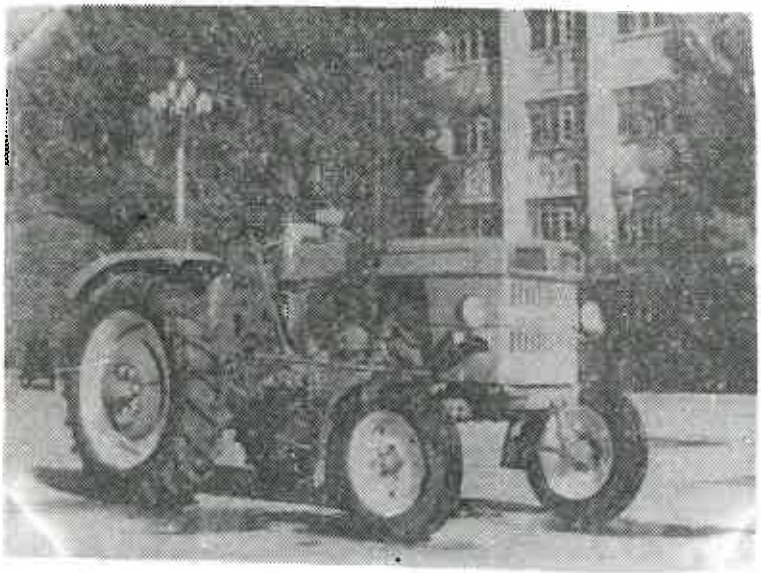
COTTEC

CHINA
OFFICIAL TRACTOR
TEST AND
EVALUATION CENTRE

Address: Luoyang
tractor research institute
Luoyang, Henan, China
Tel: 221001
Cable: 4282
Telex: 473048 LTRI CN

OECD TEST REPORT OF TN—55C(2WD) AGRICULTURAL TRACTOR (CODE I)

Report on test in accordance with the OECD standard code for the official testing of agricultural tractor performance (C(87)53(Final), Code I)



OECD Approval

No. 1241

Date Feb. 26, 1990

Tested Tractor
Make: Tianjin Tractor Works
Model: Tic Niu-55C
Type: Standard

Submitted for test by
Name: Tianjin Tractor Works
Address: Tianjin, China
Tel: 342240 Cable: 4545

This report includes 25 pages and may only be duplicated as a whole

TABLE OF CONTENTS

Page

SPECIFICATIONS OF TRACTOR ..... (3)

TEST CONDITIONS ..... (13)

TEST RESULTS ..... (16)

COMPULSORY TESTS ..... (16)

1. Main power take-off performance ..... (16)

2. Hydraulic power and lifting force ..... (18)

3. Drawbar performance ..... (19)

4. Turning area and turning circle ..... (20)

5. Location of centre of gravity ..... (20)

6. Braking ..... (20)

7. Measurement of external noise level ..... (21)

OPTIONAL TEST ..... (21)

8. Performance in a hot atmosphere ..... (21)

REPAIRS AND ADJUSTMENTS DURING TESTS ..... (23)

REMARKS ..... (23)

ANNEX I Main power take-off test curves ..... (24)

This report has been approved by the OECD Co-ordinating Centre in Paris (CEMAGREF) on Feb. 26, 1990 Approved No. 1241

TN—55C COTTEC Test No. 891432 OECD No. 1241

Tractor manufacturer' s name and address:	Tianjin Tractor Works Tianjin, China
Location of tractor assembly:	The manufacturer
Submitted for test by:	The manufacturer
Selected for test by:	The manufacturer with the agreement of the COTTEC
Place of running-in:	COTTEC, Luoyang, Henan, China
Duration of running-in:	60 hours
Location of test:	COTTEC, Luoyang, Henan, China

SPECIFICATIONS OF TRACTOR

TRACTOR

—Make:	Tianjin Tractor Works
—Model:	TN—55C
—Type:	Standard
—Number of driving wheels:	2
—Serial No. :	1979
—1st Serial No. :	

ENGINE

—Make:	Beijing Internal Combusion Engine Works
—Model:	$4115TD_1$
—Type:	4 stroke, Swirl-chamber diesel, water cooling
—Serial No. :	3510

Cylinders

—Number:	4	
—Disposition:	Vertical, in line	
—Bore/Stroke:	115/130	mm
—Capacity:	5400	cm^3
—Compression ratio:	18. 5/1	
—Arrangement of valves:	Overhead, in line	
—Cylinder liners:	Wet	

