



SELF-PROPELLED SCISSOR LIFTS

Training MANUAL

(For DS1218RT / DS1418RT)



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1. Product parameters

Product parameters

Model JCPT1218RT

Items	Parameters	Items	Parameters
Maximum Working Height	39.37ft 12m	Maximum hydraulic pressure (functions)	240bar
Maximum Platform Height	32.81ft 10m	Tire size - standard tires	Φ26×12-16.5
Height, stowed Rails up	8.50ft 2.59m	Airborne noise emissions	<80dB
Height, stowed Rails folded	5.97ft 1.82m	Maximum sound level at normal operating workstations (A-weighted)	
Width, standard tires	5.77ft 1.76m	Gradeability	21.8° 40%
Length, platform retracted	10.47ft 3.19m (without outriggers)	Maximum working slope	X-1.5°, Y-3°
	12.60ft 3.84m (with outriggers)	Drive speeds	
Length, platform extended	14.80ft 4.51m (without outriggers)	Stowed, maximum	5.0km/h
	15.78ft 4.81m (with outriggers)	Platform raised, maximum	0.45km/h
Platform dimensions	9.45ft × 4.99ft 2.88m × 1.52m	Floor loading information	
Platform extension length	4.69ft 1.43m	Tire load, maximum	4255lbs 1930kg
Maximum load capacity	1000 lbs 454kg	Outrigger load, maximum	4255lbs 1930kg
Maximum wind speed	28mile/h 12.5m/s	Tire contact pressure	945.5kPa
Wheelbase	7.51ft 2.29m	Outrigger contact pressure	602kPa
Turning radius (outside)	15.10ft 4.60m	Occupied floor pressure	8.5kPa
Turning radius (inside)	6.92ft 2.11m	Note: Floor loading information is approximate and does not incorporate different option configurations. It should be used only with adequate safety factors.	
Ground clearance	9.45in 24cm		
Weight	See Serial Label		
(Machine weights vary with option configurations)		Continuous improvement of our products is a DINGLI policy. Product specifications are subject to change without notice or obligation.	
Controls	Proportional		
AC outlet in platform	Standard		

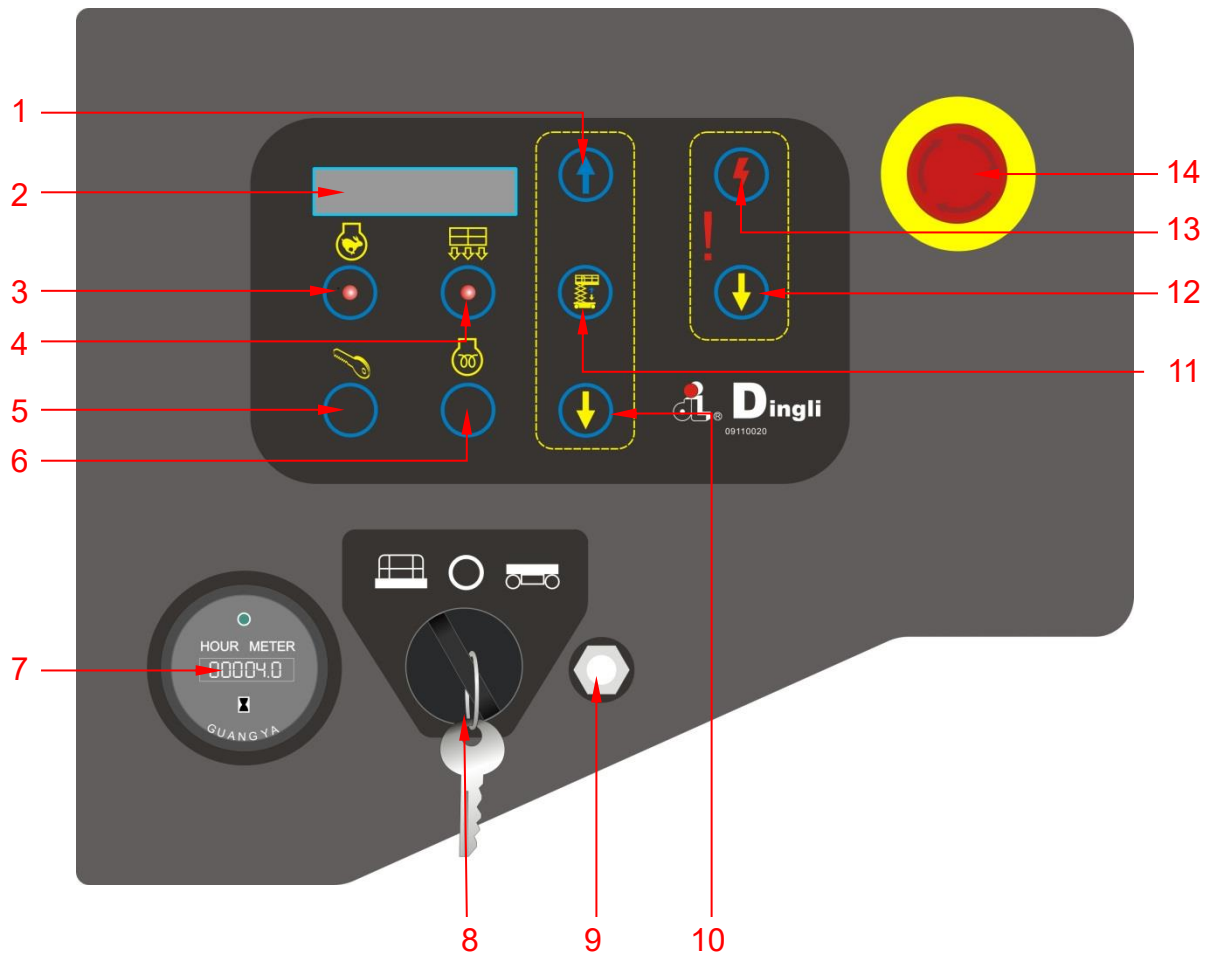
Product parameters

Model JCPT1418RT

Items	Parameters	Items	Parameters
Maximum Working Height	46.92ft 14.3m	Maximum hydraulic pressure (functions)	240bar
Maximum Platform Height	ft 12.3m	Tire size - standard tires	Φ26×12-16.5
Height, stowed Rails up	ft 2.74m	Airborne noise emissions	<80dB
Height, stowed Rails folded	ft 1.97m	Maximum sound level at normal operating workstations (A-weighted)	
Width, standard tires	5.77ft 1.76m	Gradeability	21.8° 40%
Length, platform retracted	10.47ft 3.19m (without outriggers)	Maximum working slope	X-1.5°, Y-3°
	12.60ft 3.84m (with outriggers)	Drive speeds	
Length, platform extended	14.80ft 4.51m (without outriggers)	Stowed, maximum	5.0km/h
	15.78ft 4.81m (with outriggers)	Platform raised, maximum	0.45km/h
Platform dimensions	9.45ft × 4.99ft 2.88m × 1.52m	Floor loading information	
Platform extension length	4.69ft 1.43m	Tire load, maximum	4872 lbs 2210kg
Maximum load capacity	800 lbs 363kg	Outrigger load, maximum	4872 lbs 2210kg
Maximum wind speed	28mile/h 12.5m/s	Tire contact pressure	1065kPa
Wheelbase	7.51ft 2.29m	Outrigger contact pressure	678kPa
Turning radius (outside)	15.10ft 4.60m	Occupied floor pressure	9.5kPa
Turning radius (inside)	6.92ft 2.11m	Note: Floor loading information is approximate and does not incorporate different option configurations. It should be used only with adequate safety factors.	
Ground clearance	9.45in 24cm		
Weight	See Serial Label		
(Machine weights vary with option configurations)		Continuous improvement of our products is a DINGLI policy. Product specifications are subject to change without notice or obligation.	
Controls	Proportional		
AC outlet in platform	Standard		

2. Control Unit

2.1 Ground Control Panel



1 Platform up button

2 Display

3 Engine idle select button

4 Overload indicator light

5 Engine start button

6 Engine glow plug button

7 Hour meter

8 Key switch

9 Circuit breaker

10 Platform down button

11 Lift function enable button

12 Emergency lowering down button

13 Emergency lowering down enable button

14 Red Emergency Stop button

Control Unit

- 1 Platform up button
Press this button and the platform will lift.
- 2 Display
Diagnostic readout
- 3 Engine idle select button
Press this button to select the engine idle setting. Light on indicates high idle is selected. Light off indicates low idle is selected.
- 4 Overload indicator light
Light on indicates when overloaded.
- 5 Engine start button
Press this button to start the engine.
- 6 Engine glow plug button
Press and hold this button to preheat engine.
- 7 Hour meter
The hour meter displays the number of hours the machine has operated.
- 8 Key switch
Turn the key switch to the platform position and the platform controls will operate.
Turn the key switch to the off position and the machine will be off. Turn the key switch to the base position and the ground controls will operate.
- 9 Circuit breaker
- 10 Platform down button
Press this button and the platform will lower
- 11 Lift function enable button
Press this button to activate the lift function.
- 12 Emergency lowering down button
Press this button and the platform will lower
- 13 Emergency lowering down enable button
Press this button to activate the Emergency down function.
- 14 Red Emergency Stop button
Push in the red Emergency Stop button to the off position to stop all functions. Turn the red Emergency Stop button clockwise to the on position to operate the machine.

2.2 Platform Control Panel



- | | |
|--|--|
| 1 Red Emergency Stop button | 9 Engine glow plug button |
| 2 Drive function select button | 10 LED readout screen |
| 3 Generator select button (if equipped) | 11 Engine start button |
| 4 Engine high speed idle select button | 12 Engine lower speed idle select button |
| 5 Horn button | 13 Lift function select button |
| 6 Light (if equipped) | 14 Proportional control handle |
| 7 Outrigger function enable button | 15 Thumb rocker switch |
| 8 Outrigger auto level button | 16 Function enable switch |

Control Unit

- 1 Red Emergency Stop button
Push in the red Emergency Stop button to the off position to stop all functions. Pull out the red Emergency Stop button to the on position to operate the machine.
- 2 Drive function select button
Press this button to activate the drive function.
- 3 Generator select button (if equipped)
Press this button to turn the generator on. Indicator light will be on. Press the button again to turn the generator off.
- 4 Engine high speed idle select button
Press this button to select the engine idle setting. Light on indicates high idle is selected.
- 5 Horn button
Press this button and the horn will sound.
Release the button and the horn will stop.
- 6 Light (if equipped)
Press this button to activate the light
- 7 Outrigger function enable button
Press this button to activate the individual outrigger up/down function.
- 8 Outrigger auto level button
Press this button to activate the auto level function.
- 9 Engine glow plug button
Press and hold this button to preheat engine.
- 10 LED readout screen
Diagnostic readout.
- 11 Engine start button
Press this button to start the engine.
- 12 Engine lower speed idle select button
Press this button to select the engine idle setting. Light on indicates lower idle is selected.
- 13 Lift function select button
Press this button to activate the lift function.
- 14 Proportional control handle
Lift function: Press and hold the function enable switch to enable the lift function on the platform control handle. Move the control handle in the direction indicated by the blue arrow and the platform will raise. Move the control handle in the direction indicated by the yellow arrow and the platform will lower. The descent alarm should sound while the platform is lowering.
Drive function: Press and hold the function enable switch to enable the drive function on the platform control handle. Move the control handle in the direction indicated by the blue arrow on the control panel and the machine will move in the direction that the blue arrow points. Move the control handle in the direction indicated by the yellow arrow on the control panel and the machine

will move in the direction that the yellow arrow points.

