OPERATOR'S HANDBOOK

13 14 239

TRADITIONAL

CLASSIC 1505
CLASSIC 2000

REPLACES

RLH 1505
RLH 2000
RLH 2500

Kit : 54 30 060 November 1997

OPERATOR'S HANDBOOK

CLASSIC 1505-2000

CONTENTS

NOTE: The company policy is one of continuous technological product development and consequently the company reserves the right to alter product or component specifications without notice.

This tail-lift is designed with high quality equipment and materials to ensure safe and reliable use.

The purpose of these instructions is to enable the user to operate the tail-lift safely and continue to keep it in good condition.

If followed conscientiously, the instructions herein will provide the user with complete safety and will ensure long trouble-free life for the equipment.

BEFORE USING THE TAIL LIFT:

Before using the tail-lift on public roads:

- make sure that the vehicle is parked in compliance with the highway code and the parking brake is firmly applied,
- turn on the warning lights of the vehicle (both during daytime and at night),
- at night, leave side lights on,
- lower support jacks if fitted to the vehicle before actuating the tail-lift.

Before using the tail-lift on a private site, make sure that this is possible under all the necessary requirements of safety. Special safety rules apply to certain sites: examples: hydrocarbon depot, chemical product plant, explosive product warehouse (non-exhaustive list) and that the tail-lift you are using does not comply with the RTMD/ADR requirements.

1 - MECHANICAL PART:

The tail-lift comprises three sub-assemblies:
- 1 lift chassis
- 1 balancing frame
- 1 platform

2 - HYDRAULIC CONTROL:

- One electro-hydraulic pack powered by the vehicle batteries operates the tail-lift.
- The tail-lift is fitted with hydraulic rams. Each ram is fitted with an electro-hydraulic valve.

3 - SAFETY:

- A circuit-breaker prevents any electrical short-circuits during vehicle operation.
- The power pack is fitted with a relief valve, adjusted to a given pressure, to prevent any overload of the equipment.
- If the hydraulic circuit accidentally fails, the valves hold the platform stationary.
- A flow regulator valve lowers the platform at a constant speed whether empty or loaded.
- A special "two-handed control" push-button makes the user use both hands when carrying out all the operations.
- A fuse protects the control circuit from the control box.
- If the electrical coils mounted on the ram valves accidentally fail, a temporary repair can be carried out by tightening the screw located at the end of these valves.

4 - ELECTRO-HYDRAULIC EQUIPMENT

- Electric motor power 2000 W.
- Power supply voltage: 12 or 24 V DC
- Control voltage: 12 or 24 V DC
- Current drained under load:
  - RLH 1505 (1500 kg) 180 A with 24 V
    360 A with 12 V
  - RLH 2000 (2000 kg) 180 A with 24 V
    360 A with 12 V
  - RLH 2000 (derated to 1500 kg)
    170 A with 24 V
    340 A with 12 V
  - RLH 2500 (2500 kg) 200 A with 24 V
    400 A with 12 V
- Battery capacity:
  - RLH 1505 12 Volts - 145 AH min.
    2 x12 Volts - 145 AH min.
  - RLH 2000 - 2500 12 Volts - 175 AH min.
    2 x12 Volts - 175 AH min.
- Alternator capacity: 14 Volts - 70 A min.
  28 Volts - 55 A min.
- Hydraulic gear pump: 2 cm^3/rpm
- Power pack calibrated pressure relief valve:
  - RLH 1505 220 bars
  - RLH 2000 220 bars
  - RLH 2000 (derated to 1500 kg) 180 bars
  - RLH 2500 230 bars
- Oil tank capacity: 6 liters
- Recommended oil: Mineral hydraulic oil
  Viscosity at 40°C = 32mm^2/s

Nota: The electro-hydraulic power pack may be damaged if another type of oil is used.

For safe and long use of the tail-lift the user shall observe the following instructions:

- The tail-lift shall only be operated by one person at a time.

- Only the person appointed by the company manager is allowed to operate the tail-lift.

- The flashers of the vehicle must operate when the tail-lift is being operated.

- Always use the control station which gives best visibility.

- Check that the weight and position of a load are compatible with loading information (see pages 17-18) before lifting.

- A wheeled load must be parked on the platform with the brake on before the tail-lift is actuated.

- If the wheeled load cannot be parked on the platform because it is not fitted with a brake, use the retractable stops built-in the platform. These retractable stops are designed to hold stationary a wheeled load of a maximum weight of 600 kg and fitted with wheels of a diameter less than or equal to 100 mm.

  If a wheeled load cannot be maintained stationary on the platform it is PROHIBITED to use the tail-lift.

- Keep the operating area clear.

- Inform the maintenance manager about any tail-lift malfunctioning or anomaly.

- Lower the platform onto the ground if not used for long periods of time.

- When no longer used, lock the tail-lift control system.

IT IS PROHIBITED TO:

- Drive the vehicle when the tail-lift platform is not locked in road position:
  . on the vehicle body, traditional tail-lift and half tail-lift,
  . under the vehicle body: tuck away and retractable tail-lift.

- Use the platform as a bridge,

- Work on safety devices such as the electrical valve at the bottom of the ram, flow rate limiter, pressure relief valve, etc..

- Any person to stand in the 350 mm area (see page 13).

- Use the tail-lift under conditions other than those stipulated in this handbook and normally expected for this type of equipment.

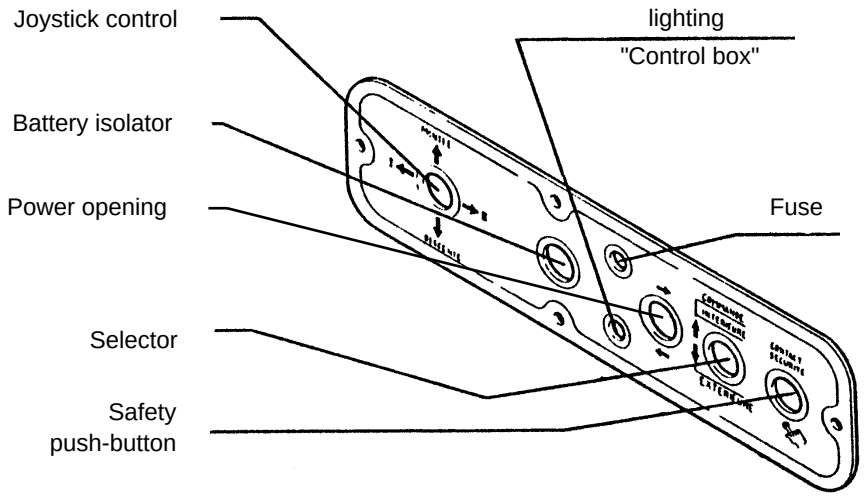
IMPORTANT NOTE:
When used for the first time, some operating anomalies may be found (hammering, vibrations, difficulties to handle the platform). This is normal. Correct operation is only possible when all air trapped in the circuit has been exhausted.

1 - START UP:

- Turn on the power using the battery isolator located in the outside control box.
- Select the control station using the selector.
- Unlock the road locking system located on the platform.

