



DONGHAE MACHINERY & AVIATION Co., Ltd

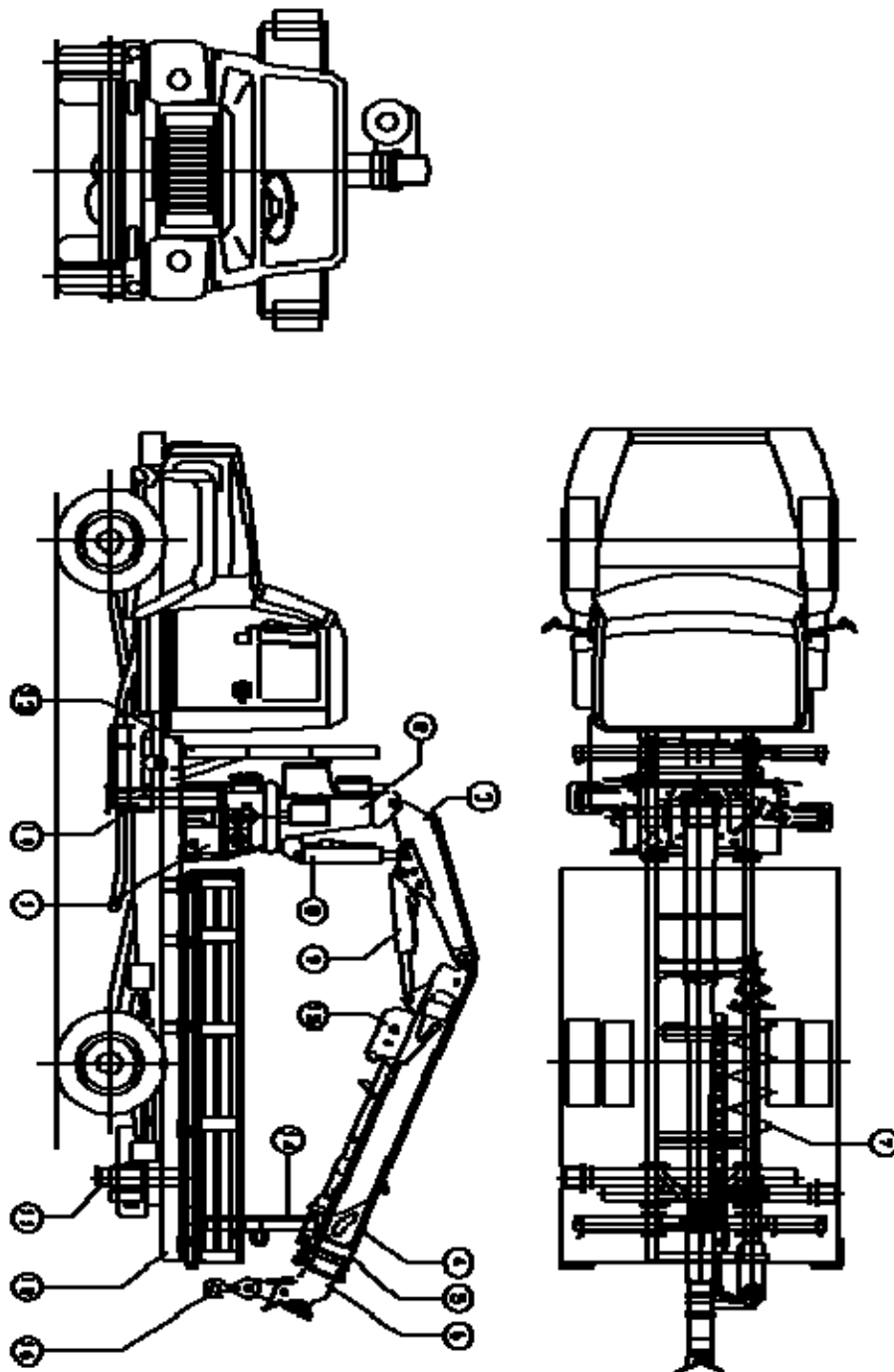
TECHNICAL SPECIFICATION

MODEL - DH SUPER 3000A



Model	DH SUPER 3000A-R
Revision	05
Date	May 16, 2012

