COTTEC

CHINA
OFFICIAL TRACTOR
TEST AND
EVALUATION CENTRE

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OECD TEST REPORT OF DONGFENG –300(2WD) 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.:1/2 283
Date:Oct. 17 2005

Tested Tractor
Make: Dongfeng
Model: 300
Type: 2WD
Speed version: 30 km/h

Submitted for test by
Name:Changzhou Dongfeng Agricultural Machinery Group Co.,Ltd (Changzhou Tractor Plant)
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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 Oct. 17,2005, Approved No. 1/2 283 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:	Changzhou Dongfeng Agricultural Machinery Group Co.,Ltd (Changzhou Tractor Plant)
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:	50.0 hours
C	-Location of test:	COTTEC, Luoyang, Henan, China
	1. SPECIFICATIONS OF TRACTOR	
	1.1 Identification	
C	- Make of the tractor:	Dongfeng
C	-Model(trade name):	DF300
C	-Type:	2WD
	1.1.1 Numbers	
D	-1st Serial No or prototype:	055525
C	- Serial No.:	055525
	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:	Changchai
C	-Model:	ZN390T
C	-Type:	4-stroke,water cooling ,vertical, vortex,indirect injection
C	-Serial No.:	C50602946A
	1.2.1 Cylinders	
C	-Number:	3
C	-Disposition:	Vertical, in line
D	-Bore/Stroke:	90/95 mm/mm
D	-Capacity:	1813 cm^3
D	-Compression ratio:	18

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:	Benbu
C	-Model of fuel filter:	CX0708T
C	-Type of fuel filter:	Paper cartridge,replaceable
D	-Capacity of fuel tank:	28 dm^3
C	-Make of injection pump:	WM
C	-Model/type of injection pump:	I pump,Single-acting pistion type
C	-Serial No :	0517582
	-Manufacturer's production setting of injection pump:	
C	. Flow rate(at rated engine speed and full load):	7.0 ± 0.5 dm^3 /h
D	.Timing:	$16^0 \pm 1^0$ before T.D.C.
D	-Make of injectors:	Kangda
D	-Model/type of injectors:	PF75S01525,Single hole,Pintle-type
D	-Injection pressure:	19.1 ± 0.5 MPa
C	-Make/Mode/Type of carburettor:	None
	1.2.4 Governor	
C	- Make:	WM
C	-Model/type:	T18,Mechanical,centrifugal
C	-Governed range of engine speed:	700～2700 min^{-1}(rev/min)
C	-Rated engine speed:	2500 min^{-1}(rev/min)
	1.2.5 Air cleaner	
	-Pre-cleaner	
C	.Make:	None
C	.Model/type:	None
C	.Location of air intake:	None
C	.Maintenance indicator:	None
	-Main-cleaner	
C	.Make:	Zhejiang Laixi
C	.Model/type:	KW1025,Dry
C	.Location of air intake:	Above front hood
C	.Maintenance indicator:	None
	1.2.6 Lubrication system	
D	-Type of feed pump:	JZX1420 Inner and outer roter type
C	-Type of filters:	Single stage , Paper cartridge,replaceable
C	-Number of filters:	1
	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:	6
C	.Fan diameter:	Φ380 mm
D	-Coolant capacity:	8.2 dm^3
C	-Type of temperature control:	Thermostat
D	-Superpressure system:	None
	1.2.8 Starting system	
C	-Make:	Jiangsu Henli
C	-Model/Type:	QD138,D.C. solenoid engaged
D	-Starter motor power rating:	2.5 kW
C	-Cold starting aid:	Eletrothermic plug
C	-Safety device:	Main shift lever in neutral position
	1.2.9 Electrical system	
C	-Voltage:	12 (Negative earth) V
	-Generator:	
C	.Make:	Changzhu shenfa
C	.Model/Type:	JF11A-P90,Altermator,belt driven
D	.Power	0.35 kW
	-Battery of accumulators:	
C	.Number:	1
D	.Rating:	105 Ah at 20 hours rating
	1.2.10 Exhaust system	
C	-Make:	Own make
C	-Model/Type:	DF300,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:	Own make
D	-Model/Type:	Single plate,dry,dual clutch for transmission & PTO
D	-Number of plates:	2
D	-Diameter of plates:	240 mm
C	-Method of operation:	Mechanically actuated by pedal
	1.3.2 Gear box	
D	-Make:	Own make
D	-Model/Type:	DF (4+1)×2, Mechanical
	-Description:	8 forward speed gear,2 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	2	2
C		Number of gears	4	1
C		Total of arrangements	8	2

