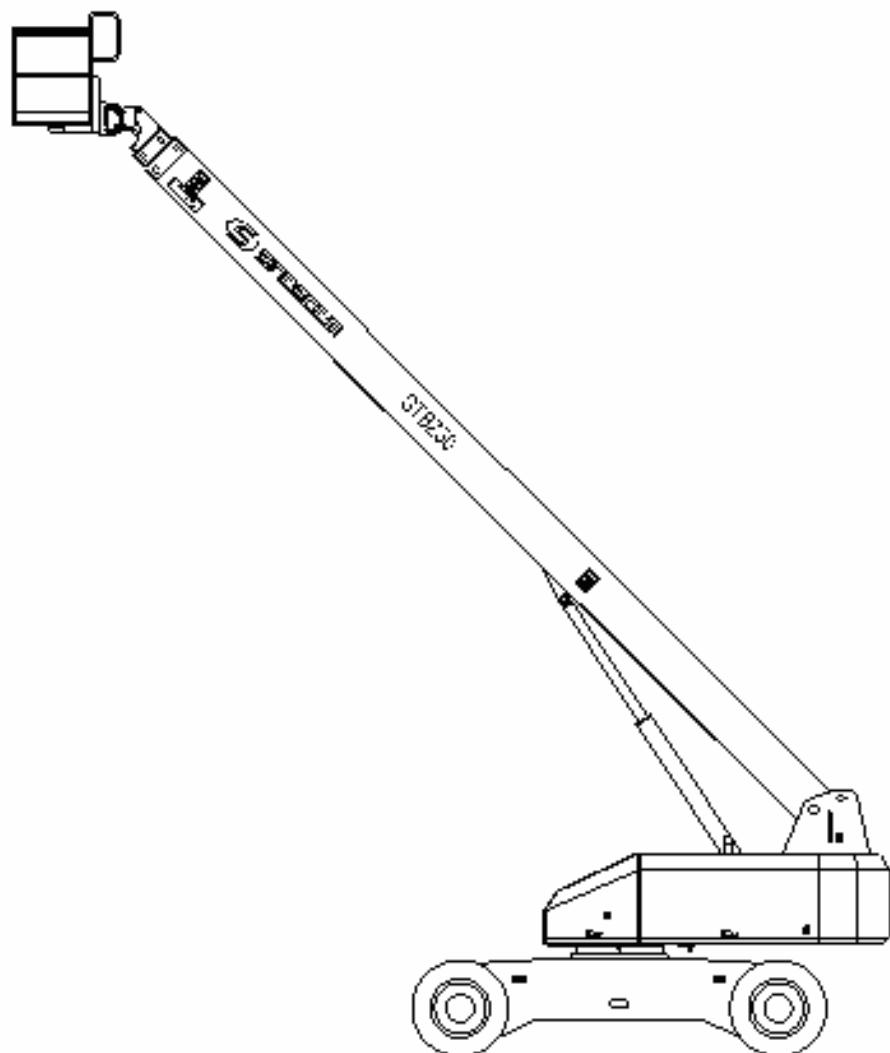




Hunan Sinoboom Heavy Industry Co., Ltd.

Technical Offer

GTBZ30



Edition: 2014.05.23

SINOBOOM Self-propelled Telescopic Boom Lift

(GTBZ30)

Detailed Technical Offer

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I. Company Profile

Founded on 28th Feb, 2008, Hunan SINOBOOM Heavy Industry Co., Ltd. is situated in Changsha, Hunan Province, China, known as the capital of engineering machinery in this country. This company is specialized in research, development, manufacturing, sale and service of aerial work equipment. There are four series of aerial work platforms, including self-propelled articulated boom lift /telescopic boom lift /scissor lift and spider lift, with working height from 6-44m. So far, the products have sold well all over China and the overseas market, e.g. Southeast Asia, Australia, Middle East, South America and Europe.

As a pioneer of aerial work platforms of China, the company owns the proprietary core technology and 30 items of intellectual property. Also SINOBOOM has come to be a member of IPAF (International Powered Access Federation) and China Engineering Machinery Association. In 2010, SINOBOOM was listed as one of key enterprises under four RMB100-billion industrial clusters (for equipment manufacturing) supported by the government. Meanwhile, SINOBOOM has passed the Australian ADR, European CE and Russian GOST.

Our products are widely used for ship building and repairing construction, civil engineering, electric power, communications, gardening, advertising, venues and stadiums, airport, harbor and various large factories and mines. It can satisfy the requirements of different customers in vary of industries.

Covering 200,000 m², Ninxiang County Jinzhou Industrial Park is an important carrier for SINOBOOM to develop further. The total investment in this program is approximately RMB 500,000,000. The area of Phase 1 is 66,667 m². The total building area is approximately 41,000 m², including 25,000 m² premises, e.g. Assembly Shop, Structure Shop, Coating Shop, Product Test Laboratory, Electric Laboratory, Hydraulic Laboratory, Office Building, Dormitory, etc. Phase 1 had been put into operation in April 2013. The production capacity will exceed RMB 500 million in value.

Vision decides height, height determines strength. With "Integrity brings business, Science makes progress", we are looking forward to cooperate with friends over the world.



II. Technical Specifications

GTBZ30 parameters

Item	Measurement
Productivity	
Max. Platform height	30.4M
Max. Working height	32.4M
Max. Horizontal reach	22.3M
Turning radius(inside/outside)	2.56M /5.57M
Turntable tail swing	1.82M
Turntable rotation	360°continuous
Platform rotation	160°
Grade ability	42% (4WD)
Platform Load capacity	340kg (non-restricted)
	480kg (restricted)
Driving Speed (stowed)	0~4.4km/h
Driving Speed (extended)	0~1.1km/h
Max allowable wind speed	12.5m/s
Max allowable slope	3°
Max noise on normal use	82dB(A)
Max allowable side force	400N
Dimensions	
Overall length(stowed)	13M
Overall width(stowed)	2.49M
Overall height(stowed)	3.08M
Ground clearance	0.43M
Wheelbase	3.66M
Platform Size (L*W*H)	1.45*0.85*1.24M
Overall weight	18760kg (4WD)
Tire specification	12.00-20/Solid
Hydraulic oil tank vol.	200L
Hydraulic system vol.	300L
Fuel tank vol.	200L
Control voltage	12VDC
Engine	Original Cummins
Drive & steer model	4WD*4WS
Covering Parts	Steel

