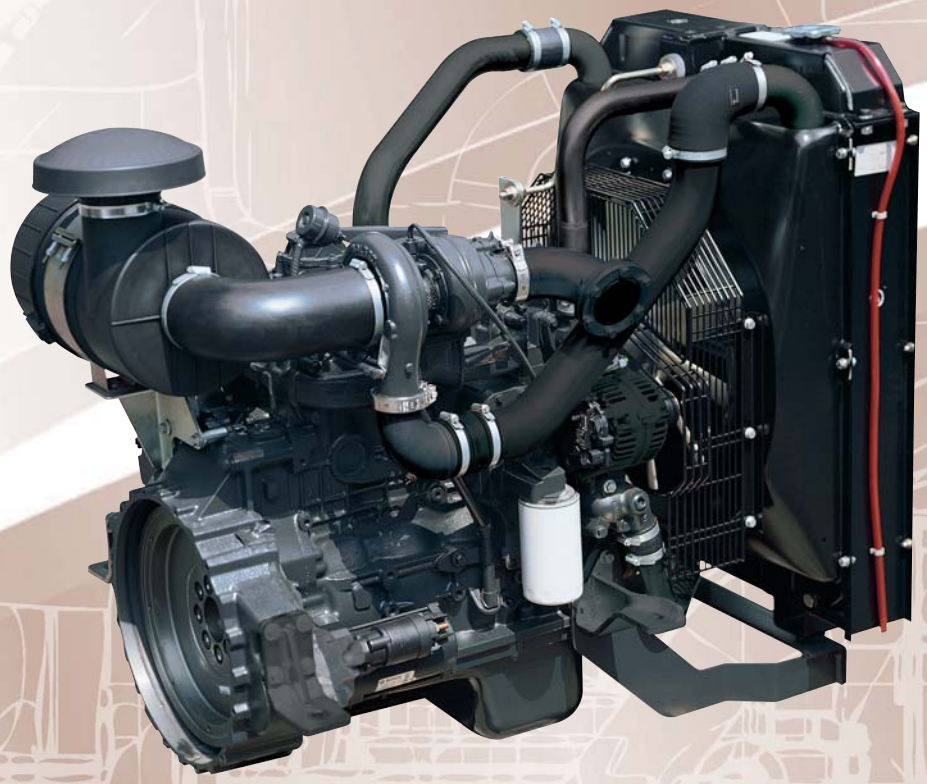
N45 MNT F40

FOR FIRE FIGHTING PUMPS

4 CYLINDERS IN LINE - DIESEL CYCLE

Max 164 kW (223 HP) @ 2940 rpm



SPRINKLER APPLICATIONS

FPT POWERTRAIN TECHNOLOGIES

N45 MNT F40 FOR FIRE FIGHTING PUMPS

Thermodynamic cycle		Diesel 4 stroke - D.I.
Air intake		TAA
Arrrangement		4L
Bore x Stroke	mm	104 X 132
Total displacement	l	4.5
Valves per cylinder		2
Cooling		liquid
Direction of rotation (viewed facing flywheel)		CCW
Compression ratio		17.5 : 1
Rotation mass moment of inertia (without flywheel)	kgm^2	0.19
Standard flywheel inertia	kgm^2	0.69

Air induction

Max suggested intake restriction with clean air filter	kPa (bar)	3.5 (0.035)
Max allowable restriction with dirty air filter	kPa (bar)	6.5 (0.065)
Air requirement for combustion at 100% load/rated speed	kg/h (m^3/h)	950 (810)
Turbocharging pressure at full load/rated speed	kPa (bar)	150 (1.5)
Turbocharging air max temperature (engine inlet)	°C	60
Heat rejected to intercooler at maximum power	kJ/s (kcal/h)	25 (21,500)
Intercooler system max pressure drop	kPa (bar)	10 (0.10)

Exhaust system

Max allowable backpressure	kPa (bar)	5 (0.05)
Max exhaust temperature at full load/rated speed (after turbo)	°C	640
Exhaust flow at max output	kg/h	990

Lubrication system

Minimum oil pressure at idle	kPa (bar)	70 (0.7)
Max oil temperature at full load/rated speed	°C	120
Engine angularity limits continuous operation: max front up and front down	0/360	20
max left hand and right hand	0/360	20
Total system capacity including pipes, filters etc.	liters	9.5

Cooling system

Coolant capacity (engine only)	liters	8.5
Water pump flow at rated speed	m^3/h	9.5
Heat to reject by heat exchanger at max power	kJ/s (kcal/h)	80 (68,800)
Thermostat (modulating range)	°C	83 ÷ 95
Cooling liquid max temperature	°C	103
Min/max inner pressure in the cooling circuit	kPa (bar)	30/100 (0.3/1)
External cooling system max pressure drop	kPa (bar)	35 (0.35)

Fuel system

Injection system		Rotary pump
Gas oil max intake restriction	kPa (bar)	0 (positive head)
Gas oil intake reference temperature	°C	30

