**FINNISH RESEARCH INSTITUTE OF ENGINEERING IN AGRICULTURE AND FORESTRY**
(VAKOLA)

**Testing, research and development of the machines used in agriculture, gardening, forestry, dairy, household work and home industries**

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# TEST BULLETIN: O.E.C.D. No. 572

**Report on test in accordance with O.E.C.D. Standard Code for the Official Testing of Agricultural Tractors**




## VALMET 702 S DIESEL TRACTOR

**Manufactured by: Valmet Oy, Tourula Works, Jyväskylä, Finland**

**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 for the Official Testing of Agricultural Tractors**

**Date of approval: 1978-01-31** **Serial No. 572**

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Helsinki 1978. Valtion painatuskeskus

Tractor manufacturer: Valmet Oy, Tourula Works, Jyväskylä, Finland

Submitted for the test by: The manufacturer

Selected by: The manufacturer with the agreement of the institute

Place of running-in: Jyväskylä

Duration of running-in: 40 h

## SPECIFICATION OF TRACTOR

### Tractor

Make: Valmet Oy, Tourula Works

Model: 702 S

Type: Wheeled tractor, rear wheel driven, unit construction

Serial no: 11838

### Engine

Make: Valmet Oy, Linnavuori Works

Model: 411 BS

Type: 4-stroke direct injection turbo-charged diesel engine, water cooled

Serial No: 16 123

Cylinders: 4 cylinders, vertical, in line, bore 108 mm, stroke 114 mm, displacement 4180 $cm^3$, compression ratio 17:1, dry replaceable cylinder liners

Valves: overhead

Fuel system: AC "VP" fuel feed pump; CAV fuel filter with replaceable cartridge type 8360 15106 and sediment bowl with watertrap; Simms in-line injection pump type P 5074/2D, manufacturer's production setting 16,00 kg/h (0,84 g/$cm^3$) at 2200 rpm rated engine speed, corresponds 72,2 $mm^3$ per stroke; CAV injector nozzles type BDLL 150S 6130 B, injection pressure 20 MPa, injection timing 17° before TDC, capacity of fuel tank 68 l

Governor: Simms type 1000 S 740, mechanical governed range of engine speed 650...2350 rpm, rated engine speed 2200 rpm

Air cleaner: Valmet, dry paper main filter 8361 15237, filter body 8360 15185, precleaner 8361 15499

Turbo-charger: Holset 3FD 230 V 1,25 SRO exhaust driven

Exhaust silencer: Own make, at left side of tractor, above the bonnet, mouth 2730 mm above ground

Lubrication system: Forced feed from gear type pump, full flow replaceable paper filter type 8361 22208 equipped with oilcooler situated at radiator lower tank, recommended oil filter cartridge change period 200 h, total oil capacity 13 l, recommended oil change period 100 h, recommended type of oil: API CD; below -10°C SAE 10 W; -10°C...+10°C SAE 20/20 W; over +10°C SAE 30

Cooling system: Water cooling, pressurized at 40 kPa, impeller assisted with 410 mm dia, belt driven 6 blade fan, Thermostat and radiator curtain for temperature control, cooling water capacity 16 l

Starting system: Electrical, Lucas type M 50 12 V 3 kW solenoid engaged starter motor, operable only when main gear selector is in neutral position, Thermostat system C.A.V. 357-5 12 V for cold starting

Electrical system: Voltage: 12 V, negative earth
Generator: Lucas 18 ACR alternator
Battery: Pakkasakku 12 V 6 EHF 17-7, capacity 125 AH (SAE 20 H)

Transmission

Clutch: Fichtel & Sachs, dry double plate, both plates 310 mm dia, driving part pedal operated, p.t.o. part hand-lever operated

Gearbox: Own make constant mesh, fully synchronized, 16 forward and 4 reverse speeds, with gear selector and two mechanical high-low range selector levers

Rear axle and final drive: Own make, bevel gear drive with crown wheel and pinion, spur gear final drives, differential lock pedal operated, self-disengaging

Oil capacities: Transmission 21 l, final drives 6,5 l each, recommended type of oil: API GL-4 or GL-5 (EP), SAE 80; recommended oil change period 800 h

Power take-off: Independent p.t.o. at rear of tractor, in vertical centre plane 745 mm above ground, 6 splines, 1 3/8 in (34,85 mm dia), hand lever operated clutch

two speed p.t.o.

