

TB 128

TECHNICAL BULLETIN

INFORMATION ONLY

For the Attention of : Service Engineers, Installers, Trade Customers, Testers,
Product Support and Training Departments, Spares Dept.

Date : 15th May 2012

Product : Maxilift hydraulic – Machine Room and MRC (cabinet) models

Subject : **Introduction of additional safety features on hydraulic drives**

Pages : 5

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Introduction:

The objective of this bulletin is to give notification and guidance on changes made to the hydraulic drive and corresponding electrical control system on Maxilift Machine Room (MR) and Machine Room Cabinet (MRC) installations. The changes in equipment specification have been introduced to meet the new safety requirements of the amendment A3 to EN81- 2 for hydraulic lifts to prevent unintended car movement (UCM) away from a landing.

Similar technical bulletins have been issued previously for the Maxilift Hydraulic MRLi model (ref TB117A) and the Maxilift traction model (ref TB125).

Details of the new hydraulic drives:

Future new installations:

The 3010 valve block, traditionally used on Maxilift machine room and MRC models, does not meet the latest requirements of EN81-2. The 3010 valve block has therefore been superseded by the electronic valve block NGV A3 (recently introduced on MRLi Maxilift) for machine room and MRC Maxilift models.

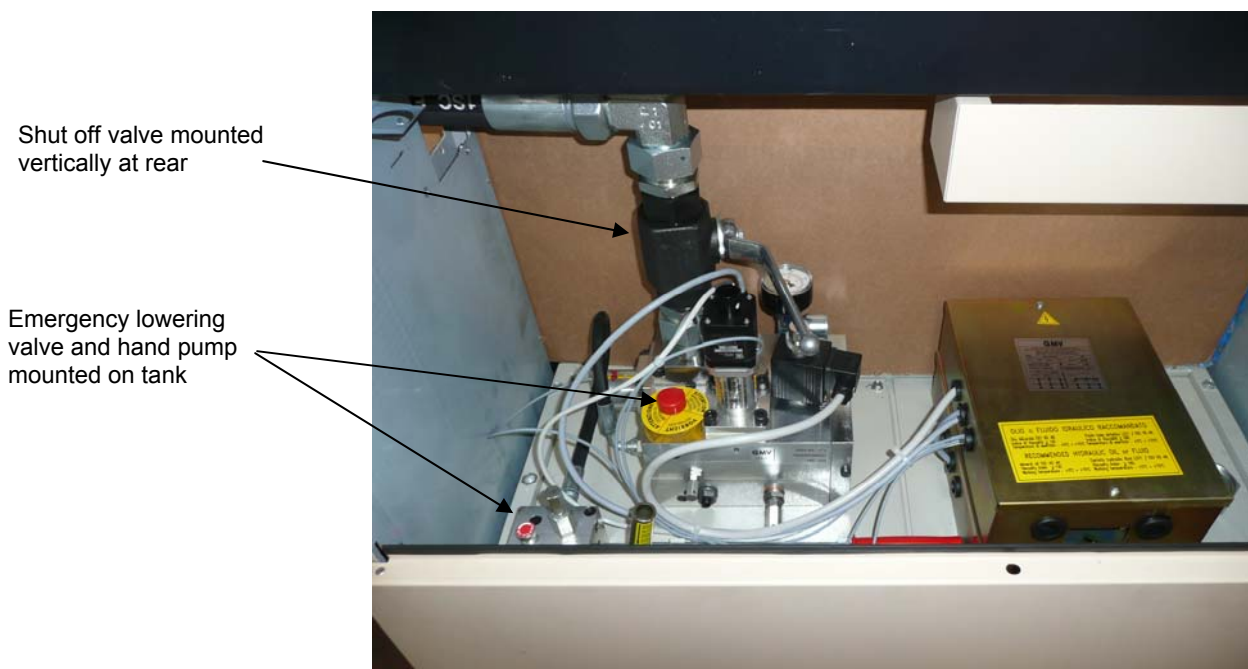
See the following Guidance Note 1 for details.

Existing installations:

A retrofit solution, to meet the requirements of EN81-2 A3, has also been introduced for existing hydraulic tanks with a 3010 valve and can be used for lifts which have been installed, partly installed or are in storage. This solution involves the addition of an extra safety valve – the DLV A3 with associated control circuit.

See the following Guidance Notes 2, 3 and 4 for details.

Guidance Note 1: MR and MRC models with NGV A3 electronic valve



Typical MRC installation with NGV A3 electronic valve

Future installations will incorporate the NGV A3 electronic valve on all GMV hydraulic tanks, which includes type GL, T1, T2 and T3. The valve block is similar to that introduced on MRLi models in 2011 where the hydraulic tank is located in the pit. The valve block incorporates 3 inductive sensors, with LEDs, to monitor the positions of both the main check valve and the main flow control valve. Unlike the MRLi the hand pump and emergency lowering valve are mounted directly on the tank rather than in the landing architrave.

