Highlight of XGP45 Pipelayer

1. Wide construction range

XGP45 standard configuration has a 7.6m long main boom, its lifting performance is equivalent to other brands, the length of main boom is 10% longer than other brands, this provide users with more choices.

2. Excellent and strong power configuration

Equipped with 179kW Chongqing Cummins engine, in compliance with "GB III" emission standard, high performance, and with a turbocharger; work properly even at an altitude of 3000 meters plateau. Equipped with cold start function, when the ambient environment temperature is below -20 ℃, the controller starts preheating program, preheat circulating water, to achieve the normal start of engine.

3. Dedicated chassis, high reliability and good stability

The use of hydraulic mechanical transmission is with high efficiency, smooth travelling, no impact, strong drive force and grade-ability. Chassis is in rigid connection with good stability and high reliability.

4. Strong braking function

When the pipelayer is with heavy load on a slope, due to heavy deadweight, is it easily for the vehicle to go forward because of brake failure. In order to prevent such accidents, a strong braking function is added. The specific structure is to install a hydraulic parking brake cylinder at the rear part of the rear axle box of the pipelayer chassis. The pressure maintaining circuit, which is composed of a hydraulic accumulator and an electromagnetic reversing valve, is used to provide constant power for brake cylinder.

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5. Quick release function

Hoist mechanism has quick release clutch, when the machine is in danger of tipping over, press the quick release switch, the hoist mechanism will release the clutch in order to lower the hook quickly, so as to prevent the occurrence of machine overturning.

6. Hydraulic pilot proportional control system

With the use of advanced hydraulic proportional control technology, the operator can control the direction and speed of the movement of each actuator by operating the hydraulic control handle; it is light, flexible, step-less adjustable speed, and good fine motion ability.

7. High security

Configured Wika load moment indicator system to fully monitor and display the lifting conditions, there is boom over-hoisted inspection to prevent main boom from the maximum working angle; there equipped with a counterweight in-place detector to lift load after counterweight is in place; there also is a height limit detector to prevent the lifting mechanism being over-hoisted.

XGP45 Crawler Pipelayer Technical Specification

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Crawler pipelayer model: XGP45

Max. lifting capacity: 45 t

Rated lifting capacity: 38.3 t

I. Main Parts and System Description

1. Chassis

Crane chassis consists of track frame, car-body, power system, travel drive system, operator's cab and travel control system. The track frame, which includes track shoe, upper roller, lower roller, guide roller and drive sprocket, is rigidly connected to car-body by bolts. The crawler track center distance is 2250mm, crawler track ground length is 3050mm. Chongqing Cummins engine is adopted for the drive system, rated power 179kV, rated speed 2000r/min, with strong power. The engine is equipped with cold start function to ensure that it can be started normally at low temperature. On the basis of the integrated hydraulic transmission of engine, torque convertor and gear box, the drive system is able to realize the chassis movements such as travel forward, travel backward, turning around and etc.. The transmission system also has strong brake function which can prevent slipping effectively when the pipelayer is travel on slope.

2. Hoist mechanism

Hoist mechanism is made up of hoister, drive motor, brake, hook quick release clutch, etc. The hoister drum is driven by hydraulic motor through planetary reducer so as to realize the hoisting and lowering of hook block. Except for the normal lifting function, the hoist unit is also equipped with hook quick release function. Constant closed brake is installed on reducer input end to ensure the safety and reliability of hoist mechanism.

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Single line speed: 0～48m/min

Max. single line pull: 7.5t.

3. Luffing mechanism

Luffing mechanism is composed of hoister and luffing motor. The hoister is planetary gear reducer with high safety coefficient and high machinery efficiency. The hoister is driven by hydraulic motor to realzie boom luffing.

Single line speed: 0～60m/min.

Max. single line pull: 6t.

4. Boom

Boom is A-frame structure with two limbs, strenghened transverse beam is set between the two limbs to ensure good stability. Boom is welded by high quality square steel with less manufacturing defect and high safety coefficient. Boom raising and lowering can be realized under the function of luffing mechanism.

5. Electrical control system

Display, load moment limiter, angle sensor, pin shaft sensor, height limiter and over-hoisted proximity switch are combined together to monitor the overall safety performance and indicate the real-time working state.

Integrated circuit composed monitoring device can not only provide real-time monitoring for parameters such as engine water temperature, engine oil pressure, engine revolution speed, working hours, but also the overall working state, such as boom over-hoisted parameter, alarming will be given by indicator lamp and buzzer.

