

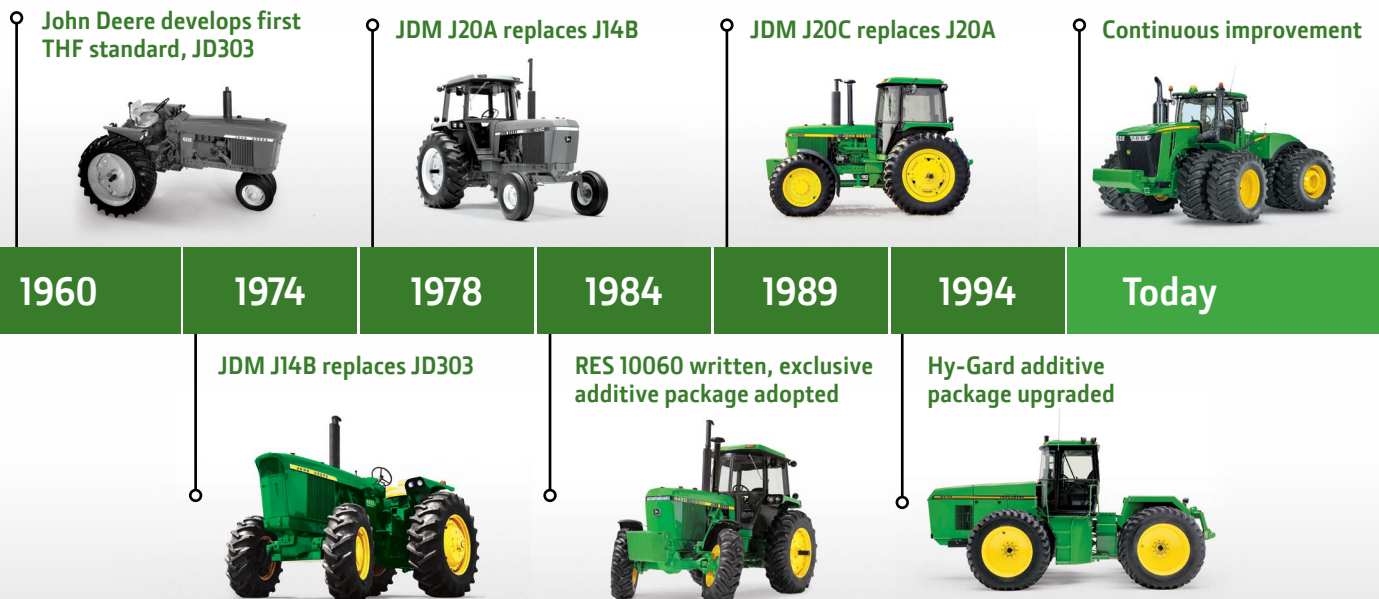
Hy-Gard™ Hydraulic and Transmission Oil



JOHN DEERE



Evolution of Hy-Gard



60 years of continuous development, makes Hy-Gard the most advanced tractor hydraulic fluid in the world!

Benefits of Hy-Gard™

Features/Benefits

- Multi-viscosity formula for a wide range of operating temperatures
- Superior high temperature performance and oxidation resistance
- Fully laboratory and field performance tested
- High tolerance to water contamination without sludge formation
- Prevents final drive wear due to anti-wear additives for gears.

Applications

- Suitable for a wide range of operating conditions
- Transmissions and differential units with immersed wet brakes
- Gearboxes with hydraulic brakes
- Gearboxes with hydraulic drive systems
- General and high demand hydraulic systems requiring an ISO 46 or 68 hydraulic fluid.

Functions

Because some systems have combined transmission and hydraulic oil reservoirs, the oil must perform many different tasks at the same time. There is very little margin for error. Robust balanced properties are essential. To understand the complexity of transmission hydraulic oil, let's review its functions.

- Prevents wear of heavily loaded gears and bearings
- Provides wear and corrosion protection for the hydraulic pump
- Provides proper friction for clutches to engage and absorb shock loads without excessive slipping or abrupt shifts
- Withstands extreme pressures in the hydraulic system without breaking down
- Prevents the formation of deposits on all internal parts
- Prevents foam and water damage to all internal parts
- Provides proper friction for brakes to ensure low chatter, long life and high capacity.

John Deere Hy-Gard is the only fluid in the world designed to meet the John Deere factory fill standard "RES 10060". Hy-Gard is the original tractor hydraulic fluid in your John Deere machine when new, and there is no true substitute available anywhere else.

