CAMTC

Report on test in accordance with the
OECD STANDARD CODE 1 for the Official
Testing of Agricultural and Forestry Tractor Performance

OECD Approval No. 1/2 006

Date of approval : 8th OCT. 2002



XIN HU HONGLI -650 (2WD) 32km/h Version Tractor

Manufactured by: Shandong Hongli Group Co.,Ltd.
Shandong, Dezhou, 253019, China

Date of test: March 2000

Test No. 2000OS201

China Agricultural Machinery Testing Centre
40 Shilihe Dongsanhuan Nanlu, 100021, Beijing, China

This is a report on a tractor test in accordance with the OECD STANDARD CODE for the Official Testing of Agricultural Tractor Performance "Blue Codes" , March 2000, Code 1.

It does not contain an evaluation of the tractor on practical work.

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Date of approval: 8th Oct, 2002

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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 the following relations:

Forces	1 kN	=	1000 N	=	102 kgf
Powers			1 kW	=	1.36 PS
Pressures	1 Mpa	=	10 bar	=	10.2 kgf/cm^2
	100 kPa	=	1000 mbar	=	750.10 mmHg

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TABLE OF CONTENTS

	Page
1 SPECIFICATIONS OF TRACTOR	3 to 12
2 TEST CONDITIONS	12 to 14
3 COMPULSORY TESTS RESULTS	14
3.1 Main power take-off performance	14 to 17
3.2 Hydraulic power and lifting force	18
3.3 Drawbar power test	19 to 20
3.4 Turning area and turning circle	21
3.5 Location of centre of gravity	21
3.6 Braking	21 to 23
3.7 Measurement of external noise level	23
4 REPAIRS AND ADJUSTMENTS DURING TESTS	23
5 REMARKS	23

Note: Units shown below, which appear in ISO 1000:1992, shall be stated and followed by national units in parentheses, if necessary.

- Tractor manufacturer's name and address:	Shandong Hongli Group Co., Ltd Shandong, Dezhou, 253019, China
- Location of tractor assembly:	Shandong, Dezhou, 253019, China
- Submitted for test by:	The manufacturer
- Selected for test by:	The manufacturer with the agreement of the CAMTC
- Place of running-in:	Shandong, Dezhou, 253019, China
- Duration of running-in:	Engine and tractor 49 hours
- Location of test:	China Agricultural Machinery Testing Centre, Beijing, 100021, China

1. SPECIFICATIONS OF TRACTOR

1.1 Identification

1.1.1

- Make of the tractor:	XIN HU
- Model:	HONGLI 650
- Type:	2WD

1.1.2 *Numbers*

- 1st serial No.:	93090002
- Serial No.:	93090002

1.1.3 *Other Specifications*

- Speed version:	32 km/h

1.2 Engine

- Make:	Dongfanghong
- Model:	LR4105T65
- Type:	4-stroke, water cooled, direct injection diesel
- Serial No.:	9914072

1.2.1 *Cylinders*

- Number/disposition:	4/vertical in line
- Bore/stroke:	105mm/125mm
- Capacity:	4330 cm^3
- Compression ratio:	17:1
- Arrangement of valves:	Overhead in line
- Cylinder liners:	Wet

1.2.2 *Supercharging*: None

1.2.3 *Fuel system*

- Fuel feed system: Forced feed by pump
- Make/Model/Type of fuel filter(s): Yanjing Motor Accessory Works/C07085/Two parallel
- Capacity of fuel tank: 90 dm^3
- Make: China First Tractor Group Co.,Ltd Pump and injector works
- Model/Type of injection pump: ZHBF49540Z-83A
- Manufacturer's production setting of injection pump:
  - . Flow rate (rated engine speed and full load): 14.84 dm^3/h
  - . Timing: 20°±1° before T.D.C.
- Make: China First Tractor Group Co.,Ltd Pump and injector works
- Model/Type of injectors ZCK150J4300/single hole long neck
- Injection pressure: 19.6~20.6 MPa
- Make/Model/Type of carburettor: None

1.2.4 *Governor*

- Make: China First Tractor Group Co.,Ltd
- Model/Type: TA/Mechanical, centrifugal variable speed governor
- Governed range of engine speed: from 650 to 2420 rev/min
- Rated engine speed: 2200 rev/min

1.2.5 *Air cleaner*

- Pre-cleaner
  - . Make/Model/Type: Anhui Bengbu Cleaner Works/KY250A/cyclone type
  - . Location of air intake: Under the bonnet, in front of engine
- Main cleaner
  - . Make/Model/Type: Anhui Bengbu Cleaner Works/KY250A/Oil bath
- Maintenance indicator: None

1.2.6 *Lubrication system*

- Type of feed pump: Gear pump
- Type of filter(s): JX0811A, Full flow with paper element, replaceable
- Number: 1

1.2.7 *Cooling system*

- Type of coolant: Water
- Type of pump: Centrifugal
- Specification of fan or blower: Axial flow type, belt driven
- Number of fan blades: 4
- Fan diameter: 450 mm
- Coolant capacity: 14 dm^3
- Type of temperature control: Thermostat
- Superpressure system: 135.3 kPa

1.2.8 *Starting system*

- Make: Hubei Automobile Electrical Machinery Factory
- Model/Type: QD154E/D.C. solenoid pre-engaged
- Starter motor power rating: 3.7 kW
- Cold starting aid: Preheater
- Safety device: Automatic return

1.2.9 *Electrical system*

- Voltage: 12 V
- Generator
  - . Make: Hubei Automobile Electrical Machinery Factory
  - . Model/Type: JFZ15219A / Alternator, belt driven
  - . Power: 0.7 kW
- Battery (number of accumulators):
  - . Model/Type: 6-QA-180, Lead accumulator
  - . Number: 1
  - . Rating: 180 A at 20 hours

