



Certificate No. 02-003897/025734

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
3500

MANUFACTURER:

CATERPILLAR Inc.
3701 South Street
Lafayette, IN 47905-4856
USA

THE PRODUCT MEETS FOLLOWING RULES/REGULATIONS:

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: **2027-03-10**

Place and date: Split, 2023-02-03

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	8, 12, 16
Cylinder arrangement	In-Vee
Working cycle	4- stroke
Cylinder bore (mm)	170
Stroke (mm)	190
Kind of fuel	Liquid
Fuel system	Electronically controlled, direct injection type
Valve operation	Cam control
Turbocharging system	Single-stage with charge air cooling

APPLICATION / LIMITATIONS:

**Application: Propulsion engine
Engine series: 3500 (mechanical)**

Engine type	3508			
Rated power (kW)	526	611	675	857
Rated speed (rpm)	1200	1300	1600	1800
Mean effective pressure (bar)	15,25	16,35	14,67	16,56
Manufacturer rating*	A	C	B	D

**Application: Propulsion engine
Engine series: 3500 (mechanical)**

Engine type	3512			3516		
Rated power (kW)	1050	1051	1305	1305	1350	1640
Rated speed (rpm)	1200	1600	1800	1200	1600	1800
Mean effective pressure (bar)	20,27	15,22	16,80	18,91	14,67	15,85
Manufacturer rating*	C	C	D	C	B	D

**Application: Propulsion engine
Engine series: 3500B/C (electronic)**

Engine type	3508B/C						
Rated power (kW)	671	820	820	895	969	1044	1119
Rated speed (rpm)	1200	1600	1800	1785	1835	1880	1925
Mean effective pressure (bar)	19,45	17,83	15,85	17,44	18,39	19,32	20,22
Manufacturer rating*	C	C	C	B	C	D	E

**Application: Propulsion engine
Engine series: 3500B/C (electronic)**

Engine type	3512B/C						
Rated power (kW)	1118	1230	1230	1343	1454	1566	1679
Rated speed (rpm)	1200	1600	1800	1785	1835	1880	1925
Mean effective pressure (bar)	21,58	17,81	15,83	17,43	18,39	19,30	20,20
Manufacturer rating*	C	C	C	B	C	D	E

**Application: Propulsion engine
Engine series: 3500B/C (electronic)**

Engine type	3516B/C						
Rated power (kW)	1379	1641	1641	1790	1939	2088	2238
Rated speed (rpm)	1200	1600	1800	1785	1835	1880	1925
Mean effective pressure (bar)	19,99	17,84	15,86	17,44	18,40	19,32	20,22
Manufacturer rating*	C	C	C	B	C	D	E

Application: Auxiliary and emergency

Engine series: 3500 (mechanical)

Engine type	3508				3512			
Rated power (kW)	446	599	673	760	860	955	1020	1125
Rated speed (rpm)	1000	1200	1500	1800	1000	1200	1500	1800
Mean effective pressure (bar)	15,51	17,36	15,61	14,69	19,92	18,44	15,75	14,48

Application: Auxiliary and emergency

Engine series: 3500 (mechanical)

Engine type	3516			
Rated power (kW)	1100	1230	1355	1511
Rated speed (rpm)	1000	1200	1500	1800
Mean effective pressure (bar)	19,13	17,83	15,71	14,60

Application: Auxiliary and emergency

Engine series: 3500B/C (electronic)

Engine type	3508B/C				3512B/C			
Rated power (kW)	649	682	856	968	933	1102	1257	1432
Rated speed (rpm)	1000	1200	1500	1800	1000	1200	1500	1800
Mean effective pressure (bar)	22,57	19,77	19,85	18,71	21,61	21,27	19,41	18,43

Application: Auxiliary and emergency

Engine series: 3500B/C (electronic)

Engine type	3516B/C			
Rated power (kW)	1287	1383	1717	1901
Rated speed (rpm)	1000	1200	1500	1800
Mean effective pressure (bar)	22,38	20,04	19,91	18,37

*Reference is made to manufacturer marine rating classification. D and E ratings are intermittent use only and not overloadable.

Lower ratings than these stated are acceptable as long as they are within the values approved by engine designer.

TYPE APPROVAL DOCUMENTATION:

Approved by the Croatian Register of Shipping with letters No.(dated): 395/TS/IA/023715 (2015-03-09)

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.