

OECD Approval No. : 2/3 150
Date of approval : 22nd of May 2019

**Report on test in accordance with
OECD STANDARD CODE 2
for the Official Testing of Agricultural and Forestry Tractors**



Agricultural Tractor Make : TAFE
Model : TAFE 5900 DI
Type : 2 WD (MEA35E65 < 40 km/h Speed)
Manufactured by : M/s. Tractors and Farm Equipment Limited,
P.O. Box No.3302, 77 (Old 35), Mahatma
Gandhi Road, Nungambakkam, CHENNAI -
600 034, (Tamil Nadu), India.
Submitted for test by : The manufacturer
Report No. : T- 1244/1771/58/OECD/2019
Date : May , 2019

GOVERNMENT OF INDIA
Ministry of Agriculture and Farmers Welfare,
(Department of Agriculture, Cooperation and Farmers Welfare)
Mechanization and Technology Division
CENTRAL FARM MACHINERY TRAINING & TESTING INSTITUTE
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This is a report on a tractor test in accordance with **OECD STANDARD CODE 2** for the Official Testing of Agricultural and Forestry Tractors.

It does not contain an evaluation of the tractor on practical work.

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In this report unit of all performance characteristics are given corresponding to the International system of units.

The relationship to the Technical System of Units is given by the following conversions:

Force	1	kN	=	1000	N	=	102	kgf
Power	1	kW	=	1000	W	=	1.36	Ps
Pressure	1	MPa	=	10	bar	=	10.2	kgf/cm ²
	100	kPa	=	1000	mbar	=	750.1	mm of Hg

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Statement

The information opposite each item in the specification portion of this report has been validated by the Testing Station. An item marked [C] indicates to the test report user that the information declared by the manufacturer has been checked whereas an item marked [D] indicates that the manufacturer's declaration has been endorsed.

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[C]	Tractor manufacturer's name and address	:	M/s. Tractors and Farm Equipment Limited, P.O. Box No.3302,77 (Old 35), Mahatma Gandhi Road, Nungambakkam, CHENNAI - 600 034, (Tamil Nadu) India.
[D]	Location of tractor assembly	:	a) M/s. Tractors and Farm Equipment Limited, 10/205,Kalladipatti (P.O) PIN Code-624 201, Dindigul District, (Tamil Nadu) India. b) M/s. Tractors and Farm Equipment Limited, Doddaballapur Plant,Plot No. 1, Kiadb Industrial estate , Doddaballapur, Bangalore -561 203 , India.
[D]	Submitted for test by	:	The manufacturer
[C]	Selected for test by	:	Testing Authority in the agreement with the manufacturer
[C]	Place of running-in	:	At C.F.M.T&T.I, Budni (M.P.), India
[D]	Duration of running-in:		
	-Engine	:	12
	-Transmission	:	16
[C]	Date of start of test	:	9 th September, 2018
[C]	Location of test	:	Government of India, Central Farm Machinery Training and Testing Institute, P.O.- Tractor Nagar, BUDNI – 466445 (M.P.), INDIA
[C]	Code version	:	OECD Standard Code 2 (February, 2018)

1. SPECIFICATIONS OF TRACTOR

1.1 Identification:

1.1.1 Denomination:

[C]	Make of tractor	:	TAFE
[C]	Model (trade name)	:	TAFE 5900 DI
[C]	Type	:	2 WD, Agricultural tractor

1.1.2 Numbers:

[D]	1 st Serial No. or prototype	:	MEA35E65BG1089378
[C]	Serial No.	:	MEA35E65YJ1201467

1.1.3 Other specification (if applicable):

[D]	Model(s) for other countries	:	TAFE 5900 DI
[C]	Transmission type or gears x ranges	:	Mechanical, constant mesh gears. 8 forward, 2 Reverse gears.
[C]	Speed version	:	<40 km/h
[D]	Manufacturer identification or Technical type no.	:	MEA35E65

1.2	Engine:		
[C]	Make	:	SIMPSON & Co.Ltd.
[C]	Model	:	T II S433
[C]	Type	:	Four stroke, water cooled, direct injection, diesel engine
[C]	Serial No.	:	S433B01966
1.2.1	Cylinders:		
[C]	Number/disposition	:	Four , vertical, in-line
[D]	Bore/Stroke	:	91.4 mm / 127 mm
[D]	Capacity	:	3300 cm ³
[D]	Compression ratio	:	18.5 :1
[D]	Arrangement of valves	:	Overhead
[D]	Cylinder liners	:	Dry type
1.2.2	Supercharging	:	Not applicable
1.2.3	Fuel system:		
[C]	Fuel feed system	:	Gravity and force feed
	Water separator:		
[C]	Make	:	Engine Tech
[C]	Type	:	Centrifugal
[C]	Location	:	Below left hand side of engine
	Filter(s):		
[C]	Make	:	Bosch
[C]	Model	:	F 002 H20 151
[C]	Type	:	Primary and secondary- paper element
[C]	Number(s)	:	Two
[C]	Capacity of fuel tank	:	71.7 dm ³
	Injection pump:		
[C]	Make	:	Bosch
[C]	Model	:	9 400 030 607 ,PES4A85D320LS2820
[C]	Type	:	Plunger, in-line
[C]	Serial Number	:	85467990
	Manufacturer's production setting of injection pump:		
[D]	Flow rate (rated engine speed & full load)	:	12.75 to 13.25 dm ³ /h
[D]	Timing	:	16 ± 1 degree before TDC
	Injectors:		
[D]	Make	:	Bosch
[C]	Model	:	9 430 031 269
[C]	Type	:	Multi hole (Six holes)
[D]	Injection pressure	:	25.0 to 25.8 MPa