Standard Configurations

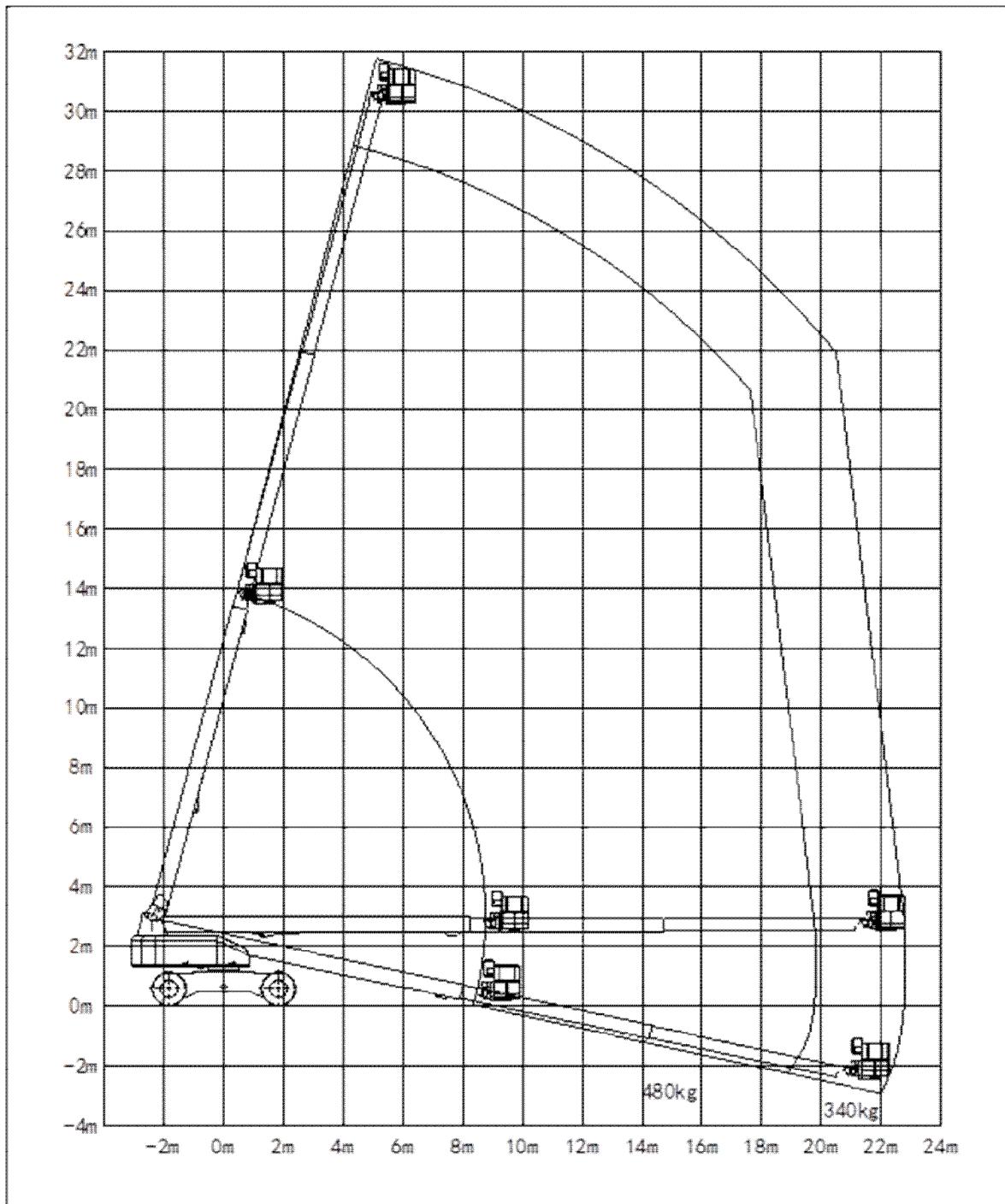
NO.	Items	Producer
1	Driving motor	Original Cummins
2	Turn table	SINOBOOM
3	Variable pump	Sauer-Danfoss(USA)/Rexroth(Germany)/EATON(USA)
4	Gear pump	Casappa(Italy)
5	Slewing reducer	Yiqun
6	Walking speed reducer	RR(Italy)/FAIRFIELD(USA)
7	Oil cylinder seals	PARKER(USA)/Busak Shamban(Germany)/NOK(Japan)
8	Oil cylinder	Chengdu Cylinder/SANY/Xiamen Yinhua
9	Balance valve	Oil control(Italy)/NEM(Italy)/SUN(USA)
10	Hydraulic valve	Oil control(Italy)/Hydraforce(USA)
11	Travel motor	Sauer-Danfoss(USA)
12	Swing motor	HELCA(USA)/Movece(Italy)
13	Rotary motor	White(USA)
14	Power unit	XQD-3.3H(HuaSheng)/GE5.5'(ChangQian)
15	Chassis	SINOBOOM
16	Boom	SINOBOOM HG70
17	Coupling	KTR(Germany)
18	Proportional control handle	Sauer-Danfoss(USA)
19	PLC programming controller	CYLINDRO(CHINA)
20	Leveling sensor	ZCT21B0J-LPS-A/IS1A45P20(GEMAC)
21	Air filter	Donaldson(USA)
22	Fault diagnosis system	SINOBOOM
23	Hydraulic hose	EATON(USA)
24	Hydraulic hose coupler	Chinese

Remark: The above configurations are subject to change without prior notice

Optional: (All “option” configure will be charged as per quotation)

- Working light
- 4WD
- Platform AC power
- oscillating axle
- Anti-collision device
- Hydraulic generator
- Engine Cold Boot
- Side door platform

Working Range Chart



III. Technical Features

Description of the major parts

1. Chassis

Four-wheel drive is standard configuration.

- | Max. driving speed is 4.4km/h
- | Max. Grade ability is 40%, machine could stop at the slope and restart.
- | Split-flow/collecting hydraulic control hauling system makes four-wheel drive realized, which will not allow the slip of a single wheel to lose power.
- | Min. ground clearance is as high as 42cm.

Four-wheel steering is standard configuration.

Four-wheel steering has four modes, including front-wheel steering, rear-wheel steering, crab-shaped steering, and four wheel steering. Multi steering modes make sure machine work flexibly in restricted conditions. Each displacement sensor at the top of king pin can dictate and automatically adjust each wheel and successfully separately control each wheel. The advantages of the system lie in the following aspects.

- 1) Steering mode switch is used in switching modes. Operator can select a steering mode when he demands steering, he can press a button for certain a mode, and at the same time, control system will automatically adjust positions of wheels in accord with the steering mode Operated selects. Therefore, if Operator previously select crab-shaped steering mode, but he thinks front-wheel steering might be more efficient and then he can select front-wheel steering mode, when Operator constantly drive, rear-wheel will be automatically back to the neutral position and locked on straight position. In the same situation, machine of other brands requires Operator's selection of rear-wheel steering mode and manually returning it to center and then switching off rear-wheel steering and getting rear-wheel locked. All in all, compared with other brands, SINOBOOM excels in selection of steering modes during driving, while other brands cannot.
- 2) Steering speed matched pattern. Control system can automatically analyze the current speed on basis of steering signal and select the suitable speed, reducing sustainability caused by steering switch.
- 3) Expandable axle. Axle control origins in control platform, when the machine drives as long as about one vehicle length, axle hydraulic cylinder will automatically expand and indicating light on platform control will alert.
 - | Stowed width is 2.49m, and extended width is 3.35m.
 - | Axle's extend is controlled by platform. Operator presses certain a functional button, the machine drives forward or backward about one vehicle length,

axle could extract or extend or stow or expand. Other brands adopt hydraulic leg fixed chassis; rely on axle's move or lower boom lever to approach ground. Lift up chassis then move axle.

- I When axle extension is not used, do not lift boom lever over horizontal plane or extent over 1.2m so as to keep safe.

Four-wheel brake is standard configuration.

Each four wheels are equipped with brake, which utilize automatic hydraulic neutral latch. Spring inflicts on brake; aerial work platform can stop on any slope within 42% gradient.

When hydraulic system appears emergent and needs get aerial work platform moving, it is easy to cut the connection reducer to let brake released.

2. Turn Table

The 360°continuous rotation is with two transport locking pin holes. (At the front/back of the chassis)

Engine——Cummins engine provides great power and has good exhaust emissions (Comply to EU standards).

Swing-out engine bracket——It's the best design for easier access to the engine, saving your time for maintenance. Just by removing a bolt, the engine can be turned out 40 degrees, and the whole engine with related parts could be reached much easier.

Dual-battery electrical system—— 2 pieces of 12 volts batteries separately installed and could be recharged through the generator in the engine.

One battery provides electric power for the engine start and auxiliary power. The other one is for the control system. If the electricity of the auxiliary power system is too low, the control system would not break off due to low voltage. The dual-battery recharging system ensures the batteries' normal usage.

The equipped ground control system which can be used for debugging, including function speed and function gradual rate.

The machine and related parts' adjusting are processed by the control system, the same all the valves and joystick's initial setting and debugging.

Safety circuit —— Two safety system are designed for safety purpose, once the boom exceeds the allowable range, the boom won't go down anymore or the engine would be stopped, the operator can get the boom into normal condition by auxiliary power.

3. Boom

Booms —— Adopts HG70 high-strength steel, the industry-leading horizontal outreach offers better versatility and practicability.

The booms' stretch are achieved by telescopic cylinder, extending/retracting wire rope, the fix end and pulley of the rope can be reached and maintained easily.

Telescopic cylinder and steel wire rope with pulley can be removed from the rear of the boom, which barely takes two hours, and no need to dismantle arm.

The derrick cylinder with buffer increases the operators' security and comfort. The derrick cylinder of the boom includes a buffer device, which will automatically slow down actions and stop smoothly when the boom is fully extended.

4. Platform and platform control system

- | Large steel platform
- | Heavy-load steel tube platform
- | 160° hydraulic rotating platform
- | The maximum load capacity as heavy as 480kg

All the main functions are controlled by the joystick —— Driving/Steering, booms' rising/lowering, extending/retracting, rotary table. The joystick is short and easy to operate.

All the secondary functions are controlled by the toggle switches —— The platform leveling and rotation.

All the buttons and switches of control system are water-proof, such as functions of steering, engine speed, engine start, auxiliary control, driving speed, horn and generator etc.

5. Safety device

Full-scale fader control system controls the driving, boom's rising/lowering, extending/retracting, rotary table, which makes the aerial working platform easy to locate and operate stably in tight space.

Driving verify system enhances the operator's alert and safety awareness. When the boom rotates over the non-steering wheel, the machine would not move when driving, meanwhile the indicator light of platform operation panel is on, it alarm the operator that the driving direction is just the opposite, the operator must press the alarm button to restore driving. This system makes sure the operators know the correct driving direction.

Two hook holes for safety belt.

Foot switch on the platform controls power source of all functions, the engine can start only when the foot switch released.

Platform auto leveling —— When the boom is derrick the platform will levels automatically. It will give the alarm when the platform tilts over 5 degrees, at the same time the booms' rising/lowering function and the platform's auto-leveling function will be cut off, to ensure the operator's safety.

All the function instructions on the control panel are pictographic symbols which are easy to read.

Short-rope inspection device is alert when any steel rope loosens or breaks and stops the risky operation.

