
HB37A Truck-Mounted Concrete Pump



HB37A is the new type truck-mounted concrete pump developed independently by our company with independent intellectual property rights, and has the “Environmental, Safe, Reliable and Advanced” quality to keep ahead of domestic same industry and keep pace with international advanced technology.

The carrier is CYZ51Q chassis from Isuzu, Japan, comply with Euro III emission control regulations, powerful output and torque, high efficiency and energy saving, and strong off-road ability.

Advanced and reliable structural design and manufacture technology, with the aid of FEM calculation and analysis for optimized structure, the stress distribution is more reasonable, avoid concentrative stress and improve fatigue resistance; use of the technology of power stimulation and mould analysis, the placing boom is calculated for force and mould under various possible working conditions, efficiently reduce the vibration of placing boom operation. Through improvement of techniques and inspection method, each important weld is ensured for 100% qualified; use of after-welding heat-treatment, the welding stress of important structural parts is eliminated so as to guarantee the structure durable and reliable.

Selection of international famous brand product for key parts and components (refer to the main parts list for detail), with reliable quality, long service life and low cost for later user maintenance. Application of modern pump vehicle advanced technologies such as engine energy-saving, fault self diagnosis and intelligent tipping prevention, greatly improve operation safety and reliability, as well as the convenience for customer operation and maintenance.

I. Parts and System

1. Carrier

The carrier is original CYZ51Q chassis imported from Isuzu, Japan, comply with Euro III emission control regulations, designed in accordance with heavy duty chassis, and suitable for tough road conditions on China construction site.

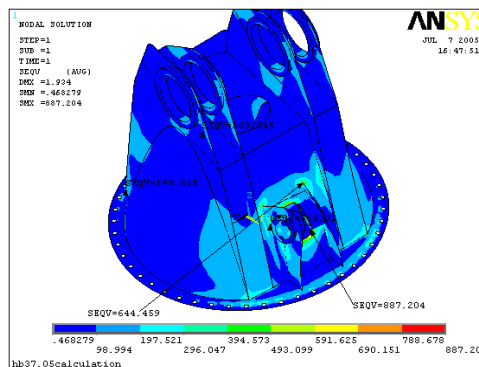
2. Structural Part

2.1 Placing boom

The placing boom design is optimized to realize highest level filling and highest efficient working, with reasonable distribution of load and space on each boom section; under the precondition to ensure boom overall length, the long initial boom length and short end boom length is realized, which makes compact boom structure, little vibration, flexible operation and wide material placing range. The boom can easily and quickly reach work position for quick location and flexible material placing.

2.2 Turntable

The turntable is board frame box type structure, the upper is connected with placing boom, through slewing ring connected with slewing basement, and may 370° swing operation.



2.3 Swivel base

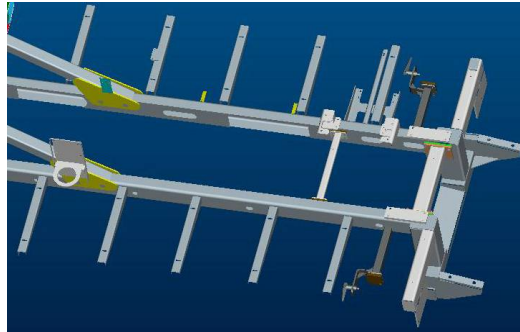
The swivel base is board frame box type structure, the upper connected with slewing ring

and the lower connected with sub-frame; the cavity has built-in hydraulic oil tank; the outrigger and extension cylinder articulated on the swing base.

2.4 Outrigger

The front outrigger is forward folding and telescoping, the rear outrigger is folding, the cross-section is box type with reinforced structure, has built-in water tank.