D	-Available options	None
	1.3.3 Rear axle and final drives	
D	-Make:	Own make
D	-Model/Type:	Crown wheel and pinion bevel gear differential and spur gear type final drives external gearing
	-Differential lock	
D	.Type:	Tooth inlayed type
C	.Method of engagement:	Mechanically actuated by pedal
C	.Method of disengagement:	Self-disengagement by spring
	1.3.4 Front axle and final drives	
D	-Make:	Own make
D	-Model/Type:	Balanced arm, telescopic axle
	-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 2500 rev/min km/h
C		1	L	268.1636	1.81
C		2	L	166.7959	2.91
C		3	L	105.7464	4.59
C		4	L	78.6671	6.17
C		5	H	51.6358	9.40
C		6	H	32.0592	15.14
C		7	H	20.3940	23.80
C		8	H	15.1870	31.94
C		R1	L	206.5430	2.35
C		R2	H	39.8176	12.19
		(*)Calculated with the dynamic radius index of 515 mm(ISO 4251/1-1998).			

C	-Number of revolutions of front wheels for one revolution of rear-wheels: None

	1.4 Power take-off	
	1.4.1 Main power take-off	
C	-Type:	Semi-independent
C	-Method of engagement:	Mechanically actuated by pedal
C	-Number of shafts:	1
C	-Method of changing power take-off shaft ends speeds:	By hand lever
	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:	600 mm
C	-Distance from the median plane of the tractor:	0 mm
C	-Distance behind rear wheel axis:	334 mm
C	-PTO speed at rated engine speed:	617 rev/min
C	-Engine speed at standard power take-off speeds	2187 rev/min
C	-Ratio of rotation speeds (engine speed/p.t.o. speed):	4.05
D	-Power restriction and maximum torque (Manufacturer's recommendation):	32.0 kW 495.3 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:	6, not in conformity with ISO 500/1991
C	-Height above ground:	600 mm
C	-Distance from the median plane of the tractor:	0 mm
C	-Distance behind rear wheel axis:	334 mm
C	-PTO speed at rated engine speed:	1117.0rev/min
C	-Engine speed at standard power take-off speeds	2238 rev/min
C	-Ratio of rotation speeds (engine speed/p.t.o. speed):	2.24
D	-Power restriction and maximum torque (Manufacturer's recommendation):	32.0 kW 273.6 N.m
C	-Direction of rotation(viewed from behind tractor):	Clockwis
	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	
C	-Make:	Own make
C	-Model:	DF300
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:	12.0±0.5 MPa