Restart of engine is stopped. When water temperature or engine oil pressure gets abnormal, the machine will automatically stop and send a bug report. Insufficient fuel oil will also be alert and it will stop with minimum fuel.

It alerts when hydraulic filter is blocked, and delay shutdown to protect hydraulic precision components.

6. Hydraulic System

- | Hydraulic components like driving pumps and driving motors are purchased from world-wide brands.
- | Full-pressure hydraulic filtering includes hydraulic filtering and oil return filtering except fuel tank.
- | Closed cycle hydraulic driving circuit provides unparalleled power and performance. The load sensing system can adjust pump's output to maintain the best performance. Driving system circuit adopts axial variable displacement piston pump and plunger driving motor of the advanced technologies.
- | Hydraulic system module can improve maintainability and reliability. Hydraulic are combined into four hydraulic module, which are respectively applied to arm function, driving function, steering function, shunt function, platform function, auxiliary drive function. The hydraulic module improves reliability as well as reduces the quantities of hose and joint and possible leakage. Diagnostic device, trouble shooting and maintainability all improve hydraulic and traditional pipeline system.
- | Hydraulic oil tank ensures a cooling hydraulic system to prolong the components' life and enhances corrosion resistance and improves the capability of monitoring and control system performance. Oil level gauge, temperature meter, absorption strainer, oil return filter and filter bypass meter are equipped.
- | Hydraulic oil cooler works within hydraulic driving circuit and is cooled by electric cooling fan. When the machine runs under high temperature condition or runs for long hours, hydraulic oil cooler will automatically cool down the hydraulic oil.

7. Transportation and Settings

- | 2.49 meter is fit for the standard width of chassis of trailer.
- | The maximum height 2.8 meter when the lift is loaded on trailer keeps the overall height under 4 meters.
- | The equally distributed weight of axle prevents serious problem, such as overload of axle, difficult in hoisting, caused by inequality of distribution.

8. Other configuration

- | Severe environment assembly —— Providing protection to the machines in dusty,

sparks flying, painting and corruption working condition. It includes the cylinder sheath, boom sand-scraping device, control box cover, central turret cover, engine air intake pre-filter device, steel cable guiderail, naked cable fire-prove protection devices, to provide protection for the machines doing welding, sand-washing and spraying work.

- | Igniter and re-ignition protection system —— Protecting flywheel ring gear of engine and starting motor.
- | Automatic engine shut down when failure —— When the engine temperature gets too high or lubricating oil pressure becomes lower, the engine will automatically cease to work.
- | The moveable cover makes the internal structural parts easy to reach for the maintenance staff.
- | Pin and bush are easy to maintain and have long service life. All the pins adopt processed steel pins and self-lubricating bearing no need grease. It is periodically tested that pin and bush withstand ten years of service life.
- | Control Penal is made of steel; it is water-proof and dust-proof, especially for welding splash and dusty conditions.
- | Length detector —— installed inside of the boom, testing the cylinder and how long the boom extends. Reduces malfunctions and improves reliability, also the failures caused by operation error will be fewer.

9. Special package for ship building/Maintenance (Not standard configuration)

- | Length/angle sensor built-in for anti-collision and dust-proof ——The length sensor to test the boom extending and the angle sensor to test the derricking are built inside the boom, better protecting the operator and ensure the equipment's reliability.
- | All-steel cover —— Steel cover with electrophoretic primer processed for both inside and outside, the fire-proof , anti-corrosion performance and service life are 3 times than normal primer, there are a round of sealing strip all along the cover, effectively protects the engine and the hydraulic system, which is perfect for long-term use for ship maintenance in severe conditions. Overall open&close steel cover makes the equipment daily maintenance very easy, and there are separate gates for refuel and cooling liquid filling, convenience for daily filling.
- | Double anti-collision protection to the basket —— The basket is equipped with lengthen spring range limit protect device and ultrasonic radar anti-collision device, from all angles to protect the operators and the equipment.

Advantages of SINOBOOM Products

1. Technical Feature

- | Strong loading capacity.
- | Wide working range.
- | Great grade ability.
- | Max. Driving speed is high.
- | Hydraulic system is closed system made of variable pump and double speed motor, with low energy consumption and small steering concussion.
- | Bus control is simple and reliable and easy to maintain.
- | Original imported military grade PLC can be custom-made program setting and developing, together with the steel covering plate and good sealing, adapting to severe environments in shipyard, like dust, welding splash, high temperatures and intensive corrosion.

2. Operation Performance

- | Easy to operate, good stability, no impact, no shake.
- | Toggle switch is more reliable than touch switch

3. Quality Advantage

- | All the key parts of hydraulic components, electric device, transmission components, like valve, pump, motor, reducer, PLC and etc., are purchased from International well-known brands, are of high reliability.
- | Safety coefficient and stability coefficient of steel structure is higher than that of other companies in CHINA, which assures longer service life of the machine.
- | The surface of spare parts are processed by sand blasting which reaches Sa2.5 level, by inorganic zinc rich primer, by Nippon finishing coat, which assures anti-corrosion performance.
- | All the axle pins are processed by wear-resistance, electroplate while most of exposed parts are processed by galvanized or chrome plating.
- | Strict dustproof protection measures are taken from oil cylinders, booms, valves, hoses to aluminum tubes, e.g. a steel cage under the operation platform for preventing welding splash, grease dirt or dust.

4. Security protection

- | Anti-collision device is optional to protect operator's safety.

- | Height limiter is optional to protect operator's safety.
- | Built-in pull box (length detector) is optional so that it will not easily be crushed.
- | Computer program automatically examine and judge whether the machine is within safety range, sound and light alerts will start when the machine is approaching danger point and operation reaching dangerous point will be cut.

5. Standard Compliance

- | Chinese national standard JG/T5101-3.
- | European CE certification under EN280.
- | Australian ADR certification under AS1418;
- | GOST certification for Russia.

IV. Free spare parts and tool kit

Free spare parts list

Serial	Code	Parts Spec.	Quantity
1	5310002	O Sealing Ring 7.5*1.5mm	15
2	5310003	O Sealing Ring 9.0*1.5 mm	15
3	5310004	O Sealing Ring 10.0*2.0 mm	10
4	5310005	O Sealing Ring 12.0*2.0 mm	5
5	5310006	O Sealing Ring 16.3*2.4 mm	10
6	5310007	O Sealing Ring 20.0*2.0 mm	5
7	5310008	O Sealing Ring 20.3*2.4 mm	5
8	5310010	O Sealing Ring 25.3*2.4 mm	5
9	5310016	O Sealing Ring 20*2.4 mm	2
10	5310012	O Sealing Ring 30*2.4 mm	1
11	5310013	O Sealing Ring 32*3.1 mm	3
12	5310014	O Sealing Ring 60*3.1 mm	2
13	5311007	O Sealing Ring 28*3.55 mm	10
14	5311008	O Sealing Ring 30*3.55 mm	10
15	5311003	O Sealing Ring 19*1.8 mm	10
16	5311009	O Sealing Ring 22.4*2.65 mm	10
17	5311006	O Sealing Ring 20*1.8 mm m	10
18	5402004	Combined Sealing Ring 33mm	5
19	5402005	Combined Sealing Ring 42mm	5
20	5402006	Combined Sealing Ring 48mm	5
21	5401001	Combined Sealing Ring 14mm	5
22	5601001	Oil Cup M10x1	10
23	5602001	Oil Cup M10x1	10
24	6206001	Suction Filter	2
25	6209001	Filter Core	1
26	6209002	Filter Core	2
27	3503001	Fuse 10A	10
28	3503003	Fuse 20A	5
29	3602012	Oil Pressure Tester Kit	2
30	3602011	Oil Pressure Tester Kit	1
31	6201018	Connector	1
32	6201017	Connector	1
33	6204002	Plug	2
34	6204004	Plug	2
35	6204006	Plug	2
36	6204007	Plug	2

Free tool Kit

Serial	Code	Name in English	Quantity
1	5811002	Adjustable Spanner 450mm	1
2	5811001	Adjustable Spanner 250mm	1
3	5817001	Plus Driver 150#	1
4	5816001	Screw Driver 150#	1
5	5819001	Straight Tip Shaft Circlip Pliers 150	1
6	5818001	Straight Tip Hole Circlip Pliers 150	1
7	5826001	Sleeve Wrench 4	1
8	5810001	Double End Solid Wrench 5.5*7	1
9	5810002	Double End Solid Wrench 8*10	1
10	5810003	Double End Solid Wrench 13*16	1
11	5810004	Double End Solid Wrench 16*18	1
12	5810005	Double End Solid Wrench 18*21	1
13	5810006	Double End Solid Wrench 22*24	1
14	5810007	Double End Solid Wrench 30*32	1
15	5810008	Double End Solid Wrench 34*36	1
16	5827001	Hexagonal Wrench 5	1
17	5827002	Hexagonal Wrench 6	1
18	5827003	Hexagonal Wrench 8	1
19	5827004	Hexagonal Wrench 10	1
20	5827005	Hexagonal Wrench 12	1
21	6600051	Tool Kit 160*160*330mm	1
22	6600044	Strap Wrench 9"	1

V. Training and Inspection

1. Technical Training

SINOBOOM will provide technical training about the operation and basic maintenance at SINOBOOM plant, subject to the terms fixed in the order.

