

व्यावसायिक परीक्षण रिपोर्ट (द्वितीय बैच परीक्षण)
COMMERCIAL TEST REPORT (Second Batch Test)

संख्या/No. : T-1561/2089/2021
माह/Month : July, 2021

(यह परीक्षण रिपोर्ट 31/07/2026 तक वैध है। / THIS TEST REPORT IS VALID UPTO 31/07/2026)

[ONLINE TESTING]



KUBOTA, L4508 DD TRACTOR



भारत सरकार

कृषि एवं किसान कल्याण मंत्रालय
कृषि, सहकारिता एवं किसान कल्याण विभाग

GOVERNMENT OF INDIA

MINISTRY OF AGRICULTURE AND FARMERS WELFARE
(Department of Agriculture, Cooperation & Farmers Welfare)

केन्द्रीय कृषि मशीनरी प्रशिक्षण एवं परीक्षण संस्थान

ट्रैक्टर नगर, बुदनी (म.प्र.) 466 445

CENTRAL FARM MACHINERY TRAINING & TESTING INSTITUTE

(An ISO 9001: 2015 Certified Institute)

TRACTOR NAGAR, BUDNI (M.P.) 466445

E-mail: fmti-mp@nic.in
Telephone: 07564-234729

Web site: <http://www.fmttibudni.gov.in>

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The “**KUBOTA, L4508 DD**” tractor had undergone “Initial Commercial Test & Test Report No. T-712/1219/2010 was released in April, 2010. Subsequently first batch testing was conducted & Test Report No. T- 972/1491/2015 was released on May, 2015. Now, the applicant has submitted online application No.28/2020-21/16 dated 20.11.2020 for second batch testing of “**KUBOTA, L4508 DD**” tractor.

All necessary tests as per Table-1 of clause 6.0 of IS: 5994 – 1998 (Reaffirmed in 2019) were carried out and test report released as under: -

Manufacturer	:	Kubota Corporation, Japan 1-2-47, Shikitsu- Higashi, Naniwa-ku, Osaka, 556-8601, Japan
Test requested by (applicant)	:	M/s Kubota Agricultural Machinery India Pvt. Ltd. Block No. 94, Tower -1, 8 th floor, TVH Beliciaa Towers, MRC Nagar, Chennai -600028, Tamil Nadu, India
Test requested by	:	The Applicant
Selected for test by	:	Applicant
Place of running-in	:	C.F.M.T& T.I, Tractor Nagar, Budni (M.P)
Duration of said running-in (h):		
- Engine	:	50
-Transmission	:	Not recommended
Method of Selection	:	Due to Covid-19 pandemic, it was not possible to conduct the random selection. Nor was it possible for applicant to facilitate the random selection. As a last resort, applicant requested to allow the direct submission of test sample which was allowed.

1. SPECIFICATION

1.1 Tractor:			
Make	: KUBOTA		
Model	: L4508 DD		
Type	: Four wheeled, 4WD, General Purpose, Unit construction, Agricultural Tractor.		
Variant: if any	: None		
Month & Year of manufacture	: <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 20px; text-align: center;">09</td><td style="width: 20px; text-align: center;">20</td></tr></table>	09	20
09	20		
Chassis number	: KBTL30DNTL8J54195		
Country of origin	: Japan		
1.2 Engine:			
Make	: Kubota Corporation, Japan		
Model	: V-2203-M-DI		
Type	: Four stroke, naturally aspirated, liquid cooled, direct injection, diesel engine.		
Serial number	: 7LQ4346		

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15. SUMMARY OF OBSERVATIONS, COMMENTS & RECOMMENDATIONS

15.1 On the basis of test conducted the performance results have been summarized as evaluative (mandatory) / non-evaluative (non-mandatory) parameters applicable for qualifying Minimum Performance criteria as per Clause-4 (Table-1) of IS: 12207-2019 for acceptance of the tractor for the purpose of subsidies/NABARD financing are summarized as under:

Sl. No.	Characteristic	Category (Evaluative / Non-Evaluative)	Requirements as per IS: 12207-2019	Values declared by the applicant/ (D) Requirement (R)	As observed	Whether meets the require- ments (Yes/No)
1	2	3	4	5	6	7
15.1.1	PTO Performance:					
a)	Maximum power under 2 h test, (kW) (Natural ambient condition)	Evaluative	Declared value to be achieved with a tolerance of: $\pm 5\%$ for PTO power and or engine power > 26 kW. $\pm 10\%$ for PTO power and or engine ≤ 26 kW.	28.0 (D)	26.9	Yes
b)	Power at rated engine speed, (kW)	Non-Evaluative	-do-	28.0 (D)	26.9	Yes
c)	Specific fuel consumption corresponding to maximum power, (g/kWh)	Evaluative	+ 10% max.	263 (D)	280	Yes
d)	Maximum equivalent crankshaft torque, (Nm)	Non-Evaluative	$\pm 8\%$	132.0(D)	118.2	Yes
e)	Back-up torque, percent	Evaluative	12 percent	28% (D) 12% (R) Minimum	19.5	Yes
f)	Maximum operating temperature, ($^{\circ}\text{C}$)					
	1) Engine oil	Evaluative	The declared value should not exceed the max. value specified by the oil company and the observed value under high ambient condition should not exceed the declaration.	130 (D)	121	Yes
	2) Coolant	Evaluative	The declared value should not exceed the boiling temperature of coolant under the pressurized or otherwise and the observed value under high ambient condition should not exceed the declaration.	135 (D)	120	Yes
g)	Engine oil consumption, (g/kWh)	Evaluative	Not exceeding 1% of SFC at max. power under High ambient conditions.	1% of SFC 2.88 (R)	0.27	Yes
h)	Smoke level, m^{-1}	Evaluative	Maximum light absorption coefficient of 3.25 per meter or equivalent BOSCH No. 5.2 or 75 Hatridge value (As per CMVR).	3.25 per meter Maximum (R)	0.28 per meter	Yes

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1	2	3	4	5	6	7	
15.1.2	Drawbar performance:						
a)	Max. drawbar pull with ballasted corresponding to 15 percent wheel slip, (kN)	Non-Evaluative	Minimum 70% of static mass of tractor with ballast.	11.30 (D) 11.88 (R) Minimum	15.11	Yes	
b)	Max. drawbar pull with unballasted as the case may be corresponding to 15 percent wheel slip, (kN)	Evaluative	Minimum 70% of static mass of tractor without ballast or with standard ballast, as the case may be.	9.80 (D) 10.30 (R) Minimum	12.60	Yes	
c)	Maximum drawbar power with standard ballast, (kW).	Evaluative	Minimum 80 % of PTO power as referred in SI No. i) a) of PTO performance in case of tractors having total static mass > 1500 kg Minimum 75 % of PTO power as referred in SI No. i) a) of PTO performance in case of light weight tractors having ≤1500 kg total static mass of tractor Minimum 75 % of the engine power as referred in SI No. i) a) of engine performance in case of tractors which do not have a PTO shaft.	25.4 (D) 20.2 (R) Minimum	25.1	Yes	
d)	For tractors fitted with air conditioned /heated cabin: Maximum drawbar power without ballast, or with standard ballast as the case may be, kW	Evaluative	Minimum 70 % of PTO power as referred in SI No. i) a) of PTO performance in case of tractors having total static mass > 1500 kg	Not fitted	Not applicable	Not applicable	
e)	Maximum transmission oil temperature (°C)	Evaluative	The declared value should not exceed the maximum value specified by oil company	120 (D)	100	Yes	
15.1.3	Power lift and hydraulic pump performance:						
a)	Maximum lifting capacity throughout the range of lift, (kN):						
	1)	At hitch points	Evaluative	Tolerance of ± 10%	11.80 (D)	12.41	Yes
	2)	With the standard frame	Evaluative	The lift capacity should at least be 24 kg/PTO kW. and it should be 21.5 kg/engine kW where the tractor is not provided with a PTO shaft.	9.10 (D) 6.33 (R) Minimum	9.49	Yes
b)	Maximum drop in the height of the point of application of the force after each 5 minutes interval for a total duration of 30 Minutes, (mm)	Non-Evaluative	The observed value should not exceed 50 mm	50 (D) Maximum	05	Yes	

