Institut za mehanizaciju poljoprivrede – Zemun

O.E.C.D. Report N° 1118
Printed: February 1988

Report on Test in Accordance with O.E.C.D. STANDARD CODE for the Official Testing of Agricultural Tractors



Agricultural tractor IMT –567 DV DE LUXE (4 WD)

Manufactured by: IMT–Industrija Mašina i Traktora
Novi Beograd – Yugoslavia

Date of test: August – September 1987

This Bulletin is based on engineering tests in accordance with the O.E.C.D. STANDARD—CODE for the Official Testing of Agricultural Tractors.

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

This Report has been aporoved by the O.E.C.D. Co-ordinating Centre (CEMAGREF, France) as being in accordance with The O.E.C.D. STANDARD–CODE.

Date of Approval: January 13th, 1988

All rights including right of translation, reprint and photomehanical copying – also of excerpts – reserved by the editor.

Printed in Yugoslavia

TABLE OF CONTENTS

	Page
Specification of tractor	1 to 13
Test condition	14
Fuel and lubricants used in tests	14
COMPULSORY TESTS	
(1) Main power take-off performance	15 to 18
(2) Drawbar performance on a tarmacadam track	19 to 21
(3) Turning space and turning circle	22
(4) Location of centre of gravity	22
(5) Braking performance	23
(6) Ambient noise, emitted by the tractor	24
(7) Noise at the driver's ear level	24
(8) Power lift and hydraulic power test	25 and 26

Tractor manufacturer:	IMT - Industrija Mašina i Traktora Novi Beograd - Yugoslavia
Submited for test by:	The manufacturer
Selected by:	Representatives of IMP
Place of running-in:	Laboratory of IMP
Duration of running-in:	cca 65 hours

SPECIFICATION OF TRACTOR

TRACTOR

Make:	IMT
Model:	IMT-567 DV DE LUXE (4 WD)
Type:	Standard-unit construction, four wheels, all wheels driven
Serial N°:	5o1 oo2 156 (Start of series)

ENGINE

Make:	IMR - Industrija Motora Rakovica
Model:	M 34
Type:	Four stroke, water cooled diesel, indirect injection, naturally aspirated
Serial N°:	147 498
Cylinders:	4, vertical, in-line, bore 91,4 mm, stroke 127 mm, displacement 333o cm^3, compression ratio 17,4 : 1, overhead valves, replaceable dry cylinder liners
Fuel system:	IPM membrane type feed pump with hand primer, two CAV-DONIT paper element fuel filters on the pressure side of feed pump, first filter with sediment bowl; fuel tank capacity 9o l; CAV-IPM distributor type DPA 32481 741 injection pump, serial N° R 29424 GA, manufacturer's production setting 52 mm^3 at 225o rev/min engine speed and full load; injection timing 2o° before T.D.C.;

Fuel system (continuation):	CAV-IPM injector nozzles of multi hole type (four holes), model YAH, injection pressure setting 12,o ± o,2 MPa;
Governor:	CAV-IPM, mechanical, all range, incorporated in fuel injection pump, governed range of engine speed 5oo ± 3o to 244o rev/min, rated engine speed 225o rev/min
Air cleaner:	Main IKARUS, with oil bath, oil capacity o,6 l; centrifugal pre-cleaner FRAD IK-517; Air intake (with pre-cleaner) above the bonnet, on the right front side; main cleaner below the bonnet and in front of radiator;
Lubrication system:	Forced feed from gear pump with strainer in sump, full flow replaceable paper element filter; total oil capacity 6,5 l, recommended oil quality acc.to MIL-L-21o4 C, recommended oil viscosities: -2o°C to - 5°C SAE 1o - 5°C to +3o°C SAE 2o or SAE 15 W 4o over 3o°C SAE 4o or SAE 15 W 4o oil and filter change interval 2oo h
Cooling system:	Water cooling with impeller pump; pressurized system set to 4o kPa overpressure; fan with 6 blades, 4o6 mm diameter; pump delivery 124 l/min of water, fan delivery 2,15 m^3/s of air, both at 225o engine rev/min; water capacity 12 l; temperature control by thermostat
Starting system:	Electrical, ISKRA solenoid-engaged starter motor OSN I/N - 12/2,5/1o - 1 2,5 kW, heating plug in intake manifold as aid for cold starting; hand lever of speed selector in neutral position as starting safety device

Exhaust:	Vertical, outside bonnet, on the left hand side of engine; single chamber expansion type silencer with 1oo mm dia and 6oo mm length; exhaust outlet 5o mm dia, with mouth showing upwards, 273o mm above ground
Electrical system:	12 Volt, negative earth; 3-phase alternator ISKRA AAG 13o2, 14 V, 28 A; 1 lead acid battery, 135 Ah 2o-hour rating

TRANSMISSION

Clutch:	KRON - Novi Beograd; dry dual friction disc type double acting clutch, tractor drive disc dia 3oo mm, p.t.o. chaft drive disc dia 25o mm, mechanically pedal operated
Gearbox:	Own make; mechanical, 5 forward and 1 reverse gear, 1^{st}, 2^{nd} and 3^{rd} gear with sliding gears, 4^{th} and 5^{th} gear synchronized; low and high speed selector of epicyclic (planetary) type; N° of speeds (totally): lo forward 2 reverse
Rear axle and final drive:	Own make; bevel gear drive with crown wheel and pinion; bevel gear type differential with lock, pedal operated, self disengaging; final drives of epicyclic type
Front axle:	Own make; driven axle Crown wheel and pinion with final reduction gear of epicyclic type; bevel gear type differential; no differential lock exist; the power to the front axle is transmitted through the side reduction unit located on the central housind and the shaft with universal joints;

the front drive is engaged and disengaged mechanically with a sliding gear and by means of hand lever located on the right hand side of drivers seat

