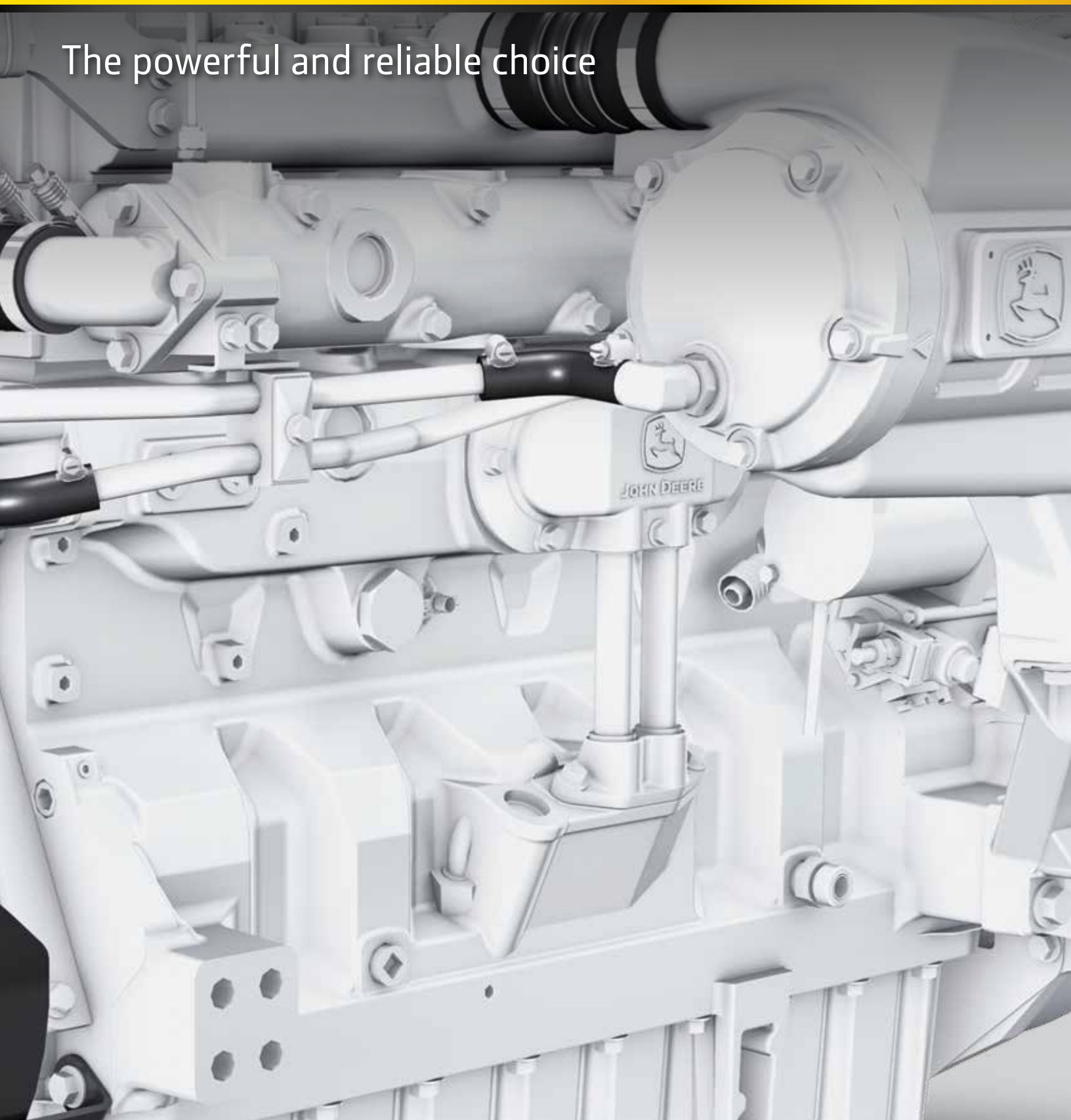
Marine Applications

Diesel Engines

JOHN DEERE



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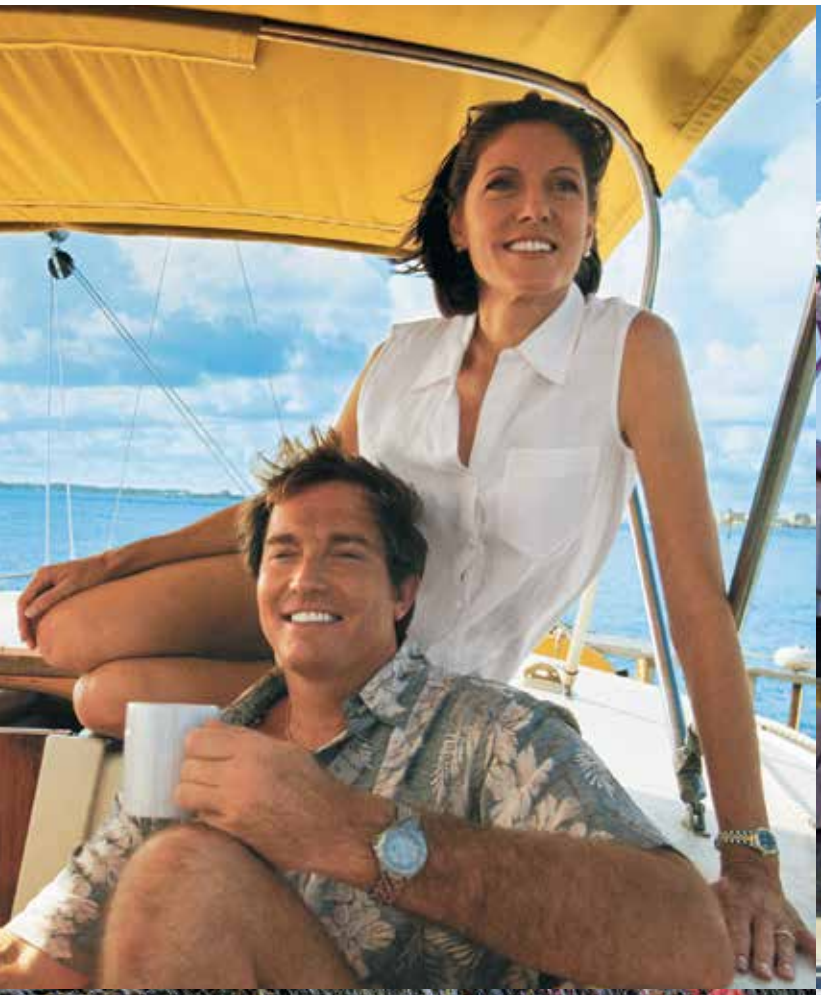


Nothing Runs Like A Deere™

John Deere PowerTech™ engines are as powerful in the water as they are on the land. Our marine propulsion and generator engines share the same reputation for performance and reliability that their agricultural and industrial counterparts have enjoyed for decades. They are also backed by a vast service network that will keep you operating — no matter where you go.

When you choose John Deere, you get the support of one of the strongest engine and equipment companies in the world. See for yourself why more vessels are being powered by John Deere.

Clean engines — clean air

With John Deere PowerTech engines, everything runs clean and efficiently — above and below deck. John Deere marine engines offer closed crankcase vents that eliminate undesirable gases in the engine room and keep the bilge clean.