HY-GARD (10W-30) AUSTRALIA

Size	Part Number	Qty
5 L	CP1565	4
20 L	CP1566	1
205 L	CP1567	1
1000 L	CP2103	1

HY-GARD (10W-30) NEW ZEALAND

Size	Part Number	Qty
5 L	CP1565NZ	4
20 L	CP1566NZ	1
205 L	CP1567NZ	1

PHYSICAL PROPERTIES

Test Parameters	10W-30
Viscosity 40 °C	60 cSt
Viscosity 100 °C	9.4 cSt min
Viscosity Index	150
ISO Viscosity	46 – 68
Specific Gravity 20/20 °	0.89
Flash Point	220 °C

SERVICE RATINGS

Major machinery manufacturer requirements:	
AGCO Massey Ferguson	M-1135, M-1141, M-1139
AGCO White Farm	Q-1722, Q-1766, Q-1766B, Q-1802, Q-1826
Allis-Chalmers, Deutz-Allis AGCO Allis	821XL
Case	MS-1207, MS-1210
Caterpillar	TO-2
Clark	MS-68
Dresser	Hydraulic Transmission Fluid (HMS B806-0002)
Eaton Hyd	Hydraulic Transmission Fluid (Form3-0401-123)
Ford/New Holland	ESN-M2C41B, M2C134D, M2C48B, M2C48C
IHC	B-6
ISO	46 – 68
Kubota	UDT Hydraulic Transmission Fluid
Oliver	Type 55
Sunstrand	Hydrostatic Transmission
Zetor	OT-H, GL-4

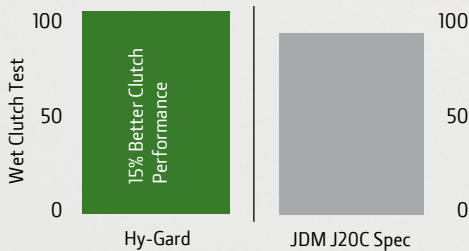
Product Testing and Development

Wet Clutch Test

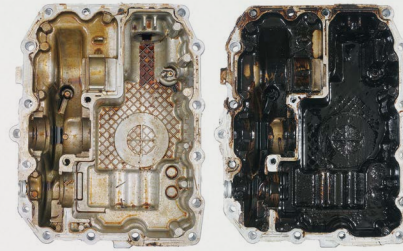


Result:

Customers can expect better clutch performance (smoother equipment, less slippage, and reduced wear) when using John Deere Hy-Gard™ Transmission and Hydraulic Oil.



TZT Oxidation Test

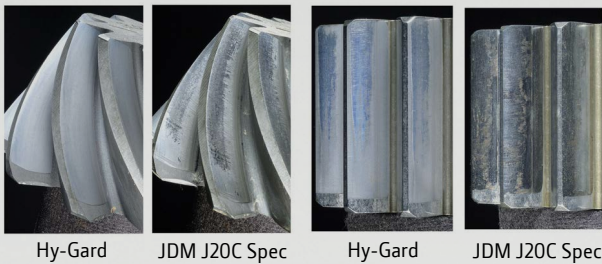


The difference in performance of Hy-Gard and a competitor's oil. The competitor oil has left heavy deposits on the pan and the viscosity has increased dramatically. This can cause valve sticking and the oil may be corrosive. Hy-Gard parts look like new, it leaves no sludge of deposits for longer equipment life.

Test runs:

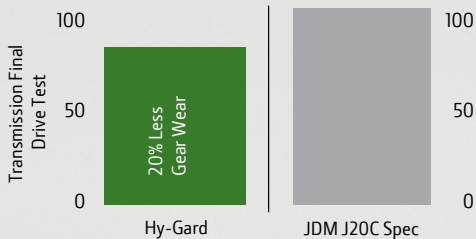
- At 160 °C (320 °F)
- 400 hours continuous test with air injection

Gear Test

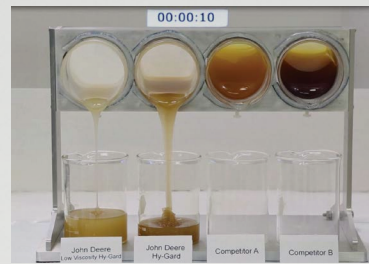


Result:

Wear in the JDQ 95B final drive test with Hy-Gard was shown to be less than the wear of a minimum performance JDM J20C fluid.



Slow-Cool Fluidity Test



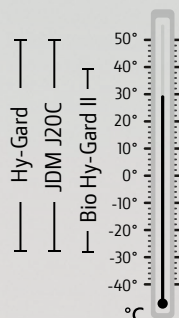
Low Temperature Flow

Hy-Gard and Low Viscosity Hy-Gard are checked for proper viscosities using the slow-cool fluidity test in addition to industry-standard tests. The slow-cool fluidity test (developed by John Deere engineers and recognised by the oil industry as a valid testing procedure) ensures Hy-Gard's proper viscosity performance, which reduces downtime and lowers the cost of operation. Few competitive hydraulic transmission oils are tested for this type of low-temperature viscosity performance.