2. Acceptance

SINOBOOM will notify the customer the estimated delivery date before the shipping date specified in the contract, and support the customer to do an acceptance inspection following below table:

Final Inspection Item	Status	Result
1.Overall inspection		
Surface inspection		
Mechanical leak inspection		
Bolts state inspection		
Engine condition		
Labels		
Instrumentation		
Engine swing-out function		
2.Ground control		
Key switch		
Engine operation/start/stop		
Emergency stop		
Auxiliary power		
Re-start delay		
Turret/platform rotation		
Boom function		
3.Platform control		
Engine operation/start/stop		
Emergency stop		
Re-start delay		
Auxiliary power		
Turret/platform rotation		
Axle stowed/extended		
Axle steering		
Boom/cable guide rail/cable		
Boom extended		
Boom stowed		
Boom raise		

Boom lower		
Limit switch for boom extended		
Limit switch for driving confirmation		
High-speed travel		
Low-speed travel		
4. Safety		
Load test		
Level sensor warning		
Foot switch		
Gradeability		
Lock function for boom raise		

VI. After-sale Service

1. 1. General Condition

Under normal operating conditions, SINOBOOM provides the following warranty service based on that the machines are operated and maintained correctly as per instruction in the Operation and Maintenance Manual.

2. Warranty range

- | Warranty service and parts including: Structure parts, most of the hydraulic parts, most of the electric parts or related system failure which are under correct operation and regular maintenance following the Operation & Maintenance manual.
- | Warranty parts excluding: All wearing parts (Engine filter elements including air/engine oil/diesel oil, hydraulic system filters, cylinder sealing elements, all the fuses, relays, etc.) , failures caused by hydraulic system cleansing.

3. Warranty contents

- | The machine cannot start or use normally by any reasons such as parts problem, design problem or manufacture problem;
- | Any operation failure caused by welding defect;
- | Joystick failure or hydraulic oil leak caused by the manufacturer assembly process;
- | Engine and motors' warranty will follow the parts manufacturers' warranty manual;
- | Any difference which cannot reach an agreement will follow the third party's inspection reports;

4. Other related service

- | Free remote guidance about installation and adjustment for new delivery machine;
- | Periodically inspect the machines condition and instruct maintenance and repair, free within the warranty period and at cost when out of warranty;
- | Free parts replacements for quality claims within the warranty period, and at cost when out of warranty;
- | Long time technical service, maintenance services and training services after warranty period, parts and labor will be at cost;

5. “5+2+1” Warranty period

- | The big structure parts including chassis, turntable, booms, outriggers, telescopic shafts, engine bracket, will be guaranteed five years or operation time add up to 6000 hours, whichever comes first;
- | The complete appliance will be guaranteed one year or operation time add up to 2000 hours, whichever comes first;

- | Detailed guarantees classification and timetable please refer to the list in the SINOBOOM warranty manual;
- | Warranty period will be calculated starting from the machines arrival at buyers' stock yard;
- | After the warranty period, SINOBOOM still offers life-long maintenance, spare parts supply and technical support services with cost charged.

6. Conditions not applied to this Warranty Policy

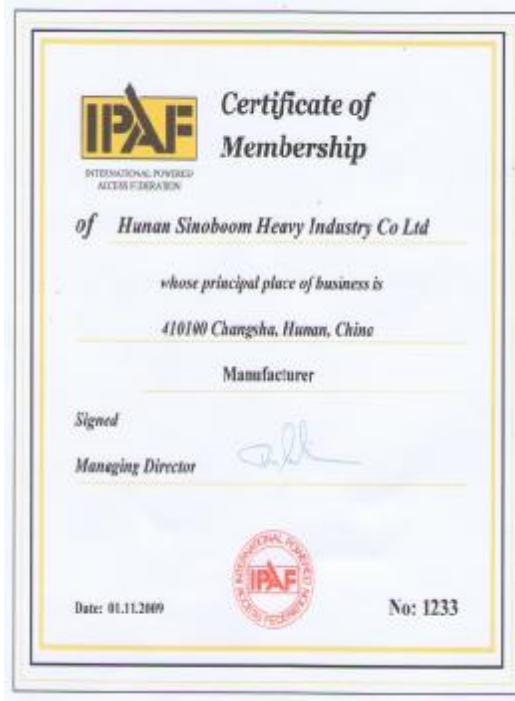
- | Not following the manuals to operate the machines, nor to maintain the machines periodically;
- | Rebuilt, parts replace or personally repair without beforehand confirmation from SINOBOOM;
- | Parts normal wear under daily usage;
- | Usage of parts which are not SINOBOOM original parts without beforehand confirmation from SINOBOOM;
- | Machines are wrongly installed or used, or machines are used under abnormal conditions, or machines are treated with improper parts like fuel oil, engine oil or lubricating oil; event under accident or fire or other force majeure.
- | Continuous operations on the machines even spotted some problems or failures without timely quality claim, which results further damages.

7. Our service promises

- | Our service team is 24 hours available online to receive your quality claims;
- | We will reply your phone call or emails within 2 hours by receiving;
- | For better, faster and exact service, you will have to fill and report your claims under our sheets and related requirements;
- | If any claims about our service, we will quickly react and give you a reasonable response accordingly;
- | SINOBOOM reserves the right of final explanation about the above warranty policy;

VII. SINOBOOM Honors and Certificates

IPAF certificate of membership



ISO9001-2000 certificate



SINOBOOM CE Certificates - For European market



SINOBOOM ADR Certificates- For Australia & New Zealand market



SINOBOOM GOST-TR3 Certificates – For Russia



VIII. SINOBOOM PHOTOS

Assemble workshop glance



Telescopic boom lifts group show



GTBZ22 working for steel construction



GTBZ38 for external wall cleaning



GTBZ36 for stadium maintenance



GTBZ20&25&38J&42J

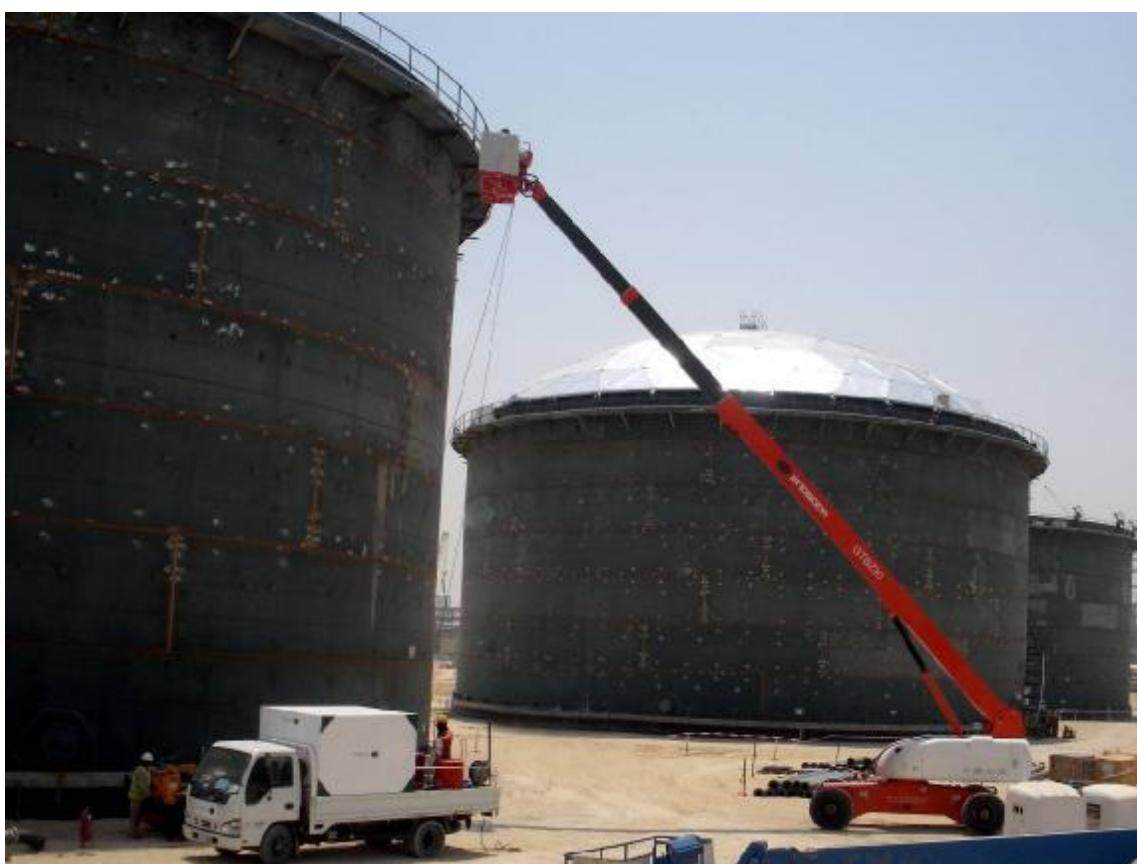
Working for world famous Nickel project construction site



