COTTEC

CHINA
OFFICIAL TRACTOR
TEST AND
EVALUATION CENTRE

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OECD TEST REPORT OF DONGFANGHONG–1204(4WD) AGRICULTURAL TRACTOR (CODE 1)

Report on test in accordance with the OECD standard code for the official testing of agricultural tractor performance



OECD Approval
No.:1/2 300
Date:Dec.16,2005

Tested Tractor
Make: Dongfanghong
Model: 1204
Type: 4WD
Speed version: 30 km/h

Submitted for test by
Name:China Yituo Group Co.,Ltd
Address: Luoyang,Henan,China
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This report includes 21 pages and may only be duplicated as a whole

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This report has been approved by the O.E.C.D. Co-ordinating Centre(CEMAGREF) in Antony(France) on Dec. 16,2005, Approved No. 1/2 300 FULL code.

	Note: Units shown below, which appear in ISO 1000:1992; Amdl:1998,shall be stated and followed by national units in parenthesis	
C[1]	Tractor manufacturer's name and address:	China Yituo Group Co.,Ltd, Luoyang,Henan,China
D[1]	-Location of tractor assembly:	The manufacturer
D	-Submitted for test by:	The manufacturer
C	-Selected for test by:	The manufacturer with the agreement of the the COTTEC
D	-Place of running-in:	COTTEC, Luoyang, Henan, China
D	-Duration of running-in:	60.0 hours
C	-Location of test:	COTTEC, Luoyang, Henan, China
	1. SPECIFICATIONS OF TRACTOR	
	1.1 Identification	
C	- Make of the tractor:	Dongfanghong
C	-Model(trade name):	1204
C	-Type:	4WD
	1.1.1 Numbers	
D	-1st Serial No or prototype:	0513850
C	- Serial No.:	0513850
	1.1.2 Other Specifications	
D	- Models for other countries:	None
C	-Transmission type or gears x ranges:	Mechanical
C	-Speed version:	30 km/h
D	- Manufacturer identification or Technical type number: None	
	1.2 Engine	
C	-Make:	Dongfanghong
C	-Model:	LR6108T1
C	-Type:	4-stroke,water cooling ,Vertical, direct injection
C	-Serial No.:	Y0539456
	1.2.1 Cylinders	
C	-Number:	6
C	-Disposition:	Vertical, in line
D	-Bore/Stroke:	108/125 mm/mm
D	-Capacity:	6870 cm^3
D	-Compression ratio:	17

1. An item marked "C"indicates that the information declared by the manufacturer has been checked;an item marked "D" that the manufacturer's declaration has been endorsed.

D	-Arrangement of valves:	Overhead,in line
D	-Cylinder liners:	Wet
	1.2.2 Supercharging	None
	1.2.3 Fuel system	
C	-Fuel feed system:	Forced feed type
C	-Make of fuel filter:	Luoyang yuada
C	-Model of fuel filter:	CS0708
C	-Type of fuel filter:	Paper cartridge,replaceable
D	-Capacity of fuel tank:	132 dm^3
C	-Make of injection pump:	China Yituo Group Co.,Ltd
C	-Model/type of injection pump:	ZHBF69550Z-45A,cylinder plunger
C	-Serial No :	BO50803624
	-Manufacturer's production setting of injection pump:	
C	. Flow rate(at rated engine speed and full load):	25.0±0.5 dm^3 /h
D	.Timing:	$20^0 \pm 1^0$ before T.D.C.
D	-Make of injectors:	China Yituo Group Co.,Ltd
D	-Model/type of injectors:	PB286J-01,Long neck,Multi-hole
D	-Injection pressure:	19.6～20.8 MPa
C	-Make/Mode/Type of carburettor:	None
	1.2.4 Governor	
C	- Make:	Own make
C	-Model/type:	Mechanical,centrifugal
C	-Governed range of engine speed:	620～2541 min^{-1}(rev/min)
C	-Rated engine speed:	2400 min^{-1}(rev/min)
	1.2.5 Air cleaner	
	-Pre-cleaner	
C	.Make:	Bangbu Air-cleaner Works
C	.Model/type:	F5/6L912A-0000,Oil bath
C	.Location of air intake:	Above front hood
C	.Maintenance indicator:	None
	-Main-cleaner	
C	.Make:	Bangbu Air-cleaner Works
C	.Model/type:	6RTF.210100,Oil bath
C	.Location of air intake:	Above front hood
C	.Maintenance indicator:	None
	1.2.6 Lubrication system	
D	-Type of feed pump:	Gear Pump
C	-Type of filters:	Full flow,paper cartridge,replaceable
C	-Number of filters:	2
	1.2.7 Cooling system	
C	-Type of coolant:	Water