6. Hydraulic system

Hydraulic proportional pilot control, with accurate control, good fine motion performance and wide range of speed adjustment.

The adopted hydraulic components are mature and relaible, the hydraulic transmission control technique is mature and stable. It is easy to operate and convinient to maintain and repair. The hydraulic system is coordinated with electrical system to ensure basic machine safety and stability.

7. Counterweight

Counterweight consists of counterweight bracket, counterweight slab and drive cylinder. The counterweight bracket is outward swing type four-bar linkage. Counterweight telescoping is driven by hydraulic cylinder. The overall structure of counterweight is mature and reliable.

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Counterweight adopts the form of four-bar linkage, swing upward and downward, easy to operate with smooth and reliable movement. The swing counterweight system is driven by cylinder to realize its extension and retraction.

8. Left/right installation strut

Left and right installation struts are key load bearing structural components to connect superstructure and chassis. Main load bearing structures is with flat-plate box type structure welded by steel plate. Boom, hoist mechanism, luffing mechanism and counterweight are all arranged on these structures; Left and right struts have the features of reasonable structure, good overall rigidity and high strength, they can be disassembled for transport.

9. Hook block

Hook name	Lifting hook block
Weight(t)	0.46
Sheave quantity	4
Max. parts of line for rope reeving	8

10. Wire rope

Rope name	Hoist wire rope	Luffing wire rope
Model	Φ22 -35W×K7-IWR-1870	φ22 -8×K31WS+IWRC-1770
Length	105m	75m

II. Safety Protection Devices

1. Emergency stop button

After this switch is pressed down, engine is stopped, no hoist and luffing movements.

2. Boom over-hoisted detection switch

This switch is used to detect whether boom is over hoisted. When the detected boom angle is bigger than the max. permissible value, sound alarming will be given and red indication will be shown on the display, at this time, luffing mechanism unloading is required and boom raising is stopped.

3. Sound and light warning lamp

The lamp is blinking while engine is working; sound alarming will be given when travel or slewing movement is being carried out.

4. Illuminator lamp

Low beam light, adjustable high beam light are equipped in front of driver's cab, illumination light and night illunination light are equipped in the cab, front and rear illuminatiion lights are installed on cab roof to improve visibility and safety during night working.

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III. Main Parts List

No.	Parts name			Model	Parameter	Qty.	Manufacturer
1	Engine system	Engine		QSNT-C240	Rated power/speed: 179KW/2000rpm	1	Cummins, Chongqing
2	Hydraulic system	Hoist system	Drum		Diameter: 380 mm		With hoist mechanism
			Motor	INM5-1800D4801011	Pressure:20MPa Displacement:1800ml/r	1	With hoist mechanism
			Reducer	J004791	Single line pull:75kN	1	Yining, Ningbo
		Luffing system	Drum		Diameter:360 mm	1	With luffing mechanism
			Motor	INM3-1000D1201011	Pressure:20MPa Displacement:1000ml/r	1	With hoist mechanism
			Reducer	J004791	Single line pull:60kN	1	Yining, Ningbo
		Pump group	Main pump	GPL5160-K1008-116L	Pressure:16MPa Displacement:2×100ml/r	1	Changjiang Hydraulic
		Valve group	Main valve	HD-5MWV18-2X/Y003	Pressure:16Mpa Flow rate:280L/min	1	Huade Hydraulic
			Control valve	HD-SPV7008-1X	Pressure:3Mpa Flow rate:20L/min	1	Huade Hydraulic
		Pilot valve	Hoist/luffing lever	M06-002802	Pressure:10MPa Flow rate:16L/min	1	Yite, Nanjing
			Counterweight luffing lever	1-2TH6L70-10/M01	Pressure:10MPa Flow rate:16L/min	1	Yite, Nanjing
3	Electronic control system	Proximity switch				2	Wika, Xuzhou
		Display				1	Wika, Xuzhou
		Pin shaft sensor				1	Wika, Xuzhou
4	A/C system	Air conditioner				1	With chassis
5	Operator's cab	Seat				1	With chassis
		Cab structure					With chassis
6	Wire rope	Hoist（φ22mm）		Φ22 -35W×K7-IWR-1870	105m	1	Baosteel, Xianyang
		Luffing（φ22mm）		φ22 -8×K31WS+IWRC-1770	75m	1	Baosteel, Xianyang

