



中国船级社
CHINA CLASSIFICATION SOCIETY

证书格式号/Form: Q01.02-
HQ002225

型式认可证书
CERTIFICATE OF TYPE APPROVAL

模式 A
Mode A

证书编号/Certificate No. GB17Q00002_04

兹证明本证书所述制造厂生产的下列产品能够满足下面列明认可标准的要求。

This is to certify that the following products produced by the manufacturer stated in the certificate can meet the requirements of the approval standards listed below.

认可产品/ Product Approved

船用柴油机
MARINE DIESEL ENGINE

制造厂/ Manufacturer

AB Volvo Penta

Gropegardsgatan, 40508 Gothenburg, Sweden

附加标志/ Notations

无/Nil.

认可标准/ Approval Standard

1. 中国船级社《钢质海船入级规范》(2015)及其修改通报第3篇第9章
Chapter 9, Part Three of China Classification Society Rules for Classification of Sea-Going Steel Ships 2015 and its Amendments

证书有效期至 **This Certificate is valid until**

2020年9月1日 / Sep. 1, 2020

发证机构
Issued by 中国船级社哥德堡办事处
CCS Gothenburg Office

签发日期
Date 2017年8月25日
Aug. 25, 2017

本证书根据中国船级社《钢质海船入级规范》及有关程序规定签发。关于证书的有关规定见本证书背面的说明。当本证书包括多页纸张时，则所有证书页为一个整体，必须同时使用。每一页证书均须由本社盖章方为有效。证书复印件无效。任何单位和个人均不应摘录或节选本证书的部分内容。本认可证书不代表本社对个体产品质量的检验。有关各方对所持证书的真实性有疑问时，可以向本社检验机构咨询。
This Certificate is issued pursuant to the Rules for Classification of Sea-going Steel Ships and related procedures of the Society. Refer to the back of the certificate for detailed requirements of the certificate. When the certificate consists of more than one page, all pages of the certificate are taken as a whole and are used simultaneously. No certificate page is valid without bearing the stamp of the Society and no copied form of the certificate is regarded as valid. Any part of the certificate is not to be extracted or abridged by any unit or individual in any form. This approval certificate does not constitute the inspection of the Society about the quality of the unit/batch product. Related parties who are doubted about the authenticity of the certificate may inquire of the Society or its offices.



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GB01376291
Nº 15233947

产品明细/ Product Description

船用柴油机/Marine Diesel Engine	
型式/Type	: D13
气缸数目/No. of cylinder	: 6
气缸直径/Cylinder bore	: 131 mm
活塞行程/Piston stroke	: 158 mm
最高爆发压力/Max. firing pressure	: Refer attached for detail. MPa
额定功率 (MCR)/Rated output	: Refer attached for detail. kW
额定转速/Rated rev.	: Refer attached for detail. r/min
超负荷功率(110%)/Overload output	: Refer attached for detail. kW
超负荷转速/Overload rev.	: Refer attached for detail. r/min

批准的图纸和设计计算书/ Approved Drawings and Design Calculations

图纸批准号/Drawings Approval No. : NP09A01685;NP11A01949;NP17A00006

产品认可试验报告/ Approval Test Report

试验报告编号/Test Report No. : 128812-1
 试验报告日期/Test Report Date : 2010-02-18
 试验单位/Laboratory : AB Volvo Penta
 试验单位地址/ Test Address : Gropegardsgatan, SE-40508 Gothenburg, Sweden

试验报告编号/Test Report No. : 142392-1
 试验报告日期/Test Report Date : 2010-06-07
 试验单位/Laboratory : AB Volvo Penta
 试验单位地址/ Test Address : Gropegardsgatan, SE-40508 Gothenburg, Sweden

试验报告编号/Test Report No. : 173515-1
 试验报告日期/Test Report Date : 2011-07-04
 试验单位/Laboratory : AB Volvo Penta
 试验单位地址/ Test Address : Gropegardsgatan, SE-40508 Gothenburg, Sweden

