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Nebraska Summary: S432 New Holland TM140

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SUMMARY OF OECD TEST 2118–NEBRASKA SUMMARY 432
NEW HOLLAND TM140 DIESEL
18 SPEED

Location of Test: Silsoe Research Institute, Wrest Park, Silsoe, MK45 4HS, United Kingdom

Dates of Test: December 2002 to January 2004.

Manufacturer: CNH U.K. Ltd., Basildon, Essex, SS14 3AD, England

FUEL and OIL: Fuel No. 2 Diesel **Specific gravity converted to 60°/60°F *(15°/15°C)*** 0.843 **Fuel weight** 7.02 lbs/gal *(0.8413 kg/l)* **Oil SAE** 10W30 **API service classification** CG-4 **Transmission and hydraulic lubricant** New Holland 134D fluid **Front axle lubricant** New Holland 134D fluid

ENGINE: Make CNH Diesel **Type** six cylinder vertical with turbocharger and air to air intercooler **Serial No.** 957504 **Crankshaft** lengthwise **Rated engine speed** 2200 **Bore and stroke** 4.40" x 5.00" *(111.8 mm x 127.0 mm)* **Compression ratio** 17.0 to 1 **Displacement** 456 cu in *(7480 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and aspirator **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** one paper element **Muffler** underhood **Exhaust** vertical **Cooling medium temperature control** thermostat and variable speed fan

CHASSIS: Type front wheel assist **Serial No.** 170899B **Tread width** rear 60.2" *(1530 mm)* to 87.8" *(2230 mm)* front 61.4" *(1560 mm)* to 89.0" *(2260 mm)* **Wheelbase** 107.2" (*2723 mm)* **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (6) range operator controlled powershift **Nominal travel speeds mph *(km/h)*** first 1.53 *(2.46)* second 1.84 *(2.96)* third 2.21 *(3.56)* fourth 2.66 *(4.28)* fifth 3.19 *(5.14)* sixth 3.55 (*5.72)* seventh 3.85 *(6.19)* eighth 4.28 *(6.88)* ninth 5.14 *(8.27)* tenth 6.18 *(9.94)* eleventh 7.43 *(11.96)* twelfth 8.94 *(14.38)* thirteenth 10.09 (*16.24)* fourteenth 12.13 *(19.52)* fifteenth 14.58 *(23.46)* sixteenth 17.52 *(28.20)* seventeenth 21.08 *(33.93)* eighteenth 25.35 *(40.80)* reverse 2.98 *(4.80)*, 3.59 *(5.78)*, 4.31 *(6.94)*, 5.19 *(8.35)*, 6.24 *(10.05)*, 7.51 *(12.08)* **Clutch** multiple wet disc electro-hydraulically operated by foot pedal **Brakes** wet disc hydraulically operated by two foot pedals that can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 1969 engine rpm or 1000 rpm at 2120 engine rpm **Unladen tractor mass** 12935 lb *(5868 kg)*

POWER TAKE-OFF PERFORMANCE

Power HP *(kW)*	Crank shaft speed rpm	Gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—1038 rpm)					
119.7 *(89.3)*	2201	7.81 *(29.58)*	0.458 *(0.279)*	15.33 *(3.02)*	
Standard Power Take-off Speed (1000 rpm)					
120.8 *(90.1)*	2121	7.67 *(29.05)*	0.446 *(0.271)*	15.74 *(3.10)*	
Maximum Power (2 hours)					
121.1 *(90.3)*	2061	7.54 *(28.54)*	0.437 *(0.266)*	16.04 *(3.16)*	
VARYING POWER AND FUEL CONSUMPTION					
119.7 *(89.3)*	2201	7.81 *(29.58)*	0.458 *(0.279)*	15.33 *(3.02)*	Air temperature
107.5 *(80.2)*	2324	7.50 *(28.40)*	0.490 *(0.298)*	14.31 *(2.82)*	69°F *(21°C)*
81.5 *(60.7)*	2345	6.28 *(23.78)*	0.541 *(0.329)*	12.97 *(2.55)*	Relative humidity
54.4 *(40.6)*	2350	5.00 *(18.93)*	0.644 *(0.392)*	10.90 *(2.15)*	34%
27.4 *(20.4)*	2368	3.67 *(13.90)*	0.943 *(0.574)*	7.44 *(1.47)*	Barometer
-- --	2382	2.43 *(9.19)*	-- --	-- --	30.2" Hg *(102.2 kPa)*

