प्रारंभिक व्यावसायिक परीक्षण रिपोर्ट संख्या/No. : T- 1779/2310/2023

INITIAL COMMERCIAL TEST REPORT माह/Month : September, 2023

Application Reference No. 28/2022-23/130

(यह परीक्षण रिपोर्ट 30/09/2028 तक वैध है / THIS TEST REPORT IS VALID UPTO 30/09/2028)



Make of Agricultural Tractor: New Holland

Model : 3600-2 A5

Manufactured by : CNH Industrial (India) Pvt. Ltd.

Plot No.-03, Udyog Kendra, Greater Noida - 201 306, Distt. Gautam Budh Nagar, Uttar Pradesh,

India.



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

(An ISO 9001:2015 Certified Institute)
E-mail:fmti-mp@nic.in
Web site:http://www.fmttibudni.gov.in

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Telephone: 07564-299003

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IMPORTANT INFORMATION

The Government of India, Ministry of Agriculture and Farmers' Welfare has directed, vide a OM No. 13-17/2021-M&T(I&P) dated 28.07.2022, that since 15th August, 2022, only mandatory tests will be carried out on a tractor unless applicant has expressly requested for optional tests as well, mentioned in the above captioned OM.

In the instant case, there is no request from the applicant to carry out the optional tests hence only Mandatory Tests, as given below, have been conducted and reported in this report: -

- 1. PTO performance
- 2. Hydraulic performance
- 3. Drawbar performance
- 4. Brake performance

Month: September Test Report No.: T-1779/2310/2023 Year: 2023



GOVERNMENT OF INDIA CENTRAL FARM MACHINERY TRAINING & TESTING INSTITUTE TRACTOR NAGAR, BUDNI (MADHYA PRADESH) 466445, INDIA

E-mail: fmti-mp@nic.in

Web site: http://www.fmttibudni.gov.in

Telephone: 07564-299003

CENTRAL FARM MACHINERY TRAINING AND TESTING INSTITUTE - BUDNI

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[C] Tractor manufacturer's name and : CNH Industrial (India) Pvt. Ltd.,

address Plot No.-3, Udyog Kendra,

Noida-201306, Distt. Gautam Budh Nagar,

Greater

Uttar Pradesh, India.

[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:

-Engine : 50 -Transmission : 50

[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 : New Holland [C] Model (trade name) : 3600-2 A5

[C] Type : 4WD, Standard Agricultural Tractor.

[C] Month & year of manufacture : 07 & 2023 [D] Country of origin : India

1.1.2 Numbers:

[D] 1st Serial No. or prototype : NHN36020ZPA641132 [C] Serial No. : NHN36020ZPG661613

1.2 Engine:

[D] Manufacturer's address : CNH Industrial (India) Pvt. Ltd.,

Plot No.-3, Udyog Kendra, Greater Noida-201306, Distt. Gautam Budh Nagar,

Uttar Pradesh, India.

[C] Make : FPT

[C] Model : 8035.05D.940

[C] Type : Four stroke, naturally aspirated, liquid cooled,

direct injection, diesel engine.

[C] Serial No. : 412627DX

1.2.1 Cylinders:

[C] Number/disposition : Three, vertical, in-line

[D] Type of combustion chamber : Re-entrant cavity on piston crown

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6. SUMMARY OF OBSERVATIONS, COMMENTS & RECOMMENDATIONS

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:

SI. No.	Ch	aracteristic	Category (Evaluative / Non Evaluative)	Requirements as per IS: 12207-2022	Values declared by the applicant/ (D) Requirement	As observed	Whether meets the requirem- ents (Yes/No)
1		2	3	4	(R) 5	6	7
•	MAN			inistry's Office Memorandum			
		d 28 th of July,					(10.11)
6.1.1		Performance:					
а)	unde (kW)	mum power r 2 h test, (Natural ent condition)	Evaluative	Declared value to be achieved with a tolerance of: ±5% for PTO power and or engine power >26 kW. ±10% for PTO power and or engine ≤ 26 kW.	33.6 (D)	33.3	Yes
b)		er at rated ne speed,	Non Evaluative	-do-	33.6 (D)	32.8	Yes
c)	cons	ific fuel umption sponding to mum power, Vh)	Evaluative	Should not be more than 10% of declared value.	255 (D)	273	Yes
d)		valent kshaft torque,	Non Evaluative	± 8%	200 (D)	189.4	Yes
e)	Back perce	-up torque, ent	Evaluative	Should be min. 12%	12, Min. (D) 12 (R)	27.4	Yes
f)	Maxii	mum operating	temperature, (
	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.	132 (D)	125	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.	124 (D)	106	Yes
g)	Engir cons (g/kV	umption,	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	2.73 Maximum (R)	0.87	Yes
h)	Smol	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). 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 (R)	0.33	Yes

