CUT
BEND
ROLL
PUNCH

the **complete** range of **solution**

www.**energymission**.com

CNC PRESS BRAKE

MAKE IN INDIA

SCAN F R LIVE CHAT

ENERGYMISSION
MACHINERIES (INDIA) PVT. LTD.

Energy Mission Machineries (India) Pvt. Ltd. was established in 1999 with strong vision to deliver most reliable & economical solutions in sheet metal industry. Today Energy Mission is one of the fastest growing company with maximum satisfied customer base in India and Abroad.

WE ARE LEADING MANUFACTURER OF

- CNC Servo Hybrid & Synchro Press Brakes
- NC / Conventional Hydraulic Press Brakes
- CNC / NC / Conventional Hydraulic Shearing Machines
- Four / Three Roll Plate Rolling Machines
- Hydraulic Iron Workers
- Hydraulic / NC Busbar Cutting, Bending & Punching Machines
- Single / Double / Triple Action Deep Drawing Presses
- CNC Servo H & C Type Presses
- Punching & Blanking Hydraulic Presses
- CNC V Grooving Machines

OUR STRENGTH

- 22 years of Experience in Manufacturing
- World Class manufacturing facility spread in 2,50,000 sq.ft
- Production capacity of 1200 machines per annum
- More than 5000+ installation across India & Abroad
- Trained & qualified team of 350 employees
- Dedicated team for design & development
- Sales & service network all over India
- Keen quality control on each component & process
- Awarded as "Outstanding Entrepreneur of Year" in Year 2008-09 & Year 2014-15

OUR VISION

We at "Energy Mission" believe to deliver high quality products at competitive price supported by best service support. To achieve this mission, we have developed in-house manufacturing facilities, focused manufacturing processes with in-depth technology know-how, sales network associates across India & abroad. Enthusiastic team of customer care is always ready to rush within shortest time at the doorstep of customer or any requirements. Our skilled workforce has a proven performance record in satisfying diverse needs of customers around the globe.

MANUFACTURING FACILITY

FLOOR BORING MACHINE

- In house single reference machining Facility ensures required quality parameters.
- CNC Floor Boring machines with Traverse Travel of 9 mtr& 8 mtr.
- Heavy duty 360° Machining position Rotary table

CNC TURNING & VERTICAL MILLING CENTRE

- High-tech CNC lathe with 8 station turret for precise cylinder component machining
- CNC Vertical milling machine with 24 stations auto Turret
- CNC boring machine suitable for Concave & Convex shapes machining.

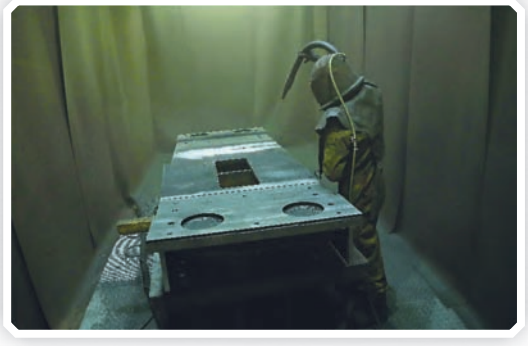
CNC PLANO MILLER

- CNC Plano Milling machines Up to 6 meter bed length
- Multiple head Single reference Machining
- Accurate, repetitive & fast operation reduces Production time & cost

INFRASTRUCTURE

CNC PLASMA CUTTING

- Precise & Fast CNC plasma cutting with X & Y controlled axis suitable for 4 mtr wide & 13 mtr long plates.
- Precise & accurate cutting accelerates manufacturing process.
- Inbuilt Nesting Facility to reduce wastage & production time



SHOT BLASTING UNIT

- Environment Friendly surface preparation Facility to remove rust and corrosive materials from the surface
- Capacity to handle up to 7 mtr. Long Plates & Assembly Structures

PAINT BOOTH UNIT

- Cross Draft type Paint booth facility to make painting & refinishing parts & Fabricated structures
- Suitable for 10 Mtr. Long Plates & Assembly Structures

CNC
PRESS BRAKE

RANGE | 30 MT to 2000 MT
LENGTH | 1250 mm to 10000 mm

EFFICIENT
SERIES

SALIENT FEATURES

- 3 Axis machine with automatic, accurate & fast back gauge
- CybTouch 8PS Controller from CYBELEC Switzerland
- Rigid upper beam guide on 12-point roller bearings
- Ultrasonically & tensile tested IS:2062 grade steel structure ensures the rigidity & avoid deflection.
- The frame is machined on Floor Boring Machine ensuring single reference accurate machining.
- Quick release clamps
- Back gauge assembly included ball screw, AC Servo drive, LM guides & timer belt
- Back gauge fingers mounted on LM guide
- Quick 'V' groove change over with self centred die with rail.
- Hardened & grounded 2'V' / 4'V' die & semi gooseneck punch
- Front sliding sheet support with LM guides for easy movement

ACCURACIES

- Press Beam Depth Accuracy : ± 0.01mm
- Press Beam Depth Repeatability : ± 0.01mm
- Back Gauge Accuracy : ± 0.1mm
- Back Gauge Repeatability : ± 0.1mm

ACCURATE
RELIABLE
CONSISTENT

CNC
PRESS BRAKE

HIGH SPEED
LOW POWER

RANGE	30 MT to 325 MT
LENGTH	1250 mm to 10000 mm

SPLENDID
SERIES

SALIENT FEATURES

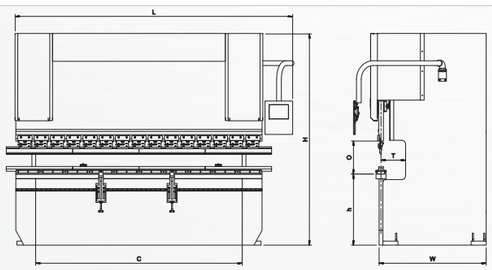
- Higher productivity & lesser cycle time by High speed beam movements
- Energy Efficient - Reduce power consumption by 40% ~ 45%
- High bending accuracy and repeatability
- Fast up & down beam speed up to 160 mm/sec, Pressing speed up to 10 mm/sec.
- 3 Axis machine with automatic, accurate & fast back gauge
- CybTouch 8PS Controller from CYBELEC Switzerland
- Very low noise, Silent & smooth machine operation
- Rigid upper beam guide on 12-point roller bearings
- The frame is machined on FLOOR BORING MACHINE ensuring single reference accurate machining
- Stable hydraulic oil temperature ensures consistent accuracy

ACCURACIES

Press Beam Depth Accuracy	: ± 0.01mm
Press Beam Depth Repeatability	: ± 0.01mm
Back Gauge Accuracy	: ± 0.1mm
Back Gauge Repeatability	: ± 0.1mm

