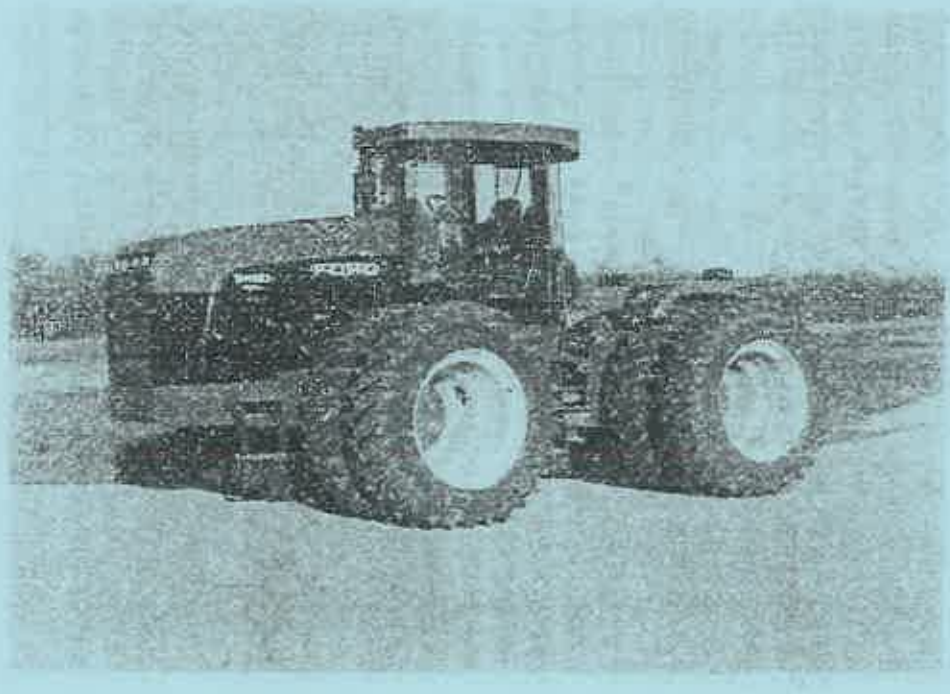
PAMI

OECD NO. 1554 RESTRICTED CODE
Date of Approval: May 10, 1995

REPORT OF TEST IN ACCORDANCE WITH **OECD RESTRICTED CODE (CODE II)**
FOR THE OFFICIAL TESTING OF AGRICULTURAL TRACTORS



FORD VERSATILE 9480 (4WD) ARTICULATED AGRICULTURAL TRACTOR

Manufactured by: New Holland Canada Ltd.
Versatile Farm Equipment Co.
Box 7300 - 1260 Clarence Ave.
Winnipeg, MB R3C 4E3
Canada

Date of Test: October, 1994

PRAIRIE AGRICULTURAL MACHINERY INSTITUTE

Test Station: P.O. Box 1060
Portage la Prairie, Manitoba
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Head Office: P.O. Box 1900
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TABLE OF CONTENTS

		Page
I	SPECIFICATIONS OF TRACTOR	1
II	TEST CONDITIONS	11
III	TEST RESULTS	14
	1. Engine Power	14
	2. Hydraulic Power and Lifting Force	16
	3. Drawbar Power and Fuel Consumption	17
	4. Optional Tests: Ballasted Drawbar Test	20
IV	FIGURES	21

Manufacturer's name and address:	New Holland Canada Limited Versatile Farm Equipment Operations P.O. Box 7300 - 160 Clarence Avenue Winnipeg, MB R3C 4E8 Canada
Location of tractor assembly plant:	Winnipeg, MB; Canada
Submitted for test by:	Manufacturer
Selected for test by:	Manufacturer, with agreement of the test station
Place of running in:	Versatile Farm Equipment Operations Winnipeg, MB
Duration of running in:	37 h
Location of tests:	Tests carried out at the manufacturer's premises VERSATILE, Winnipeg, MB and witnessed by D.J. May, Project Engineer (PAMI Portage la Prairie, MB)

I. SPECIFICATIONS OF TRACTOR

TRACTOR

Make/Model/Type:	Ford Versatile/9480/4-Wheel Drive, Articulated
Number of Driving wheels:	4
Serial Nº:	D101155
1st Serial Nº:	D100006

ENGINE

Make/Model/Type:	Cummins/NTA-855-A/Diesel, turbocharged aftercooled, direct injection
Serial Nº:	30347566

Cylinders

Number/disposition:	6/in-line, vertical
Bore/Stroke:	140 mm / 152 mm (5.51/5.98 in)
Capacity:	14016 cm^3 (855 cu in)
Compression ratio:	14.0:1
Arrangement of valves:	Overhead

Turbocharger

Make/Model:	Holset/HT3B/Exhaust gas driven turbo
Pressure:	101.4 to 128.9 kPa (14.7 to 18.7 psi) at rated power

Fuel System

Fuel feed system:	Engine driven transfer pump
Make/model/type of fuel filter:	Fleetguard/FF1212/single element, spin on
Capacity of fuel tank:	927 dm^3 (245 US gal)
Make/model/type of injection pump:	Cummins/type G, model PT/pressure-time regulated
Serial Nº:	1415 F281A 062102 3053294 33038
Manufacturer's production setting of injection pump	
Flow rate (rated engine speed and full load):	48.1 to 49.9 kg/hr (106 to 110 lb/hr) at fuel density of 0.838 - 0.858 g/cm^3 (6.992 - 7.162 lbs/US gal)
Timing:	Controlled by camshaft actuation: 19° BTDC
Make/model/type of injectors:	Cummins/PTD/cam actuated
Injection pressure:	70.3 MPa (10,200 psi)
Rail pressure:	0.669 to 0.745 MPa (97 to 108 psi)

Governor

Make/model/type:	Cummins/centrifugal flyweight, integral to fuel pump
Governed range of speed:	from 837 to 2457 rev/min
Rated engine speed:	2100 rev/min, peak torque at 1400 rev/min

Air cleaner

Pre-cleaner:	
Make/model/type:	Donaldson/H001926/Stratatube exhaust aspirated
Location of air intake:	Integral with air cleaner
Main Cleaner:	
Make/model/type:	Donaldson/STB 14 0228/Dual element
Location of air intake:	Mounted under hood
Maintenance indicator:	Electronic restriction indicator mounted on outlet tube of air cleaner, indication light located in cab on instrument panel.

