प्रारंभिक व्यावसायिक परीक्षण रिपोर्ट संख्या/No. : T- 1778/2309/2023

INITIAL COMMERCIAL TEST REPORT माह/Month : September, 2023

Application Reference No. 28/2022-23/129

(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 : 4710 E

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 द्रैक्टर नगर, बुदनी (म.प्र.) 466 445

CENTRAL FARM MACHINERY TRAINING & TESTING INSTITUTE

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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 15<sup>th</sup> 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-1778/2309/2023 Year: 2023



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

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CENTRAL FARM MACHINERY TRAINING AND TESTING INSTITUTE - BUDNI

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# T-1778/2309/2023 NEW HOLLAND, 4710 E TRACTOR - INITIAL COMMERCIAL TEST THIS TEST REPORT IS VALID UPTO: 30/09/2028

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

address

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

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) : 4710 E

[C] Type : Four Wheel Driven (4WD), Standard

Agricultural Tractor.

[C] Month & year of manufacture : 11 & 2022
[D] Country of origin : India

1.1.2 Numbers:

[D] 1<sup>st</sup> Serial No. or prototype : NHN47100ZKL497851 [C] Serial No. : NHN47100ZNL637362

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,942

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

direct injection, diesel engine.

[C] Serial No. : 389486 DX

1.2.1 Cylinders:

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

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

#### NEW HOLLAND, 4710 E TRACTOR - INITIAL COMMERCIAL TEST

THIS TEST REPORT IS VALID UPTO: 30/09/2028

### 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.	Cha	aracteristic	Category (Evaluative / Non Evaluative)	Requirements as per IS: 12207-2022	Values declared by the applicant/ (D) Requirement (R)	As observed	Whether meets the requirem- ents (Yes/No)
1		2	3	4	5	6	7
	MAN	DATORY TES	ΓS: (As per M	inistry's Office Memorandum	1 No. 13-17/	2021-M&	T (I&P)
		d 28 <sup>th</sup> of July, :	2022).				
6.1.1		Performance:					
a)		mum power	Evaluative	Declared value to be achieved with a tolerance of: ±5% for PTO	31.7	32.0	Yes
	under 2 h test,			power and or engine power >26	(D)		
		(Natural		kW. ±10% for PTO power and or			
		ent condition)		engine ≤ 26 kW.			
b)		r at rated	Non	-do-	31.7	31.2	Yes
		ie speed,	Evaluative		(D)		
	(kW)					0= 1	
c)		ific fuel	Evaluative	Should not be more than	255	254	Yes
		umption		10% of declared value.	(D)		
		sponding to mum power,					
	(g/kW						
d)	Maxir	,	Non	± 8%	180	169.7	Yes
۵,	equiv		Evaluative	± 070	(D)	10011	. 00
		shaft torque,			(-)		
	(Nm)	. ,					
e)	Back	-up torque,	Evaluative	Should be min. 12%	12, Min. (D)	19.8	Yes
	perce				12 (R)		
f)		mum operating		°C):			
	1)	Engine oil	Evaluative	The declared value should not exceed the Max value specified	134 (D)	122	Yes
				by the oil company and the			
				observed value under natural			
				ambient/high ambient condition			
				should not exceed the declaration.			
	2)	Coolant	Evaluative	Observed value should not	124 (D)	89	Yes
	,			exceed the declared value or	( )		
				boiling point of coolant at radiator cap pressure w hichever is low er.			
				The boiling point of the coolant at			
				radiator pressure shall be			
				provided by the applicant.			
g)	Engir		Evaluative	Not exceeding 1% of SFC at Max pow er under natural ambient	2.54	0.134	Yes
		umption,		condition. The value would be	Maximum		
	(g/kV	/TI)		based on the test conducted	(R)		
				under natural ambient condition		ļ	
				Maximum light absorption coefficient of 3.25 per meter or			
				equivalent BOSCH No. 5.2 or 75	3.25 per		
		1		Hatridge value ( <b>As per CMVR</b> ).	meter		
h)	Smok	ke level, m <sup>-1</sup>	Evaluative	Max Smoke level shall be	Maximum	0.11	Yes
				reported out of 6 readings tested as per IS 12062 and observed	(R)	1	
				value should be well within the	( -/	1	
				required limits.			

