

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Double Effect Steam Driven Absorption Chiller

with type designation(s)
SW100 - 1500 (352-5.274 kW)

Issued to

World Energy Co., Ltd.
Mun-gyeong-si, Gyeongsangbuk-do, Republic of Korea

is found to comply with
DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems

Application :

Product approved by this certificate is accepted for installation on all vessels classed by DNV GL.

Temperature range: n/a
Design pressure: n/a
Operating media: see certificate

Issued at **Hamburg** on **2020-08-11**

This Certificate is valid until **2025-08-10**.

DNV GL local station: **Seoul**

for **DNV GL**

Approval Engineer: **Ana Cristina Do Carmo Insfran**

Olaf Drews
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Product description

Double Effect Steam Driven Absorption Chiller type SW100-1500 (352-5.274kW)

Performance Test of Absorption Chiller:

Model: SW120

Cooling Capacity: 352 [kW]

Heat Source 6barg saturated steam / Chilled Water inlet 12 [°C]

Electric Power: 440 [V]; 60 [Hz], 3 phases

		Stationary	Heel	Rolling	Rolling	Rolling	Rolling
Trim Angle 1.5°	Pitching 7.5°	0°	1.5°	7°	11°	15°	22.5°
Cycles Hold	[1/min] 6	Hold	Hold	5	5	3	3
Capacity Ratio [%]		100	94	95	87	81	72
92	95						

Cooling Capacity: Cooling Capacity@test conditions/ Cooling Capacity@Stationary Conditions 0°

Application/Limitation

Main Components:

Evaporator, Absorber, Low Temp. Solution Heat Exchanger, High Temp. Solution Heat Exchanger, High Temp. Generator, Low Temp. Generator, Condenser, Purge unit, Refrigerant Pump, Absorbent Pump, Operating Devices and Gauges, Chilled Water Freeze Prevention Unit, Absorbent Crystallization Prevention Unit.

Media:

Inhibitor /Absorbent: LiBr (Lithium Bromide)

Refrigerant: Distilled Water

Additive: Octyl Alcohol

Job Id: **262.1-034255-1**
Certificate No: **TAP000025J**

Tests carried out

Performance Test

Type Approval documentation

Marking of Product

For traceability to this type approval each filter shall be marked:

Scope	Example
Driving Energy	Steam
Model	SW120
Cooling Capacity	352 kW / 100 usRT
Chilled Water Inlet/Outlet Temp.	12.0 / 7.0 [°C]
Flow rate	60.5 [m³/h]
Design Pressure	1.0 [MPa]
Cooling Water Inlet/Outlet Temp.	32.0 / 37.0 [°C]
Flow rate	110 [m³/h]
Design Pressure	1.0 [MPa]
Steam Inlet Pressure	6.0 [bar]
Drain Outlet Temp.	84.3 [°C]
Flow rate	433 kg/h
Power Supply	3 ø 440 [V] 60 [Hz]
Manufacturing Date	XXXX-xx.
Serial Number	WE200723
Manufacturer Name	WORLD ENERGY Co., Ltd. Made in Korea

Periodical assessment

For retention of the Type Approval, a DNV GL Surveyor shall perform periodical assessment as per DNVGL-CP-0338, Sec.4 to verify that the conditions for the Type Approval are complied with.

To check the validity of this certificate, please look it up in <https://approvalfinder.dnvgl.com>.

End of certificate