1.2.4**Governor:**

[C]	Make	:	Bosch, India
[D]	Model	:	RSV300...1200A2C2123-1R
[D]	Type	:	Inbuilt with FIP
[D]	Governed range of engine speed	:	700 to 2530 rev/min
[C]	Rated engine speed	:	2300 rev/min

1.2.5**Air cleaner:****Pre-cleaner:**

[D]	Make	:	KLN
[D]	Model	:	Not announced
[C]	Type	:	Wet
[C]	Location of air intake	:	On the top of air intake tube

Main cleaner:

[D]	Make	:	KLN
[D]	Model	:	Not announced
[C]	Type	:	Wet
[C]	Maintenance schedule	:	Every 50 hours in dusty condition & 200 hours in normal working condition

1.2.6**Lubrication System:**

[D]	Type of feed pump	:	Rotary (lobe), pump
[C]	Type of filter(s)	:	Full flow, canister
[C]	Number of filter(s)	:	One

1.2.7**Cooling System:**

[C]	Type of coolant	:	Water with coolant
[D]	Type of pump	:	Vane type ,Centrifugal pump

Specification of fan:

[D]	Number of fan blades	:	06
[D]	Fan diameter	:	381 mm
[C]	Total Coolant capacity	:	9.5 dm ³
[C]	Type of temperature control	:	Thermostat
[D]	Over pressure system	:	88 kPa

1.2.8**Starting system:**

[D]	Make	:	Lucas-TVS
[D]	Model	:	M14
[D]	Type	:	Electrical, solenoid operated .
[D]	Starter motor power rating	:	2.2 kW
[C]	Cold starting aid	:	Heater plug provided in the intake manifold
[C]	Safety device	:	Starter will not operate unless the 'Low-High' gear lever is in neutral position.

1.2.9 Electrical System:

[C] Voltage : 12V

Generator:

[D] Make : Lucas-TVS

[D] Model : A115

[D] Type : Alternator

[D] Power : 0.43 kW

Battery:

[C] Number : One

[D] Rating : 80 Ah at 20 hours discharge rate

1.2.10 Exhaust System:

[D] Make : M/s KLN Engineering

[D] Model : Not announced

[C] Type : Updraught, cylindrical

[C] Location : On LHS of engine

1.2.11 Reagent Injection System : Not applicable

1.2.12 Diesel Particulate Filter : Not applicable

1.3 Transmission:**1.3.1 Clutch (Travel and power take-off):**

[D] Make : VALEO

[D] Model : Not announced

[D] Type : Dual, Dry (for travel and PTO)

[D] Number of plate(s) : Two

[D] Diameter of plate(s) : 304.8 mm for travel & 254 mm for PTO

[C] Method of operation:

- Travel : By pressing the clutch pedal halfway, on LHS.

- PTO : By pressing the clutch pedal fully, on LHS.

1.3.2 Gear Box:

[D] Make : TAFE

[D] Model : Not announced

[D] Type : Mechanical, constant mesh gears.

	Description:	Forward	Reverse
[C]	Number of gears	4	1
[C]	Number of ranges	2 ('L' & 'H')	2 ('L' & 'H')
[C]	Total of arrangements	8	2

'L'= TORTOISE & 'H'=RABBIT

[D] Available options : None

1.3.3 Rear axle and final drives:

[D] Make : TAFE
 [D] Model : Not announced
 [D] Type : Planetary reduction unit

[D] **Differential lock:** : **Not available**

1.3.4 Front axle and final drives: : **Not available**

1.3.5 Total ratios and traveling speeds:

	Movement	GEAR	RANGE	Number of engine revolutions for one revolution of the driving wheels	Nominal traveling speed (*) at rated engine speed of 2300 rev/min, (km/h)
[C]	Forward	1	L	210.55	2.76
[C]		2	L	143.54	4.05
[C]		3	L	78.28	7.42
[C]		4	L	63.79	9.11
[C]		1	H	51.48	11.27
[C]		2	H	35.08	16.60
[C]		3	H	19.12	30.36
[C]		4	H	15.59	37.24
[C]	Reverse	1	L	154.92	3.75
[C]			H	37.77	15.37

'L'= TORTOISE & 'H'=RABBIT

* Calculated with a tyre dynamic radius index of 670 mm (ISO: 4251-1:2005)

[C] Number of revolutions of front wheels for one revolution of rear wheels : **Not available**

1.4 Power take-off:**1.4.1. Main Power Take-Off:**

[C] Type : Independent
 [C] Method of engagement : Mechanical, by a hand lever on LHS
 [C] Number of shafts : One
 [C] Method of changing power take-off shaft ends and speeds. : Not available

1.4.1.1 Power take-off proportional to engine speed:

Power take-off at : **540 (rev/min)**
 [C] - Location : At rear of tractor
 [C] - Diameter of power take-off shaft end : 34.82 mm
 [C] - Number of splines : 6, Not in conformity with ISO:500 - 3:2004
 [C] - Height above ground : 550 mm
 [C] - Distance from the median plane of the tractor : 0 mm

