SIMPLEX TURBULO

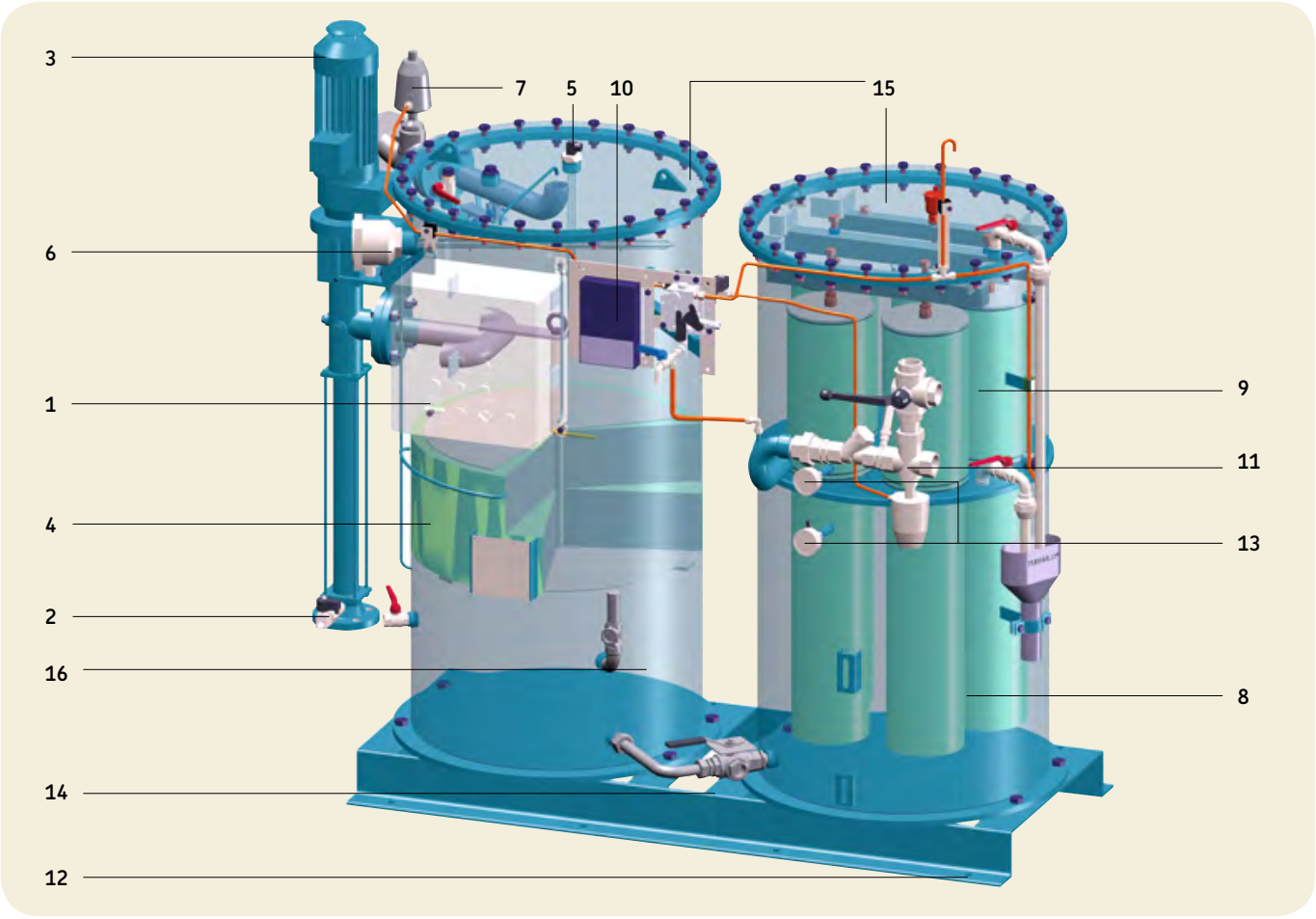
SKF

Turbulo-MPB

Bilge Water Separator

General description

- Turbulo-MPB (Mechanical Phase Breaker) designed, type-tested and approved pursuant to resolution MEPC 107(49)
- TMPB fulfils 5ppm criteria
- TMPB can treat oil/water-mixtures and emulsions pursuant to resolution MEPC 107(49)
- 6 capacities: 0.25 / 0.5 / 1.0 / 2.5 / 5.0 / 10.0 m^3/h
- BWS is pressure type – pump can be installed as loose supply for new building and retro-fitting
- No use of chemicals or charcoals



1 **Control switch box** – Operational controls and alarm cabinet for safe and easy handling.
2 **Dry-run protection** – Avoids dry-running of the pump.
3 **Helical rotary pump with low r/min** – Feeds the bilge water into the 1st stage of the separator.
4 **1st stage: High efficiency coalescer (HEC)** – Retention of bigger solids, free oil and separation of oil by coalescence. The HEC is cleanable.
5 **Oil-level probe** – Detects oil level in the 1st stage for automatic discharging.
6 **Heating device** – Heats the oil for optimised oil discharge.
7 **Oil discharge valve** – Automatic oil discharge initialised by the oil-level probe.
8 **2nd stage: Deep-filtration unit** – Protection of 2nd stage HycaSep elements by permanently reducing the solid matter concentration and to some extent the turbidites.
9 **2nd stage: HycaSep element for retention of finest oil droplets** – Securing the required oil content (ppm) at the effluent before passing the oil content monitor to overboard.
10 **Bilge alarm** (Tamper-proofed oil content monitor) – Permanent monitoring of cleaned bilge water. Ensures 18-month recording according to MEPC.
11 **Sea/bilge valve** – Solenoid valve for routing of water to overboard or recirculation to bilge tank. Manual valve for port state testing.
12 **Skit frame** – Fully assembled and delivered skit mounted for easy installation.
13 **Analogue pressure gauges** – Visualisation of pressure conditions for monitoring and maintenance.
14 **1st and 2nd stage isolation valve** – Maintenance-friendly, draining of 1st or 2nd stage.
15 **Cover plate of 1st and 2nd stage** – Access to all components by removing the top plates. No piping to be removed, for easy service access.
16 **Pressure safety valve** – Prevents overpressurisation of the pressure vessel.