| | |
|---|---|
| 540 | 540 rpm at 1556 rpm engine speed<br>763 rpm at 2200 rpm engine speed |
| Ground drive | Distance travelled for 1 revolution of p.t.o. shaft 0,125 m; No. of p.t.o. revolution for one revolution of driving wheel: 37,631 |

speed selection by means of a hand lever, direction of rotation clockwise viewed from the rear

three speed p.t.o. (optional, fitted on tractor tested)

| | |
|---|---|
| 540 | 540 rpm at 1908 rpm engine speed<br>623 rpm at 2200 rpm engine speed |
| 1000 | 1000 rpm at 2143 rpm engine speed<br>1027 rpm at 2200 rpm engine speed |
| Ground drive | Distance travelled for 1 revolution of p.t.o. shaft 0,125 m; No. of p.t.o. revolutions for one revolution of driving wheel: 37,631 |

Belt pulley: Available, not fitted for test, p.t.o. driven giving 16,1 m/s (1146 rpm) linear speed at 2200 rpm rated engine speed, direction of rotation optional.

Total ratios and speeds

| Group | Gear | Number of engine revolutions for 1 revolution of driving wheel | Nominal travelling speed at 2200 r/min rated speed of engine[1] km/h |
|---|---|---|---|
| Slow[2] | Forward | | |
| | 1 (L1) | 269,0 | 2,3 |
| | 2 (H1) | 162,5 | 3,8 |
| | 3 (L2) | 123,4 | 5,0 |
| | 4 (H2) | 74,6 | 8,3 |
| | 5 (L3) | 59,1 | 10,5 |
| | 6 (L4) | 46,3 | 13,4 |
| | 7 (H3) | 35,7 | 17,3 |
| | 8 (H4) | 28,0 | 22,1 |
| | Reverse | | |
| | 1 (LR) | 142,2 | 4,3 |
| | 2 (HR) | 85,9 | 7,2 |
| Fast | Forward | | |
| | 1 (L1) | 196,5 | 3,1 |
| | 2 (H1) | 118,7 | 5,2 |
| | 3 (L2) | 90,2 | 6,9 |
| | 4 (H2) | 54,5 | 11,3 |
| | 5 (L3) | 43,1 | 14,3 |
| | 6 (L4) | 33,8 | 18,3 |
| | 7 (H3) | 26,1 | 23,7 |
| | 8 (H4) | 20,4 | 30,3 |
| | Reverse | | |
| | 1 (LR) | 103,9 | 6,0 |
| | 2 (HR) | 62,8 | 9,8 |

1) with 16.9/14-34 radial rear tyres, measured rolling radius 746 mm and inflation pressure 150 kPa

2) optional, fitted on tractor tested

Power lift:

Hydraulic system: Own make, with gear type double pump driven directly by engine, two independent hydraulic circuits, one supplying oil to ram cylinder and external tapings and one for steering, lower link sensing, draught, position and pressure controls, adjustable draught response and speed to drop implement, No. of external tapings 1...4 (1 standard). Oil capacity 23 l, 15 l available for actionning external implements, recommended type of oil SAE 5W/20

Implement linkage: Category 2 three point linkage, vertical lift movement above ground: 35...780 mm or 450...1060 mm according to lift rod length (595 or 780 mm)

Pull attachment

Trailer hitch: Hydraulic hitch-hook at rear of the tractor, height above ground 510 mm, distance from rear axle 308 mm to rear, 235 mm under p.t.o. and 0 mm in front of it, diameter of the hook 45 mm

Drawbar: Swinging drawbar fixed on hydraulic hitch-hook, height above ground 420 mm, distance from rear axle 576-666-766 mm, 306 mm under p.t.o. and 265-355-455 mm behind it, lateral adjustment 500 mm, coupling pin dia 32 mm, distance of pivot point 73 mm rear of the rear axle center line

Towing hitch: At front of tractor, height above ground 685 mm

Steering: Own make hydrostatic steering system, independent hydraulic circuit, oilflow 35 l/min at 2200 rpm rated engine speed and maximum pressure 7 MPa, Orbitrol steering valve type OSPA 160

Brakes:

Service brake: Own make, hydraulically operated dry disc brakes acting on differential half shafts, hydraulic brake force equalizer, two pedals, independent operated for steering braking or combined operated for service braking

Parking brake: Hand lever with ratchet operating both service brakes for parking

Wheels:

Steering wheels: Two 10,00-16 8 PR tyres in front, maximum permissible load on each tyre 9 kN at 300 kPa pressure, track widt' from 1465 mm to 1665 mm in 100 mm steps, changed by extending telescopic front axle

Driving wheels: Two 16.9/14-34 6 PR radial tyres, maximum perimissible load on each tyre 20 kN at 120 kPa pressure, track width 1540 - 1640 - 1760 - 1870 - 1960 mm, changed by reversing wheel centres and offset lug type rims