GTBZ20&25&38J&42J Working for stadium maintenance



GTBZ30 working for oil refining site

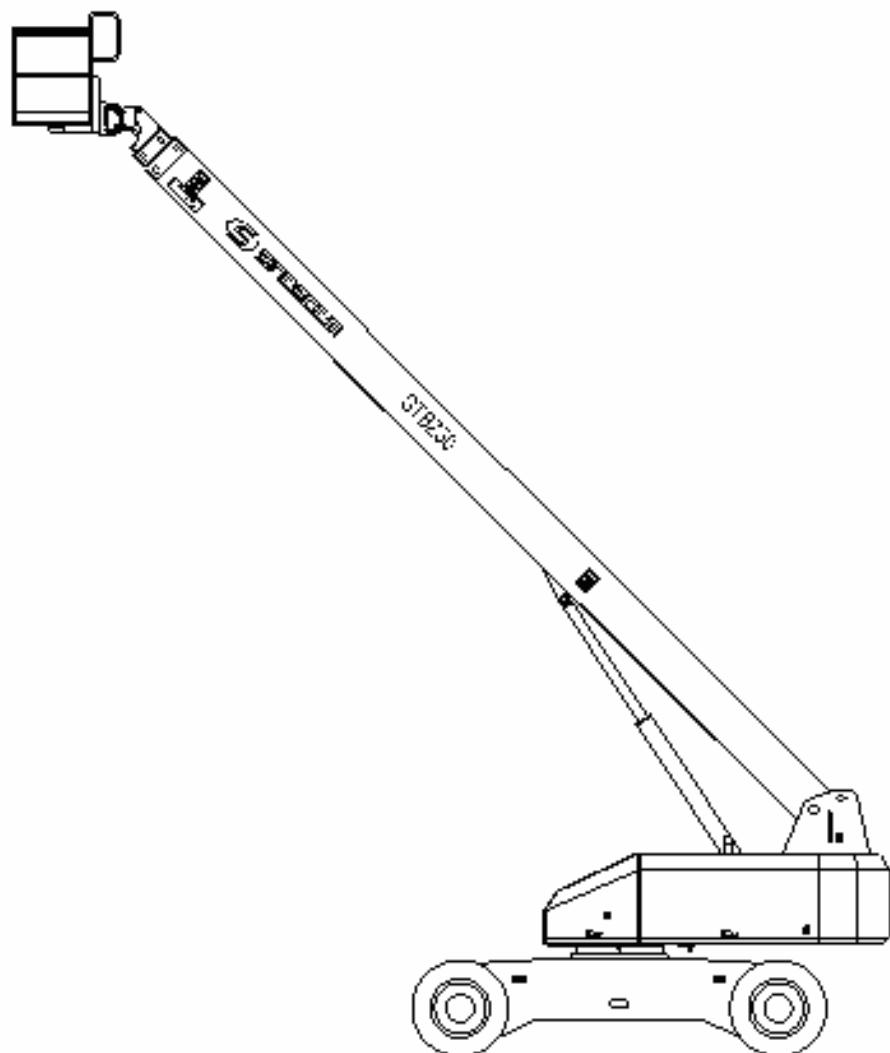




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II. Technical Specifications

GTBZ30 parameters

Item	Measurement
Productivity	
Max. Platform height	30.4M
Max. Working height	32.4M
Max. Horizontal reach	22.3M
Turning radius(inside/outside)	2.56M /5.57M
Turntable tail swing	1.82M
Turntable rotation	360°continuous
Platform rotation	160°
Grade ability	42% (4WD)
Platform Load capacity	340kg (non-restricted)
	480kg (restricted)
Driving Speed (stowed)	0~4.4km/h
Driving Speed (extended)	0~1.1km/h
Max allowable wind speed	12.5m/s
Max allowable slope	3°
Max noise on normal use	82dB(A)
Max allowable side force	400N
Dimensions	
Overall length(stowed)	13M
Overall width(stowed)	2.49M
Overall height(stowed)	3.08M
Ground clearance	0.43M
Wheelbase	3.66M
Platform Size (L*W*H)	1.45*0.85*1.24M
Overall weight	18760kg (4WD)
Tire specification	12.00-20/Solid
Hydraulic oil tank vol.	200L
Hydraulic system vol.	300L
Fuel tank vol.	200L
Control voltage	12VDC
Engine	Original Cummins
Drive & steer model	4WD*4WS
Covering Parts	Steel

Standard Configurations

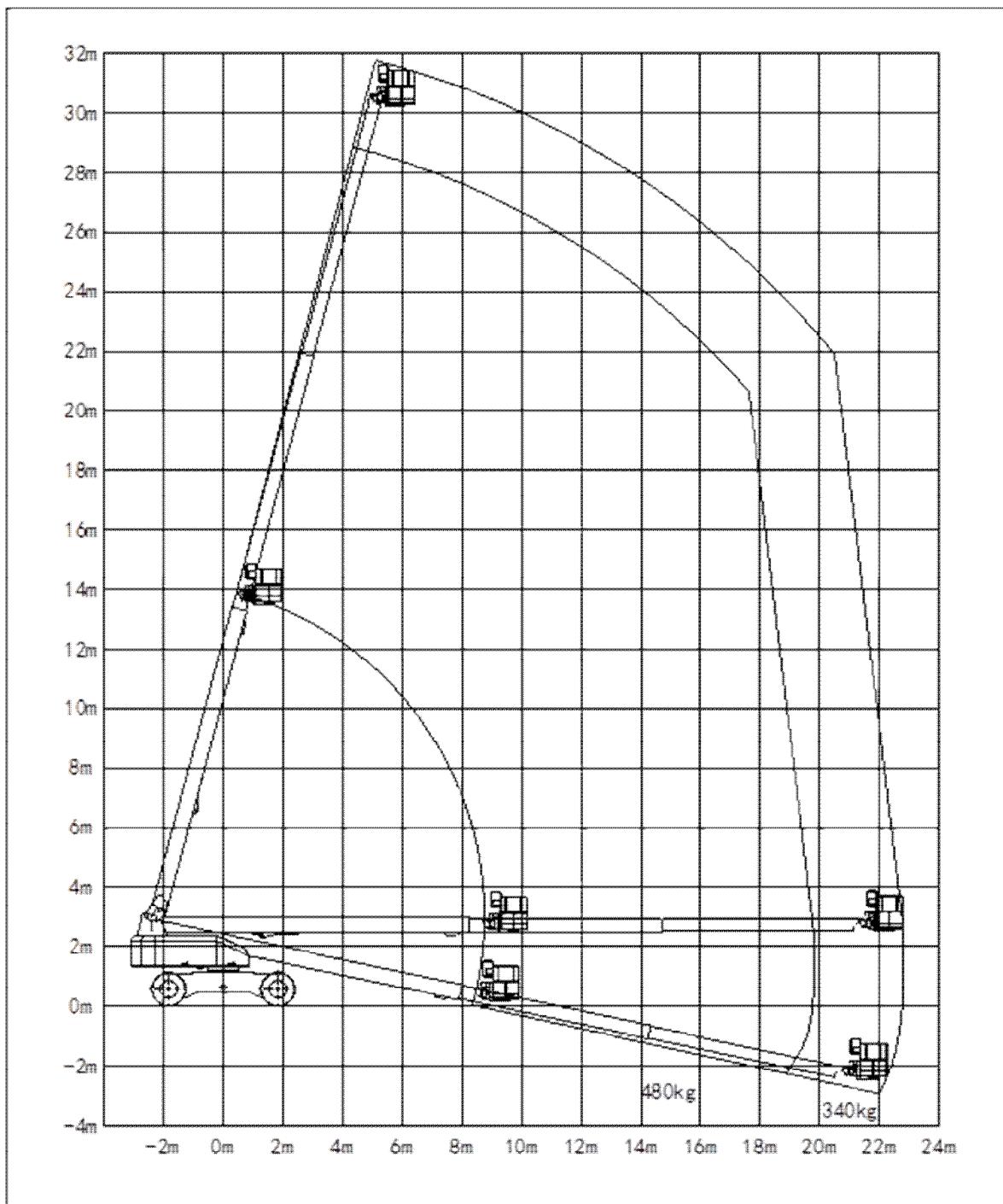
NO.	Items	Producer
1	Driving motor	Original Cummins
2	Turn table	SINOBOOM
3	Variable pump	Sauer-Danfoss(USA)/Rexroth(Germany)/EATON(USA)
4	Gear pump	Casappa(Italy)
5	Slewing reducer	Yiqun
6	Walking speed reducer	RR(Italy)/FAIRFIELD(USA)
7	Oil cylinder seals	PARKER(USA)/Busak Shamban(Germany)/NOK(Japan)
8	Oil cylinder	Chengdu Cylinder/SANY/Xiamen Yinhua
9	Balance valve	Oil control(Italy)/NEM(Italy)/SUN(USA)
10	Hydraulic valve	Oil control(Italy)/Hydraforce(USA)
11	Travel motor	Sauer-Danfoss(USA)
12	Swing motor	HELCA(USA)/Movece(Italy)
13	Rotary motor	White(USA)
14	Power unit	XQD-3.3H(HuaSheng)/GE5.5'(ChangQian)
15	Chassis	SINOBOOM
16	Boom	SINOBOOM HG70
17	Coupling	KTR(Germany)
18	Proportional control handle	Sauer-Danfoss(USA)
19	PLC programming controller	CYLINDRO(CHINA)
20	Leveling sensor	ZCT21B0J-LPS-A/IS1A45P20(GEMAC)
21	Air filter	Donaldson(USA)
22	Fault diagnosis system	SINOBOOM
23	Hydraulic hose	EATON(USA)
24	Hydraulic hose coupler	Chinese

