

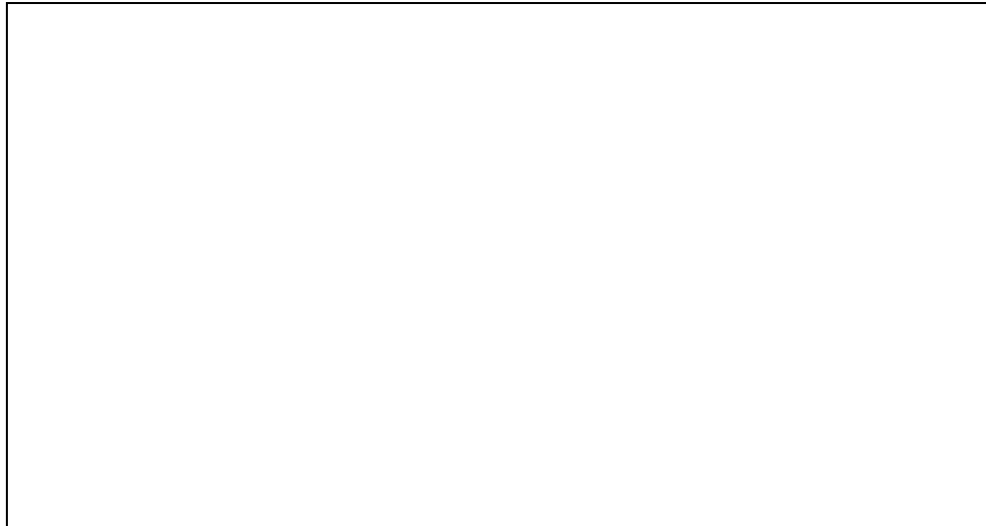
व्यावसायिक. परीक्षण रिपोर्ट .वैरिएंट (प्रथम
बैच)

संख्या/No. : T-
1511/2038/2021

COMMERCIAL TEST REPORT- VARIANT
(1st Batch Test)

माह/Month : January, 2021

(यह परीक्षण रिपोर्ट 31/01/2026 तक वैध है | / THIS TEST REPORT IS VALID UPTO: 31/01/2026)



DEUTZ FAHR, AGROMAXX 60 TRACTOR



भारत सरकार

कृषि एवं किसान कल्याण मंत्रालय
(कृषि, सहकारिता एवं किसान कल्याण विभाग,
मशीनीकरण एवं प्रौद्योगिकी प्रभाग)

GOVERNMENT OF INDIA

MINISTRY OF AGRICULTURE AND FARMERS WELFARE
(DEPARTMENT OF AGRICULTURE, COOPERATION & FARMERS WELFARE,
MECHANIZATION & TECHNOLOGY DIVISION)

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The applicant has requested vide letter no. Batch / Agromaxx/19-8, dated-30.09.2020 to convert base model “**DUETZ FAHR, AGROMAXX 60 4WD**” into variant (batch) model by replacing the front wheel drive axle with rigid type axle changing the front wheel tyre size **11.2 - 20**, 8 ply rating pneumatic traction with tyre size **6.50-20**, 8 ply rating pneumatic ribbed tyre and the range selector lever (**L/H/SR**) with (**L/H**) lever at this institute premises which was allowed by the competent authority.

Subsequent to the examination of case in the light of clause (x) of Table-2 and clause 8.4 and of **IS: 12207 -2019**, the following tests were considered to be carried out:

- Specification checking in full
- Nominal speed test
- Drawbar performance test (Unballasted condition)

2. FUEL AND LUBRICANTS

2.1 Fuel : The High-speed diesel oil supplied by M/s Indian Oil Corporation Limited having density of 0.836 g/cc at 15°C was used.

2.2 Lubricants:

S. No.	Particulars	As recommended by the manufacturer	As used during the test
1.	Engine oil	15W40 / SDF Super Motor Oil	As recommended
2.	Gearbox, differential, rear axle, rear final drive, hydraulic and Steering system oil	SDF UTTO /	Oil originally filled in the tractor was not changed
3.	Brake system oil	Servo Transdex-II	-do-
4.	Grease	Servo Gem EP-1	- do -

