OECD Approval No. : 1/1777

Date of approval : 31 August , 1998

Test in accordance with OECD Standard Code 1
for the Official Testing of Agricultural and Forestry Tractors

ON

MAHINDRA 585 DI (2WD) TRACTOR



Manufactured by	:	**Mahindra & Mahindra Ltd.** **Tractor Division,** **Akurli Road, Kandivli (East),** **MUMBAI - 400 101** **INDIA**
Report No.	:	**T-365/768/2/OECD**
Date	:	**October, 1998**

GOVERNMENT OF INDIA
MINISTRY OF AGRICULTURE
(DEPARTMENT OF AGRICULTURE & COOPERATION)
CENTRAL FARM MACHINERY TRAINING & TESTING INSTITUTE
BUDNI (M.P.) - 466 445, INDIA
PHONE : 91 07564 34729, FAX: 91 07564 34743

OECD Approval No. : 1/1777

Date of approval : 31.08.1998

Test in accordance with OECD Standard Code 1
for the Official Testing of Agricultural and Forestry Tractors

MAHINDRA 585 DI (2WD) TRACTOR

Manufactured by	:	**Mahindra & Mahindra Ltd.** **Tractor Division,** **Akurli Road, Kandivli (East),** **MUMBAI - 400 101** **INDIA**
Submitted for test by	:	**The manufacturer**
Report No.	:	**T-365/768/2/OECD**
Date	:	**October, 1998**

This is a report on a tractor test in accordance with **OECD STANDARD CODE** 1 for the Official Testing of Agricultural and Forestry tractors.

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

Date of approval	31.08.1998	OECD No.	1/1777

In this report 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:

Forces	1 kN	=	1000 N	=	102	kgf
Powers	1 kW			=	1,36	Ps
Pressures	1 MPa	=	10 bar	=	10,2	kgf/cm^2
	100 kPa	=	1000 mbar	=	750,10	mm of Hg

This report should not be reproduced in part or full without prior permission of the Director,

Central Farm Machinery Training & Testing Institute, Budni(M.P), India

TABLE OF CONTENTS

		PAGE NO.
1.	SPECIFICATIONS OF TRACTOR	1
2.	TEST CONDITIONS	11
3.	**COMPULSORY TEST RESULTS**	14
3.1	Main Power Take-Off Performance (540)	14
3.2	Hydraulic Power And Lifting Force	15
3.3	Drawbar Power Test(Ballasted And Unballasted)	16
3.4	Turning Area And Turning Circle	18
3.5	Position Of Centre Of Gravity	18
3.6	Braking Performance	19
3.7	Measurement of Noise	19
3.8	Repairs And Adjustments During Tests	19
3.9	Remarks	19
	ANNEX - I (MAIN POWER TAKE-OFF CURVES)	20, 21

- Tractor manufacturer's name and address	:	Mahindra and Mahindra Limited, Tractor Division, Akurli Road, Kandivli (East) Mumbai - 400 101 INDIA
- Location of tractor assembly	:	Mahindra and Mahindra Limited, Tractor Division, Akurli Road, Kandivli (East) Mumbai - 400 101 INDIA
- Submitted for test by	:	The manufacturer
- Selected for test by	:	The manufacturer
- Place of running-in	:	At manufacturer's works
- Duration of running-in	:	Engine : 15 h Transmission : 30 h
- Location of test	:	Central Farm Machinery Training and Testing Institute, Ministry of Agriculture, (Department of Agriculture & Co-operation.) Tractor Nagar, Budni - 466 445 (Madhya Pradesh) INDIA

1. SPECIFICATIONS OF TRACTOR

1.1 Identification

- Make	:	Mahindra & Mahindra
- Model	:	585 DI
- Type	:	Four wheel, rear wheel driven, unit construction.
- Number of driving wheels	:	Two
- Serial No.	:	PE-2627 GV
- 1st Serial No.	:	PE-1001

1.2 Engine

- Make	:	Mahindra & Mahindra
- Model	:	MDI 3000B
- Type	:	Four stroke, direct injection, naturally aspirated, water cooled diesel engine.
- Serial No.	:	PE 2627

1.2.1 Cylinders:

- Number/Disposition	:	Four, vertical, in-line
- Bore/Stroke	:	88.9 mm/101.6 mm
- Capacity	:	2523 cm^3
- Compression ratio	:	18:1
- Arrangement of valves	:	Overhead
- Cylinder liners	:	Wet, replaceable