试验报告编号/Test Report No. : 202726-1
 试验报告日期/Test Report Date : 2017-06-14
 试验单位/Laboratory : AB Volvo Penta
 试验单位地址/ Test Address : Gropegardsgatan, SE-40508 Gothenburg, Sweden

产品适用范围/ Application of the Product

船舶与海上设施 / Ships and Offshore Installations

认可保持条件/ Maintenance Requirements of Approval

1. 型式认可后, 如果产品及其重要零部件的设计、所用材料或制造方法有所改变, 且影响到产品的主要特性、特征; 或产品的性能指标有所更改, 且超过认可的范围, 则有关图纸和文件应经检验机构审批。并在检验机构认为必要时, 经本社检验人员见证有关试验和进行检查, 其结果应能证实仍符合认可条件。

After type approval, if there are changes to the design, materials used or manufacturing method of the product and important components and such changes affect major characteristics and properties of the product, or property indexes of the product are changed and exceed the scope of approval, related drawings and documents are to be examined and approved by the concerned survey office. Where deemed necessary by the survey office, the surveyor to the Society will go to witness relevant tests and conduct inspection and the results should be able to demonstrate compliance with the approval conditions.

2. 工厂的质量管理体系应保持有效运行, 并且与认可时一致。如果质量管理体系发生改变, 应经原体系认证机构审核并报本社批准。

The quality management system of the factory shall be ensure effective operation, and shall be the same as the situation of approval. If there are any changes to the quality management system, auditing of the original certification organization for quality management system and the society's approval shall be obtained.

3. 认可证书有效期内, 如果出现可能导致本社取消认可的情况, 工厂应及时采取有效的纠正措施。

Within the validity of the approval certificate, if cases occur that may cause the Society to withdraw the approval, the manufacturer should take corrective actions in a prompt and effective manner.

4. 在认可证书有效期内, 本社检验人员可在未经事先通知的情况下对工厂的产品制造过程进行审核, 以验证产品的生产是否符合业经本社批准的图纸和文件。工厂应予以配合。

Within the validity of the approval certificate, the surveyor to the Society may pay unannounced audit to the manufacturer's process of the product in order to confirm whether it is in compliance with the drawings and documents approved by the Society. The factory should provide an active cooperation.

necessary for the surveyor.

5. 型式认可A证书获得者应接受本社每年一次的定期审核, 定期审核日为认可证书期满之日对应的每一周年日, 检查工作可在周年日的前后三个月内进行。

Those who have obtained the certificate of type approval A should be subject to periodical audit every year. The periodical audit should be carried out within 3 months before and after the anniversary date which corresponds to the date of expiry of the relevant.

认可后的产品检验方式/ Method of Product Inspection after Approval

认可后的产品检验由制造厂按本社批准的产品检验计划进行, 本社在文件审核合格后颁发船用产品证书。

After approval, product inspection should be carried out by the Manufacturer in accordance with the product inspection scheme approved by the Society, and the Marine Product Certificate is issued by the Society upon satisfactory documents review.

对于原材料和零部件的检验要求/ Inspection Requirements for Materials and Components

产品如下原材料和零部件应由本社认可的制造厂生产/The following materials and components of the product should be manufactured by the factory approved by the Society:

调速器/Speed governor 高压燃油喷射阀/Fuel injector 高压燃油喷射泵/High pressure fuel Pump

产品如下原材料和零部件应经本社检验/The following materials and components of the product should be inspected by the Society:

曲轴/Crankshaft 连杆/Connecting rod 热交换器/Heat exchanger 增压器/Supercharger 挠性软管组件/Corrugated expansion joint 柴油机(机旁)控制与报警箱/Control and alarm box of diesel engine

产品如下原材料和零部件的制造厂清单, 经本社批准方可变更/The list of manufacturer for the following materials and components of the product should not be changed without the Society's approval:无/Nil

责任声明/ Statement of Responsibility

本社的认可不影响、替代与本社授权或检验无关的各方对上述工厂的认可和发证, 并且不对与本社授权或检验无关的各方负责, 不承担其未经应允而承认、接受本社认可所导致的法律和经济责任。

The approval of the Society does not affect and replace any approval and certification of the manufacturer by any parties that bear no relation with this Society's authorization or survey and therefore takes no responsibility for these parties. The Society does not undertake any legal and economic liabilities arising from accepting this Society's certificate without prior permission from this Society.

