




USER MANUAL
OQC 65-OQC 70/55
OQ-LockSupport®



800.321.3396
nascoop.com

We reserve the right to make technical changes

 Read the manual carefully before using the quick coupler



Esteemed OilQuick user

We congratulate you on the purchase of your new OilQuick quick coupler system.

OilQuick OQC is the market's most advanced quick coupler system for pendulum suspended attachments for stationary and mobile cranes.

OilQuick products are CE marked and fulfil all the applicable safety regulations and comply with the applicable parts of the European standard EN 474-4. It is important that all safety requirements are observed during installation, use and repair of OilQuick products. This applies to the safety regulations in this manual, the safety regulations in the machine's manual and the local safety regulations that apply for the area where the machine is used.

Machine operator is a job with great responsibility, both in the handling of the machine itself, but not least your personal safety and that of those people near the machine. It places great personal responsibility on you and that you are familiar with the machine and its functions.

Fill in and send your warranty card to us as soon as possible.

We hope that you enjoy and benefit from using OilQuick equipment.

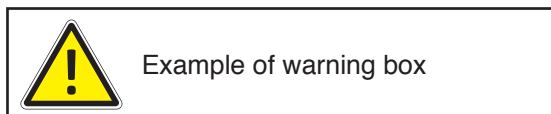
Preface

This manual applies to models: OQC 65 & OQC 70/55.

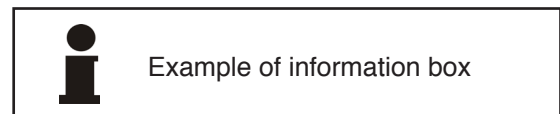
Certain parts of the manual can refer to equipment and details that are options and not installed in your system. We request that you ignore these section if that is the case. A safety conscious user that follows all safety instructions and care for the equipment, minimises the risk of any injuries and accidents.

Important information

Text in boxes as below must be read with extra care because it is important information about certain procedures. If the information is not followed accidents or injury/damage to persons or property may occur.



Text in boxes as below must be read with extra care because it is important information about important matters.



We retain the right to make technical changes and reservations for any errors.

Translation of original user manual (7412243)



The quick coupler may only be used by people who have read this manual and follow the instructions given in the manual.



Transport and lifting of persons using the quick coupler or connected attachments is strictly prohibited!



When shunting, loading and moving attachments, they must be connected and disconnected according to the applicable instructions in this manual. Attachments may not under circumstances be moved when hanging from the front pin only, regardless of whether the quick coupler is open or closed.



Read the manual carefully before the quick coupler is mounted and used.

Registration card for Product warranty

The product warranty for this OilQuick product is dependent on the correct installation on machine and attachment. By filling in and sending the registration card to OilQuick AB immediately you are registered as warranty holder for this product.

Unless otherwise agreed, the warranty conditions apply as stated in this product manual. The requested information regarding product type and serial number is stated on the product identification plate. Information regarding other questions in conjunction with this can be referred to machine dealers or installer.

Send the filled in registration card to:

OilQuick AB
Box 1055
SE-824 12 Hudiksvall

Tel: +46-650-153 40
Fax: +46-650-148 84
E-mail: information@oilquick.com

Purchased from machine dealer:

.....

Name and address of the end customer:

.....

Tel:

.....

Fax:

.....

E-mail:

.....

Type of OilQuick quick coupler:

.....

Serial number:

.....

Machine type:

.....

Machine weight:

.....

Installation date:

.....

Type of hydraulic accessories:

.....

Arrival date at OilQuick AB (Filled in by OilQuick AB):

.....



Cut here!

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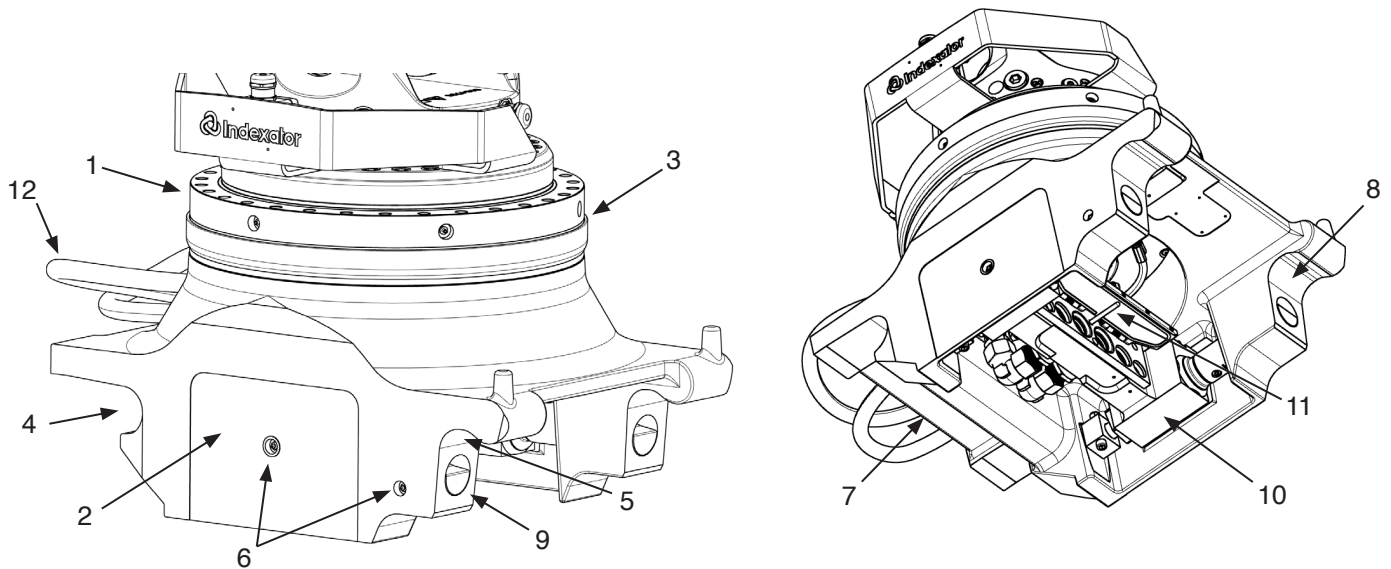
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1 Description of OilQuick quick coupler system

The following section describes the parts of an OilQuick quick coupler system. As for function, technical data, inspection, maintenance and repair of the rotator, refer to the rotator manufacturer's documentation.

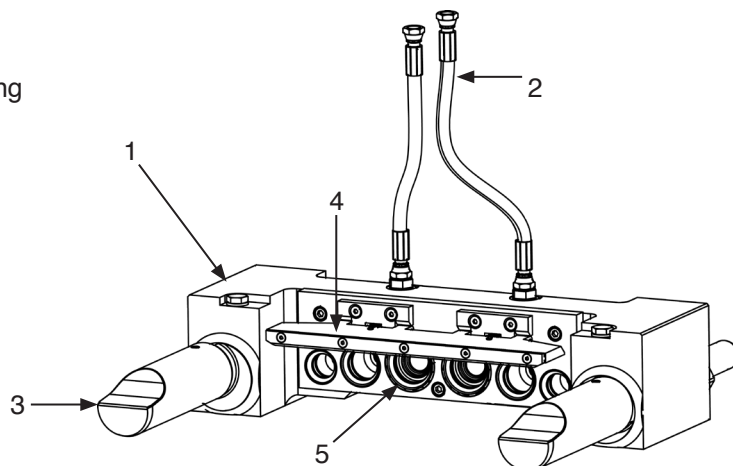
1.1 Overview quick coupler system OQC

1. Rotator
2. Coupler body
3. Mounting for rotator
4. Front pin holder
5. Rear pin holder
6. Grease nipples
7. Front support lip
8. Rear support lips
9. Locking plungers
10. H-cylinder
11. Opening bar
12. Hydraulic hoses