CNC **PRESS BRAKE TECHNICAL SPECIFICATION**

				C	O			h	T		EFFICIENT			SPLENDID			L	W	H			
Model	Bending Force	Bending Length	Bending Capacity	Clear Pass	Open Daylight	Ram Stroke	Table Width	Table Height	Throat Depth	Main Motor	Approch Speed	Working Speed	Return Speed	Approach Speed	Working Speed	Return Speed	Length	Width	Height	X axis Travel	R axis Travel	Weight (Approx.)
	M Ton	mm	mm	mm	mm	mm	mm	mm	mm	Hp	mm/s	mm/s	mm/s	mm/s	mm/s	mm/s	mm	mm	mm	mm	mm	kg
PBE 0315	30	1500	2x1500	1250	385	200	90	850	200	3	100	6	65	160	10	160	1700	1250	2000	400	200	2750
PBE 0320	30	2000	1.8x2000	1550	385	200	90	850	200	3	100	6	65	160	10	160	2200	1250	2100	400	200	3500
PBE 0415	40	1500	3x1500	1250	385	200	90	850	250	5	100	7	80	160	10	160	1700	1300	2100	400	200	3500
PBE 0420	40	2000	2.5x2000	1550	385	200	90	850	250	5	100	7	80	160	10	160	2200	1300	2100	400	200	4000
PBE 0425	40	2500	2x2500	2050	385	200	90	850	250	5	100	7	80	160	10	160	2700	1300	2200	400	200	4650
PBE 0515	50	1500	3.5x1500	1250	385	200	90	850	250	5	100	7	80	160	10	160	2000	1800	2500	400	200	3800
PBE 0520	50	2000	3x2000	1550	385	200	90	850	250	5	100	7	80	160	10	160	2200	1300	2200	400	200	4250
PBE 0525	50	2500	2.5x2500	2050	385	200	90	850	250	5	100	7	80	160	10	160	2700	1300	2300	400	200	4900
PBE 0531	50	3100	2x3100	2600	385	200	90	850	250	5	100	7	80	160	10	160	3300	1300	2300	400	200	5500
PBE 0620	65	2000	3.5x2000	1550	385	200	90	850	250	5	100	7	80	160	10	160	2200	1400	2500	400	200	4750
PBE 0625	65	2500	3x2500	2050	385	200	90	850	250	5	100	7	80	160	10	160	2700	1400	2500	400	200	5500
PBE 0631	65	3100	2x3100	2600	385	200	90	850	250	5	100	7	80	160	10	160	3300	1400	2500	400	200	6350
PBE 0820	80	2000	5x2000	1550	385	200	90	850	250	7.5	100	6	80	160	10	160	2250	1400	2600	600	200	5500
PBE 0825	80	2500	4x2500	2050	385	200	90	850	250	7.5	100	6	80	160	10	160	2750	1400	2600	600	200	6250
PBE 0831	80	3100	3x3100	2600	385	200	90	850	250	7.5	100	6	80	160	10	160	3400	1400	2650	600	200	7000
PBE 0841	80	4100	2x4100	3500	385	200	90	930	250	7.5	100	6	80	160	10	160	4300	1400	2800	600	200	8500
PBE 1025	100	2500	5x2500	2050	485	300	90	850	400	10	100	7	80	160	10	160	2750	1650	2700	600	200	7000
PBE 1031	100	3100	4x3100	2600	485	300	90	850	400	10	100	7	80	160	10	160	3400	1650	3100	600	200	8500
PBE 1041	100	4100	3x4100	3500	485	300	90	930	400	10	100	7	80	160	10	160	4300	1650	2900	600	200	10000
PBE 1051	100	5100	2.5x5100	4500	485	300	90	1000	400	10	100	7	80	160	10	160	5350	1650	3200	600	200	12500
PBE 1225	125	2500	6x2500	2050	485	300	90	850	400	12.5	100	6	65	160	10	160	3000	2100	3000	600	200	7800
PBE 1231	125	3100	5x3100	2600	485	300	90	850	400	12.5	100	6	65	160	10	160	3500	2100	3000	600	200	9000
PBE 1241	125	4100	3.5x4100	3500	485	300	90	995	400	12.5	100	6	65	160	10	160	4500	2100	3000	600	200	10750
PBE 1251	125	5100	3x5100	4500	485	300	90	1050	400	12.5	100	6	65	160	10	160	5500	2100	3000	600	200	14000
PBE 1625	160	2500	8x2500	2050	485	300	90	850	400	15	100	6	80	160	10	160	2800	1800	2900	600	200	8000
PBE 1631	160	3100	6x3100	2600	485	300	90	850	400	15	100	6	80	160	10	160	3400	1800	3100	600	200	9500
PBE 1641	160	4100	5x4100	3500	485	300	90	1010	400	15	100	6	80	160	10	160	4300	1800	3200	600	200	12000
PBE 1651	160	5100	3.5x5100	4500	485	300	90	1050	400	15	100	6	80	160	10	160	5350	1800	3400	600	200	16000
PBE 2031	200	3100	8x3100	2600	485	300	90	850	400	20	100	6	80	160	10	160	3350	1900	2900	600	200	11000
PBE 2041	200	4100	6x4100	3500	485	300	90	1000	400	20	100	6	80	160	10	160	4350	1900	3250	600	200	14000
PBE 2051	200	5100	5x5100	4500	485	300	90	1050	400	20	100	6	80	160	10	160	5350	2000	3500	600	200	17000
PBE 2531	250	3100	10x3100	2600	565	350	180	850	450	25	80	6	80	140	8	140	3350	2100	2900	600	200	12750
PBE 2541	250	4100	8x4100	3500	565	350	180	1100	450	25	80	6	80	140	8	140	4350	2100	3300	600	200	15500
PBE 2551	250	5100	6x5100	4500	565	350	180	1150	450	25	80	6	80	140	8	140	5350	2100	3600	600	200	18500
PBE 3231	325	3100	12x3100	2600	565	350	180	850	450	25	80	6	80	140	8	140	3400	2100	3200	600	200	16750
PBE 3241	325	4100	10x4100	3500	565	350	180	1150	450	25	80	6	80	140	8	140	4400	2100	3400	600	200	19750
PBE 3251	325	5100	8x5100	4500	565	350	180	1200	450	25	80	6	80	140	8	140	5400	2200	3750	600	200	24000
PBE 4031	400	3100	16x3100	2600	600	375	220	950	550	40	75	5	80	--	--	--	3400	2200	3500	600	200	22000
PBE 4041	400	4100	12x4100	3300	600	375	220	1200	550	40	75	5	80	--	--	--	4400	2200	3600	600	200	27000
PBE 4051	400	5100	10x5100	4300	600	375	220	985+P	550	40	75	5	80	--	--	--	5400	2400	4100	600	200	33000
PBE 4061	400	6100	8x6100	5300	600	375	220	985+P	550	40	75	5	80	--	--	--	6400	2500	4200	600	200	40000
PBE 5031	500	3100	20x3100	2600	600	375	220	1020	550	50	75	5	80	--	--	--	3400	2200	3600	600	200	25000
PBE 5041	500	4100	15x4100	3300	600	375	220	1200	550	50	75	5	80	--	--	--	4400	2200	3900	600	200	30000
PBE 5051	500	5100	12x5100	4300	600	375	220	985+P	550	50	75	5	80	--	--	--	5400	2400	4250	600	200	36000
PBE 5061	500	6100	10x6100	5300	600	375	220	985+P	550	50	75	5	80	--	--	--	6400	2500	4500	600	200	45000



Note :
Other Models are available as per requirements

CNC
PRESS BRAKE

INTELLIGENT
GREEN POWER

RANGE	30 MT to 325 MT
LENGTH	1250 mm to 10000 mm

OPTIMA
SERIES

SALIENT FEATURES

- Individual servo motor in combination of hyd. Pump controls the accurate positioning of Y1 & Y2 axis
- Energy Efficient - Reduce power consumption by 45% ~ 50%
- Fast up & down beam speed up to 220mm/sec, Pressing speed up to 16 mm/sec
- CybTouch 12PS Controller from CYBELEC Switzerland
- 4+1 Axis machine with Accurate, high speed backgauge reduces positioning time and easily handles bending of complex parts
- Rigid upper beam guide on 12-point roller bearings
- The frame is machined on FLOOR BORING MACHINE ensuring single reference accurate machining
- Very low noise level, Silent & smooth machine operation
- Stable hydraulic oil temperature ensures consistent accuracy
- Lesser oil quantity

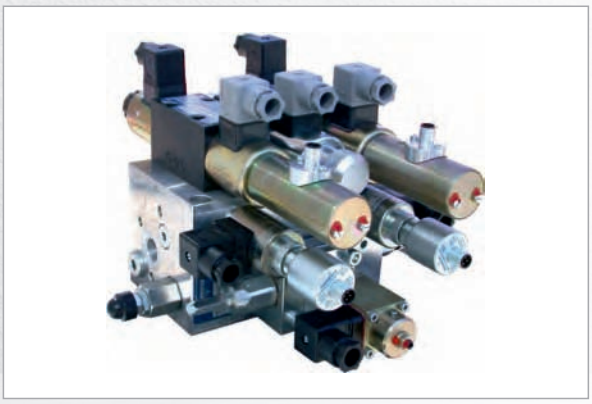
ACCURACIES

- Press Beam Depth Accuracy : ± 0.01mm
- Press Beam Depth Repeatability : ± 0.01mm
- Back Gauge Accuracy : ± 0.1mm
- Back Gauge Repeatability : ± 0.1mm

STANDARD **ACCESSORIES**

CybTouch 8PS Controller from CYBELEC Switzerland

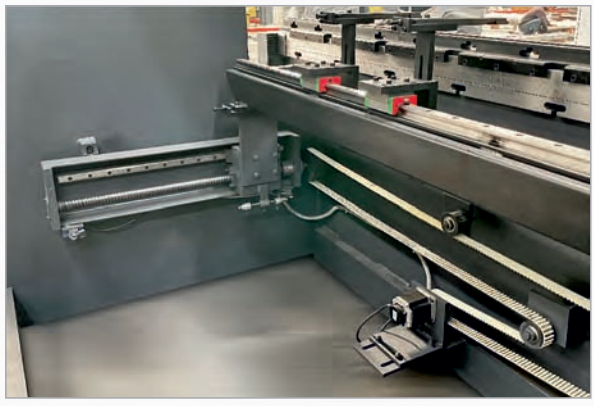
- Self centered Hardened & Grounded Segmented single 'V' /2 'V' / 4 'V' die & punch.
- Various tool profiles are available as an option.



