Institut za mehanizaciju poljoprivrede – Zemun

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



Agricultural tractor IMT – 567 DE LUXE (2 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

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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 DE LUXE (2 WD)
Type:	Standard-unit construction, four wheels, rear wheels driven
Serial N°:	7o1 ooo o84 (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, 1st, 2nd and 3rd gear with sliding gears, 4th and 5th gear synchronized; low and high speed selector of epicyclic (planetary) type; N° of speeds (totally): 1o 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; Steering axle of telescopic type, not driven; track width adjustable in steps
Oil capacities:	Gearbox and rear axle (With hydraulic power lift) 32 l Final drives (front and rear) 2 x 1 l

Recommended oil quylities:

Gearbox and rear 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.Ll.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 tractormeter

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
lo52	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

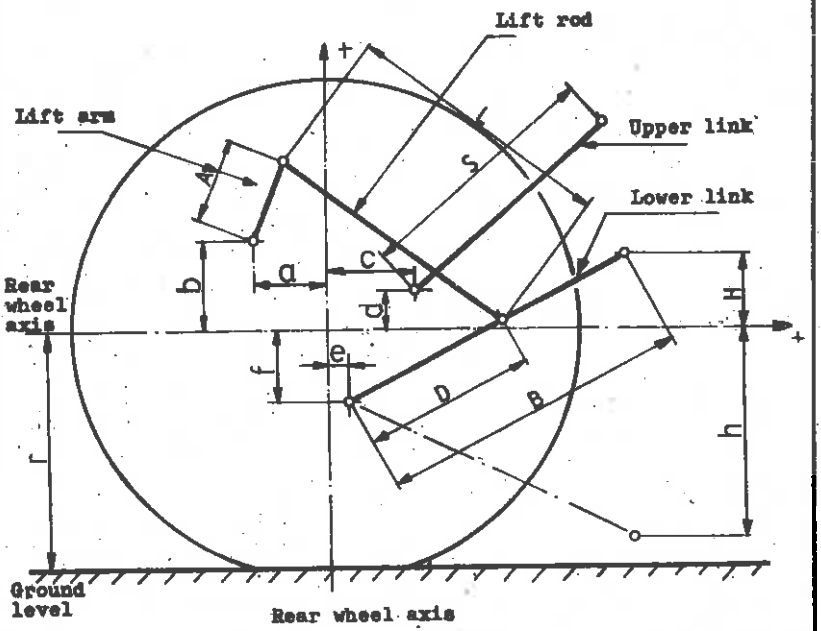
Load restriction (maximum torque): 85o Nm

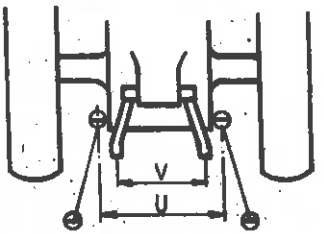
Power lift:

Hydraulic system: Own make;
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 7,5o - 16) static radius		(r')	376
Length of lift arms		(A)	3oo
Length of lower links		(B)	78o
Distance of lift arms 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, 82o
Distance of upper link pivot point from rear wheel centre line	horizontally	(c)	185 or 181
	vertically	(d)	185 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)	34o or 38o
Length of lift rods		(L)	6o5 to 725, 665

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

These data are velid for unloaded power lift

		lift rod length L		
		6o5 mm	665 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 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 circuit; engine driven pump with constant delivery 12 l/min, maximum working pressure 1o MPa; double acting ram with 4o/22 mm bore and 17o mm stroke; oil capacity 1,5 l; recommended oil - GALAXMATIC DAC or DEXTRON B, ZF ATF, ALLISON C-2 and C-3; oil changing interval 4oo h; oil filter in reverse line with changing interval 8oo h;
Brakes	
Service brake:	model G.O.I.M.P.D. 8,75x7,4 (2o°); hydraulically acting disc type brake on the rear differential half chafts, 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 234o rev/min speed at rated engine speed (225o rev/min) compressor delivery o,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 2o l capacity;
standardized coupling head;

Wheels

Steering wheels: 2 pneumatics in front 7,5o-16, 6 ply, diagonal type tyre casing;
maximum permissible load per tyre 745 kg at 2,5 bar inflation pressure and 3o km/h;
track width adjustable from 13oo to 18oo mm in 1oo mm steps;
rims 5,5F x 16