D	-Type of pump:	Centrifugal,belt driven
	-Specification of fan or blower:	
C	.Number of fan blades:	7
C	.Fan diameter:	Φ490 mm
D	-Coolant capacity:	26.0 dm^3
C	-Type of temperature control:	Thermostat
D	-Superpressure system:	None
	1.2.8 Starting system	
C	-Make:	Hubei Automobile Electrical Machinery Factory
C	-Model/Type:	QD154E,D.C. solenoid engaged
D	-Starter motor power rating:	3.7 kW
C	-Cold starting aid:	Preheater
C	-Safety device:	Automatic return
	1.2.9 Electrical system	
C	-Voltage:	12 (Negative earth) V
	-Generator:	
C	.Make:	Shandong wuyue
C	.Model/Type:	JFZ1521Y,Altermator,belt driven
D	.Power	0. 5 kW
	-Battery of accumulators:	
C	.Number:	1
D	.Rating:	200 Ah at 20 hours rating
	1.2.10 Exhaust system	
C	-Make:	Own make
C	-Model/Type:	DFH1200,expansion type,silencer
C	-Location:	Right-hand side of the engine,vertical
	1.3 Transmission	
	1.3.1 Clutch(Travel and Power Take-off)	
D	-Make:	Shanghai Clutch Works
D	-Model/Type:	Dry,dual clutch for transmission & PTO
D	-Number of plates:	2
D	-Diameter of plates:	310 mm
C	-Method of operation:	Mechanically actuated by pedal
	1.3.2 Gear box	
D	-Make:	Own make
D	-Model/Type:	DF (3+1)×4, Mechanical
	-Description:	12 forward speed gear,4 reverse speed gear, main gear is constant-mesh cylindrical gear,auxiliary gear is constant-mesh cylindrical gear,engaging sleeve gear shifting

			Forward	Reverse
C		Number of groups /ranges	4	4
C		Number of gears	3	1
C		Total of arrangements	12	4

D	-Available options	Creeper device
	1.3.3 Rear axle and final drives	
D	-Make:	Own make
D	-Model/Type:	Helical gear type differential and single stage epicyclic gear type final drives
	-Differential lock	
D	.Type:	Mechanical,two planet gear
C	.Method of engagement:	Mechanically actuated by pedal
C	.Method of disengagement:	Hydraulic release mechanism,brake by pedal
	1.3.4 Front axle and final drives	
D	-Make:	Own make
D	-Model/Type:	Helical gear type differential and single stage epicyclic gear type final drives
	-Differential lock:	None

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 2400 rev/min km/h
C	1	L1	332.650	2.23
C	2	L2	223.418	3.32
C	3	L3	183.732	4.04
C	4	L4	117.588	6.31
C	5	M1	157.685	4.70
C	6	M2	105.906	7.00
C	7	M3	87.094	8.51
C	8	M4	55.740	13.30
C	9	H1	72.002	10.30
C	10	H2	48.359	15.33
C	11	H3	39.769	18.65
C	12	H4	25.452	29.13
C	R1	R1	154.160	4.81
C	R2	R2	103.496	7.16
C	R3	R3	85.1124	8.71
C	R4	R4	54.472	13.61
	(*)Calculated with the dynamic radius index of 820 mm(ISO 4251/1-1998).			

C	-Number of revolutions of front wheels for one revolution of rear-wheels: 1.33
	1.4 Power take-off
	1.4.1 Main power take-off
C	-Type: Independent

C	-Method of engagement:	By hand lever
C	-Number of shafts:	1
C	-Method of changing power take-off shaft ends speeds:	Manually by exchanging p.t.o. shafts
	1.4.1.1 Power take-off proportional to engine speed	
	Power take-off at 540 rev/min	
C	-Location:	At rear of the tractor
C	-Diameter of power take-off shaft end:	35 mm
C	-Number of splines:	6, in conformity with ISO 500/1991
C	-Height above ground:	747 mm
C	-Distance from the median plane of the tractor:	0 mm
C	-Distance behind rear wheel axis:	522 mm
C	-PTO speed at rated engine speed:	610 rev/min
C	-Engine speed at standard power take-off speeds	2124 rev/min
C	-Ratio of rotation speeds (engine speed/p.t.o. speed):	3.933
D	-Power restriction:	80.0 kW
D	-Maximum torque transmissible:	1600.0 N.m
C	-Direction of rotation(viewed from behind tractor):	Clockwise
	Power take-off at 1000 rev/min:	
C	-Location:	At rear of the tractor
C	-Diameter of power take-off shaft end:	35 mm
C	-Number of splines:	21, in conformity with ISO 500/1991
C	-Height above ground:	747 mm
C	-Distance from the median plane of the tractor:	0 mm
C	-Distance behind rear wheel axis:	522 mm
C	-PTO speed at rated engine speed:	996 rev/min
C	-Engine speed at standard power take-off speeds	2409 rev/min
C	-Ratio of rotation speeds (engine speed/p.t.o. speed):	2.409
D	-Power restriction:	80.0 kW
D	-Maximum torque transmissible:	980.0 N.m
C	-Direction of rotation(viewed from behind tractor):	Clockwise
	1.4.1.2 Power take-off proportional to ground speed	
C	-Indicate 540 or 1000 min^{-1} (rev/min):	540/1000
C	-Travelling distance for one revolution of take-off shaft:	298/182 mm
C	-Number of power take-off shaft revolutions for one revolution of (rear) driving wheels:	17.28/28.22 rev/min
C	-Direction of rotation with forward gear engaged (viewed from behind tractor):	Clockwise
	1.4.2 Optional power take-off:	None
	1.5 Hydraulic power lift	
C	-Make:	Own make
C	-Model:	DFH1200
C	-Type:	Hydraulic,three hitch point
C	-Type of hydraulic system:	Open centre system
C	-Type and number of cylinders:	Single acting,1
C	-Type of linkage lock for transport:	Hydraulic
D	-Relief valve pressure setting:	18.5±0.5 MPa