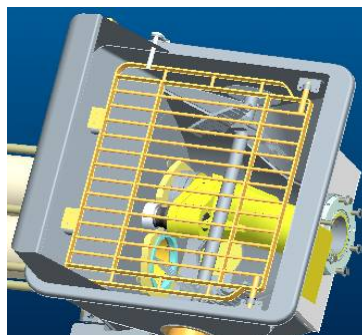
2.5 Sub-frame



The sub-frame rear section has catwalks, the middle connected with central pump water tank, the rear connected with central pump hopper and upper/lower and left/right pedals; the main frame and sub-frame connected by connection part, the connection part welded with the sub-frame, and connected with the main frame by high-strength bolt; the sub-frame divided into front and rear two sections, the middle interval part for hydraulic piping.

2.6 Hopper

The hopper is new type hopper, with large pipe and large passing, considerably reduce pumping resistance, and increase suction sufficiency and absorption efficiency.



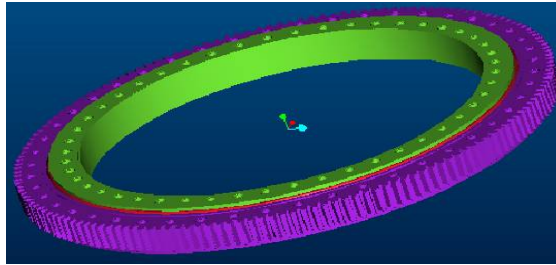
2.7 Delivery pipe

The delivery pipe is passageway for concrete pumping, use of casted high wear-resistance material, with high-frequency quenched inside surface, has a service life of 30,000m³.

3. Swing System

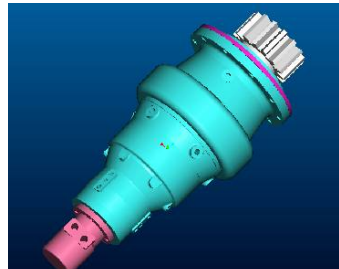
3.1 Slewing ring

The slewing ring is single-row cross roller external tooth meshed slewing ring, made by Xuzhou Rothe Erde, may 360° continues swing, the roller track is waterproof and dustproof.



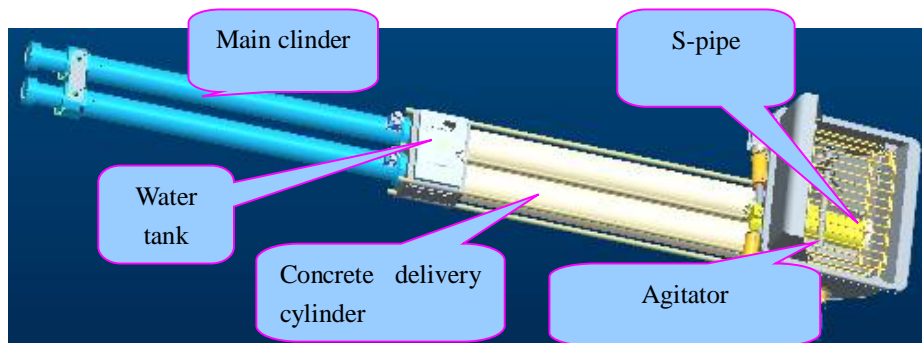
3.2 Slewing reducer

The slewing reducer is made by Italian Bonfiglioli company, with 1st fixed shaft + 2nd shaft planetary reduction, features of compact structure, heavy load bearing capacity and high power drive efficiency. The slewing bearing is reinforced and in dual series type in order to increase service life.



4. Central Pumping System

The central pumping system consists of pumping cylinder, water tank, concrete delivery cylinder and other parts. The pumping cylinder, water tank, concrete delivery cylinder, hopper are fixed together by lead-screw and connection bolt.



4.1 Main Cylinder

The main cylinder guide sleeve seal is designed with XCMG patented seal, easy for assembly and disassembly, the guide sleeve seal can be replaced without removing the main cylinder, reduced replacement time, and which is unique to the industry.

4.2 Water tank

The water tank is full of water during pumping work, and it is used to cool and lubricate the piston head; while the central pumping system is connected with the sub-frame through the water tank.

4.3 Concrete delivery cylinder

The concrete delivery cylinder is used to suck concrete from the hopper and then pump out to delivery pipe, and it has special treatment on inside surface for high wear-resistance.

