



MARINE DIESEL ENGINES

TECHNICAL DATA

2021-2022

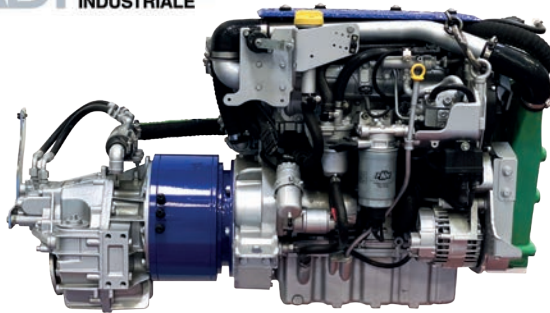


BHS BLUE HYBRID SYSTEM

HYBRID MARINE ENGINE KIT



ADI ASSOCIAZIONE
PER IL DISEGNO
INDUSTRIALE



GREEN POWER

The system puts together all advantages related to both diesel and electric engine: speed, power, wide operating time, zero emission, silence and reduced wave motion. Boat can easily switch from an operation mode to another while it is moving and can pass through marine protected areas without polluting. Moreover, using traditional engine during navigation, the electric engine can produce power, resetting idle time due to recharge operation at the pier.

AVAILABLE POWERS

From 10 to 30kw with an output power of 100% for over 1 minute.

USER INTERFACE

- a 4,3" color standard display shows all engines/generator data, battery status and all parameters necessary to navigation and whole system's control;
- electronic throttle managing both electric and endothermic propulsion.

ECU DEVELOPED IN HOUSE

All system is controlled by a CMD ECU developed in house. This control unit, using canbus technology to communicate with all components, allows the user to get easily a high power.

OPERATING TIME

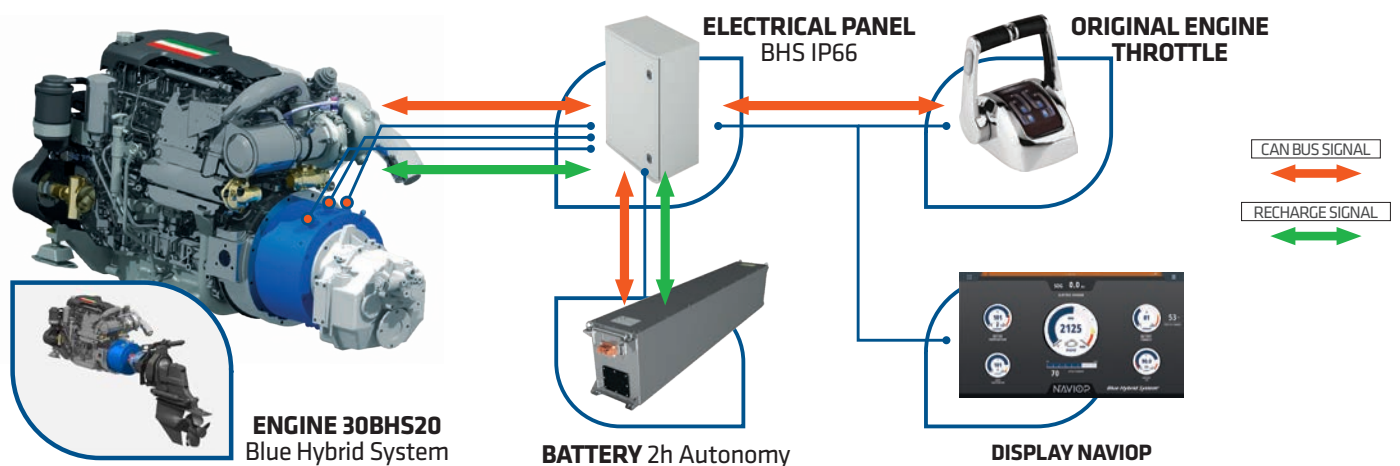
From 1h to 4h by LiFePO4 batteries cells put inside an inox steel box 1,5mm thickness.

TECHNICAL DATA

	Blue Hybrid System®
Electric Unit Engine	8 synchronous poles
Maximum Propulsion Power [kWe]	20
Maximum Recharge Power [kWe]	15
Battery Voltage [V]	96 DC
Battery Life [cycles]	> 2000
Battery Capacity [kWh]	13,2
Duration electric propulsion standard equipment	2h with standard use cycle
Total electrical system weight [kg]	240
Single Battery Weight [kg]	125

Engine shown in the picture could be not equal to standard engines.

OPERATING SCHEME



Technical data according ISO8665, fuel according EN590 standards. Fuel available on the market could have different specifications, influencing engine's power and consumptions. Production tolerance within 5% (on power). Not all produced models, equipments and accessories could be available in all countries.

13HPE INBOARD MARINE ENGINE



RELIABLE AND LONG-LASTING

FNM® 4-cylinder 13HPE marine engine is built according 1,3 Multijet II features, a key product for small diesel engines in automotive industry. The engine uses a common-rail fuel injection system controlled by an electronic control unit developed in house, made specifically for this unit. The result is a high power-to-displacement ratio unit.

HIGH LEVEL PERFORMANCES

Set either for recreational use, where the engine reaches up to 81kW (110HP), or for any commercial purpose, where it can achieve up to 3000h/year, this unit guarantees excellent performances at each kind of operating condition.

ECU DEVELOPED IN HOUSE

The engine electronic control unit (ECU) has been conceived after a 10-year development project carried out by R&D team; it is especially designed for HPE marine engines application. The ECU controls common rail system parts and includes unique control strategies which can be personalized according customers' request. It guarantees excellent performances with limited emissions.

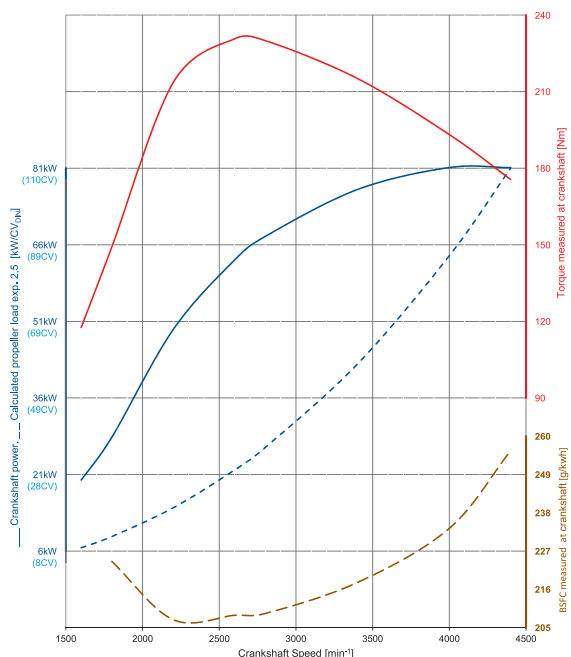
TECHNICAL DATA

Engine model	13 HPE 110	13 HPE 80	13 HPE 40
Crankshaft Power [kW] (hp)	81 (110)	59 (80)	29 (40)
Propeller shaft power [kW] (hp)	78 (107)	57 (78)	27 (38)
Engine speed [min-1]	4400	4000	4000
Displacement [l] (in3)	1,3 (76)	1,3 (76)	1,3 (76)
Number of cylinders	4	4	4
Bore/stroke [mm] (in)	69,6/82 (2,74/3,23)	69,6/82 (2,74/3,23)	69,6/82 (2,74/3,23)
Compression ratio	17,6:1	17,6:1	17,6:1
Dry weight with TM 485A [kg]	203	203	203
Dry weight with ZF 485D [kg]	202	202	202
Power Rating	B	C	D

Emission compliance

RCD Stage II 2013/53/UE

PERFORMANCE CURVES



Referred to 13HPE110

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TECHNICAL CHARACTERISTICS

ENGINE BLOCK AND HEAD

- Cylinder block made of cast-iron
- Cylinder head made of aluminium
- 4-valve per cylinder technology with hydraulic lash adjusters
- Double overhead camshafts
- Automotive-class availability of service and parts
- Metal chain gear

LUBRICATION SYSTEM

- Easily replaceable oil filter, on top of engine
- Easily to inspect or replace oil separator
- Oil vapour filter
- Integrated cooler with engine's coolant

FUEL SYSTEM

- Common rail fuel injection system
- CMD proprietary ECU
- Fuel filter with water separator and alarm

AIR INLET AND EXHAUST SYSTEM

- Air filter
- Oil vapours vented into inlet air
- Exhaust elbow or raiser depending on application
- Variable geometry turbocharger
- Raw-water cooled intercooler

COOLING SYSTEM

- Thermostatically regulated freshwater cooling
- Thermal unit that integrates tubular heat exchanger and expansion tank
- Easily accessible seawater impeller pump

ELECTRICAL SYSTEM

- 12V standard two-pole electrical system
- 12V-1,3kW starter
- Alternator 12V-75A
- Emergency stop button on engine's ECU
- CANBUS Panel with 8m extension and digital display of engine data

ENGINE MOUNTING

- Flexible engine mounting

PANEL INSTRUMENT CANBUS

Panel Instrument high brightness 5 "TFT display, with touchscreen and a very simple and intuitive interface and offers the following features:

- Engine data acquisition with CANBUS J1939 interface.
- Data acquisition from traditional sensors for up to eight analog inputs, five digital inputs and one frequency input.
- Acquisition of navigation data with NMEA0183 interface.
- Up to five relay command outputs for signals and simple activations.
- Alarm monitoring according to approved safety standards.
- Automatic brightness adjustment and day / night mode.
- USB local connectivity for firmware update and configuration.

