Institut za mehanizaciju poljoprivrede - Zemun

O.E.C.D. Report No 1231 FULL CODE

Printed: March 199o

REPORT ON TEST IN ACCORDANCE WITH O.E.C.D. FULL CODE FOR THE FFICIAL TESTING OF AGRICULTURAL TRACTORS



Agricultural Tractor IMT - 549 DV E (4 WD)

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

Date of test: May 1989.

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: February 15th, 199o

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Printed in Yugoslavia

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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 7o hours

SPECIFICATION OF TRACTOR

TRACTOR

Make:	IMT
Model:	IMT-549 DVE (4 WD)
Type:	Standard-unit construction, four wheels, four wheel drive
Serial N°:	9o1 oo9 7o2 (Start of series)

ENGINE

Make:	IMR - Industrija Motora Rakovica
Model:	DM 33
Type:	Four stroke, water cooled diesel, direst injection, naturally aspirated
Serial N°:	1o344
Cylinders:	3, vertical, in-line, bore 91,4 mm, stroke 127 mm, displacement 25oo cm^3, compression ratio 16,5:1, overhead valves, replaceable dry cylinder liners
Fuel system:	IPM membrane type feed pump with hand primer and sediment bowl, 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 3238F 23o injection pump, serial N° 12687 JCG, manufacturer's production setting 5o-52 mm^3/stroke at rated engine speed and full load; injection timing 2o° before T.D.C.; CAV-IPM injector nozzles of multi hole type (four holes), model EE, injection pressure setting 18,6 ± 5 MPa

Governor:	CAV-IPM, mechanical, all range, incorporated in fuel injection pump, governed range of engine speed 500 to 2400 rev/min, rated engine speed 2250 rev/min
Air cleaner:	DONALDSON-TPR dry paper element filter with maintenance indicator; horizontal with air inlet bellow bonnet in front of the engine; maintenance indicator with signal light on the instrument panel
Lubrication system:	Forced feed from excentric rotor pump; oil filter with replaceable cartridge; recomended oil and filter change period 250 hours; recommended oil quality acc. MIL-L-2104 A -20°C to - 5°C SAE 10 or SAE 5W20 - 5°C to +30°C SAE 20 or SAE 15W40 over 30°C SAE 40 or SAE 15W40 Oil capacity 5,5 l
Cooling system:	Water cooling with impeller pump, pressurized system set to 50 KPa overpressure; fan with 6 blades 406 mm dia; water capacity 13,5 l; temperature control by piston type thermostat;
Staring system:	Electrical, LUCAS-TVS solenoid-engaged starter motor 2SM 114 or ISKRA solenoid-engaged starter motor AZJ0404 12V, 3kW Z10; heating plug in intake manifold as aid for cold starting; hand lever of speed selector in neutral position as starting safety device
Electrical system:	12 Volt, negative earth; 3-phase alternator ISKRA AAG 1302, 14V, 28A 1 lead acid battery, 97 Ah at 20 hours rating
Exhaust:	Vertical, on the left hand side of tractor's body; single chamber expansion type silencer with 85 mm dia and 500 mm length; exhaust outlet 50 mm dia, with mouth showing upwards, 2550 mm above ground

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 228,6 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):
lo 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;

Front axle: Own make; driven axle
Grown 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)	2 x 1 l

Recoomended oil qualities:	Gearbpx, rear and front axtle; hydraulic transmission oil GALAX Traktol HT, INA Transhidrol 85 or HEN. 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 9oo acc to MIL-L-21o5 B

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 463 mm (with 12,4-28 rear tyres and radius index 59o mm); distance of the p.t.o. shaft end from the rear axle centre line: - below 127 mm - behind 261 mm

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

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	1982	3,67 : 1
613	225o	

Ground speed p.t.o.: Driven by rear axle drive, sense 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,51	7,31

Total ratios and speeds

Gear	Total ratio engine: driving wheel	Nominal travelling speed at rated engine speed of 225o rev/min km/h	at standard p.t.o. speed 54o rev/min km/h
Forward speeds			
1 low	23o,73	2,17	1,62
2 low	153,82	3,25	2,44
3 low	99,98	5,oo	3,76
4 low	83,83	5,97	4,47
5 low	66,51	7,52	5,64
1 high	57,68	8,68	6,51
2 high	38,46	13,o2	9,76
3 high	24,99	2o,o2	15,o2
4 high	2o,96	23,88	17,87
5 high	16,63	3o,1o	22,57
Reverse speeds			
low	213,o4	2,35	1,76
high	53,26	9,4o	7,o5

Calculated with the rear wheel radius index 59o mm (ISO 4251/1-1984). Number of revolutions of the front wheels for one revolution of the rear wheels 1,392.