Remark: The above configurations are subject to change without prior notice

Optional: (All “option” configure will be charged as per quotation)

- Working light
- 4WD
- Platform AC power
- oscillating axle
- Anti-collision device
- Hydraulic generator
- Engine Cold Boot
- Side door platform

Working Range Chart



III. Technical Features

Description of the major parts

1. Chassis

Four-wheel drive is standard configuration.

- | Max. driving speed is 4.4km/h
- | Max. Grade ability is 40%, machine could stop at the slope and restart.
- | Split-flow/collecting hydraulic control hauling system makes four-wheel drive realized, which will not allow the slip of a single wheel to lose power.
- | Min. ground clearance is as high as 42cm.

Four-wheel steering is standard configuration.

Four-wheel steering has four modes, including front-wheel steering, rear-wheel steering, crab-shaped steering, and four wheel steering. Multi steering modes make sure machine work flexibly in restricted conditions. Each displacement sensor at the top of king pin can dictate and automatically adjust each wheel and successfully separately control each wheel. The advantages of the system lie in the following aspects.

- 1) Steering mode switch is used in switching modes. Operator can select a steering mode when he demands steering, he can press a button for certain a mode, and at the same time, control system will automatically adjust positions of wheels in accord with the steering mode Operated selects. Therefore, if Operator previously select crab-shaped steering mode, but he thinks front-wheel steering might be more efficient and then he can select front-wheel steering mode, when Operator constantly drive, rear-wheel will be automatically back to the neutral position and locked on straight position. In the same situation, machine of other brands requires Operator's selection of rear-wheel steering mode and manually returning it to center and then switching off rear-wheel steering and getting rear-wheel locked. All in all, compared with other brands, SINOBOOM excels in selection of steering modes during driving, while other brands cannot.
- 2) Steering speed matched pattern. Control system can automatically analyze the current speed on basis of steering signal and select the suitable speed, reducing sustainability caused by steering switch.
- 3) Expandable axle. Axle control origins in control platform, when the machine drives as long as about one vehicle length, axle hydraulic cylinder will automatically expand and indicating light on platform control will alert.
 - | Stowed width is 2.49m, and extended width is 3.35m.
 - | Axle's extend is controlled by platform. Operator presses certain a functional button, the machine drives forward or backward about one vehicle length,

axle could extract or extend or stow or expand. Other brands adopt hydraulic leg fixed chassis; rely on axle's move or lower boom lever to approach ground. Lift up chassis then move axle.

- I When axle extension is not used, do not lift boom lever over horizontal plane or extent over 1.2m so as to keep safe.

Four-wheel brake is standard configuration.

Each four wheels are equipped with brake, which utilize automatic hydraulic neutral latch. Spring inflicts on brake; aerial work platform can stop on any slope within 42% gradient.

When hydraulic system appears emergent and needs get aerial work platform moving, it is easy to cut the connection reducer to let brake released.

2. Turn Table

The 360°continuous rotation is with two transport locking pin holes. (At the front/back of the chassis)

Engine——Cummins engine provides great power and has good exhaust emissions (Comply to EU standards).

Swing-out engine bracket——It's the best design for easier access to the engine, saving your time for maintenance. Just by removing a bolt, the engine can be turned out 40 degrees, and the whole engine with related parts could be reached much easier.

Dual-battery electrical system—— 2 pieces of 12 volts batteries separately installed and could be recharged through the generator in the engine.

One battery provides electric power for the engine start and auxiliary power. The other one is for the control system. If the electricity of the auxiliary power system is too low, the control system would not break off due to low voltage. The dual-battery recharging system ensures the batteries' normal usage.

The equipped ground control system which can be used for debugging, including function speed and function gradual rate.

The machine and related parts' adjusting are processed by the control system, the same all the valves and joystick's initial setting and debugging.

Safety circuit —— Two safety system are designed for safety purpose, once the boom exceeds the allowable range, the boom won't go down anymore or the engine would be stopped, the operator can get the boom into normal condition by auxiliary power.

3. Boom

Booms —— Adopts HG70 high-strength steel, the industry-leading horizontal outreach offers better versatility and practicability.

The booms' stretch are achieved by telescopic cylinder, extending/retracting wire rope, the fix end and pulley of the rope can be reached and maintained easily.

Telescopic cylinder and steel wire rope with pulley can be removed from the rear of the boom, which barely takes two hours, and no need to dismantle arm.

The derrick cylinder with buffer increases the operators' security and comfort. The derrick cylinder of the boom includes a buffer device, which will automatically slow down actions and stop smoothly when the boom is fully extended.

4. Platform and platform control system

- | Large steel platform
- | Heavy-load steel tube platform
- | 160° hydraulic rotating platform
- | The maximum load capacity as heavy as 480kg

All the main functions are controlled by the joystick —— Driving/Steering, booms' rising/lowering, extending/retracting, rotary table. The joystick is short and easy to operate.

All the secondary functions are controlled by the toggle switches —— The platform leveling and rotation.

All the buttons and switches of control system are water-proof, such as functions of steering, engine speed, engine start, auxiliary control, driving speed, horn and generator etc.

5. Safety device

Full-scale fader control system controls the driving, boom's rising/lowering, extending/retracting, rotary table, which makes the aerial working platform easy to locate and operate stably in tight space.

Driving verify system enhances the operator's alert and safety awareness. When the boom rotates over the non-steering wheel, the machine would not move when driving, meanwhile the indicator light of platform operation panel is on, it alarm the operator that the driving direction is just the opposite, the operator must press the alarm button to restore driving. This system makes sure the operators know the correct driving direction.

Two hook holes for safety belt.

Foot switch on the platform controls power source of all functions, the engine can start only when the foot switch released.

Platform auto leveling —— When the boom is derrick the platform will levels automatically. It will give the alarm when the platform tilts over 5 degrees, at the same time the booms' rising/lowering function and the platform's auto-leveling function will be cut off, to ensure the operator's safety.

All the function instructions on the control panel are pictographic symbols which are easy to read.

Short-rope inspection device is alert when any steel rope loosens or breaks and stops the risky operation.

Restart of engine is stopped. When water temperature or engine oil pressure gets abnormal, the machine will automatically stop and send a bug report. Insufficient fuel oil will also be alert and it will stop with minimum fuel.

It alerts when hydraulic filter is blocked, and delay shutdown to protect hydraulic precision components.

6. Hydraulic System

- | Hydraulic components like driving pumps and driving motors are purchased from world-wide brands.
- | Full-pressure hydraulic filtering includes hydraulic filtering and oil return filtering except fuel tank.
- | Closed cycle hydraulic driving circuit provides unparalleled power and performance. The load sensing system can adjust pump's output to maintain the best performance. Driving system circuit adopts axial variable displacement piston pump and plunger driving motor of the advanced technologies.
- | Hydraulic system module can improve maintainability and reliability. Hydraulic are combined into four hydraulic module, which are respectively applied to arm function, driving function, steering function, shunt function, platform function, auxiliary drive function. The hydraulic module improves reliability as well as reduces the quantities of hose and joint and possible leakage. Diagnostic device, trouble shooting and maintainability all improve hydraulic and traditional pipeline system.
- | Hydraulic oil tank ensures a cooling hydraulic system to prolong the components' life and enhances corrosion resistance and improves the capability of monitoring and control system performance. Oil level gauge, temperature meter, absorption strainer, oil return filter and filter bypass meter are equipped.
- | Hydraulic oil cooler works within hydraulic driving circuit and is cooled by electric cooling fan. When the machine runs under high temperature condition or runs for long hours, hydraulic oil cooler will automatically cool down the hydraulic oil.