1.2.10 *Exhaust system*

- Make: China First Tractor Group Co.,Ltd
- Model/Type: 4RTF240000/Expansion type silencer
- Location: Right-hand side of engine, vertical

1.3 Transmission

1.3.1 *Clutch (travel and power take-off)*

- Make/Model/Type: Weifang Clutch Works/650.21.001/Dry, Dual-acting
- Number of plates: 2
- Diameter of plates: 280 mm
- Method of operation: By foot pedal

1.3.2 *Gear box*

- Make/Model/Type: Own make/HL-650/Mechanical
- Description:

	Forward	Reverse
Number of gears	4	2
Number of ranges/groups	2	2
Total of arrangements	8	4

- Available option: None

1.3.3 *Rear axle and final drives*

- Make/Model/Type: Own make/HL-650/cone gear type differential planetary gear type final drives differential, spur gear final drives

- Differential lock:
  . Type: Mechanical, dog clutch
  . Method of engagement: By foot pedal
  . Method of disengagement: Self-disengagement

1.3.4 *Front axle and final drives*

- Make: Own make
- Model/Type: Balance arm type, telescopic axle

1.3.5 *Total ratios and travelling speeds*

Gear No.	Group or range	Number of engine revolutions for one revolution of the driving wheels	Nominal travelling speed (*) at rated engine speed of 2200 rev/min km/h
1	L	289.35	2.12
2	L	198.52	3.09
3	L	120.05	5.11
4	L	83.35	7.36
5	H	66.60	9.21
6	H	45.81	13.39
7	H	27.68	22.16
8	H	19.1	32.10
R1	L	215.24	2.85
R2	L	147.81	4.15
R3	H	89.42	6.86
R4	H	61.96	9.90
(*) Calculated with a tyre dynamic radius index of 740 mm (ISO 4251-1:1998).			

1.4 Power take-off

1.4.1 *Main power take-off*

- Type: Independent
- Method of engagement: Mechanically operated by hand level, Driven by the main clutch

- Number of shafts: 1
- Method of changing power take-off shaft ends and speeds: Speed change manually by hand lever

1.4.1.1 *Power take-off proportional to engine speed*

Power take-off at 540 rev/min

- Location:	At rear of tractor
- Diameter of power take-off shaft end:	35 mm
- Number of splines:	6, in conformity with ISO 500:1991
- Height above ground:	732 mm
- Distance from the median plane of the tractor:	0 mm
- Distance behind rear-wheel axis:	478 mm
- PTO speed at rated engine speed (2200 rev/min):	635 rev/min
- Engine speed at standard power take-off speed:	1872 rev/min
- Ratio of rotation speeds (engine speed/p.t.o speed):	3.467
- Power restriction:	45 kW
- Maximum torque transmissible:	938 N·m
- Direction of rotation (viewed from behind tractor):	Clockwise

Power take-off at 1000 rev/min

- Location:	At rear of tractor
- Diameter of power take-off shaft end:	35 mm
- Number of splines:	6, not in conformity with ISO 500:1991
- Height above ground:	732 mm
- Distance from the median plane of the tractor:	0 mm
- Distance behind rear-wheel axis:	478 mm
- PTO speed at rated engine speed (2200 rev/min):	1150 rev/min
- Engine speed at standard power take-off speed:	1913 rev/min
- Ratio of rotation speeds (engine speed/p.t.o speed):	1.913
- Power restriction:	45 kW
- Maximum torque transmissible:	506 N·m
- Direction of rotation (viewed from behind tractor):	Clockwise

1.4.1.2 *Power take-off proportional to ground speed*: None

1.4.2 *Optional power take-off*: None

1.5 Hydraulic power lift

- Make:	Shangdong Laizhou Mingyuan Machinery Co,. Ltd.
- Model/Type:	HL-650/Hydraulic, three hitch point
- Type of hydraulic system:	Partial separated units, open centre system
- Type and number of cylinders:	Single acting, 1

- Type of linkage lock for transport: Hydraulic lock
- Relief valve pressure setting: 16.0±0.5 MPa
- Opening pressure of cylinder safety valve: 18.0±0.5 MPa
- Lift pump type: CBN-E316 gear pump
- Transmission between pump and engine: Gear driven from gear box
- Type and number of filters: Metal mesh strainer, 1
- Site of oil reservoir: In the left case
- Type, number and location of tapping points: Thread, M18×1.5, 1, at front side of hydraulic power lift housing
- Maximum volume of oil available to external cylinders: 35.2 dm^3

1.6 Three-point linkage

- Category: 2, in conformity with ISO 730-1:1994+Cor.1:1995 ISO 730/1-1990
- Category adapter: None

Table 1.1
Dimensions of linkage geometry
when connected to the standard frame

		Dimension or range	Settings used in test
		mm	mm
Length of lift arms:	(A)	230	230
Length of lower links:	(B)	970	970
Distance of lift arm pivot from point from rear-wheel axis:			
- horizontally	(a)	130	130
- vertically	(b)	384	384
Horizontal distance between the 2 lower link points:	(u)	450	450
Horizontal distance between the 2 lift arm end points	(v)	530	530
Length of upper link:	(S)	from 510 to 780	705
Distance of upper link pivot point from rear wheel axis:			
- horizontally	(c)	405	405
- vertically	(d)	from 207 to 277	207
Distance of lower link pivot point from rear wheel axis:			
- horizontally	(e)	146	146
- vertically	(f)	221	221
Distance of lower link pivot points to lift rod pivot points on lower links:	(D)	from 400 to 450	425
Length of lift rods:	(L)	from 620 to 780	720
Height of lower hitch points relative to the rear wheel axis:			
- in low position:	(h)	from 680 to 350	536
- in high position:	(H)	from 339 to 9	144
Height above ground of lower hitch points when locked in transport position (*)		from 674 to 934	930
(*) Assuming r = 740 mm tyre dynamic radius index of ISO 4251-1:1998			