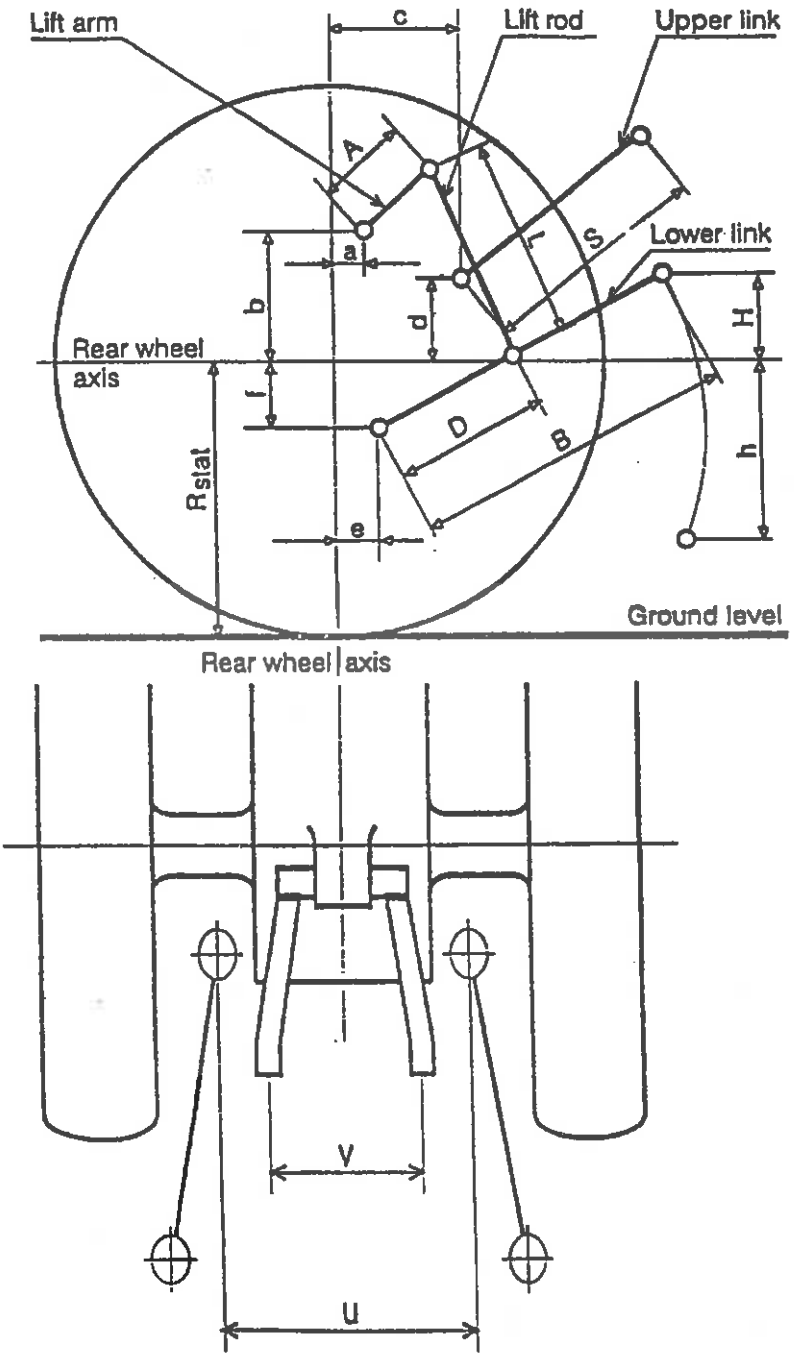
D	-Opening pressure of cylinder safety valve :	None
D	-Lift pump type:	Gear pump
D	-Transmission between pump and engine:	Driven by engine cam shaft
C	-Type and number of filters:	Cartridge type, 1
C	-Site of oil reservoir:	Transmission housing
C	-Type, number and location of tapping points:	1 double acting outlets at the rear
D	-Maximum volume of oil available to external cylinders:	10 dm^3

1.6 Three point linkage

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

				Dimension or range	Setting used in test	
				mm	mm	
C		Length of lift arms :	(A)	200	200	
C		Length of lower links :	(B)	700	700	
		Distance of lift arm pivot point from rear wheel axis:				
C		-Horizontally	(a)	57	57	
C		-Vertically	(b)	395	395	
C		Horizontal distance between the 2 lower link points:	(u)	321	321	
C		Horizontal distance between the 2 lift arms end points:	(v)	294	294	
C		Length of upper link:	(S)	From 500 to 760	580	
		Distance of upper link pivot point from rear wheel axis:				
C		-Horizontally:	(c)	246	246	
C		-Vertically	(d)	260、290、320	320	
		Distance of lower link pivot point from rear wheel axis:				
C		-Horizontally:	(e)	140	140	
C		-Vertically	(f)	100	100	
C		Distance of lower link pivot point to lift rod pivot points on lwer links:	(D)	260、310、360	310	
C		Length of lift rods:	(L)	From 465 to 600	525	
		Height of lower hitch points relative to the rear wheel axis:				
C		-in low position	(h)	From 120 to 470	327	
C		-in high position	(H)	From 210 to 440	307	
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=515 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:	Fixed	
	-Height above ground:		
C	.Maximum	502	mm
C	.Minimum	347	mm
C	-Type of adjustment:	Reversing	
C	-Distance of hitch point from rear wheel axis,horizontally:	770	mm
	-Distance of hitch point from power take-off shaft end:		
C	.Vertically:	189	mm
C	.Horizontally:	436	mm
	-Lateral adjustment(centre of clevis)		
C	.Right hand:	59	mm
C	.Left hand:	59	mm
C	-Distance of pivot point from rear wheel axis,horizontally:	174	mm
C	-Diameter of drawbar pinhole:	Φ30	mm
D	-Maximum vertical permissible load:	6.5kN	
	1.8 Trailer hitch		
C	-Type:	Fixed	
C	-Hole diameter :	Φ30	mm
C	-Height above ground:	466	mm
C	-Distance of hitch point from rear wheel axis,horizontally:	506	mm
	-Distance of hitch point from power take-off shaft end:		
C	.Vertically:	134	mm
C	.Horizontally:	172	mm
D	-Maximum vertical permissible load:	12	kN
	1.9 Holed drawbar:	**None**	
	1.10 Steering		
D	-Make:	Wanfeng	
D	-Model/Type:	Spherical worm and roller	
	-Method of operation	Manual operated	
D	.Pump:	None	
D	.Ram:	None	
D	-Working pressure:	None	
	1.11 Brakes		
	1.11.1 Service brake		
D	-Make:	Own make	
D	-Model/Type:	Dry ,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	
C	.Rear:	2,driving	

