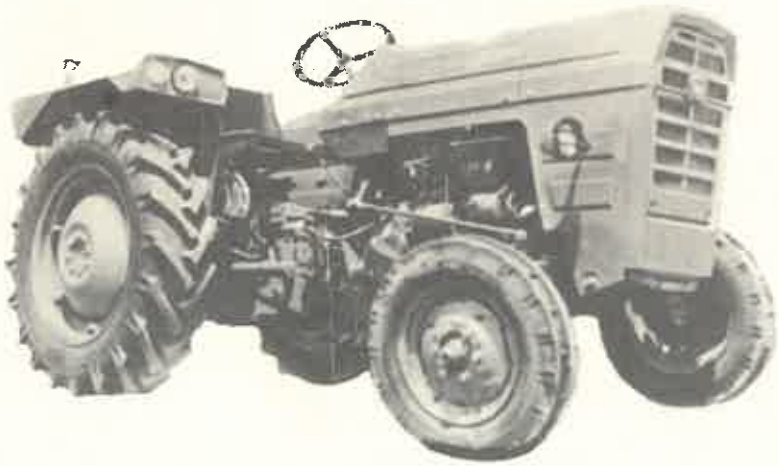
Institut za mehanizaciju poljoprivrede - Zemun

O.E.C.D Report No 819
Printed: February 1982

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



Agricultural Tractor IMT — 542

Manufactured by: IMT — Industrija Mašina i Traktora
Novi Beograd — Yugoslavija

Date of test: April – June 1981

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 (C.E.M.A.G.R.E.F., France) as being in accordance with the O.E.C.D. STANDARD – CODE.

Date of Approval: January 22nd, 1982

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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 6o hours

SPECIFICATION OF TRACTOR

TRACTOR

Make:	IMT
Model:	IMT - 542
Type:	Standard-unit construction, four wheels, rear wheels driven
Serial N°:	lol ooo 44o

ENGINE

Make:	IMR - Industrija Motora Rakovica
Model:	M 33/T
Type:	Four stroke, water cooled diesel, indirect injection
Serial N°:	Y o99 G 82759
Cylinders:	3, vertical, in-line, bore 91,4 mm, stroke 127 mm, displacement 25oo 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 5o l; CAV-IPM distributor type DPA Y323ol 21o mod 336 injection pump, serial N° WX * 177, manufacturer's production setting 53 mm^3 at 225o engine rev/min and full load; injection timing 2o° before T.D.C.; CAV-IPM injector nozzles, model YKB 32 S/81, injection pressure 125 bar

Governor:	CAV-IPM, mechanical, all range incorporated in fuel injection pump, governed range of engine speed 475 to 2400 rev/min, rated engine speed 2250 rev/min
Air cleaner:	Main KRON with oil bath, model KF 304, oil capacity 0,34 l; Pre-cleaner KRON, centrifugal, model KF 424
Lubrication system:	Forced feed from gear pump with strainer in sump, full flow replaceable paper element filter; total oil capacity 5,7 l; recommended oil quality acc. MIL-L-2104 C recommended oil viscosities: SAE 30 above 25°C SAE 20 between 0°C and 25°C SAE 10 below 0°C Oil and filter change interval 200 h
Cooling system:	Water cooling with impeller pump; pump capacity 93 l/min at 2250 rev/min engine speed; pressurized system set to 0,4 bar overpressure fan with 6 blades, 395 mm diameter; coolant capacity 10 l; temperature control by thermostat
Starting system:	Electrical, LUCAS-TVS solenoid-engaged starter motor M 45 PE; heating plug in intake manifold as aid for cold starting
Exhaust:	Horizontal, on the left hand side of the tractor's body; exhaust silencer: dia 85 mm; length 500 mm exhaust outlet: dia 50 mm distance from the rear axle axis: behind 150 mm below 250 mm Optionally: vertical exhaust with the same silencer dimensions and the mouth 2110 mm above ground
Electrical system:	12 Volt, negative earth; ISKRA generator ADJ 0101 12V 15A; one lead acid battery 135 Ah at 20-hour rating

