

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

संख्या/No. : T-1551/2079/2021
माह/Month : June, 2021

(यह परीक्षण रिपोर्ट 30/06/2024 तक वैध है/ THIS TEST REPORT IS VALID UPTO 30/06/2024)



SWARAJ, 724 FE 4WD 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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T-1551/2079/2021	SWARAJ, 724 FE 4WD TRACTOR COMMERCIAL -INITIAL
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Manufacturer : M/s. Mahindra & Mahindra Ltd.
Farm Equipment Sector - Swaraj
Division, Phase- IV - Industrial Area,
Mohali, Punjab – 160 055 – India.

Location of other manufacturing plant (apa) : i) M/s. Mahindra & Mahindra Ltd.
(Farm Equipment Sector) Agri
Development Center, Vill – Mehla, Tehsil.
– Dudu, Jaipur-Ajmer Road.
ii) **Mahindra & Mahindra Ltd.** (Farm
Equipment Sector) Near Bidar “T”
Junction, Mahindra Nagar, Zaheerabad-
502220, Medak District, Andhra Pradesh.
iii) Deepak Diesel Pvt.Ltd. Survey no.287/1,
Shapar village Main Road, Shapar
(Veral), Dist.Rajkot-360024. (Deepak
Diesel Pvt Ltd is a contract manufacturer
for Mahindra & Mahindra Ltd.)

Test requested by (applicant) : The manufacturer
Place of running-in : At manufacture works place
Duration of said running-in, (h):
- Engine : 28
- Transmission : 32
Method of Selection : The tractor was submitted directly by the
applicant for test as the ministry has
exempted random selection of tractor upto
31.03.2021

1. SPECIFICATIONS

1.1 Tractor:

Make : Swaraj
Model : 724 FE 4WD
Brand, if any : None
Type : Four wheeled, 4WD, Unit construction,
Agricultural Tractor

Month & Year of manufacture : 10 20
Chassis serial number : MBNAA45ADLTM89637
Country of origin : India

1.2 Engine:

Make : SWARAJ
Model : RV2XM+3A
Type : Four stroke, naturally aspirated, liquid
cooled, direct injection, diesel engine.

Serial number : CH.1368/SBH02813
Year of manufacture : 2020

1.2.1 Engine speed(Manufacturer’s recommended production setting), (rpm):

- Maximum speed at no load : 1900 to 2000
- Low idle speed : 580 to 700
- Speed at maximum torque : 1000 to 1400

Rated speed, (rpm):

- For PTO use : 1800
- For drawbar use : 1800

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14.4 Brakes:

Description	Initial specified thickness of brake lining, (mm)	Measured thickness of brake lining after test, (mm)	Measured depth of oil groove of brake disc, (mm)	Minimum permissible depth of oil groove of brake disc, (mm)
Left	4.8±0.1	4.81 to 4.82	0.46 to 0.52	Wear up to oil groove depth
Right	4.8±0.1	4.77 to 4.82	0.47 to 0.52	

14.5 Front axle:

Condition of front axle bushes, seals & bearings : Normal
 Any visual damage, pitting & chipping of front axle transmission gear teeth : None
 Condition of center pin & bushes : Normal
 Clearance between centre pin and bushes, (mm) : 0.08 to 0.09 | Against discard limit of 0.80mm

14.6 Steering system:

Visual condition of the components of complete steering assembly : Normal

14.7 Starter motor & Alternator:

Presence of soil/oil in housing : None
 Condition of bearings and other Components : Normal

15. ADJUSTMENTS, DEFECTS, BREAKDOWNS AND REPAIRS

S. No.	Adjustments/Defects/Breakdowns/Repairs	Tractor run hours
--	-None-	--

16. SUMMARY OF OBSERVATIONS, COMMENTS & RECOMMENDATIONS

16.1 On the basis of test conducted the performance results have been summarized as evaluative (mandatory) / Non-evaluation (Non-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:

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
16.1.1	PTO Performance:					
a)	Maximum power under 2 hr test, (kW) (Natural ambient condition)	Evaluative	Declared value to be achieved with a tolerance of ±5 percent for PTO power and or engine power > 26 kW ±10 percent for PTO power and or engine ≤ 26 kW	15.9 (D)	15.3	Yes
b)	Power at rated engine speed, (kW)	Non-Evaluative	-do-	15.9 (D)	15.3	Yes