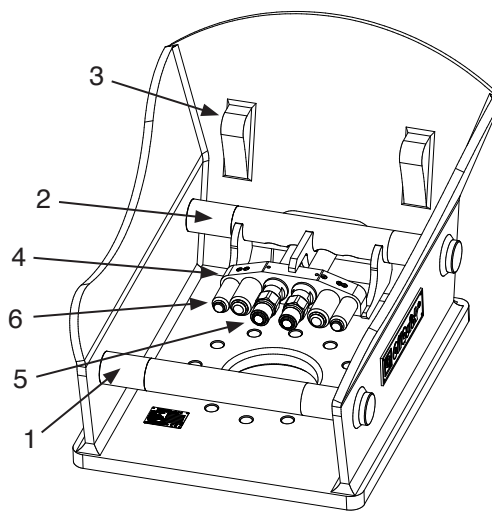
1.2 Description of H-cylinder

1. H-cylinder
2. Hydraulic hoses for locking and opening
3. Locking plungers
4. Dirt guard
5. Quick couplings (female)



1.3 Attachment adapter

1. Front pin
2. Rear pin
3. Guide lug
4. Coupling ramp
5. Quick couplings (male)
6. Dirt adapters

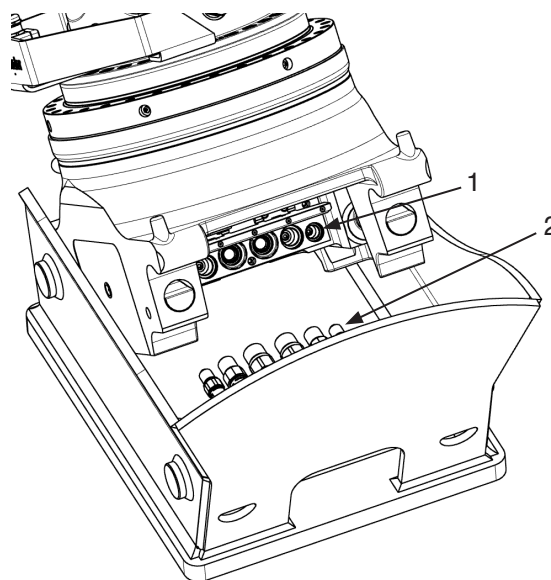


1.4 Electrical connector, straight (optional)

1. Female connection (quick coupler) *
2. Male connection (attachment part) *

Electrical connector is 10-pin. The electric swivel in the rotator can limit the number of usable poles. OilQuick's standard electric swivel is equipped with 3 high current lead-ins.

*Connection device version and its contact can vary.

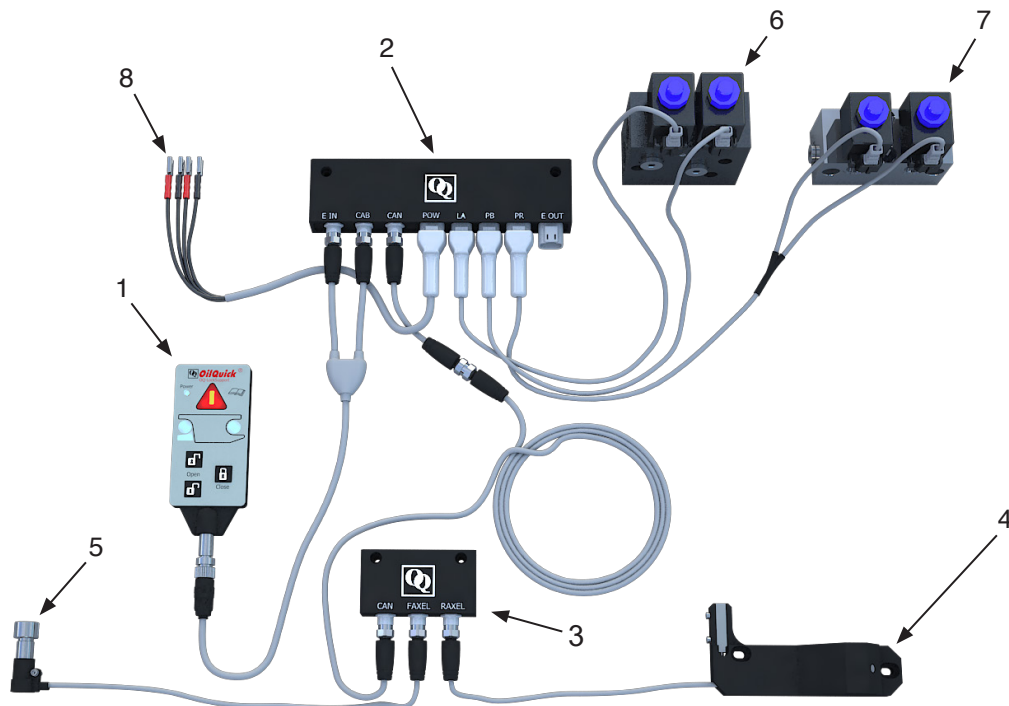


Installation of straight electric connection affects the number of hydraulic quick couplings possible in the quick coupler and hydraulic attachment adapter because it takes one of their positions.

1.6 OilQuick LockSupport®

1. Control panel
2. Master unit
3. Stick unit
4. Sensors for rear attachment pin and the locking plungers
5. Sensor for front attachment pin
6. Locking valve with LS function
7. Pressure relief valves (option)
8. Connection cables for power supply and safety gate (option)

On installation this must be supplemented with hoses and nipples for connection to pump and tank and hoses for connection to the quick coupler.

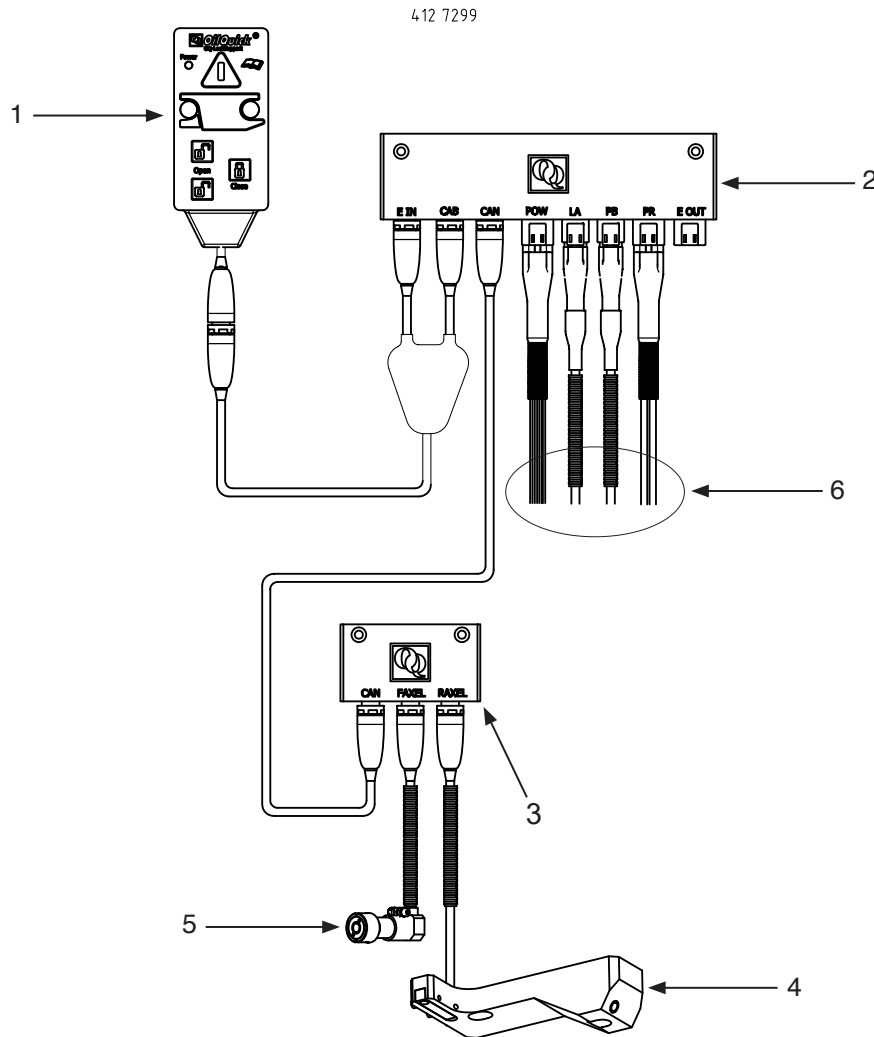


2 OQ-LockSupport basic system and options

OQLS is a command and control system for quick couplers on a material handling machine. The system consists of a basic system and a number of options depending how the base material handling machine is set up.

2.1 Basic system

1. Control panel, installed in the cab.
2. Main unit, normally installed in the area of the machine for electrical systems or hydraulic pumps.
3. Stick unit, normally mounted on the stick.
4. Sensors for rear attachment pin and locking plungers, mounted on the body of the quick coupler.
5. Sensor for front attachment pin, mounted on the body of the quick coupler.
6. Cable kit for connections between the relevant system components.



2.2 Options that are not machine dependent

- Connection to the machine safety gate, strongly recommended option.
- Pressure relief valve with accessory for relieving operating hydraulics.

2.3 Options that are machine dependent

- Cable kit for connection to the electrical system on machines that have approved locking hydraulics and control of pressure booster.
- Lock valve for operating the quick coupler on machines that do not have factory installed approved locking hydraulics.
- Valve for controlling the machine's pressure booster for machines with LS-system.
- Combined lock and pressure booster valve for machines with LS-system but without approved locking hydraulics.
- Separate hydraulic package with own pump for total autonomous control of the quick coupler.