Oil capacities: Gearbox and rear axle (With hydraulic power lift) 32 l

Front axle (differential gearbox) 5,5 l

Final drives (front and rear) 4 x 1 l

Recommended oil qualities: Gearbox, rear and front axle: hydraulic transmission oil GALAX Traktol HT, INA Transhidrol 85 or HENA Traktol M 8o, or engine oil acc to MIL-L-21o4 C; oil changing interval 8oo h; oil filter cleaning interval 8oo h;

Final drives: hypoid oil SAE 9o acc to MIL-L-21o5 B

Total ratios and speeds

Gear	Total ratio engine: driving wheel	Nominal travelling speed at rated engine speed km/h	at standard p.t.o. speed 54o rev/min km/h
Forward speeds			
1 low	279,55	2,o3	1,5o
2 low	186,37	3,o5	2,29
3 low	121,14	4,69	3,52
4 low	98,6o	5,76	4,32
5 low	8o,59	7,o5	5,29
1 high	69,88	8,13	6,1o
2 high	46,57	12,2o	9,15
3 high	3o,28	18,77	14,o8
4 high	24,66	23,o5	17,29
5 high	2o,15	28,2o	21,15
Reverse speeds			
low	258,o	2,2o	1,65
high	64,5	8,81	6,61

Calculated with the driving wheel radius index 67o mm

Power take-off

Main P.T.O. Semi-independent p.t.o. driven by the pedal operated second disc of the double acting clutch at rear of tractor, in the median plane; height above ground 543 mm (with 16,9-28 rear tyres and radius index 67o mm); distance of the p.t.o. shaft end from the rear axle axis:

- below 127 mm
- behind 45o mm

dimensions 35 mm Ø, 6 splines acc. to JUS M.L1.6o1 and ISO 5oo type 1

Proportional to engine speed p.t.o.: Standard p.t.o. speed 54o rev/min; direction of rotation clockwise, viewed from tractor rear; p.t.o. speeds may be set by aid of tractor meter

p.t.o. speed rev/min	engine speed rev/min	transmission ratio engine:p.t.o.
54o	1688	3,125 : 1
72o	225o	

Power restriction and maximum torque: Maximum engine power and torque equivalent to maximum engine torque

Optionally:

In the p.t.o. housing two pairs of reduction gears with 1,2857 : 1 gear ratio for 54o rev/min p.t.o. (35 mm Ø, 6 splines acc. to ISO 5oo Type 1), or with o,6842 : 1 gear ratio for looo rev/min p.t.o. (35 mm Ø 21 splines acc. to ISO 5oo Type 1):

p.t.o. speed rev/min	engine speed rev/min	transmission ratio engine: p.t.o.
54o	217o	4,o18 : 1
56o	225o	
looo	2138	2,138 : 1
1o52	225o	

Power restriction and maximum torque: Maximum engine power and torque equivalent to maximum engine torque

Ground speed p.t.o. Driven by rear axle drive, sence of rotation clockwise, at forward movement

p.t.o.	travel distance per p.t.o. revolution m	number of p.t.o. revolutions per rear wheel revolution
54o	o,48	8,77

Optionally (with two pairs of reduction gears in the p.t.o. gearbox):

p.t.o.	travel distance per p.t.o. revolution m	number of p.t.o. revolutions per rear wheel revolution
54o	o,62	6,82
1ooo	o,33	12,82

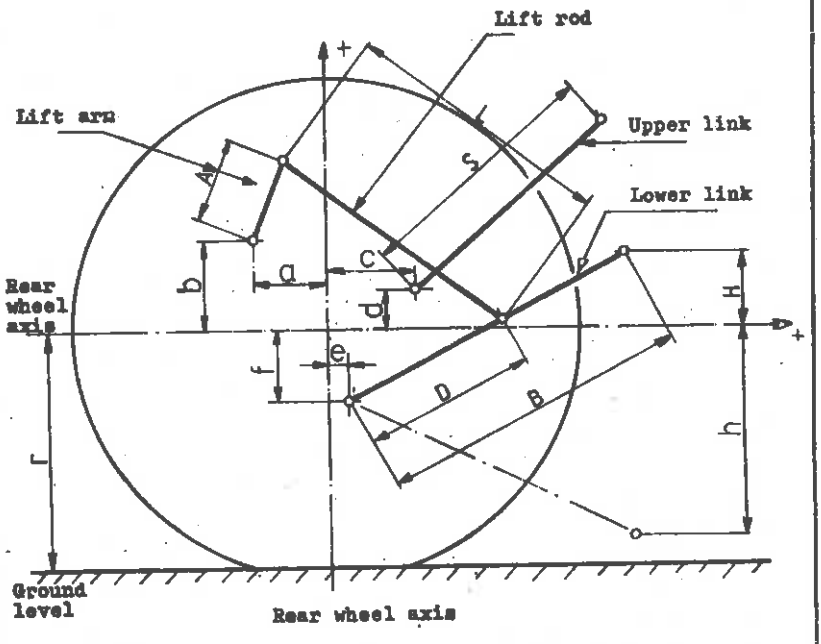
Load restriction (maximum torque): 85o Nm

