LIUGONG

LIUGONG C SERIES
TRUCK CRANE

CHALLENGER TC600C5

& BORN TO BE FEARLESS


LiuGong
TC600C5
TC600C5

Selling points

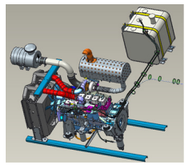
Superior lifting capacity

◎ The five-section U-shaped boom with large section and the fully extended length of 45m is the longest among same types of products in the whole industry.

◎ The single-plate boom head and the compact boom tail structure improve the overlapping between boom section as well as make the boom bearing capacity stronger.

◎ The 7.5m transverse outrigger span together with a total counterweight of 6.6t makes its half-extended lifting performance 5-10% higher than that of the products of same class.

◎ The rear-mounted luffing hinge point improves the lifting stability by 15%,making the crane an industry leader.



Strong and energy-saving power configuration

◎ The chassis with the power transmission optimization technology achieves the combined fuel consumption of 45 L/100 km.

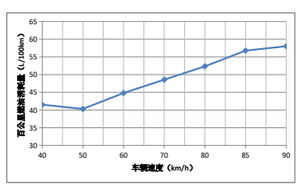
Power-driven heavy-duty chassis

◎ The overall length is 14.1m and the overall width is 2.8 m,allowing high adaptability to construction site.

◎ The minimum turning radius is 12 m,enabling a flexible job site transit.

◎ The newly-developed elevated and widened rectangular cross section box-shaped frame strengthens the torsional resistance and bending capacity comprehensively.

◎ The combination of DCEC high-power engine,Fast 9-speed transmission with synchronizer and the heavy-duty double reduction axle optimizes the suitability of power,and allows maximum driving speed of 85km/h,maximum gradeability of 46%,and the fuel consumption of 45 L/100 km.



Selling points

Stable and reliable hydraulic system

◎ The configuration of imported hydraulic pump and winch variable motor satisfies the precision lifting demand: minimum stable slewing speed of 0.1 ° /s and minimum stable speed of the winch of 1.5 m/min.

◎ The valve post-compensation technology ensures smooth compound action.

Humanized control system

◎ The equipment of torque limiter,three-wrap rope protector,height limiter,night vision leveling gauge,ABS,etc. provide the crane with compressive safety protection functions such as overload protection,over-winch protection,over-release protection,roll-over protection,loaded telescopic protection,and driving protection.

◎ The operator's cab is equipped with the winch monitor for easy observation and operation.

◎ The reverse image system is set in the cab to make parking easier and avoid scratches.

◎ The engine start and stop means and the high and low speed throttle switch are set in the control area of the lower structure outrigger,bringing easy operation.

◎ The flip-up superstructure canopy makes the maintenance more convenient.

◎ The suspension seat with high strength special-shaped steel pipe structure reduces fatigue and improves comfort.

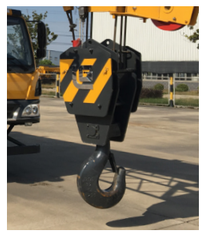
◎ The driver's seat of air suspension type can slide forwards and backwards and its angle can be changed,thus effectively reducing driver fatigue.

◎ The cab is equipped with foldable sleeper,thus making it more comfortable.

◎ The instrument panel or the rocker switch in the cab is arranged according to the service frequency to make the operator feel more comfortable and convenient.

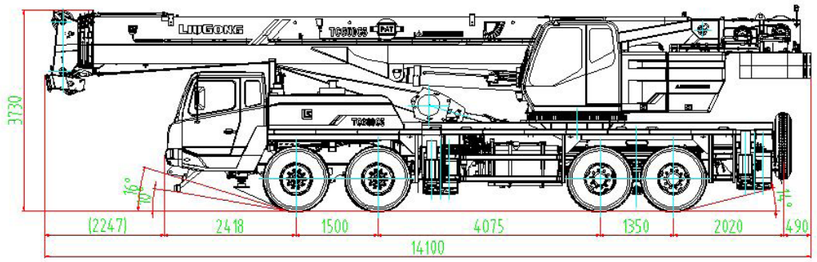
◎ The bus meter can display more information;the functional area is clear for easy observation. The fault of instrument system and engine can be directly queried in the display for easy maintenance.