Fuel system

—Fuel feed system:	Forced feed type

—Fuel filter:		
. Make:	Bangbu Tractor Accessory Works	
. Model /type:	2CS0712A2, paper catridge, replaceable	
—Capacity of fuel tank:	104	dm^3
—Injection pump		
. Make:	First Tractor Works	
. Model/type:	BII in line, plunger	
. Serial No. :	4015	
—Manufacturer' s production setting of injection pump:		
. Flow rate (rated engine speed and full load):	12. 4	dm^3/h
. Timing:	13. 5°±1° before T. D. C.	
—Injectors:		
. Make:	First Tractor Works	
. Model/Type:	BPZ 1. 5×1. 5, single-hole	
. Injection pressure:	12. 26	MPa

Governor

—Make:	First Tractor Works	
—Model/type:	Mechanical, incorporated into injection pump	
—Governed range of engine speed:	1630	rev/min
—Rated engine speed:	1500	rev/min

Air cleaner

—Pre cleaner:	
. Make:	Bangbu Tractor Accessory Works
. Model/Type:	Centrifugal stack cap
. Location of air intake:	Above bonnet
—Main cleaner:	
• Make:	Bangbu Tractor Accessory Works
• Model/Type:	F3/4L912, Oil bath
• Location of intake:	Below bonnet
—Maintenance indicator:	None

Lubrication system

—Type of feed pump:	Gear pump
—Type & Number of filter(s):	1

—Cooling system

—Type of coolant:	Water
—Type of pump:	Centrifugal, belt driven

—Description of fan:	Axial flow type, belt driven,	
—Number of fan blades:	6	
—Fan diameter:	540	mm
—Coolant capacity:	28	dm^3
—Type of temperature control:	Thermostat	
—Superpressure system	None	

Starting system

—Make:	Kaifeng Tractor Electrical Machinery Factory	
—Model/Type:	QD—04 or ST604, solenoid engaged	
—Starter motor power rating:	5	kW
—Cold starting aid:	Electorthermic plug(opitional)	
—Safety device:	Main shift lever in neutral position	

Electrical system

—Voltage:	24 (Negative earth)	V
—Generator:		
. Make:	Kaifeng Tractor Electrical Machinery Factory	
. Model/Type:	JF12N, alternator, belt driven	
. Power:	0.35	kW
—Battery:		
. Model/Type:	6—Q—135, Lead acid	
. Number:	2	
. Rating:	135	Ah at 20 hours rating

Exhaust system

—Make:	Own make
—Model/Type:	Tie Niu baffler
—Location:	Right-hand side of engine, vertical

TRANSMISSION TO WHEELS

Clutch

—Make:	Own make	
—Model/Type:	Dry, constant engaging, dual-acting	
—Number of plate(s):	2	
—Diameter of plate(s):	336 for travel, 316 for P. T. O.	mm
—Method of operation:	By pedal	

Gear box

—Make:	Own make

TN—55C COTTEC Test No. 891432 OECD No. 1241

—Model/Type: TN—55, Spur gear
—Arrangement: (5+1)×2 compound type
—Number of gears: 10 forwards and 2 reverses
—Available options: Creeper

Rear axle and final drives

—Make: Own make
—Model/Type: Crown wheel and pinion bevel gear differential, spur gear final drives

—Differential lock:
- Type: Mechanical
- Method of engagement: By pedal
- Method of disengagement: Self-disengaging

Front axle and final drives

—Make: Own make
—Model/Type: Telescopic axle, ballanced arm type

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 1500 rev/min km/h
1	L	308.59	1.32
2	L	230.82	1.76
3	L	187.56	2.17
4	L	101.11	4.03
5	H	66.90	6.09
6	L	65.59	6.21
7	H	50.04	8.14
8	H	40.66	10.01
9	H	21.92	18.57
10	H	14.22	28.63
R_1	L	307.71	1.32
R_2	H	66.71	6.10

* Calculated with a tyre dynamic radius index of 720 mm

POWER TAKE-OFF

Main power take-off

—Type:	Semi-independent	
—Method of engagement:	By hand level	
—Number of shafts:	1	
—Method of changing power take-off shaft ends and speeds:	None	

Power take-off proportional to engine speed

540 rev/min

—Location:	At rear of the tractor	
—Diameter of power take-off shaft end:	35	mm
—Number of splines:	6, in conformity with ISO 500/1979	
—Height above ground:	660	mm
—Distance from the median plane of the tractor:	0	mm
—Distance behind rear wheel axis:	440	mm
—PTO speed at rated engine speed:	658	rev/min
—Engine speed at standard power take-off speed:	1230	rev/min
—Ratio of rotation speeds (engine speed/p. t. o. speed):	2. 278	
—Power restriction and maximum torque: (Manufacturers recomendation)	36 kW 657 N · m	
—Direction of rotation(viewed from behind tractor):	Clockwise	

Option power take-off

Belt pulley driven from main P. T. O

—Location	At rear of tractor	
—Diamcter of belt pulley:	300	mm
—Width of belt pulley:	200	mm
—Height above ground:	660	mm
—Distance from median of the tractor:	0	mm
—Distance behind rear wheel axis:	573	mm
—Pulley speed at rated engine speed (1500 rev/min):	820	rev/min