The following points from TB 117A for the introduction of the NGV A3 on the MRLi models have been re-iterated for the early stage of installation:

Running as a working platform – In order to ‘punch’ the lift up or down using the pendant controller, the following steps must be taken:

- Control panel is to be connected to the main 3 phase supply.
- The battery charger unit is to be connected to the control panel.
- The safety chain is to be ‘linked’ out between ‘**PS**’ through to ‘**G2**’ including all points in between. **PSM** must also be linked out initially until there is pressure in the hydraulic system.

NOTE: These links are to be removed once safety chain connections are made.

After the controller electrical connections have been made to use as a working platform the ‘NGV A3’ pendant control/punch inputs are:

- PS to TU for an up command
- PS to TD for a down command

Guidance Note 2: Description of the DLV A3 safety valve

The DLV A3 is an electrically pilot-operated check valve incorporating a 24VDC solenoid and manual emergency lowering valve. The valve has been type tested and certified by GMV as a safety component to provide protection against unintended movement of the lift car. This safety valve is positioned between the shut-off valve and the main 3010 control valve as shown in the following installation guidance notes. The power supply to the DLV A3 valve is fed from a separate 24VDC supply to that of the main 3010 control valve.

During upward travel of the lift, the delivery of pressurized oil from the motor/pump opens the non-return valve allowing flow to the hydraulic jack.

Downward travel of the lift is prevented until the solenoid on the pilot-operated check valve is energised along with the down valve (VMD) on the main 3010 valve. When both valves have been energised the passage of oil is allowed from the hydraulic jack to the tank.

The DLV A3 works independently from the main 3010 down solenoid valve because it is fed from a separate 24VDC supply (supplied as part of retrofit kit – see wiring diagram 1009271).

Points to note for installers/site engineers:

- When the lift is being run as a working platform (i.e. prior to the car top box being wired) the DLV A3 valve should be wired temporarily in parallel with VMD.
- The pressure gauge and car overload pressure switch must be transferred from the main 3010 valve to the DLV A3 safety valve using the 2 ports x ¼”BSP. The maximum pressure switch can remain on the 3010 valve.
- A separate 24VDC supply is to be provided in the control panel to control DLV A3.
- Nexus microprocessor software must be upgraded to V7.32 or later.
- To emergency lower the lift, both manual lowering knobs (3010 and DLV A3) need to be operated simultaneously. The emergency lowering instructions should reflect this.
- The DLV A3 is not self-monitoring so correct operation should be verified at least every 6 months. This can be achieved by pressing only the manual emergency lowering button on the main 3010 valve and ensuring that the lift car does not descend. This operation can then be repeated for the other manual emergency lowering button.

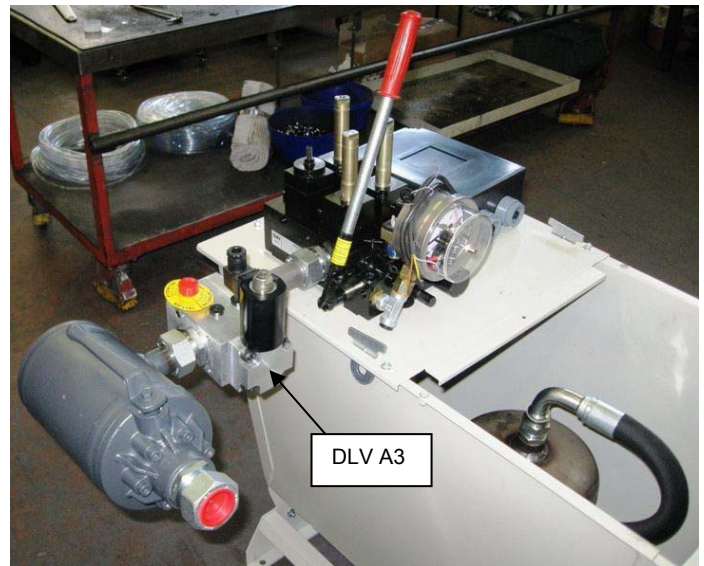


The installation guidance given in the following sections 3 and 4 is for methodology only. Please ensure that the installation of any equipment referred to in this bulletin is suitably planned and that risk assessments and safe systems of work are followed in line with current relevant legislation and company procedures.

