

John Deere Marine Variable Speed Engine Application Review Form - May 2025

Application Review Number: _____

SA Job Number: _____

General Information

Customer Name _____

Customer is: ☐ End User ☐ Shipyard ☐ Other

Vessel Location _____

Technician (name) _____

Technician's Company _____

Dealer _____

Distributor _____

Entity Which Sold Engine _____

Sea Trial Test Date _____

Present at Sea Trial ☐ Customer ☐ Dealer ☐ Builder ☐ Distributor

First article app review number
(if production sea trial)

Vessel Information

Vessel Name _____

New Build

Repower

Hull Make/Model _____

Hull Build Date _____

Hull Material _____

Measurements LOA _____ ft _____ m

Max Weight (Disp.) _____ lbs _____ kg

Full load at sea trial ☐ yes ☐ no

Loading Comments _____

New Engine Information

Model _____ S/N _____ Rated Power _____ hp _____ kW RPM _____

M Rating _____ Hours on Engine at Time of Sea Trial _____

Emission Cert. Requirements: ☐ Non-reg ☐ EPA T2 ☐ EPA T3 ☐ IMO T2 ☐ IMO T3 ☐ EU Stage V ☐ CCS ☐ Other

Application Information

Variable Speed Generator? ☐ Yes ☐ No Other (explain): _____

Vessel Type ☐ Fishing ☐ Workboat ☐ Cargo ☐ Barge ☐ Tug/Tow ☐ Passenger ☐ Recreational ☐ Other

Maximum Outside Ambient Air Temperature _____ Maximum Seawater Temperature _____

Powered Components (including alternator(s)) (AG31)

Make and Model (JD Part Number if Applicable)	Engaged		Max Power Required	Drive Type: Aux/ Pulley/Crank/etc.		Used For
	While Cranking					
	☐ Yes	☐ No	_____ hp	_____	_____	
	☐ Yes	☐ No	_____ hp	_____	_____	
	☐ Yes	☐ No	_____ hp	_____	_____	
	☐ Yes	☐ No	_____ hp	_____	_____	
Factory Installed Alternator	☐ Yes	☐ No	Alternator Voltage _____	Alternator Current _____		

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Engine Mounting (AG27/AG23.5)

Engine Installation Angle	_____°	☐ Nose Up	☐ Nose Down	Dipstick Re-marked	☐ Yes	☐ No
Type of Mounting	Solid	Isolated	_____ # points			
Engine Lift Straps must be removed after engine installation.						
Engine Lift Straps Removed?*	Yes	No, Customer Acknowledges and assumes risk of non removal				
Customer Signature and Date if No checked						

*Technician should use best efforts and strongly encourage removal of lift straps, and inform customer of removal requirement, including the safety reasons for doing so. If customer refuses following instruction, customer shall check "No, Customer Acknowledges and Assumes Risk of Non-Removal" box and then have customer sign and date the form. If customer refuses to sign, technician (and other witness if available) should check the "No" box and hand write "Customer Refuses to allow removal of lift straps" on the form and then list time, date and location of the interaction along with their name (and witness).

Air Intake (AG03)

Engine Within Enclosure or Engine Room	Yes	No	Air Filter	Standard	Other	_____
Total Engine Room Intake Vent Area	_____	in ²	cm ²	Intake Fan	Yes	No Rated Flow _____
Total Engine Room Exhaust Vent Area	_____	in ²	cm ²	Exhaust Fan	Yes	No Rated Flow _____
Remote Mounted Air Filter	Yes	No				
Diameter	_____ in	_____ cm	Pipe length	_____ ft	m	Number of Elbows: 45° _____ 90° _____
Comments						

Lube Oil System (AG23.5)

CCV	Closed System	Open System				
Duplex Oil Filter	Yes	No	Remote Mounted Oil Filter	Yes	No	
Comments						

Exhaust System (AG17.5)

