Report on test in accordance with O.E.C.D. STANDARD CODE

O.E.C.D. No. 652



Agricultural Tractor John Deere 4440 Quad-Range

Manufacturer
John Deere Werke Mannheim, D-6800 Mannheim

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This bulletin is based on engineering tests in accordance with the O.E.C.D. STANDARD CODE for the Official Testing of Agricultural Tractor Performance. It does not contain an evaluation of the tractor performance on practical work.

Duration of tests: May 1978 till May 1979

DLG-Testing-Station for Agricultural Machinery, Max-Eyth-Weg 1,
D-6114 Groß Umstadt

This report has been approved by the O.E.C.D. Coordinating Centre (C.N.E.E.M.A., France) as being in accordance with the O.E.C.D. STANDARD CODE.

Date of Approval: 6th March 1980 O.E.C.D. No. 652

In this report all performance characteristics are given corresponding to the International System of Units.

The reference to the former used Technical System of Units is given by the following relations:

Forces	1 daN = 10 N	= 1,02 kp	or 1 kp	= 0,981 daN
Powers	1 kW	= 1,36 PS	or 1 PS	= 0,736 kW
Pressures	1 bar	= 1,02 kp/cm^2	or 1 kp/cm^2	= 0,981 bar
	1000 mbar = 750,1 mm Hg			

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PRÜFUNGS-ABTEILUNG
JOHN DEERE 4440 Q-R

Test No. 78-116

Tractor manufacturer:	JOHN DEERE WERKE MANNHEIM D-6800 Mannheim
Submitted for test by:	Manufacturer
Selected by:	Manufacturer with agreement by DLG
Place of running-in:	Mannheim
Duration of running-in:	Engine and tractor appr. 100 hours

SPECIFICATION OF TRACTOR

Tractor

Make:	JOHN DEERE WERKE MANNHEIM
Model:	4440/ QUAD-RANGE
Type:	Wheeled tractor, unit construction, semi-frame reinforced, all-wheel driven
Serial no.:	285145 L

Engine

Make:	JOHN DEERE
Model:	6.466 TL-01
Type:	4-stroke DIESEL engine, direct injection, water cooled, turbo-charged
Serial no.:	6.466 TL-01- 022716 RG
Cylinders:	6, in line, 115,8 mm bore, 120,7 mm stroke, capacity 7627 cm^3; compression ratio 15,5
Valves:	Overhead
Fuel system:	BOSCH fuel feed pump FP/KE 22 AD 290; BOSCH in line injection pump: PES 6 A 95 D 410 RS 2479; manufacturer's production setting 91 mm^3/stroke at rated engine speed; injection timing 30° before TDC; BOSCH multihole injectors DLLA 155 S 713; injection pressure 279 bar; STANADYNE fuel filter with pre and main cleaner and replaceable cartridges; capacity of fuel tank 246 l
Governor:	BOSCH mechanical variable speed governor: RSV 400-1100 A 2 B 768 DL; governed engine speed 810 to 2380 rev/min; rated engine speed 2200 rev/min

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Turbo charger:	AIR RESEARCH T 04 B, optional SCHWITZER 3 LM; air pressure 1,0 to 1,3 bar overpressure, without air cooler
Air cleaner:	DONALDSON 6193 H 316; dry paper element cleaner; replaceable cartridge
Exhaust silencer:	NELSON MUFFLER CO, USA multichamber absorption-reflexion type silencer; 117,5 mm/213 mm oval, 965 mm long; above the bonnet, mouth showing upwards, mouth 3230 mm above ground
Lubrication system:	Pressurized from gear type pump; strainer in sump; DELUXE PRODUCTS CORP. oil filter in full flow with by-pass and replaceable cartridge; cartridge change at every 200 hours; oil capacity 19 l; oil changing interval 100 hours; recommended oil quality MIL-L-2104 C recommended oil viscosities: below -30°C SAE 5W from -30°C to -10°C SAE 10W from -10°C to +10°C SAE 20W/20 from +10°C to +30°C SAE 30 above +30°C SAE 40 or multigrade oils
Cooling system:	Water cooled, impeller assisted; pressurized system with 0,5 to 1,0 bar overpressure, with by-pass thermostat; fan with 8 blades, 610 mm diameter; coolant capacity 34 l
Starting system:	Electrical JOHN DEERE screw-push-starter motor 4,4 kW; optional electrically or hand operated ether starting aid

