

व्यावसायिक परीक्षण रिपोर्ट (प्रारंभिक)  
COMMERCIAL TEST REPORT (INITIAL)

संख्या/No. : T-1700/2231/2023  
माह/Month : January, 2023

Application Reference No. 28/2021-22/116

(यह परीक्षण रिपोर्ट 31/01/2028 तक वैध है / THIS TEST REPORT IS VALID UPTO 31/01/2028)



## MAHINDRA, 475 DI SP PLUS TRACTOR



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

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## 1. SPECIFICATIONS

- 1.1 Tractor:**
- Make : Mahindra  
 Model : 475 DI SP PLUS  
 Type : Rear Wheel Drive, Standard Agricultural Tractor.  
 Month & year of manufacture : 02/22  
 Chassis number : MBNTFAJAENNL02330  
 Country of origin : India
- 1.2 Engine:**
- Manufacturer's address : M/s. Mahindra & Mahindra Limited  
 (Farm Equipment Sector)  
 i) Akurli road, Kandivali (E), Mumbai - 400101  
 ii) MIDC, Hingna Road, Nagpur - 440028  
 iii) Khatima Panipat Highway, Rudrapur, Udhamsinghnagar , Pin - 263153  
 iv) Jaipur Ajmer Road Jaipur, Pin - 303007  
 v) Near Bidar "T" Junction , Mahindra Nagar, Zaheerabad- 502 220  
 vi) Mahindra Research Valley, Mahindra World City, Plot no. 41/1, Anjur P.O., District Chengalpattu - 603004.
- Make : Mahindra  
 Model : MTDHI30NA044B3A  
 Type : Four stroke, naturally aspirated, liquid cooled, direct injection, diesel engine.  
 Serial number : NNL2JAE0013  
 Country of origin : India
- 1.2.1 Engine speed (rpm), (Manufacturer's recommended production settings):**
- Maximum speed at no load : 2175 to 2375  
 - Low idle speed : 750 to 850  
 - Speed at maximum torque : 1100 to 1400
- Rated speed, (rpm):**
- For PTO use : 2000  
 - For drawbar use : 2000
- 1.3 Cylinder & Cylinder Head:**
- Number : Four  
 Disposition : Vertical, Inline  
 Bore/stroke, (mm) : 88.9/120 (apa)  
 Capacity as specified by the applicant, (cc) : 2979  
 Compression ratio : 20 (±1) : 1  
 Type of cylinder head : Monoblock  
 Type of cylinder liners : Wet, replaceable  
 Type of combustion chamber : Re-entrant cavity on piston head  
 Arrangement of valves : Overhead, inline
- | Valve clearance (cold/hot): | Cold | Hot |
|-----------------------------|------|-----|
| - Inlet valve, (mm)         | 0.4  | 0.3 |
| - Exhaust valve, (mm)       | 0.5  | 0.4 |
- 1.4 Fuel System:**
- Type of fuel feed system : Gravity and force feed
- 1.4.1 Fuel tank:**
- Capacity, (l) : 52.5  
 Location : Above clutch housing  
 Provision for draining of sediments/ water : Provided  
 Material of fuel tank : Metallic

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### 17. SUMMARY OF OBSERVATIONS, COMMENTS & RECOMMENDATIONS

17.1 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 requirements (Yes/No)
1	2	3	4	5	6	7
<b>17.1.1</b>	<b>PTO Performance:</b>					
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 $\leq 26$ kW.	29.2 (D)	28.6	Yes
b)	Power at rated engine speed, (kW)	Non Evaluative	-do-	29.2 (D)	28.6	Yes
c)	Specific fuel consumption corresponding to maximum power, (g/kWh)	Evaluative	+ 10% max.	249 (D)	254	Yes
d)	Maximum equivalent crankshaft torque, (Nm)	Non Evaluative	$\pm 8\%$	185 (D)	177.7	Yes
e)	Back-up torque, percent	Evaluative	12 percent	21 (D) 12 (R) Minimum	30	Yes
f)	Maximum operating temperature, ( $^{\circ}$ 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)	104	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.	110 (D)	100	Yes
g)	Engine oil consumption, (g/kWh)	Evaluative	Not exceeding 1% of SFC at max. Power under High ambient conditions.	2.54 (R) Maximum	0.17	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 (R) Maximum	0.43	Yes

