Certificate No.: 2508251521493938

TÜRK LOYDU

TYPE APPROVAL CERTIFICATE

This is to certify that the

Internal Combustion Engine

TL Project No	**25-0663**
Manufacturer	**WEICHAI POWER CO. LTD.**
Address	**No.197A Fushou E St., High-new Tech Industrial, Development Zone,Weifang City, Shandong, Weifang, CHINA**
Product Type	**WP13Y**
Reference Rule	**TL Rules, Part B, Chapter 4-1, Automation, 01.01.2022** **TL Rules, Part E, Chapter 103 - Metallic Materials, Special Materials for Naval Ships, 01.01.2022** **TL Rules, Part E, Chapter 104 - Naval Ship Technology, Propulsion Plants, 01.01.2022** **TL Rules, Part E, Chapter 105 - Naval Ship Technology, Electrical Installations, 01.01.2022** **TL Rules, Part E, Chapter 106 - Naval Ship Technology, Automation, 01.01.2022** **TL Rules, Part B, Chapter 5, Electric , 01.01.2024** **TL Rules, Part A, Chapter 2, Material, 01.07.2024** **TL Rules, Part B, Chapter 4, Machinery, 01.07.2024**
Expire Date of Previous Certificate	-
Place and Date	**İSTANBUL / 15.09.2025**

Subject to the conditions referred to in the following pages, this certificate is valid until 07.05.2030.

Emrah SÖĞÜTÇÜ
New Building Division Manager

135852

This certificate is subject to terms and conditions described below:

- Any significant change in design or construction may render this Certificate invalid. Type Approval Certificate is not valid for equipment, the design or manufacture of which has been varied or modified from the specimen tested. This certificate is not valid for products without marking above mentioned. The manufacturer should notify TÜRK LOYDU of any modifications or changes to equipment in order to obtain valid certificate. This certificate shows that tested specimens as representative of the product complies of the TÜRK LOYDU rules, and revelant international instruments that apply to it.

Product	: Internal Combustion Engine
Type of Product	: WP13Y
Engine Type	: -
Number of Cylinders	: 6
Stroke	: 165 mm
Bore	: 127 mm
Method of Operation	: Four Stroke
Kind of Starting Device	: Electric starter
Kind of Cooling	: Water
Fuel Type	: Diesel
Last Inspection Date	: 07.05.2025
Performed Tests	: - Type approval quality audit - Quality assurance certification audit - Controls according to approved drawing - Subcomponent Controls (crankshaft, pistons, connecting road etc.) - Integration Controls - Fire protection Controls - Turbo Charger Checks - The type test reports of IACS member classification societies conducted on 22-25 December 2024 for 3500E HD Marine Engine, Serial no: 00516115 were accepted. were found satisfactory.
Test Place	: Weifang/ China
Surveyor Remarks	: -
Application/Limitation	: The engine is a liquid-cooled four-stroke diesel engine, with direct injection, In-line, trunk- piston, non-reversible, charge air cooled, supercharged, pulsating pressure charging system.The engine is controlled by a WEICH / WISE 13A and WISE 13- P234-GXX electronic type speed governor. 1) Environmental conditions according to TL Enginery Rules and IACS UR M28. İnclination limits (degrees) Athwartships Fore and Aft Main and Auxiliary enginery Static Dynamic Static Dynamic ± 15,0° ± 22,5° ± 5,0° ± 7,5° Seawater temperature: +32 °C Temperature range: 0°C ÷ +45 °C Atmospheric pressure: 1 bar Suction air temperature: +45 °C Relative humidity: 60 % For electric components: 0°C ÷ +55 °C 2) Limitation 2.1) It can't be used as the sole main engine or emergency diesel in TL classed ships 2.1.1. In order for these machines to be used on ships with single-engine propulsion applications, the control of the machine (in case of failure of the regulator or actuator) must be done with another independent control system. In other words, two separate machine control systems should be arranged. The main machines must be fitted with stand-by cooling pumps that operate independently.If this equipments is not on the machine, the ships should be equipped with more than one main engine. 2.1.2. Engines intended for single propulsion with a fixed pitch propeller are to be able to run continuously at a speed (r.p.m.) of 40% of full speed along the theoretical propeller curve when one turbocharger is out of operation. 2.2) Other Conditions; 2.2.1.Flexible hoses with couplings are to be type approved. 2.2.2.Engine safety, control and monitoring systems, including sensors and actuators are not covered by this type approval certificate. Documentation for engine safety,