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1	2	3	4	5	6	7
6.1.2	Drawbar performa	nce:				
a)	Max. drawbar pull with ballast corresponding to 15 percent wheel slip, (kN)	Non Evaluative	Minimum 70% of static mass of tractor with ballast.	22.6 (D) 		Not appli- cable
b)	Max. drawbar pull with standard ballast corresponding to 15 percent wheel slip, (kN)	Evaluative	In case of tractors having total static mass ≥ 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 ≤ 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.	15.00 (D) 15.55 (R) Minimum	21.83	Yes
с)	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 ≤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.	26.88 (D) 26.6 (R) Minimum	29.4	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.	132 (D)	105	Yes
6.1.3	Power lift and hyd					
a)	1) At hitch points	Evaluative	Should not be less than 90% of declared value.	17.65 (D) 15.89 (R) Minimum	19.64	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.	11.2 (D) 7.84 (R) Minimum	15.22	Yes
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	10	Yes

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4		2		F 6	7
614	2 Proke performance	3 2 ot 25 kmph	4	5 6	7
6.1.4	Brake performance		organista en la entre de en con	O NI on broke in a data	th == = -!
a)	ballast, (m):		orce, equal to or less than 600		
	1) Cold brake	Evaluative	10	10 (R) 7.27	Yes
	2) Hot brake	Evaluative	10	10 (R) 7.59	Yes
b)	Whether parking	Evaluative	Yes / No	Yes Yes	Yes
	brake is effective				
	at a force of 600 N				
	at foot pedal (s) or				
	400 N at hand				
6.1.5	lever OPTIONAL TESTS:				
0.1.5			I for any optional tests, there	efore no ontional tes	te wae
	conducted.	as not applied	i for any optional tests, then	eiore no optional tes	is was
6.1.6	Safety features :				
a)	Guards against	Evaluative	Belt drives, pulleys,	Meets the	Yes
u,	moving and hot	Lvaldative	silencer, hydraulic pipes	requirement	103
	parts		[As per IS 12239 (Part2)]		
b)	Lighting	Evaluative	As per CMVR	Conforms	Yes
,	arrangement		,		
c)	Seating	Non	Should meet the	Does not	No
	requirements	Evaluative	requirements of IS: 12343	meet the	
	(Tractors having		(As amended from time to	requirement	
	more than 1150		time)		
	mm rear track				
	width)				.,
d)	Technical	Non	Should meet the	Meets the	Yes
	requirements for	Evaluative	requirements of IS: 4931	requirement	
	PTO shaft		(As amended from time to time)		
e)	Dimensions of	Non	Should meet the	Does not	No
()	three point linkage	Evaluative	requirements of IS:	meet the	110
	l moo pomit mintago	_ raidaliro	17231(As amended from	requirement	
			time to time)		
f)	Specifications of	Non	Should meet the	Does not	No
	linkage drawbar	Evaluative	requirements of IS: 12953	meet the	
			(As amended from time to	requirement	
			time)		
g)	Swinging drawbar	Non	Should meet the	Not fitted	Not
	(wherever fitted)	Evaluative	requirement of IS: 12362		appli- cable
			(Part 3) (As amended from		Cable
h)	Audible wereige	Evaluative	time to time)	Audible wereine	Voc
h)	Audible warning signal on tractor	⊏valuative	If tractor travel speed in reverse gear exceeds 20	Audible warning signal on tractor	Yes
	Signal on tractor		kmph, an audible warning	gets activated	
			signal on tractor shall get	when travel speed	
			activated.	in reverse gear	
			A sticker to the effect that	exceeds 20 kmph.	
			"operating the tractor		
			beyond 20 kmph speed in		
			reverse gear is not safe"		
			should be prominently		
			displayed.		

