

Adding performance to the industry

- 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, our own service & sales network & associates across India.
- Enthusiastic team of customer care is always ready to rush within shortest time at the doorstep of customer for any requirements.
- Our product range covers Hydraulic Shearing machine, NC Hydraulic Shearing machine, Hydraulic Press-brake, NC Hydraulic Press-brake, CNC Syncro Hydraulic Press-brake, Iron worker 'Sigma', Deep drawing press, General purpose Hydraulic presses and special purpose machines.
- Today, we have 2500 Sq. meter area with well-equipped workshop and trained work force capable of taking the new challenges and delivering the product in a planned manner. The stage wise inspection by quality control people ensures achievement of high quality product.
- As a result of teamwork & quality consciousness, today we have created a most satisfied customer base across India & abroad. Customer to large extent has reposed their confidence by confirming repeat business. We have successfully installed more than 500 machines working in MNCs, Public sector companies, Private sector Companies & Medium & small scale industries. This has made 'ENERGY MISSION' a reputed brand in market and we proudly say to our customers that
- ADD 'ENERGY' TO DRIVE YOUR 'MISSION'.

Quality Policy

- We at Energy Mission Engineers, shall always strive to achieve the highest level of customer satisfaction and shall aim to share a long lasting and growing relationship with our customers. To achieve this, we shall use technology in performing better tests and serve accurate results and also develop capabilities in all aspects of our business. We shall continuously strive for improvement in our result quality, human resources, customer relation and along with this provide prompt services, right time shipment schedules to our valued customers. We shall also ensure that we render value of money to our customers.
- We are also commutate to company with requirements of ISO 9001:2000 and continuously improve the effectiveness of our quality management system for the benefit of our customer.

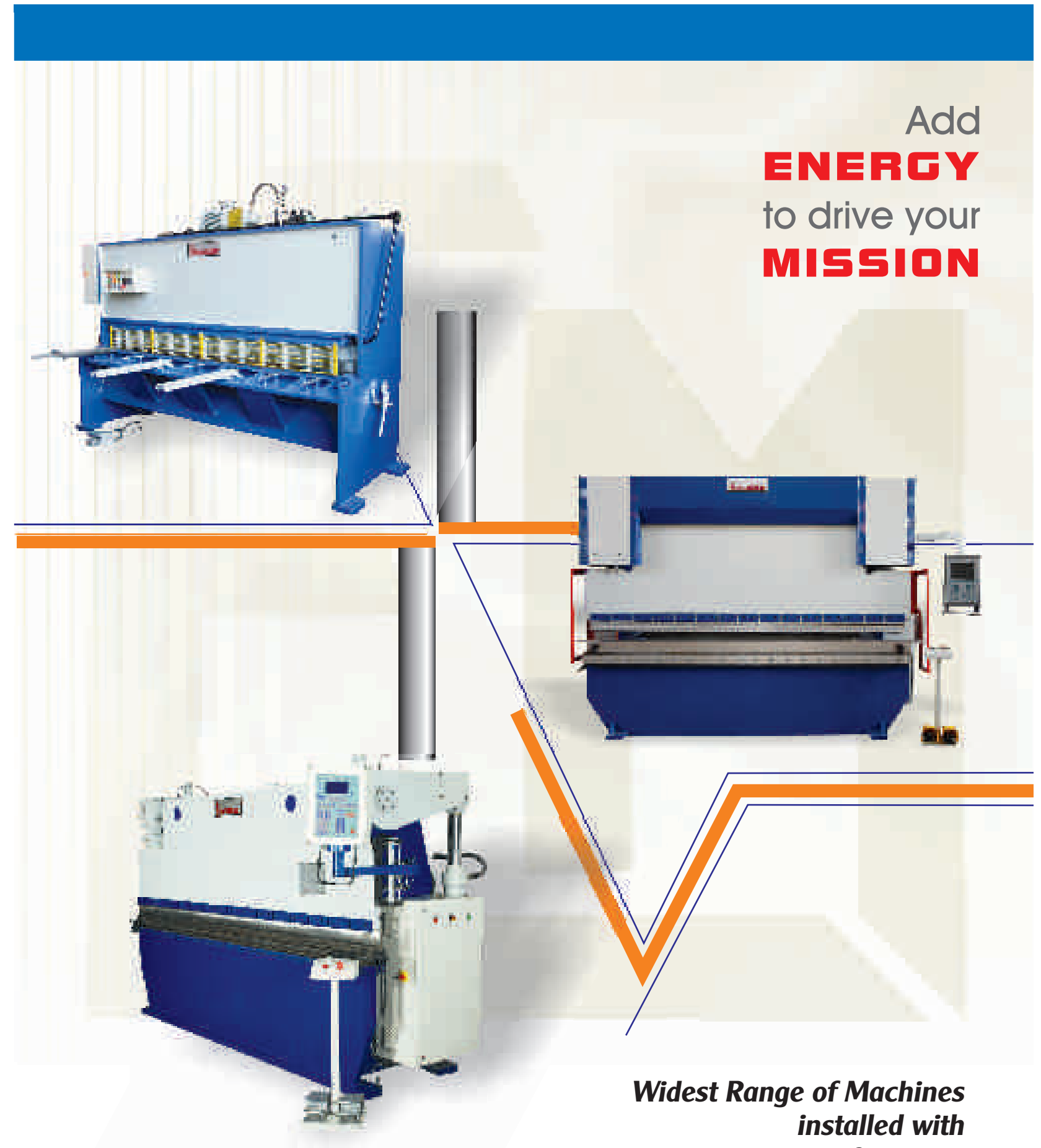


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• All data, specification and photographs are subject to change without prior notice.
 • ** Toolings not covered under warranty. • All load calculations are done considering M.S. (UTS 45 N/mm²).