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[C]	- Distance behind rear-wheel axis	:	300 mm
[C]	- PTO speed at rated engine speed	:	694 rev/min
[C]	- Engine speed at standard power take-off speed	:	1789 rev/min
[C]	- Ratio of rotation speeds (Engine speed/ PTO speed)	:	3.313 : 1
[D]	- Power restriction	:	Not available
[D]	Maximum torque transmissible	:	760 Nm
[C]	Direction of rotation (viewed from rear of tractor)	:	Clockwise
1.4.1.2	Power take-off proportional to ground speed	:	None
1.4.2	Optional power take-off	:	None
1.5	Hydraulic power-lift:		
[D]	Make	:	TAFE
[D]	Model	:	Not announced
[C]	Type of hydraulic system	:	Open centre, live ,ADDC
[C]	Type and number of cylinders	:	Single acting, one
[C]	Type of linkage lock for transport	:	Hydraulic
[D]	Relief valve pressure setting (tolerance)	:	22±1 MPa
[D]	Opening pressure of cylinder safety valve	:	24±1 MPa
[D]	Lift pump type	:	Scotch Yoke (Radial piston pump)
[D]	Transmission between pump and engine	:	Gear drive
[D]	Number and Type of filter(s)	:	One, wire mesh strainer inside the transmission housing
[C]	Site of oil reservoir	:	Transmission housing
	Type, number and location of tapping points:		
[C]	- Type	:	Quick coupling
[C]	- Number	:	One
[C]	- Location	:	Behind the operator's seat
[D]	- Maximum volume of oil available to external cylinders	:	39.5 dm ³
1.6	Three point linkage:		
[C]	Category	:	2 (Not In conformity with ISO 730-2009)
[C]	Category adapter	:	None

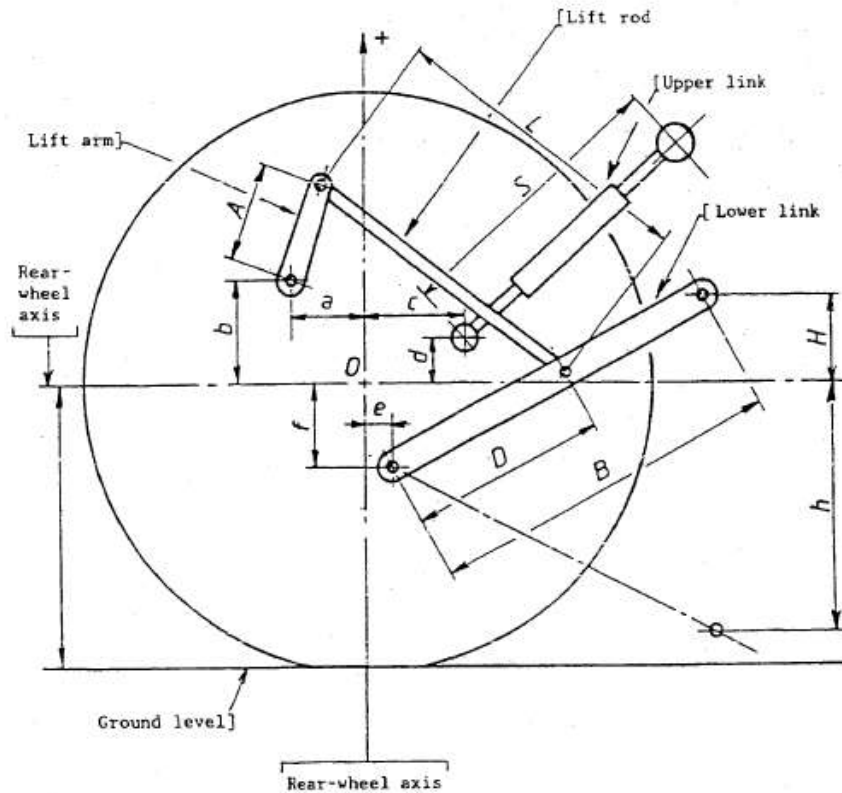


Fig. 1.1

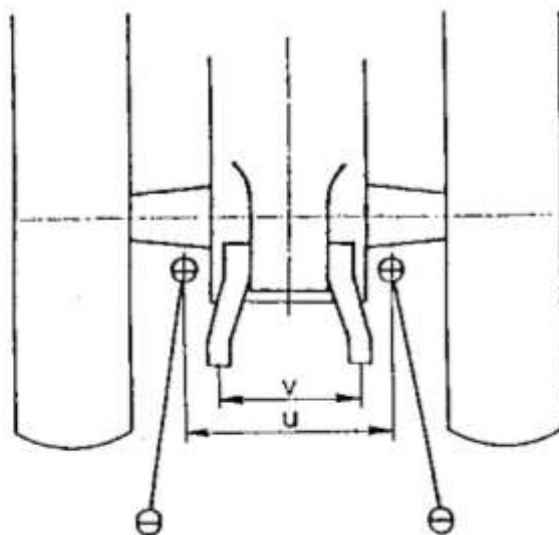


Fig. 1.2

Table: Linkage Geometry dimensions (Ref. fig. 1.1 & 1.2):

