

WÄRTSILÄ ENGINE PORTFOLIO & MAKERS GUIDE

Complete Master Directory of Medium-Speed, Low-Speed, Gas, Dual-Fuel & Acquired Heritage Brands

Publisher: Marine & Industrial Machinery Technical Reference

Scope: Current Wärtsilä, WinGD (Sulzer), & Legacy Makes

Overview: Wärtsilä Corporation (headquartered in Helsinki, Finland) is a global leader in innovative technologies and complete lifecycle solutions for the marine and energy markets. Its engine lineage incorporates pioneering developments under the Wärtsilä brand (including the famous Vasa series) along with iconic acquired makers such as Sulzer, GMT, Stork-Werkspoor, SACM, Nohab, Wichmann, and Deutz large-bore.

1. CURRENT WÄRTSILÄ 4-STROKE MEDIUM & HIGH SPEED ENGINES

Designed for main marine propulsion, auxiliary gen-sets, offshore platforms, and stationary power generation stations. Supports Diesel, Heavy Fuel Oil (HFO), Biofuels, LNG, Methanol, and Ammonia.

ENGINE MODEL	TYPE / CYCLE	BORE × STROKE	SPEED (RPM)	POWER RANGE (KW)	PRIMARY FUEL & TYPICAL APPLICATIONS
Wärtsilä 14	High-Speed 4-Stroke	138 × 160 mm	1500 – 1900	549 – 1,340 kW	DIESEL Tugs, fishing vessels, yachts, emergency auxiliary
Wärtsilä 20 / 20DF	Medium-Speed 4-Stroke	200 × 280 mm	900 – 1000	700 – 2,040 kW	DF / DIESEL Gensets on merchant ships, auxiliary, small propulsion
Wärtsilä 25 / 25DF	Next-Gen Medium-Speed	250 × 340 mm	900 – 1000	1,800 – 3,420 kW	DF / AMMONIA / DIESEL Modular platform, future-fuel ready
Wärtsilä 26	Medium-Speed 4-Stroke	260 × 320 mm	900 – 1000	1,800 – 4,080 kW	DIESEL / HFO Offshore supply, tugs, ferries, naval, multi-engine vessels
Wärtsilä 31	World-Record Efficiency	310 × 430 mm	720 – 750	4,600 – 10,400 kW	DIESEL Guinness record benchmark efficiency (4-stroke)
Wärtsilä 31DF / 31SG	Dual-Fuel / Spark-Ignited	310 × 430 mm	720 – 750	4,200 – 9,880 kW	LNG / PURE GAS Ro-Pax ferries, cruise vessels, peak power plants
Wärtsilä 32	Industry Workhorse	320 × 400 mm	720 – 750	3,000 – 9,600 kW	HFO / MDO / BIO Cruise ships, tankers, cargo vessels, baseload power
Wärtsilä 32DF / 32M	Dual-Fuel / Methanol	320 × 400 mm	720 – 750	3,000 – 9,600 kW	METHANOL / LNG Container feeding, offshore, green methanol conversions
Wärtsilä 34DF / 34SG	Medium-Bore Gas/DF	340 × 400 mm	720 – 750	3,000 – 10,000 kW	PURE GAS / LNG Grid balancing power plants, LNG carriers, OSVs
Wärtsilä 38	High-Power Medium-Speed	380 × 475 mm	600	4,350 – 15,000 kW	HFO / MDO Heavy-duty cargo ships, dredgers, large cruise liners

ENGINE MODEL	TYPE / CYCLE	BORE × STROKE	SPEED (RPM)	POWER RANGE (KW)	PRIMARY FUEL & TYPICAL APPLICATIONS
Wärtsilä 46F / 46TS	Large Medium-Speed	460 × 580 mm	500 – 600	7,200 – 19,200 kW	DIESEL / HFO Two-stage turbocharging (46TS), cruise, Ro-Pax
Wärtsilä 46DF	Large Bore Dual-Fuel	460 × 600 mm	500 – 514	6,200 – 18,300 kW	LNG / HFO LNG bunker barges, cruise ships, container feeders
Wärtsilä 50DF / 50SG	Highest Output Medium-Speed	500 × 580 mm	500 – 514	6,000 – 19,260 kW	LNG / GAS / HFO Major LNG carrier propulsion, utility-scale power plants

2. 2-STROKE LOW-SPEED MARINE ENGINES (SULZER & WINGD)

Low-speed crosshead engines powering global ocean-going fleets (Container, Bulkers, VLCCs, LNG carriers). Originally Sulzer, developed through Wärtsilä-Sulzer / Wärtsilä 2-stroke, and currently managed under Winterthur Gas & Diesel (WinGD, a CSSC/Wärtsilä joint legacy).