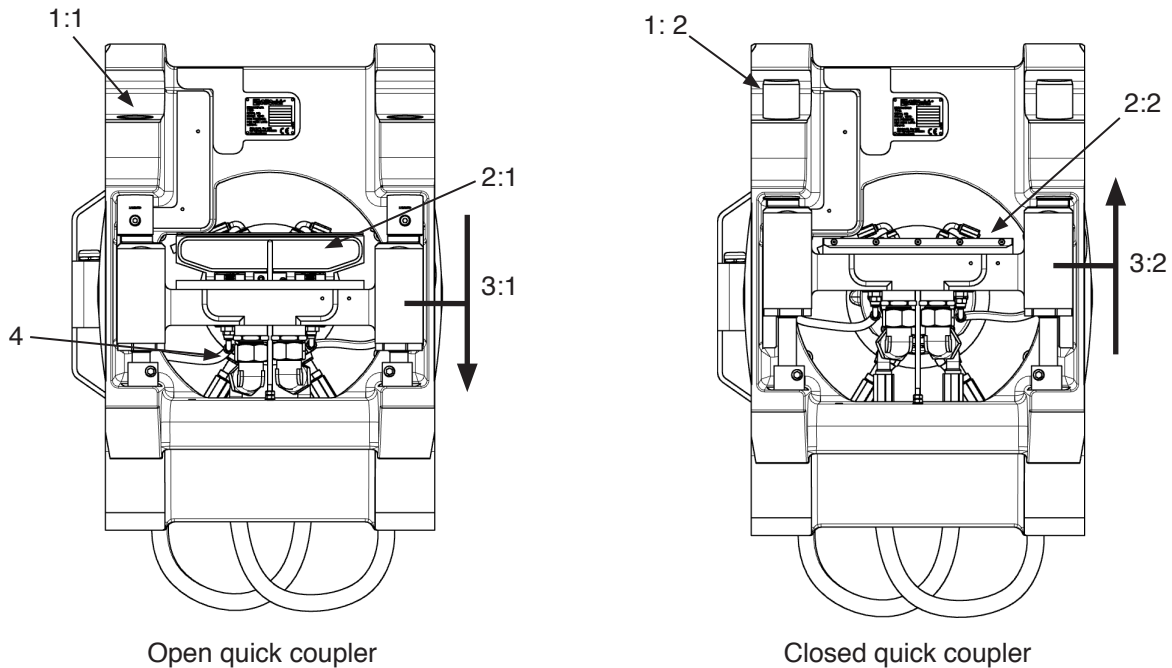
3 Mechanical and hydraulic function principle

The quick coupler consists of a coupler body in which the H-cylinder with accessories is mounted. The quick coupler is mounted on the rotator. The H-cylinder (3) and locking plungers move forwards and backwards when oil is supplied to the H-cylinder. When the H-cylinder is in the front position (3:1) the locking plungers are retracted (1:1) in the chassis and an attachment can be connected/disconnected. When the H-cylinder is in the rear position (3:2) the locking plungers are extended (1:2) and, if in place, an attachment adapter is connected to the quick coupler.

The quick couplings (4) are located in the H-cylinder's intermediate section between the locking plungers. The quick couplings are protected by a dirt guard (2) when they are not in use. This dirt guard is opened automatically when the H-cylinder is in the front position (2:1) and closes automatically in the rear position (does not apply if a hydraulic attachment is connected) (2:2).

Oil is supplied to the H-cylinder via the base machine's system for the hydraulic quick coupler.

When connecting hydraulic attachments, the hydraulic quick couplings and any electrical couplings are connected at the same time as the tool is locked mechanically.



4 Function principle, OilQuick LockSupport

The control panel in the cab is the driver's interface with the quick coupler system. The upper section of the panel displays the quick coupler system operating status and gives alarms when dangerous situations occur. The lower section of the panel allows the driver to open and close the quick coupler, in a controlled and monitored way.

The main unit monitors the status of the quick coupler, the status of the safety gate, displays the status on the control panel and controls the locking valve, pressure booster and pressure relief. The control panel has two types of alarm: normal warning when connecting the attachment and critical alarm. When critical faults have occurred the main unit gives a continuous alarm with a buzzer and lit warning symbol. The driver is then aware that the system is in a condition that is abnormal and can take action. When the driver connects an attachment the system warns with an intermittent buzzer and flashing warning symbol.

In order for the quick coupler to be operated the safety gate must be in active mode, if this option is installed, which is strongly recommended. When the driver wishes to open the quick coupler both Open buttons must be pressed for 3 seconds. After 3 seconds the lock valve is activated, pressure booster and pressure relief are activated (option). At the same time the warning symbol starts to flash and the buzzer sounds intermittently. When the locking plungers leave their lock position the symbol for the locking plungers on the control panel goes out. The coupler is now open, pressure booster and pressure relief (option) are switched off. When the driver operates the quick coupler from the frame, the symbols for the rear pin and front pin will go out when the pins leave the quick coupler.

In this position, without any attachment pins in position the driver can close the coupler for hook hoisting, transport or service. The driver presses the Close button. The lock valve is switched off and pressure booster (option) is activated. The quick coupler is closed and when the locking plungers reach their locked position the pressure booster is switched off, the symbol for the locking pistons lights, the warning symbol goes out and the buzzer stops. The coupler is now in safe mode.

To connect an attachment the driver must operate the quick coupler into the frame. Because the front and rear pins are in the correct position to lock the quick coupler both pin symbols light in the control panel. When both the pin symbols light it is permitted to close the coupler. Press the Close button. The lock valve is closed, pressure boost and pressure relief (option) are activated. The quick coupler is closed and when the locking plungers reach their locked position the pressure booster is switched off, the symbol for the locking pistons lights, the warning symbol goes out and the buzzer stops. The coupler is now in safe mode and the attachment is correctly connected.

At each start-up of the system, a diagnosis of all components is performed as well as the system's status. In the event of a system fault, an alarm is triggered to warn the driver about a dangerous situation. Actions in the event of a fault are described in a separate section in this manual.

All events in the system are logged in the main unit: the 32 most recent events in chronological order and all events in overall logs. A PC, a USB-CAN-converter and special software that authorised OilQuick service providers have access to is used to read these logs. The software also has the functionality to troubleshoot the system where a fault has occurred.

On those systems that do not have any form of pressure booster installed the driver must increase the pressure in the machine in the traditional way. This is not an optimum method, and the separate hydraulic package with separate pump should be installed instead.

5 Principal hydraulic and wiring diagram and installation requirement



OilQuick quick coupler system H-cylinder must:

- Connect directly to pump.
- Connect directly to tank return.
- Lock with the machine's maximum pressure in the operating hydraulics.



NOTE!

Before OilQuick quick coupler is installed on the base machine the machine supplier must be contacted for instructions regarding suitable connection points for hydraulics and electronics.

The main component of the quick coupler is the H-cylinder. Together with the locking plungers, the H-cylinder holds the connected attachment and the hydraulic quick couplings in the correct position. The H-cylinder hydraulic diagram is shown below.

In modern machines, both pressure and flow from the machine's hydraulic pump (5) vary depending on the machine load. Unlike many others, OilQuick quick coupler systems work with the machine's maximum operating pressure. It is necessary to have a play-free and precise lock between the coupler body and the attachment adapter. The H-cylinder must also hold the quick couplings together in the correct way. When the attachment is connected the pressure in the positive side of the cylinders (1) builds up to the machine's max pressure.

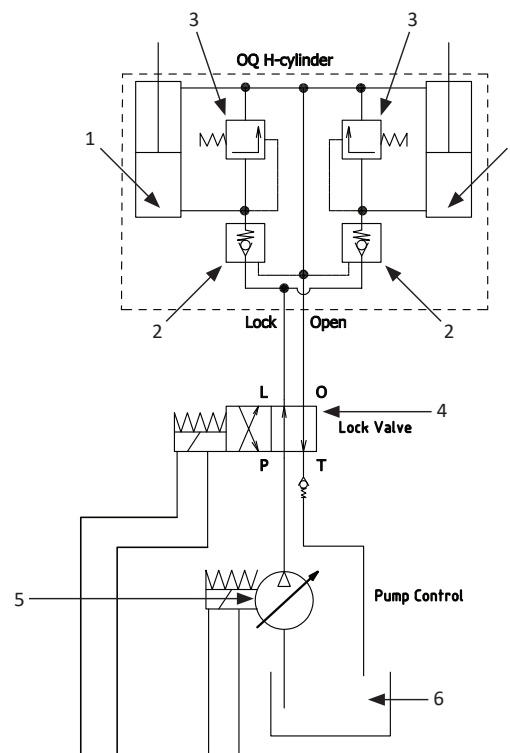
The two pilot operated check valves (2) maintain the pressure in the cylinders (1) when the machine pressure varies. Each time the pump pressure increases the cylinders are refilled (1). If the pressure in the cylinder (1) exceeds 45 MPa the pressure relief valves (3) start to open to the tank (6) and reduce the pressure. To open the quick coupler and disconnect the attachment, the lock valve (4) is activated. The minus side of the H-cylinder is then pressurised, the pilot operated check valves (2) open and the H-cylinder opens. If the oil supply to the H-cylinder ceases (for example a hose ruptures) it is prevented from opening, because the pilot operated check valves (2) ensure that the oil cannot leave the H-cylinder unless the minus side is pressurised.