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1	2	3	4	5	6	7	
<b>17.1.2</b>	<b>Drawbar performance:</b>						
<b>a)</b>	Max. drawbar pull with ballasted corresponding to 15 percent wheel slip, (kN)	Non Evaluative	Minimum 70% of static mass of tractor with ballast.	17.1 (D)	20.08	Yes	
				17.54 (R) Minimum			
<b>b)</b>	Max. drawbar pull with standard ballast 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.	12.8 (D)	15.78	Yes	
				12.93 (R) Minimum			
<b>c)</b>	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 $\leq 1500$ 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.	23.36 (D)	25.9	Yes	
				22.9 (R) Minimum			
<b>d)</b>	Maximum transmission oil temperature, ( $^{\circ}$ C)	Evaluative	The declared value should not exceed the maximum value specified by oil company	120 (D)	75	Yes	
<b>17.1.3</b>	<b>Power lift and hydraulic pump performance:</b>						
<b>a)</b>	Maximum lifting capacity throughout the range of lift, (kN):						
	1)	At hitch points	Evaluative	Tolerance of $\pm 10\%$	14.60 (D)	13.55	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.	10.20 (D)	9.54	Yes
6.73 (R) Minimum							
<b>b)</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	20	Yes	
<b>17.1.4</b>	<b>Brake performance at 25 kmph:</b>						
<b>a)</b>	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 (R)	6.49	Yes
	2)	Hot brake	Evaluative	10	10 (R)	6.59	Yes
<b>b)</b>	Maximum force exerted on the brake pedal to achieve a deceleration of $2.5 \text{ m/s}^2$ , (N)	Evaluative	600	600 (R) Maximum	277 to 395	Yes	
<b>c)</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	

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1	2	3	4	5	6	7
<b>17.1.5</b>	<b>Noise measurement:</b>					
<b>a)</b>	Maximum ambient noise emitted by the tractor, dB(A)	Evaluative	88 dB (A) for >1.5 tonne GVW and 85 db (A) for <1.5 tonne GVW (as per CMVR)	88 (R)	80	Yes
<b>b)</b>	Maximum noise at operator's ear level, dB(A)	Evaluative	96 (as per CMVR)	96 (R)	94	Yes
<b>17.1.6</b>	<b>Amplitude of mechanical vibrations at:</b>					
	1) Left foot rest	Non Evaluative	100 microns (max.)	100 (R)	214	No
	2) Right foot rest				174	No
	3) Seat (with driver seated)				130	No
	4) Steering wheel				143	No
<b>17.1.7</b>	<b>Air cleaner:</b>					
	Maximum air cleaner oil pull over, (%)	Evaluative	0.25 (Max.)	Dry type air cleaner is fitted	Not applicable	--
<b>17.1.8</b>	<b>Haulage requirements:</b>					
<b>a)</b>	Gross mass of the trailers, (tonne):					
	Two wheel	Non Evaluative	As specified by the manufacturer	5.0 (D)	5.0	Yes
	Four wheel	Non Evaluative		7.0 (D)	7.0	Yes
<b>b)</b>	<b>Distance travelled / liter of fuel consumption, (km/l):</b>					
	Two wheel	Non Evaluative	As specified by the manufacturer	5.0 to 6.0 (D)	5.83 to 6.08	No
	Four wheel	Non Evaluative		5.0 to 6.0 (D)	5.41 to 5.44	Yes
<b>c)</b>	<b>Fuel consumption, (ml/km/tonne):</b>					
	Two wheel	Non Evaluative	As specified by the manufacturer	30 to 35 (D)	32.88 to 34.33	Yes
	Four wheel	Non Evaluative		25 to 30 (D)	26.25 to 26.42	Yes
<b>17.1.9</b>	<b>Wetland cultivation:</b>					
	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	Yes
	1) Clutch assembly	-do-				
	2) Brake housings	-do-				
	3) Front axle hubs	-do-				
	4) Engine Oil	-do-				
	5) Transmission Oil	-do-				
<b>17.1.10</b>	<b>Safety features</b>					
<b>a)</b>	Guards against moving and hot parts	Evaluative	Belt drives, pulleys, silencer, hydraulic pipes (As per IS 12239 (Part2))	Meets the requirement		Yes
<b>b)</b>	Lighting arrangement	Evaluative	As per CMVR	Meets the requirement		Yes
<b>c)</b>	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>

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1	2		3	4	5	6	7
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)	Does not meet the requirement		No
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	11.42 (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 fitted		Not applicable
17.1.11	<b>Labelling of tractors (Provision of labelling plate):</b>						
	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.	Mahindra	Yes	
	2)	Model	Evaluative		475 DI SP PLUS	Yes	
	3)	Month & Year of manufacture	Evaluative		02/22	Yes	
	4)	Engine number	Evaluative		NNL2JAE0013	Yes	
	5)	Chassis number	Evaluative		MBNTFAJAENNL 02330	Yes	
	6)	Maximum PTO power, (kW)	Evaluative		29.2	Yes	
	7)	Specific fuel consumption (g/kWh)	Evaluative		249	Yes	

