

#### MARINE PLEASURE

Our efficiency. Your edge.



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Our efficiency. Your edge.

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FPT Industrial is a Brand of Iveco Group, dedicated to the design, production, and sale of powertrains and solutions for on- and off-road vehicles, as well as marine and power generation applications.

At FPT Industrial sustainability is a common underlying commitment, through the entire product development and as a corporate approach.

The extensive product offering includes six engine ranges with power outputs from 30 hp to over 1,000 hp, transmissions with torque up to 500 Nm and front and rear axles from 2.45 to 32 tonne GAW (Gross Axle Weight).

FPT Industrial offers the most complete line-up of natural gas engines for on- and off-road applications on the market, with power outputs ranging from 50 to 520 hp.

A dedicated ePowertrain division is accelerating the path towards net zero-emissions mobility with electric drivelines, battery packs and battery management systems. This extensive offering and its strong focus on R&D makes FPT Industrial a world leader in industrial powertrains and solutions.

We are proud to be a Company driven by sustainability and innovation, one which builds Customer advantage through continuous research and improvement and creates value by leveraging this advantage.

# THE WAVE OF INNOVATION

FPT Industrial Marine Pleasure Introduction

#### Superior Technology & Outstanding Advantages

With over 50 years of marine propulsion expertise, FPT Industrial propels a wide range of vessels worldwide with cutting-edge solutions. Our comprehensive in-house expertise, encompassing both base engines and marine dressing, ensures tailored solutions that meet Customers' specific needs and performance requirements.

FPT Industrial engines deliver reliable performance for a wide range of pleasure and commercial vessels, from recreational boating to light, medium and heavy commercial applications. With engine capacities ranging from 3 to 15.9 liters, our engines are renowned for their exceptional quality, comprehensive features and adaptability to various applications, excelling in both propulsion and auxiliary uses. The F1, NEF and CURSOR engine families deliver impressive continuous specific power and torque at low speeds, resulting in outstanding efficiency and remarkable durability in all sea conditions.

FPT Industrial is committed to environmental responsibility by minimizing exhaust gas emissions. A significant reduction in noise and vibration ensures a smooth and enjoyable ride, even while delivering high power.

Our engineering expertise has resulted in a lightweight design, delivering exceptional power-to-volume and power-to-weight ratios, ensuring superior performance and easy maintenance.

#### **Performance**

- High power density and top power delivered for different applications.
- Low noise and vibration, assuring the best comfort onboard.

#### Reliability

 FPT Industrial marine long blocks are the same applied on hundreds of thousands on-road and off-road applications worldwide, making them a synonym of reliability and uptime, testified by hundreds of Customers all around the world.

#### **Low Operating Costs**

 Our Proactive Assistance and Connected Solutions work together to minimize Total Cost of Ownership and maximize operating efficiency.

#### **Flexibility**

- A compact engine with a low volume/power ratio.
- A full range of available accessories.
- Compliant with a wide range of emissions and Class type approvals.
- Available in heat exchanger and keel cooled configurations.

#### **Low Environmental Impact**

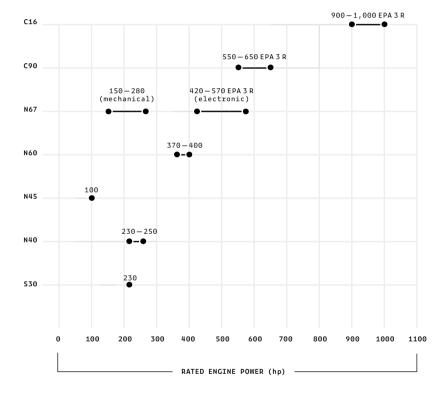
Outstanding environmental impact reduction is achieved through:

- Clean operation and fuel flexibility.
   Our solutions boasts low emissions and compatibility with renewable
   HVO (Hydrotreated Vegetable Oil) /
   XTL drop-in fuels, resulting in a CO<sub>2</sub>
   reduction of over 90% without compromising performance and service life.
- IMO Tier III compliance. The aftertreatment system, co-developed with Frydenbø Industri A/S, ensures clean operation that meets the strictest emissions regulations.
- Modular hybrid propulsion system. Our compact, scalable hybrid system, designed in collaboration with Vulkan, offers zero-emission operation and superior onboard comfort.



