



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

# TECHNICAL SPECIFICATION

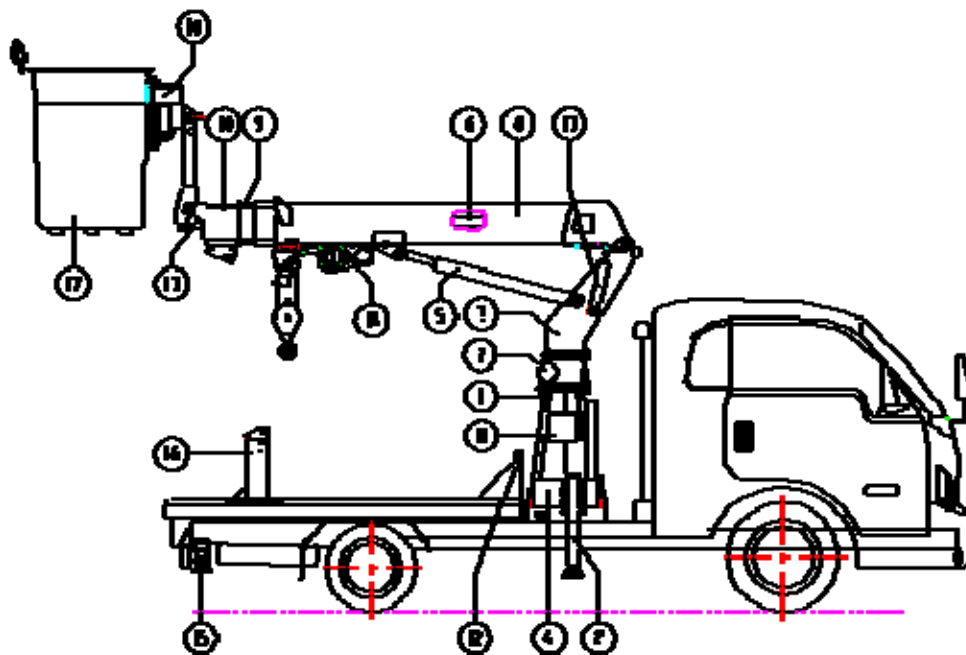
## MODEL - DHS 950L



Model	DHS 950L
Revision	05
Date	May 16, 2012

# DHS 950L \_\_\_\_\_ Hydraulic Crane Leader

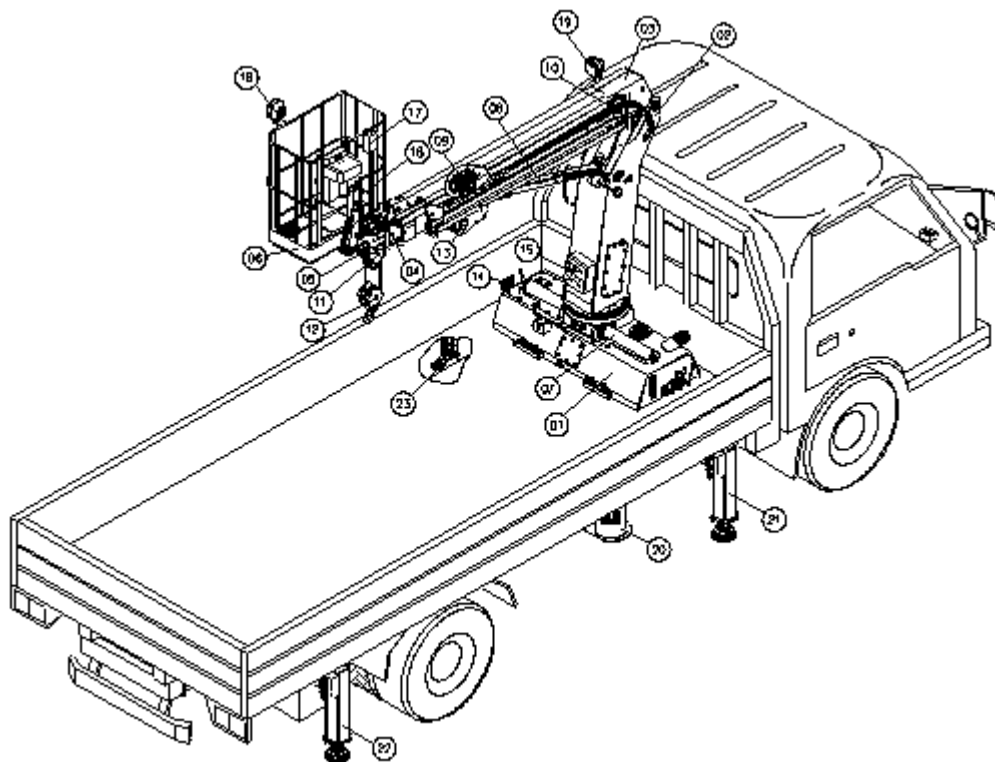
## 1. Terminology Diagram/Over 1 MT Truck