1. Terminology Diagram/DH Super 3000A

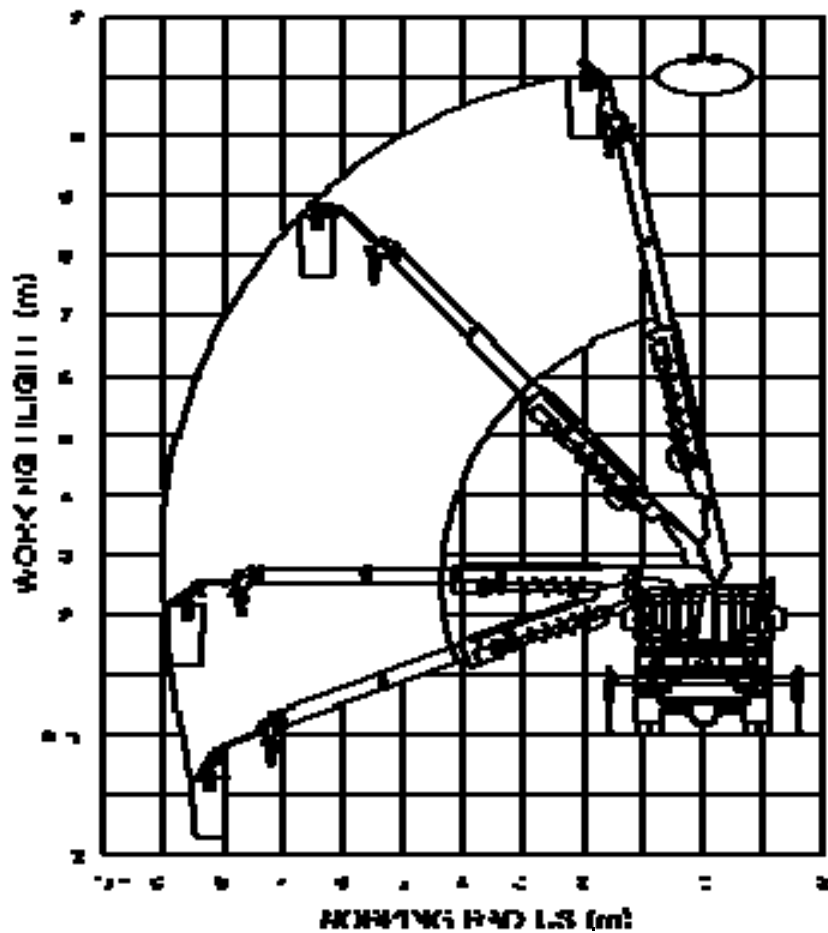


◆ The mounting chassis is Gaz-33086 made in Russia.

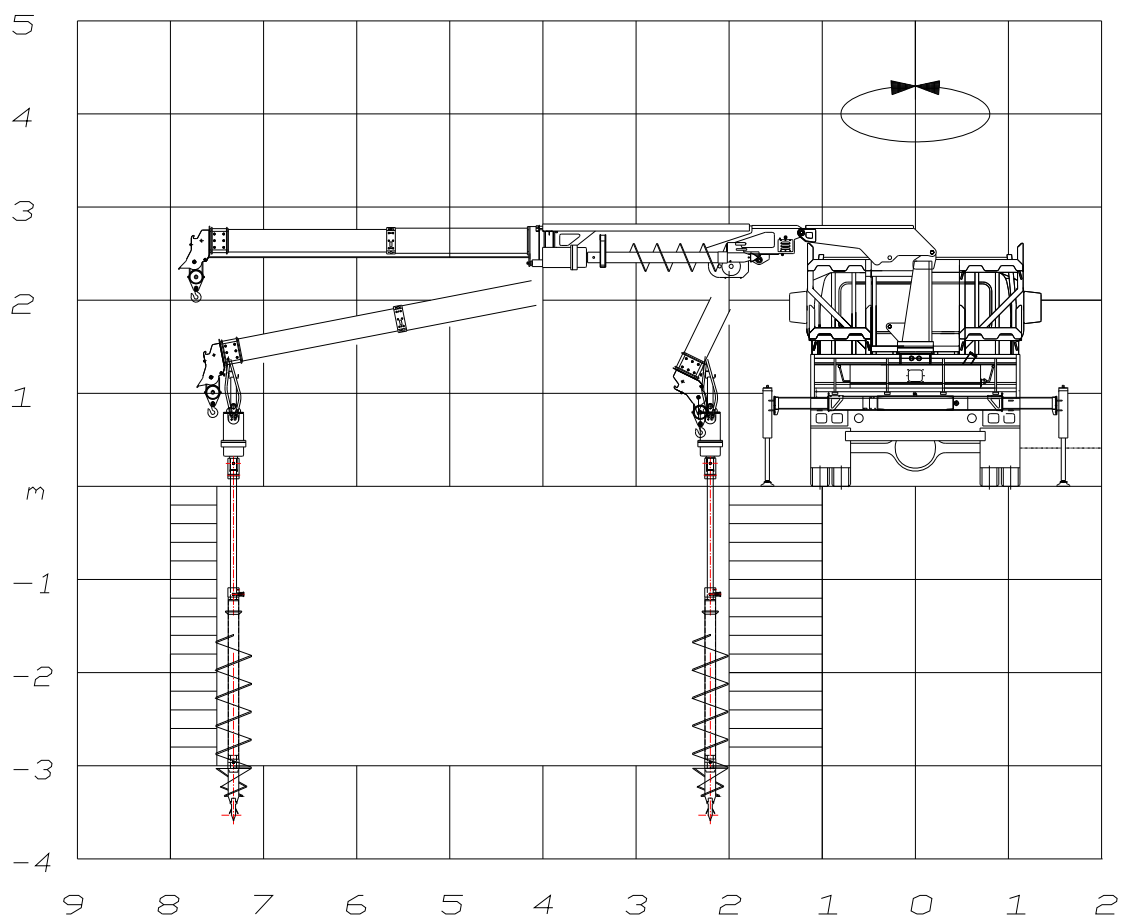
2. Components Description/DH Super 3000A