#### Marine Propulsion - Variable Speed Engines Portfolio Overview

PLEASURE LINE-UP 100-1,000 hp





Introduction

#### **Marine Pleasure Emissions Regulations**

Where	Emission Rules
	Vessel < 24 m
EU Coasts	Vessel ≥ 24 m Not ECA area
	Vessel ≥ 24 m ECA area
EU Inland Waterways	IWV Power < 300 kW
	IWV Power ≥ 300 kW
UK (England, Wales, Scotland, Northern Ireland)	UKCA RCR
Worldwide NECA (no ECA)	IMO ≥ 130 kW
Worldwide ECA areas	Vessel < 24 m
	Vessel ≥ 24 m
USA (Flagged vessel)	EPA
CHINA (Inland waterways and Coastal areas)	GB15097

2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
				RCI	) Stage	II				
	IMO Marpol Tier2									
	IMO Marpol Tier3									
	IWV Stage IIIA				IWV Stage V					
IWV	Stage 3	IIIA		IWV Stage V						
						Recre	ational 2	Craft 1017/737		tions
				IMO N	Marpol 1	Tier2				
				IMO N	Marpol 1	Tier2				
I	MO Marp	ol Tier	2	IMO Marpol Tier3						
					PA Tier	3				
	GB Stage 1						GB St	age 2		

The International Maritime Organization (IMO) regulates exhaust emissions for diesel engines above 130kW (174 hp), with an exemption for engines used exclusively in emergency applications. The IMO Tier III regulation applies within NOx Emission Control Areas and is effective for vessels built after January 1, 2016, in North America and the US Caribbean Sea.

The Nonroad Mobile Machinery Directive rules exhaust emissions from diesel engines installed on inland waterway vessels operating in the European Union (EU). The Recreational Craft Directive regulates noise and exhaust emissions from propulsion engines on recreational craft operating within the EU.

The United States Environmental Protection Agency (EPA) regulates exhaust emissions from diesel engines installed on marine vessels flagged or registered in the United States.

In the People's Republic of China, the GB15097 National Standard aims to prevent and control air pollution from marine engines, thereby improving ambient air quality. It applies to marine engines installed on inland waterway vessels, coasters, sea-river-through ships, channel ships, and fishing boats.

The Recreational Craft Regulations (RCR) 2017/737 are UK laws that establish essential requirements for products before they can be placed on or put into service on the UK market, ensuring their safety. These regulations apply to recreational craft, personal watercraft, certain engines, and specified components.

The GB Type Approval Scheme is the automotive regulatory scheme applicable to manufacturers intending to market vehicles and components in Great Britain. It sets safety and environmental standards for new vehicles, parts, and equipment. This scheme is based on the retained EU legislation as of December 31, 2020, and subsequent UK legislation that amends or supplements the retained EU legislation.

#### Emission rules - details:

IWV Stage V = Regulation (EU) 2016/1628 IMO-Marpol = ANNEX VI Technical Code 2008 RCD II = European Directive 2013/53/EC ECA = IMO-Marpol Emission Controlled Area EPA = 40CFR1042 GB Stage2 = GB15097:2016

= Aftertreatment system (ATS) required

#### **Marine Rating Classification**

#### Full load reference conditions

Reference ISO 8665

Ambient pressure (kPA): 100
Air inlet temperature (°C): 25
Relative humidity (%): 30
Fuel density (kg/dm³): 0.835
Fuel calorific value (kJ/kg): 42700
Fuel temperature (°C): 40

#### Variable speed Rating class

#### Definition

		Delinition
A1	Short range fast pleasure service	Limited to 10% of time Cruising speed at engine rpm <90% of calibration rated speed 300 h/y
A2/B1	Long range pleasure/commercial service	Limited to 10% of time Cruising speed at engine rpm <90% of calibration rated speed 1000 h/y
В	Light duty	Limited to 10% of time Cruising speed at engine rpm <90% of calibration rated speed 1500 h/y
С	Medium duty	Limited to 25% of time Cruising speed at engine rpm <90% of calibration rated speed 3000 h/y
D	Heavy duty	up to 100% of time unlimited h/y



# VARIABLE SPEED PROPULSION ENGINES

#### **Engines Specifications**

	Engine model	Rating	q	κw	Шdх	Dimensions* (L**xWxH) (mm)	Dry Weight (kg)
S30	230 E	A1	230	169	4,000	780 x 776 x 755	330
N40	250 E	A1	250	184	2,800	834 x 708 x 772	490
N40	250 E	A2	230	169	2,800	834 x 708 x 772	490
N45	100	A1	100	74	2,800	811 x 700 x 836	450
N60	400 E	A1	400	294	3,000	1,089 x 726 x 789	595
N60	400 E	A2	370	272	3,000	1,089 x 726 x 789	595
N67	150	A1	150	110	2,800	1,052 x 705 x 910	530
N67	220	A1	220	162	2,800	1,072 x 749 x 800	605
N67	280	A1	280	206	2,800	1,072 x 749 x 800	605
N67	450 N	A1	450	331	3,000	1,088 x 717 x 789	600
N67	450 N	A2	420	309	3,000	1,088 x 717 x 789	600
N67	550	A1	550	404	3,200	1,089 x 828 x 824	721
N67	550	A2	500	368	3,200	1,089 x 828 x 824	721
N67	570 EVO	A1	570	419	3,000	1,089 x 828 x 805	721
N67	570 EV0	A1	550	404	3,000	1,089 x 828 x 805	721
N67	570 EV0	A2	530	390	3,000	1,089 x 828 x 805	721
C90	620 E	A1	620	456	2,530	1,312 x 863 x 973	940
C90	620 E	A2	605	445	2,530	1,312 x 863 x 973	940
C90	620 E	A2	580	426	2,530	1,312 x 863 x 973	940
C90	620 E	A2	550	404	2,530	1,312 x 863 x 973	940
C90	650 E	A1	650	478	2,530	1,312 x 863 x 973	940
C90	650 E	A2	605	445	2,530	1,312 x 863 x 973	940
C90	650 EVO	A1	650	478	2,530	1,226 x 899 x 1,009	1,014
C90	650 EVO	A2	625	460	2,530	1,226 x 899 x 1,009	1,014
C16	1000	A2	1,000	735	2,300	1,470 x 1,166 x 1,169	1,640
C16	1000	A2	940	691	2,450	1,470 x 1,166 x 1,169	1,640
C16	1000	В	900	662	2,300	1,470 x 1,166 x 1,169	1,640

