



Certificate No. 02-003418/025373

## 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 6090

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: **2025-10-06**

Place and date: Split, 2021-10-06

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:**

Number of cylinders	<b>6</b>
Cylinder arrangement	<b>In-line</b>
Working cycle	<b>4- stroke</b>
Cylinder bore (mm)	<b>118</b>
Stroke (mm)	<b>136</b>
Kind of fuel	<b>Liquid</b>
Fuel injection system	<b>Electronically Controlled, Common rail, Direct injection</b>
Valve operation	<b>Cam control</b>
Turbocharging system	<b>With turbocharging, with charge air cooling</b> <b>6090SFM: aftercooled, air to seawater</b> <b>6090AFM: aftercooled, air to enginecoolant</b>

**APPLICATION / LIMITATIONS:**

**Application: Propulsion**

Model	6090 SFM85	6090SFM85 and 6090SFM75					6090AFM85 and 6090AFM75			
Rated power (kW)	<b>242</b>	<b>242</b>	<b>280</b>	<b>317</b>	<b>373</b>	<b>410</b>	<b>213</b>	<b>242</b>	<b>280</b>	<b>317</b>
Rated speed (rpm)	<b>2000</b>	<b>2100</b>	<b>2200</b>	<b>2300</b>	<b>2400</b>	<b>2500</b>	<b>2100</b>	<b>2200</b>	<b>2300</b>	<b>2400</b>
Mean effective pressure (bar)	<b>16,3</b>	<b>15,5</b>	<b>17,1</b>	<b>18,5</b>	<b>20,9</b>	<b>22,1</b>	<b>13,6</b>	<b>14,8</b>	<b>16,4</b>	<b>17,8</b>
Application / rating*	<b>Hybrid</b>	<b>M1</b>	<b>M2</b>	<b>M3</b>	<b>M4</b>	<b>M5</b>	<b>M1</b>	<b>M2</b>	<b>M3</b>	<b>M4</b>

\*Reference is made to Manufacturer marine rating classification.

**Application: Auxiliary and emergency**

Model	6090SFM85 and 6090SFM75		6090AFM85 and 6090AFM75		6090HFG86	
Rated power (kW)	<b>278</b>	<b>222</b>	<b>222</b>	<b>195</b>	<b>315</b>	<b>278</b>
Rated speed (rpm)	<b>1800</b>	<b>1500</b>	<b>1800</b>	<b>1500</b>	<b>1800</b>	<b>1500</b>
Mean effective pressure (bar)	<b>20,8</b>	<b>19,9</b>	<b>16,6</b>	<b>17,5</b>	<b>23,5</b>	<b>24,9</b>

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):

168/TS/IA/024061, 2017-02-01  
2011/TSE/AD/025373, 2021-10-06

**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.