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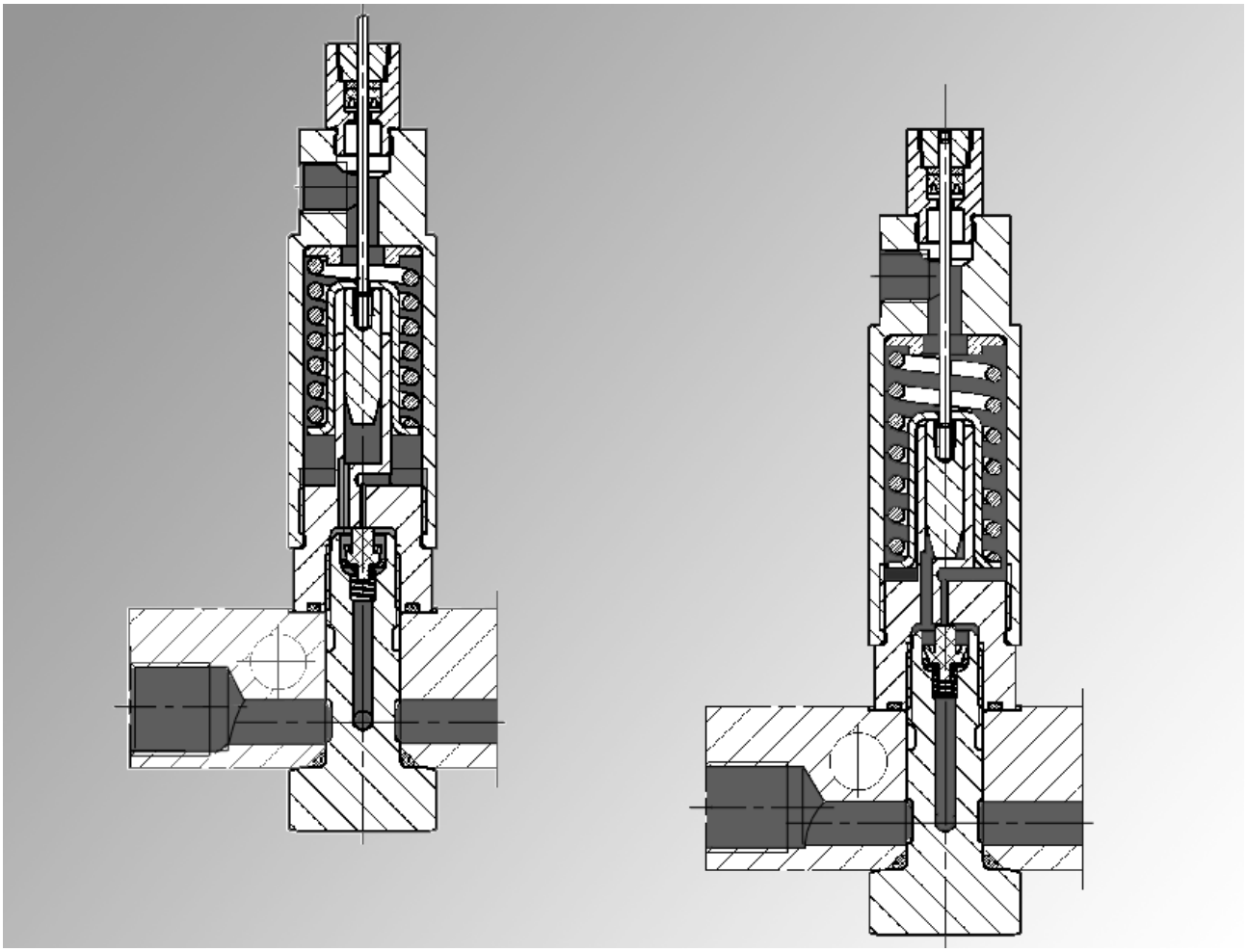
QSL Metering Device



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Introduction

Explanation of Symbols Used

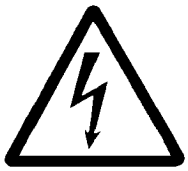
The following description standards are used in this manual:

Safety Instructions

Structure of safety instructions:

- Pictogram
- Signal word
- Danger text
  - Danger note
  - How to avoid danger

The following pictograms are used in this manual and are combined with the corresponding signal words:

 1013A94	 4273a00	 6001a02
- ATTENTION	**- ATTENTION**	**- NOTE**
- CAUTION	**- CAUTION**	**- IMPORTANT**
- WARNING	**- WARNING**	

The signal words give the seriousness of danger if the following text is not observed:

ATTENTION	refers to faults or damages on machines.
CAUTION	refers to bad damages and possible injuries.
WARNING	refers to possible dangerous injuries.
NOTE	indicates improved operation of the device.
IMPORTANT	indicates special operating features of the device.

Example: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ATTENTION!

When making use of other than the tested spare parts, serious damage may affect your device.

Therefore, for the operation of your device always use original parts made by Lincoln GmbH.

Furthermore, you will find the following text symbols in this manual:

- Listing of applicable statements
  - Subpoint of applicable statements

1. Determination of the number or sequence of contents

➲ Procedural instruction

User's Responsibility

To ensure the safe operation of the unit, the user is responsible for the following:

1. The pump / system shall be operated only for the intended use (see next chapter "Safety Instructions") and its design shall neither be modified nor transformed.
2. The pump / system shall be operated only if it is in a proper functioning condition and if it is operated in accordance with the maintenance requirements.
3. The operating personnel must be familiar with this Owner Manual and the safety instructions mentioned within and observe these carefully.

The correct installation and connection of tubes and hoses, if not specified by Lincoln GmbH, is the user's responsibility. Lincoln GmbH will gladly assist you with any questions pertaining to the installation.

Environmental Protection

Waste (e.g. used oil, detergents, lubricants) must be disposed of in accordance with relevant environmental regulations.

Service

The personnel responsible for the handling of the pump / system must be suitably qualified. If required, Lincoln GmbH offers you full service in the form of advice, on-site installation assistance, training, etc. We will be pleased to inform you about our possibilities to support you purposefully.
In the event of inquiries pertaining to maintenance, repairs and spare parts, we require model specific data to enable us to clearly identify the components of your pump / system. Therefore, always indicate the part, model and series number of your pump / system.