Wheelbase: 2240 mm

Weights (Without driver, with full tanks and safety cab)

| | front | rear | total |
|---|---|---|---|
| without ballast | 1245 kg | 2180 kg | 3425 kg |
| with ballast | 1770 kg | 3465 kg | 5235 kg |

Ballast:

| | No of weights | Total weight | Water |
|---|---|---|---|
| front | 10 + frame | 436 kg | - |
| rear | 10 (5 per wheel) | 825 kg | 549 kg |

Seat — Bostrom Argus XH, upholstered cushion and backrest, torsion spring with hydraulic damper, adjustable for 45...135 kg driver's weight, range of adjustment 100 mm fore and aft.

Dimensions

Total length: 3,80 m without ballast
4,15 m with front ballast

Total width: (at 1540 mm rear wheel track) 2,00 m without ballast
2,26 m with rear ballast

Total height: 2,51 m to top of safety frame

Minimum ground clearance: 450 mm below trailer hitch

Safety frame: Own make, Valmet H 702-42 O.E.C.D. approval no CS 1275 a

umber of grease points: 19

Lighting

| | Dimensions mm | Height above ground of centre mm | Distance from outside edge of tractor to centre x) mm |
|---|---|---|---|
| Head lights | ø 120 | 910 | 800 |
| Side lights | 55 x 80 | 1630 | 210 |
| Rear lights | 55 x 80 | 1630 | 210 |
| Reflectors | ø 78 | 1480 | 110 |

x) at 1540 mm rear wheel track

Unrestricted beam angle of headlight in plan view 108°.

Fuels and lubricants used in tests

Fuel: Shell diesel oil, specific gravity 0,830 at 15°C

Engine Oil: Esso Lube D3 10 W/30

Transmission oil: Esso Gear Oil GX 80

Hydraulic fluid: Shell Motor Oil Fll 66 5W/20

## COMPULSORY TESTS

### (1) MAIN POWER-TAKE-OFF PERFORMANCE

Date and location of tests Helsinki 1977-01-28

Type of dynamometer Schenk U1-30

| Power kW | Speed | | Fuel consumption | | |
|---|---|---|---|---|---|
| | Engine rev/min | p.t.o. rev/min | l/h (kg/h) | g/kWh | kWh/l |
| MAXIMUM POWER - 2 hours test | | | | | |
| 64,5 | 2200 | 623 | 19,6 (16,3) | 253 | 3,28 |
| STANDARD p.t.o. SPEED | | | | | |
| 61,6 | 1908 | 540 | 17,5 (14,5) | 236 | 3,52 |
| THE SPEED RECOMMENDED BY THE MANUFACTURER FOR DRAWBAR WORK | | | | | |
| 64,5 | 2200 | 623 | 19,6 (16,3) | 253 | 3,28 |
| PART LOADS | | | | | |
| (i) 58,8 | 2351 | 666 | 18,4 (15,3) | 260 | 3,19 |
| (ii) - | 2402 | 680 | 5,2 (4,3) | - | - |
| (iii) 29,2 | 2334 | 661 | 10,8 (9,0) | 307 | 2,70 |
| (iv) 64,5 | 2200 | 623 | 19,6 (16,3) | 253 | 3,28 |
| (v) 14,6 | 2365 | 670 | 8,0 (6,6) | 452 | 1,84 |
| (vi) 44,7 | 2372 | 672 | 14,5 (12,0) | 268 | 3,10 |

No load maximum engine speed 2402 rev/min

Equivalent crankshaft torque at maximum power 281 Nm

Maximum equivalent crankshaft torque 319 Nm
at 1624 rev/min of the engine

Mean atmospheric conditions
- temperature 17 °C
- pressure 991 mbar
- relative humidity 94 %

Maximum temperatures
- coolant 83 °C
- engine oil 107 °C
- fuel 41 °C
- engine air intake 18 °C

(i) = 85 % of the torque at maximum power

(ii) = unloaded

(iii) = 50 % of the load defined in (i)

(iv) = maximum power

(v) = 25 % of the load defined in (i)

(vi) = 75 % of the load defined in (i)

Power at 1000 rpm power take-off speed:

| | Speed | | Fuel consumption | | |
|---|---|---|---|---|---|
| Power kW | Engine rev/min | p.t.o. rev/min | l/h | Specific g/kWh | kWh/l |
| MAXIMUM POWER - 2 hours test | | | | | |
| 67,2 | 2200 | 1027 | 20,1 | 248 | 3,36 |
| STANDARD p.t.o. SPEED (1000 rev/min) | | | | | |
| 65,6 | 2143 | 1000 | 19,6 | 248 | 3,35 |