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1	2	3	4	5	6	7
17.1.12	<b>Discard limit for:</b>					
(a)	Cylinder bore diameter, (mm)	Evaluative	To be specified by the manufacturer and supported by the printed literature	89.13	88.882 to 88.915	Yes
(b)	Clearance between piston & cylinder liner at skirt, (mm)	Non Evaluative		0.30	0.105 to 0.122	Yes
(c)	Piston diameter at skirt, (mm)	Non Evaluative		88.15	88.793 to 88.800	Yes
d)	<b>Ring end gap (mm):</b>					
	- Top comp. ring.	Evaluative	To be specified by the manufacturer and supported by the printed literature	2.5	35	Yes
	- 2 <sup>nd</sup> comp. ring.			2.5	0.55	Yes
	- Oil ring.			2.0	0.40	Yes
(e)	<b>Ring groove clearance (mm):</b>					
	- Top comp. ring.	Evaluative	To be specified by the manufacturer and supported by the printed literature	0.30	-Tappered-	--
	- 2 <sup>nd</sup> comp. ring.			0.30	0.080 to 0.082	Yes
	- Oil ring.			0.20	0.049 to 0.054	Yes
(f)	<b>Clearance of main bearings (mm):</b>					
	- Diametrical clearance	Evaluative	To be specified by the manufacturer and supported by the printed literature	0.20	0.019 to 0.057	Yes
	- Crankshaft end float	Evaluative		0.60	0.10	Yes
(g)	<b>Clearance of big end bearings, (mm):</b>					
	- Diametrical	Evaluative	-do-	0.20	0.024 to 0.055	Yes
	- Axial	Evaluative	-do-	0.75	0.25	Yes
(h)	Clearance between king pin and bush, (mm)	Non Evaluative	-do-	0.30	0.11 to 0.23	Yes
(i)	Clearance between centre pin and bush, (mm)	Non Evaluative	-do-	0.30	0.12 to 0.20	Yes
17.1.13	<b>Literature (Submission to test agency)</b>					
(a)	Operator manual	Evaluative	Provided / Not Provided	Provided	Provided	Yes
(b)	Parts Catalogue	Evaluative	Provided / Not Provided	Provided	Provided	Yes
(c)	Workshop/ Service manual	Evaluative	Provided / Not Provided	Provided	Provided	Yes
17.1.14	<b>Fitment of Roll Over Protective Structures (ROPS):</b>					
	For tractor having more than 1150 mm rear track width	Evaluative	ROPS should meet the requirement of IS:1182 or OECD code or equivalent International Standard		Not fitted	Not applicable
17.1.15	Standard Accessories	Evaluative	Trailer hitch, front tow hook, linkage drawbar should be provided with tractor		Provided	Yes
17.1.16	Accessories (optional)	Non Evaluative	Ballast weight, if fitted, should meet the requirement of CMVR		Provided	Yes

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17.2 CATEGORY OF BREAKDOWNS / DEFECTS ( As per clause 5.0 of IS:12207-2019):					
S. 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 two and neither of them should be repetitive in nature	One <b>(Mj 21)</b>	Yes
3.	Minor	Evaluative	Not more than five 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 five, that is, (2 major + 3 minor) or (1 major + 4 minor) or 5 minor breakdowns.	One <b>(Mj 21)</b>	Yes

### 17.3 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: Part 1 Categories 1, 2, 3 & 4 (fourth revision) [IS:4468(Part-I) – 1997 (Reaffirmed in 2022)] : **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 Part2 Symbols for agricultural tractors and machinery [IS: 6283(Part-1) - 2006 (Reaffirmed Year 2019) and IS: 6283 (Part-2) – 2007 (Reaffirmed Year 2019)] : **Does not conform**
- x) Agricultural Tractors and Machinery-Lighting device for travel on public roads (IS:14683-1999) (Reaffirmed Year 2019)] : Conforms

### 17.4 Salient Observations:

#### 17.4.1 Laboratory tests:

##### 17.4.1.1 Hydraulic performance test:

During load maintenance test, leakage of hydraulic oil was observed due to crackage of the pump outlet pipe.

Upon this, the applicant has requested vide letter no. FD/BVH/ICT/475SPPLUS/21-22/11 dated 13.07.2022 to replace the "Pump end pressure pipe assembly (Part No. – 007208397V91, one number)" with same specification, which was allowed. This defect was categorized as Major breakdown (**Mj- 21**). The replacement of pipe was allowed as per IS: 12207-2019.