1.2.2	**Supercharging**		None
1.2.3	**Fuel system:**		
	- Fuel feed system	:	Gravity and force feed
	- Make, model & type of fuel filter(s)	:	MICO, LIC - BOSCH, INDIA, 450030117, primary cloth & secondary paper element
	- Capacity of fuel tank	:	35.5 dm^3
	- Make, model & type of injection pump	:	MICO, LIC-BOSCH, INDIA, Inline plunger type, 9400030741 PES4A 85D 320 RS 2856
	- Serial No.	:	76520039
	- Manufacturer's production setting of injection pump:		
	. Flow rate (rated engine speed and full load)	:	8.904 dm^3/h to 10.898 dm^3/h at 2600 rev./min.
	. Timing	:	17 degree before TDC
	- Make, model & type of injectors	:	MICO, LIC-BOSCH, INDIA, 9430031286, 4 hole
	- Injection pressure	:	20 + 0.98 MPa
1.2.4	**Governor:**		
	- Make, model & type	:	MICO LIC BOSCH, INDIA, RSV 375-1300-A2C 842 R, mechanical centrifugal variable speed.
	- Governed range of engine speed	:	700 to 2850 ± 25 rev/min
	- Rated engine speed	:	2600 rev/min
1.2.5	**Air cleaner:**		
	- Precleaner		
	. Make, model & type	:	Mahindra & Mahindra, None, Centrifugal with transparent dust collector.
	. Location of air intake	:	On top of air cleaner tube, outside bonnet
	- Main cleaner		
	. Make, model & type	:	Mahindra & Mahindra, None Oil bath

. Location : Right hand side of engine

- Maintenance indicator : None

1.2.6 **Lubricating System:**

- Type of feed pump : Geroter
- Type of filter(s) : Full flow spin on, paper element
- Number of filters : One

1.2.7 **Cooling System:**

- Type of coolant : Water
- Type of pump : Centrifugal

- Specification of fan or blower

. Number of fan blades : 8
. Fan diameter : 357 mm

- Coolant capacity : 10.0 dm^3
- Type of temperature control : Thermostat
- Super pressure system : 49 kPa

1.2.8 **Starting system:**

- Make, model & type : Lucas TVS India, 6 M 14 Electrical, Pre-engaged solenoid operated.

- Starter motor power rating : 2.24 kW
- Cold starting aid : None
- Safety device : Clutch pedal to be depressed for starting

1.2.9 **Electrical System:**

- Voltage : 12 V
- Earthing polarity : Negative

- Generator:

- Make, model & type : LUCAS TVS INDIA, A-115, Alternator belt driven.
- Power : 0. 43 kW

- Battery of accumulators:
  - Number : One
  - Rating : 88 Ah at 20 hours discharge rate

1.2.10 **Exhaust System:**

- Make, model & type : Mahindra & Mahindra, India, None, Vertical - cylindrical - Updraft.

- Location : On right hand side of engine

1.3 **Transmission**

1.3.1 **Clutch (Travel and Power Take-off):**

- Make, model & type : API India, None, Dry friction plate
- Number of plate : One
- Diameter of plate : 280 mm
- Method of operation : Mechanically by LHS pedal

1.3.2 **Gear Box:**

- Make, model & type : Mahindra & Mahindra, India, None, Mechanical, combination of constant and sliding mesh gear with high and low range selection lever.

- Description:

	Forward	Reverse
Number of gears	4	1
Number of ranges/groups	High / low	High / low
Total of arrangements	8	2

- Available options : None

1.3.3 **Rear axle and final drives:**

- Make, Model & Type : Mahindra & Mahindra, India, None Crown wheel and pinion with differential spur gear final reduction accommodated inside the transmission housing.

- Differential lock:

  - Type : Dog clutch
  - Method of engagement : Pedal operated
  - Method of disengagement : Spring loaded

1.3.4 **Front axle:**

- Make, model & type : Mahindra & Mahindra, India; None, Telescopic rectangular section.

1.3.5. **Total ratios and traveling speeds:**

Gear No.	Group or Range	Number of engine revolutions for one revolution of the driving wheels	Nominal traveling speed (*) at rated engine speed of 2600 (rev/min) km/h
L1	Low	238.88	2.50
L2	Low	139.96	4.27
L3	Low	98.18	6.09
L4	Low	65.75	9.09
H1	High	82.14	7.28
H2	High	48.12	12.43
H3	High	33.70	17.74
H4	High	22.56	26.51
LR	Low	157.44	3.80
LH	High	54.03	11.07
(*) Calculated with a tyre dynamic rolling radius of 610 mm. (ISO 4251-1-1992)			

1.4 Power take-off

1.4.1. **Main Power Take-Off:**

- Type : Not Independent
- Method of engagement : Mechanically engaged by a hand lever
- Number of shafts : One
- Method of changing power take-off shaft ends and speeds : Shaft end not changeable but speed changes with high / low range selector.

