

Edition:

1. Oil Separators

MDPC

Sizing SA/SU

Capacity table

Fuel Oils

Unit	GO	MDO	IF				HFO				
	cSt/40°C 1.5-6 20-40°C	cSt/40°C 13 40°C	30 70°C	40 80°C	60 80°C	100 90°C	180 98°C	380 98°C	460 98°C	600 98°C	700 98°C
SA/SU 811	1600	1500	1400	1400	1350	1300	1200	850	800	660	550
SA/SU 816	2750	2600	2450	2450	2300	2250	2050	1450	1400	1150	950
SA/SU 821	3750	3600	3350	3350	3150	3050	2800	2000	1900	1550	1300
SA/SU 826	4600	4400	4150	4150	3850	3750	3450	2450	2350	1950	1600
SA/SU 831	5450	5250	4900	4900	4600	4450	4100	2950	2650	2150	1850
SA/SU 836	6750	6500	6050	6050	5700	5500	5050	3650	3250	2450	2250
SA/SU 841	7900	7600	7100	7100	6650	6450	5900	4250	3800	3050	2650
SA/SU 846	9600	9200	8600	8600	8100	7850	7200	5200	4800	3900	3250
SA/SU 851	11100	10600	9950	9950	9300	9050	8250	5800	5350	4650	3600
SA/SU 856	13300	12700	11900	11900	11200	10800	9900	6850	6400	5700	4100
SA/SU 861	15100	14500	13600	13600	12700	12400	11300	7850	7300	5900	4500
SA/SU 866	17900	17200	16100	16100	15100	14600	13400	9250	8650	6200	5300
SA/SU 871	20600	19800	18900	18900	17700	17200	15700	10900	10200	7400	6250
SA/SU 876	24500	23800	23100	23100	21600	21000	19200	13300	12400	9200	7650
SA/SU 881	29100	28100	26800	26800	25100	24400	22300	15400	14400	10600	8850
SA/SU 886	36000	34600	32300	32300	30300	29400	26900	18600	17400	12600	10700

Lube Oils

Unit	LO Trunk 95°C	LO C-H 90°C
SA/SU 811	820	1100
SA/SU 816	1400	1850
SA/SU 821	1950	2550
SA/SU 826	2400	3150
SA/SU 831	2850	3700
SA/SU 836	3550	4650
SA/SU 841	4100	5450
SA/SU 846	5000	6600
SA/SU 851	5600	7300
SA/SU 856	6400	8450
SA/SU 861	7050	9250
SA/SU 866	8350	10700
SA/SU 871	9800	12500
SA/SU 876	11900	15300
SA/SU 881	13900	17800
SA/SU 886	16700	21400

Sizing of separation systems for fuel oils

Known main data:

- Maximum Continuous Rating (MCR) of the diesel engine (kW or HP)
- Fuel oil type; Distillate, MDO or IFO/HFO

- Fuel oil viscosity (for IFO/HFO)
- Frequency of the electric supply (for pump sizing)

Sizing of separator

1. Calculate the required flow rate, Q (l/h), when fuel consumption is not specified.

- For plants employing MFPX, FOPX, and S separators:

$$Q = 0.238 \times kW \quad \text{l/h}$$

or

$$Q = 0.175 \times HP \quad \text{l/h}$$

- For plants employing MOPX and MMPX separators:

$$Q = 0.248 \times kW \quad \text{l/h}$$

or

$$Q = 0.183 \times HP \quad \text{l/h}$$

- For plants employing MAB, MIB and MMB separators, only distillate and MDO:

$$Q = 0.248 \times kW \quad \text{l/h}$$

or

$$Q = 0.183 \times HP \quad \text{l/h}$$

where kW or HP = MCR (Maximum Continuous Rating of diesel engine).

Note:

Fuel oil consumption or auxiliary engines should be included in the flow rate calculation and possible fuel oil consumption of boilers burning same oil should also be added to obtain the TOTAL required flow rate of the cleaning system.

The above general calculations are based on a specific fuel oil consumption of the engine of 0,193 kg/kWh or 0,142 kg/HPH plus 18%. The margin of 18% is to allow for non-ISO conditions, wear, fuel contamination etc.

If the flow rate calculation is to be based on the specific fuel oil consumption specified by an engine manufacturer, the following basic formula must be employed:

$$Q = \frac{P \times b \times 24}{d \times T}$$

P = Max Continuous Rating (kW or HP)

b = the specific fuel oil consumption (kg/kWh or kg/HPH), specified by the engine supplier, plus 18% to allow for non-ISO conditions, wear, fuel, contamination etc

d = Fuel oil density, (0.96 kg/l)

T = continuous operating time (number of hours per 24 hour day)

- for FOPX separators T = 24 h

- for MOPX and MMPX separators T = 23 h

- for MAB, MIB and MMB separators T = 23 h

- for S separators T = 23.5 h

2. Based upon the calculated required flow rate (Q) and the actual fuel oil viscosity, the separator model can then be selected from the appropriate capacity table.

These tables also give the appropriate separation temperature for the actual fuel oil quality.