Guidance Note 3: MR models – installation of the additional DLV A3 safety valve



Typical DLV A3 assembly with shut off valve ≤ 150 litres



Typical DLV A3 assembly with shut off valve > 150 litres

Retrofit Kits:

Two retrofit kits are available for machine room models:

1. Kit part no. 12007 for 1¹/₄" 3010 valve on GL, T1 or T2 tank
2. Kit part no. 12008 for 1¹/₂" 3010 valve on T3 tank

Methodology: (For a lift already installed with hydraulic system filled with oil)

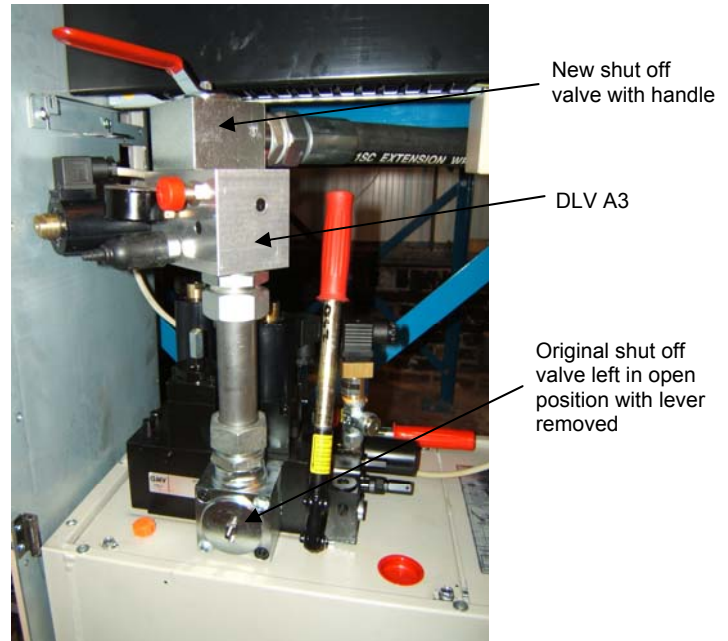
N.B: For new installations where the hydraulic system has not yet been filled with oil, items marked thus * do not apply as part of retrofit.

1. Display warning notices on all landings *
2. Move the lift car to the lowest floor *
3. Ensure the lift car is empty *
4. Isolate the lift supply and lock off
5. Manually emergency lower the lift car onto the buffers *
6. Close the shut off valve *
7. Discharge the pressure in the 3010 valve block by pressing manual lowering button *
8. Discharge the pressure to zero by manually pressing in VMD button *
9. Disconnect shut off valve from short length of solid pipe entering 3010 valve
10. Disconnect short length of solid pipe from 3010 valve and discard
11. Assemble the retrofit kit between shut off valve and 3010 valve as photo above
12. Transfer the pressure gauge and car overload switch from the 3010 valve to the DLV A3 safety valve. In turn transfer the ¼" BSP plugs from DLV A3 safety valve to the now open ¼" BSP ports on the 3010 valve
13. Complete all necessary wiring of the DLV A3 safety valve and controller as drg no.1009271
14. Install software version 7.32 (or later) on Nexus microprocessor
15. Reinstall the lift - open the shut off valve and restore power *
16. Pump up the piston and bleed if necessary *
17. Test run and return to service *

Guidance Note 4: MRC models – installation of the additional DLV A3 safety valve



Typical MRC installation without DLV A3 safety valve fitted.



Typical MRC installation with DLV A3 safety valve retrofitted.

Retrofit Kit:

One retrofit kit is available for machine room cabinet models:

1. Kit part no. 12009 for 1¹/₄" 3010 valve on GL tanks only

Methodology: (For a lift already installed with hydraulic system filled with oil)

N.B: For new installations where the hydraulic system has not yet been filled with oil, items marked thus * do not apply as part of retrofit.

1. Display warning notices on all landings *
2. Move the lift car to the lowest floor *
3. Ensure the lift car is empty *
4. Isolate the lift supply and lock off
5. Manually emergency lower the lift car onto the buffers *
6. Adjust ram pressure screw to retract ram fully until no pressure is registered and drain as much oil as possible from the hydraulic hose into the tank *
7. Disconnect short length of vertical solid pipe + elbow from the shut off valve and discard
8. Assemble the retrofit kit between shut off valve and 3010 valve as photo above:
 - Original shut off valve to remain bolted to 3010 valve in open position (lever removed)
 - The new shut off valve is provided with an opposite-hand lever to clear equipment
 - An optional swivel elbow is provided as part of the kit for use if the hydraulic hose exits immediately left out of the cabinet.
 - It may be necessary to shorten the hand pump handle at the handle-end to clear the hydraulic hose depending on the hose run.
9. Transfer the pressure gauge and car overload switch from the 3010 valve to the DLV A3 safety valve. In turn transfer the 1/4" BSP plugs from DLV A3 safety valve to the now open 1/4" BSP ports on the 3010 valve
10. Complete all necessary wiring of the DLV A3 safety valve and controller as drg no.1009271
11. Install software version 7.32 (or later) on Nexus microprocessor
12. Reinstate the lift - open the shut off valve and restore power *
13. Pump up the piston, bleed if necessary and reset the ram pressure screw *
14. Test run and return to service *