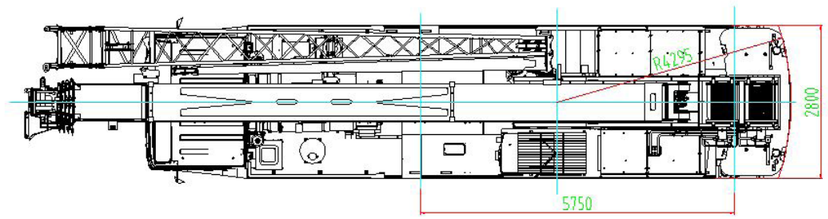
◎ The main hook features quick change parts of line. Specifically speaking,parts of line can be changed directly without removing the wedge sleeve,thus reducing the change steps and improving work efficiency.



◎ The superlarge double-deck toolbox is updated,making the storage space greater and more practical.

Overall dimensional drawing





Axle load

Axle	1	2	3	4	Total
Axle load/t	8.65	8.65	12.35	12.35	42

Note: It is equipped with fixed counterweight but no movable counterweight

Hook and number of parts of line

Rated load/t	Number of pulleys	Number of parts of line	Hook weight/kg
55	6	12	520
5	0	1	140

Working speed

Item			Single wire rope speed	Diameter/length of wire rope
Main winch			0-130m/min	18mm/205m
Auxiliary winch			0-130m/min	18mm/130m
Slewing			0-2.2r/min	
Ascending/descending			45s/100s（0-80°）	
Extension/retraction			100s/120s（11.7m-45m）	
Outrigger	Vertical outrigger	Retraction	30s	
		Extension	32s	
	Horizontal outrigger	Retraction	12s	
		Extension	15s	

Main technical parameters

Category	Item		Unit	Parameter
Dimension parameter	Overall length		mm	14100
	Overall width		mm	2800
	Overall height		mm	3730
Weight parameter	Gross weight		kg	42000
	Load	Load of the first and second axles	kg	17300
		Load of the third and fourth axles	kg	24700
Power parameter	Engine model		——	ISLe340 30
	Maximum power		kW/rpm	250/2100
	Maximum output torque		N.m/rpm	1425/1100-1400
Traveling parameter	Maximum traveling speed		km/h	85
	Minimum turning radius		m	12
	Approach angle		°	16/10
	Departure angle		°	14
	Maximum gradeability		%	46
	Fuel consumption per 100 km		L	≤ 45
Main performance parameter	Maximum rated lifting capacity		t	55
	Turntable tail slewing radius		m	4.295
	Max. imum lifting moment	Basic boom	kN.m	2033
		Fully-extended boom	kN.m	1192
	Outrigger span (transverse×longitudinal)		m	7.5×5.75
	Boom length	Basic boom	m	11.7
		Fully-extended boom	m	45
		Fully-extended boom + jib	m	61

Load chart (boom)

Unit：kg

7.5m full-extended outrigger; 6.6T counterweight; working in rear and side direction, fifth outrigger retracted; working in all directions with fifth outrigger extended.					
Working radius (mm)	Boom （mm）				
	11700	17925	24150	30375	36600
3000	60000	25000			
3500	51000	25000	25000		
4000	48000	25000	24200		
4500	45000	25000	23300		
5000	41500	25000	22400	15000	
5500	37500	25000	21600	15000	
6000	33800	25000	20800	15000	
6500	31000	25000	20100	15000	
7000	28000	25000	19500	14500	9500
7500	25500	25000	18900	13900	9500
8000	23000	25000	18000	13200	9500
9000		21700	17100	12500	9500
10000		17900	16300	11800	9500
11000		15100	15000	11000	9200
12000		12500	13000	10000	8600
14000		9800	10400	9000	7700
16000			8200	8000	6900
18000			6600	7000	6200
20000				5800	5500
22000				4800	4900
24000				4000	4200
26000					3600
28000					3000
30000					2500
32000					
34000					
Ⅰ	0%	0%	0%	0%	0%
Ⅱ	0%	25%	50%	75%	100%
Parts of line	12	6	6	5	4

Load chart (boom)

Unit：kg

7.5m full-extended outrigger; 6.6T counterweight; working in rear and side direction, fifth outrigger retracted; working in all directions with fifth outrigger extended.					
Working radius (mm)	Boom （mm）				
	13800	20025	26250	32475	38700
3000	45000	25000			
3500	45000	25000			
4000	45000	25000	24000		
4500	43000	25000	24000		
5000	40000	25000	24000		
5500	36000	25000	24000	14000	
6000	33000	25000	23200	14000	
6500	30000	25000	22400	14000	
7000	27500	25000	21600	14000	
7500	24800	25000	20700	14000	
8000	22000	25000	20000	14000	9500
9000	19000	21300	19000	13300	9500
10000	16000	17600	17400	12400	9500
11000		14800	15300	11600	9500
12000		12300	12800	10500	8900
14000		9500	10100	9300	8100
16000		7300	8000	8100	7200
18000			6400	6700	6400
20000			5200	5500	5600
22000				4600	4800
24000				3800	4000
26000				3200	3400
28000					2900
30000					2400
32000					2000
34000					
Ⅰ	25%	25%	25%	25%	25%
Ⅱ	0%	25%	50%	75%	100%
Parts of line	10	6	6	4	3

