

# Engine Maintenance and Support



JOHN DEERE

*Keep it running*





# **KEEP IT**

# **RUNNING**



**ENGINE PARTS FOR ANY AGE.  
ANY MAKE. ANY BUDGET.**

No matter the age or make of your equipment, your John Deere dealer or engine distributor is the one-stop shop to keep you up and running. Whether you choose genuine John Deere parts, remanufactured components, or alternative parts, you can be confident knowing you're getting the right part at the right price — all backed by the warranties and support you'd expect from John Deere.

[JohnDeere.com/EngineSupport](https://www.johndeere.com/EngineSupport)

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*Product safety during machine operation and maintenance is important. Before performing any maintenance on your machine, make sure it is parked in a safe location and completely powered down. Always wear protective equipment when applicable and follow all operating, safety, and maintenance instructions in the Operator's Manual.*



## Genuine John Deere parts



### *The power of choice*

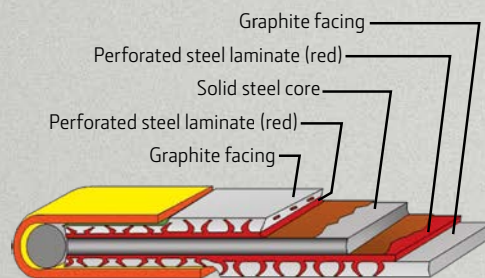
At John Deere, we support a wide range of makes and ages of engines. Your authorized John Deere dealer or engine distributor is the best place to go for recommendations — giving you the power to choose the right replacement part or maintenance solution.

We recommend genuine John Deere parts to keep your John Deere engine running at top performance. Beware of look-alike parts that may not be manufactured to John Deere's exacting standards and specifications. Only genuine John Deere parts are built the same, and perform the same, as the originals.\*

Order the parts you need through your nearest John Deere dealer or engine distributor. View parts pricing and availability, and complete online orders, at **PartsCatalog.Deere.com**.

### *John Deere head gaskets*

The five-layer design of a John Deere head gasket enhances its internal sealing performance. Graphite facing provides an excellent surface seal. Perforated steel laminate bonds the gasket internally. A solid steel core provides protection from high pressures and intense heat. Excluding any layer increases the risk of leaks, power loss, and engine wear.



**5 LAYERS**  
WITH STAND  
**HIGH ENGINE**  
➡ PRESSURES ◀

\*Attributes of the genuine John Deere engine parts referenced on pages 4–7 are based on internal tests conducted by John Deere in the United States in 2018.



## John Deere cylinder liners

**Hardened surfaces:** John Deere liners are heat-treated to a precise hardness and depth to increase durability. Proper heat treatment provides a surface with good wear characteristics to help prevent cracking or flaking on the inside of the liner.

**Graphite distribution:** Genuine John Deere liners feature even graphite distribution for even surface wear and engine durability. This consistent microstructure minimizes oil consumption caused by liner scuffing or wear.



EVEN GRAPHITE  
DISTRIBUTION  
=  
EVEN SURFACE  
WEAR

## John Deere pistons and rings

**Bore offset:** John Deere offsets the bore hole for the wrist pin slightly off-center. This decreases the impact of the piston skirt on the liner and increases service life by reducing drag, mechanical stress, vibration, and liner wear.

**Fiber reinforcement:** John Deere incorporates a fiber-reinforced ring into the lip of the piston bowl for more durable performance. The ring is constructed using high-alpha alumina fibers, which provide more than twice the yield strength of aluminum alloy and increase the operating pressure and temperature range without the risk of cracking.

**Piston rings:** John Deere piston rings include a thick phosphate coating that reduces surface wear and provides a continued seal throughout the life of the engine. A worn seal increases fuel and oil consumption and power loss.



John Deere  
offset bore

Center  
bore

**2X**  
STRONGER THAN  
ALUMINUM  
ALLOY





## Genuine John Deere parts



### *John Deere camshafts*

Camshafts serve a vital role in air, fuel, and emissions management on John Deere engines. Camshafts determine when, how long, and how fast the engine valves open and close. This is one of the most critical elements that govern engine performance. The slightest variation from the camshaft lobe design can negatively impact power output, fuel efficiency, and emissions control. Genuine John Deere camshafts are specifically designed to maximize performance and maintain emissions compliance.



