

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MEDB00001J9

Application of: Council Directive 96/98/EC of 20 December 1996 on Marine Equipment as amended by directive (EU) 2015/559, issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Authority. This Certificate is issued by DNV GL AS under the authority of the Government of the Kingdom of Norway.

This is to certify:

That the Shipboard incinerators

with type designation(s)

JALTA 220AFD, 320AFD, 530AFD, 730AFD, 1000AFD, 1300AFD

Issued to

Hyundai Marine Machinery Co., Ltd.

Seo-gu Incheon,

is found to comply with the requirements in the following Regulations/Standards:

Annex A.1, item No. A.1/2.7 and Annex B, Module B in the Directive. Marpol 73/78 as amended, Annex VI Regulation 16, IMO Res. MEPC.244(66)

Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2021-07-08**.

Issued at **Høvik** on **2016-07-09**

DNV GL local station:

Seoul

Approval Engineer:

Pål Evang Nundal

Notified Body

No.: **0575**

for **DNV GL AS**

Vidar Dolonen

Head of Notified Body

Product description

Waste Oil Incinerators JALTA 220AFD, 320AFD, 530AFD, 730AFD, 1000AFD, 1300AFD consists of one combustion chamber with diesel oil burner and sludge burner, waste oil pump (mill pump), cooling blower, furnace air damper, auto feeding door (AFD) for solid waste and charging door and PLC type control panel. The equipment is intended for installation onboard ships.

Application/Limitation

Model	220AFD	320AFD	530AFD
Calorific capacity kW(kcal/h)	256 (220,000)	372 (320,000)	616 (530,000)
Solid waste (kg/h)	45	80	90
Liquid waste (kg/h)	26	37	62
Model	730AFD	1000AFD	1300AFD
Calorific capacity kW(kcal/h)	849 (730,000)	1162 (1,000,000)	1499 (1,290,000)
Solid waste (kg/h)	110	165	200
Liquid waste (kg/h)	85	116	150

When the approved software is revised (affecting all future deliveries) DNV GL is to be informed by forwarding updated software version documentation. If the changes are judged to affect functionality for which rule requirements apply a new functional type test may be required and the certificate may have to be renewed to identify the new software version.

COMBUSTION CHAMBER AND FLUE GAS RECORDS

<i>Parameters</i>	<i>Solid waste and sludge</i>
O ₂ average in combustion chamber/zone	6-12 %
CO average in flue gas	200 mg/MJ
Soot number average	Ringelman 1/Bacharach 3
Combustion chamber flue gas outlet temperature average	850-1200 °C
Amount of unburned components in ashes	Max. 10 % by weight

Hardware and Software

Hardware: PLC: Allen-Bradley or Siemens
HMI: Allen-Bradley or Proface
Software: PLC: RS Logix 500 V8.XX or TIA portal V13.XX
HMI: FT View Studio V7.XX or GP-proEX V4.XX

Type Examination documentation

DWG. No.:	Rev.	Date	Name	Model
HOS-SK022003 ~ 7	R4	2016.04.12	Main specification	JALTA 220AFD
HOS-SK032003 ~ 7	R4	2016.04.12	Main specification	JALTA 320AFD
HOS-SK053003 ~ 7	R4	2016.04.12	Main specification	JALTA 530AFD
HOS-SK073003 ~ 7	R4	2016.04.12	Main specification	JALTA 730AFD
HOS-SK100003 ~ 7	R4	2016.04.12	Main specification	JALTA 1000AFD
HOS-SK130003 ~ 7	R4	2016.04.12	Main specification	JALTA 1300AFD
HOS-SK-JTASTD-001	R2	2016.04.12	List of control /Safety / Automation	All Model
HOS-SK-JTASTD-002	R2	2016.04.12	Process diagram incinerator	All Model
JALTA-PND0220001	R4	2016.03.29	Piping diagram	JALTA 220AFD
JALTA-B0220100	R4	2016.03.29	Outline dimension drawing	JALTA 220AFD
HOS-B0220100	R4	2016.03.29	Assembly drawing of Basis part	JALTA 220AFD
HOS-0220310 ~ 12	R4	2016.03.29	Assembly drawing of Refractory Lining	JALTA 220AFD
JALTA-PND0320001	R4	2016.03.29	Piping diagram	JALTA 320AFD
JALTA-B0320100	R4	2016.03.29	Outline dimension drawing	JALTA 320AFD
HOS-B0320100	R4	2016.03.29	Assembly drawing of Basis part	JALTA 320AFD
HOS-0320310 ~ 12	R4	2016.03.29	Assembly drawing of Refractory Lining	JALTA 320AFD
JALTA-PND0530001	R4	2016.03.29	Piping diagram	JALTA 530AFD
JALTA-B0530100	R4	2016.03.29	Outline dimension drawing	JALTA 530AFD

