

**MATERIAL STANDARDS  
DIESEL LOCOMOTIVE WORKS  
VARANASI**

NUMBER

Misc.137

INDEX

Cylinder Block

**PURCHASE SPECIFICATION FOR  
16 CYL ENGINE BLOCK WITH  
ENVELOPE MACHINING**

SHEET

1 of 2

DATE

20.06.2005

**1.Scope:**

This specification covers the technical requirements of fabricated and envelop machined cylinder blocks to PL no.10021528. This specification also covers requirement of structural steel for manual & automatic welding conforming to DLW Specification MISC 119. R2

**2. Free Supply Items:**

DLW will supply 8 nos. Saddle Inter forging to PL no. 10140025 and 01 no. Saddle Centre forging to PL no. 10140049 to firm for each cylinder block to be procured from trade. Other materials will be procured by the firm itself.

**3.Manufacturing Requirements:**

**3.1 Test of Weld Joints:** All T1 and T2 quality Weld Joints must be 100% radiographically tested during fabrication of Cyl. Block. Any type of Porosity, blow holes, pipes, Inclusions or other harmful defect in weld joints that would adversely effect will not be allowed at any cost.

**3.2 Test of Plates/Components:**

3.2.1 Plates more than 22 mm thickness should be ultrasonically tested before welding on Cylinder Block Assembly.

3.2.2 All plates after flame cutting should be straightened before use.

3.2.3 Components like Top deck LS and RS, top deck centre, side sheet, angle, Inside and out side walls, foundation rails, middle deck etc. shall be shot blasted before welding on Cylinder Block Assembly.

3.2.5 All outer weld joints must be oil tight.

3.2.6 Rectification more than 15% will not be allowed.

**3.3 Types of Electrodes:** Electrodes are to be used as mentioned in DLW Part no. 10020019.

**4.Hydrostatic Testing:**

During fabrication of cyl. Block, two stage water testing shall be done i.e. (i) Testing of water chamber compartment at 90-95 psi; water leakages will not be allowed at any cost. (ii) Testing of weld leakage from water inlet cutout on free end plate at 90-95 psi; water leakages will not be allowed at any cost.

Rev: R2 Para 1 & 9 revised.

CKD BY  
SSE(E)

APPD BY  
Dy  
CDE/Eng

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Bohola  
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*[Signature]*  
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**5. Stress Relieve:**  
The entire structure shall be stress relieved in accordance with DLW standard sheet. 01P7710.

**6. Shot Blasting:**  
The entire structure shall be shot blasted after Stress relieving.

**7. Test & Inspection:**  
Two copies of certified Test reports are to be sent to the Chief Inspecting Officer, DLW / Varanasi. The report of ultrasonic testing of plates, all T1 & T2 types weld Joints, water testing of Water Chamber & Stress Relieving of fabricated Cyl. Blocks will be furnished by supplier to DLW.

**8. Marking :**  
Vendor's Identification shall be provided as per DLW part no. 10091282 The vendor shall supply details like month & year of manufacturing etc. separately for each batch, to CQAM/DLW.

**9. Supply Condition :** R2  
Fabricated block shall be fabricated as per PL no. 10020019. Subsequently following machining operations shall be undertaken as per PL no. 10021528 before dispatching it to DLW.

1. Lay out marking
2. Envelope machining (Milling TOP deck LS, RS and Centre and Side sheet LS & RS.
3. Foundation rail and saddle machining
4. Both Generator end and Free end machining

**10. Packing Condition:**  
Cylinder block shall be dispatched by placing wooden blocks on all the machined surfaces especially at foundation rails of cylinder blocks to avoid transit damage to machined surfaces. All the threaded holes/plane holes shall be plugged with rubber stoppers after applying anti rust preventive (Servo Greece). All the inner and outer surfaces of cylinder block shall be applied with anti rust preventive to avoid corrosion.

CKD BY SSE(E)	APPD BY Dy CDE/Eng
<i>Ashok</i> 6407	<i>[Signature]</i> 6-4-07

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