Servo hydraulics from HAWE - Germany / ATOS - Italy for Y1-Y2 axis control

Back gauge finger movement in Z Axis on LM guide to maintain the parallelism across the table.

- Quick Release Clamp with taper wadges for localized bending degree adjustment.
- Sliding front sheet support on LM guides.

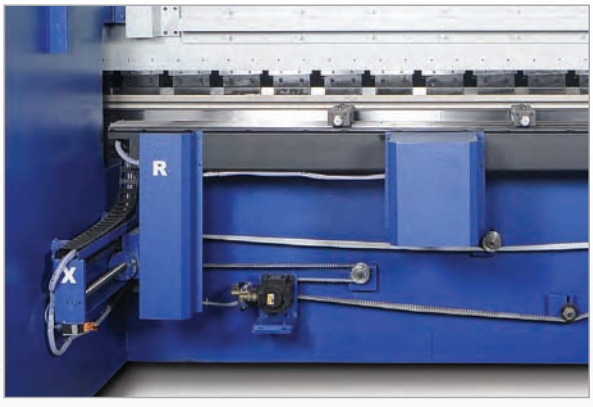


- High speed AC servo driven back gauge equipped with hardened & grounded ball screw with LM guides mounted on heavy fabricated channel housing.
- The timer belt is used for precise synchronized movement to avoid backlash error.

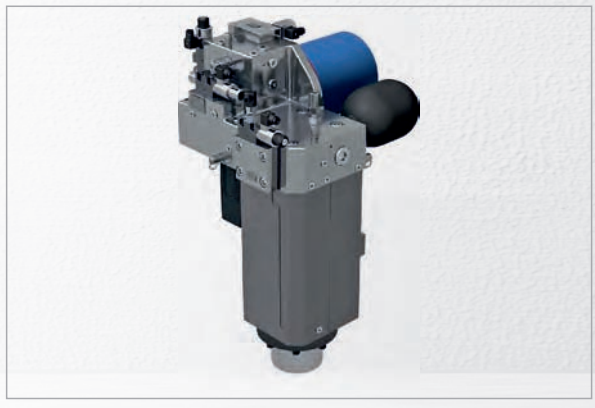
EXCLUSIVE **ACCESSORIES** FOR OPTIMA

CybTouch 12PS Controller from CYBELEC Switzerland

Automatic Crowning (For L = 2500mm & Higher)



X + R Axis Back Gauge



Hydraulic Package with Servo motor for High speed & Power Saving.

TECHNICAL SPECIFICATION FOR OPTIMA

Model	Bending Force	Bending Length	Bending Capacity	Clear Pass	Open Daylight	Ram Stroke	Throat Depth	Approach Speed	Working Speed	Return Speed
	M Ton	mm	mm	mm	mm	mm	mm	mm/s	mm/s	mm/s
PBO 0520	50	2000	3x2000	1550	385	200	250	200	14	200
PBO 0525	50	2500	2.5x2500	2050	385	200	250	200	14	200
PBO 0625	65	2500	3x2500	2050	385	200	250	200	14	200
PBO 0820	80	2000	5x2000	1550	385	200	250	200	14	200
PBO 0825	80	2500	4x2500	2050	385	200	250	200	14	200
PBO 1025	100	2500	5x2500	2050	485	300	400	200	14	200
PBO 1031	100	3100	4x3100	2600	485	300	400	200	14	200
PBO 1041	100	4100	3x4100	3500	485	300	400	200	14	200
PBO 1231	125	3100	5x3100	2600	485	300	400	200	14	200
PBO 1241	125	4100	3.5x4100	3500	485	300	400	200	14	200
PBO 1631	160	3100	6x3100	2600	485	300	400	200	14	200
PBO 1641	160	4100	5x4100	3500	485	300	400	200	14	200
PBO 2031	200	3100	8x3100	2600	485	300	400	200	14	200
PBO 2041	200	4100	6x4100	3500	485	300	400	200	14	200
PBO 2531	250	3100	10x3100	2600	565	350	450	170	12	170
PBO 2541	250	4100	8x4100	3500	565	350	450	170	12	170
PBO 3231	325	3100	12x3100	2600	565	350	450	170	12	170
PBO 3241	325	4100	10x4100	3500	565	350	450	170	12	170

*** Other Models are available on Request**

CNC
PRESS BRAKE

TANDEM / TRIDEM
CNC PRESS BRAKES

SOLUTIONS FOR
- LIGHTING POLES
- WIND MILLS
- STEEL TOWER INDUSTRY
- AUTOMOBILE INDUSTRIES
- RAILWAY & INFRASTRUCTURE

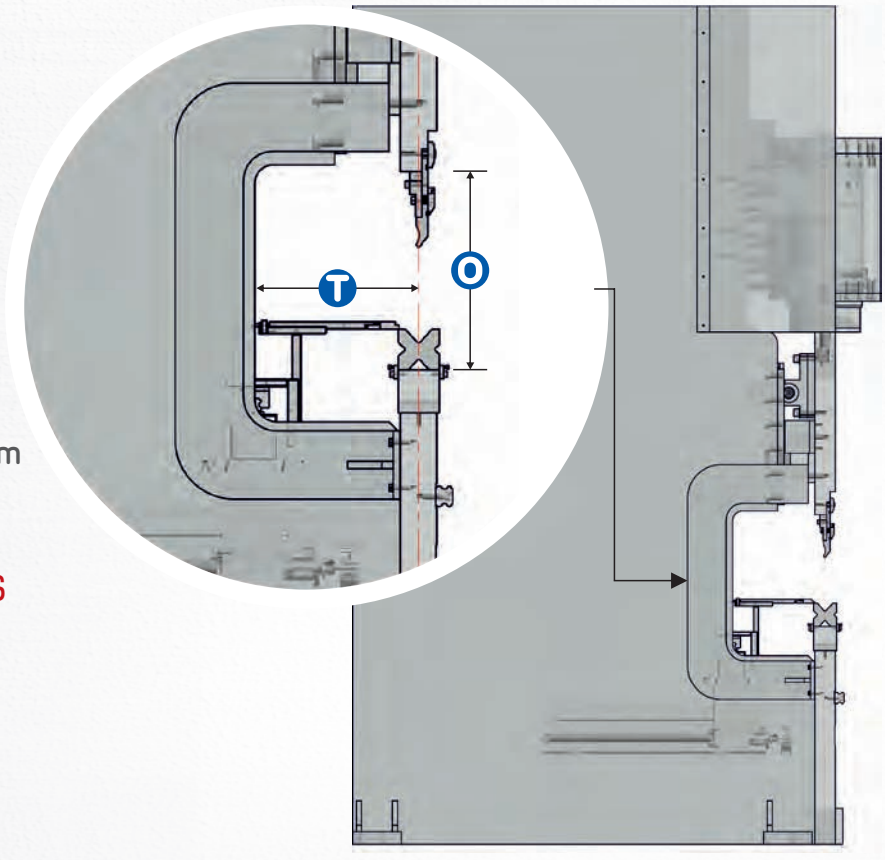
SALIENT FEATURES
- The TANDEM / TRIDEM press brakes are the combination of two or more press brakes synchronized by one controller
- Facility to use both or Individual to improve production efficiency
- Longer bending jobs, Higher tonnage machines with simple construction
- Add on options are available
- Various sheet handling accessories are available

