This is why

No barriers

Read about why M. Rota Diving runs with John Deere power at **JohnDeere.com/Rota.**

Adventure calls

Learn about the adventures of Sandy and Dan at **JohnDeere.com/Sandana.**

Born to fish

Read about how John Deere power helps Michelle do what she loves at **JohnDeere.com/Rittenhouse.**

Clean rivers

Learn how John Deere power helps Living Lands & Waters keep rivers clean at **JohnDeere.com/LLW.**

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.

CONTENTS

Meeting regulations around the world

John Deere marine engines comply with international, European, and United States emissions standards for regulated vessels. John Deere meets U.S. Environmental Protection Agency (EPA) Marine Tier 3 emissions regulations with a complete line of PowerTech engines for newly constructed vessels as well as repowered boats.

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.

ABS TYPE APPROVAL PROGRAM

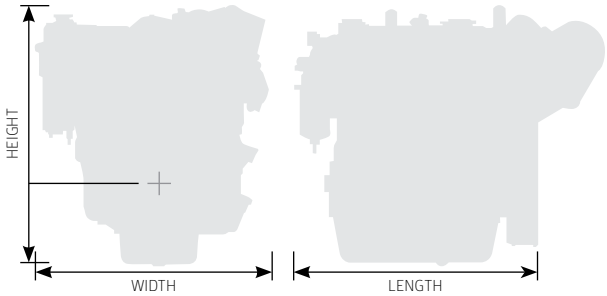
BUREAU VERITAS

CCS

DNV·GL

APPROVED TYPE APPROVAL SCHEME

Dimensions and weights



Engine dimensions and weights listed in this guide use the following variables:

Length mm (in) = length to rear face of flywheel housing

Width mm (in) = maximum width minus width of elbow

Height mm (in) = crank centerline to top plus crank centerline to bottom

Weight kg (lb) = with oil, no coolant – includes engine, flywheel, and electronics

Dimensions may vary according to options selected. Contact your distributor for more information. All specifications are at rated speed and power with standard options unless otherwise noted.

Engine identification

Model designation key

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.

Factory manufactured by

RG	Waterloo, Iowa, USA
CD	Saran, France
PE	Torreón, Mexico

Number of cylinders and total displacement

6135	6 cylinders, 13.5 liters
6090	6 cylinders, 9.0 liters
6068	6 cylinders, 6.8 liters
4045	4 cylinders, 4.5 liters

Engine serial number

Emissions

50	Non-emissions regulated
70, 75, 85	Emissions regulated

Engine type

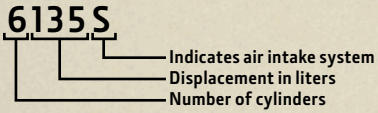
M	Marine

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



**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.*

Marine propulsion M ratings

Ratings are based on the ISO 8665/SAE J1225 standard power rating and the ISO 3046/SAE J1995 crankshaft power rating. The M 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.

M rating	Typical load factor	Typical annual usage	Typical full power operation
M1	> 65%	Unrestricted	Uninterrupted
M2	≤ 65%	3,000 – 5,000 hr	16 of each 24 hr
M3	≤ 50%	2,000 – 4,000 hr	4 of each 12 hr
M4	≤ 40%	1,000 – 3,000 hr	1 of each 12 hr
M5	≤ 35%	Up to 1,000 hr	0.5 of each 8 hr

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 between 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 between 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 four 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 between 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.

** 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 more than 200 rpm less than the maximum attainable engine speed.

