

Repair of cylinder block of main engine AKASAKA-MITSUBISHI



As a result of failure during operation a crack has emerged in the area of the sixth motion on the cylinder block of main engine „AKASAKA-MITSUBISHI“ 6UET52/90C (Figures 1 and 2)



Moments from the Metallock repair on the cylinder block body fig.3 and 4)



Final touches of machining on the reconstructed body after the crack repair (fig.7 and 8)

Equality test of the repair (fig.9 and 10)



Repair of coupling mirror disk of engine 3D12



Condition of the disk at delivery for repair (fig.1)

Mechanical treatment of the disk after the performed Metallock repair

Repair of piston pump casing



Condition of pump casing at delivery for repair (fig. 1 and 2)



Stages of the Metallock repair of the piston pump casing (fig.3 and 4)



Moment of the Metallock repair of the piston pump casing (fig. 5)

Completed Metallock repair. Next is the test for repair quality by using penetrating liquid (fig.6)



Test for repair quality (fig.7)

Repair of cylinder block and casing of main engine Russian Diesel



Due to the failure the face of the cylinder block is disturbed. This required a transverse cut to be made in order to release the tensions and for restoration of sizes. As it could be seen on fig. 1 that section was restored using the Metallock method.

The block face to the casing was supplied with bed for insert, compensating the plastic deformations, resulting from the failure (fig.2)

Moment of the mechanical processing of the insert (fig.3)



Stage of the Metallock repair for embedment of the insert to the face of the cylinder block (fig.4)

Cylinder block surface after restoration. Next is the mechanical treatment for achieving the necessary parameters of flatness and roughness, required for the proper operation of the engine (fig.5 and 6)



Preparation of the adjoining surfaces for embedment of the new part to the casing body (fig.7)

Stage of the mechanical processing of the casting, designated for embedding to the casing body (fig.8)

Manual alignment of the new part to the casing body (fig.9)



Aligned new part. Tightened and ready for embedment through the Metallock method of repair (fig.10, 11 and 12)



Completed Metallock repair. Preparation for holes restoration, required for engine re-assembly. Finally – machine treatment of casing surface (fig.13)