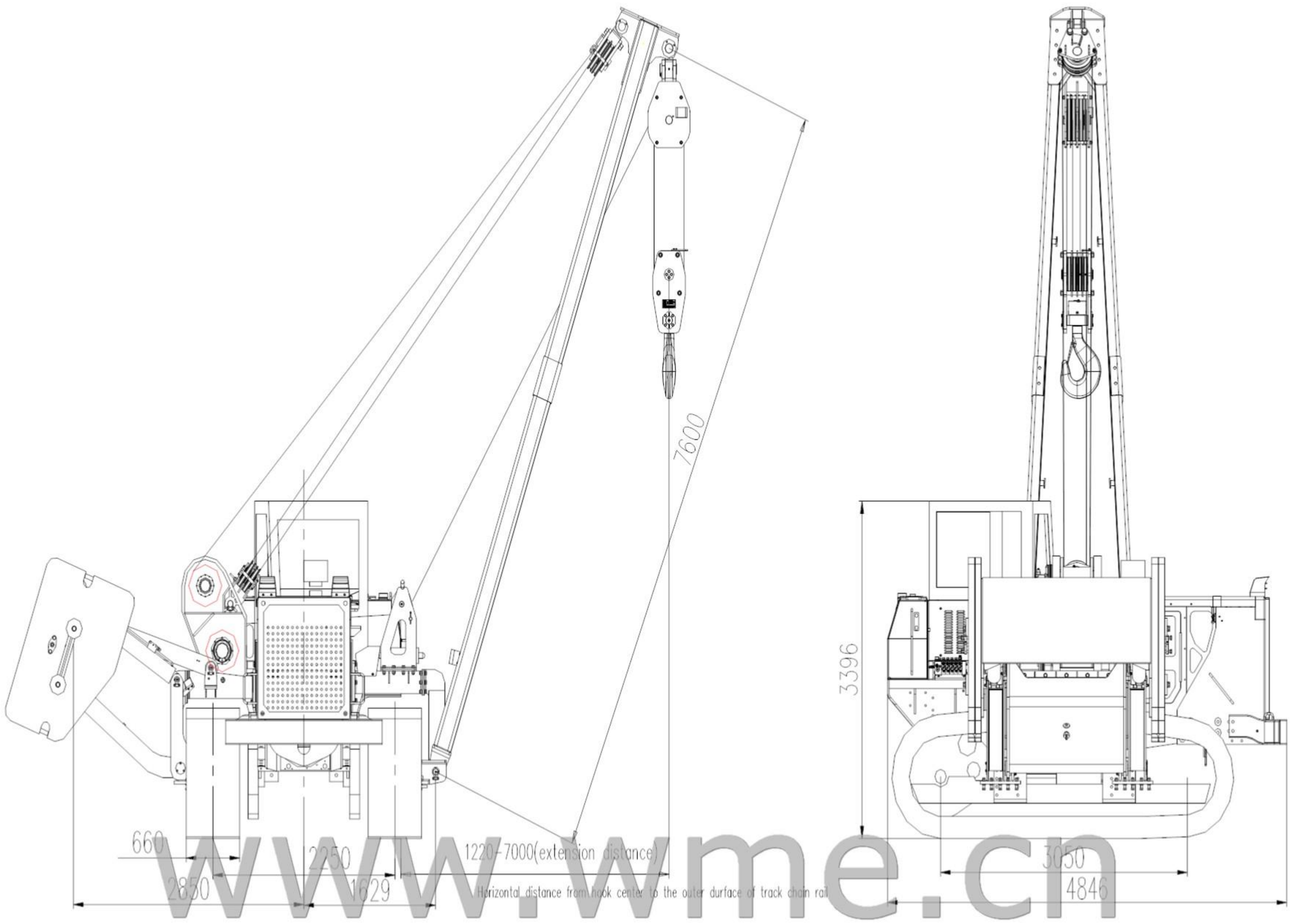
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7	Hook block	90t hook			1	Hongruida, Shandong
8	Crawler travel unit	Drive sprocket			2	With chassis
		Guide roller			2	
		Upper roller assy.			4	
		Lower roller			16	
		Track shoe			82	

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IV. Main Technical Specifications

