

BIMOTOR SPRINKLER SOLUTIONS

B8030i40 EXTENDED DATASHEET

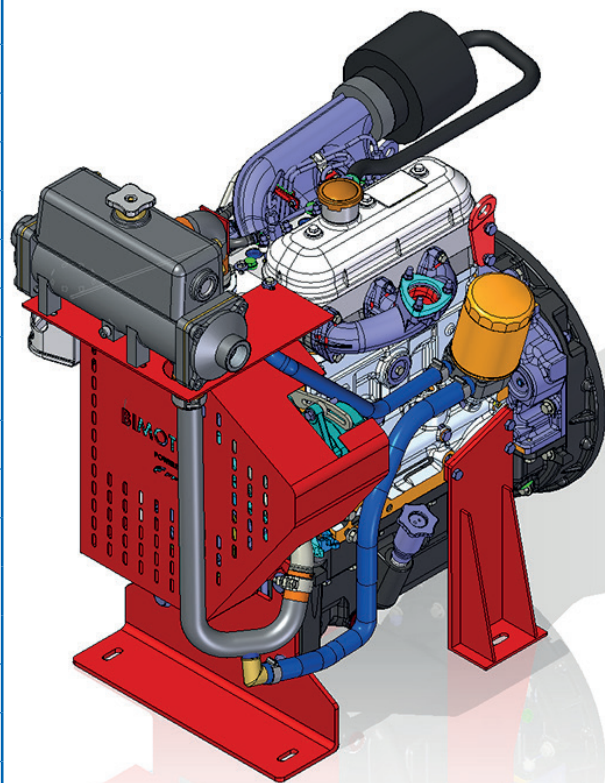
17-45 kW (24-61 HP) @ 2100-2940 rpm

Diesel Engine specifically designed for fire-fighting application. 45kW Max Power @ 2940rpm, according to ECE R120 Regulation. Fluid-cooled engine with specific water/water heat exchanger. Single-shaft distribution naturally aspirated engine with rod, valve levers and hydraulic tappets.

12V Engine equipped on demand with Oil & Water Pre-Heating System, manual drain oil pump, rpm pick-up, flexible hose and silencer.

ENGINE GENERAL DATA

SPECIFICATIONS	
Thermodynamic cycle	Diesel 4 Stroke
Engine Architecture	3 cylinders, in line
Firing Order	1-3-2
Air Intake	NA
Cooling	Water
Charge air cooling system	N/A
Compression Ratio	17:1
Injection System	Mechanical rotary pump
Combustion	Direct injection
Engine displacement	3 l
Valves per cylinder	2
Intake	1
Exhaust	1
Rotation (viewed from engine flywheel)	CCV
Engine crankcase ventilation system	Closed
Flywheel Housing /Flywheel	SAE 3 /11" 1/2
Engine weight (kg)	370



ENGINE PERFORMANCE

ENGINE SPEED [rpm]	GROSS POWER RATING [kW (HP)] (1) (2)	FUEL CONSUMPTION RATE [l/h]
2100 (3)	17 (24)	5,1
2200 (3)	20 (27)	6,4
2350	32 (44)	9,0
2600	44 (60)	13,0
2800	45 (61)	15,5
2940	45 (61)	16,0

(1) Power at flywheel according to 97/68 EC > ECE R120 (without fan), after 50 hours running, 3% tolerance Fuel Diesel EN590
Test Conditions: ISO 3046/1, 25°C (77°F) air temperature, 100kPa (14.5 PSI) atmospheric pressure, 30% relative humidity – Applicable also to DIN 6271, BS 5514, SAE J1349 Standards

(2) **Power derating conditions:** 3% for every 500 m height increment over 1000 m above sea level, -6% for 500 m increment over 3000 m above sea level, -2% for every 5°C increment above 40°C

(3) Power measured with a 5% engine drop.

EXHAUST SYSTEM

EXHAUST MAX TEMPERATURE [°C]	MAX ALLOWED BACK PRESS. [kPa]	EXHAUST FLOW RATE [kg/h]
795	5	285

AIR INDUCTION SYSTEM

MAX COMBUSTION AIR FLOW [kg/h]	MAX INLET TEMP [°C]	MAX ALLOWED RESTRICT. (CLEAN FILTER) [kPa]	MAX ALLOWED RESTRICT. (DIRTY FILTER) [kPa]
280	50	3,5	5