The unit is supplied already programmed and ready to work.



GEARS

ANGLED GEARBOXES

- TM345A (8°): R. 1,54:1, 2,00:1, 2,47:1
- ZF25A (8°): R. 1,55:1, 1,93:1, 2,48:1, 2,29:1, 2,71:1

IN-LINE AND COAXIAL GEARBOXES

- TM345 (in line): R. 1,54:1, 2,00:1, 2,47:1
- ZF25 (in line): R. 1,97:1, 2,80:1
- ZF45C (coaxial): R. 1,00:1

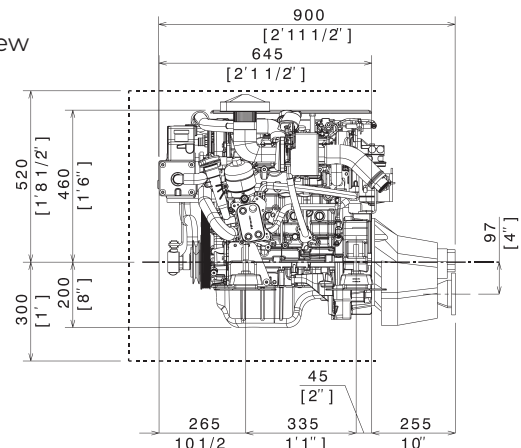
OPTIONALS

- Single or double electronic CANBUS control station
- Boiler kit for heating
- Various length panel extension
- Second control panel for flybridge installations
- RACOR and Mediterraneo filters
- Trolling Valve
- Additional PTO (ISO4183 B/SPB)
- NMEA2000 compatibility kit
- Wide range of additional instruments

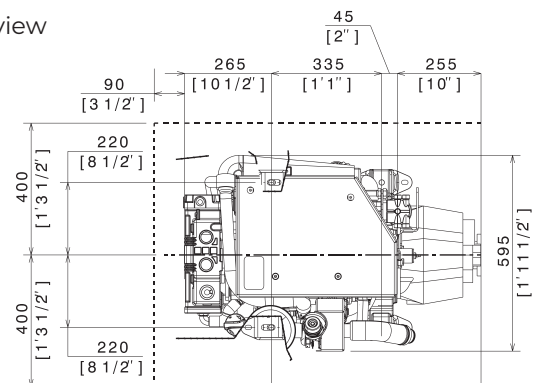
DIMENSIONAL

FNM13HPE with inverter TM345

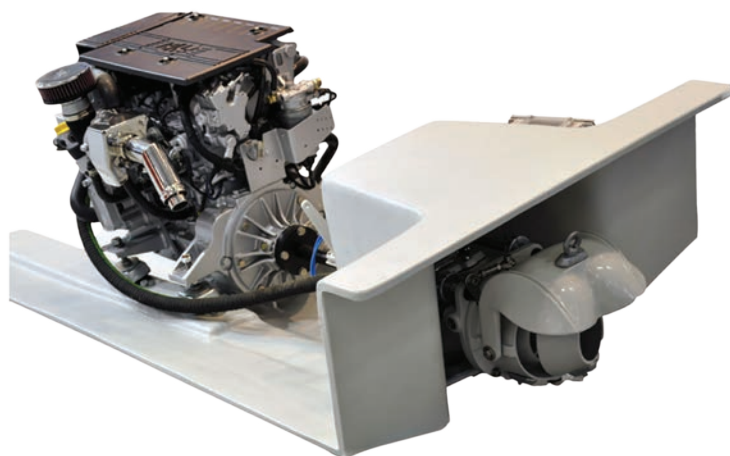
Side view



Top view



13HPE JD IN/OUTBOARD MARINE ENGINE



RELIABLE AND LONG-LASTING

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HIGH LEVEL PERFORMANCES

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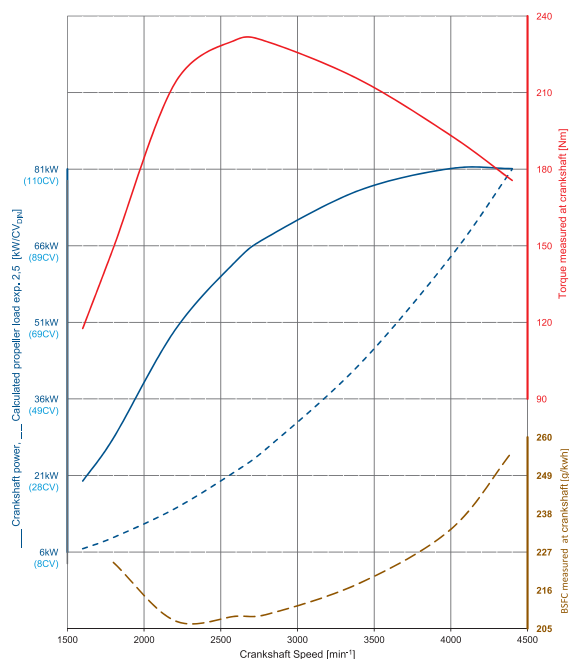
ECU DEVELOPED IN HOUSE

The engine electronic control unit (ECU) has been conceived after a 10-year development project carried out by R&D team; it is especially designed for HPE marine engines application. The ECU controls common rail system parts and included unique control strategies which can be personalized according customers' request. It guarantees excellent performances with limited emissions.

TECHNICAL DATA

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Engine speed [min-1]	4400	4000	4000
Displacement [l] (in3)	1,3 (76)	1,3 (76)	1,3 (76)
Number of cylinders	4	4	4
Bore/stroke [mm] (in)	69,6/82 (2,74/3,23)	69,6/82 (2,74/3,23)	69,6/82 (2,74/3,23)
Compression ratio	17,6:1	17,6:1	17,6:1
Dry weight without Jetdrive [kg]	175	175	175
Dry weight with Jetdrive 180 [kg]	216	216	216
Power Rating	B	C	D
Emission compliance	RCD Stage II 2013/53/UE		

PERFORMANCE CURVES



Referred to 13HPE110

Engine shown in the picture could be not equal to standard engines

TECHNICAL CHARACTERISTICS

ENGINE BLOCK AND HEAD

- Cylinder block made of cast-iron
- Cylinder head made of aluminium
- 4-valve per cylinder technology with hydraulic lash adjusters
- Double overhead camshafts
- Automotive-class availability of service and parts
- Metal chain gear

LUBRICATION SYSTEM

- Easily replaceable oil filter, on top of engine
- Easily to inspect or replace oil separator
- Oil vapour filter
- Integrated cooler with engine's coolant

FUEL SYSTEM

- Common rail fuel injection system
- CMD proprietary ECU
- Fuel filter with water separator and alarm

AIR INLET AND EXHAUST SYSTEM

- Air filter
- Oil vapours vented into inlet air
- Exhaust elbow or raiser depending on application
- Variable geometry turbocharger
- Raw-water cooled intercooler

COOLING SYSTEM

- Thermostatically regulated freshwater cooling
- Thermal unit that integrates tubular heat exchanger and expansion tank
- Easily accessible seawater impeller pump

ELECTRICAL SYSTEM

- 12V standard two-pole electrical system
- 12V-1,3kW starter
- Alternator 12V-75A
- Emergency stop button on engine's ECU
- CANBUS Panel with 8m extension and digital display of engine data

ENGINE MOUNTING

- Flexible engine mounting

PANEL INSTRUMENT CANBUS

Panel Instrument high brightness 5" TFT display, with touchscreen and a very simple and intuitive interface and offers the following features:

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- Data acquisition from traditional sensors for up to eight analog inputs, five digital inputs and one frequency input.
- Acquisition of navigation data with NMEA0183 interface.
- Up to five relay command outputs for signals and simple activations.
- Alarm monitoring according to approved safety standards.
- Automatic brightness adjustment and day / night mode.
- USB local connectivity for firmware update and configuration.

The unit is supplied already programmed and ready to work.