Dimensions can be changed according to engine options. length at flywheel.



The F1 Series

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#### **Key Advantages**

#### Reliability

- Improved reliability derived from F1C engine applied many on road light commercial vehicles.
- Best-in-class maintenance intervals 600 hours.

#### Versatility

- Wide range of accessories and options available.
- Sterndrive Bravo X available as an option.

#### **Lightness and Compactness**

 High compactness, useful to fit in the tightest engine rooms.

#### **Efficiency**

 High engine efficiency, vibrations and noise reduction thanks to innovative technologies and production processes.

#### **Emissions Standards**

- Type approvals available.
- Compatibility with XTL / HVO fuels (EN 15940).

#### S30 230 E

Arrangement: 4 Cyl. in line

Total Displacement (L): 3.0

169 (230) @ 4,000 Maximum Power (kW (hp) @ rpm): Diesel 4 stroke Thermodynamic cycle:

Air handling: TCA Valves per cylinder: Cooling System: Liquid

**Direction of Rotation** 

Counterclockwise (viewed facing flywheel):

Engine management: Electronic

Injection System:

#### **WEIGHT AND DIMENSIONS**

Dimensions <sup>1</sup>	$(L^2xWxH)$ 780 x 776 x 755 mm
Dry Weight	330 Kg

CR

Dimensions can be changed according to engine options Length at flywheel

Rating	kW	hp	rpm	g/kWh (Rated Speed)	IMO II	RCD II
A1	169	230	4,000	259	•	•

Air Handling **Injection System** TCA Turbocharged with aftercooler CR Common Rail



## THENES SERIES



**Engine model** N40 (4 cyl., 3.9 L) N45 (4 cyl., 4.5 L) N60 (6 cyl, 5.9 L) N67 (6 cyl., 6.7 L)

Power range From 100 to 570 hp From 74 to 419 kW

**Peak Torque** Up to 1,580 Nm

#### **Key Advantages**

#### **Performance**

- N67 best-in-class power density with the minimum fuel consumption and exhaust gas emission.
- N67 torque fast response.

#### **Efficiency**

- Best-in-class fuel consumption.
- High engine efficiency, vibrations and noise reduction thanks to innovative technologies and production processes.

#### **Emissions Standards**

- Type approvals available.
- Improved environmental care complying with the most stringent emissions regulations.
- Compatibility with XTL / HVO fuels (EN 15940) - for electronic engines only.

#### Reliability

- Best-in-class maintenance intervals up to 600 hours.
- Proven reliability given by base engine, used in hundreds of thousands of on-road and off-road applications installed annually.
- Both base engine and marine dressing are made by FPT Industrial.
- Reduced maintenance and operating costs.

#### Versatility

- Wide range of accessories and options available.
- Available in heat exchanger and keel cooled configurations.
- Flexibility of use for various marine applications.
- Available with mechanical direct injection or electronic common rail version.

#### **Lightness and Compactness**

Exceptional power output while maintaining a remarkably compact size.

Marine Pleasure

The NEF Series

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Marine Pleasure

The NEF Series

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#### N40 250 E

Arrangement: 4 Cyl. in line

Total Displacement (L): 3.9

Maximum Power (kW (hp) @ rpm): 184 (250) @ 2,800 Thermodynamic cycle: Diesel 4 stroke

Air handling: TCA
Valves per cylinder: 4
Cooling System: Liquid

**Direction of Rotation** 

(viewed facing flywheel): Counterclockwise

Engine management: Electronic

Injection System: CR

#### WEIGHT AND DIMENSIONS

Dimensions <sup>1</sup>	(L**xWxH)	834	Х	708	Х	772	mm
Dry Weight						490	Kg

Dimensions can be changed according to engine options

<sup>2</sup> Length at flywheel

	Rating	kW	hp	rpm	g/kWh (Rated Speed)	IMO II	RCD II
Ī	A1	184	250	2,800	219	•	•
	A2	169	230	2,800	217	•	•