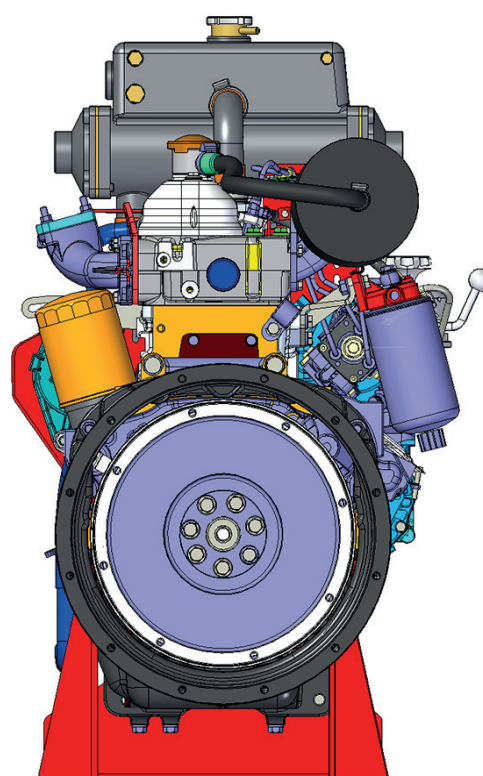
ELECTRIC SYSTEM

Voltage	12V
Alternator	14V - 35A
Starter motor	3kW - 12V
Batteries per bank	1

LUBRICATION SYSTEM

Lubrication oil* minimum pressure @ idle speed	0,7 bar
Lubrication oil* maximum pressure @ rated speed	2,4 bar
Lubrication oil* maximum temperature	120°C
Lubrication circuit full capacity	7,7 l

(*) **Oil Type:** Approved engine oil specification: 10W-40 ACEA E9/API CJ-4 low SAPs or 5W-30 ACEA E6 (for ambient temperature below -25°C (-13°F))



COOLING SYSTEM

REJECTED HEAT [kW]	REQUIRED RAW WATER FLOW @ 15°C [l/min]	REQUIRED RAW WATER FLOW @ 37°C [l/min]	ENGINE RADIATED HEAT [kW]
38	25	35	10

Thermostat	Start opening	79°C
	Full opening	94°C
Primary coolant temperature range		79 – 94°C
Primary coolant maximum temperature		103°C
Secondary circuit maximum pressure		3 bar

LIQUID HEATERS

Coolant heater	1500W – 230V
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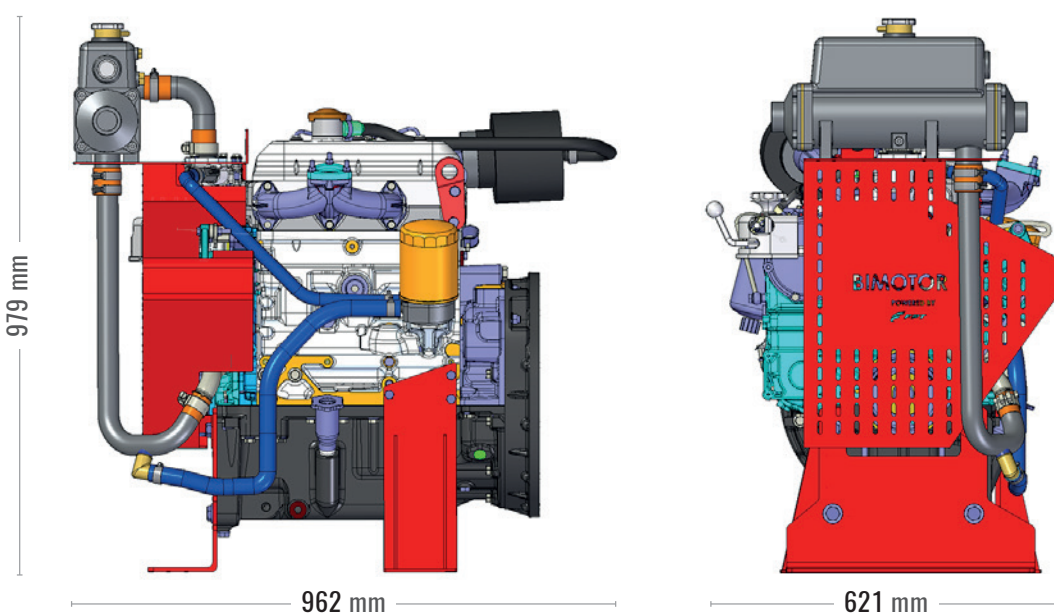
FUEL SYSTEM

Injection pump with all speed governor	Bosch
Fuel pump max intake restriction	0 bar
Minimum fuel line internal diameter	10 mm

ENGINE SELECTION CRITERIA

This engine must be selected by determining the maximum power absorbed by the fire pump at the top of the appropriate impeller curve, and add a 20% margin to this power requirement. This value now determines the minimum power requirement for a fire pump duty. An appropriate selection should then be made by using the engine gross power output after deduction for any auxiliaries.

ENGINE DIMENSIONS



Informations, modifications and details contained in this page may be updated without any notice.