



Certificate number: 73473/A1 BV

File number: ACM 101/97/1

Product code: 1403I

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

KRAL GmbH

Lustenau - AUSTRIA

for the type of product

SCREW PUMPS

series: K, M, C, L, ALP, R, Z, NE and G

double stations: DL/DS, DLC, DKC, DALP and DKB

Requirements:

BUREAU VERITAS Rules for the Classification of Steel Ships

BUREAU VERITAS Rules for the Classification of Yachts

This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 19 Dec 2027

For Bureau Veritas Marine & Offshore,

At BV HAMBURG, on 27 Nov 2025,

Heiko Lange

This certificate was created electronically and is valid without signature



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

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BV Mod. Ad.E 530 June 2017

This certificate consists of 4 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

Screw pumps:

series K for low pressure applications

- sizes: 5 to 2900
- design variants KF, KFA, KFN, KFT, KH, KV and KVT
- with or without magnetic coupling

series R for low pressure applications

- sizes: 15 to 210
- design variants RFI, RVI, RFT, RVT
- with or without magnetic coupling

series Z for low pressure applications with high capacity

- sizes: Z03000; Z05000; Z11000
- horizontal or vertical design
- including variants with various positions of connection nozzles

series ALP for low pressure applications

- sizes: 15 to 280
- with or without magnetic coupling

series L for medium pressure applications

- sizes: 5 to 85
- design variants LFI, LFM, LFT, LFW, LVI, LVM and LVT
- with or without magnetic coupling

series M for medium pressure applications

- sizes: 105 to 210
- with or without magnetic coupling

series C for high pressure applications

- sizes: 5 to 3550
- design variants CL, CK, CG, CGF, CGV, CGH
- with or without magnetic coupling

series NE for low pressure applications

- sizes: 5 to 54
- with or without magnetic coupling

series G for medium pressure applications

- sizes: 15 to 951
- design variants GF, GH, GT
- with or without magnetic coupling
- including variants with various positions of connection nozzles

Screw pumps may be assembled by pair on a common base frame and connected with each other to double pump stations.

1.1 Technical data:

series	max. working pressure	max. fluid temperature
NE	6 bar	180°C
K	16 bar	250°C
R	16 bar	180°C
Z	Z03000: 16 bar; other sizes: 25 bar	Z03000: 120°C; other sizes: 300°C
ALP	16 bar	250°C
M	40 bar	250°C
L	63 bar	250°C
C	100 bar	300°C
G	16 bar	250°C

Lower fluid temperature limits might apply depending on material choice of sealing.

1.2 Material specification:

series	material of casing	material of spindles
NE	EN-GJS-400	nitrided steel
K	EN-GJS-400	nitrided steel
R	EN-GJS-400	nitrided steel
ALP	EN-GJS-400	nitrided steel
M	EN-GJS-400	nitrided steel
L	EN-GJS-400	nitrided steel
C	EN-GJS-400; carbon steel; aluminium	nitrided steel
Z	EN-GJS-400-18; carbon steel	42CrMo4 or X5CrNiCuNb16-4 / EN-GJS-400-15, X17CrNi16-2
G	EN-GJS-400, carbon steel, stainless steel	nitrided steel, stainless steel

2. DOCUMENTS AND DRAWINGS:

According to following documents:

Designation	Document number	Date
Reference list for BV Type Approval 73473	14046	22.10.2025

3. TEST REPORTS:

Not applicable.

4. APPLICATION / LIMITATION:

- 4.1 May be used on the following services on board: Lube oil, hydraulic oil, thermal oil, fuel oil, cargo oil.
- 4.2 The pumps body and internal parts should be of a suitable type for use with fluids intended to be carried.
- 4.3 This certificate covers only the mechanical part of the pump or pump station. The pump or pump station control, monitoring, safety and electrical equipment and in particular the prime mover are to be either type approved or design appraised on a case-by-case basis.
- 4.4 The pump or pump station is to be installed according to BUREAU VERITAS Rules requirements and manufacturer's instructions.
- 4.5 The use of cast iron is restricted as per BUREAU VERITAS Rules.

5. PRODUCTION SURVEY REQUIREMENTS:

- 5.1 The pumps or pump stations are to be supplied by **KRAL GmbH** in compliance with the type and the requirements described in this certificate.
- 5.2 This type of product is within the category IBV of BUREAU VERITAS Rule Note NR320.
- 5.3 BUREAU VERITAS product certificate is required.
- 5.4 For information, **KRAL GmbH** has declared to BUREAU VERITAS the following production site:
KRAL GmbH, Lustenau / AUSTRIA
- 5.5 The screw pumps and pump stations are to be hydrostatically and performance tested and delivered with a BUREAU VERITAS certificate when required by the rules.

6. MARKING OF PRODUCT:

Each pump should be marked with:

- Manufacturer's name or logo
- Product code
- Serial number
- Maximum working pressure
- BUREAU VERITAS' marks

7. OTHERS:

- 7.1 It is **KRAL GmbH**'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.
- 7.2 This certificate supersedes the type approval certificate no. 73473/A0 BV issued on 19 Dec 2022 by the society.

*** END OF CERTIFICATE ***