—Ratio of rotation speed (engine speed/pulley speed):	1.83	
—Direction of rotation (viewed from the end of the pulley):	Clockwise	

POWER LIFT

—Make:	Own make	
—Type of hydraulic system:	Separated units, open centre system	
—Type and number of cylinders:	Double acting, 1	
—Type of linkage lock for transport:	Hydraulic lock	
—Relief valve pressure setting:	9.8～10.8	MPa
—Opening pressure of cylinder safety valve:	12.7	MPa
—Life pump type:	CB32, gear pump	
—Transmission between pump and engine:	Gear, driven from gear box	
—Type and number of filter(s):	Metal-mesh, 1	
—Site of oil reservior:	Above transmission housing	
—Tapping point(s)	None	

Three point linkage

—Category: II to ISO 730/1—1979

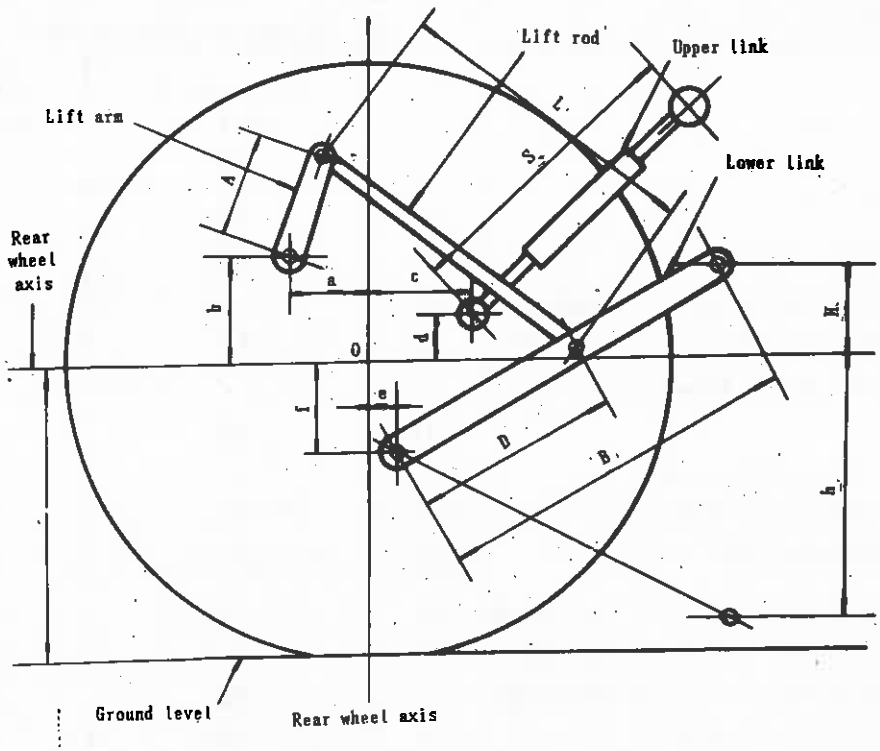
—Category adapter: None

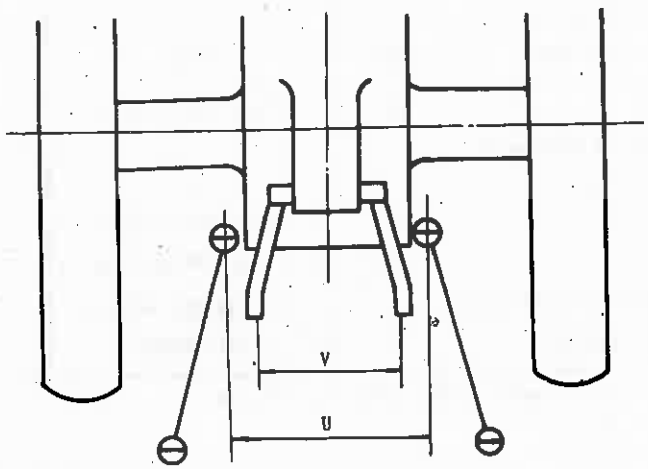
—Linkage geometry: See next page and following table

			Dimension or range * mm	Setting used in test mm
Length of lift arms		(A)	260	
Length of lower links		(B)	800	800
Distance of lift arm pivot point from rear wheel axis:	Horizontally	(a)	—390	
	Vertically	(b)	340	
Horizontal distance between the 2 lower link points		(u)	490	
Horizontal distance between the 2 lift arm end points		(v)	596	
Length of upper link		(S)	from 535 to 800	585
Distance of upper link pivot point from rear wheel axis:	Horizontally	(c)	493	
	Vertically	(d)	190	
Distance of lower link pivot point from rear wheel axis:	Horizontally	(e)	285	
	Vertically	(f)	200	
Distance of lower link pivot points to lift rod pivot points on lower links		(D)	400	
Length of lift rods		(L)	from 430 to 550	525
Height of lower hitch points relative to the rear wheel axis:				
in low position		(h)	from 340 to 580	526
in high position		(H)	from 390 to 150	196
Height above ground of lower hitch points when locked in transport position			Any height within lift range	