CNC
PRESS
BRAKE

RANGE	100 MT to 2000 MT
LENGTH	3100 mm to 10000 mm

MAGNUM
CNC PRESS BRAKES

HUGE | ENORMUS



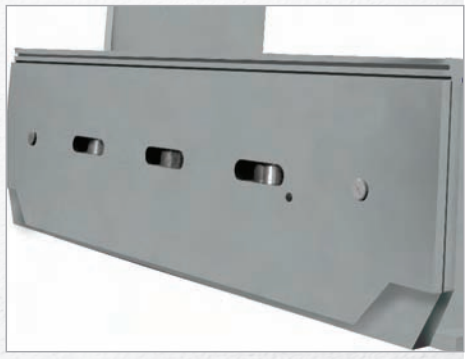
SALIENT FEATURES

- Higher Daylight
- Higher throat depth
- Higher Stroke length
- Designed to meet deeper & complex bending requirements
- Rigid upper beam guide on 12-point roller bearings
- Ultrasonically & tensile tested IS:2062 grade steel structure ensures the rigidity & avoid deflection
- The frame is machined on Floor Boring Machine ensuring single reference accurate machining
- Quick release clamps
- Back gauge assembly included ball screw, AC Servo drive, LM guides & timer belt
- Back gauge fingers mounted on LM guide
- Quick 'V' groove change over with self centred die with rail
- Hardened & grounded 2'V'/4'V' die & semi gooseneck punch
- Front sliding sheet support with LM guides for easy movement

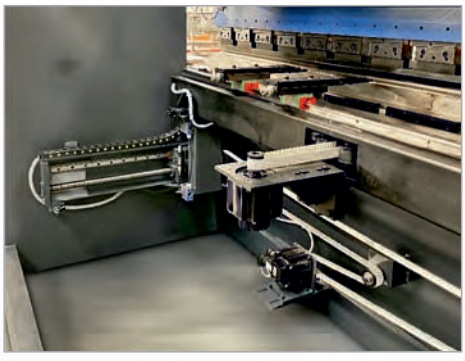
OPTIONAL **ACCESSORIES**

Manual Crowning

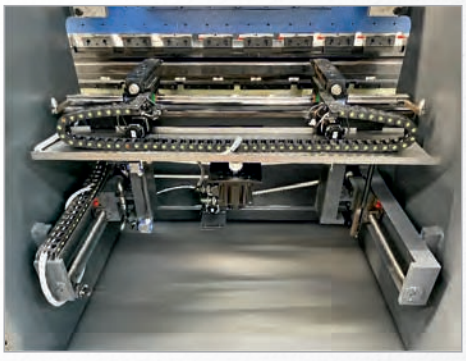
Automatic Single / Bi-Directional Crowning



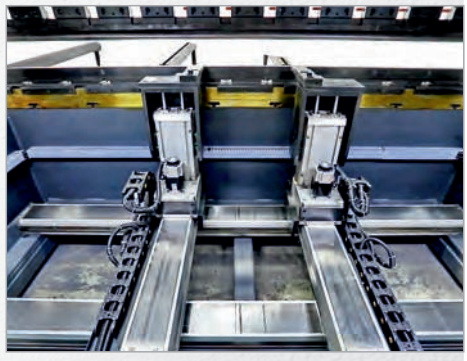
Hydraulic Crowning



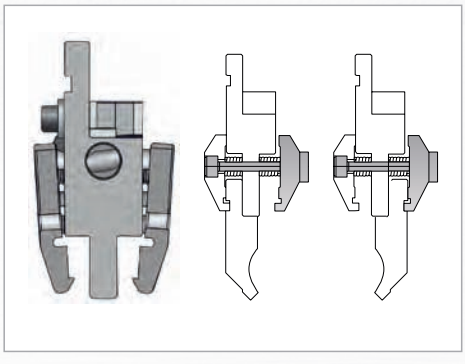
X + R Axis Back Gauge



X + R + Z1-Z2 Axis Back Gauge



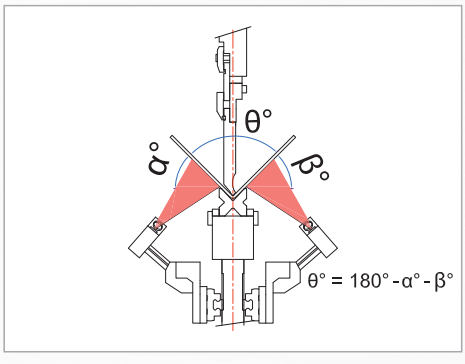
X1-X2 + R1-R2 + Z1-Z2 Axis Back Gauge



Double Side Mounting Punch Clamp

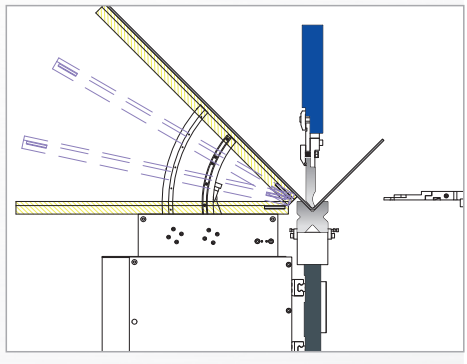
Stress Relieved Structure

Laser beam operator safety Integrated with press brake controller



Automatic Angle Measurement

Robotic Arm



Sheet Follower

CONTROLLERS

LEVEL : 1

4 + 1 AXIS
(NUMERICAL
PROGRAMMING)

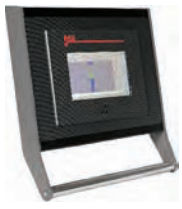

ESA S 630


CYBELEC CYB TOUCH 8PS


DELEM DA 53 T

LEVEL : 2

4 + 1 AXIS
(2D GRAPHICAL
PROGRAMMING WITH
MANUAL BEND SEQUENCE)

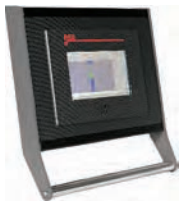

ESA S 630


CYBELEC CYB TOUCH 8PS


DELEM DA 53 T

LEVEL : 3

4 + 1 AXIS
(2D GRAPHICAL
PROGRAMMING WITH
AUTOBEND SEQUENCE)


ESA S 630

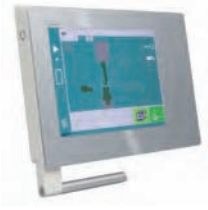

CYBELEC CYBTOUCH 12 PS


DELEM DA 58 T

LEVEL : 4

6 + 1 AXIS
(2D GRAPHICAL
PROGRAMMING WITH
AUTOBEND SEQUENCE)

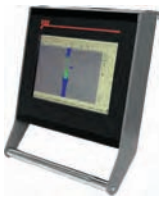

ESA S 640

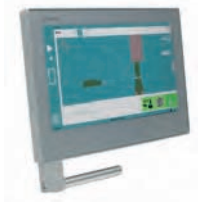

CYBELEC CYB TOUCH 15PS


DELEM DA 66 T

LEVEL : 5

MULTI AXIS
(2D GRAPHICAL
PROGRAMMING
& 3D VISUALIZATION)