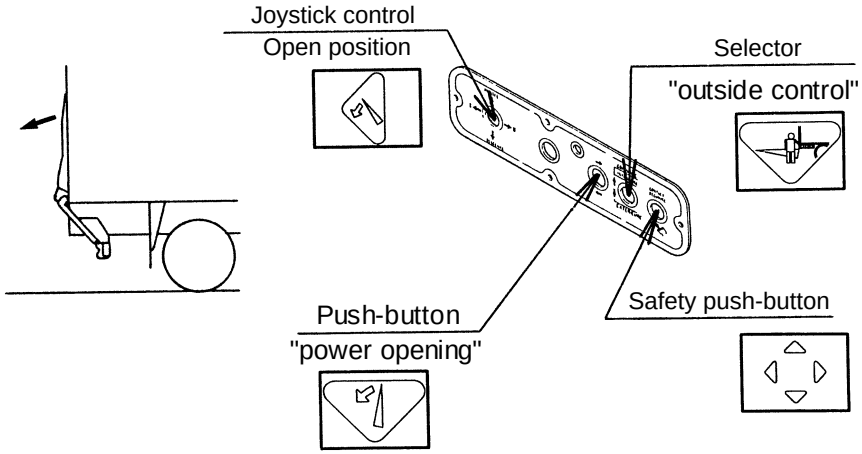
2 - CONTROL OF THE VARIOUS OPERATIONS:

2.1 USING THE OUTSIDE CONTROL BOX:

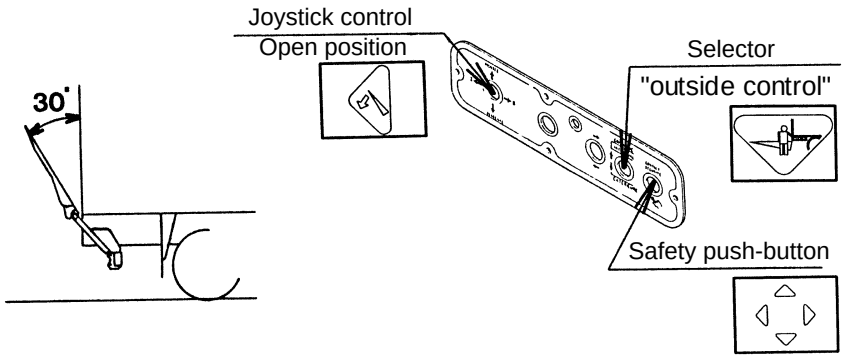


OPENING FUNCTION

The "OPENING" function of the platform comprises two phases:
- simultaneously operate the joystick control, the power opening push-button and the safety push-button.

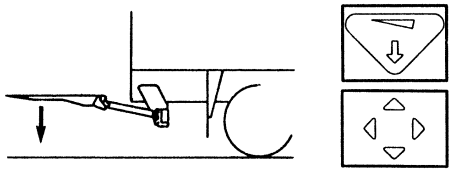


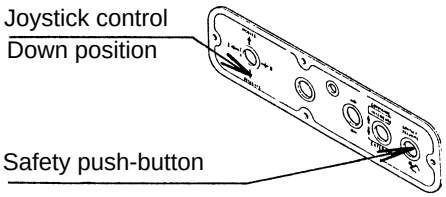
- when the platform reaches an angle of approximately 30°, release the power opening push-button.



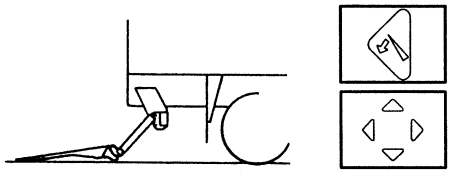
OPERATING INSTRUCTIONS	RLH 1505 RLH 2000 - 2500

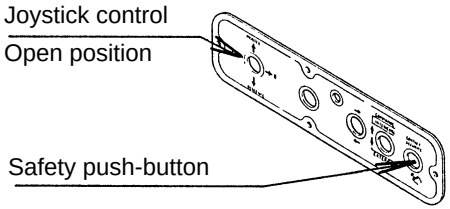
DOWN FUNCTION



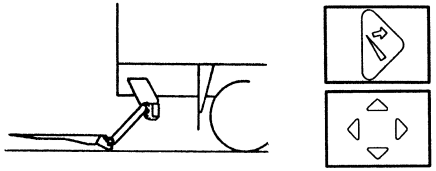


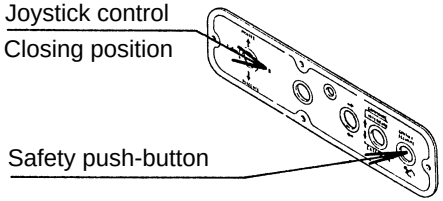
TILT ON GROUND



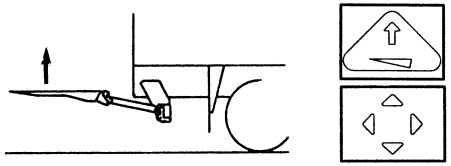


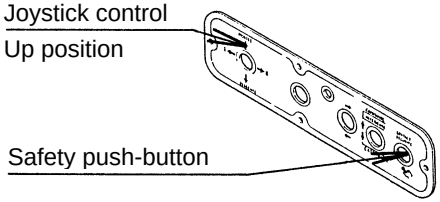
TILT UP



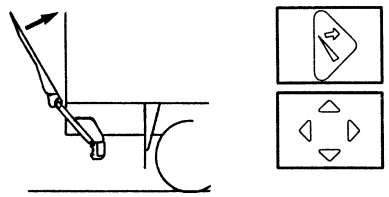


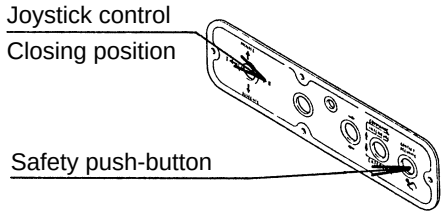
UP





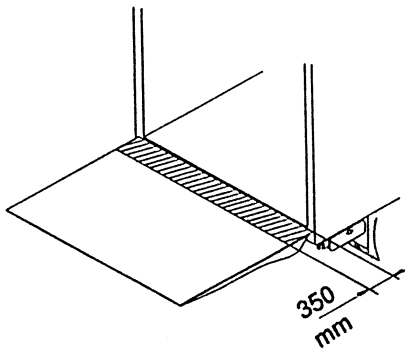
CLOSING

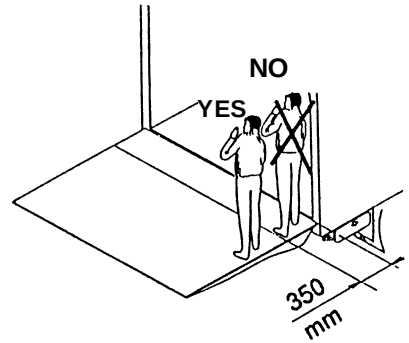




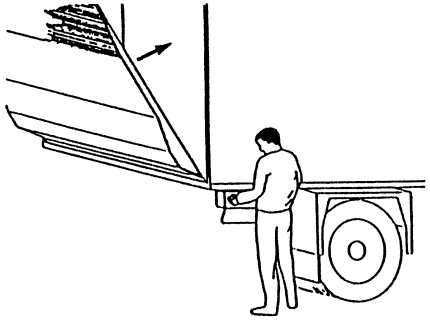
Put the selector in intermediate position at end of use, then turn the battery isolator to stop and close the control box key-locked door.

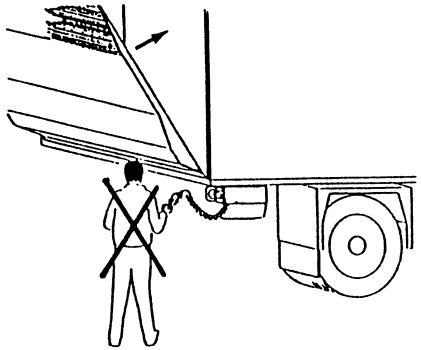
When using the tail-lift with the pendant control box (and spiral cord) the user must not stand at less than 350 mm from the edge of the platform, vehicle side.





