

Periodic Maintenance Chart

○:Check      ◆:Replace

| System                     | Check article                                                                                                   | Daily | Periodic maintenance interval |                                 |                       |                        |                        |                        |                        |
|----------------------------|-----------------------------------------------------------------------------------------------------------------|-------|-------------------------------|---------------------------------|-----------------------|------------------------|------------------------|------------------------|------------------------|
|                            |                                                                                                                 |       | Every<br>50<br>hours          | Every<br>200~250<br>hours       | Every<br>500<br>hours | Every<br>1000<br>hours | Every<br>1500<br>hours | Every<br>2000<br>hours | Every<br>3000<br>hours |
| Cooling<br>System          | Check and refill engine coolant                                                                                 | ○     |                               |                                 |                       |                        |                        |                        |                        |
|                            | Check and clean the radiator fins                                                                               |       | ○                             |                                 |                       |                        |                        |                        |                        |
|                            | Check and adjust the V-bet cooling fan                                                                          |       | ○<br>1 <sup>st</sup> time     | ○<br>2 <sup>nd</sup> &<br>after |                       |                        |                        |                        |                        |
|                            | Drain, flush and refill cooling system with<br>new coolant                                                      |       |                               |                                 |                       |                        |                        |                        |                        |
| Electrical<br>Equipment    | Verification indicators                                                                                         | ○     |                               |                                 |                       |                        |                        |                        |                        |
|                            | Check the battery                                                                                               |       | ○                             |                                 |                       |                        |                        |                        |                        |
| Motor Oil                  | Check the engine oil level                                                                                      | ○     |                               |                                 |                       |                        |                        |                        |                        |
|                            | Drain and fill the engine oil                                                                                   |       | ◆<br>1 <sup>st</sup> time     | ◆                               |                       |                        |                        |                        |                        |
|                            | Replace the engine oil filter                                                                                   |       |                               |                                 |                       |                        |                        |                        |                        |
| Motor<br>speed<br>governor | Check and adjust the regulator level and<br>engine speed control *for diesel engine with<br>mechanical governor | ○     |                               | ○                               |                       |                        |                        |                        |                        |
| Fuel                       | Check and refill the fuel tank level                                                                            | ○     |                               |                                 |                       |                        |                        |                        |                        |
|                            | Drain the fuel tank                                                                                             |       |                               |                                 |                       |                        |                        |                        |                        |
|                            | Check the Fuel Filter/Water Separator                                                                           | ○     |                               |                                 |                       |                        |                        |                        |                        |
|                            | Replace the fuel filter/water separator                                                                         |       |                               | ◆                               |                       |                        |                        |                        |                        |
| Hoses                      | Replace fuel system and cooling system<br>hoses                                                                 |       |                               |                                 |                       |                        |                        | ◆                      |                        |
| Intake and<br>Exhaust      | Clean or replace the air filter element                                                                         |       |                               | ○                               | ◆                     |                        |                        |                        |                        |

# Specifications

Diesel fuel, engine oil & coolant

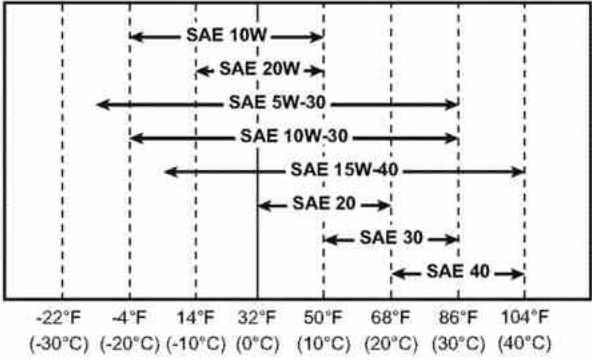
**Diesel Fuel Specification**

Diesel fuel must meet the following specifications. The table lists several global specifications for diesel fuels.

| Diesel Fuel Specification             | Location       |
|---------------------------------------|----------------|
| ASTM D975<br>No. 1D S15<br>No. 2D S15 | United States  |
| EN590 (2009)                          | European Union |
| ISO 8217 DMX                          | International  |
| BS 2869-A1 or A2                      | United Kingdom |
| JIS K2204 Grade No. 2                 | Japan          |
| KSM-2610                              | Korea          |
| GB252                                 | China          |

**Engine Oil Specifications**

Select the proper engine oil viscosity based on the ambient temperature and use the SAE Service Grade viscosity chart as below.



**Engine Coolant Specification**

|                                               |               |
|-----------------------------------------------|---------------|
| Long life coolant (LLC)                       | Acceptable    |
| Extended life coolant (ELC)                   | Acceptable    |
| Ethylene glycol conventional coolant (green)  | Acceptable    |
| Propylene glycol conventional coolant (green) | Acceptable    |
| ASTM D6210<br>D4985                           | US            |
| JIS K-2234                                    | Japan         |
| SAE J1814c<br>J1941<br>J1-34<br>J2-36         | International |

\*Never use water only

\*Never mix extended or long-life coolants and conventional (green) coolants

\*Never mix different types and/or colors of extended life coolants