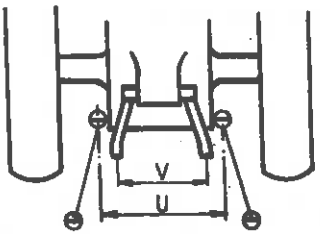
Power lift: Own make;

Hydraulic system: Four cylinder piston pump of boxer type with 26,4 cm^3/rev delivery, located in central housing, driven by p.t.o. shaft front end, with control valve at suction side;
control valve for lifting and sinking, draught control, position control, both stepless mixable;
opening pressure of relief valve 17,5 MPa,sustained pressure by the opened relief valve 18,o-18,5 MPa;
No cylinder safety valve exist;
two single acting rams with 63 mm bore, 215 mm stroke;
4 external oil tappings, single or double acting are located at rear of tractor;
hydraulic oil tank in common with gearbox, oil capacity 32 l, max 5 l may be taken off through oil tappings when tractor is mooving, lo l when tractor is stationary;
strainer in hydraulic pump suction line, every 5oo woorking hours maintained by washing.
Optional (not fited on the tested tractor) hydraulic system with additional gear pump, pump delivery 33 l/min at 225o rev/min engine speed; opening pressure of relief valve 16 MPa

Implement linkage: See pages 7 and 8

Implement linkage: Three point linkage, joint balls category 2 acc. to ISO 730/I





Dimensions of implement linkage (projected lengths, in mm)
underlined dimensions are valid for power lift test page 25

Rear tyres (size 16,9 - 28)	radius index	(r)	67o
Front tyres (size 9,5 - 24)	radius index	(r`)	52o
Length of lift arms		(A)	3oo
Length of lower links		(B)	78o
Distance of lift arm pivot point from rear wheel centre line	horizontally	(a)	-11o
	vertically	(b)	42o
Horizontal distance between the 2 lower link points		(u)	57o
Horizontal distance between the 2 lift arm end points		(v)	41o
Length of upper link		(S)	65o to 87o, <u>82o</u>
Distance of upper link pivot point from rear wheel centre line	horizontally	(c)	<u>185</u> or 181
	vertically	(d)	<u>185</u> or 219
Distance of lower link pivot point from rear wheel centre line	horizontally	(e)	215
	vertically	(f)	185
Distance of lower link pivot points to lift rod pivot points on lower links		(D)	<u>34o</u> or 38o
Length of lift rods		(L)	6o5 to 725, <u>665</u>

Height of lower link hitch points relative to rear axle centre line (situated 67o mm above ground) in mm

These data are valid for unloaded power lift

		lift rod length L		
		6o5 mm	<u>665</u> mm	725 mm
Lowest position	(h)	31o mm	46o mm	61o mm
Highest position	(H)	38o mm	26o mm	145 mm
Transport position	(H`)	38o mm	26o mm	145 mm

Pull attachment

Holed bar: Fitted on the clevis of lower links;
length between ball joints 86o mm;
thickness of the bar 3o mm, width 8o mm centre hole and 4 holes on either side in 48 mm steps;
all holes with 2o mm diameter;
height above ground adjustable by power lift within the range from 6o to 1o5o mm continuosly
distance of centre hole with lower links in horizontal position;

from rear axle:
horizontal 995 mm behind
vertical 185 mm below

from p.t.o. shaft end
horizontal 545 mm behind
vertical 58 mm above

Trailer hitch: Automatically acting by means of power lift,
height above ground 374 mm in working position;
distance of hitch centre

from rear axle:
horizontal 529 mm behind
vertical 296 mm below

from p.t.o. shaft end
horizontal 79 mm behind
vertical 169 mm below

diameter of the coupling pin 48 mm;
maximum admissible vertical load 15oo daN

Towing hitch: Fixted;
height above ground 67o, 71o;
75o and 79o mm distance of the hitch centre:

from the rear axle
horizontal 561 mm behind
vertical in line, 4o; 8o and 12o mm above

from the p.t.o. shaft end
horizontal 111 mm behind
vertical 127, 167, 2o7 and 247 mm above

diameter of the coupling pin 3o mm

Note:

1° All pull attachment heights are given for the radius index of rear wheels 67o mm (16,9-28 tyres).

2° Holed bar, trailer hitch and towing hitch are available optionally.

Steering: PPT-ORSTA
hydrostatic steering, model LAGB 1oo,
with own oil cirquit;
engine driven pump with constant delivery. 12 l/min, maximum working pressure 1o MPa;
double acting ram with 5o/25 bore and 235 mm stroke;
oil capacity 1,5 l;
recommended oil - GALAXMATIC DAC or DE ZF ATF, ALLISON C-2 and C-3, oil changing interval 4oo h;
oil filter in reverse line with changing interval 8oo.