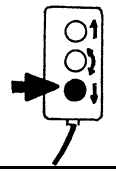
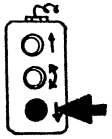
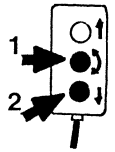
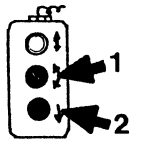
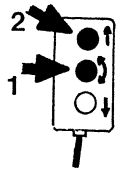
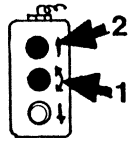
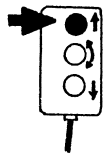
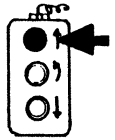
The tail-lift shall only be returned to road position (closed) or work position (open) using exclusively the outside control box located at the rear of the vehicle. Never use the pendant control box (with the spiral cord) to control these movements.





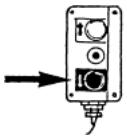
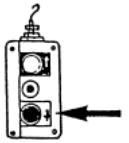
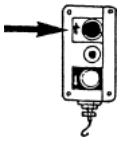
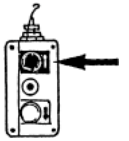
2.2 WITH THE INTERNAL OR PENDANT CONTROL BOX:
IMPORTANT: Press 1 before 2.
- Opening and closing are from the outside control box.

NOTA: Equipment fitted with "Floor Tilt Lock" option:
The platform is only tilted when the tail-lift is on the ground.

FUNCTION	INTERNAL CONTROL BOX	PENDANT CONTROL BOX
DOWN		
TILT ON GROUND		
TILT UP		
UP		

Equipment fitted with the "Auto-Tilt on Ground" option

2.3 WITH THE INTERNAL OR PENDANT CONTROL BOX:

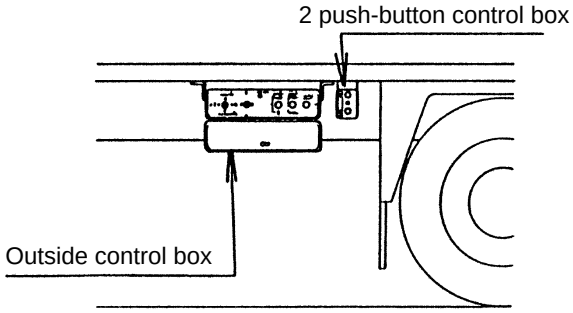
FUNCTION	INTERNAL CONTROL BOX	PENDANT CONTROL BOX
DOWN		
UP		

2.4 USING THE 3 PUSH-BUTTON FOOT CONTROL:

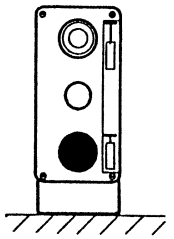
A - Unfold the platform and lower on the ground using the outside control box (see pages 11 and 12).
B - Use: for SAFETY reasons, it is necessary to press the two push-buttons at the same time to make the movement you want.

A position contact stops any tilt movement (up or down) of the platform when the tail-lift is not on the ground.

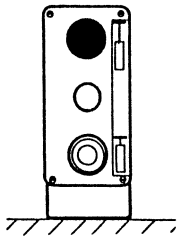
2.5 SUPPORT JACK OPTION:
Tail-lifts fitted with support jacks are equipped with an outside control box and a 2 push-button control box (see diagram):
- Turn on the power using the battery isolator located in the outside control box.
- Selector on outside control box.
- Support jacks are controlled by means of the 2 push-button control box.



SUPPORT JACKS DOWN



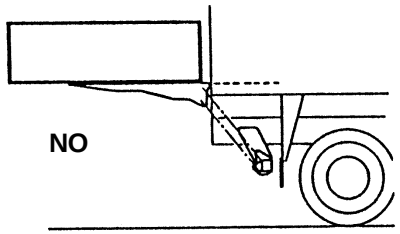
SUPPORT JACKS UP



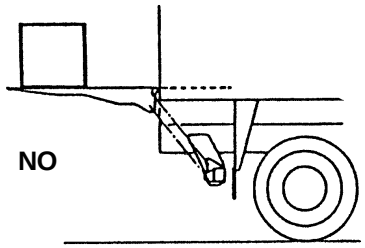
3 - SWITCHING OFF (Road position):
- Move the platform up to vertical then lock the bolt.
- Switch off the main switch using the battery isolator.
- Key lock the outside control box.

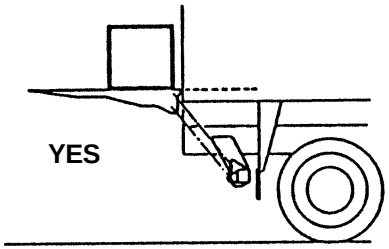
4 - LOADING:

- Check that the weight loaded is not greater than the capacity of the tail-lift (refer to the load chart in this handbook - see page 18).
- The load must never overhang the edge of the platform.

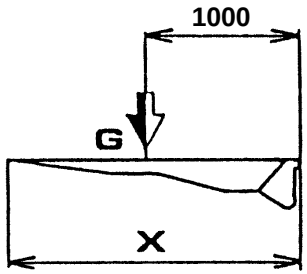


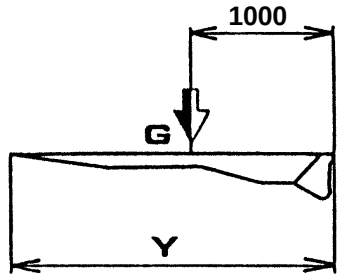
- The load must always be positioned on the platform as close as possible to the vehicle.





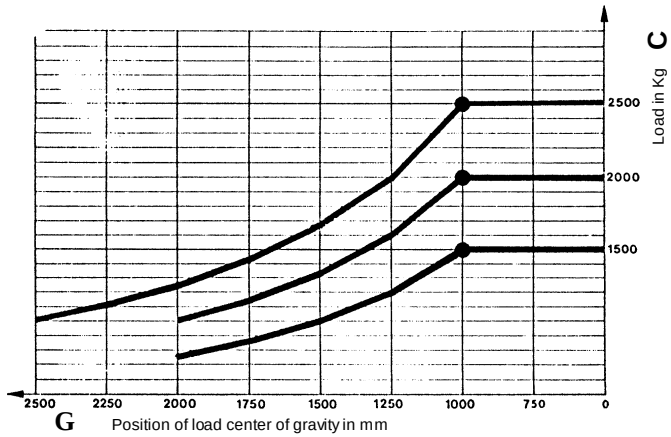
- A platform deeper than the standard platform does not increase the tail-lift capacity.





A tail-lift is designed to lift or lower loads from the floor of a vehicle to the ground and vice versa.
Any operation which does not correspond to the definition above is prohibited.

5 - LOAD CHART:



Center the load on the platform and position it as close as possible to the pivot end of the platform (rear end member side of the vehicle).

Basic equipment weight:

RLH 1505 = 265 kg
RLH 2000 = 300 kg
RLH 2500 = 300 kg

Fitted with steel platform:

	Width		Roll Stop
	2480	2590	
1500	291	303	+ 16 kg
1700	330	344	ditto
2000	373	389.5	ditto

Fitted with aluminium platform:

	Width		Roll Stop
	2480	2590	
1120	127	130.5	+ 3.5 kg
1390	146	150.5	ditto
1500	154	158.5	ditto
1660	165	171.5	ditto
1770	172	178.5	ditto
1880	179	185.5	ditto
2150	198	205.5	ditto

All maintenance operations must be carried out with the tail-lift on the ground (platform inclined on the ground), without any loads on the platform.

