Marine Applications

Diesel Engines

JOHN DEERE





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Nothing Runs Like A Deere™

John Deere PowerTech™ engines are as powerful and dependable in the water as they are on the land. Our marine propulsion, generator, and auxiliary engines share the same reputation for performance and reliability that their agricultural and industrial counterparts have enjoyed for decades. They are built for long life, reliable performance, fuel efficiency, quiet operation, ease of access to major parts, and simplified integration. But don't just take our word for it. Find out why John Deere is the powerful and reliable choice.

Engine identification

Model designation key

6135SFM85

Emissions
- 50 — Non-emissions regulated
- 70, 85 — Emissions regulated

Engine type
- M — Marine

User type
- F — OEM (John Deere Power Systems)

Air intake system
- D — Naturally aspirated
- T — Turbocharged
- A — Turbocharged and aftercooled, air-to-engine coolant
- S — Turbocharged and aftercooled, air-to-seawater*
- H — Turbocharged and aftercooled, air-to-air

Displacement in liters
- 135 — 13.5 liters
- 090 — 9.0 liters
- 068 — 6.8 liters
- 045 — 4.5 liters

Number of cylinders

A John Deere marine engine model designated as 6135SFM85 is a 6-cylinder, 13.5-liter turbocharged and aftercooled, air-to-seawater engine that is emissions regulated.

**S engines can be modified to be turbocharged and aftercooled, air-to-engine coolant, in dual-circuit keel-cooled applications. Contact your John Deere engine distributor.*

Meeting regulations around the world

John Deere marine engines comply with international, European, and United States emissions standards for regulated vessels.

- Environmental Protection Agency (EPA) Marine Tier 3 regulations for vessels flagged in the United States
- European Union (EU) Stage V requirements for select generator drive ratings on inland waterway applications
- EU Nonroad Mobile Machinery (NRMM – 97/68/EC as amended), whose standards are also recognized by the Central Commission for Navigation of the Rhine (CCNR)
- EU Recreational Craft Directive II (RCD 2)
- International Maritime Organization (IMO) Tier 2
- Engine International Air Pollution Prevention (EIAPP) certificates issued by the EPA or American Bureau of Shipping (ABS) are available for select engine models
- China Stage II marine emissions standards for select generator drive ratings on vessels that are registered in China and operate in Chinese territorial waters

Visit your John Deere marine dealer or engine distributor for details. Go to DealerLocator.Deere.com to find the location nearest you.

Engines for non-regulated territories

In addition to the engines for various emissions regulations mentioned, John Deere offers engines for the non-regulated regions throughout the world.

Marine classification societies

John Deere provides a full line of marine engines designed to meet the requirements of the various marine classification societies.

Propulsion engines — more power in the water

Marine propulsion M and H ratings

Ratings are based on the ISO 8665/SAE J1225 standard power rating and the ISO 3046/SAE J1995 crankshaft power rating. The M and H rating definitions are provided as a guide to help in the selection of the engine that best fits the application requirements. It is recommended to consult a John Deere marine dealer or engine distributor to verify the optimal rating for the specific application.