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Safety Instructions

Appropriate Use

- QSL metering devices are direct single-line metering devices
  - for greases up to NLGI grade 2
  - for oils of at least 40 mm² (cST)
  - for operating pressures during the lubricating time from 140 to 300 bar
  - for residual pressures between the lubrication intervals of max. 60 bar

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NOTE

The recommended operating pressure is higher than 140 bar (depending on the counterpressure).
Lubrication is effected under pressure via the pump.
The pressure spring in the metering device is provided exclusively for shifting purposes.

Misuse

Any use of the QSL metering device that is not expressly mentioned in this User Manual will be regarded as misuse. If the single-line system is used or operated in a different manner other than specified, any claim for warranty or liability will be null and void.

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NOTE

If personal injury or material damage occurs as a result of inappropriate operation, e.g. ignoring of safety instructions or incorrect installation of the single-line system, no claims or legal actions may be taken against Lincoln GmbH.

Exclusion of Liability

The manufacturer of the single-line system does not accept any liability for damages caused by

- lack of lubricant, due to
  - incorrect installation
  - start-up despite fault
  - irregular maintenance intervals
- operation with contaminated lubricants
- use of lubricants that are inappropriate for the lubricating device (see above)
- inappropriate disposal of used or contaminated lubricants or components that were in touch with lubricant
- unauthorized modification of system parts
- use of unauthorized spare parts
- operation without adhering to the system pressures

Accident Prevention Regulations

To prevent accidents, observe all city, state or provincial and federal safety regulations of the country in which the QSL metering devices will be used.

General Safety Instructions

- QSL metering devices
  - are designed with state-of-the-art technology.
  - can be assembled for safe operation
- Incorrect use may result in bearing damage caused by poor or excessive lubrication.
- Modifications or alterations to an installed system by the customer are subject to prior consultation with the manufacturer of the lubrication system or with his appointed dealer.
- Also adhere to the safety instructions applying to the single-line pump or system, in which the QSL metering devices are installed.

Operation, Maintenance and Repair

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ATTENTION!

Before starting any maintenance or repair work on the single-line system, make sure to disconnect the hydraulic system of the carrier device from the pressure supply.

Operation/ Maintenance

Single-line systems with QSL metering devices

- shall be filled regularly with clean lubricant.
- operate automatically. However, check in regular intervals (approx. 2 days) whether the pump actually supplies lubricant (observation).

Repair

Repairs should only be performed by authorized personnel who are familiar with the repair instructions.

Disposal

Dispose of used or contaminated lubricants as well as of parts that were in touch with lubricant according to the legal regulations pertaining to environmental protection. Make sure to observe the safety data sheets of the lubricants used.

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Safety Instructions, continuation

Installation

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ATTENTION!

Make sure to disconnect the hydraulic system of the carrier device from the pressure supply before carrying out any assembly or disassembly works on the single-line system.

- Any manipulation on safety equipment already fitted to the hydraulic system is generally prohibited.
- Safety equipment may only be removed for the purpose of fitting the system and must be replaced properly afterwards.
- Use only original Lincoln spare parts (see parts catalog) or parts approved by Lincoln.

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IMPORTANT NOTE

Adhere to the installation instructions of the manufacturer of the device as regards all drilling and welding procedures as well as to the specified minimum distances between the bores and the upper/lower rim of the frame or between two bores.

Installation and Maintenance of Hydraulic Hoses

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ATTENTION!

The operational safety of the single-line system is only guaranteed with a professional installation and maintenance of hydraulic hose lines. The following points must be observed!

Hydraulic Hose Lines

- may never be subjected to torsion
- must be installed twist-free
- must not rub against metal components or edges
- are to undergo regular visual checks and must be exchanged in the case of wear (at the latest after 2 years from the date of installation)

Pay attention with non-linear installations to allow for as large a bending radius as possible. Kinks are to be avoided. In constricted installation conditions use pipe elbow unions to avoid the danger of kinking behind the hose socket.

Identification Code

Code examples:

QSL	-	**2**	-	**22**
QSL	-	**2**	-	**4C**
QSL	-	**4**	-	**3300**
QSL	-	**5**	-	**22334** [1]
QSL	-	**6**	-	**332211**
QSL	-	**15** [1]	-	**33224 - 44433 - 22433** [2]

QSL
Quicklub Single Line

Injector Connections on divider bar
2 = divider bar with 2 injector connections, 2-fold
3 = divider bar with 3 injector connections, 3-fold
4 = divider bar with 4 injector connections, 4-fold
5 = divider bar with 5 injector connections, 5-fold
6 = divider bar with 6 injector connections, 6-fold

Metering variants [1]
0 = output 0.05 cm³ per operating cycle
1 = output 0.1 cm³ per operating cycle
2 = output 0.2 cm³ per operating cycle
3 = output 0.3 cm³ per operating cycle
4 = output 0.4 cm³ per operating cycle
C = outlet closed

[1] The injectors are positioned on the divider bar according to their outputs. Starting from the side of the lubricant inlet P1 (fig. 3) the injector connections are assigned in the requested order.