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1	2	3	4	5	6	7
15.1.4	Brake performance at 25 kmph:					
a)	Maximum stopping distance at a force, equal to or less than 600 N on brake pedal with standard ballast, (m):					
	1) Cold brake	Evaluative	10	10 (R)	9.17	Yes
	2) Hot brake	Evaluative	10	10 (R)	9.17	Yes
b)	Maximum force exerted on the brake pedal to achieve a deceleration of 2.5 m/s ² (N)	Evaluative	600	600 (R) Maximum	324 to 442	Yes
c)	Whether parking brake is effective at a force of 600 N at foot pedal (s) or 400 N at hand lever, N	Evaluative	Yes / No	Yes	Yes	Yes
15.1.5	Noise measurement:					
a)	Maximum ambient noise emitted by the tractor dB(A)	Evaluative	As per CMVR	88 (R)	78	Yes
b)	Maximum noise at operator's ear level dB(A)	Evaluative	As per CMVR	96 (R)	96	Yes
15.1.6	Amplitude of mechanical vibrations at:					
	1) Left foot rest	Non Evaluative	100 microns (max)	100(R)	83	Yes
	2) Right foot rest				67	Yes
	3) Seat (with driver seated)				39	Yes
	4) Steering wheel				39	Yes
15.1.7	Air cleaner Oil Pull-Over:					
	Maximum air cleaner oil pull over, (%)	Evaluative	0.25% (Maximum)	Dry type air cleaner fitted	Not applicable	
15.1.8	Haulage requirements:					
a)	Gross mass of the trailers, (tonnes):					
	Two wheel	Non-	--	5.0 (D)	5.0	Yes
	Four wheel	Evaluative	--	5.0 (D)	5.0	Yes
b)	Distance travelled / liter of fuel consumption, (km/l):					
	Two wheel	Non-	--	4 to 6 (D)	4.84	Yes
	Four wheel	Evaluative	--	4 to 6 (D)	5.01 to 5.04	Yes
c)	Fuel consumption (ml/km/tonne) :					
	Two wheel	Non-	--	36 to 41 (D)	41.34	Yes
	Four wheel	Evaluative	--	35 to 40 (D)	39.65 to 39.89	Yes
15.1.9	Wetland cultivation (Puddling Operation):					
	Sealing for the following assemblies:	Evaluative	The identified assemblies should essentially meet the requirement of IS: 11082. No water ingress in the identified assembly given in column-2. If tractor does not meet the requirements of wetland cultivation, it may be recommended for dry land operation only.	There should be no ingress of water and/or mud (R)	No ingress of water and / or mud was observed during ICT test vide test report no. T-712/1219 /2010 (April,2010). So, as per clause 7.2 of IS:12207-2019, test was not conducted.	--
	1) Clutch assembly	-do-				
	2) Brake housings	-do-				
	3) Front axle hubs	-do-				
	4) Engine oil	-do-				
	5) Transmission oil	-do-				

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1	2	3	4	5	6	7
15.1.10	Safety features:					
a)	Guards against moving and hot parts	Evaluative	Belt drives, pulleys, silencer, hydraulic pipes (As per IS 12239 (Part-2))		Meets the requirement	Yes
b)	Lighting arrangement	Evaluative	As per CMVR		Meets the requirement	Yes
c)	Seating requirements (Tractors having more than 1150 mm rear track width)	Non-Evaluative	Should meet the requirements of IS: 12343 (As amended from time to time)		Does not Meets the requirement	No
d)	Technical requirements for PTO shaft	Evaluative	Should meet the requirements of IS: 4931 (As amended from time to time)		Meets the requirement	Yes
e)	Dimensions of three-point linkage	Non-Evaluative	Should meet the requirements of IS: 4468 (Part-I) (As amended from time to time)		Meets the requirement	Yes
f)	Specifications of linkage drawbar	Evaluative	Should meet the requirements of IS: 12953 (As amended from time to time)		Meets the requirement	Yes
g)	Swinging drawbar (wherever fitted)	Evaluative	Should meet the requirement of IS: 12362 (Part-3) (As amended from time to time)		Not provided	Not applicable
h)	1) Maximum travelling speed at rated engine speed in reverse gears, Kmph	Evaluative	Should not exceed 20 Kmph		8.74 kmph Meets the requirement	Yes
	2) Audible warning signal on tractor	Evaluative	As soon as the travelling speed in reverse gear reaches to 20 kmph, an audible warning signal on tractor shall be activated. The safety aspects about the operation of shuttle technology shall be brought in operation and manufacturer /dealer shall ensure the training on this aspect to operator before the delivery of tractor.		Not provided	Not applicable
15.1.11	Labelling of tractors (Provision of labelling plate):					
	1) Make	Evaluative	Should conform to the requirements of CMVR along with maximum PTO Power in kW and year of manufacture in numerical form. MM YY Digit 01 – 12 in box No.1 for MM will represent the months and next two digits in box No.2 for YY will represent the year of Manufacturing.		KUBOTA	Yes
	2) Model	Evaluative		L4508 DD	Yes	
	3) Month & Year of manufacture	Evaluative		09 & 20	Yes	
	4) Engine number	Evaluative		7LQ4346	Yes	
	5) Chassis number	Evaluative		KBTL30DNTL8J54195	Yes	
	6) Maximum PTO power, (kW)	Evaluative		28.0 @ 2600 RPM	Yes	
	7) Specific fuel consumption, (g/kwh)	Evaluative		263	Yes	
15.1.12	Discard limit for:					
(a)	Cylinder bore diameter, (mm)	Evaluative	To be specified by the manufacturer and supported by the printed literature	87.17	87.005 to 87.026	Yes
(b)	Piston & cylinder liner clearance at skirt, (mm)	Non-Evaluative		0.358	0.036 to 0.048	Yes
(c)	Piston diameter at skirt, mm	Non-Evaluative		86.785	86.970 to 86.980	Yes

