

# SPECIFICATIONS GENERAL INFORMATION

<sup>b</sup>To be used if a torque wrench cannot be used. After tightening fitting by hand, put a mark on nut or boss; then tighten special nut or straight fitting the number of flats shown.

## Metric Fastener Torque Value - Grade 7

Size	Steel or Gray Iron Torque	Aluminum Torque
	N•m (lb-ft)	N•m (lb-ft)
M6	11 (8)	8 (6)
M8	24 (18)	19 (14)
M10	52 (38)	41 (30)
M12	88 (65)	70 (52)
M14	138 (102)	111 (82)
M16	224 (165)	179 (132)

## General Information

### Diesel Fuel



**Caution: Avoid Injury! California Proposition 65 Warning: Diesel engine exhaust and some of its elements from this product are known to the State of California to cause cancer, birth defects, or other reproductive harm.**

In general, diesel fuels are blended to satisfy the low air temperature requirements of the geographical area in which they are sold.

In North America, diesel fuel is usually specified to **ASTM D975** and sold as either **Grade 1** for cold air temperatures or **Grade 2** for warm air temperatures.

If diesel fuels being supplied in your area DO NOT meet any of the above specifications, use diesel fuels with the following equivalent properties:

- **Cetane Number 40 (minimum)**

A cetane number **greater than 50 is preferred**, especially for air temperatures below -20°C (-4°F) or elevations above 1500 m (5000 ft).

- **Cold Filter Plugging Point (CFPP)**

The air temperature at which diesel fuel **begins to cloud or jell** - at least 5°C (9°F) below the expected low air temperature range.

- **Sulfur Content of 0.05% (maximum)**

Diesel fuels for highway use in the United States now require sulfur content to be **less than 0.05%**.

If diesel fuel being used has a sulfur content **greater than 0.05%**, **reduce the service interval for engine oil and filter by 50%**.

Consult your local diesel fuel distributor for properties of the diesel fuel available in your area.

### Diesel Fuel Lubricity

Diesel fuel must have adequate lubricity to ensure proper operation and durability of fuel injection system components. Fuel lubricity should pass a **minimum of 3300 gram load level** as measured by the **BOCLE** scuffing test.

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## Diesel Fuel Storage

**Important: Avoid Damage! DO NOT USE GALVANIZED CONTAINERS** - diesel fuel stored in galvanized containers reacts with zinc coating in the container to form zinc flakes. If fuel contains water, a zinc gel will also form. The gel and flakes will quickly plug fuel filters and damage fuel injectors and fuel pumps.

It is recommended that diesel fuel be stored **ONLY** in a clean, approved **POLYETHYLENE PLASTIC** container **WITHOUT** any metal screen or filter. This will help prevent any accidental sparks from occurring. Store fuel in an area that is well ventilated to prevent possible igniting of fumes by an open flame or spark, this includes any appliance with a pilot light.

**Important: Avoid Damage! Keep all dirt, scale, water or other foreign material out of fuel.**

Keep fuel in a safe, protected area and in a clean, properly marked (“**DIESEL FUEL**”) container. **DO NOT** use de-icers to attempt to remove water from fuel. **DO NOT** depend on fuel filters to remove water from fuel. It is recommended that a water separator be installed in the storage tank outlet. **BE SURE** to properly discard unstable or contaminated diesel fuel and/or their containers when necessary.

## 4 - Cycle Diesel Engine Oil

Use the appropriate oil viscosity based on the expected air temperature range during the period between recommended oil changes. Operating outside of these recommended oil air temperature ranges may cause premature engine failure.

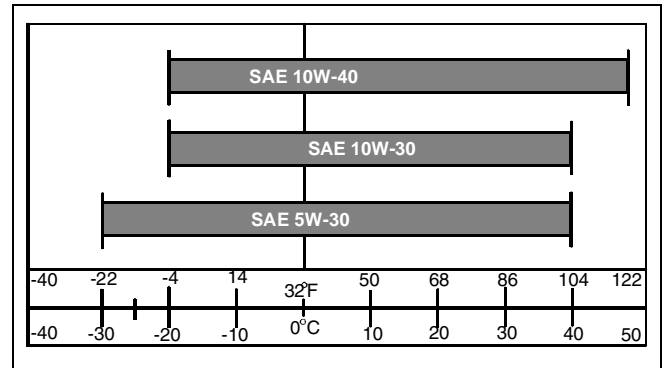
The following John Deere oils are **PREFERRED**:

**TORQ-GARD SUPREME™  
PLUS-50™**

Other oils may be used if above John Deere oils are not available, provided they meet one of the following specifications:

- API Service Classifications CF - 4 or higher;

