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Redaction Dott. Giorgio Canova

Franco Canova: Ideas Creations Inventions

"BM" MOTOR BASES

Tecnidea Cidue based in San Giovanni Lupatoto (Verona - Italy) is a world-leading company in the designing and manufacturing of power transmission components. Between its variety of products, you can also find the "BM" MOTOR BASES that are used for the automatic tensioning of belts in transmissions actuated by an electric motor (Img. 1). As it is already known, belts have the task to transfer power, if the project conditions are met, but mainly have to keep the right winding angle on the pulleys and the pull on the belts. In a belt transmission it is very important to keep the right tension value over time, so that the transmission can work at the most of its efficiency and avoiding slippage on the driving pulley that can alter the speed of belts and the driven pulley's rpm resulting in a power reduction but mainly in the wear and possible breakage of the belts.



TECNIDEA CIDUE S.r.l.
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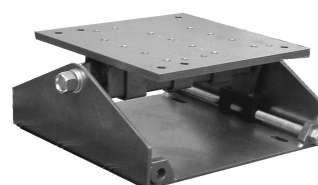


Image 1



Motor bases are mainly used in the motorization of screens, crushers and feeders, where the starting of an eccentric for the motion of the vibrating channel causes several vibrations and continuous changes of the center to center distance between the driving and the driven pulley. It is for this reason inevitable the use of an elastic motor support that allows to absorb the vibrations and to keep always constant the tension on the belts.

Once preloaded, the “BM” MOTOR BASES (Img. 2) develop a torque moment while operating, allowing them to keep the belts always in tension automatically.

The “BM” MOTOR BASES are elastic supports with a plate where the electric motor is placed.

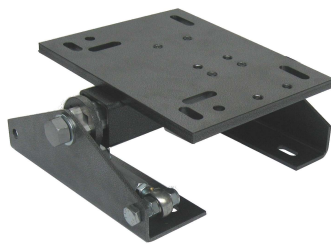


Image 2

The plate works together with the elastic group that generates and keeps torque reaction when the belts are pulled; this is placed inside a system with two square-section elements, rotated by 45° with respect to each other and four natural rubber cylinders placed inside the resulting triangular spaces (Img. 3 and Img. 6). The rotation of one profile with respect to the other compresses the rubber elastically and allows the motor to keep its push on the belts.

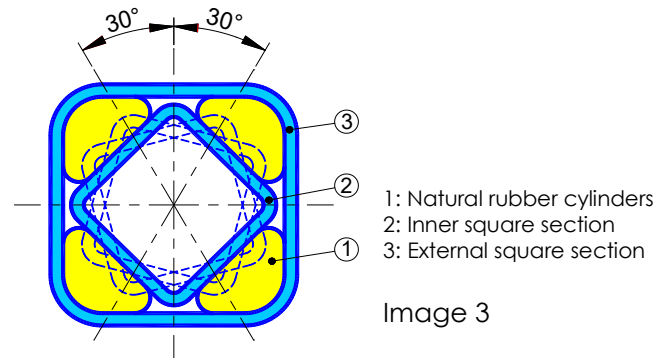


Image 3

The “BM” MOTOR BASE is activated with the preloading phase, with a mechanical system that uses screws or jacks that allow the two square sections to rotate. The torque moment generated by the rubber, as we already explained, is responsible for keeping the tension on the belts. The preloading is achieved through pull screws, this is an efficient system, but it forces the operator on the machine. To make this process better Mr. Franco Canova created for Tecnidea Cidue's Motor Bases a new hydraulic preloading system (Image. 4)

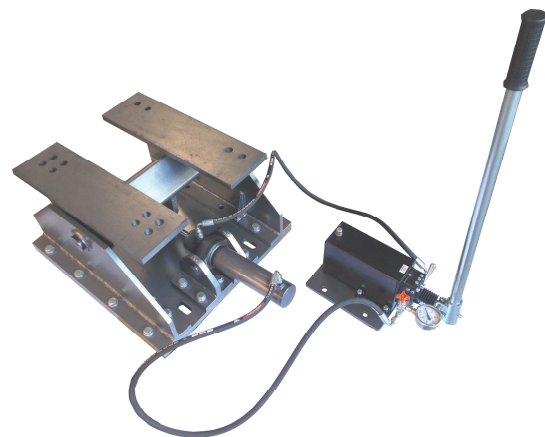


Image 4



Not only during the preloading phase, the hydraulic cylinder, if activated backwards in a pulling position, allows to rotate the motor towards the driven pulley to facilitate the insertion of the belts inside the pulley's grooves, both driving and driven, during installation. The hydraulic system can be used also during the maintenance of the plant, by acting on the pump the user can easily adjust the right tension on the belts using the manometers that are on the circuit and regulated on the manufacturers specifications. Our latest product are the “BM-ZP” **MOTOR BASES** that introduce a new concept of preloading system which it is realized horizontally, making the operations easier and the product more compact. These products are usually provided in the galvanized version (Img. 7).