Dry	Wet					
Adequate Flex	Yes	No	Exhaust Outlet Above Waterline	Yes	No	
Exhaust Wrapped	Yes	No	Wet Exhaust Elbow	Deere	Other	_____
Muffler	Yes	No	Exhaust Muffler Make/Model	_____		
Exhaust Pipe Length	_____ ft	m	Exhaust Pipe Diameter	_____ in	mm	Exhaust Piping Material _____
Number of Elbows:	45° _____	90° _____				
Comments			Turbo Outlet Pipe Supported	Yes	No	

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Fuel System (AG19)

Pre-Engine Filter/Water Separator		☐ Yes	☐ No	Make/Model				
Multiple Fuel Tanks	Yes	No	Total Fuel Capacity	_____ gal	☐ L	Day Tank	Yes	No
Fuel Level During Sea Trial	_____ %	gal	L	Fuel tank Material				
Horizontal Distance Between Inlet and Outlet Fittings on Fuel Tank				_____	in	cm		
Horizontal Distance Between Tank and Engine				_____	ft	m		
Fuel Inlet Line Diameter	_____	in	cm	Length	_____	in	cm	Material
Vertical Distance From Suction Point in Tank to low pressure pump				_____	in	cm		
Fuel Return Line Diameter	_____	in	cm	Length	_____	in	cm	Material
Unique return line for each engine		Yes	No					
Fuel Return Valve(s) Installed		Yes	No	Valve Type(s)				
Fuel Return Monitoring System Installed		Yes	No	Details				
Duplex Fuel Filter		Yes	No					
Comments								

Engine Electric System (AG10/AG11/AG11.5-P)

Isolated Ground	Yes	No	Positive Cable Length	_____	ft	m	Size	_____
Engine Grounded to Bonding Strip	Yes	No	Negative Cable Lenth	_____	ft	m	Size	_____
# of Batteries	_____	Battery Type	_____	System Voltage	12	24	System CCA	_____ Amps
Instrument Panel(s)	John Deere	Other	Controller Information					
TVP Installed	Yes	No						
Comments								

Cooling System (General) (AG08/AG09.5)

Engine Coolant Type	☐ Cool-Gard II	☐ Other	_____	John Deere Cooling System	Yes	No
Expansion Tank Volume	_____	qt	☐ L	Block/Coolant Heater	Yes	No
Expansion Tank Relative to Top Tank	Above	Below		Radiator Cap in Use	Yes	No
Height Relative To Top Tank	_____	in	cm	Remote Top Tank Volume	_____	qt
Auxiliary Coolant Utilized (i.e. cab heat)	Yes	No		Remote Top Tank relative to Top Tank	☐ Above	Below
Coolant Line Diameter	_____	in	cm	Height Relative to Top Tank	_____	in
Aux Coolant Location:	Out of Engine	_____		Outlet Line Diameter	_____	in
Return to Engine	_____					
Comments						

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Cooling System (Radiator Cooled) (AG09.5/AG04)

Radiator Make/Model	Part Number	Flow	☐ Vertical	☐ Cross			
Cooling Fan Make/Model	Part Number	Blower	Suction	Material			
Fan Diameter	in	cm	Distance From Core	in	cm	Fan Drive Ratio	:1
Fan Power Included in Powered Components Box Above		Yes	No				
LAT (Reference AG-04 for Test Procedure)		°F	°C				
Comments							

Aftercooler (HFM Engines Only) (AG01.5/AG07)

Make/Model	Part Number			
Height	Width	Thickness	in	cm
Air Duct Diameter	in	cm		
Comments				

Marine Classification Unit Certification Yes No (MAG02)

☐	American Bureau of Shipping (ABS)	Double Wall Fuel Lines	☐ Duplex Fuel Filters
☐	Other (specify)	Insulation Blanket	☐ Metal Fuel Parts
		Isolated ground options	☐ Metal Oil Filter Cap (6090 Only)
		RACOR Low Pressure Fuel System (4045A only)	
		Metal ECU case (4045T and 6068T only)	

Emission Certification Requirements:

Non-regulated	EU Stage V
EPA Tier 2	China Stage 1
EPA Tier 3	China Stage 2
IMO Tier 2	☐ Canada Transport
IMO Tier 3	Other