1 - FOREWORD:

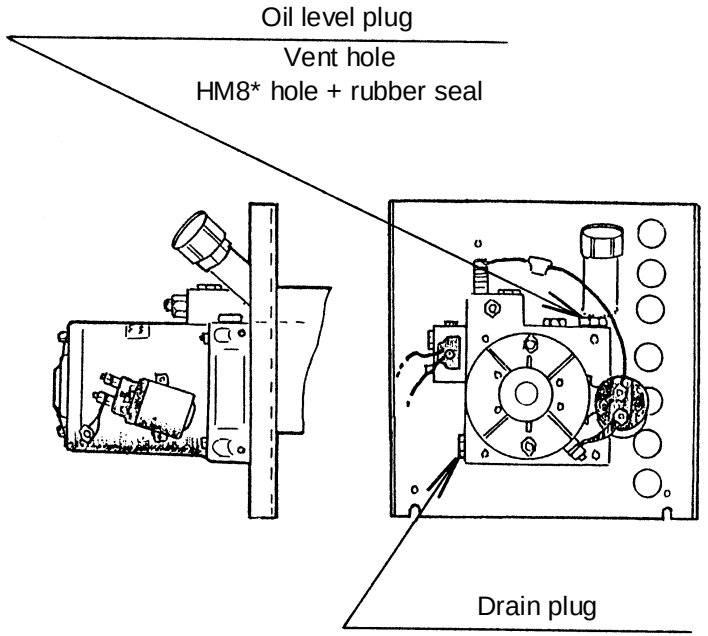
Never spray pressurized water on the electro-hydraulic power pack and on the outside control box.
Use a brush or compressed air on these parts.
The electro-hydraulic power pack is the weak point in your tail-lift.
Always make sure that it is perfectly clean.

2 - MONTHLY CHECK:

2.1 OIL LEVEL CHECK:
Work as follows:
- Tilt the platform on the ground.
- Wait 30 seconds until the oil level settles.
- For the SMITH pack, unscrew the oil level plug: the oil level should be flush with the hole (see page 20).
- For the HPI pack (see page 21).
- If necessary, top up with the recommended oil.

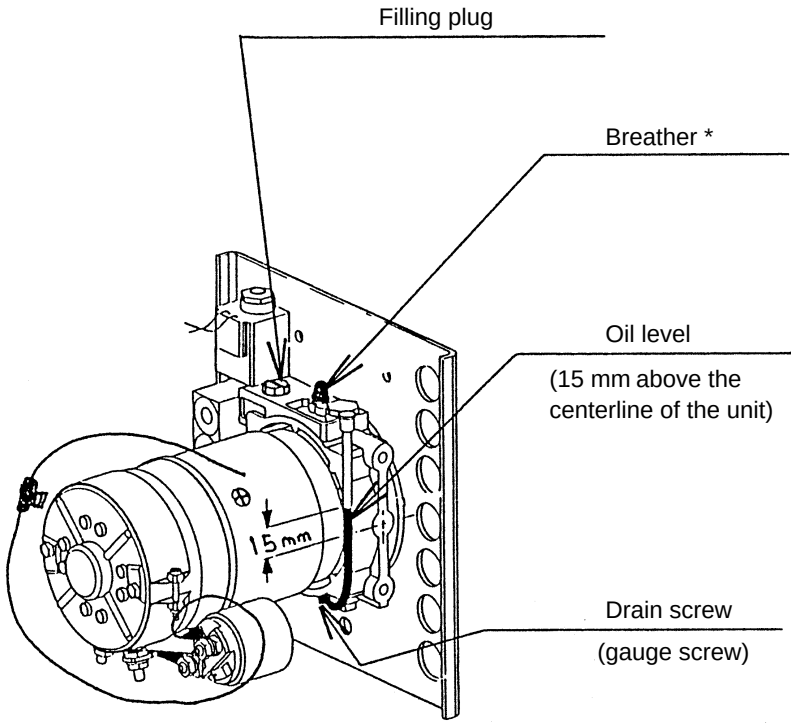
Recommended oil: **Mineral hydraulic oil at 40° C = 32 mm^2/s**
It is recommended not to mix oils from different manufacturers.
In all cases, **never use engine oil or brake oil.**

2.1.1 SMITH PACK



* The vent hole HM8 screw must be loosened a few turns when filling the tank.

2.1.2 HPI PACK:

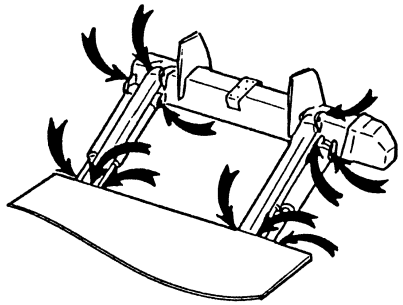


* There is no vent hole as the pack is fitted with a breather.

2.2 SECURITY OF FASTENERS:
- Make sure that hinge pin attachment screws are safetied.
- Also check that the attachment screws securing the mechanism to the aluminium platform are tightened.

2.3 LUBRICATION:
The equipment is fitted with: 8 grease points for RLH 1505.
12 grease points for RLH 2000 - 2500.

Tail-lift illustrated for RLH 2500:



All grease points shall be generously lubricated.
Increase lubrication frequency if the lift is used under difficult conditions or intensively.
Recommended grease: high temperature molybdenum disulphide grease.

NOTA: Also, we recommend greasing of grease points each time the lift is washed, especially if washed under pressure with detergents.

2.4 BATTERY CHECK:
Check battery charge and make sure that electrical connections are in good condition. An insufficient charge may affect the operation of the electro-hydraulic power pack or even damage the motor (see page 7).

2.5 CHECKING OF MECHANICAL LOCKING SYSTEMS ON THE PLATFORM:
Check the mechanical locking systems on the platform (mounted by the builder):
- on the vehicle body for traditional tail-lifts and half tail-lifts,
- under the vehicle body for tuck away and retractable tail-lifts.

2.6 TAIL-LIFT STRUCTURE:
Welds must be strictly checked.

2.7 CHECKING OF FASTENERS:
Check that all fasteners are correctly assembled and correctly tightened as well as in good condition (screws, nuts, circlips, pins, etc.).

NOTA: Pin retaining screws fastening the tail-lift or the platform must be strictly checked as loss of one of these parts could cause a serious accident.

2.8 Reminder: the inspection operations indicated in the service booklet must be carried out every year.

If the anomalies indicated on pages 19 - 22 - 23 are found, stop using your tail-lift and contact your closest repair center.

1 - THE MOTOR RUNS WITHOUT OPERATING THE PUSH-BUTTONS:

Replace the motor relay.

CAUTION: Prolonged use under these conditions may result in destruction of the power pack.

2 - THE MOTOR DOES NOT RUN:

1st possible cause: defective power supply:
- Check that the fuse is in good condition.
- Check supply of power to the battery isolator.
- Check that electric cables and control push-buttons are in good condition.

2nd possible cause: the relay is defective:
- Connect a + wire directly to the relay terminal. If the motor does not run, replace the relay.

3rd possible cause: the motor is defective:
- Connect the two power circuit terminals located on the relay (for example, using a crocodile clip).
- If the motor does not run, check the condition of the brushes, the commutator, the coils and replace if necessary.