Load chart (boom)

Unit：kg

7.5m full-extended outrigger; 6.6T counterweight; working in rear and side direction, fifth outrigger retracted; working in all directions with fifth outrigger extended.					
Working radius (mm)	Boom (mm)				
	15900	22125	28350	34575	40800
3000	45000	25000			
3500	45000	25000			
4000	45000	25000			
4500	42000	25000	21000		
5000	39000	25000	21000		
5500	36000	25000	21000		
6000	32500	25000	21000		
6500	29500	25000	21000	14000	
7000	26500	25000	21000	14000	
7500	23500	25000	21000	14000	
8000	21300	23200	20500	14000	9500
9000	18700	20500	19500	13600	9500
10000	15900	17300	17800	12800	9500
11000	13200	14500	15200	12000	9500
12000	11100	11800	12500	10800	9000
14000		9200	9900	9600	8300
16000		7100	7700	8100	7500
18000		5500	6200	6500	6500
20000			5000	5300	5600
22000			4000	4400	4600
24000				3600	3800
26000				3000	3200
28000				2400	2700
30000					2200
32000					1800
34000					1500
Ⅰ	50%	50%	50%	50%	50%
Ⅱ	0%	25%	50%	75%	100%
Parts of line	10	6	5	4	3

Load chart (boom)

Unit：kg

7.5m full-extended outrigger; 6.6T counterweight; working in rear and side direction, fifth outrigger retracted; working in all directions with fifth outrigger extended.					
Working radius (m)	Boom (m)				
	18000	24225	30450	36675	42900
3.0	35000				
3.5	35000	25000			
4.0	34400	25000			
4.5	32000	25000			
5.0	29900	25000	21000		
5.5	28000	24000	21000		
6.0	26400	22900	20800		
6.5	24900	21600	19600		
7.0	23600	20400	18600	14000	
7.5	22200	19400	17600	14000	
8.0	20300	18000	16400	14000	
9.0	18100	16700	15300	13900	9500
10.0	15700	15300	14000	13000	9500
11.0	13000	13500	12900	12000	9500
12.0	10000	11500	11400	10900	9400
14.0	7500	9000	9500	9600	8500
16.0		6900	7500	7900	7600
18.0		5200	6000	6300	6600
20.0			4800	5100	5400
22.0			3800	4200	4500
24.0			3100	3400	3700
26.0				2800	3100
28.0				2300	2500
30.0				1800	2100
32.0					1700
34.0					1300
Ⅰ	75%	75%	75%	75%	75%
Ⅱ	0%	25%	50%	75%	100%
Parts of line	8	6	5	4	3

Load chart (boom)

Unit：kg

7.5m full-extended outrigger; 6.6T counterweight; working in rear and side direction, fifth outrigger retracted; working in all directions with fifth outrigger extended.					
Working radius (mm)	Boom (mm)				
	20100	26325	32550	38775	45000
3000	30000				
3500	30000				
4000	30000	25000			
4500	30000	25000			
5000	28300	25000			
5500	26600	23500			
6000	25000	22100	17500		
6500	23500	20900	17500		
7000	22300	19700	17500		
7500	21000	18700	17200		
8000	19300	17500	16300	13500	
9000	17500	16100	14900	13500	
10000	15300	14700	13600	12500	9500
11000	12900	13000	12300	11500	9500
12000	10500	11100	10800	10400	9100
14000	7800	8900	9200	9000	8500
16000	5500	6700	7300	7700	7600
18000		5200	5800	6200	6500
20000		4000	4600	5000	5300
22000			3700	4000	4300
24000			2900	3300	3500
26000			2300	2600	2900
28000				2100	2400
30000				1700	1900
32000				1300	1500
34000					1200
Ⅰ	100%	100%	100%	100%	100%
Ⅱ	0%	25%	50%	75%	100%
Parts of line	8	6	4	3	3

Load chart (jib)

