

Certificate Of Type Approval (MCA)

This is to certify that LLOYD'S REGISTER, specified as a "person" under the terms of The Merchant Shipping (Marine Equipment) Regulations 2016 (SI2016 No. 1025), did undertake the relevant type approval procedures of the equipment identified below which was found to be in compliance with the essential Pollution prevention requirements subject to any conditions in the Design Appraisal Document hereto.

Manufacturer	Teryair Equipment Pvt Ltd
Address	Building A – 1,2, 102 to 105 & Building C12 & 13, Tirupati Udyog Nagar, Sativali Road, Palghar, 401208, INDIA
Type	CRUDE OIL WASHING MACHINE
Description	"TC-110J" Deck Mounted Dual Nozzle Non-Programmable Machine
Trade Name	"TC-110J"
Specified Standard	MARPOL 73/78 Annex I Regulation 33.2 and IMO Resolution A.446(XI) as amended.

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 Lloyd's Register EMEA of any modification or changes to the equipment in order to obtain a valid Certificate.

The attached Design Appraisal Document forms part of this certificate.

This certificate remains valid up to the expiry date, unless cancelled or revoked, or until such date where it is superseded by the requirements of the Marine Equipment Directive, whichever is sooner, provided the conditions in the attached schedule are complied with and the equipment remains satisfactory in service.

ATTACHMENT TO CERTIFICATE OF TYPE APPROVAL No. LR2011185MC

The undernoted documents have been appraised for compliance with the relevant International Conventions and UK legislation for the Type Approval of Marine Equipment for use on Merchant Ships Registered in the United Kingdom.

This Design Appraisal Document forms part of the Certificate that is issued under the authority given in the MCA Merchant Shipping Notice No MSN 1735.

APPROVAL DOCUMENTATION

This certificate is based on the survey carried out by Lloyd's Register Group surveyor, on 20 February 2020 (Control No. BOM 1900481) at Teryair Equipment Pvt. Ltd Building A – 1,2, 102 to 105 & Building C12 & 13, Tirupati Udyog Nagar, Sativali Road, Palghar: 401208, INDIA.

Principle Documents

Drawing No.

Title

Work Sheet Signed Dated 20 February 2020
 WI-058 Rev 00 Dated 10/03/2018
 43838 – TE/QAC/PWFM/02 08/01/2020
 Cal 18/12/19 valid to 17/12/20 TE/QAC/PG/01
 FF-MM-355-REV-01
 Rev 03

Test Report
 Test Procedure for Tank Cleaning Machine Model TC-110J
 Flowmeter Calibration Certificate
 Photograph of pressure gauge label by Lab House
 Operation and Maintenance Guide Tank Cleaning machine TC-110J
 Tank Cleaning Machine Technical Specifications

Pressure Bar	Nozzle Diameter 2 x 6mm		Nozzle Diameter 2 x 7mm		Nozzle Diameter 2 x 8mm		Nozzle Diameter 2 x 9mm		Nozzle Diameter 2 x 10mm	
	Flow m ³ /hr	Jet Length m	Flow m ³ /hr	Jet Length m	Flow m ³ /hr	Jet Length m	Flow m ³ /hr	Jet Length m	Flow m ³ /hr	Jet Length m
4	8.10	12.19	10.20	11.89	12.30	11.58	13.86	11.13	15.42	10.67
5	9.00	12.65	11.31	12.34	13.62	12.04	15.42	11.58	17.22	11.13
6	10.08	13.11	12.57	12.80	15.06	12.50	16.95	12.04	18.84	11.58
7	10.80	13.41	13.65	13.11	16.50	12.80	18.45	12.34	20.40	11.89
8	11.40	13.72	14.40	13.41	17.40	13.11	19.59	12.65	21.78	12.19
9	11.88	14.02	15.00	13.72	18.12	13.41	20.61	12.95	23.10	12.50
10	12.30	14.26	15.57	13.96	18.84	13.66	21.57	13.20	24.30	12.74
11	12.60	14.51	15.96	14.20	19.32	13.90	22.35	13.44	25.38	12.98
12	12.90	14.66	16.35	14.36	19.80	14.05	23.04	13.59	26.28	13.14

CONDITIONS OF CERTIFICATION

1. The delivery tube is to be stress relieved in the deck support region to improve fatigue life
2. The welding of the tubes is to be performed by qualified welders, and satisfactorily tested
3. The machine is to be electrically continuous with its mounting flange
4. Dissimilar materials are to be protected to eliminate bi-metallic corrosion
5. The machine mounting tubes are to be maintained in a satisfactory condition and critically examined at the same time as Classification Society in tank surveys and also when removed for any other reason
6. The method of support of the tank machines is to be to the satisfaction of the attending surveyors

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7. After installation it is to be demonstrated no undue vibration of the machine delivery head is induced under normal operating conditions
8. The openings in the deck and fixing arrangements of the machine must be in accordance with IMO Resolution A.446 (XI), classification society rules and requirements of the administration

PLACE OF PRODUCTION

Teryair Equipment Pvt Ltd.
Building A - 1,2,
102 to 105 & Building C12 & 13,
Tirupati Udyog Nagar,
Sativali Road
Palghar: 401208,
INDIA,



J.D. Morley
Lead Specialist and Technology Leader
MARPOL Section
UKITSO
Lloyd's Register EMEA