



DONGHAE MACHINERY & AVIATION Co., Ltd

TECHNICAL SPECIFICATION

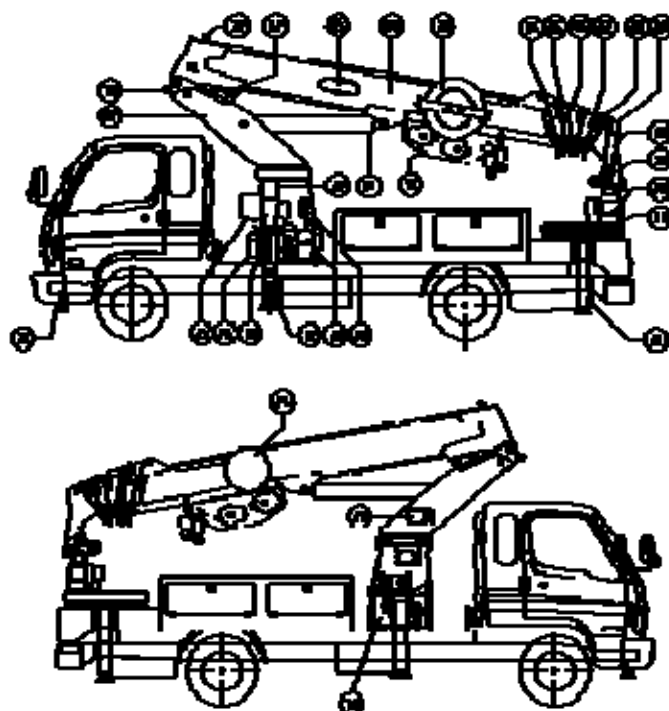
MODEL - DHS 280 AP



Model	DHS 280 AP
Revision	03
Date	May 16, 2012

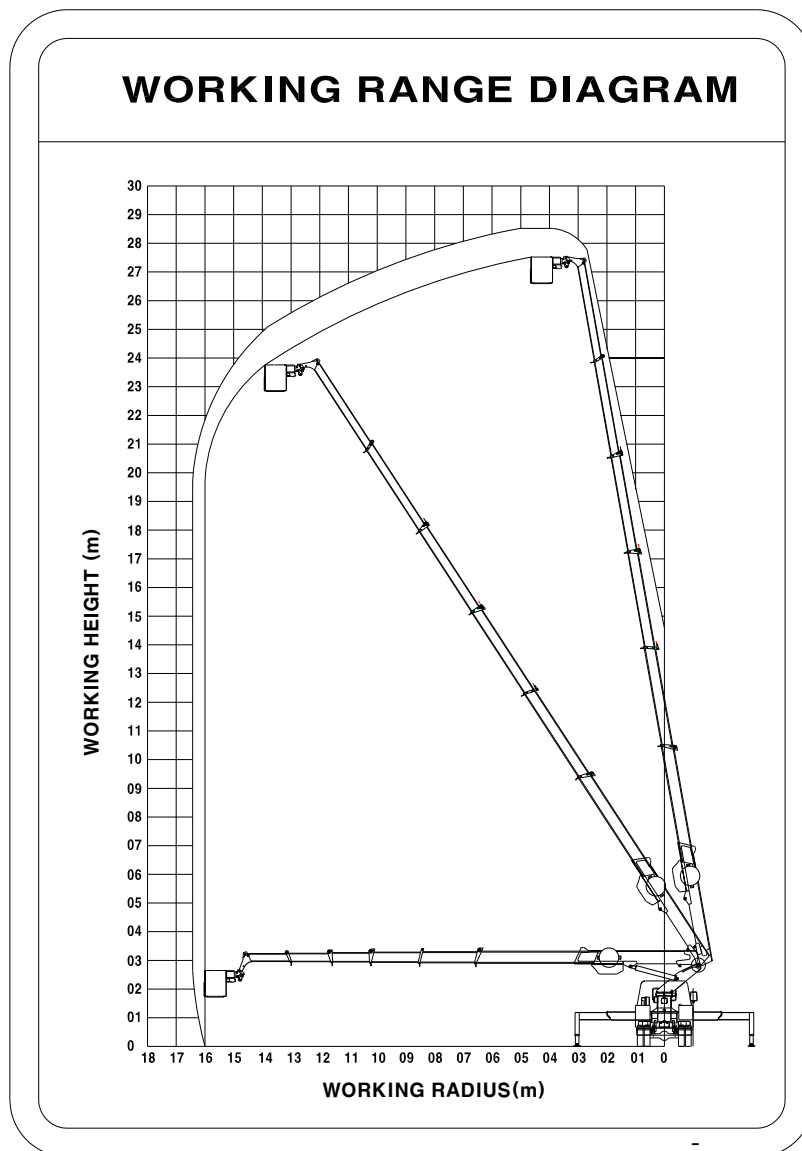
DHS 280 AP Platform --- Hydraulic Crane Leader

