

## Repair of Zgoda Sulzer diesel unit cylinder block and casing

Diesel generator cylinder block and casing during the performed inspection and before commencement of repair works. (fig.1)

The broken part of the cylinder block. For cylinder block restoration, first it was necessary to restore its construction. (fig.2)

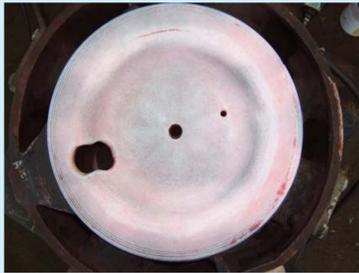
Prepared surface of the cylinder block missing part. (fig.3)

The missing part is built in and tightened to the cylinder block. This is crucial requirement for the successful restoration of casing through the Metalock method. (fig.4)



## Repair of cylinder head

Cylinder head of diesel generator with a crack, localized by colour deflection



Moment from the METALOCK repair of the cylinder head for restoration



Restoration of cylinder block wall. (fig.5)

Completed repair of the cylinder block, using the METALOCK method. The surface on which the casing is laid is treated to roughness and flatness, similar to that of the rest part of the surface. (fig.6)



The damaged part to which new material was added as to enable restoration of casing wall. The new detail was fabricated of cast iron and was embedded in the broken part of the casing, using the METALOCK method. (fig.7)

Prepared adjoining surfaces of casing wall. (fig.8)

He missing part of casing wall, prepared for embedment. (fig.9)

Embedded and tightened missing part to the casing wall. (fig.10)

Moments from casing wall restoration. (fig.11, 12)



Repaired casing wall through the METALOCK method. Casing surfaces that is in contact with the surface of the cylinder block is grinded to roughness and flatness, similar to that of the other part. (fig.13)

Localization and limited cracks on the cylinder liner. (fig. 14)

Moment of the repair for cracks restoration. (fig.15)

Repaired surface of the cylinder liner. After repair completion the surface was treated and tested through gauge for determining the cylindricity of the surface. (fig.16)



The third direction of the repair that was performed simultaneously to the restoration of the other two parts of the generator, damaged during an accident, was the cylinder liner of forth motion, particularly in the area below the packing surfaces of the cooling space.

## Repair of coupling mirror disk of engine type 3?12

The mirror disk before machining



Cracks localized through colour deflection



Completed disk repair with roughness of the repaired surface analogous to that of the operational part. Further mechanical treatment – precision grinding

Moment from the METALOCK repair

## Repair of exhaust collector of engine 6NVD48

Removed collector with localized crack before the beginning of repair (fig.1)



Preparation of the collector for repair, all the parameters are determined and project for restoration of the casing is worked out (fig.2)

Locking of collector's crack (fig.3)



The crack is locked, then final packing of material is performed, cutting out and grinding of the redundant metal. (fig.4)



Surface of the collector's casing after final completion of repair (fig.5)



Moment from the hydraulic test of the cooling space in the collector casing. The indicator of the manometer shows 0,3MPa. (fig.6)

Hydraulic test of repaired cylinder head. Testing pressure of fluid is 0,8 MPa.

