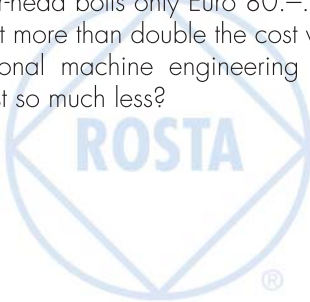


## Friction Belt Drives


### Subjects speaking for the installation of an automatic ROSTA Motorbase

By only superficial examination of the cost side, there is no motive to support the use of the ROSTA Motorbase!

After all, the purchase price for the suspension of a 225 M motor (45 kW 4-pole) is as much as Euro 490.–! A commercially-available motor tensioning carriage costs around Euro 240.–, and a pair of JORDAHL rails with four hammer-head bolts only Euro 80.–. Why invest more than double the cost when traditional machine engineering solutions cost so much less?




**Self-tensioning ROSTA-motor mounts for friction belt drives**



- self tensioning
- slippage-free
- belt protecting
- maintenance-free
- overload proof

standardized for motors  
1,5 kW – 250 kW

**ROSTA**   
**swinging solutions**

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### 1. Saving energy

Motor tensioning carriages and JORDAHL rails are rigid motor suspensions, and require regular inspection and the necessary re-tensioning of the belts, otherwise too much of the drive energy will be lost as heat-generating belt slip!

“This small amount of energy loss still does not justify the much higher investment that has to be made for self-adjusting motor suspension!” – is what you’re likely to say if you don’t realise the true cost of excessive belt slip.

The leading US belt manufacturer GATES has measured the average slip in friction-belt drives on hundreds of drive systems, and has thereby found that many belt drives work with a slip loss of up to 10% before the effective reduction in the delivered torque is registered! Slip generates heat – and energy is thereby wasted.

In addition, the survey carried out by GATES stated that the average power loss in friction belt drives could be quantified with an absolute figure of 5%. A non-self-adjusting, rigid motor suspension on a belt drive system can thereby result in an energy loss of 5%!

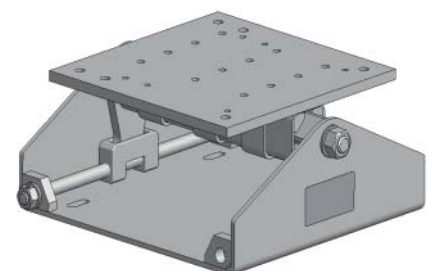
When considered superficially, a loss of 5% of the drive energy does not seem to be very much. If you take a closer look at the cost side, however, the energy loss for a 45 kW motor with size 225 M and a kW-cost price of Euro –.12 for industrial electricity, for example, already starts to cost big money when considered over a year!

- If the motor runs in a single shift (40 h/week), the loss amounts to Euro 540.– a year!
- If this same motor runs in two shifts (80 h/week), the loss increases to Euro 1,080.– a year!

- And if it runs “around the clock” (168 h/week), this increases further to Euro 2,268.– a year!

The ROSTA Motorbase continually compensates the belt slip and thereby saves the above-mentioned amounts – which is a solid argument in favour of the somewhat higher investment!

**And the cost of the ROSTA-MB is amortised after one year!**



## 2. Saving transmission belts

Friction belt drives are mainly used for driving large inertial masses and for non-uniform operations as elastic, compensating transmission units. Large flywheels on stamping machines, presses, saws and pumps are started up using belt drives, and friction belts can even elastically compensate the impacts when changing direction at the two dead-points of the crank on slider crank drives.

The inner life of the friction belt, the carcass, is placed under high stress by the start-up of these large inertial masses. The frequent start-up of flywheels leads to excessive stretching of the carcass structure, and thereby to the early wear of the belt sets.

The elastic ROSTA Motorbase deflects slightly at the start-up of large inertial masses and thereby makes a **more gentle start possible for the belts for a few revolutions through start-up slippage**. As soon as the mass is in stable rotation,

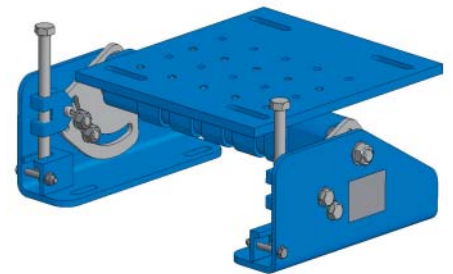
the ROSTA motor suspension swivels back to its non-slip working position. The belt-friendly working process leads to **belt service lives that are up to 3 times longer**.