ENERGY

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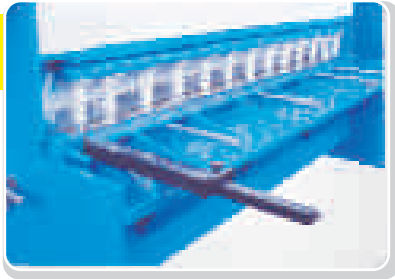
**Widest Range of Machines
 installed with
 proven performance**



**AN ISO 9001:2000
 CERTIFIED COMPANY**

ENERGY Mission

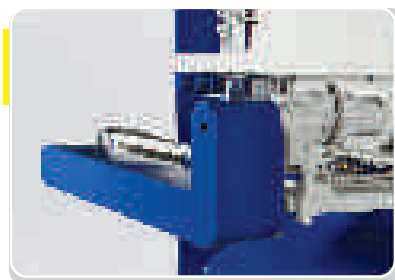
HYDRAULIC SHEARING MACHINE



- ✓ The stable, robust, **ultrasonically tested IS 2062 welded steel plates structure** as per guidelines of IMTMA standards.
- ✓ Ram & Table designed with inclined member & **box type structure** for maximum strength.
- ✓ Positive holding of **Hyd. Hold downs** avoids slippage of sheet during cutting stroke.
- ✓ **HCHCr Blade** suitable to MS & SS.
- ✓ Hardened Transfer bars.
- ✓ Front gauging by disappearing stoppers mounted on **front squaring arm**.



- ✓ International quality **hydraulics components**. Specially designed **compact manifolds** gives smooth, silent & jerk less operation.



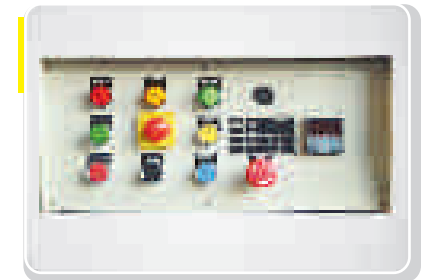
- ✓ Robust, heavy & **accurate back gauge** with various drive options.

Silent Features

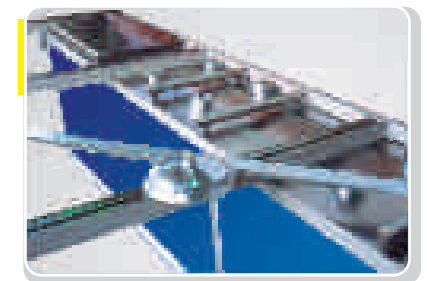
- Better cutting accuracy in thin sheets at lower rake angle
- Higher cutting capacity at max. rake angle
- Less power consumption
- Better safety for operator and machine
- Fast production on smaller jobs
- NC upgradation possible
- Low noise & smooth operation gives higher efficiency of operator



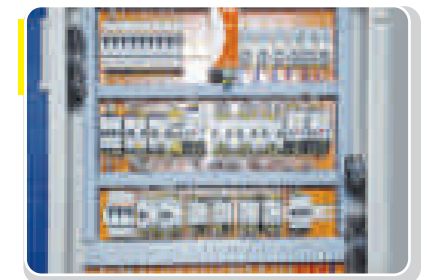
RANGE : 3 mm to 25 mm
LENGTH : 1250 mm to 7000 mm



Variable Rake Angle Adjustment for higher thickness cutting than nominal capacity. Also thin sheets can be cut at lower rake angle ensures twist free cut. **Rake Angle** can be easily adjusted through **selector switch**.



- ✓ Optional **Ball Transfer Table** for fast and smooth handling of material.
- ✓ **Degree Protector Arrangement** for taper cutting of sheets.



International quality **electrical components** ensure trouble free operation over a period of time.



The fastest & easiest **Pre calibrated blade clearance** setting for burr free cutting.

ENERGY Mission

NC HYDRAULIC SHEARING MACHINE



Silent Features

- NC controller from Delem
- 99 steps automatic back gauge program
- Hardened & ground ball screw with linear motion bearing
- Stroke counting on screen
- Rake angle control thru selector switch