**Important: Avoid Damage! If diesel fuel with sulfur content greater than 0.5% is used, reduce the service interval for oil and filter by 50%.**



## Break-In Engine Oil - Diesel

**Important: Avoid Damage! ONLY use this specified break-in oil in rebuilt or remanufactured engines for the first 100 hours (maximum) of operation. DO NOT use PLUS - 50®, SAE 15W40 oil or oils meeting specifications API CG - 4 or API CF - 4, these oils will not allow rebuilt or remanufactured engines to break-in properly.**

The following John Deere oil is **PREFERRED**:

- **BREAK - IN ENGINE OIL.**

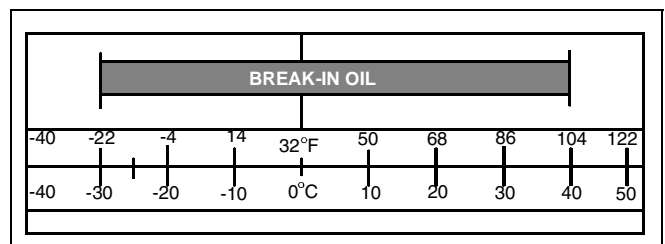
John Deere **BREAK - IN ENGINE OIL** is formulated with special additives for aluminum and cast iron type engines to allow the power cylinder components (pistons, rings, and liners as well) to “wear-in” while protecting other engine components, valve train and gears, from abnormal wear. Engine rebuild instructions should be followed closely to determine if special requirements are necessary.

John Deere **BREAK - IN ENGINE OIL** is also recommended for non-John Deere engines, both aluminum and cast iron types.

If this preferred John Deere oil is not available, use a break-in engine oil meeting the following specification during the first 100 hours of operation:

- API Service Classification CE or higher.

**Important: Avoid Damage! After the break-in period, use the John Deere oil that is recommended for this engine.**



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## Transaxle Oil

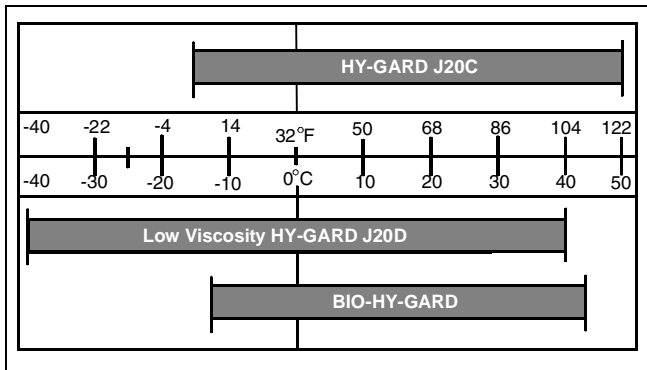
Use the appropriate oil viscosity based on these air temperature ranges. Operating outside of these recommended oil air temperature ranges may cause premature hydrostatic transmission or hydraulic system failures.

**Important: Avoid Damage! Mixing of LOW VISCOSITY HY - GARD™ and HY - GARD™ oils is permitted. DO NOT mix any other oils in this transmission. DO NOT use engine oil or “Type F” (Red) Automatic Transmission Fluid in this transmission.**

John Deere J20C HY-GARD™ transmission and hydraulic oil is recommended. John Deere J20D Low Viscosity HY-GARD™ transmission and hydraulic oil may be used, if within the specified temperature range.

Other oils may be used if above recommended John Deere oils are not available, provided they meet one of the following specifications:

- John Deere Standard JDM J20C;
- John Deere Standard JDM J20D.



## EMFWD Differential Oil

John Deere J20D Low Viscosity HY-GARD™ transmission and hydraulic oil is recommended.

**Important: Avoid Damage! Mixing of LOW VISCOSITY HY - GARD™ and HY - GARD™ oils is permitted. DO NOT mix any other oils in this transmission. DO NOT use engine oil or “Type F” (Red) Automatic Transmission Fluid in this transmission.**

Other oils may be used if above recommended John Deere oils are not available, provided they meet the following specification:

- John Deere Standard JDM J20D.

## Alternative Lubricants

Use of alternative lubricants could cause reduced life of the component.

If alternative lubricants are to be used, it is recommended that the factory fill be thoroughly removed before switching to any alternative lubricant.

## Synthetic Lubricants

Synthetic lubricants may be used in John Deere equipment if they meet the applicable performance requirements (industry classification and/or military specification) as shown in this manual.

The recommended air temperature limits and service or lubricant change intervals should be maintained as shown in the operator's manual, unless otherwise stated on lubricant label.