* Assuming (r) with a tyre dynamic radius index of 720 mm

Linkage geometry:





TRAILER HITCH

—Type:	Fixed, adjustable, connected with holed drawbar	
—Hole diameter:	32	mm
—Height above ground:	520	mm
—Distance of hitch point from rear wheel axis, horizontally:	1230	mm
—Distance of hitch point from power take-off shaft end:		
. Vertically:	140	mm
. Horizontally:	790	mm
—Maximum vertical permissible load:	14.0	kN

STEERING

—Make:	Own make
—Model/Type:	Mechanical, worm and roller
—Method of operation:	Manual operated

BRAKES

—Make:	Own make
—Model/Type	Dry disc, double plates
—Method of operation:	By pedals, coupled or independent
—Trailer braking take-off:	Air brake, operated by tractor pedals

Parking brake

—Type:	Mechanical
—Method of operation:	Pedals locked by ratchet

WHEELS

—Number		
. Front:	2, steering	
. Rear:	2, driving	
—Wheelbase:	2458	mm

—Track width adjustment:

	Minimum mm	Maximum mm	Adjustment method
Front	1464	1864	Telescopic axle
Rear	1400	1800	Moving on the rear axle or reversing wheels and off-set lug rims

DRIVER'S SEAT

—Make: Tianjin Automebile Co.
—Model/Type: TN-55
—Type of suspension: Coil springs
—Type of damping Hydraulic
—Range of adjustment:
. Longitudinal: 195 mm
. Vertical: 62 mm

MISCELLANEOUS

—Additional seat:
• Location: On the left of fender
—Number of places: 1

LIGHTING

	Height above ground of center mm	Size mm	Distance from outside edge of lights to median plane of tractor mm
Headlight	1230	D170	560
Sidelight	1080	D70	625
Rearlight	1660	D170	735
Brakelight	1520	D90	695

TN—55C COTTEC Test No. 891432 OECD No. 1241

TEST CONDITIONS

OVERALL DIMENSIONS

	Length mm	Width		Height at top of	
		Minimum mm	Maximum mm	protective structure mm	exhaust silencer mm
Ballasted	4120	1934	2122	—	2520
Unballasted	4120	1934	2122	—	2520

GROUND CLEARANCE(unballasted tractor): 450 mm

—Clearance limiting part: Under the rear axle

TRACTOR MASS

Without protective structure:

	Ballasted		Unballasted	
	Without driver kg	With driver kg	Without driver kg	With driver kg
Front	1166	1173	1166	1173
Rear	2185	2253	2045	2113
Total	3351	3426	3211	3286

BALLAST

	Weights		Water kg
	Number	Total mass kg	
Front	—	—	0
Rear	4	140	0
Optional	—	—	—

TYRE SPECIFICATIONS

	Front	Rear
Tyres:		
Dimensions	6.50—20	12—38
Ply rating	6	8
Type	Cross ply	Cross ply
Maximum load (tyre manufacturer's)	6.5 kN	15.4 kN
Inflation pressure (tyre manufacturer's)	176 kPa	137 kPa
Dynamic radius index	405 mm	720 mm
Chosen track width:	1464 mm	1400 mm

OILS AND LUBRICATION

Capacity and change interval:

	Capacity dm^3	Oil change h	Filter change h
Engine	15	300	300
Gear box	50	900	not filter
Rear axle	Common with gear box		—
Final drive (rear)	Common with gear box		—
Hydraulic system	20	900	—
Steering	1.5	1800	—

TN—55C COTTEC Test No. 891432 OECD No. 1241

Specifications:

	Recommended	Used during test
Engine oil		
Type:	SAE 10W/30	CA30
Viscosity:	9.5～12.5 cSt at 100℃	10.0～12.5 cSt at 100℃
Classification:	API CC	GB 5323—85
Transmission oil		
Type:	SAE 80W 90	85W/90
Viscosity:	13.5～24.0 cSt at 100℃	15～19 cSt at 100℃
Classification:	API GL—3	ZBE 34006—87 (China standard)
Hydraulic fluid		
Type:		
Viscosity:	Same as trans. oil	Same as engine oil
Classification:		
Steering oil		
Type:		
Viscosity:	Same as trans. oil	Same as trans. oil
Classification:		

