

व्यावसायिक वैरिण्ट परीक्षण रिपोर्ट (प्रथम बैच)

संख्या/ No. : T-1615/2146/2022

COMMERCIAL VARIANT TEST REPORT (1<sup>st</sup> Batch)

माह/ Month : January, 2022

[ONLINE TESTING]

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



**INTERNATIONAL TRACTORS LIMITED, DI-750 III HDM S1  
(Brand Name: DI) 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

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### 3. SPECIFICATIONS

- 3.1 Tractor:**
- Make : International Tractors Limited  
Model : DI-750 III HDM S1 (Brand Name: DI)  
Type : Rear Wheel Drive, Standard Agricultural Tractor  
Month & Year of manufacture : 09/2021  
Chassis number : DZZDR1109839S3  
Country of origin : India
- 3.2 Engine:**
- Manufacturer's address : M/s. International Tractors Limited  
Village – Chak Gurjan, P.O. Piplanwala,  
Jalandhar Road, Hoshiarpur-146 022  
(Punjab), India  
Make : International Tractors Limited  
Model : 4100EL  
Type : Four stroke, Liquid cooled, Naturally aspirated, Direct injection, Diesel engine.  
Serial number : 4100EL14F1070028F16  
Year of manufacture : 2021  
Country of origin : India
- 3.2.1 Engine speed (rpm), (Manufacturer's recommended production settings):**
- Maximum speed at no load : 2150 to 2250
  - Low idle speed : 650 to 750
  - Speed at maximum torque : 1100 to 1300
- Rated speed, (rpm):**
- For PTO use : 2000
  - For drawbar use : 2000
- 3.3 Cylinder & Cylinder Head:**
- Number : Four  
Disposition : Vertical, inline  
Bore/stroke, (mm) : 100 / 118  
Capacity as specified by the applicant, (cc) : 3707  
Compression ratio : 18.2 (±0.2): 1  
Type of cylinder head : Individual  
Type of cylinder liners : Wet, replaceable  
Type of combustion chamber : Direct injection, cavity on piston crown  
Arrangement of valves : Inline, Overhead
- Valve clearance (cold/hot):**
- Inlet valve, (mm) : 0.30/0.30
  - Exhaust valve, (mm) : 0.40/0.40
- 3.4 Fuel System:**
- Type of fuel feed system : Gravity and force feed
- 3.4.1 Fuel tank:**
- Capacity, (l) : 62.50  
Location : Above clutch housing  
Provision for draining of sediments/ water : Provided  
Material of fuel tank : Metallic (Steel sheet)

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## 8. SUMMARY OF OBSERVATIONS, COMMENTS & RECOMMENDATIONS

8.1 On the basis of tests conducted the performance results have been summarized as evaluative (mandatory) and non-evaluative (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
<b>8.1.1</b>	<b>PTO Performance :</b>					
a)	Max. power under 2 h test, (kW ) (Natural ambient condition)	Evaluative	Declared value to be achieved with a tolerance of: $\pm 5\%$ for PTO power or engine power $>26$ kW, $\pm 10\%$ for PTO power or Engine power $\leq 26$ kW.	36.0 (D)	35.7	Yes
b)	Specific fuel consumption corresponding to maximum power, (g/kWh)	Evaluative	+ 10% Max.	250(D)	256	Yes
<b>8.1.2</b>	<b>Air cleaner oil pull over:</b>					
	Maximum air cleaner oil pull over	Evaluative	0.25 % (max.)	0.25 % (max.)	0.11	Yes
<b>8.1.3</b>	<b>Safety features :</b>					
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)	<b>Does not meet the requirement</b>		<b>No</b>
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)	<b>Does not meet the requirement</b>		<b>No</b>

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1	2	3	4	5	6	7
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	14.40 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 fitted		Not applicable
<b>8.1.4</b>	<b>Labelling of tractors (Provision of labelling plate):</b>					
	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 MM YY 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	International Tractors Limited		Yes
	2) Model	Evaluative		DI-750 III HDM S1 (BRAND NAME : DI)		Yes
	3) Month & Year of manufacture	Evaluative		09/2021		Yes
	4) Engine number	Evaluative		4100EL14F107002 8F16		Yes
	5) Chassis number	Evaluative		DZZDR1109839S3		Yes
	6) Declaration of PTO power, kW (hp)	Evaluative		36 (48.28)		Yes
<b>8.1.5</b>	<b>Literature (Submission to test agency):</b>					
(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	Provided	Yes
(b)	Parts Catalogue	Evaluative		Provided	Provided	Yes
(c)	Workshop/ Service manual	Evaluative		Provided	Provided	Yes
<b>8.1.6</b>	<b>Fitment of Roll Over Protective Structure (ROPS):</b> for tractors having more than 1150 mm rear track width	Evaluative	ROPS should meet the requirement of IS:11821 or OECD code or equivalent International Standard	Provided	Provided	Yes