TRANSMISSION

Clutch:	KRON - Novi Beograd; dry dual friction disc type double acting clutch, tractor drive disc dia 300 mm, p.t.o. shaft drive disc dia 228,6 mm, mechanically pedal operated
Gearbox:	Own make; mechanical, 5 forward and 1 rewerse 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): 10 forward 2 reverse
Rear axle:	Own make; Bevel gear drive with crown wheel and pinion; bevel gear type differential, with lock pedal operated, self disengaging
Oil capacities:	Gearbox (with hydraulic power lift) and rear axle 32,0 l
Recommended oil qualities:	Hydraulic transmission oil JOHN DEERE J14 B, MF M-1135; IH-HY-TRAN B-6, or acc. to MIL-L-2104 C
Oil changing period:	800 hours for all gears

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 467 mm; distance of the p.t.o. shaft end from the rear axle axis: - below 127 mm - behind 261 mm dimensions 29x34,9x8,7 mm, 6 splines acc. to JUS M.L1-601 and ISO 500 type 1;

speed at rated engine speed (225o rev/min) 72o rev/min; standard p.t.o. speed 54o rev/min at 1688 rev/min engine speed;
direction of rotation clockwise, viewed from tractor rear;
p.t.o. speeds may be set by aid of tractor-meter

Ground speed P.T.O. — Main p.t.o. may be shifted to ground speed p.t.o.;
travelling distance per one revolution of the p.t.o. o,51 m;
7,31 revolution of p.t.o. per one revolution of driving wheel;
direction of rotation clockwise, facing driving end of p.t.o. and with tractor in forward gear

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	23o,73	2,18	1,63
2 low	153,82	3,26	2,45
3 low	99,98	5,o2	3,77
4 low	83,83	5,99	4,49
5 low	66,51	7,55	5,66
1 high	57,68	8,71	6,53
2 high	38,46	13,o6	9,79
3 high	24,99	2o,o9	15,o7
4 high	2o,96	23,96	17,93
5 high	16,63	3o,2o	22,65
Reverse speeds			
low	213,o4	2,36	1,77
high	53,26	9,43	7,o7

Calculated with the driving wheel rolling radius 592 mm, given in the tyre manufacturer's specification

Belt pulley: Available optionally;
located at rear of tractor, connected to p.t.o. shaft;
width 165 mm, diameter 286,6 mm;
speeds at rated engine speed (2250 rev/min)

linear	1182 m/min
rotational	1313 rev/min

engine speed at standard belt pulley speed (945 m/min) 1799 rev/min;
direction of rotation clockwise viewed face of pulley

Power lift: Own make;

Hydraulic system: Four cylinder piston pump of boxer type with 29,4 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 170 bar, sustained pressure by the opened relief valve 180 - 185 bar;
single acting ram with 83 mm bore, 121 mm stroke;
3 external oil tappings, single or double acting at rear of tractor available optionally (not fitted on the tested 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, 10 l when tractor is stationary;
strainer in hydraulic pump suction line, every 500 working hours maintained by washing

Implement linkage: Three point linkage category I;
lift rods with fixed length;
lifting range above ground
from 232 to 1000 mm
(rear wheels static radius 590 mm)

Pull attachment

Holed bar: Fitted on the clevis of lower links;
length between ball joints 660 mm;
thickness of the bar 30 mm; centre hole
and 4 holes on either side in 48 mm steps;
all holes with 20 mm diameter;
height above ground adjustable by power
lift within the range from 220 to 890 mm
continuosly;
mechanisally lockable in all positions
within the range from 280 to 610 mm above
ground by means of two supporting bars
with adjustable lengts;
distance of centre hole with lower links
in horizontal position:
from rear axle:
horizontal 820 mm behind
vertical 114 mm below
from p.t.o. shaft end
horizontal 559 mm behind
vertical 13 mm above

Trailer hitch: Automatically acting by means of power
lift;
height above ground 326 mm in working
position;
distance of hitch centre
from rear axle:
horizontal 389,5 mm behind
vertical 264 mm below
from p.t.o. shaft end
horizontal 128,5 mm behind
vertical 137 mm below
diameter of the coupling pin 30 mm;
maximum admissible vertical load 1500 daN

Towing hitch: Fixted;
height above ground 665 mm;
distance of the hitch centre:
from the rear axle
horizontal 608 mm behind
vertical 75 mm above
from the p.t.o. shaft end
horizontal 347 mm behind
vertical 202 mm above
diameter of the coupling pin 30 mm

NOTE:
1° All pull attachment heights are given for the static radius of rear wheels 590 mm.
2° Holed bar, trailer hitch and towing hitch are available optionally.