Outrigger extendable / retractable function: Press and hold the function enable switch to enable the Outrigger extend/ retract function on the platform control handle. Move the control handle in the direction indicated by the yellow arrow and the outrigger will extend. Move the control handle in the direction indicated by the blue arrow and the outrigger will retract.

15 Thumb rocker switch

Press the thumb rocker switch in either direction to activate steer function.

16 Function enable switch

Press and hold the function enable switch to enable the drive/lift function.

3. Operation

3.1 Function Test

At the Ground Controls

- 1 Select a test area that is firm, level and free of obstruction.
- 2 Pull out main power switch to “on” position.
- 3 Turn the ground red Emergency Stop button clockwise to the on position. Pull out the platform red Emergency Stop button to the on position.
- 4 Turn the key switch to ground control.
- 5 Observe the display on the ground controls.
- ⊙ Result: The display readout will come on and display SYSTEM READY.
- 6 Start the engine. See Operating Instructions section.

Test Emergency Stop

- 7 Push in the ground red Emergency Stop button to the off position.
- ⊙ Result: The engine should turn off and no functions should operate.
- 8 Turn the red Emergency Stop button clockwise to the on position. And restart the engine.

Test Up/Down Functions and Function Enable

A buzzer with different sound frequency is controlled in central system. The descent alarm sounds at 60 beeps per minute. The descent delay alarm sounds at 180 beeps per minute. The alarm that goes off when the machine is not level sounds at 180 beeps per minute. An optional automotive-style horn is also available.

- 9 Do not press the lift function enable button. Press and hold the platform up/down button.
- ⊙ Result: No function should operate.
- 10 Press and hold the lift function enable button. Press and hold the platform up button.
- ⊙ Result: The platform should rise.
- 11 Press and hold the lift function enable button. Press and hold the platform down button.
- ⊙ Result: The platform should lower the descent alarm should sound while the platform is lowering. The platform stop at the height is approximately 2.0 m from the ground. The descent delay alarm will sound.

Note: Be sure the area below the platform is clear of personnel and obstructions before continuing.

- 12 Press and hold the lift function enable button. Press and hold the platform down button.
- ⊙ Result: The platform should lower to end. The descent delay alarm should sound while the platform is lowering.

Test the Auxiliary Lowering

- 13 Activate the up function and raise the platform approximately 60 cm.
- 14 Pull the emergency lowering knob located the entry ladder end.
- ⊙ Result: The platform should lower. The descent alarm will not sound.
- 15 Restart the engine.

Test the Emergency Lowering

- 16 Activate the up function and raise the platform approximately 60 cm.

Operation

- 17 Push in the red Emergency Stop button to shut off the engine.
- 18 Turn the ground red Emergency Stop button clockwise to the on position.
- 19 Press and hold the emergency lowering down enable button. Press and hold the emergency lowering down button.
- ⊙ Result: The platform should lower.
- 20 Turn the key switch to platform control and restart the engine.

At the Platform Controls

Test Emergency Stop

- 21 Push in the platform red Emergency Stop button to the off position.
- ⊙ Result: No functions should operate.
- 22 Pull the red Emergency Stop button out to the on position.
- ⊙ Result: The LED indicator light should come on.

Test the Horn

- 23 Push the horn button.
- ⊙ Result: The horn should sound.

Test Up/Down Functions and Function Enable

- 24 Start the engine.
- 25 Do not hold the function enable switch on the control handle.
- 26 Slowly move the control handle in the direction indicated by the blue arrow, then in the direction indicated by the yellow arrow.
- ⊙ Result: No functions should operate.
- 27 Press the lift function select button.
- 28 Press and hold the function enable switch on the control handle.
- 29 Slowly move the control handle in the direction indicated by the blue arrow.
- ⊙ Result: The platform should raise.
- 30 Release the control handle.
- ⊙ Result: The platform should stop raising.
- 31 Press and hold the function enable switch. Slowly move the control handle in the direction indicated by the yellow arrow.
- ⊙ Result: The platform should lower. The descent alarm should sound while the platform is lowering.

Test the Steering

Note: When performing the steer and drive function test, stand in the platform facing the steer end of the machine.

- 32 Press the drive function select button. The indicator light should turn on.
- 33 Press and hold the function enable switch on the proportional control handle. Depress the thumb rocker switch on top of the proportional control handle in the direction identified by the blue triangle on the control panel.
- ⊙ Result: The steer wheels should turn in the direction that the blue triangle points on the control panel.

34 Press and hold the function enable switch on the proportional control handle. Depress the thumb rocker switch in the direction identified by the yellow triangle on the control panel.

⊙ Result: The steer wheels should turn in the direction that the yellow triangle points on the control panel.

Test Drive and Braking

35 Press and hold the function enable switch on the proportional control handle.

36 Slowly move the proportional control handle in the direction indicated by the blue arrow on the control panel until the machine begins to move, then return the proportional control handle to the center position.

⊙ Result: The machine should move in the direction that the blue arrow points on the control panel, then come to an abrupt stop.

37 Press and hold the function enable switch on the proportional control handle.

38 Slowly move the proportional control handle in the direction indicated by the yellow arrow on the control panel until the machine begins to move, then return the proportional handle to the center position.

⊙ Result: The machine should move in the direction that the yellow arrow points on the control panel, then come to an abrupt stop.

Note: The brakes must be able to hold the machine on any slope it is able to climb.

Test Limited Drive Speed

39 Press the lift function select button. Raise the platform approximately 2.4 m from the ground.

40 Press the drive function select button.

41 Press and hold the function enable switch on the proportional control handle slowly move the proportional control handle to the full drive position.

⊙ Result: The maximum achievable drive speed with the platform raised should not exceed 12.5cm/s.

⊖ Result: If the drive speed with the platform raised exceeds 12.5cm/s, immediately tag and remove the machine from service.

Test the Tilt Sensor Operation

Note: Perform this test from the ground with the platform controller. Do not stand in the platform.

42 Fully lower the platform.

43 Drive both wheels on one side onto a 5cm block.

44 Raise the platform approximately 2.4 m from the ground.

⊙ Result: The platform should stop and the tilt alarm will sound at 180 beeps per minute. The platform controls LED readout should display LL.

45 Press the drive function select button.

46 Press and hold the function enable switch on the control handle.

47 Move the proportional control handle in the direction indicated by the blue arrow, then move the proportional control handle in the direction indicated by the yellow arrow.

⊙ Result: The drive function should not work in either direction.

48 Press the lift function enable button.

49 Lower the platform and drive the machine off the block.

Operation

Test Auxiliary Lowering

- 50 Push the lift function select button and raise the platform approximately 60 cm.
 - 51 Push in the red Emergency Stop button to shut off the engine.
 - 52 Pull out the red Emergency Stop button to the on position.
 - 53 Push the lift function select button.
 - 54 Press and hold the function enable switch on the proportional control handle. Activate the proportional control handle in the direction indicated by the yellow arrow.
- ⊙ Result: The platform should lower.

Test the Outrigger System (if equipped)

- 55 Push and hold the auto level button.
 - 56 Press and hold the function enable switch. Activate the proportional control handle in the direction indicated by the yellow arrow.
- ⊙ Result: The outriggers will extend and level the machine. A beep will sound when the machine is level.
- 57 Push and hold the auto level button.
 - 58 Press and hold the function enable switch. Activate the proportional control handle in the direction indicated by the blue arrow.
- ⊙ Result: The outriggers should retract and return to the stowed position. A beep will sound when the machine is in the stowed position.

Test the Oscillate System

Note: Perform this test from the ground with the platform controller. Do not stand in the platform.

- 59 Start the engine from the platform controls.
- 60 Select the engine idle button to indicate high idle. Light on indicates high idle.

Test the Oscillate System (stowed position)

- 61 Drive the left steer tire up onto a 10 cm high ramp.
- ⊙ Result: All four tires should maintain firm contact with the ground.
- 62 Drive the right steer tire up onto a 10 cm high ramp.
- ⊙ Result: All four tires should maintain firm contact with the ground.
- Note: Verify that there are no fault codes shown on ground control display.

Test the Oscillate System (elevated position)

- 63 Press the lift function select button. Raise the platform approximately 2.4 m from the ground.
 - 64 Drive the left steer tire into a 10 cm deep hole.
- ⊙ Result: All four tires should maintain firm contact with the ground.
- 65 Drive the right steer tire into a 10 cm deep hole.
- ⊙ Result: All four tires should maintain firm contact with the ground.
- Note: Verify that there are no fault codes shown on ground control display.

3.2 Operation

Emergency Stop

Push in the red Emergency Stop button to the off position at the ground controls or the platform controls to stop all machine functions and turn the engine off.

Repair any function that operates when either red Emergency Stop button is pushed in.

Emergency Lowering

1 Pull the emergency lowering knob.

Starting the Engine

- 1 At the ground controls, turn the key switch to the desired position.
- 2 Be sure both ground and platform control red Emergency Stop buttons are in the on position.
- 3 Press the glow plug button for 3 to 5 seconds.
- 4 Press the engine start button.

If the engine fails to start after 15 seconds of cranking, determine the cause and repair any malfunction. Wait 60 seconds before trying to start again.

In cold conditions, -6°C and below, warm the engine for 5 minutes before operating to prevent hydraulic system damage.

In extreme cold conditions, -18°C and below, machines should be equipped with optional cold start kits. Attempting to start the engine when temperatures are below -18°C may require the use of a booster battery.

Operation from Ground

- 1 Turn the key switch to ground control.
- 2 Turn the ground red Emergency Stop button clockwise to the on position
- 3 Pull out the platform red Emergency Stop button to the on position.
- 4 Start the engine.

To Position Platform

- 1 Press the lift function enable button.
- 2 Press the platform up/down button to activate the up function or the down function.