C	-Wheelbase:				1705 mm
	-Track width adjustment:				
			Minimum mm	Maximum mm	Adjustment method
D		Front	1100	1400	Extending telescopic
D		Rear	1100	1400	Reversing wheels and off-set lug rims
	1.13 Protective structure				
C	-Make:				Own make
C	-Model:				DF300
C	-Type:				Rear Roll Bar Frame
C	-Manufacture's name and address:				Own make
	-Protective device				
C	.Cab/frame/rollguard/other:				Frame
C	.Tiltable/not tiltable:				Tiltable
	-OECD approval				
C	.Approval number:				7/S/0 230
C	.Date of approval:				Oct. 11,2005
C	.Nos. of minor modification certificates,if any:				None
	1.14 Seat				
	1.14.1Driver's seat				
C	-Make:				Dongfeng
C	-Model:				280.44C.101
C	-Type:				Fixed
C	-Seat and steering wheel reversible:				No
C	-Type of suspension:				None
C	-Type of damping:				None
	-Range of adjustment:				
C	.Longitudinal:				230 mm
C	.Vertical:				0 mm
C	-Safety belt:				Yes
C	.Type:				Purposeless
	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	894	140×45	238
C		Side lights	1158	70×70	518
C		Rear lights	1275	115×75	580
C		Reflectors	1158	70×70	518
C		Brake lights	1158	70×70	518

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	3265	1385	1685	2312	2000
Unballasted	3190	1385	1685	2318	2006

2.2 Ground Clearance(unballasted tractor)

-Clearance limiting part: Under the rear axle 367 mm

2.3 Tractor mass

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

	Unballasted		Ballasted	
	Without driver kg	With driver kg	Without driver kg	With driver kg
Front	494	505	651	661
Rear	898	962	1088	1153
Total	1392	1467	1739	1814

2.4 Ballast

	Weights		Water kg
	Number	Total mass kg	
Front	6	117	—
Rear	6	230	—
Optional	—	—	—

2.5 Track specifications: None

2.6 Tyres and track width specifications

	Front	Rear
Tyres:		
.dimensions	5.00-15	11.2-24
.ply rating	6	6
.type	Cross ply	Cross ply
.maximum load (tyre manufacturer's)	5.65 kN	12.2 kN
.maximum load (tractor manufacturer's)	5.65 kN	12.2 kN
.inflation pressure(tyre manufacturer's)	220～250kPa	100～150 kPa
.dynamic radius index	305 mm	515 mm
Chosen track width	1120 mm	1204 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	4.5	100	100
Gear box, rear axle and final drives, in common with hydraulic system	25	1000	—
Front axle and final drives	—	—	—
Steering	—	—	—

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 85W/90 9.3cSt at 100 ℃ API GL-4	Same as recommended

2.8.3 Grease

-Number of lubrication points: 18

3 COMPULSORY TESTS RESULTS

3.1 Main power take-off

-Date and location of tests: July 29,2005,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							
20.42	2499	617	2499	5.75	6.75	281.6	3.03
3.1.2 POWER AT RATED ENGINE SPEED							
20.42	2499	617	2499	5.75	6.75	281.6	3.03
3.1.3 STANDARD POWER TAKE-OFF SPEED(1000±25 or 540±10min^{-1}(rev/min)							
19.11	2187	540	2187	5.06	5.94	264.8	3.22
3.1.4 PART LOADS 3.1.4.1 the torque corresponding to maximum power at the rated engine speed							
20.42	2499	617	2499	5.75	6.75	281.6	3.03
3.1.4.2 85% of torque obtained in 3.1.4.1							
18.20	2616	646	2616	5.36	6.29	294.5	2.89
3.1.4.3 75% of torque obtained in 3.1.4.2							
13.75	2633	650	2633	4.51	5.29	328.0	2.60
3.1.4.4 50% of torque obtained in 3.1.4.2							
9.26	2653	655	2653	3.71	4.35	400.6	2.13
3.1.4.5 25% of torque obtained in 3.1.4.2							
4.62	2665	658	2665	3.09	3.63	668.6	1.27
3.1.4.6 unloaded							
1.94	2673	660	2673	2.87	3.37	—	—