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 3o km/h;
cast iron wheel discs, track width adjustable from 154o to 214o mm in four steps by turning of wheel discs;
rims W 12L x 28

Wheel base: 221o mm

Seat: Own make; model 52o o4 5oo;
upholstered seat with back rest;
adjustable spring (6o to 12o kg) with shock absorber;
for and aft adjustable about 125 mm

Cab: Safety cab IMT 527 39 6oo with drivers platform IMT 527 39 5oo (O.E.C.D. Approval CSD o999/4-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	15
	with oil	1o

OVERALL DIMENSIONS

Total lenght:	4o95 mm with horizontal lower links and with front ballast
	38o5 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:	193o mm between the outside edges of rear tyres (track setting 154o mm)
Total height:	2615 mm to the top of the cab
	273o mm to the top of the exhaust outlet
Ground clearance:	434 mm in the middle of tractor

Note: Total heights and ground clearance are given for the radius index of rear tyres 67o mm (16,9-28 tyres) and static radius of front tyres 376 mm (7,5o-16 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	1100	640
Side lights:			
front 3)	120/35	1540	130
rear 4)	60/55	1540	150
Position lights:			
front 3)	120/35	1575	130
rear 4)	120/35	1525	180
Stop lights: 4)	60/55	1570	210
Reflectors:			
rear 5)	Ø 135	1725	130

1) distance from autside edge of cab's fender (rear wheel track width 1540 mm)

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

3) on common plate 120/70 mm

4) on common plate 120/90 mm

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

Running-time meter: Mechanical with tachometer combined driven by the engine; reference engine speed for one really counted hour 1500 rev/min

TEST CONDITIONS

Masses Ready for use as tested

		without driver kg	with driver kg
Without ballast:	front	1o9o	11o5
	rear	1945	2oo5
	total	3o35	311o
with ballast:	front	139o	14o5
	rear	2545	26o5
	total	3935	4olo
Ballast:	front	8 weights 3o kg each	24o kg
	rear	4 weights 5o kg each	2oo kg
		water in tyres	46o kg
Track setting:	front	13oo 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 83, SAE 3o (11 cSt at 98,9°C)
Transmission and power lift oil:	GALAX TRAKTOL HT 8,7 cSt at 98,9°C)
Final drive:	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 Ü1-3o 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 setting 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

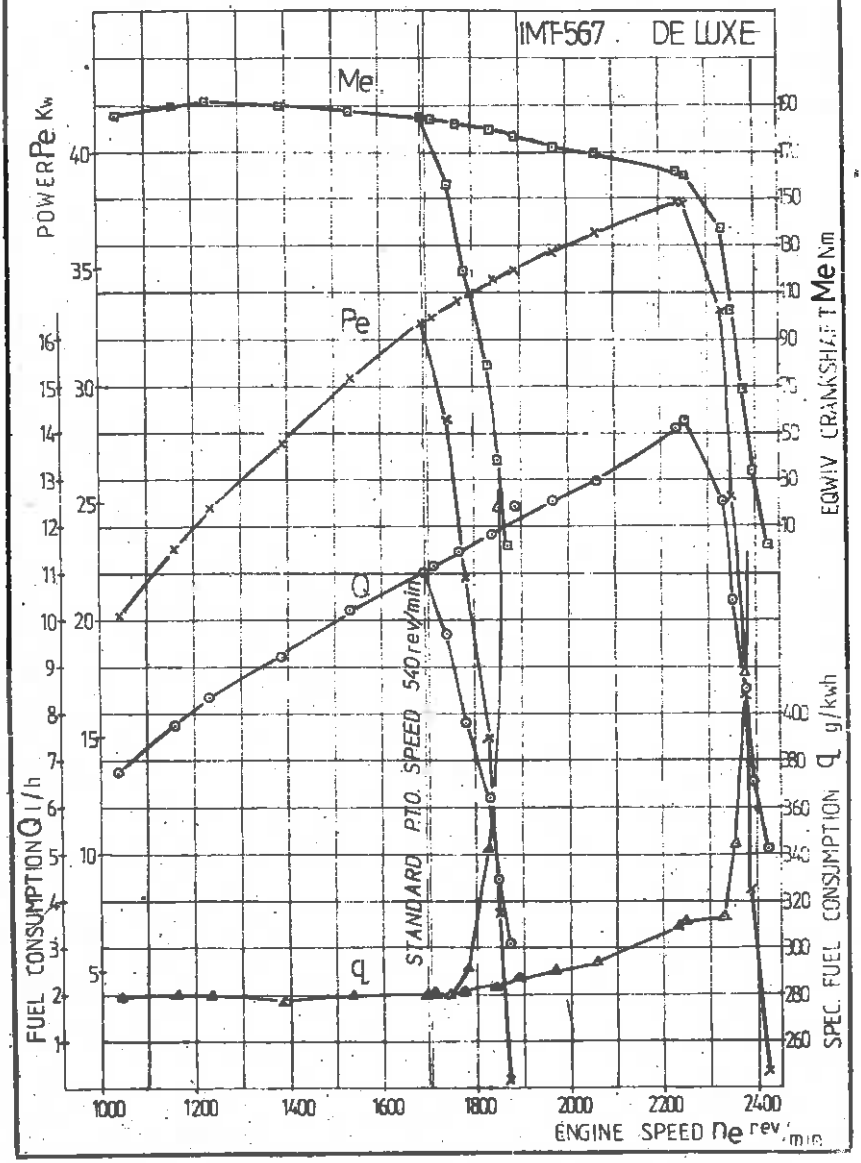
No load, maximum engine speed: 2425 rev/min