Control of the h-cylinder occurs via the OQLS-Panel, see separate section.

The lock valve's (4) pressure line must always be directly connected to the hydraulic pump's (5) pressure line to ensure that the h-cylinder always works at the machine's max. pressure.

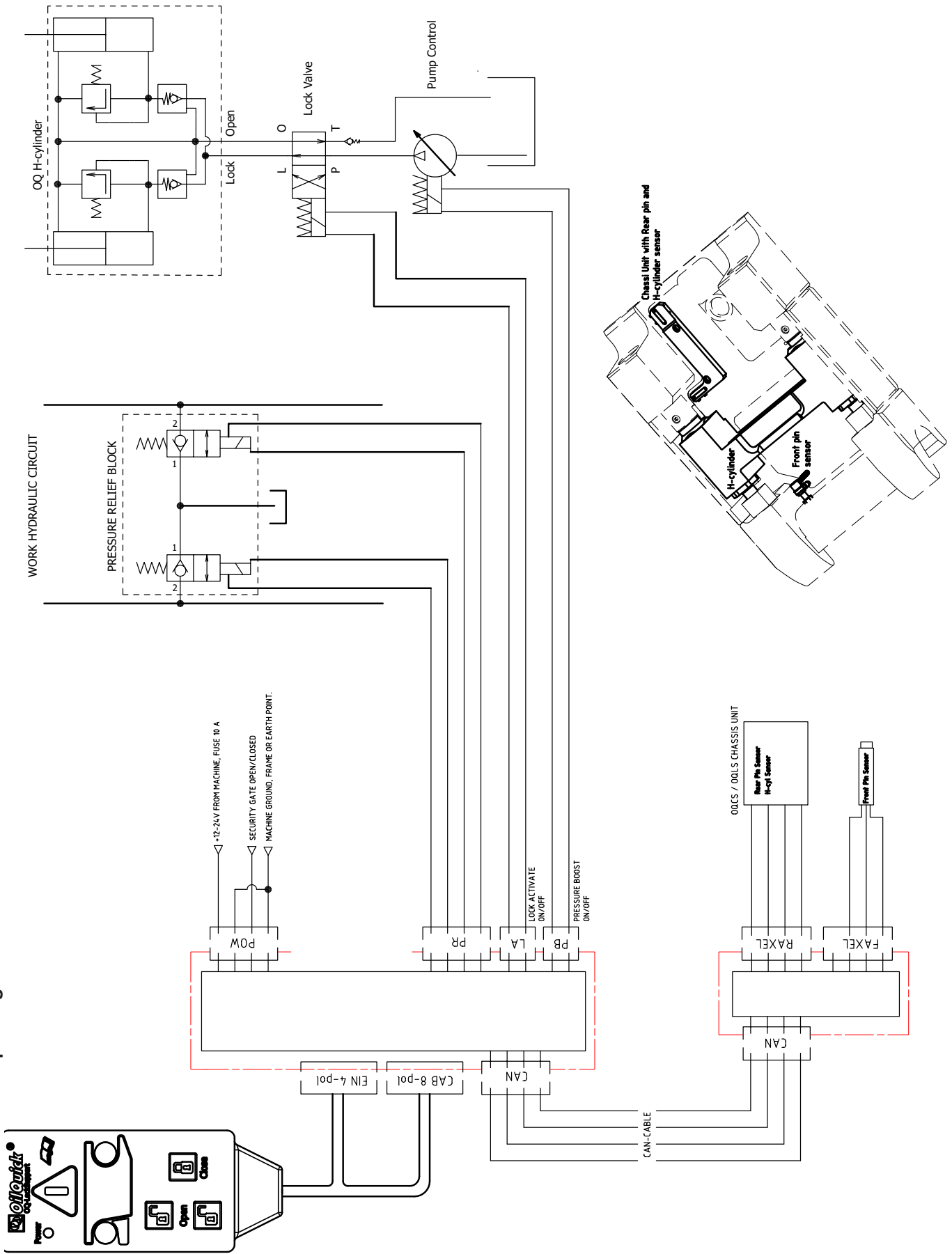
The lock valve (4) return line T must be directly connected to the machine's hydraulic tank (6) to ensure a pressure free return line.

1. H-cylinder integrated lock cylinders
2. Pilot operated check valves
3. Pressure limiter
4. Lock valve for the machine's quick coupler system
5. Hydraulic pump
6. Hydraulic tank



6 Hydraulic and wiring diagram OQLS

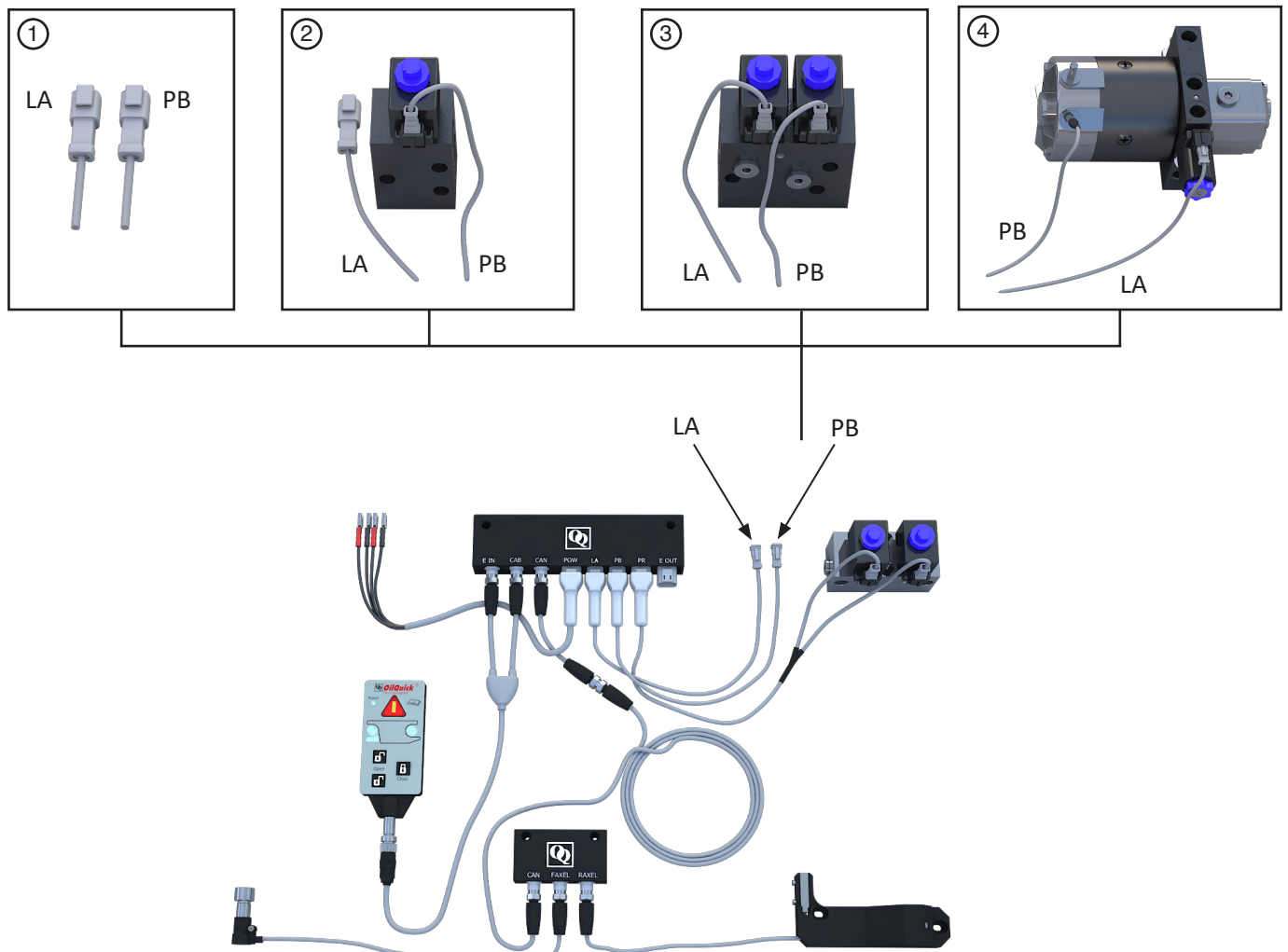
412 3891 OQLS Principle diagram



7 Locking hydraulics on material handling machines

The OilQuick quick coupler system requires that the locking hydraulics are controlled with the same pressure as the operating hydraulics. OQ-LockSupport which controls and monitors the attachment changes assumes that there is access to the locking valve for opening and closing the coupler and a function for pressure boosting of the machine when the attachment lock is operated. The conditions to obtain these functions are different from machine to machine and therefore require different solutions at installation. The following gives four installation methods depending on the machine's equipment level and technology.