Electrical equipment	12 Volt, negative earth, DELCO REMY 3-phase alternator 12 V - 72 A; 2 lead-acid batteries 88 Ah each at 20 hours rating
Transmission	
Clutch:	BORG WARNER 16209 wet dual clutch, hydraulically operated; 2 discs for travel drive and p.t.o. drive each, travel drive pedal operated, p.t.o. drive hand lever operated; all discs 306 mm diameter
Gear box:	Own make QUAD-RANGE speed change gear with 2 synchronized forward speeds, 1 collar shifted reverse speed and 1 superposed power-shift gear; group gear with 4 collar shifted groups (A, B, C and D); D-group locked for reverse speeds; 4th speed in D-group may be locked (25 km/h version) optionally; totally 16 forward and 6 reverse speeds
Rear axle and final drive:	Bevel gear drive with crown wheel and pinion; bevel gear differential with hydraulically pedal operated lock, disengaged by operating of service brake; planetary final drives
Driven front axle:	Hydrostatic front wheel drive; oil motors with planetary final drives in each front wheel housing; oil motors can be switched parallel to high torque or in series to low torque; they can be switched from high torque to low torque or vice versa, or engaged and disengaged under load when tractor is moving
Recommended oil:	JOHN DEERE JDM J 20 A
Oil changing period:	1200 hours
Oil capacity:	75 l, in common with hydraulic system

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Switching possibilities of the front wheel drive

group	gear											
	low torque						high torque					
A	1	2	3	4	1R	2R	1	2	3	4	1R	2R
B	1	2	3	-	1R	-	1	-	-	-	-	-
C	1	2	3	-	1R	-	-	-	-	-	-	-
D	-	-	-	-	-	-	-	-	-	-	-	-

Total ratios and speeds (tyres 20,8 R 38)

group	gear No.	total ratio engine: driving wheel	nominal travelling speed+) at rated engine speed km/h
forward speeds			
A	1	214,86	3,30
	2	169,20	4,19
	3	130,05	5,45
	4	102,41	6,92
B	1	93,42	7,59
	2	73,57	9,64
	3	56,54	12,54
	4	44,53	15,93
C	1	78,82	9,00
	2	62,07	11,42
	3	47,71	14,86
	4	37,57	18,88
D	1	51,34	13,81
	2	40,43	17,54
	3	31,08	22,82
	4*)	24,47	28,98
reverse speeds			
A	1	134,29	5,28
	2	105,75	6,71
B	1	58,39	12,15
	2	45,98	15,42
C	1	49,26	14,39
	2	38,80	18,28

+) calculated with the INDEX RADIUS 855 mm as per WdK 154

*) this gear is locked in countries with maximum speed limited to 25 km/h

Power take-off

Independent p.t.o.
at rear of tractor, in tractor's median plane;
height above ground: 715 mm;
by handlever under load hydraulically engageable or disengageable;
driven through wet dual clutch;
2 interchangeable p.t.o. shafts for 540 rev/min and 1000 rev/min p.t.o. speeds;
by interchanging p.t.o.-stub shafts correct speed ratio is selected

540 rev/min p.t.o.

35 mm dia, 6 splines acc. to DIN 9611 and ISO 500 type 1;
standard p.t.o. speed 540 rev/min at 2200 rev/min engine speed;
this p.t.o. shaft should not be used to transmit the full crankshaft power; the transmittable power is limited by the manufacturer's specification to 55 kW

1000 rev/min p.t.o.