No.	Description	Remark	No.	Description	Remark
1	Frame		9	2 nd stage cylinder	
2	Column		10	Front outrigger	
3	1 st stage boom		11	Rear outrigger	
4	2 nd stage boom		12	Sub frame	
5	3 rd stage boom		13	Front pole carrying bracket	
6	4 th stage boom		14	Rear pole carrying bracket	
7	Auger drill		15	Hydraulic winch	
8	1 st stage cylinder		16	Hook	

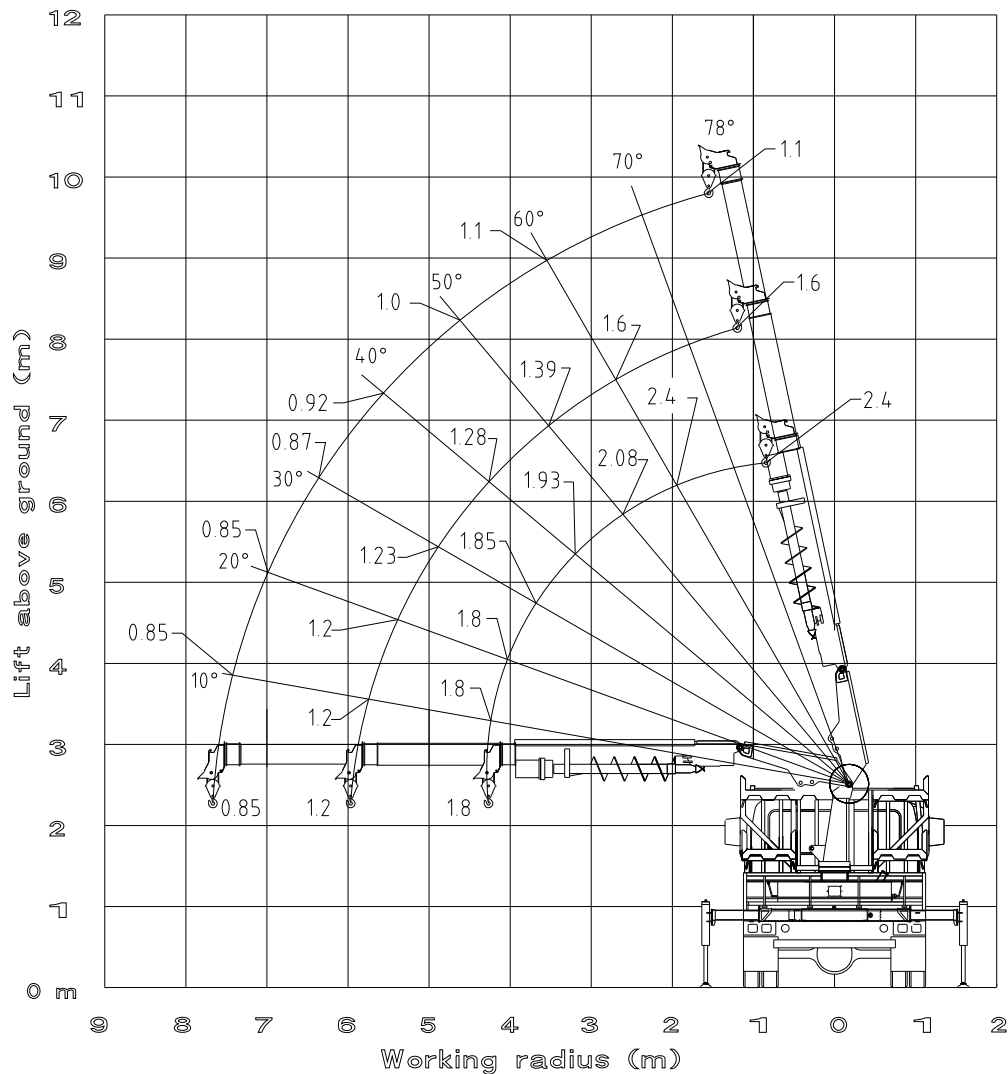
3. Working Radius/DH Super 3000A



4. Drilling Radius/ DH Super 3000A



5. Lifting Capacity/ DH Super 3000A



6. General introduction

The unit called “DH SUPER 3000” is designed for multi-purposed usage such as lifting materials, aerial work and setting up the communication pole. It is driven by P.T.O (Power Take Off), which uses engine power of the vehicle and controlled by proportional control using wire or wireless transmitter.