Example: QSL-5-**22334** (divider bar for 5 injectors):

Connections of the divider bar					
Lubricant inlet P1 >>	Injector connections 1	2	3	4	5
Injector metering variant	**2**	**2**	**3**	**3**	**4**

[2] Example of QSL:
3 pieces divider bars, each with 5 injector connections
(3 St. x 5-fach → 15)

Subject to modifications

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Description

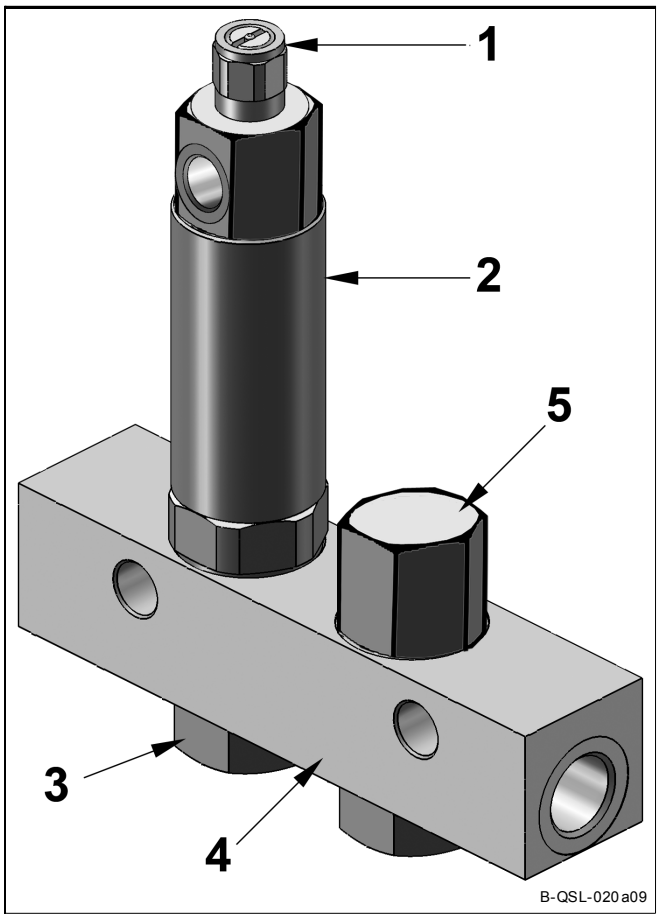

Fig. 1 Components des QSL metering device

1 - Control pin fitting
2 - Injector
3 - Hollow screw
4 - Divider bar for 2 QSL injectors
5 - Closure kit for divider bar (accessories)
Part no. 554-34387-1

QSL Metering Devices

- are directly operating lubricant metering devices.
- consist of the following subassemblies:
  - control pin fitting 1 (Fig. 1), for visual functioning control
  - injector 2, with the following outputs: 0.05, 0.1, 0.2, 0.3 or 0.4 cm³
  - hollow screw 3, for mounting the injector with the divider bar
  - divider bar 4, available for 2, 3, 4, 5 or 6 QSL injectors
  - pressure and relief line (steel tube 16 x 2 mm), connecting fitting G 3/8"
  - lubricant-feed line (plastic tube 4.1 x 2.3 mm), connecting fitting G 1/8"
- are in the relief phase (after completing a operating cycle) until the pressure in the main line and in the divider bars has fallen below 60 bar
- are in the lubrication pause phase (pause time) as soon as the lubricant pressure in the main line and at the metering device inlet has fallen below 60 bar
- are in the lubrication phase (lubricating time) as soon as the pump has built up the operating pressure in the main line and at the inlet of the metering device.

Lubrication phase

- The built-up pressure displaces the valve piston and sets the bore to the pre-chamber free.
- Lubricant flows into the pre-chamber.
- At the same time the piston already pushes the pre-metered amount of lubricant from the metering chamber to the lube point and tenses the pressure spring in each metering element.

Relief phase

- After completion of a operating cycle, the main line is relieved from pressure.
- In each metering element, the pre-tensed pressure spring releases rearranges the lubricant for the next operating cycle from the pre-chamber to the metering chamber.

Injectors

Designation	**Part number**	**Metering** (fixed)	**Color ring** (Pos. G)
QSL 0,05	554-32810-1	0,05 cm³/stroke	blue
QSL 0,1	554-32811-1	0,1 cm³/ stroke	white
QSL 0,2	554-32812-1	0,2 cm³/ stroke	yellow
QSL 0,3	554-32813-1	0,3 cm³/ stroke	red
QSL 0,4	554-32814-1	0,4 cm³/ stroke	green

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Installation

Safety Instructions


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CAUTION!

Never exceed the centralized lubrication system's maximum operating pressure of 300 bar.

Make sure to disconnect the pump/machine or system from the power supply before carrying out any maintenance or disassembly works.

Check compatibility of synthetic lubricants with the material of the metering devices and other system components before use.

Required Tools

- For the installation of the injectors ring wrenches (SW 24) are required.

Attachment of Injectors to Divider Bar

- For connection to the divider bar the injectors are provided with a connection thread G 3/8".
- If a lube point requires an increased amount of lubricant, the outlets of two or more injectors of a subassembly (divider bar) can be combined externally by means of tube adapters.
  Each connection requires one tube adapter.
- On both faces the divider bars dispose of a female thread of G3/8".
  If required, fittings for connection of the injectors must be ordered separately.
- The divider bars dispose of fastening bores Ø 10.5mm (see Fig. 2).
- The QSL metering devices can be attached in any position. However, make sure to provide free access to the visual function control.


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CAUTION – DANGER OF SQUEEZING!

During the metering procedure, the control pin is pressed out of the injector for function control purposes 1.1 (fig. 4).

Between the extracting control pin and the cover provided by the owner of the system there exists the danger of squeezing!

Make sure to provide sufficient space between the cover and the injector.

- For counterpressures exceeding ≥ 100 bar check valves must be used.
- Place of attachment
  (see plan & instructions by the machine manufacturer)
- Assignment of lube points to the injectors
  (see plan & instructions by the machine manufacturer)
- Further make sure that the place of attachment of the QSL metering device allows for routing the lines (main respectively feed lines) in such way that they cannot be damaged and do not disturb the function of the machine.
- Consider the maximum ambient temperature for machines with heat emission.

Assembly and Disassembly of Injectors

- A injector is screwed to the divider bar with a tightening torque of 40 Nm.
- When reassembling, consider the tightening torque of the hollow screw and make sure the sealing rings are seated correctly on the divider bar.
- After replacing of an injector:
  - Vent QSL metering device and respective section of line (see chapter "Start-up", page 12)


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IMPORTANT NOTE

Observe tightening torques of single components during installation (see Fig. 2).

Also observe installation instructions for the tubing and fastening material of the centralized lubrication system (see machine manufacturer's plan and parts list).