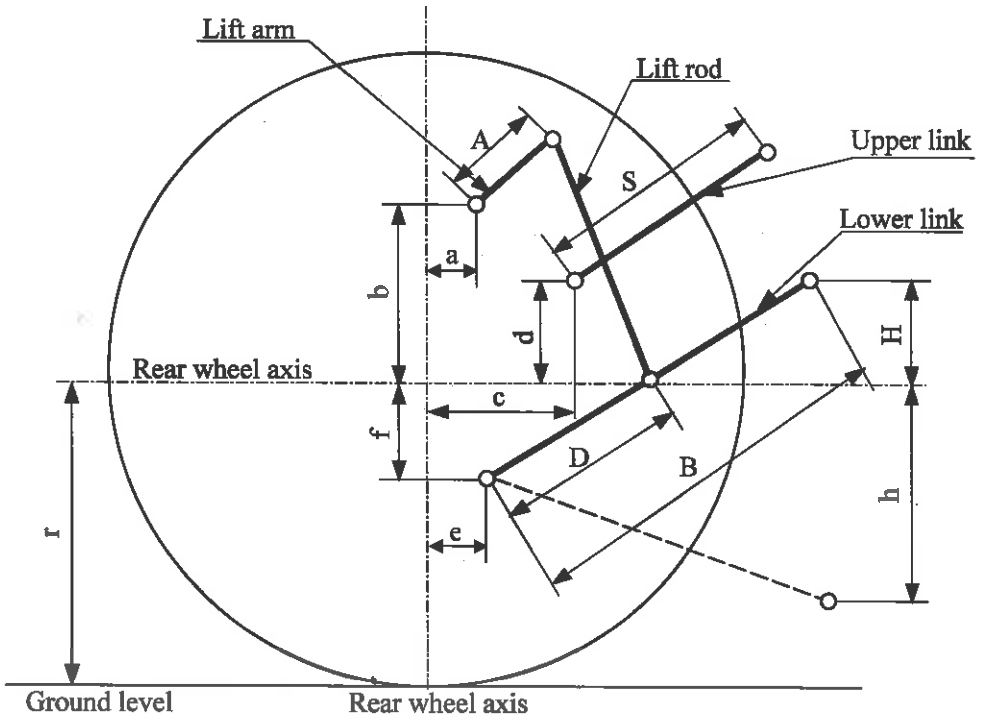


Figure 1.1
Lift test-Linkage geometry

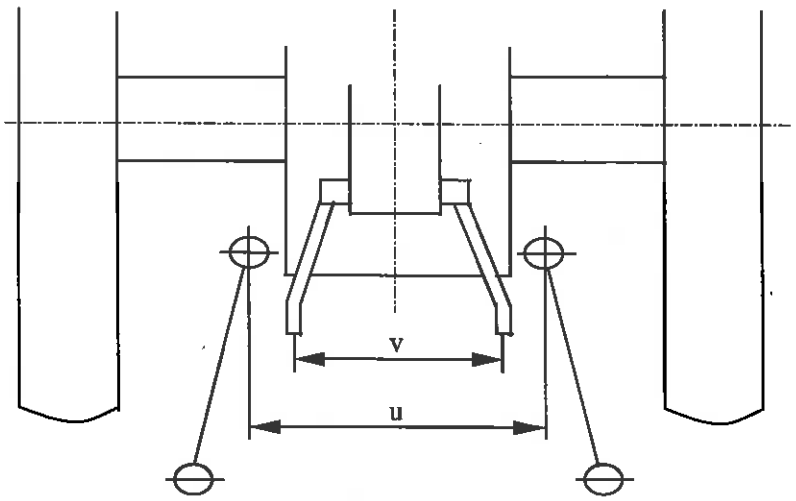


Figure 1.2
Lift test-Linkage geometry

1.7 Swinging drawbar

- Type: Swinging bar type
- Height above ground

. Maximum:	1021 mm
. Minimum:	142 mm
- Type of adjustment:	Inverting drawbar
- Distance of hitch point from rear-wheel axis, horizontally:	895～1046 mm
-Distance of hitch point from power take-off shaft end	
. Vertically:	419～568 mm
. Horizontally:	-590～289 mm
- Lateral adjustment (centre of clevis)	
. Right hand:	80 mm
. Left hand:	80 mm
- Distance of pivot point from rear-wheel axis, horizontally:	895～1046 mm
- Diameter of drawbar pinhole:	30 mm
- Maximum vertical permissible load:	8.0 kN

1.8 Trailer hitch

- Type:	Clevis type
- Hole diameter:	40 mm
- Height above ground:	611～671 mm
- Distance of hitch point from rear wheel axis,	
. horizontally:	866 mm
-Distance of hitch point from power take-off shaft end	
. Vertically:	-199～50 mm
. Horizontally:	388 mm
- Maximum vertical permissible load:	15.0 kN

1.9 Holed drawbar

- Number of holes:	5
- Distance between holes:	70 mm
- Hole diameter:	30 mm
- Thickness/width of the drawbar:	25 mm/100 mm
- Height above ground	
. Minimum:	730 mm
. Maximum:	140 mm
- Horizontal distance to power take-off shaft end (rear):	420 mm

1.10 Steering

- Make:	Zhenjiang hydraulic Element Works
- Model/Type:	BZZ1-E125C/hydrostatic steering
- Method of operation:	
. Pump(s):	HLCB-D12/10 Constant flow gear pump
. Ram(s):	single piston with double acting cylinder
- Working pressure:	10.0 Mpa

1.11 Brakes

1.11.1 *Service brake*

- Make/Model/Type: Own make/HL-650.43.015/wet & disc
- Method of operation: Hydraulically operated by pedals
- Trailer braking take-off: Air brake

1.11.2 *Parking brake*

- Type: Mechanical
- Method of operation: By hand

1.12 Wheels

- Number
  - . Front: 2, steering
  - . Rear: 2, driving
- Wheelbase: 2366 mm
- Track width adjustment:

	Minimum	Maximum	Adjustment method
	mm	mm	
Front	1385	1685	Changing offset of rims
Rear	1502	2014	reversing wheels

1.13 Protective structure

None

1.14 Seat

1.14.1 *Driver's seat*

- Make/Model/Type: Xiamen GLM Seat Co,. Ltd./—/Hydraulic damping
- Type of suspension: Spring with damper
- Type of damping: Hydraulic damper
- Range of adjustment
  - . Longitudinally: 50 mm
  - . Vertical: Automatic adjustment
- Safety belt: None

1.14.2 *Optional driver's seat* None

1.14.3 *Passenger seat*

- Location: At rear of driver's seat
- Capacity (number): 2

1.15 Lighting

	Height above ground of center	Size	Distance from outside edge of lights to median plane of tractor
	mm	mm	mm
Headlights	1250	200×185	260
Sidelights	1450	110×60	340
Rearlights	1730	160×120	800
Brakelights	1600	80×70	650

2. TEST CONDITIONS

2.1 Overall dimensions

	Length	Width		Height at top of	
		minimum	maximum	protective structure	exhaust pipe
	mm	mm	mm	mm	mm
Ballasted	4060	1960	2045	—	2770
Unballasted	4060	1960	2045	—	2775

2.2 Ground clearance (unballasted tractor): 325 mm

- Clearance-limiting part: Under the lower link pivot

2.3 Tractor mass

Mass (without frame):

	Ballasted		Unballasted	
	Without driver	With driver	Without driver	With driver
	kg	kg	kg	kg
Front	1306	1312	1297	1305
Rear	2350	2409	1777	1834
Total	3656	3721	3074	3139

2.4 Ballast

	Weights		Water
	Number	Total mass	
		kg	kg
Front	0	0	—
Rear	6	582	—
Optional	—	—	—

2.5 Track specifications None

2.6 Tyres and track width specifications

	Front	Rear
Tyres:		
- dimensions	6.50-20	13.6-38
- ply rating	6	8
- type	Cross ply	Cross ply
- maximum load (tyre manufacture's)	7.35 kN	21.75 kN
- maximum load (tractor anufacturer's)	6.33 kN	10.02 kN
- inflation pressure (tyre manufacturer's)	250 kPa	200 kPa
- dynamic radius index	402 mm	740 mm
Chosen track width:	1585 mm	1602 mm

2.7 Fuel

- Type: Standard diesel fuel in conformity with national standard GB10327-89
- Density at 15℃: 0.838 g/cm^3

2.8 Oils and lubrication

2.8.1 *Capacity and change interval*

	Capacity	Oil change	Filter change
	dm^3	h	h
Engine	17.0	200	200
Gear box	38	800	800
Rear axle	Common with gear box	Common with gear box	—
Final drive (rear)	Common with gear box	Common with gear box	—
Hydraulic system	17	800	800
Steering	3.5	800	800

2.8.2 *Specifications*

	Recommended	Used during test
Engine oil		
.Type:	SAE 15 W/30	SAE 15 W/30
.Viscosity:	14.6 cst at 100℃	14.6 cst at 100℃
.Classification:	L-ECC	L-ECC
Transmission oils		
.Type:	N100D	N100D
.Viscosity:	90-100 cst at 100℃	90-100 cst at 100℃
.Classification:	Q/SH007.1.23-87	Q/SH007.1.23-87
Hydraulic fluid		
.Type:		
.Viscosity:	Same as trans.oil	Same as trans.oil
.Classification:		
Steering oil		
.Type:		
.Viscosity:	Same as trans.oil	Same as trans.oil
.Classification:		

2.8.3 *Grease* Complex calcium base grease (GB 419-87)
- Number of lubrication points: 19

3. COMPULSORY TESTS RESULTS

3.1 Main power take-off

- Date and location of tests: 6th to 8th March, 2000, CAMTC
- Type of dynamometer bench: SCHENCK eddy-current brake W400

Power	Speed		Fuel consumption			Specific Energy
	Engine	P.T.O	Hourly		Specific	
kW	rev/min		kg/h	l/h	g/kW·h	kW·h/l
3.1.1 MAXIMUM POWER – TWO-HOUR TEST						
43.41	2101	606	10.9556	12.9652	252.4	3.3482
3.1.2 POWER AT RATED ENGINE SPEED						
43.36	2201	635	11.1488	13.1938	257.1	3.2864
3.1.3 STANDARD POWER TAKE-OFF SPEED (540±10 rev/min)						
42.41	1872	540	10.3081	12.1989	243.1	3.4765
3.1.4 PART LOADS 3.1.4.1 the torque corresponding to maximum power at rated engine speed						
43.36	2201	635	11.1488	13.1938	257.1	3.2864
3.1.4.2 85% of torque obtained in 3.1.4.1						
37.13	2219	640	9.8915	11.7059	266.4	3.1719
3.1.4.3 75% of torque defined in 3.1.4.2						
28.43	2246	648	8.3321	9.8605	293.1	2.8832
3.1.4.4 50% of torque defined in 3.1.4.2						
19.16	2281	658	6.7397	7.9760	351.8	2.4022
3.1.4.5 25% of torque defined in 3.1.4.2						
9.60	2302	664	5.2111	6.1670	542.8	1.5567
3.1.4.6 unloaded						
0.14	2333	673	3.7769	4.4697	—	—
3.1.5 PART LOADS AT STANDARD POWER TAKE-OFF SPEED (540±10 rev/min) 3.1.5.1 the torque corresponding to maximum power						
42.41	1872	540	10.3081	12.1989	243.1	3.4765
3.1.5.2 85% of torque obtained in 3.1.5.1						
36.76	1910	551	9.1352	10.8109	248.5	3.4003
3.1.5.3 75% of torque defined in 3.1.5.2						
28.30	1952	563	7.5071	8.8841	265.3	3.1855
3.1.5.4 50% of torque defined in 3.1.5.2						
19.20	1986	573	5.9352	7.0239	309.1	2.7335
3.1.5.5 25% of torque defined in 3.1.5.2						
9.75	2018	582	4.4211	5.2321	453.4	1.8635
3.1.5.6 unloaded						
0.06	2045	590	2.9560	3.4982	—	—

