Certificate number: 83667/A0 BV
File number: .
Product code: 1403I

This certificate is not valid when presented without the full attached schedule composed of 7 sections. Full certificate is to be requested to the manufacturer

www.veristar.com

TYPE APPROVAL CERTIFICATE

This certificate is issued to

KRAL GmbH

Lustenau - AUSTRIA

for the type of product

SCREW PUMPS

Screw pumps series F in hermetic sealed, magnetic coupling design

Requirements:
Bureau Veritas Rules for the Classification of Steel Ships
Bureau Veritas Rules for the Classification of Yachts
Bureau Veritas Rules for Methanol and Ethanol-Fuelled Ships
Bureau Veritas Rules for Ammonia-Fuelled ships

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: 24 Jul 2031

For Bureau Veritas Marine & Offshore,
At BV HAMBURG, on 24 Jul 2026,
Adama Diene

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.

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION

Screw pumps series F in hermetic sealed, magnetic coupling design

1.1. - Ratings

Model	F-Series
Size range (mm)	15 to 118
Temperature range (°C)	- 40 / + 180
Design pressure (bar)	63
Capacity (l/min)	280
Total head (bar)	60
Max required shaft power (kW)	35
Operating speed (rpm)	3500

1.2. - Materials

Part	Material
Housing	1.4435 / X2CrNiMo18-14-3
Flange	1.4571 / X6CrNiMoTi17-12-2
Suction Casing	1.4404 / X2CrNiMo17-12-2
Screw Set	1.4435 / X2CrNiMo18-14-3

When other choices of materials are used per manufacturer's recommendations, the BV agreement is to be obtained.

2. DOCUMENTS AND DRAWINGS

- Drawings

Drawing N°	Date
FF0118.DBC.00001	10/07/2025
FF0118.DBC.00002	11/07/2025
FF0015.DAC.00007	30/06/2025

Drawing N°	Date
FF0015.DAC.00008	18/06/2025
FF0032.DBC.00012	10/07/2025

- Part list N° FF0032.DBC.00012 dated 15/07/2025.
- Manual of installation, use and maintenance N° OIF 01en-GB edition 07/2025.
- Technical data including performance curves N° WiDok 14456 Rev. 5.0 dated 15/07/2026.

No departure from the above documents shall be made without the prior consent of the Society. The manufacturer must inform the Society of any modification or changes to these documents and drawings.

3. TEST REPORTS

3.1 - Type test not required.

4. APPLICATION / LIMITATION

4.1 - May be used on the following services on board:

- Fuel oil - Lubricating oil - Hydraulic oil - Thermal oil - Fresh water - Sea water - BIlge - Ballast water - Ethanol - Methanol - Ammonia -

4.2 - The pumps body and internal parts shall be of a suitable type for use with fluids intended to be carried.

4.3 - The approval does not include the prime mover of the pump.

4.4 - The pump is to be installed according to manufacturer's instructions and Bureau Veritas Rules requirements.

4.5 - The use of stainless steel is restricted according to Bureau Veritas Rules *NR 467, Pt C, Ch 1, Sec 10, Table 5* and corresponding requirements in *NR 500, NR 670* and *NR 671*.

4.6 - Pumps intended to be used for methanol fuelled ships or ammonia fuelled ships are to be installed in accordance with *NR 670* and *NR 671* respectively.

4.7 - The pumps used as bilge pumps are to be fitted with efficient priming means.

5. PRODUCTION SURVEY REQUIREMENTS

5.1 - The products 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 *NR 320*.

5.3 - BureauVeritas product certificate is required.

5.4 - Each pump is to be hydrostatically tested according to *NR 467, Pt C, Ch1, Sec 10, Table 40.*

5.5 - For information, **KRAL GmbH** has declared to Bureau Veritas the following production site:

KRAL GmbH:
Bildgasse 40
Industrie Nord
6890 Lustenau
AUSTRIA

6. MARKING OF PRODUCT

The product shall be marked clearly and indelibly with at least:

- Trade name and serial number
- Rated speed
- Rated capacity
- Bureau Veritas' Mark

7. OTHERS

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.

***** END OF CERTIFICATE *****