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Engine speed at 100% Load					1000					(Rated)	(Max)	Limits
Ambient Air Temperature		°F		°C								N/A
Vessel Speed (for keel cooled applications)	Knots											N/A
Generator Output (for VS gen on hybrid apps)	kWe											N/A
Analog Input 1: Coolant Pump Inlet Press.		psi		kPa								
Analog Input 3: Exhaust Back Pressure		psi		kPa								
Analog Input 4: Fuel Inlet Pressure		psi		kPa								
Analog Input 5: Fuel Return Pressure		psi		kPa								
Analog Input 7: Aux. Temp. 1 (Temp. at Air Cleaner)		°F		°C								Ambient + 17°C/30°F
Analog Input 8: Air Inlet Restriction		psi		kPa								
Analog Input 9: Auxiliary Temp. 2 (Eng. Room Temp.)		°F		°C								
Barometric Air Pressure*		psi		kPa								N/A
Engine Coolant Temperature*		°F		°C								
Engine Oil Pressure*		psi		kPa								____ Ref
Fuel Usage Rate*+		gph		Lph								N/A
Manifold Air Pressure--Actual/Boost Press.*		psi		kPa								____ Ref
Manifold Air Temperature*		°F		°C								
TC 1: Coolant Pump Inlet Temperature		°F		°C								N/A
TC3: Exhaust Temperature		°F		°C								____ Ref
TC4: Fuel Return Temperature		°F		°C								
Aftercooler Restriction (HFM Only)		psi		kPa								

Key ☐ -Measured on all coolant system types

* Denotes a parameter that can be monitored via Service ADVISOR™

+Denotes a parameter that is not monitored on mechanical eng

Data Set: Production Sea Trial (Prior John Deere approval required)

Engine Serial Number

Perf Curve Date

Article 1 App Review No.

Application Review Number

Engine speed at 100% Load					1000					(Rated)	(Max)	Limits
Ambient Air Temperature		°F		°C								N/A
Vessel Speed	Knots											N/A
Barometric Air Pressure*		psi		kPa								N/A
Engine Coolant Temperature*		°F		°C								
Engine Load at Current Speed*+	%											
Engine Oil Pressure*		psi		kPa								____ Ref
Fuel Usage Rate*+		gph		Lph								N/A
Manifold Air Pressure--Actual/Boost Press.*		psi		kPa								____ Ref
Manifold Air Temperature*		°F		°C								
Sea Water Temperature		°F		°C								N/A

Key ☐ -Measured on all coolant system types

* Parameter monitored via Service ADVISOR™

+Parameter not monitored on mechanical eng

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Serviceability Checklist

Inspect all items below and determine if serviceability/access of the item is acceptable in the currently installed condition. If not, notify vessel representative to aid in ease of service at a later date.

<u>N/A</u>	<u>Yes</u>	<u>No</u>	<u>Daily Maintenance & Checks</u>	<u>N/A</u>	<u>Yes</u>	<u>No</u>	<u>Regular Maintenance</u>
			Check oil level				Change engine oil
			Add oil				Replace oil filters
			Check coolant level				Replace air cleaners
			Add coolant				Replace fuel filters
			Check & drain fuel water separator				Adjust valve lash
			Adjust hose clamp tension				Change engine coolant
			Close seacock				Replace vibration damper
			Clean sea water strainer				Service crankcase vent system
			Fuel return valve open				Replace zinc anodes
			Access to hand primer				Replace raw water pump impeller
							Clean & remove heat exchanger core
							Clean and remove CAC core
							Adjust all belt tension

Yes

No

General

Operator manual reviewed with customer

Sea Trial and Serviceability Comments and Recommendations

By signing on the next page, all parties are indicating that the information in the application review form is accurate to the best of their knowledge and any data points not meeting John Deere requirements have been noted and communicated to the vessel representative with the understanding that those points not meeting John Deere requirements could lead to reliability issues.