GEARS

IN-LINE AND COAXIAL GEARBOXES

- ZF45C (coaxial): R, 1,00:1

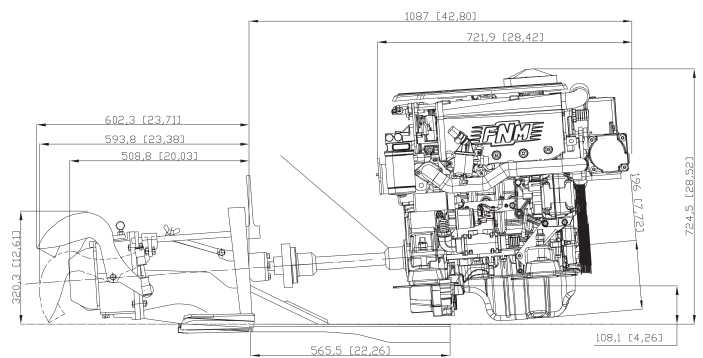
OPTIONALS

- Single or double electronic CANBUS control station
- Boiler kit for heating
- Various length panel extension
- Second control panel for flybridge installations
- RACOR and Mediterraneo filters
- Trolling Valve
- Additional PTO (ISO4183 B/SPB)
- NMEA2000 compatibility kit
- Wide range of additional instruments

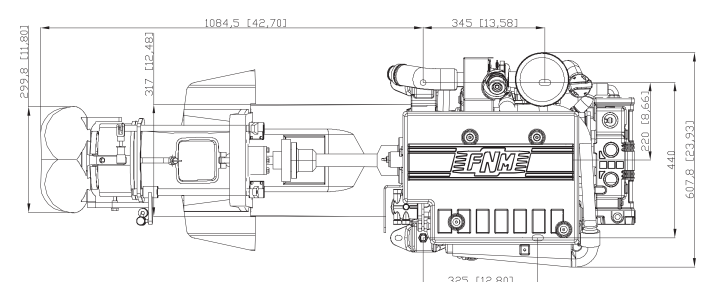
DIMENSIONAL

FNM 13HPE with Jet Drive 160

Side view



Top view



FNM Marine Diesel Engines
it's a brand
CMD a Loncin Company

Nucleo Industriale · Valle di Vitalba · 85020 · Atella (Pz) · Italia
Tel. (+39) 0972 715757 · support@fnm-marine.it · www.fnm-marine.it



13HPE SD SAIL DRIVE MARINE ENGINE



RELIABLE AND LONG-LASTING

FNM® 4-cylinder 13HPE marine engine is built according 1,3 Multijet II features, a key product for small diesel engines in automotive industry. The engine uses a common-rail fuel injection system controlled by an electronic control unit developed in house, made specifically for this unit. The result is a high power-to-displacement ratio unit.

HIGH LEVEL PERFORMANCES

Set either for recreational use, where the engine reaches up to 81kW (110HP), or for any commercial purpose, where it can achieve up to 3000h/year, this unit guarantees excellent performances at each kind of operating condition.

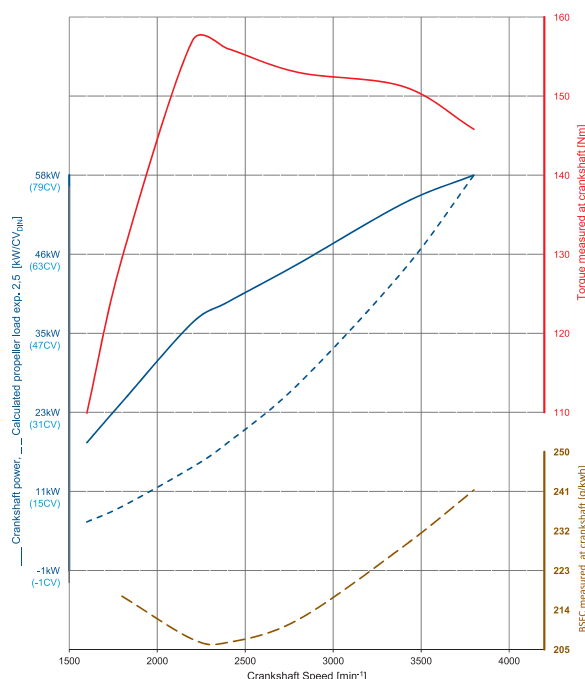
ECU DEVELOPED IN HOUSE

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TECHNICAL DATA

Engine model	13 HPE 80
Crankshaft Power [kW] (hp)	59 (80)
Propeller shaft power [kW] (hp)	57 (78)
Engine speed [min ⁻¹]	3800
Displacement [l] (in ³)	1,3 (76)
Number of cylinders	4
Bore/stroke [mm] (in)	69,6/82 (2,74/3,23)
Compression ratio	17,6:1
Dry weight with Sail Drive [kg]	220
Power Rating	C
Emission compliance	RCD Stage II 2013/53/UE

PERFORMANCE CURVES



Engine shown in the picture could be not equal to standard engines

Referred to 13HPE SD 80

TECHNICAL CHARACTERISTICS

ENGINE BLOCK AND HEAD

- Cylinder block made of cast-iron
- Cylinder head made of aluminium
- 4-valve per cylinder technology with hydraulic lash adjusters
- Double overhead camshafts
- Automotive-class availability of service and parts
- Metal chain gear

LUBRICATION SYSTEM

- Easily replaceable oil filter, on top of engine
- Easily to inspect or replace oil separator
- Oil vapour filter
- Integrated cooler with engine's coolant

FUEL SYSTEM

- Common rail fuel injection system
- CMD proprietary ECU
- Fuel filter with water separator and alarm

AIR INLET AND EXHAUST SYSTEM

- Air filter
- Oil vapours vented into inlet air
- Exhaust elbow or raiser depending on application
- Variable geometry turbocharger
- Raw-water cooled intercooler

COOLING SYSTEM

- Thermostatically regulated freshwater cooling
- Thermal unit that integrates tubular heat exchanger and expansion tank
- Easily accessible seawater impeller pump

ELECTRICAL SYSTEM

- 12V standard two-pole electrical system
- 12V-1,3kW starter
- Alternator 12V-75A
- Emergency stop button on engine's ECU
- CANBUS Panel with 8m extension and digital display of engine data

ENGINE MOUNTING

- Flexible engine mounting

PANEL INSTRUMENT CANBUS

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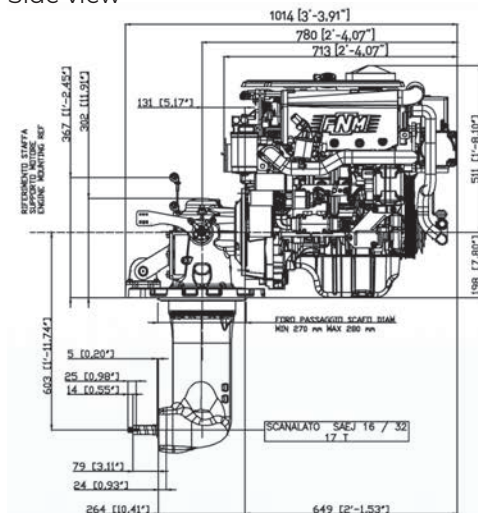
- Engine data acquisition with CANBUS J1939 interface.
- Data acquisition from traditional sensors for up to eight analog inputs, five digital inputs and one frequency input.
- Acquisition of navigation data with NMEA0183 interface.
- Up to five relay command outputs for signals and simple activations.
- Alarm monitoring according to approved safety standards.
- Automatic brightness adjustment and day / night mode.
- USB local connectivity for firmware update and configuration.



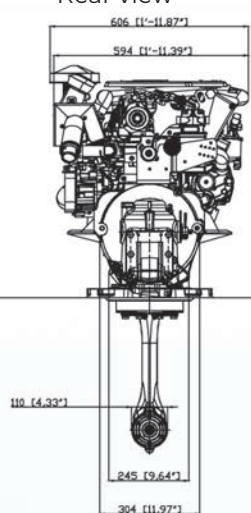
The unit is supplied already programmed and ready to work.

DIMENSIONAL FNM 13HPE SP with SEADROP 60

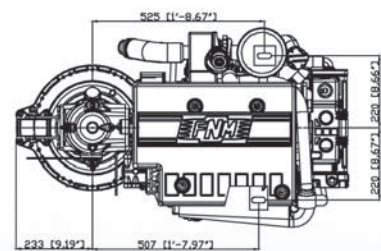
Side view



Rear view



Top view



OPTIONALS

- Spinner for fixed blade propellers
- VTR Tecnodrive engine base
- Boats template
- Single or double electronic CANBUS control station
- Boiler kit for heating
- Various length panel extension
- Second control panel for flybridge installations
- RACOR and Mediterraneo filters
- 90A alternator
- Wide range of additional instruments
- Flange for application without VTR base
- Water Sensor



20HPE INBOARD MARINE ENGINE



RELIABLE AND LONG-LASTING

FNM® 4-cylinder 20HPE engine is conceived according to GM B-family platform, equips a large number of small and medium size cars in Europe. The engine uses a common-rail fuel injection system controlled by an electronic control unit developed in house, especially made for it. The engine is small, powerful and reliable and the availability of spare parts make this engine suitable of.