1.4.1.1 **Power take-off proportional to engine speed**

Power take-off at 540 (rev./min)

- Location : Rear of tractor
- Diameter of power take-off shaft end : 34.75 mm
- Number of splines : Six, in conformity with ISO 500:1991
- Height above ground : 582 mm
- Distance from the median plane of the tractor : Centrally located
- Distance behind rear wheel axis : 347 mm
- PTO speed at rated engine speed : 709 (low range) rev/min
  2067 (high range) rev/min

	- Engine speed at standard power-take off speed	:	1980 rev/min
	- Ratio of rotation speeds (engine speed/p.t.o. speed)	:	3.667 : 1 (low range), 1.258 : 1 (high range)
	- Power restriction	:	ISO recommendation 48 kW
	- Maximum torque transmissible	:	899 Nm
	- Direction of rotation (viewed from behind tractor)	:	Clockwise
	Power take-off at 1000 (rev./min)	:	Not Available.
1.4.1.2	Power take-off proportional to ground speed	:	Not applicable
1.4.2	***Optional power take-off***	:	None

1.5 Hydraulic power-lift

	- Make, model & type	:	Mahindra & Mahindra, India. None, Hydraulic with mechanical position and draft control. top link sensing.
	- Type of hydraulic system	:	Open-center
	- Type and number of cylinders	:	Single acting, one.
	- Type of linkage lock for transport	:	Hydraulic
	- Relief valve pressure setting (tolerance)	:	17.65 MPa
	- Opening pressure of cylinder safety valve (if fitted)	:	41.97 MPa
	- Lift pump type	:	Gear
	- Transmission between pump and engine	:	Gear driven from engine
	- Type and number of filters	:	Wiremesh strainer , one
	- Site of oil reservoir	:	In hydraulic housing
	- Type, number and location of tapping points	:	Threaded, one, in front of hydraulic housing.
	- Maximum volume of oil available to external cylinders	:	9.00 dm^3

Fig. 1.1

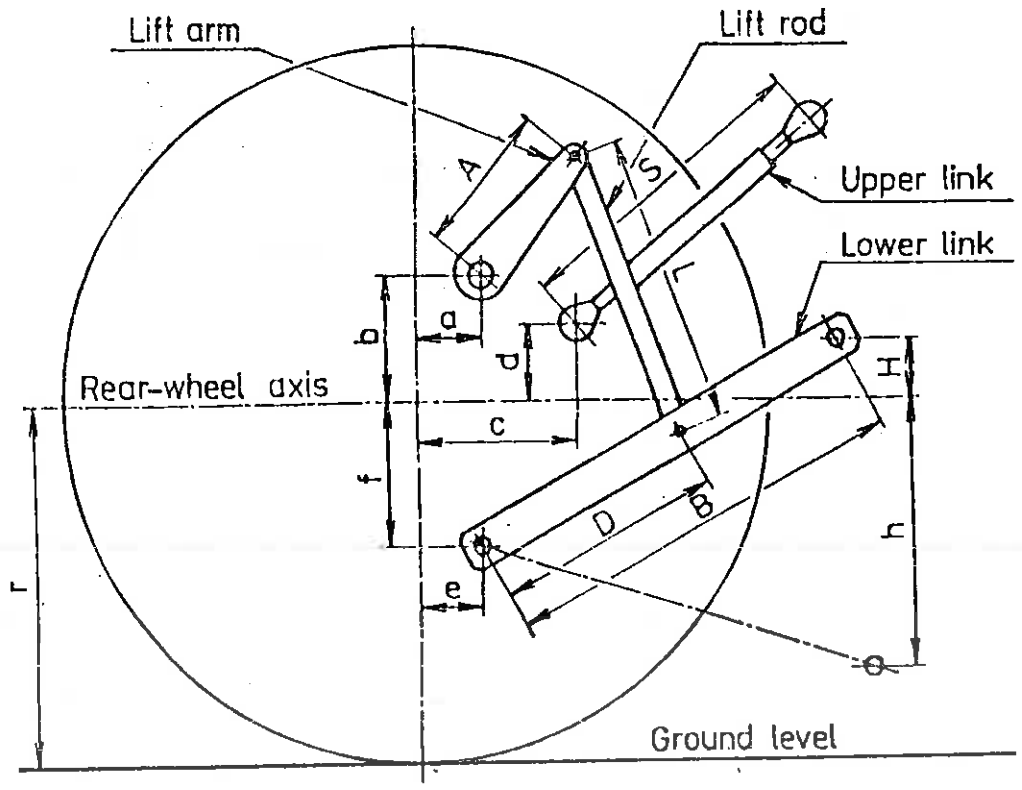
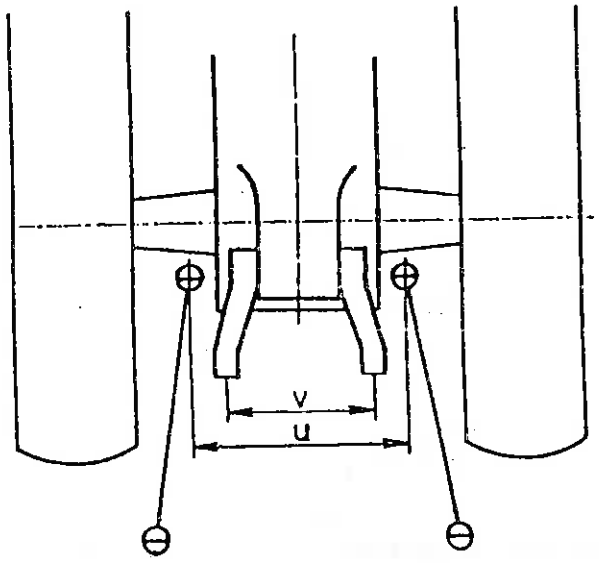