1. XGP45 Crawler Pipelayer Outline Dimensions



Pipelayer outline dimensions

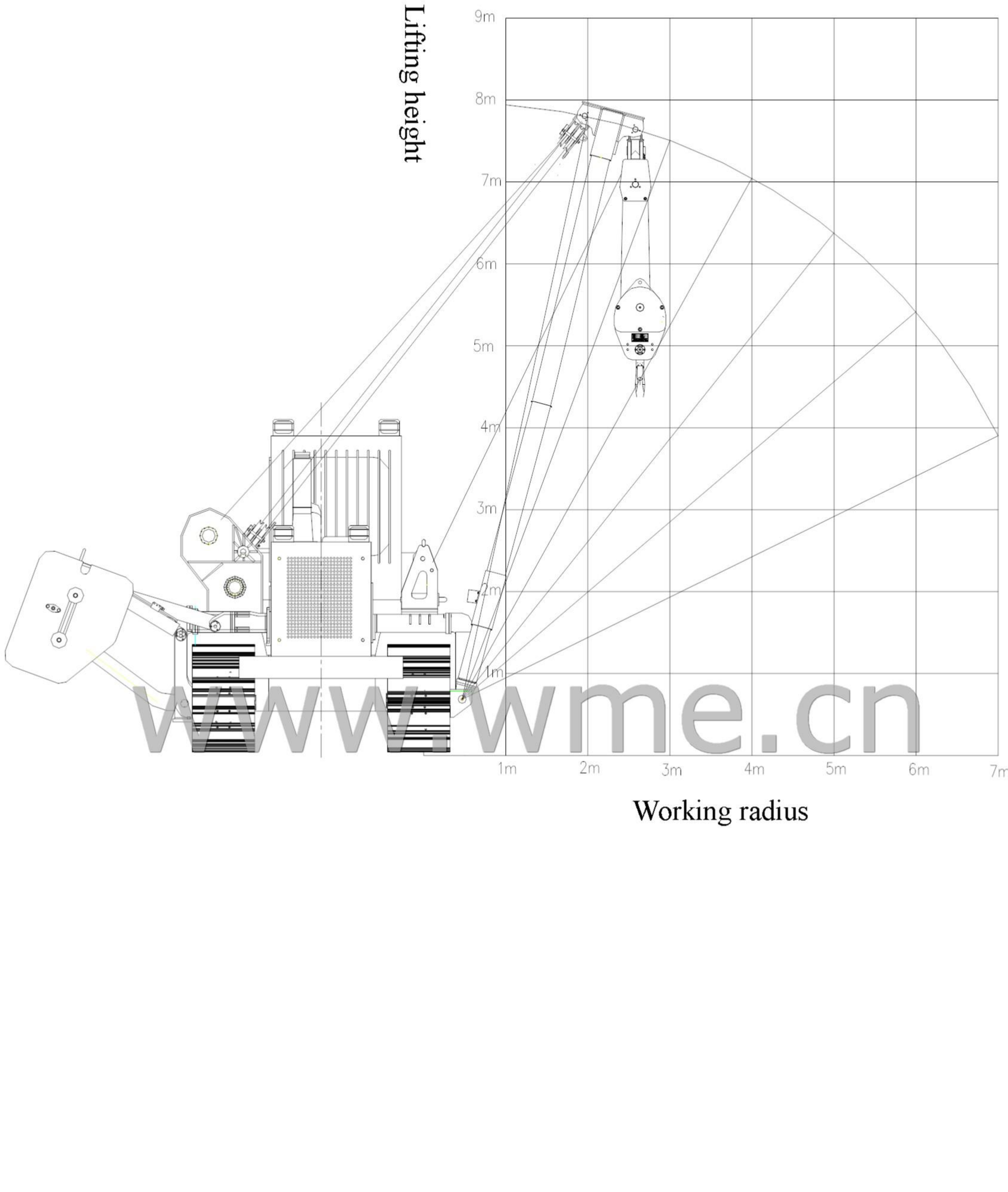
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2. XGP45 Crawler Pipelayer Main Technical Parameters