- No load maximum engine speed: 2333 rev/min
- Torque (equivalent crankshaft) at maximum power

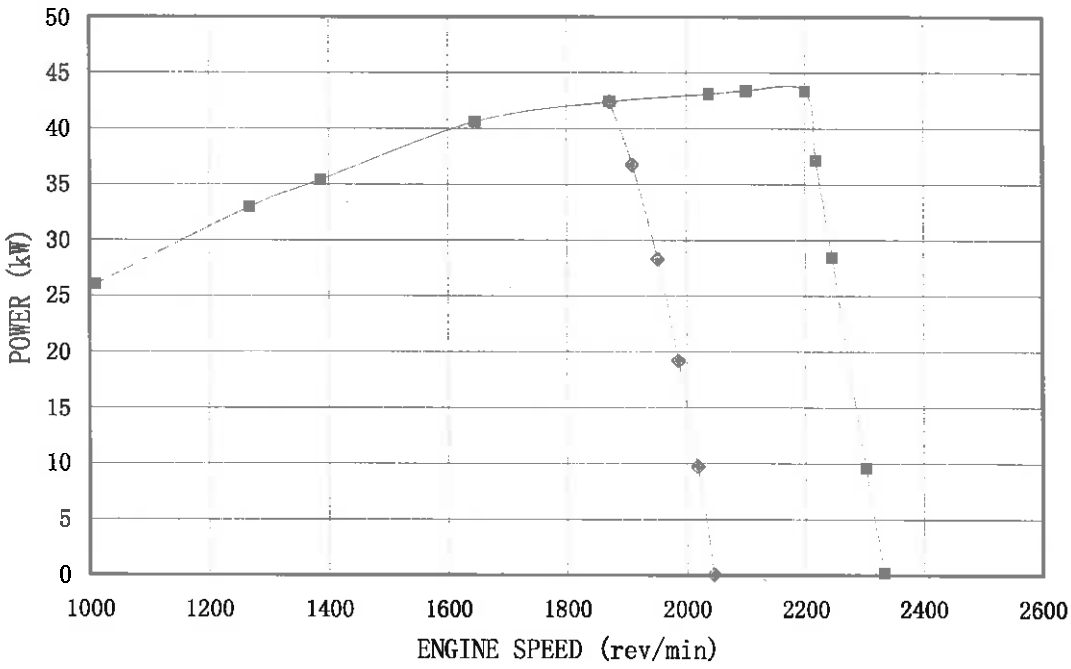
. At rated engine speed: 188.1 N·m

. At 2-hour test: 197.3 N·m

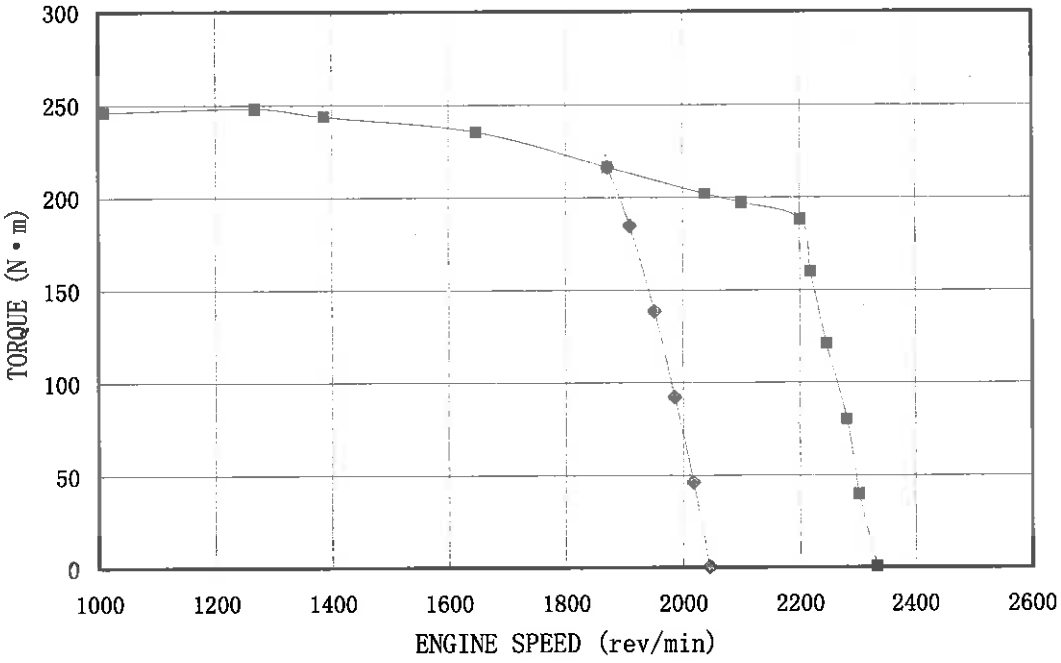
- Maximum torque (equivalent crankshaft): 248.1 N·m
(engine speed : 1269 rev/min)

