



中国船级社
CHINA CLASSIFICATION SOCIETY

证书编号/Certificate No.
NY24PTB00002

型式认可证书
CERTIFICATE OF TYPE APPROVAL

兹证明本证书所述制造厂具备按照下列标准的要求生产本证书所列产品的能力和条件。

This is to certify that the manufacturer stated in the certificate meets the requirements of the standards listed below and is available with the ability and conditions to produce the products described in the certificate.

制造厂/Manufacturer

Danfoss Power Solutions II, LLC

地址/Address

1225 West Main Street, Van Wert, OH 45891 USA

产品名称/Product

非金属挠性软管组件
Non-Metallic Flexible Hose Assemblies

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》第3篇第2章
Chapter 2, Part Three of China Classification Society Rules for Classification of Sea-Going Steel Ships

用于/Intended for

船舶/Ships

产品明细/Product Description

挠性软管组件/Flexible Pipe Set (M0001)

名称/Name	属性(值)/Value	单位/Unit
型号/Type	FC234, GH681, 2807	
工作压力/Working Pressure	Refer to additional pages	
试验压力/Test Pressure	Refer to additional pages	MPa
设计温度/Design Temperature	Refer to additional pages	°C
公称直径/Nominal Diameter	Refer to additional pages	mm
本体材料/Body Material	Refer to additional pages	

证书有效期至/This Certificate is valid until 2030年05月28日/ May. 28,2030

发证机构/Issued by 中国船级社纽约分社
CHINA CLASSIFICATION SOCIETY New York Branch

签发日期/Date 2025年05月29日
May. 29,2025

本证书根据中国船级社规范和相关规定签发。所有证书页为一个整体，必须同时使用。纸质证书每页均须由本社盖章方为有效，电子证书含数字签名方为有效，本证书复印件无效。任何单位和个人均不应摘录或节选本证书的部分内容。有关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。本证书凡是未注明版本的规范，其（发证时）最新版本适用于本证书。
This Certificate is issued pursuant to the Rules of the Society and related regulation. All pages of the certificate are taken as a whole and are used simultaneously. No paper certificate page is valid without bearing the stamp of the Society, no electronic certificates is valid without the digital signature, 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. Related parties who are doubted about the authenticity of the certificate may inquire of the Society or its offices. For Rules with no version indication, their latest version (at the time of issuance of the certificate) applies to the this certificate.



Form No: T01.

联系方式/Contact Us, 见本社官方网站/See official web site of the Society (<http://www.ccs.org.cn>)

UTN:P025-23185408

批准的图纸/Approved Drawings

图纸批准号/ Drawings Approval No. : DL24PPP20801

产品认可试验报告/ Approval Test Report

试验报告编号/ Test Report No. : DOC00074437_A (2807)
试验报告日期/ Test Report Date : 2025-05-23
试验单位/ Laboratory: Danfoss Power Solutions Technical Center
试验单位地址/ Test Address: Maumee, Ohio U.S.A.

试验报告编号/ Test Report No. : DOC00062900_A (GH681)
试验报告日期/ Test Report Date : 2025-02-10
试验单位/ Laboratory: Danfoss Power Solutions Technical Center
试验单位地址/ Test Address: Maumee, Ohio U.S.A.

试验报告编号/ Test Report No. : TR-054700A (FC234)
试验报告日期/ Test Report Date : 2024-02-29
试验单位/ Laboratory: Danfoss Power Solutions
试验单位地址/ Test Address: Ataturk Caddesi 6. Sokak, No. 1, 3, 28 Cerkezkoy, Tekirdag 59520, Turkey

试验报告编号/ Test Report No. : TR-054665A (2807)
试验报告日期/ Test Report Date : 2024-02-19
试验单位/ Laboratory: Eaton Technical Center
试验单位地址/ Test Address: Maumee, Ohio U.S.A.

试验报告编号/ Test Report No. : TR-053457A (FC234)
试验报告日期/ Test Report Date : 2023-12-01
试验单位/ Laboratory: Danfoss Power Solutions
试验单位地址/ Test Address: Ataturk Caddesi 6. Sokak, No. 1, 3, 28 Cerkezkoy, Tekirdag 59520, Turkey

试验报告编号/ Test Report No. : TR-018878A (GH681)
试验报告日期/ Test Report Date : 2017-03-14
试验单位/ Laboratory: Eaton Hydraulics Cerkezkoy
试验单位地址/ Test Address: Maumee, Ohio U.S.A.

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

按规范认可后应进行产品检验的产品/The product should be inspected in term of the rules:
认可后的产品检验应由本社验船师根据本社规范规定按批准的产品检验计划进行检验, 经检验合格后由本社颁发船用产品证书。
After approval, product inspection should be carried out by the Surveyor of the Society in accordance with the approved product inspection scheme, and the Marine Product Certificate will be issued by the Society upon satisfactory inspection.

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 manufacturing 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 and necessary for the surveyor.

备注/Remarks

1. 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.

2. Type: FC234 Media: Diesel fuel, Gasoline, Hot lube oil and water.

Type: GH681 Media: Hydraulic systems with petroleum and Water-glycol base fluids, For lubricating oils

Type: 2807 Media: Compressor discharge and Virtually all chemical applications. Not recommended for steam-cold water cycling.