Configurable Engine Derates & Shutdowns Sheet (details on page 2)

General Information

Configuration Date:			
Engine Serial Number:			
Engine Location:	Center	Port	Starboard
Configuration:	Initial	Periodic	Adjusted

Vessel Information

Vessel Name:	
Vessel Owner:	
Vessel Representative:	
Vessel Rep. Title:	

John Deere Authorized Technician Information

Authorized Tech. Name:				
Company:				
Type of Company:		Dealer		Distributor

If Adjusted from prior settings, brief description of reason for changes:

Derate and shutdown information can be found in service advisor by the following steps:

1. Connect to Service Advisor
2. From the Home icon, pick 'Reprogramming'

---- If the payload is already downloaded on your laptop, proceed to step 6 ----

3. Select 'Engine', pick 'Action' pull-down, click 'Go'
4. From the Options window, select 'Reprogramming current ECU', click 'Done'
5. The current payload will be downloaded to the computer, Select 'Back'
6. Select 'Engine', from the Action pull-down, pick 'Start Reprogramming'
- If the EDL is connected, pick which type you are using, select 'Go'
7. The changes can be made before connecting to the engine by picking "Proceed".
Otherwise, an EDL needs to be connected and selected from the options pull-down
8. Trim page is available for review/editing
9. Use the final 'Report' tab to print out the revised settings (if desired)

By signing below, all parties are indicating that the information included above is accurate, been reviewed and approved by Vessel Representative

Signatures

	<u>Company</u>	<u>Date</u>	<u>Signature</u>
John Deere Authorized Tech.			
			Authorized Representative
Dealer Representative			
			Authorized Representative
Vessel Representative			
			Authorized Representative
Distributor Representative			
			Authorized Representative

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Configurable Engine Derates & Shutdowns

Parameter	Factory Settings		Settings TODAY		DTC	Default Lamp Color
	Derates	Shutdowns	Derates	Shutdowns		
Water-in-Fuel ¹	Enabled	Disabled	Enabled Disabled ²	Enabled Disabled	97.00	Red
Oil Pressure ¹		Disabled		Enabled Disabled	100.01 100.18	Red Amber
Manifold Air Temperature ¹		Disabled		Enabled Disabled	105.00 105.16	Red Amber
Coolant Temperature ¹		Disabled		Enabled Disabled	110.00 110.16	Red Amber
Fuel Press. Sensor Voltage ¹		Not Available		Not Available	157.03 157.04	Red (high) Red (low)
Fuel Pressure ¹		Disabled		Enabled Disabled	157.01 157.18	Red Amber
Fuel Return Temp ¹		Disabled		Enabled Disabled	174.00	Red
Crank Timing Sensor ¹		Not Available		Not Available	637.02	Amber
		Not Available		Not Available	637.08	Amber
		Not Available		Not Available	637.10	Amber
ECU Temperature	Enabled ⁵	Not Available	Not Available	1136.00	Red	
Engine Overspeed	Enabled ³	Disabled ³	Enabled Disabled	Enabled Disabled	190.00	Red

¹Denotes parameters considered part of the same group

²Disabling will cause all grouped parameters denoted with ¹

³Engine overspeed is *either* Derate OR Shutdown

⁴Optional switch needed

⁵Requires sensor be enabled

Optional Settings

Parameter	Factory Settings		Settings TODAY		DTC	Default Lamp Color
	Derates	Shutdowns	Derates	Shutdowns		
Air Filter Restriction ¹	Disabled	Not Available	Enabled Disabled	Not Available	107.31	Amber
Low Coolant Level ¹	Enabled	Disabled	Enabled Disabled	Enabled Disabled	111.01	Red
Auxiliary Derate	Disabled	Not Available	Enabled Disabled	Not Available	971.31	Red
Auxiliary Shutdown	Not Available	Disabled	Not Available	Enabled Disabled	970.31	Red
Fuel Leak Switch	Pre-Alarm Only		Not Configurable		1239.31	Amber
Engine Oil Temperature	Pre-Alarm Only		Not Configurable		175.30 175.40	Red Amber

¹Denotes parameters considered part of the same group