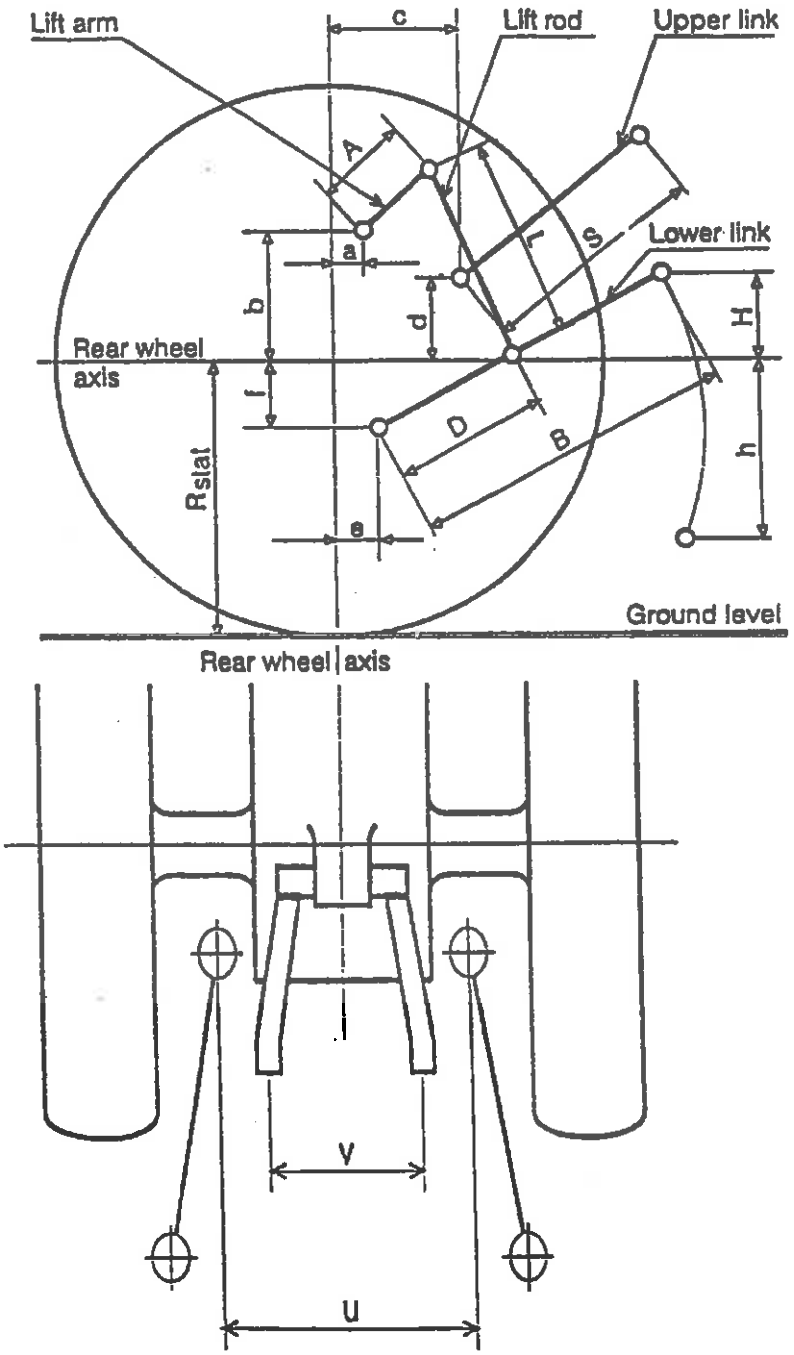
D	-Opening pressure of cylinder safety valve :	21.0±0.5 MPa
D	-Lift pump type:	Gear pump
D	-Transmission between pump and engine:	Driven by engine cam shaft
C	-Type and number of filters:	Cartridge type, 1
C	-Site of oil reservoir:	Transmission housing
C	-Type, number and location of tapping points:	Two coupler pairs quick shift adaptor, At rear of tractor
D	-Maximum volume of oil available to external cylinders:	16 dm^3

1.6 Three point linkage

C	-Category 2 ,in conformity with ISO730-1:1994+Cor.1:1995 and ISO730-2:1979	
C	-Category Adapter:	None

				Dimension or range	Setting used in test	
				mm	mm	
C		Length of lift arms :	(A)	230	230	
C		Length of lower links :	(B)	1010	1010	
		Distance of lift arm pivot point from rear wheel axis:				
C		-Horizontally	(a)	182	182	
C		-Vertically	(b)	371	371	
C		Horizontal distance between the 2 lower link points:	(u)	468	468	
C		Horizontal distance between the 2 lift arms end points:	(v)	525	525	
C		Length of upper link:	(S)	From 580 to 870	790	
		Distance of upper link pivot point from rear wheel axis:				
C		-Horizontally:	(c)	From 367 to 379	367	
C		-Vertically	(d)	From 156 to 206	206	
		Distance of lower link pivot point from rear wheel axis:				
C		-Horizontally:	(e)	130	130	
C		-Vertically	(f)	245	245	
C		Distance of lower link pivot point to lift rod pivot points on lwer links:	(D)	From 456 to 524	456	
C		Length of lift rods:	(L)	From 644 to 768	750	
		Height of lower hitch points relative to the rear wheel axis:				
C		-in low position	(h)	From 369 to 677	620	
C		-in high position	(H)	From 40 to 296	85	
C		Height above ground of lower hitch points when locked in transport position:		Any height at lift range	Any height at lift range	
		(*)Assuming r=820 mm rear tyre dynamic radius index of ISO 4251/1-1998				