Drive and steer functions are not available from the ground controls.

Engine Idle Select

Select the engine idle (rpm) by press.

Operation from Platform

- 1 Turn the key switch to platform control.
- 2 Turn the ground red Emergency Stop button clockwise to the on position
- 3 Pull out the platform red Emergency Stop button to the on position.
- 4 Start the engine.

To Position Platform

- 1 Press the lift function select button.
- 2 Press and hold the function enable switch on the control handle.
- 3 Activate the proportional control handle in the desired direction.

Operation

To Steer

- 1 Press the drive function select button.
- 2 Press and hold the function enable switch on the control handle.
- 3 Turn the steer wheels with the thumb rocker switch located on the top of the control handle.

To Drive

- 1 Press the drive function select button.
- 2 Press and hold the function enable switch on the control handle.
- 3 Increase speed: Slowly move the control handle off center.

Decrease speed: Slowly move the control handle toward center.

Stop: Return the control handle to center or release the function enable switch.

Use the direction arrows on the platform controls to identify the direction the machine will travel.

Machine travel speed is restricted when the platform is raised.

Drive speed select

The drive controls can operate in two different drive speed modes. When the engine lower speed idle select button light is on, slow drive speed mode is active. When the engine high speed idle select button light is on, fast drive speed mode is active.

Driving on a slope

Determine the slope and side slope ratings for the machine and determine the slope grade.

Maximum slope rating, stowed position 40%. Maximum side slope rating, stowed position 40%.

Note: Slope rating is subject to ground conditions and adequate traction.

To determine the slope grade

Measure the slope with a digital inclinometer or use the following procedure.

You will need:

Carpenter's level

Straight piece of wood, at least 1 m long tape measure

Lay the piece of wood on the slope.

At the downhill end, lay the level on the top edge of the piece of wood and lift the end until the piece of wood is level.

While holding the piece of wood level, measure the distance from the bottom of the piece of wood to the ground.

Divide the tape measure distance (rise) by the length of the piece of wood (run) and multiply by 100.

Example:

Run = 3.6 m

Rise = 0.3 m

$0.3 \text{ m} \div 3.6 \text{ m} = 0.083 \times 100\% = 8.3\%$



If the slope exceeds the maximum slope or side slope rating, the machine must be winched or transported up or down the slope. See Transport and Lifting section.

To Extend and Retract Platform

- 1 Lift the platform extension lock handle to the horizontal position.
- 2 Push the platform extension lock handle to extend the platform to the desired position.

Note: Do not stand on the platform extension while trying to extend it.

- 3 Lower the platform extension lock handle.

Outrigger Operation (if equipped)

- 1 Position the machine below the desired work area.

Note: The engine must be running for the outriggers to operate.

- 2 Push and hold the outrigger auto level button.
- 3 Press and hold the function enable switch. Activate the proportional control handle in the direction indicated by the yellow arrow. The outriggers will extend and level the machine. A beep will sound when the machine is level.

The indicator light on the lift function enable button will turn on when one but not all outriggers are down. All drive and lift functions are disabled.

The indicator lights on the lift function enable button and on the individual outrigger buttons will turn off when all the outriggers are in firm contact with the ground.

The drive function is disabled while the outriggers are down.

To control individual outriggers

- 1 Push and hold one or more outrigger function enable buttons.
- 2 Press and hold the function enable switch. Activate the proportional control handle in the direction indicated by the yellow arrow. The outriggers will extend and level the machine.

How to use the Safety Arm

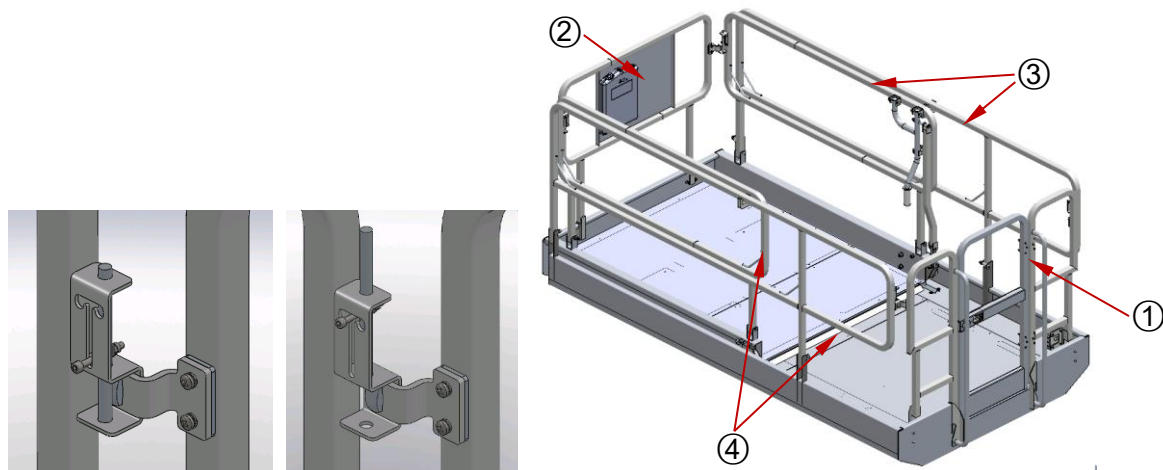
- 1 Raise the platform approximately 4 m from the ground.
- 2 Lift the safety arm, move it to the center of the scissor arm and rotate down to a vertical position.
- 3 Lower the platform until the safety arm rests securely on the link. Keep clear of the safety arm when lowering the platform.



Don't engage the safety arm unless unload the platform.

How to Fold Down the Guardrails

The platform railing system consists of three fold down rail section for the extension deck and three sections for the main deck. All sections are held in place by four latches.



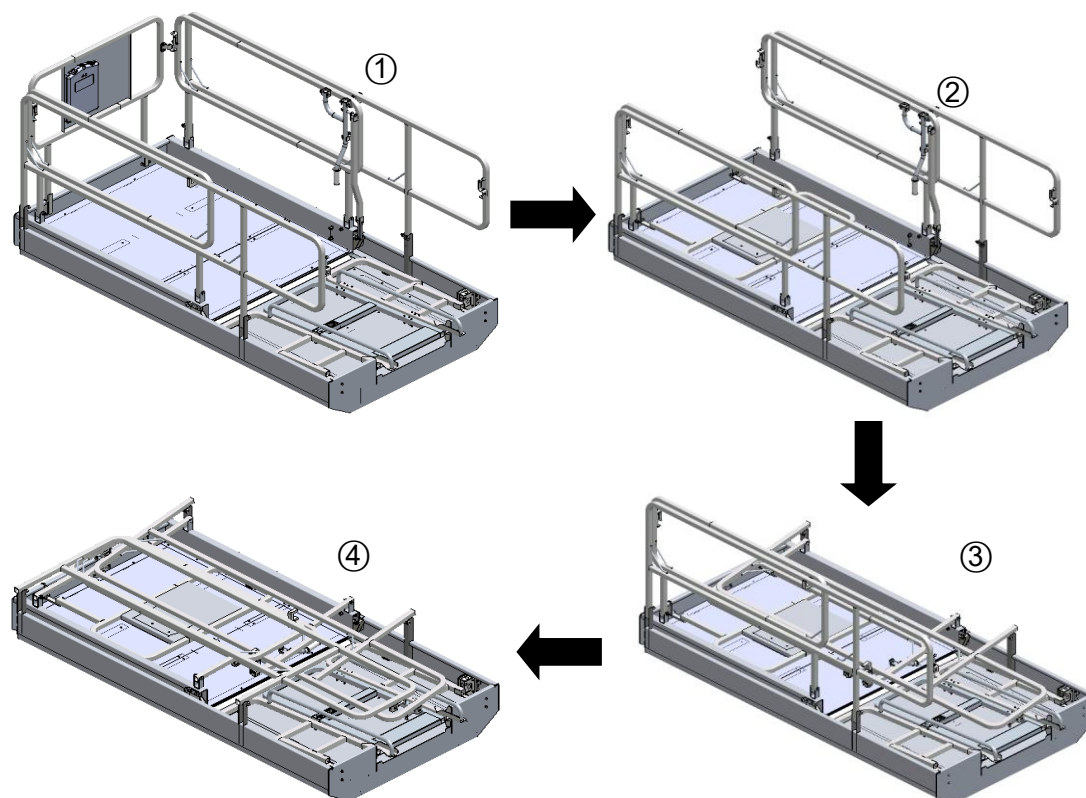
Closed latch

Open latch

- 1 Fully lower the platform and retract the platform extension.

Operation

- 2 Remove the platform controls.
- 3 Opening the latches in the corners the rails have to be folded in correct order of the numbering.



How to Raise the Guardrails

Follow the fold down instructions but in reverse order.

After Each Use

- 1 Select a safe parking location - firm level surface, clear of obstructions and traffic.
- 2 Lower the platform.
- 3 Turn the key switch to the off position and remove the key to secure from unauthorized use.
- 4 Push in the red Emergency Stop buttons to “off” position.
- 5 Push in the main power switch to “off” position.

Chock the wheels.

4. Components Introduction

Components Introduction

4.1 ECU



Control all the input and output signal, below forms show the pin definition, with the help of these forms the function of each pin can be explained.

Even when the control system break down, with the ground control Emergency lowering is available.

All the speed setting, function on/off and calibration can be finished in the ECU, please see below menu of the ECU.

Get in the system:

Hold the “up” and “down” button, turn the key switch to the ground control to turn on the power, then you will see the “tune speed” if you succeed.

Click “Up” and “down” button to turn up and down the manual, and function enable button to confirm and get in .

After replacing the ECU, overload calibration would be needed.