Brakes

Service brake: model G.O.I.M.P.D. 8,75x7,4 (2o°);
hydraulically acting disc type brake on the rear differential half shafts, in oil bath, with four discs on each side, disc diameter 222,2/187,9 mm;

Steering brakes: Divided pedals of service brake, for normal use locked together;

Parking brake: Service brake, but mechanically acting, hand lever operated;

Trailer braking take-off: Optional equipment, not fitted on the tested tractor;
make PPT;
single line air brake, operated by pedal mounted valve;

	compressor with 75 mm bore 28 mm stroke, driven by the engine at 2340 rev/min speed at rated engine speed (2250 rev/min) compressor delivery 0,29 m^3/min (at atmospheric pressure) at rated engine speed; pressure control valve with filter and coupling for tyre pressurizing, operating within 4,8-5,3 bar (opening pressure); compressed air tank with 20 l capacity; standardized coupling head;
Wheels	
Front wheels: (Steering and driving)	2 pneumatics 9,5-24 AS, 6 ply, diagonal type tyre casing; maximum permissible load per tyre 940 kg at 2,1 bar inflation pressure and 30 km/h; track width 1535 mm; rims 8 x 24
Driving wheels:	2 pneumatics at rear 16,9-28, 6 ply, diagonal type tyre casing; maximum permissible load per tyre 1925 kg at 1,4 bar inflation pressure and 30 km/h; cast iron wheel discs, track width adjustable from 1540 to 2140 mm in four steps by turning of wheel discs; rims W 12L x 28
Wheel base:	2220 mm
Seat:	Own make; model 5220 04 500; upholstered seat with back rest; adjustable spring (60 to 120 kg) with shock absorber; for and aft adjustable about 125 mm
Cab	Safety cab IMT 527 39 600 with drivers platform IMT 527 39 500 (O.E.C.D. Approval CSD 0999/3-a(C); joined to the tractor body in four points by means of elastic supports; interior padding of the cab is from sound deadening materials;

windows with safety glasses, back window may be opened;
heating and ventilating unit make TAP-Ptuj, with filter and air inlet in cab's roof front panel.

Number of grease points: with grease 19
with oil 12

OVERALL DIMENSIONS

Total lenght: 4105 mm with horizontal lower links and with front ballast
3815 mm with horizontal lower links and without front ballast

Maximum width: 2245 mm with maximum rear track setting with and without rear ballast

Minimum width: 1930 mm between the outside edges of rear tyres (track setting 1540 mm)

Total height: 2615 mm to the top of the cab
2730 mm to the top of the exhaust outlet

Ground clearance: 434 mm in the middle of tractor
317 mm below the front axle housing

Note: Total heights and ground clearance are given for the radius index of rear tyres 670 mm (16,9-28 tyres) and radius index of front tyres 520 mm (9,5-24 tyres)

Lighting equipment: Electrical, 12 Volt, negative earth

	Dimensions mm	Height above ground to centre mm	Distance from outside edge of tractor to centre mm 1)
Head lights: 2)	ø 135	115o	64o
Side lights:			
front 3)	12o/35	155o	13o
rear 4)	6o/55	156o	15o
Position lights:			
front 3)	12o/35	158o	13o
rear 4)	12o/35	152o	18o
Stop lights: 4)	6o/55	156o	21o
Reflectors:			
rear 5)	ø 135	172o	13o

1) distance from autside edge of cab's fender (rear wheel track width 154o mm)

2) unrestricted beam angle of Head lights in plan view 32°

3) on common plate 12o/7o mm

4) on common plate 12o/9o mm

5) only one reflector on the rear edge of right hand fender

Running-time meter: Mechanical with tachometer combined driven by the engine; reference engine speed for one really counted hour 15oo rev/min

TEST CONDITIONS

Masses Ready for use as tested

		without driver kg	with driver kg
Without ballast:	front	134o	135o
	rear	1925	199o
	total	3265	334o
With ballast:	front	188o	189o
	rear	25o5	257o
	total	4385	446o
Ballast:	front	lo weights 3o kg each	3oo kg
		water in tyres	165 kg
	rear	4 weights 5o kg each	2oo kg
		water in tyres	455 kg
Track setting:	front	1535 mm	
	rear	154o mm	

FUELS AND LUBRICANTS USED IN TESTS

Fuel:	INA Diesel-fuel D_2 in all tests	
	Density at 15°C:	o,829 kg/l
	Cetane number:	over 5o
	Viscosity at 5o°C	2,5 cSt
Engine oil:	GALAX SUPER HD S3, SAE 3o (11 cSt at 98,9°C)	
Transmission and power lift oil:	GALAX TRAKTOL HT 8,7 cSt at 98,9°C)	
Final drives and front ayle:	HYPOL 9o B (17 cSt at 98,9°C)	
Steering oil:	GALAXMATIC DAC	

COMPULSORY TESTS

(1) MAIN POWER-TAKE-OFF PERFORMANCE

Date and location of test: 28th August 1987
Institut za mehanizaciju poljoprivrede - Zemun