John Deere also protects the air outside your boat by complying with international, European, and United States emissions standards for regulated vessels. John Deere will meet 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, as regulation dates become effective.

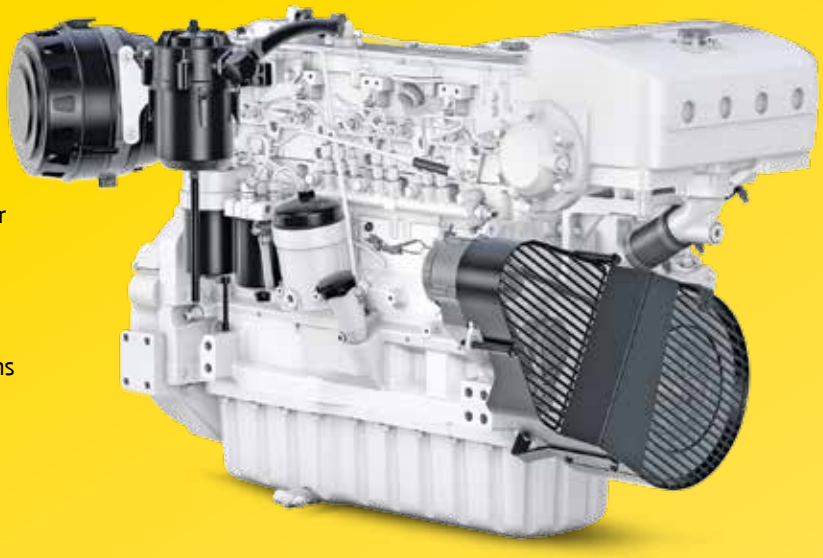
- EPA Tier 3 regulations for vessels flagged in the United States
- European Union Nonroad mobile machinery (NRMM – 97/68/EC as amended), whose standards are also recognized by the CCNR for sailing on the Rhine
- European Union Recreational Craft Directive (RCD – 94/25/EC as amended)
- Emissions certified engines over 130 kW (174 hp) meet regulations set out in Annex VI of the International Maritime Organization (IMO) MARPOL convention. Engine International Air Pollution Prevention (EIAPP) certificates issued by the U.S. EPA or American Bureau of Shipping (ABS) are available for select engine models. **Visit your John Deere dealer for details.**