Model	Cutting Length in mm	Shearing Capacity				Nominal Rake Angel in degree	Rake Angle range in degree	Rake Angle Stroke per min		No. of Hold downs	Holding Force in Kg.	Power in HP	Packing Dimension (LXWxH) in mm
		Thickness in mm						Min.	Max.				
		M.S.	S.S.										
HVR 320	2000	3.15	4	2	3.15	1°15'	0.5-3°	20	11	11	2000	3	2700x1250x1950
HVR 325	2500	3.15	4	2	3.15	1°15'	0.5-3°	25	13	13	2300	5	3200x1250x2000
HVR 330	3000	3.15	4	2	3.15	1°15'	0.5-3°	21	9	16	2600	5	3700x1400x2100
HVR 340	4000	3.15	4	2	3.15	1°15'	0.5-3°	12	6	20	3200	7.5	4700x1500x2250
HVR 415	1500	4	6	3	4	1°37'	0.5-3°	25	13	8	4500	7.5	2250x1250x2050
HVR 420	2000	4	6	3	4	1°37'	0.5-3°	23	11	11	6200	7.5	2750x1250x2100
HVR 425	2500	4	6	3	4	1°37'	0.5-3°	21	8	13	8000	7.5	3300x1400x2250
HVR 430	3000	4	6	3	4	1°37'	0.5-3°	21	10	16	10000	10	3700x1500x2400
HVR 440	4000	4	6	3	4	1°37'	0.5-3°	15	6	20	12000	10	4700x1650x2600
HVR 450	5000	4	6	3	4	1°37'	0.5-3°	10	3	24	15000	10	5700x1700x2750
HVR 460	6000	4	6	3	4	1°37'	0.5-3°	10	3	28	15000	10	6700x1800x2850
HVR 615	1500	6	8	4	6	1°45'	0.5-3°	22	8	8	6500	10	2250x1300x2100
HVR 620	2000	6	8	4	6	1°45'	0.5-3°	20	7	11	6500	10	2750x1350x2150
HVR 625	2500	6	8	4	6	1°45'	0.5-3°	24	8	13	8500	15	3300x1500x2300
HVR 630	3000	6	8	4	6	1°45'	0.5-3°	22	6	16	10800	15	3800x1650x2500
HVR 640	4000	6	8	4	6	1°45'	0.5-3°	22	6	20	13600	20	4800x1700x2750
HVR 650	5000	6	8	4	6	1°45'	0.5-3°	18	4	24	16500	20	5700x1800x2850
HVR 660	6000	6	8	4	6	1°45'	0.5-3°	14	3	28	19500	20	6700x1900x2950
HVR 815	1500	8	10	6	8	2°	0.5-3°	15	8	8	10500	10	2250x1350x2100
HVR 820	2000	8	10	6	8	2°	0.5-3°	18	8	11	12000	15	2750x1450x2250
HVR 825	2500	8	10	6	8	2°	0.5-3°	20	8	13	16500	20	3300x1650x2450
HVR 830	3000	8	10	6	8	2°	0.5-3°	18	6	16	18500	20	3800x1800x2600
HVR 840	4000	8	10	6	8	2°	0.5-3°	16	4	20	23000	20	4800x1850x2800
HVR 850	5000	8	10	6	8	2°	0.5-3°	12	3	24	27000	25	5750x1950x2900
HVR 860	6000	8	10	6	8	2°	0.5-3°	8	2	28	31000	25	6750x2100x3100
HVR 1015	1500	10	13	8	10	2°	0.5-3°	14	6	8	10500	10	2250x1350x2200
HVR 1020	2000	10	13	8	10	2°	0.5-3°	18	8	11	13000	15	2750x1500x2300
HVR 1025	2500	10	13	8	10	2°	0.5-3°	15	8	13	17500	20	3300x1650x2500
HVR 1030	3000	10	13	8	10	2°	0.5-3°	12	6	16	20000	20	3800x1850x2750
HVR 1040	4000	10	13	8	10	2°	0.5-3°	13	6	20	25000	25	4800x1950x2850
HVR 1050	5000	10	13	8	10	2°	0.5-3°	10	5	24	30000	30	5750x2050x3000
HVR 1060	6000	10	13	8	10	2°	0.5-3°	8	3	28	35000	30	6750x2200x3300
HVR 1320	2000	13	16	10	13	2°	1-3°	15	8	11	16000	25	2850x1800x2600
HVR 1325	2500	13	16	10	13	2°	1-3°	13	6	13	20000	25	3350x1900x2750
HVR 1330	3000	13	16	10	13	2°	1-3°	11	6	16	25000	25	3800x1950x2850
HVR 1340	4000	13	16	10	13	2°	1-3°	9	4	20	30000	30	4800x2000x2950
HVR 1350	5000	13	16	10	13	2°	1-3°	9	4	24	35000	40	5750x2150x3150
HVR 1360	6000	13	16	10	13	2°	1-3°	7	3	28	40000	40	6750x2300x3500
HVR 1620	2000	16	20	13	16	2°	1-3°	18	6	11	20000	30	3000x1900x2800
HVR 1625	2500	16	20	13	16	2°	1-3°	15	5	13	25000	30	3500x2000x2900
HVR 1630	3000	16	20	13	16	2°	1-3°	12	5	16	28000	30	4000x2000x3000
HVR 1640	4000	16	20	13	16	2°	1-3°	7	3	20	33000	30	4800x2050x3100
HVR 1650	5000	16	20	13	16	2°	1-3°	7	3	24	38000	40	5750x2250x3300
HVR 1660	6000	16	20	13	16	2°	1-3°	5	2	28	43000	40	6750x2350x3700
HVR 2025	2500	20	25	16	20	2°	1-3°	12	5	13	28000	40	3500x2000x3000
HVR 2030	3000	20	25	16	20	2°	1-3°	11	5	16	35000	40	4000x2100x3200
HVR 2040	4000	20	25	16	20	2°	1-3°	9	4	20	40000	50	4800x2200x3300
HVR 2050	5000	20	25	16	20	2°	1-3°	8	3	24	45000	60	5800x2350x3500
HVR 2060	6000	20	25	16	20	2°	1-3°	5	2	28	50000	60	6800x2450x4100
HVR 2525	2500	25	30	20	24	2°	1-3°	10	4	13	36000	60	3400x2250x3300
HVR 2530	3000	25	30	20	24	2°	1-3°	8	4	16	45000	60	4000x2300x3300
HVR 2540	4000	25	30	20	24	2°	1-3°	7	4	20	50000	75	5000x2300x3500
HVR 2550	5000	25	30	20	24	2°	1-3°	5	2	24	55000	75	6000x2450x3700
HVR 2560	6000	25	30	20	24	2°	1-3°	3	1	28	60000	75	7000x2600x4300

NC Value Addition :



- ✓ HMI with 2 Line 16 character LCD monochrome screen & numeric keypad.
- ✓ 99 steps back gauge position program
- ✓ Stroke control on screen
- ✓ Stroke counter on screen
- ✓ Rake angle adjustment through selector switch



- ✓ Hardened ground Ball screw with better position accuracy
- ✓ Linear motion bearings for smooth & accurate guiding.
- ✓ Various drives interface like two-speed motor, stepper motor or AC servo motor
- ✓ Optional Timer belt drive

STANDARD ACCESSORIES

- Main Drive Motor.
- Electric Control Panel.
- Operational Consol.
- Rake angle selection through selector switch
- Lever operated Blade clearance with calibration.
- Fine stroke adjustment rod with limit switch
- Front sheet support.
- Squaring arm with steel rule.
- Hardened Transfer bars mounted on table
- Hold down cylinders.
- Cutting area illuminated for clear view of blades.
- Four edge HCHCr Blade suitable to MS & SS.
- Manual Back Gauge.

STANDARD ACCESSORIES (NC CONTROL)

- HMI with 2 Line 16 character LCD monochrome screen & numeric keypad.
- Main Drive Motor.
- Electric Control Panel.
- Hardened Ground Ball screw & Linear motion bearings .
- Two-speed AC motor for back gauge drive.
- Rake angle selection through selector switch.
- Lever operated Blade clearance with calibration.
- Stroke adjustment through screen.
- Front sheet support.
- Squaring arm with steel rule.
- Hardened Transfer bars mounted on table.
- Hold down cylinders.
- Cutting area illuminated for clear view of blades.
- Four edge HCHCr Blade suitable to MS & SS.