Grease

—Type: Multi—purpose grease

—Number of lubrication points: 18

Fuel

—Type: No. 0 diesel fuel in conformity with GB 252-87 (China standard)

—Density at 15°C: 0.848 g/cm³

TEST RESULTS

COMPULSORY TESTS RESULTS

1. MAIN POWER TAKE-OFF

—Date and location of tests: Sep. 22—23, 1989, COTTEC

—Type of dynamometer: LPA—Bedienpult 250 elec. dynamometer

Power kW	Speed		Fuel consumption			Specific energy kW • h/l
	Engine rev/min	P. T. O. rev/min	Hourly kg/h	Hourly l/h	Specific g/kW • h	
1. 1 MAXIMUM POWER—TWO HOURS TEST						
39. 21	1446	635	10. 15	11. 96	259	3. 27
1. 2 POWER AT RATED ENGINE SPEED						
36. 71	1500	658	9. 55	11. 26	260	3. 26
1. 3 STANDARD POWER TAKE-OFF SPEED (540±10 rev/min)						
36. 85	1230	540	9. 86	11. 63	268	3. 16
1. 4 PART LOADS						
1. 4. 1 The torque corresponding to max. power at rated engine speed						
36. 71	1500	658	9. 55	11. 26	260	3. 26
1. 4. 2 85% of the torque obtained in 1. 4. 1						
31. 58	1517	666	8. 37	9. 87	265	3. 20
1. 4. 3 75% of the torque defined in 1. 4. 2						
23. 94	1533	673	6. 80	8. 02	284	2. 98
1. 4. 4 50% of the torque defined in 1. 4. 2						
16. 12	1549	680	5. 38	6. 34	334	2. 54
1. 4. 5 25% of the torque defined in 1. 4. 2						
8. 19	1574	691	4. 02	4. 74	491	1. 73
1. 4. 6 Unloaded						
0. 88	1587	697	2. 83	3. 34	—	—

TN—55C COTTEC Test No. 891432 OECD No. 1241

Power kW	Speed		Fuel consumption			Specific energy kW • h/l
	Engine rev/min	P. T. O. rev/min	Hourly		Specific g/kW • h	
			kg/h	l/h		
1. 5 PART LOADS AT STANDARD POWER TAKE-OFF SPEED						
1. 5. 1 The torque corresponding to maximum power						
36. 85	1230	540	9. 86	11. 63	268	3. 16
1. 5. 2 85% of the torque obtained in 1. 5. 1						
34. 80	1369	600	9. 52	11. 23	274	3. 09
1. 5. 3 75% of the torque defined in 1. 5. 2						
26. 58	1392	611	7. 88	9. 29	297	2. 86
1. 5. 4 50% of the torque defined in 1. 5. 2						
17. 98	1412	620	5. 65	6. 66	314	2. 70
1. 5. 5 25% of the torque defined in 1. 5. 2						
9. 13	1435	630	3. 94	4. 65	431	1. 97
1. 5. 6 Unloaded						
0. 80	1458	640	2. 50	2. 95	—	—

—No load maximum engine speed:	1587	rev/min
—Equivalent crankshaft torque at maximum power:	258. 9	N • m
—Maximum Equivalent crankshaft torque: (Engine speed: 1141 rev/min)	294. 1	N • m
—Mean atmospheric conditions		
. Temperature:	25. 3	℃
. Pressure:	99. 2	kPa
. Relative humidity:	23	%
—Maximum temperatures		
. Coolant:	98	℃
. Fuel:	58	℃
. Engine air intake:	51	℃
. Engine oil:	92	℃

2. HYDRAULIC POWER AND LIFTING FORCE

—Date of test: Sep. 21, 1989

2.1 HYDRAULIC POWER TEST

None

2.2 POWER LIFT TEST

—Sustained pressure with relief valve open: 12.5 MPa

—Temperature of hydraulic power: 63 ℃

		At the hitch point	On the frame
Height of lower hitch points above ground in down position	mm	185	140
Vertical movement	mm	715	970
Maximum corrected force exerted throught full range	kN	16.57	10.11
Corresponding pressure of hydraulic fluid	MPa	11.7	11.7
Moment about rear wheel axle	kN • m	17.15	16.63
Maximum tilt angle of mast from vertical	degrees	—	17.3

—Linkage setting for test: see above table and figures

Lifting heights relative to the horizontal plane inculding the lower link pivot points										
mm	—405	—335	—200	—100	0	100	200	325	400	495
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		26.2	23.0	21.8	20.7	19.7	18.6	16.6		
Corresponding pressure: 11.7 MPa										
At the frame kN	24.1	22.7	19.8	18.2	16.7	15.3	13.9	12.3	11.3	10.1
Corresponding pressure: 11.7 MPa										