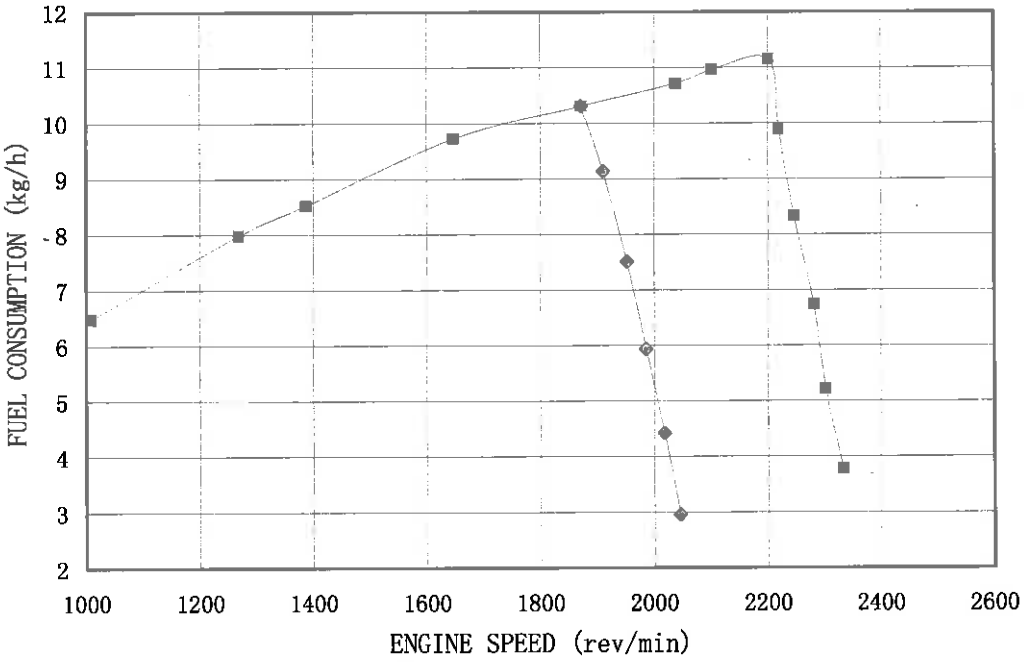
Mean atmospheric conditions:	
Temperature	18 ℃
Pressure	101.6 kPa
Relative humidity	26 %
Maximum temperatures:	
Coolant	95 ℃
Engine oil	92 ℃
Fuel	20 ℃
Engine air intake	19 ℃

