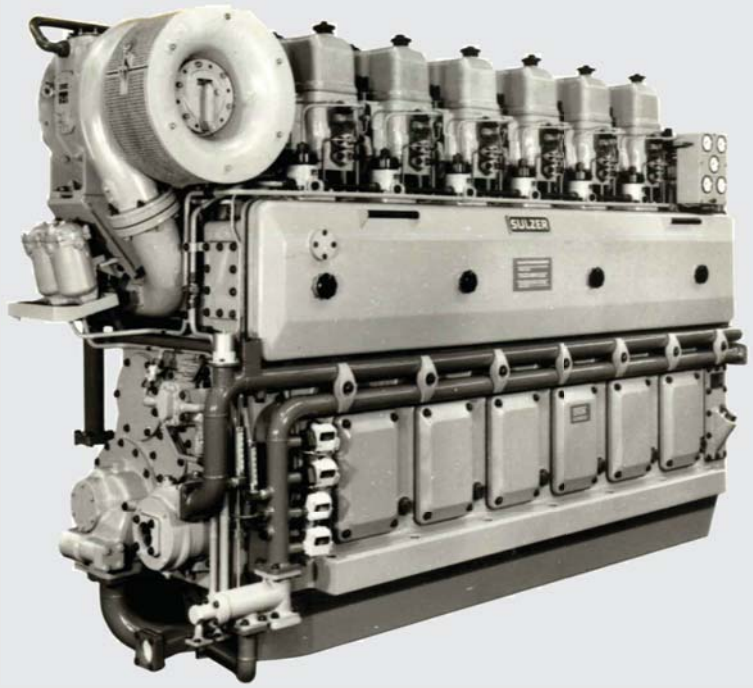
AL20

MDO: 450-820 kW at 720-1000 min^{-1}
HFO: 420-760 kW at 720-1000 min^{-1}

TOTAL SERVICE



SULZER 4-stroke ENGINES

CHARACTERISTICS

- Water-cooled 6-, and 8-cylinder in-line-engines.
- Four stroke, direct fuel injection.
- Turbocharger and charge air cooling.
- Cylinder heads with 4-valve technology.
- Power-take off on both ends of crankshaft.
- Engine driven pumps on free end of crankshaft.

BENEFITS

- High reliability of the engine.
- Low operational costs due to easy maintenance and long maintenance intervals.
- Low fuel and lubricating oil consumption.
- Clean combustion, even on part load

WÄRTSILÄ

ENGINE DESCRIPTION

Crankcase	Single-piece cast-iron crankcase with underslung crankshaft. Drillings in the block for water and oil distribution to reduce the pipe work.
Crankshaft	The crankshaft is of low alloy steel, forged in one piece and fully machined. Counterweights on all cranks. A torsional vibration damper can be fitted to the free end.
Main bearings	Thin-walled bearing shells fitted to both the main bearings and the big end bearings.
Connecting rods	Drop-forged from alloyed steel and fully machined. The big ends have a serrated joint.
Big end bearings	Identical to the main bearings.
Pistons	One part piston for operation on MDO, two part piston for HFO operation. With 3 chromium plated piston rings and 2 scraper rings. Fully floating piston pin.
Cylinder heads	The cylinder heads are made of special cast iron and are fitted with two inlet and two exhaust valves. Nimonic alloy valves with rotators for engines operating on HFO.
Camshaft	The camshaft consists of individual segments, one for each cylinder.
Fuel injection pumps	Individual helix-controlled fuel injection pump for each cylinder.
Governor	The governor is of Woodward UG8 / PGA12 type.
Turbocharger	The turbocharger is mounted on the front end. ABB VTR type or Napier.
Pump drive	The oil pump, cooling water pump and fuel booster pump are mounted on the front end. Provision is made for driving an extra cooling water pump.
Fuel system	The fuel system is pressurized by a built-on feed pump. Fuel circulates over the fuel day tank. Optionally, external fuel supply is possible.
Lubricating oil system	A built-on gear pump supplies oil flow and pressure. Oil flows through a cooler and filter before entering the engine. Optionally, a centrifugal filter is installed.
Starting air system	The engine is started by means of direct air starting. The system supplies starting air to the individual cylinder heads via the main starting valve. Control air derived from the starting air is used to control the individual starting valves.
Cooling water system	The cooling water system is divided in a high temperature and a low temperature system. High temperature cooling water is used for jacket cooling, low temperature is used for charge air cooling and lubricating oil cooling.
Exhaust gas system	Exhaust system is of pulse type.
Classification	Classification performed by engine manufacturer.
Emission regulations	Emission regulations are not applicable for these engines, because most engines were built before the IMO / EIAPP era (before 2000).