35 mm dia, 21 splines acc. to DIN 9611 and ISO 500 type 2;
1002 rev/min at rated engine speed;
standard p.t.o. speed 1000 rev/min at 2195 rev/min engine speed

All p.t.o. speeds may be set by aid of tractormeter

Direction of rotation of both p.t.o. shafts clockwise viewed from tractor rear

Power lift

Hydraulic system:

Own make;
hydraulic power lift in unit construction;
closed system with pressure reservoir;
self-regulating 8-piston radial type pump, directly driven by front end of crankshaft;
maximum delivery rate 66 cm^3/rev or 126 l/min at rated engine speed

Oil circuit is in common for all hydraulically controlled units of the tractor;
maximum system pressure 165 bar

main cylinder integrated in power lift unit,
bore 108 mm, stroke 211 mm;
1 external lift assist cylinder standard,
bore 44,5 mm, stroke 208,3 mm;
a second lift assist cylinder optional;
main cylinder and lift assist cylinder
are connected with the oil circuit by an
oil flow control valve,
oil flow is set to 47 l/min;
single acting JOHN DEERE control valve
in power lift integrated,
for lifting, lowering, neutral and
floating position,
power control, position control,
both mixable in steps;
up to 2 JOHN DEERE additional control
valves for single or double acting
oil tappings available;
hydraulically acting lock for transport

Oil reservoir and oil changing in common with gear box and front wheel drive,
75 l capacity, up to 22 l for continuous oil flow may be taken off through oil tappings when tractor is moving as well as stationary

Implement linkage:

Three point linkage category II DIN 9674
category III optional;
telescopic lower links;
lift rods adjustable from 775 to 840 mm;
lift height above ground
with short lift rods from 432 to 1072 mm
with long lift rods from 267 to 972 mm

Pull attachment

Swinging drawbar:

Height above ground 492 or 607 mm,
changeable by reversing drawbar;
diameter of hole 33 mm;
distance of hole from
p.t.o. shaft end 404 mm (1000 rev/min p.t.o.),
rear axle centre 903 mm;
pivot point 175 mm before rear axle centre;
swingable to either side for 218 mm

Trailer hitch	ROCKINGER 279 H height above ground 1020 mm; swingable aside when using upper link; hitch hole 33 mm diameter; distance of hitch hole 620 mm from rear axle centre; permissible vertical load 1500 kg
Towing hitch:	1000 mm above ground

Steering

Own make
hydrostatic steering
oil supply from hydraulic system of power lift;
handwheel operated steering valve acting on steering motor on front axle

Brakes

Parking brake:	Mechanically acting multiple-disc brake, acting on driving shaft of bevel gear drive; brake discs 126 mm diameter; operated by hand lever with ratchet
Service brake:	Hydraulically pedal operated wet disc-type brake; with hydraulic force amplifier, fed by the hydraulic system; 1 brake disc on each differential half shaft; disc diameter 380 mm
Steering brake:	Divided pedal of service brake, for normal use locked together

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Wheels

Steered wheels:	Two pneumatics at front; 14,9-24 AS 6 ply; diagonal type tyre casing; maximum permissible load per tyre 1760 kg at 1,8 bar inflation pressure and 30 km/h; track width from 1666 to 2380 mm adjustable in steps of 102 mm by extending telescopic front axle shafts; rims W 12 x 24
Driving wheels:	Two pneumatics at front and two at rear; specifications of driving front wheels see steered wheels; driving rear wheels: 20,8 R 38 AS 8 ply; radial type tyre casing; maximum permissible load per tyre 3090 kg at 1,3 bar inflation pressure and 30 km/h; track width from 1594 to 2416 mm stepless adjustable by rack on rear axle shaft and pinion and by offset lug type rims; rims W 18 L x 38
Wheel base:	2710 mm
Cab	Own make; O.E.C.D. tested; approval-No. CS 1338b
Seat	Own make; upholstered seat with back and arm rests; adjustable spring with shock absorber; height of seat platform 1345 mm above ground; height of seat above platform about 570 mm in median position; adjustable on inclined guideways fore and aft about 185 mm and simultaneously 80 mm up and down; additional independent height adjustment-range about 70 mm
Number of grease points	14

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Weights — Ready for use, as tested

		without driver	with driver
Without ballast:	front	2145 kg	2155 kg
	rear	4005 kg	4090 kg
	total	6150 kg	6245 kg
Front ballast:	1 base weight		58 kg
	10 front weights 42,5 kg each		425 kg
Rear ballast:	6 weights per wheel 66 kg each		792 kg
With ballast:	front	2700 kg	2710 kg
	rear	4725 kg	4810 kg
	total	7425 kg	7520 kg