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1	2	3	4	5	6	7
c)	Specific fuel consumption corresponding to maximum power, (g/kWh)	Evaluative	+10 percent Max.	268(D)	265	Yes
d)	Maximum equivalent crankshaft torque, (Nm)	Non-Evaluative	± 8 percent	98.0 (D)	99.9	Yes
e)	Back-up torque, percent	Evaluative	12 percent	12 % (D) 12 % (R)	23.2	Yes
f)	Maximum operating temperature, (°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)	108	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.	118 (D)	98	Yes
g)	Engine oil consumption, (g/kWh)	Evaluative	Not exceeding 1% of SFC at max. power under High ambient conditions	2.68(D) 2.65 (R)Maximum	0.68	Yes
h)	Smoke level	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 (R)Maximum	0.20	Yes
16.1.2	Drawbar performance:					
a)	Max. drawbar pull with ballast as the case may be corresponding to 15 percent wheel slip or 7 percent track slip, kN	Evaluative	Minimum 70 percent of static mass with ballast	Ballasting not recommended by the manufacturer	Not applicable	Not applicable
b)	Max. drawbar pull without ballast as the case may be corresponding to 15 percent wheel slip or 7 percent track slip, kN	Evaluative	Minimum 70 percent of static mass of tractor without ballast or with standard ballast , as the case may be	8.60 (D) 8.72 (R)	9.68	Yes

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1	2	3	4	5	6	7	
c)	Maximum drawbar power without ballast or with standard ballast as the case may be, 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.	12.7 (D) 11.5(R)Minimum	13.2	Yes	
d)	For tractors fitted with air conditioned /heated cabin: Maximum drawbar power without ballast, or with standard ballast as the case may be, kW	Evaluative	Minimum 70 % of PTO power as referred in SI No. i) a) of PTO performance in case of tractors having total static mass > 1500 kg	Not fitted	Not applicable	Not applicable	
e)	Max. transmission oil temperature, (°C)	Evaluative	The declared value should not exceed the maximum value specified by oil company	120 (D)Maximum	77	Yes	
16.1.3 Power lift and hydraulic pump performance:							
a)	Maximum lifting capacity throughout the range of lift, (kN):						
	1)	At hitch points	Evaluative	[Tolerance of ± 10%]	7.35 (D)	7.65	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	4.41 (D) 3.60 (R)Minimum	5.83	Yes
b)	Maximum drop in the height of the point of application of the force after each 5 min. interval for a total duration of 30 min/ mm	Non-Evaluative	The observed value should not exceed 50 mm.	50	10	Yes	
16.1.4 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):						
	1)	Cold brake	Evaluative	10	10 (R)	6.80	Yes
	2)	Hot brake	Evaluative	10	10 (R)	7.40	Yes
b)	Maximum force exerted on the brake pedal to achieve a deceleration of 2.5 m/s ² (N)	Evaluative	600	600(R)Maximum	250 to 285	Yes	

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1	2	3	4	5	6	7
c)	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 (R)	Yes	Yes
16.1.5	Noise measurement:					
a)	Maximum ambient noise emitted by the tractor at bystanders' position, dB(A)	Evaluative	88 dB(A) for >1.5 tonne GVW and 85 dB(A) for <1.5 tonne GVW (as per CMVR)	85(R) Maximum	80	Yes
b)	Maximum noise at operator's ear level dB(A)	Evaluative	As per CMVR	96(R) Maximum	92	Yes
16.1.6	Amplitude of mechanical vibrations at:					
	1) Left foot rest	Non-Evaluative	100 microns (max)	100 (R) Maximum	120	No
	2) Right foot rest				126	No
	3) Seat (with driver seated)				56	Yes
	4) Steering Wheel				147	No
16.1.7	Air cleaner:					
	Air cleaner oil pull over, (%)	Evaluative	0.25 % (max.)	Dry type air cleaner is provided	Not applicable	Not applicable
16.1.8	Haulage requirements:					
a)	Gross mass of the trailers, (tones):					
	Two wheel	Non-Evaluative	--	3.5 (D)	3.5	Yes
b)	Distance traveled / liter of fuel consumption, (km/l):					
	Two wheel	Non-Evaluative	--	5.0 to 8.0 (D)	7.13 to 8.44	No
c)	Fuel consumption, (ml/km/tonne):					
	Two wheel	Non-Evaluative	--	28 to 42 (D)	34 to 40	Yes
16.1.9	Wetland cultivation:					
	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	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-				