Item		Unit	Data
Max. lifting capacity		t	45
Rated lifting capacity		t	38.3
Total mass（approx.）		t	35
Dimension of basic machine in transport state (L×W×H) mm		mm	4846×3400×3396
Mass of basic machine in transport state		t	27
Mean ground pressure		MPa	0.09
Min. ground clearance		mm	405
Max. grade-ability		°	20
Engine	Model		Cummins QSNT-C240
	Rated power	kW	179
	Rated speed	rpm	2000
Travel system	Operation method		Control lever
	Forward（2gear）	km/h	3.8/6.8
	Backward（2 gear）	km/h	4.9/8.2
	Crawler track ground length	mm	3050
	Crawler track center distance	mm	2250
	Crawler track width	mm	660
	Lower roller quantity		8×2
Lifting system	Luffing form		Wire rope luffing
	Operation method		Hydraulic control lever
	Boom length	mm	7600
	Boom luffing angle	°	0～84
	Hook block speed(8 parts of line)	m/min	0～6

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3. Working range



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4. Load Chart

Table 2-5 Boom lifting capacity unit: t

Working radius（m）	Rated lifting load(t)	Max. lifting load(t)	Lifting height(m)
1.2	38.3	45	7.4
2	22.5	26.5	7.2
2.5	17.7	20.8	7.1
3	14.6	17.2	6.9
3.5	12.5	14.7	6.7
4	10.8	12.7	6.5
4.5	9.5	11.2	6.2
5	8.5	10.0	5.8
5.5	7.6	8.9	5.4
6	7.0	8.2	4.9
6.5	6.4	7.5	4.3
7	5.8	6.8	3.5

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Note:

1.The value shown in the load chart refers to the lifting capacity when the pipelayer is set on firm and flat ground with gradient ≤ 1°.

2. The lifting capacity listed in the load chart includes the weight of fixed pulley block(420kg), hook block (460kg) , slings and riggings.

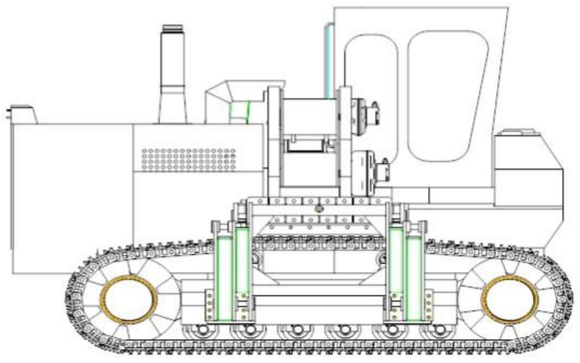
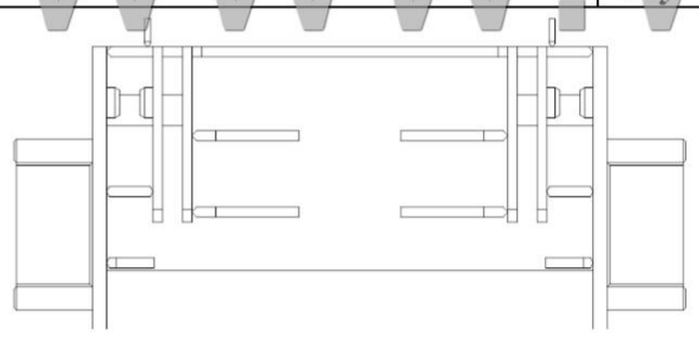
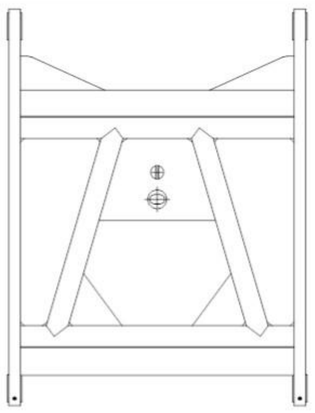
3. The working radius in load chart refers to the horizontal distance between hook block center and the outer surface of crawler track chain at boom lateral side.