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	1006 m/min
rotational	1118 rev/min

engine speed at standard belt pulley speed (945 m/min) 2113 rev/min;
direction of rotation clockwise viewed face of pulley

Power lift:

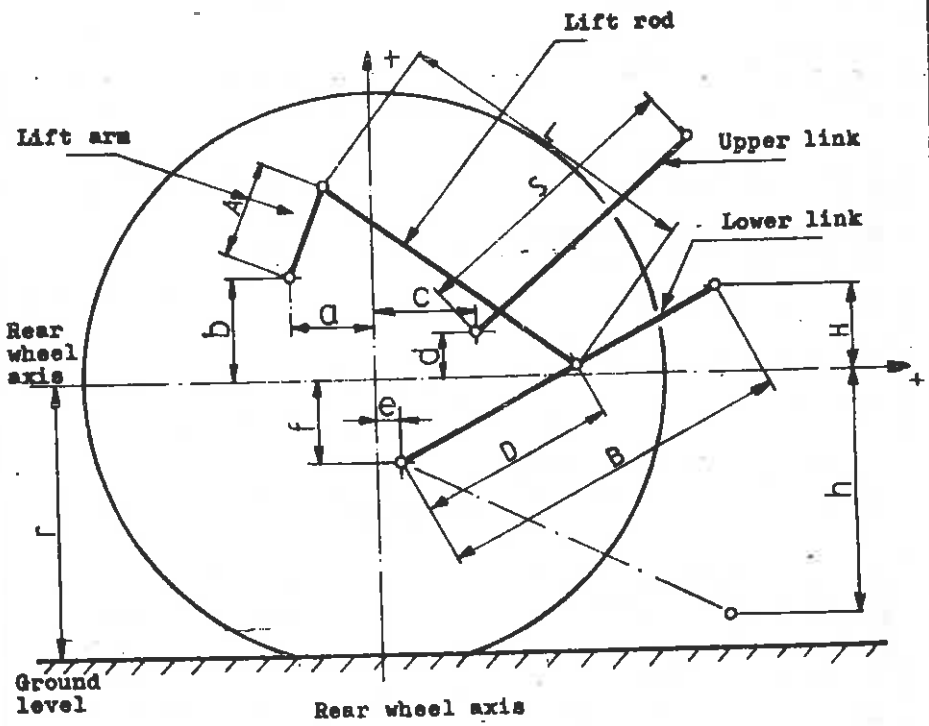
Hydraulic system:

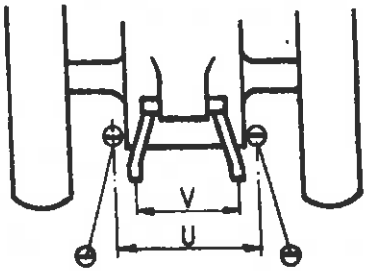
Four cylinder piston pump of boxer type with 26,4 cm^3/rev delivery, located in central housing, driven by p.t.o. shaft front end, with control valve at suction side;
control valve for lifting and sinking, draught control, position control, both stepless mixable;
opening pressure of relief valve 175 bar, sustained pressure by the opened relief valve 180-185 bar;
no cylinder safety valve exist
single acting ram with 83 mm bore, 121 mm stroke;
4 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 33 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:

See pages 7 and 8

Implement linkage: Three point linkage, joint balls category 1 acc. to ISO 730/I-1977.





Dimensions of implement linkage (projected lengths, in mm)
underlined dimensions are valid for power lift test page 23

Rear tyres (size 12,4 - 28)	radius index	(r)	59o
Front tyres (size 7,5o - 2o)	radius index	(r)	425
Length of lift arms		(A)	256
Length of lower links		(B)	864
Distance of lift arm pivot point from rear wheel centre line	horizontally	(a)	196
	vertically	(b)	241
Horizontal distance between the 2 lower link points		(u)	46o
Horizontal distance between the 2 lift arm end points		(v)	535
Length of upper link		(s)	575 to 77o, <u>69o</u>
Distance of upper link pivot point from rear wheel centre line	horizontally	(c)	13o
	vertically	(d)	278
Distance of lower link pivot point from rear wheel centre line	horizontally	(e)	-45
	vertically	(f)	114
Distance of lower link pivot points to lift rod pivot points on lower links		(D)	374
Length of lift rods		(L)	<u>5oo</u>