Type of dynamometer: Hydraulic brake SCHENCK U1-3o with auxilary band brake

Power kW	Speed engine rev/min	Speed p.t.o. rev/min	Fuel consumption hourly l/h	Fuel consumption hourly kg/h	Fuel consumption specific kg/kWh	Specific energy kWh/l
	MAXIMUM POWER					
	At 2-hour test					
37,78	225o	72o	14,22	11,78	o,312	2,66
	At standard p.t.o. speed (54o rev/min)					
32,55	1688	54o	1o,99	9,11	o,28o	2,96
	At speed recommended by the manufacturer for drawbar work					
37,78	225o	72o	14,22	11,78	o,312	2,66
	PART LOADS					
	Governor hand lever in position giving maximum power					
(i) 85% of torque at maximum power						
33,24	2329	745	12,52	1o,38	o,312	2,65
(ii) unloaded						
o,63	2425	776	5,o9	4,22	-	-
(iii) 5o% of the load defined in (i)						
16,87	2364	757	8,52	7,o6	o,418	1,98
(iv) maximum power						
37,78	225o	72o	14,22	11,78	o,312	2,66
(v) 25% of the load defined in (i)						
8,56	2392	765	6,56	5,43	o,635	1,3o
(vi) 75% of the load defined in (i)						
25,16	2348	751	1o,43	8,64	o,344	2,41

Power kW	Speed engine rev/min	Speed p.t.o. rev/min	Fuel consumption hourly l/h	Fuel consumption hourly kg/h	Fuel consumption specific kg/kWh	Specific energy kWh/l
Governor settiing giving standard p.t.o. speed at full load						
(i) 85% of the torque at full load						
28,58	1744	558	9,65	8,oo	o,28o	2,96
(ii) unloaded						
o,31	1872	599	3,o7	2,55	-	-
(iii) 5o% of the load defined in (i)						
14,98	1828	585	6,18	5,12	o,342	2,42
(iv) full load						
32,55	1688	54o	1o,99	9,11	o,28o	2,96
(v) 25% of the load defined in (i)						
7,57	1847	591	4,46	3,7o	o,489	1,7o
(vi) 75% of the load defined in (i)						
21,86	1778	569	7,73	6,41	o,293	2,83

STANDARD SPECIFIC FUEL CONSUMPTION o,312; o,418
o,28o; o,342 kg/kWh

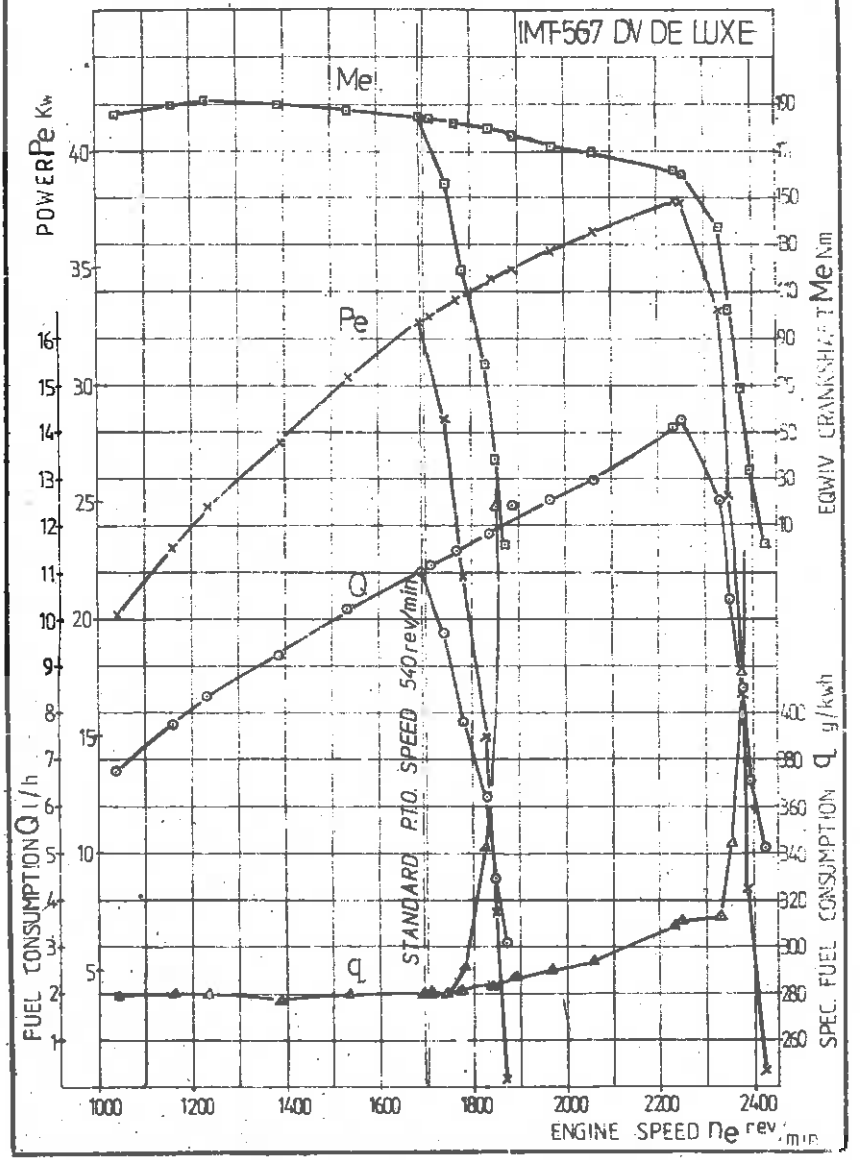
No load, maximum engine speed: 2425 rev/min

