

Applies to:

13_B_MSP

2009 - RX-8 - Engine**METERING OIL PUMP CONTROL OPERATION [13B-MSP]****Outline**

- The PCM moves the plunger in metering oil pumps No.1 and No.2 to discharge the engine oil by controlling the metering oil pump driver. Two types of metering oil pumps are utilized separately and the discharge amount is adjusted based on the stroke intervals of the plunger to realize precise control of the flow amount according to engine demand.

Operation timing

- The PCM calculates the oil level required by the engine according to the engine operation conditions. When the calculated value reaches the discharge amount, a drive signal is sent to the metering oil pump driver and the metering oil pump operates (ON/OFF) to discharge oil.

Demand-oil amount

- The demand-oil amount is determined for metering oil pumps No.1 and No.2 respectively.
- The base flow amount, based on engine speed and engine load, is compared with the minimum flow amount, based on the engine coolant temperature and intake air temperature, and the larger of the two values is selected as the demand-oil amount.

Discharge amount

- The discharge amount is the oil amount injected from the center oil nozzle and side oil nozzles when metering oil pump No.1 or No.2 operates once.
- The discharge amount is corrected according to battery positive voltage, the metering oil pump internal pressure, and engine coolant temperature.

Ignition switch off function

- Engine startability at cold temperatures is improved by discharging engine oil while the ignition is switched off.
- If the engine is started with the coolant temperature lower than 20 °C {68 °F} and the ignition is switched off with the coolant temperature lower than 60 °C {140 °F}, the PCM calculates the necessary oil amount based on the coolant temperature. The PCM controls the metering oil pump driver until the engine rotation is completely stopped.