HIGH LEVEL PERFORMANCES

Set either for recreational use, where the engine reaches up to 129kW (175HP), or for any commercial purpose, where it can achieve up to 3000h/year, this unit guarantees excellent performances at each kind of operating condition.

ECU DEVELOPED IN HOUSE

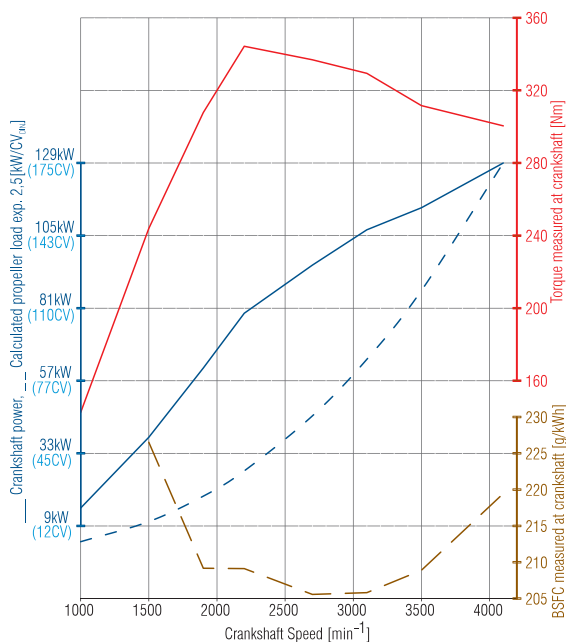
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TECHNICAL DATA

Engine model	20HPE 180	20HPE 150	20HPE 120	20HPE 100	20HPE 40
Crankshaft Power [kW] (hp)	129 (175)	108 (147)	88 (120)	73 (100)	29 (40)
Propeller shaft power [kW] (hp)	125 (170)	105 (143)	85 (116)	71 (97)	28 (39)
Engine speed [min ⁻¹]	4100	4100	3800	3800	3200
Displacement [l] (in ³)	2,0 (119)	2,0 (119)	2,0 (119)	2,0 (119)	2,0 (119)
Number of cylinders	4	4	4	4	4
Bore/stroke [mm] (in)	83,0/90,4 (3,27/3,56)	83,0/90,4 (3,27/3,56)	83,0/90,4 (3,27/3,56)	83,0/90,4 (3,27/3,56)	83,0/90,4 (3,27/3,56)
Compression ratio	16,5:1	16,5:1	16,5:1	16,5:1	16,5:1
Dry weight with TM 485A [kg]	301	301	301	301	301
Dry weight with ZF 485D [kg]	312	312	312	312	312
Power Rating	A	B	C	D	D

Emission compliance RCD Stage II 2013/53/UE

PERFORMANCE CURVES



Referred to 20HPE 180

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TECHNICAL CHARACTERISTICS

ENGINE BLOCK AND HEAD

- Cylinder block made of cast-iron
- Cylinder head made of aluminium
- 4-valve per cylinder technology with hydraulic lash adjusters
- Double overhead camshafts
- Oil-cooled pistons with compression and scraper rings
- Automotive-class availability of service and parts
- Rubber belt timing

LUBRICATION SYSTEM

- Oil filter
- Oil separator with filtering technology
- Integrated cooler with engine's coolant

FUEL SYSTEM

- Common rail fuel injection system
- CMD proprietary ECU
- Fuel filter with water separator and alarm

ENGINE MOUNTING

- Flexible engine mounting

AIR INLET AND EXHAUST SYSTEM

- Air filter
- Oil vapours vented into inlet air
- Exhaust elbow or raiser depending on application
- Coolant-cooled turbocharger
- Raw-water cooled intercooler

COOLING SYSTEM

- Exhaust manifold coolantcooled
- Thermostatically regulated freshwater cooling
- Thermal unit that integrates thermostat and tubular heat exchanger
- Easily accessible seawater impeller pump

ELECTRICAL SYSTEM

- 12V standard two-pole electrical system
- 12V-2,3kW starter
- Alternator 12V-110A
- Emergency stop button on engine's ECU
- CANBUS Panel with 8m extension and digital display of engine data

PANEL INSTRUMENT CANBUS

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GEARS

ANGLED GEARBOXES

- TM345A (8°) (20HPE100/40): R. 1,54:1, 2,00:1, 2,47:1
- TM485A1 (8°): R. 1,51:1, 2,09:1, 2,40:1
- ZF25A (8°) (20HPE120/100/40): R. 1,55:1, 1,93:1, 2,48:1, 2,23:1, 2,71:1
- ZF45A (8°): R. 1,26:1, 1,51:1, 2,03:1, 2,43:1

V-LINE GEARBOXES

- ZF45-IV (20°): R. 1,21:1, 1,46:1

IN-LINE AND COAXIAL GEARBOXES

- ZF45-1 (in line): R. 2,20:1, 2,5:1, 3,03:1, 3,74:1
- ZF45C (coaxial): R. 1,00:1

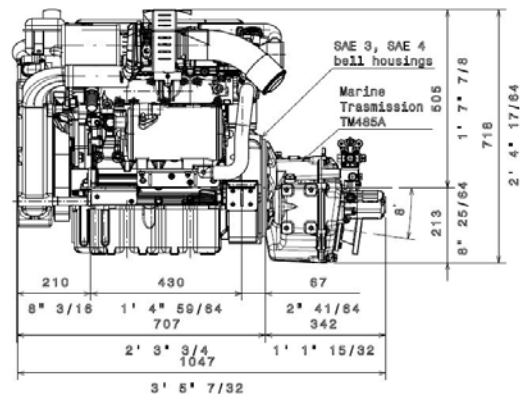
OPTIONALS

- Single or double electronic CANBUS control station
- Boiler kit for heating
- Various length panel extension
- Second control panel for flybridge installations
- RACOR and Mediterraneo filters
- Trolling Valve
- NMEA2000 compatibility kit
- Wide range of additional instruments

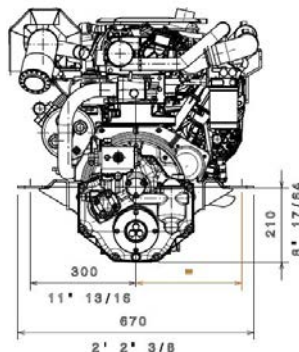
DIMENSIONAL

FNM20HPE with inverter TM485A

Side view



Top view



20HPEP IN/OUTBOARD MARINE ENGINE



RELIABLE AND LONG-LASTING

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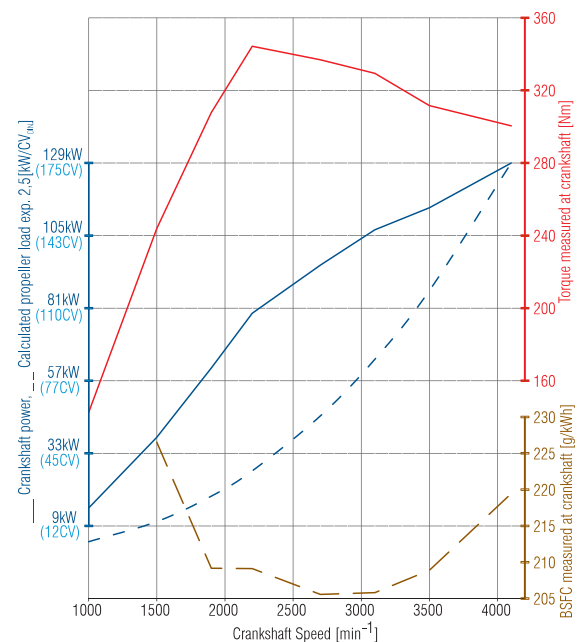
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Propeller shaft power [kW] (hp)	125 (170)	105 (143)	85 (116)	71 (97)	28 (39)
Engine speed [min⁻¹]	4100	4100	3800	3800	3200
Displacement [l] (in³)	2,0 (119)	2,0 (119)	2,0 (119)	2,0 (119)	2,0 (119)
Number of cylinders	4	4	4	4	4
Bore/stroke [mm] (in)	83,0/90,4 (3,27/3,56)	83,0/90,4 (3,27/3,56)	83,0/90,4 (3,27/3,56)	83,0/90,4 (3,27/3,56)	83,0/90,4 (3,27/3,56)
Compression ratio	16,5:1	16,5:1	16,5:1	16,5:1	16,5:1
Dry weight with TM 485A [kg]	301	301	301	301	301
Dry weight with ZF 485D [kg]	312	312	312	312	312
Power Rating	A	B	C	D	D
Emission compliance	RCD Stage II 2013/53/UE				

PERFORMANCE CURVES



Engine shown in the picture could be not equal to standard engines

TECHNICAL CHARACTERISTICS

ENGINE BLOCK AND HEAD

- Cylinder block made of cast-iron
- Cylinder head made of aluminium
- 4-valve per cylinder technology with hydraulic lash adjusters
- Double overhead camshafts
- Oil-cooled pistons with compression and scraper rings
- Automotive-class availability of service and parts
- Rubber belt timing

