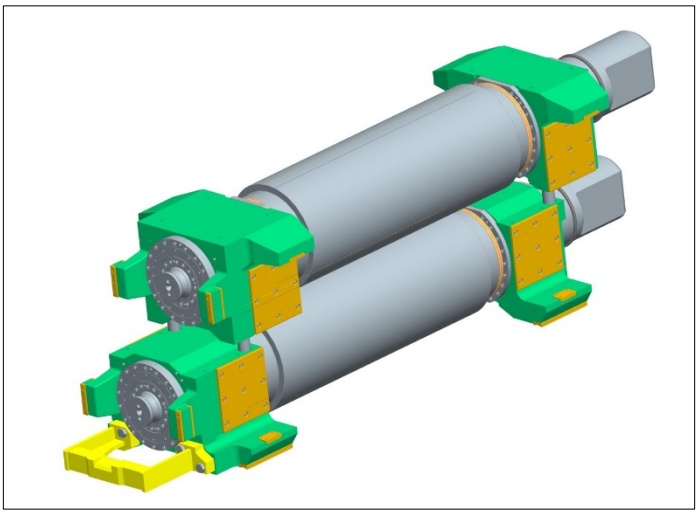
Field of Application for Laminum® – Laminated Shims

Construction / Assembly technique / Maintenance / Conveying technique / Forming technique

Work Rolls

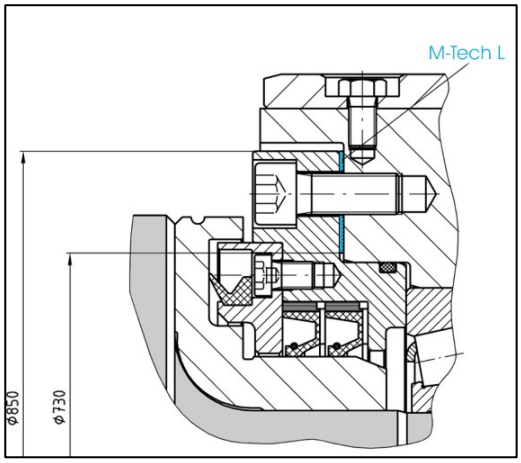
Shims ensure axial compensation with the bedding of work rolls



Shims compensate the tolerance inside the bearings, thus compensating the axial play of the work rolls.

The construction of the bearing points of the work rolls for rolling mills is a complex task, one central aspect of which is the compensation of accumulated tolerances. By using laminated metal shims, tolerances can be adjusted accurately up to 25 micrometers without grinding.

Power, heat, humidity: the production lines of steel sheeting manufacturers work under extreme conditions, because all of the components of the hot-rolling systems have to meet high demands. This applies in particular to the bearings of the work rolls, because the heavy cylinders not only have to run precisely, they must also be as easy to maintain as possible. A quick look at the technical drawings of renowned plant engineering specialists reveals that the work roll bedding is a really complex affair from a construction point of view. This problem is solved in part by using different antifriction bearing types, such as angular roller bearings that run in opposite directions to one other. Elements that are barely noticeable at first glance are also integrated into the construction of the bearings, however, even though they perform vital functions: flat steel rings made of special laminated sheeting. These small parts are shims and their job is to compensate the tolerance inside the bearings, thus compensating the axial play of the work rolls at the same time. For the plant engineering specialists, they are indispensable construction elements which ensure that their rollers run precisely all the time.



Shims are indispensable construction elements which ensure that work rolls run precisely.

Tolerance compensation now and later

Georg Martin GmbH supplies ready-for-use spacer rings and ring segments of the type Laminum® with drill holes for the work rolls of a large mill train manufacturer, for example. Their thickness can be adjusted from 0.5 to 3.2 mm, depending on requirements. An important aspect here is the twin function of the shims: they are required in construction because a combination of different fits has to be taken into account due to the complexity of the work roll bearings. This results in accumulated tolerances for the compensation of which there is no economical solution – according to the plant engineers. In addition to this, the installed shims also facilitate subsequent maintenance, because when the work rolls have to be realigned in accordance with the maintenance schedule, their axial play can be compensated simply, quickly and precisely by peeling off the laminated shims.

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