

# ***Fabricating Equipments for Reinforcing Steel Bars***



- Consistent Quality
- Labor optimization
- Timely execution
- Economy
- Workmen's safety

***Reinforcing Steel ... The Backbone of the Structure  
Cutting Bending Machines ... The Quintessential Tools***

## Rebar Cutting Machine (C Series)



- Low operating height
- Compact construction
- Multiple Edged Cutting Tool
- Basic Electro-Hydraulic - Easy to maintain

Model	Max Bar size metric	Power: Elec Motor Kw (HP)	Machine Size (LxBxH) mm	Machine Weight Kgs	Prod Cap Tons per Hr
C32	32	3.1 (4)	800x700x650	375	3 to 4
C40	40	3.7 (5)	900x850x700	650	6 to 7
C50	50	7.8 (10)	1050x1050x850	850	8 to 12

- The machine Power in terms of Bar size is wrt Steel Grade 415 metric (ASTM 60) for higher Steel Grade, the machine power is de-rated proportionately.
- Production Capacity is computed wrt to large diameter Bars, approx 12 ft cut lengths, average four cuts per minute.
- Small size bars in multiples can be cut, with due care.

## Reinforcing Steel Cutting Machine To suit Multiple Bar cutting (V series)



- Facilitates Feeding Multiple Bars for Cutting
- Elevated Operating Height
- Compact construction
- Multiple Edged Cutting Tool
- Automatic Bar Clamping
- Basic Electro-Hydraulic - Easy to maintain

Model	Bar size x No of bars	Power Elec Motor Kw (HP)	Machine Size (LxBxH)mm	Machine Weight Kgs	Prod Cap Tons per Hr
V32	32/25x1, 20x3, 16x4, 12x5, 10x6, 8x8	3.1 (4)	900X600X650	400	4 to 5
V40	40/36x1, 32x2, 25x3, 20x4, 16x6, 12x8	3.7 (5)	950x750x800	750	7 to 9

- The machine Power in terms of Bar size is wrt Steel Grade 500 metric (ASTM 75) for higher Steel Grade, the machine power is de-rated proportionately.

## Rebar Cut-bend Combi Machine



- Bi-directional Bending capable
- Automatic bend Angle control
- Maximum bend Angle 180 deg U bend
- Tooling & Table to suit Bending Radius 2xD
- Set of Tooling for standard bar sizes
- Low Operating height for Cutting
- The Cutting unit is a loose attachment, position it in any suitable orientation
- Multiple edged cutting Blades
- Simple Electro-Hydraulic Drive with all Branded parts

Model	Max Bar size Metric	Power Elec Motor Kw (HP)	Machine Size (LxBxH) mm	Machine Weight Kgs	Prod Cap Tons per Hr
BC32	32	3.1 (4)	1200X500X850	475	3 - 4
BC40	40	3.7 (5)	1500X600X950	700	6 - 7

- The machine power in terms of Bar size is wrt Steel grade 415 (ASTM 60), for higher steel Grade Bars, the machine power is de-rated proportionately.
- Production capacity is computed considering normal requirements, construction related.
- Small size bars may be cut in multiples, with due care.
- Bending radius is generated by the center Roller, Ideal Bending Radius depends on Bar material. Steel Grades 415/500, recommended Bending Radius is 2XD

## Rebar Cutting Machine (M Series)



- Electro-Mechanical Drive
- Compact Construction
- Castor wheels for Easy handling

Model	Max Bar size Metric	Power Elec Motor Kw (HP)	Machine Size (LxBxH)mm	Machine Weight Kgs	Prod Capacity Tons per Hr**
M36	32	2.2 (3)	1000x500x700	375	4 to 5
M42	42	3 (4)	1200x600x850	525	8 to 9

- The machine Power in terms of Bar size is wrt Steel Grade 415 metric (ASTM 60), for higher Steel Grade, the machine power is de-rated proportionately.
- Production capacity is evaluated considering common requirements and machine speed.

