 - R2 - Z1 - Z2 and AP3 - AP4 part support system

## Delem - 66T



- 2D Graphic touch screen and programming mode
- 3D imaging in simulation and production
- 17" High resolution colors
- Suitable for full Windows applications Compatible with DelemModusys
- USB and peripheral interface
- User specific application support Multitasking competencies
- Sensor bending and correction interface

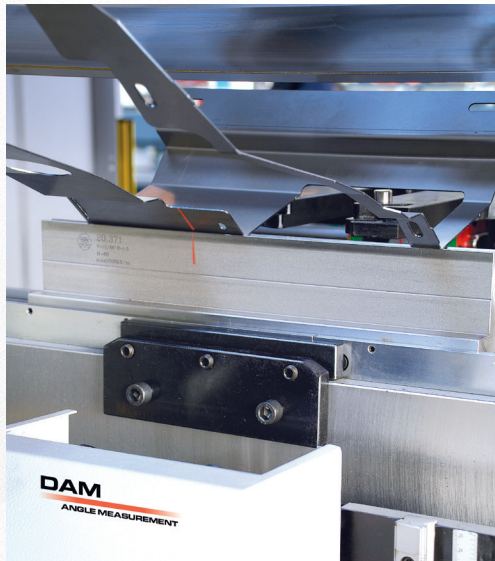
## DA - 69T

- 3D and 2D graphic touch screen programming
- 3D imaging in simulation and production
- 17" high resolution colors
- Suitable for full Windows applications Compatible with DelemModusys
- USB and peripheral interface
- Sensor bending correction interface
- Multitasking competencies
- Higher memory





### DURMA Angle Measuring



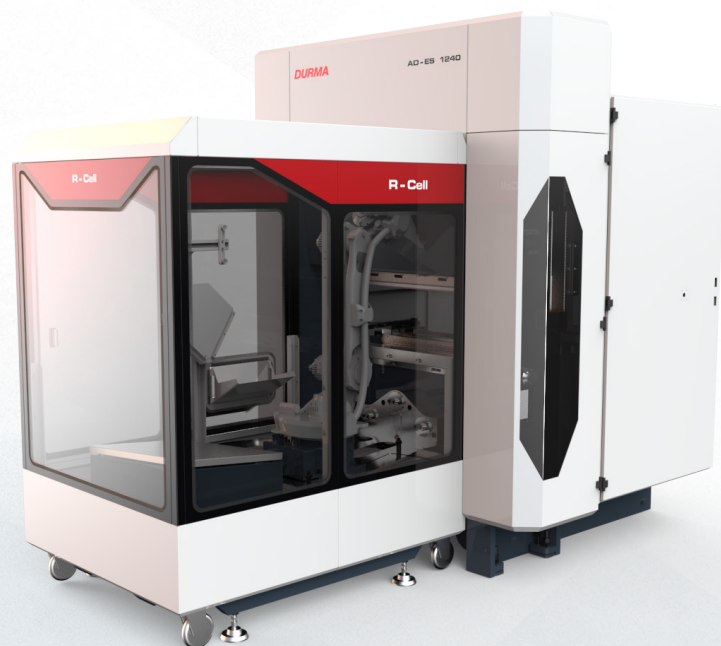
### Operator table support system



### Robotic Solutions

AD-ES series machine has component advantages with the drive system. Drive system consists of a few main parts and does not need oil for to generate press power. Machine sets up quickly and works long time with the same calibrate R-CELL Robot brand is Japan Yaskawa.

The MOTOMAN GP12 is a compact and flexible handling robot which provides a payload of 12 kg. Easy set - up and maintenance and a wrist structure with great environment resistance improve efficiency in installation, operation maintenance of equipment.