2. Drawbar Performance

Date of tests: 1976-10-06...28

Type of track: tarmacadam

Height of drawbar above ground: 510 mm

| Gear | Speed km/h | Power kW | Drawbar pull kN | Engine speed rev/min | Slip % |
|---|---|---|---|---|---|
| (i) Maximum Power (ballasted) | | | | | |
| 1 (L1 Slow) | 2,02 | 18,8 | 33,5 | 2353 | 15,0 |
| 2 (L1 Fast) | 2,92 | 27,4 | 33,8 | 2325 | [illegible] |
| 3 (H1 Slow) | 3,38 | 32,3 | 34,4 | 2333 | 15,0 |
| 4 (L2 Slow) | 4,83 | 44,1 | 32,9 | 2311 | 8,3 |
| 5 (H1 Fast) | 5,12 | 46,2 | 32,5 | 2347 | 6,7 |
| 6 (L2 Fast) | 6,44 | 55,3 | 30,9 | 2224 | 5,4 |
| 7 (H2 Slow) | 7,78 | 57,5 | 26,6 | 2191 | 4,6 |
| 8 (L3 Slow) | 9,94 | 56,3 | 20,4 | 2188 | 3,2 |
| 9 (H2 Fast) | 10,05 | 56,1 | 20,1 | 2047 | 4,0 |
| 10 (L4 Slow) | 12,77 | 55,0 | 15,5 | 2178 | 2,1 |
| (ii) Five hour test at 75 % of pull at maximum power | | | | | |
| 7 H2 Slow) | 8,42 | 47,7 | 20,4 | 2321 | 3,0 |
| (iii) Five hour test at pull corresponding to 15 % wheelslip in test (i) | | | | | |
| 5 (H1 Fast) | 4,57 | 45,6 | 35,9 | 2270 | 14,2 |
| (v) Maximum Power (unballasted) | | | | | |
| 1 (L1 Slow) | 2,23 | 15,6 | 25,2 | 2504 | 14,4 |
| 2 (L1 Fast) | 2,81 | 21,3 | 27,3 | 2324 | 14,3 |
| 3 (H1 Slow) | 3,67 | 25,8 | 25,3 | 2326 | 7,1 |
| 4 (L2 Slow) | 4,68 | 33,3 | 25,6 | 2327 | 1[illegible] |
| 5 (H1 Fast) | 4,75 | 33,4 | 25,3 | 2341 | 13,3 |
| 6 (L2 Fast) | 6,15 | 45,3 | 26,5 | 2292 | 12,0 |
| 7 (H2 Slow) | 7,20 | 50,6 | 25,3 | 2067 | 4,1 |
| 8 (L3 Slow | 9,54 | 54,6 | 20,6 | 2129 | 5,3 |
| 9 (H2 Fast) | 10,59 | 56,2 | 19,1 | 2155 | 3,9 |
| 10 (L4 Slow) | 12,31 | 57,1 | 16,7 | 2118 | 2,7 |
| 11 (H3 Slow) | 13,85 | 58,1 | 15,1 | 2248 | 2,0 |
| 12 (L4 Fast) | 17,00 | 51,0 | 10,8 | 2058 | 1,9 |

Total oil consumption during ten hours duration of tests (ii) and (iii) 51

| consumption | Temperature | | | Atmospheric conditions | | |
|---|---|---|---|---|---|---|
| kWh/l | Fuel °C | Coolant °C | Engine oil °C | Tempera-ture °C | Relative humidity % | Pressure mbar |
| 1,85 | 24 | 85 | 72 | 7 | 71 | 1010 |
| 2,34 | 24 | 85 | 72 | 7 | 71 | 1010 |
| 2,30 | 23 | 85 | 72 | 7 | 71 | 1010 |
| 2,73 | 23 | 85 | 72 | 7 | 71 | 1010 |
| 2,73 | 24 | 85 | 72 | 7 | 71 | 1010 |
| 2,90 | 24 | 85 | 72 | 7 | 71 | 1010 |
| 2,88 | 15 | 85 | 79 | 1 | 72 | 1008 |
| 2,92 | 15 | 85 | 79 | 1 | 72 | 1008 |
| 3,06 | 15 | 85 | 79 | 1 | 72 | 1008 |
| 2,83 | 15 | 85 | 79 | 1 | 72 | 1008 |
| 3,05 | 28 | 85 | 93 | 2 | 72 | 1010 |
| - | 31 | 85 | 95 | 1 | 72 | 1010 |
| - | 14 | 85 | 70 | 1 | 66 | 1029 |
| - | 14 | 85 | 70 | 1 | 66 | 1029 |
| - | 15 | 85 | 70 | 1 | 66 | 1029 |
| - | 15 | 85 | 70 | 1 | 66 | 1029 |
| - | 12 | 85 | 72 | -1 | 73 | 1023 |
| - | 12 | 85 | 72 | -1 | 73 | 1023 |
| - | 13 | 85 | 75 | -1 | 73 | 1023 |
| - | 13 | 85 | 75 | -1 | 73 | 1023 |
| - | 12 | 85 | 74 | -1 | 73 | 1023 |
| - | 12 | 85 | 75 | -1 | 73 | 1023 |
| - | 13 | 85 | 75 | -1 | 73 | 1023 |
| - | 13 | 85 | 74 | -1 | 73 | 1023 |