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#### NEW HOLLAND, 4710 E TRACTOR - INITIAL COMMERCIAL TEST

THIS TEST REPORT IS VALID UPTO: 30/09/2028

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 E valuative	Minimum 70% of static mass of tractor with ballast.	Ballasi recomm		Not appli c-abl e
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.	14.3 (D) 15.5 (R) Minimum	20.12	Yes
c)	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.	25.4 (D) 25.6 (R) Minimum	28.3	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)	106	Yes
6.1.3	Power lift and hyd					
a)	1) At hitch points	acity througho Evaluative	ut the range of lift, (kN): Should not be less than 90% of declared value.	17.65 (D) 15.89 (R) Minimum	19.16	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) 7.53 (R) Minimum	15.20	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 E valuati ve	The observed value should not exceed 50 mm.	50 (D) Maximum	20	Yes

# NEW HOLLAND, 4710 E TRACTOR - INITIAL COMMERCIAL TEST

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	11113 TEST REPORT 13 VALID OF 10: 30/03/2020						
1	2	3	4	5	6	7	
6.1.4	Brake performance	•					
a)	ballast, (m):		orce, equal to or less than 600	·			
	1) Cold brake	Evaluative	10	10 (R)		es	
	2) Hot brake	Evaluative	10	10 (R)		'es	
b)	Whether parking	Evaluative	Yes / No	Yes	Yes Y	es	
	brake is effective						
	at a force of 600 N						
	at foot pedal (s) or						
	400 N at hand						
6.1.5	lever OPTIONAL TESTS	<u> </u>					
0.1.5			d for any optional tests, there	efore no ontio	nal toete w	126	
	conducted.	as not applied	a for any optional tests, there	eiore no optioi	iiai ie sis w	as	
6.1.6	Safety features :						
a)	Guards against	Evaluative	Belt drives, pulleys,	Meets th	vo V	es	
aj	moving and hot	L valuative	silencer, hydraulic pipes	requireme		U3	
	parts		[As per IS 12239 (Part2)]	10quii oilic			
b)	Lighting	Evaluative	As per CMVR	Meets th	ie Y	es	
/	arrangement			requireme			
c)	Seating	Non	Should meet the	Does no		No	
,	requirements	Evaluative	requirements of IS: 12343	meet the	е		
	(Tractors having		(As amended from time to	requirem	ent		
	more than 1150		time)				
	mm rear track						
	width)						
d)	Technical	Non	Should meet the	Meets the		es	
	requirements for Evaluative requirements of IS: 4931		requireme	ent			
	PTO shaft		(As amended from time to time)				
e)	Dimensions of	Non	Should meet the	Does no	>+ N	No	
<del>e</del> )	three point linkage	Evaluative	requirements of IS: 4468	meet the		10	
	Timee point inikage	L valuative	(Part-I) (As amended from	requireme			
			time to time)	roquironii			
f)	Specifications of	Non	Should meet the	Doesno	ot N	No	
,	linkage drawbar	Evaluative	requirements of IS: 12953	meet the	e		
			(As amended from time to	requireme	ent		
			time)	-			
g)	Swinging drawbar	Non	Should meet the	Not fitted		lot	
	(wherever fitted)	Evaluative	requirement of IS: 12362			opli- able	
			(Part 3) (As amended from		Ca	אטופ	
			time to time)				
<b>b</b> \	Audiblee.:	Evelvetive	If treater travel aread in	Audible	orning V	<b>'05</b>	
h)	Audible warning signal on tractor	Evaluative	If tractor travel speed in	Audible w signal on	-	es	
	aignai on tractor		reverse gear exceeds 20 kmph, an audible warning	gets activated			
			signal on tractor shall get	travel spee			
			activated.	reverse	gear		
			A sticker to the effect that	exceeds 20 ki			
			"operating the tractor		'		
			beyond 20 kmph speed in				
			reverse gear is not safe"				
			should be prominently				
			displayed.				