#### N45 100

Arrangement: 4 Cyl. in line

Total Displacement (L): 4.5

Maximum Power (kW (hp) @ rpm): 74 (100) @ 2,800 Thermodynamic cycle: Diesel 4 stroke

Air handling: NA
Valves per cylinder: 2
Cooling System: Liquid

Direction of Rotation

(viewed facing flywheel): Counterclockwise Engine management: Mechanical

Injection System: M

#### WEIGHT AND DIMENSIONS

Dimensions <sup>1</sup>	$(L^2xWxH)$	811	Х	700	х	836	mm	
Dry Weight						450	Kg	

- Dimensions can be changed according to engine options
- <sup>2</sup> Length at flywheel

Rating	kW	hp	rpm	g/kWh (Rated Speed)	IMO II
A1	74	100	2,800	260	exempted

Air Handling Injection System
TCA Turbocharged with aftercooler CR Common Rail

Air Handling
NA Naturally Aspirated

Injection System

M Mechanical

#### N60 400 E

Arrangement: 6 Cyl. in line

Total Displacement (L): 5.9

Maximum Power (kW (hp) @ rpm): 294 (400) @ 3,000 Thermodynamic cycle: Diesel 4 stroke

Air handling: TCA
Valves per cylinder: 4
Cooling System: Liquid

**Direction of Rotation** 

(viewed facing flywheel): Counterclockwise

Engine management: Electronic

Injection System: CR

#### WEIGHT AND DIMENSIONS

Dimensions <sup>1</sup>	(L <sup>2</sup> xWxH) 1,089 x 726 x 789 mm
Dry Weight	595 Ka

Dimensions can be changed according to engine options

<sup>2</sup> Length at flywheel

Rating	kW	hp	rpm	g/kWh (Rated Speed)	d) IMO II RCD II		
A1	294	400	3,000	231	•	•	
A2	272	370	3,000	227	•	•	

#### N67 150

Arrangement: 6 Cyl. in line

Total Displacement (L): 6.7

Maximum Power (kW (hp) @ rpm): 110 (150) @ 2,800 Thermodynamic cycle: Diesel 4 stroke

Air handling: NA
Valves per cylinder: 2
Cooling System: Liquid

Direction of Rotation

(viewed facing flywheel): Counterclockwise Engine management: Mechanical

Injection System: M

#### **WEIGHT AND DIMENSIONS**

Dimensions <sup>1</sup>	(L <sup>2</sup> xWxH)	1,052	х	705	х	910	mm
Dry Weight						530	Kg

<sup>1</sup> Dimensions can be changed according to engine options

<sup>2</sup> Length at flywheel

Rating	kW	hp	rpm	g/kWh (Rated Speed)	IMO II
A1	110	150	2,800	255	exempted

Air HandlingInjection SystemTCATurbocharged with aftercoolerCRCommon Rail

Air Handling
NA Naturally Aspirated

Injection System

M Mechanical

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Marine Pleasure

The NEF Series

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The NEF Series

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#### N67 220

6 Cyl. in line Arrangement:

Total Displacement (L): 6.7

Maximum Power (kW (hp) @ rpm): 162 (220) @ 2,800 Thermodynamic cycle: Diesel 4 stroke

Air handling: TC 2 Valves per cylinder: Liauid Cooling System:

**Direction of Rotation** 

Counterclockwise (viewed facing flywheel): Engine management: Mechanical

Injection System:

#### **WEIGHT AND DIMENSIONS**

Dimensions <sup>1</sup>	$(L^2xWxH)$ 1,072 x 749 x 800 mm
Dry Weight	605 Kg

Dimensions can be changed according to engine options

<sup>2</sup> Length at flywheel

Rating	kW	hp	rpm	g/kWh (Rated Speed)
A1	162	220	2,800	241

#### N67 280

6 Cyl. in line Arrangement:

Total Displacement (L): 6.7

Maximum Power (kW (hp) @ rpm): 206 (280) @ 2,800 Thermodynamic cycle: Diesel 4 stroke

Air handling: TCA Valves per cylinder: 2 Cooling System: Liquid

Direction of Rotation

(viewed facing flywheel): Counterclockwise

Engine management: Mechanical

Injection System: М

#### WEIGHT AND DIMENSIONS

Dimensions <sup>1</sup>	$(L^2xWxH)$ 1,072 x 749 x 800 mm
Dry Weight	605 Kg

Dimensions can be changed according to engine options

<sup>2</sup> Length at flywheel

Rating	kW	hp	rpm	g/kWh (Rated Speed)	IMO II	
۸1	206	280	2 800	2/10		

Marine Pleasure

The NEF Series

FPT Industrial

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Marine Pleasure

The NEF Series

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#### N67 450 N

Arrangement: 6 Cyl. in line

Total Displacement (L): 6.7

Maximum Power (kW (hp) @ rpm): 331 (450) @ 3,000 Thermodynamic cycle: Diesel 4 stroke