HOS-B0530100	R4	2016.03.29	Assembly drawing of Basis part	JALTA 530AFD
HOS-0530310 ~ 12	R4	2016.03.29	Assembly drawing of Refractory Lining	JALTA 530AFD
JALTA-PND0730001	R4	2016.03.29	Piping diagram	JALTA 730AFD
JALTA-B0730100	R4	2016.03.29	Outline dimension drawing	JALTA 730AFD
HOS-B0730100	R4	2016.03.29	Assembly drawing of Basis part	JALTA 730AFD
HOS-0730310 ~ 12	R4	2016.03.29	Assembly drawing of Refractory Lining	JALTA 730AFD
JALTA-PND1000001	R4	2016.03.29	Piping diagram	JALTA 1000AFD
JALTA-B1000100	R4	2016.03.29	Outline dimension drawing	JALTA 1000AFD
HOS-B1000100	R4	2016.03.29	Assembly drawing of Basis part	JALTA 1000AFD
HOS-1000310 ~ 12	R4	2016.03.29	Assembly drawing of Refractory Lining	JALTA 1000AFD
JALTA-PND1300001	R4	2016.03.29	Piping diagram	JALTA 1300AFD
JALTA-B1300100	R4	2016.03.29	Outline dimension drawing	JALTA 1300AFD
HOS-B1300100	R4	2016.03.29	Assembly drawing of Basis part	JALTA 1300AFD
HOS-1300310 ~ 12	R4	2016.03.29	Assembly drawing of Refractory Lining	JALTA 1300AFD
HOS-AFD130010	R4	2016.03.29	Assembly drawing of Auto feeding door	All Model
HMM-CB0220001	R0	2007.10.01	Outline of cooling blower	JALTA 220AFD
HMM-CB0320001	R0	2008.01.01	Outline of cooling blower	JALTA 320AFD
HMM-CB0530001	R0	2008.01.01	Outline of cooling blower	JALTA 530AFD
HMM-CB0730001	R0	2008.01.01	Outline of cooling blower	JALTA 730AFD
HMM-CB1000001	R0	2008.01.01	Outline of cooling blower	JALTA 1000AFD
HMM-CB1300001	R0	2008.01.01	Outline of cooling blower	JALTA 1300AFD
JALTA-CPTYAP002 ~ 4	R2	2014.04.04	ELECTRIC PANEL-LAYOUT/FRONT	All Model
JALTA-CPTYAP006 ~ 8	R3	2014.04.04	ELECTRIC PANEL-MAIN CURRENT	All Model
JALTA-CPTYAP015 ~ 24	R3	2014.04.04	ELECTRIC PANEL-CIRCUIT DIAGRAM	All Model
JALTA-CPTYAP025	R3	2014.04.04	ELECTRIC PANEL-CIRCUIT OPTION	All Model
JALTA-CPTYAP030	R3	2014.04.04	ELECTRIC PANEL-EXTERNAL SIGNAL	All Model
JALTA-CPTYAP040 ~ 43	R3	2014.04.04	ELECTRIC PANEL-PART LIST	All Model
JALTA-CPTYAP501 ~ 3	R3	2014.04.04	ELECTRIC PANEL-TERMINAL STRIP	All Model
HNP-JALINC-EPA7	R7	2011.11.26	MAIN NAME PLATE	All Model
NP-SIMENS-OPAPLC-JAL	R7	2014.09.11	OPERATION INSTRUCTION PLATE	All Model
NP-WNPLC	R9	2014.09.11	WARNING PLATE	All Model
HINC-PGM-MAXIJAL	R0	2015.09.11	PLC LADDER SYSTEM SOFTWARE QUALITY PLAN	All Model
V03-JALTA(PLC_SIMENS)	R3	2015.06.03	INSTRUCTION MANUAL	All Model
HINC-PGM-MAXIJAL-R0	R0	2015-09-11	PLC Ladder System Software Quality Plan	All Model

Tests carried out

Test Reports:

HTTR-SO500201RD dated 4 November 2008;
HTTR-SO500101RD dated 4 November 2008;
HTTR-SO500301RD dated 4 November 2008
from Hyundai Marine Machinery Co., Ltd, Rep. of Korea.

Marking of product

For traceability to this type approval, each incinerator is to be marked with;

Job Id: **344.1-005412-3**
Certificate No: **MEDB00001J9**

- Manufacturer's name or trade mark
- Type designation
- Serial No.
- Capacity (net design heat release)
- Revision information, as applicable, for all firmware or software modules installed per hardware unit, necessary to identify the equipment, permanently marked somewhere on the final product.