Lift arm
Lift rod
Upper link
Lower link
Rear-wheel axis
Ground level
A
S
L
a
b
d
c
f
e
D
B
H
h
r

Fig. 1.2


v
u

1.6 Three point linkage:

- Category : I of ISO standard 730-1:1994
- Category adapter : Interchangeable position of lower links.

		Dimension or range	Settings used in test
		mm	mm
Length of lift arms:	(A)	265	265
Length of lower links:	(B)	700	700
Distance of lift arm pivot point from rear-wheel axis:			
- horizontally	(a)	25 behind	25 behind
- vertically	(b)	383	383
Horizontal distance between the 2 lower link points:	(u)	460	460
Horizontal distance between the 2 lift arm end points:	(v)	535	535
Length of upper link:	(S)	575 to 830	600
Distance of upper link pivot point from rear wheel axis:			
- horizontally	(c)	245 behind	245
- vertically	(d)	270	270
Distance of lower link pivot point from rear wheel axis:			
- horizontally	(e)	150/155 behind	150
- vertically	(f)	65/125 below	65
Distance of lower link pivot points to lift rod pivot points on lower links:	(D)	345 & 500	345
Length of lift rods:	(L)	480 to 590	515
Height of lower hitch points relative to the rear-wheel axis:			
- in low position	(h)	410	410
- in high position	(H)	250/265	250
Height above ground of lower hitch points when locked in transport position (*)	-	Any height within lift range (Hydraulic transport lock)	Any height within lift range (Hydraulic transport lock)
(*) Assuming r= 610 mm tyre dynamic radius index of ISO 4251-1:1992.			

Table 1.1
Dimensions of linkage geometry when connected to the standard frame

1.7 Swinging drawbar

-Type	:	Clevis
- Height above ground		
. Maximum	:	524 mm
. Minimum	:	374 mm
- Type of adjustment	:	Inverting clevis
- Distance of hitch point from rear-wheel axis, horizontally	:	695 mm
- Distance of hitch point from power take-off shaft end:		
. Vertically	:	208 mm
. Horizontally	:	348 mm
- Lateral adjustment (center of clevis):		
. Right hand	:	133 mm
. Left hand	:	133 mm
- Distance of pivot point from rear-wheel axis, horizontally	:	145 mm forward
- Diameter of drawbar pin hole	:	27.3 mm
- Maximum vertical permissible load	:	10 kN

1.8 Trailer hitch

- Type	:	Clevis
- Hole diameter	:	42 mm
- Height above ground	:	340 mm to 805 mm
- Distance of hitch point from rear-wheel axis, horizontally	:	387 mm
- Distance of hitch point from power take-off shaft end:		
. Vertically	:	242 to 465 mm
. Horizontally	:	40 mm
- Maximum vertical permissible load	:	7 kN

1.9 Holed drawbar

- Number of holes	:	7
- Distance between holes	:	80 mm
- Hole diameter	:	25.5 mm
- Thickness/Width of drawbar	:	30/76 mm/mm
- Height above ground:		
. Minimum	:	90 mm
. Maximum	:	925 mm
- Horizontal distance to power take-off shaft end (rear) lower links in horizontal position.	:	483 mm

1.10 Steering

- Make, model & type : Rane India, None, Mechanical re-circulating balls & Nut with single drop arm.

- Method of operation : Manual steering control wheel of 430 mm diameter.

1.11 Brakes:

1.11.1 **Service brake:**

- Make, model & type : Mahindra & Mahindra, India, None, Mechanical dry disc.

-Method of operation : Independent or combined pedal

- Trailer braking take-off (hydraulic or air brake) : None

1.11.2 **Parking brake:**

- Type : Mechanical, ratchet lock on service brakes

- Method of operation : Hand lever

1.12 Wheels

- Number : Four
  . Front : Two, steering
  . Rear : Two, driving
- Wheelbase : 1920 mm

- Track width adjustment:

	Minimum	Maximum	Adjustment
	mm	mm	method
Front	1220	1620	By extending telescopic axle and reversing wheel rim
Rear	1390	1870	By changing the position of wheel discs on rim lugs & reversing the wheel disc

1.13 Protective structure : None

1.14 Seat:

1.14.1 **Driver's seat:**

- Make, mode & type : Harita Grammer, India, None, Cushioned with back rest.