POWER TAKE-OFF PERFORMANCE CURVES

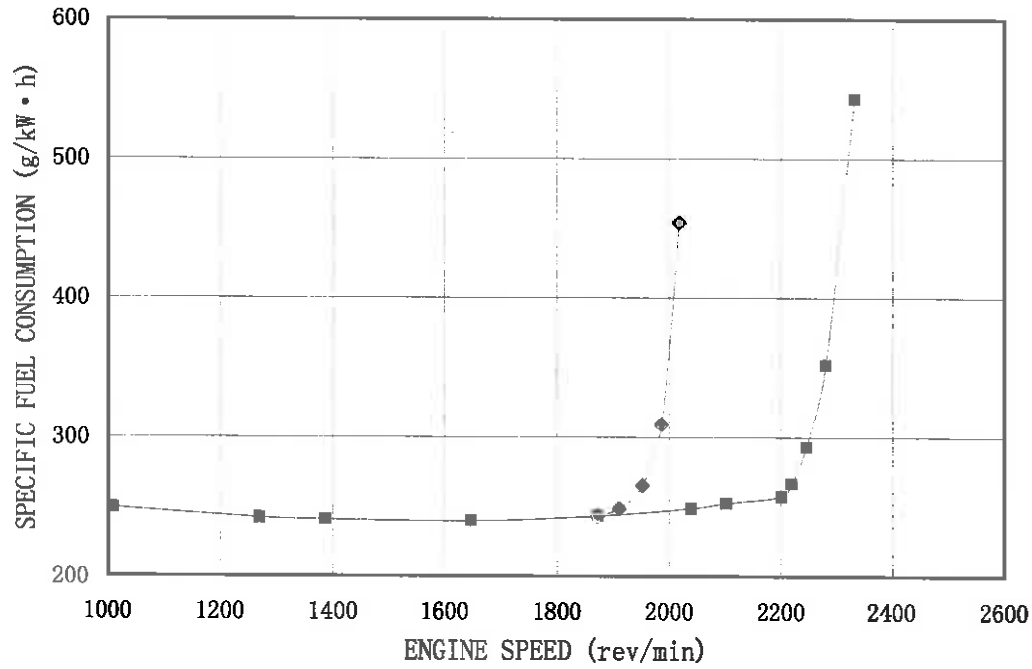


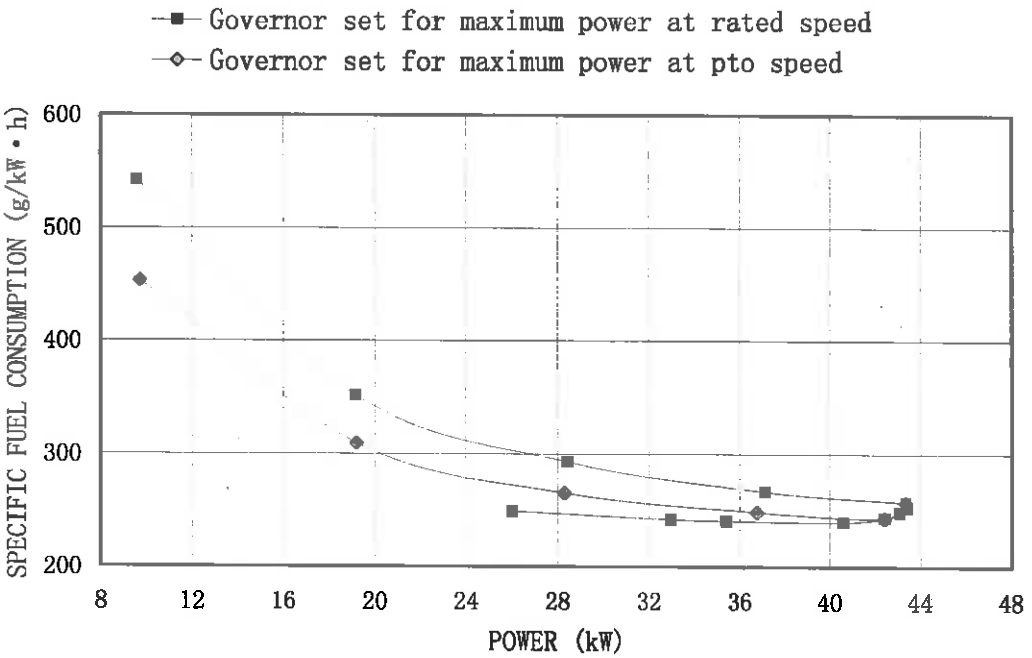
POWER TAKE-OFF PERFORMANCE CURVES





POWER TAKE-OFF PERFORMANCE CURVES





3.2 Hydraulic power and lifting force

- Date of tests: 17th to 20th April, 2000

3.2.1 *Hydraulic power test*

- Sustained pressure with relief valve open: 16.0 Mpa
- Pump stalled: No
- Pump delivery rate at minimum pressure: 29.07 1/min

	Flow rate	Pressure	Power
	1/min	MPa	kW
Flow rate corresponding to a hydraulic pressure equivalent to 90 % of the actual relief valve pressure setting and corresponding hydraulic power	27.03	14.4	6.49
Flow rate and hydraulic pressure corresponding to maximum hydraulic power	27.03	14.4	6.49

- Tapping point used for test: At rear part of the tractor
- Temperature of hydraulic fluid: 66℃
- Opening pressure of the unloading valve: None
- Closing pressure of the unloading valve: None

3.2.2 *Power lift test*

- Linkage settings for test-see Table 1.1 and Figures 1.1 and 1.2

	at the hitch point	on the frame
Height of lower hitch points above ground in down position	200 mm	200 mm
Vertical movement	665 mm	708 mm
Maximum corrected force exerted through full range	16.12 kN	10.37 kN
Corresponding pressure of hydraulic fluid	16.0 MPa	16.0 MPa
Moment about rear wheel axis	17.99 kN·m	18.52 kN·m
Maximum tilt angle of mast from vertical	—	5 degrees

Lifting heights relative to the horizontal plane including the lower link pivot points											
mm	-373	-324	-300	-200	-100	0	+100	+200	+300	+335	+341
Lifting forces (the values measured are corrected to correspond to a hydraulic pressure equivalent to 90% of the actual relief valve pressure setting or to maximum power delivered by the hydraulic system,which is lower)											
at the hitch point kN	—	16.12	16.34	17.38	18.02	18.47	18.66	18.82	18.91	—	18.95
Corresponding pressure: 14.4 MPa											
at the frame kN	16.12	—	16.04	15.96	15.63	15.07	14.39	12.96	11.38	10.37	—
Corresponding pressure: 16.0 MPa											

3.3 Drawbar power test (ballasted and unballasted tractor)

- Date of tests: 9th to 15th March, 2000
- Type of track: Concrete

	Height of drawbar above ground	Tyre inflation pressure	
		Front	Rear
	mm	kPa	kPa
Unballasted	375	180	120
Ballasted	370	180	120

Gear number and range	Power	Drawbar pull	Speed	Engine speed	Slip of wheels	Specific fuel consumption	Specific energy	Temperature			Atmospheric conditions		
								Fuel	Coolant	Engine oil	Temperature	Relative humidity	Pressure
	kW	kN	km/h	rev/min	%	g/(kW·h)	kW·h/l	℃	℃	℃	℃	%	kPa
3.3.1 MAXIMUM POWER IN TESTED GEARS (unballasted tractor)													
L-1	9.91	19.82	1.80	2288	15	567	1.49	14	75	87	13	20	101.1
L-2	14.05	19.60	2.58	2263	15	498	1.70	14	78	87	13	20	101.1
L-3	22.00	19.18	4.13	2250	15	316	2.67	14	83	88	13	20	101.1
L-4	34.10	18.63	6.59	2205	7	319	2.65	14	85	88	13	20	101.1
H-5	37.56	16.27	8.31	2201	5	293	2.88	14	87	88	13	20	101.1
H-6	37.00	10.43	12.77	2200	6	308	2.74	14	88	90	13	20	101.1
3.3.2 MAXIMUM POWER IN TESTED GEARS (ballasted tractor)													
L-1	11.97	24.76	1.74	2282	15	480	1.76	16	70	88	15	22	101.1
L-2	15.74	22.85	2.48	2260	15	470	1.80	16	83	88	15	22	101.1
L-3	27.21	23.32	4.20	2248	15	386	2.19	16	85	89	15	22	101.1
L-4	36.40	20.10	6.52	2204	6	308	2.75	16	88	90	15	22	101.1
H-5	37.41	15.75	8.55	2201	4	305	2.77	16	89	90	15	22	101.1
H-6	37.30	10.98	12.23	2200	5	296	2.85	16	89	91	15	22	101.1
3.3.3.1 FIVE-HOUR TEST at 75% of pull at maximum power at rated speed													
H-5	28.79	11.53	8.99	2225	2	358	2.36	16	86	88	15	22	101.1
3.3.3.2 FIVE-HOUR TEST at pull corresponding to 15% wheel slip													
L-3	27.27	23.32	4.21	2150	12(*)	364(*)	2.67	16	87	88	15	22	101.1

(*)Test 3.3.3.2 was carried out with additional ballast 450kg.