To secure the safety of the unit, vehicle and personnel, the unit has diverse kinds of safety devices.

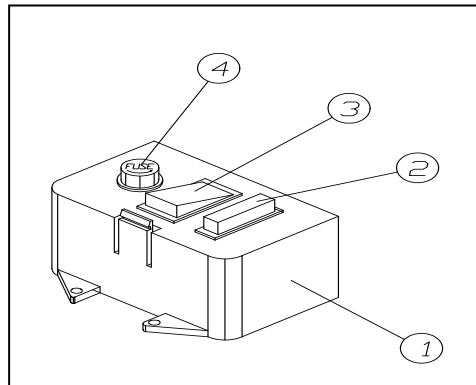
No.	Description	Standard
1	Dimension	4,900(mm) x 2,035(mm) x 2,450(mm)
2	Permissible vehicle for mounting	Not less than 3.5 MT truck
3	Maximum work height	10.8 (From ground to the bucket top)
		9.5m (From ground to the winch hook)
4	Maximum Side Reach	8.8m (Bucket)
5	Rotation angle/Speed	360°/30sec – Continuous rotation
6	Rotation device	Hydraulic rack gear
7	Load capacity	Refer to the load chart
8	Operation method	Wire or wireless transmitter/ Manual control lever
9	Front outrigger type	Automatic & contained hydraulic cylinder
10	Oil type & tank capacity	ISO VG #46 - 64 Liter
11	Standard items	Crane, solenoid manual lever, cylinder load protection cover, control system, wire transmitter, wireless transmitter, remote controlled engine acceleration device, working lamp, front outrigger, rear outrigger.
12	Option items	FRP bucket for 2 person, hydraulic emergency system, auger reducer, auger screw, auger drill, auger hydraulic system, auger extension bar, oil cooler, oil heating device

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- IT IS SUBJECTED TO CHANGE FOR THE IMPROVEMENT OF THE QUALITY WITHOUT PRIOR NOTICE.

7. PTO

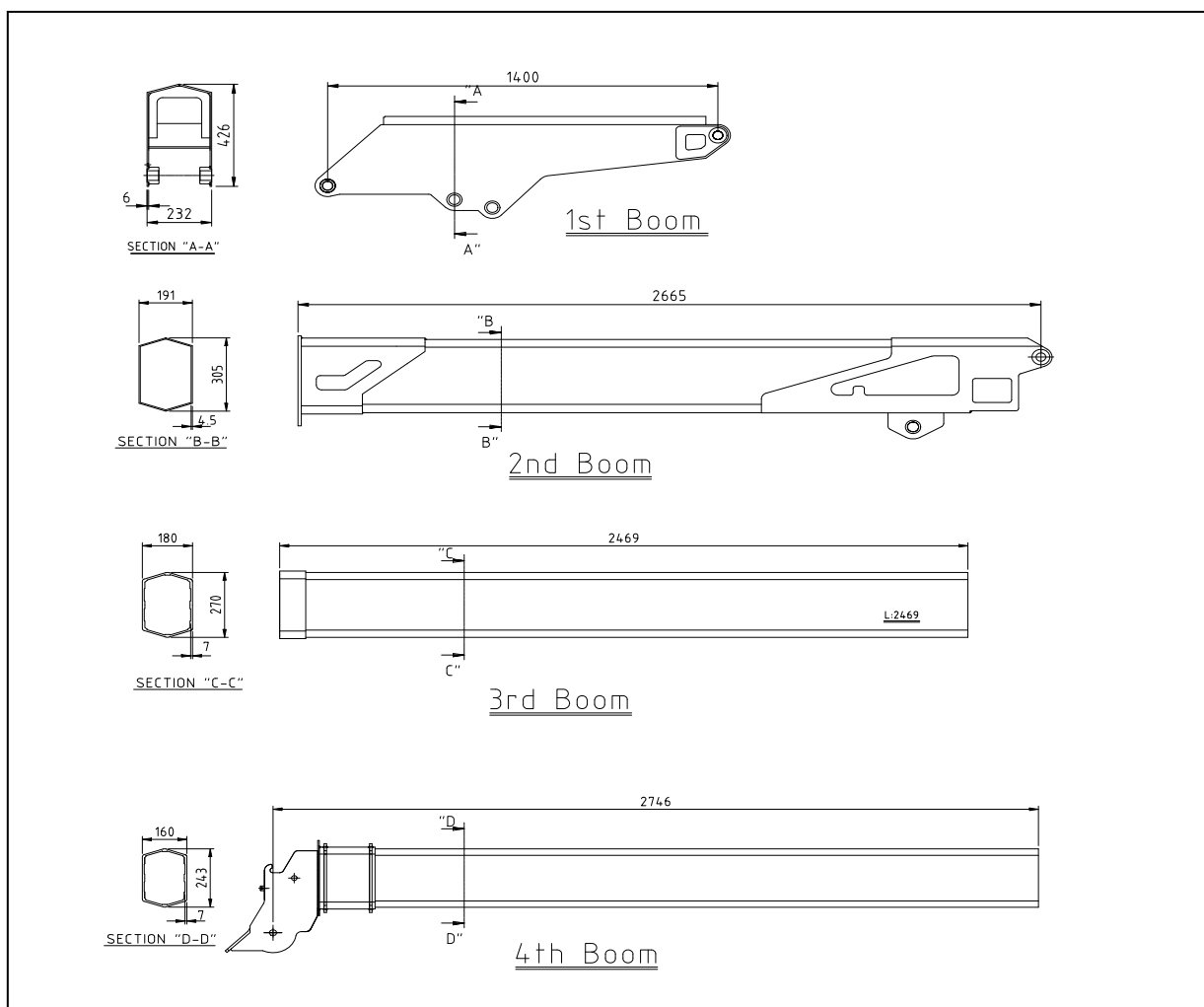
The oil pump is driven by the P.T.O via Propeller shaft. The P.T.O conversion switch box locates at the cabin of the vehicle.