4.4 S-pipe

The S-pipe is floating seal structure, can automatically compensate wearing clearance for long service life. The drive shaft uses high-strength alloy steel 38CrMoAl with nitriding treatment, optimized structure, dispersed stress and long service life. The S-pipe can be guaranteed for a service life of 100,000 m³.

4.5 Agitator

The agitator uses single side motor for drive, the motor installation and positioning is ensured by the machining tolerance of flange and shaft, not by the adjustment of assembly. In operation, when replacing blade, S-pipe and other components need removing motor, the motor is easy to be ensured for installation accuracy, avoid motor shaking and increase reliability for the work.

5. Hydraulic System

The main hydraulic oil pump and boom pump are imported from Rexroth, Germany, placing boom control valve, cylinder lock, high-pressure hose, hydraulic pipe fitting, solenoid valve, hydraulic valve, all use world-famous company's parts and components to ensure high reliability for our product.

The pumping hydraulic system is the latest closed constant power variable displacement system, less pressure loss, little heating, no impact to direction change and smooth operation. The high-pressure automatic unloading system, when the main pump oil pressure exceeds 35MPa, can automatically reduce pumping pilot pressure to 1MPa below and automatically stop pumping, reduce energy loss and system heating, while the pulse shocking pressure can effectively solve the pipe clogging.

The placing boom hydraulic system is variable displacement pump with electro-hydraulic proportional remote control for load sensing system. The use of pilot pressure-relief balance valve makes the operation of control lever more convenient, flexible, good fine motion, less power loss, and smooth work and little vibration for placing boom operation.

6. Electric System

The machine has a color screen, can dynamically display variable operating parameters and real-time record variable working history of each equipment, and has the function of fault warning and automatic cut-off.

The electric system is equipped with HBC remote control, easy for carrying and operation, integrated with multiple functions for realization of remote operation, increase convenience of operation, while with the industry's unique step-less remote control of pumping operation.

The system can realize automatic control of engine running speed and idle speed with energy-saving effect; and can realize automatic control of hydraulic oil temperature.

It is also equipped with GPS / GPRS for remote fault diagnosis and quick troubleshooting.

7. Centralized Lubrication System

The imported progressive lubrication system can give grease to each key lubrication point with point by point, by time and by quantity. The vehicle has a self maintenance mechanism for longer service life.

The lubrication point: S-pipe, agitator, delivery cylinder.

8. Cleaning System

The outrigger has a built-in water tank to avoid the lack of water on construction site; high-pressure water pump can facilitate after-work cleaning of pumping system, delivery pipe and overall vehicle.

9. Radiator System

The radiator is driven by hydraulic motor and has an automatic checking device; when the oil temperature reaches the system specified 55°C, the radiator motor starts running to reduce system oil temperature, so as to ensure the normal work of hydraulic system and increase the service life of hydraulic components.

II. Safety Protection System

1. Engine overload protection

The system has a power limit valve; when engine overload occurs, pump can automatically reduce delivery so as to avoid engine power loss.

2. Engine low speed protection

The system has no pumping function when engine speed is lower than 800rpm, so as to avoid engine running with load at low speed, and prolong engine service life.

3. Main pump overload protection

The system has a pressure cut-off valve; the system pressure will reach the highest when pump is clogged; at this time main pump flow will automatically return to zero to avoid overflow heat loss; engine in low load state and delivery pressure pulsation impact is easy to resolve pipe clogging; if it has no pressure cut-off valve, the engine will be in max. load status and even shutdown, so as to reduce the engine service life.

4. Hydraulic oil automatic cooling

When hydraulic oil temperature reaches 55°C, the oil radiator sensor automatically turns on the cooling fan to bring oil temperature down; when the system temperature reaches 90°C, pump delivery is stopped in order to protect system parts from damage.

5. Pump suction protection

When oil level is too low or filter is dirty, a vacuum meter will give warning to indicate oil refilling or filter element replacing, greatly reduce the possibility of pump suction, and increase the pump service life.