Oil consumption during ten hours duration of tests 3.3.3.1 and 3.3.3.2:66.0 g/h

3.4 Turning area and turning circle

- Details of wheel equipment:

	Tyre size	Track width
front:	6.50-20	1500
rear:	13.6-38	1600

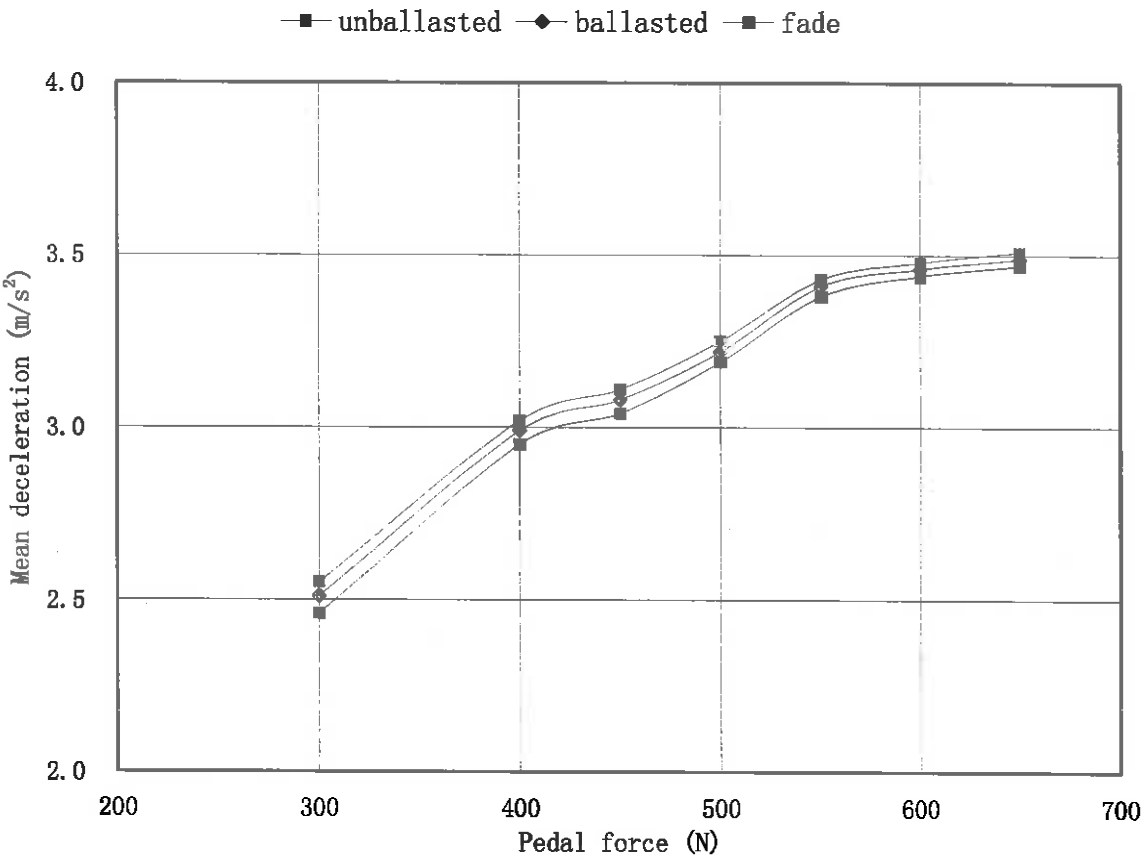
	With brakes		Without brakes	
	Right-hand	Left-hand	Right-hand	Left-hand
	m	m	m	m
Radius of turning area	3.29	3.83	4.13	4.28
Radius of turning circle	3.45	3.99	4.29	4.44

3.5 Location of centre of gravity

- Height above ground: 832 mm
- Distance forward from the vertical plane containing the axis of the rear wheels: 985 mm
- Distance from the median plane of the tractor to the right: 20 mm

3.6 Braking

- Date of tests: 21st to 22nd March, 2000



3.6.1 *Cold service braking device test*

	Speed before Application of brakes	Braking device control force	Mean deceleration
	km/h	kN	m/s^2
Ballasted tractor	32.40	0.30	2.55
		0.40	3.02
		0.45	3.11
		0.50	3.25
		0.55	3.43
		0.60	3.48
		0.65	3.51
Unballested tractor	32.70	0.30	2.51
		0.40	2.99
		0.45	3.08
		0.50	3.22
		0.55	3.41
		0.60	3.46
		0.65	3.49

- Maximum deviation of tractor from its original course: None
- Abnormal vibration: None
- Braking heating method: None

	Speed before Application of brakes	Braking device control force	Minimum stopping distance without locking the wheels
	km/h	kN	m
Ballasted tractor	32.40	0.65	11.54
Unballested tractor	32.70	0.65	11.82

3.6.2 *Fade test*

Speed before Application of brakes	Braking device control force	Mean deceleration
km/h	kN	m/s^2
32.40	0.30	2.46
	0.40	2.95
	0.45	3.04
	0.50	3.19
	0.55	3.38
	0.60	3.44
	0.65	3.47

- Maximum deviation of tractor from its original course: 0 mm

- Abnormal vibration: None
- Brakes heating method: Driven with brakes applied for 1 km at 80% of maximum speed with a pedal force corresponding to a deceleration of $1m/s^2$

	Speed before Application of brakes	Braking device control force	Minimum stopping distance without locking the wheels
	km/h	kN	m
Ballasted tractor	32.40	0.65	11.67

3.6.3 *Parking braking device test*

	Uphill	Downhill
Braking device control force	0.25 kN	0.30 kN

3.7 Measurement of external noise

- Date of test: 23rd to 24th March, 2000
- Type of sound level meter: B&K 2235
- Type of track: Concrete
- Gear number: 8(H4)
- Travelling speed before acceleration: 24.55 km/h
- Sound level: 85.6 dB(A)

4. REPAIRS AND ADJUSTMENTS DURING TESTS:

None

5. REMARKS:

Test carried out by: Lixijiang, Zhangmenghua, Gengzhanbin, Changxiongbo, Liuqin, Baiyuchun, Chenxinghe, Tianli

Officer in Charge: Liqingdong 李庆东

Chief of Tractor Testing Division: Xuzhijian 徐志坚

For the director: Zhuliang 朱良