Components Introduction

ECU setting form

Main Menu	Items	Value
Tune Speeds	Max Fwd Raised Drive Speed	Raised Drive Speed ↑ 27 ↓
	Max Rev Raised Drive Speed	Raised Drive Speed ↑ 27 ↓
	Max Fwd High Speed Drive	High Speed Drv ↑ 70 ↓
	Max Rev High Speed Drive	High Speed Drv ↑ 70 ↓
	Max Fwd High Torque Drive	High Torque Drv ↑ 68 ↓
	Max Rev High Torque Drive	High Torque Drv ↑ 68 ↓
	Max Lift Speed	Lift Speed ↑ 30 ↓
	Max descent Speed	Descent speed ↑ 00 ↓
	Max Settling Speed	Settling Speed ↑ 00 ↓
	Steering Speed	Steering Speed ↑ 00 ↓
	Max Outrig Ret High Speed	Ret OR Hi Spd ↑ 45 ↓
	Max Outrig Ext High Speed	Ext OR Hi Spd ↑ 30 ↓
	Max Outrig Ret Low Speed	Ret OR Lo Spd ↑ 30 ↓
	Max Outrig Ext Low Speed	Ext OR Lo Spd ↑ 30 ↓
	Set Glow Plug Time	Glow Plug Time ↑ 05 ↓
	Restore Speed Defaults	Defaults Restored
	Return to Main Menu	
Select Model JCPT17 Diesel	JCPT Dual Fuel	
	JCPT17 Diesel	
	JCPT23 Diesel	
	Return to Main Menu	

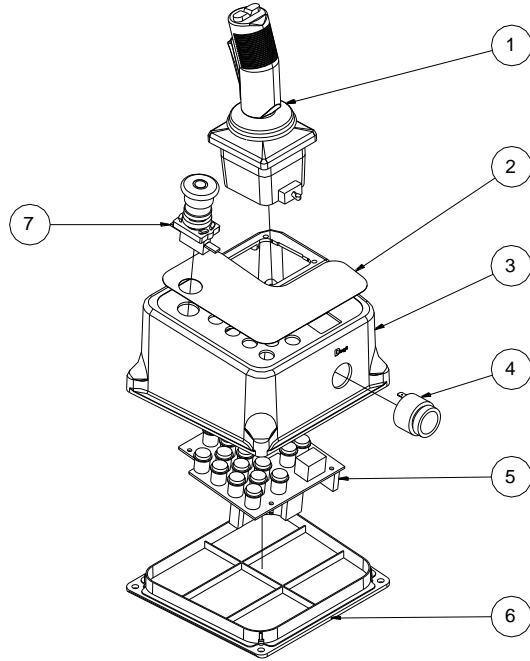
Components Introduction

Select Options	Descent Delay On	Descent Delay Off
	Motion Alarm On	Motion Alarm Off
	Motion Beacons On	Motion Beacons Off
	Overload On	Overload Off
	1 Limit Sw OR Off	1 Limit Sw OR On
	Beacons On	Beacons Off
	Generator Off	Generator On
	Outriggers On	Outriggers Off
	Water Temp Alarm Alarm+Shutdown	Water Temp Alarm Alarm only
	Oil press Alarm Alarm+Shutdown	Oil press Alarm Alarm only
	Return to Main Menu	
Test System	Run system Test	No Fault Detected
	Return to Main Menu	
Calibrate Mode	Set Height Limit	Set Height Complete
	Calibrate Full Load	Calibration Complete
	Calibrate Empty Load	Calibration Complete
	Return to Main Menu	
Load Software or Parameters	Connect to Host PC	Waiting for Host PC
	Return to Main Menu	
Exit		

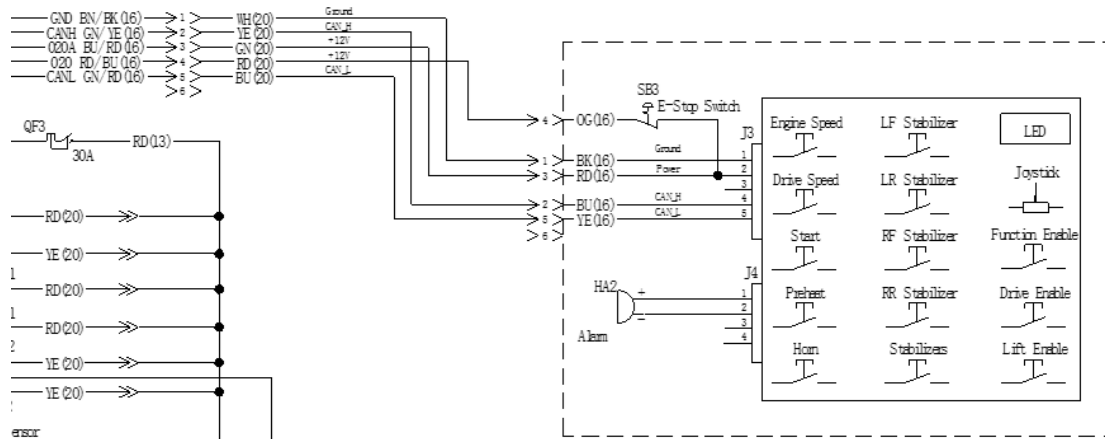
Components Introduction

4.2 Up controller

The up controller can be removed down to the ground control, it will help test the machine.



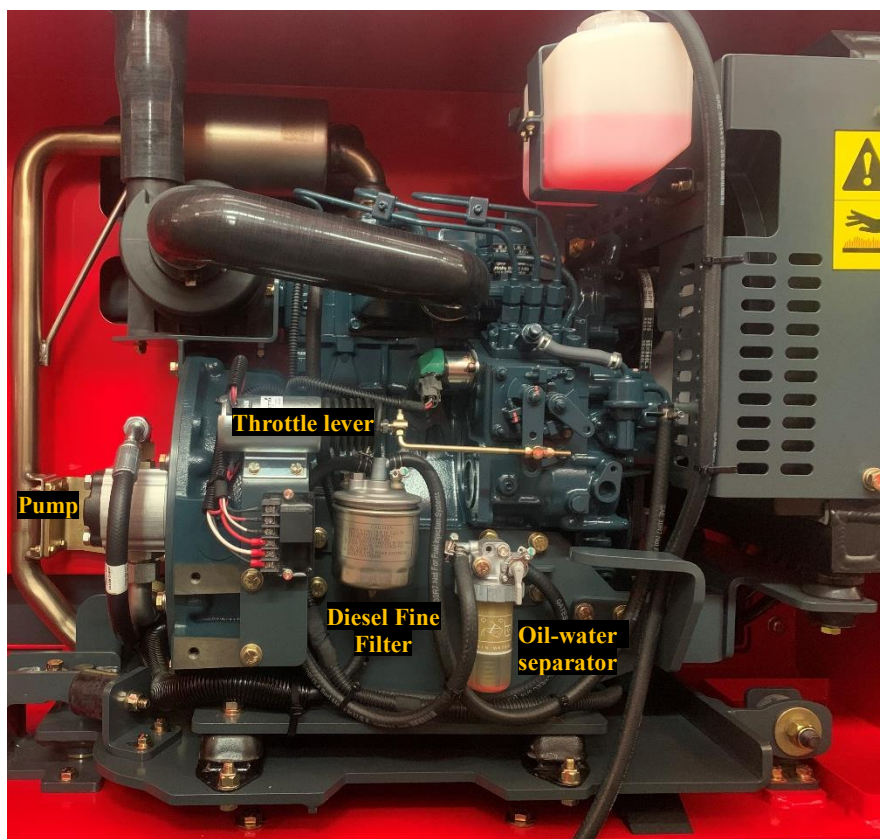
Item	Description
1	Joystick
2	Decal, Platform control panel
3	Enclosure
4	Alarm
5	Main board
6	Cover bottom
7	Emergency stop switch



Pin definition of up controller			
Pin No.	Color	Wire No.	Description
Pin1	White	GND	GND
Pin 2	Yellow	CAN H	Canbus High
Pin 3	Green	020B	+12V out
Pin 4	Red	020A	+12V in
Pin 5	Blue	CAN L	Canbus Low
Pin 6	/	/	/

Components Introduction

4.3 Engine & Pump



Engine

Model: Kubota D1105-EF02; Stage III

Rated speed: 3000rpm

Rated power: 18.2kW

Its function is to drive the pump operation.

Throttle lever

Under the control of the ECU, it can precisely control the engine speed.

Pump

Displacement: 16cc

Its function is to supply oil to the drive & functional oil circuit of the whole machine.

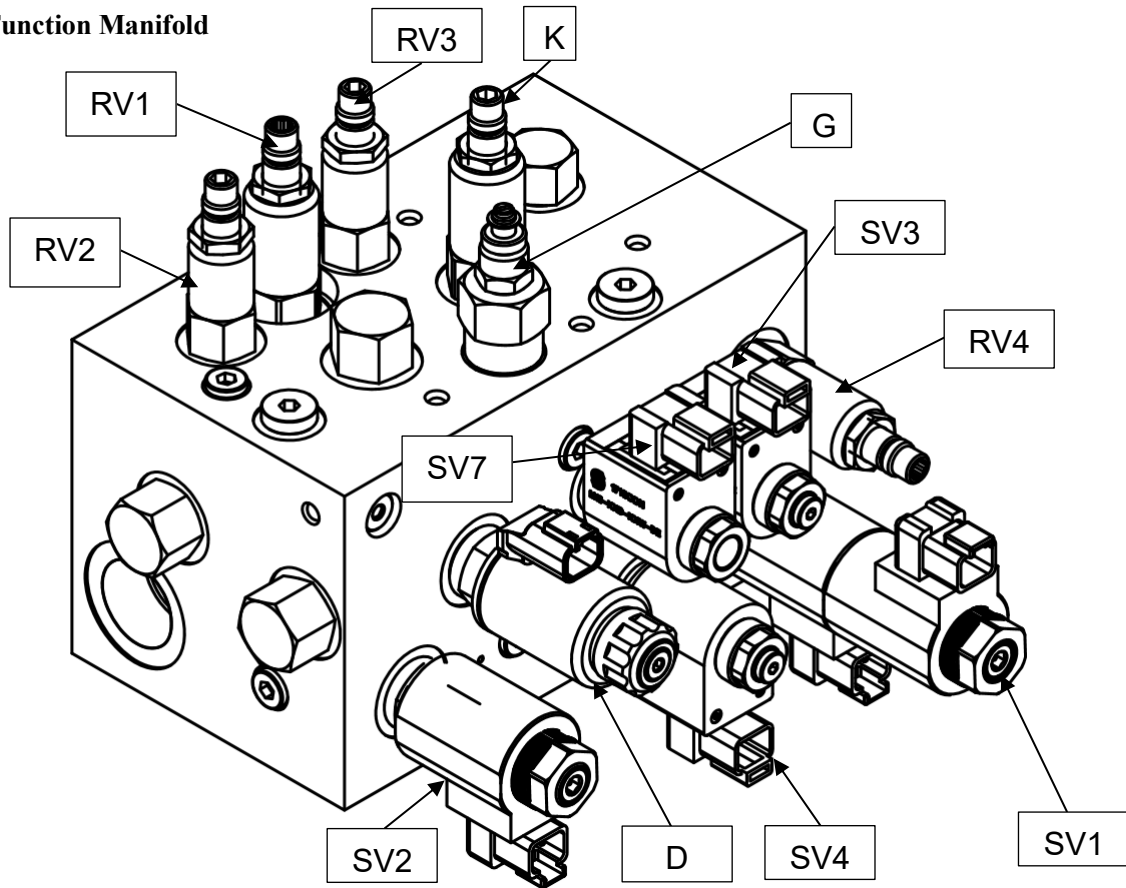
The oil pumped from the pump leads to the drive and function valve blocks, which are controlled by the ECU to achieve specific forms of operation.