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			Dimension or range, (mm)	Settings used during test, (mm)
	(1)	(2)	(3)	(4)
[C]	Length of lift arms:	(A)	250	250
[C]	Length of lower links:	(B)	948	948
	Distance of lift arm pivot point from rear-wheel axis:			
[C]	- Horizontally	(a)	205,forward	205,forward
[C]	- Vertically	(b)	230	230
[C]	Horizontal distance between the 2 lower link points:	(u)	490	490
[C]	Horizontal distance between the 2 lift arm end points:	(v)	530	530
[C]	Length of upper link:	(S)	670 to 855	765
	Distance of upper link pivot point from rear wheel axis:			
[C]	- Horizontally	(c)	197,210 & 223	210
[C]	- Vertically	(d)	140,180 & 215	180
	Distance of lower link pivot point from rear wheel axis:			
[C]	- Horizontally	(e)	25,forward	25,forward
[C]	- Vertically	(f)	210	210
[C]	Distance of lower link pivot points to lift rod pivot points on lower links:	(D)	230	230
[C]	Length of lift rods:	(L)	600 & 665	625
	Height of lower hitch points relative to the rear-wheel axis:			
[C]	- in low position	(h)	- 590 to - 390	- 470
[C]	- in high position	(H)	140 to 280	270
[C]	Height above ground of lower hitch points when locked in transport position (*)	--	270	270

(*) Assuming r = 670 mm, tyre dynamic radius index of ISO: 4251-1:2005 (pneumatic tyred tractors only).

- 1.7 Swinging drawbar : Not available**
- 1.8 Trailer hitch:**
- [C] - Type : Clevis
- [C] - Hole diameter : 36.3 mm
- [C] - Height above ground : 565 & 685 mm
- [C] - Distance of hitch point from rear-wheel axis, horizontally : 445 mm
- Distance of hitch point from power take-off shaft end:
- [C] - Vertically : 15 mm & 135 mm
- [C] - Horizontally : 145 mm
- [D] - Maximum vertical permissible load : 10 kN

1.9 Holed drawbar:

[C]	Number of holes	:	7
[C]	Distance between holes	:	80 mm
[C]	Hole diameter	:	25 mm
[C]	Thickness / Width of drawbar	:	35 mm / 75 mm
[C]	Height above ground:		
	- Minimum	:	40 mm
	- Maximum	:	950 mm
[C]	Horizontal distance to power take-off shaft end (rear)	:	615 mm

1.10 Steering:

[D]	Make	:	Danfoss
[D]	Model	:	Not announced
[D]	Type	:	Hydrostatic, open center
[D]	Method of operation	:	Manual, through steering control wheel
[D]	Pump(s)	:	Gear type
[D]	Ram(s)	:	Reciprocating
[D]	Working pressure, MPa	:	14

1.11 Brakes:**1.11.1 Service brake:**

[D]	Make	:	JMI
[D]	Model	:	Not announced
[D]	Type	:	Oil immersed disc brake
[C]	Method of operation	:	Mechanical, Independent or coupled pedal operation
[C]	Trailer braking take-off (hydraulic or air brake)	:	Not available

1.11.2 Parking brake:

[C]	Type	:	Pawl and ratchet
[C]	Method of operation	:	Manual, by a hand lever on LHS

1.12 Wheels:

	Number		
[C]	Front	:	Two (steering)
[C]	Rear	:	Two (driving)
[C]	Wheel base	:	2035 mm

Track width adjustment:

		Minimum [mm]	Maximum [mm]	Adjustment method
[D]	Front	1300	2020	Reversing wheels and offset lug rims
[D]	Rear	1420	2140	Reversing wheels and offset lug rims

1.13 Protective structure: : **Not available**

OECD approval:

[D] Approval number : Not applicable

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[D] Date of approval : Not applicable
[D] Number of minor modification certificates, if any : Not applicable

1.14 Seat:

1.14.1 Driver's seat:

[D] Make : M/s HARITA SEATING SYSTEMS LTD.
[D] Model : Not announced
[C] Type : Cushioned
[C] Seat and steering wheel reversible : No
[C] Type of suspension : Two helical coil springs
[C] Type of dampening : Hydraulic shock absorber
Range of adjustment:
[C] Longitudinally : ± 75 mm
[C] Vertically : Not available
[C] Safety belt : Provided

1.14.2 Optional driver's seat(s) : Not fitted on tractor

1.14.3 Passenger seat : Not fitted on tractor

1.15 Lighting:

		Height of centre above ground	Size	Distance from outside edge of lights to median plane of tractor
		[mm]	[mm]	[mm]
[C]	Head lights	1020	160 x 95	222
[C]	Side lights	1475	110 x 50	842
[C]	Rear lights	1475	90 x 75	740
[C]	Reflectors	1475	45 x 55	762

2. TEST CONDITIONS

2.1	Overall dimensions (Unballasted tractor):			
Length [mm]	Width		Height at top of	
	Minimum [mm]	Maximum [mm]	Protective Structure [mm]	Exhaust pipe [mm]
3570	1870	2590	Not available	2375

2.2 Ground clearance (unballasted tractor) : 390 mm
Clearance – limiting part : Below transmission housing.

2.3 Tractor Mass :

		Unballasted	
		Without driver	With driver
		[kg]	[kg]
	Front	915	925
	Rear	1405	1470
	Total	2320	2395

