# Research and development of SCR technology using high speed main engine

**JAPAN** 

### Objective & Outline

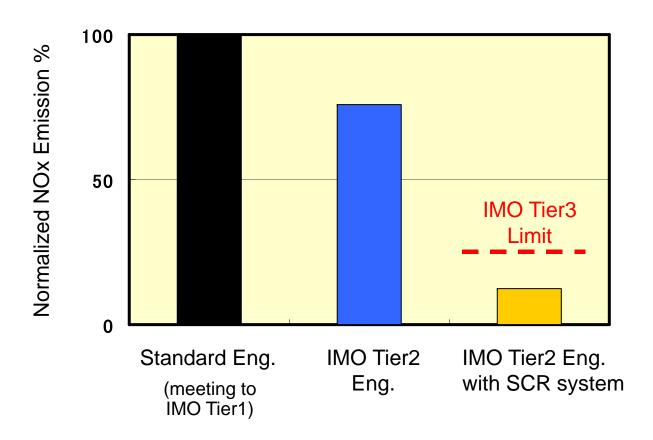
 Laboratory test of exhaust gas denitration with high-speed rotation main engine was conducted. In this test, Urea was used as reductant.

Participant of this project:

Yanmar Co., Ltd.

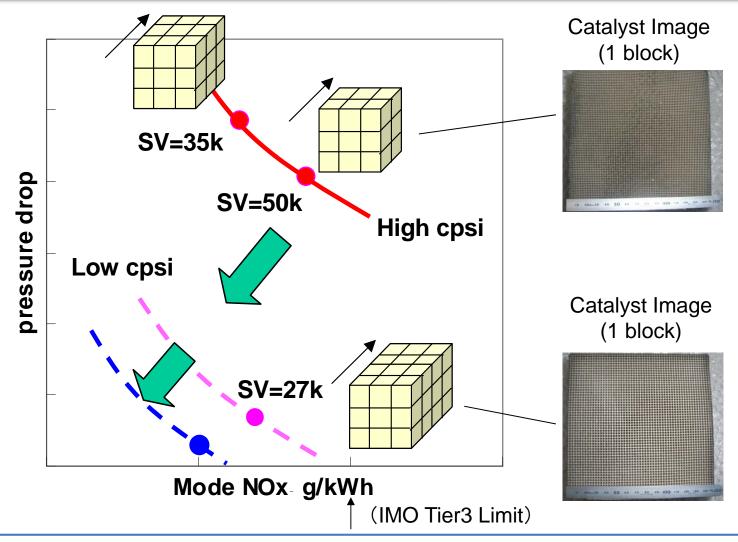
#### Test Rig of SCR System (Main Engine) $4NH_3 + 4NO + O_2 \rightarrow 4N_2 + 6H_2O$ **Catalyst Reactor** PS NOx PS NOx PS TS PS Exhaust Gas **Urea Injector** Mixer Diesel Engine $NH_3$ Eng.Load **Eng.Speed Urea Tank** Power P :Pump TS:Temp. Sensor **SCR Control Unit Urea Dosing System** PS:Press. Sensor

# SCR Performance (Main Engine)



 SCR was fitted with a Tier II compliant engine. As a result of this laboratory test, 80% denitration rate required by Tier III was achieved.

## Evaluation of SV (Main Engine)



• SV number was set at 50000(1/h) in this laboratory test. In this test condition, SV number of 27000 is considered to achieve both denitration rate required by Tier III and mitigation of clogging of the catalyst.