3. DRAWBAR PERFORMANCE

—Date of tests: Sep. 25—28, 1989

—Type of track: Concrete

Height of drawbar above ground:
Unballasted: 542 mm
Ballasted: 538 mm

Tyre inflation pressure:
Front: 176 kPa
Rear: 137 kPa

Gear 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
3.1 MAXIMUM POWER IN TESTED GEARS (unballasted tractor)													
5(H1)	29.83	19.56	5.49	1491	14.7	331	2.56	39	65	56	22	68	99.7
6(L5)	30.47	19.84	5.53	1475	14.8	335	2.53	41	68	58	22	68	99.7
7(H2)	31.94	15.27	7.53	1456	10.3	319	2.66	41	69	60	22	68	99.7
8(H3)	32.68	12.45	9.45	1445	7.8	312	2.72	42	69	60	23	68	99.7
3.2 MAXIMUM POWER IN TESTED GEARS (ballasted tractor)													
1(L1)	7.35	21.35	1.24	1566	15.0	571	1.48	38	67	56	20	67	99.8
2(L2)	9.68	21.12	1.65	1558	14.7	516	1.64	39	67	57	20	67	99.8
3(L3)	11.88	21.27	2.01	1548	14.9	453	1.87	40	68	57	21	67	99.8
4(L4)	21.57	21.27	3.65	1513	14.9	388	2.19	40	69	59	21	67	99.8
5(H1)	30.92	20.50	5.43	1477	14.2	322	2.62	41	69	61	21	67	99.8
6(L5)	31.84	20.84	5.50	1457	14.1	320	2.65	42	69	61	21	67	99.8
7(H2)	32.17	15.34	7.55	1456	9.5	317	2.68	42	70	63	21	67	99.8
8(H3)	32.77	12.55	9.40	1442	7.5	311	2.73	44	70	63	21	67	99.8
3.3 TEN—HOUR TEST (ballasted tractor)													
3.3.1 FIVE-HOUR TEST at 75% of pull at maximum power													
7(H2)	25.60	11.52	8.00	1519	6.9	328	2.58	35	66	58	21	67	99.8
3.3.2 FIVE-HOUR TEST at pull corresponding to 15% wheelslip without additional ballast.													
4(L4)	21.67	21.26	3.67	1513	—	—	—	40	69	60	21	67	99.8

Oil consumption during ten hours duration of tests 3.3.1 and 3.3.2 : 55 g/h

TN—55C COTTEC Test No. 891432 OECD No. 1241

4. TURNING AREA AND TURNING CIRCLE

Details of wheel equipment:

	Tyre size	Track mm
Front	6.5—20	1464
Rear	12—38	1400

	With brakes		Without brakes	
	Right hand m	Left hand m	Right hand m	Left hand m
Radius of turning area	4.73	4.69	5.31	5.34
Radius of turning circle	4.59	4.55	5.17	5.20

5. LOCATION OF CENTRE OF GRAVITY

—Height above ground: 893 mm

—Distance forward from the vertical plane containing the axle of the rear wheels: 877 mm

—Distance from the median plane of the tractor: R 18 mm

6. BRAKING

—Date of tests: Sep. 25, 1989

—Type of track: Concrete

—Speed before application of brakes: 29.5 km/h

6.1 COLD SERVICE BRAKING DEVICE TEST

Ballasted tractor	Braking device control force N	266	402	456	521	593	619
	Mean deceleration m/s^2	0.52	2.15	2.48	2.66	2.91	2.99
Unballasted tractor	Braking device control force N	285	380	456	532	591	611
	Mean deceleration n/s^2	1.14	1.32	2.27	2.78	2.86	2.83

6.2 FADE TEST

Ballasted tractor	Braking device control force N	258	327	372	456	523	639
	Mean deceleration m/s²	0.54	0.86	1.90	2.19	2.19	2.11

—Maximum deviation of tractor from its original course: 0 mm
—Abnormal vibration: None
—The brakes were heated by: Driving

6.3 PARKING BRAKING DEVICE TEST

	Up	Down
Braking device control force N		

7. MEASUREMENT OF EXTERNAL NOISE LEVEL

—Date of tests: Sep. 28, 1989
—Sound level meter, Make/Model/Type: B & K 2209
—Type of track: Concrete
—Gear number: 10
—Travelling speed before acceleration: 22.15 km/h
—Sound level: 83.5 dB(A)

OPTIONAL TEST RESULTS

8. PERFORMANCE IN A HOT ATMOSPHERE

—Date and location of test: Sep. 23, 1989, COTTEC
—Limiting temperatures specified by manufacturer:
• Coolant: 98 ℃
• Engine oil: 110 ℃
—Special epuipment fitted for the test: None
—Fuel:
• Type: No. 0(GB 252—87, China standard)
• Density at 15 ℃ 0.848 g/cm³
• Cetane number: >50

