

METALLOCK'S PURPOSE DESIGNED GRINDER KEEPS CAN RINGS PULLABLE

To remove the effects of fretting corrosion on metal can conversion presses - used for partially cutting through lids to produce a ring pull - Metallock Engineering has developed a grinding machine to regrind in-situ the lower bed face to an extremely fine tolerance over a large surface area.

The majority of can making presses throughout the world are made by The Minster Machine Company of Ohio, USA. For several years now Coventry based Metallock, has been refurbishing the lower bed faces on Minster presses throughout Europe, the Middle and Far East. These machines operate 24 hours a day all year round and a typical 100 tonne press will have a lower die bed length of 1270mm(50in.) up to 760mm wide(30in.) to which the bolster and die is bolted. To ensure that the penetration dimensions required for the ring pull to function are consistently achievable, the lower die bed must be parallel to the upper moving ram to within 0.040mm(0.0015in.) over length and width. The material used for can lids is 0.203mm(0.008in) to 0.229mm(0.009in) thick and after penetration, only 0.0762mm (0.003in) to 0.102mm(0.004in) \pm 0.0152mm(0.0006in) remains around the scored apperture.

Even though the bolster and die are firmly bolted to the lower bed, the constant vibration and heavy pressure causes slight relative movement and fretting corrosion, the evidence of which is a reddish brown deposit of iron oxide when the parts are separated. Over a long period this corrosion affects the parallelism of the upper and lower bed faces and regrinding is required.

Metallock has developed a special system with a moveable carriage that bolts to the edges of the lower bed, and following accurate alignment facilitates the lower bed surface regrind. Usually removal of up to 15 thousandths of an inch is all that is needed to restore the overall flatness and parallelism to within the 0.040mm (0.0015in) required.

Recently Metallock undertook refurbishments on two 100 tonne presses for Carnaud Metal Box in Carlisle, UK. Although the beds are not skimmed every time, CMB machines are overhauled on an annual basis. On this occasion the machines were being upgraded with new rams, slides and bolsters so the opportunity was taken to regrind the beds and restore the press frames to as near new conditions as possible.



Metallock's insitu grinding machine for metal can conversion presses, used to press ring pulls, restores the overall flatness and paralellism with the upper ram to within 0.04mm TIR on a lower bed die of 1270mm by 760mm.

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