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1		2	3	4	5	6	7
6.1.7	Lak	celling of tracto	rs (Provision o	of labelling plate):			
	1)	Make	Evaluative	Should conform to the	New H	lolland	Yes
	2)	Model	Evaluative	requirements of CMVR	3600-	-2 A5	Yes
	3)	Month &	Evaluative	along-with declared value	07 &	2023	Yes
		Year of		of PTO in kW, Specific fuel			
		manufacture		consumption (SFC)			
	4)	Engine	Evaluative	corresponding to maximum	4126	627DX	Yes
		number		power in g/kWh and year of			
	5)	Chassis	Evaluative	manufacture in numerical		020ZPG	Yes
		number		form	66	1613	
	6)	Maximum	Evaluative	MM YY	33	3.6	Yes
		PTO power,		Digit 01-12 in box No. 1 for			
		(kW)		MM will represent the			
	7)	Specific fuel	Evaluative	month and next two digit in	2	55	Yes
		consumption,		the box No. 2 for YY will			
		(g/kWh)		represent the year of			
				manufacturing.			
6.1.8	Literature (Submission to test agency):						
(a)		erator manual	Evaluative	The printed literature in	Provi	dod	Yes
(b)		ts Catalogue	Evaluative	booklet form should be	Provi		Yes
		rkshop/	Evaluative	provided as per IS 8132	Provi		Yes
(c)		vice manual	Evaluative	and should submit along	PIOVI	ueu	res
	Sei	vice manuai		with the test sample.			
6.1.9	Fitr	ment of Roll Ov	er Protective S	Structures (ROPS):			
0.1.5		tractor having	Evaluative	ROPS should meet the	Not fi	tted	Not
	mo	•	Lvaldative	requirement of IS:11821 or	1400111	lica	applicable
	mm	_		OECD code or equivalent			арріюцью
	wid			International Standard.			
6.1.10		ndard	Evaluative	Trailer hitch, front tow	Provi	ded	Yes
		essories		hook, linkage drawbar	1 1001	-54	. 00
	, 100	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		should be provided with			
				tractor			
6.1.11	Acc	essories	Non	Ballast weight, if fitted,	Not fi	tted	Not
		tional)	Evaluative	should meet the			applicable
	(5)	,		requirement of CM\/D			

6.2	CATEGORY O	F BREAKDOW	/NS / DEFECTS (As per clause 5.0 o	f IS:12207-20	22):
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

requirement of CMVR

vi)

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6.3 Conformity with following IS:

i) Guidelines for declaration of power and specific fuel consumption and labeling of : Conforms agricultural tractors (First revision) [IS:10273 -1987 (Reaffirmed Year 2019)]

Agricultural tractors - Rear mounted power take-off - Types 1, 2 and 3 (third : ii) Conforms revision) [IS:4931-1995 (Reaffirmed Year 2019)]

iii) Agricultural wheeled tractors - Rear mounted three-point linkage; Categories : Does not 1N,1,2N, 2, 3N,3 & 4N and 4 [IS:17231-2019] conform

Drawbar for agricultural tractors – Link type [IS 12953:1990 (Reaffirmed Year : Does not iv) 2022)] conform

v) Agricultural tractors- Operator's seat technical requirement [IS12343 - 2021] Does not conform

Guide for safety & comfort of operator of agricultural tractors:Part 1 General: Does not

requirements (first revision):[IS 12239 (Part 1) - 2018] Tractors and machinery for agriculture and forestry - Technical means for : vii) Does not ensuring safety Part 2: Tractors (first revision) (IS 12239 (Part 2) 1999) conform (Reaffirmed Year 2019)]

viii) Guide lines for location and operation of operator controls on agricultural tractors : Conforms and machinery [IS: 8133 - 2021]

ix) Tractors and machinery for agriculture and forestry, powered lawn and garden: Conforms 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)]

Agricultural Tractors and Machinery-Lighting device for travel on public roads : Conforms x) (IS:14683-1999) (Reaffirmed Year 2019)]

6.4 **Salient Observations:**

Dimension of Three Point Linkage:

The following parameters does not meet the requirements of IS: 4468 (Part-I) – 1997 and needs to be looked into for necessary corrective actions:

- The width of the ball of upper hitch point has been measured as 43.9 mm against the requirement of 50.5 to 51.0 mm.
- Lateral distance from lower hitch point to centre line of tractor has been measured as 434 mm against the requirement 435 mm.

6.4.2 Dimension of drawbar Linkage:

The length of linkage drawbar has been measured as 822 mm against the requirement of 823.5 to 826.5 mm which does not meet the requirement of IS: 12953-1990. This should be looked into for necessary corrective action.

Operator's seat: 6.4.3

The following parameters does not meet the requirement of IS: 12343-2021:

- Inclination of back rest has been measured as 17 degrees against the requirement of 10±5
- Provision for adjustment of driver's mass has been specified as 50 to 120 kg against the requirement of 40 to 100 kg.
- Vertical distance of SIP from accelerator pedal has been measured as 550 mm against the requirement of 230 to 460 mm.
- Vertical distance from SIP to centre of steering control wheel has been measured as 150 mm against the requirement of 265 to 385 mm.
- Vertical distance of SIP from foot rest has been measured as 600 mm against the requirement of 450 to 520 mm.