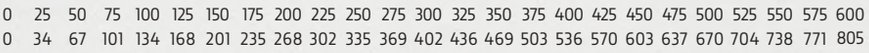
M1	The M1 rating is for marine propulsion applications that may operate up to 24 hours per day at uninterrupted full power and have load factors* greater than 65 percent.	***Possible applications:*** Line haul tugs and towboats, fish and shrimp trawlers/draggers, and displacement hull fishing boats.
M2	The M2 rating is for marine propulsion applications that typically operate 3,000 – 5,000 hours per year and have load factors* up to 65 percent. This rating is for applications that are in continuous use and use full power for no more than 16 hours of each 24 hours of operation. The remaining time of operation is at or below cruising† speed.	***Possible applications:*** Short-range tugs and towboats, long-range ferryboats, large passenger vessels, and offshore displacement hull fishing boats.
M3	The M3 rating is for marine propulsion applications that typically operate 2,000 – 4,000 hours per year and have load factors* up to 50 percent. This rating is for applications that use full power for no more than 4 hours out of each 12 hours of operation. The remaining time of operation is at or below cruising† speed.	***Possible applications:*** Coastal fishing boats, offshore crew boats, research boats, short-range ferryboats, and dinner cruise boats.
M4	The M4 rating is for marine propulsion applications that typically operate 1,000 – 3,000 hours per year and have load factors* below 40 percent. This rating is for applications that use full power no more than one hour out of each 12 hours of operation. The remaining time of operation is at or below cruising† speed.	***Possible applications:*** Inshore crew boats, charter fishing boats, pilot boats, dive boats, and planing hull commercial fishing boats.
M5	The M5 rating is for marine recreational propulsion and certification for light-duty commercial Tier 3 applications that typically operate up to 1,000 hours per year and have load factors* below 35 percent. This rating is for applications that use full power for no more than 30 minutes out of each eight hours. The remaining time of operation is at or below cruising† speed.	***Possible applications:*** Recreational boats, tactical military vessels, and rescue boats.
H	The H rating is for hybrid vessels that require a variable-speed generator drive engine to develop electrical power for any combination of electric propulsion, energy storage, hotel load, and auxiliary electric loads. The engine is designed for load factors up to 70 percent.	***Possible applications:*** Recreational and commercial vessels.

**Load factor is the actual fuel burned over a period of time divided by the full-power fuel consumption for the same period of time. For example, if an engine burns 160 liters of fuel during an eight-hour run, and the full-power fuel consumption is 60 liters per hour, the load factor is 160 liters / (60 liters per hour x 8 hours) = 33.3 percent.*

†Cruising is any operating time where the engine speed is at least 200 rpm less than the maximum attainable engine speed.

Propulsion power ratings — IMO exempt and non-certified engines

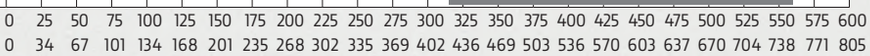
Engine	Power rating
4045DFM70	60 kW (80 hp)
4045TFM50	90 – 112 kW (120 – 150 hp)
6068TFM50	115 – 168 kW (154 – 225 hp)



Ratings are subject to change. Please contact your John Deere marine dealer or engine distributor for details.

Propulsion power ratings — IMO and EPA compliant engines

Engine	Power rating
4045TFM85	75 – 93 kW (100 – 125 hp)
4045AFM85	119 – 168 kW (160 – 225 hp)
4045SFM85	205 – 235 kW (275 – 315 hp)
6068AFM85	172 – 246 kW (230 – 330 hp)
6068SFM85	186 – 298 kW (249 – 400 hp)
6090AFM85	213 – 317 kW (285 – 425 hp)
6090SFM85	242 – 410 kW (325 – 550 hp)
6135AFM85	272 – 429 kW (365 – 575 hp)
6135SFM85	317 – 559 kW (425 – 750 hp)



Ratings are subject to change. Please contact your John Deere marine dealer or engine distributor for details.

Propelled performance

John Deere engines give you an effective blend of pure power and rugged durability. From 60 to 559 kW (80 to 750 hp), our complete, high-horsepower lineup offers the right engines for your needs. The result? John Deere engines build power faster for cruising at higher speeds with lower rpm. Boost your vessel's performance in wind, swells, tides, or currents with reliable power that's ready when you are.

Engine model	Emissions			Rated power		Rated speed	Rated fuel consumption	
	IMO	EPA	RCD	kW	hp	rpm	L/hr	gal/hr
IMO exempt and non-certified engines								
4045DFM70								
M2	EX	-	-	60	80	2500	17.5	4.6
4045TFM50								
M2*	EX	-	-	90	120	2400	22.7	6.0
M3*	EX	-	-	101	135	2500	26.3	6.9
M4	EX	-	-	112	150	2600	29.7	7.8
6068TFM50								
M1	EX	-	-	115	154	2300	29.6	7.8
M2	-	-	-	130	175	2400	34.7	9.2
M3	-	-	-	149	200	2500	38.8	10.3
M4	-	-	-	168	225	2600	44.3	11.7