(3) TURNING SPACE AND TURNING CIRCLE

Details of wheel equipment: As in specification without ballast

Track of wheels - front 1465 mm

rear 1540 mm

| RESULTS | With brakes | | Without brakes | |
|---|---|---|---|---|
| | right-hand m | left-hand m | right-hand m | left-hand m |
| Radius of turning space | 3,79 | 3,84 | 4,15 | 4,27 |
| Radius of turning circle | 3,59 | 3,64 | 3,95 | 4,07 |

(4) LOCATION OF CENTRE OF GRAVITY

| | | |
|---|---|---|
| Height above ground | mm | 810 |
| Distance forward from the vertical plane containing the axis of the rear wheels | mm | 810 |
| Distance from the median plane | mm | 0 |

(5) BRAKING

Date of tests 1976-10-14, 1977-03-07, 1978-01-02

Type of track tarmacadam

Type of decelerometer Motometer

Weight of ballasted tractor 5235 kg

COLD BRAKES

| | | Ballasted | Without ballast |
|---|---|---|---|
| Travelling speed of the tractor | km/h | 25 | 25 |
| (i) Maximum deceleration | $m/s^2$ | 4,1 | 3,6 |
| (ii) Stopping distance | m | 5,9 | 6,5 |
| (iii) Force exerted on the brake pedal | N | 360 | 110 |
| (iv) Force exerted on the brake pedal to achieve a deceleration of 2.5 $m/s^2$ | N | 130 | 60 |

BRAKE FADE CHARACTERISTICS (hot tests)

| | Ballasted | Without ballast |
|---|---|---|
| Deceleration, hot/deceleration, cold x 100 | 106 % | 94 % |
| Stopping distance, cold/stopping distance, hot x 100 | 96 % | 95 % |
| Force on pedal, cold/force on pedal, hot x 100 | 15 % | 57 % |

PARKING BRAKE

| | | |
|---|---|---|
| Efficiency of handbrake, facing up a 16 % slope | | good |
| down a 16 % slope | | good |
| Pull on handbrake | N | 250 |

(6) MEASUREMENT OF AMBIENT NOISE

| | |
|---|---|
| Date of tests | 1977-03-08 |
| Type of sound level meter | Brüel & Kjaer 2203 |
| Type of track | tarmacadam |
| Results of tests | |
| Gear | H 4 Fast |
| Travelling speed before acceleration | 22,7 km/h |
| Sound level | 89 dB(A) |

(7) NOISE MEASUREMENT AT THE DRIVER'S EAR LEVEL

| | |
|---|---|
| Date of tests | 1976-08-24 |
| Type of sound meter | Brüel & Kjaer 2203 |
| Type of track | tarmacadam |
| Type of frequency analyser | Brüel & Kjaer 2112+2305 |

results of tests

| Gear | Travelling speed km/h x) | dB(A) |
|---|---|---|
| 6. (L2 Fast) | 6,9 | 85 |
| 5. (H1 Fast) | 5,2 | 86 |
| 9. (H2 Fast) | 11,3 | 86 |
| 13. (L4 Fast) | 18,3 | 87 |
| 15. (H3 Fast) | 23,7 | 86 |

x) The first gear tested corresponds to the travelling speed nearest to 7.5 km/h.