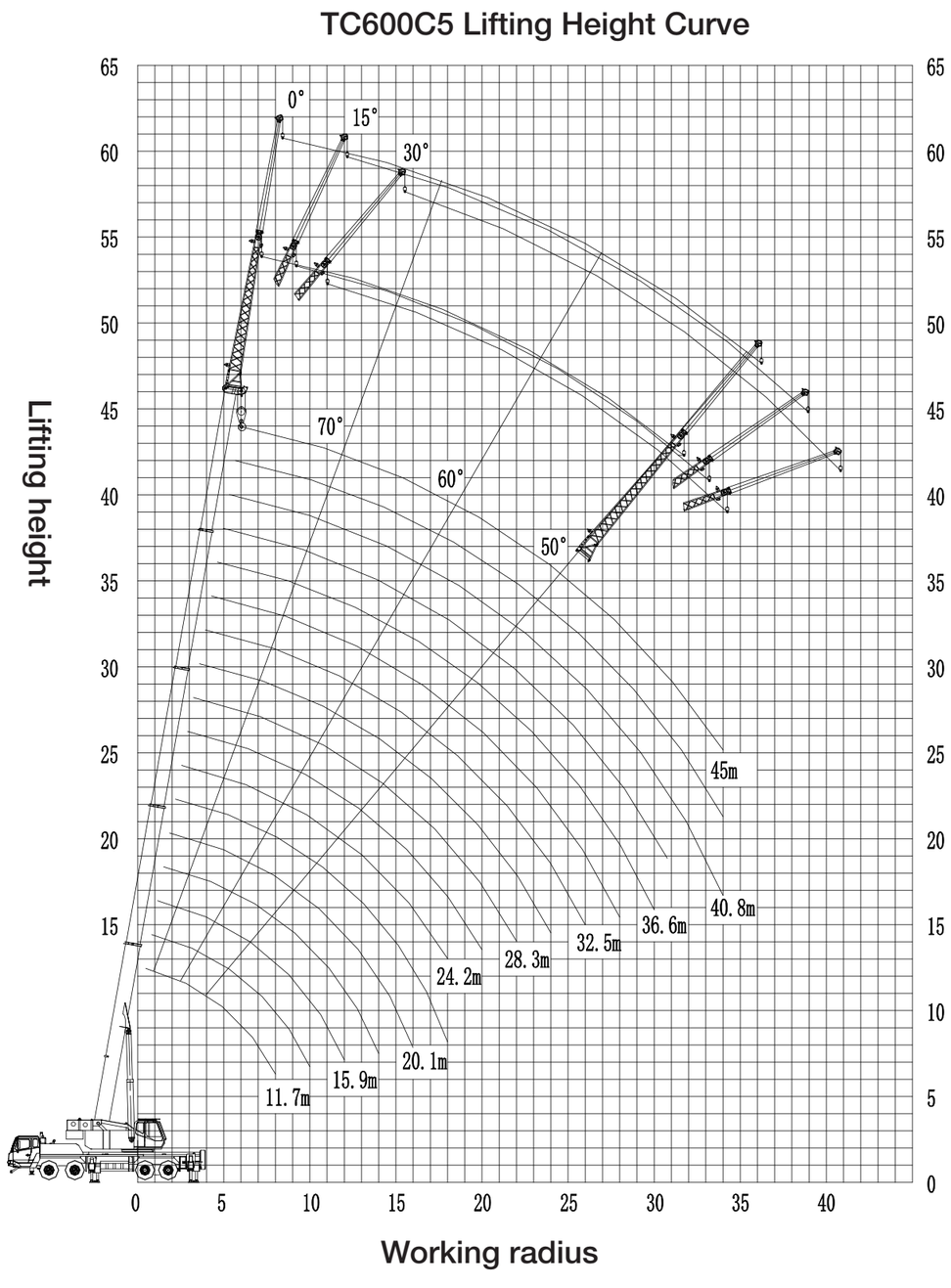
Unit：kg

Boom operation angle	7.5m full-extended outrigger; 6.6T counterweight; working in rear and side direction, fifth outrigger retracted; working in all directions with fifth outrigger extended.					
	45+9m			45+16m		
	0°	15°	30°	0°	15°	30°
80°	4500	2800	2400	2800	1500	1100
78°	4500	2800	2400	2600	1500	1100
76°	4000	2700	2300	2250	1350	1100
74°	3800	2500	2250	2200	1300	1100
72°	3500	2400	2200	1950	1200	1100
70°	3200	2300	2100	1800	1150	1100
68°	3000	2200	1950	1600	1100	1000
66°	2700	2100	1950	1600	1050	950
64°	2200	1900	1800	1500	1000	900
62°	2100	1700	1650	1400	900	850
60°	1800	1600	1500	1300	850	800
58°	1500	1300	1200	1150	800	750
56°	1200	950	1000	950	700	650
54°	1000	700	850	800	600	500
52°	800	550	550			