- Seat and steering wheel reversible : No
- Type of suspension : Helical springs
- Type of damping : Hydraulic shock absorber
- Range of adjustment
  - . Longitudinally : 30 mm
  - . Vertically : None
- Safety belt : No

1.14.2 Optional driver's seat(s) : None
1.14.3 Passenger seat : None

1.15 Lighting

	Height above ground of center	Size	Distance from outside edge of lights to median plane of tractor
	mm	mm	mm
Head lights	990	95 ϕ	196
Side lights			
- On mudguards	1380	85x55	782
- On bonnet	900	65x40	296
Rear lights			
- Working lights	1540	120 ϕ	540
- Parking	1350	60x85	690
- Brake lights	1350	75x85	630
- Side indicators	1350	70x85	770
Reflectors (Rear mudguard)	1350	45x50	795

2. TEST CONDITIONS

2.1 Overall dimensions

	Length mm	Width minimum* mm	Width maximum mm	Height at top of Exhaust silencer mm	Height at top of Steering wheel mm
Ballasted	3230	2350	2500	2075	1400
Unballasted but with standard ballast weights	3230	1750	2230	2075	1400

* Overall width at standard track

Ground clearance (unballasted tractor) : 285 mm

Clearance limiting part : Swinging drawbar hitch pin

Tractor mass:

Mass

	Without Ballast but with standard ballast weights		With ballast (Kg)	
	Without driver	**With driver**	**Without driver**	**With driver**
	kg	kg	kg	kg
Front	680	700	800	820
Rear	1150	1205	2230	2285
Total	1830	1905	3030	3105

2.4 Ballast

	Weights		Water	Standard ballast weights	
	Number	Total mass			
		kg	kg	Number	Total mass kg
Front (On wheel)	4	80	40	Front bracket - 2 Front axle - 1	31 16
Rear	22	800	280	N I L	--

2.5 Tyres and track width specifications

	Front	Rear
Tyres:		
- dimensions	6.00-16	13.6-28
- ply rating	6	12
- type	cross ply	cross ply
- maximum load (tyre manufacturer's)	3.73 kN	11.96 kN
- maximum load (tractor manufacturer's)	3.73 kN	11.96 kN
- inflation pressure (tyre manufacturer's)	167 kPa	118 kPa
- dynamic radius index	340 mm	610 mm
Chosen track width	1220 mm	1390 mm

2.6 Fuel:

- Type : High speed diesel oil with diesel index of 57 and kinematic viscosity of 2.8 cSt at 38 °C meeting specification of Indian Standard Number 1460 - 1974.
- Density at 15 °C : 0.8469 g/cm^3

2.7 Oils and lubricants

2.7.1 *Capacity and change interval:*

	Capacity	Oil change	Filter change
	(dm^3)	(h)	(h)
Engine	7.0	1st change after 50 hours subsequent change every 200 hours	1st change after 50 hour & then after every 200 h
Gear box , Rear axle and Final drive (Rear)	19.1	After every 1000 hours	Not applicable
Steering	0.6	After every 1000 hours	Not applicable
Hydraulic system	11.0	After every 1000 hours	No change . Only cleaning

2.7.2 **Specifications:**

	Recommended	Used during test
Engine oil . Type	SAE30 MIL-L-2104-C	As recommended
Transmission oil . Type	SAE90 GL-4 / MIL-L-2105	As recommended
Hydraulic fluid . Type	SAE30 MIL-L-2104-C	As recommended
Steering oil . Type	SAE90 GL-4 / MIL-L-2105	As recommended

2.8.3 **Grease:**

- Number of lubricating points:

Oiling	:	01
Greasing	:	18
Grease cups	:	02

3. COMPULSORY TESTS RESULTS

3.1 Main power take-off

- Date and location of tests : 18.11.97 to 19.11.97 at CFMT&TI, BUDNI
- Type of dynamometer bench : Eddy current