SERIES / GENERATION	REPRESENTATIVE MODELS	BORE RANGE	OUTPUT RANGE (KW)	TECHNICAL SIGNIFICANCE & TECHNOLOGY
WinGD X-DF Series	X52DF, X62DF, X72DF, X82DF, X92DF	520 – 920 mm	5,400 – 63,840 kW	LOW-PRESSURE DUAL-FUEL Otto-cycle lean-burn gas technology with minimal NOx without SCR; dominant on ultra-large LNG & container vessels.
WinGD X Series	X35, X40, X52, X62, X72, X82, X92	350 – 920 mm	3,475 – 70,000+ kW	TIER III COMPLIANT Common-rail electronic direct injection, long-stroke architecture for maximized propeller efficiency.
Wärtsilä RT-flex Series	RT-flex50, 58T, 68D, 82C/T, 84T, 96C	500 – 960 mm	5,600 – 80,080 kW	COMMON-RAIL PIONEER World's first camshaft-less common rail marine engines; volumetric fuel control and variable exhaust valve actuation.
Sulzer RTA Series	RTA38, RTA48T, RTA52U, RTA58T, RTA62U, RTA72U, RTA84T, RTA96C	380 – 960 mm	3,000 – 80,080 kW	CAMSHAFT CROSSHEAD Highly durable camshaft engines. The 14RTA96C was famously the world's most powerful reciprocating internal combustion engine (108,920 hp).
Sulzer RLB / RLA / RND	RND68, RND76, RND90, RLA56, RLB66, RLB76, RLB90	560 – 900 mm	4,000 – 35,000 kW	CLASSIC 2-STROKE Loop-scavenged and uniflow-scavenged 2-stroke heritage engines that established modern heavy-fuel reliability standards.

3. CLASSIC WÄRTSILÄ VASA HERITAGE ENGINE SERIES

Pioneered at the Wärtsilä Vasa factory in Finland, these engines established Wärtsilä's global dominance in continuous heavy fuel operation at medium speeds.

ENGINE MODEL	BORE × STROKE	SPEED RANGE	POWER RANGE (KW)	KEY FEATURES & HISTORICAL SIGNIFICANCE
Wärtsilä Vasa 22 (22HF)	220 × 240 mm	900 – 1200 RPM	530 – 3,500 kW	First compact medium-speed engine designed specifically to start and stop directly on true Heavy Fuel Oil (HFO).
Wärtsilä Vasa 32 (32LN)	320 × 350 mm	720 – 750 RPM	1,480 – 7,380 kW	The world's most popular medium-speed auxiliary & propulsion engine for decades. Basis of modern Wärtsilä 32.
Wärtsilä Vasa 24	240 × 310 mm	720 – 750 RPM	400 – 1,000 kW	Early Vasa workhorse engine built for tugs, trawlers, and regional coastal cargo vessels.
Wärtsilä Vasa 14	140 × 180 mm	1500 RPM	150 – 500 kW	High-speed auxiliary generator and emergency power generation series.

4. ACQUIRED HERITAGE BRANDS & HISTORICAL MAKERS UNDER WÄRTSILÄ

Through strategic mergers, Wärtsilä acquired full intellectual property, manufacturing documentation, and global spare parts support for several historic engine manufacturers:

- Sulzer Diesel (Winterthur, Switzerland)**

ACQUIRED / INTEGRATED: 1990 (NEW SULZER DIESEL) / 1997 (WÄRTSILÄ NSD)

The undisputed pioneer of marine diesel technology (founded by the Sulzer Brothers in 1834). Brought world-renowned 2-stroke low-speed crosshead technology and 4-stroke medium-speed designs.

Key Historical Models: RD series (RD56, RD68, RD76, RD90), RND / RND-M (RND68, RND76, RND90), RLA / RLB (RLB56, RLB66, RLB76, RLB90), RTA series (RTA48, RTA52, RTA58, RTA62, RTA72, RTA84), ZA40 / ZA40S (renowned 4-stroke rotating-piston engine), S20, AT25, AL20/24.
- Stork-Werkspoor Diesel (SWD) (Amsterdam / Zwolle, Netherlands)**

ACQUIRED / INTEGRATED: 1989

Dutch builder celebrated for rugged, high-reliability medium-speed industrial and marine propulsion engines.