4. The lifting height in this load chart refers to the distance between boom fixed pulley center and the ground.

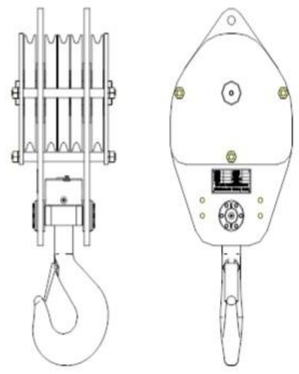
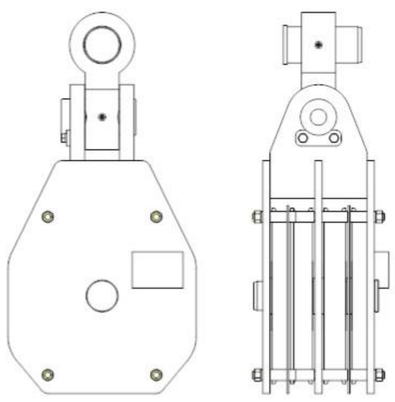
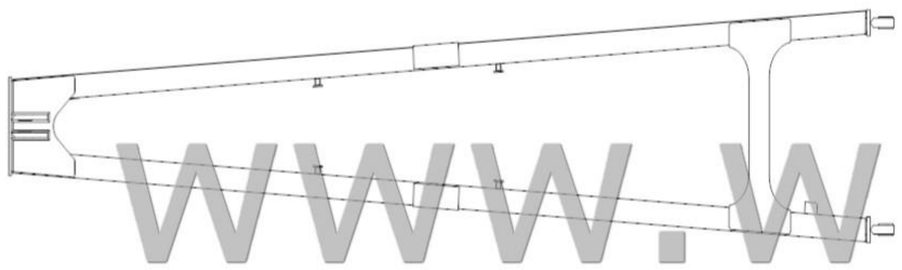
5. The max. lifing load in this chart refers to the tipping load, 85% of the tipping load is the rated lifing capacity, and 70% of the tipping load is the travel load, the travel load is no more than 10t.

V. transport list and transport plan

1. Overall pipe-layer weight is about (including optional parts) 35t, separate components weight and size are as in the table below:

No.	Components name and figure			L (m)	W (m)	H (m)	W (t)	Remark
1	Transport plan 1	Quantity	1	4.85	3.40	3.39	27	Including left and right crawler tracks, luffing pulley block, left and right connection strut, hydraulic oil about 400L,fuel oil about 50L
								
2	Counterweight block	Quantity	2	1.68	1.15	0.16	2.0	
								
3	Counterweight installation strut	Quantity	1	2.43	1.29	1.05	1.85	
								
4	Counterweight luffing device	Quantity	1	2.056	1.51	0.36	0.42	
								
5	Counterweight pendant	Quantity	2	1.45	0.18	0.05	0.06	
								

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No.	Components name and figure			L (m)	W (m)	H (m)	W (t)	Remark
6	Hook	Quantity	1	0.48	0.40	1.25	0.46	
								
7	Fixed pulley block	Quantity	1	0.4	0.41	0.95	0.42	
								
8	Main boom	Quantity	1	7.84	1.56	0.81	1.25	
								

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Notes:

(1) The above parts and components transport dimensions as a schematic, not according to the ratio of the drawing, the size is the design value, not including packaging.

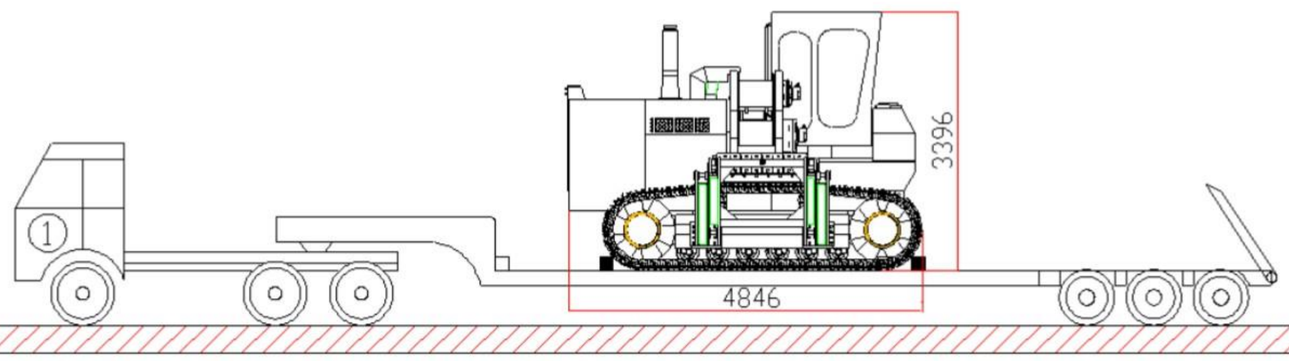
(2) The weight is the design value, which may be slightly different due to manufacturing error.

2. Overall pipe-layer transport plan

Transport plan

1: main body 1 pc, about 27t ;
Note: The front and back of crawler tracks must be added with pad wood to prevent sliding durong transportation.

