Technical Report PolymerMetall®

TEC-# 028
Surface preparation before the coating of hydraulic rams

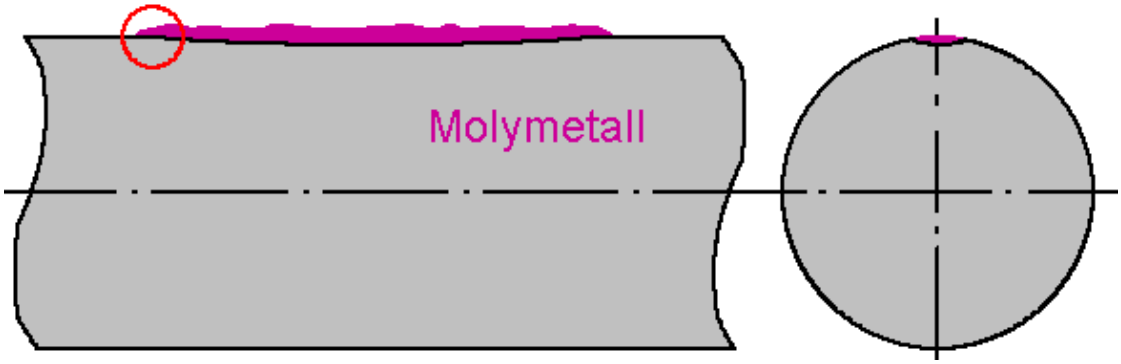
Used products
Molymetall®

Introduction
Molymetall® is a PolymerMetal with a very low coefficient of friction and self-lubricating properties. The emergency running properties against solid dry friction such as sliding wear and stick-slip are excellent. After full curing, Molymetall can be processed to a finished measure up to the µ-area. Possible applications are e.g. hydraulic pistons, pillar guides, slide bearings, slide ways, tappet guides.

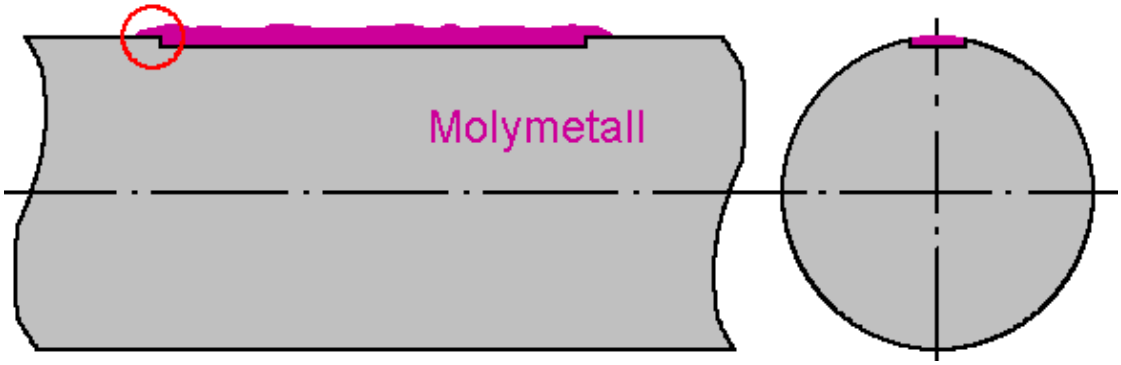
Description
Especially when Molymetall® is used for the repair of hydraulic rams, it is important that the surface of the work piece is thoroughly prepared before coating. Therefore

make the surface metallically clean and carryable &
rough up the surface mechanically by sandblasting, cutting, grinding etc.

Wrong:



Right:



Especially during the creation of a metallically clean and carryable surface, it is very important that any pittings and cracks on the work piece surface, which were caused by wear won't be let run out, but machined instead. That means that before the application of Molymetall® covering the complete area, any cracks should be grinded down by appr. 1 mm. This way the bonding of Molymetall® on the surface is secured.

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clean again by sweeping, blowing or sucking off
thoroughly degrease with MM-Degreaser Z

It is important that only suitable degreasers like e.g. MM-Degreaser Z, acetone or ethyl acetate are used. Benzine, alcohol, varnish and paint thinner or other unknown substances are not suitable. Remains of oil diffused in the work piece can be removed by heating up the damaged area by using a Bunsen burner or a gas flame. Through this the adhesion of Molymetall® on the surface won't be affected by remainders of oil.

MM-Release agent

Apply a thin layer of MM-Release agent on the surfaces, where a compound should not be formed with the PolymerMetal and polish after a short drying period

Hints for the application of Molymetall®

During the application of the PolymerMetal we recommend striking out a thin layer of the mixed PolymerMetal on a clean (metal) plate or any similar suitable substrate before starting to coat the work piece. Through this small air bubbles arisen in the still soft PolymerMetal during mixing of the components can be avoided or removed. Molymetall® should be applied to up to appr. 0,5 mm above the wanted nominal layer thickness, because normally a machining of the initially or fully cured Molymetall® is desired or necessary later to achieve a very smooth and regular surface of the damaged area. In every case it is important that first some Molymetall® is applied over the nominal diameter because if sufficient material has not been applied, a surface preparation must be done again. We recommend applying more material because Molymetall® can be machined quite easily. The machining can be done by i.e. using first coarse and later fine sand paper.

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