Marine engine propulsion power ratings

Propulsion power ratings — IMO compliant 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)
6068TFM75	118 – 150 kW (158 – 201 hp)

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

kW	0	25	50	75	100	125	150	175	200	225	250	275	300	325	350	375	400	425	450	475	500	525	550	575	600
hp	0	34	67	101	134	168	201	235	268	302	335	369	402	436	469	503	536	570	603	637	670	704	738	771	805

Propulsion power ratings — IMO and EPA compliant engines

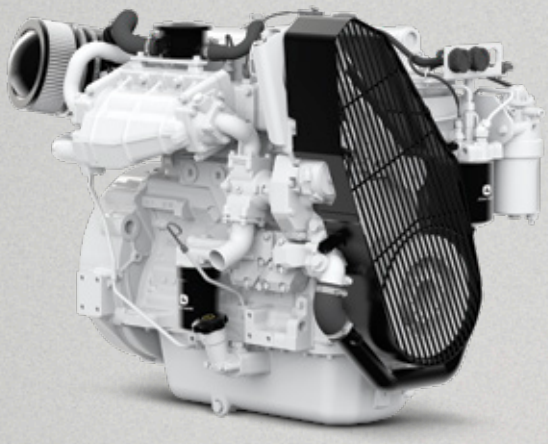
Engine	Power rating
4045TFM85	75 – 93 kW (100 – 125 hp)
4045AFM85	119 – 168 kW (160 – 225 hp)
4045SFM85	205 – 235 kW (275 – 315 hp)
6068AFM85	172 – 246 kW (230 – 330 hp)
6068SFM85	186 – 298 kW (249 – 400 hp)
6090AFM85	213 – 317 kW (285 – 425 hp)
6090SFM85	242 – 410 kW (325 – 550 hp)
6135AFM85	272 – 429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

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

kW	0	25	50	75	100	125	150	175	200	225	250	275	300	325	350	375	400	425	450	475	500	525	550	575	600
hp	0	34	67	101	134	168	201	235	268	302	335	369	402	436	469	503	536	570	603	637	670	704	738	771	805

PowerTech
4.5L marine engines

- Keel-cooled or heat exchanger configurations
- Naturally aspirated, turbocharged non-aftercooled, or turbocharged with air-to-seawater or air-to-coolant aftercooling
- Feature constant power to 400 rpm below rated speed
- Excellent choice for launches, work boats, trawler yachts, and patrol craft



Engine model	Emissions			Rated power		Rated speed	Rated fuel consumption	
	IMO	EPA	RCD	kW	hp	rpm	L/hr	gal/hr
IMO compliant 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
IMO and EPA compliant engines								
4045TFM85								
M1	EX	Tier 3	RCD II	75	100	2400	21.4	5.7
M2	EX	Tier 3	RCD II	93	125	2500	29	8
4045AFM85								
M1	Tier 2	Tier 3	RCD II	119	160	2300	33.2	8.8
M2	Tier 2	Tier 3	RCD II	134	180	2400	37	10
M3	Tier 2	Tier 3	RCD II	149	200	2500	44	12
M4	Tier 2	Tier 3	RCD II	168	225	2600	49	13
4045SFM85								
M4	Tier 2	Tier 3	RCD II	205	275	2600	54	14
M5	Tier 2	Tier 3	RCD II	235	315	2800	62	16

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

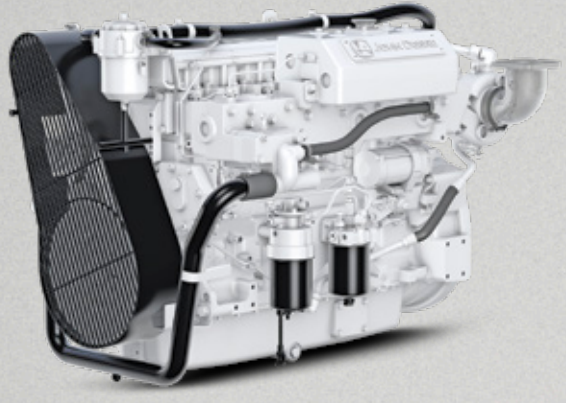
Engine model	Length, to rear of block		Width		Height		Weight, dry	
	mm	in	mm	in	mm	in	kg	lb
4045DFM70†	756	29.8	703 – 731	27.7 – 28.8	901	35.4	437	963
4045TFM50	748	29.4	703	27.7	912	35.9	461	1017
4045TFM85†	739	29.1	692 – 703	27.3 – 27.6	912	35.9	507	1117
4045AFM85†	752	29.6	692 – 771	27.3 – 30.4	964	37.9	578	1274
4045SFM85	762	30.0	820	32.3	922	36.2	558	1230

†Engine configuration may vary.