Engines for non-regulated territories

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

Marine classification societies

John Deere has worked with various marine classification societies allowing the use of our engines in vessels designed and built to the society's requirements.



BUREAU VERITAS

Lloyd's Register

ABS TYPE APPROVAL PROGRAM

DNV

Propulsion engines — more power in the water

John Deere PowerTech engines are built for long life, reliable performance, fuel efficiency, quiet operation, ease of access to main parts, and simplified integration. They give you the power you need when you're on the water. Choose reliable John Deere engines from 56 to 559 kW (75 to 750 hp).

Propelled performance

John Deere engines give you an effective blend of pure power and rugged toughness. Our full, high-horsepower lineup offers the right engine for your needs — each of them with added torque at slower speeds. The result? John Deere engines build power faster and cruise at a higher speed with a lower rpm. Boost your vessel's performance in swells, tides, or currents with reliable power that's ready when you are.

Model designation key

6135SFM85

Emissions
50 – Non-emissions regulated
50, 70, 75, 76, 85 – Emissions regulated

Indicates air intake system
DFM – Naturally aspirated
TFM – Turbocharged
AFM – Turbocharged and aftercooled, air-to-coolant
SFM – Turbocharged and aftercooled, air-to-seawater

Displacement in 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.

4.5L
56 – 168 kW
75 – 225 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

Marine propulsion M ratings

Ratings are based on the ISO 8655 standard power rating and the SAEJ1228 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 representative to verify the optimal rating for the specific application.

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 hauls tugs and towboats, fish and shrimp trawlers/draggers, and displacement hull fishing boats

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

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 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.

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 1 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 planning hull commercial fishing boats.

The **M5** rating is for marine recreational propulsion and certification for light duty commercial Tier 3 applications that operate between 300-1,000 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 8 hours. The remaining time of operation is at or below cruising† speed.

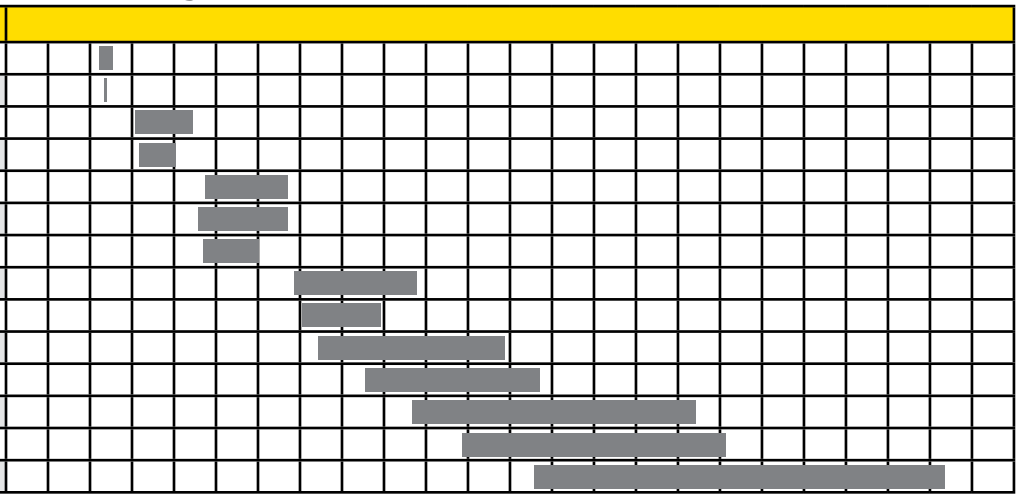
Possible applications: recreational boats, tactical military vessels and rescue boats.

