



Confirmation of Product Type Approval

Company Name: KRAL GMBH

Address: BILDGASSE 40 INDUSTRIE NORD A-6890 LUSTENAU Austria

Product: Pump, Multiple Screw Rotary Displacement

Model(s): ALP/DALP-S Series, CKC / CL/CG Series, ECA/DCA Series, DL/DS/DCL/DCS Series, DKC/DKB/EKL/EKS Series, DKL/DKS/TKL/TKS Series, ELL/ELS/DLC/DLB Series, L/ DM / M / R / K Series, Z Series.

Endorsements:

Certificate Type	Certificate Number	Issue Date	Expiry Date
Product Design Assessment (PDA)	25-0220344-PDA	28-APR-2025	27-APR-2030
Manufacturing Assessment (MA)	20-4477594	15-OCT-2020	08-NOV-2025
Product Quality Assurance (PQA)	20-4477594-PQA	15-OCT-2020	08-NOV-2025

Tier

4 - Enrolled in PQA Program

Intended Service

Fuel Oil, Lubricating Oil and Hydraulic Oil Handling.

Description

Pumps are rotating displacement pumps whose displacement effect results from the meshing of two or three rotating screws and the enclosing housing. The radial support of the screws is effected by the sliding contact in the housing or double sided bearings. The integrated overflow valve prevents very high pressures that can result in housing parts bursting.

Ratings

Maximum design capacity and pressure: depends on the Pump Series - see attachment.

Maximum temperature of the pumped liquid: depends on the Pump Series - see attachment.

Pump housing material: depends on the Pump Series

Screws material: depends on the Pump Series

Service Restrictions

1. Unit Certification is required for pumps as listed in 4-6-1/7.3.1 of ABS Marine Vessels Rules and 6-1-6/7.3.2 of ABS Mobile Offshore Units Rules.

2. The tests required by 4-6-1/7.3.2 of ABS Marine Vessels Rules and 6-1-6/7.3.2 of ABS Mobile Offshore Units Rules, as applicable, are to be carried out at the manufacturer's plant in the presence of

the Surveyor as required.

3. As an alternative to certification specified in 4-6-1/7.3.2, for mass-produced pumps, the manufacturer is to operate a quality assurance system which is to be certified for compliance with a quality standard in accordance with 1-1-A3/5.3 (AQS)/(RQS) or 1-1-A3/5.5 (PQA) of the ABS Rules for Conditions of Classification (Part 1). The quality control plan is to have provision to subject each production unit of the pump to tests specified in 4-6-1/7.3.2 and the manufacturer is to submit record of such tests to the local ABS office who will finalize the Unit Certification. Pumps that meet this requirement will be listed in the ABS Type Approval.

4. If the manufacturer or purchaser requests an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.

Comments

1. The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

2. Motors are not included in this PDA.

Notes, Drawings and Documentation

Drawing No. PDA Type approval submission, 20-1995944-1-PDA revalidation_110225, Revision: -, Pages

Term of Validity

This Product Design Assessment (PDA) Certificate remains valid until 27/Apr/2030 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

ABS Rules

Rules for Conditions of Classification, Part 1A - 2025 - 1A-1-4/7.7, 1A-1-A3, 1A-1-A4, which covers the following:

2025 ABS Rules for Building and Classing Marine Vessels: 4-6-1/7.3.1, 4-6-1/7.5.3

Rules for Conditions of Classification - Offshore Units, Part 1B, - 2025 - 1B-1-4/9.7, 1B-1-A2, 1B-1-A3, which covers the following:

2025 Mobile Offshore Units 6-1-6/7.3.2

International Standards

NA

EU-MED Standards

NA

National Standards

NA

Government Standards

NA

Other Standards
NA

A handwritten signature in dark ink, appearing to read "James J. Wilk".

Corporate ABS Programs
American Bureau of Shipping
Print Date and Time: 15-May-2025 7:50

ABS has used due diligence in the preparation of this certificate, and it represents the information on the product in the ABS Records as of the date and time the certificate is printed.

If the Rules and/or standards used in the PDA evaluation are revised or if there is a design modification (whichever occurs first), a PDA revalidation may be necessary.

The continued validity of the MA is dependent on completion of satisfactory audits as required by the ABS Rules. The validity of both PDA and MA entitles the product to receive a **Confirmation of Product Type Approval**.

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or prior to the effective date of the ABS Rules and standards applied at the time of PDA issuance. ABS makes no representations regarding Type Approval of the Product for use on vessels, MODUs or facilities built after the date of the ABS Rules used for this evaluation.

Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. The manufacturer is responsible to maintain compliance with all specifications applicable to the product design assessment. Unless specifically indicated in the description of the product, certification under type approval does not waive requirements for witnessed inspection or additional survey for product use on a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS.

Due to wide variety of specifications used in the products ABS has evaluated for Type Approval, it is part of our contract that; whether the standard is an ABS Rule or a non-ABS Rule, the Client has full responsibility for continued compliance with the standard.

Questions regarding the validity of ABS Rules or the need for supplemental testing or inspection of such products should, in all cases, be addressed to ABS.

pump / pump station		Type / series	Design pressure [bar]	max. capacity [l/min]	max. viscosity [mm ² /s] - higher values possible upon request	min. viscosity	Max Temp. [°C]
1	pump	K	16	3500	5000	1,5*	180
2	pump	L	63	205	5000	1,1	180
3	pump	M	40	500	5000	4*	180
4	pump	ALP	16	660	2500	1,1	180
5	pump	R	16	500	5000	1,1	180
6	pump	CKC	70	2125	5000	4*	90
7	pump	CL	100	4285	5000	4*	180
8	pump	CG	100	4285	5000	3*	250
9	pump station	DKC / DKB	16	500	5000	1,1	180
10	pump station	DLC / DLB	40	205	5000	1,1	180
11	pump station	DM	40	500	5000	1,5*	180
12	pump station	DL / DS	6	130	2500	2*	150
13	pump station	DALP	16	660	2500	1,1	155
14	pump station	EKS / EKL	16	500	5000	1,1	250
15	pump station	ELL / ELS	63	205	5000	1,1	180
16	pump station	EKL / EKS / TKL / TKS / DKL / DKS	16	3500	5000	1,1	180
17	pump station	ECA/DCA	63	1640	2500	1,1	180
18	pump	Z	25**	11000*	5000	1.1	300*

* In case of dropping below the minimum viscosity please contact the manufacturer.

**Depending on subtype and bearing execution.