EX = MARPOL Annex VI exempt
**Not available in all countries.*

Engine model	Emissions			Rated power		Rated speed	Rated fuel consumption	
	IMO	EPA	RCD	kW	hp	rpm	L/hr	gal/hr
IMO and EPA compliant engines								
4045TFM85								
M1	EX	Tier 3	RCD 2	75	100	2400	21.4	5.7
M2	EX	Tier 3	RCD 2	93	125	2500	29	8
4045AFM85								
M1	Tier 2	Tier 3	RCD 2	119	160	2300	33.2	8.8
M2	Tier 2	Tier 3	RCD 2	134	180	2400	37	10
M3	Tier 2	Tier 3	RCD 2	149	200	2500	44	12
M4	Tier 2	Tier 3	RCD 2	168	225	2600	49	13
4045SFM85								
M4	Tier 2	Tier 3	RCD 2	205	275	2600	54	14
M5	Tier 2	Tier 3	RCD 2	235	315	2800	62	16
6068AFM85								
M1	Tier 2	Tier 3	RCD 2	172	230	2300	50.9	13.4
M2	Tier 2	Tier 3	RCD 2	198	265	2400	58.0	15.0
M3	Tier 2	Tier 3	RCD 2	224	300	2500	65.0	17.0
M4	Tier 2	Tier 3	RCD 2	246	330	2600	71.0	19.0
6068SFM85								
M1	Tier 2	Tier 3	RCD 2	186	249	2400	51.0	13.0
M2	Tier 2	Tier 3	RCD 2	209	280	2500	57.0	15.0
M3	Tier 2	Tier 3	RCD 2	239	321	2600	63.0	17.0
M4	Tier 2	Tier 3	RCD 2	265	355	2700	69.0	18.0
M5	Tier 2	Tier 3	RCD 2	298	400	2800	81.0	21.0
6090AFM85								
M1	Tier 2	Tier 3	RCD 2	213	285	2100	64.6	17.1
M2	Tier 2	Tier 3	RCD 2	242	325	2200	71.0	19.0
M3	Tier 2	Tier 3	RCD 2	280	375	2300	81.0	21.0
M4	Tier 2	Tier 3	RCD 2	317	425	2400	91.0	24.0
6090SFM85								
M1	Tier 2	Tier 3	RCD 2	242	325	2100	65.4	17.3
M2	Tier 2	Tier 3	RCD 2	280	375	2200	78.0	21.0
M3	Tier 2	Tier 3	RCD 2	317	425	2300	87.0	23.0
M4	Tier 2	Tier 3	RCD 2	373	500	2400	107.0	28.0
M5	Tier 2	Tier 3	RCD 2	410	550	2500	116.0	31.0
H	Tier 2	Tier 3	-	242	325	2000	63.2	16.7
6135AFM85								
M1	Tier 2	Tier 3	RCD 2	272	365	1800	76.7	20.3
M2	Tier 2	Tier 3	RCD 2	317	425	1900	86.0	23.0
M3	Tier 2	Tier 3	RCD 2	373	500	2000	102.0	27.0
M4	Tier 2	Tier 3	RCD 2	429	575	2100	119.0	31.0
6135SFM85								
M1	Tier 2	Tier 3	RCD 2	317	425	1800	79.5	21.0
M2	Tier 2	Tier 3	RCD 2	373	500	1900	94.0	25.0
M3	Tier 2	Tier 3	RCD 2	429	575	2000	111.0	29.0
M4	Tier 2	Tier 3	RCD 2	485	650	2100	124.0	33.0
M5	Tier 2	Tier 3	RCD 2	559	750	2200	146.0	39.0

EX = MARPOL Annex VI exempt
Specifications are subject to change.



4.5L | 60 – 235 kW
80 – 315 hp



6.8L | 115 – 298 kW
154 – 400 hp



9.0L | 213 – 410 kW
285 – 550 hp



13.5L | 272 – 559 kW
365 – 750 hp

See your John Deere marine dealer or engine distributor for options to combine the high power density of our 6090SFM and 6135SFM marine engines in dual-circuit keel-cooled applications.

Generator drive and constant-speed auxiliary engines — the strong silent type

Power that never lets you down

John Deere is a trusted provider of generator drive engines worldwide. For reliable power from 40 to 416 kW (54 to 558 hp), John Deere generator drive and constant-speed auxiliary engines deliver quiet operation and low vibration. The water-cooled exhaust manifolds provide cool, quiet performance. And all 4-cylinder models have internal balance shafts to reduce vibration.