OPTIONAL ACCESSORIES

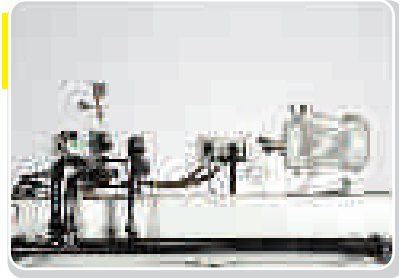
- Motorized back gauge with DRO.
- Second squaring arm on other side.
- Front support with roller according to required length.
- Rear Sheet support.
- Timer belt drive for back gauge.
- Ball Transfer Table.
- Degree protector for angular cutting.
- Stroke counter.
- Design with throat depth.
- First fill of Hydraulic oil.

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HYDRAULIC PRESS BRAKE

Silent Features

- Compact cylinders & low pressure system due to rear cylinder design
- Better rigidity & load carrying capacity against fatigue failure
- Positive synchronisation of cylinders with welded torque tube
- Better safety for operator & machine
- Low power consumption
- Three speed system for higher productivity
- Fast production on smaller jobs
- NC upgradation possible
- Low noise & smooth operation gives higher efficiency of operator



International quality **hydraulics components**. Specially designed **compact manifolds** gives smooth, silent & jerk less operation.



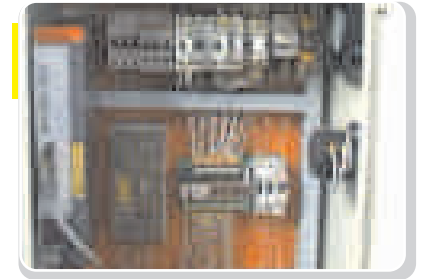
Front operated **manual back gauge** with micro-adjustment.



- ✓ The stable robust welded steel frame made of ultrasonically tested IS 262 plates as per guidelines of IMTMA standards.
- ✓ Fast approach & fast return speeds to save cycle time, slow pressing speed for better stroke control & bending accuracy, ensures high productivity.
- ✓ Repetitive accuracy within ± 0.04 mm.
- ✓ Accurate & fine Ram Position Control by micro limit switch.
- ✓ Five piece adjustable guides with special wear resistant liners.



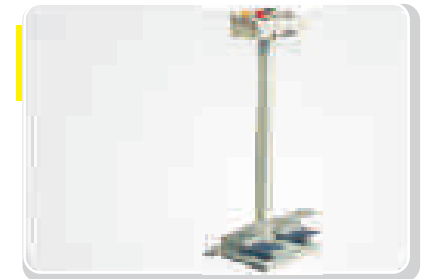
RANGE : 20 MT to 600 MT
LENGTH : 1250 mm to 7000 mm



International quality **electrical components** ensure trouble free operation over a period of time.



- ✓ **Hydraulic cylinder with twin type sealing** low & high pressure and hard chrome plated rod with special type guide for long life without leakage.
- ✓ **Centralized lubrication** with flow control ensures adequate lubrication at all points.



Moving work station with ON/OFF controls, Emergency push button & selector for Manual, Semi-Auto & Automatic mode for easy operation & safety.



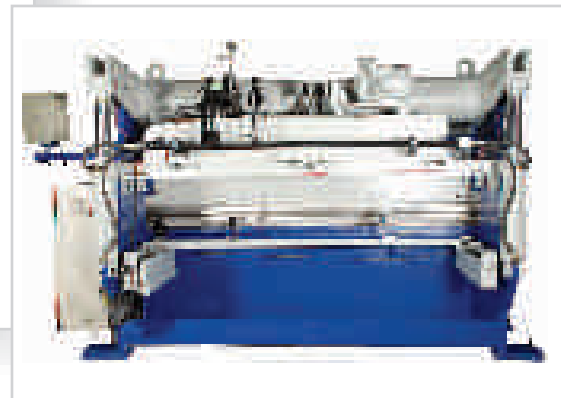
Ram tilting arrangement to maintain bending accuracy over a period.

NC HYDRAULIC PRESS BRAKE

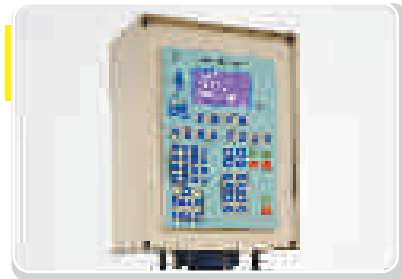


Silent Features :

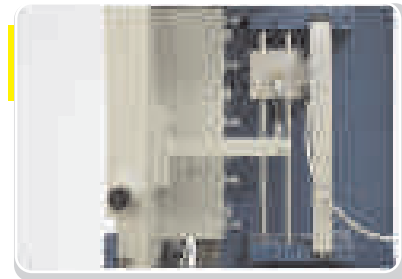
- Suitable for complex job bending
- Ram axis Y and back gauge axis X can be controlled
- Bend angle & Depth mode programs
- Highly precise Magnetic type press brake scale
- Hardened & ground ball screw with linear motion bearings
- 128 x 16 bend program memory
- Automatic degree & back gauge position as per program



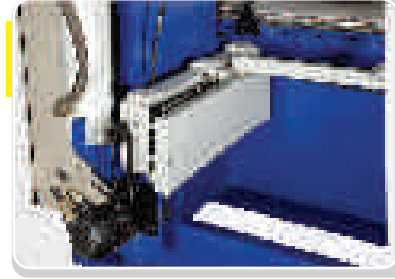
NC Value Addition :



- ✓ Dedicated controller with LCD monochrome screen & numeric keypad.
- ✓ Manual, Auto & Program mode selection through screen.
- ✓ 128 programs X 16 bends per program can be stored.
- ✓ Stroke control and stroke counter on screen.



- ✓ Highly Precise glass tube optical linear scale for accurate Y-axis positioning.
- ✓ Repetitive accuracy within ± 0.03mm.
- ✓ Alarm, Fault & status pages to detect the problems.
- ✓ Password protected screen menus to safeguard program access.



- ✓ Various drive Interface like two-speed motor, stepper motor or AC Servo Motor.
- ✓ Hardened ground Ball screw and linear motion bearing for better position accuracy and longer life.
- ✓ Optional Timer belt drive.