**PRECISION  
VALVE  
CONTROL**

### *John Deere crankshaft damper*

Crankshaft dampers protect your engine from harmful vibration that could occur when torque is applied. Dampers not only protect the crankshaft; they help extend belt life and reduce gear wear. Your damper should be replaced whenever an engine is overhauled or replaced with a remanufactured engine. John Deere recommends changing the crankshaft damper at 4,000 to 5,000 hours or five years, whichever comes first in the application.



**REPLACE  
DAMPER EVERY  
5,000 HOURS  
OR 5 YEARS**



## John Deere piston liner kits

John Deere piston liner kits are preassembled and covered by warranty when purchased from a John Deere dealer or engine distributor. Preassembled kits minimize the chance for broken or improperly installed piston rings that might cause power loss, oil consumption, and excessive wear. Preassembled kits also reduce overall costs since additional labor and special tools are not necessary to assemble individual components.

**PRE-  
ASSEMBLED**



## John Deere engine overhaul kits

Your engine is the lifeblood of your machine, and its components are integral to keeping your equipment running at peak performance. When it comes time to overhaul your engine, choose a kit that provides the same quality and performance your engine had when it left the factory.

Some manufacturers offer engine overhaul kits for John Deere engines. However, only John Deere overhaul kits contain genuine John Deere components that are manufactured and tested to the latest John Deere specifications.

### Most John Deere overhaul kits include:

- Engine gasket kit (gaskets, o-rings, and seals)
- Piston liner kit
- All bearings and bushings (rod, main, and thrust bearings)
- Thrust washers
- One-time-use fasteners
- Cup plugs, rivets, or any other sealing parts that cannot be reused after removal
- Bypass and pressure-regulating valves and springs
- Rod bolts
- Main bolts



**John Deere engine overhaul and piston liner kit warranty:** Our engine overhaul kits and preassembled piston liner kits come with a 1-year/1,500-hour warranty (whichever comes first) determined from the date of purchase. Coverage includes both parts and labor when installed by a John Deere dealer or engine distributor; otherwise coverage is for parts only. See your John Deere dealer for details.

## Remanufactured engines and components

### ***John Deere Reman. It's not rebuilt. It's remanufactured.***

Remanufactured is not the same as rebuilt or repaired. The distinction is critical. A rebuilt engine or component is disassembled only to the point of failure, and rebuilt using the same, new, or aftermarket part. When an engine or component is repaired, only the defective parts are examined and replaced.

John Deere goes beyond remanufacturing to create parts in like-new condition. We completely disassemble the product, thoroughly clean and inspect each part for wear or damage, replace if necessary, and assemble using the same processes we use to produce new engines and components. If a part like a turbocharger has had revisions or improvements since it was originally designed, we remanufacture it using all the updates to maximize reliability and performance.

### ***Get genuine John Deere performance***

John Deere Reman products deliver the same level of performance and reliability as new engines and components. We guarantee all engines and components are manufactured to stringent John Deere standards and produced to original John Deere specifications. They're even designed by our engineers and built by our certified technicians — using only 100% John Deere parts.

### ***Spend less and get back to work sooner***

You'll get like-new performance while spending 25% to 30% less than new, making John Deere Reman your low-cost repair alternative. Choosing Reman over an in-house or outside repair can save you even more money with reduced labor costs and downtime. And when compared to other repair options, the price is very competitive.

For additional information about John Deere Reman, visit **[JohnDeere.com/Reman](http://JohnDeere.com/Reman)**.

