



Certificate No. 02-003514/025492

TYPE APPROVAL CERTIFICATE

This is to certify that this product complies with the Rules for the classification of ships, Part 1 - General requirements, Chapter 3 - Type approval of products.

TYPE AND DESCRIPTION OF PRODUCT:

DIESEL ENGINE
type 4045, 6068

MANUFACTURER:

JOHN DEERE POWER SYSTEM
3801 West Ridgeway Avenue
P.O. Box 5100
Waterloo, IA 50704-5100
USA

THE PRODUCT MEETS FOLLOWING RULES/REGULATIONS:

CRS: Rules for the classification of ships, Part 9. - Machines.

FURTHER DETAILS OF THE PRODUCT AND CONDITIONS FOR CERTIFICATION ARE GIVEN OVERLEAF.

APPROVAL IS VALID UNTIL: **2026-03-12**

Place and date: Split, 2022-03-12

Seal

Marinko Popović, dipl.ing.

NOTE: This certificate is not valid for equipment, the design or manufacture of which has been varied or modified from the specimen tested. The manufacturer should notify Croatian Register of Shipping of any modification or changes to the product in order to obtain a valid certificate.

DETAILED PRODUCT DESCRIPTION:

<i>Number of cylinders</i>	4, 6
<i>Cylinder arrangement</i>	In-line
<i>Working cycle</i>	4 - stroke
<i>Cylinder bore (mm)</i>	107
<i>Stroke (mm)</i>	127
<i>Kind of fuel</i>	Liquid
<i>Fuel injection system</i>	Direct injection
<i>Valve operation</i>	Cam control
<i>Turbocharging system</i>	6068AFM, 4045AFM: With turbocharging and aftercooled, air to enginecoolant 6068SFM: With turbocharging and aftercooled, air to seawater 6068TFM, 4045TFM: With turbocharging, without aftercooling 4045DFM: Naturally aspirated

APPLICATION / LIMITATIONS:

Application: Propulsion

<i>Engine model</i>	<i>Rated power (kW)</i>	<i>Speed, (rpm)</i>	<i>Rating*</i>
4045 DFM50	56	2400	M1
	63	2500	M2
4045 DFM70	60	2500	M2
4045 TFM50	78	2300	M1
	90	2400	M2
	101	2500	M3
4045 TFM75	112	2600	M4
	80	2400	M1
	90	2500	M2
	101	2600	M3
4045 AFM85	119	2300	M1
	134	2400	M2
	149	2500	M3
	168	2600	M4

<i>Engine model</i>	<i>Rated power (kW)</i>	<i>Speed (rpm)</i>	<i>Rating*</i>
6068 TFM50	115	2300	M1
	131	2400	M2
	149	2500	M3
	168	2600	M4
6068 TFM75	118	2400	M1
	133	2500	M2
	150	2600	M3
6068 AFM75	172	2300	M1
	198	2400	M2
	224	2500	M3
	246	2600	M4
6068 AFM85	172	2300	M1
	198	2400	M2
	224	2500	M3
	246	2600	M4
6068 SFM50	176	2400	M3
	199	2500	M4
	224	2600	M5
6068 SFM75	186	2400	M1
	209	2500	M2
	239	2600	M3
	265	2700	M4
	298	2800	M5
6068 SFM85	186	2400	M1
	209	2500	M2
	239	2600	M3
	265	2700	M4
	298	2800	M5

*Reference is made to Manufacturer marine rating classification.

Power ratings (at the same rated speed) lower than those stated is accepted as long as they are within the values approved by engine designer.

Application: Auxiliary and emergency

<i>Engine model</i>	<i>Rated power (kW)</i>	<i>Rated speed (rpm)</i>
6068 AFM75	139	1500
6068 AFM85	117	
6068 AFM85	129	
6068 AFM85	139	
6068 SFM85	168	
4045 AFM85	110	1800
6068 TFM76	110	
6068 TFM50	115	
6068 AFM75	166	
6068 AFM85	129	
6068 AFM85	166	
6068 SFM85	195	

Power ratings (at the same rated speed) lower than those stated is accepted as long as they are within the values approved by engine designer.

TYPE APPROVAL DOCUMENTATION:

Approved by the Croatian Register of Shipping with letter No.(dated):

453/TS/IA/023564, 2014-03-12

498/TSE/KF/025492, 2022-03-12

MARKING OF PRODUCT:

- *manufacturer's mark*
- *location and year of final fitting*
- *CRS mark*

CONDITIONS FOR CERTIFICATION:

Signalization and protection related to the engine shall be subject to CRS approval in each particular case and will depend on service applied and the degree of automation of the engine plant.