TECHNICAL DATA

TECHNICAL DATA			
Engine type		**AL20**	
Model		**6AL20**	**8AL20**
Number of cylinders		6	8
Bore / stroke	mm	200 / 240	
Displacement	l	45	60
MEP	bar	16.39 - 16.80	
Direction of rotation		Clockwise or counter-clockwise, non-reversible	
Power ratings			
HFO [1]			
at 720 min^{-1}	kW	420	560
at 750 min^{-1}	kW	432	576
at 900 min^{-1}	kW	525	700
at 1000 min^{-1}	kW	570	760
MDO			
at 720 min^{-1}	kW	450	600
at 750 min^{-1}	kW	468	624
at 900 min^{-1}	kW	570	760
at 1000 min^{-1}	kW	615	820
General data			
Specific fuel consumption [2]			
at 900 min^{-1}	g/kWh	213	
at 1000 min^{-1}	g/kWh	213	

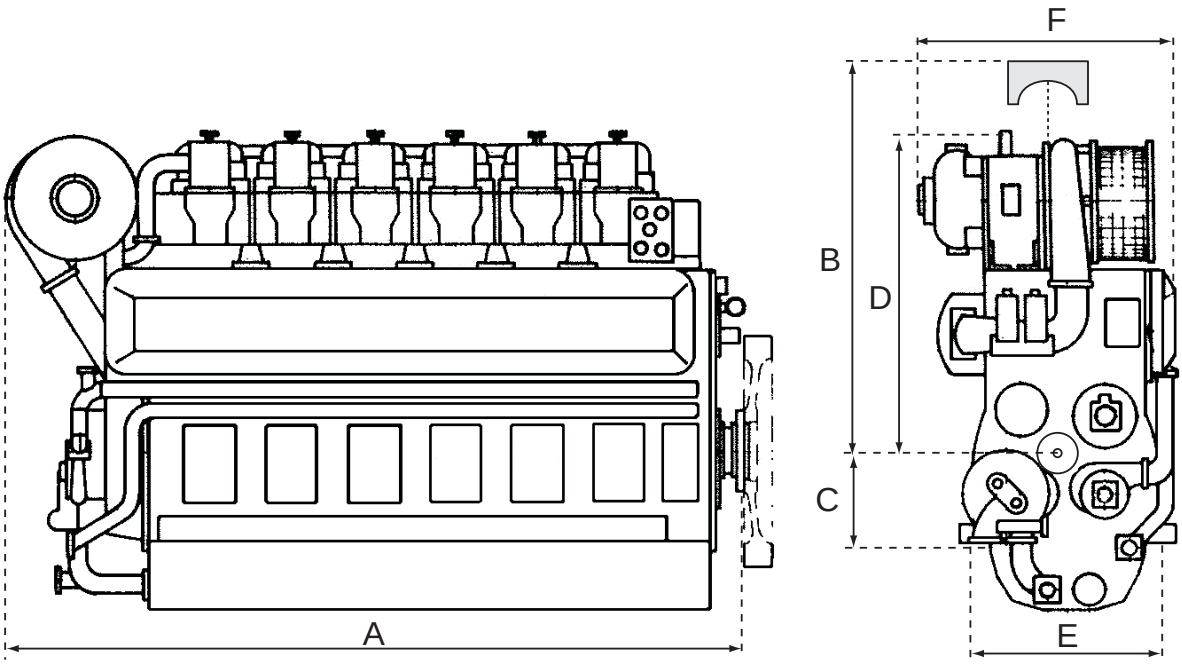
[1] Up to 500 cST/50 °C viscosity in marine auxiliary applications and 380 cST/50 °C viscosity in marine propulsion and stationary applications.

[2] For net caloric value 42 707 kJ/kg (10 200 kcal/kg) and ISO-standard reference condition.

Power declarations based on the following ISO standard reference conditions:
27 °C intake air temperature, 27 °C charge air coolant temperature, barometric pressure 1000 mbar, relative humidity 60%.

Note: The values given in this document are for information purposes only and not binding.

DIMENSIONS



PRINCIPAL ENGINE DIMENSIONS (mm) AND WEIGHTS (t)							
Engine type	**A**	**B**	**C**	**D**	**E**	**F**	**Weight**
6AL20	2780	1620	340	1190	792	1060	6.4
8AL20	3530	1620	340	1350	792	1160	8.2

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