Steering: Own make;
worm with travelling balls;
manual control with two arms and two connecting rods

Brakes:

Service brake: Own make;
mechanically acting shoe type brake with 2 brake drums at the end of differential half shafts;
operated with 2 pedals coupled by a latch;

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

Parking brake: Hand lever with ratchet actuating service brake

Trailer brake: Optional equipment, 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 by 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; compressed air tank with 2o l capacity; standardized coupling head
Wheels	
Steering wheels:	2 pneumatics in front 6,oo-16 AS-FRONT, 6 ply, diagonal type tyre casing; maximum permissible load per tyre 535 daN at 3,o bar inflation pressure and 3o km/h; track width adjustable from 126o to 2o6o mm in loo mm steps by extending axle; rims 4,5Ex16
Driving wheels:	2 pneumatics at rear 12,4-28, agricultural, 6 ply, diagonal type tyre casing; maximum permissible load per tyre 115o daN at 1,5 bar inflation pressure and 3o km/h; steel wheel discs, track width adjustable from 123o to 193o mm in cca loo mm steps by reversing discs and rims rims W11x28
Wheel base:	195o mm
Seat:	Own make; upholstered seat with back rest; adjustable spring (6o to 12o kg) with shock absorber; for and aft adjustable about 125 mm
Number of grease points:	with grease 7 with oil 6

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 11o	1ooo	45o
Side lights:			
front 3)	12o/35	1315	1oo
rear 4)	6o/55	1315	195
Position lights:			
front 3)	12o/35	1285	1oo
rear 4)	12o/35	1285	225
Stop lights: 4)	6o/55	1315	255
Reflectors:			
front 5)	Ø 85	13oo	225
rear 6)	Ø 135	152o	375

1) distance from autside edge of the fender

2) unrestricted beam angle of Head lights in plan view 32^{o}

3) on common plate 12o/7o mm

4) on common plate 12o/9o mm

5) a pair of reflectors on the fender's front panel

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

CONDITIONS DURING TEST

Weights Ready for use as tested

		without driver kg	with driver kg	
Without ballast:	front	7o5	715	
	rear	111o	1175	
	total	1815	189o	
With ballast:	front	98o	99o	
	rear	147o	1535	
	total	245o	2525	
Ballast:	front	6 weights 3o kg each and weight carrier 15 kg		195 kg
	rear	4 weights 6o kg each		24o kg
		water in tyres		2oo kg

Track setting: front 126o mm
rear 1325 mm

Dimensions

Total length: 33oo mm without ballast and with power lift lower links in horizontal position
362o mm with front ballast and with power lift lower links in horizontal position

Total width:
Without ballast: 17oo mm (between outher edges of fenders)
With ballast: 176o mm (with 132o mm rear wheels track setting)

Total height: 166o mm to the top of steering wheel

Ground clearance: 342 mm, in the meadle of tractor's base (and 59o mm static radius of rear wheels)

FUELS AND LUBRICANTS USED IN TESTS

Fuel:	INA Diesel-fuel D_2 in all tests
	Specific gravity at 15°C: 0,827 kg/h
	Cetane number: 58
	Viscosity 4,8 mm^2/S at 15°C
Engine oil:	GALAX SUPER HD 83, SAE 3o
	(11 cSt at 98,9°C)
Transmission and power lift oil:	HENA TRAKTOL M-8o
	(8,8 sCt at 98,9°C)

COMPULSORY TESTS

(1) MAIN POWER-TAKE-OFF PERFORMANCE

Date and location of test: 21th May 1981
Institut za mehanizaciju poljoprivrede - Zemun