Model	Tonnage		Table Length		Bending Capacity		Table Width	Clear Pass	Ram Stroke	Open Height	Throat Depth	Approach Pressing Return speed	Power	Packing Dimensions
	in MT	in mm	in mm	in mm	in mm	in mm	in mm	in mm	in mm	in mm	in mm	HP	(LxWxH)	
PBR 215	20	1500	1.6x1500	2x1250	125	1050	100	250	100	250	100	35-9-35	3	1700x1050x1900
PBR 320	30	2000	2x2000	3x1250	125	1550	100	250	200	200	200	30-7-40	3	2200x1150x1900
PBR 420	40	2000	2.5x2000	3x1500	180	1550	100	250	200	200	200	40-6-45	5	2200x1150x1800
PBR 425	40	2500	2x2500	3x1500	180	2050	100	250	200	200	200	40-6-45	5	2700x1150x1900
PBR 430	40	3000	1.6x3000	3x1500	180	2550	100	250	200	200	200	40-6-45	5	3200x150x2000
PBR 515	50	1500	4x1500	5x1250	180	1050	100	250	200	200	200	35-6-40	5	1700x1150x1900
PBR 520	50	2000	3x2000	4x1500	180	1550	100	250	200	200	200	35-6-40	5	2200x1150x1900
PBR 525	50	2500	2.5x2500	3x2000	180	2050	100	250	200	200	200	35-6-40	5	2700x1150x1900
PBR 530	50	3000	2x3000	2.5x2500	180	2550	100	250	200	200	200	35-6-40	5	3200x1150x2000
PBR 540	50	4000	1.6x4000	2x3000	180	3100	100	250	200	200	200	35-6-40	5	4200x1250x2300
PBR 625	65	2500	3x2500	4x2000	180	2050	150	330	200	200	200	35-5-40	5	2700x1200x2000
PBR 630	65	3000	2.5x3000	3x2500	180	2550	150	330	200	200	200	35-5-40	5	3200x1200x2000
PBR 640	65	4000	2x4000	2.5x3000	180	3100	150	330	200	200	200	35-5-40	5	4200x1250x2400
PBR 820	80	2000	5x2000	6x1500	180	5100	150	330	200	200	200	40-6-45	7.5	2200x1550x2100
PBR 825	80	2500	4x2500	5x2000	180	2050	150	330	200	200	200	40-6-45	7.5	2700x1550x2300
PBR 830	80	3000	3x3000	4x2500	180	2550	150	330	200	200	200	40-6-45	7.5	3250x1550x2300
PBR 840	80	4000	2.5x4000	3x3000	180	3100	150	330	200	200	200	40-6-45	7.5	4250x1650x2500
PBR 850	80	5000	2x5000	2.5x4000	180	4100	150	330	200	200	200	40-6-45	7.5	5300x1650x2700
PBR 860	80	6000	1.6x6000	2x5000	180	5100	150	330	200	200	200	40-6-45	7.5	6300x1750x2800
PBR 1025	100	2500	5x2500	6x2000	180	2050	150	330	200	200	200	43-6-48	10	2700x1550x2300
PBR 1030	100	3000	4x3000	5x2500	180	2550	150	330	200	200	200	43-6-48	10	3250x1550x2300
PBR 1040	100	4000	3x4000	4x3000	180	3100	150	330	200	200	200	43-6-48	10	4250x1650x2500
PBR 1050	100	5000	2.5x5000	3x4000	180	4100	150	330	200	200	200	43-6-48	10	5300x1700x2800
PBR 1060	100	6000	2x6000	2.5x5000	180	5100	150	330	200	200	200	43-6-48	10	6300x1750x2900
PBR 1225	125	2500	6x2500	8x2000	230	2050	150	350	300	300	300	40-6-50	15	2750x1650x2700
PBR 1230	125	3000	5x3000	6x2500	230	2550	150	350	300	300	300	40-6-50	15	3250x1650x2500
PBR 1240	125	4000	4x3500	5x3000	230	3100	150	350	300	300	300	40-6-50	15	4250x1650x2600
PBR 1250	125	5000	3x5000	4x4000	230	4100	150	350	300	300	300	40-6-50	15	5300x1750x2900
PBR 1260	125	6000	2.5x6000	3x5000	230	5100	150	350	300	300	300	40-6-50	15	6300x1800x3000
PBR 1625	160	2500	8x2500	10x2000	230	2050	150	350	300	300	300	35-6-45	15	2750x1800x2500
PBR 1630	160	3000	6x3000	8x2500	230	2550	150	350	300	300	300	35-6-45	15	3250x1800x2600
PBR 1640	160	4000	5x4000	6x3000	230	3100	150	350	300	300	300	35-6-45	15	4300x1800x2700
PBR 1650	160	5000	4x5000	5x4000	230	4100	150	350	300	300	300	35-6-45	15	5300x1850x3000
PBR 1660	160	6000	3x6000	4x5000	230	5100	150	350	300	300	300	35-6-45	15	6300x1900x3200
PBR 2025	200	2500	10x2500	12x2000	230	2050	200	400	300	300	300	35-6-48	20	2850x1900x2600
PBR 2030	200	3000	8x3000	10x2500	230	2550	200	400	300	300	300	35-6-48	20	3350x2050x2750
PBR 2040	200	4000	6x4000	8x3000	230	3100	200	400	300	300	300	35-6-48	20	4350x2050x2800
PBR 2050	200	5000	5x5000	6x4000	230	4100	200	400	300	300	300	35-6-48	20	5350x2100x3100
PBR 2060	200	6000	4x6000	5x5000	230	5100	200	400	300	300	300	35-6-48	20	6350x2200x3500
PBR 2530	250	3000	10x3000	12x2500	300	2550	200	400	300	300	300	30-5-40	20	3350x2100x2800
PBR 2540	250	4000	8x4000	10x3000	300	3100	200	400	300	300	300	30-5-40	20	4350x2000x2900
PBR 2550	250	5000	6x5000	5x4000	300	4100	200	400	300	300	300	30-5-40	20	5350x2150x3200
PBR 2560	250	6000	5x6000	6x5000	300	5100	200	400	300	300	300	30-5-40	20	6350x2250x3600
PBR 3030	300	3000	12x3000	15x2500	300	2550	200	400	300	300	300	30-5-40	25	3350x2150x2900
PBR 3040	300	4000	10x3500	12x3000	300	3100	200	400	300	300	300	30-5-40	25	4350x2150x2900
PBR 3050	300	5000	7x5000	9x4000	300	4100	200	400	300	300	300	30-5-40	25	5350x2200x3400
PBR 3060	300	6000	6x6000	7x5000	300	5100	200	400	300	300	300	30-5-40	25	6350x2300x3800
PBR 4030	400	3000	16x3000	20x2500	300	2550	250	500	350	350	350	25-5-30	30	3350x2200x3000
PBR 4040	400	4000	12x4000	16x3000	300	3100	250	500	350	350	350	25-5-30	30	4350x2200x3000
PBR 4050	400	5000	10x5000	12x4000	300	4100	250	500	350	350	350	25-5-30	30	5350x2250x3600
PBR 4060	400	6000	8x6000	10x5000	300	5100	250	500	350	350	350	25-5-30	30	6350x2350x4000
PBR 5030	500	3000	20x3000	25x2500	300	2550	250	500	350	350	350	25-5-30	40	3350x2200x3200
PBR 5040	500	4000	15x4000	20x3000	300	3100	250	500	350	350	350	25-5-30	40	4500x2200x3300
PBR 5050	500	5000	14x5000	15x4000	300	4100	250	500	350	350	350	25-5-30	40	5350x2400x3900
PBR 5060	500	6000	11x6000	14x5000	300	5100	250	500	350	350	350	25-5-30	40	6350x2500x4250
PBR 6030	600	3000	25x3000	30x2500	300	2550	250	500	350	350	350	25-5-30	50	3350x2200x3300
PBR 6040	600	4000	18x4000	25x3000	300	3100	250	500	350	350	350	25-5-30	50	4500x2200x3500
PBR 6050	600	5000	15x5000	18x4000	300	4100	250	500	350	350	350	25-5-30	50	5350x2300x3700
PBR 6060	600	6000	12x6000	15x5000	300	5100	250	500	350	350	350	25-5-30	50	6350x2600x4350