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



Figures 1.1
Lift test-linkage geometry

	1.7 Swinging drawbar:	
C	-Type:	Clevis
	-Height above ground:	
C	.Maximum	472 mm
C	.Minimum	372 mm
C	-Type of adjustment:	Reversing
C	-Distance of hitch point from rear wheel axis,horizontally:	877 mm
	-Distance of hitch point from power take-off shaft end:	
C	.Vertically:	340 mm
C	.Horizontally:	355 mm
	-Lateral adjustment(centre of clevis)	
C	.Right hand:	137 mm
C	.Left hand:	137 mm
C	-Distance of pivot point from rear wheel axis,horizontally:	140 mm
C	-Diameter of drawbar pinhole:	Φ28.5 mm
D	-Maximum vertical permissible load:	12.0 kN
	1.8 Trailer hitch	
C	-Type:	Fixed
C	-Hole diameter :	Φ34 mm
C	-Height above ground:	563 mm
C	-Distance of hitch point from rear wheel axis,horizontally:	677 mm
	-Distance of hitch point from power take-off shaft end:	
C	.Vertically:	79 mm
C	.Horizontally:	155 mm
D	-Maximum vertical permissible load:	12.0 kN
	1.9 Holed drawbar:	**None**
	1.10 Steering	
D	-Make:	Jining Like
D	-Model/Type:	BZZI-160, Hydrostaticsteering system
	-Method of operation	
D	.Pump:	HLCB-D16/12 Gear pump
D	.Ram:	1,double acting ram actuating directly on front axle
D	-Working pressure:	12.5±0.5 MPa
	1.11 Brakes	
	1.11.1 Service brake	
D	-Make:	Hangzhou Podwer Metallurgy Research Institute
D	-Model/Type:	Oil bath,disc,double plates, mechanical
C	-Method of operation:	By pedals
C	-Trailer braking take-off:	Pneumatic braking,operated by tractor pedals
	1.11.2 Parking brake	
C	-Type:	Mechanical
C	-Method of operation:	Depressed by brake pedals and ratched by hand lever
	1.12 Wheels	
	-Number	
C	.Front:	2,steering & driving
C	.Rear:	2,driving
C	-Wheelbase:	2688.5 mm

	-Track width adjustment:				
			Minimum mm	Maximum mm	Adjustment method
D		Front	1822	2153	Reversing wheels and off-set lug rims
D		Rear	1662	2262	Reversing wheels and off-set lug rims
	1.13 Protective structure				
C	-Make:				Own make
C	-Model:				DFH1200
C	-Type:				None
C	-Manufacture's name and address:				Own make
	-Protective device:				
C	-Cab/frame/rollguard/other:				Cab,
C	-Tiltable/not tiltable:				Not tiltable
	-OECD approval				
C	.Approval number:				COTTEC Test No. 200510
C	.Date of approval:				None
C	.Nos. of minor modification certificates,if any:				None
	1.14 Seat				
	1.14.1 Driver's seat				
C	-Make:				Grammer
C	-Model:				DS 85H/90
C	-Type:				Adjustable suspension
C	-Seat and steering wheel reversible:				No
C	-Type of suspension:				Mechanical
C	-Type of damping:				None
	-Range of adjustment:				
C	.Longitudinal:				150 mm
C	.Vertical:				60 mm
C	-Safety belt:				Yes
	1.14.2 Optional driver's seat(s):				None
	1.14.3 Passenger seat:				None
	1.15 Lighting				

			Height above ground of center mm	Size mm	Distance from outside edge of lights to median plane of tractor mm
C		Head lights	1215	175×120	265
C		Side lights	1650	32×115	780
C		Rear lights	1908	Φ155	954
C		Reflectors	1635	90×55	933
C		Brake lights	1785	60×110	738

2 TEST CONDITIONS

Separate tables may be added to report other test conditions or equipments.

2.1 Overall dimensions

	Length mm	Width		Height at top of	
		Minimum mm	Maximum mm	Protective Structure mm	Exhaust Silencer mm
Ballasted	4820	2030	2730	2660	2930
Unballasted	4530	1930	2630	2685	2955

2.2 Ground Clearance(unballasted tractor)

-Clearance limiting part: Under the front axle 464 mm

2.3 Tractor mass

-Mass(with protective Cab and full fuel tank):

	Unballasted		Ballasted	
	Without driver kg	With driver kg	Without driver kg	With driver kg
Front	1922	1938.	2420	2436.
Rear	2588	2647	2780	2839
Total	4510	4585	5200	5275

2.4 Ballast

	Weights		Water kg
	Number	Total mass kg	
Front	10	388	—
Rear	6	302	—
Optional	—	—	—

2.5 Track specifications: None

2.6 Tyres and track width specifications

	Front	Rear
Tyres:		
.dimensions	14.9-26	18.4-38
.ply rating	10	10
.type	Cross ply	Cross ply
.maximum load (tyre manufacturer's)	17.6 kN	25.2 kN
.maximum load (tractor manufacturer's)	17.6 kN	25.2 kN
.inflation pressure(tyre manufacturer's)	98～118kPa	98～118kPa
.dynamic radius index	615 mm	820 mm
Chosen track width	1895 mm	1670 mm

2.7 Fuel

-Type: Standard diesel fuel in conformity with GB 10327(China standard)

-Density at 15 ℃ 0.8523 g/cm^3

2.8 Oils and lubricants

2.8.1 Capacity and change interval

	Capacity	Oil change	Filter change
	dm^3	h	h
Engine	22.0	500	500
Gear box, rear axle and final drives, in common with hydraulic system	60	1000	—
Front axle and final drives	8.9	1000	—
Steering	1.5	1000	—

2.8.2 Specifications(SAE,API,CCMC,ACEA,Mil.L,ISO)

	Recommended	Used during test
Engine oil .Type: .Viscosity: .Classification:	 SAE10W/30 11.4cSt at 100 ℃ API-CC	Same as recommended
Transmission oil,Hydraulic fluid,Steering oil .Type: .Viscosity: .Classification:	 SAE 80W/90 9.3cSt at 100 ℃ API GL-4	Same as recommended