Components Introduction

4.4 Hydraulic Components

4.4.1 Valve Block

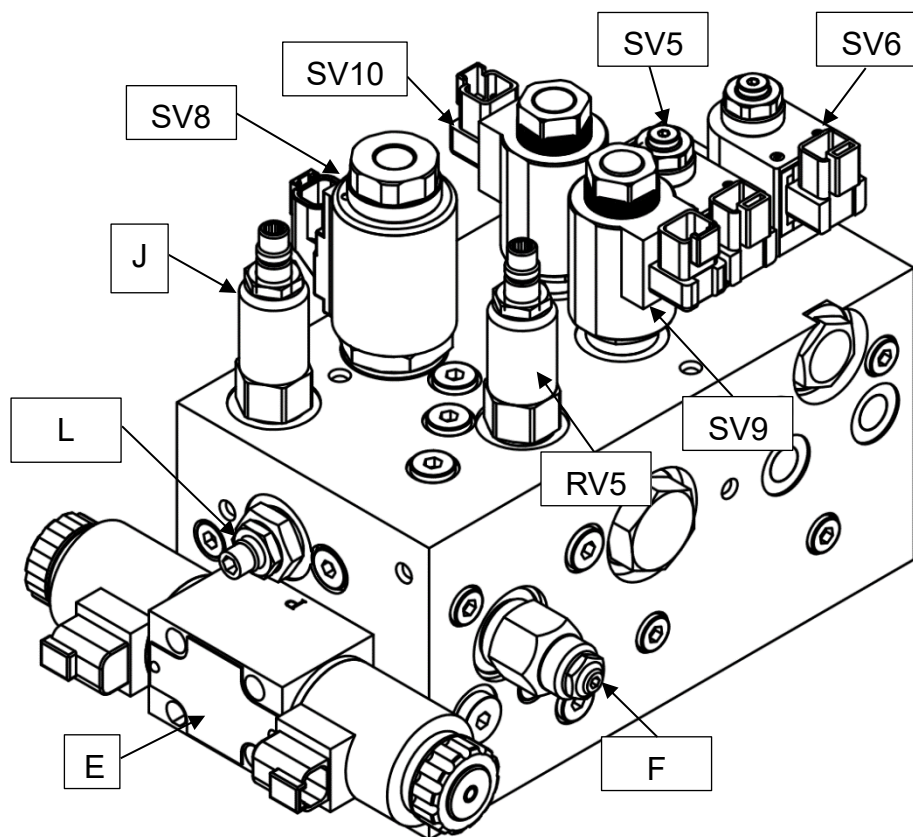
Function Manifold



Code	Valve	Description
SV1	Steering	Control the left/right turn of the vehicle
SV2	Lift up	Control the lifting action of the lifting cylinder
SV3	Oscillate left	When the floating bridge is not locked, automatically adjust the angle of the floating bridge
SV4	Oscillate right	When the floating bridge is not locked, automatically adjust the angle of the floating bridge
SV7	Oscillate float	Used to lock floating bridge
D	PROP Valve	Control the speed of each action
RV1	Total relief valve	The relief pressure is 230Bar
RV2	Relief valve	The relief pressure is 200Bar
RV3	Relief valve	The relief pressure is 228Bar
RV4	Steering relief valve	The relief pressure is 100Bar
K	Sequence valve	59Bar
G	Flow control valve	

Components Introduction

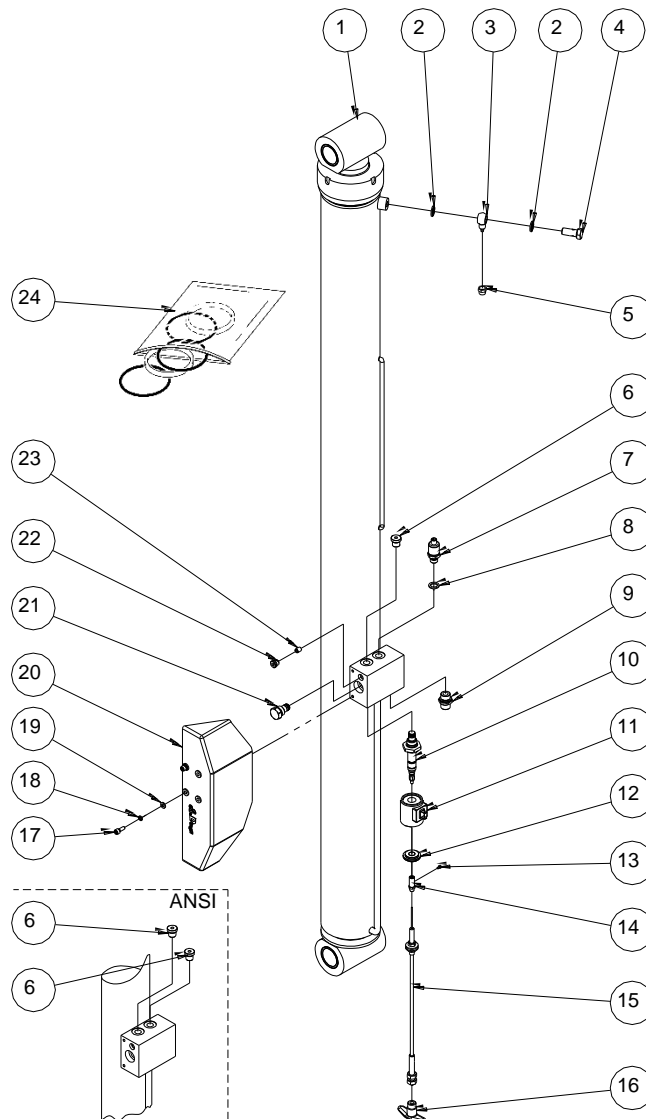
Traction Manifold



Code	Valve	Description
SV5	2-Speed valve	Control the speed of the vehicle
SV6	Brake valve	Control vehicle brakes
SV8	Control valve 2	Used to control the front and rear wheels
SV9	F-Motors	Used to control the on and off of the front wheel oil circuit
SV10	Control valve 1	Used to control two oil motors of front wheels
E	Forward/Reverse valve	Control the forward and backward of the vehicle
F	Balance valve	241Bar, 4.5:1
L	Lock valve	Used to lock the oil circuit between forward and backward
J	Pressure reducing valve	17Bar
RV5	Relief valve	172Bar

Components Introduction

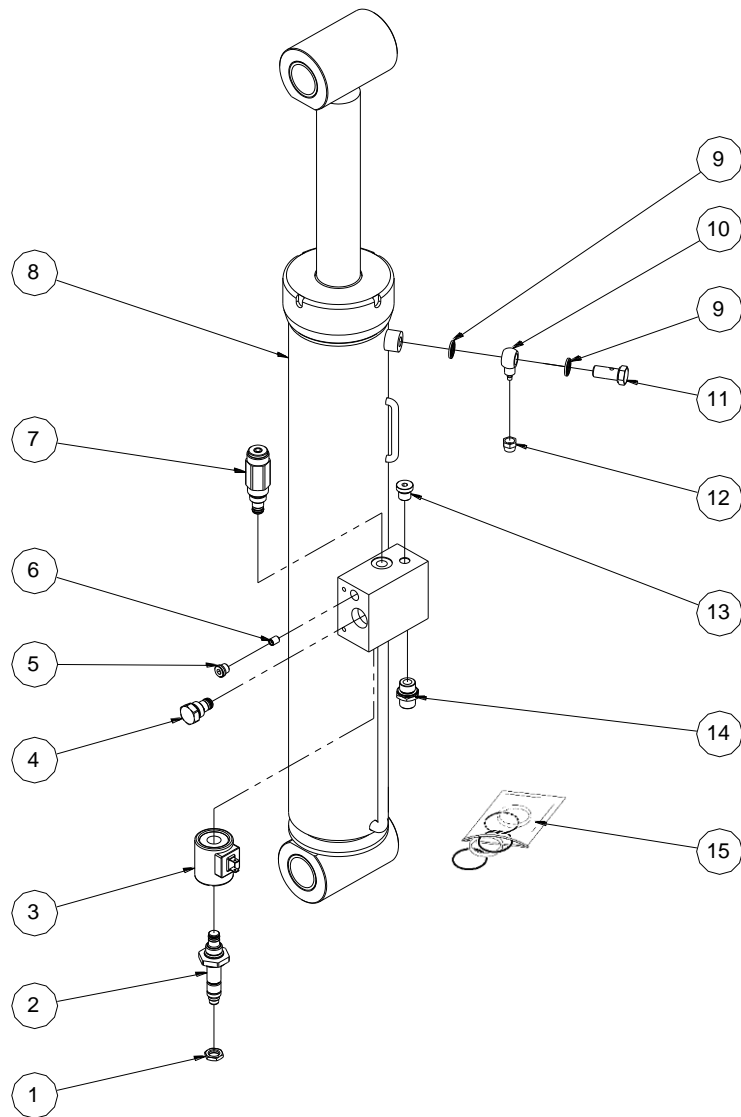
4.4.2 Lower Lift Cylinder



Item	Part Number	Function Description
7	00002418	Pressure sensor (JCPT1218RT-CE, JCPT1418RT-CE)
10	00003022	Solenoid valve spool
11	00003668	Coil
12	00003020	Nut
15	10002910	Emergency down cable assembly
21	10000404	Check valve
23	00005213	Orifice 3/8-16 Φ1.8
24	00003617	Seal kit