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1	2	3	4	5	6	7	
(d)	Ring end gap (mm):						
	-	Top comp. ring.	Evaluative	-do-	1.25	0.35 to 0.40	Yes
	-	2 nd comp. ring.		-do-	1.25	0.50 to 0.55	Yes
	-	Oil ring.		-do-	1.25	0.30	Yes
(e)	Ring groove clearance (mm):						
	-	Top comp. ring.	Evaluative	-do-	0.20	0.068 to 0.074	Yes
	-	2 nd comp. ring.		-do-	0.20	0.082 to 0.090	Yes
	-	Oil ring.		-do-	0.15	0.050 to 0.055	Yes
(f)	Clearance of main bearings (mm):						
	-	Diametrical clearance	Evaluative	-do-	0.40 (D)	0.085 to 0.114	Yes
	-	Crankshaft end float	Evaluative		0.50 (D)	0.20	Yes
(g)	Clearance of big end bearings, (mm):						
	-	Diametrical	Evaluative	-do-	0.40 (D)	0.060 to 0.093	Yes
	-	Axial	Evaluative	-do-	0.50 (D)	0.45	Yes
(h)	Clearance between king pin and bush, (mm)		Non-Evaluative	-do-	Not applicable	Not applicable	--
(i)	Clearance between centre pin and bush, (mm)		Non-Evaluative	-do-	1.0 (D)	0.070 to 0.175	Yes
15.1.13	Literature (Submission to test agency)						
(a)	Operator manual	Evaluative	Provided / Not Provided	Provided	Provided	Yes	
(b)	Parts Catalogue	Evaluative		Provided	Provided	Yes	
(c)	Workshop/ Service manual	Evaluative		Provided	Provided	Yes	
15.1.14	Fitment of Roll Over Protective Structures (ROPS):						
	For tractor having more than 1150 mm rear track width	Evaluative	ROPS should meet the requirement of IS:11821 or OECD code or equivalent International Standard		Not fitted	Not applicable	
15.1.15	Standard Accessories	Evaluative	Trailer hitch, front tow hook, linkage drawbar should be provided with tractor		Provided	Yes	
15.1.16	Accessories (optional)	Non-Evaluative	Ballast weight, if fitted, should meet the requirement of CMVR		Provided	Yes	

Sl. No.	Category of breakdowns	Category (Evaluative / Non-Evaluative)	Requirements as per IS: 12207-2019	As observed	Whether meets the Requirements (Yes/No.)
1.	Critical	Evaluative	No critical breakdown	None	Yes
2.	Major	Evaluative	Not more than one and neither of them should be repetitive in nature	None	Yes
3.	Minor	Evaluative	Not more than three and frequency of each should not be more than two.	None	Yes
4.	Total breakdowns	Evaluative	In no case, the total number of breakdowns should exceed four, that is, (1 major + 3 minor) or 4 minor breakdowns.	None	Yes

