

	<h1>Engineering specification</h1>	Number: ES521223	
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<b>Title:</b> <b>General Oil lubrication specifications</b>	By: Leon Gelauff	Chk:	
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### Scope:

This document lists the general lubrication requirements to an automotive MHI Turbocharger.

### Oil lubrication system specifications

#### Oil inlet/outlet :

- It is recommended to install the turbocharger in such way that the shaft is in horizontal position.
- Oil in- and outlet position shall be within  $\pm 10^\circ$  angle of the vertical centerline.
- The rotor centerline should be within  $\pm 5^\circ$  angle from the horizontal.

#### Oil drain requirement

- The cross section of the oil drainpipe must be larger than the cross section of the oil outlet on the bearing house.
- The slope of the oil drainpipe must be positive throughout the run of the pipe length.
- The oil drain outlet must be located at least 5 cm above the max oil level in the sump pan.

#### Oil quality

- Required oil quality: equivalent or superior to 5W30.
- Recommended oil change interval: Automobiles: 15,000 km. Industrial: 250 ~ 500 hours.
- Recommended a quick oil change after production (max 1000 km).
- Maximum allowed particle size: 30  $\mu\text{m}$ . Recommended oil filter: full - flow paper element type, having a mesh not greater than 30 microns. Recommended periodic change interval: every 25000 km or 500 hour.

#### Oil pressure

- The required oil pressure (continuous) at Full Load Rated Speed: 2 ~ 5 kg/cm<sup>2</sup>.
- The recommended oil pressure at F.L.R.S. 3 ~ 3.5 kg/cm<sup>2</sup>.
- Min oil pressure requirement at low idle at warm condition is 0.8 kg/cm<sup>2</sup>.

*Note:* Also consider the 'Cold start Specification' ES522256

#### Oil temperature

- Recommended oil temperature at oil inlet on the bearing house:  $95 \pm 5^\circ\text{C}$
- Max allowed oil temperature at oil inlet on the bearing house:  $120^\circ\text{C}$ .

#### Oil flow

- Oil flow is 0.8~1.2 litre / min.
- For specific Turbocharger types see the specific oil flow measurements.