Components Introduction

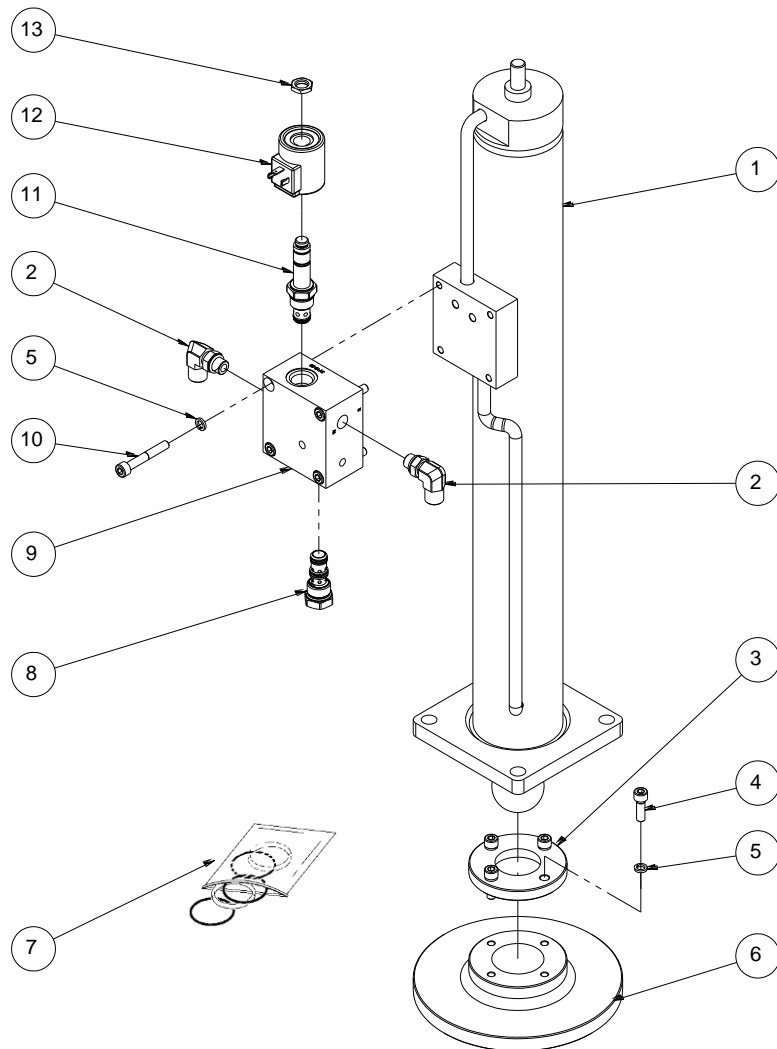
4.4.3 Up Lift Cylinder (Only 1418RT)



Item	Part Number	Function Description
2	00004686	Solenoid valve spool
3	00004688	Coil
4	10000404	Check valve
6	00003578	Orifice $\Phi 0.8$
7	10000086	Relief valve
15	00003618	Seal kit

Components Introduction

4.4.4 Outrigger Manifold & Cylinder

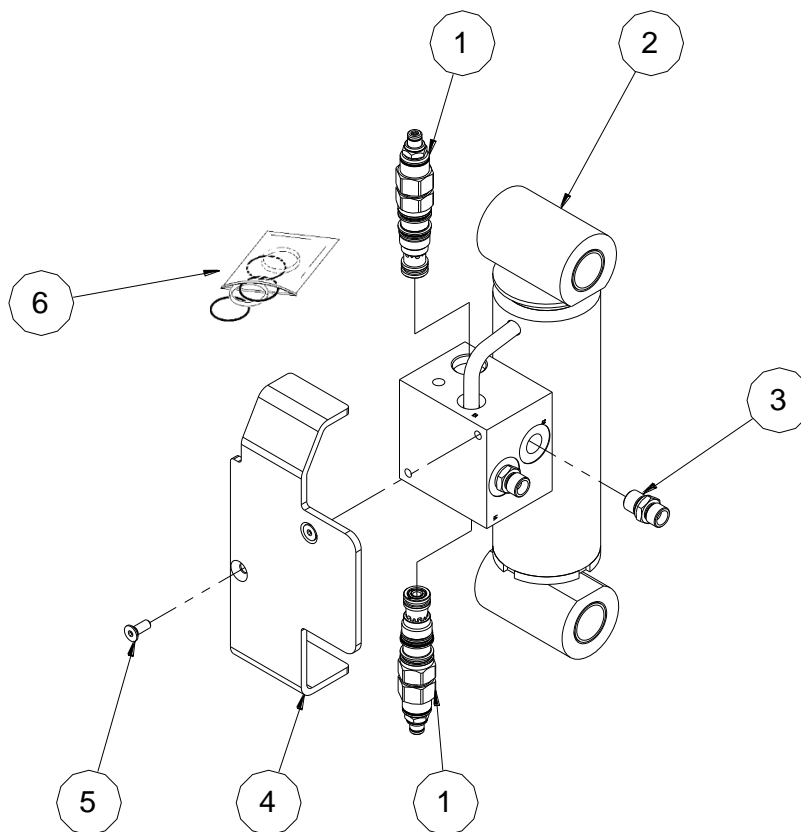


Item	Part Number	Function Description
3	10002867	Retainer
6	10002866	Outrigger footpad
7	00003621	Seal kit
8	00003281	Pilot-operated check valve
9	00003279	Valve body
11	00003280	Solenoid valve spool
12	00003287	Coil

Components Introduction

4.4.5 Floating Manifold & Cylinder

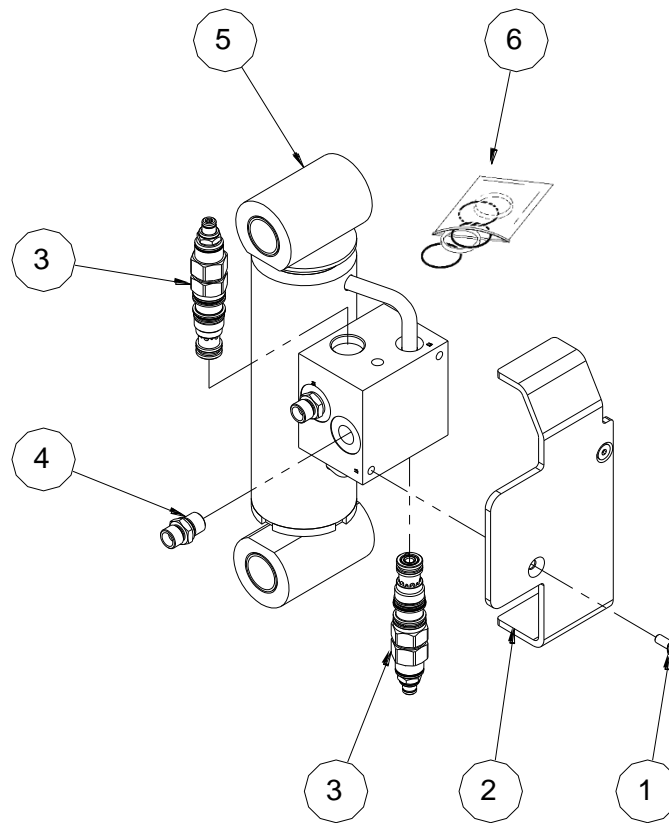
4.4.5.1 Left Swing Cylinder Assembly



Item	Part Number	Function Description
1	00003373	Counterbalance valve spool
2	10002833	Left oscillate cylinder
3	00001282	Straight fitting
4	10002856	Protect cover
5	00000830	Screw GB/T 70.3 M6×16
6	00003620	Seal kit

Components Introduction

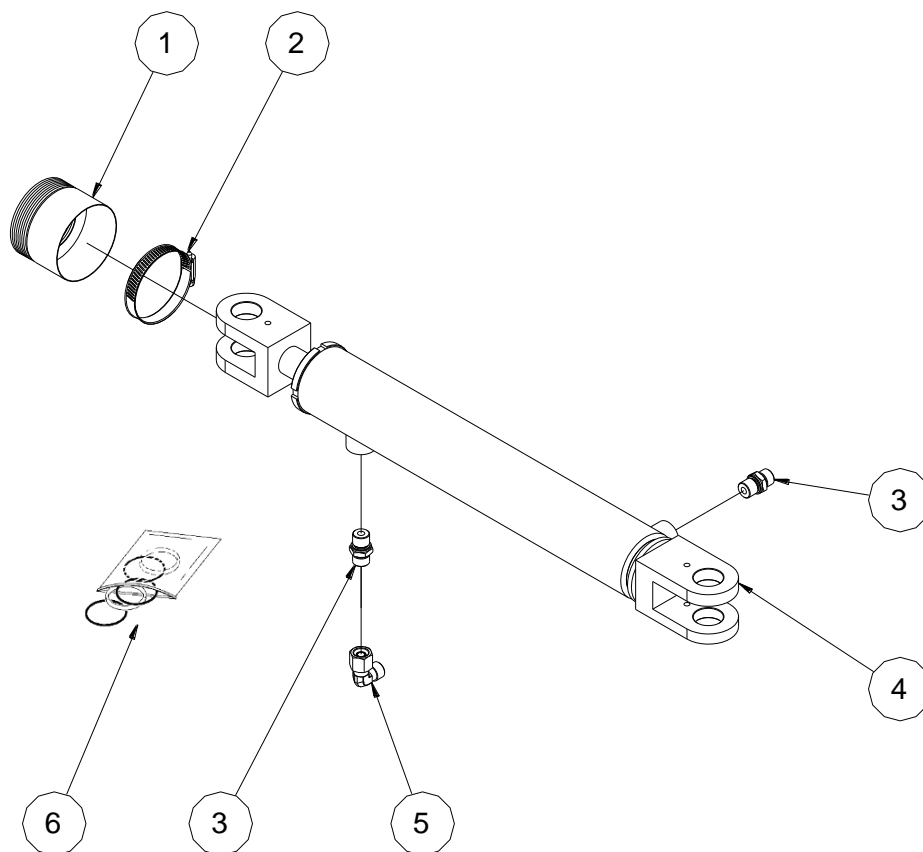
4.4.5.2 Right Swing Cylinder Assembly



Item	Part Number	Function Description
1	00000830	Screw GB/T 70.3 M6×16
2	10002857	Protect cover
3	00003373	Counterbalance valve spool
4	00001282	Straight fitting
5	10002903	Right oscillate cylinder
6	00003620	Seal kit

Components Introduction

4.4.6 Steer Cylinder Assembly



Item	Part Number	Function Description
1	10005460	Dustproof sleeve
2	00003623	Clamp
3	00001282	Straight fitting
4	10002831	Steer cylinder
5	00001832	Elbow
6	00003619	Seal kit

Components Introduction

4.5 Sensors & Sensor calibration

4.5.1 Angle sensor setting

If the machine shows code OL, or you replace the Angle sensor, try to calibrate it.

1. Turn on the machine power.
2. Lift the machine chooses the suitable height to set zero, see the following steps.
Ensure that the lowest and highest angle sensor output voltage (white wire and black wire) is between 0.5V-4.5V. For example, normally machine stowed, the signal is around 4.0V, and full height is around 1 V, so pls set zero at the voltage 2.5V. $(4+1) V/2=2.5V$
3. Find the reset button “SET ZERO” on the side of the sensor, press the button, the indicator light on the sensor until the alternating red and green flashes.

Suggestion: If you put the new sensor on JCPT1218/1418RT, when machine is stowed, the signal of angle sensor is around 2.5V, then you can just lift up the machine until the voltage is 0.9V, then set zero at this height.



