

Bending machines (4)

Bending machines



<b>BENDING MACHINE 1550 X 4/6 MM - 4 ROLLS</b>
Model : 4 HCI
Manufacturer : FACCIN
Oleodinamic Bending machine Faccin 1550 x 4/6 mm - 4 Rolls - Useful lenght mm 1550 - Bending mm 6 - Prebending mm 4 - Diameter superior roll mm 191 - Diameter inferior rolls mm 160 - Tempered rools - Hydraulic Unhook - Lenght mm 3500 - Width mm 1400 - Height mm 1100



<b>BENDING MACHINE 3000 X 10 MM</b>
Model : AK 310
Manufacturer : MG



<b>BENDING MACHINE 3000 X 25 / 32 MM</b>
Model : AK 332
Manufacturer : MG
BENDING ROLL MACHINE "MG" MOD. AK332E 3 ROLL DOUBLE PINCH PLATE
Technical data:
Installed power: Kw. 18.5
Top roll diameter: mm. 400
Side rolls diameter: mm. 380
Capacity:
Working length: mm. 3,100

Maximum rolling thickness: mm. 32  
Maximum pre-bend thickness: mm. 25

Machine size:

Width: mm. 2,030  
Total length: mm. 5,235  
Working height: mm. 1,435  
Weight: Kg. 14,000

The max performances are referred to shells of diameter equal or larger than 3 times the top roll diameter and with material with a yield point within  $R = 260 \text{ N} / \text{mm}^2$ .

Technical characteristics:

A) AUTOMATIC ADJUSTMENT FOR CONE -

movable rolls by MASSIVE MECHANICAL TORSION SHAFTS without any of the adjustments and re-balancing required by hydraulic leveling systems.

B) ALL PLANETARY MOVEMENTS - Eliminating all friction common to vertical, diagonal or horizontal sliding guide systems and requiring absolutely no adjustment.

C) PERMANENT LUBE SYSTEM - No more ordinary greasing and lubrication for all the life of the machine by specially protected screened and full-life pregreased components.

C) Replacement of all low efficiency components (reduction unit, high friction bronze bushings, mechanical drives, gears, belts joined arms, sliding guides, etc.) by new high energy efficiency drives (planetary gears DIRECT DRIVE COUPLED to the rolls, bearings, central multi-way electro/hydraulic power motor) keeping the real force available on the plate to bend (positive power) Energy saving system conforms to the "International High Efficiency and Anti-Pollution" rules and standards.

Features:

- All steel structural welded frame construction (often no foundation required)
- Hydraulic drives with infinitely variable speeds automatically adjusted by progressive controls (hydroelectric valve machines excluded)
- Plate is driven by high-energy efficiency hydraulic motor/planetary drive eliminating secondary reduction gears, chains, synchronization devices and clutches.
- Instantaneous drive stop of rolls by hydraulic over-center valves
- Side-forming rolls controlled by hydraulic cylinders with infinitely variable speed (hydroelectric valve machines excluded)
- Automatically controlled side roll parallelism mechanical controlled by "TORSION BARS"
- Hydraulic powered drop end
- Automatic balancing of top roll (to open the machine)
- All rolls mounted on SPECIAL floating 2 crowns rolls bearings with automatic self-alignment

- All rolls are cambered to compensate for deflection and to increase the driving and gripping power of the two central rolls.
- Fully hydraulic powered movements
- One only operator required

Standard equipment:

- Compact hydraulic power unit including hydraulic valves and flexible hydraulic hoses
- Electric control cabinet including overload protection for electric motor, electric fuses, electric contacts, electric relays, and security key-lock door
- Special front/pivoting operators console including progressive hydraulic controls for all machine
- Hydraulic machine opening to extract finished cylinders
- Multi-system emergency safety device for instantaneous stopping of all movements.
- Floating control w/electro valves

Material Strength

This is by far the most important consideration when selecting a set of plate rolls.

Material specifications state the minimum yield strength that the material will be produced to, but in general there is no maximum limit, steel arriving at your works is likely to be above the specification stated minimums.

A commonly used steel is BS EN 10025:1993 – S275, this steel has a stated minimum yield Of 275N/mm<sup>2</sup>, yet it often arrives at works gates with yields of 360N/mm<sup>2</sup> this increase in yield strength will reduce the pre bend and roll capabilities of a machine by 16%.

Please look at page 2 of this quotation – 'K' factor chart shows how a change in steel yield strength will effect pre bend & roll capabilities

Closing of the longitudinal seam edge

To produce a perfect closing of the longitudinal seam, the 'bending rolls' have to be manufactured with a correctly calculated compensating top roll camber, specific to a material thickness, At point of order, the manufacturer will require to know, at which material thickness top roll camber is to be calculated, this is generally the material thickness at which most of your production is done.

For avoidance of doubt Material rolled above or below the specified material thickness to be used in the camber calculation, is likely to suffer from 'barreling' or 'hour glass' effect's, to what degree we cannot be specific.

Flat produced with pre bend

There is a theoretical possibility of achieving a flat each side of the longitudinal seam of the plate approx 1½ to 2 times the material thickness. There are many variables that influence the ability to actually achieve this theoretical flat, the experience of the machine operator being a factor.

Cone rolling

When cone rolling, the machines capacity is reduced to ½ that of the pre bend capacity.

ie ½ the thickness & ½ the length.

When you pre bend a plate with the side rolls set parallel to the top roll, the bearing loading is equal at the end of each side roll. This loading changes when you tilt the side rolls to produce the cone, the side bearings at the drop end take approx 80% - 100% of the loading.

- Hardening and polishing rolls
- Conical bending system

Constant parallel leveling control of

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