*Not available in all countries.*





## ENGINES

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Complete and basic engines



Complete block assemblies

## ELECTRICAL/ELECTRONICS

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Starters



Alternators



Electronic Control Unit (ECU)

## FUEL

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Fuel injection pumps



Injectors

## ENGINE COMPONENTS

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Connecting rods



Cylinder heads



Water pumps



Oil pumps



Turbochargers

*Components listed above are in our current product offering. John Deere Reman components will vary by machine and model, and our product line is currently expanding to meet increasing demands. Check with your John Deere dealer or engine distributor for availability of Reman components for your engine.*

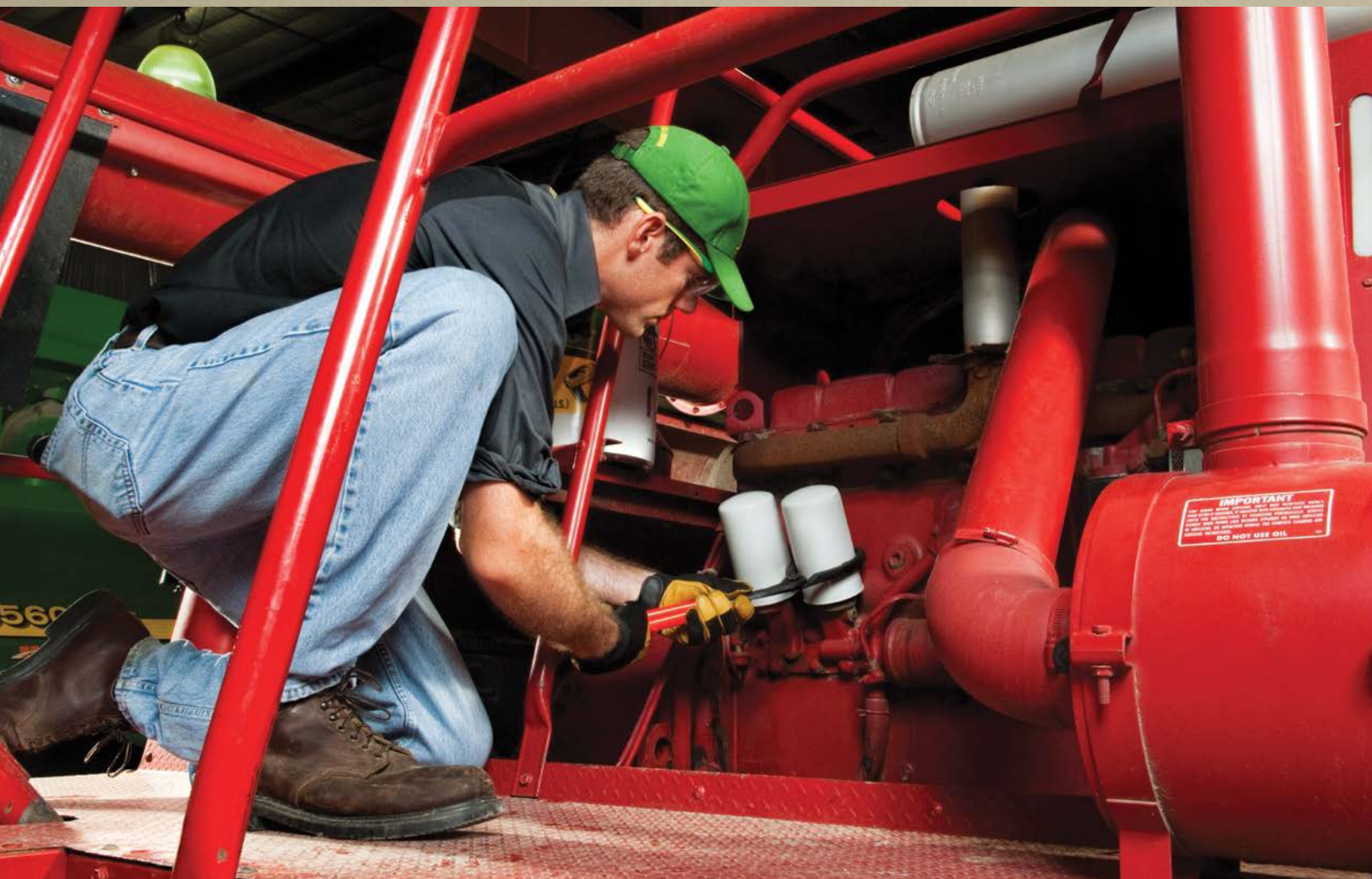


## Alternative parts

### *The right parts for any brand of equipment*

At John Deere, you get a choice of replacement and maintenance parts for all makes and ages of machines. Have an older John Deere engine or a mixed fleet? You know your equipment and needs better than anyone. That's why we offer quality alternative parts at a lower cost. Buy with confidence. Our alternative parts are built and tested using a proven process to ensure proper fit and finish. We're ready to keep you up and running no matter what color your equipment.