Marine generator drive engine ratings

The marine generator engine rating is the power available under normal varying electrical load factors* for an unlimited number of hours per year in commercial applications. This rating incorporates a 10 percent overload capability, and conforms to ISO 8528 prime power. Average load over a 24-hour period shall not exceed 67 percent of the prime rating, of which no more than two hours are between 100 percent and 110 percent of the prime rating.

This rating is used for applications that require constant speed in auxiliary applications.

**Load factor is the actual fuel burned over a period of time divided by the full-power fuel consumption for the same period of time. For example, if an engine burns 160 liters of fuel during an eight-hour run, and the full-power fuel consumption is 60 liters per hour, the load factor is 160 liters / (60 liters per hour x 8 hours) = 33.3 percent.*

Meeting regulations in Europe and Asia

Select generator drive engine ratings meet European Union (EU) Stage V requirements for inland waterway applications and China Stage II marine emissions standards for vessels that are registered in China and operate in Chinese territorial waters.

Engine model	Emissions		Prime power ratings			
	IMO	EPA	kW	hp	kVA	kWe
1500 rpm/50 Hz						
IMO exempt and non-certified engines						
4045DFM70	EX	-	40	54	45	36
4045TFM50	EX	-	57	76	64	51
6068TFM50	EX	-	89	119	102	82
6068AFM85*	EX	-	117	157	133	106
IMO and EPA compliant engines						
4045TFM85*†	EX	Tier 3	61	82	69	55
4045AFM85*†	EX	Tier 3	89	120	102	82
6068AFM85†	EX	Tier 3	129	173	146	117
6068AFM85†	Tier 2	-	139	187	160	125
6068SFM85	Tier 2	-	168	226	188	150
6090AFM85	Tier 2	-	195	261	219	175
6090SFM85	Tier 2	-	222	297	250	200
6135AFM85	Tier 2	-	278	373	313	250
6135SFM85	Tier 2	-	334	447	375	300
1800 rpm/60 Hz						
IMO exempt and non-certified engines						
4045DFM70	EX	-	46	62	50	40
4045TFM50	EX	-	71	95	80	64
6068TFM50	EX	-	115	154	124	99
IMO and EPA compliant engines						
4045TFM85	EX	Tier 3	74	99	81	65
4045TF285	Tier 2	Tier 3	71	95	74	60
4045AFM85	Tier 2	Tier 3	110	148	124	99
4045HF285	Tier 2	Tier 3	117	157	123	99
6068AFM85	EX	Tier 3	129	173	146	117
6068AFM85	Tier 2	Tier 3	166	223	188	150
6068SFM85	Tier 2	Tier 3	195	262	218	175
6090AFM85	Tier 2	Tier 3	222	297	250	200
6090HFM85	-	Tier 3	238	319	249	200
6090SFM85	Tier 2	Tier 3	278	373	313	250
6135AFM85	Tier 2	Tier 3	334	447	375	300
6135HFM85	-	Tier 3	416	558	436	350
6135SFM85	Tier 2	Tier 3	416	558	469	375

EX = MARPOL Annex VI exempt

Specifications are subject to change.

**Meets Marine EU Stage V.*

†Meets China Stage II.