3 - THE PLATFORM WILL NOT LOWER:

1st possible cause: (see § 2 - 1st possible cause).

2nd possible cause: defective coils.
- Check that power is fed to the coil mounted on the lift ram and on the pack coil. Check that you can hear the valve operating, if you cannot, replace the defective coil.

4 - THE PLATFORM DOES NOT TILT (OR DOES NOT OPEN):

- See page 24, § 2: 1st possible cause.

- See page 24, § 3: check closing ram coil instead of lift ram coil.

5 - THE MOTOR RUNS BUT THE PLATFORM WILL NOT RISE NOR TILT UP:

1st possible cause: defective control push-buttons:
- Check the joystick control.

2nd possible cause: defective coils (noise with excess pressure):
- Check power supply to lift ram coil if the platform does not rise.
- Check power supply to closing ram coil if the platform does not tilt up (or does not incline).
- Check that you can hear the valve operating. If you cannot, replace the defective coil.

3rd possible cause: Defective pack coil:
- Remove and clean it. Replace if necessary.

4th possible cause: lack of oil:
- Check oil level and top up if necessary.

5th possible cause:
- Clean as indicated on page 19 § 2.1.

6th possible cause: Defective motor/pump coupling:
- Uncouple the pump support motor and replace the defective unit.

7th possible cause: defective pump:
- Contact one of our approved service centers.

6 - THE PLATFORM LOWERS OR TILTS ALONE (OR DOES NOT OPEN):

Hydraulic leak:

- Check hydraulic units and their connections.
- Check that there are no leaks at rams as well as at electro-hydraulic valves.

In all cases, contact one of our approved service centers.

7 - THE PLATFORM RISES AND TILTS UP OR CLOSES AT THE SAME TIME:

- Dismantle and clean the cartridge in the electro-hydraulic valve mounted on the closing ram.

8 - THE PLATFORM TILTS DOWN OR OPENS AND LOWERS AT THE SAME TIME:

- Dismantle and clean the cartridges of the electro-hydraulic valve mounted on the lift ram.

9 - THE PLATFORM RISES HIGHER THAN THE FLOOR OF THE VEHICLE:

- Check and build up the frame stops welded to the vehicle.
- Make sure that the bodywork has not moved towards the front of the vehicle.

10 - PLAY IN JOINTS:

- Replace pins and bushes.

11 - USING THE EMERGENCY CONTROL:

CAUTION: there are two types of solenoid valves:

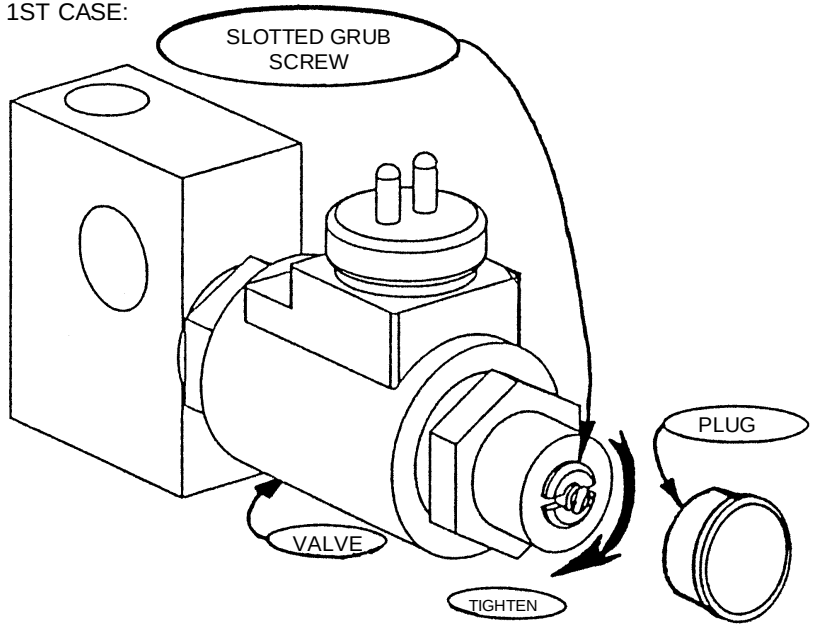
1st case: - Unscrew the plug and carefully tighten the slotted grub screw.

2nd case: - Loosen the plug, remove the coil and put the plug back.

IMPORTANT: When the emergency control is screwed it is necessary to actuate the tail-lift depending on the function requested to operate it.
Example: The platform is on the floor.
The valve wire is cut.

To lower the platform, it is necessary to screw in the emergency control and operate the joystick control with the "two-handed control" to actuate the "down" function.

1ST CASE:



Refer to additional explanations on page 6.

Problems specific to auto-tilt on ground:

1 - THE PLATFORM RISES BUT WITHOUT RETURNING TO THE HORIZONTAL:

1st possible cause: Incorrect positioning of the mercury switch under the platform. Correct if necessary.
2nd possible cause: Electrical conductor from the mercury switch in bad condition (wires short-circuited).
3rd possible cause: Defective R2 relay. Replace the printed circuit board.
4th possible cause: Printed circuit or one of its electrical connections in bad condition. Replace the printed circuit board.

2 - THE PLATFORM LIFTS BUT DOES NOT STOP HORIZONTALLY:

1st possible cause: (see § 1 - 1st possible cause).
2nd possible cause: Electric contactor from the mercury switch in bad condition (wires cut).
3rd possible cause: Printed circuit or its electrical connections in bad condition. Replace the printed circuit board.

3 - THE PLATFORM CLOSES WHEN RISING:

1st possible cause: Defective VLB on closing ram. Replace it.
2nd possible cause: Defective R2 relay or tracks in bad condition. Replace the printed circuit board.

4 - THE PLATFORM JOLTS WHEN TILTING ON THE GROUND:

Possible cause: Defective R1 relay or tracks. Replace the printed circuit board.

5 - THE PLATFORM DOES NOT TILT WHEN IT TOUCHES THE GROUND:

1st possible cause: The or one of the pressure sensor(s) (located on the lift ram(s)) is defective. Replace it.
2nd possible cause: Conductor from the or one of the pressure detector(s) cut or torn off. Replace it.
3rd possible cause: Conductor from the closing ram torn off or cut. Replace it.
4th possible cause: Defective VLB on closing ram. Replace it.

6 - THE PLATFORM OPENS AND LOWERS SIMULTANEOUSLY WHEN TAIL-LIFT LOWERING IS ACTUATED:

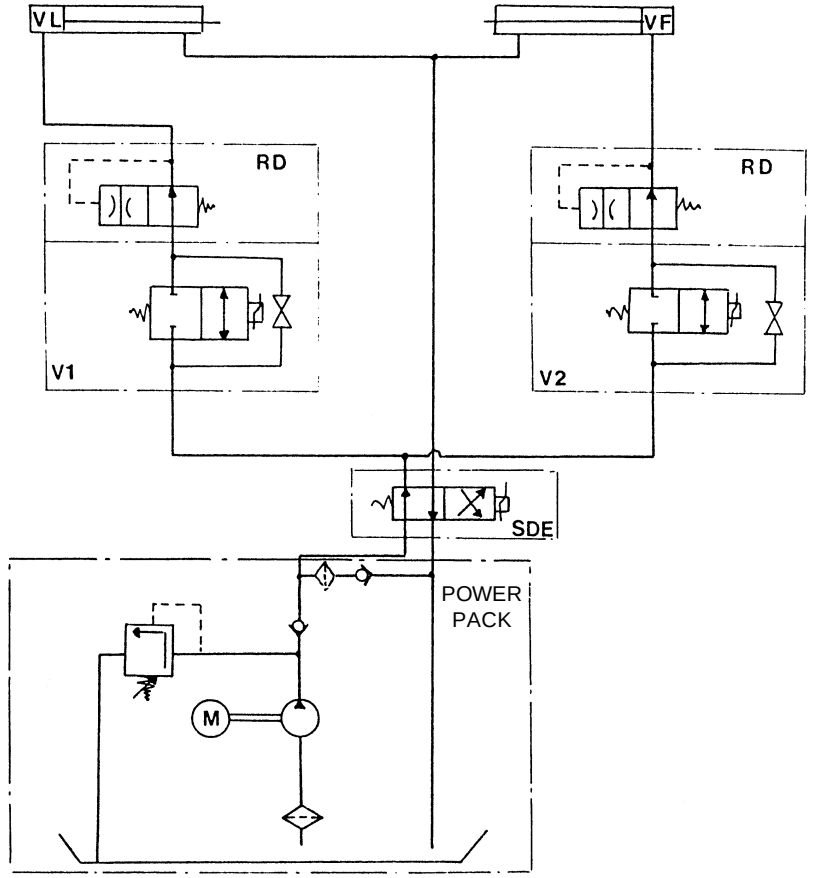
1st possible cause: Defective VLB on closing ram. Replace it.
2nd possible cause: Defective R1 relay. Replace the printed circuit board.
3rd possible cause: Conductor from the pressure sensor short-circuited. Replace it.

7 - THE PLATFORM LOWERS AND OPENS SIMULTANEOUSLY WHEN OPENING IS ACTUATED:

1st possible cause: Defective VLB on lift ram. Replace it.
2nd possible cause: Short-circuited diode. Replace the printed circuit board.

1 - HYDRAULIC DIAGRAMS:

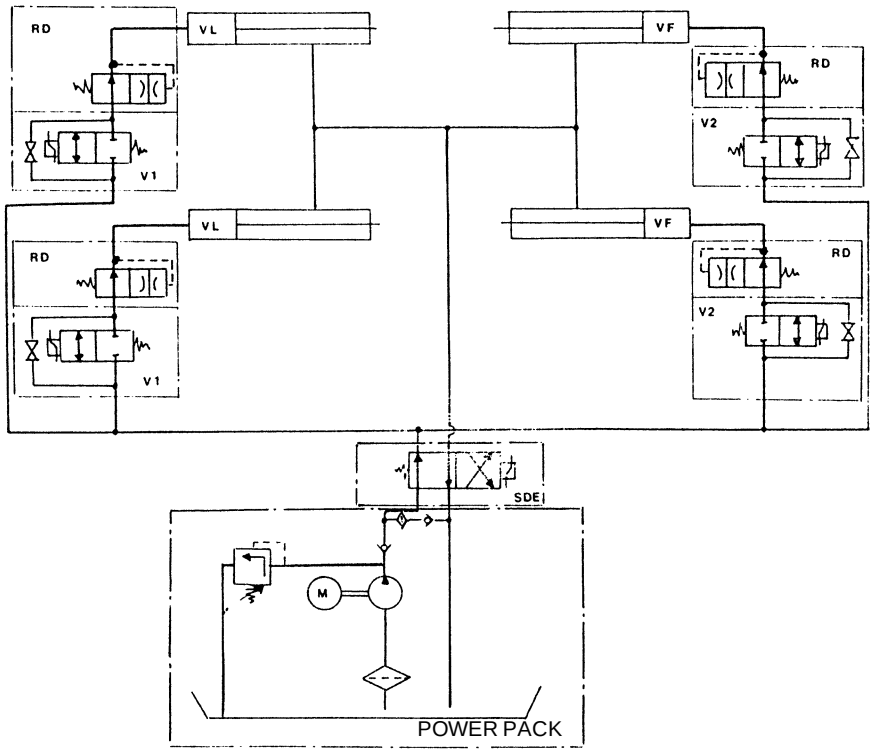
1.1 HYDRAULIC DIAGRAM, NO OPTIONS



VL	:	LIFT RAM
VF	:	TILT RAM
V1	:	ELECTRO-HYDRAULIC VALVE ON LIFT CIRCUIT
V2	:	ELECTRO-HYDRAULIC VALVE ON TILT CIRCUIT
RD	:	FLOW REGULATOR VALVE
SDE	:	DOUBLE-ACTING SELECTION

1 - HYDRAULIC DIAGRAMS:

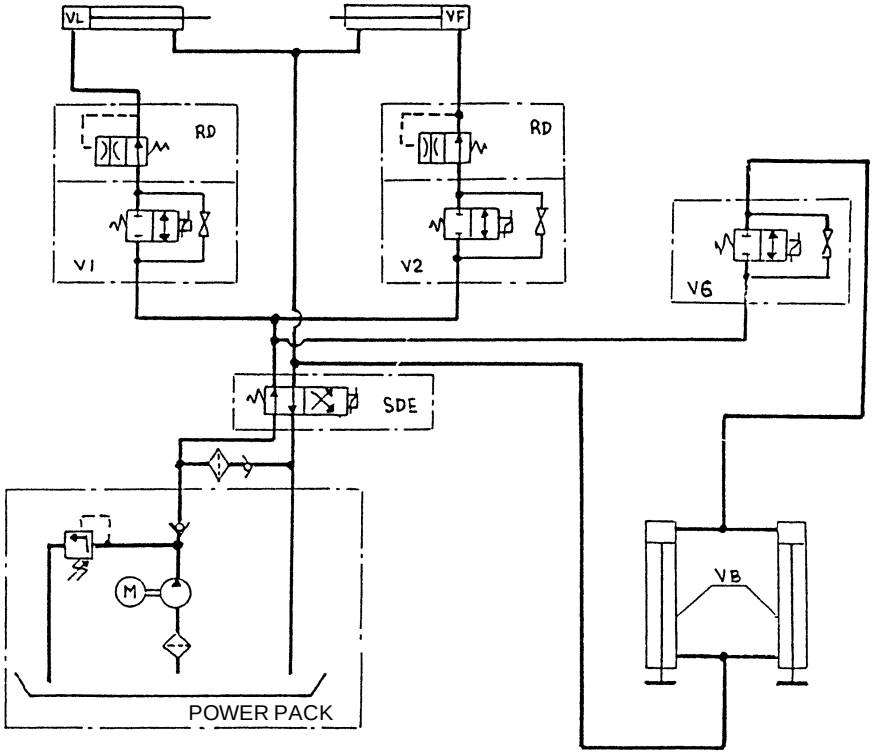
1.2 HYDRAULIC DIAGRAM, NO OPTIONS



VL	:	LIFT RAM
VF	:	TILT RAM
V1	:	ELECTRO-HYDRAULIC VALVE ON LIFT CIRCUIT
V2	:	ELECTRO-HYDRAULIC VALVE ON TILT CIRCUIT
RD	:	FLOW REGULATOR VALVE
SDE	:	DOUBLE-ACTING SELECTION