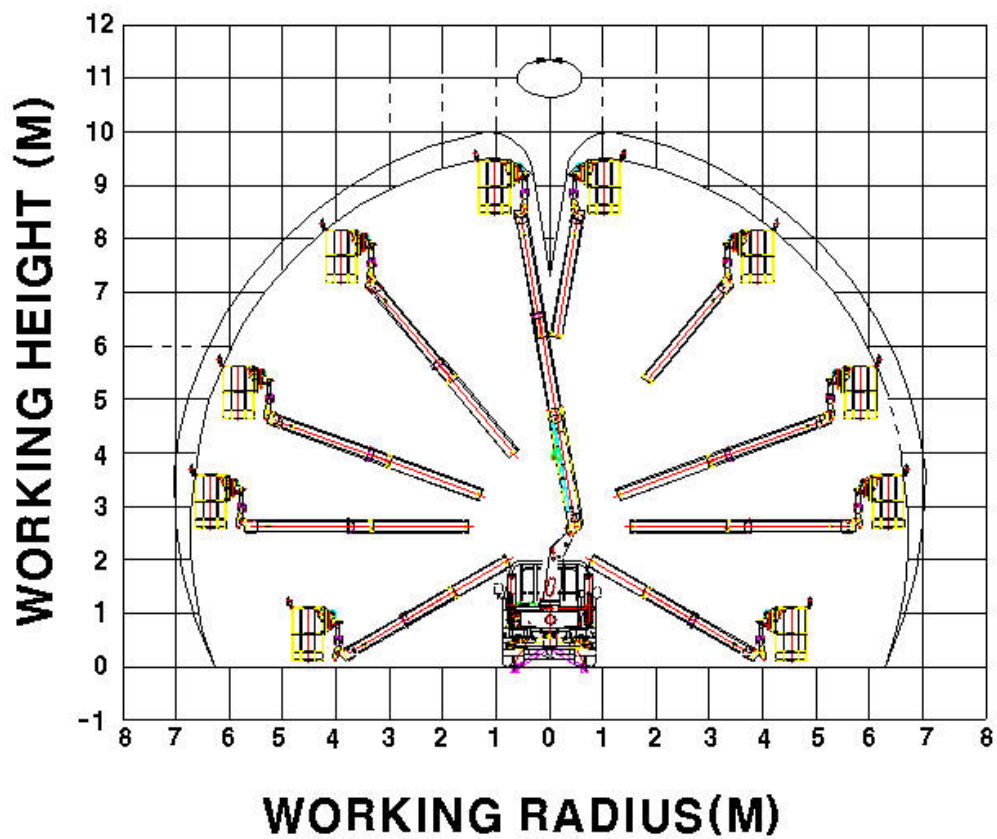
No.	Description	No.	Description
1	Frame	11	Receiver
2	Front outrigger	12	Partition
3	Column	13	Leveling cylinder
4	Oil tank	14	Winch (Option)
5	Derrick cylinder	15	Rear outrigger
6	Telescopic cylinder	16	Boom rest bracket
7	Reducer	17	Bucket
8	1 <sup>st</sup> section boom	18	Bucket rotation device
9	2 <sup>nd</sup> section boom		
10	3 <sup>rd</sup> section boom		

# DHS 950L Hydraulic Crane Leader

## 1-1. Terminology Diagram/Over 2.5MT Truck



No.	Description	No.	Description
1	Unit	13	Winch (Option)
2	Column	14	Outrigger Control Lever
3	1 <sup>st</sup> Stage Boom	15	Receiver Box
4	2 <sup>nd</sup> Stage Boom	16	Working Lamp
5	3 <sup>rd</sup> Stage Boom	17	Transmitter Box
6	Platform	18	Control Box (Connecting Terminal)
7	Rack Cylinder	19	Work Lamp (Option)
8	Derrick Cylinder	20	Hydraulic Power Pack
9	Telescopic Cylinder	21	Front Outrigger
10	Leveling Cylinder	22	Rear Outrigger
11	Platform Leveling Cylinder	23	Proportional Block Assembly
12	Hook	24	