Variable-speed auxiliary engines — ready when you are

We've got you covered

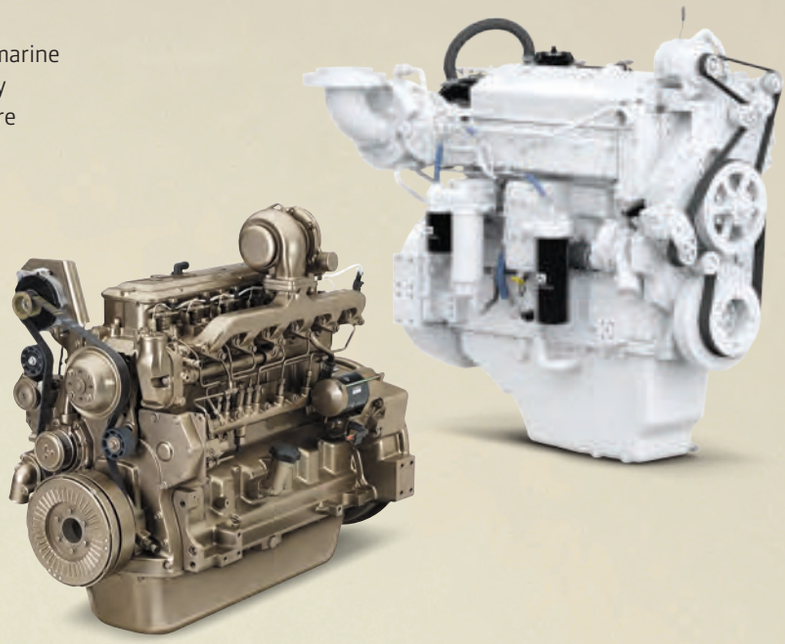
John Deere provides a full line of reliable and fuel-efficient variable-speed auxiliary engines to help you meet U.S. Environmental Protection Agency Marine Tier 3 emissions regulations* and marine classification societies. See your John Deere marine dealer or engine distributor for complete specifications. Log on to **DealerLocator.Deere.com** to find the service dealer nearest you.

**Not available in all countries.*
Specifications are subject to change.

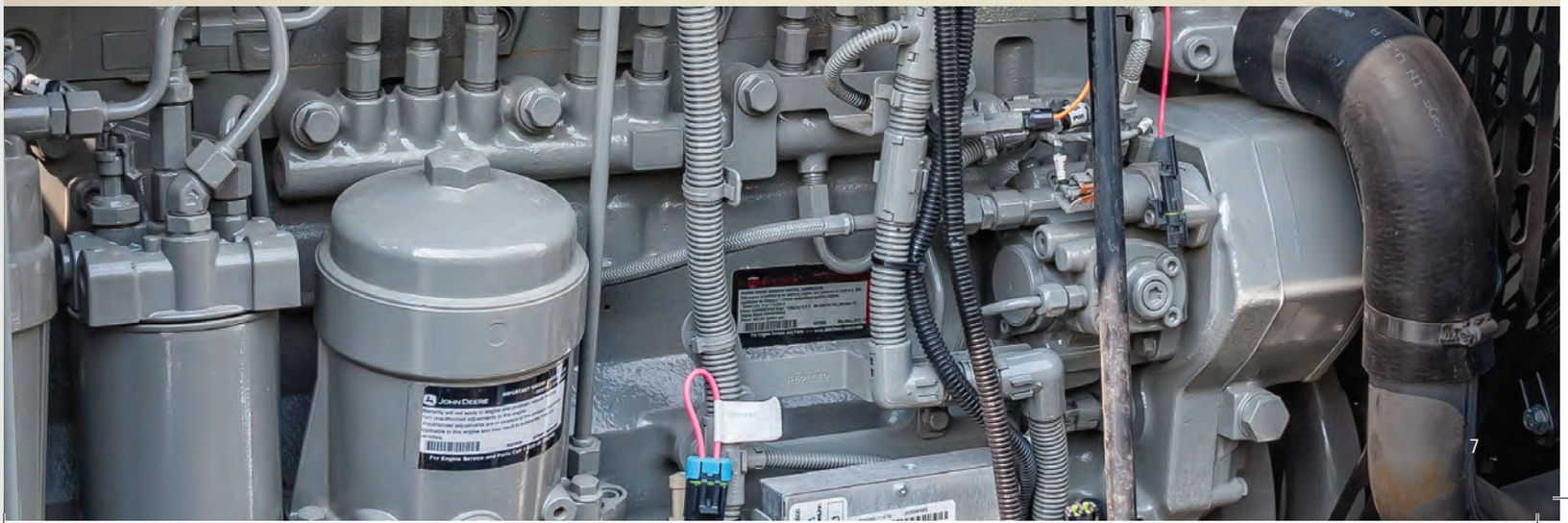
Dry-exhaust or wet-exhaust manifolds

John Deere PowerTech™ radiator-cooled, dry-exhaust manifold engines (TF and HF models) are engineered to run vessel auxiliaries such as pumps, winches, deck cranes, and hydraulics. With displacements from 4.5 to 13.5 liters and power ratings from 74 to 448 kW (99 to 600 hp), meeting EPA Marine Tier 3 requirements has never been easier.