- ① P.T.O Switch Box
- ② P.T.O Lamp
- ③ P.T.O Switch
- ④ P.T.O Fuse



8. Boom Structure

(1), Boom sectional size



(2), Boom length

The radius of boom when fully retracted is not less than 2.2 m. The radius length when boom is fully extended is not less than 7.3 m.

Refer to the chapter 1, 2 & 3 for its work radius and load chart.

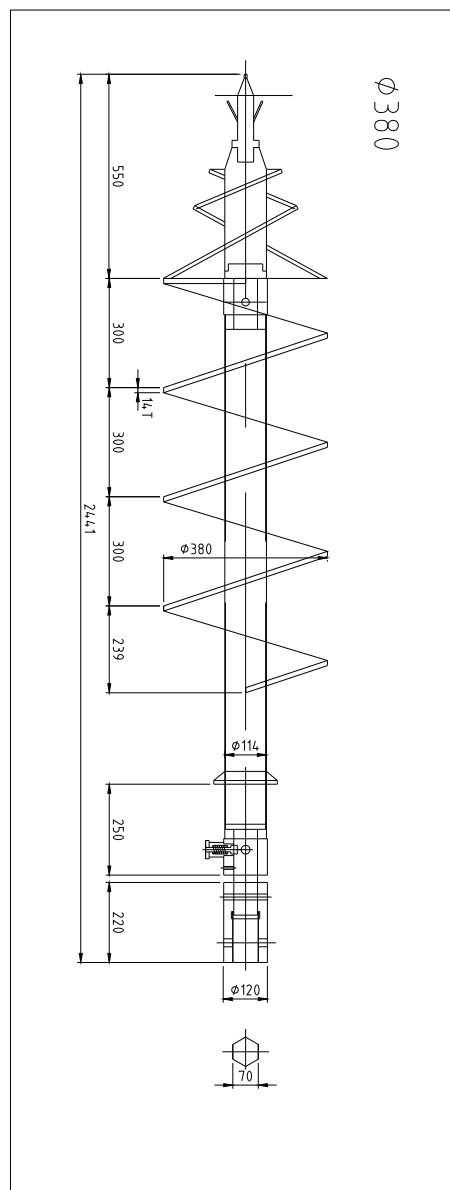
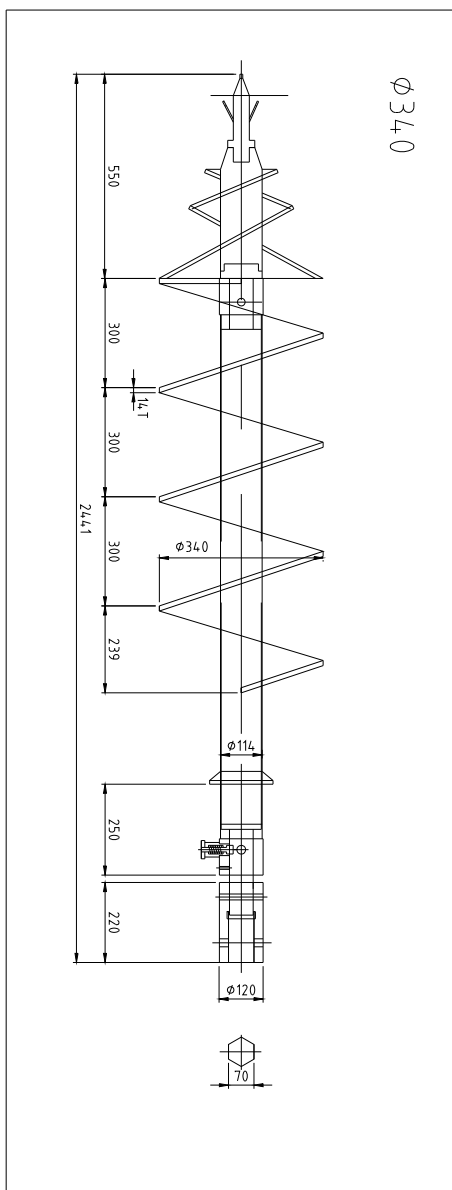
(3), Boom detail