3. ESSENTIAL TESTS

3.1 SPECIFICATIONS

- 3.1.1 Tractor:**
- Make : DEUTZ-FAHR
 Model : AGROMAXX 60
 Type : Four-wheel, rear wheel drive, General purpose, Agricultural tractor.
 Month & Year of manufacture : 12/19
 Chassis number : M1TAF 21RDME000005
 Country of origin : India
- 3.1.2 Engine:**
- Make : Same Deutz-Fahr India (P) Ltd
 Model : 1000.3WT-55 CV (apa).
 Type : Four stroke, liquid cooled, turbo charged, direct injection, diesel engine.
 Serial number : 3M53090M19
 Month & Year of manufacture :
 Country of origin : India
- 3.1.2.1 Engine speed (rpm), (Manufacturer’s recommended production settings):**
- Maximum speed at no load : 2470 to 2570
 - Low idle speed : 600 to 900

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(first revision) IS: 8133-1983 (Reaffirmed 2014)]

	<u>Previous sample</u>	<u>Present sample</u>
ix) Tractors and machinery for agriculture and forestry, powered lawn and garden equipment - Symbols for operator controls and other displays Part 2 Symbols for agricultural tractors and machinery [IS:6283 (Part-1)- 2006 and IS: 6283 (Part-2)-2007 (Reaffirmed 2014)]	Conformed	Conforms
x) Agricultural Tractors and Machinery - Lighting device for travel on public roads (IS: 14683-1999) (Reaffirmed 2014)]	Conformed	Conforms
6.2 Performance Characteristics:		
6.2.1 PTO Performance:		
Maximum Power, (kW)	39.7*	37.7
Power at Rated engine speed, (kW)	30.5*	37.7
Specific fuel consumption corresponding to maximum power, (g/kWh)	295*	311
6.2.2 Drawbar performance:		
Maximum power with unballasted tractor, (kW)	32.2*	32.8
Maximum pull with unballasted tractor, (kN)	21.92*	17.48

6.3 Salient Observations:

6.3.1 Laboratory test:

<u>Previous Sample</u>	<u>Present Sample</u>
6.3.1.1 Drawbar performance test :*	
i) Maximum drawbar pull with unballast corresponding to 15 percent wheel slip, (kN) was recorded as 21.92 kN against the minimum requirement of 15.45 kN , which meet the minimum requirement of IS: 12207-2019.	i) The maximum drawbar pull with unballast corresponding to 15 % wheel slip was observed as 17.48 kN against the declaration of 14.21 kN which meets the requirement of IS: 12207-2019 with regard to tolerance limit.
ii) Maximum drawbar power with unballast was recorded as 32.2 kW against the minimum requirement of 30.2 kW , which meets the minimum requirement of IS: 12207-2019.	ii) The maximum drawbar power with unballast tractor condition was measured as 32.8 kW against the declaration of 30.2 kW , which is within the tolerance limit of IS: 12207-2019.

Remark (*): The data has been taken from base model (1st batch) vide Test Report No. **T-510/2037/2021 (January, 2021).**

6.4 Adequacy of literature:

Following literatures of tractor models were supplied with the test sample for reference during the test.

a) Use and Maintenance manual in respect of Agromaxx 40, Agromaxx 45 Agromaxx 50, Agromaxx 55 and Agromaxx 60 tractor models.	a) Use and Maintenance manual in respect of Agromaxx 40, Agromaxx 45 Agromaxx 50, Agromaxx 55 and Agromaxx 60 tractor models.
b) Workshop service manual for Agromaxx series tractors.	b) Workshop service manual for Agromaxx series tractors.

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c) Spare Parts Catalogue for Agromaxx series tractors. | c) Spare Parts Catalogue for Agromaxx series tractors.

7. SUMMARY OF OBSERVATIONS, COMMENTS & RECOMMENDATIONS

7.1 On the basis of tests conducted the performance results have been summarized as evaluative (mandatory) and non-evaluation (not-mandatory) parameter 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: -

S. 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 requirements (Yes/No)
1	2	3	4	5	6	7
7.1.1	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.	37.5 (D)	37.7	Yes
c)	Specific fuel consumption corresponding to maximum power, (g/kWh)	Evaluative	+ 10% max.	298 (D)	311	Yes
7.1.2	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.	23.82 (D) 24.09 (R) Minimum	Not applicable	Not applicable
b)	Max. drawbar pull without ballasted 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.	14.0 (D) 14.21 (R) Minimum	17.48	Yes
c)	Maximum drawbar power without 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 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.	30.0 (D) 30.2 (R) Minimum	32.8	Yes
d)	Maximum transmission oil temperature ($^{\circ}\text{C}$)	Evaluative	The declared value should not exceed the maximum value	120 (D)	81	Yes