Unit：kg

Boom operation angle	7.5m full-extended outrigger; 6.6T counterweight; working in rear and side direction, fifth outrigger retracted; working in all directions with fifth outrigger extended.					
	45+9m			45+16m		
	0°	15°	30°	0°	15°	30°
80°	4500	2800	2400	2800	1500	1100
78°	4500	2800	2400	2600	1500	1100
76°	4000	2700	2300	2250	1350	1000
74°	3600	2500	2250	2000	1200	980
72°	3200	2300	2000	1800	1150	950
70°	2500	1800	1600	1600	1100	900
68°	1500	1400	1300	1300	1000	700
66°	1100	1000	900	1000	900	600
64°	900	800	700	800	700	450
62°	700	600	500	600	500	350
60°	500	400	300	400	300	200
Parts of line	1					
Hook	5t					

Lifting Height Curve



Configuration information

Superstructure

Turntable structure

It is made of high-strength steel plate and is designed with the large box structure at the bottom,improving the rigidity by 20%. The rear-mounted luffing hinge point improves the lifting stability under the same weight by 15%;the slewing ring with large ball and wide track brings high anti-tipping performance and better slewing stability.

Hydraulic system

The gear pump,valve post-compensation technologyand pressure measuring exhaust joint at the hydraulic system characteristic point improve the product operation,maintenance and repair performance.

Control system

The superstructure actions (main/auxiliary lifting,luffing,slewing and boom extending) are controlled through two hydraulic pilot handles in the operator's cab,and the engine speed through the accelerator pedal.

Lifting system

The automatic variable winch motor is equipped to drive the winch reducer with double folded rope groove and provide the lifting power. The normally closed winch brake and the original imported winch balance valve can prevent the weight loss of the falling hook.

Luffing system

The deadweight descending luffing system and original imported self-compensating luffing balance valve are applied to regulate the luffing speed,improving stability of the descending.

Slewing system

Axial fixed displacement piston motor drives the slewing reducer,and the unique slewing buffer design achieves more stable braking.

Operator's cab

It features a widened internal space,safety glass and anti-corrosive steel plates,fully covered soft interior trims,panoramic sunroof,adjustable seats and other user-friendly designs,as well as the winch monitor and other devices for easier observation and operation. The 7-inch touch display achieves the organic combination of the console with operation display system so that the data of all the lifting conditions can be know intuitively.

Safety devices

Safety devices available for this model include the high-precision torque limiter,length and angle sensors,height limiter,three-wrap rope protector,hydraulic overflow valve and balance valve,outrigger two-way hydraulic lock,and leveling gauge of well-known brands.

Boom system

The five-section boom of U-shaped section is a welding structure from high-strength steel plate,with the basic boom length of 11.7m and fully extended boom length of 45m,and is configured with double cylinder + wire rope telescoping mechanism. The jib is 9m/16m long,with one section in truss structure and another section in box variable cross section structure,and having a mounting offset of 0,15 or 30° .

Counterweight

The fixed counterweight is 3.3t and the movable counterweight is 3.3t,with a total weight of 6.6t.

Configuration information

Lower structure

Cab

The panoramic cab features wide space and vision,and fully covered soft interior trims,bringing high grade appearance and environmental protection. In the cab,A/C,radio and USB interface are equipped as standard. The instrument panels or the rocker switches in the cab and operator's cab are arranged according to the service frequency to make the operator feel more comfortable and convenient;the driver's seat of air suspension type can slide forwards and backwards and its angle can be changed,thus effectively reducing driver fatigue. The foldable sleeper design brings spacious,comfortable and practical effects.

Chassis

The self-made four-axle chassis of 8×4×4 type is applied,and it is configured with DCEC ISL9.5-340E51A engine,Fast 9-speed transmission,and Dajiang high-ratio axle.

Frame

The frame of high-strength thin-plate anti-torsion large box structure reduces the deadweight by 10% and improves the anti-torsion capability by 30%.

Outrigger

The H-type outrigger has 4 support points with a span of 5.75m×7.5m (longitudinal * transverse),making the operation easier and more stable;it is made of fine grain high-strength steel plate,with 1-grade and 2-grade outriggers capable of full hydraulic transversal extension/retract.

Electric system

It includes 2×12 V maintenance-free battery and the mechanical main power switch for manually cutting off the crane power supply.

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