1. Terminology Diagram/DHS 280AP



No.	Description	No.	Description
1	Frame (Unit)	17	Front outrigger
2	Column	18	Rear outrigger
3	1 st stage boom	19	Sub front outrigger
4	2 nd stage boom	20	Bucket rotation device
5	3 rd stage boom	21	Hose reel
6	4 th stage boom	22	Red warning lamp (Warning, safety)
7	5 th stage boom	23	Working lamp receiver box
8	6 th stage boom	24	Wire reel
9	7 th stage boom	25	Outrigger manual control lever
10	Bucket holder	26	High pressure filter
11	Bucket	27	Main control panel
12	Leveling cylinder 1	28	Emergency manual control lever
13	Leveling cylinder 2	29	Main controller (Receiver)
14	Derrick cylinder	30	White warning lamp (Working condition)
15	Telescopic cylinder	31	Oil tank
16	Hydraulic winch		

2. Working Radius/DHS 280 AP



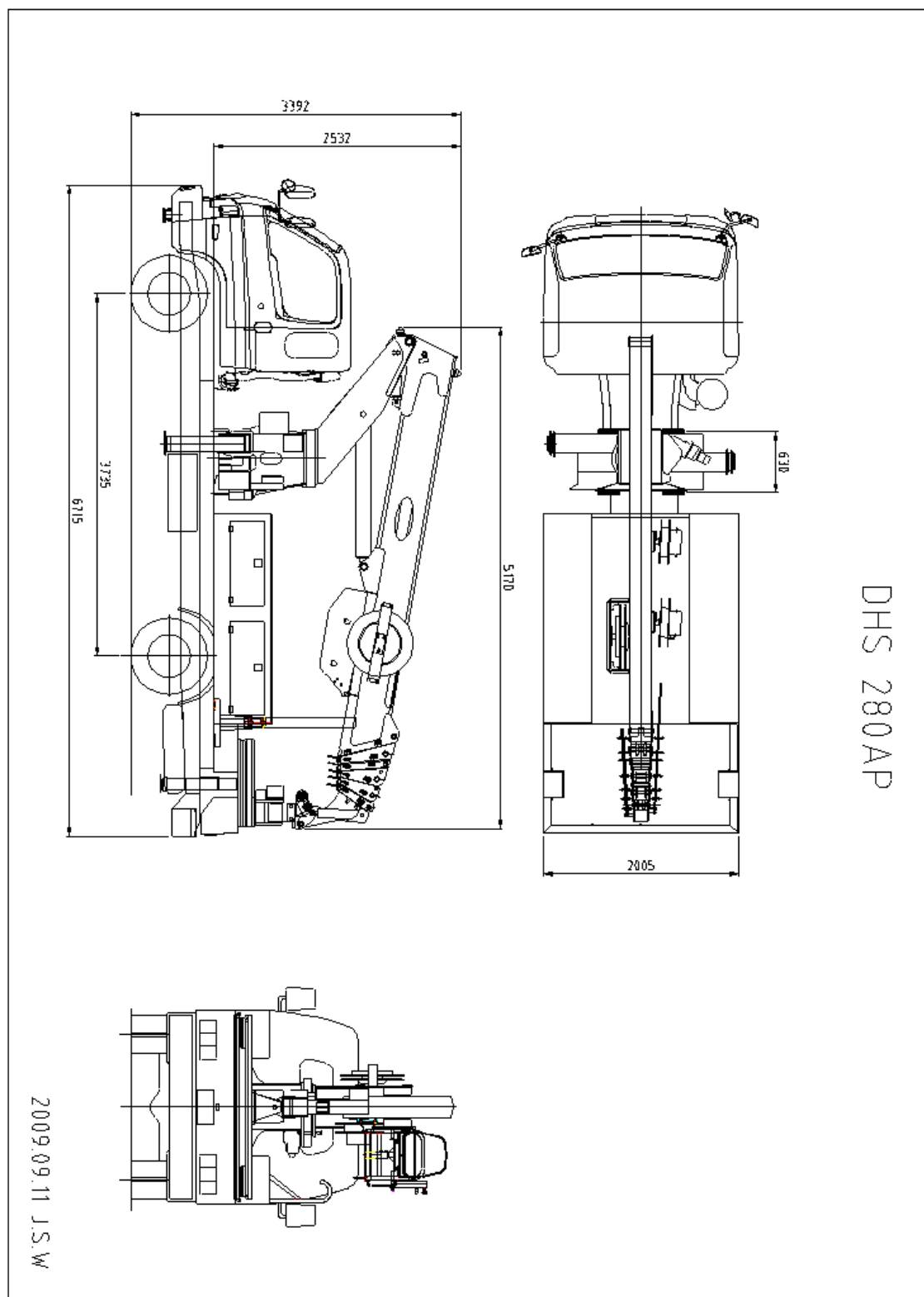
DHS 280 AP Platform = Hydraulic Crane Leader

