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PBM Series Pipe Bending Machine

PBM Series Vertical Hydraulic Cold Bending Machine applies in the cold bending machine constructive site in the long pipeline construction with the large diameter. In order to achieve the cold bending steel pipe, this machine applies the method of making the reasonable support point and the force bearing point to impose the bending moment. It divides into several times to make the steel pipe to be plastic deformation. The main working link is to introduce the steel pipe with the help of spreader into the lower tube, put the inner tube into the steel pipe and then set it on the middle of the upper mold. The expansion of inner tube support the inner wall of the steel pipe, and then it can prohibit the abnormal deformation during the procedure of the steel pipe bending. Operating the level hydraulic steel to drive the empera piece, it makes the ektexine of the steel pipe temperature the clamp and hasten the steel pipe with clamp in order to prohibit the pipe move up and down during the whole bending procedure. It operates the Vertical Hydraulic Cold Bending Machine while bending. With the effect of the hydraulic cylinder, the steel pipe will be in bending forming along the upper mold.
PBW Series Vertical Hydraulic Cold Bending Machine applies the cold bending machine constructive site in the long pipeline construction with large diameter Vertical Hydraulic Cold Bending Machine consists of the engine, hydraulic system, outer mold (upper mold, the lining of front clamp, the mold of down tube and the lining of proscenium), inner tube, clamps, hoisting equipment, carrying and the traction device, etc. The engine mainly supplies power for hydraulic system, It adopt the CUMMINS engine, four strokes, turbocharged, start with direct current; the suitable altitude range for water colded diesel engine is from 0m to 2400m.The engine easily start and it works so stable that there is no noise; and it was fitted the alarm device to show the high water temperature, high oil temperature and low oil pressure, etc. It applies the antifreeze.

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The Main Feature of hydraulic pipe cold bender

1. Operator controls the whole device function through hydraulics, the operating is handiness and free.
2. The complete machine adopt high quality power equipment and fluid drive device, performance outstanding, quality credibility, adaptable to inclement execution conditions.
3. The hydraulic pressure system adopt unique warm-up and colding system, advance clearly work efficiency, prolong clearly service life.
4. Bend fully specified size range pipes only by chaning the bend set and homologous inner die.
5. Simple structure, easy to maintain, high intensity and long life.
6. Panseal lubrication, avoid vindicatory tracklayer running gear, It is ture of field operation.
7. Main frame of the main machine adopts low-alloy high-tensile structural steel, it all eviates clearly main machine's weight, at the same time increasing strength.
8. Modular organization design. The complete machine is divided into four module: main machine, engine system, inner die, running mechanism, when transporting, it can monomer pull and transport, assemble on the spot, for convenience removal and mounting, each module compartment adopts specific joint design.
9. Unique master hydraulic cylinder synchronizer, adopt brust resisting hose parallel mode to joint oil way, bring each hydraulic cylinder at the same time enter the oil with return to oil, control six master hydraulic cylinder got up synchronization at bending time through valve unit.
10. Bending course digitalization control, apply PLC technology among pipe-bending art, it can indicate directly pipe's migration distance and hydraulic cylinder height of lifting at operating platform, improve bending precision, depress labour intensity.
11. Design clearly self-loading and unloading device at main engine, it can load and unload main engine freely, and automatic tipper can decouple from the main engine, relieve main engine weight, solve job location hoisting problem, save hoisting expense.

The main deployment of the hydraulic pipe cold bender

1. CUMMINS water colding engine or DEULTZ air colding engine
2. Germany Rexroth technical variable displacement pump
3. PARKER hydraulic pressure system
4. Adopt ShanTui's track that is panseal lubrication, avoid vindicatory tracklayer

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The bending set of hydraulic pipe cold bender

The bending set:
The generic terms of the front clamp, the front mode, the bottom pipe mode and the top pipe mode, it is one of the adjunct that it is necessary for steel tube flexural deformation, a sort of steel tube outside diameter is corresponding to a sort of the bending set. The part that osculates with steel tube all adhibit to virtual shield stuff, thus can prevent outer erosion resistant coating of the steel tube from destroying.

The front clamp:
Every sort of the standard front clamps without exception is composed of twain piece, as best as one can reduce in weight, removal and mounting convenience at the same time at ensuring strength enough.

The front mode:
Every sort of the standard front modes is composed of one piece, it realize fastening joint quickly with the main engine through the screw bolts, removal and mounting convenience.

The bottom pipe mode:
Owing to cold pipe-bending machine type is difference, therefore the number of pieces of the bottom pipe mode have got difference too, the bottom pipe mode is formed of twain pieces, mating PBM1632 main engine type, the bottom pipe mode is formed of three pieces, mating PBM3248、PBM4050 and PBM4860 main engine type.

The top pipe mode:
It is a very important stressing piece in the course of bending pipe, high strength cast steel process, it is one of the positioners of steel tube flexural deformation, According to the type of the vertical hydraulic pipe coldbender different, the top pipe mode is divided into two kinds of constructions.

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The mating inner die of hydraulic pipe cold bender

Inner die:
It is one of the key assemblsy of the cold pipe-bending machine, it is used for cold pipe-bending manufacturing process mostly, prevent bending pipe inner arc from edge lifting and crimple, control bending ellipticity, using inner die is the most key, above all, as manufacturing thin pipe wall and high strength cold pipe-bending mainly are sloping block type inner die(apply to pipe diameter: Φ508mm-Φ1422mm).Their power can match with fluid drive basing effective demand.

Sloping block type inner die:
It have got amphi-structural styles basing different position of the hydraulic cylinder: a sort of structural style is hydraulic cylinder staying hemi of the inner die, another sort of structural style is hydraulic cylinder parking interior of the inner die.Sloping block type inner die possesses the following function in the course of bending pipe:

Staying and bulge function:
It has staying and expansive force enough, it can satisfy staying and bulge steel tube so as to bring it with minute predeformation.

Self-locking function:
Stoping block self-locking when bending.

Automatic walking function:
It is driven by the hydraulic motor, it can ensure inner die it is in steel tube moving freely.

Self-return function:
Steel spring plate can bend automatic and get back to original position.

Inner erosion resistant coating of the steel tube shield:
It is supported by the polyurethane bracer, it can prevent inner erosion resistant coating of the steel tube damaged.

Mechanical measure angle instrument:
Used for measuring the angle of the bending pipe, have the following characteristics: Stainless steel frame;65° -0° -65° Engrave degree dish; The spirit bubble is adjustable 6° -0° -6°; Cursor accuracy:0.25°; Magnetic iron type bottom.

The operation:
operation platform was designed understand easily, making operation more in brief, more convenient.