Track setting during tests

front axle	1768 mm
rear axle	1780 mm

Dimensions

Total length:	4436 mm without ballast 4540 mm with ballast
Total width:	2592 mm without ballast 2610 mm with ballast
Total height:	3230 mm to top of exhaust pipe
Ground clearance:	460 mm below swinging drawbar

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Light equipment

	Dimensions mm	Height of centre above ground mm	Distance from outside edge of tractor to centre mm
Head lights	130 Ø	1303	825
Side lights	55 Ø	1915	400
Rear lights	30 x 65	1470	265
Reflectors			
1st pair	80 Ø	750	990
2nd pair	80 Ø	1470	125

FUELS AND LUBRICANTS, USED IN TESTS

Fuel ARAL-DIESEL fuel DIN 51601
specific gravity at 15 °C

at engine tests: 0,835 kg/l
at p.t.o. tests: 0,828 kg/l
at drawbar tests: 0,830 kg/l

Engine oil: FUCHS UNIVERSAL SAE 15W/40 MIL-L-2104 C

Transmission and hydraulic oil: JOHN DEERE JDM J 20 A

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Test No. 78-116

COMPULSORY TESTS

(1) MAIN POWER TAKE-OFF PERFORMANCE (1000 rev/min)

Date of tests: 27th April 1979
Type of dynamometer: SCHENCK hydraulic dynamometer U1-40

Power kW	Speed engine rev/min	Speed p.t.o. rev/min	Fuel consumption total l/h	Fuel consumption total kg/h	Fuel consumption specific g/kWh	Specific energy kWh/l
Maximum power						
At 2-hour test						
104.7	2195	1000	35.84	29.65	283	2.92
At standard p.t.o. speed						
104.7	2195	1000	35.84	29.65	283	2.92
At the speed recommended for drawbar work						
104.6	2200	1002	35.77	29.60	283	2.92
Part loads, the governor hand lever in the position corresponding to the maximum power at full load						
(i) 85% of the torque at maximum power at 2-hour test						
91.1	2251	1026	32.86	27.19	298	2.77
(ii) unloaded						
-	2358	1074	11.70	9.68	-	-
(iii) 50% of the load defined in (i)						
46.5	2299	1048	21.99	18.20	391	2.12
(iv) maximum power						
104.7	2195	1000	35.84	29.65	283	2.92
(v) 25% of the load defined in (i)						
23.5	2319	1056	16.71	13.82	589	1.40
(vi) 75% of the load defined in (i)						
69.2	2280	1039	27.19	22.50	325	2.55

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Power kW	Speed engine rev/min	Speed p.t.o. rev/min	Fuel consumption total l/h	Fuel consumption total kg/h	Fuel consumption specific g/kWh	Specific energy kWh/l
Part loads, the governor hand lever in the position corresponding to the standard p.t.o. speed at full load						
(i) 85% of the torque at maximum power at 2-hour test						
91.1	2251	1026	32.86	27.19	298	2.77
(ii) unloaded						
-	2358	1074	11.70	9.68	-	-
(iii) 50% of the load defined in (i)						
46.5	2299	1048	21.99	18.20	391	2.12
(iv) maximum power						
104.7	2195	1000	35.84	29.65	283	2.92
(v) 25% of the load defined in (i)						
23.5	2319	1056	16.71	13.82	589	1.40
(vi) 75% of the load defined in (i)						
69.2	2280	1039	27.19	22.50	325	2.55

Standard specific fuel consumption (g/kWh): 298/391/298/391

No load maximum engine speed: 2358 rev/min
Equivalent crankshaft torque at maximum power (2 hours): 455 Nm
Maximum equivalent crankshaft torque: 589 Nm at 1493 rev/min of the engine

Mean atmospheric conditions:	temperature	23 °C
	pressure	986 mbar
	relative humidity	50 %
Maximum temperatures:	coolant	88 °C
	engine oil	107 °C
	fuel	26 °C
	engine air intake	39 °C