6. Agitator automatic reversion

During pumping work, if agitator blade is blocked by big stone, oil pressure goes up fast; at this time, the pressure relay switch sends a signal, the solenoid change valve has a direction change, and the agitator motor turns in reverse direction; after 1s~3s delay for the barrier taken off, the electro-magnet resets and the agitator motor turns in normal work, thus efficiently protect agitator motor and oil pump against damage.

7. Automatic centralized lubrication protection

The lubrication system can use thin hydraulic oil for lubrication when users forget to refill lubricating oil.

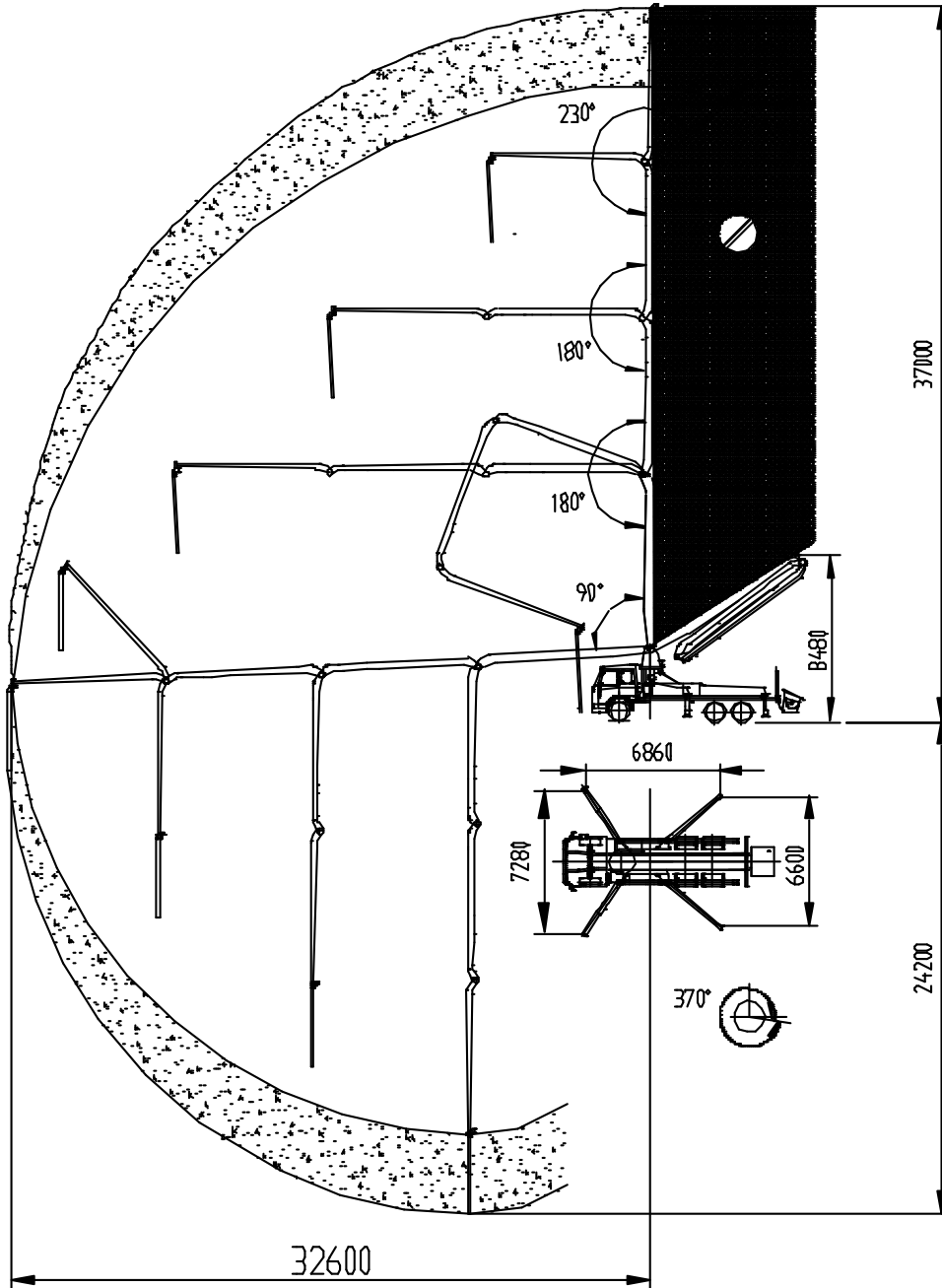
III. Main Technical Specifications

Category	Items	Unit	Parameter
Pumping system	Theoretical output	m ³ /h	138 / 90
	Rated working pressure	MPa	8.7/13
	Delivery cycles	cycle/min.	27/18
	Hoper capacity	L	600
	Concrete filling height	mm	1450
	Hydraulic system type		Closed type
	Distribution valve type		S-pipe
	Oil cylinder ID× Stroke	mm	Φ 140/2100
	Delivery cylinder ID× Stroke	mm	Φ 230/2100
	Hydraulic oil cooling		Fan cooling
	Concrete slump	cm	12~23
	Max. aggregate size	mm	40
	Spectacle plate service life	m ³	60000
	Cutting ring service life	m ³	40000
	Pump pipeline service life	m ³	30000 (end boom tube 10000~20000)
Placing boom	Max. reach height	m	37
	Max. reach radius	m	32.6
	Max. reach depth	m	24.2
	Slewing angle		370°
	Number of boom section		4
	Boom unfolding angle		90° / 180° / 180° / 230°
	Delivery pipe diameter	mm	125
	Delivery pipe wall thickness	mm	Upper 4.5, Lower 7
	End hose length	mm	3000
Chassis	Chassis model		CYZ51Q
	Wheelbase	mm	4595/1310
	Track (front/rear)	mm	2065/1850
	Tire	mm	295/80R22.5
	Engine model and manufacturer		6WF1A/Isuzu, Japan
	Engine max. output power	kW/(r/min.)	265/1800
	Engine max. torque	N.m/(r/min.)	1422/1100
	Engine max. displacement	mL	14256