Height of lower link hitch points relative to rear axle centre line (situated 59o mm above ground) in mm

These data are velid for unloaded power lift

		lift rod length L
		5oo mm
Lowest position	(h)	37o mm
Highest position	(H)	3oo mm
Transport position	(H`)	3oo mm

Pull atachment

Holed bar: Fitted on the clevis of lower links;
length between ball joints 66o mm;
thickness of the bar 3o mm, width 7o 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 22o to 89o mm continuoslly;
mechanically lockable in all positions within the range from 28o to 61o 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	82o 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	39o mm behind
vertical	264 mm below

from p.t.o. shaft end -

horizontal	129 mm behind
vertical	137 mm below

diameter of the coupling pin 3o mm;
maximum admissible vertical load 15oo daN

Towing hitch: Fixted;:
height above ground 665 mm;
distance of the hitch centre:
from the rear axle
horizontal 6o8 mm behind
vertical 75 mm above
from the p.t.o. shaft end
horizontal 347 mm behind
vertical 2o2 mm above
diameter of the coupling pin 3o mm

NOTE:

1° All pull attachment heights are given for the radius index of rear wheels 59o mm (12,4-28 tyres).

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

Steering: PPT-ZF
hydrostatic steering model 847o 955 58o,
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 2o6 mm stroke;
oil capacity 1,5 l;
recomended oil - GALAX D.A.C., INA ATF or oil for automatic transmisions;
oil changing interval 4oo h;
oil filter in reverse line with changing interval 8oo h.

Brakes:

Service brake: Own make;
mechanically acting shoe type brake with 2 brake drums at the end of diferential 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 on left hand side of driver's seat, mechanically actuating service brake
Trailer braking take-off:	Optional equipment, fitted on the tested tractor; make PPT; single line air brake, operated by pedal mounted valve; compresor with 75 mm bore, 28 mm stroke, driven by the engine at 2340 rev/min by reted 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 type pressurizing, operating within 4,8-5,3 bar; compressed air tand with 20 l capacity; standardized coupling head

Wheels

Front:	2 pneumatics in front 7,50-20-AT, 8 ply, diagonal type tyre casing; maximum permissible load per tyre 855 daN at 2,7 bar inflation pressure and 30 km/h; track width adjustable from 1300 to 1900 mm in 100 mm stepe by extending axle; rims 5,5 F (e) - 20
Rear:	2 pneumatics at rear 12,4-28 agricultural, 6 ply, diagonal type casing; maximum permissible load per tyre 1290 daN at 1,8 bar inflation pressure and 30 km/h; steel wheel discs, track width adjustable from 1230 to 1930 mm in cca 100 mm steps by reversing discs and rims rims W11x28
Wheel base:	1950 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 2oo with drivers platform IMT 527 39 35o (O.E.C.D.Approval CSD 1271/1/NM o25o). joined to the tractor body in four points by means of elastic supports; interior padding of the cab is from sound deadeing materials; windows with safety glasses, back window may be opened; heating and ventilating unit make TAP-Ptuj, with filter and air inlet on cab's roof front panel
Number of grease points:	with grease 9 with oil 9

OVERALL DIMENSIONS

Total length:	3365 mm with horizontal lower links
Maximum width:	2245 mm with maximum rear track setting with and without rear ballast
Minimum width:	176o mm between the outside edges of cab's fenders
Total height:	247o mm to the top of the cab 255o mm to the top of the exhaust oultet

Ground clearance: 315 mm below the front axle housing

NOTE: Total heights and ground clearance are given for the radious index of rear tyres 59o mm

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

Lighting equipment: Electrical, 12 Volt, negative earth

		Dimension mm	Height above ground to centre mm	Distance from outside edge of tractor to centre mm 1)
Head lights:	2)	Ø 135	950	730
Side lights:				
front	3)	120/35	1380	150
rear	4)	60/55	1410	120
Position lights:				
front	3)	120/35	1415	150
rear	4)	120/35	1365	150
Stop lights:	4)	60/55	1410	180
Reaflectors:				
rear	5)	Ø 135	1365	90

1) distance from outside edge of cab's fender (rear wheel track setting 1330 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 right hand fender

NOTE: All heights are given for the radius index of rear wheels 590 mm (12,4–28 tyres) and radius index of front wheels 425 mm (7,50–20 tyres).