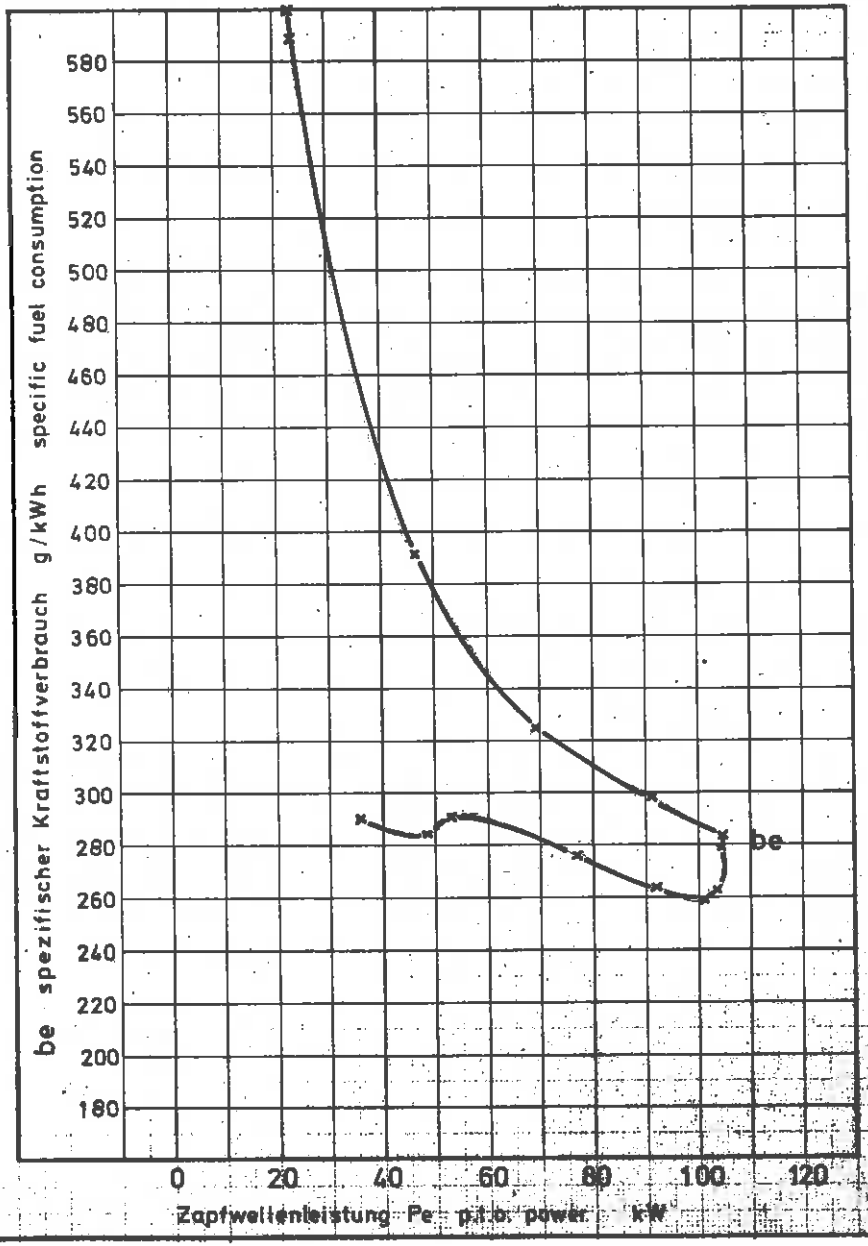
Zapfwellenleistung
PRÜFUNGS-ABTEILUNG
JOHN DEERE 4440 Q-R
P.t.o. performance
Test Nr. 78-116
Ps
M equiv
be
standard p.t.o. speed
Zapfwellenleistung P.t.o. power PS
äquivalentes Drehmoment M equiv Nm
equiv. crankshaft torque
spez. Kraftstoffverbrauch be g/kWh
spec. fuel consumption
Motordrehzahl n engine speed U/min rev/min

PRÜFUNGS-ABTEILUNG

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Zapfwellenleistung
P.t.o. performance