John Deere PowerTech radiator-cooled, wet-exhaust manifold marine engines (HFM models) are rated to provide dependable auxiliary power for oceangoing vessels and other applications that require type approval for marine classification societies. With power ratings from 242 to 373 kW (325 to 500 hp), these engines are ready to work.



Engine model	Emissions		Rated power		Rated speed
	IMO	EPA	kW	hp	rpm
IMO and EPA compliant engines					
4045TF285	Tier 2	Tier 3	74	99	2200
6068HF485	Tier 2	Tier 3	187	251	2200
6090HFM85	-	Tier 3	242	325	2000
6090HF485	Tier 2	Tier 3	280	375	2200
6135HFM85	-	Tier 3	373	500	2000
6135HF485	Tier 2	Tier 3	448	600	2100



Parts and accessories



Maintenance parts

When you choose John Deere, you get the support of one of the strongest engine and equipment companies in the world. Our global support network has been established to help you complete your journey or your workday in comfort and confidence. With our industry-exclusive selection of maintenance parts (from water pumps to fuel conditioners) we have everything you need to keep your engine up and running.

Easy to maintain

- Internal coolant passages to eliminate hoses and fittings
- Dipstick and oil fill on either side
- Poly-vee belt drive that provides durability
- Washable, dry-type air filters that can be serviced quickly and easily
- Replaceable wet liners, precision-joint connecting rod/cap joint, and replaceable valve seats to make rebuilding easy



Reliable accessories

John Deere engine accessories match up perfectly with the performance and reliability of John Deere marine engines. Every John Deere accessory is specially designed to provide easy installation and seamless operation. This complete approach to marine power is why more and more vessels are running with John Deere.

Electronics, instrumentation, and control kits

John Deere electronic kits are engineered to work in harsh marine environments. Instrumentation is easy to read so you always know what is happening with your engine. Harnesses are designed with weatherproof connections and plug-and-play installation to save you time and money.

- Includes tachometer, oil pressure, voltmeter, water temperature, and hour meter gauges
- Electronic information display is bright and easy to read
- Multilanguage text display





A lifetime of support

You can rely on us

With installation assistance, standard and extended warranties, and an extensive worldwide parts and service network, John Deere provides ongoing support for the life of your engine.

Easy to install

- Compact design for easy installation
- Front PTO with electronic clutch to drive pumps and accessories
- SAE flywheel and housing options
- Wet- or dry-exhaust elbows
- Keel-cooled or heat exchanger configurations



Warranty support when you need it

Every John Deere marine engine comes with a solid 2-year/2,000-hour standard warranty. Register your engine and enable your John Deere dealer to respond should you need a warrantable repair.* Registering your engine gives us the information needed to stock the right service parts, maintenance products, and servicing tools. Register the warranty for your engine at **JohnDeere.com/OEMWarranty**.

Extend your protection

Avoid unexpected repair costs with the protection of a John Deere marine engine extended warranty plan — up to 5 years or 3,000 hours for marine engines with less than an M5 power rating. No preapproval of warrantable failure claims is necessary. Simply call or visit any authorized John Deere dealership for fast, reliable service. Our extended warranty plans protect the engine as well as any components and accessories installed by John Deere and our engine distributors.

John Deere PowerAssist™ app

Retrieve serial-specific information for your John Deere engine. Just scan or enter your John Deere engine serial number to access option codes, manuals, part numbers, ECU information, and much more. Download this free app today!

Don't have a mobile device? Go to **JohnDeere.com/EngineSupport** and sign in to the engine information search online product database.



**See specific OEM product warranty language for applicable terms and conditions. Refer to the John Deere new marine engine warranty for complete warranty coverage details.*

I NEED THE RIGHT PARTS. AT THE RIGHT PRICE. RIGHT NOW.

Whether you've got a brand new John Deere engine, one that's been working for years, or a mixed fleet — John Deere is ready to keep you up and running. You can rely on us for your choice of genuine John Deere parts, remanufactured components, and all-makes products. Find your closest John Deere engine distributor or dealer at **DealerLocator.Deere.com**. Ask them about the parts you need, or visit **PartsCatalog.Deere.com**.



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