##### 17.4.1.2 Mechanical Vibration

The amplitude of mechanical vibration on various assemblies marked as (\*) in Chapter – 9 of this test report is on higher side. This calls for dampening down of vibrations especially on left foot rests, right foot rest, steering wheel and operator's seat to improve the operational comfort and service life of components.



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**17.4.1.3 Three point linkage:**

The dimensions viz. diameter of hitch pin hole & width of ball of upper hitch points, diameter of hitch pin hole & width of ball of lower hitch points and lateral distance from lower hitch point to centre line of tractor does not meet the requirements of IS:4468 (Part-I) – 1997. This should be looked into for corrective action.

**17.4.1.4 Operator's seat:**

- i) Length of operator's seat was measured 200 mm against the minimum requirement of 210 mm.
- ii) Adjustment of driver's mass should be provided as per the above referred standard.
- iii) Vertical distance from Seat Index Point to centre of steering control wheel was measured 220 mm against the requirement of 265 to 385 mm.
- iv) Upward position of silencer outlet from Seat Index Point was measured 770 mm against the minimum requirement of 800 mm.

Above parameters does not meet the requirement of IS: 12343-2021. This should be looked into for necessary corrective action at production level.

**17.4.1.5 Operator's work place:**

- i) Vertical retainer has not been provided on inner side of clutch pedal.
- ii) Width of foot step has been measured as 160 mm against the requirement of 200 mm.
- iii) Spark arresting device has not been provided in the exhaust system.

Above parameters does not meet the requirement of IS: 12239 (Part-I) 2018. This should be looked into for necessary corrective action at production level.

**17.4.1.6 PTO master shield:**

PTO master shield has not been provided on tractor. This should be looked into for necessary corrective action.

**17.5 Maintenance / Service Problems:**

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

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

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

- i) The working clearance around Position control lever and Draft control lever has been measured as 30 mm should be provided as per the requirement of IS: 12239 (Part-2) - 1999, (Reaffirmed in January, 2019).
- ii) The working clearance around Draft control lever & RHS fender has been measured as 40 mm should be provided as per the requirement of IS: 12239 (Part-2) - 1999, (Reaffirmed in January, 2019).
- iii) Fuel shut off knob should does not remains in stop as per the requirement of IS: 8133-2021.
- iv) Identification of hand control by colour coding should be provided as per the requirement of IS: 8133-2021.
- v) Identification of "Neutral" position in range selector gear lever and main gear lever should be provided as per of IS: 6283 (Part 1&2) – 1998 (Re-affirmed in January, 2019).
- vi) Identification of rockshaft (Basic, Up & Down) should be provided as per of IS: 6283 (Part 1&2) – 1998 (Re-affirmed in January, 2019).

**17.7 Haulage Test**

Distance travelled per litre fuel consumption with two wheel wheel trailers was observed as 5.83 to 6.08 km/l against the declaration of 5.0 to 6.0 km. This should be looked into for necessary corrective action.

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### 17.8 Specification

Discrepancies in the specification between the Specification sheet and Operator's manual are as under:

S. No.	Description	As per Specification Sheet	As per Operator's manual
a)	Coolant as recommended	BIL MT-92	Mahindra M-Star Coolz Plus or coolant conforming to JIS K-2234 (P. No. 19-1)
b)	Coolant water ratio	1:4	In 1 litre of mineral water, add 50 to 60 ml concentrated antirust additive (Refer P. No. 12-6)
c)	Transmission oil	TRACT ELF MM/IOCL	M-Star genuine OIB oil or Servo MTRAC 30 (P. No. 19-1)
d)	Engine oil change period	First change after 100 hours and subsequently after every 400 hours.	First change after 250 hours and subsequently after every 350 hours.(P. No. 20-3)
e)	Transmission oil change period	First change after 1200 hours and subsequently after every 1200 hours.	First change after 1300 hours and subsequently after every 1400 hours.(P. No. 20-3)

### 17.9 Adequacy of Literature supplied with machine:

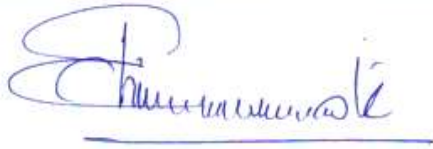
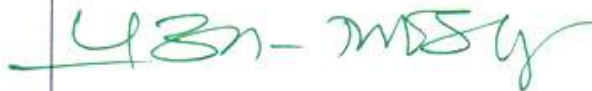
17.9.1 The following literature was supplied with test sample for reference during the test.