3. MARKING OF PRODUCT:

Each hose with end fittings is to be clearly marked as follows to avoid any wrong utilization:

- Manufacturer's name or logo
- Type designation
- Nominal diameter
- Maximum working pressure
- Maximum and minimum working temperature
- Date of manufacture

中国船级社纽约分社

CCS New York Branch

注: 本证书含有附页, 共2页

Note: The certificate is attached with additional 2 page(s)

AA.PRODUCT DESCRIPTION:**1.Hose type 2807**

Part No.2807-	3	4	5	6	8	10	12	16	20
I.D. max. [mm]	3.2	4.8	6.4	7.9	10.3	12.7	15.9	22.2	28.6
O.D. max. [mm]	6.8	8.2	10.1	11.6	14.3	16.8	20.1	26.9	33.5
Max. working pressure [bar] With FC-series fittings or Super Gem	207	207	207	172	138	103	83	69	43
Max. working pressure [bar] With E- Series fittings	--	241	--	190	155	138	103	83	--
Min. bending radius [mm]	38.1	50.8	76.2	101.6	133.4	165.1	196.9	228.6	406.4
Temperature range[°C]	- 73 to + 260								
Media may be used for the following	Compressor discharge and Virtually all chemical applications. Not recommended for steam-cold water cycling								
Tube	Extruded PTFE tube								
Reinforcement	Stainless steel braid with one plait of contrasting stainless steel wire								
Cover	Single layer stainless steel wire braid								
End Fittings	Carbon steel, stainless steel[FC-series fittings, E- Series fittings, Super Gem]								

2.Hose type GH681

Part No. GH681-	3	4	5	6	8	10	12	16	20	24	32
I.D. max. [mm]	4.8	6.4	7.9	9.5	12.7	15.9	19.0	25.4	31.8	38.1	50.8
O.D. max. [mm]	10.9	12.9	14.1	16.3	19.9	22.3	26.0	34.0	41.5	47.9	64.0
Max. working pressure [bar]	250	255	225	235	221	140	138	103	69	52	41
Min. bending radius [mm]	45	50	55	63	90	100	120	150	210	250	315
Temperature range[°C]	- 46 to + 126										
Media may be used for the following	Hydraulic systems with petroleum and Water-glycol base fluids, For lubricating oils and water										
Tube	Synthetic rubber (NBR)										
Reinforcement	Single wire braid										
Cover	Synthetic rubber (NBR/PVC)										
End Fittings	Carbon steel[1A Series TTC fittings]										

2.Hose type FC234

Part No. FC234	5	6	8	10	12	16
I.D. max. [mm]	6.4	7.9	10.3	12.7	15.9	22.2
O.D. max. [mm]	14.8	17.3	19.4	23.7	27.6	31.6
Max. working pressure [bar]	103	103	86	86	52	28
Min. bending radius [mm]	25.4	31.8	44.5	57.2	69.9	88.9
Temperature range[°C]	- 40 to + 150					
Media may be used for the following	Diesel fuel, Gasoline, Hot lube oil and water					
Tube	AOP elastomer					
Reinforcement	Brassplated steel wire braidedrefractory insulation					
Cover	Blue AOP elastomer					
End Fittings	Carbon steel[100R5 FJ fittings, SAE 100R5 style fittings]					

BB. APPLICATION / LIMITATION:

- 1.1 End fittings as per manufacturer's catalogue. The hoses are to be entirely assembled in the manufacturer's workshop.
- 1.2 Taper threaded end connections are not to be used for liquid fuel or oil circuits in engine rooms nor any place containing an ignition source unless otherwise suitably screened at the Society's Surveyor satisfaction.
- 1.3 The hose assemblies are to be installed according to the Society's Rules requirements and the manufacturer's instructions.
- 1.4 The hoses are to be limited to a length necessary to provide for relative movement between fixed and flexibly mounted items of machine/equipment or systems and are only to be used in lengths up to 1.5 m. The hoses are to be installed in clearly visible and readily accessible locations at all times.

- 1.5 The hose assemblies intended for use in piping systems where high levels of vibration are expected to occur in service are to be designed for the maximum expected forces due to vibration. Otherwise, this use is to be subject to special consideration by the Society for each case.

CC. PRODUCTION SURVEY REQUIREMENTS:

1. The hoses are to be supplied in compliance with the types and the requirements described in this certificate.
2. CCS product certificate is required.
3. The hoses are to be supplied in compliance with the types and the requirements described in this certificate as the following production site:
Hoses:
Eaton Corporation, Middlesex, North Carolina / USA
Couplings:
Danfoss Power Solutions II GmbH, Baden Baden / GERMANY and
Danfoss Power Solutions II, LLC, Van Wert, Ohio / USA
4. Each hose with end fittings is to be hydraulic pressure tested to 1.5 times the maximum working pressure under witnessing of a Society's Surveyor.

DD.MARKING OF PRODUCT:

Each hose with end fittings is to be clearly marked as follows to avoid any wrong utilization:

- Manufacturer's name or logo
- Type designation
- Nominal diameter
- Maximum working pressure
- Maximum and minimum working temperature
- Date of manufacture

EE.OTHERS:

It is Danfoss Power Solutions II, LLC's responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

*** END OF CERTIFICATE ***