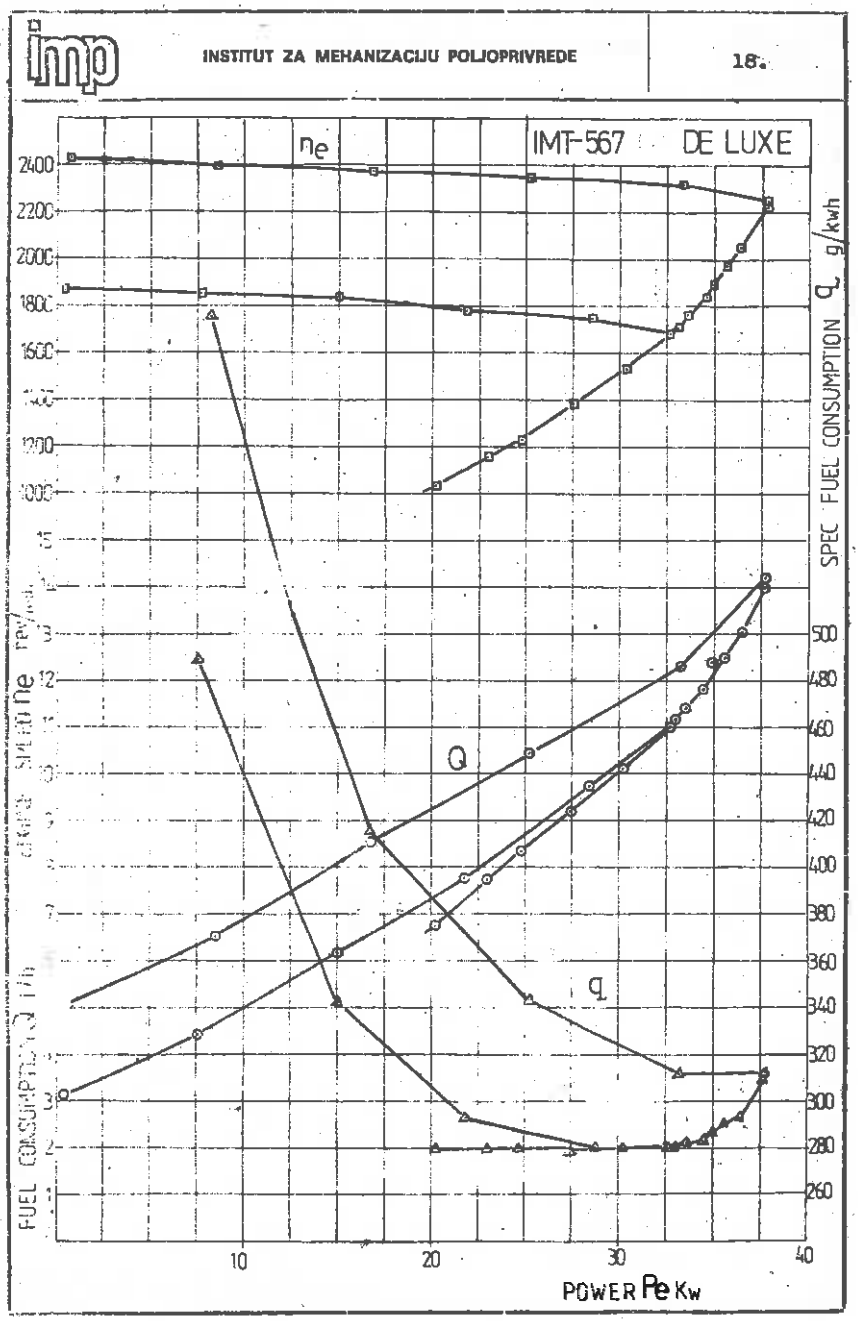
Equivalent crankshaft torque
at maximum power: 16o Nm