2.8.3 Grease

-Number of lubrication points: 10

3 COMPULSORY TESTS RESULTS

3.1 Main power take-off

-Date and location of tests: Sep. 2,2005,COTTEC

-Type of dynamometer: LPA-Bedienpult 250 Elec. dynamometer:

Power	Speed			Fuel consumption			Specific energy
	Engine	P.T.O	Fan	Hourly		Specific	
kW	min^{-1}(rev/min)			kg/h	l/h	g/kW.h	kW.h/l
3.1.1 MAXIMUM POWER-TWO-HOUR TEST							
78.43	2199	559	2199	20.14	23.63	256.8	3.32
3.1.2 POWER AT RATED ENGINE SPEED							
77.93	2399	610	2399	20.97	24.60	269.1	3.17
3.1.3 STANDARD POWER TAKE-OFF SPEED(1000±25 or 540±10min^{-1}(rev/min)							
78.31	2124	540	2124	19.78	23.21	252.6	3.37
3.1.4 PART LOADS 3.1.4.1 the torque corresponding to maximum power at the rated engine speed							
77.93	2399	610	2399	20.97	24.60	269.1	3.17
3.1.4.2 85% of torque obtained in 3.1.4.1							
67.87	2458	625	2458	18.94	22.22	279.1	3.05
3.1.4.3 75% of torque obtained in 3.1.4.2							
51.16	2470	628	2470	15.35	18.01	300.0	2.84
3.1.4.4 50% of torque obtained in 3.1.4.2							
34.56	2501	636	2501	12.36	14.50	357.6	2.38
3.1.4.5 25% of torque obtained in 3.1.4.2							
17.33	2513	639	2513	9.50	11.15	548.2	1.55
3.1.4.6 unloaded							
1.29	2541	646	2541	7.07	8.30	—	—

Power	Speed			Fuel consumption			Specific energy
	Engine	P.T.O	Fan	Hourly		Specific	
kW	min^{-1}(rev/min)			kg/h	l/h	g/kW.h	kW.h/l
3.1.5 PART LOADS AT STANDARD POWER TAKE-OFF[1000±25 or 540±10min^{-1}(rev/min)]							
3.1.5.1 the torque corresponding to maximum power							
78.31	2124	540	2124	19.78	23.21	252.6	3.37
3.1.5.2 85% of torque obtained in 3.1.5.1							
69.63	2222	565	2222	18.02	21.14	258.8	3.29
3.1.5.3 75% of torque obtained in 3.1.5.2							
52.70	2242	570	2242	14.49	17.00	274.9	3.10
3.1.5.4 50% of torque obtained in 3.1.5.2							
35.71	2277	579	2277	11.39	13.36	318.9	2.67
3.1.5.5 25% of torque obtained in 3.1.5.2							
17.95	2293	583	2293	8.44	9.90	470.2	1.81
3.1.5.6 unloaded							
0.99	2328	592	2328	5.86	6.88	—	—
3.1.6 PART LOADS AT DIFFERENT ENGINE SPEEDS							
3.1.6.1 Maximum power at rated engine speed							
77.93	2399	610	2399	20.97	24.60	269.1	3.17
3.1.6.2 80% of power obtained in 3.1.6.1 at max. speed setting							
62.37	2458	625	2458	17.62	20.67	282.5	3.02
3.1.6.3 80% of power obtained in 3.1.6.1 with governor control set to 90% of rated engine speed							
62.32	2159	549	2159	16.12	18.91	258.7	3.30
3.1.6.4 40% of power obtained in 3.1.6.1 with governor control set to 90% of rated engine speed							
31.04	2151	547	2151	10.07	11.82	324.4	2.63
3.1.6.5 60% of power obtained in 3.1.6.1 with governor control set to 60% of rated engine speed							
46.76	1439	366	1439	10.97	12.87	234.6	3.63
3.1.6.6 40% of power obtained in 3.1.6.1 with governor control set to 60% of rated engine speed							
31.24	1443	367	1443	7.92	9.29	253.5	3.36

-No load maximum engine speed: 2541 rev/min
-Torque(equivalent crankshaft) at maximum power
.At rated engine speed: 310.2 Nm
.At 2-hour test: 340.7 Nm
-Maximum torque(equivalent crankshaft) (engine speed:1601 rev/min): 389.0 Nm

Mean atmospheric conditions	
Temperature	26 ℃
Pressure	99.1 kPa
Relative humidity	46 %
Maximum Temperature:	
Coolant	82 ℃
Engine oil	99 ℃
Fuel	45 ℃
Engine air intake	36 ℃

3.2 Hydraulic power and lifting force
-Date and location of test: Sep. 5,2005 COTTEC
3.2.1 Hydraulic power test
3.2.1.1 Hydraulic fluid data
- Hydraulic fluid type: SAE 80W/90
-Viscosity index(ISO3448+Corr 1:1993): 9.3cSt at 100 ℃

