



**DONGHAE MACHINERY & AVIATION Co., Ltd**

# TECHNICAL SPECIFICATION

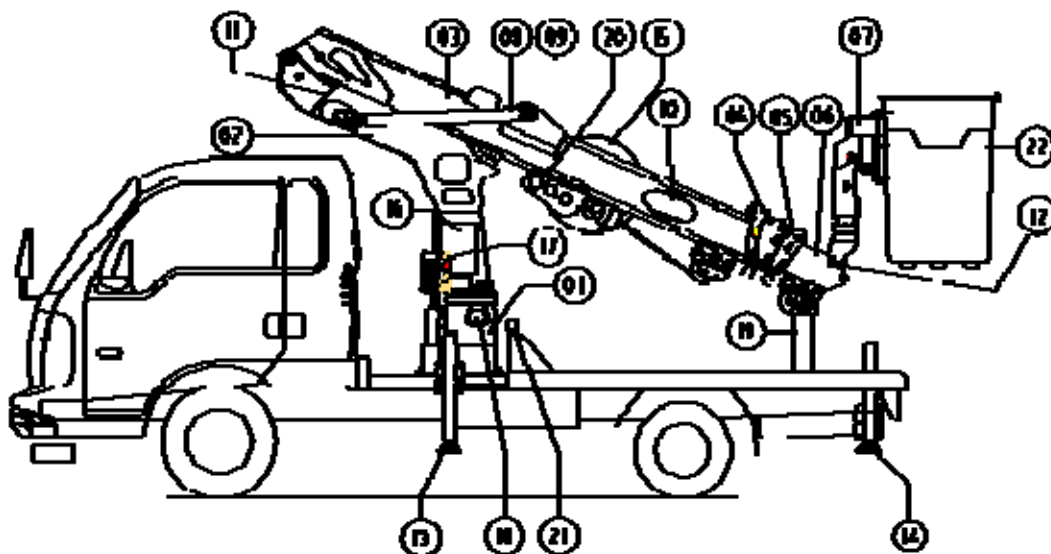
## MODEL - DHS 15 AP



Model	DHS 15 AP
Revision	05
Date	May 10, 2012

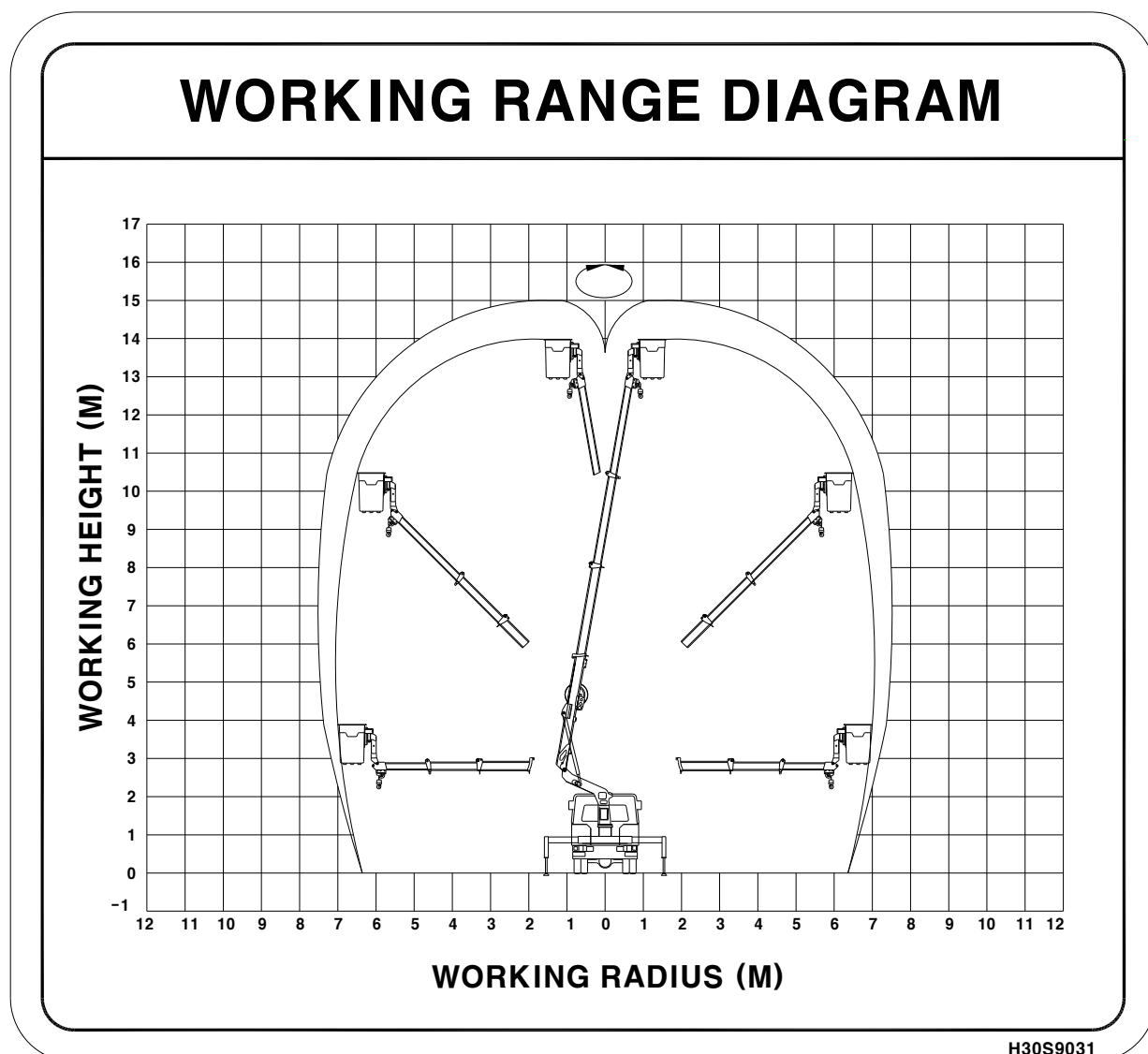
## DHS 15 AP \_\_\_\_\_ Hydraulic Crane Leader