Maximum Torque - 419.4 lb.-ft. *(568.6 Nm)* at 1350 rpm
Maximum Torque Rise - 51.3%
Torque rise at 1800 engine rpm - 22%

DRAWBAR PERFORMANCE
(Unballasted - Front Drive Engaged)
FUEL CONSUMPTION CHARACTERISTICS

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr *(kg/kW.h)*	Fuel Consumption Hp.hr/gal *(kW.h/l)*	Temp.°F *(°C)* cool-ing med	Air dry bulb	Barom. inch Hg *(kPa)*
Maximum Power—9th(3B) Gear									
101.2 *(75.5)*	7485 *(33.3)*	5.07 *(8.16)*	2199	3.3	0.541 *(0.329)*	12.97 *(2.55)*	198 *(92)*	50 *(10)*	30.1 *(101.9)*
75% of Pull at Maximum Power—9th(3B) Gear									
81.1 *(60.5)*	5630 *(25.1)*	5.40 *(8.69)*	2325	2.6	0.593 *(0.361)*	11.83 *(2.33)*	201 *(94)*	64 *(18)*	30.1 *(101.9)*
50% of Pull at Maximum Power—9th(3B) Gear									
54.8 *(40.9)*	3755 *(16.7)*	5.47 *(8.81)*	2341	1.9	0.704 *(0.428)*	9.97 *(1.96)*	201 *(94)*	66 *(19)*	30.1 *(101.9)*
75% of Pull at Reduced Engine Speed—10th(4B) Gear									
81.1 *(60.5)*	5645 *(25.1)*	5.39 *(8.68)*	1933	2.6	0.524 *(0.319)*	13.40 *(2.64)*	203 *(95)*	66 *(19)*	30.1 *(101.9)*
50% of Pull at Reduced Engine Speed—10th(4B) Gear									
54.7 *(40.8)*	3750 *(16.7)*	5.47 *(8.81)*	1946	1.9	0.600 *(0.365)*	11.70 *(2.31)*	199 *(93)*	66 *(19)*	30.1 *(101.9)*

DRAWBAR PERFORMANCE

(Unballasted - Front Drive Engaged)
MAXIMUM POWER IN SELECTED GEARS

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temp.°F*(°C)* cool-ing med	Air dry bulb	Barom. inch Hg *(kPa)*
					1st(1A) Gear				
52.6	13895	1.42	2342	14.7	0.777	9.04	190	57	30.2
(39.2)	*(61.8)*	*(2.28)*			*(0.473)*	*(1.78)*	*(88)*	*(14)*	*(102.2)*
					2nd(2A) Gear				
63.2	13760	1.72	2342	13.9	0.712	9.86	196	59	30.2
(47.1)	*(61.2)*	*(2.77)*			*(0.433)*	*(1.94)*	*(91)*	*(15)*	*(102.2)*
					3rd(3A) Gear				
76.4	13545	2.11	2326	11.4	0.621	11.31	194	55	30.2
(57.0)	*(60.2)*	*(3.40)*			*(0.378)*	*(2.23)*	*(90)*	*(13)*	*(102.2)*
					4th(4A) Gear				
90.5	13420	2.53	2290	10.5	0.598	11.73	192	55	30.2
(67.5)	*(59.7)*	*(4.07)*			*(0.364)*	*(2.31)*	*(89)*	*(13)*	*(102.2)*
					5th(5A) Gear				
99.0	12725	2.92	2143	8.2	0.548	12.81	199	55	30.2
(73.8)	*(56.6)*	*(4.70)*			*(0.333)*	*(2.52)*	*(93)*	*(13)*	*(102.2)*
					6th(1B) Gear				
100.7	11870	3.18	2060	6.4	0.534	13.15	198	55	30.2
(75.1)	*(52.8)*	*(5.12)*			*(0.325)*	*(2.59)*	*(92)*	*(13)*	*(102.2)*
					7th(6A) Gear				
101.1	10880	3.48	2065	5.4	0.518	13.55	196	55	30.2
(75.4)	*(48.4)*	*(5.61)*			*(0.315)*	*(2.67)*	*(91)*	*(13)*	*(102.2)*
					8th(2B) Gear				
102.6	9845	3.91	2063	4.6	0.512	13.72	198	50	30.1
(76.5)	*(43.8)*	*(6.29)*			*(0.311)*	*(2.70)*	*(92)*	*(10)*	*(101.9)*
					9th(3B) Gear				
102.7	8125	4.74	2062	3.6	0.518	13.55	198	50	30.1
(76.6)	*(36.1)*	*(7.63)*			*(0.315)*	*(2.67)*	*(92)*	*(10)*	*(101.9)*
					10th(4B) Gear				
102.3	6700	5.73	2059	2.9	0.520	13.50	199	52	30.1
(76.3)	*(29.8)*	*(9.22)*			*(0.316)*	*(2.66)*	*(93)*	*(11)*	*(101.9)*
					11th(5B) Gear				
101.7	5515	6.92	2055	2.4	0.520	13.50	190	52	30.1
(75.8)	*(24.5)*	*(11.13)*			*(0.316)*	*(2.66)*	*(88)*	*(11)*	*(101.9)*
					12th(6B) Gear				
98.0	4385	8.38	2064	2.1	0.522	13.45	199	61	30.1
(73.1)	*(19.5)*	*(13.48)*			*(0.317)*	*(2.65)*	*(93)*	*(16)*	*(101.9)*
					13th(1C) Gear				
99.8	3950	9.47	2061	1.9	0.532	13.20	203	63	30.1
(74.4)	*(17.6)*	*(15.24)*			*(0.324)*	*(2.60)*	*(95)*	*(17)*	*(101.9)*