ESA S 650

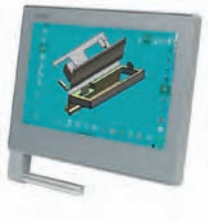

CYBELEC VISIPAC & VISITOUCH 19


DELEM DA 66 T

LEVEL : 6

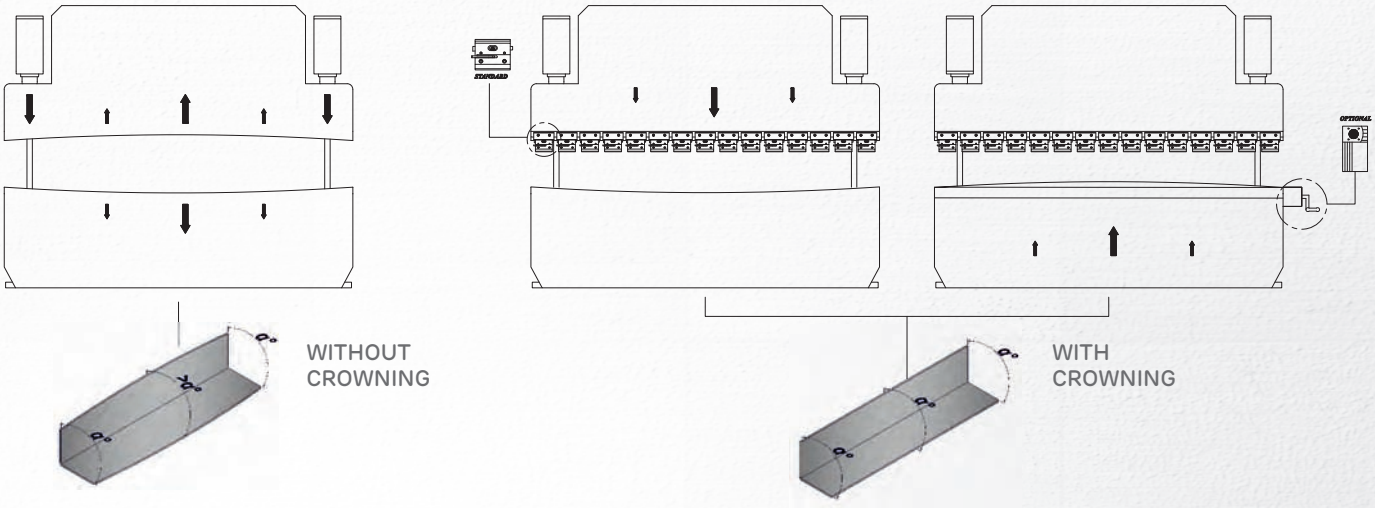
MULTI AXIS
(3D GRAPHICAL
PROGRAMMING
WITH 3D VISUALIZATION)


ESA S 660


CYBELEC VISITOUCH 19 MX


DELEM DA 69 T

CROWNING **SYSTEM**



With press brakes, the machine frames tend to deflect during the bending process. Without correction, the top tool does not penetrate the bottom die as deeply across the machine length, especially towards the centre of the press brake. As a result, the bending angle is not constant over the entire length. Crowning systems are characterized by their extremely compact design without any externally moving parts. Control often takes place automatically via a CNC drive motor integrated to the machine controller, eliminating the need for the press brake operator to make adjustments for machine deflection.

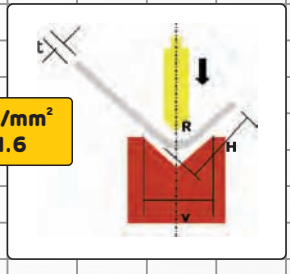
The crowning system is intended to overcome the deflection of structure. It is mounted on the bed (lower beam) of the machine, designed to included stacks of mechanical wedges that could be increased or decreased in height, predominantly in the centre of the machine. This make it possible to increase or decrease the curve in the crowning system to match the natural curve that was the result of deflection in the ram when the machine came under a load.

CNC Crowning ensure the ram and table are parallel during the bending operation. Sheet thickness, Length , Die Opening , and tensile Strength data are entered into the controller, Force and related deflection of the table and ram are automatically determined, preloading is optimally obtained for each bend.

BENDING FORCE **CHART**

t/V	4	6	8	10	12	16	20	25	32	40	50	63	80	100	125	160	200	250
H (min)	3	4	5.5	6.5	8	10.5	13	16.5	21	26	32.5	41	52	65	81.5	104	130	163
Ri (min)	0.5	0.8	1	1.3	1.5	2	2.5	3.2	4.4	5	6.5	8	10	12	15	20	25	37
0.5	4	3	2															
0.8	12	7	5	4														
1.0		11	8	6	5													
1.2		18	12	9	7	5												
1.5			21	15	12	8	6											
2				30	23	16	12	9										
2.5					39	27	20	14	11									
3						43	31	23	16	12								
4							60	44	32	23	18							
5								76	54	39	23	22						
6									85	62	45	33	25					
8										121	88	70	46	35				
10											151	109	79	58	44			
12												173	124	91	66	50		
15													213	155	113	81	62	
20														302	220	158	115	89
25															378	269	187	144

For SS U.T.S. 72 kg/mm² Multiply Force by 1.6



The force required for air bending can be calculated from the following formula:

Load, P = $\frac{K.L.S.t^2}{1000V}$ Metric Tones

CONTROL **TECHNOLOGY**

The CNC Press Brake is a modern press brake with precise automation & state of art technology for achieving best results on fabrication jobs.

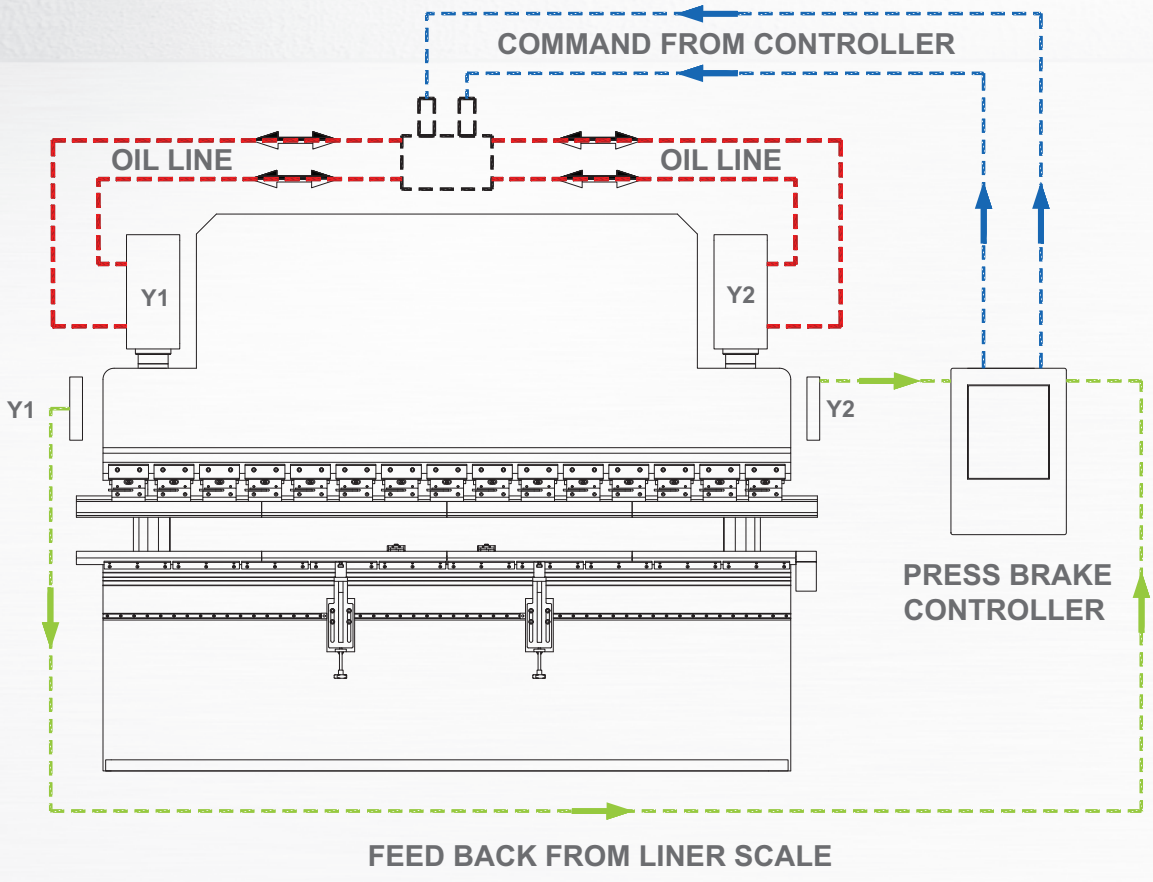
It eliminates the need of adjusting bending degrees & marking of bending positions on job. The operator can make program with different degrees & different gauge position. In turn, we can save the time on material handling & job marking. The operator can finish the complete job in one sequence even if different bending degrees & different edge dimensions are required. Hence it is enhancing the productivity of machine. It can save total 200 product programs & each program having 24 bends. These programs can be saved & recalled again for future use.

