DE MAAS BV
FIRE FIGHTING ENGINES

FM APPROVED

DATA SHEET IF07-F Series

General Engine Data			IF07ATIH-F	IF07BTIH-F	IF07CTIH-F
Type			4 cycle, 6 Cylinder In Line, Water cooled		
Aspiration			Turbo charged & Inter cooled		
Cylinder Type			Replaceable dry liner		
Bore x Stroke		mm	104 x 132		
Displacement		litre	6.728		
Compression Ratio			17.5 : 1		
Valves per Cylinder	- Intake		1		
	- Exhaust		1		
Valve Timing	- Intake		Opening: 15° BTDC - Close: 35° ABDC		
	- Exhaust		Opening: 69° BBDC - Close: ATDC		
Valves lashes at cold	- Intake	mm	0.25 ±0.5		
	- Exhaust	mm	0.50 ±0.5		
Combustion Type			Direct Injection		
Firing Order			1 – 5 – 3 – 6 – 2 - 4		
Rotation			Counter Clockwise, viewed from flywheel		
Dimension L x W x H *(L=Built Length)*		Approx. mm	1,210 x 957 x 1,554		
Dry Weight		Approx. kg	750		

Engine Rating		1,760	2,100	2,200	2,350	2,600	2,800	2,940
IF07ATIH-F	kW	143	162	167	172	179	179	179
IF07BTIH-F	kW	165	187	190	195	198	200	202
IF07CTIH-F	kW	-	-	-	-	216	222	224

Although our FM ratings are shown at specific speeds, De Maas FFE engines can be applied at any intermediate speed.
To determine the intermediate speed power; make a linear interpolation from the applicable De Maas power curves.

Power : *At flywheel according to 97/68 EC, after 50 hours running, 3% tolerance, fuel Diesel EN 590*

Test conditions : *ISO 3046/1, 25 ° Celsius air temperature, 100 kPa atmospheric pressure, 30 % relative humidity. Applicable also to DIN 6271, BS 5514, SAE J1349 Standards.*

Fuel System		1,760	2,100	2,200	2,350	2,600	2,800	2,940
Injection Pump		StanaDyne Rotary Pump type						
Governor		Fixed speed control						
Fuel Lift Pump		**Exclusive** (Electric version as an Option)						
Fuel Filter		Full flow, cartridge type						
Used Fuel		Diesel fuel according EN 590						
Fuel consumption **IF07ATIH-F**	gr/kWh	174	171	169	177	184	190	197
Fuel consumption **IF07BTIH-F**	gr/kWh	199	184	187	190	204	217	228
Fuel consumption **IF07CTIH-F**	gr/kWh	-	-	-	-	187	198	206
Standard Supply line Size	mm	Ø 10						
Standard Return line Size	mm	Ø 10						

Electrical System		24 Volts (Nominal)
Starter motor	kW	4
Battery Min. capacity recommended	Ah	180 (12 Volts)
Quantity per battery bank		2
Battery Cold Cranking Amperes	@ -18°C	800
Charging Alternator Output	Amp.	90
Engine stop device build in fuel pump		Energized to Stop

Air Induction System		IF07ATIH-F	IF07BTIH-F	IF07CTIH-F
Air Cleaner Type		Dry		
Engine Air Flow at maximum revs.	m^3/min.	17,1	18.0	18.3
Air Inlet Restriction Dirty	kPa	2.0	2.0	2.0
Turbo charging pressure at full load/rated speed	kPa	140	140	140
Turbo charging air inlet maximum temperature	°C	55		

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Cooling system with DE MAAS std heat exchanger		IF07ATIH-F	IF07BTIH-F	IF07CTIH-F
Heat Exchanger Maximum Flow	*l/min / kW installed*	0,7	0,7	0,8
Water Pump		Centrifugal type driven by belt		
Engine Radiated Heat	*kW*	See table no. 03.400.06VLEN03		
Water Pump Capacity	*litre/min.*	250		
Heat Exchanger Raw water system				
Maximum Pressure	*kPa*	2,000	2,000	2,000
Flow *(maximum)*	litre/min.	126	142	179
Maximum Temperature	*°C (°F)*	37.8 (100)	37.8 (100)	37.8 (100)
Thermostat, Start to Open	*°C*	83		
Fully Opened	*°C*	95		
Coolant Capacity *Approximately*	*litre*	23		
Coolant Pressure Cap	*kPa*	95		
Maximum Raw Water Supply pipe Connection to Heat Exchanger	*inch*	1 ½" BSP		
Maximum Raw Water Discharge pipe Connection from Heat Exchanger	*inch*	1 ½" BSP		
Maximum Engine H_2O Temperature	*°C*	103		
Pressure loss Engine Cooling Circuit	*kPa*	10		
Header tank capacity (Fresh water system)	litre	6.5		
Cooling Loop sizing	*Depending on application*	Consult De Maas		

Lubrication System		
Lubrication Method		Fully Forced pressure feed type
Oil Pump		Gear type driven by crankshaft
Oil Filter		Full Flow, Cartridge type
Oil pressure Range, normal	*kPa*	70 at idle 350 at maximum speed
Maximum Oil Temperature	*°C*	120 @ 2,940 rpm
Total Capacity	*litre*	12.8
Oil consumption at max. rating	*%*	0.1 *(Of fuel consumption)*

Exhaust System		IF07ATIH-F	IF07BTIH-F	F07CTIH-F
Exhaust Gas Flow based on 2,940 rpm	*kg/h*	1,240	1,320	1,340
Exhaust Gas Temperature at max rating/power	*°C*	530	580	600
Max. Allowable Back Pressure	*kPa*	7		
Minimum Exhaust Pipe Diameter	*mm(inch)**	101.6 (4")		
Exhaust compensator with counter flange		Included		

***Based on Nominal System. Flow analysis must be done to assure adherence to system limitations!**
(Minimum exhaust pipe diameter is based on 6 metre (15 ft.) of pipe, one elbow, and a silencer. Pressure drop no greater than one half the max. allowable back pressure)

Heater System		
Wattage (Nominal)	*W*	1,500
Voltage AC	*V*	230

Miscellaneous		
Flywheel housing	*SAE*	3
Flywheel	*SAE*	11½
Number of teeth starter ring		125

Engine Performance Data		
All data is based on the engine operating with fuel system, lubricating oil pump, air cleaner, and alternator; not included are compressor, fan, optional equipment, and driven components. Data is based on operation at SAE standard J1394 conditions of 300ft (91,4m) altitude, 29.61 in.(752mm) Hg dry barometer, and 77°F (25°C) intake air temperature, using No.2 diesel or a fuel corresponding to ASTM-D2.		
Altitude above which output should be Limited	*m*	91.4
Correction Factor per 305m. above Altitude Limit		3 %
Temperature above which output should be Limited	*°C*	25

Note: All the hereof technical information is, unless stated otherwise, based on the maximum speed of 2,940 rpm