6.1.10

6.1.11

Standard

Accessories

Accessories

(optional)

Evaluative

Non

Evaluative

# NEW HOLLAND, 4710 E TRACTOR - INITIAL COMMERCIAL TEST THIS TEST REPORT IS VALID UPTO: 30/09/2028

1		2	3	4	5	6	7
6.1.7	Lab	elling of tracto	rs (Provision o	f labelling plate):			
	1) Make Eva		Evaluative	Should conform to the	New	Holland	Yes
	2)	Model	Evaluative	requirements of CMVR	47	710 E	Yes
	3)	Month &	Evaluative	along-with declared value	1	1/2022	Yes
		Year of		of PTO in kW, Specific fuel			
		manufacture		consumption (SFC)			
	4)	Engine	Evaluative	corresponding to	38	9486DX	Yes
		number		maximum power in g/kWh			
	5)	Chassis	Evaluative	and year of manufacture in	NHN	47100ZNL	Yes
		number		numerical form		37362	
	6)	Maximum	Evaluative	MM YY	;	31.7	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		255	Yes
		consumption,		the box No. 2 for YY will			
		(g/kWh)		represent the year of			
				manufacturing.			
6.1.8	Lite	rature (Submis	sion to test ag	ency):			
(a)		erator manual	Evaluative	The printed literature in	Pro	vided	Yes
(b)	Par	ts Catalogue	Evaluative	booklet form should be	Pro	vided	Yes
(c)	Wo	rkshop/	Evaluative	provided as per IS 8132	Pro	vided	Yes
'	Service manual			and should submit along			
				with the test sample.			
6.1.9	Fitn	nent of Roll Ove	er Protective S	tructures (ROPS):	·		
	For	tractor having	Evaluative	ROPS should meet the	Not	fitted	Not
	mor			requirement of IS:11821			applicable
	mm			or OECD code or			
	widt	:h		equivalent International			
				Standard.			

	(5)		requirement of CMVR				
6.2	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		

hook,

tractor

should

Trailer hitch, front tow

should be provided with

Ballast weight, if fitted,

meet

linkage drawbar

Provided

Not fitted

Yes

Not

applicable

#### NEW HOLLAND, 4710 E TRACTOR - INITIAL COMMERCIAL TEST

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#### 6.3 Conformity with following IS:

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

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

iii) Agricultural wheeled tractors – Rear mounted three-point linkage: IS : **Does not** 17231:2019/ISO 730:2009. **conform** 

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

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 : Does not requirements (first revision):[IS 12239 (Part 1) - 2018] conform

vii) Tractors and machinery for agriculture and forestry – Technical means for : 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 : Does not tractors and machinery [IS: 8133 - 2021] conform

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)]

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

#### 6.4 Salient Observations:

#### 6.4.1 Dimension of Three Point Linkage:

The following parameters does not meet the requirements of IS 17231:2019/ISO 730:2009 and needs to be looked into for necessary corrective actions:

- i) Diameter of hitch pin hole of upper and lower hitch points has been measured as 25.78 and 28.76 mm against the requirement of 19.30 to 19.50 mm and 22.40 to 22.65 mm respectively.
- ii) The width of the ball of lower hitch point has been measured as 45.0 mm against the requirement of 34.5 to 35.0 mm.
- iii) Lateral distance from lower hitch point to centre line of tractor has been measured as 364 mm against the requirement 359 mm.
- iv) Distance from end of power take-off to centre of lower hitch point (lower links in horizontal position) has been measured as 610 against the requirement of 500 to 575 mm.