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1	2	3	4	5	6	7
16.1.1	Safety features:					
a)	Guards against moving and hot parts	Evaluative	Belt drives, pulley, silencer, hydraulic 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)	Tractors rear track width is less than 1150 mm		Not applicable
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)	Dimension of three-point linkage	Non-Evaluative	Should meet the requirements of IS 4468 (part 1) (as amended from time to time)	Meet the requirements		Yes
f)	Specification of linkage drawbars	Evaluative	Should meet the requirements of IS 12953 (as amended from time to time)	Meet the requirements		Yes
g)	Specification of Swinging drawbars	Evaluative	Should meet the requirements of IS 12362 (Part 3)	Not fitted		--
h)	1) Maximum travelling speed at rated engine speed in reverse gears, Kmph	Evaluative	Should not exceed 20 kmph	6.55 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 applicable		--
16.1.11	Labelling of tractors (Provision of labelling plate):					
	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 & next two digits in box No.2 for YY will represent the year of manufacturing.	SWARAJ		Yes
	2) Model	Evaluative		724 FE 4WD		Yes
	3) Month & Year of manufacture	Evaluative		10	20	Yes
	4) Engine number	Evaluative		CH.1368/ SBH02813		Yes
	5) Chassis number	Evaluative		MBNAA45ADL TM89637		Yes
	6) Declaration of PTO power, (kW)	Evaluative		15.9		Yes

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1	2	3	4	5	6	7
16.1.12	Discard limit for:					
(a)	Cylinder bore diameter, (mm)	Evaluative	To be specified by the manufacturer	100.225 (D)	100.019 to 100.027	Yes
(b)	Piston to cylinder liner Clearance at skirt (mm)	Non-Evaluative		0.60	0.098 to 0.099	Yes
(c)	Piston Diameter	Non-Evaluative	-do-	99.600	99.928 to 99.929	Yes
(d)	Ring end gap (mm):					
	- Top comp. ring	Evaluative	-do-	2.00	0.35	Yes
	- 2 nd comp. ring		-do-	2.00	0.50	Yes
	- Oil ring		-do-	2.25	0.40	Yes
(e)	Ring groove clearance (mm):					
	- Top comp. ring	Evaluative	-do-	0.50	Tapered	--
	- 2 nd comp. ring		-do-	0.50	0.067 to 0.068	Yes
	- Oil ring		-do-	0.50	0.029 to 0.030	Yes
(f)	- Diametrical clearance of main bearings	Evaluative	-do-	0.30	0.103 to 0.109	Yes
(g)	Clearance of big and small end bearings, (mm):					
	- Diametrical	Evaluative	-do-	0.30	0.074 to 0.076	Yes
	- Axial	Evaluative	-do-	0.60	0.30	Yes
(h)	- Crankshaft end float	Evaluative	-do-	0.60	0.25	Yes
(i)	Clearance between centre pin and bush, (mm)	Non-Evaluative	-do-	0.80	0.08 to 0.09	Yes
16.1.13	Literature (Submission to test agency)					
(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	As per relevant IS-8132 As per relevant	Provided	Yes
(b)	Parts Catalogue	Evaluative			Provided	Yes
(c)	Workshop/service manual	Evaluative			Provided	Yes
16.1.14	Fitment of Roll Over Protective Structures (ROPS): 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.	----	Not fitted	Not applicable
16.1.15	Standard accessories	Evaluative	Trailer hitch, front tow hook, linkage drawbar should be provided with the tractor	---	Provided	Yes
16.1.16	Accessories (optional)	Non-Evaluative	Ballast weights, if fitted, should meet the requirement of CMVR	---	Not fitted	Not applicable

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16.1.17 CATEGORY OF BREAKDOWNS / DEFECTS:					
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	No critical breakdown	None	Yes
2.	Major breakdowns	Evaluative	Not more than two and neither of them should be repetitive in nature	None	Yes
3.	Minor breakdowns	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.	None	Yes