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive Disengaged dB(A)	Engaged dB(A)
At no load in 8th (2B) gear	75.0	75.0
Bystander	--	--

TIRES AND WEIGHT	Tested Without Ballast
Rear tires - No.,size, ply & psi*(kPa)*	Two 20.8R38; **;13 *(90)*
Front tires - No.,size, ply & psi*(kPa)*	Two 16.9R28; **;13 *(90)*
Height of Drawbar	21.5 in *(545 mm)*
Static Weight with operator- Rear	8080 lb *(3665 kg)*
- Front	5020 lb *(2278 kg)*
- Total	13100 lb *(5943 kg)*

REPAIRS AND ADJUSTMENTS: No repairs or adjustments

REMARKS: All test results were determined from observed data obtained in accordance with official OECD test procedures. The standard capacity 3 point lift claim of 9755 lbs *(4425 kg)* was not tested for verification.The performance figures on this summary were taken from a test conducted under the OECD Code II test procedure.

We, the undersigned, certify that this is a true summary of data from OECD Report No. **2118** Nebraska Summary 432, September 17, 2004.

Leonard L. Bashford
Director

M.F. Kocher
V.I. Adamchuk
W.P. Campbell
Board of Tractor Test Engineers

DRAWBAR PERFORMANCE

(Unballasted - Front Drive Disengaged)

FUEL CONSUMPTION CHARACTERISTICS

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temp.°F *(°C)* cool-ing med	Air dry bulb	Barom. inch Hg *(kPa)*
Maximum Power—9th (3B) Gear									
99.1 *(73.9)*	7510 *(33.4)*	4.95 *(7.97)*	2198	4.5	0.547 *(0.333)*	12.84 *(2.53)*	196 *(91)*	53 *(11)*	29.8 *(101.0)*
75% of Pull at Maximum Power—9th (3B) Gear									
79.8 *(59.5)*	5620 *(25.0)*	5.32 *(8.57)*	2330	3.1	0.604 *(0.367)*	11.62 *(2.29)*	199 *(93)*	50 *(10)*	29.8 *(101.0)*
50% of Pull at Maximum Power—9th (3B) Gear									
54.2 *(40.4)*	3755 *(16.7)*	5.41 *(8.70)*	2345	2.2	0.735 *(0.447)*	9.55 *(1.88)*	198 *(92)*	50 *(10)*	29.8 *(101.0)*
75% of Pull at Reduced Engine Speed—10th (4B) Gear									
79.5 *(59.3)*	5610 *(25.0)*	5.31 *(8.55)*	1935	3.1	0.538 *(0.328)*	13.05 *(2.57)*	194 *(90)*	54 *(12)*	29.8 *(100.8)*
50% of Pull at Reduced Engine Speed—10th (4B) Gear									
54.0 *(40.3)*	3755 *(16.7)*	5.40 *(8.69)*	1948	2.2	0.612 *(0.372)*	11.47 *(2.26)*	194 *(90)*	54 *(12)*	29.8 *(100.8)*