Lubrication system

Type of feed pump:	Full pressure, positive displacement
Type of filter:	Spin on
Number:	One

Cooling system

Type of coolant:	50/50 water/glycol base anti-freeze
Type of pump:	Belt driven centrifugal pump
Specification of fan or blower:	Belt driven
Number of fan blades:	8
Fan diameter:	813 mm (32 in)
Coolant capacity:	58 dm^3 (15 US gal)
Type of temperature control:	Thermostat
Superpressure system:	48.3 kPa (7.0 psi)

Starting system

Make/model/type:	Delco Remey/42 MT/electric motor/electro-mechanical engagement
Starter motor power rating:	6.5 kW (8.7 hp)
Cold starting aid:	Optional engine coolant heater and ether spray to intake manifold
Safety device:	Mechanical lockout on key switch (return to "OFF" to re-crank)

Electrical system

Voltage:	12 volt, negative ground
Alternator:	
Make/model/type:	Delco Remey/30 Si
Power:	12 volt, 130 amp
Battery (number of accumulators):	Three (SAE Group 31)
Rating:	950 amps at -18 °C cold crank capacity 120 Ah each at 20 h rating

Exhaust system

Make/model/type:	Donaldson/M090753 G4/aspirating
Location:	Mounted on rear of front R/H fender, mounted vertically

TRANSMISSION TO WHEELS

Clutch

Make/model/type:	Versatile /hydraulic, multi-disc, wet
Number of plates:	6
Diameter of plates:	280 mm (11 in)
Method of operation:	Hydraulic

Gear box

Make/model/type:	Versatile /12 speed/mechanical
Arrangement:	Gear box with 4 synchronized gears, 3 forward ranges, and 1 reverse, 2 levers
Number of gears:	12 forward, 4 reverse
Available options:	Power take-off

Rear axle and final drives

Make/model/type:	Versatile/outboard planetary
Differential lock:	Optional
Type:	Electrical solenoid operated mechanical clutch
Method of engagement:	R/H console mounted switch
Method of disengagement:	Same

Front axle and final drives

Make/model/type:	Versatile/outboard planetary
Differential lock:	Optional
Type:	Electrical solenoid operated mechanical clutch
Method of engagement:	R/H console mounted switch
Method of disengagement:	Same

Total Ratios and travelling speeds

Group or Range	Gear No.	Number of engine revolutions for one revolution of the driving wheels	Nominal travelling speed(*) at rated engine speed of 2100 rev/min km/h	(mph)
	Forward			
L	1	160	4.5	(2.8)
	2	137	5.2	(3.2)
	3	117	6.1	(3.8)
	4	101	7.1	(4.4)
M	1	88	8.1	(5.0)
	2	75	9.5	(5.9)
	3	65	11.1	(6.9)
	4	55	12.9	(8.0)
H	1	43	16.9	(10.5)
	2	36	19.7	(12.2)
	3	31	23.0	(14.3)
	4	27	26.7	(16.6)
	Reverse			
	1	123	5.8	(3.6)
	2	105	6.8	(4.2)
	3	90	7.9	(4.9)
	4	78	9.2	(5.7)

(*) Calculated with a tire dynamic radius index of: 905 mm (35.6 in) (ISO 4251/1 - 1992)

Number of revolutions of front wheels
for one revolution of rear wheels: 1.0

POWER TAKE-OFF (Optional Equipment -- Test Tractor Not Equipped With PTO)

Main power take-off

Type: Independent, wet, multiple disc
Method of engagement: Electrically operated solenoid valve switch controlled from console

Number of shafts: One at rear of tractor in vertical median plane
Method of changing power take-off shaft ends and speeds: 1000 rev/min only at rated 2100 rev/min engine speed

Power take-off proportional to engine speed 1000 rev/min

Location: Rear of tractor in vertical median plane
Diameter of power take-off shaft: 44.5 mm (1.75 in)
Number of splines 20 in conformity with ISO 500 - 1991
Height above ground: 861 mm (33.9 in)

Distance from the median plane of tractor:	0 mm (0 in)
Distance behind rear wheel axis:	638 mm (25.1 in)
PTO speed at rated engine speed:	996.9 rev/min
Engine speed at standard power take-off speed:	2106.5 rev/min
Ratio of rotation speeds (engine speed/PTO speed):	2.11:1.0
Direction of rotation (viewed from behind tractor):	Clockwise

Power take-off proportional to ground speed 1000 rev/min using lowest forward gear

Travelling distance for one revolution of power take-off shaft:	74.95 mm (2.95 in)
Number of power take-off shaft revolutions for one revolution of (rear) driving wheels:	75.87
Direction of rotation with forward gear engaged (viewed from behind tractor):	Clockwise

POWER LIFT

Make/model/type:	Versatile/hydraulic
Type of hydraulic system:	Closed centre, load sensing, variable flow
Type and number of cylinders (single- or double-acting):	External, 2, double-acting
Type of linkage lock for transport:	Electro-hydraulic
Relief valve pressure setting (tolerance):	15.00 ± 0.53 MPa (2176 ± 77 psi) kick-out in implement valves
Opening pressure of cylinder safety valve (if fitted):	None
Lift pump type:	Eaton load sensing, pressure and flow compensated
Transmission between pump and engine:	Direct drive at engine accessory drive
Type and number of filters:	Two canister type replaceable element, cleanable suction screen inside oil reservoir
Site of oil reservoir:	Beneath engine, 75.7 dm^3 (20 US gal)
Type, number and location of tapping points:	Leverless quick disconnect, 4, 5th optional, located at rear of tractor
Maximum volume of oil available to external cylinders:	46.35 dm^3 (12.2 US gal) 6.3 dm^3 (1.7 US gal) at 25° tilt

Three-point linkage

Category 3/4, in conformity with 3 wide/4 narrow of ISO 730/3-1982.

Category adapter: Reverse lower links; install alternate bushings at hitch points

