Certificate No: TO.DEB.21-0739

# TÜRK LOYDU

## TYPE APPROVAL CERTIFICATE

This Certificate consists of 4 pages.

This is to certify that the

OIL SEPARATOR

With type designations

P605, P615, P626, P636, MAB 103B24, S921, S926, S927, S976, S946, S947, S949

Manufactured by

ALFA LAVAL TUMBA AB

Is found to comply with

"TL Rules, Part E, Chapter 107 - Naval Ship Technology, Ship Operation Installations and Auxiliary System January 2016", "TL Rules, Part B, Chapter 4, Machinery January 2021".

| | |
|---|---|
| **Application** | : Products approved by this certificate are accepted for installation on all vessels classed by Türk Loydu. |
| **Design** | : Alfa Laval Tumba AB |
| **Sizes** | : See second page |
| **Address of Manufacturer** | : S-147 80 Tumba/SWEDEN |
| **Place and date** | : İSTANBUL, 21.12.2021 |

Subject to the conditions referred to in the following pages, this certificate is valid until 14.11.2026.

**Haluk ÇOBAN**
**New Building Division Deputy Manager**

89495

**Product description :** For the details, please refer to be attachment (Appendix I)

**Type Designation** : P605, P615, P626, P636, MAB 103B24, S921, S926, S927, S976, S946, S947, S949

**Materials used** : To be referred to the approved drawing dated 23.08.2021.

**Application/ Limitation (Approval conditions):**

1-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-The list of manufacturer for the following materials and components of the product should not be changed without the Society's approval such as Bowl body, Bowl hood, Sliding bowl bottom Bowl spindle, Motor.
3-These separators may be fitted on ships granted with an automation notation provided that all requirements stated in our rules are complied with.
4-Hoses and electric equipment including control safety devices cable required type approved are to be in conformity with the applicable TL rules.
5-If fuel separator to be used to clean the lubricating oil, the transmitter and receiver must have suitable mechanisms to prevent the mixing of fuel and oils.

**Documentation:** The design and construction drawings approved by Türk Loydu, TL Ref Number: PAE-EPAS/010184/21-0739/ŞÜ on dated 23.08.2021.

**Test carried out (and results) :** Following tests were carried out, found satisfactory.
- Performance test.
- Visual inspection.

**Place of test carried out:** ALFA LAVAL KRAKOW SP. ZO.O., UI. Zavila 56, 30-390 Krakow, POLAND

**Marking of product:** The product to be marked same as below mentioned.
- Manufacturer name and trade mark
- Type designation
- Serial number
- Power and rpm
- Frequency

**S. Mahir TUĞCU**
**Surveyor**

This certificate is subject to terms and conditions described below:

- Any significant change in design or construction may render this Certificate invalid. Type Approval Certificate is not valid for equipment, the design or manufacture of which has been varied or modified from the specimen tested. This certificate is not valid for products without marking above mentioned. The manufacturer should notify TÜRK LOYDU of any modifications or changes to the equipment in order to obtain valid certificate. This certificate shows that tested specimens as representative of the product complies of the TÜRK LOYDU rules, and relevant international instruments that apply to it.

TÜRK LOYDU

# ANNEX I

## LIST OF PRODUCTS
## Product Description and/or Approval Condition

| Type | Capacity (Ltr/Hr) | Sludge and Water (Ltr) | Power of E-Motor, Min. Size (Kw) | Max. Bowl Spindle Speed (RPM) | Frequency (Hz) |
|---|---|---|---|---|---|
| **P605 (MMPX403SGP-11)** | 1850 (MDO),1300 (HFO 180cSt),950 (HFO 380cSt), 640 (HFO 600 cSt), 860 (LO Trunk Engine) | 1.0 | 2.2 / 2.5 | 9512 / 9307 | 50 / 60 |
| **P615 (MMPX404SGP-11)** | 3150 (MDO),2200 (HFO 180cSt),1600 (HFO 380cSt), 1100 (HFO 600 cSt), 1450 (LO Trunk Engine) | 1.1 | 3.0 / 3.7 | 9512 / 9307 | 50 / 60 |
| **P626** | 4400 (MDO),4100 (HFO 180cSt),2950 (HFO 380cSt), 2150 (HFO 600 cSt), 2650 (LO Trunk Engine) | 1.7 | 5.5 | 12129 / 12086 | 50 / 60 |
| **P636** | 7100 (MDO),5900 (HFO 180cSt),4250 (HFO 380cSt), 3050 (HFO 600 cSt), 3900 (LO Trunk Engine) | 2.5 | 7.5 | 10683 / 10668 | 50 / 60 |
| **MAB 103 B-24** | 900 (MDO), 1150 (MGO), 300 (LO Trunk) | 0- not self cleaning | 0.75 / 0.9 | 8571 / 8600 | 50 / 60 |
| **S976** | 23800 (MDO),19200 (HFO 180cSt),13300 (HFO 380cSt), 9200 (HFO 600 cSt), 11900 (LO Trunk Engine) | 15.4 | 22 | 6060 / 6084 | 50 / 60 |
| **S921** | 3600 (MDO),2800 (HFO 180cSt),2000 (HFO 380cSt), 1550 (HFO 600 cSt), 1950 (LO Trunk Engine) | 1.6 | 5.5 | 11912 / 11885 | 50 / 60 |
| **S926** | 4400 (MDO),3450 (HFO 180cSt),2450 (HFO 380cSt), 1950 (HFO 600 cSt), 2400 (LO Trunk Engine) | 1.6 | 5.5 | 11912 / 11885 | 50 / 60 |
| **S927** | 4800 (MDO),4100 (HFO 180cSt),2950 (HFO 380cSt), 2150 (HFO 600 cSt), 2650 (LO Trunk Engine) | 1.6 | 5.5 | 11912 / 11885 | 50 / 60 |
| **S946** | 9600 (MDO), 7200 (HFO 180cSt), 5200 (HFO 380cSt), 3250 (HFO 700cST), 5000 (LO Trunk Engine) | 1.8 | 9.5 | 9090/9108 | 50 / 60 |
| **S947** | 11100 (MDO), 8250 (HFO 180cSt), 5800 (HFO 380cSt), 3600 (HFO 700cST), 5500 (LO Trunk Engine) | 1.6 | 9.5 | 9090/9108 | 50 / 60 |
| **S949** | 11100 (MDO), 10300 (HFO 180cSt), 7200 (HFO 380cSt), 4500 (HFO 700cST), 6450 (LO Trunk Engine) | 2.17 | 9.5 | 9090/9108 | 50 / 60 |

**S. Mahir TUĞCU**
**Surveyor**