(8) POWER LIFT AND HYDRAULIC PUMP PERFORMANCE

Date and location of tests: Helsinki 1977-01-17 and 01-26

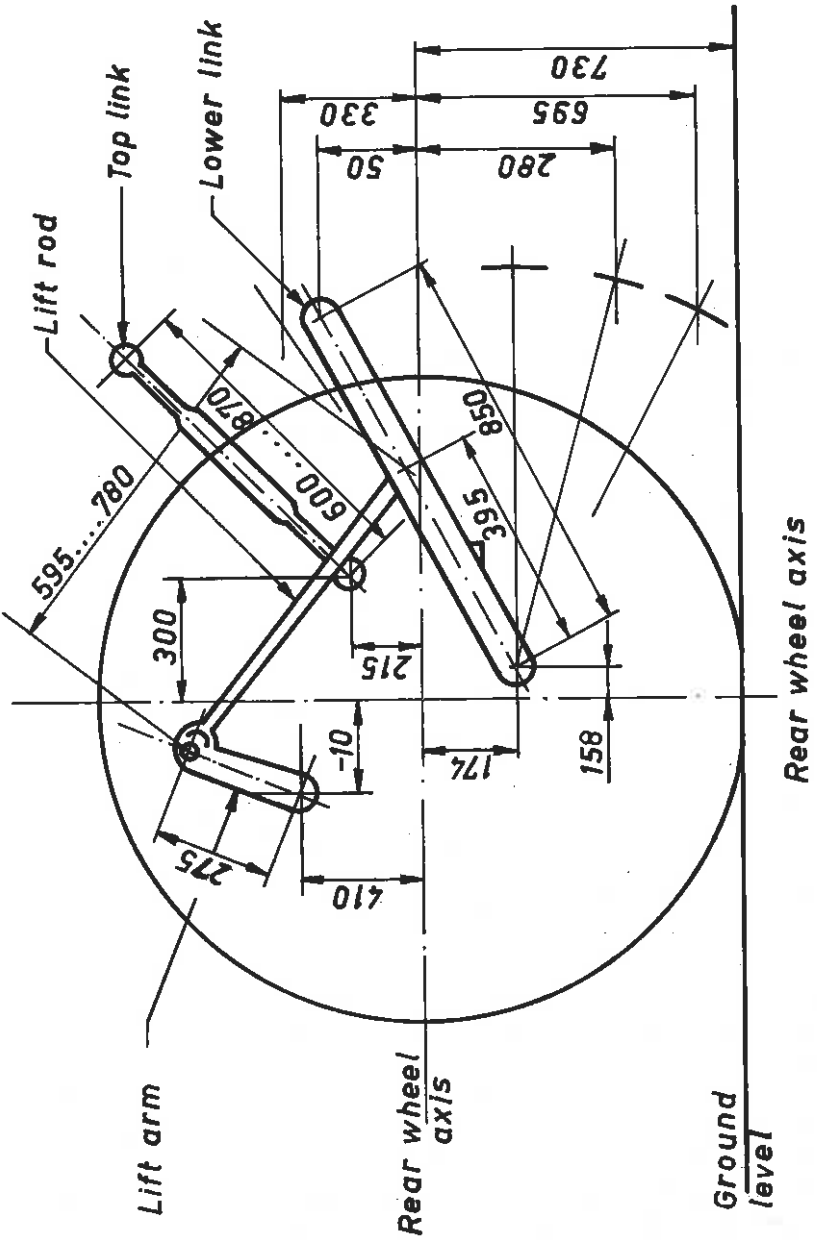
Hydraulic fluid:

make and type: Shell Motor Oil F 11 66 5W/20

Type of linkage lock for transport: hydraulic

Pump characteristics:

| | |
|---|---|
| opening pressure of the relief valve | 18,7 MPa |
| sustained pressure by the open relief valve | 19,1 MPa |
| Pump delivery rate at external tapping: | |
| at minimum pressure and rated engine speed | 26,3 l/min |
| at maximum hydraulic power and maximum engine speed | 28,8 l/min |
| delivery pressure | 18,6 MPa |
| power | 9,0 kW |


Top link
Lower link
Lift rod
730
695
330
280
50
870
600
850
395
595....780
300
215
-10
174
158
275
410
Lift arm
Rear wheel axis
Ground level
Rear wheel axis