## Reinforcing Steel, Bar Bending Machine (B & BE Series)



- Bi-directional Bending, CW and CCW
- Automatic Bend Angle Control (Digital Controller Optional)
- Max Bend Angle 180 deg - U Bend
- Tooling and Table to suit Inner Bend Radius = 2xD
- Set of Bending Rollers to suit different Bar sizes.

Model	Max Bar size metric	Power Elec Motor Kw (HP)	Machine Size (LxBxH) mm	Machine Weight Kgs	Prod Cap RPM /Tons per Hr
B32	32	3.1 (4)	700X500X850	325	5 / 3 to 4
B40	40	3.8 (5)	900x600x950	525	5 / 6 to 7
B50	50	5.6 (7.5)	1100x750x1050	700	5 / 10 to 12

- The machine Power in terms of Bar size is wrt Steel Grade 415 metric (ASTM 60) for higher Steel Grade, the machine Power is de-rated proportionately.
- Bending radius is generated by the center roller. Ideal Bending radius depends on the bar material for normal grades Fe415/500 a bending radius of 2 x D is recommended.
- **Models BE32 / BE40:** Machine specifications is the same, as per the above table. The BE series machines are devoid of electronics/automation controls, thereby simplified and cost effective. The bending direction is CCW only. Max angle Bending U-bend, bending over right-angle is stepped.

## Stirrup Forming Ring Making Machines



- Automatic Bend Angle Control
- Stopper Flags for Length Control between Bends
- Multiple Bar Bending
- High speed Bending action
- Two to four thousand stirrups per shift
- Mini Cutting Unit - Optional

Model	Bar size x No of bars	Power Elec Motor Kw (HP)	Machine Size (LxBxH)mm	Machine Weight Kgs	Prod Cap RPM / Stirrups per Hr
STP16	12x1,10x3, 8x4	1.1 (1.5)	1250x370x1600	200	16 / 300 to 400

- This machine is Low Torque, High-Speed. A right angle bend is generated in one second. Eight dia bars typically used for stirrups can be bent in multiples. Dependant on the shape of the stirrup and operator's skill, the machine can produce thousands of stirrups per shift.
- **STP16 (Tall):** A huge upright table facilitates Forming Large Stirrup shapes. A Mini-cutter (16 size) is an Optional Attachment with this model.

In the course of continuous development the machine specs may vary.

# StpAuto

## CNC Programmable Stirrup Forming Machine.

The machine accepts Angles and Length between each bend as a Program to form a particular stirrup profile. Multiple such programs are stored in the memory.

Recalling the program from the memory the correct bar length is displayed, pre-cut bar is then formed to the precise shape as per the program.

The drive system is electro-hydraulic with all standard parts and Mitsubishi PLC & MMI.

The upright table is a convenient working height, and facilitates large size stirrup forming. The powerful bending gear can handle multiple bars enhancing production rate.

With this arrangement the machine can produce large quantities of perfect stirrups and store 100 programs ready for recall and start production.



### Machine Specifications:

Model	Bar size x No Of bars	Power: Motor Kw (HP)	Machine Size mm	Mc Wt kgs	Prod Capacity** RPM / Stirrups per Hr
StpAuto	12x2, 10x3, 8x4	1.1(1.5)	1600x500x1600ht	350	16 / 400 to 600

\*\* Production capacity is evaluated considering common requirements, machine speed and Operators practice.

# Digital Bend Angle Controller, An Optional Feature on B series Benders and Stirrup Benders :



On standard Benders and Stirrup bender stp16, the Bending angle control is achieved with an Indexing Pin arrangement which activates a sensor.

The Digital Bend Angle controller is a micro processor device where Two Pre-sets (P1 and P2) are available. Dependant on the position of the Selector switch the pre-set Angle P1 or P2 is executed.

The Indexing pin arrangement is also in place, on Position III of the selector switch the machine will operate in that mode. In effect, the operator can now set and select three angles just by flick of the selector switch.

This is a versatile utility for Benders and Stirrup benders for accurate angle control and enhanced productivity.

## ELECTRO-HYDRAULIC DRIVE SYSTEM:

The machines work on Electro-Hydraulic drive system. A normal 3-ph. Four pole, TEFC electric motor is the prime mover.