Therefore, all of the above should be looked into for necessary corrective action.

conform

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6.4.4 Operator's work place:

The following parameters does not meet the requirement of IS: 12239 (Part-I) 2018.

- i) Vertical retainers on inner side of clutch and brake pedals have not been provided.
- ii) Spark arresting device has not been provided in the exhaust system.

Therefore, all of the above should be looked into for necessary corrective action.

6.4.5 PTO master shield:

PTO master shield has not been provided on tractor as per IS:12239-1999 (Part-2). This should be looked into for necessary corrective action.

6.5 Specification of Tractor:

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

		A = = = = O = = = if: = = f' = =	
S.	Description	As per Specification	As per Operator's manual
No.	Description	Sheet	As per operator s mandar
a)	Multi speed PTO & reverse PTO	Not available	Available
	speed		(P. No. 6-7, 6-8, 6-9, 6-5,
			6-6, 6-7, 6-8, 6-9 & 6-10)
b)	Maximum drawbar pull with standard	15.0	19.2 (P. No. 6-13)
,	ballast, (kN)		,
c)	Maximum drawbar pull with ballast,	22.6	22.95 (P. No. 6-13)
	(kN)		,
d)	Coolant recommended	AMBRA	Extended life OAT & 1:1
		AGRIFLU-OT	(P. No. 9-20)
e)	Steering oil capacity, (I)	2.0	2.7 (P. No. 7-7)
f)	Front axle housing oil capacity, (I)	5.5	7.5 (P. No. 7-7)
g)	Total coolant capacity, (I)	10.3	10.8 (P. No. 7-7)
h)	Coolant water ratio	1:4	3:7 (P. No. 7-7)
i)	Service schedule for transmission oil	NA	First change after 50 hours
	filter		and subsequently after
			300 hours of operation.
			(P. No. 7-2, 7-8, 7-9)
j)	High idle speed of engine, rpm	2450 ± 70	2450 ± 50 (P. No. 9-8)

6.6 Maintenance / Service Problems:

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

6.7 Recommendation with regard to safety on tractor:

i) Identification of hand controls by colour coding (4WD engaging lever, differential locks & PTO engage lever-yellow colour) has not been provided as per the requirement as laid down in Table – 5 of IS: 8133-2021.

Above parameters should be looked into for necessary corrective action.

6.8 Adequacy of Literature supplied with machine:

- **6.8.1** The following literatures were supplied with the test tractor for reference during the test:
 - a) Operator Manual for "New Holland ,3600-2A,3600-2 A1,3600-2 A3,3600-2 A4,3600-2 A5" ,4710 E,4710 E1,4710 E2,4710 E3, 4710 E4 & 4710 E5 tractor models.
 - b) Parts catalogue for "New Holland 3600-2 A5" tractor model.
 - c) Service manual Part I, II & III for "New Holland "3600-2 A5" tractor models.
- **6.8.2** 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) Safe hitch height while using trailer.
 - ii) Recommended ballast masses for different operations.

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

C.S. RAGHUWANSHI AGRICULTURAL ENGINEER	La human
C. V. CHIMOTE TEST ENGINEER	Museument
A.K. UPADHYAY DIRECTOR (I/C)	Me

Draft Test Report compiled by C.S. Raghuwanshi, Agricultural Engineer.

7. APPLICANT'S COMMENTS

Para No.	Our reference	Applicant's comments
7.1	6.4.1,6.4.2,6.4.3,6.4.4,6.4.5, & 6.7	Your valuable comments and suggestions for improvements are well taken. Under our policy of continuous product improvement, these aspects are being looked into further, and we will take appropriate actions to eliminate these deviations soon wherever necessary.
7.2	6.5 & 6.8.2	We will study this further, and appropriate actions
		will be taken.

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ANNEXURE-I

TRACTOR RUN HOURS DURING TEST

A.	LABORATORY AND TRACK TESTS:	HOURS
1.	Running-in	Applicant has declared it to be conducted on their work place.
2.	PTO performance test	14.0
3.	Power lift and hydraulic pump performance test	0.9
4.	Drawbar performance test	3.0
5.	Brake performance test	2.1
6.	Nominal speed test	2.8
В.	Miscellaneous test and other run hours including idle run, transportation, trials and preparation for test	5.7
	TOTAL:	28.5