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							
19.11	2187	540	2187	5.06	5.94	264.8	3.22
3.1.5.2 85% of torque obtained in 3.1.5.1							
17.13	2308	570	2308	4.72	5.54	275.5	3.09
3.1.5.3 75% of torque obtained in 3.1.5.2							
12.95	2329	575	2329	3.87	4.54	298.8	2.85
3.1.5.4 50% of torque obtained in 3.1.5.2							
8.75	2349	580	2349	3.08	3.61	352.0	2.42
3.1.5.5 25% of torque obtained in 3.1.5.2							
4.40	2361	583	2361	2.35	2.76	534.1	1.59
3.1.5.6 unloaded							
1.06	2402	593	2402	1.81	2.12	—	—
3.1.6 PART LOADS AT DIFFERENT ENGINE SPEEDS							
3.1.6.1 Maximum power at rated engine speed							
20.42	2499	617	2499	5.75	6.75	281.6	3.03
3.1.6.2 80% of power obtained in 3.1.6.1 at max. speed setting							
16.37	2616	646	2616	5.05	5.93	308.5	2.76
3.1.6.3 80% of power obtained in 3.1.6.1 with governor control set to 90% of rated engine speed							
16.47	2244	554	2244	4.49	5.27	272.6	3.13
3.1.6.4 40% of power obtained in 3.1.6.1 with governor control set to 90% of rated engine speed							
8.27	2252	556	2252	2.84	3.33	343.4	2.48
3.1.6.5 60% of power obtained in 3.1.6.1 with governor control set to 60% of rated engine speed							
12.36	1494	369	1494	3.18	3.73	257.3	3.31
3.1.6.6 40% of power obtained in 3.1.6.1 with governor control set to 60% of rated engine speed							
8.25	1499	370	1499	2.22	2.60	269.1	3.17

-No load maximum engine speed: 2673 rev/min
-Torque(equivalent crankshaft) at maximum power
..At rated engine speed: 78.0 Nm
.At 2-hour test: 78.0 Nm
-Maximum torque(equivalent crankshaft) (engine speed:1559 rev/min): 91.4 Nm

Mean atmospheric conditions	
Temperature	28 ℃
Pressure	98.5 kPa
Relative humidity	60 %
Maximum Temperature:	
Coolant	78 ℃
Engine oil	101 ℃
Fuel	43 ℃
Engine air intake	39 ℃

3.2 Hydraulic power and lifting force
-Date and location of test: July. 30,2005 COTTEC
3.2.1 Hydraulic power test
3.2.1.1 Hydraulic fluid data
- Hydraulic fluid type: SAE 85W/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.	min^{-1}	L/min	kW
Rated Engine Speed (Manufactures Specification)				2500		
3.2.1.2.1 Maximum (sustained) pressure with relief valve open as measured at the coupler Pump stalled: Yes	12.50	60	66	2627		
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	11.25	65		2632	24.4	4.58
3.2.1.2.3 Maximum available flow and maximum power from one coupler pair:	11.00	64		2630	25.2	4.62
3.2.1.2.3 Maximum available flow and maximum power from coupler pairs operating simultaneously(flow through two or more coupler pairs if required):	—	—		—	—	—

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	188 mm	165 mm
Vertical movement: without lifting force:	634 mm	715 mm
with lifting force:	606 mm	676 mm
Maximum corrected force exerted through full range	6.78 kN	5.11 kN
Corresponding pressure of hydraulic fluid	11.25 MPa	11.25MPa
Moment about rear wheel axle	5.70 kN.m	7.41 kN.m
Maximum tilt angle of mast from vertical	—	9^0