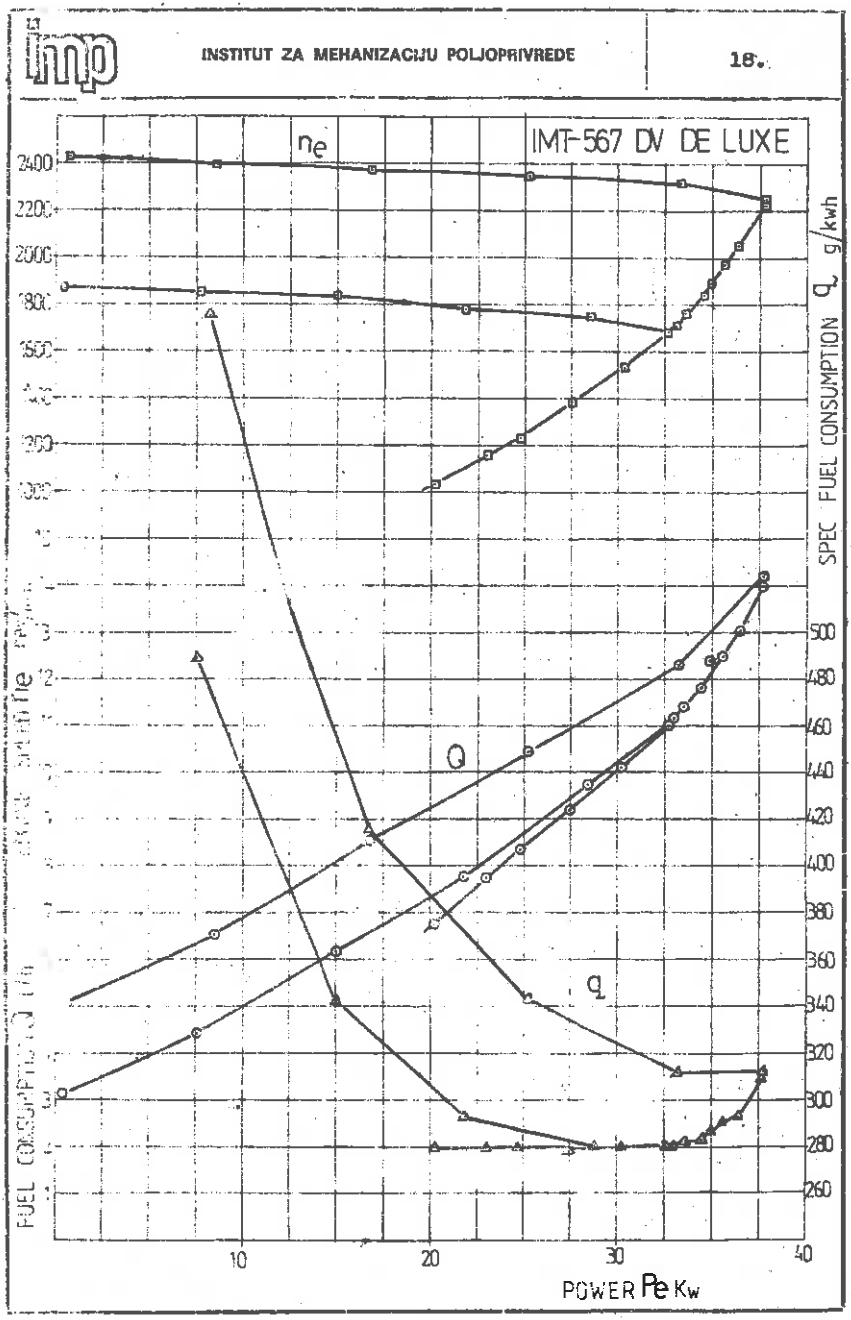
Equivalent crankshaft torque
at maximum power: 16o Nm

Maximum equivalent
crankshaft torque: 191 Nm
at 1232 rev/min engine speed

Mean atmospheric conditions:
- temperature: 19°C
- pressure: 1o16 mbar
- humidity: 69%

Maximum temperatures
- coolant: 84°C
- engine oil: 96°C
- fuel: 21°C
- air intake: 21°C


IMT-567 DV DE LUXE
Me
Pe
Q
q
STANDARD P.T.O. SPEED 540 rev/min
POWER Pe Kw
FUEL CONSUMPTION Q l/h
EQUIV CRANKSHAFT Me Nm
SPEC. FUEL CONSUMPTION q g/kwh
ENGINE SPEED ne rev/min
1000
1200
1400
1600
1800
2000
2200
2400


IMT-567 DV DE LUXE
ne
Q
q
SPEC FUEL CONSUMPTION q g/kwh
FUEL CONSUMPTION Q l/h
POWER Pe Kw
2400
2200
2000
500
480
460
440
420
400
380
360
340
320
300
280
260
10
20
30
40

