

o-B2

2 General Engine Data

nd temperature range

Introduction for New “Technical Data”

g ranges a
ire and temperat
nes.

shows the values at normal rating.
sure in this technical data are
g distances (engine sides gauge
main engine crankshaft center.

LSE-Eco-B2

x 4.6mm

March 31, 2015

Marine Engine Division



1 What's Changing?

2 How to Get the New “Technical Data”?

3 Schedule

New “Technical Data” (1)

- Format and contents of “Technical Data” have been **renovated**.
 - Customers/users can get the new “Technical Data” freely on MHI-MME web site without ID and password*.
- *: ID and password are necessary to access the conventional “Technical Data” site.

TECHNICAL DATA
OF
MITSUBISHI UE DIESEL ENGINE

MODEL :

MITSUBISHI HEAVY INDUSTRIES, LTD.
KOBE SHIPYARD & MACHINERY WORKS
UE DIESEL ENGINE DESIGNING SECTION
DIESEL ENGINE DEPARTMENT

LSE-Eco	No.	E-14-151 (1/6)
	80-80	Tier 2

in following table.

Kind of strainer	Mesh	Remarks
er with gauze (in magnet)	60	1 set for 2 pumps
er with gauze	250~300	1 set for 2 pumps
ipe strainer (gauze wire)	40	1 set for 2 pumps
ipe strainer (gauze wire)	200~250	1 set for 2 pumps
ipe strainer (gauze wire)	60	1 set per lubricator
er with gauze	60	1 set for 2 pumps
in wire type (er with steam jacket #2)	5~10 μ	1 set for 2 pumps
in wire type (er with steam jacket #2)	320 (100 μ)	1 set for 2 pumps

LSE, B0LSE, B1LSE, B0LSE, B0LSE

be sure to install the strainer with same with either of the following case.

*When the strainer, which bypasses fuel at the time of auto-back-wash, is installed. The system should be planned that only fuel oil passed through the strainer is supplied to the engine.

Date: May 21 11

MITSUBISHI HEAVY INDUSTRIES, LTD.



Technical Data
UEC45LSE-Eco-B2

3. Engine Dynamics

3.2.2 Countermeasures

One-node vibration

There are two methods to reduce the amplitude of torsional vibration. One is so called "under critical running" and the other is "over critical running". With recent enlargement of propellers, it is difficult to accomplish a great critical running.

Under critical running

In general, this method is available for 5- or less cylinder engines with a short shafting system. In case of this method, the natural frequency of one-node vibration is so adjusted that resonance with the main critical order appears about 30%-40% above the engine speed at MCR by shaft diameter.

Over critical running

This method is available for 3- or more cylinder engines. In case of this method, the natural frequency of one-node vibration is so adjusted that resonance with the main critical order appears about 20% or more below the engine speed at MCR by shaft diameter with material or a heavy flywheel at driving end and a swing wheel at free end.

Even if the resonance still remains over the transient limit, a torsional vibration danger at the free end of the shafting can reduce the amplitude of vibratory torsional stress.

Two-node vibration

In case of 8-cylinder engines, Order-11 and 13 of flexural vibration should be taken care. If the resonant moment of inertia due to the reciprocating mass is not considered as variable with crank angle, the measurement result of amplitude can be higher than the calculation result. Accordingly, it is recommended to equip a torsional vibration damper to the 8-cylinder engines.

Any tuning wheel or torsional vibration damper are not included in the scope of supply normally, if the countermeasure is to be taken as a result of the torsional vibration calculation.

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MHI GROUP

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80SHW12_1_1_2

New “Technical Data” (2)

- New “Technical Data” documents are available for new project, complied with IMO NOx Tier III.
- Guidance for EGR or SCR, depending on engine type, is included in the new “Technical Data”.

Page 2/8
UEC50LSH-Eco-C2
Technical Data

5 Auxiliary Systems

5.11.3 EGR principle and system configuration

EGR technology has drastic NOx reduction possibility by change of combustion process. That is, in the EGR system a part of exhaust gas is mixed with fresh air, therefore O2 concentration of scavenging air becomes lower, as the result combustion phenomena will get slower than normal operation and Thermal NOx production amount will become smaller.