Lifting heights relative to the horizontal plane including the lower link pivot points											
mm	-250	-227	-200	-100	0	100	200	300	379	400	426
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 11.25 MPa											
kN	—	6.78	6.93	7.25	7.38	7.50	7.33	7.24	7.13	—	—
At the frame, Corresponding pressure 11.25 MPa											
kN	6.77	—	7.06	6.93	6.71	6.38	6.05	5.65	—	5.30	5.11

3.3 Drawbar performance

-Date of tests: July. 31,2005
-Type of track: Concrete

	Height of drawbar above ground	Tyre inflation pressure	
		Front	Rear
	mm	kPa	kPa
Unballasted	378	220	100
Ballasted	375	220	100

Gear umber 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	Temperat-ure	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)														
1	5.00	10.77	1.67	2640	2640	15.08	658	1.28	33	76	97	28	45	98.5
2	8.06	10.79	2.69	2628	2628	15.10	468	1.80	33	76	97	28	45	98.5
3	12.45	10.75	4.17	2610	2610	15.08	395	2.13	33	76	97	28	45	98.5
4	15.92	10.46	5.48	2506	2506	14.10	366	2.30	33	76	97	28	45	98.5
5	18.24	7.33	8.96	2506	2506	6.93	321	2.62	33	76	97	28	45	98.5
6	17.65	4.25	14.95	2506	2506	3.59	333	2.53	33	76	97	28	45	98.5
3.3.2 MAXIMUM POWER IN TESTED GEARS(ballasted tractor)														
1	5.51	11.73	1.69	2645	2645	14.99	606	1.39	33	77	99	29	45	98.4
2	8.83	11.73	2.71	2632	2632	14.99	445	1.89	33	77	99	29	45	98.4
3	13.58	11.78	4.15	2608	2608	15.04	390	2.15	33	77	99	29	45	98.4
4	16.71	10.94	5.50	2506	2506	12.11	350	2.40	33	77	99	29	45	98.4
5	18.64	7.49	8.96	2505	2505	6.54	316	2.66	33	77	99	29	45	98.4
6	18.09	4.36	14.95	2505	2505	3.46	325	2.59	33	77	99	29	45	98.4
3.3.3 FIVE-HOUR TESTS 3.3.3.1 FIVE-HOUR TEST at 75 % of pull at maximum power(at rated engine speed)														
5	14.76	5.58	9.52	2620	2620	4.83	344	2.44	33	78	99	29	40	98.2
3.3.3.2 FIVE-HOUR TEST at pull corresponding to 15 % wheel slip with additional ballast: 0 kg														
3	13.51	11.71	4.15	2608	2608	15.02	392	2.14	33	78	99	28	40	98.0

Oil consumption during ten hours duration of tests 3.3.3.1 and 3.3.3.2: 45.8 g/h

3.4 Turning area and turning circle

	Without brakes	
	Right-hand	Left-hand
	m	m
Radius of turning area	3.17	3.15
Radius of turning circle	3.01	3.02

3.5 Location of center of gravity

-Height above ground: 747 mm
-Distance from the vertical plane containing the axis of the rear-wheels: 587 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: Aug. 7,2005

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	33.3	0.10	0.83	51.5
	33.3	0.20	1.52	28.1
	33.3	0.30	2.42	17.7
	33.3	0.35	2.87	14.9
	33.3	0.40	3.24	13.2
	33.3	0.45	3.40	12.6
	33.3	0.50	3.42	12.5
Unballasted tractor	33.3	0.10	0.91	47.0
	33.3	0.20	1.64	26.1
	33.3	0.30	2.85	15.0
	33.3	0.35	3.19	13.4
	33.3	0.40	3.54	12.1
	33.3	0.45	3.60	11.9
	33.3	0.50	3.63	11.8