STANDARD ACCESSORIES

- Main Drive Motor.
- Electrical control panel with selection of 'AUTO', 'INCH' & 'SINGLE CYCLE AUTO' mode operations.
- Movable work station with pair of foot switch.
- Pair of lifting links.
- Pair of sheet support.
- Fine stroke adjustment rod with limit switch.
- Manual back gauge with micro setting.
- One suitable five way die & Punch of EN-9** (unhardened and ungrounded)
- Centralized lubrication system with flow control valves for adequate lubrication.
- Ram tilting arrangement on selected models.

STANDARD ACCESSORIES (NC CONTROL)

- Main Drive Motor.
- Selection of 'AUTO' & 'MANUAL' mode through screen.
- Two axis dedicated controller with LCD monochrome screen & numeric keypad.
- 128 jobs X 16 bends program memory.
- Movable work station with pair of foot switch.
- AC Servo motor with resolver for back gauge drive.
- Hardened & Grounded Ball screw.
- Linear motion bearing on guide rods.
- Highly precise glass tube optical linear scale for accurate Y-axis position.
- Pair of lifting links.
- Pair of sheet support.
- One suitable five way die & Punch of EN-9** (unhardened and ungrounded).
- Centralized lubrication system with flow control valves for adequate lubrication.
- Ram tilting arrangement on selected models.

OPTIONAL ACCESSORIES

- AC servo drives for R-axis & Z-axis control of back gauging.
- Anti deflection unit (Manual / Motorized / Automatic)
- Sliding sheet support with Swing away stoppers.
- Hardened tools & special tools.**
- Hydraulic tool clamping.
- Photo electric fingers safety guard.
- Higher throat depth.
- Automatic lubrication system.
- Fast cycling models for high productivity.
- First fill of hydraulic oil.

ENERGY MISSION

CNC SYNCRO HYDRAULIC PRESS BRAKE

Silent Features

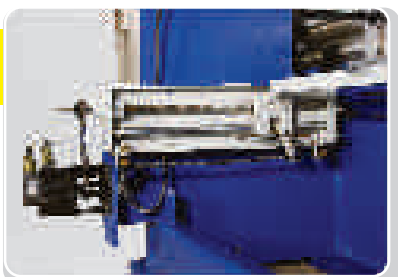
- CNC controller from Delem
- Close Loop ram axis Y1, Y2 & Back gauge axis X
- Bend Angle & Depth mode program
- Highly precise Magnetic type press brake scale
- Hardened & ground ball screw with linear motion bearings
- Close loop proportional Hydraulics for beam synchronization
- Zero leak sealing of hydraulic cylinders
- AC servo drive on back gauge
- Hardened & ground Die & Punch
- Manual Anti Deflection unit in Punch
- Quick release die clamps



World class **dedicated controller** from **Delem** or Equivalent.



Highly precise **proportional valve** to control accurate beam movement. The power pack is supplied by **Horibigar/BOSCH** - Germany.



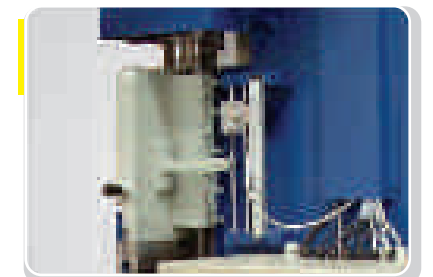
Back gauge consist of hardened & grounded **ball screw**, **linear motion bearings** and **AC servo drive** for accurate positions up to 0.05 mm. Flip-top fingers & Optional R&Z axis movement.



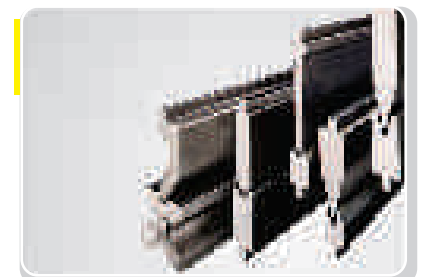
RANGE : 65 MT to 600 MT
LENGTH : 2500 mm to 7000 mm



Cylinder equipped with world class **seals from Bushak Shamban** for Trouble free operation.