MAXIMUM POWER IN SELECTED GEARS

1st(1A) Gear									
42.0 *(31.3)*	11105 *(49.4)*	1.42 *(2.28)*	2349	14.2	0.828 *(0.504)*	8.48 *(1.67)*	194 *(90)*	55 *(13)*	29.8 *(100.8)*
2nd(2A) Gear									
49.9 *(37.2)*	10880 *(48.4)*	1.72 *(2.77)*	2345	13.2	0.780 *(0.474)*	9.00 *(1.77)*	194 *(90)*	54 *(12)*	29.8 *(100.8)*
3rd(3A) Gear									
60.2 *(44.9)*	10905 *(48.5)*	2.07 *(3.33)*	2343	12.9	0.702 *(0.427)*	10.00 *(1.97)*	193 *(89)*	54 *(12)*	29.8 *(100.8)*
4th(4A) Gear									
71.5 *(53.3)*	10580 *(47.1)*	2.54 *(4.08)*	2335	11.1	0.662 *(0.403)*	10.61 *(2.09)*	194 *(90)*	54 *(12)*	29.8 *(100.8)*
5th(5A) Gear									
84.8 *(63.2)*	10465 *(46.6)*	3.04 *(4.89)*	2321	10.9	0.641 *(0.390)*	10.97 *(2.16)*	195 *(91)*	55 *(13)*	29.8 *(100.8)*
6th(1B) Gear									
92.9 *(69.3)*	10110 *(45.0)*	3.45 *(5.55)*	2293	7.8	0.584 *(0.355)*	12.03 *(2.37)*	195 *(91)*	50 *(10)*	29.8 *(100.9)*
7th(6A) Gear									
96.2 *(71.7)*	10025 *(44.6)*	3.60 *(5.79)*	2192	7.1	0.560 *(0.341)*	12.54 *(2.47)*	194 *(90)*	53 *(12)*	29.7 *(100.5)*
8th(2B) Gear									
99.4 *(74.1)*	9520 *(42.3)*	3.91 *(6.30)*	2135	6.6	0.539 *(0.328)*	13.03 *(2.57)*	195 *(91)*	50 *(10)*	29.8 *(100.9)*
9th(3B) Gear									
101.8 *(75.9)*	8275 *(36.8)*	4.61 *(7.42)*	2057	4.9	0.515 *(0.313)*	13.62 *(2.68)*	201 *(94)*	53 *(12)*	29.7 *(100.7)*
10th(4B) Gear									
101.1 *(75.4)*	6745 *(30.0)*	5.62 *(9.05)*	2062	3.7	0.522 *(0.318)*	13.44 *(2.65)*	197 *(92)*	50 *(10)*	29.8 *(101.0)*
11th(5B) Gear									
101.1 *(75.4)*	5585 *(24.8)*	6.79 *(10.93)*	2054	3.0	0.528 *(0.321)*	13.30 *(2.62)*	196 *(91)*	50 *(10)*	29.8 *(101.0)*
12th(6B) Gear									
98.8 *(73.7)*	4500 *(20.0)*	8.23 *(13.24)*	2056	2.5	0.530 *(0.322)*	13.25 *(2.61)*	197 *(92)*	53 *(12)*	29.8 *(101.0)*
13th(1C) Gear									
101.6 *(75.8)*	4090 *(18.2)*	9.32 *(15.00)*	2060	2.3	0.518 *(0.315)*	13.55 *(2.67)*	199 *(93)*	55 *(13)*	29.8 *(101.0)*

THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: II
Quick Attach: None
Maximum Force Exerted