1. Machines with locking hydraulics that meet OilQuick's requirements and are controlled electrically and can control pressure boost electrically when opening/closing the quick coupler.
Solution: OQLS switches for Lock Activate (LA) and Pressure Boost (PB) are connected directly to the machine's electric switches for locking function and pressure boost.
2. Machines with locking hydraulics that meet OilQuick's requirements and are controlled electrically and can control pressure boost hydraulically when opening/closing the quick coupler (conventional LS-signal).
Solution: OQLS switches for Lock Activate (LA) are connected directly to the machine's electric switches for locking function. The switch for Pressure Boost (PB) is connected via a post-installed valve block to the machine's pump control and thereby the pressure booster.
3. Machines with locking hydraulics that meet OilQuick's requirements but can control pressure boost hydraulically when opening/closing the quick coupler (conventional LS signal).
Solution: post-installation of OilQuick's combined locking valve with LS control is used and controls both quick coupler and pump control via the functions: Lock Activate (LA) and Pressure Boost (PB).
4. Machines that do not have pressure boost when opening/closing quick coupler (for example machines with Negacon control and/or monitored control systems).
Solution: an autonomous system with pump and locking valve must be post installed. The system is controlled via the functions: Lock Activate (LA) and Pressure Boost (PB).



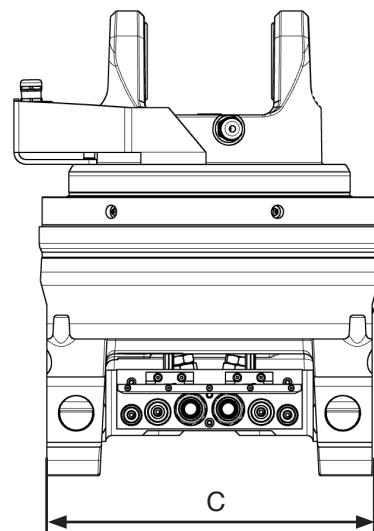
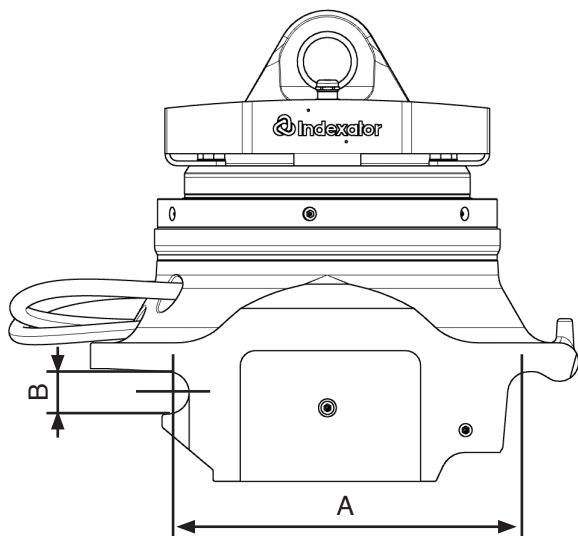
For complete installation requirements for hydraulics for OilQuick quick coupler system, see chapter 5.

8 Technical data

8.1 Dimensions and forces

Dimensions

Model	OQC 65	OQC 70/55
Max. lifting capacity (tonnes)	20	30
C-C measurement pin holders (mm) (A)	530	600
Measurement pin diameter (mm) (B)	65	70
Width (mm) (C)	440	550
Weight (kg)	See identification plate	See identification plate



For technical data and information regarding repair and maintenance for the rotator refer to the rotator manufacturer's technical documentation.

8.2 Electrical components

Electrical couplings

Electrical coupling model	1/2"	3/4"
Max current strength per contact pin in electrical coupling (continuous)	5A	5A
Max current strength per contact pin in electrical coupling (intermittent, 5 secs)	8A	8A
Max current total across all contact pins (continuous)	15A	15A
Max current total across all contact pins (intermittent, 5 secs)	20A	20A
Max current strength per contact pin in electric connection when attachment is disconnected	500 mA	500 mA

1/2" High current contact, 2-pole

Max 300V AC/DC.

Max 100A.

Must not be connected under voltage.

8.3 Hydraulic components in the quick coupler

Hydraulic oil

Viscosity classes	ISO VG 32,46 & 68
Mineral oil	ISO 6743-4, HM and HV ; SS 155434, AV and BV ; DIN 51524 HVLP
Environmentally friendly oil	DIN 51524 part 3 ; SS 155434, AV and BV
Oil temperature	-25°C to +80°C.
Ambient temperature	-25°C to +55°C.

The quick coupler has two parallel hydraulic cylinders, the following technical data applies:

Model	OQC 65	OQC 70/55
Max operating pressure (MPa)	35	35
Load holding/hose rupture valves	Yes	Yes
Pressure reducing valves	Yes	Yes
Piston/piston rod, diameter (mm)	40/20	55/30
Stroke length (mm)	65	75

Following technical data applies to quick couplings:

Coupling dimensions	1/2"	3/4"	1"
Oil flow at 0.3 MPa pressure drop (l/min) Stated value only applies to quick couplings.	70	140	250
Max continuous operating pressure (MPa)	35	35	35

8.4 Dimensions and positioning of quick couplings:



The actual appearance of the couplings varies. This is determined by the machine's attachment hydraulics and which attachments are to be used in the system solution. Questions regarding this should be directed to your nearest OilQuick dealer.

The location of the couplings is viewed from the cab.

QQC 65

Coupling 1 and 5: 1/2"

Coupling 2-4: 3/4"

Coupling 1 can be replaced with electric coupling 1/2"

Coupling 3 can be replaced with electric coupling 3/4"

QQC 70/55

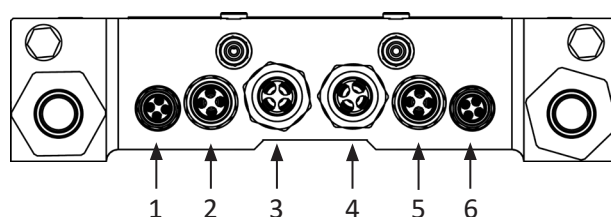
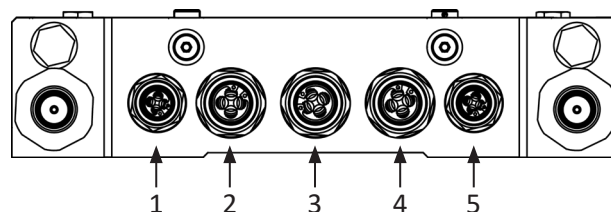
Coupling 1 and 6: 1/2"

Coupling 2 and 5: 3/4"

Coupling 3 and 4: 1"

Coupling 1 can be replaced with electric coupling 1/2"

Coupling 2 can be replaced with electric coupling 3/4"

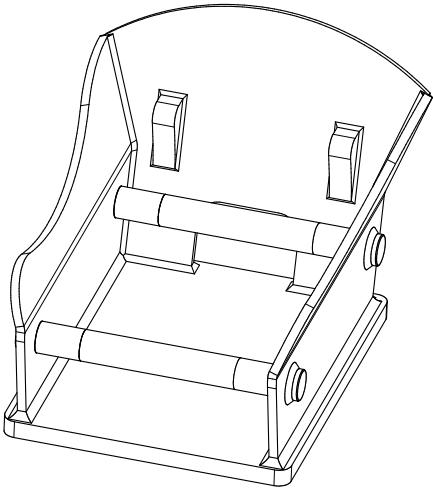


8.5 Attachment adapters

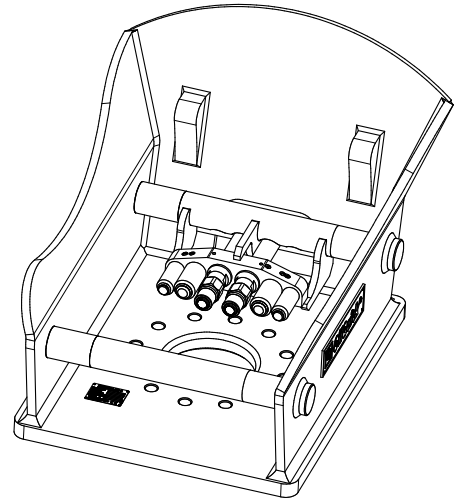
Technical data for the most common types of attachment adapter is given below. For more information, contact nearest OilQuick representative.

Attachment adapters for mechanical attachments

Model	Internal width (mm)	Pin spacing (mm)	Pin diameter (mm)	Approx. weight (kg)
OQC 65	440	530	65	230
OQC 70/55	550	600	70	340



Mechanical adapter



Hydraulic adapter

Attachment adapters for hydraulic attachments

Model	Internal width (mm)	Pin spacing (mm)	Pin diameter (mm)	Approx. weight (kg)
OQC 65	440	530	65	250
OQC 70/55	550	600	70	360

9 Installation of quick coupler



WARNING!