LUBRICATION SYSTEM

- Oil filter
- Oil separator with filtering technology
- Integrated cooler with engine's coolant

FUEL SYSTEM

- Common rail fuel injection system
- CMD proprietary ECU
- Fuel filter with water separator and alarm

ENGINE MOUNTING

- Flexible engine mounting

AIR INLET AND EXHAUST SYSTEM

- Air filter
- Oil vapours vented into inlet air
- Exhaust elbow or raiser depending on application
- Coolant-cooled turbocharger
- Raw-water cooled intercooler

COOLING SYSTEM

- Exhaust manifold coolantcooled
- Thermostatically regulated freshwater cooling
- Thermal unit that integrates thermostat and tubular heat exchanger
- Easily accessible seawater impeller pump

ELECTRICAL SYSTEM

- 12V standard two-pole electrical system
- 12V-2,3kW starter
- Alternator 12V-110A
- Emergency stop button on engine's ECU
- CANBUS Panel with 8m extension and digital display of engine data

PANEL INSTRUMENT CANBUS

Panel Instrument high brightness 5" TFT display, with touchscreen and a very simple and intuitive interface and offers the following features:

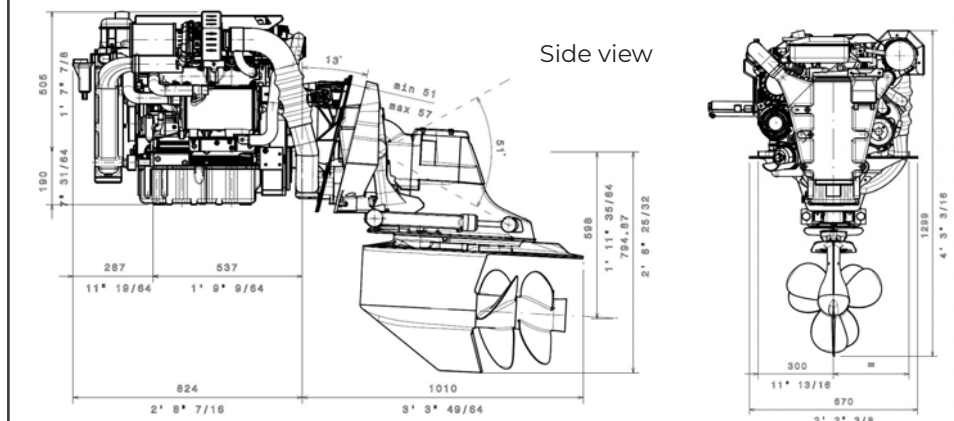
- Engine data acquisition with CANBUS J1939 interface.
- Data acquisition from traditional sensors for up to eight analog inputs, five digital inputs and one frequency input.
- Acquisition of navigation data with NMEA0183 interface.
- Up to five relay command outputs for signals and simple activations.
- Alarm monitoring according to approved safety standards
- Automatic brightness adjustment and day / night mode.
- USB local connectivity for firmware update and configuration.



The unit is supplied already programmed and ready to work.

DIMENSIONAL

FNM20HPEP BRAVO 3

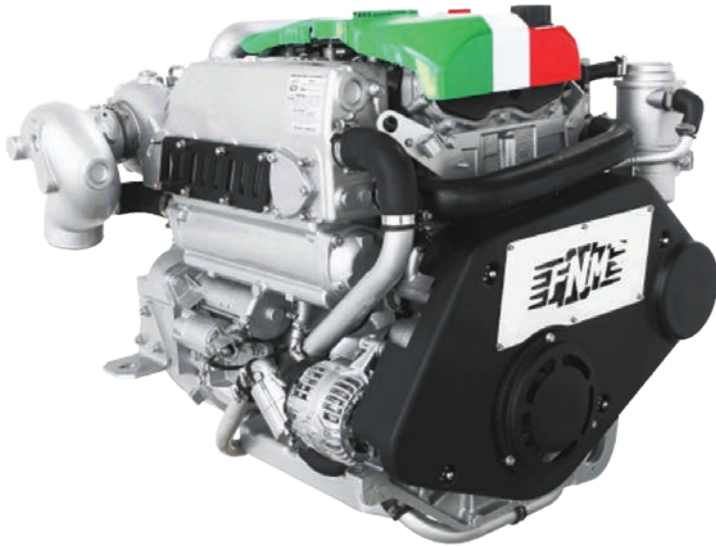


OPTIONALS AND GEAR

- Single or double electronic CANBUS control station
- Boiler kit for heating
- Various length panel extension
- Second control panel for flybridge installations
- RACOR and Mediterraneo filters
- Trolling Valve
- Additional PTO (ISO4183 Z/SPZ)
- Steering pump
- NMEA2000 compatibility kit
- Wide range of additional instruments
- BRAVO X-1 stern drive Red. 1,65:1 or BRAVO 2 Red.2:1 - BRAVO 3 Red. 2:1
- Stainless steel propeller for BRAVO X-1
- Aluminium propeller for BRAVO X-2
- Stainless steel propeller for BRAVO X-3
- Multiple Sterndrive Steering Tie for twin-engine
- Alignment tool
- Volvo coupler kit



30HPE INBOARD MARINE ENGINE



RELIABLE AND LONG-LASTING

FNM® 4-cylinder 30HPE engine is conceived according best-seller FIC platform requirements. The engine uses a common-rail fuel injection system controlled by an electronic control unit developed in house, especially made for it. The result is a high power-to-displacement ratio unit.

HIGH LEVEL PERFORMANCES

Set either for recreational use, where the engine reaches up to 184kW (250HP), or for any commercial purpose, where it can achieve up to 3000h/year, this unit guarantees excellent performances at each kind of operating condition.

ECU DEVELOPED IN HOUSE

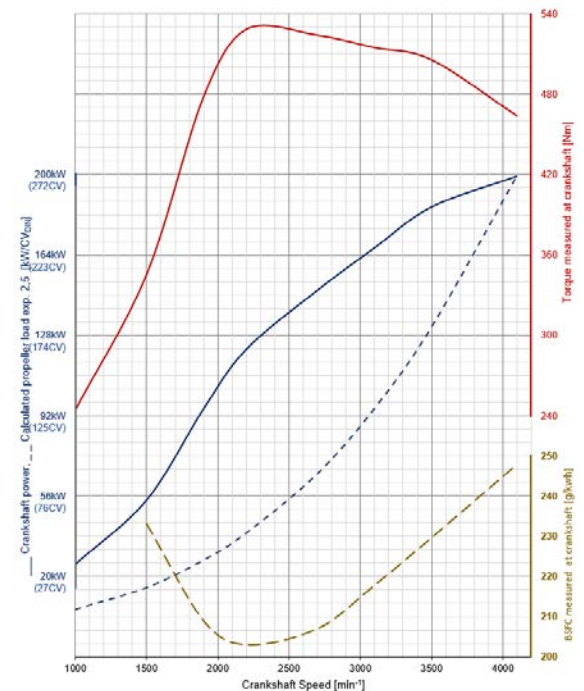
The engine electronic control unit (ECU) has been conceived after a 10-year development project carried out by R&D team; it is especially designed for HPE marine engines application. The ECU controls common rail system parts and included unique control strategies which can be personalized according customers' request. It guarantees excellent performances with limited emissions.

TECHNICAL DATA

NEW

Engine model	30 HPE 270	30 HPE 250	30 HPE 225	30 HPE 180
Max. Power	198,5 kW 270 HP 4100 rpm	184 kW 250 HP 4100 rpm	165 kW 225 HP 4100 rpm	132 kW 180 HP 3800 rpm
Max. Torque	530 Nm 2300 rpm	N.D.	N.D.	N.D.
Number of cylinders	4 in line			
Displacement	2.934 cc			
Bore and Stroke	95,8x104 mm			
Dry Weight	320 Kg			
Cooling	Water			
Combustion	Direct Injection Common Rail			
Induction	Turbocharged and intercooled			
Emission	RCD Stage 2			
Dimension (mm)	753(H) x 730(L) x 750(W)			

PERFORMANCE CURVES



Referred to 30HPE 270

Engine shown in the picture could be not equal to standard engines

Technical data according ISO8665, fuel according EN590 standards. Fuel available on the market could have different specifications, influencing engine's power and consumptions. Production tolerance within 5% (on power). Not all produced models, equipments and accessories could be available in all countries.