Type of dynamometer: Hydraulic brake SCHENCK U1-3o

Power	Speed		Fuel consumption			Specific energy
	engine	p.t.o.	hourly		specific	
kW	rev/min	rev/min	l/h	kg/h	kg/kWh	kWh/l
	MAXIMUM POWER					
	At 2-hour test					
26,83	225o	72o	1o,82	8,92	o,332	2,48
	At standard p.t.o. speed (54o rev/min)					
24,69	1688	54o	8,75	7,21	o,292	2,82
	At speed recommended by the manufacturer for drawbar work					
26,83	225o	72o	1o,82	8,92	o,332	2,48
	PART LOADS					
	Governor hand lever in position giving maximum power					
(i) 85 % of torque at maximum power						
23,55	2321	743	9,75	8,o4	o,341	2,42
(ii) unloaded						
o,65	24oo	768	5,33	4,39	-	-
(iii) 5o % of the load defined in (i)						
12,o2	2372	759	6,77	5,58	o,464	1,78
(iv) maximum power						
26,83	225o	72o	1o,82	8,92	o,332	2,48
(v) 25 % of the load defined in (i)						
6,o2	2388	764	5,72	4,71	o,782	1,o5
(vi) 75 % of the load defined in (i)						
17,69	2341	749	7,86	6,48	o,366	2,25

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						
21,8o	1753	561	7,57	6,23	o,286	2,88
(ii) unloaded						
o,35	1844	59o	2,92	2,41	-	-
(iii) 5o % of the load defined in (i)						
11,15	1794	574	4,84	3,99	o,358	2,3o
(iv) full load						
24,69	1688	54o	8,75	7,21	o,292	2,82
(v) 25 % of the load defined in (i)						
5,56	1816	581	3,66	3,o2	o,543	1,52
(vi) 75 % of the load defined in (i)						
16,5o	1775	568	6,o2	4,97	o,3o1	2,74

STANDARD SPECIFIC FUEL CONSUMPTION: o,341; o,464:, o,286; o,358 kg/kWh

No load, maximum engine speed: 24o5 rev/min

Equivalent crank-shaft torque at maximum power: 11,39 daNm

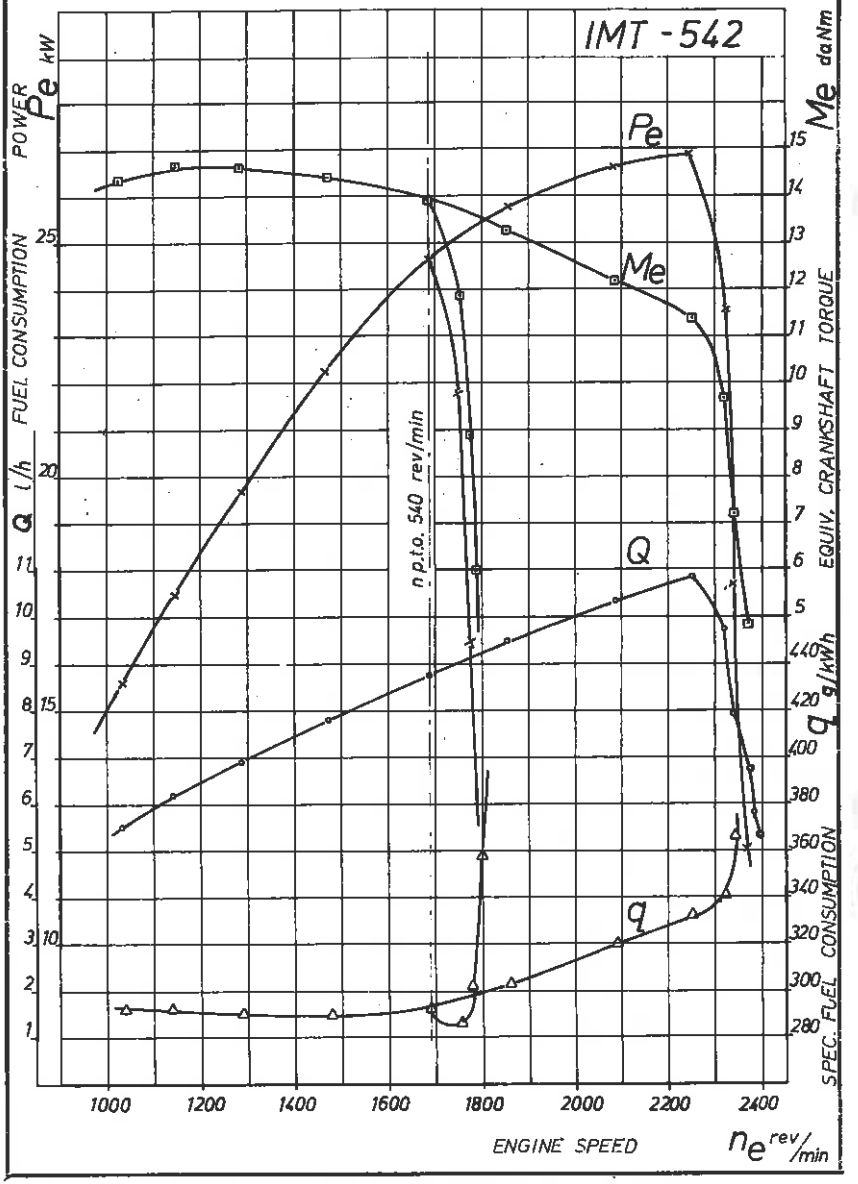
Maximum equivalent crankshaft torque: 14,69 daNm at 1142 rev/min engine speed