Through Whole Range:	7485 lbs *(33.3 kN)* (one boost cylinder)
	9015 lbs *(40.1 kN)* (two boost cylinders)
i) Opening pressure of relief valve:	NA
Sustained pressure of the open relief valve:	2960 psi *(204 bar)*
ii) Pump delivery rate at minimum pressure:	32.1 GPM *(121.5 l/min)*
iii) Pump delivery rate at maximum hydraulic power:	29.3 GPM *(110.8 l/min)*
Delivery pressure:	2395 psi *(165 bar)*
Power:	40.9 HP *(30.5 kW)*

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi. *(bar)*	2960 *(204)*
Location:	lift cylinder
Hydraulic oil temperature: °F *(°C)*	150 *(65)*
Location:	hydraulic sump
Category:	II
Quick attach:	none

SAE Static Test—System pressure 2610 psi *(180 Bar)* (one boost cylinder)

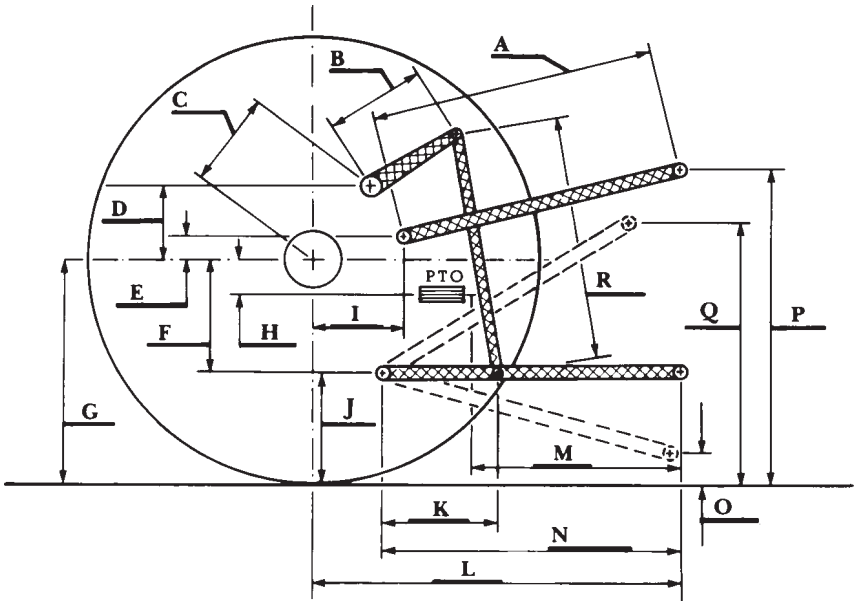
Hitch point distance to ground level in. *(mm)*	8.0 *(203)*	15.7 *(400)*	22.4 *(570)*	29.7 *(755)*	37.0 *(940)*
Lift force on frame lb	13490	14075	14095	13890	12295
" " " " " " *(kN)*	*(60.0)*	*(62.6)*	*(62.7)*	*(61.8)*	*(54.7)*

SAE Static Test—System pressure 2610 psi *(180 Bar)* (two boost cylinders)

Hitch point distance to ground level in. *(mm)*	9.5 *(240)*	15.4 *(390)*	23.8 *(605)*	31.5 *(800)*	39.6 *(1005)*
Lift force on frame lb	16525	17285	17760	17420	16545
" " " " " " *(kN)*	*(73.5)*	*(76.9)*	*(79.0)*	*(77.5)*	*(73.6)*

HITCH DIMENSIONS AS TESTED—NO LOAD
(2 boost cylinders)

	OECD test		SAE test	
	inch	*mm*	inch	*mm*
A	29.7	*754*	29.9	*760*
B	9.1	*230*	9.1	*230*
C	15.6	*395*	15.6	*395*
D	14.3	*363*	14.3	*363*
E	8.2	*208*	10.8	*275*
F	9.8	*250*	9.8	*250*
G	33.6	*855*	33.6	*855*
H	0.7	*17*	0.7	*17*
I	17.9	*455*	16.9	*430*
J	23.8	*605*	23.8	*605*
K	17.1	*435*	19.8	*504*
L	47.0	*1194*	47.0	*1194*
M	23.3	*592*	23.3	*592*
N	38.3	*974*	38.3	*974*
O	7.8	*198*	9.4	*240*
P	47.8	*1215*	43.9	*1115*
Q	36.3	*923*	35.0	*890*
R	29.5	*750*	31.0	*787*



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