A **5-strand SPB belt set** with a length of 3,550 mm is used on the drive of below-shown centrifugal crusher. The belt set costs **Euro 290.—**. The centrifugal crusher runs in 2-shift running period in a "Stop and Go" operation. Before the mounting of the drive motor on the elastic ROSTA Motorbase, the belt sets had to be replaced twice a year (carcass rip).

Since then, however, the centrifugal crusher has been running for almost two years with the ROSTA Motorbase suspension – **with the same belt set!**

The ROSTA Motorbase is belt-friendly and saves wear on parts and hours of maintenance time.

**And in this application, the cost of the ROSTA-MB was amortised within one year!**



Centrifugal crusher 45 kW, 225 M with 5-strand SPB belt set, ROSTA MB 50 x 500

### 3. Saving maintenance costs

On the illustrated centrifugal crusher on page 2, the drive belts were normally inspected and re-tensioned at 3-month intervals.

The respective maintenance outlay was thereby one man-hour each time. The skilled worker from the maintenance service carried out the work on the 45 kW drive as follows:

- Removal of the belt cover
- Checking the belt tension with the prescribed test load
- Loosening the four hammer-head bolts on the JORDAHL rail
- Moving the motor using two set-screws (on the rail)
- Checking the belt tension (test force)
- Alignment of the two belt pulleys using a straight edge (parallelism)

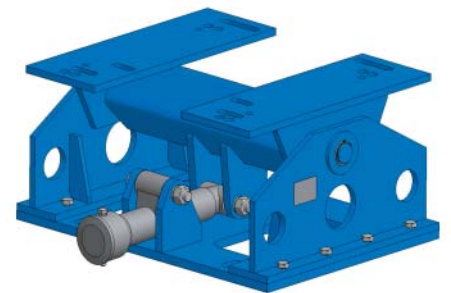
- Adjustment of the motor position
- Re-tightening the four hammer-head bolts on the JORDAHL rail
- Replacement of the belt cover
- Test run

The man-hour for a skilled worker from the maintenance service must certainly be estimated as costing Euro 60.–. The maintenance of the belt drive on the centrifugal crusher thereby costs the operator Euro 240.– a year – not to mention the fact that the crusher and the downstream machinery in the production process would be unproductive for a good hour each time!

The ROSTA Motorbase is maintenance-free! The belt tension does not have to be periodically checked. The suspension is self-adjusting, and compensates the ageing elongation of the belts.

Furthermore, the alignment of the belt pulleys always remains parallel during any subsequent belt change.

**And as a result of not having to carry out any maintenance work, the ROSTA-MB was amortised in short time!**



*Easy belt replacement within minutes*

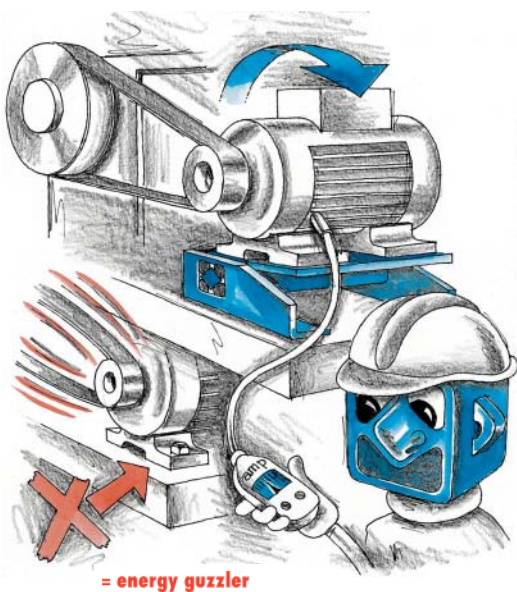


## 4. Easy mounting

Please ask for our Motorbase-Manual giving illustrated guidelines for the installation.



High energy savings with the  
ROSTA Motorbase!



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