For specific product information, visit **AllPartsStore.com** in North America and **www.Vapormatic.com** in other regions.





# Maintenance parts

## *Protect the engines you depend on*

Every John Deere engine comes with groundbreaking technology, long-lasting parts, and a dealer support network to stand by you day in and day out. But as important as those things are, your engine must be properly maintained to deliver the performance you expect. That's why we offer premium maintenance products to help your engine deliver top-notch performance year after year.

### *John Deere coolant*

Cool-Gard™ II provides protection against engine failures and can extend the cooling system service interval to six years or 6,000 hours, without the hassle and cost of using supplemental coolant additives.\*

Advanced oxidation stability provides exceptional protection against heat, so you can reduce downtime and lower your operating costs. You'll experience excellent, long-lasting performance with Cool-Gard II.

Available in concentrate, ready-to-use pre-mix, and propylene glycol-based formulations.

\*Please see Operator's Manual for all details and appropriate use.



### *John Deere Diesel Exhaust Fluid*

John Deere Diesel Exhaust Fluid (DEF) is compatible with all engines using selective catalytic reduction (SCR) aftertreatment technology. John Deere DEF provides the essential chemical component to remove nitrogen oxides (NOx) from diesel engine exhaust.

Available in a variety of container sizes, John Deere DEF is easily integrated into your maintenance-fluid routine. Dispensing packages and a 246 L (65 gal) portable dispensing unit are also available.

Not available in all countries.





## Maintenance parts

### John Deere oils

John Deere uses cutting-edge chemistry and countless reformulations to create advanced engine oils. Reference the engine operator's manual or contact your John Deere dealer about the engine oil that's right for you and your equipment.



**Plus-50™ II — one oil for all:** Plus-50 II Engine Oil is specially formulated to keep all of your engines running smoothly and efficiently in extreme off-road conditions. It supports engines with diesel particulate filters, including 2007 and newer on-highway vehicles, and is backward compatible for all current applications. Available in 15W-40, 10W-30, and full synthetic 0W-40 or 5W-40.

**Torq-Gard™ — for Tier 3 and older engines:** Recommended for all diesel and gasoline engines, Torq-Gard Engine Oil helps reduce corrosion and control sludge for a clean engine.

**Break-In™ Plus — use during initial service interval:** Designed for new, rebuilt, or remanufactured engines, Break-In Plus Engine Oil promotes initial surface mating between piston rings and cylinder liners to establish a good wear pattern for longer service life.

*Not available in all countries.*

*Torq-Gard meets API CI-4 PLUS/SL industry standards and provides a standard drain interval of 250 hours. Plus-50 II exceeds API CK-4/SN industry standards and provides an extended drain interval of 500 hours for John Deere diesel engines (with the exception of marine engines) when the following criteria are met: 1. Engine is equipped with an extended drain interval oil pan, 2. Machine uses a John Deere engine oil filter, and 3. Machine uses only ultra-low sulfur diesel fuel.*





## John Deere fuel additives

Typical fuel contaminants — water, debris, microbes — can spell trouble for a fuel system, especially high-pressure fuel systems designed for extremely precise fuel control. John Deere provides several fuel additives designed to keep fuel flowing freely so your engine performs at its best.\*

### Diesel Fuel Conditioner

John Deere Diesel Fuel Conditioner helps protect against fuel system erosion caused by contaminated fuel. You will notice smoother starting, improved water tolerance, and less exhaust smoke. It effectively cleans mechanical fuel systems and is compatible with all diesel fuels. Diesel Fuel Conditioner is also available in a Cold Weather Formula.