THE UNIQUE FEATURES OF CNC CONTROLLER PRESS BRAKE OFFERS

- Highly precise & accurate Bending results
- Quick & Easy programming
- The program can be made as simple as reading the job drawing.
- Complex bending sequence in one go
- Low maintenance cost
- Higher productivity & Saving on labour
- No skilled labour requirement for accurate bending
- Easy to make samples for special jobs

BEAM CONTROL

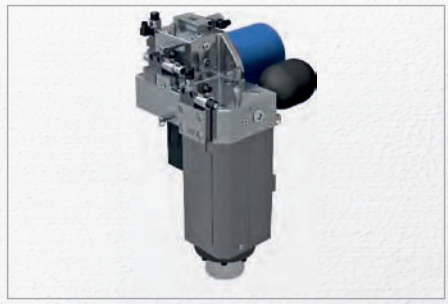
The CNC controller has Y1-axis& Y2-axis of Beam control at both ends. The beam axes Y1 & Y2 are synchronized axes. The servo hydraulics is used for controlling the ram parallism very precisely. Two linear encoder (Y1-Y2) are mounted on two sides of machine, they measure the exact distance between the Ram and Worktable, The Encoder are connected to The table, So that the deformation of the side frame dose not influence the position, The Position data is immediately sent to the controller system that calculates and output the control signal for the servo valves. If there is minor position error, two servo valves can be rectified necessarily by CNC System, it always ensure parallelism statues between the ram and tables.



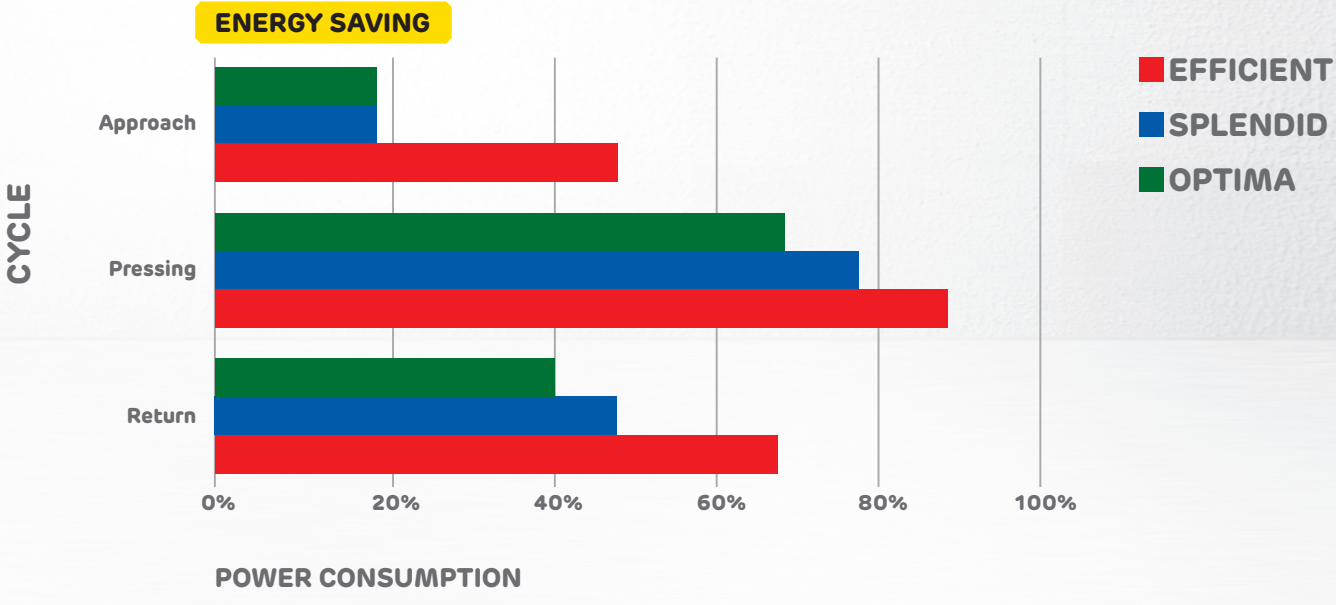
EFFICIENT

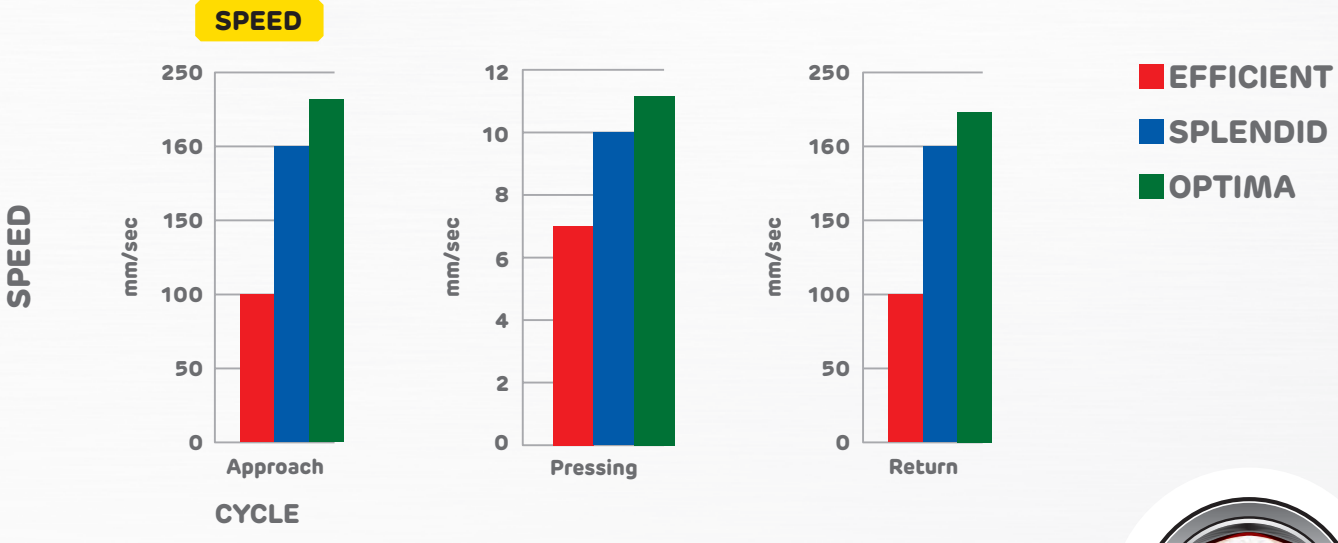
SPLENDID

OPTIMA



- 40% Energy Saving with Servo motor Package
- High Speed beam movements with less power
- Silent Operations & No oil heating

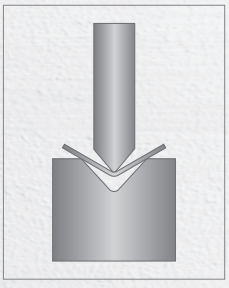




BENDING **FORCE CALCULATION** (METRIC TONES)

HYDRAULIC PRESS BRAKE MACHINE

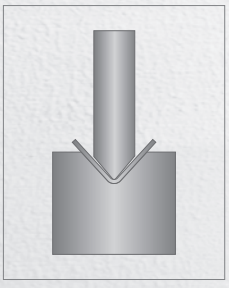
The capacity of Press Brake is generally defined in tons. Followings contain the details of load calculation in different types of bending methods like Air Bending, Bottoming, Forming etc. There are certain special applications like piercing, straightening etc, which can also be used on press brakes. But these processes need special tools and different load calculations.



AIR BENDING

Air Bending is the most widely used application on press brake. Air Bending is done on three contact lines, two die edge & cone punch edge. The calculation for air bending is as per following.

T Sheet Thickness in MM	0.5mm-8mm	9mm-10mm	12mm or More
V - Die Opening	8T	10T	12T



BOTTOM BENDING

In bottom bending the upper and lower dies are usually made with an include angle of 90 degree to ensure sharp corners on the formed part, In the forming process, the dies strike solidly and squeeze the material at stroke bottom.

This process requires 3 to 5 times the tonnage needed in air bending. Since more tonnage is required bottoming is seldom performed on steel greater than 12 gauge.

The adjustable "V" die opening for bottoming are : V=5 to 6x material thickness

PRESS BRAKE SELECTION GUIDELINES

The basic factors to be considered while selecting a press brake, or calculating the correct setting for operation are:

PARAMETERS	UNIT
Plate Thickness (t)	mm
Ultimate Tensile Strength of Plate (S)	Kg/mm²
Aluminum	25 Kg/mm²
Mild Steel	45 Kg/mm²
Stainless Steel	72 Kg/mm²
Bending Length(L)	mm

PARAMETERS	UNIT
Die Opening (V)	mm
Minimum Internal Radius	mm
Minimum Flange (H)	mm
Bending Correction Force (K)	1.3
Required Tonnage (P)	M. Tones

THE FORCE REQUIRED FOR AIR BENDING CAN BE CALCULATED FROM THE FOLLOWING FORMULA

Load, P (Metric Tones) = $K \times L \times S \times t^2 / 1000 \times V$

Suppose we want to bend 3.15 mm MS (10 Gauge) in 3000mm length, Following are the Calculation.