* 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

Engine	Power Rating
4045DFM50	56 – 63 kW (75 – 85 hp)
4045DFM70	60 kW (80 hp)
4045TFM50	78 – 112 kW (105 – 150 hp)
4045TFM75	80 – 101 kW (107 – 135 hp)
4045AFM85	119 – 168 kW (160 – 225 hp)
6068TFM50	115 – 168 kW (154 – 225 hp)
6068TFM75	118 – 150 kW (158 – 201 hp)
6068AFM75/85	172 – 246 kW (230 – 330 hp)
6068SFM50	176 – 224 kW (236 – 300 hp)
6068SFM75/85	186 – 298 kW (249 – 400 hp)
6090AFM75/85	213 – 317 kW (285 – 425 hp)
6090SFM75/85	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.

Generator drive engines — the strong silent type

For auxiliary power from 40 to 416 kW (54 to 558 hp), John Deere generator drive engines deliver quiet, smooth operation that never lets you down. You may even forget they are aboard until you turn on the lights or plug in an appliance. This quiet reliability is why John Deere has become the preferred provider of generator drive engines worldwide, producing more engines in our power range for marine generators than any other manufacturer. They are available in 1500 rpm for 50 Hz and 1800 rpm for 60 Hz configurations.

Quiet operation and low vibration

We strive to design engines that go almost unnoticed. This is why all the moving parts are dynamically balanced. The torque available at low rpm helps with fast load response.

- Water-cooled exhaust manifold for cooler, quieter performance
- Engine isolators with optional mounting supports
- All 4-cylinder models have internal balance shafts to eliminate vibration

Generator
Drive Engines
40 – 416 kW
54 – 558 hp

Marine generator 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 required 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

Marine Engine Generator Drive Power Ratings

Engine	Power Rating
4045DFM50	40 – 48 kW (54 – 64 hp)
4045DFM70	40 – 46 kW (54 – 62 hp)
4045TFM50	57 – 71 kW (76 – 95 hp)
4045TFM75	55 – 73 kW (74 – 98 hp)
4045TFM85	61 – 74 kW (82 – 99 hp)
4045AFM85	89 – 110 kW (119 – 148 hp)
6068TFM50	89 – 115 kW (119 – 154 hp)
6068TFM76	89 – 110 kW (119 – 148 hp)
6068AFM75/85	139 – 166 kW (186 – 223 hp)
6068SFM85	168 – 195 kW (226 – 262 hp)
6090AFM75/85	195 – 222 kW (261 – 297 hp)
6090SFM75/85	222 – 278 kW (298 – 373 hp)
6135AFM85	278 – 334 kW (373 – 448 hp)
6135SFM85	334 – 416 kW (448 – 558 hp)

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

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

Marine applications

Effortless engine power

Easy to install

John Deere marine engines can be configured for propulsion, generator set, and auxiliary applications. Our full range of reliable, fuel-efficient engines have the power to meet your needs. We also offer a choice of options and accessories to fit any application.

The simple and clean design of John Deere marine engines allows direct access to connection and service points for the cooling system, fuel supply, lubrication system, and exhaust system.

- 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 cooled

Easy to operate

Prewired instrument panel provides electronic control of engine functions and instant access to engine diagnostics.

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

Easy to maintain

- Internal coolant passages minimize leaks by eliminating hoses and fittings
- Dipstick and oil fill on either side
- Poly-vee belt drive increases durability
- Washable, dry-type air filters can be serviced quickly and easily
- Replaceable wet liners, precision-joint connecting rod/cap joint, and replaceable valve seats make rebuilding easy
- Gear timing maintenance-free during entire life of engine

PowerView™ Display

Cruise with confidence

Reliable parts and service

With more than 4,000 John Deere service locations worldwide, you're never far from help when you need it. However, when you can't see the shore, reliability takes on a whole new meaning. That's why you should make sure the parts that go into your John Deere marine engine are always genuine John Deere parts.

John Deere Parts On-Board Kits contain preventive maintenance or recommended spare parts for your particular engine model. By ordering a kit and storing it below deck, you'll be prepared in the unlikely event of needing unexpected maintenance or repairs when you're miles from shore.

Work with any John Deere dealer to customize your kit today. Log on to JohnDeere.com/dealer to find the service dealer nearest you.

Not available in all regions. Please contact your local dealer.