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15.3 Salient Observations:

15.3.1 Laboratory tests:

15.3.1.1 PTO Performance Test:

- i) The maximum power in case of previous & present sample were observed as 28.0 & 26.9 kW respectively, against the declaration of 28.0 kW, which meets the requirement of IS: 12207-2019 with regard to tolerance limit.
- ii) The specific fuel consumption corresponding to maximum power in case of previous & present sample was recorded as 270 & 280 g/kWh against respectively the declaration of 263 g/kWh, which meets the requirement of IS: 12207-2019 with regard to tolerance limit.
- iii) The maximum equivalent crankshaft torque in case of previous & present sample were recorded as 122.9 & 118.2 Nm against the declaration of 132.0 Nm, which meets the requirement of IS: 12207-2019 with regard to tolerance limit.
- iv) The backup torque was observed as 19.5 % and meets the evaluative requirement of IS: 12207-2019.

15.3.1.2 Drawbar performance test:

- i) Maximum drawbar pull in case of previous & present sample without ballast corresponding to 15 percent wheel slip, (kN) was recorded as 12.83 kN & 12.60 kN respectively which meets the requirement of IS: 12207-2019 with regard to tolerance limit.
- ii) Maximum drawbar power in case of previous & present sample without ballast condition was recorded as 25.6 kW & 25.1 kW which meets the minimum requirement of IS: 12207-2019.

15.3.1.3 Hydraulic performance test:

- i) Maximum lifting capacity throughout the range of lift at hitch point and standard frame was recorded as 12.41 kN & 9.49 kN respectively against the declaration of 11.8 kN & 9.10 kN respectively which meets the requirement of IS: 12207-2019 with regard to tolerance limit.

15.4 Maintenance / Service Problems:

No noticeable maintenance or service problem was observed during the test.

15.5 Recommendation with regard to safety on tractor:


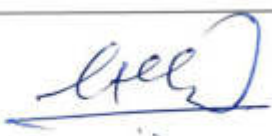

The following requirements, inter alia, may be considered for incorporation on the tractor:

- i) Width of seat, vertical distance from SIP to centre of clutch pedal & brake pedal, longitudinal distance of SIP from differential lock should be provided as IS: 12343-1998 (Reaffirmed in:2019).
- ii) Vertical retainness at inner side of clutch pedal & provision for spark arresting device should be provided as IS :12239 (Part-I)-2018.
- iii) Provision of master shield has should be provided as IS: 12239 (Part-II) (Reaffirmed in 2019).
- iv) Working clearance in between position control and draft control lever is should be provided as per IS: 12239 (Part-II) (Reaffirmed in 2019).
- v) Colour codes for engine revolution gauge & water temperature & symbol for adjustment off driver's mass should be provided as per IS: 6283 (Part-1 & 2)-2006 & 2007 (Reaffirmed in 2019).

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- 15.6.1** The supplied literature was found adequate
- a) Operator Instruction for Kubota L4508 DD tractor model.
 - b) Illustrated Parts list for Kubota L4508 DD tractor model.
 - c) Workshop manual (WSM) for Kubota L4508 DD tractor & Rotary Tiller KRM 180D model.
- 15.6.2** The literature should be brought out in national as well as other regional languages of India for guidance of users.

TESTING AUTHORITY:

C.V. CHIMOTE TEST ENGINEER	
Y.K. RAO SENIOR AGRICULTURAL ENGINEER	
P.K. PANDEY DIRECTOR	

Draft test report compiled by **C.S. Raghuwanshi**, Agricultural Engineer.

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16. APPLICANT'S COMMENTS

Para no.	Our reference	Applicant comments
16.1	---	We do not have any specific comment/corrections in this report.

ANNEXURE- I

TRACTOR RUN HOURS DURING TEST

A.	LABORATORY AND TRACK TESTS:	HOURS
1.	Running-in	50.0
2.	PTO performance test	12.0
3.	Drawbar performance test	17.1
4.	Power lift and hydraulic pump performance test	3.9
5.	Brake test	1.8
6.	Noise measurement	1.1
7.	Mechanical vibration test	0.8
8.	Theoretical speed test	1.6
B.	Haulage Test	6.0
C.	Miscellaneous test and other run hours including idle run, transportation, trials and preparation for test	4.7
TOTAL:		99.0