Precise Position control with **high quality linear encoders**. Both side mounted linear encoders providing accurate synchronization between cylinders upto 0.01 mm.



Hardened & grounded tooling ensures the total result of accurate bending in combination with servo-hydraulic, linear encoder and CNC Controller.

CNC SYNCRO HYDRAULIC PRESS BRAKE

Model	Tonnage MT	Table Size (in mm)	Working Height of Table (in mm)	Clear Pass (in mm)	Ram Stroke (in mm)	Open Height (in mm)	Closed Height (in mm)	Throat Depth (in mm)	RAM speeds Mm/sec.			Motor HP	Overall Dimension Length x Width x Height (in mm)
									Approach	Pressing	Return		
PBS 825	80	180X2500	900	2000	150	350	200	200	100	7	80	7.5	3250x1600x2600
PBS 830	80	180x3000	900	2500	150	350	200	200	100	7	80	7.5	3750x1650x2650
PBS 840	80	180X4000	900	3100	150	350	200	200	100	7	80	7.5	4750x1800x2800
PBS 1025	100	180x2500	900	2000	150	350	200	200	100	7	80	10	3250x1650x2700
PBS 1030	100	180x3000	900	2500	150	350	200	200	100	7	80	10	3750x1700x2800
PBS 1040	100	180X4000	900	3100	150	350	200	200	100	7	80	10	4750x1850x3000
PBS 1050	100	180X5000	900	4100	150	350	200	200	100	7	80	10	5750x1950x3200
PBS 1230	125	220x3000	900	2500	200	410	210	300	100	6	80	10	3750x1700x2850
PBS 1240	125	220x4000	900	3100	200	410	210	300	100	6	80	15	4800x1800x3000
PBS 1250	125	220x5000	900	4100	200	410	210	300	100	6	80	15	5750x2050x3300
PBS 1260	125	220x6000	900	5100	200	410	210	300	100	6	80	15	6750x2200x3400
PBS 1630	160	220x3000	900	2500	200	410	210	300	100	7	80	15	3750x1800x2900
PBS 1640	160	220x4000	900	3100	200	410	210	300	100	7	80	20	4800x1900x3200
PBS 1650	160	220x5000	900	4100	200	410	210	300	100	7	80	20	5750x2100x3400
PBS1660	160	220x6000	900	5100	200	410	210	300	100	7	80	20	6750x2300x3600
PBS 2030	200	220x3000	900	2500	200	410	210	300	100	6	80	20	3800x1900x3000
PBS 2040	200	220x4000	900	3100	200	410	210	300	100	6	80	20	4800x2000x3250
PBS 2050	200	220x5000	900	4100	200	410	210	300	100	6	80	20	5750x2200x3500
PBS 2060	200	220x6000	900	5100	200	410	210	300	100	6	80	20	6750x2350x3700
PBS 2530	250	300x3000	1000	2500	200	410	210	300	80	6	80	25	3800x2000x3100
PBS 2540	250	300x4000	1000	3100	200	410	210	300	80	6	80	25	4800x2050x3250
PBS 2550	250	300x5000	1000	4100	200	410	210	300	80	6	80	25	5750x2250x3700
PBS 2560	250	300x6000	1000	5100	200	410	210	300	80	6	80	25	6750x2350x3900
PBS 3030	300	300x3000	1000	2500	250	500	250	300	80	5.5	80	25	3850x2050x3200
PBS 3040	300	300x4000	1000	3100	250	500	250	300	80	5.5	80	25	4850x2100x3400
PBS 3050	300	300x5000	1000	4100	200	500	250	300	80	5.5	80	25	5750x2300x3900
PBS 3060	300	300x6000	1000	5100	200	500	250	300	80	5.5	80	30	6750x2400x4000
PBS 4030	400	300x3000	1000	2500	300	500	300	350	75	5	80	30	3850x2100x3400
PBS 4040	400	300x4000	1000	3100	300	600	300	350	75	5	80	30	4850x2200x3600
PBS 4050	400	300x5000	1000	4100	300	600	300	350	75	5	80	30	5750x2400x4100
PBS 4060	400	300x6000	1000	5100	300	600	300	350	75	5	80	30	6750x2500x4200
PBS 5040	500	300x4000	1000	3100	300	600	300	350	100	6	100	40	4900x2300x3900
PBS 5050	500	300x5000	1000	4100	300	600	300	350	100	6	100	40	6000x2400x4100
PBS 5060	500	300x6000	1000	5100	300	600	300	350	100	6	100	40	7000x2500x4500
PBS 6040	600	300x4000	1000	3100	300	600	300	350	80	5	80	50	4900x2400x4000
PBS 6050	600	300x5000	1000	4100	300	600	300	350	80	5	80	50	6000x2500x4300
PBS 6060	600	300x6000	1000	5100	300	600	300	350	80	5	80	50	7000x2700x4750

STANDARD ACCESSORIES:

- Main Drive Motor.
- Selection of Auto, Manual & Adjust mode.
- HMI with 5.7" LCD, monochrome screen & numeric keypad.
- DA-56 PS controller from Delem for Y1, Y2 & X axis.
- Proportional hydraulics for Y1, Y2 axis.
- Individual linear encoder for Y1 & Y2 for precise synchronization of beam movement.
- AC Servo motor with resolver for back gauge drive.
- Hardened & Grounded Ball screw.
- Linear motion bearing on guide rods.
- One suitable five way, hardened & grounded die and punch**.
- Manual anti deflection unit.
- Pair of sheet support.
- Movable work station with pair of foot switch.

OPTIONAL ACCESSORIES:

- Multi- axes back gauge.
- Higher versions of controllers .
- Special Toolings.
- Anti-deflection unit. (motorized & automatic)
- Sliding sheet supports with swing-away stoppers for front gauging.
- Bed & ram horn extensions.
- Photo-electric finger safety guards.
- Hydraulic Tool Clamping.
- First fill of hydraulic oil.

Press Brake Load Calculation

The capacity of Press Brake are 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.