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control including speed governing and monitoring systems shall be submitted for approval according to the TL Part B- Chapter 4-1 Section 2 (January 2022). (It is only required for Turkish Lloyd's product certificate.)
2.2.3.Electric cables and cabling are not covered by this approval and must be verified to comply to the TL Part B- Chapter 5 Section 9 (January 2022). (It is only required for Turkish Lloyd's product certificate.)
2.2.4. WEICHAI POWER is responsibilty to inform the shipbuilders and/or their subcontractors about the installation, use, general maintenance of the approved equipment and the conditions of this approval.
2.3) Service Restriction: 2.3.1.In order for this product to be used on TL classified ships, Unit Certification (Turkish Lloyd Product Certification) is required according to IACS UR M51.
2.3.2. Signalization and protection related to the engine shall be subjected to Turkish Lloyd approval in each particular case and will depend on service applied and the degree of the vessel's automation. These engines can be installed on ships with automation notation provided that all the conditions specified in our rules are followed. For this purpose, equipment that meets the requirements of the Automation Rules must be on the engine and our surveyors must check whether these requirements are met during FAT or ship trials.
3) Comments
3.1) Torsion vibration analysis is required for each propulsion installation unit.
3.2) The fitting of Rules required protective devices is to be verified at installation on board a vessel in class with the Turkish Lloyd as well as the Rule required quantity of pump units depending on actual installation arrangements.

Others : Application/Limitation continues:
3.3) For engines intended to be used for emergency services, supplementary tests in accordance with regulations of the Administration whose flag the vessel flies may be required.
3.4) Products requiring witnessed testing by a Surveyor as part of their Certification for use on a vessel,or facility classed by Turkish Lloyd ,as defined in the applicable section of the Rules,will continue to require witnessed testing. Each engine produced in future where Turkish Lloyd certification is required is to be shop tested.
3.5) This certificate does not cover the following plans which are to be reviewed for each installation:
3.5.1. Schematic diagram of engine control and safety system. Electronic monitoring and control system(s) - software and hardware
3.5.2. Turbochargers
3.5.3. Flexible Hoses.
3.5.4. The electrical and electronic equipment located within areas protected by local Fixed Pressure Water-spraying or Water-mist Fire Extinguishing system and those with in adjacent areas exposed to direct spray are to have a degree of protection not less than IP 44.
3.5.5. Crankcase explosion relief devices
3.5.6. Oil mist detection and alarm devices
3.5.7. Fuel management system (where dual fuel arrangements are fitted)
3.5.8. Engine driven pumps
3.5.9. Engine mounted filters
3.6) Use of the Product for non-Turkish Lloyd units is subject to agreement between the manufacturer and intended client.
3.7) The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

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	Product Description	Application	Rated Power	Rated RPM	Mean Effective Pressure
1	WP13Y600-21E210	Propulsion	73,5 [kW/cyl.]	2100 [rpm]	2,01 Mpa
2	WP13Y550-18E210	Propulsion	67,5 [kW/cyl.]	1800 [rpm]	2,15 Mpa
3	WP13Y530-18E210	Propulsion	65 [kW/cyl.]	1800 [rpm]	2,07 Mpa
4	WP13Y500-18E210	Propulsion	61,34[kW/cyl.]	1800 [rpm]	1,96 Mpa
5	WP13Y490-15E210	Propulsion	60 [kW/cyl.]	1500 [rpm]	2,30 Mpa
6	WP13Y450-18E210	Propulsion	55 [kW/cyl.]	1800 [rpm]	1,75 Mpa
7	WP13Y170-15E210	Propulsion	20,84 [kW/cyl.]	1500 [rpm]	0,80 Mpa
8	WP13Y170-18E210	Propulsion	20,84 [kW/cyl.]	1800 [rpm]	0,66 Mpa
9	WP13Y170-21E210	Propulsion	20,84 [kW/cyl.]	2100 [rpm]	0,57 Mpa
10	WP13CD138E210	Propulsion/Auxiliary	20,84 [kW/cyl.]	1500 [rpm]	0,80 Mpa
11	WP13CD138E211	Propulsion/Auxiliary	20,84 [kW/cyl.]	1800 [rpm]	0,66 Mpa
12	WP13CD142E210	Propulsion/Auxiliary	21,5 [kW/cyl.]	1500 [rpm]	0,82 Mpa
13	WP13CD142E211	Propulsion/Auxiliary	21,5[kW/cyl.]	1800 [rpm]	0,82 Mpa
14	WP13CD396E210	Propulsion/Auxiliary	60 [kW/cyl.]	1500 [rpm]	2,30 Mpa
15	WP13CD385E210	Propulsion/Auxiliary	58,34[kW/cyl.]	1500 [rpm]	2,23 Mpa
16	WP13CD319E210	Propulsion/Auxiliary	48,34[kW/cyl.]	1500 [rpm]	1,85 Mpa
17	WP13CD385E211	Propulsion/Auxiliary	58,34[kW/cyl.]	1800 [rpm]	1,86 Mpa
18	WP13CD429E211	Propulsion/Auxiliary	65 [kW/cyl.]	1800 [rpm]	2,07 Mpa
19	WP13CD429E210	Propulsion/Auxiliary	65 [kW/cyl.]	1500 [rpm]	2,49 Mpa

Approval Conditions : -

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