2.4 Tyres and track width specifications:

Tyres		Front	Rear
- Dimensions		7.50-16	16.9-28
- Ply rating		8	12
- Type		Pneumatic, ribbed	Pneumatic, diagonal
- Maximum load (tyre manufacturer's)	kN	17.33	31.87 kN
- Maximum load (tractor manufacturer's)	kN	33.1	26.0 kN
- Inflation pressure (tyre manufacturer's)	kPa	196	78
- Dynamic radius index	mm	--	670
- Chosen track width	mm	1400	1420

2.5 Fuel:

Type : High speed diesel conforming to IS:1460-2005
 Density at 15 °C : 0.836 g/cm³

2.6 Oils and lubricants:**2.6.1 Capacity and change interval:**

	Capacity, (dm ³)	Oil change, (h)	Filter change, (h)
(1)	(2)	(3)	(4)
Engine oil sump	9.0	After every 250 hours of operation	After every 250 hours of operation
Gear box, rear axle, rear final drive, hydraulic and service brakes	39.5	After every 600 hours of operation	Not applicable
Front axle	Not available	Not applicable	Not applicable
Front final drive			
Steering housing	1.10	After every 1200 hours of operation	Not applicable

2.6.2 Specifications:

1	Recommended 2	Used during test 3
Engine:		
Type	SAE 20W40	As recommended
Viscosity	10-12 cSt at 100°C	
Classification	MIL-L-46152/MIL-L2104C	
Transmission, Hydraulic fluid, Service brake , Rear axle and final drive (rear) oil:		
Type	SAE10W30	As recommended
Viscosity	10-11 cSt at 100°C	
Classification	API Gulf	

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1	2	3
Front axle and final drive (front) oil:	Not applicable	Not applicable
Steering oil :		
Type	SERVO TQ	As recommended
Viscosity	7 – 8.4 cSt at 100°C	
Classification	Transmission Fluid F	

- 2.6.3 Grease:**
Number of lubricating points:
Grease nipples : 12 Nos.
Grease cups : 2 Nos.

3. COMPULSORY TESTS RESULTS

3.1 Main power take-off test:

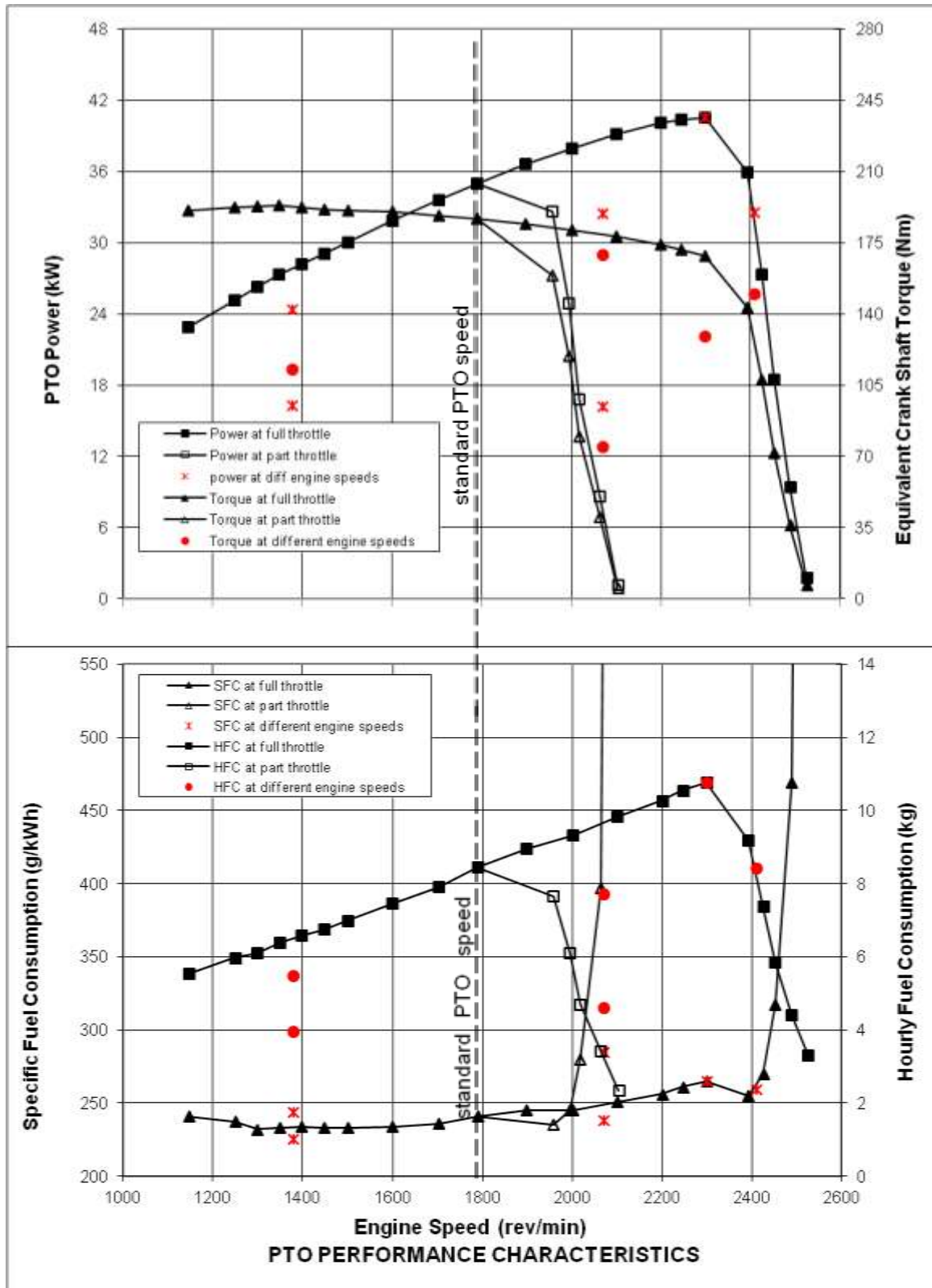
Date and location of tests : 01.11.2018, CFMTTI, BUDNI (M.P.), India