PIN	Color	Description
1	RED	12V+
2	White	Signal
3	Black	GND

4.5.2 Tilt Sensor Reset Operation

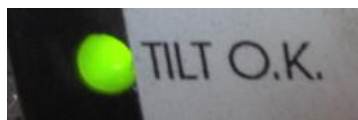
After replacing the Tilt sensor, please set zero of the tilt sensor for the machine

1. Drive machine to the level ground.
2. Find the “SET ZERO” button which in front side, press the button until “TILT O.K.” and “Tilt Level EXCEEDED” LEDs are flashing alternately.

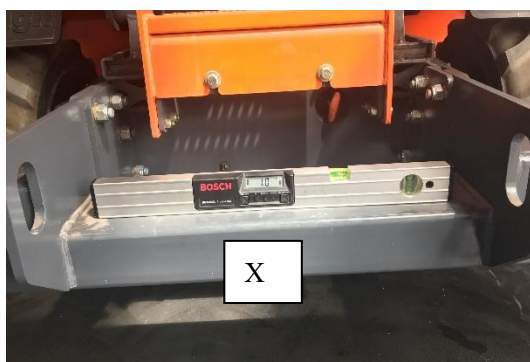


Components Introduction

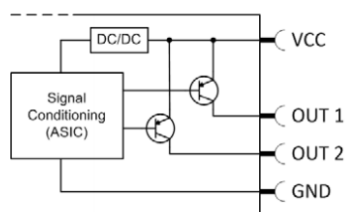
- Press “SET ZERO” button continuously 3 times until “TILT O.K.” and “Tilt Level EXCEEDED” LEDs stop flashing, the tilt sensor reset is done when the “TILT O.K.” LED is on constantly.



Suggestion: Also you can leveling the machine with outrigger (control single outrigger), and with the help of the instrument below, then set zero.



4.5.3 Pressure sensor





Pressure range	0-250bar
Supply voltage	9-32V
Output signal 1	4-20mA
Output signal 2	20-4mA
Electrical connection	M12*1
Operating temperature	-40°C to +85°C
Protection class	IP67
Electrical connection	
Pin	Function
1	VCC
2	Output signal 2
3	Ground
4	Output signal 1
5	Not used

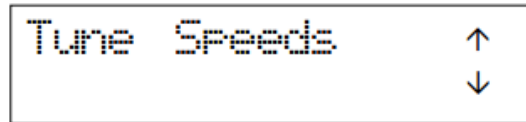
Overload Recalibrate Operation




The overload system will be affected by the temperature, because the hydraulic oil pressure is totally different in the winter and summer, so if the machine shows OL alarm, please calibrate it.

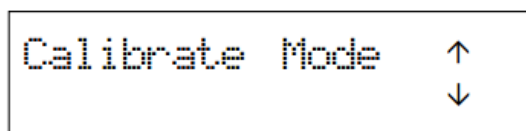
If you replace the ECU, angle sensor, please also calibration.




Components Introduction

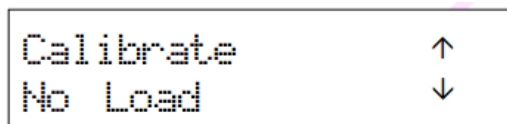
1. Drive machine to the level ground.
2. Operate continuously 5 times lift cycle and turn off the key switch.
3. Press and hold the  and  buttons, turn on the key switch to ground control at the same time.



4. Press  or  button until find the “Calibrate Mode”, press  button to enter.







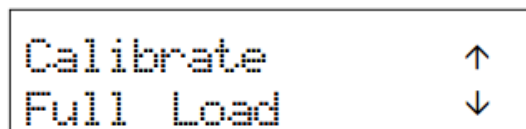
5. Press  or  button until find “Calibrate Empty Load”. Start the engine before make sure there is no load on the platform. Press  button to recalibrate the empty load automatically.



6. The recalibrate will be finished until display “Calibration Complete”



7. Press  button to quit, then press  or  button until find “Calibrate Full Load”. Press  button to recalibrate the full load automatically before make sure there is rated load on the platform.



8. The recalibrate will be finished until display “Calibration Complete”, operation is done.

Components Introduction

4.5.4 Limit switches

1. Up limit switch:

if machine elevated to the max. height, the switch will be activated, machine stops lifting.



2. Down limit switch: (2 switches in series)

It will be set at the height of around 4 meters, then the switch will work and machine drive in elevated drive speed, it is also the height of descent delay



3. Outrigger limit switch

When the outriggers reach to the ground, the outrigger lights on the up controller will light, and then the outrigger extend speed will turn to slow speed.



4. Floating limit switch

When machine elevated over the down limit switch, the floating cylinder will be lock up, however when one wheel of the machine dropped into pothole, the opposite floating limit switch

Components Introduction

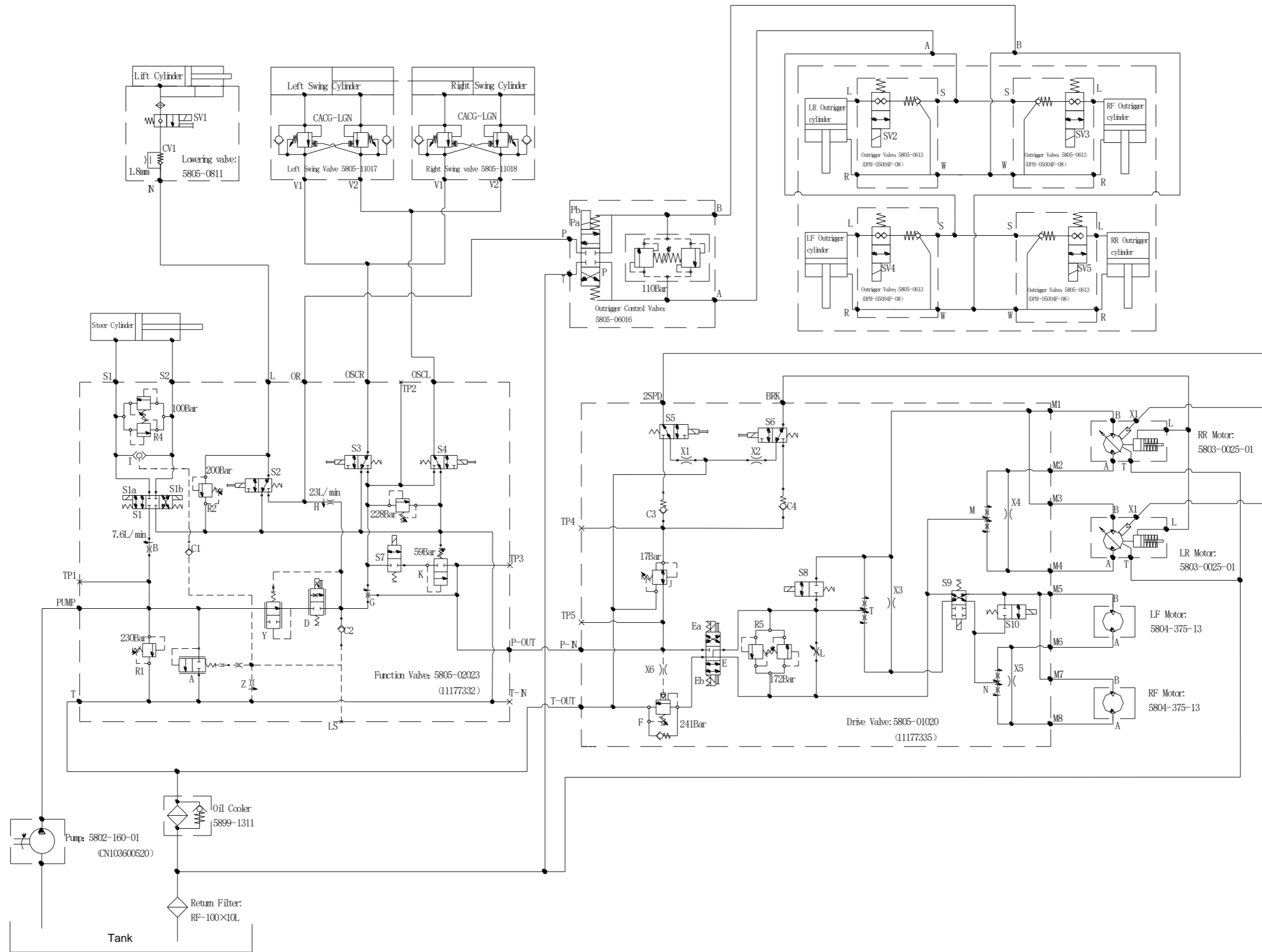
at the rear wheel will be activated, then the floating cylinder will extend out to protect the machine from turning over.



Machine stowed			
Items	Contactora	State	Result
Up limit	NC	Not activated	+12V to 201A
Down limit	NC	Activated	+12V to 202A
Machine lift up over the down limit switch			
Up limit	NC	Not activated	+12V to 201A
Down limit	NO	Not activated	0V to 202A
Max. height			
Up limit	NO	activated	0 V to 201A
Down limit	NO	Not activated	0V to 202A

