

NOT LISTED SPRINKLER SOLUTIONS

B7TF40N OPERATION DATASHEET

ENGINE GENERAL DATA

THERMODYNAMIC CYCLE	DIESEL - 4 STROKE
ENGINE ARCHITECTURE	6 CYLINDERS, IN LINE
FIRING ORDER	1 - 5 - 3 - 6 - 2 - 4
AIR INTAKE	TCA
COOLING	WATER
CHARGE AIR COOLING SYSTEM	CHARGE AIR HEAT EXCHANGER
COMPRESSION RATIO	16,8:1
INJECTION SYSTEM	MECHANICAL INLINE PUMP
COMBUSTION	DIRECT INJECTION
ENGINE DISPLACEMENT	6.9 l
VALVES PER CYLINDER	4
INTAKE	2
EXHAUST	2
ROTATION (VIEWED FROM ENGINE FLYWHEEL)	CCW
ENGINE CRANKCASE VENTILATION SYSTEM	CLOSED
ENGINE WEIGHT	950 kg
ENGINE MAIN DIMENSIONS (L x W x H)	1550 mm x 1050 mm x 1305 mm

ENGINE PERFORMANCE

ENGINE SPEED [rpm]	NET POWER RATING	FUEL CONSUMPTION RATE
	[kW (cv) (1) (2) (3) (4)]	[l/h]
2100 rpm	220 (300)	50
2200 rpm	280 (380)	75
2350 rpm	280 (380)	80
2600 rpm	280 (380)	71
2800 rpm	280 (380)	76
2940 rpm	280 (380)	79

- (1) Power at flywheel according to 97/68 EC (without fan), after 50 hours running, 3% tolerance, fuel Diesel EN 590
- (2) Power derating conditions: a deduction of 3 percent from engine horsepower rating at standard SAE conditions shall be made for diesel engines for each 1000 ft. (305 m) altitude above 300 ft. (91.4 m), a deduction of 1 percent from engine horsepower rating as corrected to standard SAE conditions shall be made for diesel engines for every 10°F (5.6°C) above 77°F (25°C) ambient temperature.
- (3) Performance evaluated with intake restrictions and exhaust backpressures values as shown.
- (4) Values obtained with 10% droop, corrected as per FM1333 regulation.

EXHAUST SYSTEM

ENGINE SPEED [rpm]	EXHAUST MAX TEMPERATURE [°C]	MAX ALLOWABLE BACK PRESSURE [kPa]	EXHAUST GASES FLOW [kg/h]
2100 rpm	620	10	1390
2200 rpm	620	10	1560
2350 rpm	590	10	1760
2600 rpm	540	10	1850
2800 rpm	520	10	1850
2940 rpm	510	10	1860

LUBRICATION SYSTEM

LUBRICATION OIL MINIMUM PRESSURE @ IDLE SPEED	6 bar
LUBRICATION OIL MAXIMUM PRESSURE @ RATED SPEED	6-7 bar
LUBRICATION OIL MAXIMUM TEMPERATURE	110°C
LUBRICATION CIRCUIT FULL CAPACITY	24 l

ELECTRIC SYSTEM

VOLTAGE	24V
ALTERNATOR	24V-55A
STARTER MOTOR	3,2 kW
BATTERIES PER BANK	2
BATTERY CABLES MAX RESISTANCE	0,0013 ohm
BATTERY CABLES MIN ALLOWED SIZE (4)	AWG000
BATTERY CCA @ -18° C (5)	1000 A
RESERVE CAPACITY (5)	430 min - 180 Ah

(4) Length combination of positive and negative cables.

(5) Parameters evaluated according to SAE Standard J537.

AIR INDUCTION SYSTEM

ENGINE SPEED [rpm]	COMBUSTION AIR FLOW [kg/h]	MAX INLET TEMPERATURE [°C]	MAX ALLOWED RESTRICTION (CLEAN FILTER) [kPa]	MAX ALLOWED RESTRICTION (DIRTY FILTER) [kPa]
2100 rpm	1350	55	4	8
2200 rpm	1500	55	4	8
2350 rpm	1700	55	4	8
2600 rpm	1700	55	4	8
2800 rpm	1800	55	4	8
2940 rpm	1800	55	4	8

COOLING SYSTEM

ENGINE SPEED [rpm]	REJECTED HEAT [kW]	REQUIRED RAW WATER FLOW @ 15°C [l/min]	REQUIRED RAW WATER FLOW @ 38°C [l/min]	ENGINE RADIATED HEAT [kW]
2100 rpm	140	155	175	40
2200 rpm	170	155	175	40
2350 rpm	190	155	175	40
2600 rpm	190	155	175	40
2800 rpm	200	155	175	40
2940 rpm	215	155	175	40

THERMOSTAT	START OPENING	82°C
	FULL OPENING	94°C
PRIMARY COOLANT TEMPERATURE RANGE		85-95°C
PRIMARY COOLANT MAXIMUM TEMPERATURE		95°C
PRIMARY COOLANT LOW TEMPERATURE ALARM		35°C
PRIMARY COOLANT CAPACITY		24 l
PRIMARY COOLANT PRESSURE (CAP)		0,7 bar
SECONDARY CIRCUIT MAXIMUM PRESSURE		3 bar
RAW WATER TEMPERATURE ALARM		40°C

LIQUID HEATERS

COOLANT HEATER	1500W – 230V	1500W – 120V
LUBRICATION OIL HEATER	350W – 230V	

FUEL SYSTEM

FUEL PUMP MAX INTAKE RESTRICTION	0 bar
MAX ALLOWABLE FUEL HEAD ABOVE FUEL PUMP	1 m
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 10% MARGIN TO THIS POWER REQUIREMENT. THIS VALUE NOW DETERMINES THE MINIMUM POWER REQUIREMENT FOR A FIRE PUMP DUTY.

STANDARD CONFIGURATION

SAE#1 FLYWHEEL HOUSING
 14" FLYWHEEL
 DRY AIR FILTER
 FUEL FILTER
 LUBE OIL FILTER
 ENGINE RIGID SUPPORTS
 FUEL METAL CONNECTIONS
 HIGH WATER TEMPERATURE SWITCH
 WATER TEMPERATURE SENSOR
 LOW OIL PRESSURE SWITCH
 OIL PRESSURE SENSOR
 24V STARTER
 24V ALTERNATOR
 24V ENERGIZE TO STOP FUEL SOLENOID
 EXHAUST COMPENSATOR
 AUXILIARY TWIN BELT
 W/W HEAT EXCHANGER
 AIR/W INTERCOOLER

OPTIONS

SECONDARY COOLANT COOLING LOOP
 PRIMARY COOLANT 220V – 1500W HEATER
 ENGINE CONTROL PANEL
 LUBE OIL 220V HEATER
 EXHAUST MUFFLER
 OIL DRAIN PUMP

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