

प्रारंभिक व्यावसायिक परीक्षण रिपोर्ट
INITIAL COMMERCIAL TEST REPORT

संख्या/No. : T-2039/2570/2025
माह/Month : November, 2025

Application Reference No. 28/2024-25/139

(यह परीक्षण रिपोर्ट 30/11/2030 तक वैध है / THIS TEST REPORT IS VALID UPTO 30/11/2030)



Make of Agricultural Tractor : EICHER
Model : EICHER 380 4WD V2
Manufactured by : Eicher Tractors
(A Unit of TAFE Motors & Tractors Ltd.,
A wholly owned subsidiary of TAFE)
Plot No. 1, Sector – D, Industrial Area,
Mandideep – 462 046, Distt. – Raisen (M.P.)



भारत सरकार

कृषि एवं किसान कल्याण मंत्रालय
(कृषि एवं किसान कल्याण विभाग)

GOVERNMENT OF INDIA

MINISTRY OF AGRICULTURE AND FARMERS WELFARE
(DEPARTMENT OF AGRICULTURE & FARMERS WELFARE)

केन्द्रीय कृषि मशीनरी प्रशिक्षण एवं परीक्षण संस्थान

ट्रैक्टर नगर, बुदनी (म.प्र.) 466 445

CENTRAL FARM MACHINERY TRAINING & TESTING INSTITUTE

TRACTOR NAGAR, BUDNI (M.P.) 466 445

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[C]	Tractor manufacturer's name and address	: Eicher Tractors (A Unit of TAFE Motors & Tractors Limited, a wholly owned subsidiary of TAFE) Plot No. 1, Sector – D, Industrial Area, Mandideep – 462046, Distt. – Raisen (M.P.)
[C]	Submitted for test by (Applicant)	: The Manufacturer
[C]	Selected for test by	: The Ministry vide OM No. 13-17/2021 - M&T (I&P) dated 28.07.2022, has allowed the applicant to submit the test sample directly to the Institute without requiring any random selection for Initial Commercial Testing. Thus, the applicant directly submitted the test sample to the Institute for test.
[D]	Place of running-in	: At manufacturer's works
[D]	Duration of running-in (h):	
	-Engine	: 21
	-Transmission	: 30
[C]	Location of test	: Government of India, Central Farm Machinery Training and Testing Institute, P.O. - Tractor Nagar, BUDNI – 466445 (M.P.), INDIA

1. SPECIFICATIONS OF TRACTOR

1.1 Identification:

1.1.1 Denomination

[C]	Make of tractor	: EICHER
[C]	Model	: EICHER 380 4WD V2
[C]	Type	: Four Wheel drive , Standard Agricultural Tractor
[C]	Month & year of manufacture	: 03 / 25
[D]	Country of origin	: India

1.1.2 Numbers:

[D]	1 st Serial No. of prototype	: 932813144971
[C]	Serial No.	: 935113108645

1.2 Engine:

[D]	Manufacturer's address	: Simpson & Co.Ltd. Sembiam plant, Huzur Gardens, Sembiam, Chennai-600011
[C]	Make	: Simpsons
[C]	Model	: T III A S325/E1-F2.5
[C]	Type	: Four stroke, naturally aspirated, liquid cooled, direct injection, diesel engine
[C]	Serial No.	: S325 R07992

1.2.1 Cylinders:

[C]	Number/disposition	: Three / vertical, inline
[D]	Bore / Stroke, (mm)	: 91.4 / 127
[D]	Capacity, cm ³	: 2500
[D]	Compression ratio	: 18.5 ± 0.3 :1
[D]	Arrangement of valves	: Overhead, Inline
[D]	Cylinder liners	: Dry, replaceable
[D]	Type of combustion chamber	: Direct combustion, Re-entrant type