Air handling: TCA
Valves per cylinder: 4
Cooling System: Liquid

Direction of Rotation

(viewed facing flywheel): Counterclockwise

Engine management: Electronic

Injection System: CR

#### WEIGHT AND DIMENSIONS

Dimensions <sup>1</sup>	(L <sup>2</sup> xWxH) 1,088 x 717 x 789 mm
Drv Weight	600 Kg

Dimensions can be changed according to engine options

<sup>2</sup> Length at flywheel

				g/kWh				China GB II	
				(Rated			EPA Tier 3	(GB15097-	
Rating	kW	hр	rpm	Speed)	IMO II	RCD II	Recreational	2016)	
A1	331	450	3,000	229	•	•	•	-	
Δ2	309	420	3.000	228	•	•	•	•	

#### N67 550

Arrangement: 6 Cyl. in line

Total Displacement (L): 6.7

Maximum Power (kW (hp) @ rpm): 404 (550) @ 3,200 Thermodynamic cycle: Diesel 4 stroke

Air handling: TCA
Valves per cylinder: 4
Cooling System: Liquid

Direction of Rotation

(viewed facing flywheel): Counterclockwise

Engine management: Electronic

Injection System: CR

#### **WEIGHT AND DIMENSIONS**

Dim	ensions¹	(L²xWxH) 1,089 x	828 >	824	mm
Drv	Weight			721	Κa

<sup>1</sup> Dimensions can be changed according to engine options

<sup>2</sup> Length at flywheel

Rating	kW	hp	rpm	g/kWh (Rated Speed)	IMO II	RCD II	EPA Tier 3 Recreational	
A1	404	550	3,200	225	•	•	•	-
Δ2	368	500	3.200	231	•	•	•	•

Air Handling
TCA Turbocharged with aftercooler CR Common Rail

**Air Handling** TCATurbocharged with aftercooler

Injection System CR Common Rail **FPT Industrial** Marine Pleasure The NEF Series 34

#### **N67 570 EVO**

Arrangement: 6 Cyl. in line

Total Displacement (L): 6.7

Maximum Power (kW (hp) @ rpm): 419 (570) @ 3,000 Diesel 4 stroke Thermodynamic cycle:

Air handling: TCA Valves per cylinder: 4 Cooling System: Liquid

Direction of Rotation

(viewed facing flywheel): Counterclockwise

Engine management: Electronic CR

Injection System:

#### **WEIGHT AND DIMENSIONS**

(L<sup>2</sup>xWxH) 1,088 x 828 x 805 mm Dimensions<sup>1</sup> Dry Weight 721 Kg

Dimensions can be changed according to engine options
 Length at flywheel

Rating	kW	hp	rpm	g/kWh (Rated Speed)	IMO II	RCD II	EPA Tier 3 Recreational	
A1	419	570	3,000	223	•	•	•	
A1	404	550	3,000	227	•	•	•	
A2	390	530	3,000	225	•	•	•	

Air Handling Injection System TCA Turbocharged with aftercooler CR Common Rail



# THE CURSOR SERIES



Engine model C90 (6 cyl., 8.7 L) C16 (6 cyl., 15.9 L)

Power range From 550 to 1,000 hp From 404 to 735 kW Peak Torque Up to 3,510 Nm

#### **Key Advantages**

#### **Performance**

- Top-class performance, leader for peak power and torque fast response.
- CURSOR 9 best-in-class in peak power.
- C90 650 EVO supercharged to reach the best response time and best planing performances.
- CURSOR 16 Guinness World Record holder for the fastest diesel on water at 277.5 km/h.

#### Versatility

Wide range of accessories and options available.

#### **Emissions Standards**

- Type approvals available.
- Compatibility with XTL / HVO fuels (EN 15940).

#### Reliability

- High maintenance intervals up to 600 hours.
- Both base engine and marine dressing are made by FPT Industrial.
- Reduced maintenance and operating costs.

#### **Efficiency**

- CURSOR 9 best-in-class fuel consumption.
- Low fuel consumption if compared with direct competitors.

#### **Lightness and Compactness**

- CURSOR 9 the lightest of its category.
- CURSOR 16 compactness and lightness of a 13L with the durability of a 16L.