- The centralized lubrication lines have to comply with the individual operation requirements as regards material quality, pressure resistance, nominal width and length, and have to be adapted to the centralized lubrication system.
  - Route and mount lines professionally.
  - Mount tube fittings firmly and leak-proof.
    Observe installation instruction of the manufacturer of the fittings.
  - Before installing tube lines and hoses, make sure that inside they are free from foreign particles. Steel tubes must be rust-free.
  - Cut steel tubes to size with pipe cutter. Tube must be cut rectangular and free of burrs.
  - Observe bending radius of steel pipes and flexible lines.
  - Mount pipes with clamps vibration-free and safe against break-off.

Accessories


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NOTE

Instead of the planned injectors a divider bar can also be equipped with a closure kit. (Part no. 554-34387-1).

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Technical Data

Rating

Admissible operating temperature [1] ..... –40 °C to +70 °C
Operating pressure:
- minimum ..... 140 bar
- maximum ..... 300 bar
Pressure relief ..... ≤ 60 bar
Life ..... min. 20000 operating cycles

Materials:
- Injector, divider bar ..... steel
- Sealings ..... Polyuretane
Connections:
- Main line on divider bar ..... G 3/8"
- Injector to lube point [2] ..... G 1/8"

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[1] **IMPORTANT**

Also observe the temperature ranges of all components of your lubrication system, including the temperature range of the lubricant applied (see User Manual 2.0-40001, chapter „Proven lubricants").

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[2] **IMPORTANT**

Caulk all conical outlet fittings with Loctite 572 and fix with a tightening torque of 10 NM ± 10 %.

Dimensions

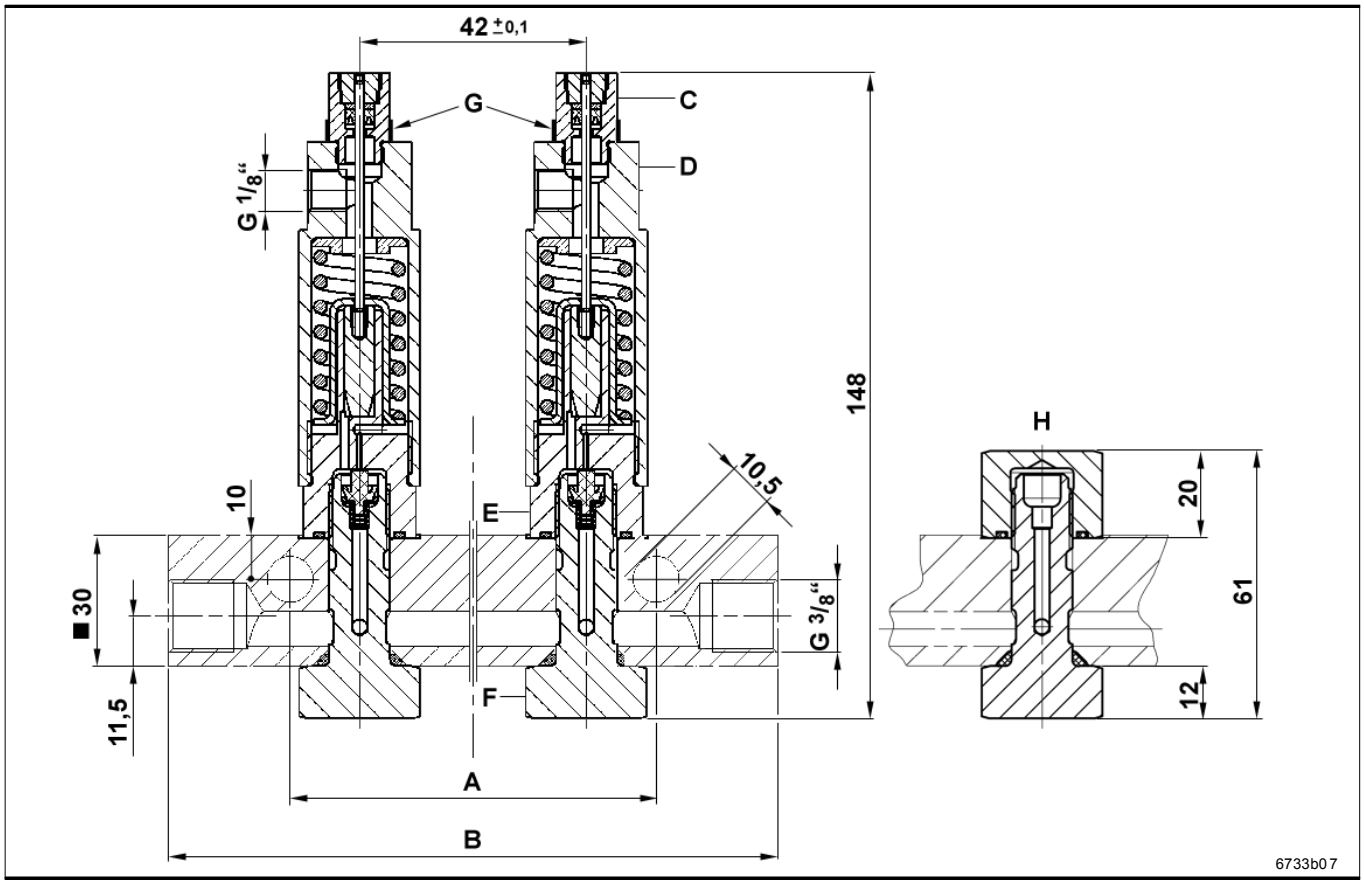

Fig. 2 Dimensions of the QSL metering device (indications in mm)

A - Measures, see following chart "Divider bars", tolerance ± 0,2 mm
B - Measures, see following chart "Divider bars"
C - SW 10, 15 Nm ± 10%
D - SW 24, 40 Nm ± 10%
E - SW 24, 40 Nm ± 10%
F - SW 24, 40 Nm ± 10%
G - Colour ring, see above, chart "Injectors"
H - Closure kit for divider bar (accessories)
SW 24, 40 Nm ± 10%