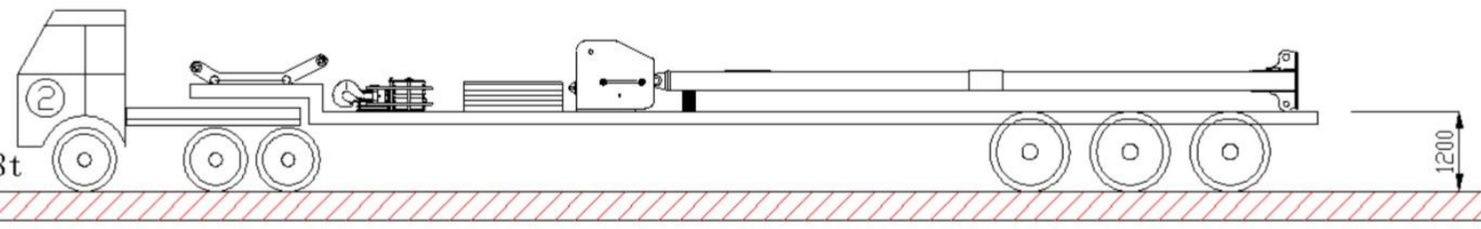
(1)



Load weight: 27t

1: counterweight assembly (with 1 counterweight strut, 2 counterweight blocks, 1 counterweight frame) , about 6.5 t;
2: main boom (with 1 boom head single pulley) , about 1.25t;
4: Hook block: 90t hook block, about 0.45t;
Note: Boom and hook must be seperated by pad wood to prevent sliding.

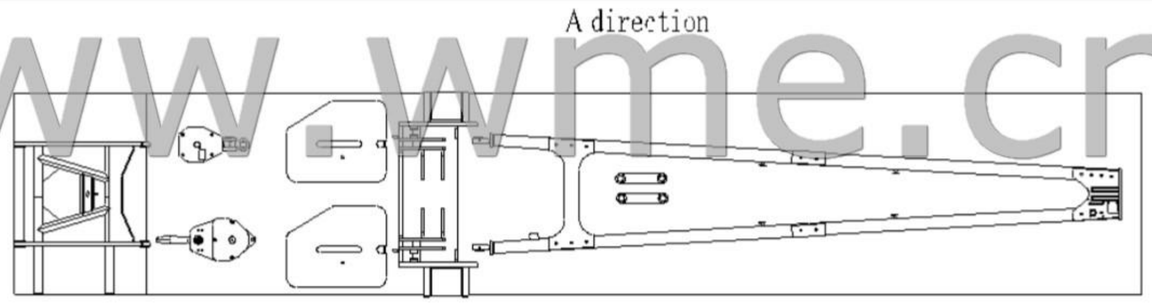
(2)



Load weight: 8t

(II)