Test Nr. 78-116



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(2) DRAWBAR PERFORMANCE

Date of tests: 8th till 17th May 1979
Type of track: Concrete

Gear No. and Group	Driving speed km/h	Power kW	Drawbar pull daN	Engine speed rev/min	Slip of front wheels %	Slip of rear wheels %
(i) MAXIMUM POWER with ballast height of drawbar above ground 470 mm						
1 A +)	2,91	58,3	7206	2271	3,5	15,1
2 A +)	3,68	73,9	7224	2254	2,9	15,1
3 A +)	4,91	87,9	6446	2200	3,3	10,9
4 A +)	6,51	88,2	4878	2198	3,2	6,5
1 B +)	7,21	88,8	4436	2201	2,8	5,8
1 C *)	8,56	88,4	3716	2198	0,6	5,5
2 B *)	9,23	86,5	3373	2200	0,6	5,0
(ii) FIVE-HOUR-TEST at 75 % of pull at maximum power in 4th A gear						
4 A +)	6,83	69,4	3659	2251	2,6	4,2
(iii) FIVE-HOUR-TEST at pull corresponding to 15 % wheel slip in test (i)						
2 A +)	3,71	74,5	7224	-	-	-
(iv) MAXIMUM POWER without ballast height of drawbar above ground 490 mm						
2 A +)	3,73	64,4	6212	2268	5,6	14,9
3 A +)	4,74	81,7	6207	2223	5,3	14,9
4 A +)	6,36	86,4	4891	2198	4,7	9,2
1 B +)	7,09	87,5	4444	2202	3,9	7,6
1 C *)	8,44	87,2	3719	2201	0,4	7,2
2 B *)	9,10	85,5	3383	2199	0,5	6,4

Total oil consumption during ten hours duration of tests (ii) and (iii) 38 g/h

+)hydrostatic front wheel drive switched to high torque
*) hydrostatic front wheel drive switched to low torque

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Tyres size front: 14,9 - 24 6 ply
rear: 20,8 R 38 8 ply

Tread bar height at the beginning of drawbar tests:
at front 89 %, at rear 94 % of the value when new

Specific energy kWh/l	Specific fuel consumpt. g/kWh	Temperatures Fuel °C	Coolant °C	Engine-oil °C	Atmospheric conditions Tempe-rature °C	Relative humidity %	Pressure mbar
tyre inflation pressure 1,2 bar at front and 1,0 bar at rear							
2,04	404	25	86	94	24	61	1012
2,16	381	23	86	90	21	74	1006
2,39	345	23	86	94	21	74	1005
2,39	345	23	86	95	23	70	1005
2,43	339	23	86	95	23	70	1005
2,41	342	25	86	94	25	65	1003
2,37	347	25	86	95	25	65	1003
2,23	369	23	86	100	23	72	1003
-	-	23	86	99	22	83	1002
tyre inflation pressure 0,8 bar at front and 1,0 bar at rear							
2,10	393	18	86	87	15	59	1006
2,26	365	20	86	95	20	49	1006
2,34	352	20	86	97	20	45	1006
2,40	343	21	86	97	20	45	1006
2,39	351	22	86	96	21	45	1006
2,35	351	22	86	95	20	45	1005

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

(3) TURNING SPACE AND TURNING CIRCLE

Wheel equipment front: 14,9 - 24 AS 6 ply
rear: 20,8 R 38 AS 8 ply

Track of wheels front: 1768 mm
rear: 1780 mm

Front axle drive disengaged

	With brakes		Without brakes	
	left-hand m	right-hand m	left-hand m	right-hand m
Radius of turning space	4,53	4,57	5,07	5,13
Radius of turning circle	4,30	4,35	4,84	4,91

(4) LOCATION OF CENTRE OF GRAVITY

Height above ground	1045 mm
Distance forward from rear axle centre	934 mm
Distance from tractor's median plane	3 mm on the left

(5) BRAKING PERFORMANCE

A) SERVICE BRAKE

Date of tests: 9th and 21th May 1979
Type of track: Concrete
Type of decelerometer: MOTO-METER-Bremsverzögerungs- und Pedalkraftschreiber

Weight of ballasted tractor with driver 7520 kg

Front axle drive disengaged

Cold brakes

		With ballast	Without ballast
Travelling speed	km/h	25,0	25,0
Deceleration	m/s^2	3,8	3,9
Stopping distance	m	8,2	8,4
Force on pedal	daN	31	30
Force on pedal to achieve a deceleration of 2,5 m/s^2	daN	24	22