**DHS 950L      Hydraulic Crane Leader****2. WORK RADIUS/DHS 950L**

# DHS 950L Hydraulic Crane Leader

## 3. SPECIFICATION

Specification of DHS 950L			
No.	Description		Standard
1	Product Name		DHS 950L Platform Type
2	Manufacturer Name		DONGHAE MACNIHERY & AVIATION Co., Ltd
3	Dimension (L x W x H)	Before Mounting	3,020(mm) x 1,600(mm) x 1,950(mm)
		After Mounting	5,425 (mm) x 1,750(mm) x 2,739(mm)
4	Permissible Vehicle for Mounting		Not less than 1 MT truck
5	Maximum Work Height		10 m
6	Maximum Side Reach		6.5 m
7	Boom Type	1 <sup>st</sup> Stage	Articulated
		2 <sup>nd</sup> & 3 <sup>rd</sup> Stage	Telescopic
8	Boom Material	1 <sup>st</sup> Stage	High tensile Hexagonal Steel
		2 <sup>nd</sup> & 3 <sup>rd</sup> Stage	Hexagonal Aluminum
9	Rotation Angle/Speed		Clockwise 180° & Counter clockwise -180°
10	Rotation Device		Hydraulic Cylinder
11	Platform	Material	F.R.P (Fiberglass Reinforced Plastic)
		Dimension	1,000 x 645 x 1,000(mm)
		Swing Angle	180° / Manual Wheel Bar
		Leveling	Auto horizontality by Hydraulic Cylinder
		Load Capacity	200kg (Including Operator)
		Occupancy	2 Personnel
		Feature	Platform Tilt & Arc Rotation
12	Winch (Option)		300 kg / Single line
			600 kg / Double line
13	Operation Method		Wire or Wireless Transmitter
14	Front Outrigger		Auto-Horizontal & Vertical Extending Type
15	Maximum Outrigger Span		3.2 (m)
16	Hydraulic Oil Reservoir Capacity		35 (ℓ)

## DHS 950L Hydraulic Crane Leader

No.	Description	Standard
17	KC Items	Outrigger sensor, emergency stop switch, emergency manual control lever, emergency power pack, Boom rest bracket & interlock
18	Operation Method	Transmitter
19	Safety Devices	Relief Valve, Counter Balance Valve, Proportional Control Valve, Platform Safe Angle Control Valve, Pilot Check Valve, Vehicle Overturning Preventer, Column Swing Fixing Device, Overload Check Sensor

- **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 950L Hydraulic Crane Leader

### 4. 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 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.

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, work lamp switch and receiver outside of the platform.

#### (4) Oil Tank;

1) The oil tank locates at the floor of base and its capacity is 35 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.

## DHS 950L Hydraulic Crane Leader

- 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> and 3<sup>rd</sup> stage boom.
- 2) The 1st stage boom made of high tensile steel is fixed to the column by pin, hinge and derrick cylinder and its refraction angle is  $-30^{\circ} \sim 80^{\circ}$ .
- 3) The 2<sup>nd</sup> & 3<sup>rd</sup> stage booms are made of high tensile aluminum and they have been fully tested and manufactured for the unit.
- 4) The 2<sup>nd</sup> & 3<sup>rd</sup> stage booms are simultaneously extended and retracted by the telescopic cylinder in the inside of 1<sup>st</sup> stage boom and its length is 3,400mm.

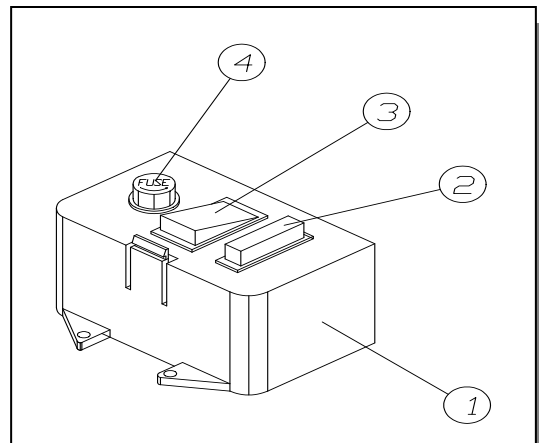
### (6) Bucket

As a hydraulic cylinder is adopted, bucket keeps horizontality automatically according to change of boom angle. It is also possible of free arc rotation in 180 degrees and bucket tilt is available in an emergency case and removing garbage of the bucket. If there is angle deviation of the bucket, it can be controlled and adjusted by a transmitter.

### (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





## DHS 950L Hydraulic Crane Leader

### 5. SAFETY DEVICES

#### **1. Proportional Valve;**

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

#### **2. Pilot Check Valve and Counter Balance Valve;**

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

#### **3. Vehicle Overturning Prevention Device;**

1) Swing angle check sensor

If the vehicle tilts more than 3 degrees to the front and the boom swings in 120 degrees to the front side of the vehicle, the swing is limited as the swing angle check sensor is connected with a front angle check sensor.

2) Vehicle side angle check sensor

When platform is overloaded and the vehicle tilts more than 2 degrees in right or left side, the movement of boom and column are limited.