There is a risk of damage when installing the quick coupler.

The following requirements must be met when installing the OilQuick quick coupler system:

- The rotator must have a link that is adapted to the actual machine's stick, link and geometry.
- The pins for the stick and rotator must fit and lock in a secure way.
- The lock hydraulics pressure side (LOCK) must have a direct connection to the pump and the machine's full operating pressure.
- The lock hydraulics return side (OPEN) must have a free return to the tank.
- Hydraulic components that are used for the installation must be of the same or higher pressure classification than the machine's operating pressure.
- The machine manufacturer's instructions for installing the quick coupler must otherwise be followed.

The quick coupler is supplied to the location for installation in transport packaging. This packaging should not be removed until the quick coupler is to be installed. The packaging also simplifies moving the quick coupler.

Great care must be taken when installing the quick coupler on the machine. There are large and heavy parts and failure to proceed in the correct way could result in severe injury.

The quick coupler's attachment hydraulics are connected via hoses from the quick couplings to the connections on the rotator. Hose routing is individual to each rotator type. Route the hoses so that there is sufficient bending radius in all positions on the base machine's stick, so that the hoses are not stretched in any position and not rubbing or twisted. Hoses for locking hydraulics must be installed and routed in the same way as from the H-cylinder in the quick coupler to the rotator's connections for it (OPEN/LOCK). When the hoses have been routed, all hydraulic hoses must be supplied with hose guards that protect the hoses from external impact.

When working with the hydraulic system the following points must be observed:

- Depressurise any hydraulic accumulators and the hydraulic system on the machine.
- Preserve the environment, clean up every oil spillage.
- Protective gloves must be used, long term exposure to hydraulic oil can cause allergic reaction.
- Protective eyewear should be used to prevent oil splashes to the eyes.
- Cleanliness must be observed when working on hydraulic systems. There is a risk of malfunction if contaminants enter the system.

When installation is complete the following must be done:

- Control measurement of the hydraulic pressure in the H-cylinder lock port (LOCK) when locking (must follow the machine's operating pressure).
- Control measurement of the hydraulic pressure in the H-cylinder open port (OPEN) when locking (must be near zero).
- Daily inspection (see chapter 15.1).
- Enter which functions of the base machine are connected to quick couplings on H-cylinder in the quick coupler and applicable configuration and options for OQ-LockSupport in the tables below.
- Signature below of the installer responsible for installation of the OilQuick quick coupler system.

Quick coupler:	
H-Cylinder #:	

See chapter 8.4 for details on connections and quick couplings for all H-cylinder models.

Quick coupling on H-cylinder	Function on material handling machine
1	
2	
3	
4	
5	
6	
7	
8	
9	

OQLS basic system

Locking valve		PressureBoost	
Originally installed by the machine manufacturer		No	
OilQuick locking valve		Originally installed by the machine manufacturer	
OQCS/OQLS combi valve (lock- and LoadSense-valve)		OilQuick LoadSense valve	
OQCS/OQLS pump and locking valve unit			
Other			

OQLS option

Installed options for OilQuick-LockSupport®				
Safety gate	Yes		No	
Active signal level	High		Low	
OilQuick pressure relief block	Yes		No	

Responsible installer:.....

Signature:.....

Date and place:.....

10 Handling when connecting attachments.

IMPORTANT TO REMEMBER



- Only attachments with a suitable OilQuick attachment adapter or mechanical attachment adapter of the same size/model may be connected.
- There is always an element of risk associated with changing attachments.
- No personnel may be within the machine operating area when the attachment is connected to or disconnected from the machine. The attachment can tip and/or fall away during the process.
- The attachment must always be positioned on a horizontal surface that is both hard and stable.
- When opening and locking the quick coupler the machine must be stationary.
- Lock test must always be carried out when connecting and changing an attachment.

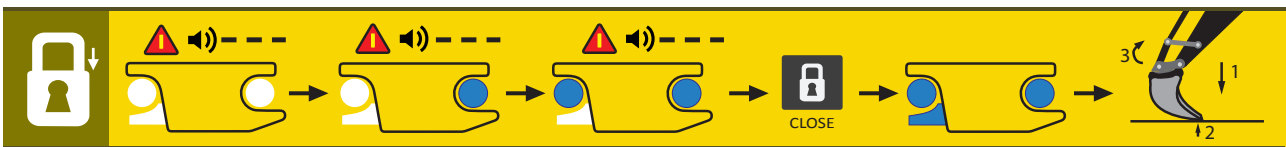


NOTE!

Special connection procedures may apply for individual attachments. Refer to the attachment documentation regarding this!



When the quick coupler closes, the PressureBoost function activates, which boosts the pressure in the locking hydraulics automatically. The driver need not take any further action. NOTE! If the PressureBoost option is not installed on the machine, the driver must increase the pressure to the locking hydraulics by using one of the machine's hydraulic functions (however, not an attachment function).

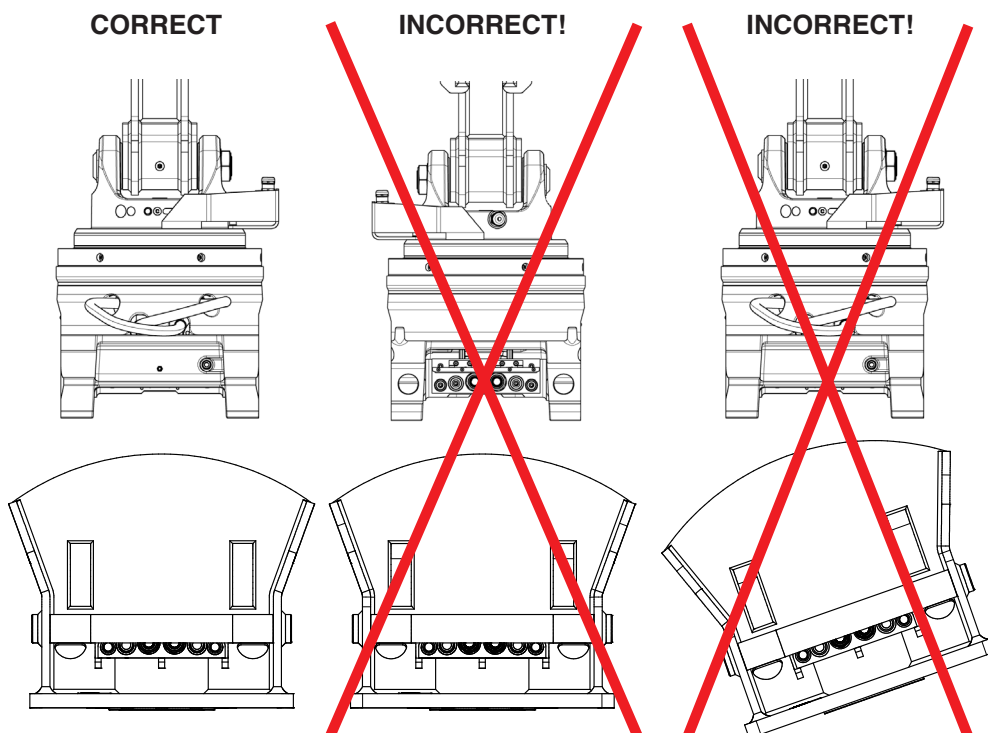


This section covers connection procedures of attachments that should be connected to the attachment adapter pins in the horizontal position. Examples of attachments: grapple bucket, timber grapple and hoisting hook.

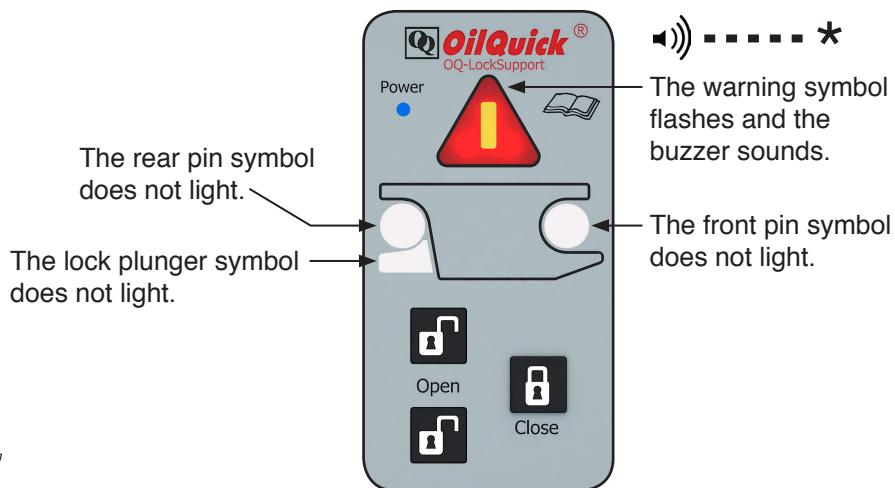
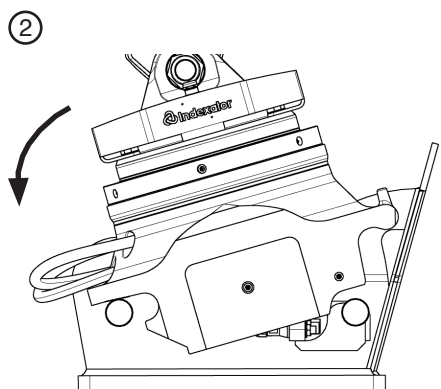
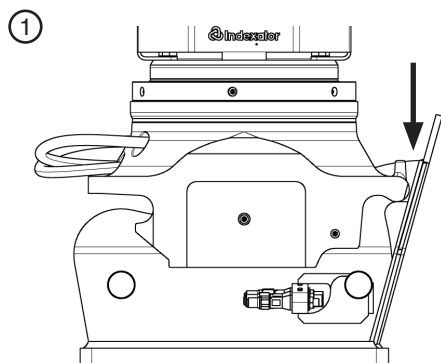
Procedure:

It is assumed in this section that no attachment is connected and that the quick coupler is open.