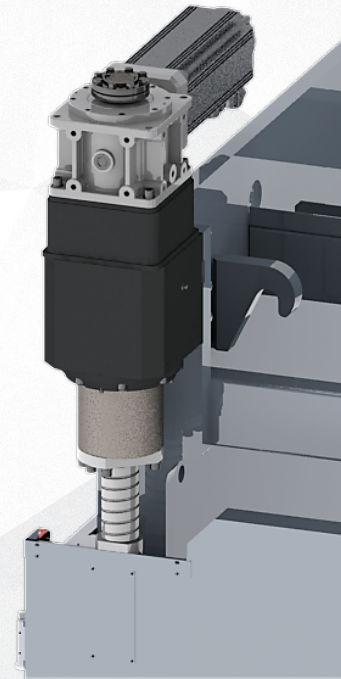
# Advantages compared to classical press brakes

## Drive System Group Equipment

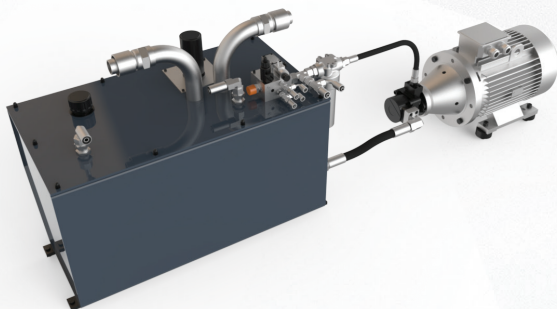
Servo Motor  
Gearbox  
Mechanical Roller Bearing  
Ballscrew and Nut

## Equipment Advantages

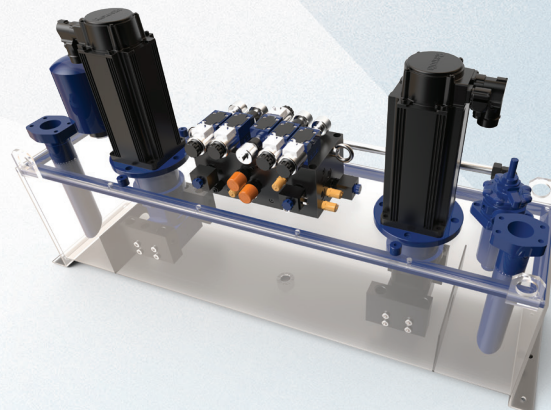
Simpler Drive Group  
Less Component  
Easy and Fast Assembly  
Easy and quick maintenance  
Hydraulic oil-free drive system