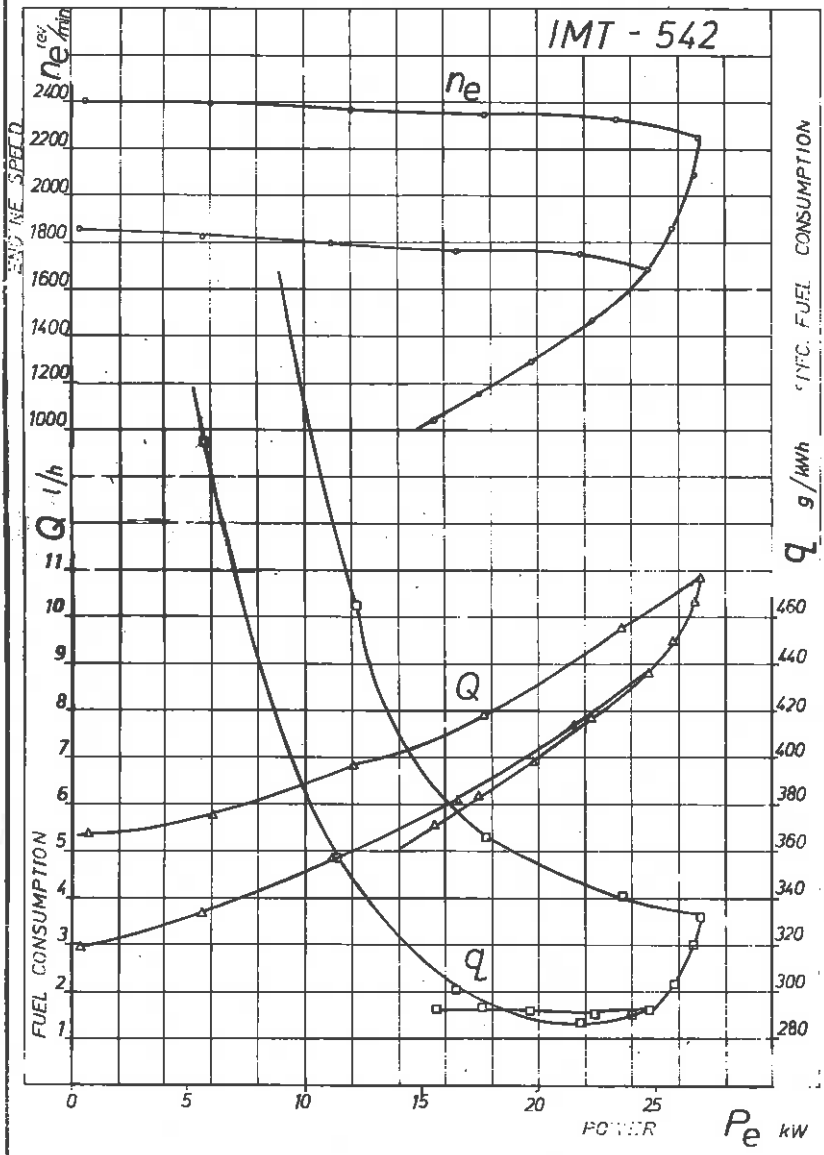
Mean atmospheric conditions:

- temperature: 24 °C
- pressure: looo6 mbar
- humidity: 53 %

Maximum temperatures

- coolant: 82 °C
- engine oil: 93 °C
- fuel: 27 °C
- air intake: 27 °C


IMT - 542
Pe kW POWER
Q l/h FUEL CONSUMPTION
Me daNm EQUIV. CRANKSHAFT TORQUE
q g/kWh SPEC. FUEL CONSUMPTION
n p.t.o. 540 rev/min
Pe
Me
Q
q
1000
1200
1400
1600
1800
2000
2200
2400
ENGINE SPEED
ne rev/min


IMT - 542
ENGINE SPEED
n_e rev/min
2400
2200
2000
1800
1600
1400
1200
1000
n_e
Q l/h
11
10
9
8
7
6
5
4
3
2
1
FUEL CONSUMPTION
Q
q
q g/kWh
SPEC. FUEL CONSUMPTION
460
440
420
400
380
360
340
320
300
280
0
5
10
15
20
25
POWER
P_e kW

(2) DRAWBAR PERFORMANCE

Date of test: 23rd and 24th June 1981

Type of track: Tarmacadam

Note: The drawbar test was started with new, 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 with ballast					height of drawbar above ground 69o mm driving wheels inflation pressure 1,1 bar					
1 L	1,93	11,74	219o	2345	15,o	1,6o	o,513	26	8o	88	24	63	1oo3
2 L	2,88	17,52	219o	232o	15,o	1,83	o,45o	26	8o	88	24	63	1oo3
3 L	4,63	22,12	172o	225o	8,2	2,o3	o,4o3	27	82	9o	24	63	1oo3
4 L	5,64	22,56	144o	225o	6,1	2,o7	o,395	28	82	91	25	56	1oo3
5 L	7,26	22,79	113o	225o	4,4	2,o9	o,392	28	84	92	25	56	1oo3
1 H	8,45	23,oo	98o	225o	3,4	2,12	o,388	29	84	92	25	56	1oo3
2 H	12,85	22,49	63o	225o	2,1	2,o7	o,396	29	84	93	25	56	1oo3
3 H	2o,oo	21,11	38o	225o	1,3	1,94	o,423	28	84	92	25	56	1oo3
4 H	23,8o	2o,44	31o	225o	1,1	1,88	o,435	27	83	92	25	56	1oo3
5 H	3o,15	18,84	225	225o	o,9	1,67	1,473	27	83	9o	25	56	1oo3

1	2	3	4	5	6	7	8	9	1o	11	12	13	14
	(ii) FIVE-HOUR-TEST at 75 % of drawbar pull at maximum power in 4th low gear												
4 L	5,96	18,o5	1o9o	2325	4,5	2,o1	o,4o8	25	85	92	23	67	998
	(iii) FIVE-HOUR-TEST at drawbar pull corresponding to 15 % wheelslip in test (i)												
2 L	-	-	22oo	-	-	-	-	25	82	9o	23	67	998
	(iv) MAXIMUM POWER without ballast height of drawbar above ground 71o mm driving wheels inflation pressure o,9 bar												
1 L	1,96	8,55	157o	236o	15,o	1,32	o,625	23	8o	86	23	63	1oo8
2 L	2,9o	12,65	157o	234o	15,o	1,68	o,49o	23	8o	88	23	63	1oo8
3 L	4,43	19,32	157o	231o	15,o	1,91	o,43o	23	8o	89	24	57	1oo8
4 L	5,3o	21,35	145o	225o	12,1	1,97	o,42o	23	82	91	24	57	1oo8
5 L	7,oo	22,17	114o	225o	7,9	2,o3	o,4o6	24	82	92	24	57	1oo8
1 H	8,22	22,61	99o	225o	6,o	2,o7	o,395	24	82	92	25	54	1oo8
2 H	12,6o	22,4o	64o	225o	3,5	2,o5	o,399	24	82	92	25	54	1oo8
3 H	19,8o	22,oo	4oo	225o	2,o	2,o2	o,4o5	24	81	92	25	54	1oo8
4 H	23,7o	21,4o	325	225o	1,6	1,96	o,419	25	81	92	25	54	1oo8
5 H	3o,1o	19,65	235	225o	1,2	1,8o	o,456	24	81	9o	25	54	1oo8

Remark: Five hour test at pull corresponding to 15 % wheelslip (test iii) was carried out with additional ballast. Therefore results of test for power, wheelslip, driving speed and fuel consumption would not have ony practical value.