- Operated by Hydraulic cylinder.
- Type: 1st & 2nd stage booms - Articulated boom.
3rd & 4th stage booms - Telescopic boom.
- Material: 1st stage boom – High tensile pentagonal steel.
2nd stage boom – High tensile hexagonal steel.
3rd & 4th stage booms – Aluminum hexagonal boom..
- 1st stage boom elevation range is from (0°) to (78°) (Minimum).
- 2nd stage boom elevation range is from (-69°) to (0°) (Minimum).
- Turning angle 360 ° - Continuous rotation
- Lifting capacity is not less than (700)kg at 0° with 2nd stage boom fully extended.
- Maximum lifting capacity is (3) Metric ton.
- Digging radius distance when boom at 0° is (2.2)m.(Minimum)
- Digging radius distance with 4th stage boom fully extended at 0° is (7.3)m.

9. Auger**(1), Specification of Auger Drill**

Material	Drill body	STPG 370 Pipe
	Drill wing	SM45C
	Bit blade	Hard metal
Distance between drill wings	294 mm	
Drill diameter	380 mm	
Excavation depth	3 m	
Excavation range	2 ~ 7 m	
Revolution	20 ~ 40 (rev/min)	
Torque	Over 300kgm	
Power source	Hydraulic motor	

(2), Diagram of Auger drill



10. Main Components

(1) Unit:

- 1) Unit is designed for fixing this crane to vehicle and it is connected with swing part of the crane.
- 2) The part for fixing base and vehicle is fixed by special steel bolts with heat treatment.
- 3) Column is mounted over the bearing of rotary shaft. Rotation system is driven by rack gear and spur one. Hydraulic cylinder pushes rack gear and the rack gear rotates spur gear and then it makes the column rotated. Rotation angle is 360°

(2) Outrigger:

- 1) There are two set of outriggers in this unit, one in front and the other in rear.
- 2) Manual valve lever controls raise and lowering the outriggers and extending & retracting of the outriggers are operated by automatically or manually according to option.
- 3) The outriggers are composed of beams and legs. The appearance of beam is rectangle and a double-acting cylinder is used.
- 4) To prevent shake of the vehicle, the outriggers are used when the unit operates. The vehicle may be turned over if you do not set the outriggers and operates the unit.
- 5) Pilot check valve prevents up & down joggle of the outrigger legs and prevents also tilt of the vehicle when hose breakage happens.

(3), Column

- 1) The column is assembled with rotary bearing on the base and connected with the 1st stage boom and 1st stage cylinder.
- 2) In the inside of the column, there are solenoid valve and block to discharge and distribute hydraulic oil to every cylinder. Also there are power switch, fuse and work lamp switch outside of the column.

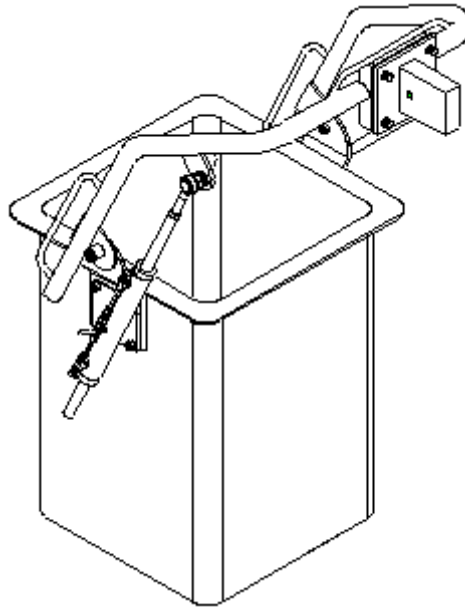
(4), Oil Tank

- 1) The oil tank locates at the floor of base and its capacity is 64 liters.
- 2) Oil amount is shown at the oil gauge of the side of oil tank. Make sure the oil amount always should be over the maximum limit of the oil gauge.
- 3) There are one oil feeder, one oil filter and a drain outside of the tank and another oil filter is inside of the oil tank.
- 4) Hydraulic oil influences the expected life span of the main component of the unit.

(5), Bucket

- 1) It is used for aerial work attaching at the end of 4th stage boom.
- 2) It keeps the horizontality by dead weight owing to the change of boom angle.
- 3) To keep the horizontality, move the lever of cylinder at the side of the bucket.