Brake fade characteristics (hot tests)

Deceleration	hot/cold	%	100	100
Stopping distance	cold/hot	%	100	98
Force on pedal	cold/hot	%	107	103

B) PARKING BRAKE

Tractor facing up 16 % slope
Pull on hand brake 38 da N, tractor does not roll

Tractor facing down 16 % slope
Pull on hand brake 32 da N, tractor does not roll

(6) AMBIENT NOISE EMITTED BY THE TRACTOR

Date of test: 10th May 1979
Type of track: Concrete
Type of sound level meter: BRÜEL AND KJAER model 2209

Results of test

Gear: 4th D
Travelling speed before acceleration: 22,8 km/h
Sound level: 88,5 dB(A)

(7) NOISE AT THE DRIVER'S EAR LEVEL

Date of tests: 10th May 1979
Type of track: Concrete
Type of sound level meter: BRÜEL AND KJAER model 2209

A safety cab was fitted on tractor
O.E.C.D. tested approval No. CS 1338 b

Results of tests

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 A +)	6184	3,30	2,93	82,0
2 A +)	6200	4,19	3,36	82,0
3 A +)	6198	5,45	4,76	82,0
4 A +)	4900	6,92	6,35	82,5
1 B*)+)	4460	7,59	7,07	82,5
1 C x)	321	9,00	9,62	82,0
2 B x)	426	9,64	10,29	82,0
2 C x)	2804	11,42	10,95	82,0
3 B x)	318	12,54	13,37	82,0
3 C x)	2107	14,86	14,44	82,0
4 D o)	light load	28,98	30,42	81,5

*) The 1st B gear corresponds to the travelling speed nearest to 7,5 km/h
+) hydrostatic front wheel drive switched to high torque
x) hydrostatic front wheel drive switched to low torque
o) hydrostatic front wheel drive automatically switched off

see on page 7

(8) POWER LIFT AND HYDRAULIC PUMP PERFORMANCE

Date of tests: 6th September and 16th November 1978

HYDRAULIC PUMP

The tractor contains one oil circuit for all hydraulically controlled tractor units. Power lift assembly is connected to the hydraulic supply circuit by an oil flow control valve. This restricts the oil flow to the power lift to maximum 47 l/min

Circuit of power lift

(1) Sustained pressure with pump stalled	165 bar
(2) Pump delivery rate at minimum pressure and rated engine speed	46,8 l/min
(3) Pump delivery rate at maximum hydraulic power	44,9 l/min
corresponding delivery pressure	128 bar
power	9,5 kW

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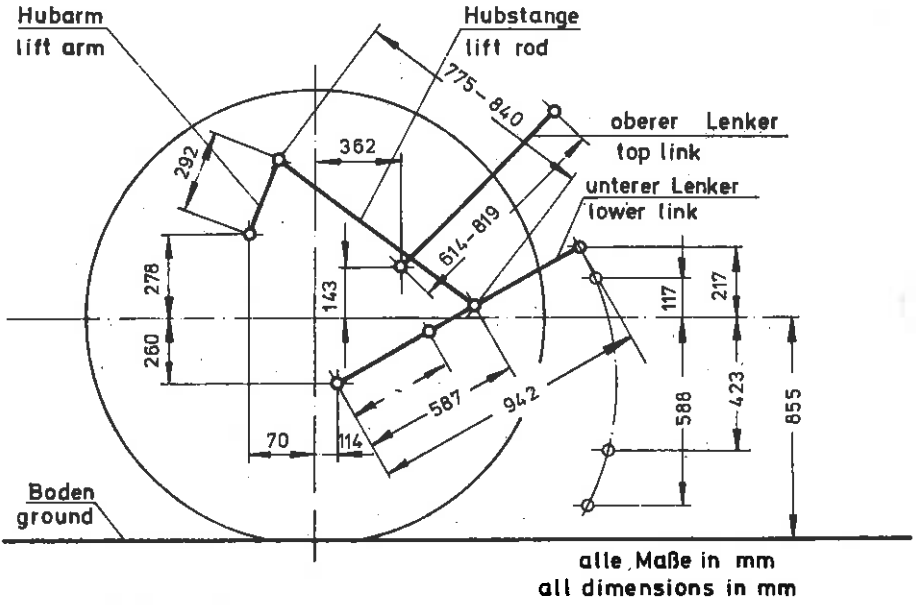
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Remote circuit with oil tappings