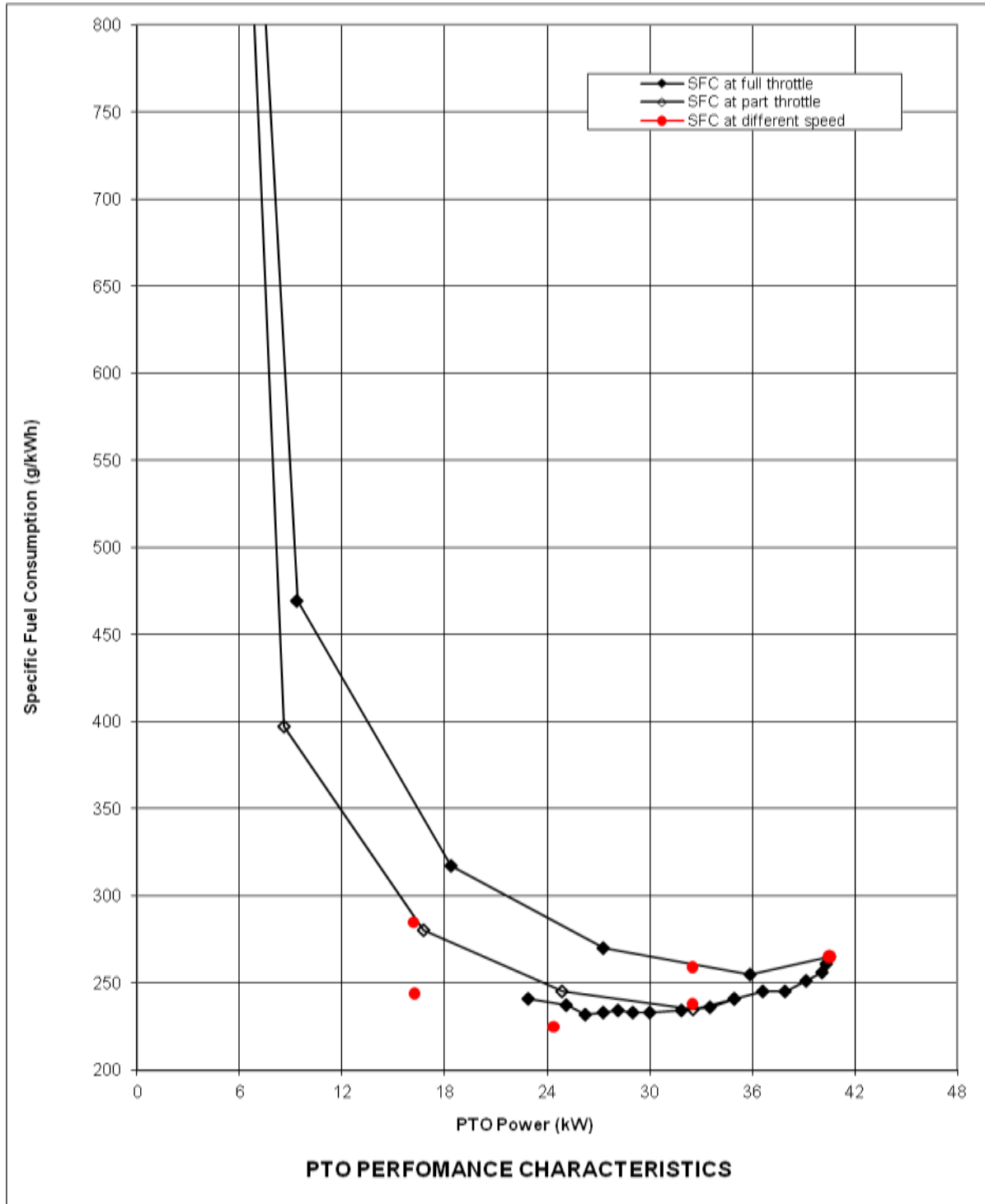
Type of dynamometer bench : FUCHINO ESF -1000S, Eddy current