4) To let the bucket in horizontality, always open the lever to keep the horizontality by dead weight when the boom rises or lowers. But fix the lever when you work in the bucket without movement.



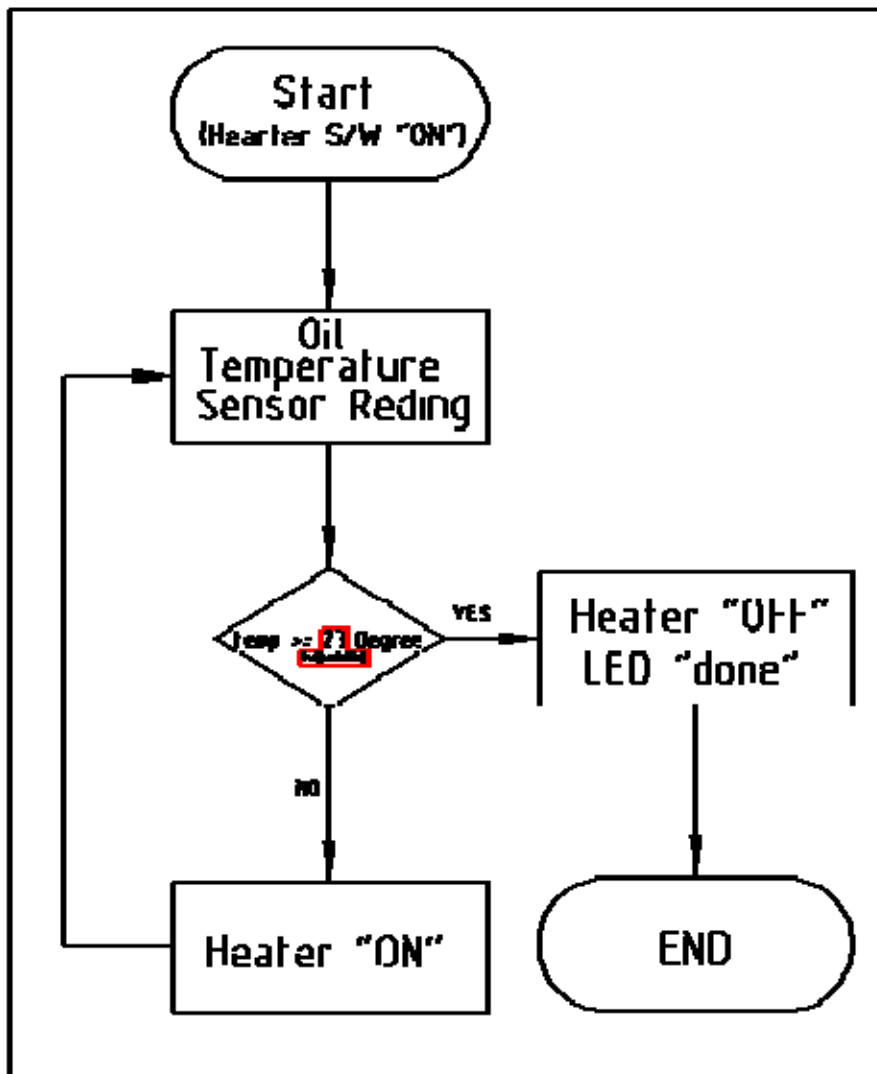
■ **Bucket is not insulated. Extremely be careful not to get electric shock.**

(6), Winch (Option)

- 1) It is a hydraulic winch for lifting a heavy material.
- 2) It is composed of a hydraulic motor, a gear, a drum and a brake. Its lifting capacity is 750 kg.
- 3), Auger, aerial and lifting work have to be operated separately.

(7), Oil heating device (Option)

OIL Pre-Heating Controller Working Flow Chart



11. SAFETY DEVICES

(1) Manual valve:

It prevents rapid movement when the unit operates and makes the cylinder operated smoothly.

(2) Pilot check valve:

These prevent boom falling abruptly if there is a hydraulic line failure or cutting off.

(3) Preventive device for swing range deviation:

It is a device to prevent the overturning of the vehicle, it controls the swing angle to the front

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side of the vehicle in the 120° (Each 60° from the center line)

(4) Overload check sensor:

It stops the unit operation when the unit lifts over the rated load with alarm sound. It is possible to lift heavier load than the rated load when the boom is fully retracted and close to the vehicle.

(5) Leveling cylinder:

It keeps the horizontality of the bucket by dead weight. Open the lever when the boom rises or lowers and then fix the lever when you work in the bucket without movement. (Manual lever)

(6) Lock catch:

It is device to prevent the crane turning when the vehicle is running.

(7) Warning alarm:

It is a device to make a warning sound in the case of unsafe working situation.

Replace the cause of alarm after stop operation.