TEST CONDITIONS

Masses Ready for use as tested

		without driver kg	with driver kg
Without ballast:	front	1o5o	1o65
	rear	137o	143o
	total	242o	2495
With ballast:	front	1o5o	1o65
	rear	181o	187o
	total	286o	2935
Ballast:	front	The manufacturer does not recommend use of front ballast	
	rear	4 weights 6o kg each	24o kg
		water in tyres	2oo kg
Track setting:	front	13oo mm	
	rear	133o mm	

FUELS AND LUBRICANTS USED IN TESTS

Fuel:	INA Diesel-fuel D_2 in all tests
	Density at 15°C: o,828 kg/l
	Cetane number: min 5o
	Viscosity at 5o° 2,5 cSt
Engine oil:	GALAX SUPER HD,S3, SAE 3o (11 cSt at 98,9°C)acc.to MIL-L-21o4 C
Transmission and power lift oil:	GALAX TRAKTCL-HT (8,7 cSt at 98,9°C)acc.to MIL-L-21o4 C
Steering oil:	GALAXMATIC DAC

COMPULSORY TESTS

(1) MAIN POWER-TAKE-OFF PERFORMANCE (54o rev/min)

Date of tests: 8th May 1989

Location of tests: Institut za mehanizaciju poljoprivrede - Zemun

Type of dynamometer: Hydraulic dynamometer Schenck U1-3o with auxilary hand brake

Power kW	Speed engine rev/min	Speed p.t.o. rev/min	Fuel consumption hourly 1/h	Fuel consumption hourly kg/h	Fuel consumption specific g/k.h	Specific energy kWh/l
	Maximum power					
1.1. At 2-hour test						
3o,2o	225o	613	1o,32	8,55	283	2,93
1.2. At rated speed						
3o,2o	225o	613	1o,32	8,55	283	2,93
1.3. At standard p.t.o. speed						
28,8o	1982	54o	9,56	7,92	275	3,o1
1.4. Part loads, the governor hand lever in the position corresponding to maximum power at full load						
1.4.1. the torque corresponding to maximum power at rated speed						
3o,2o	225o	613	1o,32	8,55	283	2,93
1.4.2. 85% of the torque obtained in 1.4.1.						
26,4o	2315	631	9,21	7,63	289	2,87
1.4.3. 75% of the torque definal in 1.4.2.						
2o,o2	2346	639	7,59	6,29	314	2,64
1.4.4. 5o% of the torque defined in 1.4.2.						
13,57	2376	647	6,23	5,16	38o	2,18
1.4.5. 25% of the torque defined in 1.4.2.						
6,8o	2385	65o	4,71	3,9o	574	1,44
1.4.6. unloaded						
-	24o5	655	3,51	2,91	-	-

1.5. Part loads, the governor hand lever in position corresponding to the p.t.o. speed at full load

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 g/kwh	Specific energy kWh/l
1.5.1. the torque corresponding to full load						
28,80	1982	540	9,56	7,92	275	3,01
1.5.2. 85% of the torque obtained in 1.5.1.						
25,25	2040	556	8,48	7,02	278	2,98
1.5.3. 75% of the torque defined in 1.5.2.						
19,17	2070	564	6,78	5,62	293	2,83
1.5.4. 50% of the torque defined in 1.5.2.						
13,02	2096	571	5,49	4,54	349	2,37
1.5.5. 25% of the torque defined in 1.5.2.						
6,60	2114	576	4,26	3,53	535	1,55
1.5.6. unloaded						
-	2136	582	2,68	2,22	-	-