	Fuel tank capacity	L	400
	Emission standard		Euro III

Subject to the update and modification of products by XCMG

	Total vehicle mass	kg	28400
	Braking distance		At initial speed 30km/h, ≤10m
	Total vehicle dimension (L× W× H)	mm	11990/2500/3900
	Outrigger		Front/rear dual slewing
Others	Lubrication		Automatic lubrication
	Hydraulic oil tank capacity		780
	Control type		Manual+Remote control
	Water pump max. pressure	MPa	2
	Water tank capacity	L	600
	Concrete pipe cleaning		Water cleaning/dry cleaning

IV. Placing boom operation area



V. Main Parts List

No.	Name	Model	Data	Qty.	Manufacturer
1	Placing boom			1	XCMG, BMC
2	Slewing basement			1	XCMG, BMC
3	Outrigger			1	XCMG, BMC
4	Turntable			1	XCMG, BMC
5	Slewing ring	011.35.1116.101.24.03D1		1	Xuzhou Rothe Erde
6	Slewing gear	309L3-100-HZ-4F-S5AP-0		1	Bonfiglioli, Italy
7	Chassis	CYZ51Q		1	Isuzu, Japan
8	Transfer case	4496.30		1	STIEBEL, Germany
9	Boom pump	A2F023/61L PAB05	23ml/r	1	Rexroth, Germany
10	Triple pump	A4VG180HD9MT1/32R-NSD02F021S-S	180ml/r 42MPa	1	Rexroth, Germany
11	Superstructure multi-way valve	PSL4...	40MPa	1	HAWE, Germany
12	Undercarriage multi-way valve	DL35-3-EGGGE-B/F2-2		1	HAWE, Germany
		DL31-3-EGGGE-B/E2-3-250	25MPa	1	
13	Cleaning water pump	BZ-320	20L/min 7MPa	1	Jiebao, Suzhou
14	Agitator motor	BM5-985K3AY	985ml/r	1	Zhongyi, Ningbo
15	High-pressure oil filter	SG150-G1	10μ		Helinde, Shanghai
16	Accumulator	SB330-10A1/112A-330A	10L 10MPa		Hydac, Germany
17	Radiator	BCFL53.10.76-00	53KW	1	Helinde, Shanghai
18	Lubrication system	RHX-B + WGQ-6A + RZ-4/0.08 + 8JPQC		1	Weidong
		53498-21+ M2500+RZ-4/0.08 + LS-02-106		1	BIJUR
		EP-S+MX-F4/8-8/6R(L)105/105 / 105/75+ BV4+ FAZ02706-01		1	BEKA
19	Display	ST064-A-C-Y-06	Color 6.4 inch	1	Palfin
20	Controller	TTC PC1000	9~32VDC IP67	1	TTC, Italy
21	Remote control device	FST727A		1	HBC, Germany