Divider bars

Designation	Part number	Measure A (Fig. 2)	Measure B (Fig. 2)
Divider bar, 2-fold	454-71505-1	74 mm	130 mm
Divider bar, 3-fold	454-71506-1	42 mm	128 mm
Divider bar, 4-fold	454-71507-1	84 mm	170 mm
Divider bar, 5-fold	454-71508-1	126 mm	212 mm
Divider bar, 6-fold	454-71509-1	84 mm [2]	254 mm

[2] 3 bores

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Operating Method

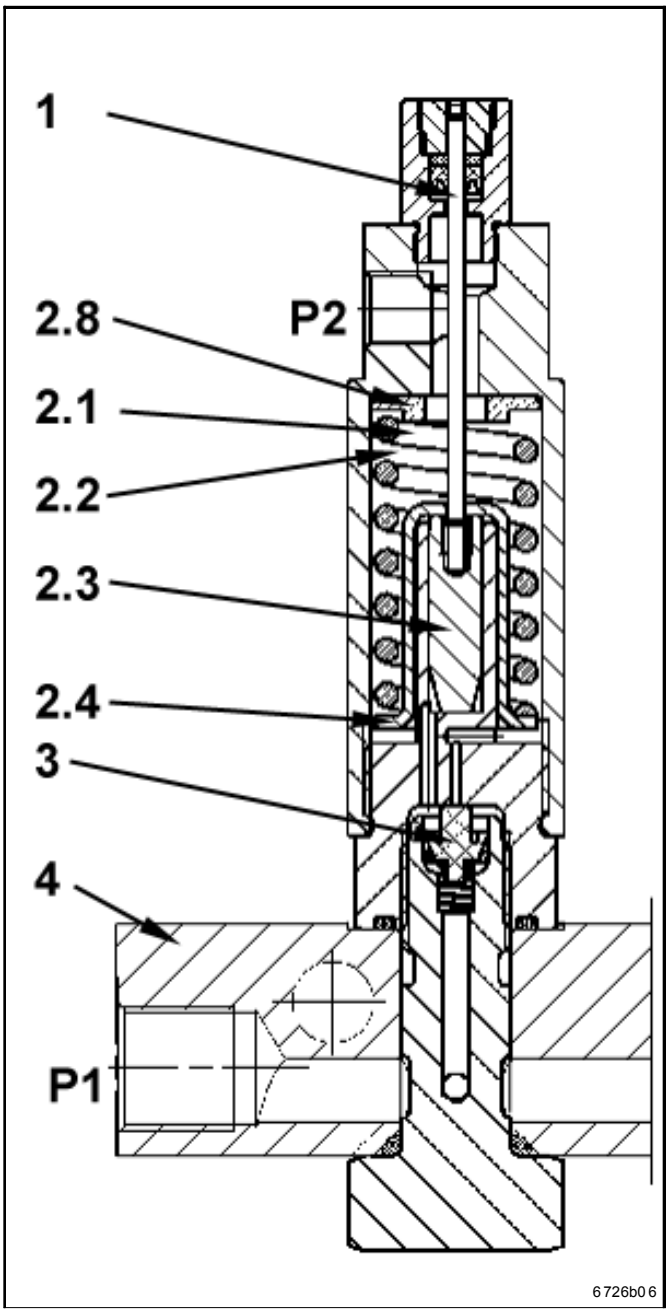

Fig. 3 Basic position of the QSL metering device

1 Indicator pin, retracted
P2 Outlet to the lube points
2.1 Compression spring
2.2 Distributing chamber
2.3 Piston
2.4 Spring sleeve
2.8 Metering washer
3 Valve
4 Divider bar
P1 Lubricant inlet

Operating Cycle

Basic position (see fig. 3):

- QSL metering device and main line 4 (divider bar) pressure-relieved
- Compression spring 2.1 pretensioned
- The distributing chamber 2.2 is still filled with lubricant from the previous operating cycle.
- Sealing lip of valve 3 closed

Metering procedure (see fig. 4):

- The centralized lubrication pump builds up the operating pressure in the main line and at the inlet P1 of the divider bar (max. 300 bar).
  The operating pressure P1 presses the valve-sealing lip against the valve 3 and opens the metering channel 2.6 to the metering chamber 2.5.
  Lubricant passes by the valve-sealing lip into the metering chamber 2.5 and presses the piston 2.3 in the compression sleeve 2.4 upward.
  The indicator pin 1.1 is pressed outward as a visual function control.

Final metering position (see Fig. 5):

- The metering chamber 2.5 is filled until the upper end of the spring sleeve 2.4 touches the metering washer 2.8. Thereby, lubricant is supplied above the spring sleeve 2.4 through the distribution chamber 2.2 to outlet P2.

Pressure relief (see Fig. 6):

- After actuating the pressure-relief unit of the centralized lubrication pump, the pressure P1 in the main line and the divider bars drops.
- At the point of time of venting between main line and metering chamber 2.5 the valve 3 closes all channels 2.6 & 2.7.

Shifting process I

- For a shifting the pressure P1 in the main line and the divider bars must fall below 60 bar so that the compression spring 2.1 can relieve and press the pre-metered amount of lubricant from the metering chamber 2.5 (Fig. 4 or 5) into the distributing chamber 2.2.
- At the same time the valve 3 moves downward and prevents the lubricant from flowing back into the main line (see Fig. 7).

Shifting process II (see Fig. 8):

- The compression spring 2.1 moves the piston (2.3) downward via the spring sleeve 2.4 and shifts the lubricant from the metering chamber 2.5 into the distributing chamber 2.2.

Basic position (see Fig. 9):

- When the shifting process has been completed, the QSL metering device returns into the basic position.
  The lubricant in the main line and in the QSL metering device is relieved from pressure.
  The indicator pin 1 is retracted again.

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NOTE

In the drawings fig. 2 ff the outlets P2 are shown at the side. Actually they are mounted showing to the front side (see fig. 1).