1.2.2 Supercharging : **Not available**

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6. SUMMARY OF OBSERVATIONS, COMMENTS & RECOMMENDATIONS

6.1 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: 12207-2022** 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: 12207-2022	Values declared by the applicant/ (D) Requirement (R)	As observed	Whether meets the requirements (Yes/No)
1	2	3	4	5	6	7
MANDATORY TESTS: (As per Ministry's Office Memorandum No. 13-17/2021-M&T (I&P) dated 28th of July, 2022).						
6.1.1	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.	25.75 (D)	25.6	Yes
b)	Power at rated engine speed, (kW)	Non Evaluative	-do-	25.75 (D)	25.6	Yes
c)	Specific fuel consumption corresponding to maximum power, (g/kWh)	Evaluative	Should not be more than 10% of declared value.	265 (D)	291	Yes
d)	Maximum equivalent crankshaft torque, (Nm)	Non Evaluative	$\pm 8\%$	135.2 (D)	147.1	No
e)	Back-up torque, percent	Evaluative	Should be min. 12%	12 (D) 12 (R)	29.6	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 natural ambient/high ambient condition should not exceed the declaration.	130 (D)	119	Yes
	2) Coolant	Evaluative	Observed value should not exceed the declared value or boiling point of coolant at radiator cap pressure whichever is lower. The boiling point of the coolant at radiator pressure shall be provided by the applicant.	120 (D)	104	Yes
g)	Engine oil consumption, (g/kWh)	Evaluative	Not exceeding 1% of SFC at Max power under natural ambient condition. The value would be based on the test conducted under natural ambient condition	2.91 Maximum	0.39	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). Max Smoke level shall be reported out of 6 readings tested as per IS 12062 and observed value should be well within the required limits.	3.25 per meter Maximum	0.54	Yes

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1	2	3	4	5	6	7
6.1.2	Drawbar performance:					
a)	Max. drawbar pull with ballast corresponding to 15 percent wheel slip, (kN)	Non Evaluative	Minimum 70% of static mass of tractor with ballast.	*	*	*
b)	Max. drawbar pull without ballast/with standard ballast corresponding to 15 percent wheel slip or 7 percent track slip, (kN)	Evaluative	In case of tractors having total static mass \geq 1500 kg, Min 70% of static mass of tractor without ballast or with standard ballast, as the case may be. In case of light weight tractors having \leq 1500 kg total static mass of tractor, Min. 65% of static mass of tractor without ballast or with standard ballast, as the case may be.	15.27 (D) 15.31 (R) Minimum	20.06	Yes
c)	Maximum drawbar power without ballast/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 \leq 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.	20.6 (D) 20.5 (R) Minimum	21.0	Yes
d)	Maximum transmission oil temperature, (°C)	Evaluative	The declared value should not exceed the recommendation by the oil manufacturer. The observed value should not exceed the declared value throughout the drawbar test.	120 (D)	100	Yes

* Applicant vide letter no. TMTL/ICT/E3804WDV2/2024-25/04 dated 08.08.2025 has requested to conduct drawbar performance test in without ballasted condition only, which was allowed as per the additional guideline of testing of tractors vide OM No. 13-32/2023-M&T (I&P) (FPS-125476) dated 16.05.2023. Accordingly, drawbar performance test was conducted in without ballasted condition only.

6.1.3	Power lift and hydraulic pump performance:					
a)	Maximum lifting capacity throughout the range of lift, (kN):					
1)	At hitch points	Evaluative	Should not be less than 90% of declared value.	13.73 (D) 12.36 Minimum	14.80	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.	11.0 (D) 6.03 Minimum	11.83	Yes

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1	2	3	4	5	6	7
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	30	Yes
6.1.4	Brake performance at 25 kmph:					
a)	Maximum stopping distance at a force, equal to or less than 600 N on brake pedal with road ballast, (m):					
	1) Cold brake	Evaluative	10	10	7.29	Yes
	2) Hot brake	Evaluative	10	10	7.61	Yes
b)	Whether parking brake is effective at a force of 600 N at foot pedal (s) or 400 N at hand lever	Evaluative	Yes / No	Yes	Yes	Yes
6.1.5	OPTIONAL TESTS: As the applicant has not applied for any optional tests, therefore no optional tests was conducted.					
6.1.6	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	Conforms	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	Non Evaluative	Should meet the requirements of IS: 4931 (As amended from time to time)	Conforms	Yes	
e)	Dimensions of three point linkage	Non Evaluative	Should meet the requirements of IS: 17231: 2019 (As amended from time to time)	Does not meet the requirement	No	
f)	Specifications of linkage drawbar	Non Evaluative	Should meet the requirements of IS: 12953 (As amended from time to time)	Conforms	Yes	
g)	Swinging drawbar (wherever fitted)	Non Evaluative	Should meet the requirement of IS: 12362 (Part 3) (As amended from time to time)	Not fitted	Not applicable	
h)	Audible warning signal on tractor	Evaluative	If tractor travel speed in reverse gear exceeds 20 kmph, an audible warning signal on tractor shall get activated. A sticker to the effect that "operating the tractor beyond 20 kmph speed in reverse gear is not safe" should be prominently displayed.	Not fitted	Not applicable	