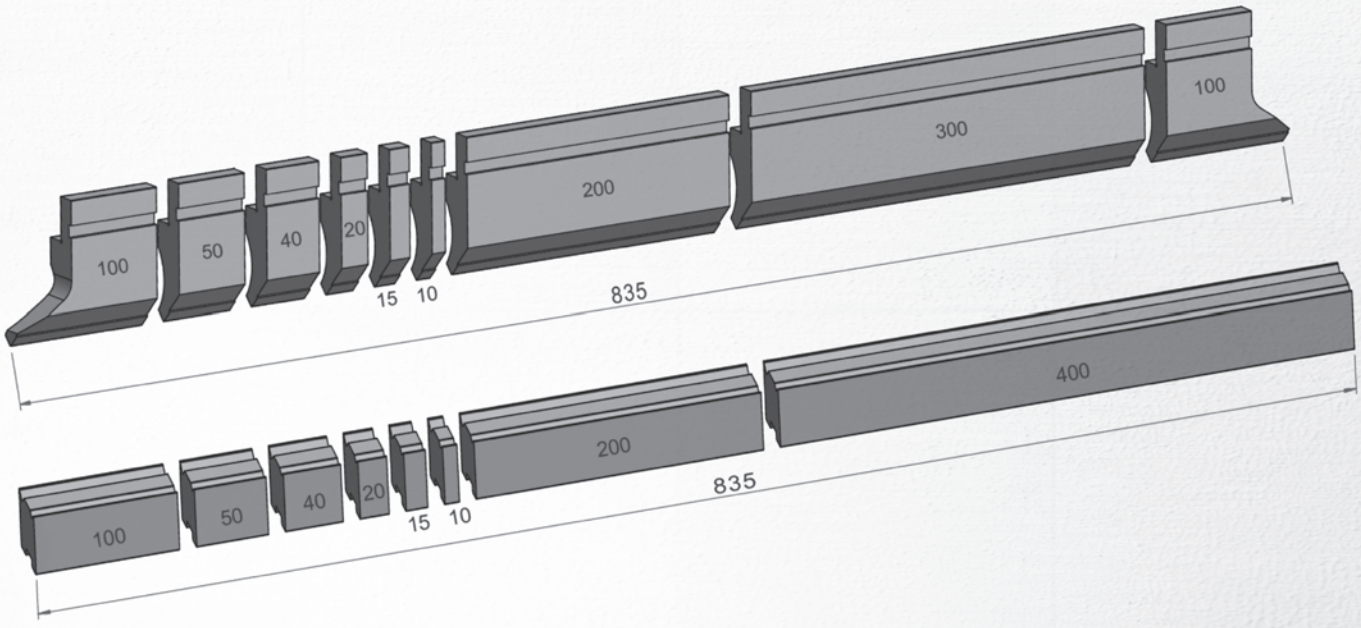
P = 1.3 (K) x 3000mm (L) x 45 (S) x 3.15^2 / 1000 (24mm) = 72 Metric Tones

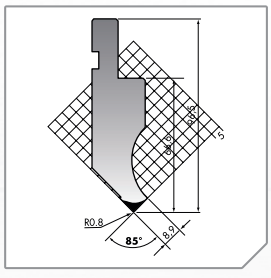
Suppose if we want to bend 3.15 mm SS (10 Gauge) in 3000mm length, Following are the Calculation.

P = 1.3 (K) x 3000mm (L) x 72 (S) x 3.15^2 / 1000 (24mm) = 115 Metric Tones

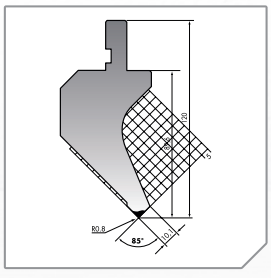
The bending chart also gives the bend radius & minimum bend edge also. The bending chart defines the load required per mm thickness per meter. To use bending chart, select the "V" opening from upper most line and thickness from vertical line, the matrix shows the total load in tons per meter. To achieve total load, this value should be multiplied by the total length of job.

TOOL **PROFILE**

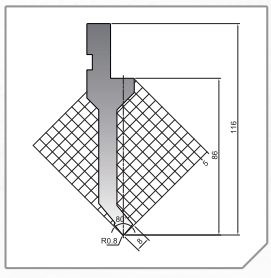




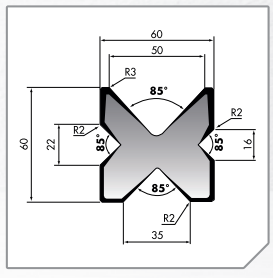
Standard Punch



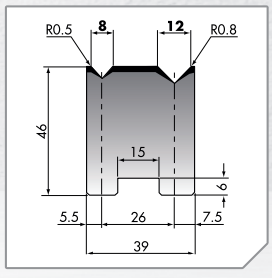
Goose Neck Punch



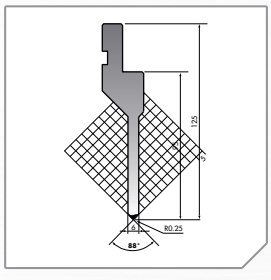
Narrow Punch



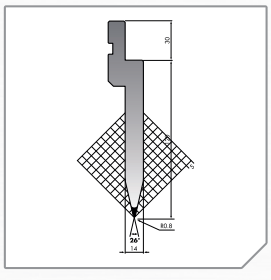
4 "V" Die



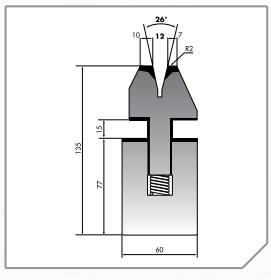
2 "V" Die



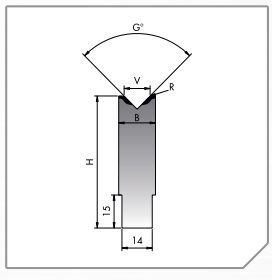
Straight Punch



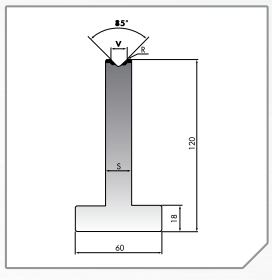
30° Straight Punch



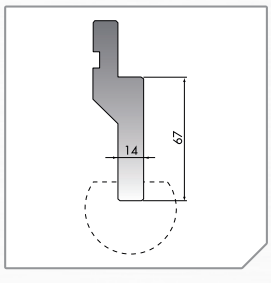
Hamming Die



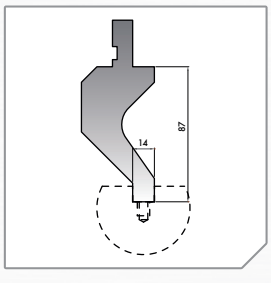
Single "V" Die (Inserted)



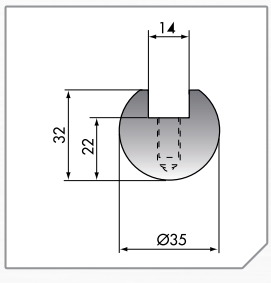
Single "V" T Die



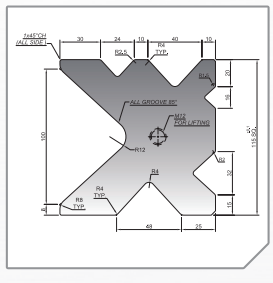
Radius Punch Holder



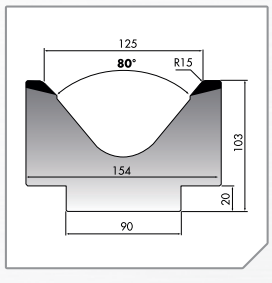
Goose Neck Type Radius Punch Holder



Radius Tool



Multi "V" Die



Single "V" Die

NETWORK

Sales **Network**

Energy Mission Machineries (India) Pvt. ltd have spread the network across India with presence in various states like Gujarat, Maharashtra, Delhi, Karnataka, Tamil Nadu, A.P., Telangana, Kerala, Uttar Pradesh & West Bengal. We have our team of executives to attend our customers in various cities with aim to provide local sales support. This ensures the in-depth know how about the product and application areas & appropriate selection of products at doorstep.