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Operating Method, continuation

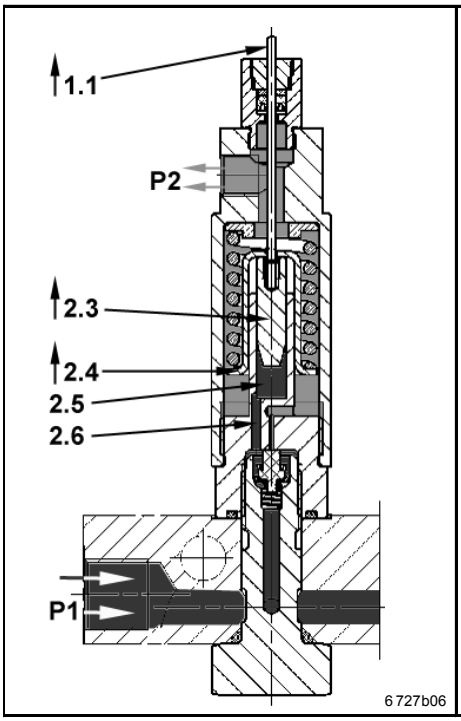

Fig. 4 Metering procedure

1 Indicator pin
2.3 Piston
2.4 Spring sleeve
2.5 Metering chamber
2.6 Metering channel

P1 Pressure of main line (divider bar)
P2 Outlet to the lube points

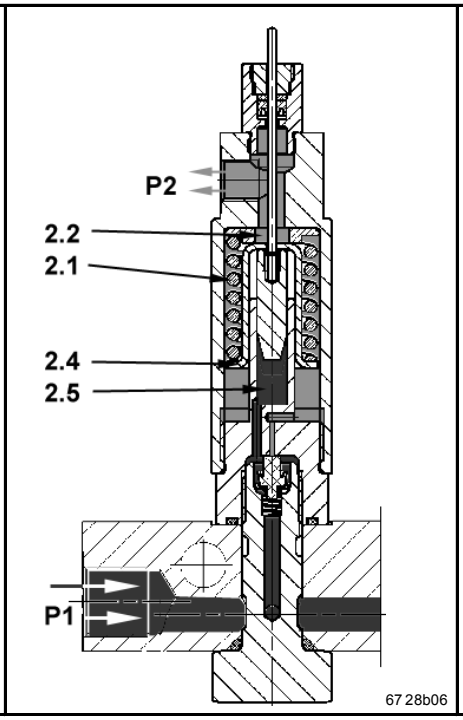

Fig. 5 Final metering position

2.1 Compression spring
2.2 Distributing chamber
2.4 Spring sleeve
2.5 Metering chamber
P1 Pressure of main line (divider bar)
P2 Outlet to the lube points