3. Specification

Specification of DHS 280AP			
No.	Description	Standard	
1	Product Name	DHS 280 AP	
2	Manufacturer Name	DONGHAE MACNIHERY & AVIATION Co., Ltd	
3	Dimension (L x W x H)	5,170(mm) x 1,925 (mm) x 2,532 (mm)	
4	Permissible Vehicle for Mounting	Not less than 3.5 MT ~ 5 MT payload truck	
5	Maximum Working Height	27.5m (To the bucket top)	
6	Maximum Side Reach	16m	
7	Derrick Lifting Capacity (Lifting in boom horizontal state)	2,600 kgs/3.9M	
		1,200 kgs/7M	
		530 kgs/11M, 360 kgs/14M	
8	Rotation Angle	360° /Continuous rotation	
9	Power	PTO	
10	Front Outrigger	Type	Electronic horizontal & vertical auto extension
		Max Span	5.76M
11	Rear Outrigger	Type	Electronic horizontal & vertical auto extension
		Max Span	3.85M
12	Sub Front Outrigger	Type	X-type electronic vertical auto extension
		Max Span	1.3M
13	Operation Method	Wireless Transmitter	
14	Hydraulic Oil Reservoir Capacity	60 (ℓ)	
15	Safety Devices	Pressure control valve, Over-center valve for prevention of boom falling, Double over-center valve, Auto brake for prevention of hook falling, Double pilot check valve, Boom interlock, Outrigger sensor,	
16	Standard Items	Electronic outrigger, Main winch, Sub winch, Wire transmitter, Working lamp, Auto leveling	

- **ALL TECHNICAL SPECIFICATION IS BASED ON STANDARD ITEM OF DONGHAE MACHINERY & AVIATION Co., Ltd.**
- **IT IS SUBJECTED TO CHANGE FOR THE IMPROVEMENT OF THE QUALITY WITHOUT PRIOR NOTICE.**

DHS 280 AP Platform

 Hydraulic Crane Leader**4. Overall Sketch**

◆ Truck & bucket specification may be different up to customer's choice.

5. Main components

(1) Frame (Unit);

- 1) Frame is designed for fixing this crane to vehicle and it is connected with swing part of the crane.
- 2) The part, which is fixed frame and chassis is tightened by special steel bolts with heat treatment and plating to the main frame of chassis.
- 3) Column is mounted over the bearing of rotary base. Rotation system is continuously driven by rack gear.
- 4) In the side of frame, manual control levers used for outrigger and crane operation are installed in a case.
- 5) Inside frame, there are a solenoid valve and block to discharge and distribute hydraulic oil to every cylinder. Also a buzzer is inside to make sound and notify an operator that the control device is working. And there are switch cutting main power of crane, fuse, working lamp switch and receiver outside of frame.

(2) Outrigger:

- 1) There are three set of outriggers installed to this unit. Sub front outrigger is located under the cabin, and front & rear outriggers are installed at both side of the chassis.
- 2) Raising and lowering outriggers are operated by wire transmitter and extension and retraction of outrigger beams are operated automatically.
- 3) The outriggers are composed of beams and legs. The appearance of beam is rectangular and a double-acting cylinder is used.
- 4) To prevent shake of the chassis, the outriggers are fully stabilized before the unit operates.
- 5) Pilot check valve prevents up & down joggle of the outrigger legs and prevents also tilt of the chassis when hose breakage happens.

