व्यावसायिक परीक्षण रिपोर्ट (प्रथम बैच परीक्षण रिपोर्ट) संख्या / No. : T-1447/1974/2020 COMMERCIAL TEST REPORT (First Batch Test) माह / Month : June, 2020

(यह परीक्षण रिपोर्ट 30/06/2025 तक वैध है। / THIS TEST REPORT IS VALID UP TO : 30/06/2025)



MAHINDRA, 605 DI PS (Brand Name : ARJUN NOVO) 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)

केन्द्रीय कृषि मशीनरी प्रशिक्षण एवं परीक्षण संस्थान

ट्रैक्टर नगर, बुदनी (म.प्र.) ४६६ ४४५

CENTRAL FARM MACHINERY TRAINING & TESTING INSTITUTE

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T-1447	/1974/2020	(BRAND NAME: AF	RJUN N	A, 605 DI PS TRACTOR IOVO)-COMMERCIAL -1 st BATCH TEST RT IS VALID UPTO: 30/06/2025	
1.1	Tractor:	1. SP	ECIFICA	ATIONS	
	Make Model		:	Mahindra 605 DI PS	
	Brand name		:	Arjun Novo	
	Variant, if an	У		None	
	Туре		:	Four wheeled, rear-wheel driven, General Purpose Agricultural Tractor.	
		r of manufacture	:	EK	
	Chassis num		:	MBNWHBCYEKNE 01042 India	
	Country of o	ngin	•	nuia	
1.2	Engine: Make		-	Mobindro	
	Model		:	Mahindra MSI 452 3A	
	Туре		:	Four strokes, water cooled, direct injection,	
	1,900		•	natural aspirated, diesel engine.	
	Serial numbe	-	:	NKE3WBE0001	
1.2.1	Country of origin : India Engine speed (rpm), (Manufacturer's recommended production settings):				
1.2.1		speed at no load	:	2400 to 2500	
	- Low idle sp	•	:	750 to 850	
		naximum torque	:	1100 to 1300	
	Rated speed				
	- For PTO us		:	2100	
	- For drawba	r use	:	2100	
1.3		Cylinder Head:			
	Number		:	Four Verticel Inline	
	Disposition Bore/stroke			Vertical, Inline 96/122	
		s specified by the	:	3532	
	applicant, (•	0002	
	Compressi		:	18.3 : 1 (± 0.5)	
	Type of cyl		:	Monoblock	
		inder liners	:	Wet, replaceable	
		mbustion chamber	:	Re-entrant bowl cavity on piston head	
		nt of valves rance (cold):	•	Overhead, inline Cold Hot	
	- Inlet valve		:	0.3 0.4	
	- Exhaust v		:	0.3 0.4	
1.4	Fuel Syste Type of fue	em: el feed system	:	Gravity and force feed	
1.4.1	Fuel tank:				
	Capacity, (l)	:	61.4	
	Location		; :	Above clutch housing	
	Provision for water	or draining of sediments/	:	Provided	
	Material of	fuel tank		Metallic	
	Water sepa		:	Not provided, however a drain plug is	
			-	provided at the bottom of fuel filter to drain the water	

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14. SUMMARY OF OBSERVATIONS, COMMENTS & RECOMMENDATIONS

14.1 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:

SI. No.		aracteristic	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
14.1.1	ΡΤΟ	Performance	:				
a)	under (kW) ambie	num power 2 h test, (Natural ent 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.	33.5 (D)	33.3	Yes
b)	engir (kW)	er at rated ne speed,	Non Evaluative	-do-	33.5 (D)	32.8	Yes
c)	Specific fuel consumption corresponding to maximum power, (g/kWh)		Evaluative	+ 10% max.	251 (D)	250	Yes
d)	Maximum equivalent crankshaft torque, (Nm)		Non Evaluative	± 8%	178 (D)	175.6	Yes
e)	Back-up torque, percent		Evaluative	12 percent	15.0 % (D) 12 % (R)	17.6	Yes
f)	Maxi	mum operating	g temperature	e, (°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)	115	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.	112 (D)	94	Yes
g)	Engine oil consumption, (g/kWh)		Evaluative	Not exceeding 1% of SFC at max. power under High ambient conditions.	2.51 Maximum (R)	0.42	Yes
h)	Smok	ke 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)	0.09	Yes