### 1. Terminology Diagram/DHS 15 AP – 1.2 ton truck



No.	Description	No.	Description
1	Frame	12	Bucket Leveling Cylinder
2	Column	13	Front Outrigger
3	1 <sup>st</sup> Stage Boom	14	Rear Outrigger
4	2 <sup>nd</sup> Stage Boom	15	Hose Reel
5	3 <sup>rd</sup> Stage Boom	16	Emergency Manual Control Valve
6	4 <sup>th</sup> Stage Boom	17	Control Box
7	Bucket Rotation Device	18	Rotary Cylinder
8	Derrick Cylinder (L)	19	Boom Rest Bracket
9	Derrick Cylinder (R)	20	Winch (Option)
10	Telescopic Cylinder	21	Partition
11	Leveling Cylinder	22	Bucket



**DHS 15 AP \_\_\_\_\_ Hydraulic Crane Leader****2. Working Radius/DHS 15 AP**







## DHS 15 AP Hydraulic Crane Leader

### 5. 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  $0^{\circ} \sim 180^{\circ}$  and  $0^{\circ} \sim (-180^{\circ})$ .

#### (2) Outrigger:

1) There are three set of outriggers in this unit, sub front, front and rear outriggers are equipped to secure safety.

2) Manual valve lever controls raising 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. If the outrigger are not firmly grounded, the structure of chassis may be damaged and turned over.

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 frame and connected with the 1st stage boom.

2) In the inside of the column, there are solenoid valve and block to discharge and distribute hydraulic oil to every cylinder. Also a buzzer is inside to make a sound and notify the control device works. And there are switch, fuse, working lamp switch and receiver outside of the platform.



## **DHS 15 AP \_\_\_\_\_ Hydraulic Crane Leader**

### **(4) Oil Tank;**

- 1) The oil tank locates at the floor of base and its capacity is 35 liters in 1.4 MT truck. Over 2.5 MT truck, the oil tank capacity is 50 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 components of the unit.

### **(5) Boom System;**

- 1) The booms are composed of 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> stage boom and its section is hexagonal to minimize the shaking. Using high tensile steel, it is strong and durable.
- 2) The 1<sup>st</sup> stage boom is fixed to the column and boozer, which sounds operation of control devices.
- 3) The material of 2<sup>nd</sup> ~ 4<sup>th</sup> stage boom is high tensile steel and these are fully tested and manufactured for the unit.
- 4) The 2<sup>nd</sup> stage boom is fixed at the end of 1<sup>st</sup> stage boom and bended by 1<sup>st</sup> stage cylinder. Its articulating angle is -24 ~ 80 degrees
- 5) The 3<sup>rd</sup> stage boom is extended and retracted inside of the 2<sup>nd</sup> stage boom by driving of telescopic cylinder. And the length is 2,290mm.
- 6) The 4<sup>th</sup> stage boom is extended and retracted inside of the 3<sup>rd</sup> stage boom by driving of telescopic cylinder and wire. And the length is 2,290mm. Also it is produced to attaché platform and winch.

### **(6) Winch (Option);**

- 1) To lift heavy material, hydraulic winch is adopted as option item.
- 2) Winch is composed of hydraulic motor, gear, drum and brake. Its lifting capacity is 300 kgs.

### **(7) Bucket;**

- 1) It is used for aerial work and fixed and connected at the end of 4<sup>th</sup> stage boom by the hinge assembly.
- 2) Using a hydraulic cylinder, it keeps the horizontality automatically when the bucket changes its angle. And it rotates the bucket within 180 degrees by a manual wheel bar.



## **DHS 15 AP Hydraulic Crane Leader**

### **4. Overload Check Sensor;**

It makes alarm sound and shut down the movement when lifting an overloaded material beyond rated capacity with winch.

The more closer to the vehicle with fully retracted boom, the more heavy material can be lifted.

### **5. Auto Leveling Cylinder;**

It makes horizontality of the platform automatically.

### **6. Alarm;**

It makes alarm sound when safety device is working.

Stop operation and remove the cause of the alarm sound.