Power, (kW)	Speed			Fuel consumption			Specific Energy, (kWh/l)
	Engine	PTO	Fan	Hourly		Specific	
	(rev/min)			(kg/h)	(l/h)	(g/kWh)	
1	2	3	4	5	6	7	8
3.1.1 Maximum Power – One-Hour Test:							
40.6	2299	694	3481	10.76	12.87	265	3.16
3.1.2 Power at Rated Engine Speed (2300 rev/min) :							
40.6	2299	694	3481	10.76	12.87	265	3.16
3.1.3 Standard Power Take-Off Speed [540 ± 10 (rev/min)] :							
35.0	1789	540	2709	8.44	10.10	241	3.47
3.1.4 Part Loads:							
3.1.4.1 The torque corresponding to maximum power at rated engine speed :							
40.6	2299	694	3481	10.76	12.87	265	3.16
3.1.4.2 85 % of torque obtained in 3.1.4.1 :							
35.9	2392	722	3622	9.17	10.97	255	3.27
3.1.4.3 75 % of torque defined in 3.1.4.2 :							
27.3	2425	732	3672	7.38	8.83	270	3.09
3.1.4.4 50 % of torque defined in 3.1.4.2 :							
18.4	2452	740	3712	5.84	6.99	317	2.63
3.1.4.5 25 % of torque defined in 3.1.4.2 :							
9.4	2488	751	3767	4.41	5.28	469	1.78
3.1.4.6 Unloaded :							
1.8	2525	762	3823	3.29	3.94	1828	0.47

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1	2	3	4	5	6	7	8
3.1.5 Part Loads at Standard Power Take-Off Speed [540± 10 (rev/min)] :							
3.1.5.1 The torque corresponding to maximum power :							
35.0	1789	540	2709	8.44	10.10	241	3.47
3.1.5.2 85 % of torque obtained in 3.1.5.1 :							
32.6	1958	591	2964	7.66	9.16	235	3.56
3.1.5.3 75 % of torque defined in 3.1.5.2 :							
24.9	1994	602	3019	6.10	7.30	245	3.41
3.1.5.4 50 % of torque defined in 3.1.5.2 :							
16.8	2018	609	3055	4.70	5.62	280	2.99
3.1.5.5 25 % of torque defined in 3.1.5.2 :							
8.6	2064	623	3125	3.41	4.08	397	2.11
3.1.5.6 Unloaded :							
1.1	2104	635	3186	2.35	2.81	2136	0.39
3.1.6 PART LOADS AT DIFFERENT ENGINE SPEEDS							
3.1.6.1 Maximum power at rated engine speed:							
40.6	2299	694	3481	10.76	12.87	265	3.16
3.1.6.2 80% of power obtained in 3.1.6.1 at max. speed setting :							
32.5	2409	727	3647	8.42	10.07	259	3.23
3.1.6.3 80% of power obtained in 3.1.6.1 with governor control set to 90% of rated engine speed :							
32.5	2071	625	3136	7.72	9.23	237	3.52
3.1.6.4 40% of power obtained in 3.1.6.1 with governor control set to 90% of rated engine speed :							
16.2	2071	625	3136	4.61	5.51	285	2.94
3.1.6.5 60% of power obtained in 3.1.6.1 with governor control set to 60% of rated engine speed :							
24.4	1378	416	2086	5.49	6.57	225	3.71
3.1.6.6 40% of power obtained in 3.1.6.1 with governor control set to 60% of rated engine speed :							
16.2	1378	416	2086	3.95	4.72	244	3.43

No load maximum engine speed	:	2525 rev/min
Torque (equivalent crankshaft) at maximum power :		
-At rated engine speed	:	168.50 Nm
-At one hour test	:	168.50 Nm
Maximum torque (equivalent crank- shaft) (Engine speed: 1348 rev/min)	:	193.42 Nm
Mean atmospheric conditions:		
-Temperature	:	24 °C
-Pressure	:	98.9 kPa
-Relative humidity	:	54 %
Maximum temperatures:		
-Coolant	:	79 °C
-Engine oil	:	92 °C
-Fuel	:	41 °C
-Engine air intake	:	23 °C





3.2 Hydraulic power and lifting force:

Date of tests : 20.12.2018 & 21.12.2018

3.2.1 Hydraulic Power and Lifting force Test:**3.2.1.1 Hydraulic Fluid Data:**

- Hydraulic fluid type : Tractelf SF3I
- Viscosity index : 104
(ISO 3448: 1992+ corr 1: 1993)
- Viscosity at 65 °C : 70 cSt

3.2.1.2 Compulsory Reporting (Test Results):

1	2	Press- ure, (MPa)	Reservoir oil Temp. °C		Engine speed, (rev/min)	Flow rate, (l/min)	Power, (kW)
			4 (min.)	5 (max.)			
1.	Rated Engine speed (Manufacturer's specification)	--	--	--	2300	--	--
2.	Maximum (sustained) pressure with relief valve open as measured at the coupler. Pump stalled- No	23.0	60	70	2491	0.0	0.0
3.	Flow rate corresponding to a hydraulic pressure equivalent to 90% of the actual relief valve pressure setting and corresponding hydraulic power.	20.7	67		2495	17.5	6.0
4.	Maximum available flow and maximum power from one coupler pair	21.0	68		2495	17.4	6.1
5.	Maximum available flow and maximum power from coupler pairs operating simultaneously (flow through two or in over coupler pair if required)	Not applicable	Not applicable		Not applicable	Not applicable	Not applicable

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3.2.2 Power Lift Test:

-Linkage settings for test - See Table at Page 10 ,11 and Fig. 1.1 & 1.2

	At hitch point	On the frame
Height of lower hitch points above ground in down position	200 mm	200 mm
Vertical movement:		
- Without lifting force	740 mm	740 mm
- With lifting force	615 mm	625 mm
Maximum corrected force exerted through full range	18.06 kN	15.54 kN
Corresponding pressure of hydraulic fluid	20.7 MPa	20.7 MPa
Moment about rear wheel axle	16.67 kNm	23.82 kNm
Maximum tilt angle of mast from vertical	--	14.2 degree