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1	2	3	4	5	6	7		
6.1.7	Labeling of tractors (Provision of Labeling plate):							
	1)	Make	Evaluative	Should conform to the requirements of CMVR along-with declared value of PTO in kW, Specific fuel consumption (SFC) corresponding to maximum power in g/kWh and year of manufacture in numerical form <table border="1" style="margin-left: 20px;"> <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 in the box No. 2 for YY will represent the year of manufacturing.	MM	YY	EICHER	Yes
	MM	YY						
	2)	Model	Evaluative		EICHER 380 4WD V2	Yes		
	3)	Month & Year of manufacture	Evaluative		03/ 25	Yes		
	4)	Engine number	Evaluative		S325R07992	Yes		
	5)	Chassis number	Evaluative		935113108645	Yes		
	6)	Maximum PTO power, (kW)	Evaluative		25.75	Yes		
7)	Specific fuel consumption, (g/kWh)	Evaluative	265		Yes			

6.1.8	Literature (Submission to test agency):				
(a)	Operator manual	Evaluative	The printed literature in booklet form should be provided as per IS: 8132 and should submit along with the test sample.	Provided	Yes
(b)	Parts Catalogue	Evaluative		Provided	Yes
(c)	Workshop/ Service manual	Evaluative		Provided	Yes

6.1.9	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
6.1.10	Standard Accessories	Evaluative	Trailer hitch, front tow hook, linkage drawbar should be provided with tractor	Provided	Yes
6.1.11	Accessories (optional)	Non Evaluative	Ballast weight, if fitted, should meet the requirement of CMVR	Provided	Yes

6.2	CATEGORY OF BREAKDOWNS / DEFECTS (As per clause 5.0 of IS:12207-2022):				
S. No.	Category of break-downs	Category (Evaluative / Non Evaluative)	Requirements as per IS: 12207-2022	As observed	Whether meets the Requirement (Yes/No)
1.	Critical	Evaluative	There is no 'critical breakdown' during the course of testing.	None	Yes
2.	Major	Evaluative	There are not more than 2 major breakdowns and neither of them should be of repetitive nature.	None	Yes
3.	Minor	Evaluative	There are not more than 5 minor defects during the test and neither of them should of repetitive nature.	None	Yes
4.	Total breakdowns	Evaluative	In no case, the total number of breakdowns should exceed five that is, (2 major + 3 minor) or (1 major + 4 minor) or 5 minor breakdowns.	None	Yes

6.3 Conformity with following IS:

- | | | | |
|-------|--|---|-------------------------|
| i) | Guidelines for declaration of power and specific fuel consumption and labeling of agricultural tractors (First revision) [IS:10273 -1987 (Reaffirmed Year 2019)] | : | Conforms |
| ii) | Agricultural tractors – Rear mounted power take-off - Types 1, 2 and 3 (third revision) [IS:4931-1995 (Reaffirmed Year 2019)] | : | Conforms |
| iii) | Agricultural wheeled tractors – Rear mounted three-point linkage: Categories 1N,1, 2N, 2, 3N, 3, 4N & 4 [IS:17231-2019] | : | Does not conform |
| iv) | Drawbar for agricultural tractors – Link type [IS 12953:1990 (Reaffirmed Year 2022)] | : | Conforms |
| v) | Agricultural tractors- Operator’s seat technical requirement [IS12343 – 2021] | : | Does not conform |
| vi) | Guide for safety & comfort of operator of agricultural tractors: Part 1 General requirements (first revision): [IS 12239 (Part 1) – 2018] | : | Does not conform |
| vii) | Tractors and machinery for agriculture and forestry – Technical means for ensuring safety Part 2: Tractors (first revision) (IS 12239 (Part 2) 1999) (Reaffirmed Year 2019)] | : | Does not conform |
| viii) | Guide lines for location and operation of operator controls on agricultural tractors and machinery [IS: 8133 – 2021] | : | Does not conform |
| 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 (Reaffirmed Year 2019) and IS: 6283 (Part-2) – 2007 (Reaffirmed Year 2019)] | : | Conforms |
| x) | Agricultural Tractors and Machinery-Lighting device for travel on public roads (IS:14683-1999) (Reaffirmed Year 2019)] | : | Conforms |