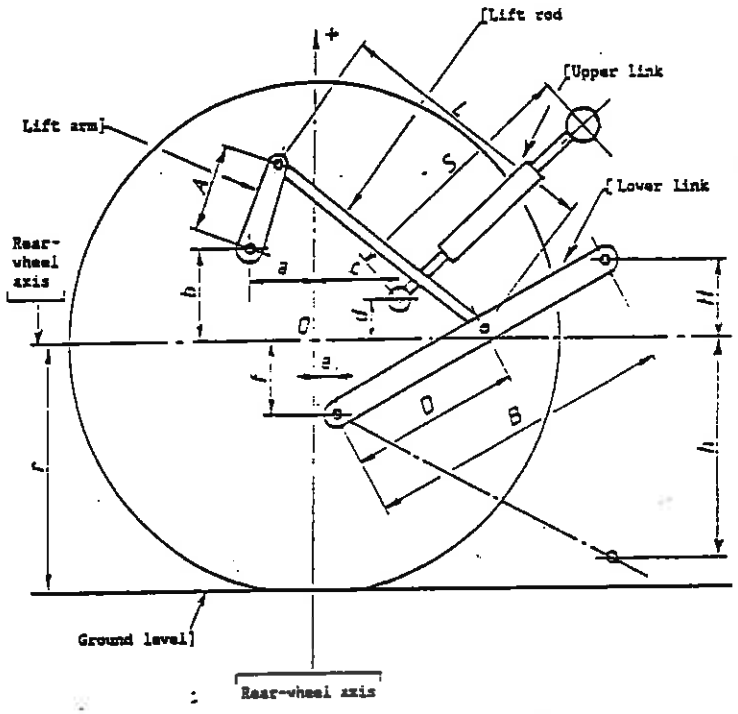


Figure 2.1 Lift test - Linkage geometry

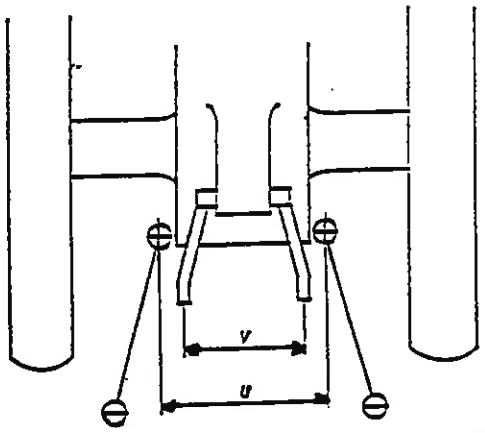


Figure 2.2 Lift test - Linkage geometry

Table 2.1 - Linkage geometry dimensions
(when connected to standard frame)

		Dimension or Range mm (in)	Settings used in test mm (in)
Length of lift arms	(A)	472 (18.6)	Same
Length of Lower links	(B)	1092 (43.0)	Same
Distance of lift arm pivot point from rear wheel axis: horizontally	(a)	182 (7.2)	Same
vertically	(b)	483 (19.0)	Same
Horizontal distance between the 2 lower link points	(u)	945 (37.2)	Same
Horizontal distance between the 2 lift arm end points	(v)	954 (37.6)	Same
Length of upper link	(s)	From 660 to 838 (26.0 to 33.0)	715 (28.1)
Distance of upper link pivot point from rear wheel axis: horizontally	(c)	642 (25.3)	Same
vertically	(d)	341 or 214 (13.4 or 8.4)	341 (13.4)
Distance of lower link pivot point from rear wheel axis: horizontally	(e)	264 (10.4)	Same
vertically	(f)	263 (10.4)	Same
Distance of lower link pivot points to lift rod pivot points on lower links	(D)	457 or 635 (18.0 or 25.0)	635 (25.0)
Length of lift rods	(L)	From 737 to 876 (29.0 to 34.5)	842 (33.1)
Height of lower hitch points relative to the rear-wheel axis: in low position	(h)	From 383 to 617 (15.1 to 24.3)	602 (23.7)
in high position	(H)	From 344 to 136 (13.5 to 5.4)	166 (6.5)
Height above ground of lower hitch points when locked in transport position (*)		Any height with in lift range	

(*) Assuming r -tire dynamic radius of 905 mm (35.6 in) (ISO 4251/1 - 1992)

SWINGING DRAWBAR

Type:	Versatile
Height above ground (top of drawbar)	
Maximum:	522 mm (20.6 in)
Minimum:	417 mm (16.4 in)
Type of adjustment	
Vertical:	Fixed
Horizontal:	Manual slide
Distance of hitch point from rear wheel axis, horizontally:	1145 mm (45.1 in)
Distance of hitch point from power take-off shaft end	
Vertical:	285 mm (11.2)
Horizontal:	0 mm (0 in)
Lateral adjustment (centre of clevis)	
Right-hand:	413.5 mm (16.3 in) standard cage 213.5 mm (8.4 in) 3-pt hitch drawbar cage
Left-hand:	413.5 mm (16.3 in) standard cage 213.5 mm (8.4 in) 3-pt hitch drawbar cage
Distance of pivot point from rear wheel axis, horizontally:	1335 mm (52.6 in)
Diameter of drawbar pin hole:	51.9 mm (2.0 in)(optional kit, providing 1.5 in. hole)
Maximum vertical permissible load:	25.6 kN (5755 lb)

STEERING

Make/model/type:	Eaton/92226/hydrostatic open centre valve
Method of operation:	Articulated
Pump:	Open centre gear pump
Rams:	2, double acting, 88.9 mm (3.5 in) bore x 419.1 mm (16.5 in) stroke
Working pressure:	17.23 MPa (2500 psi)

BRAKES

Service brake:

Make/model/type:	Hayes/dry disc
Method of operation:	Hydraulic
Trailer Braking Take-off:	None

Parking brake

Type:	Calliper
Method of operation:	Mechanical

WHEELS

Number:	4
Front:	2, driving
Rear:	2, driving
Wheelbase:	3380 mm (133 in)

Track width adjustment:

	Minimum mm (in)	Maximum mm (in)	Adjustment method	Dual wheel Minimum & Maximum mm (in)
Front	1829 (72.0)	2032 (80.0)	Reverse rims	2552 (100)
Rear	1829 (72.0)	2032 (80.0)	Reverse rims	2552 (100)

PROTECTIVE STRUCTURE

Make/model/type:	Ford Versatile/9703124/safety cab
Manufacturer's name and address:	New Holland Canada Limited Versatile Farm Equipment Operations P.O. Box 7300 - 160 Clarence Avenue Winnipeg, MB R3C 4E8 Canada
Protective device:	Cab, not tiltable
OECD approval number:	CSS 0290/3 MOD1/CDN (PAMI)

DRIVER'S SEAT

Make/model/type: Versatile-Sears/Sears Airride/electric air compressor air support with swivel

Type of suspension: Air

Type of damping: Fluid/adjustable

Range of adjustment:

Longitudinal: 177.8 mm (7.0 in)

Vertical: 76.0 mm (3.0 in)

LIGHTING

	Height of centre above ground mm (in)	Size mm	Distance from out side edge to median plane of tractor mm (in)
Headlights	2231 (87.8)	170 wide x 101 high	400 (15.7)
Sidelights	2073 (81.6)	170 wide x 101 high	1157 (45.6)
Rearlights	2116 (83.3)	170 wide x 101 high	1035 (40.7)
Reflectors	1950 (76.8)	190 wide x 70 high	945 (37.2)

II. TEST CONDITIONS

OVERALL DIMENSIONS (unballasted tractor)