Specifications are subject to change.

PowerTech
6.8L marine engines

- Keel-cooled or heat exchanger configurations
- Turbocharged non-aftercooled, or turbocharged with air-to-seawater or air-to-coolant aftercooling
- Excellent choice for recreational boats, launches, work boats, trawler yachts, and patrol craft



Engine model	Emissions			Rated power		Rated speed	Rated fuel consumption	
	IMO	EPA	RCD	kW	hp	rpm	L/hr	gal/hr
IMO compliant and non-certified engines								
6068TFM75								
M1	EX	-	-	118	158	2400	33.7	8.9
M2	Tier 2	-	-	133	178	2500	38.3	10.1
M3	Tier 2	-	-	150	201	2600	44.1	11.6
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
IMO and EPA compliant engines								
6068AFM85								
M1	Tier 2	Tier 3	RCD II	172	230	2300	50.9	13.4
M2	Tier 2	Tier 3	RCD II	198	265	2400	58.0	15.0
M3	Tier 2	Tier 3	RCD II	224	300	2500	65.0	17.0
M4	Tier 2	Tier 3	RCD II	246	330	2600	71.0	19.0
6068SFM85								
M1	Tier 2	Tier 3	RCD II	186	249	2400	51.0	13.0
M2	Tier 2	Tier 3	RCD II	209	280	2500	57.0	15.0
M3	Tier 2	Tier 3	RCD II	239	321	2600	63.0	17.0
M4	Tier 2	Tier 3	RCD II	265	355	2700	69.0	18.0
M5	Tier 2	Tier 3	RCD II	298	400	2800	81.0	21.0

EX = MARPOL Annex VI exempt

Engine model	Length, to rear of block		Width		Height		Weight, dry	
	mm	in	mm	in	mm	in	kg	lb
6068TFM75	1004	39.5	712	28.0	882	34.7	730	1609
6068TFM50	1004	39.5	712	28.0	881	34.7	730	1609
6068AFM85[†]	1034	40.7	806 – 865	31.7 – 34.0	935	36.9	787	1735
6068SFM85	1034	40.7	872	34.3	931	36.7	763	1682

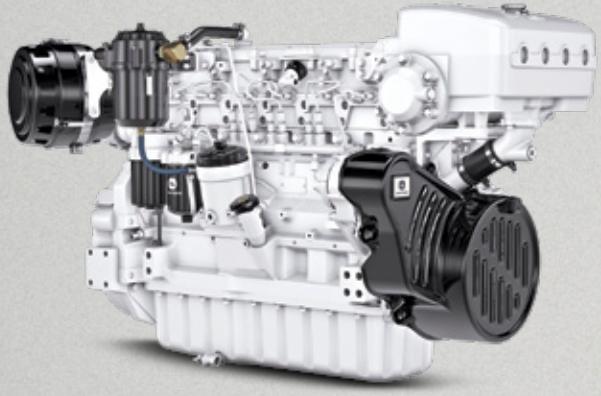
[†]Engine configuration may vary.

Specifications are subject to change.

PowerTech
9.0L marine engines

- Keel-cooled or heat exchanger configurations
- Turbocharged with air-to-seawater or air-to-coolant aftercooling
- 4-valve cylinder head
- Electronically controlled HPCR fuel system
- Front or side service
- Excellent choice for patrol craft, launches, work boats, fishing boats, trawler yachts, and sportfishing boats

See your John Deere engine distributor for options to combine the high power density of our 9.0L SFM marine engines in dual-circuit keel-cooled applications.