其他/Others

1. 本证书由原型式认可证书 (No. GB16Q00001_03) 变更并替代原证书。

This certificate is modified from and supersedes the previous Type Approval Certificate No. GB16Q00001_03.

2. 本社已审核了产品厂无石棉声明, 但本社的审核不免除产品厂按照合同关系向订货方保证产品无石棉的责任。

The declaration of asbestos-free submitted by manufacturer has been reviewed by the Society. However, liability of the manufacturer to guarantee the products are asbestos-free to purchaser under contract will not be exempted.

中国船级社哥德堡办事处

CCS Gothenburg Office

*****本证书正文完/ End of Text*****



注: 本证书含有附页, 共5页

Note: The certificate is attached with 5 additional page(s)



D13 Marine Diesel Engine Technical Particulars

Name	Marine Diesel Engine				
Type	D13				
Description	4 strokes, In-Line, Direct injection, Turbocharged , and after cooled diesel engine				
No. of cylinders	6				
Cylinder bore	131mm				
Piston stroke	158mm				
Displacement total, liters	12.78				
Drawing approval No.	NP11A01949				
Application	Propulsion				
Prop/Aux/Emergency	D13-MH				
Volvo Penta Rating	R1			R2	
Rated output power (kW)	294	331	368	404	441
Technical code	D13B-N MH-294@1800 D13B-N MH (FE) -294@1800	D13B-N MH-331@1800 D13B-N MH (FE) -331@1800	D13B-N MH-368@1800 D13B-N MH (FE) -368@1800	D13B-N MH-404@1900 13B-N MH (FE) -404@1900	D13B-N MH-441@1900 D13B-N MH (FE) -441@1900
Overload power (kW) (110%)	324	365	405	445	486
Rated Speed (r/min)	1800	1800	1800	1900	1900
Overload Speed (r/min)	1858	1858	1858	1961	1961
Max. firing pressure(bar)	160	160	160	165	165
Mean indicated pressure(bar)	21.6	21.6	21.6	24.3	24.3



Name	Marine Diesel Engine			
Type	D13			
Description	4 strokes, In-Line, Direct injection, Turbocharged , and after cooled diesel engine			
No. of cylinders	6			
Cylinder bore	131mm			
Piston stroke	158mm			
Displacement total, liters	12.78			
Drawing approval No.	NP09A01685			NP17A00006
Application	Propulsion			
Prop/Aux/Emergency	D13-700	D13-800	D13-900	D13-1000
Volvo Penta Rating	R3	R4	R5	R5
Rated output power (kW)	515	588	662	735
Technical code	D13C3-A MP-515@2300	D13C1-A MP-588@2300	D13C2-A MP-662@2300	D13C6-A MP-735@2400
Overload power (kW) (110%)	567	647	729	809
Rated Speed (r/min)	2300	2300	2300	2400
Overload Speed (r/min)	2374	2374	2374	2477
Max. firing pressure(bar)	193	190	200	238
Mean indicated pressure(bar)	24.3	27.6	30.7	31.3



