

Wärtsilä Airguard two pipe system

Building on a history of success

PRODUCT DATASHEET



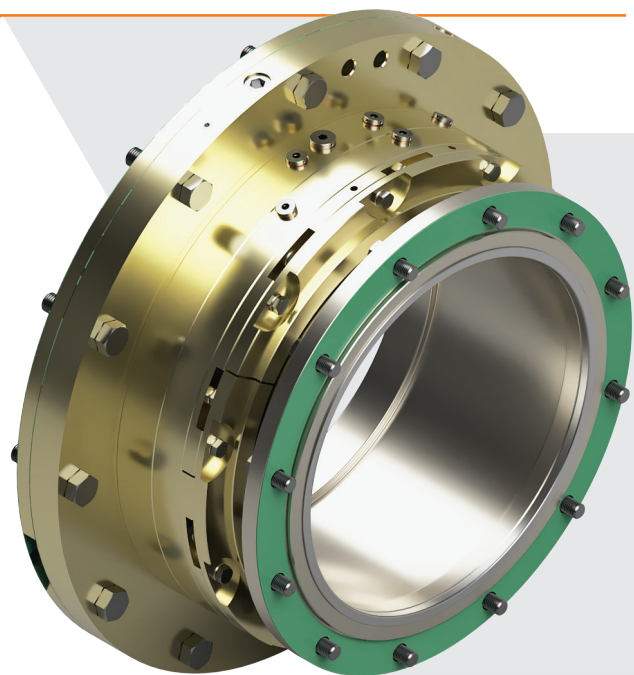
At Wärtsilä, we want to make sure that ship operators can meet environmental guidelines whilst managing costs effectively. The Wärtsilä Airguard is an alternative to using environmentally acceptable lubricants (EALs) as it eliminates the oil-to-sea interface. We can now give customers a solution that meets VGP2013 regulations as well as reducing the CAPEX and OPEX costs.

A HISTORY OF GOOD PRACTICE

Introduced in 1998 the Wärtsilä Airguard seal has proven itself in the marine industry for its robustness and reliability. We have now developed a new solution based on the successful Wärtsilä Airguard technology, which offers vessel owners a smart way to upgrade almost every vessel type in a lean and cost-efficient way.

STREAMLINED FOR SUCCESS

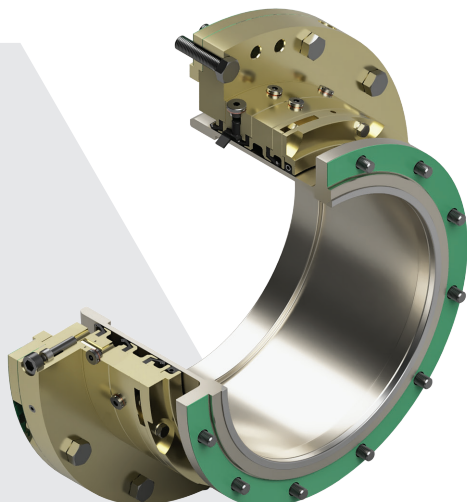
The new Wärtsilä Airguard two pipe system has been developed to significantly reduce the scope of installation work and limit the time in dry-dock. It uses the existing lube oil system and the auxiliary equipment, which reduces cost and saves equipment space. What makes the new two pipe system unique is the additional standby seal, made possible due to a new internal oil circulator, that improves seal lubrication and cooling.



CONSTANTLY IMPROVING OUR SOLUTIONS

We understand the market needs, which allows us to provide products which fit customer demands. That's why we engineered the Wärtsilä Airguard two pipes system to provide benefits such as:

- Reduced piping arrangement which lowers installation costs;
- No requirement to remove tail shaft for installation or retrofit;
- An innovative oil circulator to improve seal security;
- And a streamlined auxiliary system to reduce required space in the engine room.



Simplified structure, enhanced results

FEATURES	ADVANTAGES	BENEFITS
Designed for vessels with only two pipes in the stern tube.	Simplifies installation and modification in dry-dock.	Reduces cost and time during installation.
System enables use of existing seal liner, piping in stern tube and auxiliaries (pumps and starter) in engine room.	Provides opportunity to optimise the auxiliary system to suit the application best.	Saves space in engine room and offers cost savings in investment, installation and power consumption.
Additional standby seal.	Safe return-to-port functionality.	Increases reliability and operational safety.
Internal oil circulator.	Improves cooling and lubrication of seal ring.	Higher performance limits, reduced lip seal wear and increased safety margin.