Length mm (in)	Minimum width mm (in)	Maximum width mm (in)	Height to top of protective structure mm (in)	Height to top of exhaust silencer mm (in)
6750 (266)	2368 (93.2)	3814 (150)	3476 (137)	3712 (146)

Ground Clearance (unballasted): 506 mm (19.9 in)

- Clearance Limiting port: Drawbar clamp bolts

TRACTOR MASS (with cab)

	Unballasted		Ballasted*	
	Without Driver kg (lb)	With Driver kg (lb)	Without Driver kg (lb)	With Driver kg (lb)
Front	7638 (16839)	7678 (16927)	9382 (20683)	9422 (20772)
Rear	5029 (11086)	5064 (11164)	5429 (11969)	5464 (12046)
Total	12667 (27925)	12742 (28091)	14811 (32652)	14886 (32818)

BALLAST (all ballast in the form of liquid added to tyres)

	Weights	CaCl Solutions kg (lb)
Front	-	1744 (3844)
Rear	-	400 (883)
Total:	-	2144 (4727)

TYRES AND TRACK WIDTH SPECIFICATIONS

	Front	Rear
Tyres:		
. dimensions	20.8R42 radial duals	20.8R42 radial duals
. ply rating	two star	two star
. type	radial	radial
. maximum load (tyre manufacturer's)	38.0 kN (8550 lb)	38.0 kN (8550 lb)
. maximum load (tractor manufacturer's)	38.0 kN (8550 lb)	38.0 kN (8550 lb)
. maximum inflation pressure (tyre manufacturer's)	165 kPa (24 psi)	165 kPa (24 psi)
. dynamic radius index	905 mm (35.6 in)	905 mm (35.6 in)
Chosen track width:	2552 mm (100 in)	2552 mm (100 in)

OILS AND LUBRICATION

- capacity and change interval

	Capacity dm³	Capacity (US gal)	Oil change h	Filter change h
Engine	38.77	(10.2)	250	250
Gear box	41.6	(11.0)	1500	500
Front axle	48	(12.7)	500	-
Rear axle	48	(12.7)	500	-
Final drive (front)	-	-	-	-
Final drive (rear)	-	-	-	-
Hydraulic system (*)	110	(29.1)	1500	500
Other (steering ... etc)**	-	-		

* not common with gear box or rear axle
** common with hydraulic system

- specifications (SAE, API, Mil.L, ISO)

	Recommended	Used during the test
Engine oil . type: . viscosity: . classification:	SAE 15W40 API CE 110 cst @ 40°C API SF/CD	Same
Transmission oils . type: . viscosity: . classification:	hydraulic 56 54 cst @ 40°C SAE 20 SF/CD	Same
Hydraulic fluid . type: . viscosity: . classification:	hydraulic 56 54 cst @ 40°C SAE 20 SF/CD	Same
Steering oil . type: . viscosity: . classification:	hydraulic 56 54 cst @ 40°C SAE 20 SF/CD	Same

- grease: lithium base EP - high temperature
- number of lubrication points: 30 w/o PTO, (39 w PTO)

FUEL

- type (in conformity): No. 2, diesel in conformity with national standard
- density at 15°C (60°F): 0.847 g/cm³ (7.068 lb/US gal)

III. TEST RESULTS

COMPULSORY TESTS RESULTS

1. ENGINE POWER*

- Date and location of tests: September 28, 1994; Winnipeg, Manitoba Canada
- Type of dynamometer: Eddy Current

Power	Engine Speed	Fuel consumption			Specific energy
		Hourly		Specific	
kW	rev/min	kg/h	l/h	g/kWh	(kWh/l)
1.1 MAXIMUM POWER - TWO-HOUR TEST					
206.5	1853	47.9	56.5	232	3.66
1.2 POWER AT RATED ENGINE SPEED					
194.6	2101	49.4	58.4	254	3.33
1.4 PART LOADS 1.4.1 the torque corresponding to maximum power at rated engine speed					
194.6	2101	49.4	58.4	254	3.33
1.4.2 85% of torque obtained in 1.4.1					
171.3	2177	45.8	54.1	268	3.17
1.4.3 75% of torque defined in 1.4.2					
131.5	2228	39.1	46.1	297	2.85
1.4.4 50% of torque defined in 1.4.2					
89.2	2266	32.2	38.0	361	2.35
1.4.5 25% of torque defined in 1.4.2					
45.3	2301	23.0	27.2	509	1.70
1.4.6 unloaded					
0.1	2339	15.5	18.3	140,000	0.01

* Test tractor not supplied with Power-take-off (PTO). Power test conducted by attaching dynamometer directly to transmission output shaft.

Power	Engine Speed	Fuel consumption			Specific energy
		Hourly		Specific	
(hp)	rev/min	(lb/h)	(gal/h)	(lb/hph)	(hph/gal)
1.1 MAXIMUM POWER - TWO-HOUR TEST					
(276.8)	(1853)	(105.5)	(14.93)	(0.381)	(18.55)
1.2 POWER AT RATED ENGINE SPEED					
(260.8)	(2101)	(109.0)	(15.42)	(0.418)	(16.92)
1.4 PART LOADS 1.4.1 the torque corresponding to maximum power at rated engine speed					
(260.8)	(2101)	(109.0)	(15.42)	(0.418)	(16.92)
1.4.2 85% of torque obtained in 1.4.1					
(229.6)	(2177)	(101.0)	(14.29)	(0.440)	(16.07)
1.4.3 75% of torque defined in 1.4.2					
(176.3)	(2228)	(86.1)	(12.18)	(0.488)	(14.47)
1.4.4 50% of torque defined in 1.4.2					
(119.6)	(2266)	(70.9)	(10.03)	(0.593)	(11.92)
1.4.5 25% of torque defined in 1.4.2					
(60.7)	(2301)	(50.8)	(7.19)	(0.837)	(8.61)
1.4.6 unloaded					
(0.1)	(2339)	(34.2)	(4.84)	(230.3)	(0.04)

* Test tractor not supplied with Power-take-off (PTO). Power test conducted by attaching dynamometer directly to transmission output shaft.