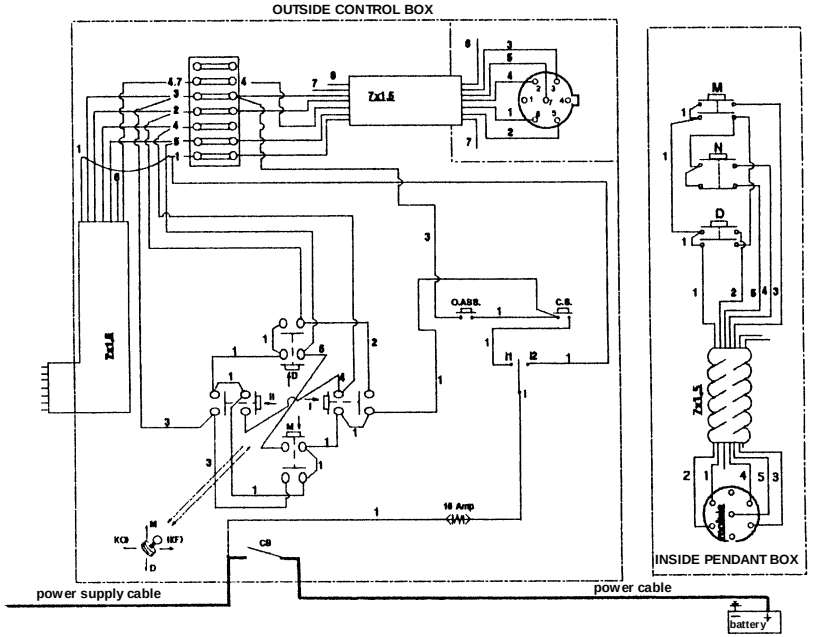
1 - HYDRAULIC DIAGRAMS:

1.2 HYDRAULIC DIAGRAM WITH SUPPORT JACKS



VL	:	LIFT RAM
VF	:	TILT RAM
V1	:	ELECTRO-HYDRAULIC VALVE ON LIFT CIRCUIT
V2	:	ELECTRO-HYDRAULIC VALVE ON TILT CIRCUIT
RD	:	FLOW REGULATOR VALVE
SDE	:	DOUBLE-ACTING SELECTION
VB	:	SUPPORT JACK

2 - ELECTRIC DIAGRAM, NO OPTIONS
(WITH TWO-HANDED OUTSIDE CONTROL BOX)



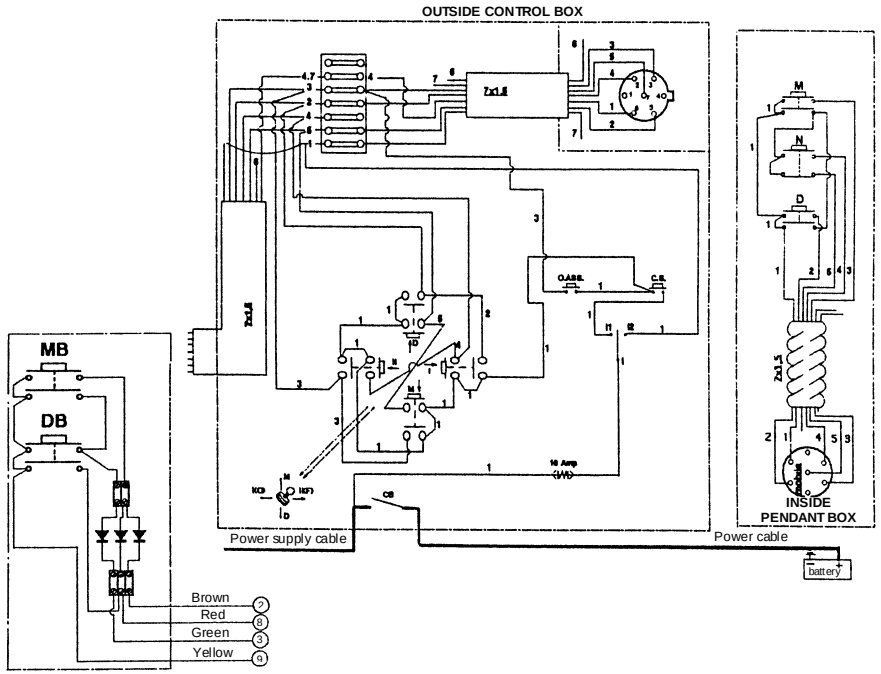
COLOR CODE		CONTROL	EXCITATION	WIRE COLORS
YELLOW	1	UP	5 + 3	WHITE + GREEN
BROWN	2	DOWN	5 + 2	WHITE + BROWN
GREEN	3	CLOSING	4 + 3	RED + GREEN
RED	4	OPENING	4 + 2	RED + BROWN
WHITE	5	POWER OPENING	4 + 3 + 2	RED + GREEN + BROWN

M : joystick control, up position
II : joystick control, closing position
D : joystick control, down position
I : joystick control, open position
CS : safety contact
I : reverser - i1 control box
- i2 inside pendant box
CB : battery isolator
O.ASS : power opening
16 Amp : 16 amp fuse

—— : power circuit
—— : power supply circuit

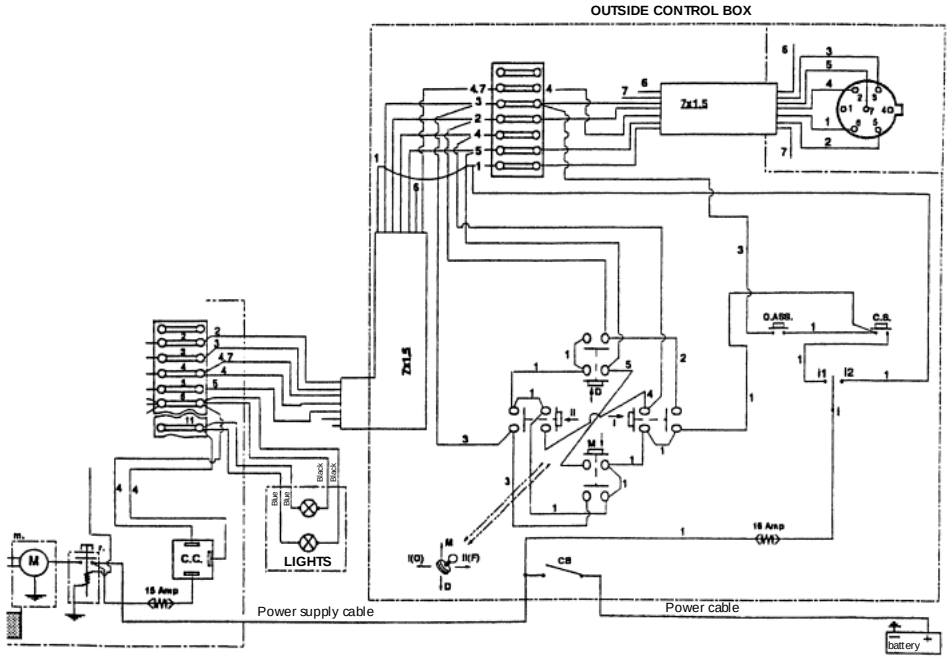
M : Up position push-button
N : Neutral position push-button
D : Down position push-button

3 - ELECTRIC DIAGRAM WITH SUPPORT JACKS
(WITH BOX - NO PRESSURE SWITCH)