Total engine oil consumption during ten hours duration of tests (ii) and (iii) was 46 g/h

(3) TURNING SPACE AND TURNING CIRCLE

Wheel equipment front: 6,00 - 16 AS Front, 6 ply
rear: 12,4 - 28 AS 6 ply

Track of wheels front: 1260 mm
rear: 1325 mm

	Without brakes		With brakes	
	left-hand	right-hand	left-hand	right-hand
	m	m	m	m
Radius of turning space	3,67	3,76	3,21	3,32
Radius of turning circle	3,56	3,66	3,09	3,21

(4) LOCATION OF CENTRE OF GRAVITY

Height above ground: 758 mm

Distance forward from rear axle centre: 738 mm

Distance from tractor's median plane: 6 mm to the left

(5) BRAKING PERFORMANCE

Date of test: 22nd and 25th June 1981

Type of track: Tarmacadam

Mass of tractor with driver (kg):

	front	rear	total
ballasted	990	1535	2525
unballasted	725	1165	1890

Type 0 (ordinary cold service braking device performance) test

Speed before application of brakes 31,2 km/h

Ballasted	Braking device control force	daN	28	32	36	45	55
	Mean deceleration	m/s^2	1,65	1,96	2,31	2,67	2,92
Unballasted	Braking device control force	daN	24	30	36	44	52
	Mean deceleration	m/s^2	1,60	1,95	2,25	2,60	2,75

Type I (fade) test

Speed before application of brakes 31,2 km/h

Ballasted	Braking device control force	daN	28	32	36	45	55
	Mean deceleration	m/s^2	1,62	1,90	2,25	2,61	2,86
Unballasted	Braking device control force	daN	24	30	36	44	52
	Mean deceleration	m/s^2	1,63	1,92	2,20	2,55	2,70

Maximum deviation of tractor from its original course less than 0,5 m to the left

No abnormal vibrations occured

The brakes were heated by towing the tractor with the braking force about 10 % of the mass at the speed 25 km/h (80 % of the maximum speed).

Parking braking device test

		18 per cent slope		12 per cent slope with trailer of two tonnes	
		Up	Down	Up	Down
Braking device control force,	daN	36	36	39	39

(6) AMBIENT NOISE EMITTED BY THE TRACTOR

Date of test: 29th June 1981
Type of track: Tarmacadam
Type of sound level meter: BRUEL &.KJAER mod.22o9

Results of test

Gear: 5th high
Travelling speed before acceleration: 25 km/h
Sound level: 89,4 dB(A)

(7) NOISE AT THE DRIVER'S EAR LEVEL

Date of test: 29th June 1981
Type of track: Tarmacadam
Type of sound level meter: BRUEL &.KJAER mod.22o9

Results of test

+) Tractor without cab or frame and with horizontal exhoust pipe

Gear	Drawbar pull at which the tractor develops the maximum sound level daN	Travelling speed nominal km/h	Travelling speed effective km/h	Sound level dB(A)
1 L	155o	2,15	2,o	95,7
2 L	155o	3,25	3,o	96,o
3 L	155o	5,o3	4,5	96,4
4 L	14oo	5,98	5,4	97,7
5 L +)	1o5o	7,55	7,1	98,4
1 H	95o	8,75	8,4	98,7
2 H	6oo	13,1o	12,8	98,7
3 H	37o	2o,1o	2o,o	99,o
4 H	3oo	24,1o	24,o	99,5
5 H	Light load	3o,3o	31,o	99,3

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

(8) POWER LIFT AND HYDRAULIC PUMP PERFORMANCE

Date and location of tests: 15th June 1981
Institut za mehanizaciju poljoprivrede - Zemun

Hydraulic fluid:

Make and type: HENA TRAKTOL M-8o
Viscosity: 8,8 cSt at 98,9 °C
Viscosity index: over 85

Note: Power lift operates with the oil from the gearbox

Type of linkage lock for transport: hydraulic

Power lift

	Height of lower hitch point above ground in down position 1) mm	Vertical movement mm	Maximum force exerted through full range daN	Corresponding pressure of hydraulic fluid MPa (bar)	Moment about rear axle daNm	Max.tilt angle of mast over range of lift deg.
At hitch points	215	681	128o	15,3 (153)	1235	-
On the frame	17o	868	95o	15,3 (153)	1645	-2° 1o' +1o° 5'

1) With the rear wheel static radius 59o mm

2) Calculated with the maximum force exerted through the full range of lower links movement and with maximum oil pressure (18,6 MPa)

Temperature of hydraulic fluid at start of test 61°C

Hydraulic pump performance

Opening pressure of the relief valve: 17,o MPa (17o bar)

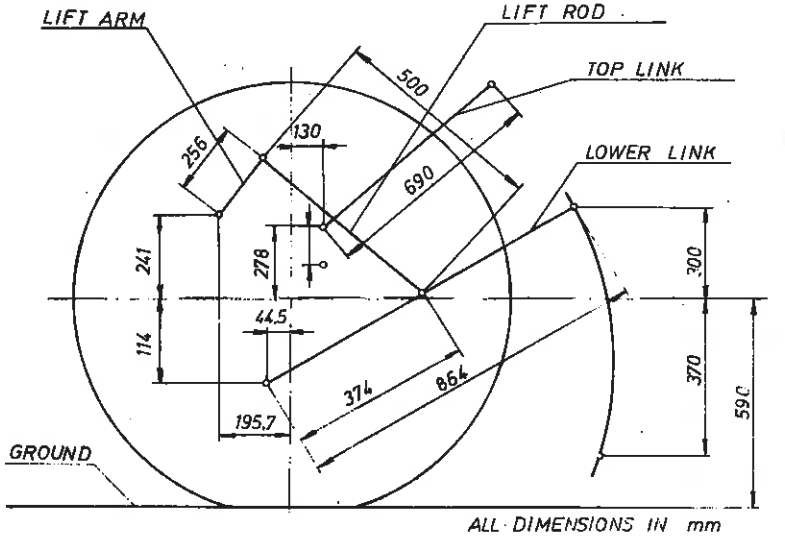
Sustained pressure with relief valve open: 18,6 MPa (186 bar)
(Pump was not stalled)

Pump delivery rate at minimum pressure,
the governor control lever being set for
maximum power 18,5 l/min

Pump delivery rate at 9o % of relief
valve setting, the governor control lever
being set for maximum power: 17,1 l/min

Hydraulic power at 9o % of relief valve setting: 4,36 kW

Dimensions of linkage geometry
for the table on page 24



LIFTING FORCES

Lifting heights relative to horizontal lower links

mm	-325	-300	-260	-200	-100	0	+100	+200	+300	+400	+420	+500	+560
			At hitch points										
daN	-	-	1280	1310	1350	1380	1410	1420	1450	1460	1470	-	-
			At test frame (610 mm behind lower link hitch points)										
daN	-	1160	-	1150	1120	1110	1100	1090	1070	1050	-	1010	950

1° The forces are measured at sustained pressure with the relief valve open (18,6 MPa) and calculated on the pressure 15,3 MPa which corresponds 90 % of relief valve setting

2° The hydraulic fluid temperature during the test was 61°C - 68°C

Linkage geometry when connected to the standard frame

Projected length in side view

lower links	864 mm
lift arms	256 mm
lift rods	5oo mm
top link	69o mm
Distance of lift rod connection point from pivot point of lower link	374 mm

The folloving dimensions are given relative to the rear wheel centre line, situated 59o mm above the ground level:

Lower link pivot point	44,5	mm forward,	114	mm below
Top link pivot point	13o	mm behind,	278	mm above
Lift arm pivot point	195,7	mm forward,	241	mm above
Maximum and minimum height of lower link hitch points	3oo	mm above,	37o	mm below
Height of lower link hitch points when locked in transport position	3oo	mm above		