Apart from Indian territory, we are exporting our products to many countries like UAE, Saudi Arabia, Oman, Bahrain, Qatar, Kuwait, Jordan, Kenya, Uganda, Ghana, Srilanka, Nepal, Bangladesh etc.

Service **Network**

After sales service is one of the most important aspects of our business ethics. We at energy mission believe to provide prompt and uninterrupted service network to our valued customers. We have established our service centers in various locations like Ahmedabad, Mumbai, Pune, Bangalore, Chennai, Coimbatore, Madurai, Hyderabad, Kolkata, Lucknow & Delhi. As a result of teamwork & quality consciousness, today we have created a most satisfied customer base across India. We have successfully installed more than 5000+ machines working in MNC, Public sector companies, Private Sector Companies & small scale industries.

SOME OF OUR CLIENTS

ACHIEVEMENT

**AWARDED AS "OUTSTANDING ENTREPRENEUR OF YEAR"
IN YEAR 2008-09 & YEAR 2014-15**

ISO 9001 : 2015 CERTIFICATE

QRO
QUALITY RESEARCH ORGANIZATION

Certificate of Registration

This is to certify that

ENERGY-MISSION MACHINERIES (INDIA) PRIVATE LIMITED

OFFICE : - PLOT NO. 87/1, OPP PUSHPAK INDUSTRIAL ESTATE, PHASE 1, GIDC VATVA, AHMEDABAD-382 445, GUJARAT, INDIA.
FACTORY: - PLOT NO. E9/3 AND E-12,, BOL GIDC,, TA.-SANAND, AHMEDABAD, GUJARAT, 382170, INDIA

has been independently assessed by QRO
and is compliant with the requirement of:

ISO 9001:2015

Quality Management System

For the following scope of activities:

DESIGN, DEVELOPMENT, MANUFACTURE, SUPPLY, INSTALLATION, COMMISSIONING & SERVICING OF HYDRAULIC SHEAR & HYDRAULIC PRESS BRAKE, NC HYDRAULIC SHEAR & NC HYDRAULIC PRESS BRAKE, CNC SHEAR & CNC SYNCRO PRESS BRAKE, HYDRAULIC IRON WORKER, 3 ROLL & 4 ROLL PLATE ROLLING MACHINE, SECTION BENDING MACHINE, BUSBAR MACHINE (BENDING, CUTTING & PUNCHING), HYDRAULIC C & H FRAME PRESS, HYDRAULIC FOUR PILLAR & HORIZONTAL PRESS AND HYDRAULIC DEEP DRAWING PRESS MACHINE

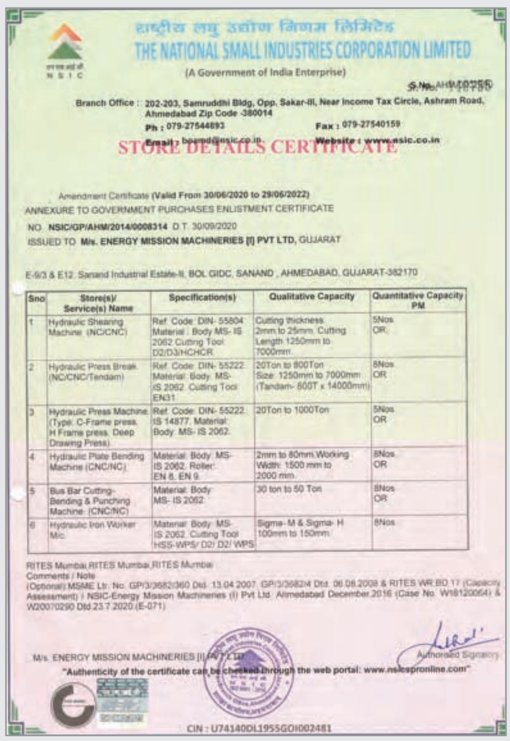
Date of Certification: 21st July 2021
2nd Surveillance Audit Due: 20th July 2023
1st Surveillance Audit Due: 20th July 2022
Certificate Expiry: 20th July 2024

Certificate Number: 305021072101Q

QRO EGAC IAF

Head of Certification

NSIC CERTIFICATE



राष्ट्रीय लघु उद्योग निगम लिमिटेड
THE NATIONAL SMALL INDUSTRIES CORPORATION LIMITED
(A Government of India Enterprise)

Branch Office : 202-203, Samruddhi Bldg, Opp. Sakar-III, Near Income Tax Circle, Ashram Road, Ahmedabad Zip Code -380014
Ph : 079-27544893 Fax : 079-27540159
Website : www.nsic.co.in

STORE DETAILS CERTIFICATE

Amendment Certificate (Valid From 30/06/2020 to 29/06/2022)
ANNEXURE TO GOVERNMENT PURCHASES ENLISTMENT CERTIFICATE
NO. NSIC/GP/AHM/2014/0008314 D.T. 30/09/2020
ISSUED TO M/s. ENERGY MISSION MACHINERIES [I] PVT LTD, GUJARAT

E-9/3 & E12, Sanand Industrial Estate-II, BOL GIDC, SANAND , AHMEDABAD, GUJARAT-382170

Sno	Store(s)/ Service(s) Name	Specification(s)	Qualitative Capacity	Quantitative Capacity PM
1	Hydraulic Shearing Machine (NC/CNC)	Ref. Code: DIN- 55804 Material : Body MS- IS 2062 Cutting Tool: D2/D3/HCHCR	Cutting thickness 2mm to 25mm. Cutting Length 1250mm to 7000mm	5Nos OR
2	Hydraulic Press Break (NC/CNC/Tendam)	Ref. Code: DIN- 55222 Material: Body: MS- IS 2062 Cutting Tool EN31	20Ton to 800Ton Size: 1250mm to 7000mm (Tandam- 800T x 14000mm)	8Nos OR
3	Hydraulic Press Machine (Type: C-Frame press, H Frame press, Deep Drawing Press)	Ref. Code: DIN- 55222 IS 14877. Material: Body: MS- IS 2062.	20Ton to 1000Ton	5Nos OR
4	Hydraulic Plate Bending Machine (CNC/NC)	Material: Body: MS- IS 2062. Roller: EN 8. EN 9.	2mm to 80mm Working Width: 1500 mm to 2000 mm.	8Nos OR
5	Bus Bar Cutting- Bending & Punching Machine (CNC/NC)	Material: Body MS- IS 2062	30 ton to 50 Ton	8Nos OR
6	Hydraulic Iron Worker M/c	Material: Body: MS- IS 2062. Cutting Tool HSS-WPS/ D2/ D2/ WPS	Sigma- M & Sigma- H 100mm to 150mm	8Nos

RITES Mumbai,RITES Mumbai,RITES Mumbai
Comments / Note
(Optional) MSME Ltr. No. GP/3/3682/360 Dtd. 13.04.2007, GP/3/3682/4 Dtd. 06.06.2008 & RITES WR BD 17 (Capacity Assessment) / NSIC-Energy Mission Machineries (I) Pvt Ltd. Ahmedabad December 2016 (Case No. W18120064) & W20070290 Dtd.23.7.2020 (E-071)

M/s. ENERGY MISSION MACHINERIES [I] PVT LTD

Authorised Signatory

"Authenticity of the certificate can be checked through the web portal: www.nsicspronline.com"

CIN : U74140DL1955GOI002481

The Company reserves right to change Technical Specifications without prior notice.

omkar cs - +91 97 12912 882

ENERGYMISSION
MACHINERIES (INDIA) PVT. LTD.

SCAN FOR LIVE CHAT

+91 99790 66669

OFFICE : Plot No : 87/1, Phase-I, Opp. Pushpak Industrial Estate, GIDC, Vatva, Ahmedabad - 382445, Gujarat - India.
FACTORY : Plot No : E-9/3, Sanand - II Industrial Area, Bol GIDC, Sanand - 382170, Ahmedabad, Gujarat - India.

MARKETING : +91 98244 81470 | +91 98243 03302
SERVICE : +91 99099 58538
RECEPTION : +91 99244 59591

info@energymission.com | energymission@gmail.com
care@energymission.com
contact@energymission.com | www.energymission.com