(8) Preventive device for Overwind:

It prevents the collision between hook and the end of the boom when the winch is wound and the boom is extended.

(9) Emergency Hydraulic Unit;

① When you have to operate the unit under the engine failure, use the emergency pump.

Pressing the pump do the operation what you have to do.

② Do not operate the unit under the engine failure except an emergency case. (The battery could be discharged and it will cause hazard to the unit.)

**(10) Emergency manual valve:**

1), Its usage is for the case that battery and transmitter are out of order when the engine is on.

2), Before operating, contact with headquarter or A/S center for more safe work.

3), Detach the Emergency manual valve cover from column.

4), Lock the metering valve located on behind outrigger manual valve.

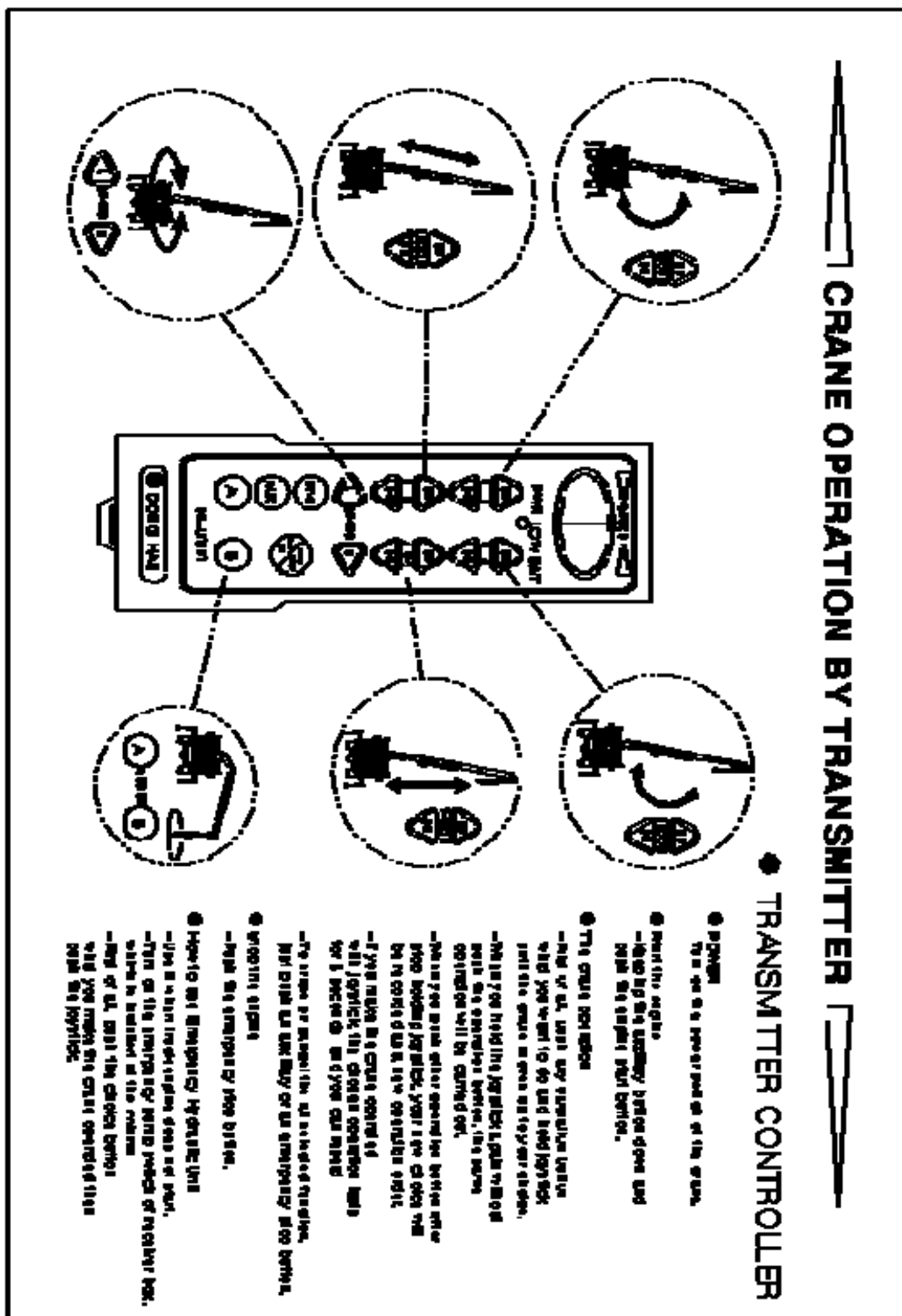
5), Check the label on column, expect the crane operation.

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- 6), Make the equipment return to safe condition by operating the lever as slowly as it can.
- 7), Get the metering valve to the original position.



12. Efficiency of the control (Wire/Wireless transmitter)



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- The End -