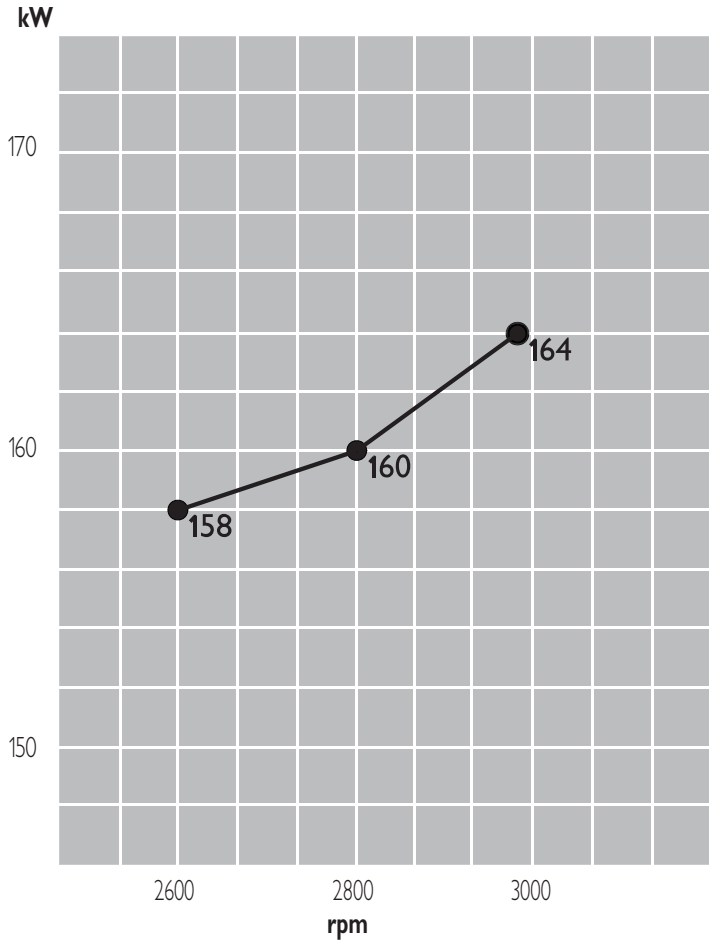
Electrical system

Voltage	V	12

N45 MNT F40 **FOR FIRE FIGHTING PUMPS**

Engine gross power ratings *	rpm	2600	2800	2940
	kW	158	160	164
	HP	215	218	223
Specific fuel consumption at maximum rating	g/kWh @ rpm		247 @ 2940	
Oil consumption at max rating	(% of fuel consumption)		0.1	
Minimum starting temperature without auxiliaries	°C		-15	
Dry weight (standard configuration)	kg		390	

* **Gross Power** *at flywheel according to ISO POWER 3046. Applicable also to DIN 6271, B.S. 5514 and SAE J 1349.*
Test conditions: *ISO 3046/1, 25 °C air temperatur , 100 kPa atmospheric pressure, 30% relative humidity.*



Dimensions

L = 807 mm

W = 662 mm

H = 957 mm

N45 MNT F40 FOR FIRE FIGHTING PUMPS

Engine selection

In order to select an engine determine the maximum power absorbed by the pump at the top of the appropriate impellor curve and add a 10% margin to this power requirement. This now determines the minimum power requirement for fire pump duty. An appropriate selection should then be made using the engine gross power output after deduction of the fan absorption.

Standard configuration

Flywheel housing prearranged for pick-up	type	SAE 3
Flywheel size	inch	11" ½
Intake manifold location		left side / front inlet
Exhaust manifold / turbocharger location		right side / upward outlet
Turbocharger		fixed geometry with waste gate
Turbocharger location		right side / high position
Fan transmission ratio		1.12 to 1
Distance between fan - crankshaft centers	mm	296
Fuel filter	n°	1 - left side
Fuel prefilter		–
Fuel pump		included
Oil filter	n°	1 - right side
Oil sump		sheet steel / front sump
Oil vapours blow-by circuit		on timing cover
Oil heat exchanger		included
Oil filler		on timing cover
Exhaust counter flange		included
Starting motor		12 V - 3 kW
Alternator		12 V - 90 A with W contact
Engine stop device		incorporated in the pump
Wiring harness		–
Painting	colour	grey

Not included in the standard configuration

Battery - minimum capacity recommended	180 Ah (12 V)
Battery - minimum cold cranking capacity recommended	950 A (12 V)

FPT OFFERS THE WIDEST AVAILABILITY OF ENGINE BUILD OPTIONS TO CUSTOMER SPECIFIC REQUIREMENTS WITHIN THE ENGINE SUPPLY. TO FIND OUT MORE ABOUT THE CONFIGURATIONS AND ACCESSORIES WHICH ARE AVAILABLE, CONTACT THE FPT SALES NETWORK.

LOCAL DISTRIBUTOR

FIAT POWERTRAIN TECHNOLOGIES
Via Puglia, 15 - 10156 Torino

FIAT POWERTRAIN TECHNOLOGIES
Viale dell'Industria, 15/17 - 20010 Pregnana Milanese (MI)

www.fptpowertrain.com

Publication P2F04N007E - 03.09

FPT POWERTRAIN TECHNOLOGIES