- No load maximum engine speed: 2339 rev/min
- Torque (equivalent crankshaft) at rated speed: 884 Nm (652 ft-lb) (2101 rev/min)
- Torque (equivalent crankshaft) at maximum power: 1064 Nm (784 ft-lb) (1853 rev/min)
- Maximum torque (equivalent crankshaft): 1367 Nm (1009 ft-lb) (1102 rev/min)
- Mean atmospheric conditions:
  - Temperature: 21°C (70°F)
  - Pressure: 101.36 kPa (30.0 in Hg)
  - Relative Humidity: 71%
- Maximum temperatures:
  - Coolant: 87°C (189°F)
  - Engine oil: 108°C (226°F)
  - Fuel: 37°C (99°F)
  - Engine air intake: 36°C (97°F)

2. HYDRAULIC POWER AND LIFTING FORCE

- Date of tests: September 29 and October 4, 1994

2.1 HYDRAULIC POWER TEST

- Sustained pressure with relief valve open: (Pump stalled) — 16.9 MPa (2453 psi)

- Pump delivery rate at minimum pressure: — 98.0 l/min (25.9 US gal/min)

	Flow rate l/min (US gal/min)	Pressure MPa (psi)	Power kW (hp)
Flow rate corresponding to a hydraulic pressure equivalent to 90 per cent of the actual relief valve pressure setting and corresponding hydraulic power	81.4 (21.5)	15.2 (2208)	20.7 (27.7)
Flow rate and hydraulic pressure corresponding to maximum hydraulic power	88.6 (23.4)	14.6 (2122)	21.6 (29.0)

- Tapping point used for test: — Remote circuit coupler

- Temperature of hydraulic fluid: — 65 ± 5°C

- This hydraulic system does not use an accumulator. Opening and closing pressures of the unloading valve could not be measured.

2.2 POWER LIFT TEST

	At The Hitch Point	On The Frame
Height of lower hitch points above ground in down position	303 mm (11.9 in)	479 mm (18.9 in)
Vertical movement	768 mm (30.2 in)	766 mm (30.2 in)
Maximum corrected force exerted through full range	87.9 kN (19770 lbf)	60.1 kN (13510 lbf)
Corresponding pressure of hydraulic fluid	16.5 MPa (2400 psi)	16.5 MPa (2400 psi)
Moment about rear-wheel axis	112.1 kNm(82681 ft-lb)	111.7 kNm (82386 ft-lb)
Maximum tilt angle of mast from vertical		10 degrees

- Linkage settings for test - see Table 2.1 and Figures 2.1 and 2.2.

Lifting heights relative to the horizontal plane including the lower link pivot points												
mm (in)	-343 (-13.5)	-329 (-13.0)	-300 (-11.8)	-200 (-7.9)	-100 (-3.9)	0 (0)	+100 (3.9)	+200 (7.9)	+300 (11.8)	+400 (15.7)	+425 (16.7)	+437 (17.2)
Lifting forces (the value measured are corrected to correspond to a hydraulic pressure equivalent to 90% of the actual relief valve pressure setting or to a maximum power delivered by the hydraulic system, whichever is lower)												
at the hitch points kN (kips)	95.2 (21.4)	-	94.9 (21.3)	94.1 (21.2)	93.2 (21.0)	91.7 (20.6)	90.0 (20.2)	88.4 (19.9)	87.9 (19.8)	87.9 (19.8)	87.9 (19.8)	-
Corresponding pressure: 14.6 MPa (2122 psi)												
at the frame KN (kips)	-	96.7 (21.7)	95.6 (21.5)	90.7 (20.4)	86.0 (19.3)	81.2 (18.3)	76.3 (17.2)	71.6 (16.1)	66.8 (15.0)	61.9 (13.9)	-	60.1 (13.5)
Corresponding pressure: 14.6 MPa (2122 psi)												

3. DRAWBAR POWER AND FUEL CONSUMPTION (UNBALLASTED TRACTOR)

Date of tests: October 20 and 21, 1994
Type of track: Concrete

	Tyre inflation pressure			
	Front		Rear	
Height of drawbar above ground	Inner	Outer	Inner	Outer
530 mm (20.9 in)	68.9 kPa (10 psi)	68.9 kPa (10 psi)	55.2 kPa (8 psi)	55.2 kPa (8 psi)

Gear and Range	Power	Drawbar Pull	Speed	Engine Speed	Slip of Wheels or tracks	Specific Fuel Consumption	Specific Energy	Temperature			Atmospheric conditions		
	kW	kN	km/h	rev/min	%	g/kWh	kWh/l	°C	°C	°C	°C	%	kPa
3.1 MAXIMUM POWER IN TESTED GEARS													
L1	158.1	134.2	4.24	2140	7.1	322	2.63	49	81	102	18	73	100.68
L2	172.6	132.2	4.70	2019	6.7	291	2.91	49	81	102	18	73	100.68
L3	179.6	124.4	5.20	1877	4.5	270	3.13	48	81	102	17	71	100.85
L4	181.0	107.9	6.04	1845	4.1	262	3.24	44	81	102	15	71	100.85
M1	181.5	92.3	7.08	1879	2.5	260	3.25	43	81	101	15	72	100.72
M2	182.1	81.1	8.08	1821	1.6	258	3.28	43	81	101	15	72	100.72
M3	182.7	67.8	9.71	1869	1.4	248	3.42	44	81	100	16	72	100.72
M4	181.4	58.4	11.18	1842	1.0	260	3.26	46	81	100	17	73	100.68
3.2 FUEL CONSUMPTION **3.2.1 in selected gear, at maximum power**													
M3	182.7	67.8	9.71	1869	1.4	248	3.42	44	81	100	16	52	100.43
3.2.1.1 75% of pull at maximum power at rated speed													
M3	125.6	39.0	11.62	2218	0.3	360	2.35	48	81	101	16	52	100.43
3.2.1.2 50% of pull at maximum power at rated speed													
M3	85.6	26.0	11.84	2257	0.1	400	2.12	48	81	101	16	52	100.43
3.2.1.3 next higher gear at reduced engine speed; same pull and travelling speed as in 3.2.1.1.													
M4	127.5	39.6	11.60	1903	0.6	287	2.95	48	81	99	16	52	100.43
3.2.1.4 next higher gear at reduced engine speed; same pull and travelling speed as in 3.2.1.2.													
M4	88.7	26.9	11.86	1942	0.4	354	2.39	48	81	99	16	52	100.43
3.2.2 in selected gear nearest to 7.5 km/h													
M1	181.5	92.3	7.08	1879	2.5	260	3.25	43	81	101	16	55	100.38
3.2.2.1 75% of pull at maximum power at rated speed													
M1	94.6	39.4	8.65	2256	0.5	365	2.32	47	80	99	16	55	100.38
3.2.2.2 50% of pull at maximum power at rated speed													
M1	64.2	26.4	8.76	2279	0.3	454	1.87	47	80	99	16	55	100.38
3.2.2.3 next higher gear at reduced engine speed; same pull and travelling speed as in 3.2.2.1.													
M2	95.9	39.7	8.70	1937	0.6	333	2.54	48	80	97	16	55	100.38
3.2.2.4 next higher gear at reduced engine speed; same pull and travelling speed as in 3.2.2.2.													
M2	65.1	26.53	8.83	1963	0.4	212	4.00	47	80	97	16	55	100.38