(1)	Sustained pressure with pump stalled	165 bar
(2)	Delivery rate at minimum pressure and rated engine speed	64,8 l/min
(3)	Delivery rate at max. hydraulic power	77,1 l/min
	corresponding delivery pressure	106 bar
	power	13,6 kW

Dimensions of implement linkage for the table on page 25



LINKAGE GEOMETRY when connected to the standard frame	Maximum mechanical advantage	Minimum mechanical advantage
Projected length in side view:		
Lower links	942 mm	942 mm
Lift arms	292 mm	292 mm
Lift rods	840 mm	775 mm
Top link	697 mm	700 mm
Distance of lift rod connection point from pivot point of lower link	587 mm	587 mm
The following dimensions are given relative to rear axle centre line 855 mm above ground		
Lower link pivot point	114 mm behind, 260 mm below	114 mm behind, 260 mm below
Top link pivot point	362 mm behind, 143 mm above	362 mm behind, 143 mm above
Lift arm pivot point	70 mm forward, 278 mm above	70 mm forward, 278 mm above
Maximum and minimum height of lower link hitch points	117 mm above, 588 mm below	217 mm above, 423 mm below
Height of lower link hitch points above ground when locked in highest transport position	972 mm	1072 mm

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LIFTING FORCES with 1 external lift assist cylinder

Lifting heights relative to horizontal lower links

mm	-353	-328	-300	-200	-195	-163	-100	0	+100
at hitch points	maximum mechanical advantage								
daN						3180	3330	3630	3750
	minimum mechanical advantage								
daN		2910	2950	3250			3440	3560	3670

Max. force exerted throughout the whole range 3180 daN
Front of tractor does not lift

at test frame	maximum mechanical advantage								
daN	2980		3050	3130			3130	3090	3020
	minimum mechanical advantage								
daN					2940		3130	3170	3130

Max. force exerted throughout the whole range 2710 daN
Front of tractor does not lift if front axle is ballasted to its maximum allowable load (3520 kg)

+200	+300	+377	+400	+442	+477	+500	+600	+607	

lift rods 775 mm long

360	3900		3970		4050				

lift rods 840 mm long

3710	3780	3860							

lift rods 840 mm long

2940	2826		2710	2710					

lift rods 775 mm long

3050	2980		2830			2710	2670	2670	

All values of forces for pressure 128 bar at max. hydraulic power, see page 23; calculated from measurements at max. oil pressure 165 bar

PRÜFUNGS-ABTEILUNG
JOHN DEERE 4440 Q-R

LIFTING FORCES with 2 external lift assist cylinders

Lifting heights relative to horizontal lower links

mm	-353	-328	-300	-200	-195	-163	-100	0	+100
at hitch points maximum mechanical advantage									
daN						3670	3900	4160	4350
minimum mechanical advantage									
daN		3370	3400	3710			3940	4130	4200

Max. force exerted throughout the whole range 3670 daN
Front of tractor does not lift if front axle is ballasted to its maximum allowable load (3520 kg)

at test frame maximum mechanical advantage									
daN	3550		3620	3700			3700	3620	3550
minimum mechanical advantage									
daN					3510		3620	3660	3660

Max. force exerted throughout the whole range 3170 daN
Front of tractor does not lift if front axle is ballasted to its maximum allowable load (3520 kg)

+200	+300	+377	+400	+442	+477	+500	+600	+607	
lift rods 775 mm long									
4510	4540		4620		4730				
lift rods 840 mm long									
4280	4350	4430							

lift rods 840 mm long

3430	3320		3210	3170					
lift rods 775 mm long									
3590	3430		3280			3090	2980	2940	

All values of forces for pressure 128 bar at max. hydraulic power, see page 23; calculated from measurements at max. oil pressure 165 bar

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