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

-Abnormal vibration: None

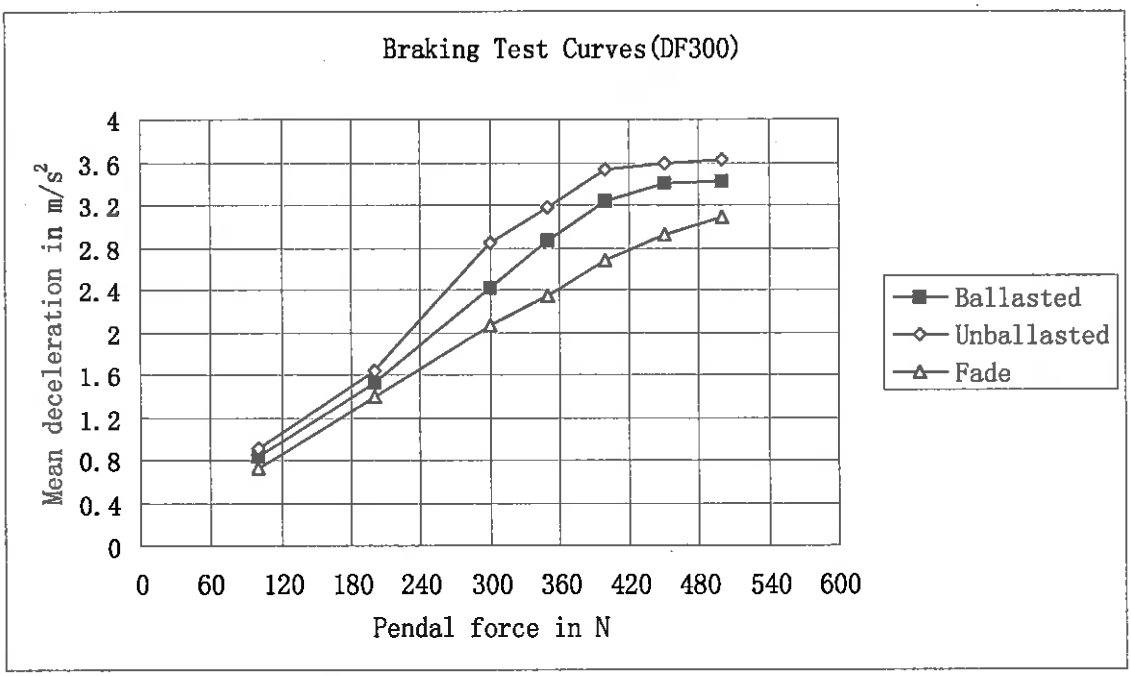
3.6.2 Fade test

Speed before application of brakes	Braking control force	Mean deceleration	Minimum stopping distance without locking the wheels
km/h	kN	m/s^2	m
33.3	0.10	0.72	59.4
33.3	0.20	1.40	30.6
33.3	0.30	2.07	20.7
33.3	0.35	2.34	18.2
33.3	0.40	2.67	16.0
33.3	0.45	2.93	14.6
33.3	0.50	3.08	13.9

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

-Abnormal vibration: None

-Brake heating method: Driving



3.6.3 Parking braking device test

	Uphill	Downhill
Braking device control force N	240	220

3.7 Measurement of external noise

-Date of tests:	Aug.9,2005
-Sound level meter, make/mode/type:	B & K 2209
-Type of track:	Concrete
-Gear number:	8
-Travelling speed before accceleration:	25.0 km/h
-Sound level:	83.8 dB(A)

4 OPTIONAL TEST RESULTS

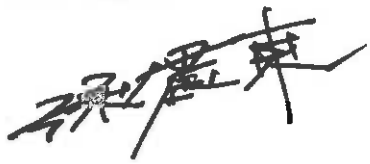
4.1 Low temperature starting

-Date of tests:	Aug.11,2005
-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:	SAE10W/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:	-2.0 ℃