#### 6.4.2 Operator's seat:

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

- i) Vertical adjustment upward and downward from the mid position has not been provided.
- ii) Provision for adjustment of driver's mass has been specified as 50 to 120 kg against the requirement of 40 to 100 kg.
- iii) Vertical distance from SIP to centre of accelerator pedal has been measured as 540 mm against the requirement of 230 to 460 mm.

Does not

conform

#### NEW HOLLAND, 4710 E TRACTOR - INITIAL COMMERCIAL TEST

#### THIS TEST REPORT IS VALID UPTO: 30/09/2028

- iv) Vertical distance from SIP to centre of steering control wheel has been measured as 245 mm against the requirement of 265 to 385 mm.
- v) 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.

#### 6.4.3 Operator's work place:

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

- i) Vertical retainers on outer 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:

S. No.	Description	As per Specification Sheet	As per Operator's manual
a)	Tractor Model	4710 E	4710 Excel
	High idle speed of engine, rpm	2450 ± 70	2450 ± 50
b)	Total coolant capacity, I	10.3	10.8
c)	Coolant recommended	AMBRA AGRIFLU-OT	Extended life OAT
d)	Total lubrication oil capacity, I	7.0	7.2
e)	Transmission oil & hydraulic oil capacity, I	23.0	25.0
f)	Wheel base, mm	2005	2040
g)	Nominal speed, kmph		
h)	Forward	2.75 to 33.92	2.75 to 33.95
i)	Reverse	2.91 to 35.84	2.91 to 35.87

#### 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) Differential lock has not been provided.
- ii) Identification of work lamp by symbol has not been provided as per the requirement of IS: 6283(Part-1)-2006 (Reaffirmed January,2019).
- iii) Colour codes on illuminated display has not been provided as per the requirement as laid down in IS: 6283 (Part 2): 2007.
- iii) 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.
- iv) The working clearance between PTO clutch lever and LHS mudguard has been measured as 65 mm, against the minimum requirement of 70 mm as per the requirement of IS: 12239 (Part II) 2019.

Above parameters should be looked into for necessary corrective action.

# NEW HOLLAND, 4710 E TRACTOR - INITIAL COMMERCIAL TEST

### THIS TEST REPORT IS VALID UPTO: 30/09/2028

- 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 4710 E" tractor model.
  - b) Parts catalogue for "New Holland 4710 E" tractor model.
  - c) Service manual Part I, II & III for "New Holland 4710 E" tractor model.
- 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.

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

#### **TESTING AUTHORITY**

B.N. DIXIT AGRICULTURAL ENGINEER	B and a second s
C. V. CHIMOTE TEST ENGINEER	Etimen C
A.K. UPADHYAY DIRECTOR(I/C)	Me

Draft Test Report compiled by B.N. Dixit, Agricultural Engineer

#### 7. APPLICANT'S COMMENTS

Para No.	Our reference	Applicants comments
7.1	Clause No. 6.4.1, 6.4.2, 6.4.3, 6.4.5, &	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
7.2	6.7 Clause No. 6.5 & 6.8.2	these deviations soon wherever necessary.  We will study this further, and appropriate actions will be taken.

#### ANNEXURE-I

#### TRACTOR RUN HOURS DURING TEST

LABORATORY AND TRACK TESTS:	HOURS
Running-in	Applicant has declared it to be conducted on their work place.
PTO performance test	14.29
Power lift and hydraulic pump performance test	3.34
Drawbar performance test	3.38
Brake performance test	2.0
Nominal speed test	2.28
Miscellaneous test and other run hours including idle run, transportation, trials and preparation for test	1.00
TOTAL:	26.29
	Running-in  PTO performance test  Power lift and hydraulic pump performance test  Drawbar performance test  Brake performance test  Nominal speed test  Miscellaneous test and other run hours including idle run, transportation, trials and preparation for test

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