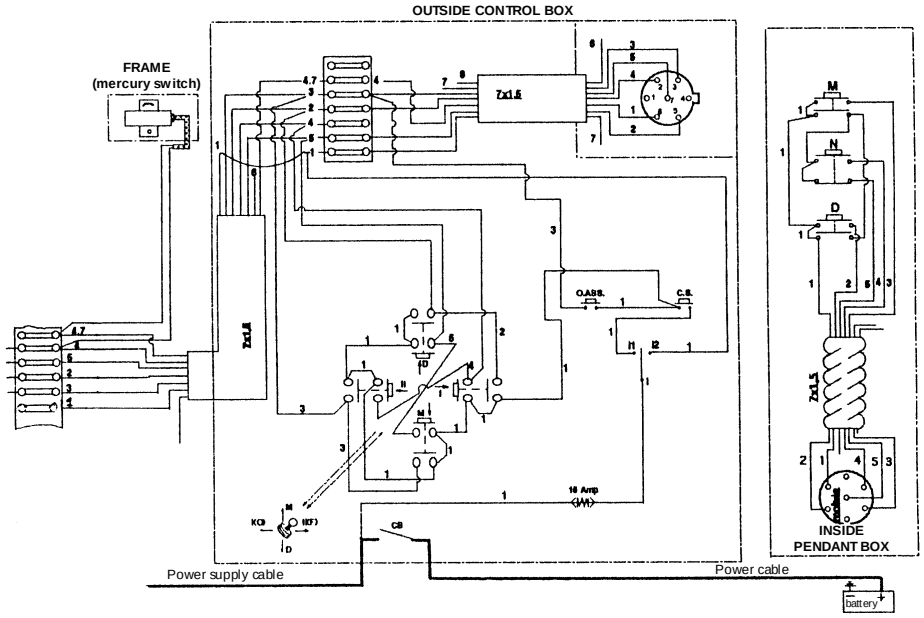
M	:	joystick control, up position	▬	:	power circuit
II	:	joystick control, closing position	──	:	power supply circuit
D	:	joystick control, down position			
I	:	joystick control, open position			
CS	:	safety contact	MB	:	support jack up
I	:	reverser - i1 control box	DB	:	support jack down
		- i2 inside pendant box	di	:	diode
CB	:	battery isolator	M	:	Up position push-button
O.ASS	:	power opening	N	:	Neutral position push-button
16 Amp	:	16 amp fuse	D	:	Down position push-button

4 - ELECTRIC DIAGRAM WITH LIGHT INDICATORS



M	:	joystick control, up position	▬	:	power circuit
II	:	joystick control, closing position	──	:	power supply circuit
D	:	joystick control, down position			
I	:	joystick control, open position			
CS	:	safety contact			
I	:	reverser - i1 control box	CC	:	flasher unit
		- i2 inside pendant box	SL	:	light indicating
CB	:	battery isolator	M	:	Up position push-button
O.ASS	:	power opening	N	:	Neutral position push-button
16 Amp	:	16 amp fuse	D	:	Down position push-button

5 - ELECTRIC DIAGRAM WITH TILT ON GROUND LOCKOUT



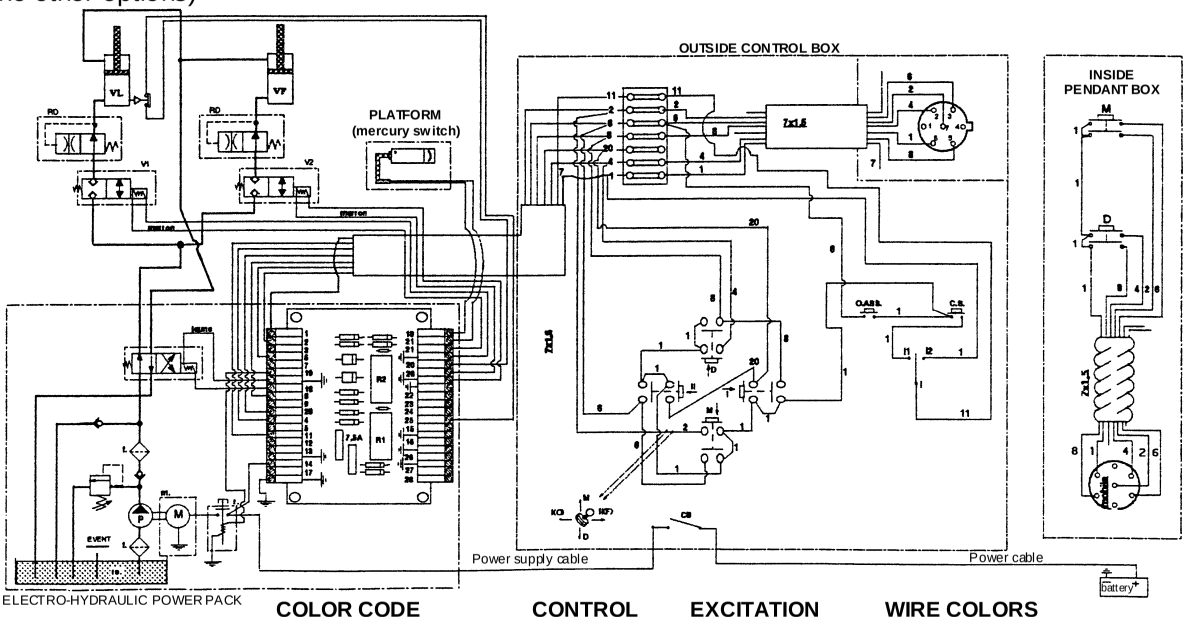
M	:	joystick control, up position	▬	:	power circuit
II	:	joystick control, closing position	──	:	power supply circuit
D	:	joystick control, down position			
I	:	joystick control, open position			mercury switch on frame
CS	:	safety contact			
I	:	reverser - i1 control box			
		- i2 pendant control box			
CB	:	battery isolator	M	:	Up position push-button
O.ASS	:	power opening	N	:	Neutral position push-button
16 Amp	:	16 amp fuse	D	:	Down position push-button

ELECTRO-HYDRAULIC DIAGRAM

RLH 1505
RLH 2000 - 2500

6 - ELECTRO-HYDRAULIC DIAGRAM WITH AUTO-ELECTRIC TILT

(no other options)



COLOR CODE		CONTROL	EXCITATION	WIRE COLORS
YELLOW	1	UP	2 + 6	WHITE + GREEN
YELLOW	4	DOWN	4 + 8	WHITE + BROWN
BROWN	8	CLOSING	6 + 20	RED + GREEN
GREEN	6	OPENING	20 + 8	RED + BROWN
RED	20	POWER OPENING	20 + 8 +6	WHITE + GREEN + BROWN
WHITE	2			
BLACK	11			

ELECTRO-HYDRAULIC DIAGRAM

RLH 1505
RLH 2000 - 2500

KEY

VL : lift ram
VF : closing ram

ELECTRO-HYDRAULIC POWER PACK

RD : flow regulator valve
P : pump
f. : filter
re : tank
m. : motor (with built-in thermal protection)
r. : relay
V1 : valve on lift ram
V2 : valve on closing ram

OUTSIDE CONTROL BOX

M : joystick control, up position
II : joystick control, closing position
D : joystick control, down position
I : joystick control, opening position
CS : safety contact
I : reverser: i1 control box
i2 pendant control box
CB : battery isolator
O.ASS : power opening

PENDANT CONTROL BOX

D : down position push-button
M : up position push-button

EFFECT OF CONTROLS ON ELECTRICAL DEVICES

OUTSIDE CONTROL BOX

Up : 2 + 6
Down : 4 + 8
Closing : 6 + 20
Opening : 20 + 8
Power opening : 20 + 8 + 6

PENDANT CONTROL BOX

Up : 2 + 6
Down: : 4 + 8

7 - ELECTRO-HYDRAULIC DIAGRAM WITH AUTO-ELECTRIC TILT

(with other options)