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			specified company	by	oil			
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1	2	3	4	5	6	7		
7.1.2	Safety features:							
a)	Guards against moving and hot parts	Evaluative	Belt drives, pullies, silencer, hydraulics pipes (as per IS-12239 Part 2)	Meet the requirements		Yes		
b)	Lighting arrangement	Evaluative	As per CMVR	Meet the requirements		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 meet the requirement		No		
d)	Technical requirements for PTO shaft	Evaluative	Should meet the requirements of IS: 4931 (As amended from time to time)	Meet the requirements		Yes		
e)	Dimensions of three-point linkage	Non-Evaluative	Should meet the requirements of IS: 4468 (Part-I) (As amended from time to time)	Meet the requirements		Yes		
f)	Specifications of linkage drawbar	Evaluative	Should meet the requirements of IS 12953 (As amended from time to time)	Meet the requirements		Yes		
g)	Specifications of Swinging drawbar (wherever fitted)	Evaluative	Should meet the requirements 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	14.82 kmph (Meet the requirements)		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.	Not applicable		--		
7.1.3	Labelling of tractors (Provision of labelling plate):							
	1) Make	Evaluative	Should conform to the requirements of CMVR along with maximum declared value of PTO power in kW and for month & year of manufacture in numerical <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>MM</td><td>YY</td></tr></table> Digit 01-12 in box No.1 for MM will represent the month and next two digit	MM	YY	SAME DEUTZ-FAHR INDIA (P) LTD		Yes
MM	YY							
	2) Model	Evaluative		DEUTZ-FAHR		Yes		
	3) Month & Year of manufacture	Evaluative		AGROMAXX 60		Yes		
	4) Engine number	Evaluative		3M53090M19		Yes		
	5) Chassis number	Evaluative	M1TAF21RD ME000005		Yes			

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	6)	Declaration of PTO power, kW	Evaluative	in the box No.2 for YY will represent the year of manufacturing	37.5	Yes
	7)	Specific fuel consumption, g/kWh	Evaluative		298	Yes
1	2	3	4	5	6	7
7.1.4	Literature (Submission to test agency)					
(a)	Operator manual	Evaluative	Provided /Not Provided		Provided	Yes
(b)	Parts Catalogue	Evaluative	Provided /Not Provided		Provided	Yes
(c)	Workshop/ Service manual	Evaluative	Provided /Not Provided		Provided	Yes
7.1.5	Standard accessories	Evaluative	Trailer hitch, front tow hook, linkage drawbar should be provided with tractor		Provided	Yes
7.1.6	Accessories (Optional)	Non Evaluative	Ballast weights if fitted should meet the requirement of CMVR.		Provided	Yes

7.2	CATEGORY OF BREAKDOWNS / DEFECTS (As per clause 5.0 of IS:12207-2019) :				
S. No.	Category of Breakdown	Category (Evaluative / Non Evaluative)	Requirements as per IS: 12207-2019	As observed	Whether meets the requirement (Yes/No.)
1.	Critical breakdown	Evaluative	There is no 'critical breakdown' during the course of testing	None	Yes
2.	Major breakdowns	Evaluative	There are not more than 1 major breakdowns and neither of them is of repetitive nature	None	Yes
3.	Minor breakdowns	Evaluative	There are not more than 3 minor defects during the test and the frequency of each is 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

7.3 Salient Observations:

7.3.1 Laboratory tests:

7.3.1.1 Drawbar performance test:

- i) Maximum drawbar pull in case of present sample with unballasted condition corresponding to 15 percent wheel slip, (kN) was recorded as **17.48 kN** against the minimum requirement of **14.21 kN** which meets the requirement of IS: 12207-2019 with regard to tolerance limit.
- ii) Maximum drawbar power in case of present sample with unballasted condition was recorded as **32.8 kW** respectively against the minimum requirement of **30.2 kW** which meets the minimum requirement of IS: 12207-2019.

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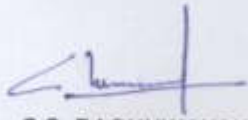
- ii) Vertical retainness in both side of clutch pedal has not been provided as IS :12239 (Part-I).
- iii) Fuel shut-off lever does not remain in stop position as per IS:8133.
- 7.6 **Adequacy of Literature:**
- 7.6.1 Following literature of following tractor models were supplied with the test sample for reference during the test.
- a) Use and Maintenance manual in respect of Agromaxx 40, Agromaxx 45, Agromaxx 50, Agromaxx 55 and Agromaxx 60 tractor models.
- b) Workshop service manual for Agromaxx series tractors.
- c) Spare Parts Catalogue for Agromaxx series tractors.
- 7.6.2 The supplied literature was found adequate.
- 7.6.3 However, these literatures should be brought out in other vernacular languages of India for guidance of users.