Arrangement

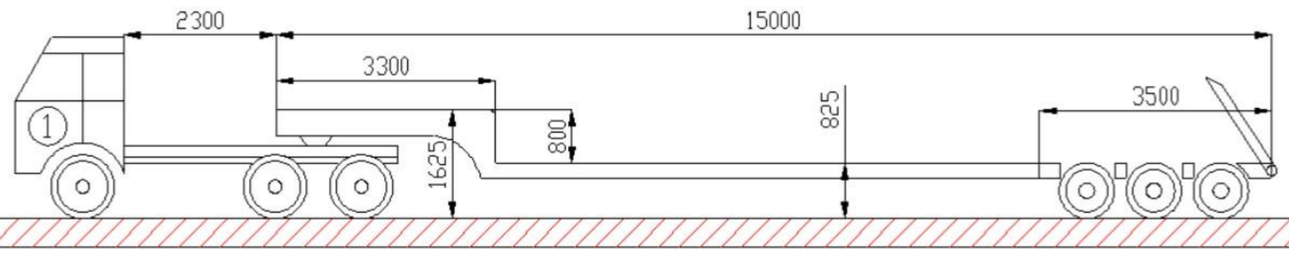


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Transport vehicle

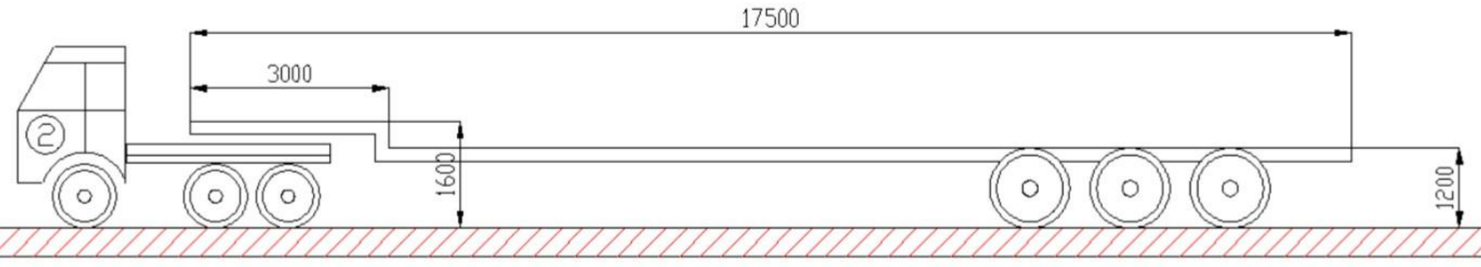
Trailer with goose neck length: 15000 mm width:3200 mm Trailer height from the ground: 825mm Rated weight (T) 35

(一)



15m trailer length: 15000 mm width:3000 mm Trailer height from the ground: 1200mm Rated weight (T) 35

(二)



3. Small parts transported in box

No.	SAP	Name	Quantity	Remark
1	183100082	Pin shaft	2	Counterweight part
2	183100083	Pin shaft	2	
3	183100084	Baffle ring	4	
4	183100085	Baffle plate	4	
5	805046892	Bolt M10×45	8	
6	805048158	Bolt M24×70	4	
7	805048275	Bolt M30×90	4	
8	805338260	Washer 10	8	
9	805338445	Washer 30	4	
10	805338390	Washer 30	4	
11	183100077	Compact structure	2	
12	803685848	A2B-Z hoisted height limit	2	Small parts for electrical installation
13	803685838	Chain for new hammer, used for height limit	4	
14	183100037	Spiral cable assembly	2	
15	801336382	GB/T5973-2006 wedge 22	1	Assembly of main hoist rope wedge
16	801336377	GB/T5976-2006 Rope clip 22KTH left	2	
17		Chassis random wooden box	2	Supplied tool, supplied spare parts, instruction manual,etc.

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The transport plan is suitable for full working conditions, the size in the figure are design dimensions, if there is any deviation, please take the actual as standard, for reference purposes only!

If the "optional" parts are not purchased by the user, all parts marked "optional" should be removed from the transport plan.

VI. Free supplied tool list

No.	SAP	Name and specification	Quantity	Remark
1	840500695	Inner-hexagonal spanner 3	1	
2	840500002	Inner-hexagonal spanner 4	1	
3	840500035	Inner-hexagonal spanner 5	1	
4	840500036	Inner-hexagonal spanner 6	1	
5	840500037	Inner-hexagonal spanner 8	1	
6	840500027	Inner-hexagonal spanner 10	1	
7	840500028	Inner-hexagonal spanner 12	1	
8	840500029	Inner-hexagonal spanner 14	1	
9	840500030	Inner-hexagonal spanner 17	1	
10	840500031	Inner-hexagonal spanner 19	1	
11	840500032	Inner-hexagonal spanner 22	1	
12	840500003	Double-end spanner 22-24	1	
13	801535364	Double-end spanner 27-30	1	
14	840500041	Double-end spanner 32-36	1	
15	840500042	Double-end spanner 41-46	1	
16	840500087	Adjustable spanner 150×19	1	
17	840500256	Adjustable spanner 300	1	
18	801100667	Pressure testing device	1	
19	803109539	Pressure testing device	1	
20	801500365	Hammer 8P	1	
21	840700145	Flat belt 3t×8m	2	
22	840500065	Double-end spanner 50×55	1	
23	803500007	24V working lamp assy.	1	
24	819900454	First-aid box	1	AK-120
25	819900607	Information lever bag	1	

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VII. Free supplied spare parts

No.	SAP	Name and specification	Quantity	Remark
1	171401228	ED sealing bag	1	
2	171401386	Flange sealing bag	1	
3	141701227	O-ring sealing	1	
4	803192492	O-ring sealing 180×4	1	
5	801138508	O-ring sealing 192×4	1	
6	803602758	Fuse 20A	3	SI-FORM-C 20A
7	805140648	Screw M16	2	GB/825-1988
8	803611413	Relay	1	HFV4/0241Z4SGD2

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