Power	Speed		Fuel consumption			Specific energy
	Engine	P.T.O.	Hourly		Specific	
kW	(rev/min)		l/h	kg/h	g/kWh	kWh/l
3.1.1 MAXIMUM POWER - TWO HOURS TEST						
32.5	2611	712	9.70	8.21	253	3.35
3.1.2 POWER AT RATED ENGINE SPEED						
32.5	2600	709	9.65	8.17	251	3.37
3.1.3 STANDARD POWER TAKE-OFF SPEED [540 ± 10 (rev/min)]						
26.6	1980	540	7.44	6.30	237	3.58
3.1.4 PART LOADS						
3.1.4.1 **the torque corresponding to maximum power at rated engine speed**						
32.5	2600	709	9.65	8.17	251	3.37
3.1.4.2 **85 % of torque obtained in 3.1.4.1**						
29.3	2728	744	8.77	7.43	254	3.34
3.1.4.3 **75 % of torque defined in 3.1.4.2**						
22.1	2780	758	7.07	5.99	271	3.13
3.1.4.4 **50 % of torque defined in 3.1.4.2**						
15.2	2831	772	5.77	4.89	322	2.63
3.1.4.5 **25 % of torque defined in 3.1.4.2**						
7.8	2853	778	4.35	3.68	472	1.79
3.1.4.6 **Unloaded**						
--	2871	783	3.28	2.78	-	-
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** :						
26.6	**1980**	**540**	**7.44**	**6.30**	**237**	**3.58**
3.1.5.2 **85 % of torque obtained in 3.1.5.1**						
23.0	2032	554	6.47	5.48	238	3.55
3.1.5.3 **75 % of torque defined in 3.1.5.2**						
17.7	2090	570	5.28	4.47	253	3.35
3.1.5.4 **50 % of torque defined in 3.1.5.2**						
12.2	2149	586	4.11	3.48	285	2.97
3.1.5.5 **25 % of torque defined in 3.1.5.2**						
6.1	2193	598	2.92	2.47	405	2.09
3.1.5.6 **Unloaded**						
-	2233	609	2.06	1.75	-	-

- No load maximum engine speed : 2871 rev/min

- Torque (equivalent crankshaft) at maximum power:

. At rated engine speed : 119.4 Nm
. At 2 hour test : 118.9 Nm

- Maximum torque (equivalent crankshaft) : 128.5 Nm
(Engine speed : 1749 rev/min)

Mean atmospheric conditions:	
Temperature	22 °C
Pressure	97.8 kPa
Relative humidity	77 %
Maximum temperatures:	
Coolant	92 °C
Engine oil	114 °C
Fuel	47 °C
Engine air intake	43 °C

3.2 Hydraulic power and lifting force

- Date of tests: 13.01.98 to 14.01.98

3.2.1. Hydraulic Power Test:

-Sustained pressure with relief valve open : 17.0 MPa
-Pump stalled : No
-Pump delivery rate at minimum pressure : 25.5 l / min

	Flow rate l / min	Pressure MPa	Power kW
Flow rate corresponding to a hydraulic pressure equivalent to 90% of the actual relief valve pressure setting and corresponding hydraulic power	9.8	15.3	2.50
Flow rate and hydraulic pressure corresponding to maximum hydraulic power	25.0	14.0	5.83

-Tapping point used for test : External circuit tapping
-Temperature of hydraulic fluid ,if different from 65+5 °C : 62 to 70 °C
-Opening pressure of the unloading valve : Not applicable
-Closing pressure of the unloading valve : Not applicable

3.2.2 Power Lift Test:

- Linkage settings for test - see Table 1.1 and figures 1.1 and 1.2

	at the hitch point	on the frame
Height of lower hitch points above ground in down position	200 mm	200 mm
Vertical movement	560 mm	570 mm
Maximum corrected force exerted through full range	15.9 kN	11.3 kN
Corresponding pressure of hydraulic fluid	15.3 MPa	15.3 MPa
Moment about rear wheel axis	13.5 kNm	16.5 kNm
Maximum tilt angle of mast from vertical	----	16.8 degrees

Lifting heights relative to the horizontal plane including the lower link pivot points									
mm	-345	-300	-200	-100	0	+100	+200	+215	+225
Lifting forces (the values of force measured shall be corrected to correspond to a hydraulic pressure equivalent to 90 % of the actual relief valve pressure setting of the hydraulic lift system):									
at the hitch points, kN:	15.9	16.7	17.2	17.3	17.3	17.1	16.8	16.3	----
Corresponding pressure: 15.3 MPa									
at the frame, kN	13.5	13.7	13.9	13.7	13.3	12.4	11.5	---	11.3
Corresponding pressure: 15.3 MPa									

3.3 Drawbar power test (ballasted and unballasted tractor)

- Date of tests : 19.01.98 & 16.02.98 to 17.02.98
- Type of track : Concrete

	Height of drawbar above ground	Tyre inflation pressure	
		Front	Rear
	mm	kPa	kPa
Un-ballasted but with standard ballast weight.	490	166.7	117.7
Ballasted	500	166.7	117.7