5 REPAIRS **None**

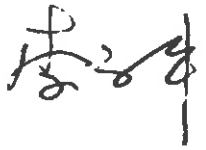
6 REMARKS **None**

Director of the COTTEC
Senior engineer



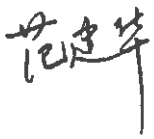
Sun Zhendong

Vice-director of the COTTEC
Senior engineer



Li Jingzhong

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

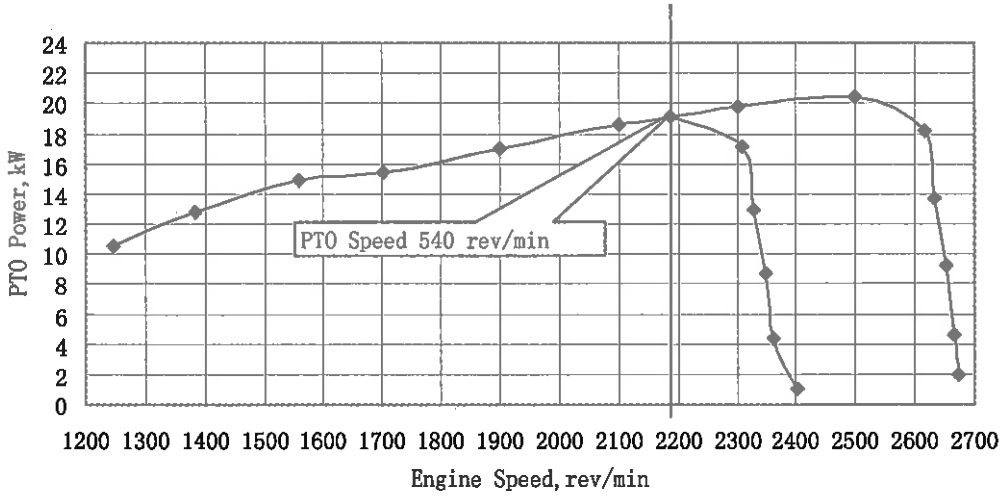


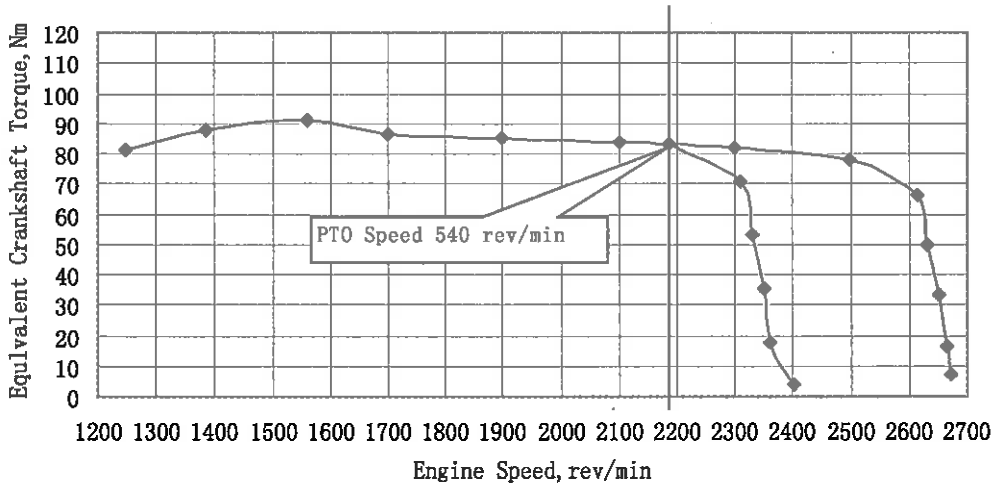
Fan Jianhua

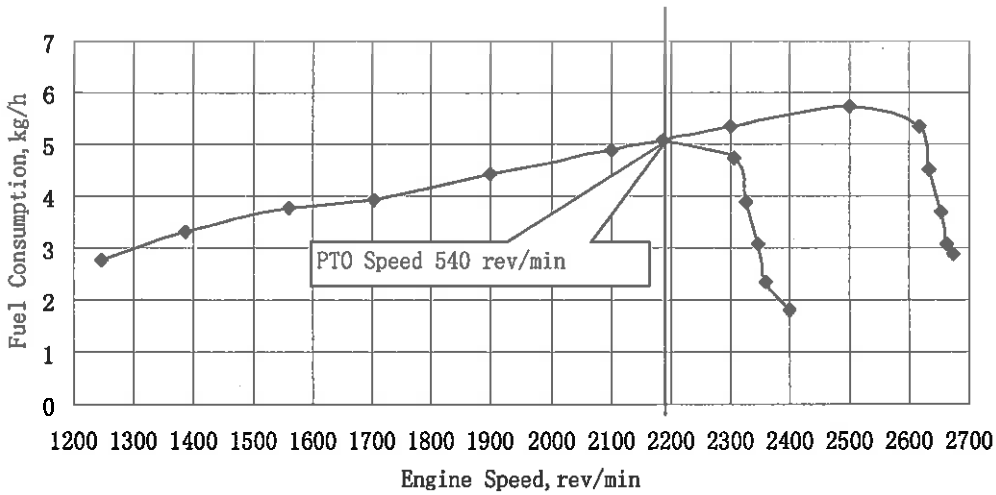
Date: Aug 20,2005

Members of the tractor test board:
Chen Zhiqiang Yan Xiaofang, Liu Hua,
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