Lifting height relative to the horizontal plane including the lower link pivot points:											
mm	-235	-200	-100	0	+100	+200	+300	+360	+370	+380	+390
Lifting forces (the values of the force measured have been corrected to correspond to a hydraulic pressure equivalent to 90% of actual relief valve pressure setting of the hydraulic lift system.)											
At the hitch point in (kN)	18.06	18.64	20.19	21.94	23.09	23.96	24.80	25.67	25.49	25.39	--
Corresponding pressure 20.7 MPa:											
At the frame in (kN)	15.54	15.81	16.81	17.28	17.64	17.46	17.01	16.92	16.88	16.77	16.75
Corresponding pressure 20.7 MPa											

3.3 Drawbar power and fuel consumption test (Unballasted tractor):

Date(s) of tests : 04.02.2019

Type of track : Concrete

Height of drawbar above ground, (mm)	Tyre inflation pressure	
	Front	Rear
	[kPa]	[kPa]
575	196	78

DRAWBAR TEST RESULTS

Gear Number & Range	Draw-bar power	Draw-bar pull	Speed	Engine speed	FAN speed	Slip of wheels	Specific fuel consumption	Specific Energy	Temperature			Atmospheric conditions		
									Fuel	Coolant	Engine oil	Temperature	R.H.	Pressure
	(kW)	(kN)	(km/h)	(rev/Min)	(rev/Min)	(%)	(g/kWh)	(kWh/t)	(°C)	(°C)	(°C)	(°C)	(%)	(kPa)
3.3.1	Maximum Power in tested Gears (Unballasted tractor):													
1L	12.6	17.93	2.53	2447	3705	15.2	461	1.81	38	80	95	26	40	99.7
2L	19.1	18.62	3.70	2425	3672	14.8	380	2.20	37	81	97	24	37	99.8
3L	32.4	16.98	6.87	2299	3481	8.9	331	2.53	35	83	98	23	41	99.9
4L	33.2	13.72	8.72	2300	3482	5.8	332	2.60	34	83	94	23	46	99.9
1H	32.8	10.74	10.98	2299	3481	4.1	331	2.53	33	82	96	21	49	99.9

Remark: Maximum power in the gear '2H' was not measured because forward speed in this gear exceeded the safety limit of testing equipment.

Gear Number & Range	Draw-bar power	Draw-bar pull	Speed	Engine speed	FAN speed	Slip of wheels	Specific fuel consumption	Specific Energy	Temperature			Atmospheric conditions		
									Fuel	Coolant	Engine oil	Temperature	R.H.	Pressure
	(kW)	(kN)	(km/h)	(rev/Min)	(rev/Min)	(%)	(g/kWh)	(kWh/t)	(°C)	(°C)	(°C)	(°C)	(%)	(kPa)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
3.3.2	Fuel Consumption:													
3.3.2.1	In Selected gear / speed setting nearest 7.5 km/h, at maximum power at rated engine speed:													
3L	32.4	16.98	6.87	2299	3481	8.9	331	2.53	35	83	98	23	41	99.9
3.3.2.1.1	75% of pull corresponding to maximum power at rated engine speed:													
3L	26.1	12.75	7.38	2402	3637	6.3	323	2.59	39	82	100	26	38	99.7
3.3.2.1.2	50% of pull corresponding to maximum power at rated engine speed:													
3L	18.2	8.49	7.73	2438	3691	3.3	349	2.39	39	81	99	26	40	99.6
3.3.2.1.3	Higher gear / speed setting at reduced engine speed: Same pull and traveling speed as in 3.3.2.1.1:													
4L	26.1	12.75	7.38	1957	2963	6.3	302	2.77	39	82	94	27	41	99.5
3.3.2.1.4	Same gear / speed selection as 3.3.2.1.3 at reduced engine speed: Same pull and traveling speed as in 3.3.2.1.2:													
4L	18.2	8.49	7.73	1989	3011	3.5	299	2.80	39	80	95	27	40	99.5
3.3.2.2	In Selected gear/speed nearest between 7 km/h and 10 km/h at rated engine speed:													
4L	33.2	13.72	8.72	2300	3482	5.8	332	2.60	34	83	94	23	46	99.9
3.3.2.2.1	75% of pull corresponding to maximum power at rated engine speed:													
4L	26.4	10.29	9.22	2400	3634	4.6	322	2.60	39	82	99	27	38	99.5

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
3.3.2.2.2	50% of pull corresponding to maximum power at rated engine speed:													
4L	18.2	6.86	9.53	2431	3681	2.6	361	2.32	39	80	100	27	43	99.5
3.3.2.2.3	Higher gear / speed setting at reduced engine speed: Same pull and traveling speed as in 3.3.2.2.1:													
1H	26.4	10.29	9.23	1939	2936	4.4	289	2.89	39	82	94	27	36	99.4
3.3.2.2.4	Same gear / speed selection as 3.3.2.2.3 at reduced engine speed: Same pull and traveling speed as in 3.3.2.2.2:													
1H	18.2	6.87	9.53	1961	2969	2.4	309	2.70	38	80	91	26	43	99.4

4. REPAIR AND ADJUSTMENTS PRIOR TO TESTS

-None -

5. REMARKS

-None -

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

TESTING AUTHORITY



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