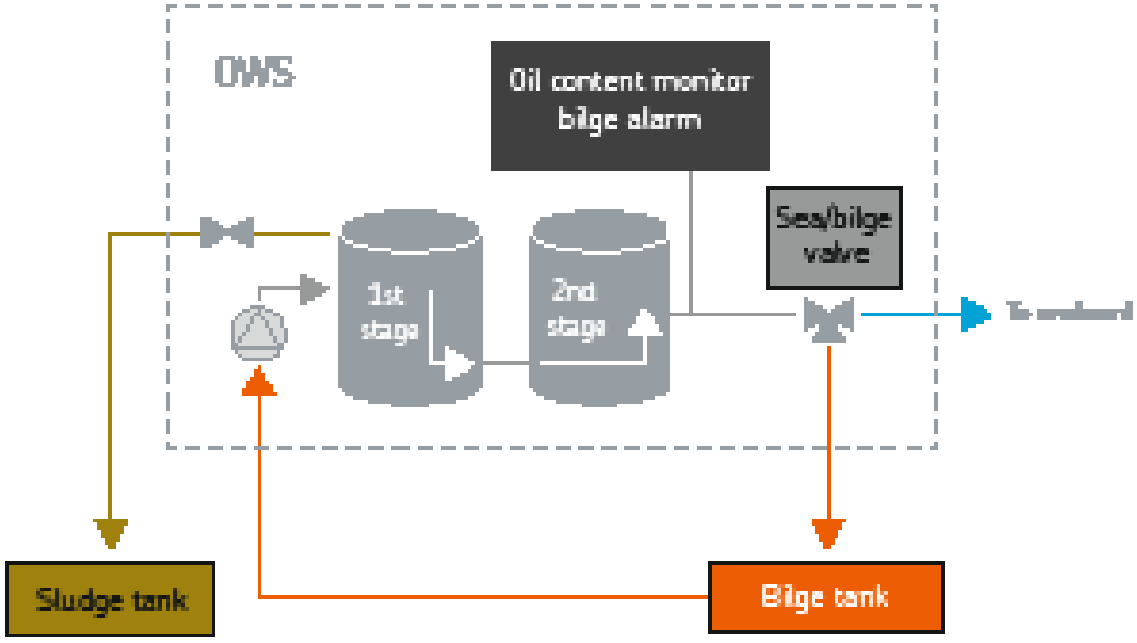
Ex-proof design

Booster pump design

Applications

- Ex-proof design for hazardous areas
- Booster pump for higher counter-pressure
- NORSOK standard
- Special coating and design
- Taylor-made design on customer demand
- Shock-proof design on demand
- Own laboratory
- NR 13

Technology



Design

- Compact two-stage separator – reliable separation of oily mixtures in a capacity range of 0.25 m^3/h to 10 m^3/h
- Type approval pursuant to IMO Resolution MEPC 107.(49) issued by: USCG; CCS; RMRS; BG Verkehr
- Fulfils special requirements such as the 5ppm criteria for: Environmental passport (GL) / Clean Design (DNV) / Canadian Coast Guard (CCG)
- Oil content monitor – type-tested and approved pursuant to IMO Resolution MEPC.107(49)
- MARPOL: Sea to bilge (three-way valve) – Safe routing of clean water overboard or back to bilge or holding tank. Manual valve for testing when requested by port state control.

Installation

- Reliable components and DIN ISO 9001/MED certified production process at SKF Marine
- Final manufactured unit, fully tested and delivered ready-to-use to any shipyard worldwide
- Retrofit and customized solutions available:
  - Small footprint
  - Easy to install - skit mounted for convenient handling
  - Simplified installation procedure
  - No OEM commissioning engineer necessary
  - No chemicals required for commissioning

Operation

- Reliable and operator-friendly technology:
  - Automatic operation (oil drain by level electrode / discharge by pneumatic oil discharge valve)
  - Continuous oil-content measuring and status recording
  - Approved alarm and monitoring concept
  - Dry-run protection of pump
- Operator-friendly maintenance and handling:
  - Easy access to inside of separator from top
  - No need to dismount pipes and fittings
  - Precise condition monitoring and condition-based maintenance of elements
- Low operational costs:
  - No chemicals, charcoals or absorber
  - No sludge through chemicals
  - No back-flushing required (low freshwater consumption)
  - Protection of top HycaSep elements

Service

- Documentation for TMPB:
  - Simple and clear installation and commissioning procedure
  - Operating instructions
  - Troubleshooting advice
  - Type approval and test certificates in accordance with requirements
- Worldwide service network and availability of spares and consumables

PUB 43/P2 14706/1 EN · September 2015