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1		2	3	4	5	6	7
14.1.2	Drav	wbar performan	-		5	0	,
a)	Max with corre 15	. drawbar pull	Non Evaluative	Minimum 70% of static mass of tractor with ballast.	18.6 (D) 19.74 Minimum (R)	23.13	Yes
b)	cas corr 15 p	without asted as the	Evaluative	Minimum 70% of static mass of tractor without ballast or with standard ballast, as the case may be.	15.7 (D) 16.54 (R) Minimum	19.12	Yes
c)	Max	kimum wbar power out ballast,	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.	26.8 (D) 26.6 (R) Minimum	28.6	Yes
d)	tran	kimum smission oil perature (°C)	Evaluative	The declared value should not exceed the maximum value specified by oil company	110 (D)	89	Yes
14.1.3		ver lift and hydra		rformance :			
a)	Max	-	pacity through	nout the range of lift, (kN):			
	1)	At hitch points	Evaluative	Tolerance of ± 10%	21.5 (D)	22.95	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.	13.34 (D) 7.84 (R) Minimum	12.73	Yes
b)	the poin of t each inter dura Minu	val for a total ttion of 30 utes, (mm)	Non Evaluative	The observed value should not exceed 50 mm	50 (D) Maximum	00	Yes
14.1.4	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):						with
	1)	Cold brake	Evaluative	10	10 (R)	7.60	Yes
	2)	Hot brake	Evaluative	10	10 (R)	7.66	Yes
b)	exer brak achi	e pedal to eve a eleration of 2.5	Evaluative	600	600 (R) Maximum	298 to 304	Yes

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1	2	3	4	5	6	7
c)	Whether parking	5	4	5	0	1
	brake is effective at a force of 600 N at foot pedal (s) or 400 N at hand lever, N	Evaluative	Yes / No	Yes	265 to 330	Yes
14.1.5	Noise measurem	nent :				
a)	Maximum ambient noise emitted by the tractor dB(A)	Evaluative	As per CMVR	88 (R)	83	Yes
b)	Maximum noise at operator's ear level dB(A)	Evaluative	As per CMVR	96 (R)	94	Yes
14.1.6	Amplitude of me	chanical vib	rations at:			-
	1) Left foot rest				158	No
	2) Right foot res		100 mierono		125	No
	3) Seat (with driver seated)	Non Evaluative	100 microns (max)	100(R)	70	Yes
	4) Steering wheel				251	No
14.1.7	Air cleaner:	I	l	I	1	I
	Air cleaner oil pull over, (%)	Evaluative	0.25 % (Maximum)	0.25 % (Maximum)	Dry type air cleaner fitted	Not applic
14.1.8	Haulage require	monto :	(Maximum)	(เพลงเทนเท)	olounor nited	able
a)	Gross mass of the t					
aj	Two wheel	Non				
	Four wheel	Evaluative Non	Yes / No	5.0 (D)	5.0	Yes
		Evaluative	Yes / No	8.0 (D)	8.0	Yes
b)	Distance travelled /	liter of fuel con	sumption, (km/l):	•	•	
	Two wheel	Non Evaluative	Yes / No	3 to 6 (D)	4.60 to 5.17	Yes
	Four wheel	Non Evaluative	Yes / No	3 to 6 (D)	4.32 to 4.43	Yes
C)	Fuel consumption (1	00 / 15	00.00	
	Two wheel	Non Evaluative	Yes / No	30 to 45 (D)	38.68 to 43.52	Yes
	Four wheel	Non Evaluative	Yes / No	30 to 45 (D)	28.23 to 28.95	No
14.1.9	Wetland cultivat	ion :				
	Sealing for the following assemblies:	Evaluative	The identified assemblies should essentially meet the requirement of IS:	There	The major breakdowns were not	
	1) Clutch assembly	-do-	11082. No water ingress in the	should be no ingress	observed in the field test during initial	
	2) Brake housings	-do-	identified assembly given in column-2.If tractor does not meet	of water and/or	commercial testing of the	Yes
	3) Front axle hubs	-do-	the requirements of wetland cultivation, it may be recommended	mud (R)	tractor model vide test report	
	4) Engine Oil	-do-	for dry land operation		No. T- 954/1472/2015,	
	5) Transmission	-do-	only.		954/1472/2015, February, 2015	
	Oil				2010	