TECHNICAL CHARACTERISTICS

ENGINE BLOCK AND HEAD

- Cylinder block made of cast-iron
- Cylinder head made of aluminium
- 4-valve per cylinder technology with hydraulic lash adjusters
- Double overhead camshafts
- Automotive-class availability of service and parts
- Metal chain gear

LUBRICATION SYSTEM

- Easily replaceable oil filter, on top of engine
- Easily to inspect or replace oil separator, on top of engine
- Double oil vapour filter technology
- Integrated cooler with engine's coolant

FUEL SYSTEM

- Common rail fuel injection system
- CMD proprietary ECU
- Fuel filter with water separator and alarm

AIR INLET AND EXHAUST SYSTEM

- Commercial-grade air filter
- Oil vapours vented into inlet air
- Exhaust elbow or raiser depending on application
- Coolant-cooled turbocharger
- Raw-water cooled intercooler

COOLING SYSTEM

- Thermostatically regulated freshwater cooling
- Thermal unit that integrates exhaust manifold, thermostat, tubular heat exchanger and expansion tank
- Easily accessible seawater impeller pump

ELECTRICAL SYSTEM

- 12V standard two-pole electrical system
- 12V-2,3kW starter
- Alternator 12V-110A
- Emergency stop button on engine's ECU
- CANBUS Panel with 8m extension and digital display of engine data

ENGINE MOUNTING

- Flexible engine mounting

PANEL INSTRUMENT CANBUS

Panel Instrument high brightness 5" TFT display, with touchscreen and a very simple and intuitive interface and offers the following features:

- Engine data acquisition with CANBUS J1939 interface.
- Data acquisition from traditional sensors for up to eight analog inputs, five digital inputs and one frequency input.
- Acquisition of navigation data with NMEA0183 interface.
- Up to five relay command outputs for signals and simple activations.
- Alarm monitoring according to approved safety standards.
- Automatic brightness adjustment and day / night mode.
- USB local connectivity for firmware update and configuration.

The unit is supplied already programmed and ready to work.



GEARS

ANGLED GEARBOXES

- TM485 A (10°): R. 1,53:1, 2,08:1, 2,60:1
- ZF 45 A

V-LINE GEARBOXES

- ZF63-IV (12°): R. 1,29:1, 1,56:1, 1,99:1, 2,48:1

IN-LINE AND COAXIAL GEARBOXES

- ZF 45 D (in line): R. 1,26:1, 1,51:1, 1,75:1, 1,93:1, 2,48:1, 2,78:1
- ZF63C (coaxial): R. 1,00:1

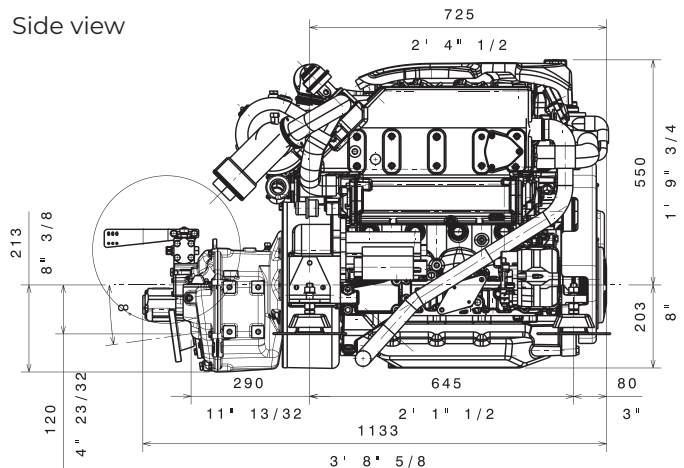
OPTIONALS

- Single or double electronic CANBUS control station
- Boiler kit for heating
- Various length panel extension
- Second control panel for flybridge installations
- RACOR and Mediterraneo filters
- Trolling Valve
- Additional PTO (ISO4183 Z/SPZ)
- Steering pump
- NMEA2000 compatibility kit
- Wide range of additional instruments

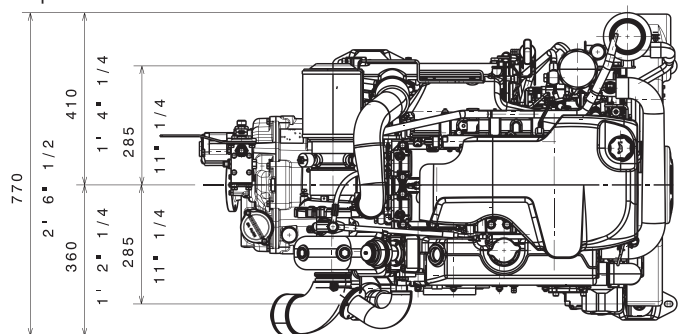
DIMENSIONAL

FNM 30HPE with gearboxes TM485 A

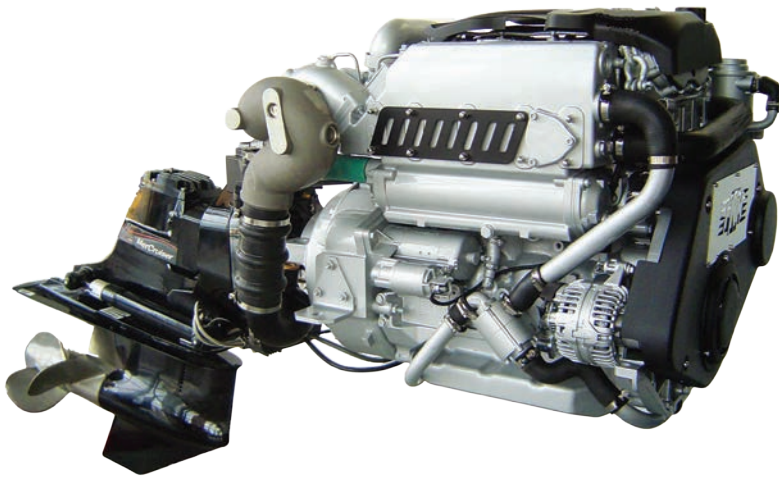
Side view



Top view



30HPEP IN/OUTBOARD MARINE ENGINE



RELIABLE AND LONG-LASTING

FNM® 4-cylinder 30HPE engine is conceived according best-seller FIC platform requirements. The engine uses a common-rail fuel injection system controlled by an electronic control unit developed in house, especially made for it. The result is a high power-to-displacement ratio unit.

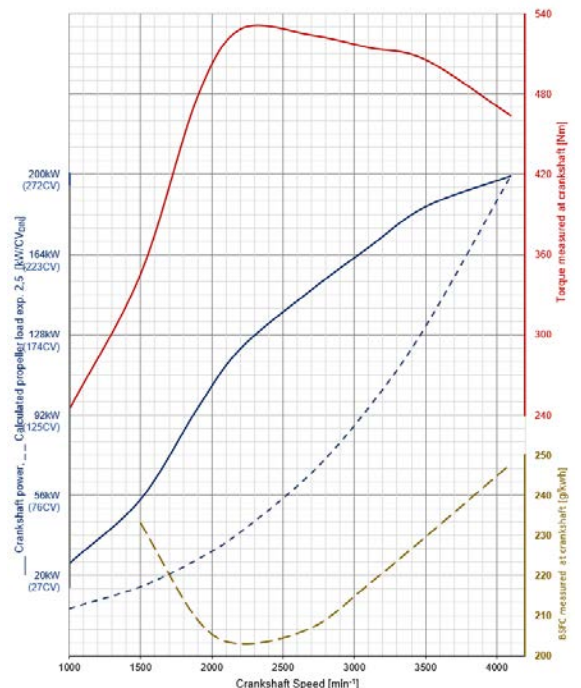
HIGH LEVEL PERFORMANCES

Set either for recreational use, where the engine reaches up to 184kW (250HP), or for any commercial purpose, where it can achieve up to 3000h/year, this unit guarantees excellent performances at each kind of operating condition.

ECU DEVELOPED IN HOUSE

The engine electronic control unit (ECU) has been conceived after a 10-year development project carried out by R&D team; it is especially designed for HPE marine engines application. The ECU controls common rail system parts and included unique control strategies which can be personalized according customers' request. It guarantees excellent performances with limited emissions.