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								
6090AFM85								
M1	Tier 2	Tier 3	RCD II	213	285	2100	64.6	17.1
M2	Tier 2	Tier 3	RCD II	242	325	2200	71.0	19.0
M3	Tier 2	Tier 3	RCD II	280	375	2300	81.0	21.0
M4	Tier 2	Tier 3	RCD II	317	425	2400	91.0	24.0
6090SFM85								
M1	Tier 2	Tier 3	RCD II	242	325	2100	65.4	17.3
M2	Tier 2	Tier 3	RCD II	280	375	2200	78.0	21.0
M3	Tier 2	Tier 3	RCD II	317	425	2300	87.0	23.0
M4	Tier 2	Tier 3	RCD II	373	500	2400	107.0	28.0
M5	Tier 2	Tier 3	RCD II	410	550	2500	116.0	31.0

EX = MARPOL Annex VI exempt

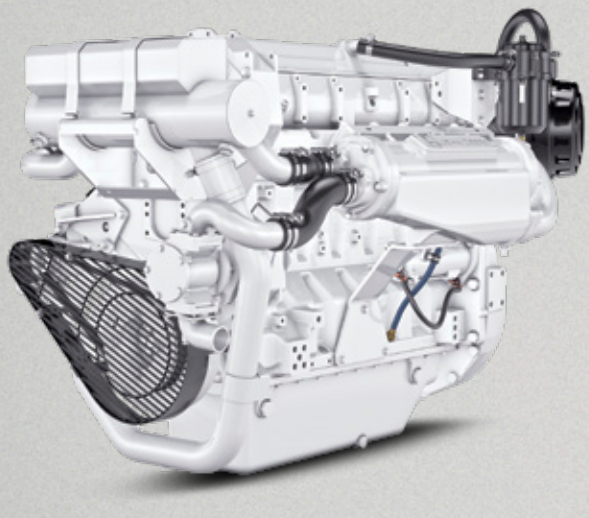
Engine model	Length, to rear of block		Width		Height		Weight, dry	
	mm	in	mm	in	mm	in	kg	lb
6090AFM85	1297	51.1	938	36.9	983	38.7	1055	2325
6090SFM85	1297	51.1	938	36.9	983	38.7	1056	2327

Specifications are subject to change.

PowerTech
13.5L marine engines

- Keel-cooled or heat exchanger configurations
- Turbocharged with air-to-seawater or air-to-coolant aftercooling
- 4-valve cylinder head
- Feature constant power to 400 rpm below rated speed
- Excellent choice for patrol craft, launches, work boats, fishing boats, trawler yachts, and sportfishing boats

See your John Deere engine distributor for options to combine the high power density of our 13.5L SFM marine engines in dual-circuit keel-cooled applications.



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								
6135AFM85								
M1	Tier 2	Tier 3	RCD II	272	365	1800	76.7	20.3
M2	Tier 2	Tier 3	RCD II	317	425	1900	86.0	23.0
M3	Tier 2	Tier 3	RCD II	373	500	2000	102.0	27.0
M4	Tier 2	Tier 3	RCD II	429	575	2100	119.0	31.0
6135SFM85*								
M1	Tier 2	Tier 3	RCD II	317	425	1800	79.5	21.0
M2	Tier 2	Tier 3	RCD II	373	500	1900	94.0	25.0
M3	Tier 2	Tier 3	RCD II	429	575	2000	111.0	29.0
M4	Tier 2	Tier 3	RCD II	485	650	2100	124.0	33.0
M5	Tier 2	Tier 3	RCD II	559	750	2200	146.0	39.0

**Also meets EU Stage III A emissions regulations.*

Engine model	Length, to rear of block		Width		Height		Weight, dry	
	mm	in	mm	in	mm	in	kg	lb
6135AFM85	1316	51.8	990	39.0	1182	46.5	1410	3108
6135SFM85	1335	52.6	990	39.0	1176	46.3	1426	3143

Specifications are subject to change.