Name	Marine Diesel Engine			
Type	D13			
Description	4 strokes, In-Line, Direct injection, Turbocharged , and after cooled diesel engine			
No. of cylinders	6			
Cylinder bore	131mm			
Piston stroke	158mm			
Displacement total, liters	12.78			
Drawing approval No.	NP11A01949			
Application	Auxiliary/Emergency			
Prop/Aux/Emergency	D13-MG			
Volvo Penta Rating	Constant speed			
Rated output power (kW)	300*	360*	360*	400*
Technical code	D13B-E MG-300@1500 D13B-E MG (FE)-300@1500 D13B-F MG-300@1500 D13B-F MG (FE)-300@1500	D13B-E MG-360@1500 D13B-E MG (FE)-360@1500 D13B-F MG -360@1500 D13B-F MG (FE)-360@1500	D13B-E MG-360@1800 D13B-E MG (FE)-360@1800 D13B-F MG-360@1800 D13B-F MG (FE)-360@1800	D13B-E MG-400@1800 D13B-E MG (FE)-400@1800 D13B-F MG-400@1800 D13B-F MG (FE)-400@1800
Overload power (kW) (110%)	330*	396*	396*	440*
Rated Speed (r/min)	1500	1500	1800	1800
Overload Speed (r/min)	1500	1500	1800	1800
Max. firing pressure(bar)	154	176	179	170
Mean indicated pressure(bar)	19.0	24.5	21.0	



Note:

*Rated output power is stated for the bare engine. Fan power consumption for radiator cooled engines is 11 kW @ 1500 rpm and 19 kW @ 1800 rpm causing a net power reduction of the rated power.

*The related transformation should be approved and conformed by CCS if the engine is intended for emergency generating sets.

1. Definition of Volvo Penta Rating R1, R2, R3, R4, R5 & Constant speed:

- R1 (Rating 1) - Continuous Duty Commercial
 - This power rating is intended for commercial vessels with displacement hulls in heavy operation.
 - Load and speed could be constant, and full power can be used without interruption.
 - Unlimited number of running hours per year.
 - Typical application: Coastal fishing boats, tugboats, trawlers, barges, ferries.

- R2 (Rating 2) - Heavy Duty Commercial
 - This power rating is intended for commercial vessels with semiplaning or displacement hulls in cyclical operation.
 - Full power could be utilized maximum 8 h per 12 h operation period.
 - Running hours less than 5000 h per year.
 - Typical application: Patrol and pilot boats, Fishing boats, Passenger, crew and work boats.

- R3 (Rating 3) - Light Duty Commercial
 - This power rating is intended for commercial boats with high demands on speed and acceleration, planning or semiplaning hulls in cyclical operation.
 - Full power could be utilized maximum 2 h per 12 h operation period.
 - Running hours less than 2000 h per year.
 - Typical application: Fast patrol, rescue, police, light fishing, taxi boats, offshore supply, coastguard boats and high-speed passenger ferries etc.

- R4 (Rating 4) - Special Light Duty Commercial
 - This power rating is intended for light planning craft in commercial operation.
 - Full power could be utilized maximum 1 h per 12 h operation period.
 - Running hours: D4/D6 less than 800h per year. D9-D16 less than 1000h per year
 - Typical application: High-speed patrol, navy, rescue, police, ambulance, offshore supply, coastguard boats, high-speed passenger ferries and special high speed fishing



No. 16579697

boats.

- R5 (Rating 5) - Pleasure Duty
 - This power rating is intended for pleasure craft applications, and can be used for high speed planning crafts in commercial applications with special limited warranty. Running hours less than 300 h per year.
 - Full power could be utilized maximum 1 h per 12 h operation period. Between full load operation periods, engine speed should be reduced at least 10% from the obtained full load engine speed.

- Constant speed
 - This rating is intended for genset and auxiliary applications onboard commercial vessels
 - Load could be constant and full power can be used without interruption
 - 10% overload capability is available
 - Unlimited number of running hours per year
 - Typical application: Driving generators with varying load factors running in parallel for utility electric load and driving emergency generators

2. The guarantee for engine running hours for different application is subject to specification of AB VOLVO PENTA.

3. Fuel oil grade for emergency generating sets to conform to ASTM-D975-No. 1 and 2-D, JIS KK 2204, EN 590, DMX and MDO-DMA (ISO8271)

4. Lubrication oil grade for emergency generating sets VDS 3 15W40

5. D13-700 has a single turbo, D13-800, D13-900 and D13-1000 has twin turbos.