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 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


ne
IMT-567 DE LUXE
2400
2200
2000
1800
1600
1200
Q
q
SPEC FUEL CONSUMPTION q g/kwh
500
480
460
440
420
400
380
360
340
320
300
280
260
10
20
30
40
POWER Pe Kw

(2) DRAWBAR PERFORMANCE

Date of test: 22nd and 28th September 1987

Type of track: Tarmacadam

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

Gear	Driving speed	Power	Drawbar pull	Engine speed	Slip of wheels	Specific energy	Specific fuel consumpt.	Temperatures Fuel	Co-olant	Engine oil	Atmospheric conditions 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
	(i) MAXIMUM POWER without ballast						height of drawbar above ground 71o mm driving wheels inflation pressure o,9 bar						
1 L	1,81	12,97	258o	236o	15,o	1,51	o,547	22	8o	82	23	47	1oo7
2 L	2,7o	19,35	258o	234o	15,o	1,84	o,45o	23	8o	84	23	47	1oo7
3 L	4,o1	28,74	258o	2255	15,o	2,o7	o,4oo	24	82	85	23	47	1oo7
4 L	5,2o	3o,91	214o	225o	9,8	2,17	o,382	25	83	87	24	44	1oo7
5 L	6,6o	31,81	1735	225o	6,6	2,23	o,372	25	84	88	24	44	1oo7
1 H	7,71	32,55	152o	225o	5,3	2,28	o,364	25	86	9o	24	44	1oo7
2 H	11,85	32,42	985	225o	3,o	2,28	o,365	26	86	9o	24	44	1oo7
3 H	18,5o	31,35	61o	225o	1,7	2,2o	o,378	26	86	9o	25	42	1oo7
4 H	22,8o	3o,4o	48o	225o	1,3	2,13	o,39o	26	85	9o	25	42	1oo7
5 H	27,95	29,11	375	225o	1,o	2,o4	o,4o7	27	85	9o	25	42	1oo7

Gear	Driving speed	Power	Drawbar pull	Engine speed	Slip of wheels	Specific energy	Specific fuel consumpt.	Temperatures Fuel	Co-olant	Engine oil	Atmospheric conditions 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
		(ii) MAXIMUM POWER with ballast					height of drawbar above ground 71o mm driving wheels inflation pressure 1,2 bar						
1 L	1,8o	16,8o	336o	235o	15,o	1,76	o,47o	18	8o	8o	18	43	1oo8
2 L	2,69	25,11	336o	233o	15,o	2,o1	o,412	18	8o	82	19	4o	1oo8
3 L	4,22	3o,71	262o	225o	1o,3	2,16	o,384	19	81	83	19	4o	1oo8
4 L	5,35	31,36	211o	225o	7,2	2,2o	o,377	19	82	83	2o	37	1oo8
5 L	6,71	31,69	17oo	225o	5,o	2,22	o,373	2o	83	85	21	35	1oo8
1 H	7,78	32,2o	149o	225o	4,6	2,26	o,367	2o	84	86	21	35	1oo8
2 H	11,9o	31,4o	95o	225o	2,8	2,2o	o,377	22	84	88	22	34	1oo8
3 H	18,5o	29,55	575	225o	1,4	2,o7	o,4o1	24	84	89	23	34	1oo8
4 H	22,8o	27,87	44o	225o	1,1	1,95	o,425	24	85	9o	23	34	1oo8
5 H	28,oo	26,44	34o	225o	o,8	1,85	o,449	24	85	9o	24	38	1oo8