The Electro-hydraulic elements are standard parts, available in the open-market, reasonably priced. The electro-hydraulic circuit is also very basic. Easy availability of components and simple system design are favourable features to maintain machines for life long.

Hydraulic power transmission is characterized by "Low Power to Weight ratio", hence these machines are relatively smaller, lighter easy to handle on construction sites.

Hydraulic power transmission is widely used in construction equipment; it is reliable, cost-effective, power-efficient and excellent service life.

## TOOLING:

A particular model is good for a wide range of bar sizes, hence a set of suitable tooling is provided to achieve desired output and also ensure machine safety.

For performance and long life cycle, the tooling is made of heat treated alloy steels.

## OPTIONAL FEATURES:

- Regional / Export Requirements:** Standard models are designed for operating on 415V, 50 Hz power supply, for other regions suitable electrical system is offered.
- Remote Area Applications:** Hydraulic system can be coupled with other prime movers, such as IC engines. For remote area applications where electrical power is not available, engine driven machines are offered. Overall size of Engine operated machines is relatively big hence trailer mounted arrangement is offered.
- Higher Capacity Machines:** Standard models cover up to 50 size bars Fe-415 grade / 45 size bars Fe-500 grade. However, custom built machines for higher capacity are offered.
- Machines with Additional Features:** To suit pre-coated bars, or such machines for lab use, special features are offered such as : Variable bending speed (0.5 rpm to max speed) Extra large bending table to accommodate 3D / 4D bending radius Torque control / monitoring device.

## USEFUL DATA ON REINFORCING STEEL

Mechanical Properties								
Specs	Grade	Yield Strength			UTS n/mmsq	Elongation% min	Bend Test	
IS 2062/1999		<20	20-40	40			Upto 22	>22
	A (Sk)	250	240	230	410	23	2d	3d
	B (K)	250	240	230	410	23	2d	3d
	C (K)	250	240	230	410	23	2d	3d
IS 1786/1985	Fe 415	415			485	14.5	3d	4d
	Fe 500	500			545	12	4d	5d
	Fe 550	550			585	8	5d	6d
TMT	Fe 415	415			500	Upto 28 >28	2d	3d
	Fe 500	500			580	20 18	2d	3d
	Fe 550	550			680	18 16	2d	3d
TMT HCR	Fe 415	415			Upto 28	>28	22 20	2d 3d
	Fe 500	500			580	560	20 18	2d 3d
	Fe 550	550			630	610	18 16	2d 3d

Section (mm)	Nominal weight (kg/meter)	Nominal length (Mts/MT approx)
8	0.395	2531
10	0.617	1620
12	0.888	1126
16	1.58	633
20	2.47	405
25	3.85	260
28	4.83	207
32	6.31	159
36	7.99	125
40	9.85	102

## Shape Codes BS 8666 : 2000

00  Total length (L) = A	11  Total length (L) = A + (B) - 1/2r - d	12  Total length (L) = A + (B) - 1/2R - d
13  Total length (L) = A + 0.57B + (C) - 1.57d	15  Total length (L) = A + (C)	21  Total length (L) = A + B + (C) - r - 2d
25  Total length (L) = A + B + (E)	26  Total length (L) = A + B + (C)	31  Total length (L) = A + B + C + (D) - 1 1/2r - 3d
33  Total length (L) = 2A + 3B + 17d	41  Total length (L) = A + B + C + (D) + (E) - 2r - 4d	44  Total length (L) = A + B + C + D + (E) - 2r - 4d
48  Total length (L) = A + 2B + C + (E)	67  Total length (L) = 2(A - 3 + Q) + 2 * 1/2r - 8r	67  Total length (L) = A
77  Total length (L) = C * (A - d)	98 A) shapes where standard shapes cannot be used. A dimensioned sketch shall be drawn over the dimension columns A - E. Total length (L) = To be calculated	

## OTHER PRODUCTS

- Hydraulic Drives, Cylinders, Rotary Actuators For Industrial & Mobile Applications
- Power Presses, Oil Filtering Units
- Hydro-pneumatics



**CONSOLIDATED MACHINES**

HYDRAULICS • HYDRO-PNEUMATICS  
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