(3) Column;

- 1) The column is assembled with rotary bearing on the frame and connected with the 1st stage boom.
- 2) Outside of the column, there are working lamp, white warning lamp showing working condition and red warning lamp showing alert and operation of safety devices.

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(4) Oil Tank;

- 1) The oil tank locates at the floor of base and its capacity is 60 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 a return filter for oil feeding and a drain outside of the tank.
- 4) At side of the tank, a suction filter is installed.
- 5) Hydraulic oil influences the expected life span of the main components of the unit.

(5) Boom System;

- 1) The booms are composed of 1st, 2nd, 3rd, 4th, 5th, 6th, and 7th stage boom.
- 2) The 1st stage boom is fixed to the column operated by the derrick cylinder and its articulated angle is $-13 \text{ deg} \sim 80 \text{ deg}$.
- 3) The 2nd, 3rd, 4th, 5th, 6th, and 7th stage booms are made by high tensile steel.
- 4) The 2nd and 3rd stage booms are fixed inside of the 1st stage boom and extended & retracted by the telescopic stage cylinder. The length of boom extension and retraction is 2,825mm.
- 5) The 3rd, 4th, 6th, and 7th stage booms are fixed inside of the 3rd stage boom and extended & retracted by the telescopic stage cylinder and wire. The length of boom extension and retraction is 2,725mm.

(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, a brake and wire guide. Its lifting capacity is 1,000 kg.

(7) Bucket;

Basically, steel bucket for 2 person is equipped as a standard item.



< Steel bucket for 2 person >

■ **Bucket is not insulated. Extremely be careful of electric shock and damage.**

6. Safety Devices

(1), Pilot check valve and counter balance valve

- It prevents boom falling abruptly if there is a hydraulic line failure or cutting.

(2), Emergency Stop Switch

- It is fitted on the main control panel. In emergency case or in case for shutting off the power, this switch provides fast and reliable stopping function of the unit.
- When this switch is pushed, all unit function and engine itself will be stopped.

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- To release this switch, turn the switch to the clockwise. The switch cap will be bounced up.
- Start the engine again and operate the unit.

(3), Safety Device and Function Perception Lamp of Each Part

- It shows whether safety sensors operate normally and it can be identified by LED lamp whether each function, selection and operation works or not.

(4), Boom Fixing Pin

- It is a fixing pin to prevent rotation of the boom during driving.

(5), Warning and alarm device

- It is a device to indicate an operator state of safety devices. The operator can recognize it through LED lamp and alarm sound.

(6), Overload prevention

- When bucket is overloaded or winch lifts beyond its rated load capacity, these functions are stopped with alarm sound.

(7), Truck front angle check sensor (Truck Overturning Prevention Device)

- If truck is tilted over 3 degrees in front of the truck during boom rotation, the boom movement will be stopped. In the opposite direction against the tilted side, boom movement like extension and rotation are possible.

(8), Truck Left and Right Side Angle Check Sensor (Truck Overturning Prevention Device)

- When bucket is overloaded and the truck is tilted over 2 degrees in the right or left side for overload of the winch, the movement of boom is limited.

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(9), Outrigger Stabilization Sensor

- It perceives stabilization of outriggers on the ground and when outriggers are separated from the ground, unit function will be automatically stopped. This safety sensor is linked with interlock system.

(10), Boom Rest Bracket

- It is a device to limit outrigger stabilization. Outrigger can be stabilized on the ground only the boom is stowed on the bracket. It also prevents boom rotation during driving.

(11), Interlock System

- It is a linked safety device to limit outrigger and boom. Without outrigger stabilization, boom can't be operated and outrigger can be operated only the boom is stowed on the bracket.

(12), Bucket Safe Angle Sensor

- Bucket movement will be automatically stopped when it is tilted approximately 10 degrees of its front and rear side. At that time, keep the bucket horizontality by transmitter then resume to work.

(13), Bucket Overload Prevention Function

- When bucket is overloaded, its movement will be automatically stopped.

(14), Bucket Rotation Stop Function

- Bucket rotation is controlled by wireless transmitter and when bucket touches the stop point for rotation, the rotation will be automatically stopped.

- The End -