DRAWBAR PERFORMANCE TEST

Gear number and range	Power	Drawbar pull	Speed	Engine speed	Slip of wheels	Specific fuel consumption	Specific energy	Temperatures				Atmospheric conditions		
								Fuel	Coolant	Engine oil	Transmission oil	Temperature	Relative humidity	Pressure
	kW	kN	km/h	rev/min	%	g/kWh	kWh/l	°C	°C	°C	°C	°C	%	kPa
3.3.1 MAXIMUM POWER IN TESTED GEARS - Un-ballasted tractor (but with standard ballast weight)														
L1	10.2	15.6	2.37	2815	15.5	434	1.94	20	87	83	48	19	61	98.6
L2	17.3	15.5	4.04	2799	14.8	331	2.55	19	87	97	45	18	61	98.6
L3	22.7	14.6	5.60	2744	15.3	319	2.65	19	88	88	40	18	62	98.5
L4	28.1	11.8	8.55	2610	9.5	291	2.89	24	88	92	61	23	53	98.5
H1	26.8	14.7	6.55	2655	14.6	310	2.71	22	88	105	66	20	58	97.8
H2	29.5	8.9	11.96	2594	7.0	283	2.98	22	88	99	68	21	56	98.8
3.3.2 MAXIMUM POWER IN TESTED GEARS (ballasted tractor)														
L1	15.4	23.8	2.34	2831	15.2	352	2.37	31	87	106	76	29	57	98.1
L2	25.4	23.8	3.85	2740	15.4	310	2.70	31	88	107	74	28	55	98.1
L3	28.0	17.5	5.77	2676	9.4	287	2.91	30	89	101	70	29	55	98.2
L4	28.7	11.9	8.66	2605	6.3	273	3.06	31	91	108	41	29	64	98.2
H1	26.8	14.1	6.82	2598	7.8	291	2.87	32	90	98	64	32	41	98.4
H2	27.5	8.1	12.22	2619	4.5	285	2.93	33	90	111	82	31	45	98.3
3.3.3 FIVE-HOUR TESTS														
3.3.3.1 FIVE-HOUR TEST at 75% of the pull corresponding to maximum power at rated speed														
L3	22.3	13.1	6.14	2766 to 2783	6.8	292	2.92	17 to 30	68 to 88	102 to 111	52 to 90	16 to 27	53 to 84	98.3 to 98.4
3.3.3.2 FIVE-HOUR TEST at pull corresponding to 15% wheel slip														
L2	25.4	23.8	3.85	2705 to 2729	15.0	306	2.73	29 to 32	88 to 89	109 to 115	92 to 96	27 to 29	47 to 63	98.0 to 98.2

Oil consumption during ten hours duration of tests 3.3.3.1 et 3.3.3.2 .9.45 g/h

3.4 Turning area and turning circle

	With brakes		Without brakes	
	Right-hand	Left-hand	Right-hand	Left-hand
	m	m	m	m
Radius of turning area	3.00	3.04	3.49	3.54
Radius of turning circle	2.81	2.85	3.30	3.35

3.5 Location of center of gravity

- Height above ground : 783 mm
- Distance from the vertical plane containing the axis of the rear wheels : 712 mm
- Distance from the median longitudinal plane of the tractor : 0.0 mm

3.6 Braking

- Date of tests: 04.02.98 & 24.02.98

3.6.1 *Cold service braking device test*

	Speed before application of brakes	Braking device control force	Mean deceleration
	km/h	kN	m/s^2
Ballasted tractor	28.8	0.60	4.08
Unballasted tractor (Standard weight)	29.2	0.57	4.12

- Maximum deviation of tractor from its original course : None
- Abnormal vibration : None

3.6.2 *Fade test*

Speed before application of brakes	Braking device control force	Mean deceleration
km/h	kN	m/s^2
28.8	0.60	3.99

- Maximum deviation of tractor from its original course : None
- Abnormal vibration : None
- Brake heating method : Self braking

3.6.3 ***Parking braking device test:***

	Uphill	Downhill
Braking device control force	0.27 kN	0.26 kN

3.7 Measurement of external noise

- Date of tests	:	05.03.98
- Sound level meter, make/model/type	:	Bruel & Kjaer/2230
- Type of track	:	Concrete
- Gear number	:	H4
- Traveling speed before acceleration	:	21.88 km/h
- Sound level	:	84 dB(A)

