

TECHNICAL CIRCULAR

DOC No.: HHI-TEC-0448

Date : JUNE 3, 2022

SUBJECT: THE iCER ON-ENGINE SYSTEM

TYPE: HYUNDAI-WinGD 5/6X72DF-2.1/2.2

DISTRIBUTION

<input checked="" type="checkbox"/> Ship yard	<input checked="" type="checkbox"/> Ship owner
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We have introduced the iCER(intelligent Control by Exhaust Recycling) technology through HHI-TEC-0421 & HHI-TEC-0422. Since HHI-EMD & WinGD has released iCER off-engine technology, we realize that the technology can have relatively complex arrangement and layout according to the engine room design. This is because key components such as exhaust gas cooler, circulation tank, etc are installed at engine room. Therefore, we have decided to give an opportunity/benefit for ship-designer to have more simplified arrangement. The new iCER on-engine system has been developed under close cooperation with HHI-EMD & WinGD, and the integration of major iCER components on the engine reduces the installation and commissioning efforts.

X72DF-2.1 iCER **off-engine**



- Off engine solution with interfaces to ship yard. Additional piping work for ship yard. (similar effort as for HP-SCR)
- Similar engine design compared to existing X-DF engines.

X72DF-2.1 iCER **on-engine**



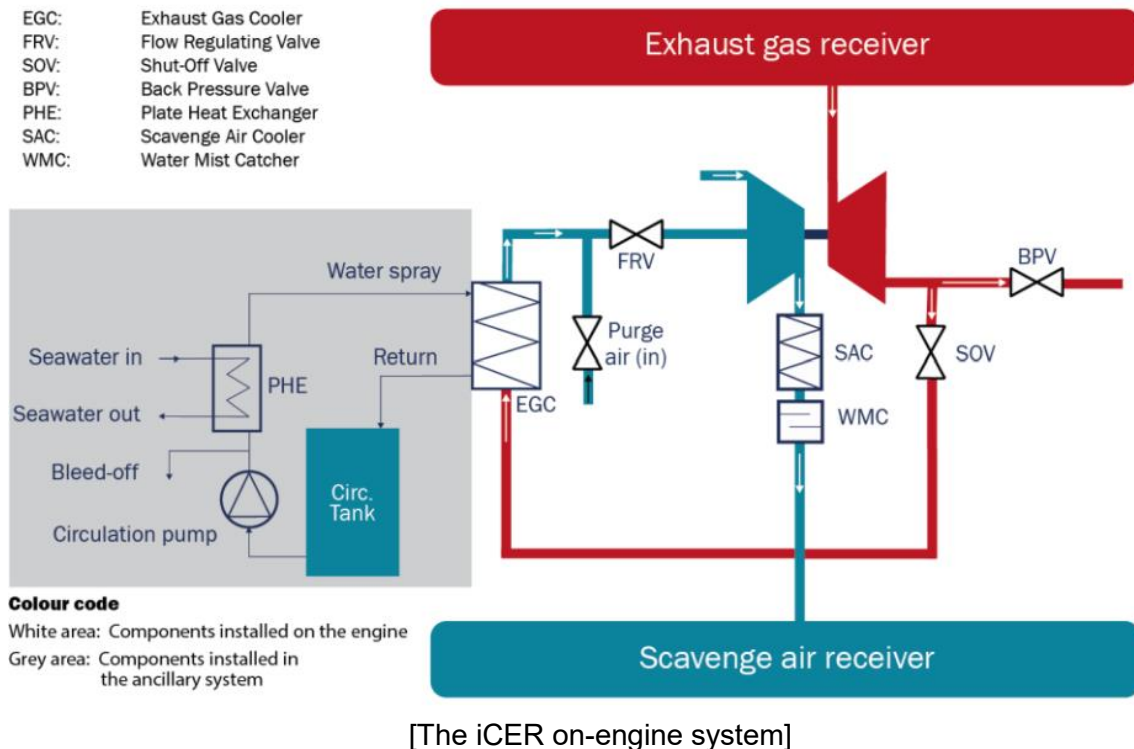
- All components for the exhaust gas control including EGC are installed on the engine.
- M/E design affected by installation of EGC, gas pipes, supports, etc.

The installation of the iCER on-engine system provides the compact engine room design. The most of major components such as valves, exhaust gas cooler, etc are installed on the engine directly except for water treatment system.

The main concept of operation and performance data is the same with iCER on & off-engine. (However, micro-economizer application is eliminated on i-CER on-engine concept.) The iCER on-engine is also available to operate iCER gas & diesel Tier III mode.

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The iCER on-engine system is currently available only for the 5- & 6- cylinder configurations for the X72DF-2.1 & 2.2 engines. Also, HHI-EMD & WinGD will look into the extension of development for iCER on-engine system.

We, HHI-EMD, are ready to provide design material & quotation for i-CER on-engine to customers. Please contact us or WinGD if you need the information. According the schedule, customers also have to check relevant materials on the WinGD website for actual project application.

We hope the information will do you a valuable service.

[The end]

Yours sincerely,

S. H. Shin

S. H. SHIN / Senior Engineer

Head of Engine System Technical Sales Dep't