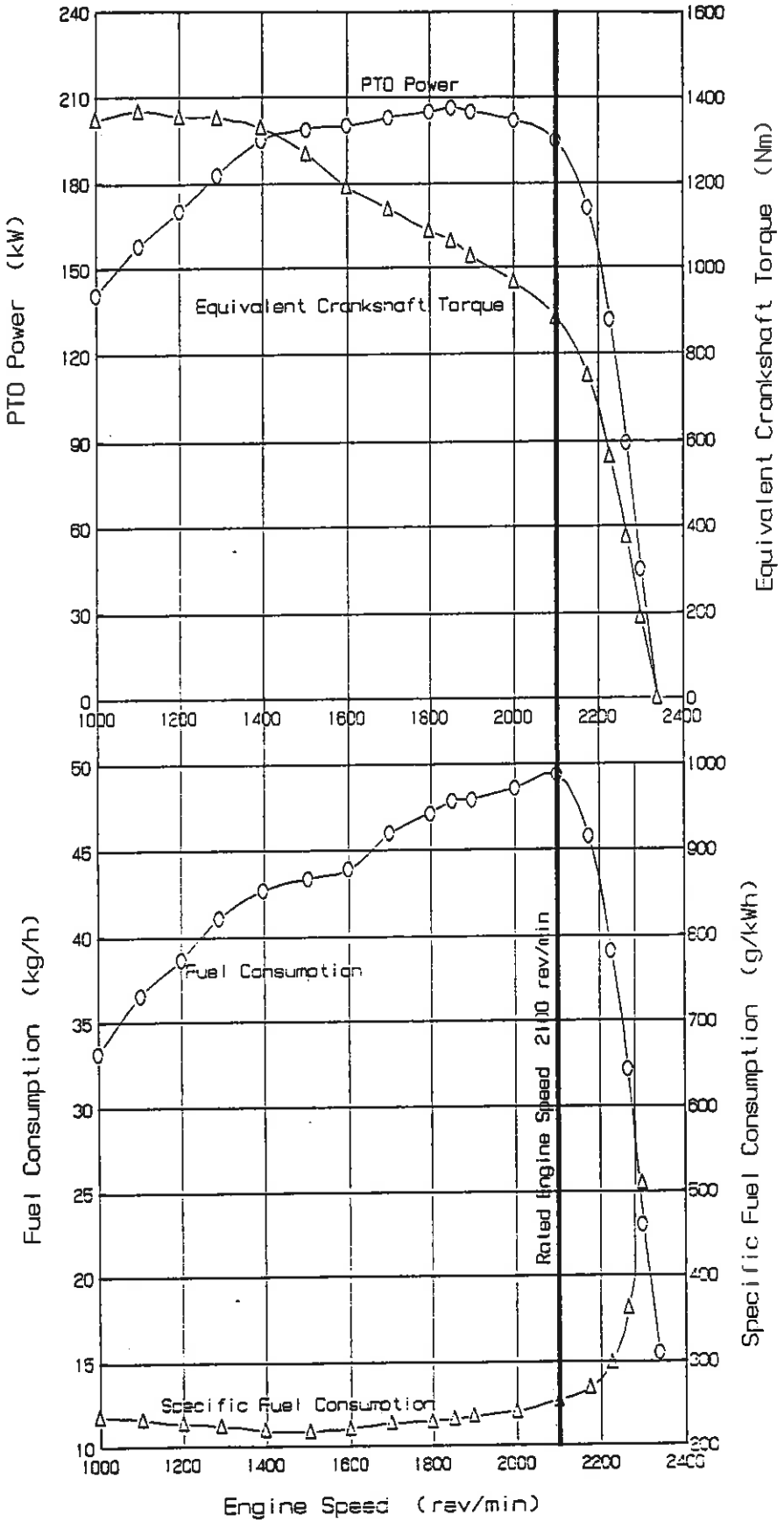
Gear and Range	Power	Drawbar Pull	Speed	Engine Speed	Slip of Wheels or tracks	Specific Fuel Consumption	Specific Energy	Temperature			Atmospheric conditions		
	hp	lb	mph	rev/min	%	lb/hph	hph/gal	°F	°F	°F	°F	%	in-Hg
3.1 MAXIMUM POWER IN TESTED GEARS													
L1	212.0	30170	2.64	2140	7.1	0.529	13.35	120	178	216	64	73	29.8
L2	231.3	29710	2.92	2019	6.7	0.479	14.77	120	178	216	64	73	29.8
L3	240.8	27960	3.23	1877	4.5	0.455	15.90	118	178	216	63	71	29.9
L4	242.7	24260	3.75	1845	4.1	0.430	16.42	111	178	216	59	71	29.9
M1	243.3	20750	4.40	1879	2.5	0.428	16.50	109	178	214	59	72	29.8
M2	244.1	18240	5.02	1821	1.6	0.425	16.63	109	178	214	59	72	29.8
M3	244.9	15240	6.03	1869	1.4	0.408	17.34	111	178	212	61	72	29.8
M4	243.2	13140	6.95	1842	1.0	0.428	16.54	115	178	212	63	73	29.8
3.2 FUEL CONSUMPTION **3.2.1 in selected gear, at maximum power**													
M3	244.9	15240	6.03	1869	1.4	0.408	17.34	111	178	212	61	52	29.7
3.2.1.1 75% of pull at maximum power at rated speed													
M3	168.4	8760	7.21	2218	0.3	0.592	11.94	118	178	214	61	52	29.7
3.2.1.2 50% of pull at maximum power at rated speed													
M3	114.7	5850	7.36	2257	0.1	0.657	10.76	118	178	214	61	52	29.7
3.2.1.3 next higher gear at reduced engine speed; same pull and travelling speed as in 3.2.1.1.													
M4	170.9	8900	7.21	1903	0.6	0.472	14.99	118	178	210	61	52	29.7
3.2.1.4 next higher gear at reduced engine speed; same pull and travelling speed as in 3.2.1.2.													
M4	118.9	6050	7.37	1942	0.4	0.582	12.15	118	178	210	59	55	29.7
3.2.2 in selected gear nearest to 4.6 mph													
M1	243.3	20750	4.40	1879	2.5	0.428	16.50	109	178	214	59	55	29.7
3.2.2.1 75% of pull at maximum power at rated speed													
M1	126.8	8850	5.38	2256	0.5	0.601	11.77	117	176	210	61	55	29.7
3.2.2.2 50% of pull at maximum power at rated speed													
M1	86.1	5930	5.44	2279	0.3	0.747	9.46	117	176	210	61	55	29.7
3.2.2.3 next higher gear at reduced engine speed; same pull and travelling speed as in 3.2.2.1.													
M2	128.5	8920	5.40	1937	0.6	0.548	12.89	118	176	207	61	55	29.7
3.2.2.4 next higher gear at reduced engine speed; same pull and travelling speed as in 3.2.2.2.													
M2	87.2	5970	5.48	1963	0.4	0.348	20.31	117	176	207	61	55	29.7