3.8 Repairs and adjustments during Tests : None

3.9 Remarks : None

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

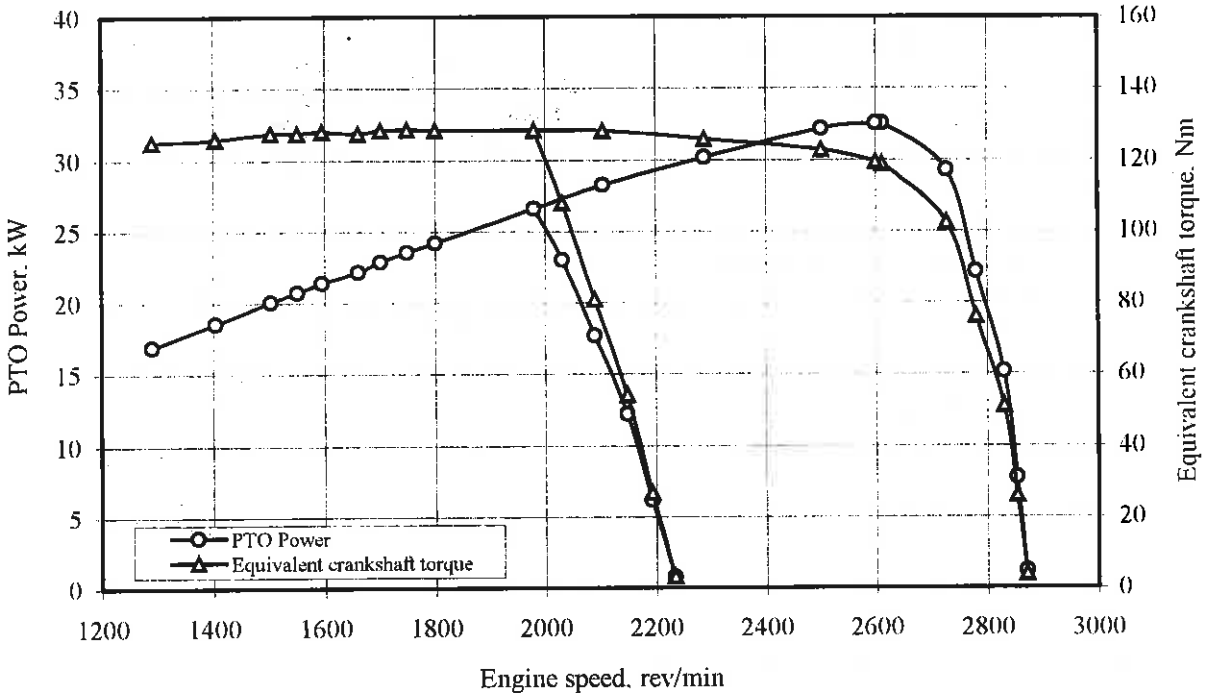
TESTING AUTHORITY

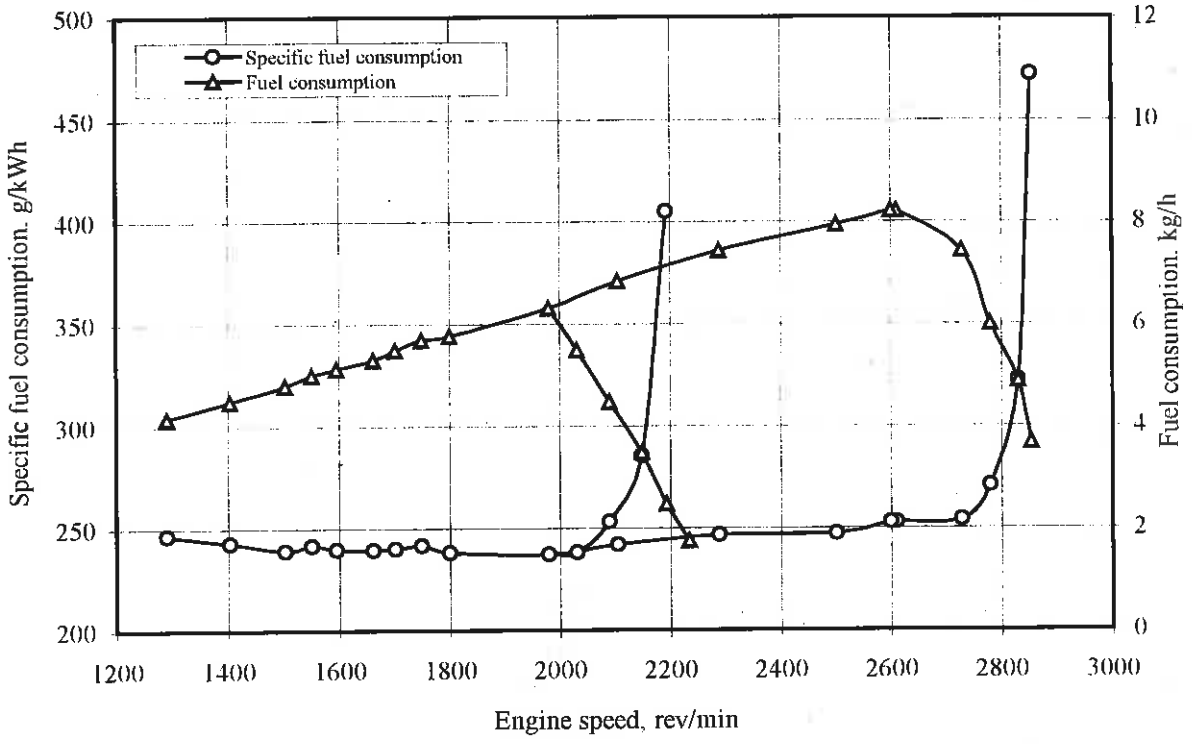
(C.R. RAI)
ASSISTANT ENGINEER (Series Testing)

(A.N. MESHRAM)
SENIOR TEST ENGINEER

(R.S. DASS)
DIRECTOR

PTO Performance Characteristics of Mahindra 585 DI Tractor





PTO Performance Characteristics of Mahindra 585 DI Tractor