Gear	Driving speed	Power	Drawbar pull	Engine speed	Slip of wheels	Specific energy	Specific fuel consumpt.	Temperatures			Atmospheric conditions		
								Fuel	Co-olant	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
		(iii)	FIVE-HOUR TEST										
			at 75% of drawbar pull at maximum power in 5thL gear										
5 L	7,o4	25,o3	128o	233o	3,6	2,19	o,378	27	82	86	25	36	1oo8
		(iv)	FIVE-HOUR TEST										
			at pull corresponding maximum wheel sleep in test (ii)										
2 L	-	-	336o	232o	-	-	-	27	8o	92	24	39	1oo8

Total oil consumption during the ten hours duration of tests (iii) and (iv) was 47 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:	7,5o - 16) 6 ply
	rear:	16,9 - 28 AS 8 ply
Track of wheels	front:	13oo mm
	rear:	154o mm

	Without brakes		With brakes	
	left-hand	right-hand	left-hand	right-hand
	m	m	m	m
Radius of turning space	4,56	4,59	3,88	3,9o
Radius of turning circle	4,42	4,45	3,73	3,75

(4) LOCATION OF CENTRE OF GRAVITY

Height above ground:	781 mm
Distance forward from rear axle centre:	785 mm
Distance from tractor's median plane:	2 mm to the right

(5) BRAKING PERFORMANCE

Date of test: 24th and 30th September 1987

Type of track: Tarmacadam

Mass of tractor with driver (kg)

	front	rear	total
ballasted	14o5	26o5	4olo
unballasted	11o5	2oo5	311o

Type 0 (ordinary cold service braking device performance) test

Speed before application of brakes 29,o km/h

Ballasted	Braking device control force	daN	3o	35	4o	45	5o
	Mean deceleration	m/s^2	2,3o	3,1o	3,3o	3,45	3,5o
Unballasted	Braking device control force	daN	25	3o	35	4o	45
	Mean deceleration	m/s^2	2,25	3,1o	3,3o	3,4o	3,45

Type I (fade) test

Speed before application of brakes 29,o km/h

Ballasted	Braking device control force	daN	3o	35	4o	45	5o
	Mean deceleration	m/s^2	2,o5	2,6o	3,oo	3,2o	3,4o
Unballasted	Braking device control force	daN	25	3o	35	4o	45
	Mean deceleration	m/s^2	2,15	2,9o	3,1o	3,25	3,4o

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 1o% of the mass at the speed 23,o km/h (8o% of the maximum speed)

Parking braking device test

	Tractor with ballast 18 per cent slope		Tractor without ballast 12 per cent slope with trailer od 3o35 kg	
	Up	Down	Up	Down
Braking device control force, daN	25	25	27	27

(6) AMBIENT NOISE EMITTED BY THE TRACTOR

Date of test: 23rd September 1987
Type of track: Tarmacadam
Type of sound level meter: BRUEL &. KJAER mod.2209

Results of test

Gear: 5th high
Travelling speed before acceleration: 21,5 km/h
Sound level: 86,8 dB(A)

(7) NOISE AT DRIVER'S EAR LEVEL

Date of test: 23rd September 1987
Type of track: Tarmacadam
Type of sound level meter: BRUEL &. KJAER mod.2209

Results of test

Tractor with cab and with vertical exhaust pipe

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	255o	2,o3	1,8	83,2
2 L	255o	3,o5	2,7	83,4
3 L	255o	4,69	4,o	83,6
4 L	211o	5,76	5,3	83,7
5 L+)	172o	7,o5	6,6	83,9
5 L+)	Light load	7,o5	7,2	82,7
1 H	15oo	8,13	7,7	83,1
2 H	95o	12,2o	11,9	83,6
3 H	6oo	18,77	18,6	84,o
4 H	45o	23,o5	22,8	83,8
5 H++)	Light load	28,2o	28,5	83,6

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

(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 242o daN (tractor without front ballast) or 3o9o 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	-2oo	-1oo	0	+1oo	+2oo	+3oo	+4oo	+445	+5oo	+55o
	At hitch points											
daN	-	221o	229o	239o	25oo	26oo	265o	272o	28oo	283o	-	-
	At test frame (61o mm behind lower link hitch points)											
daN	182o	-	192o	198o	2o2o	2o5o	2o7o	2o7o	2o8o	-	21oo	212o

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 9o% 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 225o rev/min engine speed
Flow rate corresponding to a hydraulic pressure equivalent to 9o% 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