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1	2	3	4	5	6	7
8.1.7	<b>Standard accessories</b>	Evaluative	Trailer hitch, front tow hook, linkage drawbar should be provided with tractor	Provided	Provided	Yes
8.1.8	<b>Accessories (Optional)</b>	Non Evaluative	Ballast weights if fitted should meet the requirement of CMVR.	Not Provided	Not Provided	<b>Not Applicable</b>

8.2 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

**8.3 Salient Observations:**

**8.3.1 Laboratory tests:**

**8.3.1.1 Three point linkage:**

- i) The dimension of width of ball of upper hitch point does not meet the requirement of IS:4468- 1997 (Part-I) (Reaffirmed in October, 2017). This should be looked into for necessary corrective action at production level.
- ii) Lateral distance from lower hitch point to centre line of tractor does not meet the requirement of IS:4468- 1997 (Part-I) (Reaffirmed in October, 2017). This observation was also made in the previous test report No. T-1174/1701/2018 (August, 2018) and no improvement have been made as regards to its conformity so far. This should be looked into for necessary corrective action at production level.
- iii) Some of the parameters conform to Cat. I and some of them conform to Cat. II. Keeping in view the spirit of standardization, necessary improvements may be incorporated.

**8.4 Maintenance / Service Problems:**

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

**8.5 Recommendation with regard to safety on tractor:**

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

- i) Longitudinal distance from seat index point to centre of steering control wheel has been measured as "550 mm" against the requirement of "425 to 525 mm" as per IS: 12343-1998 (Re-affirmed in January, 2019).

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- ii) Spark arrester should be provided in the exhaust system as per the requirement of IS: 12239 (Part-2)-1999 (Re-affirmed in January, 2019).
- iii) Fuel shut-off knob does not remain in "STOP" position as per requirement of IS: 8133-1983 (Re-affirmed in 2019). This observation was also made in the previous test report No. T-1174/1701/2018 (August, 2018) and no improvement have been made as regards to its conformity so far.
- iv) Master shield of PTO shaft should be provided as per the requirement of IS: 4931-1995 (Re-affirmed in January, 2019).
- v) Vertical retainers at both sides of clutch pedal should be provided as per IS: 12239 (Part-1) – 2018.
- vi) Provision of differential lock as per IS: 12239 (Part-2) – 1999 (Reaffirmed in January, 2019).
- vii) The working clearance between position and draft control lever of hydraulic system was measured as 40 mm against the minimum requirement 70 mm as per IS: 12239 (Part-2)-1999 (Re-affirmed in January, 2019).

**8.6 Adequacy of Literature:**



**8.6.1** The following literatures were supplied with the test tractor for reference during the test:-

- a) Service Manual (Part-1 & Part-2) of "International Tractors Ltd. DI-750 III HDM S1 (Brand Name: DI)" tractor model.
- b) Parts Catalogue (Part-1 & Part-2) of "International Tractors Ltd. DI-750 III HDM S1 (Brand Name: DI)" tractor model.
- c) Operator's manual of "International Tractors Ltd. DI-750 III HDM S1 (Brand Name: DI)" tractor model.

**8.6.2** The operator manual may be brought out for the guidance of users and service personnel as per IS:8132-1999 incorporating, inter alia, the following:

- i) Recommended oil grade of steering system
- ii) Fuel saving tips
- iii) Safe hitch height while using trailer
- iv) The literatures should also be brought out in national as well as other regional languages for the guidance of users and service personnel.

**TESTING AUTHORITY:**

<b>C.V. CHIMOTE</b> TEST ENGINEER	
<b>P.K. PANDEY</b> DIRECTOR	

Draft test report is compiled by: **Poonam Khurasia**, Senior Technical Assistant

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### 9. APPLICANT'S COMMENTS

Para No.	Our Reference	Applicant's comments
9.1	8.6.2 (i), (ii), (iii) & (iv)	It will be updated in our literature.

### ANNEXURE – I

#### TRACTOR RUN HOURS DURING TEST

A.	LABORATORY AND TRACK TESTS	HOURS
1.	Running-in	40.00
2.	PTO performance test	3.28
3.	Air cleaner oil pull over test	2.50
4.	Nominal speed test	1.36
B.	Miscellaneous test and other run hours including idle run, transportation, trials and preparation for test	1.48
<b>TOTAL:</b>		<b>48.62</b>