INNOVATION AT ITS CORE

The Wärtsilä Airguard two pipe system comes with an innovative oil circulator. This helps to secure the operation of the standby seal with no need for any additional piping. This in turn helps to promote lubrication and cooling, further increasing the durability of the seal.

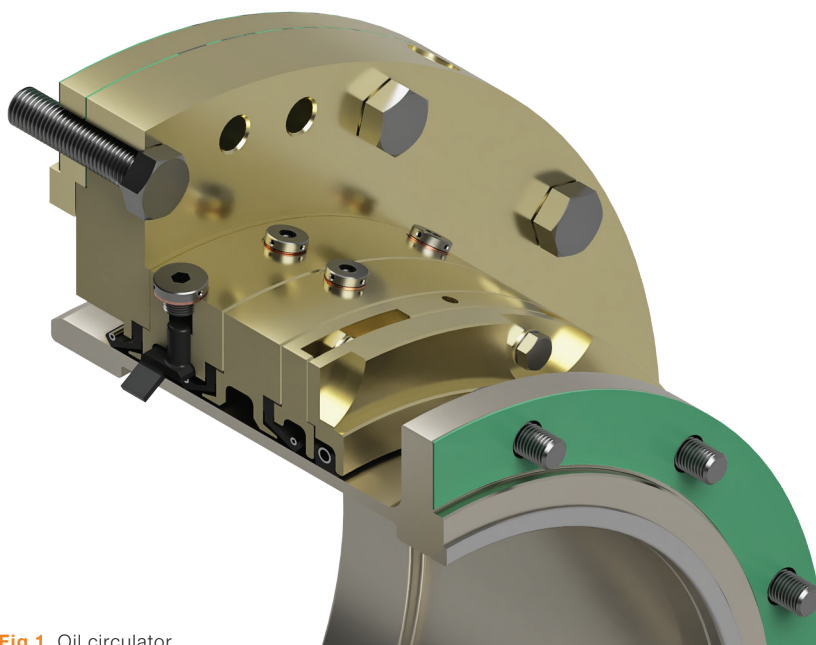


Fig.1 Oil circulator.

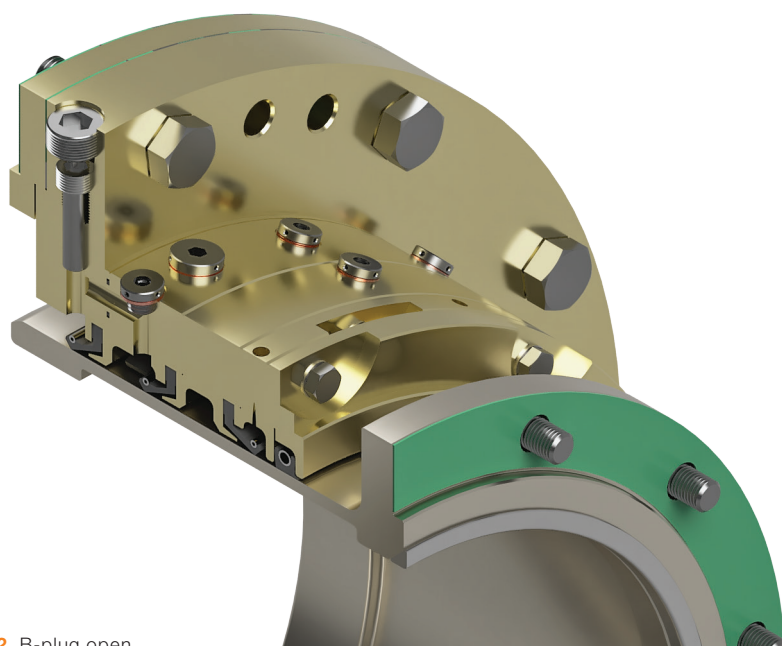
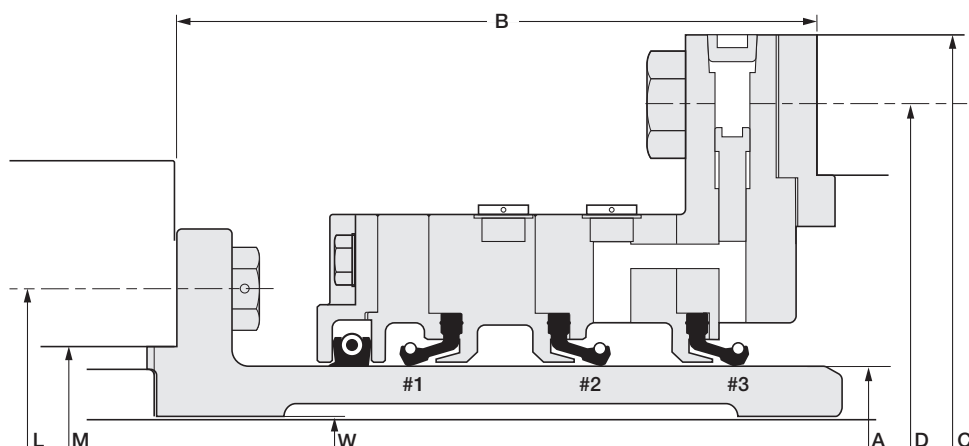