Our EGR system is LP-EGR system, which the EGR gas is branched and recirculated from after T/C outlet (after Exhaust Gas Economizer), and then cleaned by the EGR Scrubber, after mist is caught by Demister and led to T/C inlet (before Compressor) with the EGR Blower, thereafter joined and mixed with fresh air in T/C. Fig.5.11.2 shows the outline of LP-EGR system and Fig.5.11.3 shows the EGR system components on engine.

1) Tier II operation
In Tier II operation mode, the engine is just same as normal Tier II engine which is now operating all over the world by closing the EGR inlet/outlet valve. This operation mode is used in global area (= non-ECA area). Fig.5.11.4 shows the EGR system condition on Tier II operation mode.

2) Tier III operation
In Tier III operation mode, opening the EGR inlet/outlet valve and the EGR Blower running, NOx emission will become low sufficiently complying with the IMO NOx Tier III regulation. This operation is used in NOx-ECA. (Refer to Fig.5.11.2)

Fig. 5.11.2 LP-EGR system outline

Fig. 5.11.3 LP-EGR system on engine

SOLSHeco_C2_5_1_0 MITSUBISHI HEAVY INDUSTRIES MARINE MACHINERY & ENGINE CO., LTD.

〈 Sample: 5.11 EGR system 〉

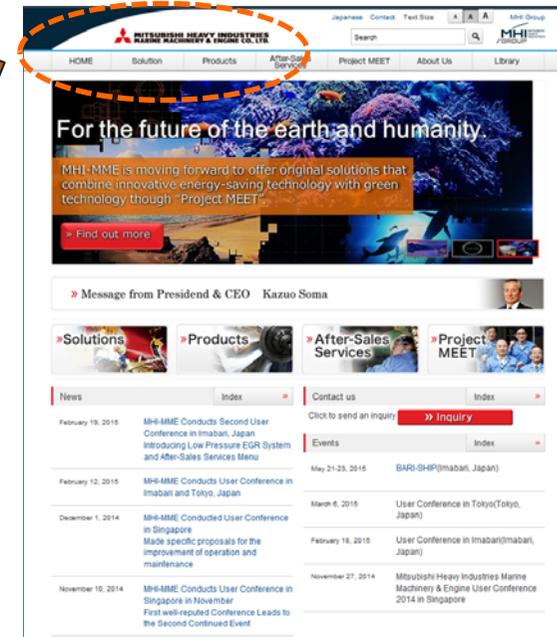
1 What's Changing?

2 How to Get the New “Technical Data”?

3 Schedule

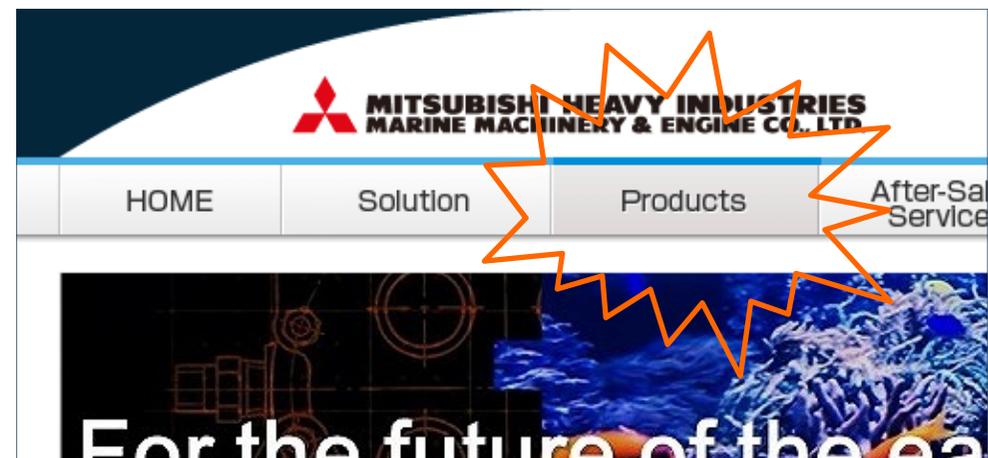
How to Get the New “Technical Data” (1)