#### C90 620 E

Arrangement: 6 Cyl. in line

Total Displacement (L): 8.7

Max Power (kW (hp) @ rpm): 456 (620) @ 2,530 Thermodynamic cycle: Diesel 4 stroke

Air handling: TCA
Valves per cylinder: 4
Cooling System: Liquid

**Direction of Rotation** 

(viewed facing flywheel): Counterclockwise

Engine management: Electronic

Injection System: CR

#### **WEIGHT AND DIMENSIONS**

Dimensions <sup>1</sup>	(L <sup>2</sup> xWxH) 1,312 x 863 x	973	mm
Drv Weight		940	Κα

Dimensions can be changed according to engine options

<sup>2</sup> Length at flywheel

				g/kWh					EPA Tier 3	China GB II (GB15097-
Rating	kW	hр	rpm	(Rated Speed)	IMO	II	RCD	II		2016)
A1	456	620	2,530	228	•		•		•	-
A2	426	580	2,530	225	•		•		•	-
A2	404	550	2,530	224	•		•		•	•

#### C90 650 E

Arrangement: 6 Cyl. in line

Total Displacement (L): 8.7

Maximum Power (kW (hp) @ rpm): 478 (650) @ 2,530 Thermodynamic cycle: Diesel 4 stroke

Air handling: TCA
Valves per cylinder: 4
Cooling System: Liquid

Direction of Rotation

(viewed facing flywheel): Counterclockwise

Engine management: Electronic

Injection System: CR

#### WEIGHT AND DIMENSIONS

Dimensions <sup>1</sup>	(L <sup>2</sup> xWxH) 1,312 x 863 x 973 mm
Dry Weight	940 Kg

- <sup>1</sup> Dimensions can be changed according to engine options
- Length at flywheel

ı	Rating	kW	hp	rpm	g/kWh (Rated Speed)	IMO II	RCD II	EPA Tier 3 Recreational
	A1	478	650	2,530	227	•	•	•
	A2	445	605	2,530	232	•		•

Air Handling Injection System
TCA Turbocharged with aftercooler CR Common Rail

Air Handling Injection System
TCA Turbocharged with aftercooler CR Common Rail

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#### C90 650 EVO

Arrangement: 6 Cyl. in line Total Displacement (L): 8.7

Max Continuous Power (kW (hp) @ rpm): 478 (650) @ 2,530 Thermodynamic cycle: Diesel 4 stroke Air handling: TCA + supercharger

Valves per cylinder: 4
Cooling System: Liquid

Direction of Rotation

(viewed facing flywheel): Counterclockwise

Engine management: Electronic Injection System: CR

#### WEIGHT AND DIMENSIONS

Dimensions <sup>1</sup>	(L <sup>2</sup> xWxH)	1,226	х	899	х	1,009	mm
Dry Weight						1,014	Kg

Dimensions can be changed according to engine options

<sup>2</sup> Length at flywheel

Rating	kW	hp	rpm	g/kWh (Rated Speed)	IMO II	RCD II	EPA Tier 3 Recreational
A1	478	650	2,530	227	•	•	•
A2	460	625	2,530	229	•	•	•

#### C16 1000

Arrangement: 6 Cyl. in line

Total Displacement (L): 15.9

Maximum Power (kW (hp) @ rpm): 735 (1,000) @ 2,300

Thermodynamic cycle: Diesel 4 stroke Air handling: TCA

Valves per cylinder: 4
Cooling System: Liquid

Direction of Rotation

(viewed facing flywheel): Counterclockwise

Engine management: Electronic

Injection System: CR

#### WEIGHT AND DIMENSIONS

Dimensions <sup>1</sup>	$(L^2xWxH)$ 1,470 x 1,166 x 1,169 mm
Drv Weight	1,640 Ka

Dimensions can be changed according to engine options

<sup>2</sup> Length at flywheel

Rating	kW	hp	rpm	g/kWh (Rated Speed)	IMO II	RCD II	EPA Tier 3 Recreational	China GB II (GB15097- 2016)
A2	735	1,0002	2,300	228	•	•	•	•
A2	691	940 2	2,450	234	•	-	-	-
В	662	900 2	2,300	231	•	•	•	•

Air Handling Injection System
TCA Turbocharged with aftercooler CR Common Rail

Air Handling Injection System
TCA Turbocharged with aftercooler CR Common Rail

# ENGINE OPTIONS AND INTEGRATED CONTROL & MONITORING SYSTEM

**Engine Options** 

## MARINE ENGINE OPTIONS

#### FPT Industrial offers a whole range of options to complete your engine:

#### **Elastic Mountings**

#### **Electrical system**

- Electrical configuration 12V or 24V
- Insulated poles electrical system
- Uprated Alternators

#### **Power Take-Off**

- Front PTO
- Rear PTO

#### Monitoring&Control

- Gauges and sensors
- Digital and analog panels
- Electronic throttle levers and joystick
- Multi-function panels
- Water cooled or dry exhaust pipes
- Gearboxes
- Emission and Class type approvals engine certification with various classification societies

Please contact your local distributor on our locator at fptindustrial.com to get more information.



## RED HORIZON

#### **Key Features**

Red Horizon is the FPT Industrial marine integrated electronic control and monitoring system developed in partnership with ZF and Simrad Yachting, a Navico Group brand.

Conceived as the perfect connection between pilot and engine, Red Horizon is a combination of high-tech contents and style that culminates in unmatchable performance, excellent manoeuvrability and mooring.