4.0 OPTIONAL TESTS: Ballasted Drawbar Test/Date of Test: October 25, 1995

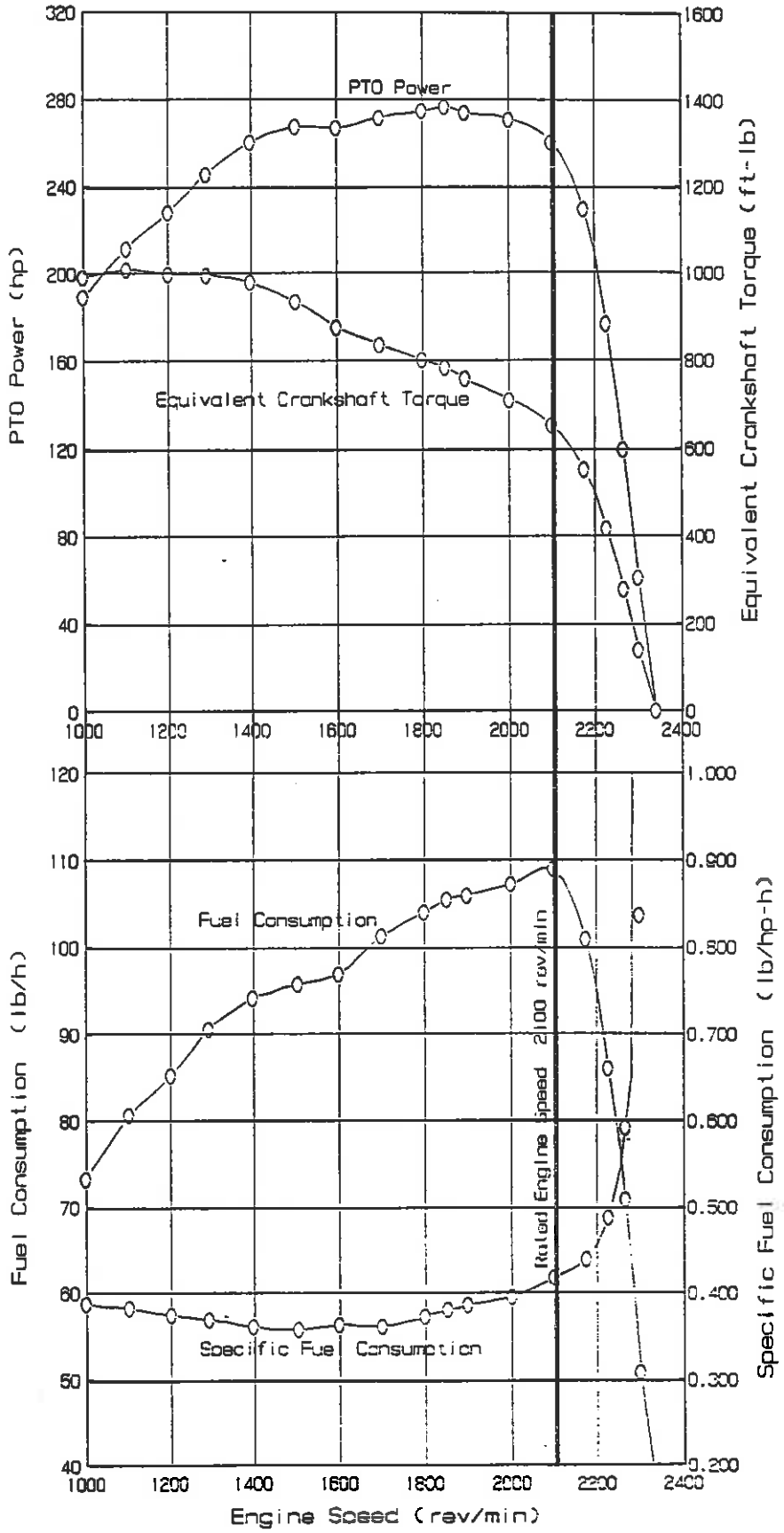
Gear and Range	Power	Drawbar Pull	Speed	Engine Speed	Slip of Wheels or tracks	Specific Fuel Consumption	Specific Energy	Temperature			Atmospheric conditions		
	kW	kN	km/h	rev/min	%	g/kWh	kWh/l	°C	°C	°C	°C	%	kPa
MAXIMUM POWER IN TESTED GEARS (ballasted tractor): Drawbar Height: 569 mm; Tire Pressures: 69 kPa rear (inner), 90 kPa front (inner), 69 kPa rear (outer), 90 kPa front (outer)													
L1	169.8	146.7	4.2	2092	6.4	288	2.93	42	81	100	5	67	102.45
L2	178.5	141.6	4.5	1926	5.4	274	3.07	43	81	100	5	67	102.45
L3	182.4	123.0	5.3	1899	3.1	268	3.15	44	81	100	8	67	102.45
L4	183.4	111.3	5.9	1798	2.4	255	3.31	43	81	98	9	67	102.45
M1	184.8	94.0	7.1	1864	1.1	255	3.31	44	81	100	10	69	102.39
M2	184.1	79.3	8.4	1872	1.0	256	3.30	43	81	101	6	69	102.39
M3	182.9	67.7	9.7	1864	1.0	256	3.30	43	81	100	8	69	102.39

Gear and Range	Power	Drawbar Pull	Speed	Engine Speed	Slip of Wheels or tracks	Specific Fuel Consumption	Specific Energy	Temperature			Atmospheric conditions		
	hp	lb	mph	rev/min	%	lb/hph	hph/gal	°F	°F	°F	°F	%	in-Hg
MAXIMUM POWER IN TESTED GEARS (ballasted tractor): Drawbar Height: 22.4 in Tire Pressures: 10 psi rear (inner), 13 psi front (inner), 10 psi rear (outer), 13 psi front (outer)													
L1	227.6	32980	2.6	2092	6.4	0.473	14.87	108	178	212	41	67	30.3
L2	239.3	31840	2.8	1926	5.4	0.451	15.60	109	178	212	41	67	30.3
L3	244.5	27660	3.3	1899	3.1	0.440	15.99	111	178	212	46	67	30.3
L4	245.9	25020	3.7	1798	2.4	0.419	16.80	109	178	208	48	67	30.3
M1	247.8	21130	4.4	1864	1.1	0.419	16.80	111	178	212	50	69	30.3
M2	246.8	17840	5.2	1872	1.0	0.421	16.73	109	178	214	43	69	30.3
M3	245.1	15220	6.0	1864	1.0	0.421	16.73	109	178	212	46	69	30.3