3.2.1.2 Compulsory Reporting(Test Results):

	Pressure	Reservoir oil Temperature ℃		Engine Speed	Flow rate	Power
	Mpa	Min.	Max.	Rev/min^{-1}	L/min	kW
Rated Engine Speed (Manufactures Specification)				2400		
3.2.1.2.1 Maximum (sustained) pressure with relief valve open as measured at the coupler Pump stalled: Yes	19.00	62	64	2472		
3.2.1.2.2 Flow rate corresponding to a hydraulic pressure equivalent to 90 percent of the actual relief valve pressure setting and corresponding hydraulic power	17.10	68		2512	16.8	4.79
3.2.1.2.3 Maximum available flow and maximum power from one coupler pair:	13.50	67		2522	40.8	9.18
3.2.1.2.4 Maximum available flow and maximum power from coupler pairs operating simultaneously(flow through two or more coupler pairs if required):	13.50	66		2522	41.2	9.27

3.2.2 Power lift test
-Linkage settings for test-see Table 1.1 and Figures 1.1

	At the hitch point	On the frame
Height of lower hitch points above ground in down position	200 mm	143 mm
Vertical movement: without lifting force:	705 mm	844 mm
with lifting force:	675 mm	804 mm
Maximum corrected force exerted through full range	28.04 kN	25.72 kN
Corresponding pressure of hydraulic fluid	17.10 MPa	17.10 MPa
Moment about rear wheel axle	31.97 kN.m	45.01 kN.m
Maximum tilt angle of mast from vertical	—	8^0

Lifting heights relative to the horizontal plane including the lower link pivot points											
mm	-432	-400	-375	-300	-200	-100	0	100	200	300	372
Lifting forces (the values of force measured are correspond to a hydraulic pressure equivalent to 90 % of the actual relief value pressure setting of the hydraulic lifting system) At the hitch point,Corresponding pressure 17.10 MPa											
kN	—	—	28.04	31.37	33.82	35.18	35.40	35.74	36.12	37.76	—
At the frame, Corresponding pressure 17.10 MPa											
kN	25.72	26.28	—	26.96	29.03	30.24	30.62	30.21	29.17	28.39	28.25

3.3 Drawbar performance

-Date of tests: Sep. 6,2005
-Type of track: Concrete

	Height of drawbar above ground	Tyre inflation pressure	
		Front	Rear
	mm	kPa	kPa
Unballasted	518	100	100
Ballasted	515	100	100

Gear number and and range	Power	Drawbar pull	Speed	Engine Speed	Fan Speed	Slip of wheels	Specific fuel consumption	Specific energy	Temperature			Atmospheric conditions		
									Fuel	Coolant	Engine oil	Temperature	Relative hummidity	Pressure
	kW	kN	km/h	Min^{-1}	Min^{-1}	%	g/kW.h	kW.h/l	℃	℃	℃	℃	%	kPa
3.3.1 MAXIMUM POWER IN TESTED GEARS (unballasted tractor)														
L1	21.60	37.74	2.06	2507	2507	15.04	518	1.65	30	92	86	26	35	100.0
L2	31.84	37.71	3.04	2488	2488	15.04	418	2.04	30	92	86	26	35	100.0
L3	38.35	37.52	3.68	2474	2474	14.98	396	2.15	30	92	86	26	35	100.0
L4	58.43	37.64	5.55	2415	2415	15.01	350	2.45	30	92	86	26	35	100.0
M1	44.92	37.78	4.28	2460	2460	15.07	374	2.28	30	92	86	26	35	100.0
M2	62.69	34.56	6.53	2410	2410	11.23	336	2.54	30	92	86	26	35	100.0
M3	65.85	29.05	8.16	2410	2410	8.25	319	2.67	30	92	86	26	35	100.0
M4	63.26	17.45	13.05	2410	2410	5.08	333	2.56	30	92	86	26	35	100.0
H1	66.56	24.01	9.98	2410	2410	6.82	316	2.70	30	92	86	26	35	100.0
3.3.2 MAXIMUM POWER IN TESTED GEARS(ballasted tractor)														
L1	24.60	41.98	2.11	2495	2495	15.05	482	1.77	30	92	86	25	35	99.5
L2	36.48	41.82	3.14	2479	2479	14.89	385	2.21	30	92	86	25	35	99.5
L3	43.31	41.91	3.72	2498	2498	15.02	375	2.27	30	92	86	25	35	99.5
L4	62.23	38.36	5.84	2408	2408	11.76	338	2.52	30	92	86	25	35	99.5
M1	50.11	41.95	4.30	2450	2450	15.05	363	2.35	30	92	86	25	35	99.5
M2	64.85	35.16	6.64	2408	2408	8.78	325	2.62	30	92	86	25	35	99.5
M3	67.29	29.47	8.22	2408	2408	6.94	313	2.73	30	92	86	25	35	99.5
M4	64.26	17.62	13.13	2408	2408	4.02	328	2.60	30	92	86	25	35	99.5
H1	67.77	24.35	10.02	2408	2408	5.71	311	2.74	30	92	86	25	35	99.5
3.3.3 FIVE-HOUR TESTS 3.3.3.1 FIVE-HOUR TEST at 75 % of pull at maximum power(at rated engine speed)														
H1	51.99	18.12	10.33	2460	2460	5.38	395	2.16	30	93	87	27	35	99.6
3.3.3.2 FIVE-HOUR TEST at pull corresponding to 15 % wheel slip with additional ballast: 0 kg														
L3	42.82	41.66	3.70	2458	2458	14.96	379	2.25	30	92	87	26	35	99.4

Oil consumption during ten hours duration of tests 3.3.3.1 and 3.3.3.2: 62.5 g/h

3.4 Turning area and turning circle

	Without brakes	
	Right-hand	Left-hand
	m	m
Radius of turning area	3.71	3.89
Radius of turning circle	3.62	3.80