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1		2	3	4	5	6	7
14.1.10	Sat	ety features :		· · · ·			-
a)	Gu	ards against ving and hot	Evaluative	Belt drives, pulleys, silencer, hydraulic pipes (As per IS 12239 (Part2)		Conforms	Yes
b)	-	hting angement	Evaluative	As per CMVR		Conforms	Yes
c)	(Tra thai	ating requirements actors having more n 1150 mm rear sk width)	Non Evaluative	Should meet the requirements of IS: 12343 (As amended from time to time)		Does not conform	No
d)	req	chnical uirements for O shaft	Evaluative	Should meet the requirements of IS: 4931 (As amended from time to time)		Conforms	Yes
e)	poi	nensions of three nt linkage	Non Evaluative	Should meet the requirements of IS: 4468 (Part-I) (As amended from time to time)		Conforms	Yes
f)	link	ecifications of age drawbar	Evaluative	Should meet the requirements of IS: 12953 (As amended from time to time)		Conforms	Yes
g)		inging drawbar herever fitted)	Evaluative	Should meet the requirement of IS: 12362 (Part 3) (As amended from time to time)		Not fitted	Not appli cable
h)	1)	Maximum travelling speed at rated engine speed in reverse gears, Kmph	Evaluative	Should not exceed 20 Kmph		17.22 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 fitted	Not appli cable
14.1.11	Lab	celling of tractors	6 (Provision	of labelling plate):			
	1)	Make	Evaluative	Should conform to the		Mahindra	Yes
	2)	Model	Evaluative	requirements of CMVR along with maximum		605 DI PS	Yes
	3)	Month & Year of manufacture	Evaluative	along with maximum PTO Power in kW and year of manufacture in		EK	No
	4)	Engine number	Evaluative	numerical form.		NKE3WBE 0001	Yes
	5)	Chassis number	Evaluative	MM YY Digit 01 – 12 in box No.1		MBNWHBCY EKNE01042	Yes
	6)	Maximum PTO power, (kW)	Evaluative	for MM will represent the months and next two		33.5	Yes
	7)	Specific fuel consumption (g/kWh)	Evaluative	digits in box No.2 for YY will represent the year of Manufacturing.		251	Yes