VI. Supplied Spare Parts List

No.	Name and Spec.	Qty.	Remarks
1	O ring 25 × 3.55G	2	GB/T3452.1-2005
2	O ring 37.5 × 2.65G	1	GB/T3452.1-2005
3	O ring 37.5 × 3.55G	4	GB/T3452.1-2005
4	O ring 40 × 2.65G	1	GB/T3452.1-2005
5	O ring 200 × 7.0G	3	GB/T3452.1-2005
6	O ring 258 × 7G	1	GB/T3452.1-2005
7	O ring 90 × 2.65G	2	GB/T3452.1-2005
8	O ring 100 × 5.3G	1	GB/T3452.1-2005
9	O ring 122 × 5.3G	1	GB/T3452.1-2005
10	O ring 47.5 × 3.55G	1	GB/T3452.1-2005
11	O ring 33.5 × 3.55G	1	GB/T3452.1-2005
12	O ring 236 × 5.3G	3	GB/T3452.1-2005
13	O ring 63 × 3.55G	2	GB/T3452.1-2005
14	O ring 12.5 × 2.65G	2	GB/T3452.1-2005
15	O ring 243 × 5.3G	1	GB/T3452.1-2005
16	Y type seal ring 220 × 240	3	
17	Support ring 0 × 225 × 24.5	1	
18	Dustproof ring A1M010P5008	1	Imported [America]
19	Y type seal ring 20 × 100 × 16	1	GB/T10708.1-2000
20	EF-109 Filter cartridge	1	
21	EF-108 Filter cartridge	3	
22	SG150-00-20 Filter cartridge	1	Imported
23	BO-ZR8L/S Connector fitting	2	Imported
24	BO-ZR10L/S Connector fitting	1	Imported
25	BO-ZR12L/S Connector fitting	4	Imported
26	BO-ZR12L Connector fitting	4	Imported
27	BO-ZR15L Connector fitting	4	Imported
28	BO-ZR18L Connector fitting	4	Imported
29	BO-ZR16S Connector fitting	4	Imported
30	BO-ZR20S Connector fitting	4	Imported
31	BO-ZR25S Connector fitting	2	
32	Rubber ring butyl rubber	2	
33	Floating ring	2	
34	Wear-resistance sleeve	1	
35	Φ150-Φ125 Tapered tube	1	
36	90° Bended tube	2	
37	36° Bended tube	1	
38	90° Bended tube	1	
39	90° Bended tube	1	

40	90° Bended tube	1	
41	90° Bended tube	1	
42	Φ 125 Pipe clamp (bolt)	2	
43	Φ 150 Pipe clamp (with seal ring)	1	
44	Φ 180 Pipe clamp	1	
45	Cleaning ball, foam rubber	1	
46	Access switch	2	
47	Relay	2	Imported
48	Fuse 10A 5*20	5	Imported
49	Fuse 20A 5*20	5	
50	Water pump supplied spare parts	1 set	Manufacturer supplied