6.4 Salient Observations:

6.4.1 Laboratory test:

6.4.1.1 PTO Performance Test:

The maximum equivalent crankshaft torque was recorded as 147.1 N-m against the declaration of 135.2 N-m and does not meet the requirement of IS: 12207-2022. Even though this parameter is categorized as ‘Non-Evaluative’, as per IS:12207-2022, yet for the sake of improvement it would be advisable to look into the matter to make it conforming to the requirement.

6.4.1.2 Three point linkage:

The dimensions of lateral distance from lower hitch point to centre line of tractor has been measured as 364 mm against the requirement of 435 mm, which does not meet the requirements of IS:17231 – 2019. This should be looked into for corrective action.

6.4.1.3 Operator’s seat:

The following parameters do not meet the requirement of IS: 12343-2021 and needs to be looked into for necessary corrective actions:

- | | |
|-----|---|
| i) | Vertical distance from SIP to centre of accelerator pedal has been measured as 485 mm against the requirement of 230 to 460 mm. |
| ii) | Vertical distance from SIP to foot rest has been measured as 590 mm against the requirement of 450 to 520 mm. |




6.4.1.4 Operator’s work place:

Spark arresting device has not been provided as per the requirement of IS: 12239 (Part1) – 2018.

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- 6.4.2 PTO master shield:**
PTO master shield has not been provided on tractor. This should be looked into for necessary corrective action.
- 6.5 Maintenance / Service Problems:**
No noticeable maintenance or service problem was observed during the test.
- 6.6 Recommendation with regard to safety on tractor:**
- i) The hand accelerator lever, when moved away from the operator (i.e. forward) decreases the engine speed, which does not meet the requirement as laid down in Table – 1 of IS: 8133-2021.
 - ii) The working clearance between draft control lever and position control lever, RHS fender & position control lever has been measured as 45 mm & 65 mm respectively against the minimum requirement of 70 mm.
 - iii) PTO master shield has not been provided as per IS: 12239 (Part-2).
Above parameters should be looked into for necessary corrective action.
- 6.7 Adequacy of Literature supplied with machine:**
The following literatures were supplied with the test tractor for reference during the test: -
- a) Operator Manual for "EICHER 380 4WD V2" tractor model.
 - b) Part Catalogue for "EICHER 380 4WD V2" tractor model.
 - c) Service Manual for "EICHER 380 4WD V2" tractor model.

**TEST CARRIED OUT AT C.F.M.T. & T.I., BUDNI (M.P.), INDIA
TESTING AUTHORITY**

V. KEYHO TEST ENGINEER	
P. LODH SENIOR AGRICULTURAL ENGINEER	
Dr. B. M. NANDEDE DIRECTOR	

Draft Test Report compiled by **Dushyant Rahangdale**, Engineer (Outsourced).

7. APPLICANT'S COMMENTS

Para no.	Our reference	Applicant's Comments
7.1	6.4.1.1, 6.4.1.2, 6.4.1.3 (i & ii) & 6.6 (i & ii)	Observation will be studied and necessary corrective action will be initiated

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ANNEXURE - I

TRACTOR RUN HOURS DURING TEST

A.	LABORATORY AND TRACK TESTS:	HOURS
1.	Running-in	The applicant has declared that it has already been conducted on their work place.
2.	PTO performance test	11.1
3.	Power lift and hydraulic pump performance test	4.3
4.	Drawbar performance test	7.0
5.	Brake performance test	1.0
6.	Nominal speed test	3.7
B.	Miscellaneous test and other run hours including idle run, transportation, trials and preparation for test	1.7
TOTAL:		28.8