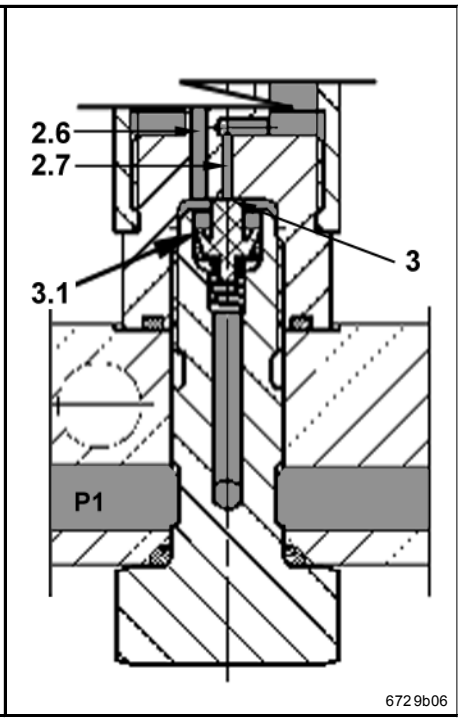

Fig. 6 Pressure relief

2.6 Metering channel
2.7 Shifting channel
3 Valve
3.1 Valve-sealing lip
P1 Pressure of main line (divider bar)

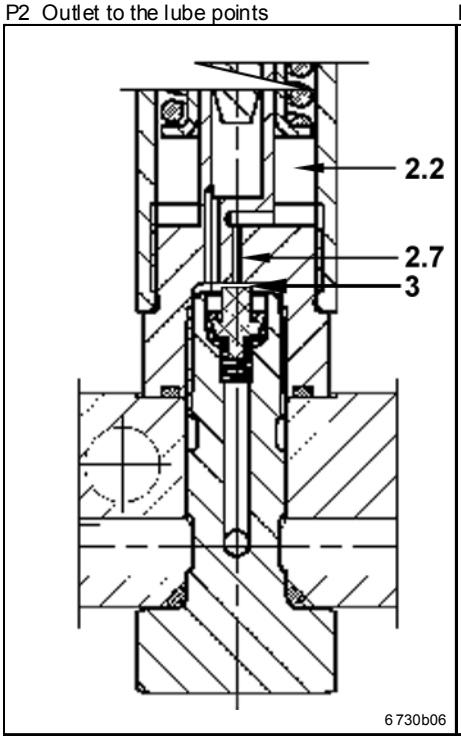

Fig. 7 Shifting process I

2.2 Distributing chamber
2.7 Shifting channel
3 Valve opens shifting channel to distribution chamber

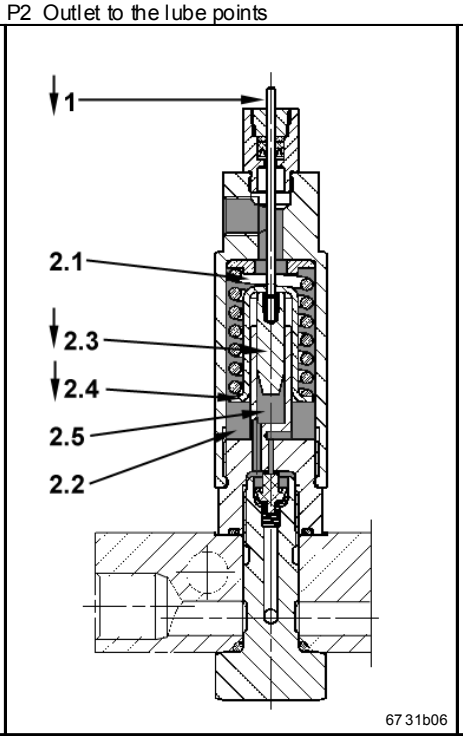

Fig. 8 Shifting process II

1 Indicator pin
2.1 Compression spring
2.2 Distributing chamber
2.3 Piston
2.4 Spring sleeve
2.5 Metering chamber

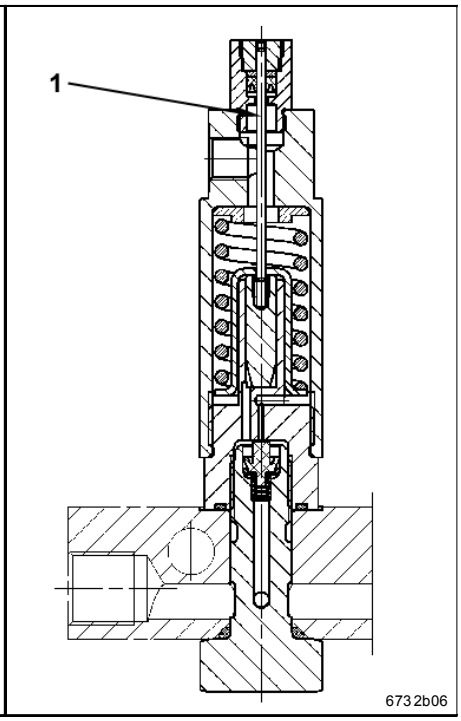

Fig. 9 Basic position

1 Indicator pin retracted again

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Operation

Safety indications


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WARNING!

Never exceed the centralized lubrication system's max. operating pressure of 300 bar.

Do not carry out any assembly or disassembly works while the system is pressurized or the pump/machine is operating.

Before using any synthetic lubricants, check their compatibility with the materials of the metering devices and other system components.

Preparation for operation

- of centralized lubrication pump and timer:
  - see User Manual for the respective components
  - see Instructions and Safety Indications by the manufacturer/ supplier of the machine.

Start-up


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CAUTION!

Wear protective glasses when venting the lubricant lines; avoid splashes.

Before the start-up

- see Instructions and Safety Indications by the manufacturer/ supplier of the machine

Prime and vent the main line

➲ Before the metering devices can be operated, the following measures must be carried out:
  - Fill main line with lubricant
  - Vent stub lines and ascending lines of the main line
  - When filling and venting the lines, operate pump at low pressure
  - Make sure helpers with containers are available to collect the leaking lubricant during the venting procedure.
  - Check lubricant main line for leakages.


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IMPORTANT NOTE

The QSL metering devices have been designed for a max. operating pressure of 300 bar.

➲ Before the machine start-up, after completion of installation or repair works:
  - main and stub lines as well as metering devices must be primed and vented.
  - feed lines must be primed and connected
  - all metering devices must have been checked with regard to their functional capability
  - all metering devices as well as the timing of the lubricating intervals must be adjusted according to the prescriptions.
  - See Instructions by the machine manufacturer.

Verify functional capability of QSL metering devices

➲ Adjust pump and timer in such way that the recommended operating pressure of 140-300 bar is adhered to.

➲ Trigger lubrication pulse manually
(see User Manual for the respective centralized lubrication pump, timer and QSL metering device)

- With an operating pressure ≥ 140 bar, the indicator pin is extracted.
  After a pressure relief down to ≤ 60 bar the indicator pin is retracted again.
  Incomplete venting of the main line may impact the function of the metering devices.

Priming of lubricant feed lines

- Precondition:
  The proper functioning of all metering devices of the system has been stated (see above, chapter "Verify functional capability of metering devices").

➲ Before connecting the lubricant feed lines to the lubrication points:
  - Prime lubricant feed lines with lubricant. Make sure to use only the lubricant specified by the machine manufacturer
  - Fill the lines with lubricant by means of a grease gun
  - Check for leakages on the lubricant feed lines and, if there are any, eliminate them
  - Collect lubricant leaking from the end of the lubricant feed line during the filling process in containers

➲ When all lines are primed: Connect the lubricant feed lines.


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IMPORTANT NOTE

In the case of backpressures in lubrication point lines of ≥ 100 bar or if several injectors are combined to one lubrication point, use check valves.

Check valves for connection at lubrication point outlets:
Part no. 223-12289-7

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Operation, continuation

Operation

- ➲ For the operation of a centralized lubrication system
  - all QSL metering devices must be designed for the lubricant metering volume prescribed by the machine manufacturer
  - adjust the timing of the lubrication procedure to the pause times prescribed by the machine manufacturer
  - observe the operating pressure (hydraulic pressure) required for the operation of the QSL metering devices as well as the following pressure relief of the main line (for changing-over the QSL metering devices)
- ➲ To shut the machine down
  - the centralized lubrication system must be switched off.

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CAUTION!

Excessive or poor lubrication may result in machine damages. Do not use any contaminated lubricants.

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WARNING!

Do not exceed the admissible operating pressure of the centralized lubrication system. Shut pump down immediately in case of defects or strange operating behavior.

When starting the machine up again after a longer stoppage, verify the functional capability of the centralized lubrication system!

Inspection and Maintenance

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WARNING!

Do not carry out any disassembly works as long as the pump is operating or pump and system are still pressurized. Carry out maintenance or repair works only after shutting down the machine.

- ➲ Check tightness, intactness and functional capability of all lubricant lines, QSL metering devices and pump at regular intervals.
- ➲ Remedy any deficiencies immediately.
- ➲ Observe the safety indications by the machine manufacturer.
- ➲ If during the maintenance and repair works of the machine parts are disassembled that belong to the centralized lubrication system, make sure that these parts are properly reassembled before the restart of the machine. Verify the functional capability of the centralized lubrication system professionally.
- ➲ Avoid contaminations of the indicator pin of the metering device as these may result in an early wear of the metering device's sealing.

Troubleshooting

- Only qualified service personnel may remedy appearing failures.
- ➲ See User Manual of the respective centralized lubrication pump.
- ➲ See User Manual of the respective control and monitoring devices as well as Instructions by the machine manufacturer.

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CAUTION!