No load, maximum engine speed: 2405 rev/min

Equivalent fluwheel torque at rated engine spped: 128 Nm

Maximum equivalent fluwheel torque: 150 Nm at 1425 rev/min engine speed

Mean atmospheric conditions

temperature : 18°C

pressure : 101 KPa

rel.humidity : 64 %

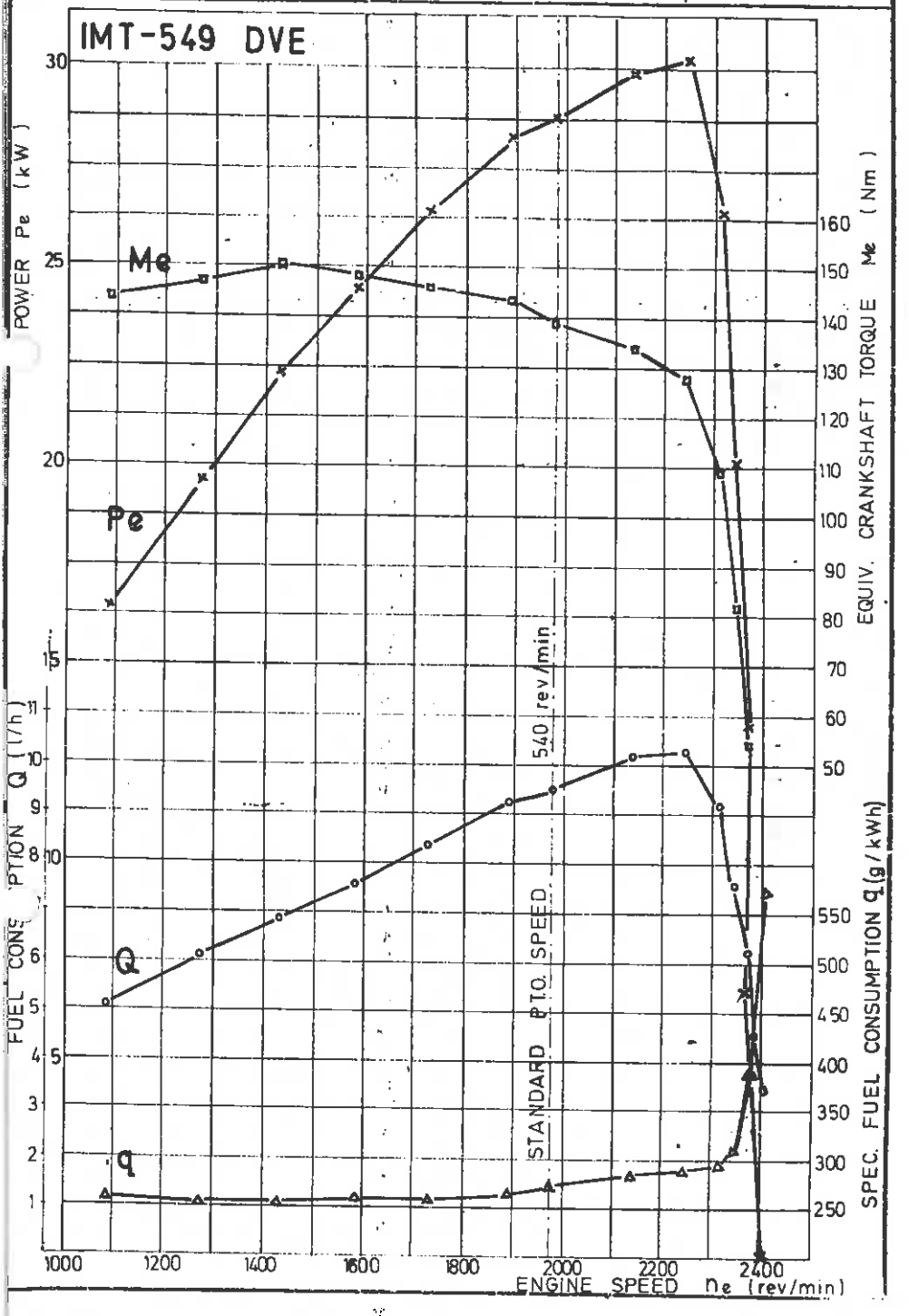
Maximum temperatures

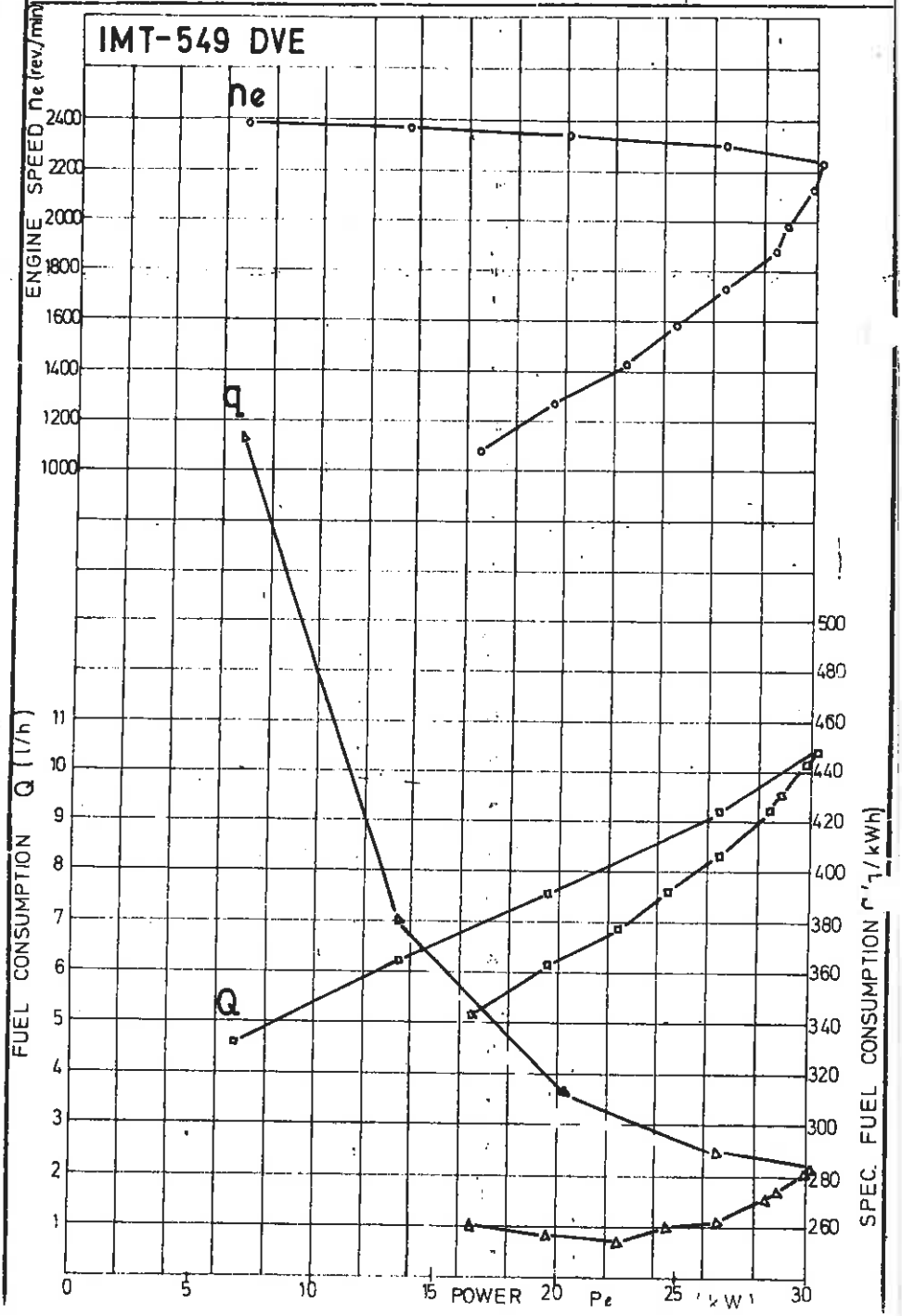
coolant : 84°C

oil : 98°C

fuel : 21°C

air intake : 22°C


IMT-549 DVE
POWER Pe (kW)
EQUIV. CRANKSHAFT TORQUE Me (Nm)
FUEL CONSUMPTION Q (l/h)
SPEC. FUEL CONSUMPTION q (g/kWh)
ENGINE SPEED ne (rev/min)
STANDARD P.T.O. SPEED 540 rev/min
Me
Pe
Q
q
30
25
20
15
11
10
9
8
6
5
4
3
2
1
160
150
140
130
120
110
100
90
80
70
60
50
550
500
450
400
350
300
250
1000
1200
1400
1600
1800
2000
2200
2400


IMT-549 DVE
ne
q
Q
ENGINE SPEED ne (rev./min)
FUEL CONSUMPTION Q (l/h)
SPEC. FUEL CONSUMPTION q (g/kWh)
POWER Pe (kW)
2400
2200
2000
1800
1600
1400
1200
1000
11
10
9
8
7
6
5
4
3
2
1
500
480
460
440
420
400
380
360
340
320
300
280
260
0
5
10
15
20
25
30

(2) HYDRAULIC POWER AND LIFTING FORCE

Date and location of test:	18th May 1989 IMP - Zemun
Hydraulic fluid:	
Make and type:	Galax Traktol HT
Viscosity:	8,7 mm/s (cSt) at 98,9°C
Viscosity index:	over 85
Hydraulic fluid temperature at the beginning of test:	63°C
Type of linkage lock for transport:	hydraulic
Opening pressure of the cylinder overpressure safety valve (manufacturer's specification)	No overpressure valve exist