Key Historical Models: TM410 (410 mm bore, classic bestseller), TM620 (largest medium-speed 4-stroke of its era), SW280, DRO210, F240, R150 series.
- Grandi Motori Trieste (GMT) (Trieste, Italy)**

ACQUIRED / INTEGRATED: 1997 – 2000 (FINCANTIERI JOINT VENTURE, LATER 100% WÄRTSILÄ)

Formed originally by Fiat and IRI. The massive Trieste manufacturing facility became Wärtsilä Italia SpA, now one of Wärtsilä's premier global engineering & manufacturing centers.

Key Historical Models: A320, B550, BL230, A420, C420, B230, SS420, A580, and naval propulsion units.
- SACM Diesel / Poyaud (Mulhouse / Surgères, France)**

ACQUIRED / INTEGRATED: 1993 (SOCIÉTÉ ALSACIENNE DE CONSTRUCTIONS MÉCANIQUES)

Renowned French designer of compact, high-power-density diesel and gas engines for naval vessels, locomotive traction, and critical standby power.

Key Historical Models: UD30, UD33, UD45, Poyaud 520, Poyaud 620 series.

NOHAB Diesel & Polar (Trollhättan, Sweden)

ACQUIRED / INTEGRATED: 1979 (WÄRTSILÄ NOHAB)

Swedish manufacturer known for durable Polar 2-stroke and 4-stroke diesel powerplants across Scandinavian icebreakers and merchant vessels.

Key Historical Models: Nohab Polar F10, F20, F30 series, Polar MN1600, Wärtsilä-Nohab 25.

Wichmann (Rubbestadneset, Norway)

ACQUIRED / INTEGRATED: 1983 (WÄRTSILÄ WICHMANN)

Norwegian specialist in complete propulsion packages, controllable pitch propellers (CPP), gearboxes, and 2-stroke trunk-piston engines.

Key Historical Models: Wichmann AX, ACA, WX28, 28V series, and associated CP propeller lines.

Deutz / MWM Large Bore Marine Division (Mannheim, Germany)

ACQUIRED / INTEGRATED: 2005 (DEUTZ MEDIUM-SPEED LARGE MARINE BUSINESS)

Acquisition of Deutz's medium-speed marine diesel engine line and comprehensive worldwide service agreements.

Key Historical Models: Deutz SBV 6M / 8M / 9M 628, BV 16M 628, Deutz BV 640 series, MWM TBD 440, TBD 510, TBD 484.

Bolnes (Krimpen aan de Lek, Netherlands)

ACQUIRED / INTEGRATED: 1988 (THROUGH STORK-WERKSPoor)

Unique manufacturer of small 2-stroke crosshead diesel engines with cylindrical crosshead guide acting as a scavenge pump.

Key Historical Models: Bolnes DNL 150/600, 190/600, V-DNL series.

5. WÄRTSILÄ ENGINE DESIGNATION DECODING REFERENCE

Standard nomenclature system used to interpret Wärtsilä engine plates and specifications:

NOMENCLATURE ELEMENT	SAMPLE FORMAT	MEANING & EXPLANATION
Cylinder Count & Layout	6L32 vs 12V32	Number indicates cylinder count (e.g. 6, 8, 9, 12, 16, 20). L = In-line engine, V = Vee configuration.
Bore Size	Wärtsilä 20, 25, 31, 32, 46, 50	Engine series number represents cylinder diameter in centimeters (e.g., 32 = 320 mm cylinder bore).
Fuel / Combustion Suffix	DF, SG, M, TS, GD	• DF: Dual Fuel (LNG/Methanol + pilot diesel) • SG: Spark Gas (Otto cycle, spark ignited pure gas) • GD: Gas Diesel (High-pressure gas injection) • M: Methanol-capable / dedicated • TS: Two-Stage Turbocharging
WinGD / Sulzer Codes	X72DF / RT-flex82T	X: Generation X 2-stroke; DF: Dual Fuel; RT-flex: Common-rail; T: Tanker/Bulker low-RPM rating; C: Container high-RPM rating.