The results of the tests carried out on variant model "DEUTZ FAHR, AGROMAXX 60" Tractor have been compared with those on base model (1st Batch test) "DEUTZ FAHR, AGROMAXX 60 4WD" Tractor and found within the limit, as specified in Indian Standard: 12207-2019.

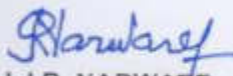
8. CITIZEN CHARTER

Time frame for Testing & Evaluation as per Citizen Charter	Duration of Test	Whether the Test Report is released within the time frame given in Citizen Charter	Remarks
10 Months	1 Months (November, 2020)	Yes	None

TESTING AUTHORITY:


C.S. RAGHUWANSHI
AGRICULTURAL ENGINEER


C.V. CHIMOTE
TEST ENGINEER


J.J.R. NARWARE
DIRECTOR

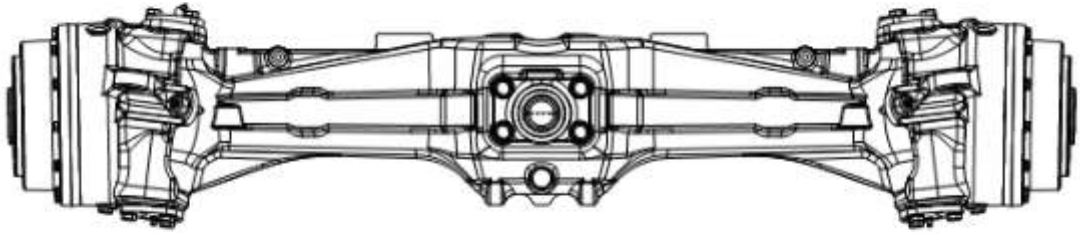
This test report is compiled by Sh. Shivkumar Sharma, Senior Technical Assistant

9. APPLICANT'S COMMENTS

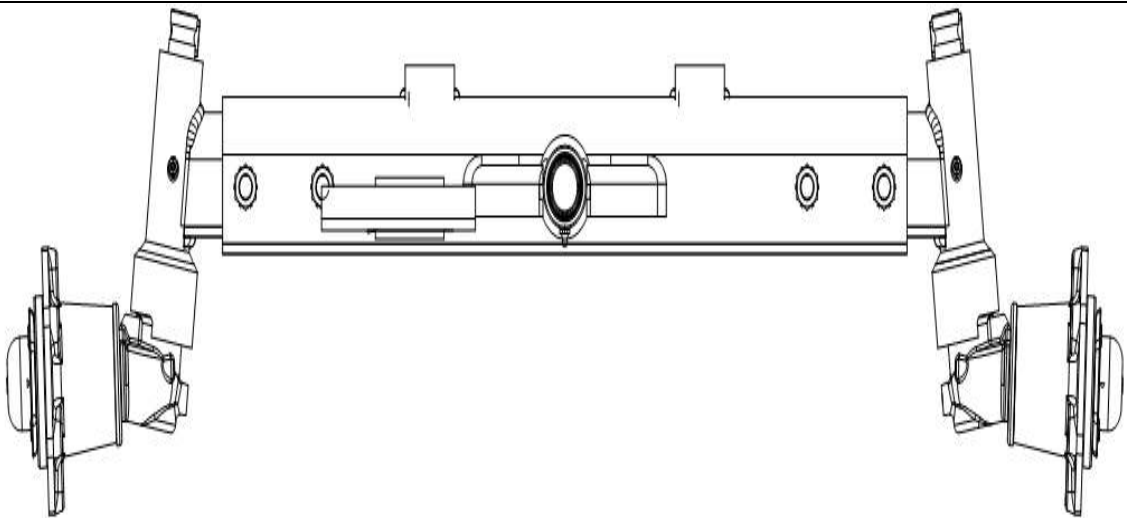
Para no.	Our reference	Applicant comments
9.1	7.5	Recommendations would be reviewed.
9.2	7.6.3	Literature available in all regional languages.

9. APPLICANT'S COMMENTS

Para no.	Our reference	Applicant comments
9.1	7.5	Recommendations would be reviewed.
9.2	7.6.3	Literature available in all regional languages.



FRONT AXLE DESIGN ON BASE MODEL DEUTZ-FAHR -AGROMAXX 60 (4WD)



FRONT AXLE DESIGN ON VARIANT MODEL DEUTZ-FAHR -AGROMAXX 60

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ANNEXURE – II

TRACTOR RUN HOURS DURING TEST

A.	LABORATORY AND TRACK TESTS	HOURS
1.	Drawbar performance test	3.50
B.	Miscellaneous test and other run hours including idle run, transportation, trials and preparation for test	0.50
TOTAL:		4.00