1. Access MHI-MME web site.
(MHI-MME web site: <http://www.mhi-mme.com/>)



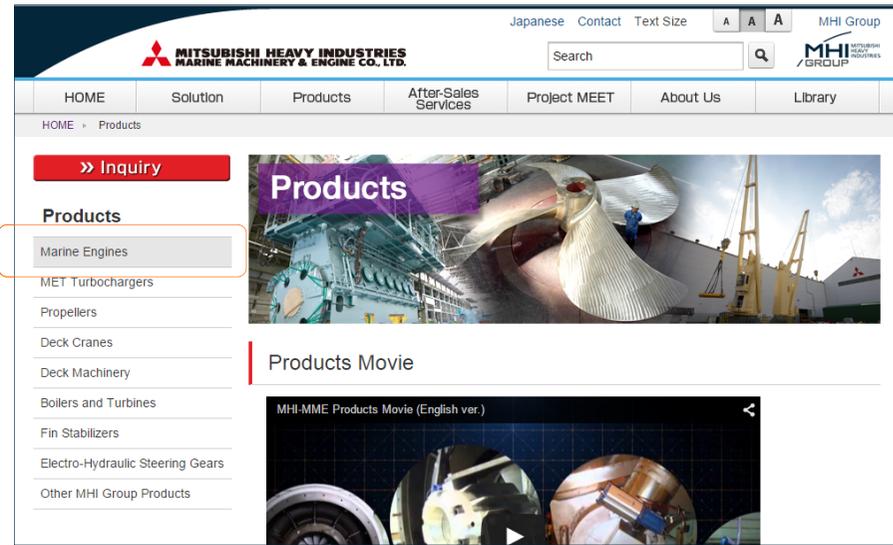
〈 MHI-MME top page 〉

2. Click “Products”
on top page menu.

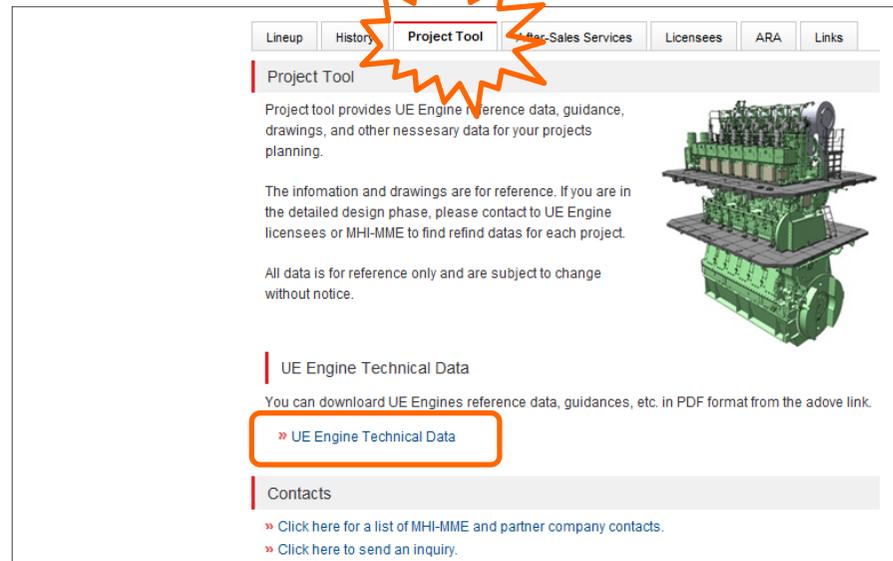


How to Get the New “Technical Data” (2)