3) Vehicle front angle check sensor

It perceives the tilt of the front side of the vehicle and when the vehicle tilts more than 3 degrees, the movement of boom and column are limited.

#### **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.

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### 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.



### 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.



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### 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.

### 14. Bucket Rest Bracket

It is used for bucket stowing before chassis traveling. If not, outrigger can't be raised and retracted.

### 15. Chassis horizontal Sensor

To prevent overturning of the chassis, outrigger should stabilize the chassis and make it on the surface level. If not, boom extension and retraction, boom rotation is limited.

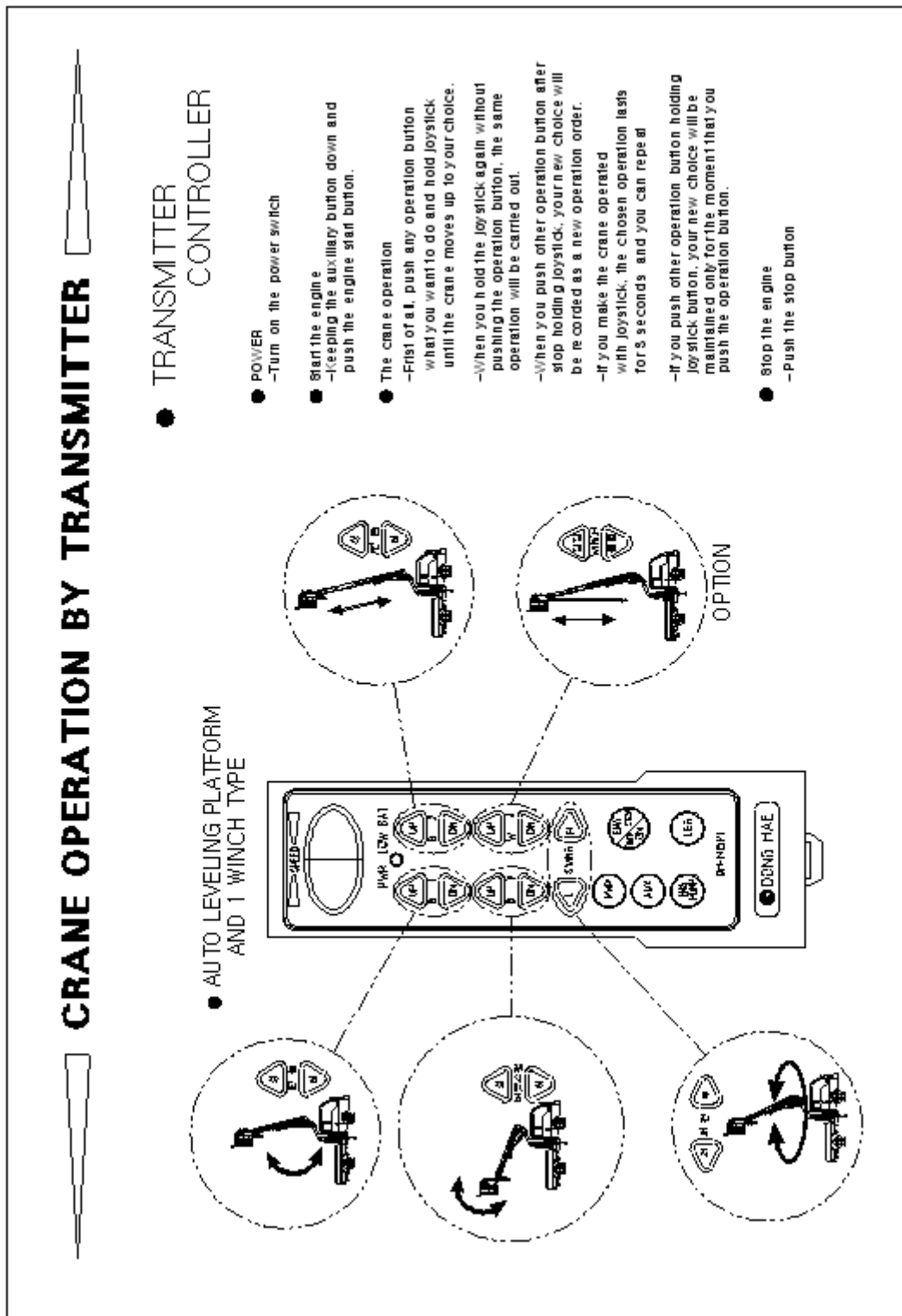
### 16. Emergency stop switch



It is fitted at the unit and makes stop of all crane function in emergency. To restore function, turn to the switch to the clockwise.

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## 6. EFFICIENCY OF THE CONTROL (WIRE/WIRELESS TRANSMITTER)



## DHS 950L Hydraulic Crane Leader



OPTION – Steel Locker

