General Engine Data		
Type		V-Type, 4 cycle, water cooled, 10 Cylinder
Aspiration		Turbocharged & Intercooled
Cylinder Type		Replaceable dry liner
Bore x Stroke	***mm (inch)***	128 x 142 (5.04 x 5.59)
Displacement	***litre (inch^3)***	18.273 (1115)
Compression Ratio		15 : 1
Valves per Cylinder - Intake		1
- Exhaust		1
Valves lashes at cold - Intake	***mm (inch)***	0.3 (0.0118)
- Exhaust	***mm (inch)***	0.4 (0.0157)
Valve Timing - Intake		Opening: 24º BTDC Close: 36º ABDC
- Exhaust		Opening: 63º BBDC Close: 27º ATDC
Combustion Type		Direct Injection
Firing Order		1-6-5-10-2-7-3-8-4-9
Injection Timing		18º BTDC
Rotation		Counter Clockwise, viewed from flywheel
Dimension (L x W x H)	***Approx. mm***	1,855 x 1,288 x 1,838 (L=Construction length)
Dry Weight	***Approx. kg (lb.)***	1,375 (3,031)

Approved Ratings		1,470 rpm	1,760 rpm	2,100 rpm
DF18TiH-F Output	***kW (hp)***	364 (495)	436 (593)	464 (631)

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.

Fuel System		
Injection Pump		Bosch in-line “P” type
Governor		RSV type (all speed control)
Feed Pump		Mechanical type
Injection Nozzle		Multi hole type
Opening Pressure	***kPa (psi)***	27,949 (4,053.7)
Fuel Filter		Full flow, cartridge type
Used Fuel		Diesel fuel type 2-D Only
Fuel consumption		See table no. 03.100.06FCEN.XX
Minimum Supply line Size	***mm (inch)***	12 (0.47)
Minimum Return line Size	***mm (inch)***	12 (0.47)

Electrical System		24 Volts (Nominal)
Starter motor	***kW***	1 x 7
Recommended Battery Capacity	***Ah***	200
Quantity per battery bank		2
Cold Cranking Amperes	***@ -18ºC (0ºF)***	1,000
Charging Alternator Output	***Amp.***	45

Air Induction System		
Air Cleaner Type		Drip proof
Engine Air Flow	***m^3/min.***	38.0 @ 2,100 rpm
Air Inlet Restriction Dirty	***kPa***	3.4

Cooling system

Heat Exchanger Minimum Raw Water Flow		1 litre / Minute per kW installed
Engine Water Pump		Centrifugal type driven by belt
Water Pump Capacity	***litre/min. (gal./min.)***	454 (120) @ 2,100 rpm
Heat Exchanger Raw water Inlet		
Maximum Pressure	***kPa (psi)***	1,000 (145.1)
Flow	***litre/min. (gal./min.)***	464 (102.0)
Maximum Temperature	***°C (°F)***	37.8 (100)
Thermostat, Start to Open	***°C (°F)***	71 (160)
Fully Opened	***°C (°F)***	85 (185)
Coolant Capacity	***litre (gal.)***	33 (8.7)
Coolant Pressure Cap	***kPa (psi)***	95 (13.8)
Maximum Raw Water Supply pipe Connection to Heat Exchanger	***inch***	1½" BSP
Maximum Raw Water Discharge pipe Connection from Heat Exchanger	***inch***	2" BSP Vertical up!
Max. Engine Coolant Temperature	***°C (°F)***	96 (204.8)
Pressure loss Engine Cooling Circuit	***kPa (psi)***	80 (11.6)

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 (psi)***	100 (14.5) at idle 400-500 (58-72.5) at maximum speed
Max. Oil Sump Temperature	***°C (°F)***	119
Oil Sump Capacity High	***litre (gal.)***	35 (9.2)
Low	***litre (gal.)***	28 (7.4)
Total Engine Oil Capacity	***litre (gal.)***	35 (9.2)
Minimum Oil Pressure	***kPa (psi)***	75 (10.9)

Exhaust System		
Exhaust Gas Flow	***m^3/min.***	107 @ 2,100 rpm
Exhaust Gas Temperature	***°C (°F)***	534 (993) @ 2,100 rpm
Max. Allowable Back Pressure	***kPa***	5.7
Minimum Exhaust Pipe Diameter	***mm(inch)****	2x 219.1 (2x 8")

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

Heater System		
Wattage (Nominal)	***W***	3,000
Voltage AC	***V***	230

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 (ft.)***	91.4 (300)
Correction Factor per 305m.(1,000ft.) above Altitude Limit		3 %
Temperature above which output should be Limited	***°C (°F)***	25 (77)
Correction Factor per 11°C (10°F) above Temperature Limit		2% (1%)