Uni Ma Tec Prägesysteme GmbH

System Description of the UniMaTec Compensator of load alternation

Bearing carriers are tightened on both rolls right and left of the roll barrel to receive the deep groove ball bearings. In addition two relieves are also provided right and left of the roll barrel and serve to introduce material later on.
For each side an upper bearing pad and a lower bearing pad are assembled together with the pressure springs, the pressure pistons and the screws to build a unit. During the installation of the rolls, these pre-assembled devices to compensate load alternation (= CLA) are then placed in the machine between the rolls and in the position of both assembled deep groove ball bearings.

The matched steel embossing rolls are pre-assembled as usual with the intended spherical roller bearings, bearing blocks and connecting gear as well as with the usual nip adjustment device. And of course they are also equipped with the above described deep groove ball bearings.
The rolls are then installed as usual in the roll frame of the respective machine while presetting is performed for the material to be embossed. After this setting, the rolls are pushed apart again until the CLA fits in between the deep groove ball bearings. Afterwards the rolls are brought together again and the opening nip is adjusted to approx. 4 mm. At this nip, the CLA is already under pressure, i.e. both half-shells rest against the deep groove ball bearings. When the rolls are brought together at the set embossing nip, the counter pressure of the CLA first presses the rolls in the opposite direction until the necessary bearing play of the spherical roller bearings has been completely eliminated in the load direction, i.e. there is no more bearing play in the embossing pressure direction, the rolls stand virtually motionless opposite one another. Thanks to this, the usual oscillations cannot either develop, i.e. the rolls cannot draw aside during the transversal embossing. Solely the normal resilience of the whole framing still causes embossing variations. If the primary material is accordingly even, the ply bond of the different formats will be very even too. This measure enables to partly reduce in future the engraving height which is essential to emboss the cross borders. This means that even thin materials can be reliably embossed with the required embossing nip.