DNV·GL

Certificate No:
TAM000015U

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Gas Compressor

with type designation(s)
KS40STX

Issued to
Kobe Steel Ltd., Takasago Works
Takasago City, Hyogo Pref., Japan

is found to comply with
DNV GL rules for classification – Ships Pt.4 Ch.5 Rotating machinery – driven units

Application :

Products approved by this certificate are accepted for installation on all vessels classed by DNV GL.

Issued at **Høvik** on **2020-04-22**
This Certificate is valid until **2025-04-21**.
DNV GL local station: **Kobe**

Approval Engineer: **Geir Olav Moen**

for **DNV GL**

Oddvar Deinboll
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.

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Job Id: **262.1-032148-1**
Certificate No: **TAM000015U**

Product description
Screw type compressor with two compression stages used for injecting the LNG BOG gas to the ship engines, gas combustion unit and re-liquefaction system etc.

Application/Limitation
The compressor is approved as a fuel gas compressor. The type approval is valid for compressor only. The approval does not cover driving member, control system, connected instrumentation and other connected components.

Model name:	KS40STX	
Max. shaft power:	2100 kW	
Max. rotation speed:	3550 rpm	
Compression media:	BOG	
Max. inlet capacity: ***1**	8654 m3/h	
Compression stage:	1st	2nd
Design ***2** pressure (barG):	35	35
Design temperature (degree C):	Min. -100 Max. 120	

Note **(*1)** Compressor capacity will be variated based on gas composition and operating condition.

Note **(*2)** TA certificate is listing the max permissible pressure (relief valve setting) = design pressure. Maker may adjust the individual setting up to the stated max design pressure.

Type Approval documentation

Marking of product
The product to be marked with manufacturer's name or trademark and type number identification.

Periodical assessment
For retention of the Type Approval, a DNV GL surveyor shall perform a survey every second year and before the expiry date of this certificate to verify that the conditions of the type approval are complied with.

Other conditions
- For Compressor installed on liquefied gas tanker the piping shall be in accordance to (Pt.5 Ch.7 Sec.5)
- After installation on board, the compressor and the system to which it is connected shall be function tested under working conditions (Pt. 4 Ch.5 Sec.4 [7.1]).

END OF CERTIFICATE