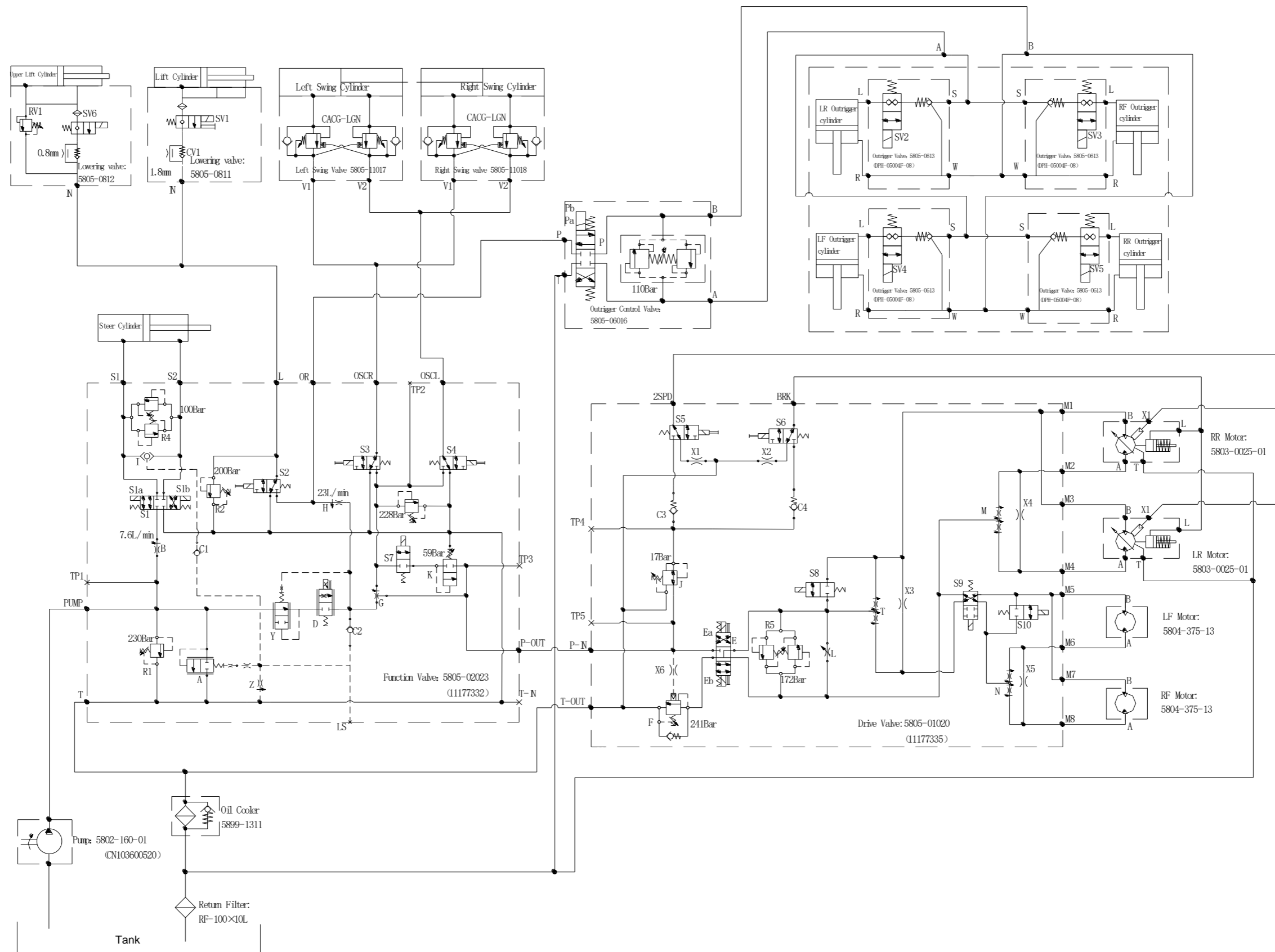
5. Hydraulic Schematic

JCPT1218RT



Training Manual
Hydraulic Schematic

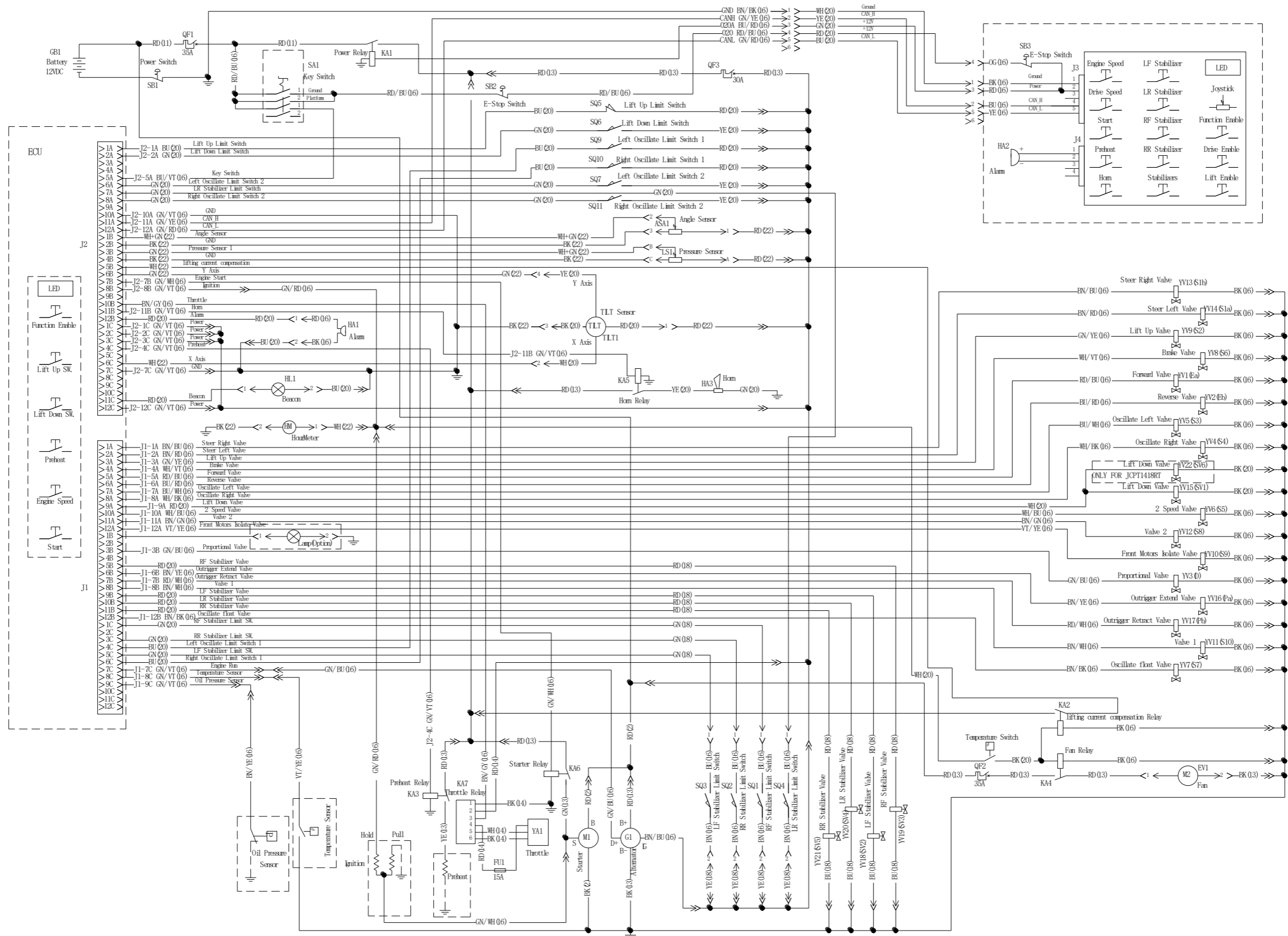
JCPT1418RT



6. Electrical Schematic

Training Manual

Electrical Schematic



7. Fault Codes

Electrical Schematic

Fault State

If the LED diagnostic readout displays an error code, such as LL, push in and turn the red Emergency Stop button to reset the system.

List of Fault Codes

Display for Platform	Display for Ground	Solution
01	01 Internal ECU Fault	Replace ECU
02	02 Platform ECU Fault	Check the wiring; if the wiring is intact, replace the PCU and ECU respectively to determine which part is out of order.
08	08 Floating Coil Left Fault	Check the wiring; replace the solenoid valve
09	09 Floating Coil Right Fault	Check the wiring; replace the solenoid valve
14	14 Angle Sensor Fault	Check wiring; check sensors
15	15 Pressure Sensor Fault	Check wiring; check sensors
20	20 Chassis Start Sw Fault	Check the switch; check the wiring
21	21 Chassis Choke Sw Fault	Check the switch; check the wiring
22	22 Chassis Up Sw Fault	Check the switch; check the wiring
23	23 Chassis Lift Sw Fault	Check the switch; check the wiring
24	24 Chassis Down Sw Fault	Check the switch; check the wiring
25	25 Left Turn switch Fault	Check the switch; replace the PCU
26	26 Right Turn switch Fault	Check the switch; replace the PCU
27	27 Drive Enable Sw Flt	Check the switch; replace the PCU
28	28 Off Neutral Drive Joystick	Check the switch; replace the PCU
31	31 Platform Choke Sw Fault	Check the switch; replace the PCU
32	32 Platform Start Sw Fault	Check the switch; replace the PCU
33	33 Left Front outrig Sw Flt	Check the switch; replace the PCU
34	34 Right Front outrig Sw Flt	Check the switch; replace the PCU
35	35 Left Rear outrig Sw Flt	Check the switch; replace the PCU
36	36 Right Rear outrig Sw Flt	Check the switch; replace the PCU
37	37 Auto Level Switch Fault	Check the switch; replace the PCU
38	38 LF OR Limit Switch Fault	Check the switch; check the wiring
39	39 RF OR Limit Switch Fault	Check the switch; check the wiring
40	40 LR OR Limit Switch Fault	Check the switch; check the wiring

Electrical Schematic

41	41 RR OR Limit Switch Fault	Check the switch; check the wiring
43	43 Folat limit switch fault	Check the switch; check the wiring
49	49 Drive Coil 1 Fault	Check the wiring; replace the solenoid valve
50	50 Drive Coil 2 Fault	Check the wiring; replace the solenoid valve
51	51 Drive Coil 3 Fault	Check the wiring; replace the solenoid valve
52	52 Func Prop Coil Fault	Check the wiring; replace the solenoid valve
54	54 Up Coil Fault	Check the wiring; replace the solenoid valve
55	55 Down Coil Fault	Check the wiring; replace the solenoid valve
56	56 Right Turn Coil Fault	Check the wiring; replace the solenoid valve
57	57 Left Turn Coil Fault	Check the wiring; replace the solenoid valve
58	58 Brake Coil Fault	Check the wiring; replace the solenoid valve
60	60 Forward 1 Coil Fault	Check the wiring; replace the solenoid valve
61	61 Reverse 1 Coil Fault	Check the wiring; replace the solenoid valve
66	66 Low Oil Pressure	Check the wiring; replace the pressure sensor
67	67 High Cool ant Temperature	Check the wiring; replace the temperature sensor
68	68 Low ECU Voltage	Check the wiring; check the battery; replace the battery
69	69 Low Engine RPM	Check the wiring; check the engine
70	70 High Engine RPM	Check the wiring; check the engine
81	81 Left Front Otrg Coil Flt	Check the wiring; replace the solenoid valve
82	82 Left Rear Otrg Coil Flt	Check the wiring; replace the solenoid valve
83	83 Right Front Otrg Coil Flt	Check the wiring; replace the solenoid valve
84	84 Right Rear Otrg Coil Flt	Check the wiring; replace the solenoid valve
85	85 Outrigger Ext Coil Fit	Check the wiring; replace the solenoid valve
86	86 Outrigger Ret Coil Fit	Check the wiring; replace the solenoid valve
95	95 Machine Type Fautit	Resetting the machine model
OL	98 Platform Overload	Check whether the counterweight is too heavy
LL		Machine Tilted Beyond Safe Limits Fault

For more information, please consult the appropriate Dingli Service Dept.