- Service manual for Mahindra 475 DI SP Plus tractor model.
- Operator's manual for Mahindra 475 DI SP Plus tractor model.
- Parts catalogue for Mahindra 475 DI SP Plus tractor model.

17.9.2 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:

- Safe hitch height while using trailer.
- Recommended gross mass of trailer for haulage operation.

### TESTING AUTHORITY:

C.V. CHIMOTE TEST ENGINEER	
P.K. PANDEY DIRECTOR	

Draft Test Report is compiled by: **Pratyush Satya**, Senior Technical Assistant

### 18. Applicant's comments

Para no.	Our reference	Applicant's comments
18.1	17.4.1.1	Failure will be studied & necessary action will be initiated.
18.2	17.4.1.5 & 17.6	Parameters will be studied and necessary action will be initiated.
18.3	17.8 & 17.9.2	Product literature will be studied and necessary action will be initiated.

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**ANNEXURE- I**

**BRIEF SPECIFICATION OF MATCHING IMPLEMENTS AS DECLARED BY APPLICANT**

S. No.	Parameters	Disc Plough	Rotavator	Puddler
1	Make	Farmking	Mahindra	Not available
2	Type	Mounted	Mounted	Mounted
3	No. of Discs / Blades	Two	36 in 7 flanges	12 (6 in 2 gangs)
4	Type of Discs / Blades	Plain concave	Hatchet	Notched
5	Size of Discs / Blades, (mm)	655	265 x 85 x 8	460
6	Spacing of Discs /Flanges, (mm)	495	325	165
7	Lower hitch point span, (mm)	760	785	680
8	Mast height, (mm)	480	595	500
9	Overall Dimensions, (mm):			
	Length	1480	970	1190
	Width	1060	1690	1810
	Height	1180	1105	1330
10	Gross Mass, (kg)	200	450	240
11	Working width (cm)	2 x 30	145	210

**ANNEXURE-II**

**BRIEF SPECIFICATION OF MATCHING CAGE WHEEL AS DECLARED BY APPLICANT**

S. No.	Items	Specification
1	Type	Half cage wheel
2	Outer dia. (mm)	1200
3	Width (mm)	360
4	No. & Type of Lugs	14, straight lugs made of MS angle section welded to angle iron frame
5	Size of angle section, (mm)	50 x 50 x 5
6	Length of lug, (mm)	360
7	Spacing of lug, (mm)	260
8	Weight of each cage wheel, (kg)	100

**ANNEXURE-III**

**BRIEF SPECIFICATION OF TRAILER DECLARED AS MATCHING TRAILER BY APPLICANT**

S. No.	Item	Trailer	Trailer
1.	Type of trailer	Semi - Trailer	Semi - Trailer
2.	Number of axles	Single	Double
3.	Un laden Weight of Trailer, kg	1670	2800
4.	Fully laden Weight of Trailer, Tons (Kg)	5000	7000
5.	<b>Overall dimensions of Trailer, (mm):</b>		
	Overall Width	1870	2140
	Overall Length	4180	5785
	Overall Height	2175	2110
	Wheel Base	Not applicable	2835
	Wheel Track	1600	1740(Front) &1765(Rear)
6.	<b>Dimension of fitted Platform, (mm):</b>		
	Length	3040	4225
	Width	1830	2135
	Height from ground	1190	1305
7.	Brakes of Trailer	Not Provided	Not Provided

T-1700/2231/2023	MAHINDRA, 475 DI SP PLUS TRACTOR - COMMERCIAL (INITIAL)
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**ANNEXURE-IV**

**TRACTOR RUN HOURS DURING TEST**

<b>A.</b>	<b>LABORATORY AND TRACK TESTS:</b>	<b>HOURS</b>
1.	Running-in	60.0
2.	PTO performance test	12.3
3.	Power lift and hydraulic pump performance test	2.0
4.	Drawbar performance test	17.4
5.	Turning ability	0.5
6.	Location of centre of gravity	0.3
7.	Operator's field of vision	0.5
8.	Brake test	1.8
9.	Noise measurement	1.0
10.	Mechanical vibration test	1.0
11.	Nominal speed test	0.6
<b>B.</b>	<b>FIELD TEST:</b>	
1.	Disc ploughing	10.9
2.	Rotavation	10.3
3.	Puddling (including 5.0 hours water proof test)	15.5
<b>C.</b>	<b>HAULAGE TEST:</b>	5.1
<b>D.</b>	Miscellaneous test and other run hours including idle run, transportation, trials and preparation for test	7.6
<b>TOTAL:</b>		<b>146.8</b>