Marine generator drive and constant-speed auxiliary 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.*

Conversions

Generator drive rating (kWe)

[Engine power - Fan power loss] x Generator efficiency

Note:
DFM, TFM, AFM, and SFM generator drive ratings do not have fan power loss.

Power factor (PF)

kWe & kVA = Real power / Apparent power
PF constant = 0.80

Formulas

Standby power = Prime power x 110% overload capacity
kVA rating = kWe rating / 0.80

Estimated electrical power is calculated from the typical generator efficiency and fan power percentages shown. Applications may vary.

PowerTech marine generator and constant-speed auxiliary engines

- Quiet, smooth operation
- Trusted provider of generator drive engines worldwide
- Available in 1500 rpm for 50 Hz and 1800 rpm for 60 Hz configurations
- This rating is capable of a 10 percent overload capability and conforms to ISO 8528 prime power

Engine model	Emissions		Prime power ratings			
	IMO	EPA	kW	hp	kVA	kWe
1500 rpm / 50 Hz						
IMO compliant and non-certified engines						
4045DFM70	EX	-	40	54	45	36
4045TFM50	EX	-	57	76	64	51
4045TFM85	EX	-	61	82	69	55
4045AFM85	EX	-	89	120	102	82
6068TFM50	EX	-	89	119	102	82
6068AFM85	Tier 2	-	129	173	146	117
6068AFM85	Tier 2	-	139	187	160	128
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 compliant and non-certified engines						
4045DFM70	EX	-	46	62	50	40
4045TFM50	EX	-	71	95	80	64
6068TFM50	EX	-	115	154	124	99
6068AFM85	Tier 2	-	129	173	146	117
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	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

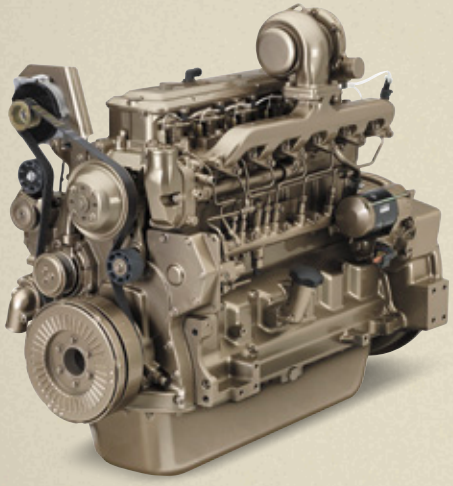
Specifications are subject to change.

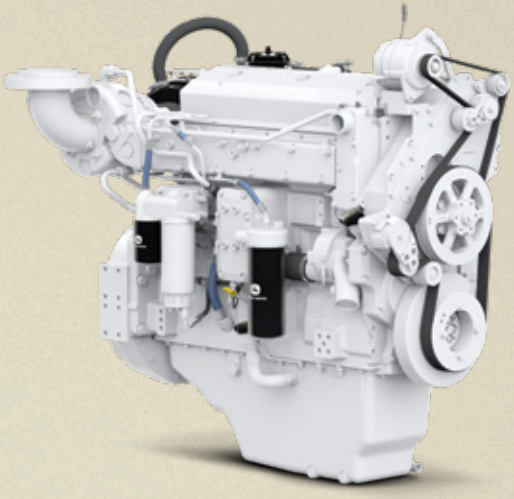
PowerTech variable-speed auxiliary engines

John Deere PowerTech radiator-cooled, dry-exhaust manifold engines (TF and HF models) are compliant with EPA Marine Tier 3 emissions regulations* and engineered to run vessel auxiliaries such as pumps, winches, deck cranes, and hydraulics. We also offer a choice of options and accessories.

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.

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





*Not available in all countries.

Specifications are subject to change.