### Keep Clean

Specifically formulated for modern high-pressure diesel fuel systems, John Deere Keep Clean limits and reduces the formation of deposits that cause injector sticking, engine misfire, rough idling, excess exhaust smoking, power loss, and/or hard starting conditions. Can be used in all makes of diesel engines.

### FQS 1.5 Microbicide<sup>†</sup>

Kills and protects against microbial growth that can grow in gasoline, diesel, and biodiesel fuels. Works as a maintenance or shock treatment to control bacteria and fungi in fuel systems. Decrease microbial activity in as quickly as five hours after initial treatment. Use 3.79 L (1 gal) FQS 1.5 Microbicide to 37,854 L (10,000 gal) of fuel.

### Emergency Thaw<sup>†</sup>

John Deere Emergency Thaw dissolves gelled diesel fuel and melts ice in the fuel filter caused by freezing conditions, restoring fuel flow to the engine. It works with all diesel fuels.

<sup>†</sup>Not available in all countries.



\*To optimize engine performance and reliability, closely follow recommendations on fuel quality, storage, and handling, which are found in your John Deere Operator's Manual.



## Maintenance parts



### John Deere filters

John Deere filters protect your engine from harmful particles invading your system while extending the life of your engine. We design our filters with high-quality media that can catch particles as small as one-fifth the width of a human hair! You'll be sure to notice a long service interval and exceptional protection.



### Fuel filters

When it comes to your fuel, water is the number one enemy. That's why John Deere fuel filters are designed not only to trap water but to repel it. Our filters have a coated media that keeps water out, helping protect against rust and microbial growth that could cause poor fuel economy or permanently damage your fuel system components.





## Oil filters

John Deere oil filters are expertly engineered to catch small particles like dirt and other contaminants before they pollute your engine. Dirty oil will slow you down, leading to less productivity and shorter service intervals.

John Deere engineers design our oil and oil filters to work hand in hand. Pair John Deere oil filters with premium Plus-50 II Engine Oil and there's no stopping you for 500 hours!\*



## Air filters

John Deere air filters are another high-quality line of defense against contaminants invading your engine. They reduce engine wear by removing dust, dirt, and other pollutants from intake air. They are highly efficient when it comes to trapping unwanted particles.



*\*500-hour drain interval applies to John Deere diesel engines (with the exception of marine engines) when the following criteria are met: 1. Engine is equipped with an extended drain interval oil pan, 2. Machine operates with Plus-50 II Engine Oil API CK-4/SN, 3. Machine uses a John Deere engine oil filter, and 4. Machine uses only ultra-low sulfur diesel fuel.*



# Maintenance parts

## Fluid analysis

Take the guesswork out of machine maintenance with the John Deere Fluid Analysis program. John Deere oil, fuel, and coolant analysis kits are available to test all brands of fluids and equipment. Routine fluid analysis will help you avoid unexpected downtime, optimize your drain intervals, make more informed decisions, and save money.

We keep fluid analysis simple. Instead of reacting to downtime, you can easily manage it. Contact your John Deere engine distributor or service dealer to get started.



## John Deere grease

John Deere grease is specially formulated to meet the demanding lubricating needs for tough off-road and on-road conditions. Keep your operation running smoothly with our multi-purpose and special-purpose lubricants.

### MULTI-PURPOSE GREASE TYPES

#### Multi-Purpose SD Polyurea Grease and Extreme-Duty Synthetic Grease

For high temperatures and extreme pressures. Best used for U-joints, bearings, and other grease points requiring severe-duty grease.

#### Multi-Purpose HD Lithium Complex

Use for bearings, U-joints, and other grease points requiring heavy-duty grease where a lithium or lithium complex grease is recommended.

### SPECIAL-PURPOSE GREASE TYPES

#### Calcium Sulfonate 5% Moly Grease

For high temperature and extreme pressure, protects against corrosion, and stays in place in wet conditions. For use in pins, bushings, and heavy-duty shock loads or continuous sliding contact.

#### HD 3% Moly Grease

For special applications that include construction, mining, and heavy industrial equipment. For use in pins, bushings, and ball joints, and shock load and continuous sliding contact. Moly grease is not recommended for bearing applications.



Not available in all countries.



