

TRANSNET ENGINEERING

PRODUCT SYSTEMS DEVELOPMENT

PORT EQUIPMENT

SPECIFICATION FOR Engine Refurbishments

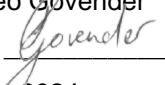
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1. Introduction

Activity Type: Recondition / Refurbish / Repair

Recondition engines according to the following scope or exchange current engine for a reconditioned unit from Mercedes-Benzes (engine type: Mercedes OM906LA)

2. Scope of Work

Complete reconditioned engine, which includes the following, but is not limited to:

1. Strip The Complete Engine
2. Clean All Components
3. Assess Engine & Carry Out All Machining Incl Line Boring on Engine Block Where Required
4. Crankshaft To Be Assessed and Machined/Repaired Where Required
5. All Machining to Be Carried Out According to Oem Specifications
6. Carry Out All Machining on Cylinder Head According to Oem Specifications
7. Replace All Intake and Exhaust Valves
8. Replace All Valve Cross Overs
9. Replace All Valve Seats
10. Replace All Gaskets and Seals
11. Replace All Sensors (Pressure Sensor, Temperature Sensor, Engine Speed Sensor Barometric Pressure Sensor, Engine Position Sensor, etc.)
12. Replace All Pistons (New)
13. Replace All Piston Rings (New)
14. Replace All Connecting Rods (New)
15. Replace All Bushes and Bearings (New)
16. Replace All Runners (New)
17. Replace Thermostat (New)
18. Replace Engine Oil Pump (New)
19. Replace Oil Pressure Relief Valve (New)
20. Replace Oil Cooler (New)
21. Replace Oil Sprays (New)
22. Replace Water Pump (New)
23. Replace Fan Drive Belts (New)
24. Replace Fan Drive Bearings (New)
25. Recondition Fuel Injector Pump
26. Recondition Injectors
27. Replace All Filters (New)

28. Re-Assemble Engine to OEM Specifications
29. Replace Turbo (New)
30. Recondition Air Compressor
31. Replace Engine Breather (New)
32. Replace Defective Push Rods (New)
33. Supply New ECU with Terberg Specific Vehicle Software (Evidence to be provided on software)
34. Carry Out All Adjustments and Settings According to OEM Specifications
35. Dyno Test Engine
36. Supply A Dyno Report on Engine
37. Paint Engine to the OEMs Original Color Scheme.
38. Commission Of Engine After Installation into Vehicle and Supply Commissioning Certificate.
39. Replace Engine Harness (New)
40. Clear All Fault Codes After Engine Is Installed to Vehicle
41. All associated clamps, pipes fittings etc. shall be supplied for the engine.
42. Supply of new flex plates

Note: Supplier is to assess engine and all missing components are to be replaced with new components to form a complete engine unit.

Suppliers are considered to be experts in engine refurbishments/engine building and are to make Transnet aware of any shortcoming in this specification.