TN—55C COTTEC Test No. 891432 OECD No. 1241

—Engine oil:

- Type: CA40 GB 5323-85
- Viscosity: 12.5～16.3 cSt. at 100℃

—Transmission oil:

- Type: 85W/90
- Viscosity: 15—19 cSt. at 100℃

—Results of tests:

Ambient temperature ℃	Loss of power at the P.T.O. %	P.T.O. speed rev/min	Temperature		Atmospheric pressure kPa
			Coolant ℃	Engine oil ℃	
36	0	658	80	88	99.3
39	1.93	658	80	88	99.3
41	2.67	658	81	88	99.3
43	4.30	658	87	92	99.3
45	5.19	658	95	98	99.3
47	6.67	658	98	108	99.3

TN—55C COTTEC Test No. 891432 OECD No. 1241

REPAIRS AND ADJUSTMENTS DURING TESTS:

None

REMARKS:

In COTTEC the safety limit speed of drawbar testing equipment is 12 km/h, so we make only drawbar power test in the gears which the speed is below 12 km/h.

Director of the COTTEC
Senior engineer

罗光辉

Luo Guanghui

Vice-director of the COTTEC
Senior engineer

孙殿俊

Sun Dianjun

Vice-director of the COTTEC
Senior engineer

朱荫梧

Zhu Yinwu

Responsible engineer for these tests:
Senior engineer

钱进

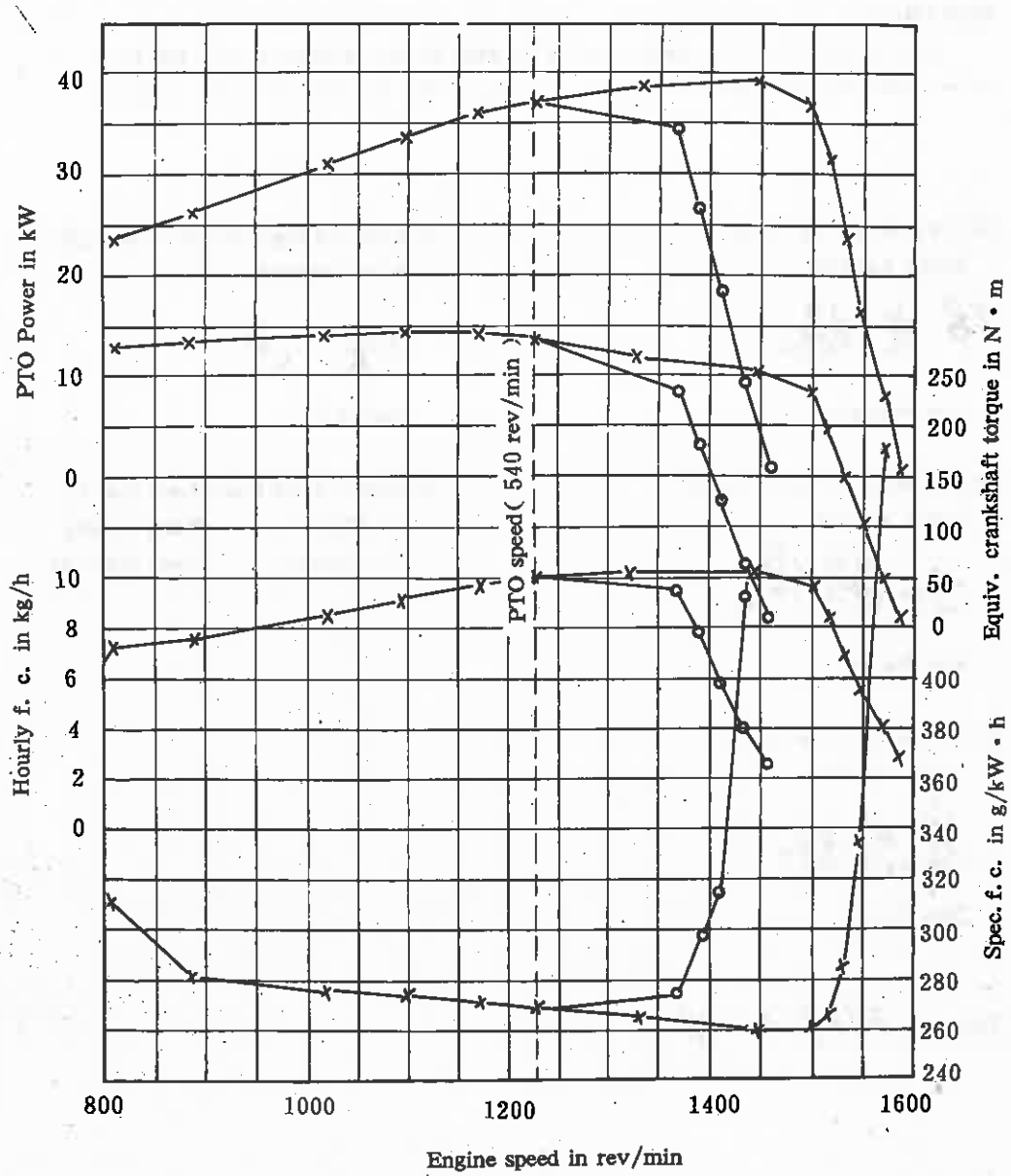
Qian Jin

Members of the tractor test board:
Xie Zhiqiao, Wang Dailing
Shi Guoquan, Chen Zhiqiang