**Standard Hydraulic Press Brake**



**Servo Hydraulic Press Brake**



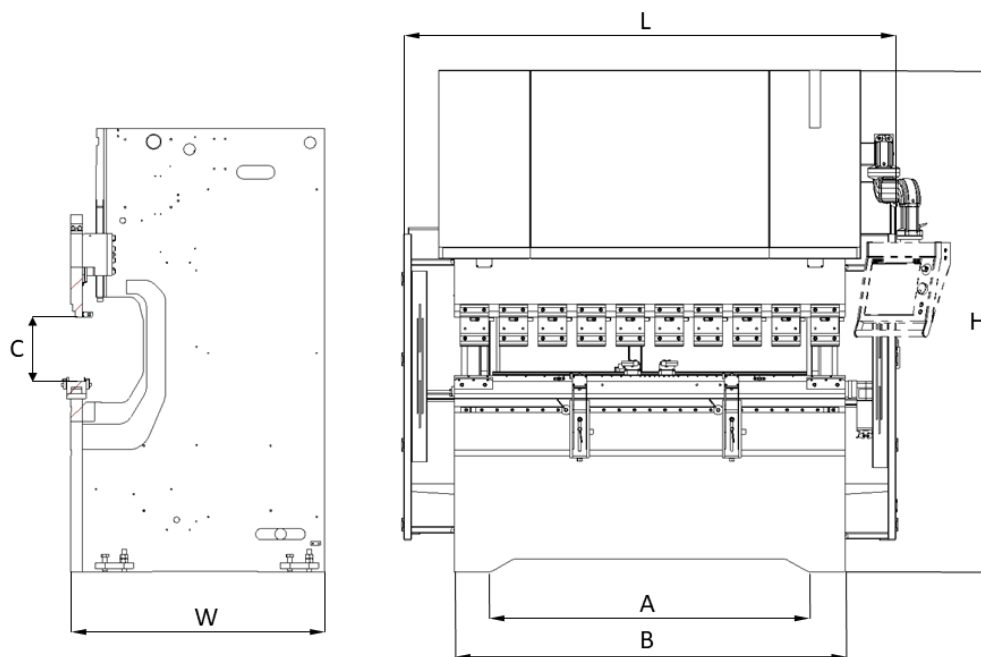




## AD-ES Series Technical Details

Machine Types	Bending Power	Bending Length	Distance Between Columns	Stroke	Daylight(D)	Working Height(F)	Approach Speed	Bending Speed	Rotation Speed	Back Gauge X axis Length	Back Gauge R axis Length	Length	Width	Height	Weight
Unit	Ton	mm	mm	mm	mm	mm	mm/sn	mm/sn	mm/sn	mm	mm	mm	mm	mm	kg
AD-ES 1240	40	1250	240 - 1050	200	440	1000	115	10-20*	115	650	250	1950	1450	2650	3600
AD-ES 2040	40	2050	2040 - 1700	200	440	1000	115	10-20*	115	650	250	2600	1450	2650	4400

\* According to CE norm, the bending speed should be maximum 10 mm / sec except for robotic use..



## RobotCell Technical Details

Air Pressure	5 - 7 bar
Voltage	380 - 480 V
Power Supply	1.5 Kw
Robot Maximum Lifting Force	12 Kg
R-Cell Length	1250 mm
R-Cell Width	1050 mm
R-Cell Height	2150 mm
R-Cell Weight	1100 kg



# Standard & Optional Equipment

## Standard Equipment

Control Unit - DA-69T 3D touchscreen  
Y1, Y2, X, R (4-Axis) X=650mm Back Support (AI – Double Guide )  
FIESSLER BLVT  
DBEND 3D bending edit and simulation  
Servo motor back support & linear guided & ballscrew system (X-R)  
Motorized crowning controlled via CNC Unit (Only 2040 Model)  
European type tool holding system  
Sliding Front arms - Sliding Front arms slide on full-length linear slides with T-Channel & Locking

## Optional Equipment

Control Unit - DELEM-66T  
Control Unit - SKY 22  
Z1, Z2 axis  
X=650mm X,R,Z1,Z2,Delta X +/- 125mm CNC Controlled (AL - double Guide)  
X axis = 1000 mm – Back protection with light barriers  
Laser angle measurement system  
Quick Clamping System  
Hydraulic and Pneumatic tool holding system  
Upper and lower tool  
Central lubrication system  
Additional support finger and additional sliding front sheet metal support system  
Special packaging for overseas countries



# Fast on Service and Spare Parts

DURMA provides the best level of service and spare parts with qualified personnel and spare parts in stock. Our experienced and professional service personnel are always ready at your service. Our professional training and application enriched courses will give you an advantage to use our machinery.