### **7. Swing Angle Check Sensor;**

If the vehicle tilts more than 3 degrees in the front and the boom swings in 120 degrees in the front side of the vehicle, the swing is limited.

### **8. Safe Angle Deviation Preventer of Platform;**

When occupying the platform and the platform tilts over 10 degrees up and down, the platform movement is limited.

### **9. 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.
- 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.

## DHS 15 AP Hydraulic Crane Leader



### 10. Emergency power pack

When truck engine is out of order, this emergency power pack can operate aerial platform such as boom rotation, boom extension and retraction, outrigger extension and retraction etc. In an engine failure case, an operator who is in the bucket can get back to the ground using this unit.



### 11. Outrigger Sensor

It is a kind of interlock device. Without full stabilizing of outrigger on the ground, boom rotation, boom extension and retraction are limited.

### 12. Boom interlock

Before driving the chassis, boom should be fully retracted. If not, outrigger can't be raised and retracted.

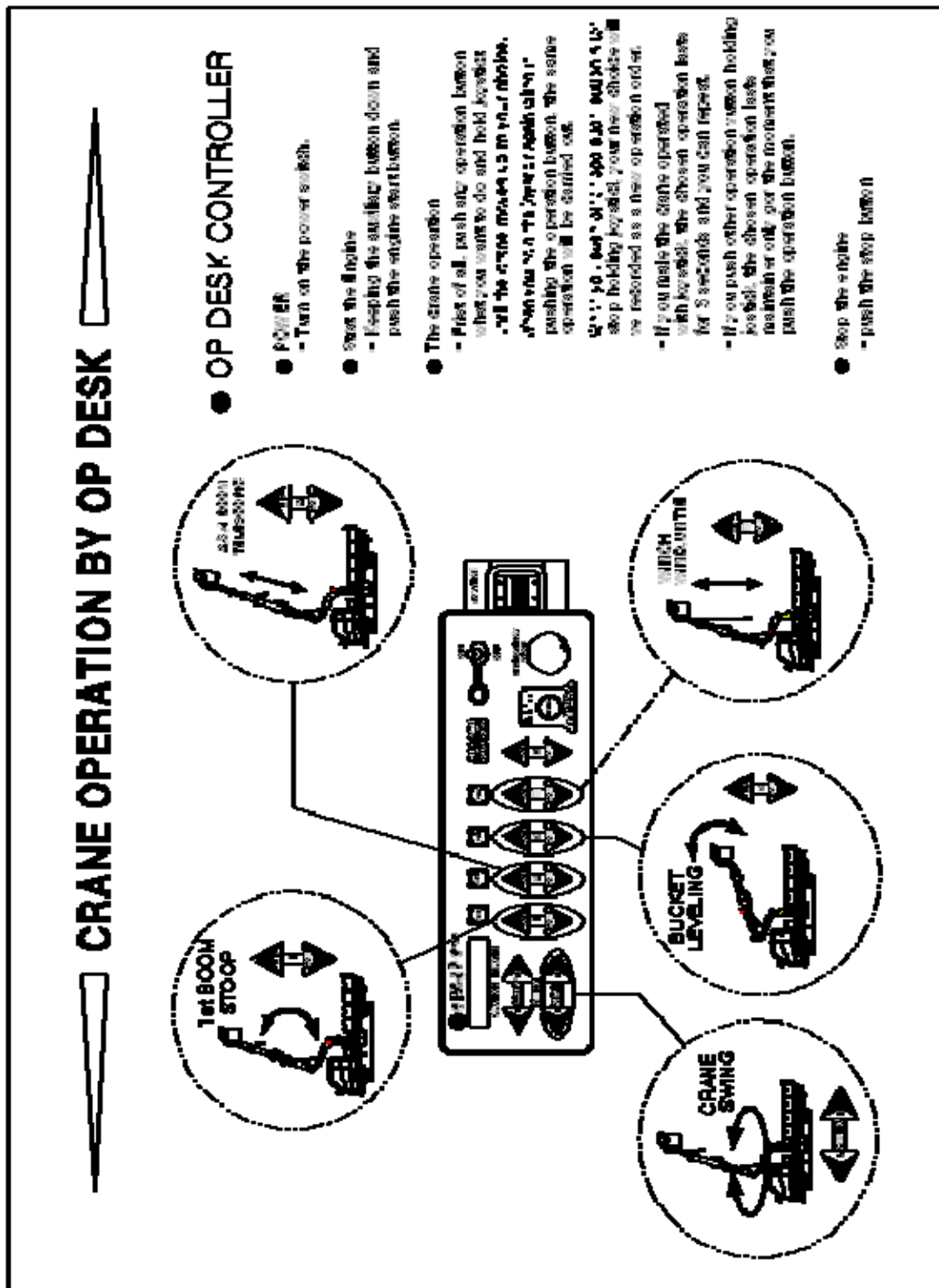
### 13. Boom Angle Gauge

It shows boom angle to an operator. Referring to this gauge, operator can easily recognize the bucket angle.



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7. Efficiency of the control (OP DESK CONTROLLER)







# DHS 15 AP --- Hydraulic Crane Leader



- The End -