2.1. Hydraulic power test:

Systained pressure with relief valve open:	18 MPa	
Opening pressure of relief valve:	17,5 MPa	
Pump delivery rate on minimum pressure:	15,6 l/min at 2250 rev/min	
Flow rate corresponding to a hydraulic pressure equivalent to 90% of the actual relief valve pressure setting and corresponding hydraulic power:	Flow rate: Pressure: Power:	14,9 l/min 15,8 MPa 3,92 kW
Flow rate and hydraulic pressure corresponding to maximum hydraulic power:	Flow rate: Pressure: Power:	14,3 l/min 16,5 MPa 3,93 kW
Tapping point used for test:	At rear of tractor	
Temperature of hydraulic fluid:	63-66°C	

2.2. Power lift test:

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	222	67o	13oo	15,8	-	-
On the frame	171	865	95o	15,8	1358	-2^{o} 5' $+1o^{o}$ 5'

Performance of power lift

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

mm	-3o7	-256	-2oo	-1oo	0	+1oo	+2oo	+3oo	+4oo	+414	+5oo	+558
At hitch points												
daN	-	13oo	133o	136o	139o	142o	143o	146o	148o	149o	-	-
At test frame (61o mm behind lower link hitch points)												
daN	115o	-	114o	113o	112o	11oo	11oo	1o8o	1o4o	-	1o1o	95o

1° The forces are measured at sustained pressure with the relief valve open (18 MPa) and calculated on the pressure 15,8 MPa which corresponds 9o% relief valve setting (17,5 MPa).

(3) DRAWBAR PERFORMANCE

Date of test: 10th till 25th May 1989

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	Coolant	Engine oil	Atmospheric condit. Temperature	Relative humidity	Pressure
-	km/h	kW	daN	rev/min	%	kWh/l	g/kWh	°C	°C	°C	°C	%	KPa
1	2	3	4	5	6	7	8	9	10	11	12	13	14
3.1. MAXIMUM POWER (unbalasted tractor) height of drawbar 72o mm tyre inflation pressure: front 2oo KPa; rear 12o KPa													
1 L	1,95	12,19	225o	2375	15,o	1,7o	482	2o	8o	85	19	56	loo,5
2 L	2,87	17,94	225o	234o	15,1	2,21	376	2o	8o	85	19	56	loo,5
3 L	4,55	25,o2	198o	225o	8,5	2,42	343	21	81	86	19	56	loo,5
4 L	5,68	25,4o	161o	225o	5,1	2,45	339	21	81	86	2o	53	loo,5
5 L	7,2o	25,6o	128o	225o	4,o	2,47	336	22	82	88	2o	53	loo,5
1 H	8,4o	25,67	11oo	225o	3,3	2,48	335	22	83	9o	2o	53	loo,5
2 H	12,8o	24,89	7oo	225o	1,7	2,41	345	22	84	91	2o	53	loo,5
3 H	19,75	23,59	43o	225o	1,3	2,29	365	23	84	92	21	5o	loo,5
4 H	23,6o	22,94	35o	225o	1,o	2,22	375	24	84	91	21	5o	loo,5
5 H	29,9o	21,6o	26o	225o	o,9	2,o9	397	24	83	9o	22	46	loo,5

Gear	Driving speed	Power	Drawbar pull	Engine speed	Mean slip of wheels	Specific energy	Specific fuel consumpt.	Temperatures Fuel	Co-lant	Engine oil	Atmospheric condit. Tempe-rature	Relative humidity	Pres-sure
-	km/h	kW	daN	rev/min	%	kWh/l	g/kWh	°C	°C	°C	°C	%	KPa
1	2	3	4	5	6	7	8	9	1o	11	12	13	14
	3.2. Maximum power (ballasted tractor) height of drawbar above ground: 665 mm tyre inflation pressure: front 2oo KPa, rear 16o KPa												
1 L	1,93	13,94	26oo	2355	15,o	1,9o	435	17	8o	82	17	72	99,7
2 L	2,85	2o,58	26oo	231o	15,6	2,33	355	18	8o	83	17	72	99,7
3 L	4,62	25,o2	195o	225o	7,7	2,4o	344	18	81	84	17	72	99,7
4 L	5,7o	25,57	1615	225o	4,8	2,46	336	18	82	84	17	72	99,7
5 L	7,25	25,68	1275	225o	3,8	2,47	335	18	82	85	17	72	99,7
1 H	8,4o	25,32	1o85	225o	3,2	2,44	34o	19	83	86	17	72	99,7
2 H	12,86	25,oo	7oo	225o	1,4	2,4o	344	19	83	86	18	68	99,7
3 H	19,9o	23,25	42o	225o	1,1	2,24	37o	19	83	87	18	68	99,7
4 H	23,7o	22,4o	34o	225o	o,9	2,16	385	19	83	86	18	68	99,7
5 H	3o,oo	2o,8o	25o	225o	o,7	2,o1	415	19	82	86	18	68	99,7