Consultancy



Spare Parts



R&D Center



After Sales  
Service

**DURMA**

Solution Center



Service  
Agreements



Software



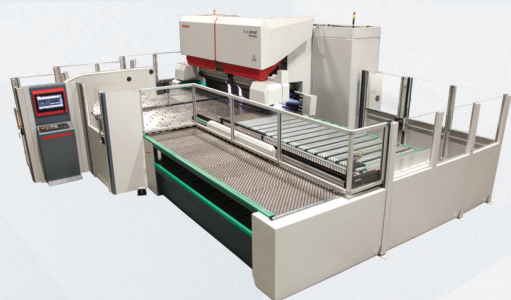
Training



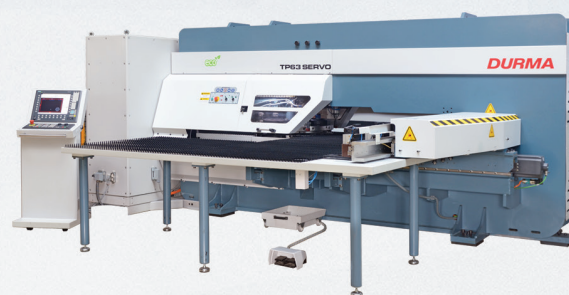
Flexible Solution



**DURMA**



PANEL BENDER



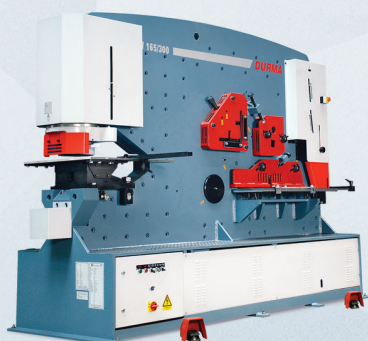
PUNCH



PLASMA



L ANGLE PROCESSING CENTER



IRON WORKER



POWER OPERATED SHEAR

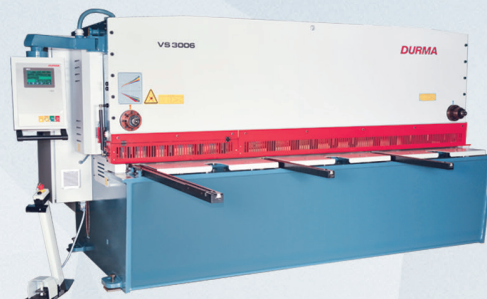




**DURMA**



PRESS BRAKE



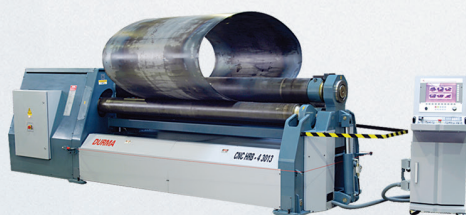
VARIABLE RAKE SHEAR



TUBE LASER CUTTING



FIBER LASER



ROLL BENDING



PROFILE BENDING



CORNER NOTCHER



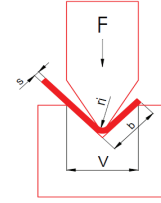
# DURMA

Today, Tomorrow and Forever with You...

V	b	r <sub>i</sub>	s(mm)																							
			0.5	0.8	1	1.2	1.5	1.8	2	2.5	3	3.5	4	4.5	5	6	7	8	9	10	12	15	18	20		
6	5	1	2,5	6,5	10																					
8	6	1,3	2	5	8	11																				
10	7	1,7	1,5	4	6	9	13																			
12	9	2		3	5	7	11	16																		
15	12	2,7			4	6	9	13	16																	
20	15	3,3				4	7	10	12	19																
26	18	4,2					4	7,5	9	14	21															
30	22	5						6,5	8	12	19	24														
32	23	5,4							7,5	11,6	17	23	30													
37	25	5,8								10	14,5	20	26	33												
42	29	6,7									13	17	23	29	33,5											
45	32	7,5										16	21	27	33	48										
50	36	8,3											19	24	30	43	58									
60	43	10												20	25	36	49	64								
70	50	11,5													21	31	42	55	69							
80	57	13,5														27	37	48	60	75						
90	64	15															32	42	54	66	95					
100	71	17																38	48	60	86	134				
130	93	22																	37	46	66	103	149			
180	130	30																		33	48	75	107	153		
200	145	33																			43	67	83	119		
250	180	42																				54	77	92		

The diagram illustrates a V-belt pulley system. A red V-belt is shown passing over a pulley with radius  $r_i$ . The belt has a width  $b$ . A downward force  $F$  is applied to the top of the belt. The center distance between the pulley and the point of application of the force is  $V$ . The belt is shown in a cross-section view, with the pulley radius  $r_i$  and the belt width  $b$  clearly marked. The force  $F$  is applied vertically downwards. The center distance  $V$  is the horizontal distance between the pulley and the point of application of the force.

$$F = \frac{1,42 \times L \times Rm \times s^2}{1000 \times V} (Ton)$$



$$F = \frac{1,42 \times L \times Rm \times s^2}{1000 \times V} (Ton)$$

F: Bending Force (Ton) L: Length (mm) Ri: Inside Radius (mm) Rm: Material Tensile Strength (daN/mm²) V: Channel Width (mm) B: Minimum Sheet Bending Side (mm) S: Thickness (mm)

## AD-ES SERIES

### Electrical Press Brake

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