VII. Supplied Tools List

No.	Name and Spec.	Qty.	Remarks
1	NST-402 tools kit (Pump track)	1	All the tools are packed in NST-402 tools kit (pump track).
2	Inner-hexagon spanner 2.5	1	
3	Inner-hexagon spanner 3	1	
4	Inner-hexagon spanner 4	1	
5	Inner-hexagon spanner 5	1	
6	Inner-hexagon spanner 6	1	
7	Inner-hexagon spanner 8	1	
8	Inner-hexagon spanner 10	1	
9	Inner-hexagon spanner 12	1	
10	Inner-hexagon spanner 14	1	
11	Double-end spanner 6 × 7	1	
12	Double-end spanner 8 × 10	1	
13	Double-end spanner 12 × 14	1	
14	Double-end spanner 13 × 15	1	
15	Double-end spanner 16 × 18	1	
16	Double-end spanner 17 × 19	1	
17	Double-end spanner 22 × 24	1	
18	Double-end spanner 27 × 30	1	
19	Double-end spanner 32 × 36	1	
20	Double-end spanner 41 × 46	1	
21	Double-end ring spanner 12 × 14	1	
22	Double-end ring spanner 17 × 19	1	
23	Cross-head screwdriver 100 × 6	1	
24	Plain-head screwdriver 100 × 6	1	
25	Square head hammer 0.5KG	1	
26	Wire pliers L=150	1	
27	Adjustable spanner 150 × 18	1	
28	Adjustable spanner 300 × 36	1	
29	Grease gun (lever type) 120CC	1	
30	Socket spanner Socket 10	1	
31	Socket spanner Socket 11	1	
32	Socket spanner Socket 12	1	
33	Socket spanner Socket 14	1	
34	Socket spanner Socket 17	1	
35	Socket spanner Socket 19	1	
36	Socket spanner Socket 22	1	
37	Socket spanner Socket 24	1	
38	Socket spanner Socket 27	1	
39	Socket spanner Socket 30	1	

40	Socket spanner Socket 32	1	
41	Ring ratchet spanner 10	1	
42	Sliding lever 10	1	All the tools are packed in NST-402 tools kit (pump track).
43	Quick crank 16-1/4	1	
44	Connection rod 5 inch	1	
45	Connection rod 10 inch	1	
46	Tire pressure gun GAS-1	1	
47	CQJ-BC Inflation tool	1	
48	Single-end spanner 65	1	
49	AK-120 First-aid kit	1	
50	Brush 3	1	
51	SJB-50 Manual greasing pump	1	For Weidong lubrication system
52	Manual greasing tool (803007351)	1	For BIJUR lubrication system
53	Quick connection fitting (21520150)	1	It is assembled with EP-1 electric pump for delivery (for BEKA lubrication system)
54	Grease filler (208103026)	1	For BEKA lubrication system
55	Chassis supplied tools	1	Attached chassis supplied tools list
56	Lever type information bag	1	

Note: Use SJB-50 manual greasing pump for Weidong lubrication system (803000602), use manual greasing tool (803007351) for BIJUR lubrication system, use grease filler (208103026) for BEKA lubrication system, select one of the three.

VIII. Packing List

No.	Name	Qty.	Package	Remarks
1	HB37A Truck-Mounted Concrete Pump	1	Nude packing	With 20 L fuel in fuel tank
2	HB37A Packing List	1		
3	HB37A Product Certificate	1		
4	HB37A Operation Manual	1		
5	HB37A Parts Catalogue	1		
6	HB37A Maintenance Manual	1		
7	HB37A Supplied Tools List	1		
8	HB37A Supplied Spare Parts List	1		
9	HB37A Supplied Tools	1	In iron case	
10	HB37A Supplied Spare Parts	1	In wood case	
11	Chassis Packing List and Specified Documents	1	Original package	
12	Reducer Packing List and Specified Documents	1	Original package	
13	Transfer Case Packing List and Specified Documents	1	Original package	
14	Lubrication System Packing List and Specified Documents	1	Original package	
15	Cleaning Water Pump Packing List and Specified Documents	set	1	Original package
16	Remote Control Operation Instructions, Product Certificate and Other Supplied Documents	set	1	Original package