16.2 Conformity with following IS:

- i) Guide lines for declaration of power and specific fuel consumption and labelling of agricultural tractors [IS10273: 1987 (Reaffirmed in Jan. 2019)] : Conforms
- ii) Agricultural tractors - Rear mounted power take-off - Types 1, 2 and 3 [IS:4931-1995 (Reaffirmed in Jan. 2019)] : Conforms
- iii) Agricultural wheeled tractors –Three-point linkage: Part 2- category 1 N (Narrow hitch) [IS 4468:1993: Part-2] (Reaffirmed in January,2019) ISO 730-1:1979 : Conforms
- iv) Drawbar for agricultural tractors – Link type [IS 12953:1990 (Reaffirmed in Oct. 2017)] : Conforms
- v) Agricultural tractors - Operator's seat technical requirement [IS 12343 –1998 (Reaffirmed in Jan. 2019)] : Not applicable as the rear track width is less than 1150 mm.
- vi) Guide for safety & comfort of operator of agricultural tractors: Part 1 General requirements: [IS 12239 (PT-1) 2018/ISO 4254-1:2013] : **Does not conform**
- vii) Tractors and machinery for agriculture and forestry – Technical means for ensuring safety Part 2: Tractors (IS 12239 (PT-2) 1999) (Reaffirmed in Jan. 2019)] : **Does not conform**
- viii) Guide lines for location and operation of operator controls on agricultural tractors and machinery (IS: 8133-1983 (Reaffirmed in Jan. 2019)] : **Does not conform**
- ix) Tractors and machinery for agriculture and forestry, powered lawn and garden equipment - Symbols for operator controls and other displays Part 2 Symbols for agricultural tractors and machinery [IS:6283 (Part-1)- 2006 and IS: 6283 (Part-2)- 2007 (Reaffirmed in Jan. 2019)] : **Does not conform**
- x) Agricultural Tractors and Machinery - Lighting device for travel on public roads (IS: 14683-1999) (Reaffirmed in Jan. 2019)] : Conforms

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16.3 Salient Observations:

16.3.1 Laboratory tests:

16.3.1.1 PTO Performance:

- i) The maximum PTO power was recorded as 15.3 kW against the declaration of 15.9 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 265 g/kWh against the declaration of 268 g/kWh, which is within the tolerance limit of IS: 12207-2019.
- iii) The maximum equivalent crankshaft torque was recorded as 99.9 N-m against the declaration of 98.0 N-m, which is within the tolerance limit of IS: 12207-2019.
- iv) The backup torque is 23.2% & meets the evaluative requirement of IS: 12207-2019.

16.3.1.2 Drawbar performance:

- i) Maximum drawbar pull without ballast corresponding to 15 percent wheel slip, (kN) was recorded as 9.68 kN against the minimum requirement of 8.72 kN, which meets the requirement of IS: 12207-2019 with regard to tolerance limit.
- ii) Maximum drawbar power without ballast condition was recorded as 13.2 kW against the minimum requirement of 11.5 kW which meets the evaluative requirement of IS: 12207-2019.

16.3.1.3 Hydraulic performance:

- i) The maximum lifting capacity at hitch points was observed as 7.65 kN against the declared value of 7.35 kN which is within the tolerance limit as specified in the IS: 12207-2019.
- ii) Maximum lifting at standard frame was recorded as 5.83 kN against the minimum requirement of 3.60 kN, which meets the requirement of IS: 12207-2019 with regard to tolerance limit.

16.3.1.4 Mechanical Vibration:

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

16.3.1.5 Haulage test:

Distance travelled / litre of fuel consumption has been recorded as 7.13 to 8.44 km/l against the declaration of 5.0 to 8.0 km/l, which does not meet the requirement of IS: 12207-2019 with regards to tolerance limit. This should be looked into for necessary corrective action at production level.

16.4 Field and haulage test:

16.4.1 Wet land cultivation (Puddling operation):

No ingress of mud/or water was noticed during puddling operation of the tractor. Hence, it meets the requirements of IS: 11082-1984 (Technical requirements of agricultural tractors for wetland operation). The tractor is found suitable for wetland operation (Puddling).

16.5 Maintenance / Service Problems:

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

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16.6 Recommendation with regard to safety on tractor:

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

- i) The provision of chart for indicating grease lubricant frequency, oil lubricant type and frequency should be provided on the tractor as per IS: 6283 (Part-1&2) – 2006 & 2007 (Re-affirmed in 2019).
- ii) Vertical retainness at both side of clutch pedal should be provided as per IS: 12239 (Part-1)-2018.
- iii) Hand holds for easy mounting & dismounting of the operator.
- iv) Provision for spark arrester in exhaust system should be provided as per IS-12239 (Part-I) 2018.
- v) Working clearance between draft control lever and RHS fender, PTO engaging lever & LHS fender should be provided as per IS: 12239 (Part-2) – 1999.
- v) PTO shaft master shield should be provided as per IS: 12239 (Part-2)-1996.
- vi) The fuel shut-off knob should be remained in stop position as per IS: 8133 - 1983.