7. Transportation and Settings

- | 2.49 meter is fit for the standard width of chassis of trailer.
- | The maximum height 2.8 meter when the lift is loaded on trailer keeps the overall height under 4 meters.
- | The equally distributed weight of axle prevents serious problem, such as overload of axle, difficult in hoisting, caused by inequality of distribution.

8. Other configuration

- | Severe environment assembly —— Providing protection to the machines in dusty,

sparks flying, painting and corruption working condition. It includes the cylinder sheath, boom sand-scraping device, control box cover, central turret cover, engine air intake pre-filter device, steel cable guiderail, naked cable fire-prove protection devices, to provide protection for the machines doing welding, sand-washing and spraying work.

- | Igniter and re-ignition protection system —— Protecting flywheel ring gear of engine and starting motor.
- | Automatic engine shut down when failure —— When the engine temperature gets too high or lubricating oil pressure becomes lower, the engine will automatically cease to work.
- | The moveable cover makes the internal structural parts easy to reach for the maintenance staff.
- | Pin and bush are easy to maintain and have long service life. All the pins adopt processed steel pins and self-lubricating bearing no need grease. It is periodically tested that pin and bush withstand ten years of service life.
- | Control Penal is made of steel; it is water-proof and dust-proof, especially for welding splash and dusty conditions.
- | Length detector —— installed inside of the boom, testing the cylinder and how long the boom extends. Reduces malfunctions and improves reliability, also the failures caused by operation error will be fewer.

9. Special package for ship building/Maintenance (Not standard configuration)

- | Length/angle sensor built-in for anti-collision and dust-proof ——The length sensor to test the boom extending and the angle sensor to test the derricking are built inside the boom, better protecting the operator and ensure the equipment's reliability.
- | All-steel cover —— Steel cover with electrophoretic primer processed for both inside and outside, the fire-proof , anti-corrosion performance and service life are 3 times than normal primer, there are a round of sealing strip all along the cover, effectively protects the engine and the hydraulic system, which is perfect for long-term use for ship maintenance in severe conditions. Overall open&close steel cover makes the equipment daily maintenance very easy, and there are separate gates for refuel and cooling liquid filling, convenience for daily filling.
- | Double anti-collision protection to the basket —— The basket is equipped with lengthen spring range limit protect device and ultrasonic radar anti-collision device, from all angles to protect the operators and the equipment.

Advantages of SINOBOOM Products

1. Technical Feature

- | Strong loading capacity.
- | Wide working range.
- | Great grade ability.
- | Max. Driving speed is high.
- | Hydraulic system is closed system made of variable pump and double speed motor, with low energy consumption and small steering concussion.
- | Bus control is simple and reliable and easy to maintain.
- | Original imported military grade PLC can be custom-made program setting and developing, together with the steel covering plate and good sealing, adapting to severe environments in shipyard, like dust, welding splash, high temperatures and intensive corrosion.

2. Operation Performance

- | Easy to operate, good stability, no impact, no shake.
- | Toggle switch is more reliable than touch switch

3. Quality Advantage

- | All the key parts of hydraulic components, electric device, transmission components, like valve, pump, motor, reducer, PLC and etc., are purchased from International well-known brands, are of high reliability.
- | Safety coefficient and stability coefficient of steel structure is higher than that of other companies in CHINA, which assures longer service life of the machine.
- | The surface of spare parts are processed by sand blasting which reaches Sa2.5 level, by inorganic zinc rich primer, by Nippon finishing coat, which assures anti-corrosion performance.
- | All the axle pins are processed by wear-resistance, electroplate while most of exposed parts are processed by galvanized or chrome plating.
- | Strict dustproof protection measures are taken from oil cylinders, booms, valves, hoses to aluminum tubes, e.g. a steel cage under the operation platform for preventing welding splash, grease dirt or dust.

4. Security protection

- | Anti-collision device is optional to protect operator's safety.

- | Height limiter is optional to protect operator's safety.
- | Built-in pull box (length detector) is optional so that it will not easily be crushed.
- | Computer program automatically examine and judge whether the machine is within safety range, sound and light alerts will start when the machine is approaching danger point and operation reaching dangerous point will be cut.

5. Standard Compliance

- | Chinese national standard JG/T5101-3.
- | European CE certification under EN280.
- | Australian ADR certification under AS1418;
- | GOST certification for Russia.

IV. Free spare parts and tool kit

Free spare parts list

Serial	Code	Parts Spec.	Quantity
1	5310002	O Sealing Ring 7.5*1.5mm	15
2	5310003	O Sealing Ring 9.0*1.5 mm	15
3	5310004	O Sealing Ring 10.0*2.0 mm	10
4	5310005	O Sealing Ring 12.0*2.0 mm	5
5	5310006	O Sealing Ring 16.3*2.4 mm	10
6	5310007	O Sealing Ring 20.0*2.0 mm	5
7	5310008	O Sealing Ring 20.3*2.4 mm	5
8	5310010	O Sealing Ring 25.3*2.4 mm	5
9	5310016	O Sealing Ring 20*2.4 mm	2
10	5310012	O Sealing Ring 30*2.4 mm	1
11	5310013	O Sealing Ring 32*3.1 mm	3
12	5310014	O Sealing Ring 60*3.1 mm	2
13	5311007	O Sealing Ring 28*3.55 mm	10
14	5311008	O Sealing Ring 30*3.55 mm	10
15	5311003	O Sealing Ring 19*1.8 mm	10
16	5311009	O Sealing Ring 22.4*2.65 mm	10
17	5311006	O Sealing Ring 20*1.8 mm m	10
18	5402004	Combined Sealing Ring 33mm	5
19	5402005	Combined Sealing Ring 42mm	5
20	5402006	Combined Sealing Ring 48mm	5
21	5401001	Combined Sealing Ring 14mm	5
22	5601001	Oil Cup M10x1	10
23	5602001	Oil Cup M10x1	10
24	6206001	Suction Filter	2
25	6209001	Filter Core	1
26	6209002	Filter Core	2
27	3503001	Fuse 10A	10
28	3503003	Fuse 20A	5
29	3602012	Oil Pressure Tester Kit	2
30	3602011	Oil Pressure Tester Kit	1
31	6201018	Connector	1
32	6201017	Connector	1
33	6204002	Plug	2
34	6204004	Plug	2
35	6204006	Plug	2
36	6204007	Plug	2

Free tool Kit

Serial	Code	Name in English	Quantity
1	5811002	Adjustable Spanner 450mm	1
2	5811001	Adjustable Spanner 250mm	1
3	5817001	Plus Driver 150#	1
4	5816001	Screw Driver 150#	1
5	5819001	Straight Tip Shaft Circlip Pliers 150	1
6	5818001	Straight Tip Hole Circlip Pliers 150	1
7	5826001	Sleeve Wrench 4	1
8	5810001	Double End Solid Wrench 5.5*7	1
9	5810002	Double End Solid Wrench 8*10	1
10	5810003	Double End Solid Wrench 13*16	1
11	5810004	Double End Solid Wrench 16*18	1
12	5810005	Double End Solid Wrench 18*21	1
13	5810006	Double End Solid Wrench 22*24	1
14	5810007	Double End Solid Wrench 30*32	1
15	5810008	Double End Solid Wrench 34*36	1
16	5827001	Hexagonal Wrench 5	1
17	5827002	Hexagonal Wrench 6	1
18	5827003	Hexagonal Wrench 8	1
19	5827004	Hexagonal Wrench 10	1
20	5827005	Hexagonal Wrench 12	1
21	6600051	Tool Kit 160*160*330mm	1
22	6600044	Strap Wrench 9"	1

V. Training and Inspection

1. Technical Training

SINOBOOM will provide technical training about the operation and basic maintenance at SINOBOOM plant, subject to the terms fixed in the order.

2. Acceptance

SINOBOOM will notify the customer the estimated delivery date before the shipping date specified in the contract, and support the customer to do an acceptance inspection following below table:

Final Inspection Item	Status	Result
1.Overall inspection		
Surface inspection		
Mechanical leak inspection		
Bolts state inspection		
Engine condition		
Labels		
Instrumentation		
Engine swing-out function		
2.Ground control		
Key switch		
Engine operation/start/stop		
Emergency stop		
Auxiliary power		
Re-start delay		
Turret/platform rotation		
Boom function		
3.Platform control		
Engine operation/start/stop		
Emergency stop		
Re-start delay		
Auxiliary power		
Turret/platform rotation		
Axle stowed/extended		
Axle steering		
Boom/cable guide rail/cable		
Boom extended		
Boom stowed		
Boom raise		

Boom lower		
Limit switch for boom extended		
Limit switch for driving confirmation		
High-speed travel		
Low-speed travel		
4. Safety		
Load test		
Level sensor warning		
Foot switch		
Gradeability		
Lock function for boom raise		

VI. After-sale Service

1. 1. General Condition

Under normal operating conditions, SINOBOOM provides the following warranty service based on that the machines are operated and maintained correctly as per instruction in the Operation and Maintenance Manual.

