



# KONING TECHNISCH BEDRIJF B.V.

## MOTORENTECHNIEK

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### Full remanufacturing of your engine

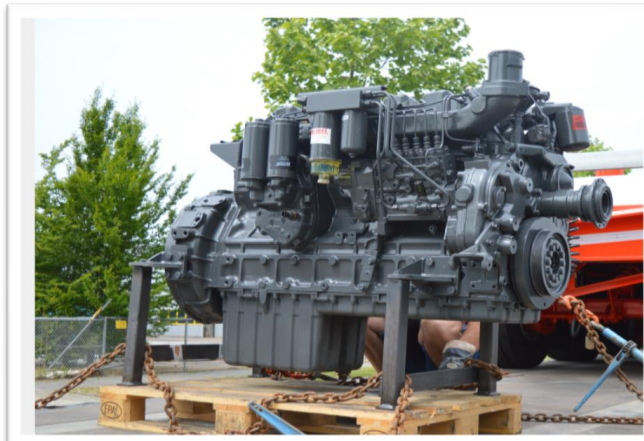
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You need an engine, but your model is not produced anymore? You are looking for an engine info@ktbkoning.nl quality as a new one, but with a reasonable price?

**KTB** offers you a full remanufacturing of your own engine.

#### What is a remanufactured engine?

A remanufactured engine, by definition, is an engine that has been completely disassembled and received major repairs including (but not limited to) block re-boring, crankshaft re-grinding & valves re-facing. The engine is re-assembled into its original factory specifications. All damaged parts are replaced and the engine is tested as a final check. Essentially it's a brand new engine.



#### Advantages:

- ♦ The cost of a remanufactured engine is several times lower than a brand new engine
- ♦ Some engine types are no longer produced and are not available new. A remanufactured engine will ensure a longer lifecycle of your equipment and therefore increase the total ROI
- ♦ A completely remanufactured engine is built according to the manufacturer's original specifications and has a 100% identical configuration to the old engine that needs the replacement.
- ♦ Only high quality OEM and ORIGINAL spare parts are used for the remanufactured engine.
- ♦ The remanufactured engine is tested on our testbench and delivered with 12 months full warranty.

## Remanufacturing process.

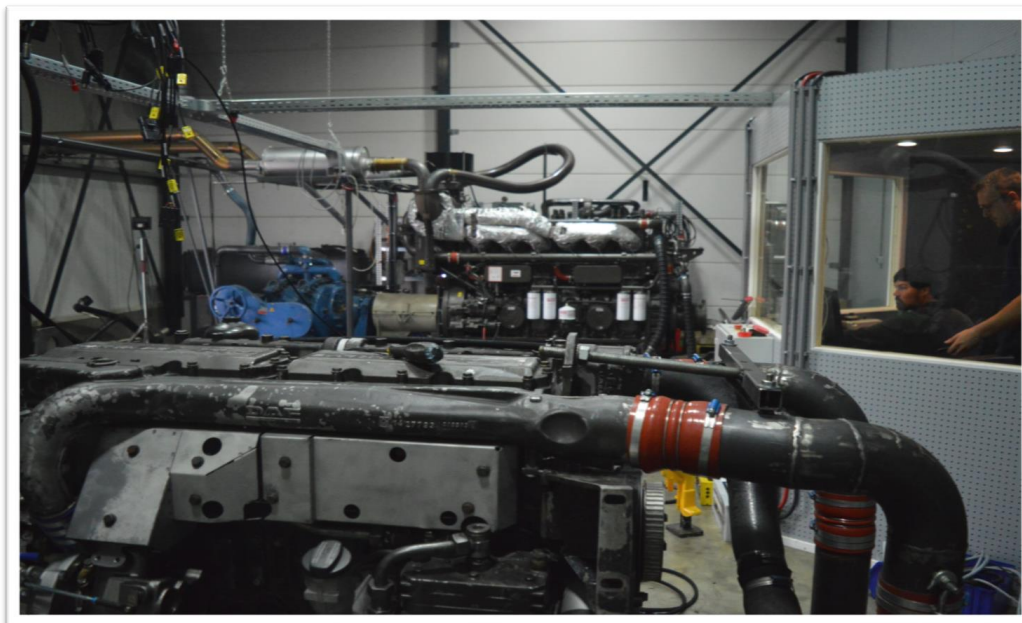
Remanufacturing is the rebuilding of an engine according to the specifications of the original manufactured engine using a combination of re-used, repaired and new parts. It requires the repair or replacement of worn out or obsolete components and modules. Through a series of industrial processes in a factory environment the used engine is restored to like-new condition.

The engine is reassembled in order to produce a unit fully equivalent and sometimes superior in performance and expected lifetime to the original new product.