## John Deere batteries

John Deere StrongBox™ and Performance Series batteries are built to power through tough working conditions that not all batteries are strong enough to face.

See your John Deere dealer or engine distributor for our full line of batteries, chargers, and accessories. You'll find just what you need for farm, ranch, commercial, and marine applications. When you're out on the job, don't risk it. Choose genuine John Deere batteries.

### StrongBox™ Batteries\*

John Deere StrongBox Original Equipment is our premium-quality battery that meets the original factory specifications for all John Deere equipment.

This advanced, maintenance-free technology is perfect for heavy-duty farm, ranch, construction, utility, and lawn and garden equipment. Maintenance-free Strongbox batteries are designed and tested for high heat and intense vibration in off-road conditions.

*\*Sold as Strongbox Original Equipment batteries in the United States and Canada. Sold as Strongbox batteries in Europe, Africa, and the Middle East.*

### Standard-Duty Batteries†

John Deere StrongBox Standard-Duty and Performance Series batteries are an alternative to lower-specification batteries. They are comparable to most competitive brands.

These batteries are ideal for all makes of agricultural, commercial, automotive, light truck, SUV, lawn and garden, utility vehicle, golf cart, electric vehicle, and marine equipment.

*†Sold as Strongbox Standard-Duty batteries in the United States and Canada. Sold as Performance Series batteries in Europe, Africa, and the Middle East.*

### Battery Recycling

Return your old battery to your local John Deere dealer or engine distributor for proper recycling.





## Customer support

### *You can rely on us*

The John Deere service network is built to support you. We offer global support with over 9,000 service locations and a worldwide parts distribution system. Only John Deere dealer and distributor service technicians have the expertise to ensure top performance of your John Deere engine. These technicians complete specialized training on John Deere engine technology, diagnostic tools, and service techniques. Locate your closest John Deere dealer or engine distributor at **JohnDeere.com/Dealer**.

### *Confidence is built in*

John Deere provides one of the best warranties in the business. Our 2-year/2,000-hour standard warranty applies not only to the new OEM engine but also to John Deere parts and accessories added by a John Deere engine distributor.\*

\*When sold by John Deere, its authorized dealers and distributors, and delivered to the first retail purchaser.

### *Worldwide warranty support*

Register your John Deere OEM engine and enable your John Deere dealer or engine distributor to respond should you need a warrantable repair.† Registering your engine at **JohnDeere.com/OEMWarranty** gives us the information needed to stock the right service parts, maintenance products, and servicing tools.

†See the John Deere OEM engine warranty statement at [JohnDeere.com/PartsWarranty](http://JohnDeere.com/PartsWarranty) for coverage details.

### *Extended coverage*

PowerGard™ Protection Plan for John Deere OEM engines offers strong yet flexible coverage — up to five years or 10,000 hours in specific applications.† This coverage protects the engine as well as any John Deere components and accessories installed by John Deere and our engine distributors. Plus, the warranty is portable and transferable.

†Extended warranty begins the same day as delivery to the first retail customer.





### *John Deere PowerAssist™ app*

This free app provides information specific to the serial number for your John Deere engine. Simply scan or enter your John Deere engine serial number to retrieve option codes, emissions certificates, ECU information, and much more. Get started by installing PowerAssist onto your iOS or Android™ mobile device.

Available worldwide in English only. Android is a trademark of Google Inc.

### *Engine information search*

Don't have a mobile device to use the PowerAssist app? Go to **JohnDeere.com/EngineSupport** and sign in to the engine information search online product database. Enter your John Deere engine serial number to access emissions certificates, manuals, year of manufacture, and other important details.

### *Technical information store*

Need a John Deere operator's manual, parts catalog, technical manual, or other publication that is not available in electronic format? Visit **TechPubs.Deere.com**.

### *Order parts*

New and remanufactured John Deere parts can be ordered from your local John Deere dealer or engine distributor, or by visiting the online John Deere parts catalog. With just a few clicks, order from anywhere at any time using your mobile phone, tablet, or laptop.

**Fast. Convenient. Online.**  
**PartsCatalog.Deere.com**







**JOHN DEERE**

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