Operating the machine with disconnected or defective centralized lubrication system results in damages to the machine (see Indications by the machine manufacturer).

- Failures on individual lubricant injectors or feed lines result in defects on the individual lube points that are not provided with lubricant.

Repair

- Only qualified and authorized personnel may carry out repair works.

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WARNING!

Do not disassemble metering device while pump and/or centralized lubrication system is pressurized.

Disconnect machine from the power supply before carrying out any repair works.

Before disassembly shut down pump and centralized lubrication system and depressurize pump and lines. Collect leaking lubricants in containers always.

- ➲ After repair works on QSL metering devices:
  - Verify functional capacity of the metering devices.
- Injectors may be exchanged without disassembling the divider bar – after the repair, but before the restart of the machine and the centralized lubrication system:
- ➲ Vent the lines of the lubrication system and verify the functional capability of the centralized lubrication system. (See chapter "Check functional capability of QSL metering devices", page 12).

Spare Parts

- ➲ Replace only complete injectors or divider bars.
- ➲ Order designations, see chapter "Technical Data", page 9.

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Note:

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Original Language

D	GB	F	E	I
EG- Einbauerklärung	**EC Declaration of incorporation**	**Déclaration CE d'incorporation**	**Declaración CE de incorporación**	**Dichiarazione CE di incorporazione**
Hiermit erklären wir, dass die Bauart von	*Herewith we declare that the model of*	*Par la présente, nous déclarons que le produit ci-dessous*	*Por la presente, declaramos que el modelo suministrado*	*Si dichiara che il prodotto da noi fornito*

QSL Metering Device

in der von uns gelieferten Ausführung zum Einbau in eine Maschine bestimmt ist und dass ihre Inbetriebnahme solange untersagt ist, bis festgestellt wurde, dass die Maschine, in die das o. g. Produkt eingebaut werden soll, den Bestimmungen aller einschlägigen grundlegenden Sicherheits- und Gesundheitsanforderungen entspricht, einschließlich deren zum Zeitpunkt der Erklärung geltenden Änderungen. Der Hersteller verpflichtet sich, technische Dokumente (gem. Anhang VII Teil B) bei begründeter Anfrage zum o. g. Produkt einzelstaatlichen Stellen in gedruckter Form zur Verfügung zu stellen.	*in the supplied version is intended to be incorporated into machinery and must not be put into service until the machinery into which it is to be incorporated has been declared in conformity with the provisions of the relevant fundamental requirements on health and safety, including all modifications of this directive valid at the time of the declaration. The manufacturer undertakes to make available any technical documents in printed version (following Annex VII Part B) to subnational authorities in the case of reasonable request regarding the above mentioned product.*	*dans la version dans laquelle nous le livrons, est destiné à être installé sur une machine et que sa mise en service est interdite tant qu'il n'aura pas été constaté que la machine sur laquelle le produit mentionné ci-dessus doit être installé est conforme aux réglementations régissant toutes les exigences fondamentales de sécurité et celles relatives à la santé, y compris les amendements en vigueur au moment de la présente déclaration. Le fabricant s'engage, en cas de demande justifiée, à fournir sous forme écrite aux organismes nationaux respectifs les documents techniques (suivant Annexe VII, Partie B) relatifs au produit ci-dessus.*	*en la versión suministrada es destinada a ser incorporada en una máquina y que su puesta en servicio está prohibida antes de que la máquina en la que vaya a ser incorporada haya sido declarada conforme a las disposiciones de los requisitos pertinentes y fundamentales de salud y seguridad en su redacción vigente en el momento de instalación. El fabricante se obliga a hacer disponible documentos técnicos (según anexo VII parte B) en versión imprimida a entes uniestatales a petición fundada referente al producto arriba mencionado.*	*nella versione da noi fornita è destinato all'installazione in una macchina e che la relativa messa in esercizio resta vietata fino all'avvenuto accertamento della conformità della macchina nella quale il suddetto prodotto deve essere installato con tutti i requisiti basilari prescritti in termini di sicurezza e di salute, incluse le relative modifiche vigenti al momento della dichiarazione. Il costruttore si impegna a mettere a disposizione la documentazione tecnica (ai sensi dell'Allegato VII parte B) in forma scritta relativa al summenzionato prodotto dietro richiesta motivata presso le singole sedi nazionali.*
Angewendete harmonisierte Normen, insbesondere:	*Applied harmonized standards in particular:*	*Normes harmonisées, notamment :*	*Normas armonizadas utilizadas, particularmente:*	*Norme armonizzate applicate in particolare:*

Maschinenrichtlinie 2006/42/EG	**Machinery Directive 2006/42/EC**	**Directive machines 2006/42/CE**	**Directiva de máquinas 2006/42/CE**	**Direttiva Macchine 2006/42/CE**
DIN EN ISO 12100 – Teil 1 & 2 **Sicherheit von Maschinen** *Grundbegriffe, allgemeine Gestaltungsleitsätze*	**– Part 1 & 2** **Safety of machinery** *Basic terms, general design guidelines*	**– Parties 1 & 2** **Sécurité de machines** *Notions fondamentales, directives générales d'élaboration*	**– Parte 1 & 2** **Seguridad de máquinas** *Términos básicos, axiomas generales de diseño*	**– Parte 1 e 2** **Sicurezza delle macchine** *Concetti basilari, principi guida generali*
		DIN EN 908		
Pumpen und Pumpengeräte für Flüssigkeiten *Allgemeine sicherungstechnische Anforderungen*	**Pumps and pump units for liquids** *General safety requirements*	**Pompes et groupes de pompes pour liquides** *Exigences en matière de sécurité technique*	**Bombas y equipos de bombas para líquidos** *Prescripciones generales referente a la seguridad*	**Pompe e dispositivi di pompaggio per liquidi** *Requisiti generali di sicurezza tecnica*
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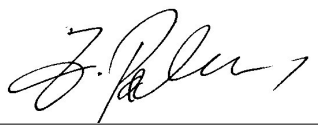

Walldorf, Nov 30, 2009, Dr.-Ing. Z. Paluncic
Director Research & Development

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