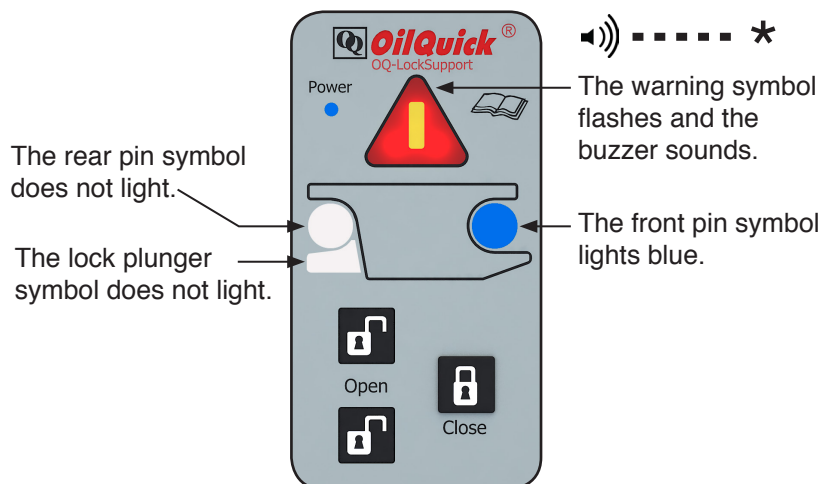
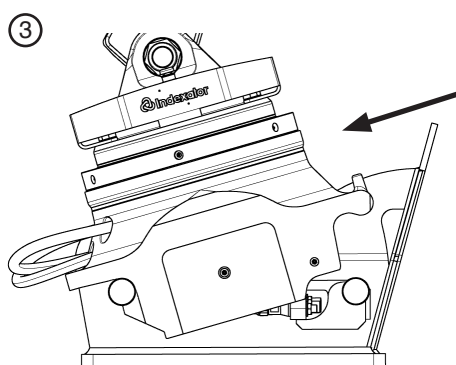
- Check that no-one is within the machine's operating area.
- Check that the quick coupler and adapter of the attachment to be connected are parallel to each other and that the front pin holder of the quick coupler is turned towards the front pin of the attachment adapter (see images below).



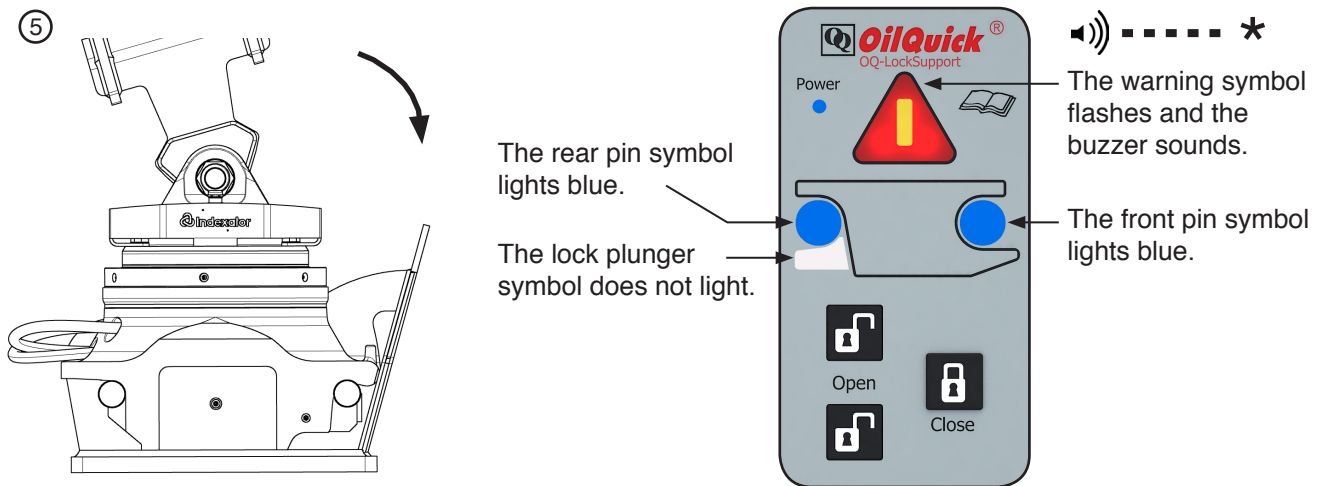
- The quick coupler is open. The warning symbol flashes and the buzzer sounds.
- Lower the quick coupler so that its rear support lies against the guide lug in the attachment adapter (1).
- Slowly lower the quick coupler's front section so that its front support lip lies against the attachment adapter's front pin (2).



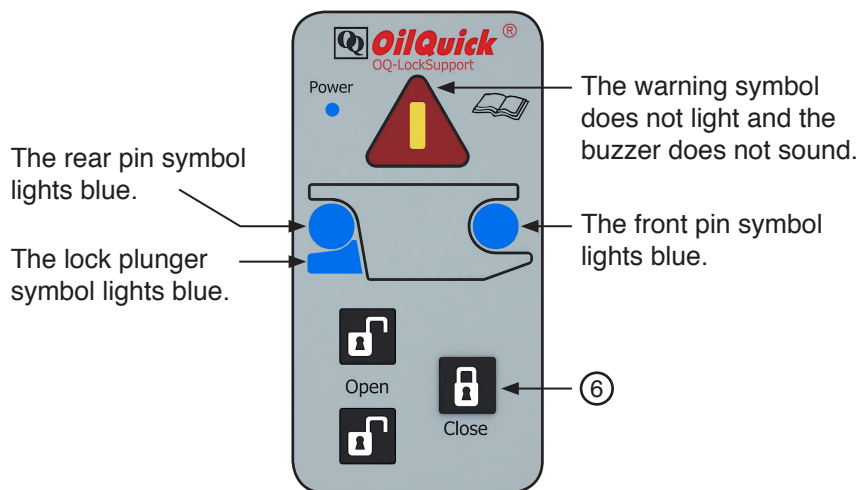
- Adjust the stick so that the quick coupler moves towards the cab. The coupler's front pin holder must engage the attachment adapter's front pins in position as illustrated in image (3).
- The front pin symbol lights blue when the front pin is in the correct position against the front pin holder on the quick coupler.



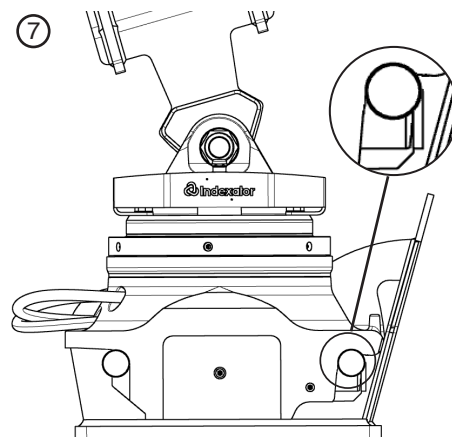
- Lower the coupler and ensure that the rear support lips lie against the attachment frame's rear pins (5).
- When the support surfaces for the rear pin on the quick coupler are in the correct position against the rear attachment pin the pin symbol for the rear pin lights blue.



- It is now possible to close the quick coupler to connect the attachment.
- NOTE! In this mode only the control panel for OQLS can be operated.
- Press the Close button (6) for closing. The quick coupler closes and the attachment is connected.



- The locking plunger symbol and the pin symbols light and verify that the attachment is connected (7).
- The warning symbol goes out and the buzzer is silent.
- The machine's controls must be used to carry out the lock test before work with the attachment is started.
- Carry out a lock test according to chapter 7.



