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ONLY THOSE PERSONS WHO HAVE READ THESE TECHNICAL INSTRUCTIONS THOROUGHLY AND UNDERSTAND THEM COMPLETELY SHALL BE AUTHORIZED TO USE THIS PRODUCT.

IMPORTANT NOTICE

If this product is being purchased or used in co-operation with another product (for example, a compressed gas valve for incorporation into a compressed gas cylinder), then **CMT Manufacturing B.V.** reminds the end product manufacturer that any and all product user warnings, instructions or product labels are the responsibility of the end product manufacturer.

Additional Security Indication
Before any intervention on the LPG installation, it is obligatory to close the manual shut-off of the valve.

CONTENT

1. DESCRIPTION

The MLD, Minimum Liquid Detector, is intended and approved for LPG (liquid propane gas) Forklift truck application. This product is not intended for any other installation or purpose. If the product user has any questions regarding this product's proper application or purpose, the product user should call : **+31 318 619 138**. Any non-approved use or application and/or modification of the product may result in a serious accident or personal injury. **CMT Manufacturing B.V.** is not responsible for any unapproved use or application.

2. GENERAL SAFETY REQUIREMENTS

- All users must comply fully with all national or local laws, rules or regulations in force.
- Anyone using this product must be thoroughly familiar with these instructions and other applicable product instructions and manuals.

This PRODUCT is a component part designed for use on LPG fuel circuit. The final manufacturer is responsible for preparing appropriate and adequate instructions and warnings for the ultimate product user.

- The maintenance instructions outlined below should be incorporated into any product manual or instruction label.
- Failure to follow any instruction or warning within this instruction manual or on any product label may result in a serious accident involving either personal injury, property damage or both.
- The electrical connections must be respected (see electrical diagram provided at the end of this manual).

- The low level alarm (ALARM and LED) indicates the absence of liquid at MLD's position. The time until completely running out of fuel depends on various local parameters (dip-tube, fuel, temperature, fuel line, engine, etc.).
- A flashing LED-output signalizes a failure (e.g. sensor circuit), the ALARM output is switched off. The STATUS-Led at the ECU lightens red.

2.1 Before every use, check the condition of the valve (cleanliness, condition of threads); keep yourself informed about the standards and safety regulations for the Valve and the LPG.
2.2 This product is designed and approved for the use on LPG forklift truck fuel circuit. Any other use or application is not permitted without a written authorisation by our technical department.
2.3 Respect the torques for the fuel connections (¼NPT) and mounting thread (M8): 8 to 10Nm.
2.4 Never disassemble the MLD.
2.5 Never apply grease or oil to the MLD or one of its components.
2.6 Never disassemble a MLD from a circuit under pressure.
2.7 Use only materials with clean surfaces and are compatible with the specified gas, the specified pressures and the desired flow.
2.8 The Safety Relief Valve at 27.6 Bar (*if applicable) bears the CE-mark.
a) Conformity with technical specifications
b) The customer must assure the traceability after assembling the MLD to fuel circuit
c) The customer must inform **CMT Manufacturing B.V.** about any malfunctions and must return all MLD he found defective for check and analysis
2.9 The MLD has to be stocked in a dry environment at ambient temperature in its original packaging.
2.10 The MLD should not be subjected to any clash or impact or deformation.
It is not permitted to use a deformed or damaged MLD. The electrical circuit must be protected against friction, cutting, shearing, etc.
2.11 Never use a direct flame near the LPG installation.
2.12 Never modify or remove the markings on the MLD or its components.
2.13 All users must strictly comply with all national or local laws, rules or regulations in force.
2.14 The manufacturer of the end product is responsible for any personal injury, material or immaterial accident or dammaging caused by a non-approved fitting or failure of maintenance.
2.15 The customer has to assure an appropriate transportation and handling of this product. **CMT Manufacturing B.V.** is not responsible if the product has been transported or handled in an inappropriate way and especially when its specific original packaging looks are dammaged. In this case the customer has to inform the manufacturer **CMT Manufacturing B.V.** immediately.
2.16 Avoid the use of devices known for causing inflammation of LPG (Ignition).
2.17 The manufacturer of the end product has to look after the cleanliness of the cylinder, which has to be free of grease and metallic, plastic or other particles.

3. TECHNICAL DATA

Maximum Working Pressure	35 Bar
Safety Relief Valve (*if applicable)	27.6 Bar
Working temperature	–40°C to +65°C
Inlet connector	R1/4" (ISO 7.1) / ¼ NPT
Outlet connector	R1/4" (ISO 7.1) / ¼ NPT
Medium	LPG; Butane, Propane or a mixture of both
Marking :	
MLD Body	Type 471, 3 stars, CMT-logo, IN, OUT, TOP
Safety Relief Valve (*if applicable)	pressure setting: 27.6 Bar (CE)
on ECU	
at backside:	serial number: yyaannnn yy=year of production
type	MLD212
supply	12Vdc
outputs	1.5A (LED: 25mA)

Subject to technical changes without notice

4. INSTALLATION AND HANDLING INSTRUCTIONS

- MLD must be placed as close as possible to the cylinder and at a lower level (Fig.1 and Fig.2).
- MLD has to be submitted to the same temperature as the cylinder.
- MLD must be placed always in vertical position.