(2) DRAWBAR PERFORMANCE

Date of test: 31st August and 8th September 1987

Type of track: Tarmacadam

Note: The drawbar test was started with run-in tyres

Gear	Driving speed	Power	Drawbar pull	Engine speed	Mean slip of wheels	Specific energy	Specific fuel consumpt.	Temperatures Fuel	Co-olant	Engine oil	Atmospheric condit. Tempe-rature	Relative humidity	Pres-sure
-	km/h	kW	daN	rev/min	%	kWh/l	kg/kWh	°C	°C	°C	°C	%	mber
1	2	3	4	5	6	7	8	9	1o	11	12	13	14
				(i) MAXIMUM POWER (unballasted)							tyre inflation pressure		
				height of drawbar above ground 75o mm							front 1,7 bar, rear o,9 bar		
1 L	1,82	15,32	3o3o	2354	15,o	1,73	o,478	23	8o	82	23	57	1oo9
2 L	2,7o	22,73	3o3o	2335	15,o	2,o3	o,4o7	24	8o	84	23	57	1oo9
3 L	4,22	3o,48	26oo	225o	1o,1	2,14	o,388	25	82	85	24	57	1oo9
4 L	5,39	31,52	21o5	225o	6,7	2,21	o,375	26	83	85	24	54	1oo9
5 L	6,75	31,97	17o5	225o	4,3	2,24	o,369	26	84	86	24	54	1oo9
1 H	7,87	32,57	149o	225o	3,4	2,29	o,362	26	85	87	24	54	1oo9
2 H	11,98	31,95	96o	225o	2,o	2,24	o,368	26	85	87	25	54	1oo9
3 H	18,55	3o,14	585	225o	1,4	2,12	o,393	27	84	86	25	54	1oo9
4 H	22,85	28,56	45o	225o	1,1	2,o1	o,415	27	84	86	25	52	1oo9
5 H	28,1o	27,32	35o	225o	o,8	1,92	o,433	28	83	86	26	52	1oo9

Gear	Driving speed	Power	Drawbar pull	Engine speed	Slip of wheels	Specific energy	Specific fuel consumpt.	Temperatures			Atmospheric conditions		
								Fuel	Coolant	Engine oil	Temperature	Relative humidity	Pressure
-	km/h	kW	daN	rev/min	%	kWh/l	kg/kWh	°C	°C	°C	°C	%	mbar
1	2	3	4	5	6	7	8	9	1o	11	12	13	14
		(ii)	MAXIMUM POWER (ballasted)						tyre inflation pressure				
			height of drawbar above ground 75o mm						front 2,1 bar, rear 1,2 bar				
1 L	1,8o	2o,3o	4o6o	234o	15,o	1,95	o,423	18	8o	82	19	54	1oll
2 L	2,61	29,15	4o2o	225o	14,5	2,o5	o,4o5	19	82	83	2o	51	1oll
3 L	4,41	31,48	257o	225o	6,2	2,21	o,375	2o	82	83	2o	51	1oll
4 L	5,51	31,68	2o7o	225o	4,4	2,22	o,372	21	83	84	21	49	1oll
5 L	6,84	31,83	1675	225o	3,3	2,24	o,37o	22	84	84	21	49	1oll
1 H	7,9o	31,82	145o	225o	2,9	2,23	o,37o	22	84	86	21	49	1oll
2 H	12,oo	3o,83	925	225o	1,9	2,17	o,383	22	84	86	22	46	1oll
3 H	18,6o	28,67	555	225o	1,o	2,o1	o,412	23	85	88	22	46	1oll
4 H	22,9o	26,72	42o	225o	o,7	1,88	o,442	24	86	88	22	46	1oll
5 H	28,1o	24,98	32o	225o	o,5	1,75	o,473	24	85	87	23	45	1oll

Gear	Driving speed	Power	Drawbar pull	Engine speed	Slip of wheels	Specific energy	Specific fuel consumpt.	Temperatures			Atmospheric conditions		
								Fuel	Co-olant	Engine oil	Tempe-rature	Relative humidity	Pres-sure
-	km/h	kW	daN	rev/min	%	kWh/l	kg/kWh	°C	°C	°C	°C	%	mbar
1	2	3	4	5	6	7	8	9	1o	11	12	13	14
		(iii)	FIVE-HOUR-TEST at 75% of drawbar pull at maximum power in 5th L gear										
5 L	7,1o	24,85	126o	233o	2,8	2,18	o,38o	25	83	86	23	45	1oll
		(iv)	FIVE-HOUR-TEST at pull corresponding 15% wheel sleep in test (ii)										
1 L	-	-	4o6o	225o	-	-	-	26	88	91	23	45	1oll

Total oil consumption during the ten hours duration of tests (iii) and (iv) was 49 g/h

Test (iv) was carried out with additional ballast, the figures not quoted are therefore irrelevant

(3) TURNING SPACE AND TURNING CIRCLE

Wheel equipment	front:	9,5o - 24 AS 6 ply
	rear:	16,9 - 28 AS 8 ply
Track of wheels	front:	1535 mm
	rear:	154o mm

+Front wheel drive disengaged

	Without brakes		With brakes	
	left-hand	right-hand	left-hand	right-hand
	m	m	m	m
Radius of turning space	4,95	4,93	4,45	4,43
Radius of turning circle	4,69	4,66	4,18	4,15

(4) LOCATICN CF CENTRE OF GRAVITY

Height above ground:	779 mm
Distance forward from rear axle centre:	897 mm
Distance from tractor's median plane:	1 mm to the left