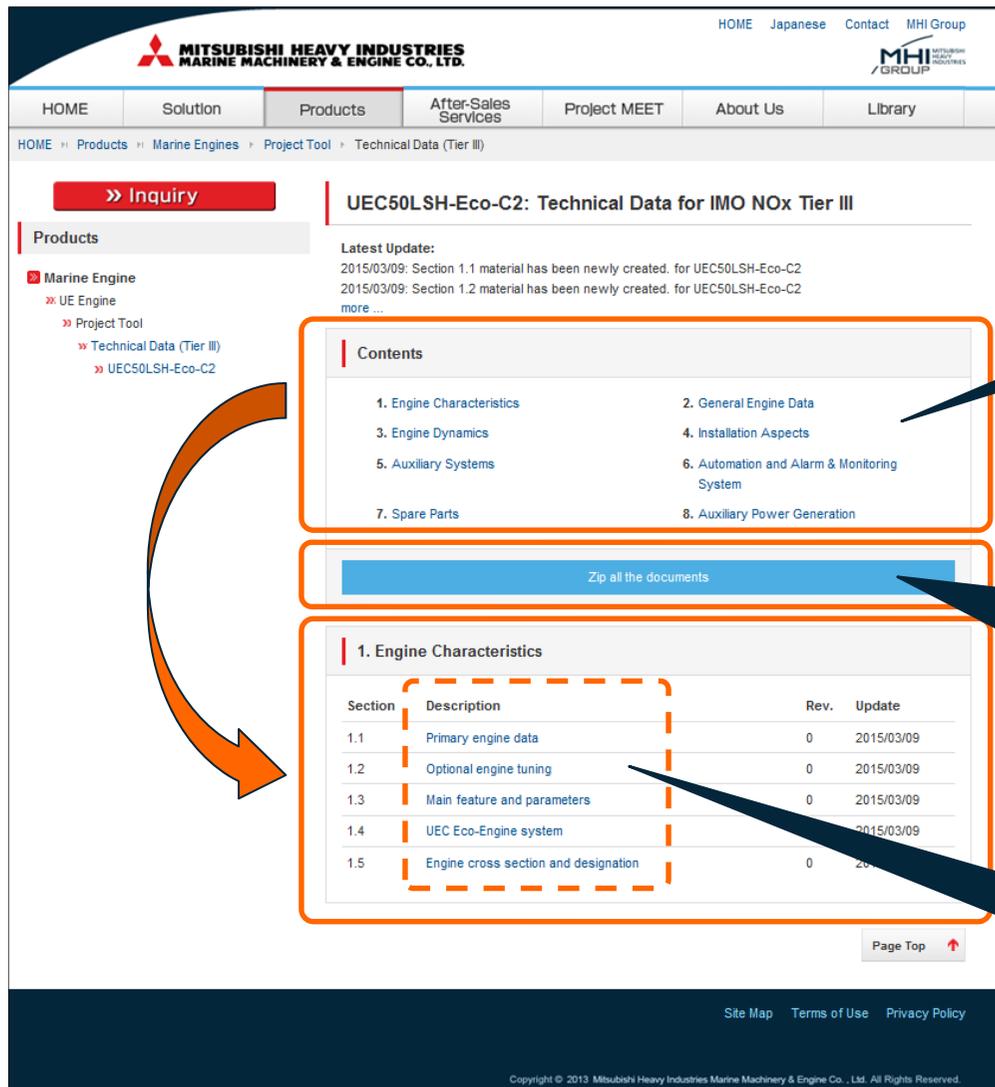
3. Click “Marine Engines” column.



4. Scroll down and change to “Product Tool” card.
And, then and click “UE Engine Technical Data” link.



How to Get the New “Technical Data” (4)



HOME Japanese Contact MHI Group

MITSUBISHI HEAVY INDUSTRIES MARINE MACHINERY & ENGINE CO., LTD.

HOME » Products » Marine Engines » Project Tool » Technical Data (Tier III)

» Inquiry

Products

- Marine Engine
 - UE Engine
 - Project Tool
 - Technical Data (Tier III)
 - UEC50LSH-Eco-C2

Click a description of each part and the corresponding contents in each part are listed at below space.

Click “Zip all the documents” button.

All the technical data documents for the corresponding engine can be downloaded as one digital booklet.

When clicking a description, PDF browser starts up and the corresponding technical data document is displayed.

1 What's Changing?

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3 **Schedule**



Schedule of New “Technical Data”

- Please refer to the schedule of new “Technical Data” as the below table.
- If you need the information for a specific engine, please contact licensees or MHI-MME*.

*: MHI-MME Contact ; Marine engine division
E-mail: info-uewebcont@mhi-mme.com

Engine type	2015			2016				Remarks
	2Q	3Q	4Q	1Q	2Q	3Q	4Q	
UEC50LSH-Eco-C2	Now available							
UEC45LSE-Eco-B2	Now available							
UEC60LSE-Eco-A1, -A2, -B1		▼						
UEC80LSE-Eco-A2, -B1			▼					
UEC50LSE-Eco-A1, -A2, -B1				▼				
Others								Technical data for all engines will be available until 2016/4Q

Remarks: This schedule are subject to change without notice.



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