Avoid mixing different brands, grades, or types of oil. Oil manufacturers blend additives in their oils to meet certain specifications and performance requirements. Mixing different oils can interfere with the proper functioning of these additives and degrade lubricant performance.

## Lubricant Storage

All machines operate at top efficiency only when clean lubricants are used. Use clean storage containers to handle all lubricants. Store them in an area protected from dust, moisture, and other contamination. Store drums on their sides. Make sure all containers are properly marked as to their contents. Dispose of all old, used containers and their contents properly.

## Mixing of Lubricants

In general, avoid mixing different brands or types of lubricants. Manufacturers blend additives in their lubricants to meet certain specifications and performance requirements. Mixing different lubricants can interfere with the proper functioning of these additives and lubricant properties which will downgrade their intended specified performance.

## Oil Filters

**Important: Avoid Damage! Filtration of oils is critical to proper lubrication performance. Always change filters regularly.**

The following John Deere oil filters are PREFERRED:

- AUTOMOTIVE AND LIGHT TRUCK ENGINE OIL FILTERS.

Most John Deere filters contain pressure relief and anti-

# SPECIFICATIONS COOLANT

drainback valves for better engine protection.

Other oil filters may be used if above recommended John Deere oil filters are not available, provided they meet the following specification:

- ASTB Tested In Accordance With SAE J806.

## Brake Fluid

The following John Deere heavy duty brake fluid is **PREFERRED** for all drum and disc brakes:

- Brake Fluid - DOT3

Other brake fluids may be used if the above John Deere brake fluid is not available and they provide the following:

- DOT3 certified.
- Conforms to Motor Vehicle Safety Standard No. 116.
- Minimum wet boiling point 140°C (284°F).
- Minimum dry boiling point 232°C (450°F) to prevent vapor lock.

## Chassis Grease

Use the following grease based on the air temperature range. Operating outside of the recommended grease air temperature range may cause premature failures.

The following John Deere grease is **PREFERRED**:

- Multi-Purpose SD Polyurea Grease
- Multi-Purpose HD Lithium Complex Grease
- **Moly High-Temperature EP Grease**

Other greases may be used if above preferred John Deere grease is not available, provided they meet the following specification:

- John Deere Standard JDM J13E4, NLGI Grade 2.

## Coolant

### Recommended Engine Coolant

**Important: Avoid Damage! Using incorrect coolant mixture can cause overheating and damage to the radiator and engine:**

- Do not operate engine with plain water.
- Do not exceed a 50% mixture of coolant and water.
- Aluminum engine blocks and radiators require approved ethylene-glycol based coolant.

The engine cooling system is filled to provide year-round protection against corrosion and cylinder liner pitting, and winter freeze protection to -37 degrees C (-34 degrees F). If protection at lower temperatures is required, consult your John Deere dealer for recommendations.

**The following coolants are preferred:**

- John Deere COOL-GARD II™ Premix
- John Deere COOL-GARD Premix
- John Deere COOL-GARD PG Premix

John Deere COOL-GARD II Premix and John Deere COOL-GARD Premix are available in a concentration of 50% propylene glycol.

John Deere COOL-GARD PG Premix is available in a concentration of 55% propylene glycol.

**Additional recommended coolants:**

- John Deere COOL-GARD II Concentrate in a 40% to 60% mixture of concentrate with water.
- John Deere COOL-GARD Concentrate in a 40% to 60% mixture of concentrate with water.

**If the recommended coolants are unavailable, use an ethylene glycol or propylene glycol base coolant that meets the following specification:**

- ASTM D3306 prediluted (50%) coolant.
- ASTM D3306 coolant concentrate in a 40% to 60% mixture of concentrate with water.

Check container label before using to be sure it has the appropriate specifications for your machine. Use coolant with conditioner or add conditioner to coolant before using.

### Water Quality

- Water quality is important to the performance of the cooling system. Distilled, deionized, or demineralized water is recommended with ethylene glycol base engine coolant concentrate.

# SPECIFICATIONS SERIAL NUMBER LOCATIONS

## Engine Coolant Drain Interval

When using John Deere Premixs, drain and flush the cooling system and refill with fresh coolant mixture every 36 months or 3,000 hours of operation, whichever comes first.

When using John Deere Concentrate coolants, drain and flush the cooling system and refill with fresh coolant mixture every 24 months or 2,000 hours of operation, whichever comes first.

If above John Deere coolants are not being used; drain, flush, and refill the cooling system according to instructions found on product container or in equipment operator's manual or technical manual.

## Serial Number Locations

### Product Serial Number



MX38987

The 13-digit product identification number (A) is located on the right-hand side frame.

### Engine Serial Number Location



MX38988

Engine serial number (A) is located on valve cover. The model number will designate the engine type.



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