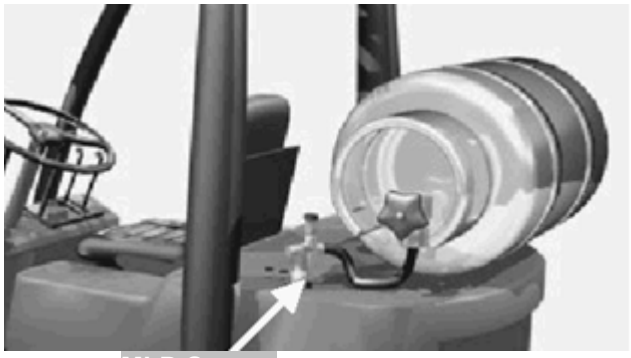


Fig. 1. MLD Position

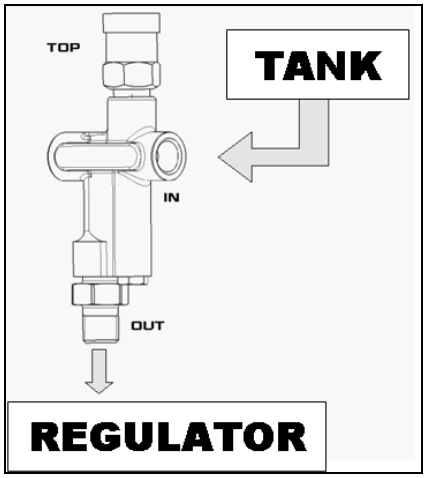


Fig.2. MLD vertical position.

4.1. Check the MLD connection threads correspond to the threads on the fuel lines.
4.2. Insert the MLD on the fuel circuit. MLD must be fixed as close as possible to the cylinder and at a lower level (Fig.1 and Fig.2). Vertical position must be respected, Safety Relief Valve in upper position.
4.3 . Use an appropriate sealing product for the threads, which does not interfere with the correct function of the MLD. Apply sealing on threads only. Avoid any sealing product with lubrication effect (e.g. never use products containing oil or lead).
4.4. Be careful while assembling: protect wires against damage (cutting, shearing,…).
4.5. After fitting check the assembly for leaks. Any fire or direct flame is prohibited during this operation.

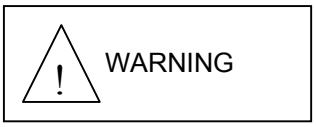
ATTENTION: The leak detection should especially not contain ammonia (risk of cracking of brass parts). Any fire or direct flame is prohibited during this operation.

4.6. See electrical diagram at the end of this manual for the E-box (ECU) connections. Disconnect battery before any electrical operation.
4.7 The power supply +12VDC must be switched by the contact key of the vehicle. Don't apply permanent power to the ECU.
4.8. Be sure there's an appropriate fuse (max.5A) in any power supply line (12V supply).
4.9. Respect maximum load of the outputs.
4.10. All connected loads share common minus/ground.
4.11. The ECU must be mounted directly on the chassis.
4.12. Place a minimum liquid indicator, connected to the LED-output, on the dashboard in the vision area of the driver.
4.13. The electrical wiring must be protected against cutting, shearing, friction,…
4.14. Eventually not used/connected wires and/or connector positions must be protected against water, dust, etc.
4.15. The outputs ALARM(5) and LED(6) are being delayed for about 15s after the detection of gasphase and the red flashing STATUS-Led at the control box.

5. MAINTENANCE

The warranty foreseen in our general conditions of sale does not cover the following:

- Repair or replacement due to normal wear or damage during routine maintenance.
- Damage to components whose fragility is for technical reasons unavoidable and determined by product design.
- Damage from not following recommended maintenance and procedures, as outlined in this instruction manual.
- Damage arising from modifications not included in the procedures in this instruction manual.
- Damage resulting from the use of an unauthorised part, supplied, manufactured or modified by procedures not included in this instruction manual.



Failure to follow the installation instructions and handling instructions may cause an accident or personal injury, for which **CMT Manufacturing B.V.** declines any responsibility.

Maintenance, repairs and reconditioning of the PRODUCT are under the responsibility of the user or the operator. Anyone attempting to maintain, repair or conditioning the PRODUCT must be thoroughly familiar with standards and regulations referenced therein.

Maintenance, repair and/or reconditioning shall be performed by properly trained personal.

In case of incident or complaint, the user has to send back the supposed defective product securely packed. In order to preserve the warranty, the user will not execute any intervention on the product (disassembling, repair, modification…) without our written agreement.

6. GENERAL CONDITIONS

6.1. Because of a policy of continuous product improvement, **CMT Manufacturing B.V.** reserves the right to change designs and materials as well as specifications and product informations without notice.
6.2. **CMT Manufacturing B.V.** preserves completely the intelectual property of their projects, studies and in general on all documents forwarded to their customers : it is not permitted to communicate, to execute or to use these documents in any way without their written authorisation.
6.3. This instruction manual is a part of the sales contract and is subject to the general terms of sale.

7. E-BOX (ECU) DIAGRAM MLD212