### Progress works:

- ◇ Dismantle and clean the engine completely.
- ◇ Check and measure every single engine part.
- ◇ Order the genuine factory parts from the producer.
- ◇ Control the engine block and cylinder heads on little fractures using special machinery.
- ◇ Install the new cylinders and bore and hone them for the perfect fitting.
- ◇ Rebuild each cylinder head (check on cracks, grinding, renew the valves, renew valves seals and valve liners).
- ◇ Install the new injector nozzles on the fuel system.
- ◇ Assemble the engine fully with new bearings and gaskets.
- ◇ Set up the engine on our test facility and let it run through a complete test as a final check  
All the information about the technical characteristics will be saved and can be delivered to the client together with the engine.
- ◇ Repaint the engine and make it ready for transport.
- ◇ Get an approval of our head engineer before shipments

After a complete remanufacturing the engine is run through our specifically equipped test area:





### A fully remanufactured engine includes:

- ◇ Spotlessly cleaned cast iron engine block – Reconditioned
- ◇ Crankshaft (STD size) – reconditioned / re-grounded
- ◇ Crankshaft main BEARINGS – NEW
- ◇ Camshaft (STD size) – reconditioned or NEW
- ◇ Camshaft BEARINGS – NEW
- ◇ Reconditioned CONNECTION RODS with NEW BUSHINGS
- ◇ Connection rod BEARINGS – NEW
- ◇ NEW pistons (set complete with rings, pin and clip)
- ◇ Reconditioned Fuel Injection pump
- ◇ Reconditioned Fuel injectors (complete with nozzles / atomizers)
- ◇ Reconditioned Cylinder head complete with the valves, guides and springs
- ◇ Reconditioned or NEW valve tappets, push-rods, valve lifters, timing chain, rocker-arms and tubes
- ◇ Cylinder head gasket and bolts/studs – NEW
- ◇ Oil pump – only reconditioned
- ◇ Water pump – reconditioned or NEW
- ◇ Turbocharger – reconditioned or NEW
- ◇ Engine gasket set complete – NEW
- ◇ Oil and fuel filters – NEW
- ◇ Reconditioned oil pan, flywheel and flywheel housing, air lines, inlet and exhaust manifolds

### A remanufactured engine does not include:

- ✗ Starter, Alternator (overhaul and/ or new)
- ✗ Electronic sensors, ECU, wiring. (overhaul and/ or new)
- ✗ Radiator (overhaul and/ or new)
- ✗ Compressor (overhaul and/ or new)

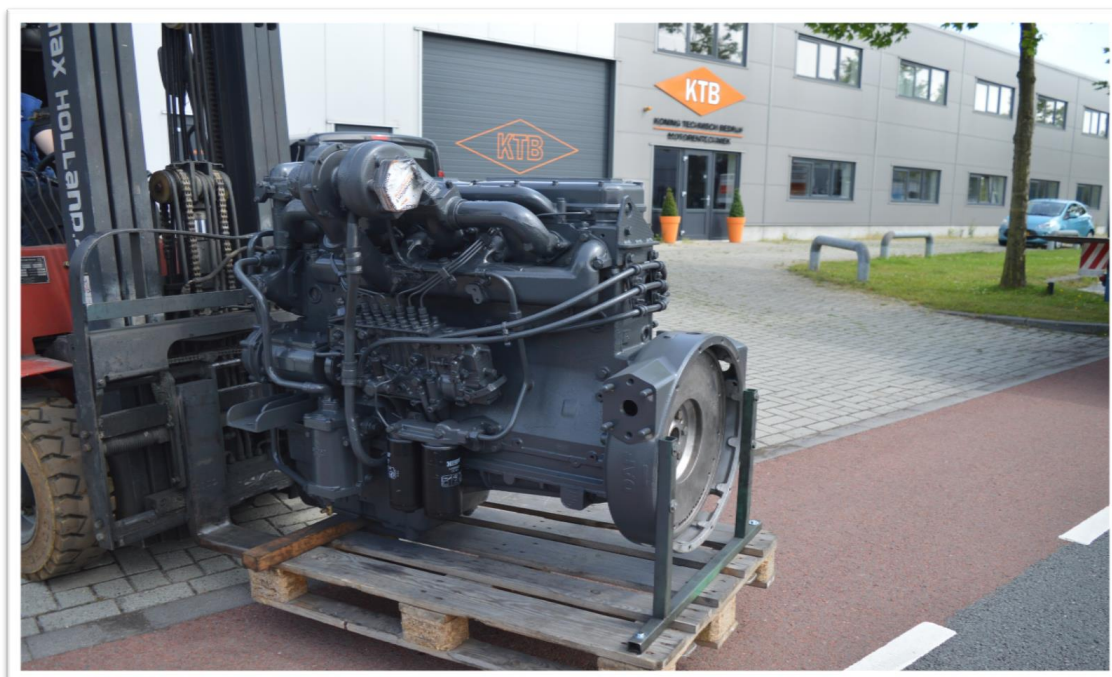


## Packaging.

Every engine supplied by KTB is carefully prepared for safe worldwide transportation.  
For the road transport within the EU borders the engines are securely fixed on standard safety pallet.



For intercontinental transportation by SEA or AIR every engine is packed into a wooden box, certified for all countries. This certificate will be delivered together with all the other shipping documents.



## Worldwide transport.

ROAD, SEA or AIR worldwide transport can be offered additionally through logistical partners carefully selected by KTB.  
The engine can be delivered to the nearest custom terminal, sea port or airport as well as to the final destination address.