Editing Ing. Enrico Caceffo

Consult our catalogues, Visit our Website www.tecnideacidue.com, but most importantly check TC2's quality by using our products.

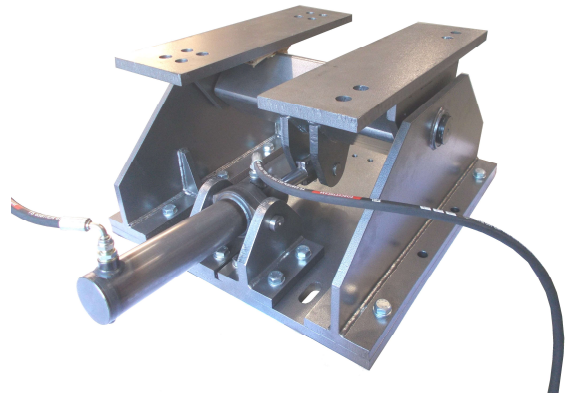


Image 5



Image 6



Image 7

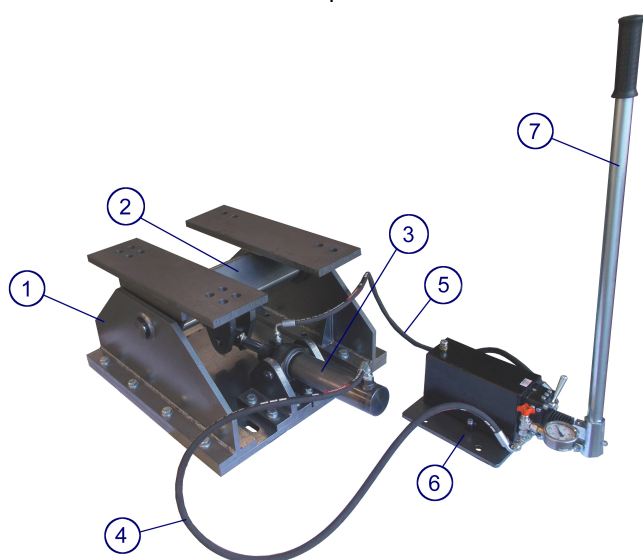


MOTOR BASES “BM” with hydraulic preload system

The “Motor Base” (Img. 8) is composed by a double-acting hydraulic cylinder (Pos. 3), powered by a closed circuit hydraulic pump (Pos. 6), that uses oil as maneuver fluid. The pump can be activated manually, by using a lever (Pos. 7) that thanks to the dedicated arm can be operated effortlessly; or autonomously, if it's motorized. Thanks to its flexible tubes with high flow rate of delivery (Pos. 4) and return (Pos. 5), you can operate both on the machine or remotely, without having the need of an operator physically present on plant. This is a great advantage both for the intervention speed but also for the worker's safety on plant, this is particularly clear because these applications are used mainly in heavy industry with a power output of up to 500 kW. This new product offers designers many advantages:



- It simplifies preloading operations
- It simplifies assembly and disassembly interventions of belts
- It reduces considerably the calibration's effort on the VIB elastic elements that are mounted on Motor Bases even for high torque.
- It guarantees the applied force thanks to the check on manometers mounted on the hydraulic circuit
- For loading, unloading and calibration, it allows operations from afar
- It increases Technical and Technological product value
- With these new “BM” products, thanks to the electro-valves in the circuit you can create an automatic system working with the other Motor Bases placed in other motorizations on the same plant.



Motor Base

Legend:

- 1 – Motor Base
- 2 – **VIB®** Elastic element
- 3 - Double-acting hydraulic cylinder
- 4 - Flexible tube with high flow capacity
- 5 - Flexible tube with high return capacity
- 6 – Pump
- 7 – Manual input

Image 8

Editing Mr. Franco Canova



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