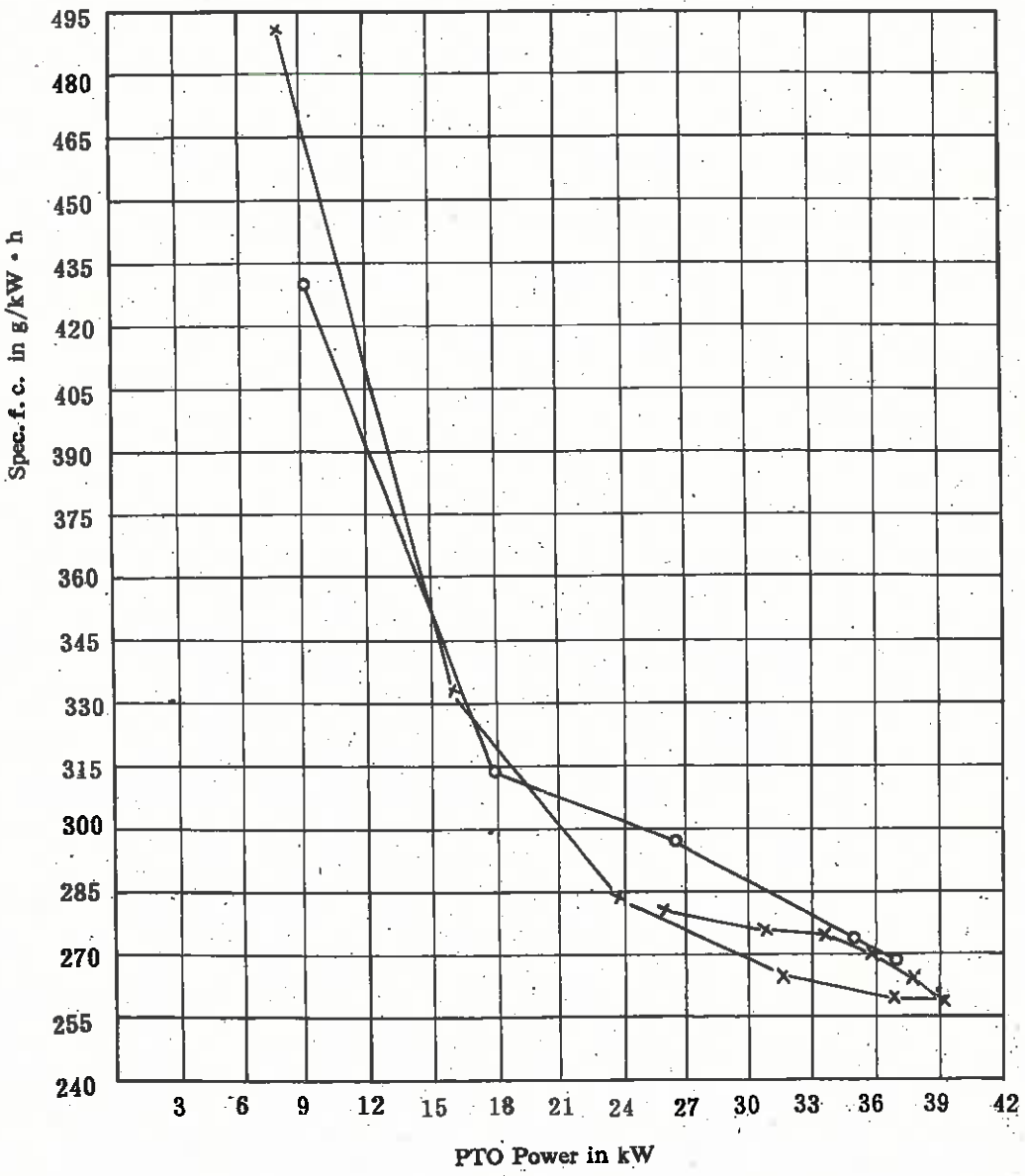
Date: 1989.12.28

ANNEX I

MAIN POWER TAKE – OFF TEST CURVES



MAIN POWER TAKE-OFF TEST CURVES



Printed in 613, Luoyang, China