PERFORMANCE CURVES



Referred to 30HPE 270

TECHNICAL DATA

NEW

Engine model	30 HPEP 270	30 HPEP 250	30 HPEP 225	30 HPEP 180
Max. Power	198,5 kW 270 HP 4100 rpm	184 kW 250 HP 4100 rpm	165 kW 225 HP 4100 rpm	132 kW 180 HP 3800 rpm
Max. Torque	530 Nm 2300 rpm	N.D.	N.D.	N.D.
Number of cylinders	4 in line			
Displacement	2.934 cc			
Bore and Stroke	95,8x104 mm			
Dry Weight	320 Kg			
Cooling	Water			
Combustion	Direct Injection Common Rail			
Induction	Turbocharged and intercooled			
Emission	RCD Stage 2			
Dimension (mm)	753(H) x 730(L) x 750(W)			

Engine shown in the picture could be not equal to standard engines

TECHNICAL CHARACTERISTICS

ENGINE BLOCK AND HEAD

- Cylinder block made of cast-iron
- Cylinder head made of aluminium
- 4-valve per cylinder technology with hydraulic lash adjusters
- Double overhead camshafts
- Oil-cooled pistons with compression and scraper rings
- Five bearing crankshaft
- Automotive-class availability of service and parts
- Metal chain gear

LUBRICATION SYSTEM

- Easily replaceable oil filter, on top of engine
- Easily to inspect or replace oil separator, on top of engine
- Double oil vapour filter technology
- Integrated cooler with engine's coolant

FUEL SYSTEM

- Common rail fuel injection system
- CMD proprietary ECU
- Fuel filter with water separator and alarm

AIR INLET AND EXHAUST SYSTEM

- Commercial-grade air filter
- Oil vapours vented into inlet air
- Exhaust elbow or raiser depending on application
- Coolant-cooled turbocharger
- Raw-water cooled intercooler

COOLING SYSTEM

- Thermostatically regulated freshwater cooling
- Thermal unit that integrates exhaust manifold, thermostat, tubular heat exchanger and expansion tank
- Easily accessible seawater impeller pump

ELECTRICAL SYSTEM

- 12V standard two-pole electrical system
- 12V-2,3kW starter
- Alternator 12V-110A
- Emergency stop button on engine's ECU
- CANBUS Panel with 8m extension and digital display of engine data

ENGINE MOUNTING

- Flexible engine mounting

PANEL INSTRUMENT CANBUS

Panel Instrument high brightness 5 "TFT display, with touchscreen and a very simple and intuitive interface and offers the following features:

- Engine data acquisition with CANBUS J1939 interface.
- Data acquisition from traditional sensors for up to eight analog inputs, five digital inputs and one frequency input.
- Acquisition of navigation data with NMEA0183 interface.
- Up to five relay command outputs for signals and simple activations.
- Alarm monitoring according to approved safety standards.
- Automatic brightness adjustment and day / night mode.
- USB local connectivity for firmware update and configuration.

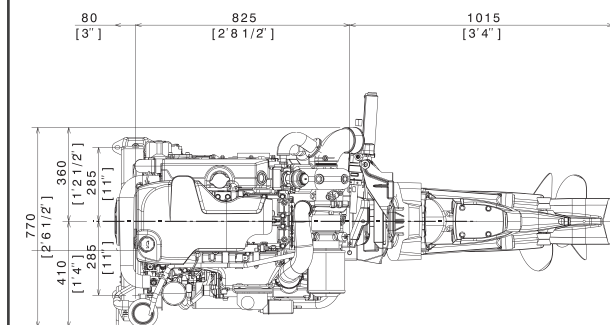


The unit is supplied already programmed and ready to work.

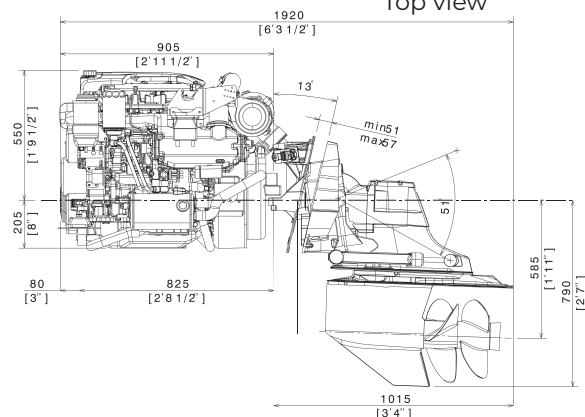
DIMENSIONAL

FNM30HPEP BRAVO 3

Side view



Top view



OPTIONALS AND GEAR

- Single or double electronic CANBUS control station
- Boiler kit for heating
- Various length panel extension
- Second control panel for flybridge installations
- RACOR and Mediterraneo filters
- Trolling Valve
- Additional PTO (ISO4183 Z/SPZ)
- Steering pump
- NMEA2000 compatibility kit
- Wide range of additional instruments
- BRAVO X-1 stern drive Red.1,65:1 or BRAVO 2 Red.2:1 - BRAVO 3 Red. 2:1
- Stainless steel propeller for BRAVO X-1
- Aluminium propeller for BRAVO X-2
- Stainless steel propeller for BRAVO X-3
- Multiple Sterndrive Steering Tie for twin-engine
- Alignment tool
- Volvo coupler kit



42HPE

INBOARD MARINE ENGINE



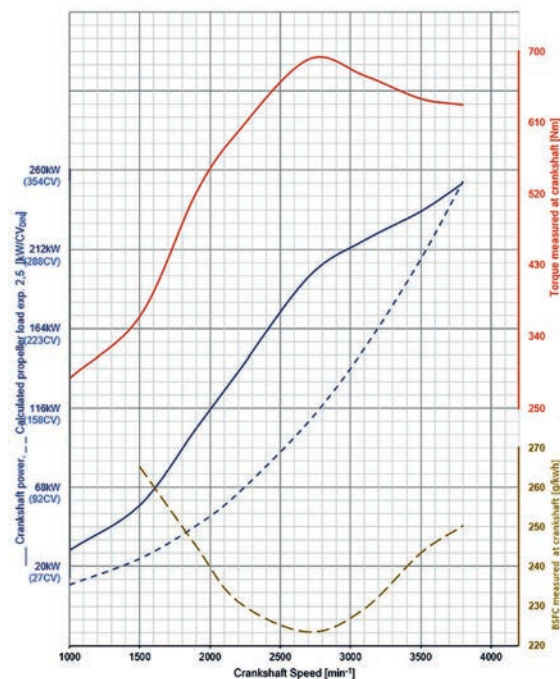
FEATURES

4 stroke turbocharged and aftercooled, direct injection diesel engine with electronically controlled common rail injection. Cooling controlled by separate fresh and salt water circuits, with extractable hoses for easy maintenance. Lube oil, water and air circuits designed to reduce external flexible pipes to a minimum to reduce loss of liquids in the bilge. Auxiliary devices driven by Poly-V belt to ensure excellent power transfer and long life. Electrical circuit protected by reactivateable valves.

TECHNICAL DATA

Engine model	42 HPE 350	42 HPE 330	42 HPE 300	42 HPE 280	42 HPE 150
Max. Power	257 kW 350 HP 3800 rpm	242,6 kW 330 HP 3800 rpm	220,6 kW 300 HP 3800 rpm	206 kW 280 HP 3800 rpm	110 kW 150 HP 3800 rpm
Max. Torque	700 Nm 71.4 Kgm 2700 rpm	657 Nm 67 Kgm 2700 rpm	657 Nm 67 Kgm 2700 rpm	657 Nm 67 Kgm 2700 rpm	330 Nm 33.6 Kgm 2700 rpm
Number of Cylinders	6 in line				
Displacement	4.164 cc				
Bore and Stroke	94x100 mm				
Dry Weight	460 Kg - 1014 lbs				
Cooling	Water				
Combustion	Direct Injection Common Rail				
Induction	Turbocharged and intercooled				
Emissions	RCD Stage2				
Dimension (mm)	806(H) x 1188(L) x 762(W)				

PERFORMANCE CURVES



Referred to 42HPE 350

Engine shown in the picture could be not equal to standard engines

Technical data according ISO8665, fuel according EN590 standards. Fuel available on the market could have different specifications, influencing engine's power and consumptions. Production tolerance within 5% (on power). Not all produced models, equipments and accessories could be available in all countries.

STANDARD EQUIPMENT

- SAE flywheel housing
- Starter motor 12V
- Alternator 12V-110A
- Oil and fuel filters
- Air filter
- Freshwater engine cooling system with seawater heat exchanger
- Engine lubricating oil cooled by heat exchanger seawater cooled
- Freshwater cooled exhaust manifold and freshwater turbocharger

- Bronze seawater circulating pump with impeller in special rubber
- Centrifugal pump for freshwater circulation
- Drain oil pump
- Expansion tank integrated
- Stainless steel exhaust gas/seawater mixer
- Flexible mounts
- Electrical instrument panel with alarms
- 8m. panel cable extension
- White paint finish

GEARS

ANGLED GEARBOXES

- TM880 A (10°): R. 1,53:1, 2,08:1, 2,60:1
- ZF 63 D - A

V-LINE GEARBOXES

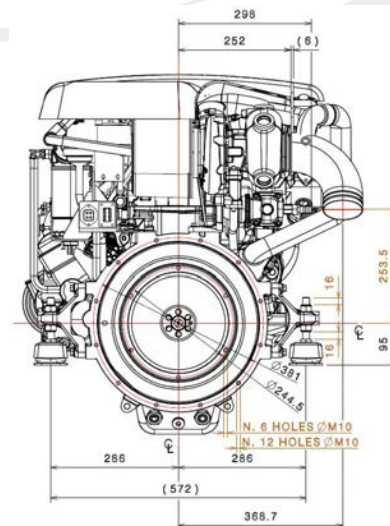
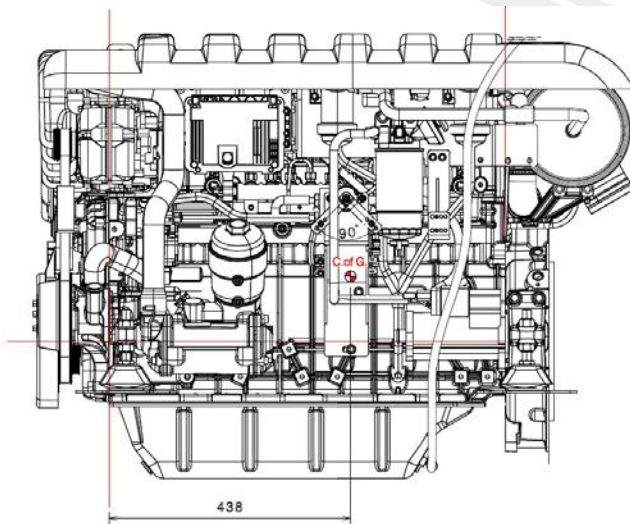
- ZF63-IV (12°): R. 1,29:1, 1,56:1, 1,99:1, 2,48:1