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1 2 3 4 5 6 14.1.12 Discard limit for:	I06 Yes .928 Yes 45 Yes 05 Yes 50 Yes 05 Yes 06 Yes
(a)Cylinder bore diameter, (mm)EvaluativeTo specified96.522 (D)95.990 to 96.(b)Clearance between piston & cylinder liner at skirt, (mm)Non EvaluativeTo specified96.522 (D)95.990 to 96.(c)Piston diameter at skirt, (mm)Non EvaluativeNon Evaluative0.50 manufacturer and supported0.087 to 0.1 (D)(c)Piston diameter at skirt, (mm)Non EvaluativeNon Evaluative95.60 literature95.912 to 95.(d)Ring end gap (mm):0.40 to 0.4 comp. ringTop comp. ring. -Evaluative0.30 (D)0.40 to 0.4 comp. ring.(e)Ring groove clearance (mm): 0.30 (D)Tapered comp. ringClearance of main bearings (mm):0.025 (D)0.043 to 0.0(f)Clearance of main bearings (mm):	I06 Yes .928 Yes 45 Yes 05 Yes 50 Yes 904 Yes
(b)Clearance between piston & cylinder liner at skirt, (mm)Non Evaluativethe manufacturer and supported0.50 (D)0.087 to 0.1(c)Piston diameter at skirt, (mm)Non Evaluativeby the printed literature95.60 (D)95.912 to 95.d)Ring end gap (mm): - Top comp. ring. - Oil ringdo- Evaluative2.5 (D) -do-0.40 to 0.4 2.5 (D)(e)Ring groove clearance (mm): - Top comp. ring. - Oil ring.Evaluative Evaluative-do- -do-0.30 (D) 0.30 (D)Tapered 0.055 to 0.0 0.043 to 0.0(f)Clearance of main bearings (mm): - DiametricelEvaluative - Diametricel-do- - do-0.25 (D) 0.043 to 0.0	I06 Yes .928 Yes 45 Yes 05 Yes 50 Yes 05 Yes 06 Yes
piston & cylinder liner at skirt, (mm) Non Evaluative manufacturer and supported 0.50 (D) 0.087 to 0.1 (c) Piston diameter at skirt, (mm) Non Evaluative by the printed literature 95.60 (D) 95.912 to 95. d) Ring end gap (mm): - Top comp. ring. - Oil ring. -do- 2.5 (D) 2.5 (D) 0.40 to 0.4 0.40 to 0.4 0.40 to 0.5 (e) Ring groove clearance (mm): - Top comp. ring. - Oil ring. -do- 2.0 (D) 2.0 (D) 0.40 to 0.5 0.40 to 0.5 (e) Ring groove clearance (mm): - Top comp. ring. - Oil ring. -do- 0.30 (D) 0.30 (D) Tapered 0.30 (D) - Oil ring. Evaluative -do- 0.25 (D) 0.043 to 0.0 (f) Clearance of main bearings (mm): - Diametrical - Diametrical	.928 Yes 45 Yes 05 Yes 50 Yes 745 745 745 745 745 745 745
Iner at skirt, (mm)Evaluative and supported(D)(c)Piston diameter at skirt, (mm)Non Evaluativeby the printed by the printed95.60 (D)95.912 to 95.(d)Ring end gap (mm): - Top comp. ring. - 2nd comp. ringdo- Evaluative2.5 (D)0.40 to 0.4-Oil ring.Evaluative-do- - 2.5 (D)2.0 (D)0.40 to 0.5(e)Ring groove clearance (mm): - Top comp. ring. - Top comp. ringdo- Evaluative0.30 (D)Tapered-Oil ring.Evaluative-do- - 0.30 (D)0.055 to 0.0(f)Clearance of main bearings (mm): - Diametrical-Diametrical	.928 Yes 45 Yes 05 Yes 50 Yes 745 745 745 745 745 745 745
(c) Piston diameter at skirt, (mm) Non Evaluative by the printed literature 95.60 (D) 95.912 to 95.01 d) Ring end gap (mm): - Top comp. ring. - 2 nd comp. ring. - Oil ring. -do- Evaluative 2.5 (D) 0.40 to 0.4 - 2 nd comp. ring. - Oil ring. Evaluative -do- - do- 2.0 (D) 2.5 (D) 1.00 to 1.0 (e) Ring groove clearance (mm): - Top comp. ring. - 2 nd comp. ring. - Oil ring. -do- Evaluative 0.30 (D) Tapered 0.30 (D) - Oil ring. Evaluative -do- 0.25 (D) 0.043 to 0.0 (f) Clearance of main bearings (mm): - Diametrical - Diametrical -	45 Yes 05 Yes 50 Yes 064 Yes
skirt, (mm) Evaluative literature (D) 95.912 to 95. d) Ring end gap (mm): .	45 Yes 05 Yes 50 Yes 064 Yes
d) Ring end gap (mm): - Top comp. ring. - 2 nd comp. ring. - 2 nd comp. ring. - Oil ring. - Top comp. ring. - Top comp. ring. - Top comp. ring. - Top comp. ring. - Oil ring.	05 Yes 50 Yes Yes 064 Yes
- Top comp. ring. -do- 2.5 (D) 0.40 to 0.4 - 2 nd comp. ring. Evaluative -do- 2.5 (D) 1.00 to 1.0 - Oil ring. -do- 2.0 (D) 0.40 to 0.4 - Oil ring. -do- 2.0 (D) 0.40 to 0.5 (e) Ring groove clearance (mm): -do- 0.30 (D) Tapered - Top comp. ring. -do- 0.30 (D) 0.055 to 0.0 - Oil ring. Evaluative -do- 0.25 (D) 0.043 to 0.0 (f) Clearance of main bearings (mm): - Diametrical - -	05 Yes 50 Yes Yes 064 Yes
- Oil ring. -do- 2.0 (D) 0.40 to 0.5 (e) Ring groove clearance (mm): - Top comp. ring. -do- 0.30 (D) Tapered - Top comp. ring. -do- 0.30 (D) Tapered - 2 nd comp. ring. -do- 0.30 (D) 0.055 to 0.0 - Oil ring. -do- 0.25 (D) 0.043 to 0.0 (f) Clearance of main bearings (mm): -	50 Yes Yes 064 Yes
(e) Ring groove clearance (mm): - Top comp. ring. - 2 nd comp. ring. - 2 nd comp. ring. - Oil ring. - Oil ring. - Clearance of main bearings (mm):	Yes 064 Yes
- Top comp. ring. -do- 0.30 (D) Tapered - 2 nd comp. ring. Evaluative -do- 0.30 (D) 0.055 to 0.0 - Oil ring. -do- 0.25 (D) 0.043 to 0.0 (f) Clearance of main bearings (mm):	064 Yes
- 2 nd comp. ring. Evaluative -do- 0.30 (D) 0.055 to 0.0 - Oil ring. -do- 0.25 (D) 0.043 to 0.0 (f) Clearance of main bearings (mm): - - - -	064 Yes
- Oil ring. -do- 0.25 (D) 0.043 to 0.0 (f) Clearance of main bearings (mm): - Diametrical -	
(f) Clearance of main bearings (mm):	
- Diametrical	057 Yes
Evaluative 0.30 (D) 0.052 to 0.3	85 Yes
- Crankshaft and -00-	
float Evaluative 0.90 (D) 0.25	Yes
(g) Clearance of big end bearings, (mm):	
- Diametrical Evaluative -do- 0.20 (D) 0.018 to 0.0	59 Yes
- Axial Evaluative -do- 0.75 (D) 0.15	Yes
(h) Clearance between Non	
King pin and bush, Evaluative -do- 0.20 (D) 0.080 to 0.1	107 Yes
(mm)	
(i) Clearance between Non centre pin and bush, Evolutive -do- 0.20 (D) 0.198 to 0.2	209 Yes
(mm)	.00 105
14.1.13 Literature (Submission to test agency)	
(a) Operator manual Evaluative Provided / Provided Provided	l Yes
Not Provided Trovided Trovided	163
(b) Parts Catalogue Evaluative Provided / Provided Provided	l Yes
(c) Workshop/ Evaluative Provided /	
Service manual Not Provided Provided Provided	l Yes
14.1.14 Fitment of Roll Over Protective Structures (ROPS):	
For tractor having Evaluative ROPS should meet the	
more than 1150 mm requirement of IS:1182	Not
rear track width or OECD code or Not Applica equivalent	ble appli cable
International Standard	Cable
14.1.15 Standard Evaluative Trailer hitch, front tow	
Accessories hook, linkage drawbar Provided	l Yes
should be provided	
with tractor 14.1.16 Accessories Non Ballast weight, if fitted,	
	Yes
(optional) Evaluative should meet the Provided requirement of CMVR	162