3.5 Location of center of gravity

-Height above ground: 997 mm
-Distance from the vertical plane containing the axis of the rear-wheels: 1135 mm
-Distance from the median longitudinal plane of the tractor: 3 mm
-If the angle of suspension of the tractor is less then 20° ,indicate its value: None

3.6 Braking

-Date of tests: Sep. 8,2005

3.6.1 Cold service braking device test

	Speed before application of brakes	Braking device control force	Mean deceleration	Minimum stopping distance without locking the wheels
	km/h	kN	m/s^2	m
Ballasted tractor	30.6	0.10	1.00	36.2
	30.6	0.20	1.83	19.7
	30.6	0.30	2.42	14.9
	30.6	0.35	2.60	13.9
	30.6	0.40	2.78	13.0
	30.6	0.45	2.82	12.8
	30.6	0.50	2.89	12.5
	30.6	0.60	2.91	12.4
Unballasted tractor	30.6	0.10	1.18	30.6
	30.6	0.20	2.00	18.1
	30.6	0.30	2.53	14.3
	30.6	0.35	2.82	12.8
	30.6	0.40	2.99	12.1
	30.6	0.45	3.09	11.7
	30.6	0.50	3.14	11.5
	30.6	0.60	3.17	11.4

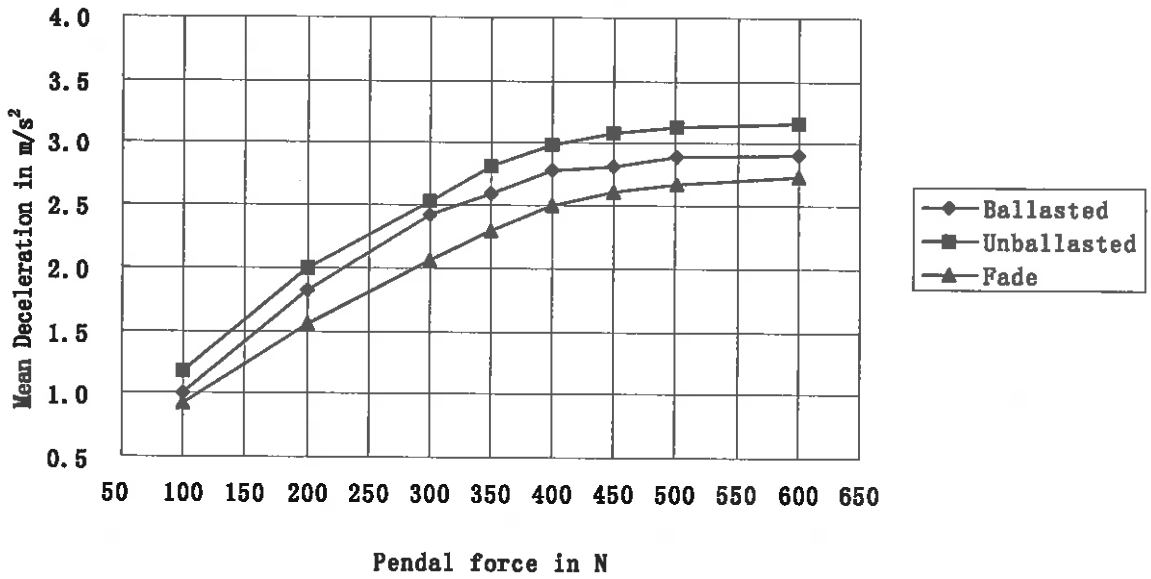
-Maximum deviation of tractor from its original course: 0 mm
-Abnormal vibration: None

3.6.2 Fade test

Speed before application of brakes	Braking control force	Mean deceleration	Minimum stopping distance without locking the wheels
km/h	kN	m/s^2	m
30.6	0.10	0.93	38.8
30.6	0.20	1.55	23.3
30.6	0.30	2.06	17.5
30.6	0.35	2.29	15.8
30.6	0.40	2.51	14.4
30.6	0.45	2.62	13.8
30.6	0.50	2.68	13.5
30.6	0.60	2.74	13.2

-Maximum deviation of tractor from its original course: 0 mm
-Abnormal vibration: None
-Brake heating method: Driving

Braking Test Curves(DFH-1204)



3.6.3 Parking braking device test

	Uphill	Downhill
Braking device control force N	380	360

3.7 Measurement of external noise

-Date of tests:	Sep.10,2005
-Sound level meter, make/mode/type:	B & K 2209
-Type of track:	Concrete
-Gear number:	12(H4)
-Travelling speed before accceleration:	23.0 km/h
-Sound level:	87.9 dB(A)

4 OPTIONAL TEST RESULTS

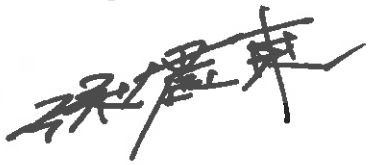
4.1 Low temperature starting

-Date of tests:	Sep.15,2005
-Detail of the starting aids used for the tests,battery included:	None
-Fuel	
.Type	-35#
.Octane or cetane number:	>50
.Pour-point and other specifications:	-30 ℃
-Engine oil	
.Type:	SAE20 or10 W-30
.Viscosity and other specifications:	11.4cSt at 100 ℃
-Test results	
.Starting procedure used for the tests:	The manufacturer's procedure
.Lowest temperature at which the engine started:	-10.0 ℃

5 REPAIRS None

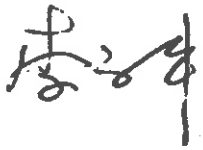
6 REMARKS None

Director of the COTTEC
Senior engineer



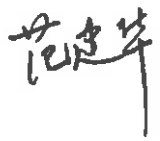
Sun Zhendong

Vice-director of the COTTEC
Senior engineer



Li Jingzhong

Responsible engineer for these tests and editor for the test report publish:
Senior engineer