The advisable "Vee" die openings for air bending are:

- V= 6 to 8x material thickness (t), when t<=4
- V= 6 to 12x material thickness (t), when t>=4

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 "Vee" 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/mm ²
Bending Length(L)	mm
"vee" Die Opening (V)	mm
Minimum Internal Radius (R)	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:

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

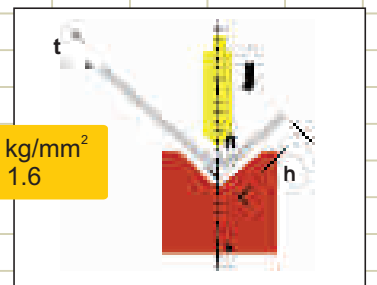
The bending chart also gives the bend radius & minimum bend edge also.

The bending chart defines the load required per mm thickness per meter. To use bending chart, select the "Vee" opening from upper most line and thickness from vertical line, the matrix shows the total load in tonnes per meter. To achieve total load, this value should be multiplied by the total length of job.

Bending Force Chart (Tonnes/Metre Length)

t/V	4	8	12	16	20	24	32	40	48	64	80	96	120	150	180	200	250	300
H(min)	3	6	8.5	11.5	14.5	17	23	29	34	46	57	68	85	110	130	145	180	215
R(min)	0.6	1.3	2	2.7	3.3	4	5.3	6.7	8	10.5	13.5	16	20	25	30	33	42	50
0.5	4	2																
1	19	8	5															
1.5		19	12	8	7													
2		38	22	16	12	10												
2.5			37	26	20	17	12											
3			56	36	28	24	17	14	11									
4				74	56	44	32	25	20	16								
5						75	50	40	33	24	19							
6							77	57	48	35	27	23						
8								112	86	64	50	41	33					
10									150	100	80	60	51	43				
12										155	105	96	77	62	51			
15											180	150	120	96	80	72		
18												200	160	128	107	96	77	
20													250	200	170	150	120	100
25														296	250	220	178	150

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



HYDRAULIC IRON WORKER



Engineering Excellence with cost effective solution.

- ✓ Angle Cutting
- ✓ Channel Cutting
- ✓ Flat Cutting
- ✓ Round Bar Cutting
- ✓ Square Bar Cutting
- ✓ Punching
- ✓ Notching

Energy Mission Hydraulic Iron Worker (SIGMA) is designed to give an effective solution to all the cutting and punching problems of flat and Section with satisfactory work quality from robust and compact machine.

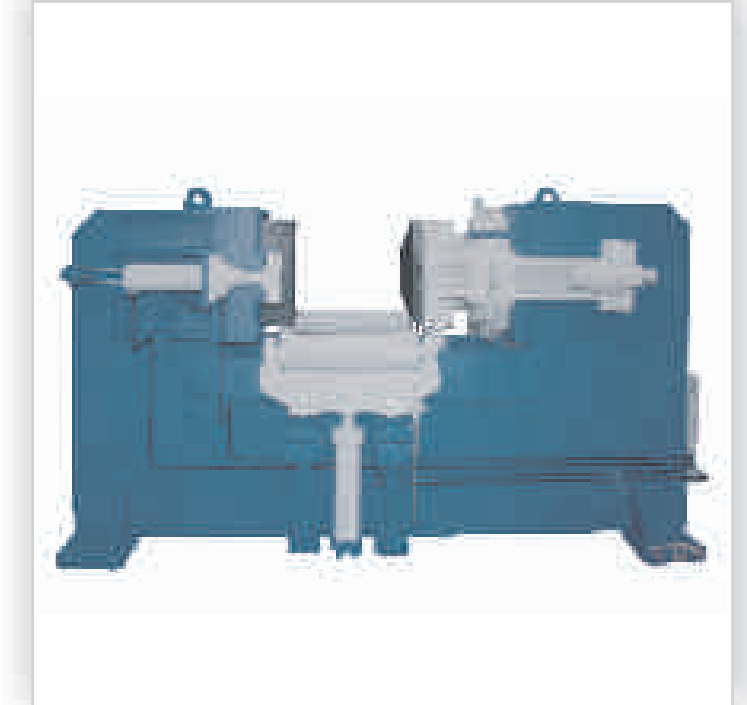
- ✓ Unique compact design by using ultrasonically tested steel plates.
- ✓ Five work station catering '7' different operation.
- ✓ Parallel operation of punching station with other work station gives higher productivity.
- ✓ Direct shearing avoids any waste of materials.

HYDRAULIC ANGLE CUTTING MACHINE



- ✓ Robust and compact structure design to withstand high cutting forces.
- ✓ Range varies from 75x75x6 to 200x200x25 mm.
- ✓ Direct shearing avoids any wastage of material.

HORIZONTAL PRESS



- ✓ Horizontal Press suitable for straightening and bending of sections like round bar angle, channel, I section etc.
- ✓ Range varies from 60 MT to 500 MT.

HYDRAULIC H-FRAME PRESS



- ✓ Range varies from 20 MT to 2000 MT.
- ✓ Suitable for various applications like, trimming, blanking, deep drawing etc.
- ✓ Special guiding designs for proper operation.
- ✓ Equipped with die cushion & ejection arrangement.

HYDRAULIC STAMPING & PUNCHING PRESS



- ✓ Range varies from 60 MT to 200 MT.
- ✓ Special guiding arrangement.
- ✓ Suitable for high productivity.

STANDARD ACCESSORIES:

- Main Drive motor.
- Electric Control Panel.
- Fine stroke adjustment rod with limit switch.
- Manual job Clamping Device.
- Blade for Angle Cutting, Channel Cutting, Flat Cutting & Notching.
- Pair of foot Switch.

OPTIONAL ACCESSORIES:

- Manual back gauge.
- Blade for Round Bar Cutting, Square Bar Cutting, T Section Cutting.
- High Speed System for more number of stroke/minute.
- First fill hydraulic oil.]
- Extra blade for channel cutting and punching.

Capacity	SIGMA M
Shear for Flat	150 x 16, 250 x 12
Angle	100 x 100 x 10
Channel	100 x 50
Round	32
Square Bar	32
Punching	40 x 8
Notching	80 x 40 x 5
General Specification	
Motor	5 Hp
No. of Stroke/min. (20mm travel for punching side)	15
Throat Depth	250
Overall Dimension	1250 x 750 x 1600