16.7 Adequacy of Literature supplied with machine:

16.7.1 The supplied literature was found adequate


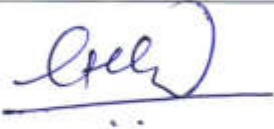

- a) Operator's manual of tractor model SWARAJ 724 FE 4WD.
- b) Parts catalogue of tractor model SWARAJ 724 FE 4WD.
- c) Service Manual of tractor model SWARAJ 724 FE 4WD.

16.7.2 The supplied literature was found adequate.

16.7.3 However, these literatures should be brought out in other vernacular languages of India for guidance of users.

TESTING AUTHORITY:

TESTING AUTHORITY:

C.V. CHIMOTE TEST ENGINEER	
Y.K.RAO SENIOR AGRICULTURAL ENGINEER	
P.K. PANDEY DIRECTOR	

Draft Test Report is compiled by: **C.S. Raghuvanshi**, Agricultural Engineer

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17. APPLICANT'S COMMENTS

Para no.	Our reference	Applicant comments
17.1	1.20.2, 1.20.3, 1.20.4, 1.20.5 & 16.5	These requirements are being revisited for necessary corrective action at our end.
17.2	16.2.1.4 & 16.2.1.5	Study and trials are under progress for necessary corrective action
17.3	16.6.3	Literatures are already printed in all regional languages for end user.

ANNEXURE – I

BRIEF SPECIFICATION OF IMPLEMENTS USED DURING FIELD TEST

S.No.	Item	MB Plough	Rotavator
1.	Make	Mahindra	Mahindra
2.	Type	Mounted	Mounted
3.	No. of bottom/blades	Two	16, in 4 flange
4.	Type of bottom/blades	General purpose	Hatchet
5.	Size of bottom/blades, (mm)	255	220 x 68 x 8
6.	Spacing of bottom/flanges, (mm)	170	190
7.	Lower hitch point span, (mm)	480	515
8.	Mast height, (mm)	375	365
9.	Overall dimensions, (mm):		
	- Length	1035	745
	- Width	760	1000
	- Height	840	790
10.	Gross mass, (kg)	75	100

ANNEXURE –II

BRIEF SPECIFICATION OF HALF CAGE WHEEL

S. No.	Particular	Specification
1	Type	Half cage wheel
2	Outer dia., (mm)	885
3	Width, (mm)	315
4	No. & type of lugs, (mm)	9 & angular type
5	Size of angle section, (mm)	40 x 40 x 5
6	Length of lug, (mm)	300
7	Spacing of lugs, (mm)	245
8	Weight of each cage wheel, (kg)	45

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ANNEXURE –III

BRIEF SPECIFICATION OF ROTAVATOR AS USED DURING PUDDLING TEST

S.No.	Item	Rotavator
1.	Make	Mahindra
2.	Type	Mounted
3.	No. of bottom/blades	16, in 4 flange
4.	Type of bottom/blades	Hatchet
5.	Size of bottom/blades, (mm)	220 x 68 x 8
6.	Spacing of bottom/flanges, (mm)	190
7.	Lower hitch point span, (mm)	515
8.	Mast height, (mm)	365
9.	Overall dimensions, (mm):	
	- Length	745
	- Width	1000
	- Height	790
10.	Gross mass, (kg)	100

ANNEXURE –IV

TRACTOR RUN HOURS DURING TEST

A.	LABORATORY AND TRACK TESTS:	HOURS
1.	Running-in	--
2.	PTO performance test	11.4
3.	Drawbar performance test	16.2
4.	Power lift and hydraulic pump performance test	4.8
5.	Turning ability& steering effort	1.0
6.	Location of centre of gravity	0.5
7.	Operator's field of vision	--
8.	Brake test	2.0
9.	Noise measurement	1.3
10.	Mechanical vibration test	1.0
11.	Theoretical speed test	1.3
B.	FIELD TEST:	
1.	Ploughing	11.0
2.	Rotavation	11.3
3.	Puddling (including water proof test)	15.4
C.	HAULAGE TEST:	6.9
D.	Miscellaneous test and other run hours including idle run, transportation, trials and preparation for test	3.9
	TOTAL:	88.0