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1	2	3	4	5	6	7
14.2	CATEGORY O	F BREAKDOWNS	/ DEFECTS (As	per clause 5.0 of	IS:12207-20	019):
SI. No.	Category of breakdowns	Category (Evaluative / Non Evaluative)		rements 12207-2019		Whether meets the Requirem- ents (Yes/No.)
1.	Critical	Evaluative	No critical brea	akdown	None	Yes
2.	Major	Evaluative		one and neither I be repetitive in	None	Yes
3.	Minor	Evaluative		an three and ch should not be	None	Yes
4.	Total breakdowns	Evaluative	breakdowns	major + 3 minor)	None	Yes

14.3 Salient Observations:

14.3.1 Laboratory tests:

14.3.1.1 PTO Performance Test:

- i) The maximum PTO power was observed as 33.3 kW against the declaration of **33.5** kW, which meets the requirement of IS: 12207-2019 with regard to tolerance limit.
- ii) The specific fuel consumption corresponding to maximum power was recorded as 250 g/kWh against the declaration of 251 g/kWh, which meets the requirement of IS: 12207-2019 with regard to tolerance limit.
- iii) The maximum equivalent crankshaft torque was recorded as 175.6 N-m against the declaration of 178 N-m, which meets the requirement of IS: 12207-2019 with regard to tolerance limit.
- iv) The backup torque is **17.6** %, which meets the requirement of IS: 12207-2019 with regard to tolerance limit.
- v) The drop in maximum power under natural and high ambient condition was recorded as 6.4%. This should be looked into for corrective action.

14.3.1.2 Drawbar performance test:

- i) The maximum drawbar power under unballasted condition was observed as **27.7 & 28.6 kW** against the declaration of 26.8 kW in case of previous & present sample respectively which meets the requirement of IS: 12207-2019 with regard to tolerance.
- ii) The maximum drawbar pull under unballasted condition was observed as **19.94 & 19.12 kN** against the declaration of **16.54** kN in case of previous & present sample respectively, which meets the requirement of IS: 12207-2019 with regard to tolerance.
- iii) The maximum drawbar pull with ballast corresponding to 15% wheel slip was recorded as 27.36 kN & 23.13 kN in case previous & present sample respectively. The pull recorded in case of present sample 18.1 % lower than the previous sample .This indicates that the overall drawbar performance of tractor was found deteriorated. This should be looked into

14.3.1.3 Hydraulic performance test:

- Maximum lifting capacity throughout the range of lift at hitch point and standard frame was recorded as 22.95 kN & 12.73 kN respectively against the declaration of 21.5 kN & 13.34 kN respectively, which meets the evaluative requirement of IS: 12207-2019.
- ii) The lifting capacity at hitch point was observed as 97.1% of total mass of unballasted tractor, should be examined for its safe operation.