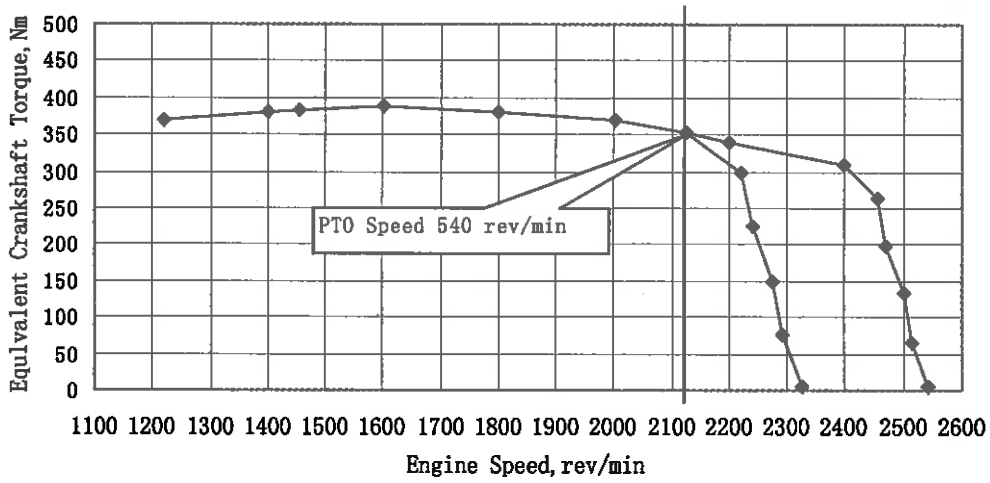


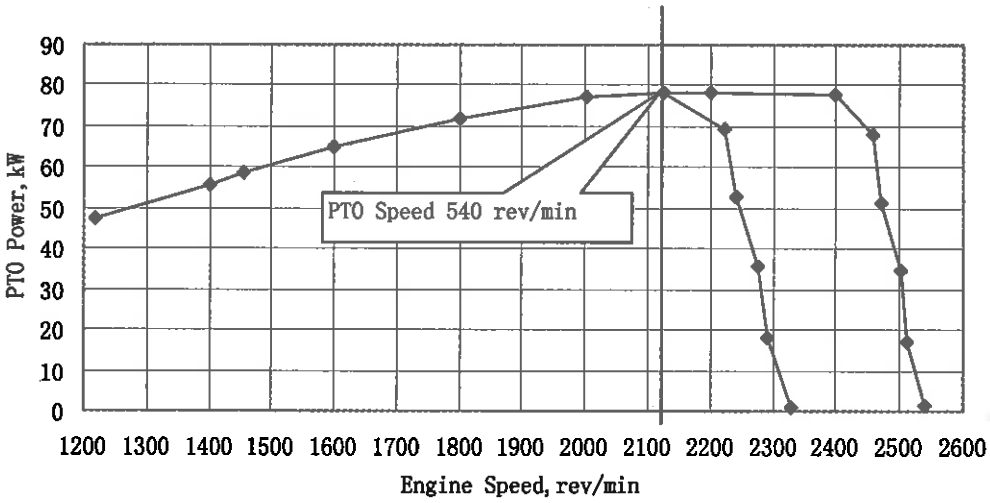
Fan Jianhua

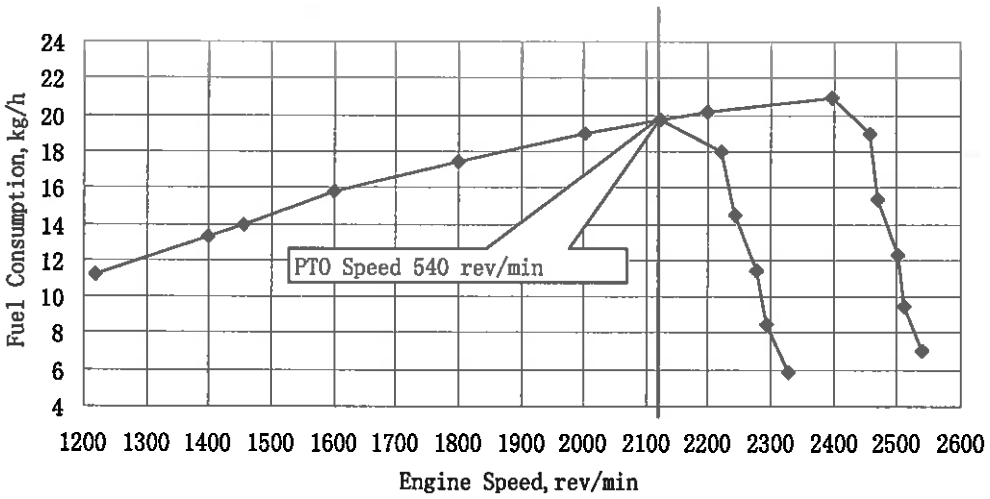
Date: Sep. 16,2005

Members of the tractor test board:
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Zheng Zhigang, Gao Bo, Zhao Jun,
Sun Zhennan, Yang Hongmei,Liu Hui
Sun Panpan,Liu Zhiqiang,Bai Demin,
Yi Xiaodong, Liu Hongqiang,

ANNEX
MAIN POWER TAKE-OFF TEST CURVES 1







ANNEX
MAIN POWER TAKE-OFF TEST CURVES 2