Fig.2 B-plug open.

Wärtsilä Airguard two pipe system

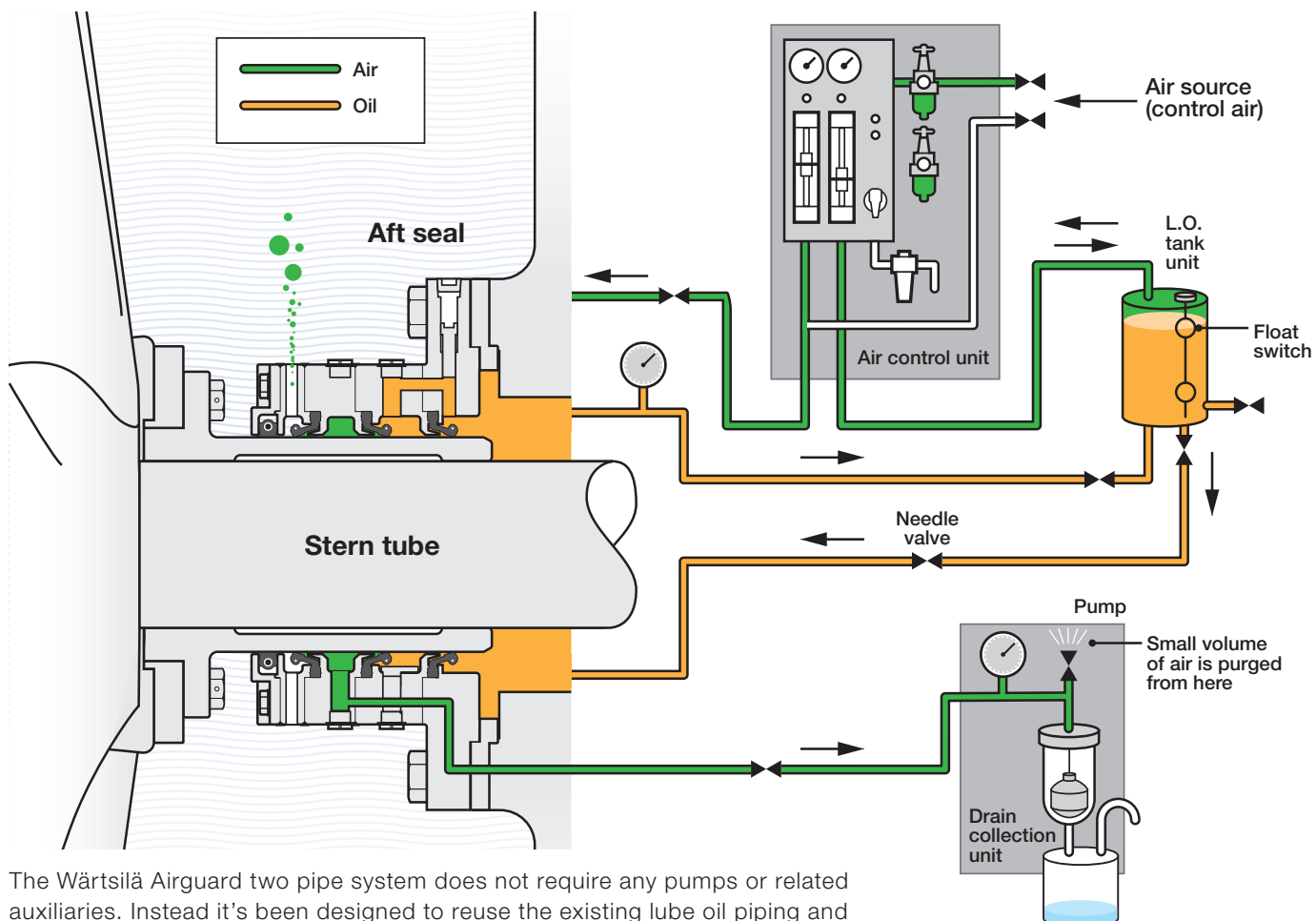


Dimensions

Shaft sizes		330	355	380	400	420	450	480	500	530	560	600	630	670	710	750	800	850	900	950	1000	1030	1060	1120	1180	1250
Liner diameter	A	330	355	380	400	420	450	480	500	530	560	600	630	670	710	750	800	850	900	950	1000	1030	1060	1120	1180	1250
Max. shaft diameter	W	286~ 315	316~ 339	340~ 362	363~ 381	382~ 400	401~ 428	429~ 457	458~ 476	477~ 504	505~ 532	533~ 570	571~ 598	599~ 635	636~ 672	673~ 710	711~ 756	757~ 803	804~ 850	851~ 896	897~ 942	943~ 968	969~ 998	999~ 1053	1054~ 1108	1109~ 1172
Aft overall length	B	200	200	200	220	220	225	225	225	225	240	240	245	245	280	280	310	310	330	330	330	350	350	355	355	370
Flange diameter	C	540	565	590	610	630	675	705	725	755	820	860	890	930	990	1030	1090	1140	1200	1250	1300	1370	1400	1460	1520	1590
Pitch circle diameter	D	480	525	550	570	590	630	660	680	710	765	805	835	875	930	970	1030	1080	1135	1185	1235	1295	1325	1385	1445	1520
Linear pitch circle diameter	L	390	416	440	460	486	510	550	560	590	630	660	710	750	790	836	890	950	1010	1070	1110	1140	1170	1230	1290	1360
Linear spigot diameter	M	360	384	406	424	450	476	510	526	550	588	620	670	710	740	780	825	870	920	970	1040	1070	1100	1160	1220	1290

Dimensions in mm unless otherwise stated. All specified technical data is subject to change without notice and should be verified at the time of the order.

PIPING DESIGN



The Wärtsilä Airguard two pipe system does not require any pumps or related auxiliaries. Instead it's been designed to reuse the existing lube oil piping and auxiliary system, significantly saving cost of ownership.