## Linkage geometry when connected to the standard frame

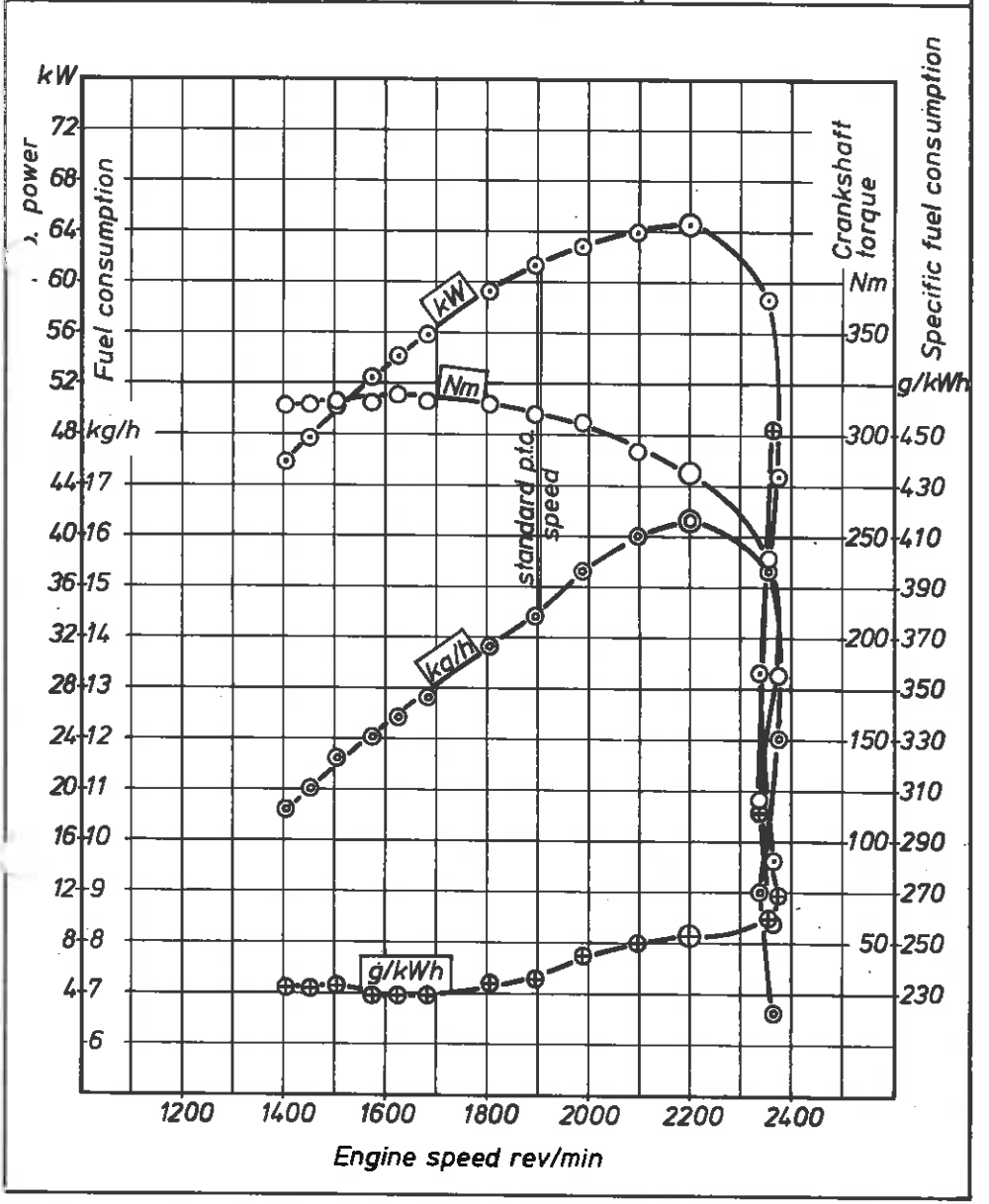
| | Maximum mechanical advantage | Minimum mechanical advantage |
|---|---|---|
| Projected length in side view | | |
| lower links, mm | 850 | 850 |
| lift arms, mm | 275 | 275 |
| lift rods, mm | 595 | 780 |
| top link, mm | 685 | 685 |
| Distance of lift rod connection point from pivot point of lower link, mm | 395 | 395 |
| The following dimensions are given relative to the rear wheel centre line, situtated 730 mm above the ground level | | |
| Lower link pivot point | 158 mm behind, 174 mm below | 158 mm behind, 174 mm below |
| Top link pivot point | 300 mm behind, 215 mm above | 300 mm behind, 215 mm above |
| Lift arm pivot point | 10 mm forward, 410 mm above | 10 mm forward, 410 mm above |
| Maximum and minimum height of lower link hitch points | 330 mm above, 280 mm below | 50 mm above, 695 mm below |
| Height of lower link hitch points when locked in transport position | Any height within limits given above | Any height within limits given above |

Lifting heights in relation to a horizontal line through the lower link pivoting point