Characterized by a skillful and inimitable mix of high-tech contents and style, Red Horizon guarantees:

- Full navigation control and safety.
- Optimal driving comfort.
- Easy handling and harbouring.

#### **Control and Monitoring Systems**

FPT Industrial elevates marine propulsion and manoeuvring with an integrated system that combines ZF's renowned SmartCommand electronic propulsion controls and JMS manoeuvring systems with our common rail engines.

This sophisticated system prioritizes user experience, placing intuitive control at the operator's fingertips.

Customized Multi Function Displays, built upon Simrad technology, excel in engine monitoring, providing a comprehensive overview of the vessel's operation through seamless integration with various onboard devices.



#### FPT INDUSTRIAL MONITORING SYSTEMS Key Features

- Based on Simrad technology, the Multi Function Display (MFD) of NSX Series
  has been customized to match with FPT Industrial marine common rail engines.
  The NSX panels provide more than an engine monitoring visualization, thanks
  to the potential integration with many other vessel devices:
  - Radar
  - Autopilot
  - Camera / Thermal camera
  - Echosounder
  - Trip data statistics
  - Audio Control
- 7", 9"and 12" displays are available with SolarMax HD IPS technology optimized for viewing from all angles and in bright sunlight. Their size allows best use of dash and screen space, allowing larger displays in smaller places while also providing a streamlined and attractive options for mounting.
- Simrad Companion App is available to access marine data, operating manual and information anywhere. It is compatible with smartphones and tablets and available for Android and iOS.
- Compatibility:
  - NEF Family: N40, N60, N67 450 N, N67 550, N67 570 EVO
  - Cursor Family: C90 170, C90 410, C90 650 E, C90 620 E, C90 650 EVO,
     C16 600, C16 1000









FPT Industrial Marine Pleasure Red Horizon 50 FPT Industrial Marine Pleasure Red Horizon 51

#### FPT INDUSTRIAL PREMIUM CONTROL Key Features

- FPT Industrial takes control systems to the next level by integrating ZF advanced electronic propulsion controls (SmartCommand) and maneuvering systems (JMS), specifically designed to work seamlessly with our engines. This ensures optimal performance and efficiency.
  The FPT Industrial Premium Controls, featuring the innovative and compact 5200 control head, integrate the latest CAN bus technology. This user-friendly design enhances comfort and safety through different control modes.
- Visual indicators on the control head help to easily locate the neutral detent position; 2-color LED's indicate which control head is in command and whether the corresponding transmission is engaged.
- FPT Industrial Premium Controls offer customizable special features to optimize the maneuverability for docking and trolling.
   Advanced control modes include:
  - ✓ CRUISE
  - **✓ EASIDOCK**
  - **✓ AUTOTROLL**
  - ✓ WARM UP
  - ✓ ONE LEVER



#### FPT INDUSTRIAL PREMIUM JOYSTICK Key Features

- FPT Industrial adopts ZF manoeuvring systems (JMS) specifically suited for our engines. This ensures optimal engine and system performance for efficient vessel operation. The FPT Industrial Premium Joystick provides simple and intuitive boat control during manoeuvres and allows captains to confidently navigate even complex docking situations.
- Standard control heads can make maneuvers like sideways docking, 360° spot turns and precise low-speed control a struggle. However, with FPT Industrial Premium Joystick, these complex operations become effortless.
- The system also controls the throttle of the engines and shifts the transmissions
  with automatically controlled trolling valves to deliver the needed precise speed
  and responsiveness for smooth manoeuvring and easy docking even in tight
  spaces.
- Thanks to an integrated electronic compass, the FPT Industrial Premium
  Joystick keeps the vessel going in the selected direction.
- Ready to work with an additional iAnchor kit, to automatically maintain the position of vessel against wind and current.





**FPT Industrial** 

Marine Pleasure

**Customer Service** 



### YOU ASK FOR THE BEST. WE MAKE IT HAPPEN.

When the market becomes increasingly challenging, it is essential to have reliable partners.

We collaborate closely with you to provide tailor-made solutions, maximizing engine performance and durability. We are committed to doing everything possible to support you and your business.

FPT Industrial

Marine Pleasure

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#### Extended Warranty. Everyday closer to your needs.

On top of the Base Warranty, it is possible to submit our Extended Warranty program, that covers all required FPT Industrial Genuine parts along with any repairs carried out by highly qualified technicians.

The FPT Industrial Extended Warranty guarantees:

- Customizable offer according to your needs.
- Avoid unexpected repair costs during your chosen operation period with our transparent FPT Industrial product warranties.
- Assistance performed by FPT Industrial qualified technicians.
- Optimal Product performance thanks to FPT Industrial Genuine Parts.

Our FPT Industrial Extended Warranty is made with the aim to be closer to you in your everyday activities. You can customize it according to your needs and extend it up to five years. To request a quotation please contact your FPT Industrial Dealer of reference.