Best warranty on the water — by far

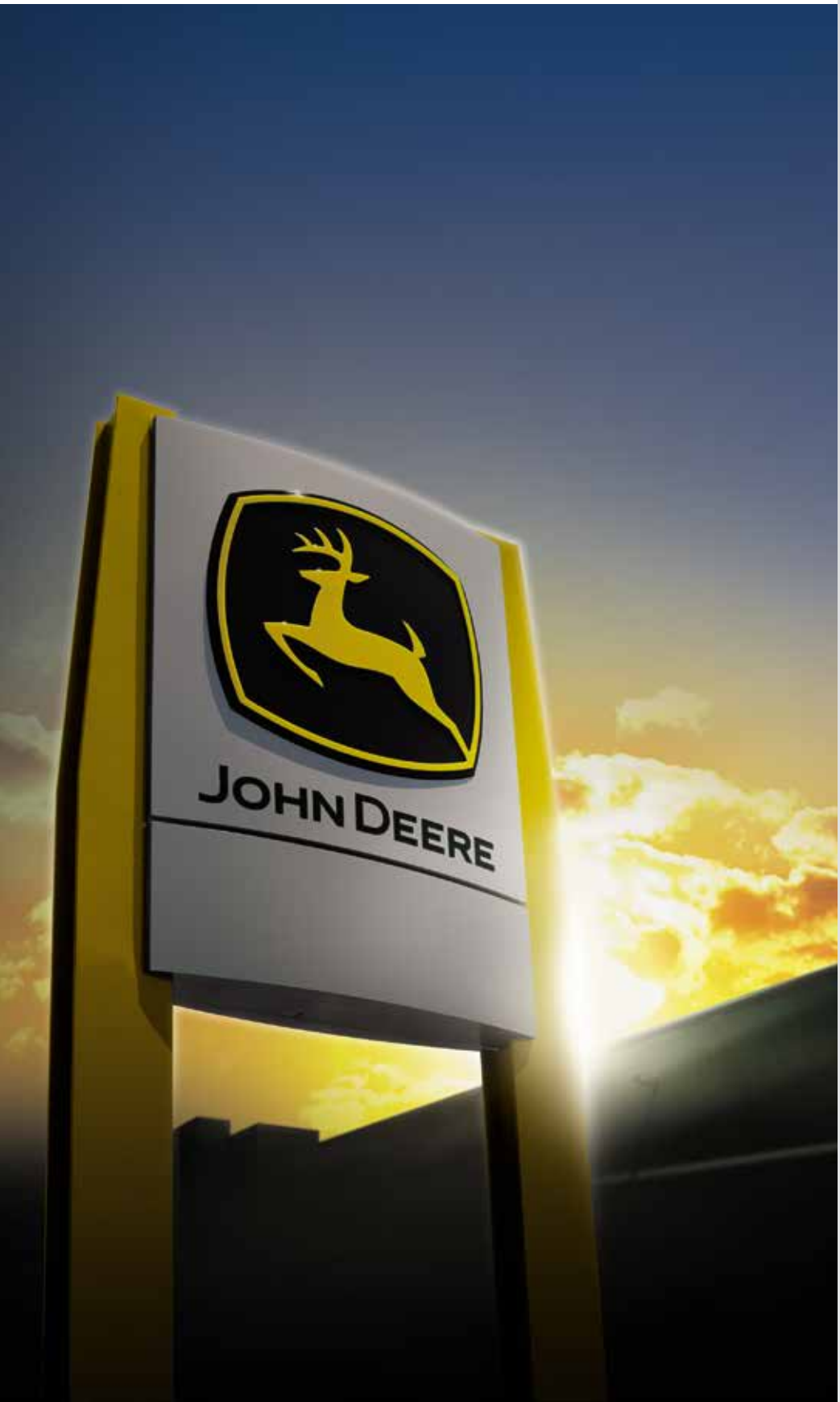
Whether you're working on the water or heading out to relax — it's nice to know that you're taking the best marine engine warranty with you. The John Deere warranty has the most complete coverage of the major marine engine manufacturers. While others include only major components, our standard warranty covers everything — for either 12 months (with unlimited hours of use), or 24 months (with up to 2,000 hours of use).* Plus, you get even longer worry-free cruising when you purchase an extended warranty of up to 5-years/6,000 hours.* See your John Deere marine dealer or engine distributor for details.

*Conditions apply. See warranty registration.

Less fuel

The efficiency of John Deere marine engines makes a big difference in your fuel costs. A unique combustion chamber and electronically controlled fuel injection delivers the lowest fuel consumption levels possible. In addition, thanks to high torque, our engines can be used at lower rpms. You can travel farther and get more out of every tank when you choose John Deere marine engines.