2. Warranty range

- | Warranty service and parts including: Structure parts, most of the hydraulic parts, most of the electric parts or related system failure which are under correct operation and regular maintenance following the Operation & Maintenance manual.
- | Warranty parts excluding: All wearing parts (Engine filter elements including air/engine oil/diesel oil, hydraulic system filters, cylinder sealing elements, all the fuses, relays, etc.) , failures caused by hydraulic system cleansing.

3. Warranty contents

- | The machine cannot start or use normally by any reasons such as parts problem, design problem or manufacture problem;
- | Any operation failure caused by welding defect;
- | Joystick failure or hydraulic oil leak caused by the manufacturer assembly process;
- | Engine and motors' warranty will follow the parts manufacturers' warranty manual;
- | Any difference which cannot reach an agreement will follow the third party's inspection reports;

4. Other related service

- | Free remote guidance about installation and adjustment for new delivery machine;
- | Periodically inspect the machines condition and instruct maintenance and repair, free within the warranty period and at cost when out of warranty;
- | Free parts replacements for quality claims within the warranty period, and at cost when out of warranty;
- | Long time technical service, maintenance services and training services after warranty period, parts and labor will be at cost;

5. “5+2+1” Warranty period

- | The big structure parts including chassis, turntable, booms, outriggers, telescopic shafts, engine bracket, will be guaranteed five years or operation time add up to 6000 hours, whichever comes first;
- | The complete appliance will be guaranteed one year or operation time add up to 2000 hours, whichever comes first;

- | Detailed guarantees classification and timetable please refer to the list in the SINOBOOM warranty manual;
- | Warranty period will be calculated starting from the machines arrival at buyers' stock yard;
- | After the warranty period, SINOBOOM still offers life-long maintenance, spare parts supply and technical support services with cost charged.

6. Conditions not applied to this Warranty Policy

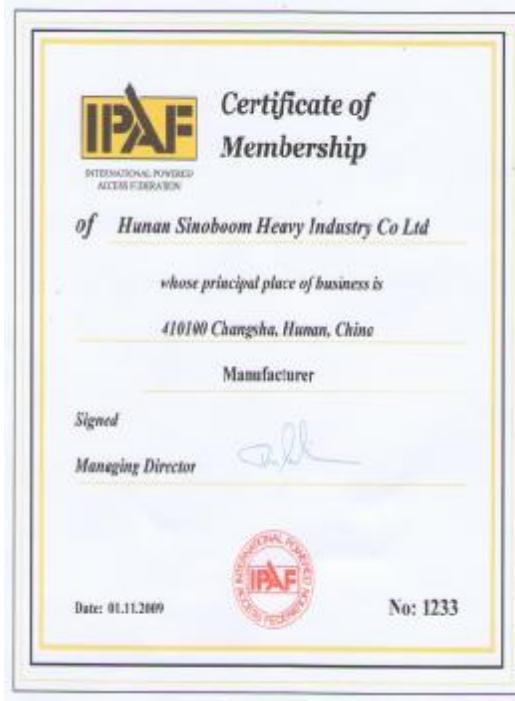
- | Not following the manuals to operate the machines, nor to maintain the machines periodically;
- | Rebuilt, parts replace or personally repair without beforehand confirmation from SINOBOOM;
- | Parts normal wear under daily usage;
- | Usage of parts which are not SINOBOOM original parts without beforehand confirmation from SINOBOOM;
- | Machines are wrongly installed or used, or machines are used under abnormal conditions, or machines are treated with improper parts like fuel oil, engine oil or lubricating oil; event under accident or fire or other force majeure.
- | Continuous operations on the machines even spotted some problems or failures without timely quality claim, which results further damages.

7. Our service promises

- | Our service team is 24 hours available online to receive your quality claims;
- | We will reply your phone call or emails within 2 hours by receiving;
- | For better, faster and exact service, you will have to fill and report your claims under our sheets and related requirements;
- | If any claims about our service, we will quickly react and give you a reasonable response accordingly;
- | SINOBOOM reserves the right of final explanation about the above warranty policy;

VII. SINOBOOM Honors and Certificates

IPAF certificate of membership



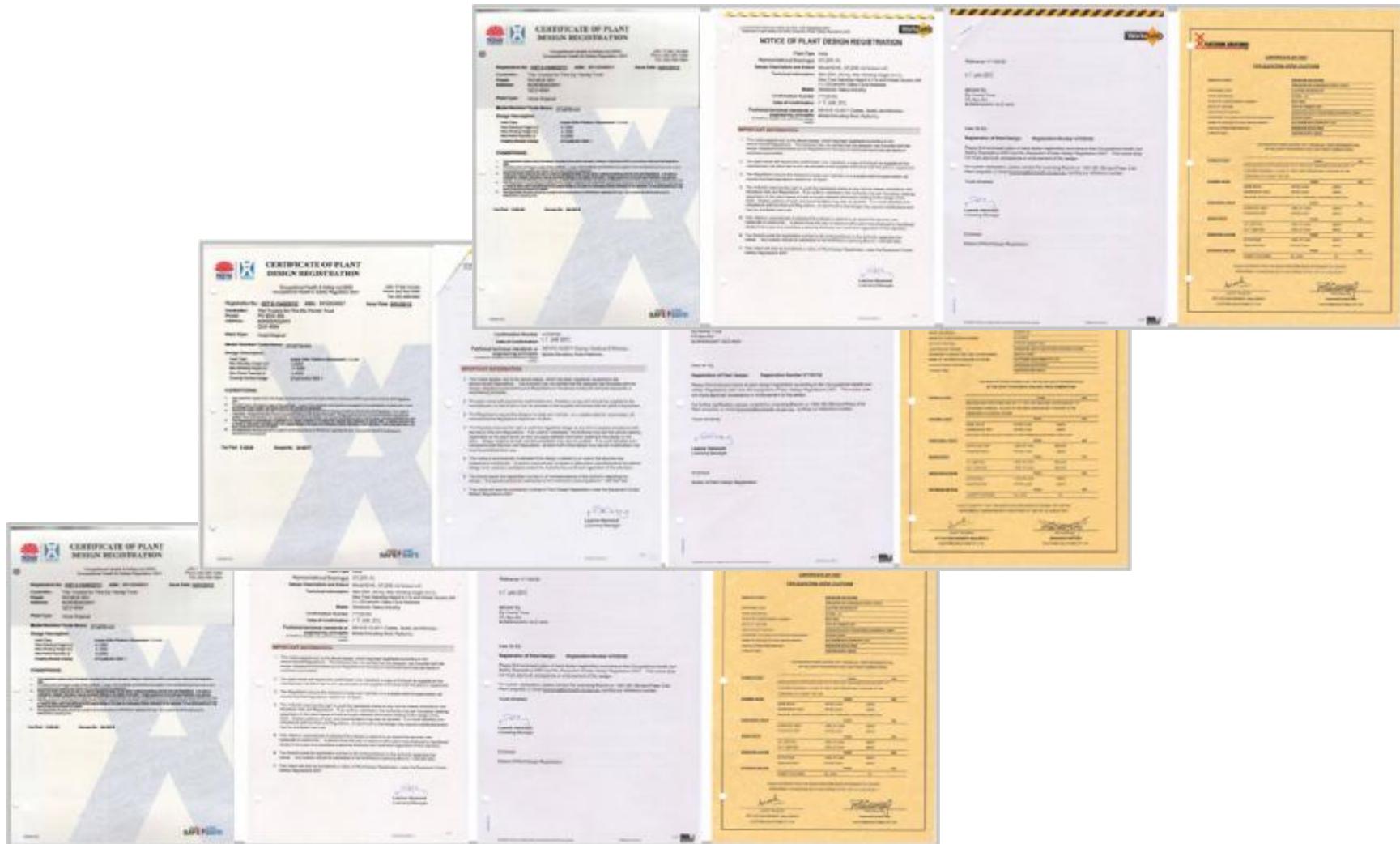
ISO9001-2000 certificate



SINOBOOM CE Certificates - For European market



SINOBOOM ADR Certificates- For Australia & New Zealand market



SINOBOOM GOST-TR3 Certificates – For Russia



VIII. SINOBOOM PHOTOS

Assemble workshop glance



Telescopic boom lifts group show



GTBZ22 working for steel construction



GTBZ38 for external wall cleaning



GTBZ36 for stadium maintenance



GTBZ20&25&38J&42J

Working for world famous Nickel project construction site



GTBZ20&25&38J&42J Working for stadium maintenance



GTBZ30 working for oil refining site