(5) BRAKING PERFORMANCE

Date of test: 1st and 10th September 1987

Type of track: Tarmacadam

Mass of tractor with driver (kg):

	front	rear	total
ballasted	1890	2570	4460
unballasted	1350	1990	3340

+Front wheel drive engaged

Type 0 (ordinary cold service braking device performance) test

Speed before application of brakes 28,5 km/h

Ballasted	Braking device control force	daN	30	35	40	45	50	55
	Mean deceleration	m/s^2	2,95	3,20	3,65	3,90	4,25	4,40
Unballasted	Braking device control force	daN	25	30	35	40	45	50
	Mean deceleration	m/s^2	3,10	3,40	3,70	4,00	4,50	4,70

Type I (fade) test

Speed before application of brakes 28,5 km/h

Ballasted	Braking device control force	daN	30	35	40	45	50	55
	Mean deceleration	m/s^2	2,80	3,10	3,45	3,70	4,05	4,20
Unballasted	Braking device control force	daN	30	35	40	45	50	55
	Mean deceleration	m/s^2	3,00	3,30	3,60	3,85	4,30	4,55

Maximum deviation of tractor from its original course no deviation was observed

No abnormal vibrations occured

The brakes were heated by towing the tractor with the braking force about 10% of the mass at the speed 22,6 km/h (80% of the maximum speed)

Parking braking device test

	Tractor with ballast 18 per cent slope		Tractor without ballast 12 per cent slope with trailer of 3265 kg	
	Up	Down	Up	Down
Braking device control force, daN	26	26	24	24

(6) AMBIENT NOISE EMITTED BY THE TRACTOR

Date of test: 15th September 1987
Type of track: Tarmacadam
Type of sound level meter: BRUEL &. KJAER mod.22o9

Results of test

Gear: 5th high
Travelling speed before acceleration: 21,5 km/h
Sound level: 87,o dB(A)

(7) NOISE AT DRIVER`S EAR LEVEL

Date of test: 15th September 1987
Type of track: Tarmacadam
Type of sound level meter: BRUEL &. KJAER mod.22o9

Results of test

1) Tractor with cab and with vertical exhaust pipe
2) Front wheel drive engaged

Gear -	Drawbar pull at which the tractor develops the maximum sound level daN	Travelling speed nominal km/h	Travelling speed efective km/h	Sound level dB(A)
1 L	3ooo	2,o3	1,8	83,5
2 L	3ooo	3,o5	2,7	83,6
3 L	26oo	4,69	4,2	83,8
4 L	21oo	5,76	5,4	83,9
5 L+)	17oo	7,o5	6,7	84,o
5 L+)	Light load	7,o5	7,3	82,9
1 H	145o	8,13	7,9	83,2
2 H	95o	12,2o	12,o	83,8
3 H	57o	18,77	18,6	84,1
4 H	45o	23,o5	22,8	83,9
5 H++)	Light load	28,2o	28,8	83,7

+) The 5th low gear corresponds to the travelling speed nearest to 7,5 km/h

++) Front wheel drive disengaged

(8) POWER LIFT AND HYDRAULIC POWER TEST

Date and location of test: 18th September 1987
IMP - Zemun

Hydraulic fluid:

Make and type: Galax Traktol HT

Viscosity: 8,7 mm/s (cSt) at 98,9°C

Viscosity index:

Hydraulic fluid temperature at the beginning of test: 62°C

Type of linkage lock for transport: hydraulic

Opening pressure of the cylinder overpressure safety valve (manufacturer's specification): No overpressure valve exist

Power lift:

Main linkage dimensions see on pages 7 and 8

	Height of lower hitch point above ground in down position mm	Vertical movement mm	Maximum force exerted through full range daN	Corresponding pressure of hydraulic fluid MPa	Moment around rear axle daNm	Max. tilt angle of mast over range of lift degr.
At hitch points	21o	72o	221o	15,8	-	-
On the frame	15o	885	182o	15,8	292o	-5° 25' +1o° 2o'

Note: The front wheels are raising when on the lower links hitch points is applied the lifting force of 299o daN (tractor without front ballast) or 4195 daN (tractor with front ballast)

Performance of power lift

Lifting heights in relation to a horizontal line through the lower link pivot points

mm	-335	-275	-200	-100	0	+100	+200	+300	+400	+445	+500	+550
	At hitch points											
daN	-	2210	2290	2390	2500	2600	2650	2720	2800	2830	-	-
	At test frame (610 mm behind lower link hitch points)											
daN	1820	-	1920	1980	2020	2050	2070	2070	2080	-	2100	2120

1° The forces are measured at sustained pressure with the relief valve open (18,1 MPa) and calculated on the pressure 15,8 MPa which corresponds 90% of relief valve setting (17,5 MPa).

Hydraulic power test:

Systained pressure with relief valve open:	18,1 MPa (181 bar)
Opening pressure of relief valve:	17,5 MPa (175 bar)
Pump delivery rate on minimum pressure:	18,4 l/min at 2250 rev/min engine speed
Flow rate corresponding to a hydraulic pressure equivalent to 90% of the actual relief valve pressure setting and corresponding hydraulic power:	Flow rate: 17,9 l/min Pressure: 15,8 MPa (158 bar) Power: 4,71 kW
Flow rate and hydraulic pressure corresponding to maximum hydraulic power:	Flow rate: 17,3 l/min Pressure: 16,5 MPa (163 bar) Power: 4,76 kW
Tapping point used for test:	At rear of tractor
Temperature of hydraulic fluid:	62 - 66°C
REMARKS and REPAIRS:	No