Oil needs to flow properly at low temperature to ensure lubricant gets to where it is needed. The cold temperature flow of Hy-Gard can be much better than oils that claim they meet JDM J20C (tested after aging).

Air Temperature Chart

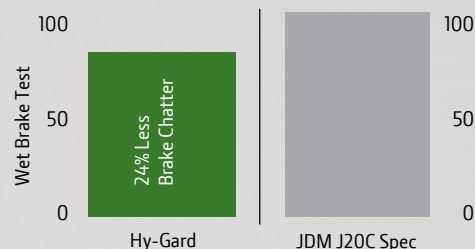
Use the oil viscosity based on the expected air-temperature range during the period between changes. Always check the Operator's Manual for specific applications. Some applications may be restricted at the upper or lower limits of the temperature range.



Wet Brake Test

Result:

Customers can expect better brake-chatter control using John Deere Hy-Gard compared to oils meeting the minimum performance JDM J20 specification.



Bio Hy-Gard™ II

The Smart Alternative:

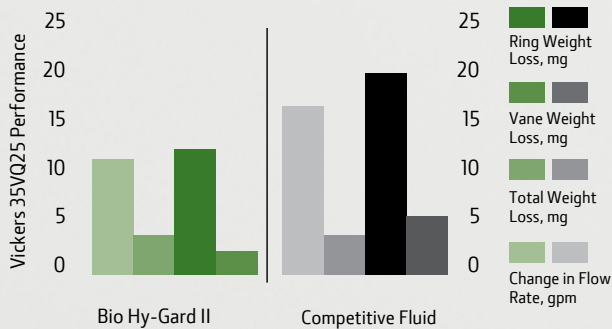
- Environmentally sound, user friendly
- Biodegradable transmission and hydraulic oil

With conventional hydraulic fluids, leaks or spills can contaminate nearby soil and groundwater. Bio Hy-Gard II protects these resources with shorter regeneration time because it's derived from nature-based canola plants.

Now you can protect your equipment and the environment at the same time with a biodegradable solution that meets and exceeds the performance of conventional petroleum-based lubricants. Bio Hy-Gard II is formulated with canola oil, allowing grass and soil to regenerate more quickly after spills or leaks, with no residual environmental effects.



Vickers 35VQ25 Performance



- The Vickers 35VQ25 test was performed on Bio-HyGard II and competitive biodegradable oil
- The test evaluates fluid in high-pressure operations using a Vickers 35VQ25 vane pump with the test fluid at a specified speed, pressure and temperature
- Three runs of 50 hours each are performed using a new pump cartridge for each run
- The test consists of operating a Vickers 35VQ25 vane pump at high-pressure conditions for 50 hours. Test pressure is 3,000psi, inlet fluid temperature is 93 ° C, and pump speed is 2,400rpm
- The required horsepower input is in the range of 100
- Evaluation of test results is done by a visual qualitative review of pump parts and weight-loss determinations.

Bio Hy-Gard II Hydraulic Transmission Oil

Bio Hy-Gard II protects your land and your equipment. It can be recommended as a replacement for mineral oil-based hydraulic and transmission oil. Bio Hy-Gard II is formulated for multi-functional systems including transmissions, axles, hydraulics, wet brakes, and wet clutches. It is recommended when biodegradable tractor hydraulic fluid or hydraulic oils are desired. Bio Hy-Gard II meets the general performance requirements of regular Hy-Gard.

Applications

Forestry, turf care (golf courses/cemeteries), construction, city services (garbage collection/street services), waterway operations, orchards, and farming operations.

Features

- Base oil from farm-grown products.
- Formulated from canola-based oil
- 94% biodegradable
- Exceed environmental ecotoxicity performance requirements
- Brake chatter suppressed while superior brake performance maintained
- Excellent corrosion protection
- Over 13,000 hours of trouble-free field-testing
- Compatible with mineral-based oils.



JOHN DEERE

This literature has been compiled for worldwide circulation. While general information, pictures and descriptions are provided, some illustrations and text may include finance, credit, insurance, product options and accessories NOT AVAILABLE in all countries or regions. In some countries, products and accessories may require modifications or additions to ensure compliance with the local regulations of those countries. PLEASE CONTACT YOUR LOCAL DEALER FOR DETAILS. John Deere reserves the right to change specification and design of all products described in this literature without notice. John Deere's green and yellow colour scheme, the leaping deer symbol, and JOHN DEERE are trademarks of Deere & Company. All photography and illustrations contained herein are copyrighted assets of Deere & Company.

JohnDeere.com.au
JohnDeere.co.nz