	OPERATING HOURS	COVERAGE	DURATION
2	Max. limit depending on rating  Short Range Pleasure up to 1,500 hrs  Long Range Pleasure up to 5,000 hrs	BRONZE Engine Major components only*  SILVER Complete Engine	□ Up to 5 Years

<sup>\*</sup> List of major components: cylinder head; cylinder block; crankshaft; camshaft; connecting road; pistons; timing gears; flywheel; flywheel housing; oil pump; exhaust manifold; engine control unit.

#### Proactive Assistance. Your direct connection to the Control Room.

Ensuring optimal engine performance and smooth operations has never been easier, thanks to our Telematic systems, we will take care of you. Installing the Telematic Kit on your engine you will allow FPT Industrial Control Room to analyze your engine data in real-time. Through this advanced system, we can promptly detect any action that will maximize the performances of your vessel.

Our dedicated team is always ready to provide prompt assitance and support. With this proactive approach, we can address any potential issues, ensuring that your engine performs at its best.

Experience the convenience of enhanced engine performance and the peace of mind that comes with our close monitoring and support.

- Engine Status monitoring.
- Maximize uptime thanks to the prompt activation of the FPT Industrial local Service Point, which is informed about the issue before leaving the Workshop supported by the remote pre-diagnosis.
- Engine diagnostics and repair based on FPT Industrial technical know-how and field experience.
- Monitor the performances of individual boat or fleet in real time, with periodic reports tailored to your mission.
- Total Cost of Ownership (TCO) reduction by optimizing engine performance, fuel consumption and by reducing up to 60% the Maintenance & Repair downtime.



FPT Industrial Marine Commercial Customer Service

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#### Genuine Parts. Original is better.

Our Genuine Parts are manufactured with the same rigorous procedures and premium materials as your FPT Industrial engine. They ensure:

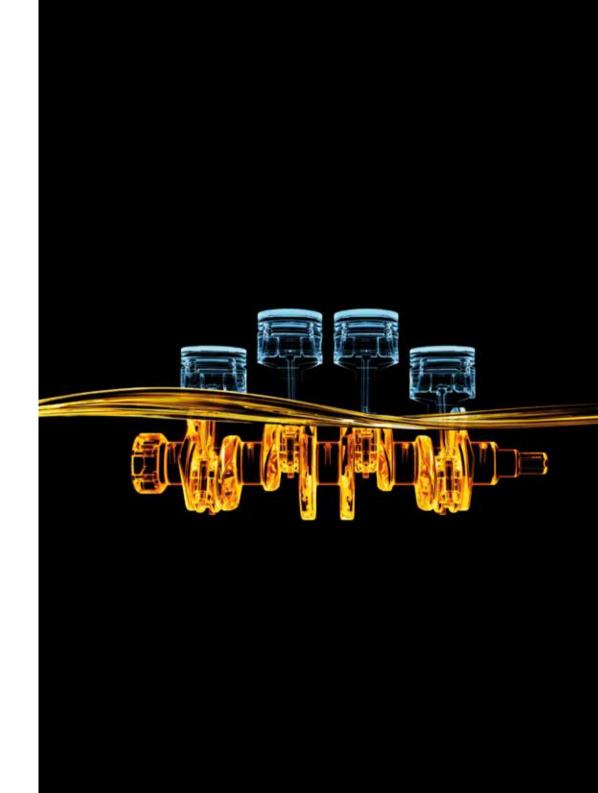
- Total Compatibility: guaranteed to perfectly fit with your engine.
- Optimized Service Life: exceptional durability without compromising engine performance.
- Guaranteed Operation: assured to achieve optimal engine output.

By choosing FPT Industrial Genuine Parts, you maintain the best conditions just like from the manufacturing plant, maximizing engine output and uptime. Our network of Authorized Workshops features highly qualified technicians ready to expertly assist you in achieving peak engine efficiency.

#### The perfect combination.

FPT Industrial Genuine Engine Oils are designed with Customer's missions in mind. Developed for exceptional performance under any condition, our lubricants deliver:

- Enhanced Protection & Durability: extended engine life and minimized downtime with superior wear and tear resistance.
- Maximized Uptime & Fuel Efficiency: our core focus is keeping your equipment running strong. FPT Industrial Fluids has been developed to guarantee the highest level of cleanliness, protection and efficiency, resulting in:
  - +87% cleaner pistons and +68% better top ring protection.
  - +41% Cylinder Wear protection.
  - +20% improved Soot Handling and Sludge Control.
  - -20% in Total Cost of Ownership (TCO).
  - Reduced fuel and oil consumption for a greener future. C16 600, C16 1000



Because you never stop, neither do we. Our Customer Contact Centre is active 24/7, to assist you and to activate our local support network.

For any issue or need, our technical and expert support service is ready to help you anytime, anywhere.

If you need technical support or assistance on-site, you can always rely on more than 70 dealers global network and over 900 Service points.

Discover our global dealers' network:







# **NOTES**