IN-LINE AND COAXIAL GEARBOXES

- ZF63C (coaxial): R. 1,00:1

DIMENSIONAL

Side view



PANEL INSTRUMENT CANBUS

Panel Instrument high brightness 5 "TFT display, with touchscreen and a very simple and intuitive interface and offers the following features:

- Engine data acquisition with CANBUS J1939 interface.
- Data acquisition from traditional sensors for up to eight analog inputs, five digital inputs and one frequency input.
- Acquisition of navigation data with NMEA0183 interface.
- Up to five relay command outputs for signals and simple activations.
- Alarm monitoring according to approved safety standards.
- Automatic brightness adjustment and day / night mode.
- USB local connectivity for firmware update and configuration.

The unit is supplied already programmed and ready to work.



OPTIONALS

- Single or double electronic CANBUS control station
- Boiler kit for heating
- Various length panel extension
- Second control panel for flybridge installations
- Fuel and seawater filters
- Power steering pump
- Trolling Valve
- NMEA2000 compatibility kit
- Wide range of additional instruments

42HPEP

INBOARD MARINE ENGINE



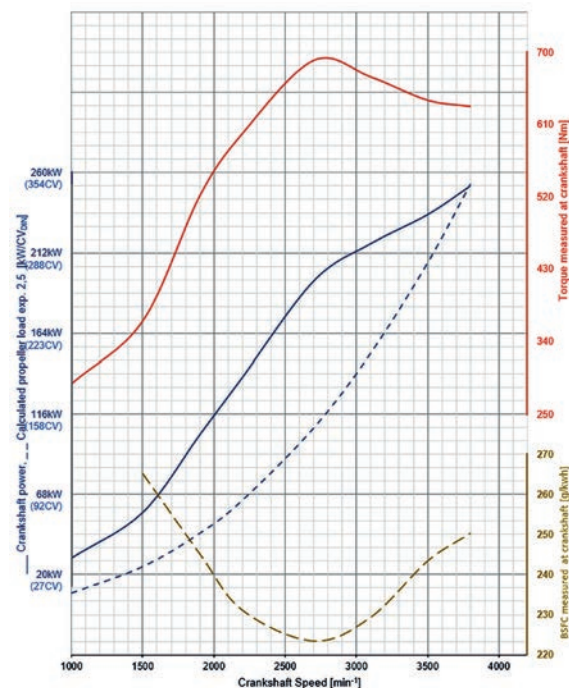
FEATURES

4 stroke turbocharged and aftercooled, direct injection diesel engine with electronically controlled common rail injection. Cooling controlled by separate fresh and salt water circuits, with extractable hoses for easy maintenance. Lube oil, water and air circuits designed to reduce external flexible pipes to a minimum to reduce loss of liquids in the bilge. Auxiliary devices driven by Poly-V belt to ensure excellent power transfer and long life. Electrical circuit protected by reactivateable valves.

TECHNICAL DATA

Engine model	42 HPEP 350	42 HPEP 330	42 HPEP 300	42 HPEP 280	42 HPEP 150
Max. Power	257 kW 350 HP 3800 rpm	242,6 kW 330 HP 3800 rpm	220,6 kW 300 HP 3800 rpm	206 kW 280 HP 3800 rpm	110 kW 150 HP 3800 rpm
Max. Torque	700 Nm 71.4 Kgm 2700 rpm	657 Nm 67 Kgm 2700 rpm	657 Nm 67 Kgm 2700 rpm	657 Nm 67 Kgm 2700 rpm	330 Nm 33.6 Kgm 2700 rpm
Number of Cylinders	6 in line				
Displacement	4.164 cc				
Bore and Stroke	94x100 mm				
Dry Weight	460 Kg - 1014 lbs				
Cooling	Water				
Combustion	Direct Injection Common Rail				
Induction	Turbocharged and intercooled				
Emissions	RCD Stage2				
Dimension (mm)	806(H) x 1188(L) x 762(W)				

PERFORMANCE CURVES



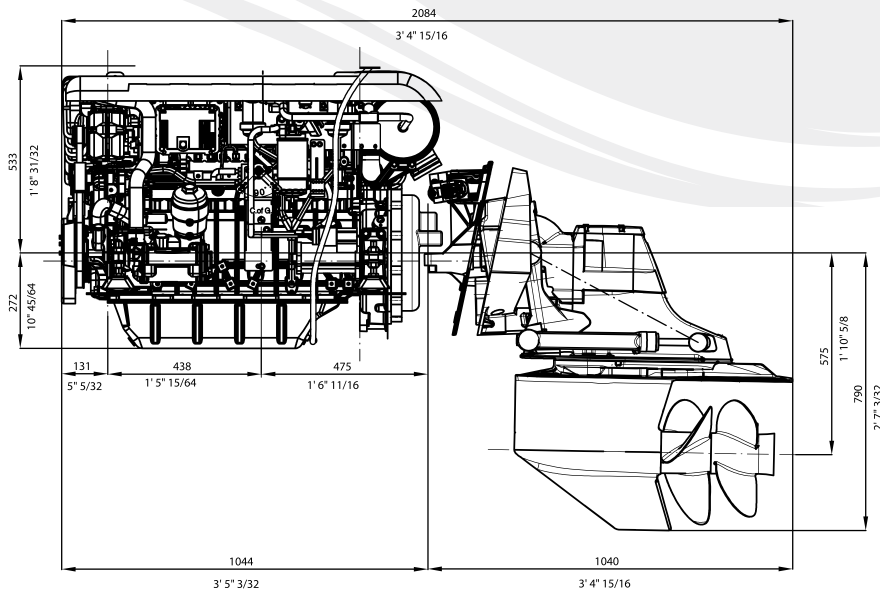
Engine shown in the picture could be not equal to standard engines

STANDARD EQUIPMENT

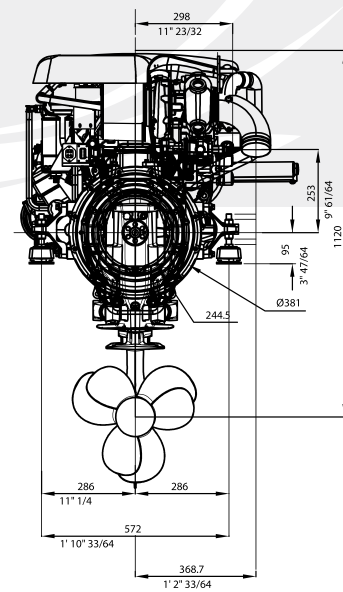
- SAE flywheel housing
- Starter motor 12V
- Alternator 12V-110A
- Oil and fuel filters
- Air filter
- Freshwater engine cooling system with seawater heat exchanger
- Engine lubricating oil cooled by heat exchanger seawater cooled
- Freshwater cooled exhaust manifold and freshwater turbocharger
- Bronze seawater circulating pump with impeller in special rubber
- Centrifugal pump for freshwater circulation
- Drain oil pump
- Expansion tank integrated
- Stainless steel exhaust gas/seawater mixer
- Flexible mounts
- Electrical instrument panel with alarms
- 8m. panel cable extension
- White paint finish

DIMENSIONAL

Side view 42HPEP BRAVO 3



Front view 42HPEP



PANEL INSTRUMENT CANBUS

Panel Instrument high brightness 5" TFT display, with touchscreen and a very simple and intuitive interface and offers the following features:

- Engine data acquisition with

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- Data acquisition from traditional sensors for up to eight analog inputs, five digital inputs and one frequency input.
- Acquisition of navigation data with NMEA0183 interface.
- Up to five relay command outputs for signals and simple activations.
- Alarm monitoring according

to approved safety standards.

- Automatic brightness adjustment and day / night mode.
- USB local connectivity for firmware update and configuration.

The unit is supplied already programmed and ready to work.



OPTIONALS AND GEAR

- Single or double electronic CANBUS control station
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- Aluminium propeller for BRAVO X-2
- Stainless steel propeller for BRAVO X-3
- Multiple Sterndrive Steering Tie for twin-engine
- Alignment tool
- Coupler kit
- NMEA2000 compatibility kit
- Wide range of additional instruments