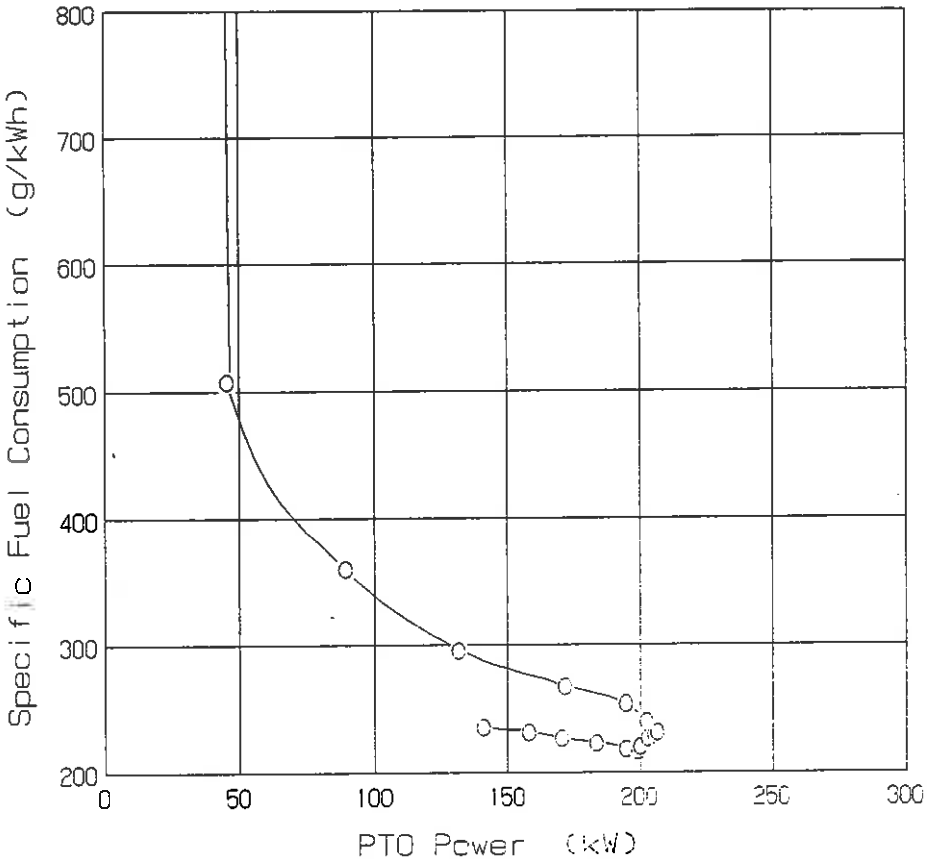
FORD VERSATILE 9480 4-WD ARTICULATED



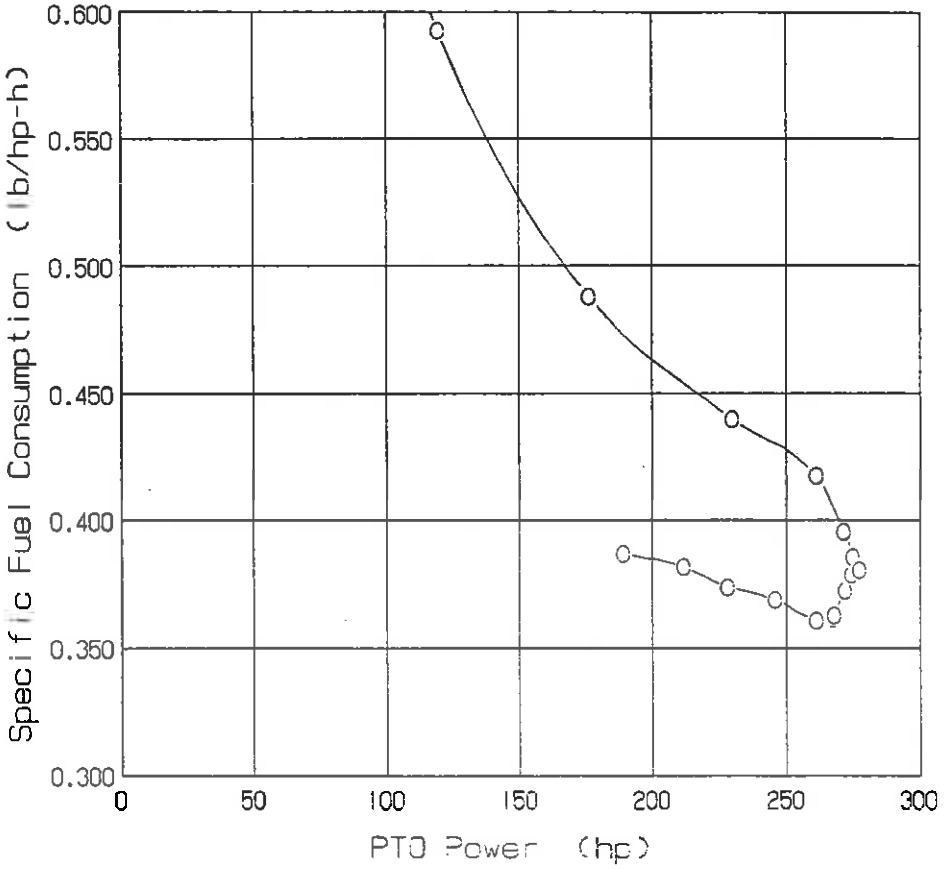
FORD VERSATILE 9480 4-WD ARTICULATED



FORD VERSATILE 9480 4-WD ARTICULATED



FORD VERSATILE 9480 4-WD ARTICULATED



REPAIRS AND ADJUSTMENTS: None

REMARKS: 15% wheel slip could not be achieved during drawbar tests due to occurrence of wheel hop or bounce. Test tractor was supplied without Power Take-Off (PTO). Power test was conducted by attaching dynamometer directly to transmission output shaft.

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TEST CONDUCTED BY: D.J. May, P.Eng., Project Engineer
K.A. Carmichael, Project Technologist

Signed: _____
Bruce Allen, P.Eng., MBA
Station Manager, for the Director

Date: July 21/95