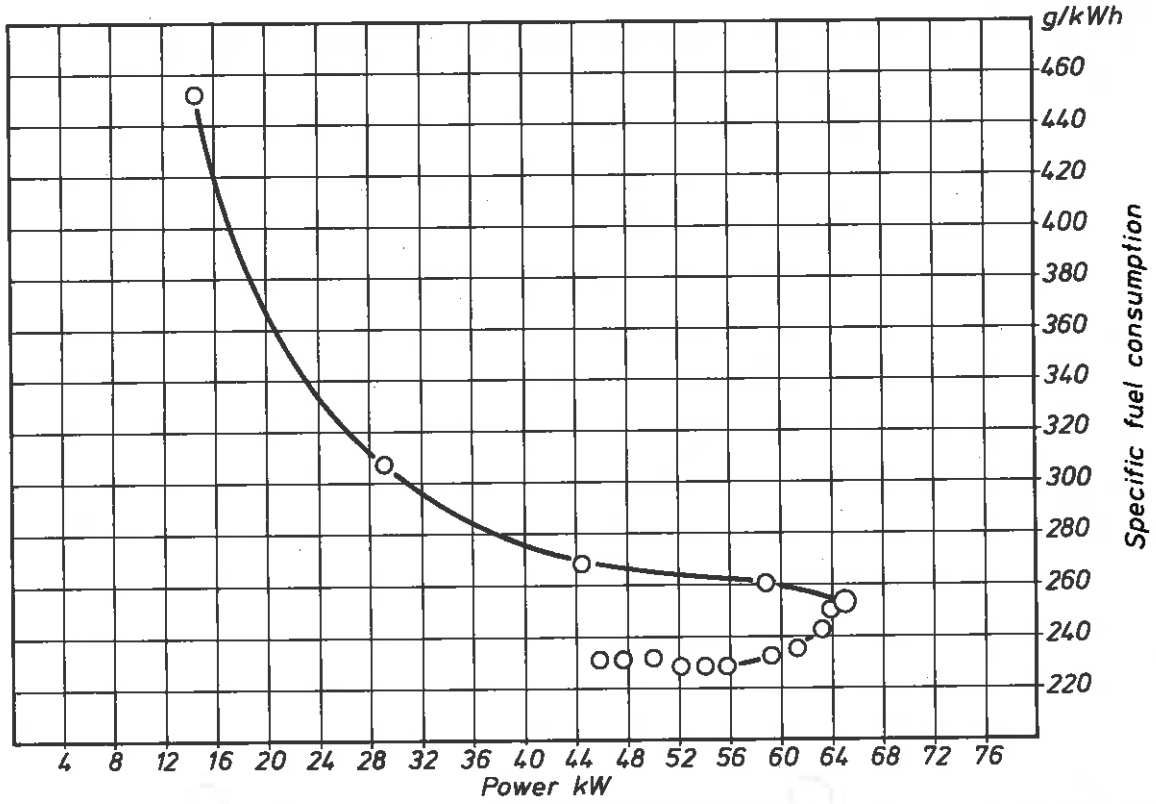
| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lifting force at the hitch points Values corresponding to the maximum hydraulic power pressure (18,6 MPa) calculated from measurements made at maximum pressure (19,1 MPa) | | | -52 | -37 | -26 | -11 | 0 | +7 | +22 | +30 | +41 | +50 | cm |
| | max.mech. advantage | kN | | | | 25,6 | 24,1 | 23,4 | 22,4 | 21,7 | 21,6 | 21,0 | |
| | min.mech. advantage | kN | 21,5 | 20,6 | 20,6 | 19,4 | 19,2 | 19,2 | 18,7 | | | | |
| | Maximum force exerted throughout whole range 18,7 kN<br>Front of tractor does not lift with maximum allowable front ballast | | | | | | | | | | | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lifting force at the frame Values corresponding to the maximum hydraulic power pressure (18,6 MPa) calculated from measurements made at maximum pressure (19,1 MPa) | | | -50 | -40 | -24 | -11 | 0 | +11 | +21 | +29 | +38 | +50 | cm |
| | max.mech. advantage | kN | | | | 23,1 | 20,4 | 18,9 | 17,4 | 16,2 | 15,0 | 14,5 | |
| | min.mech. advantage | kN | 20,7 | 19,2 | 18,0 | 17,1 | 15,9 | 15,0 | 14,5 | | | | |
| | Maximum force exerted throughout whole range 14,5 kN<br>Front of tractor does not lift with maximum allowable front ballast | | | | | | | | | | | | |

| Finnish Research Institute of Engineering in Agriculture and Forestry | Power take-off test | Valmet 702 S diesel tractor |
|---|---|---|



| Finnish Research Institute of Engineering in Agriculture and Forestry | Power take-off test | Valmet 702 S diesel tractor |
|---|---|---|



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