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iii) The moment about rear axle with standard frame was calculated as 19.60 kN-m. Whereas, the moment about front axle was calculated as 19.17 kN-m under unballasted condition and ballasted condition. The moment about rear axle is on higher side as compared to the moment about front axle even under ballasted condition. It is, therefore, recommended that the lifting capacity of the hydraulic system may be reduced suitably or standard ballast at front axle may be provided to avoid the front lifting of the tractor during operation.

14.3.1.4 Mechanical Vibration:

The amplitude of mechanical vibration on various assemblies marked as (*) in Chapter – 8 of this test report is on higher side. This calls for dampening down of vibrations especially on steering control wheel to improve the operational comfort and service life of components.

14.3.1.5 Haulage Test:

Specific fuel consumption (mm/km/tonne) with two wheel and four wheel was recorded as **28.23 to 28.95 ml/km/tonne** and 29.98 ml/**km/tonne** against the declaration of **30 to 45 ml/km/tonne** respectively. Which does not meet the requirement of IS: 12207-2019. This should be looked into for necessary corrective action.

14.3.1.6 Labelling plate:

The month & year of manufacture embossed on the labelling plate as 'EK', which does not meet the evaluative requirement of IS: 12207-2019. This should be in numerical form on the labelling plate.

14.4 Maintenance / Service Problems:

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

14.5 Recommendation with regard to safety on tractor:

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

- i) Longitudinal distance from SIP to center line of differential lock pedal should be as per the requirement of relevant IS code.
- ii) Vertical retainness should be provided at both side of clutch.
- iii) There should be provision for spark arresting device in exhaust system.
- iv) The working clearance around the draft & position controls should be provided as per IS: 12239 (Part-2) 1999 (Re-affirmed in 2014).

14.6 Adequacy of Literature supplied with machine:

- **14.6.1** The supplied literature was found adequate
 - a) Operators Manual for Mahindra 605 DI PS, 605 DI i , 605 DI MS,605 DI i 4WD S+ ,605 DI MS 4WD S+, 605 DI I Cab tractor models.
 - b) Spare part's catalogue for Mahindra 605 DI PS, 605 DI i , 605 DI MS,605 DI i 4WD S+ ,605 DI MS 4WD S+, 605 DI I Cab tractor models.
 - c) Workshop service manual for tractor part –I ,II & III for Mahindra 605 DI PS, 605 DI i ,605 DI MS,605 DI i 4WD S+ ,605 DI MS 4WD S+, 605 DI I Cab tractor models..
- **14.6.2** However, these literatures should be brought out in other vernacular languages of India for guidance of users



MAHINDRA, 605 DI PS TRACTOR (BRAND NAME: ARJUN NOVO)-COMMERCIAL -1st BATCH TEST THIS TEST REPORT IS VALID UPTO: 30/06/2025

15. Citizen charter

Test duration under citizen charter	Duration of Test	Whether the report released within time frame given in the citizen charter	Remark
10 Months	07 Months (November, 2019 to May, 2020)	Yes	None

TESTING AUTHORITY:

C.S RAGHUWANSHI AGRICULTURAL ENGINEER

Munun

C.V. CHIMOTE TEST ENGINEER

J.J.R. DIRECTOR

The report compiled by: Sh. Shivkumar Sharma, Senior Technical Assistant.

16. APPLICANT'S COMMENTS

Para No.	Our reference	Applicant's comments
16.1	14.6.2	Literatures are available in all languages of India.
16.2	14.3.1.3 (ii),(iii),14.5(i,ii,iii & iv)	Observation will be studied and necessary action will be incorporated.

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ANNEXURE- I

TRACTOR RUN HOURS DURING TEST

Α.	LABORATORY AND TRACK TESTS	HOURS
1.	Running-in (Engine & transmission)	47.0
2.	PTO performance test	11.2
3.	Drawbar performance test	19.2
4.	Power lift and hydraulic pump performance test	1.0
5.	Brake test	2.8
6.	Noise measurement	2.6
7.	Mechanical vibration test	0.8
8.	Nominal speed test	1.1
В.	HAULAGE TEST	4.9
C.	Miscellaneous test and other run hours including idle run,	4.8
	transportation, trials and preparation for test	
	TOTAL:	95.4