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Technical specifications

Shaft sizes	286-1172mm
Sealed medium	Air, oil
Serviceability	Lip seals serviceable with shaft in situ

COMPONENTS AND SCOPE OF SUPPLY

Air control unit	Wärtsilä standard
L.O. tank unit (180 litres)	Optional Seal sizes ≤ 1000 (shaft 942mm or less) Oil circulator system with 15L tank can be applied
FWD seal tank capacity (15 litres)	Seal size ≥ 750 (shaft 710mm and over) Forced circulation with lube oil cooler is recommended Seal size > 1000 (shaft larger than 943mm) Forced circulation with lube oil cooler should be applied
Drain collection unit	Wärtsilä standard

MATERIALS OF CONSTRUCTION

AFT seal casing	Manganese bronze
FWD seal casing	Cast iron
AFT liner	Ni-Cr steel
FWD liner	Special cast iron
Seal ring	FR, Bio Seal Ring

FLOW RATE AND SUPPLY PRESSURE

Air flow rate	Seal size 330-480 (shaft 286-457mm): 25NL/min Seal size 500-710 (shaft 458-672mm): 30NL/min Seal size 750-1250 (shaft 673-1172mm): 35NL/min 0.4~0.7MPa control air (to Air control unit)
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An industry leader in shaft line components Wärtsilä Shaft Line Solutions delivers a portfolio of end-to-end services and integrated solutions for the marine markets that builds on our core values: lifecycle efficiency, risk reduction, environmental leadership and design excellence. As an original equipment manufacturer operating in 75 countries, we have the capabilities to support customers on a global scale, and remain committed to providing in-country and round-the-clock expertise.



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08 / 2020