Gear	Driving speed	Power	Drawbar pull	Engine speed	Mean slip of wheels	Specific energy	Specific fuel consumpt.	Temperatures Fuel	Co-lant	Engine oil	Atmospheric condit. Tempe-rature	Relative humidity	Pres-sure
-	km/h	kW	daN	rev/min	%	kWh/l	g/kwh	°C	°C	°C	°C	%	KPa
	3.3.1. Five-hour-test at 75% of drawbar pull at maximum power in 4 L gear												
4 L	6,oo	2o,17	121o	233o	3,o	2,38	348	21	8o	89	18	68	99,7
	3.3.2. Five-hour-test at drawbar pull corresponding to 15% wheelsleep in test 3.2.												
2 L	-	-	26oo	-	-	-	-	22	82	91	17	7o	99,7

a. Total oil consumption during ten hours duration of tests 3.3.1. and 3.3.2. : 43 g/h

b. Test 3.3.2. was carried out with aditional ballast. Therefore results of test for driving speed, drawbar power, any practical value.

(4) TURNING AREA AND TURNING CIRCLE
(front wheel drive disengaged)

Wheel equipment	front:	7,5o - 2o AT	8 ply
	rear:	12,4 - 28 AS	6 ply
Track of wheels	front:	13oo mm	
	rear:	133o mm	

	Without brakes		With brakes	
	left-hand	right-hand	left-hand	right-hand
	m	m	m	m
Radius of turning area	3,73	3,64	3,44	3,4o
Radius of turning circle	3,55	3,45	3,25	3,2o

(5) LOCATION OF CENTRE OF GRAVITY

Height above ground:	778 mm
Distance forward from rear axle centre:	832 mm
Distance from tractor's median plane:	8 mm to the left

(6) BRAKING (front wheel drive engaged)

Date of test: 14 th and 25th May 1989

Type of track: Concrete

Mass of tractor with driver (kg):

	front	rear	total
Without ballast	1o65	143o	2495
With ballast	1o65	187o	2935

6.1. Cold service braking device test

Speed before application of brakes 31,o km/h

Without ballast	Pedal force N	4oo	45o	5oo	55o	6oo
	Mean deceleration m/s^2	1,9o	2,25	2,55	2,9o	3,3o
With ballast	Pedal force N	4oo	45o	5oo	55o	6oo
	Mean deceleration m/s^2	1,65	1,95	2,2o	2,5o	2,85

6.2. Fade test

Speed before application of brakes 31,o km/h

Without ballast	Pedal force N	4oo	45o	5oo	55o	6oo
	Mean deceleration m/s^2	1,8o	2,15	2,45	2,75	3,1o
With ballast	Pedal force N	4oo	45o	5oo	55o	6oo
	Mean deceleration m/s^2	1,5o	1,7o	2,1o	2,4o	2,7o

No significant deviation of tractor from original course and no abnormal vibrations occured

Brakes-heating: Actuating of brake for 1 km with pedal force coresponaling to 1 m/s^2 at the speed 25 km/h

6.3. Parking braking device test

	Bellasted tractor on 18% - slope	
	up	down
Braking device control force N	26o	26o

(7) MEASUREMENT OF EXTERNAL NOISE LEVEL

Date of test: 26 st May 1989
Type of track: Tarmacadam
Type of sound level meter: BRUEL &. KJAER mod. 2209

Results of test

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

APPENDIX

MEASUREMENT OF NOISE IN THE PROTECTIVE STRUCTURE

Results of OECD - test No. CSD 1271/1/NM 0250 with IMT safety cab model IMT 527 39 200 with drivers platform IMT 527 39 350

Gear	Drawbar pull kN	Travelling speed km/h	Sound level dB(A)
1 H +)	12,9	7,1	84,4
1 H +)	light load	7,6	83,2
5 H ++)	light load	30,6	83,9

+) Gear corresponding to the nominal travelling speed nearest to 7,5 km/h

++) Front wheel drive disengaged

REMARKS AND REPAIRS: no