The Parts On-Board Kit comes with a factory-recommended list of maintenance items and common repair parts for your specific engine. So you can run with confidence when you are close to home or miles from shore. Think of it as the most useful marine engine parts kit you may never use.



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JOHN DEERE ENGINE MANUFACTURING
ISO 9000
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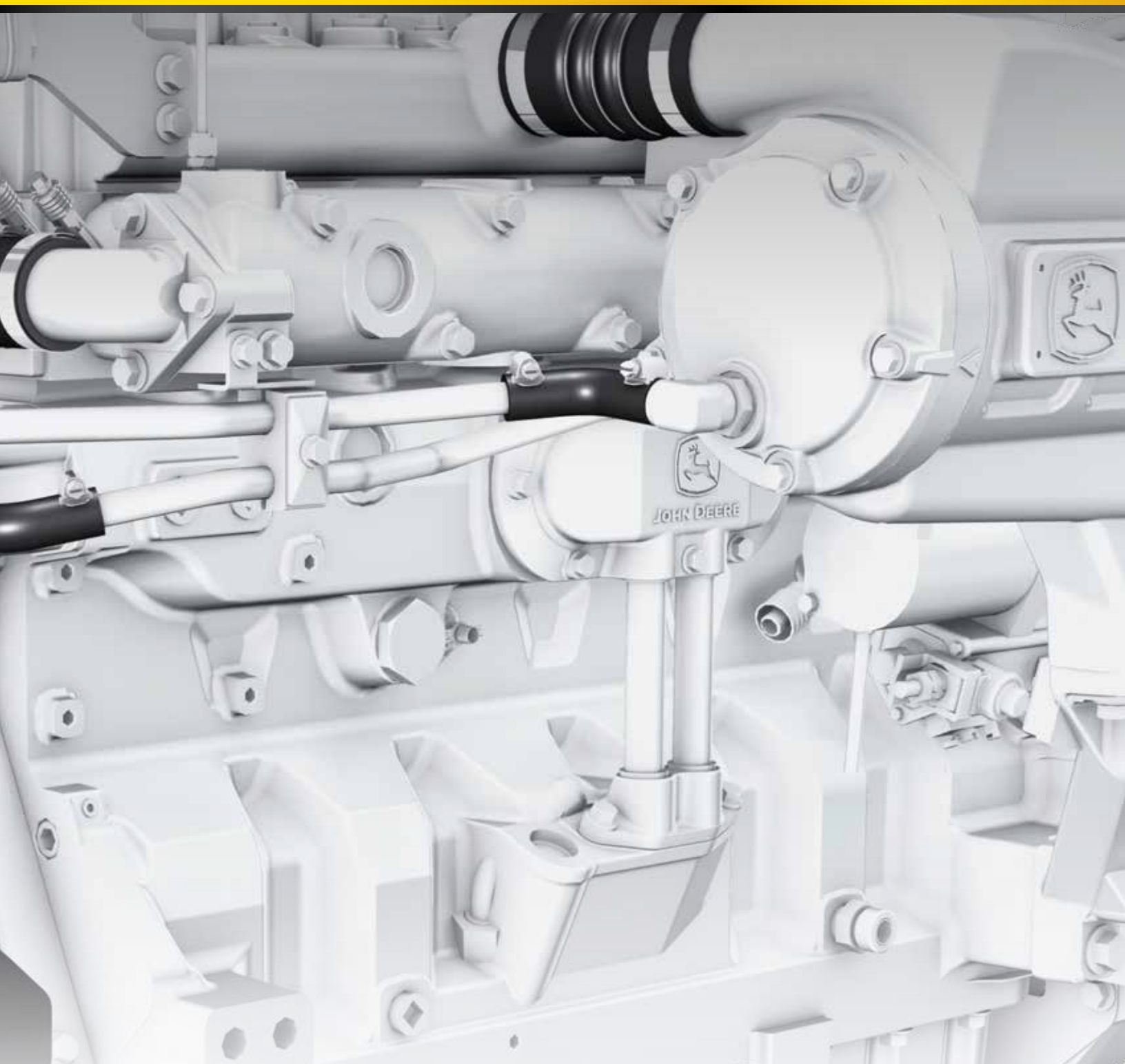

DSWC20 Litho in U.S.A. (13-09)

JohnDeere.com/marine