11 Lock test of attachments



THE LOCK TEST MUST ALWAYS BE CARRIED OUT WHEN ATTACHMENTS ARE CHANGED.

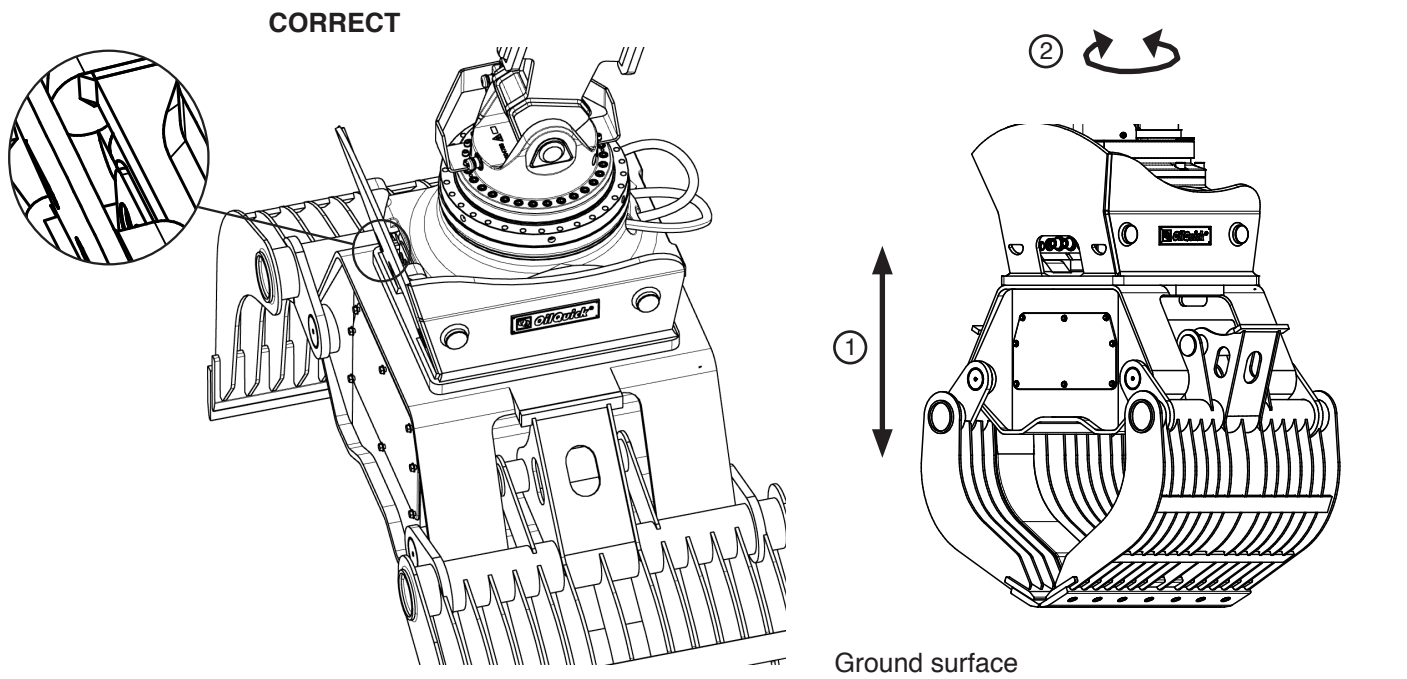
- If connection of the attachment is unsuccessful the reason for this must be checked and rectified before the attachment is reconnected.
- If there is any doubt over whether the attachment has connected correctly, the operator must check using the procedure given in section: 11.3.
- Take great care within the risk area because the attachment may be incorrectly connected and thereby at risk of coming loose.

11.1 Without hydraulic function

After connecting attachments without a hydraulic function a mechanical lock must be carried out.

Procedure:

- Lift the tool 20-30 cm from the ground.
- Shake the attachment vertically and rotate back and forth. The force of this should clearly show that the tool is under load and cannot come loose.
- Ready.

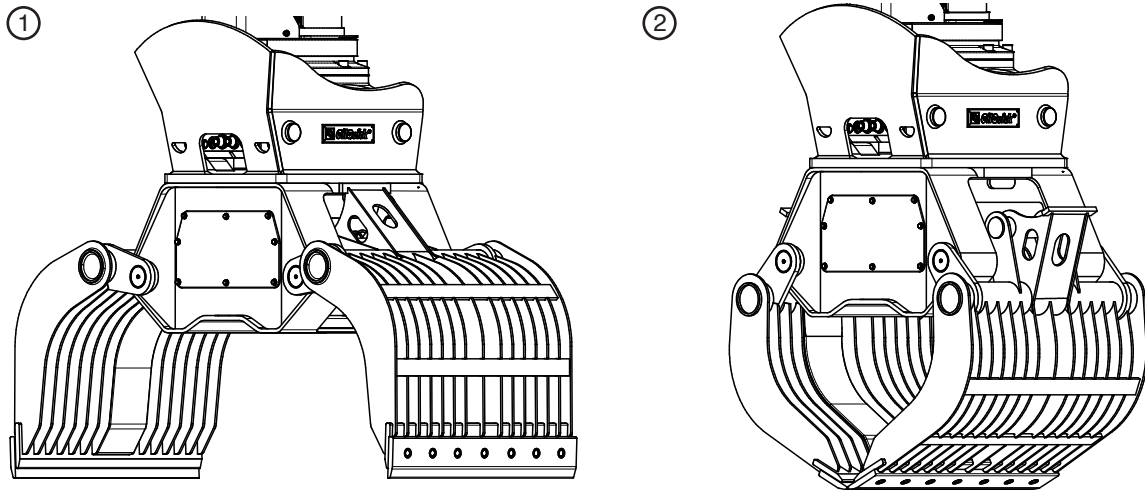


11.2 With hydraulic function

After connecting attachments with a hydraulic function a hydraulic lock test must be carried out.

Procedure:

- Lift the attachment 20-30 cm off the ground.
- Check that the attachment's hydraulics work. If so, connection is correct.
- Ready.

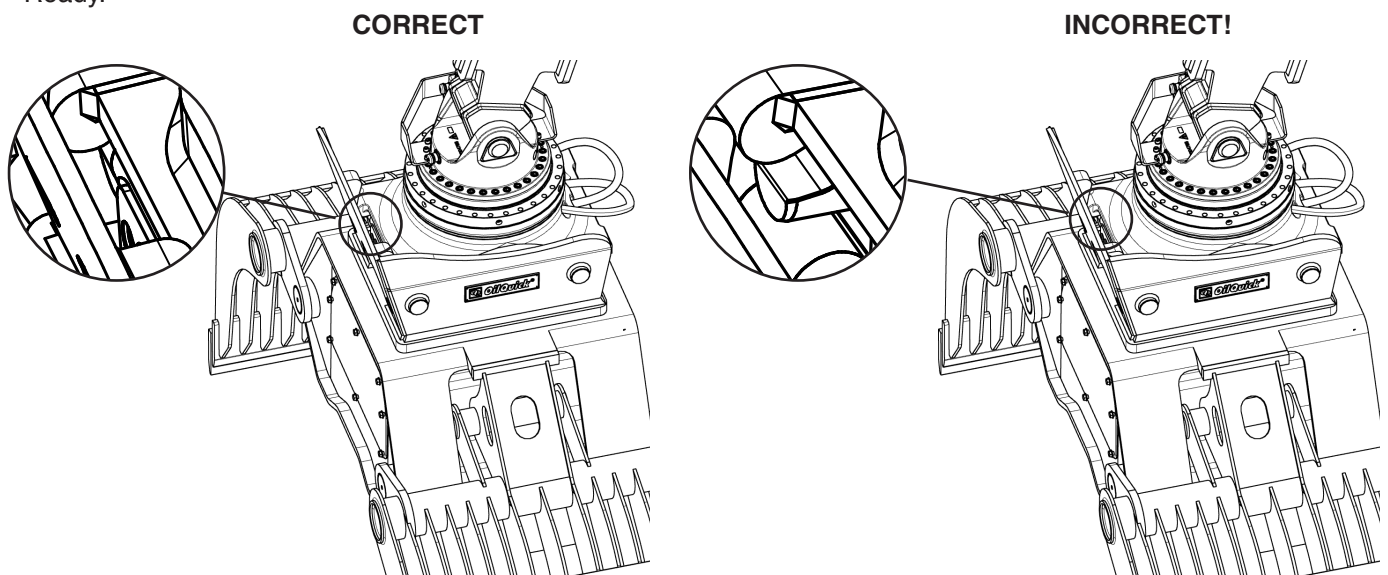


11.3 Without hydraulic function and/or without possibility of mechanical lock test

Pendulum mounted attachments without hydraulic function, or other attachments must be checked visually if the lock cannot be tested according to one of the sections: 11.1-11.2.

Procedure:

- Lift the attachment 20-30 cm off the ground.
- Shut off the machine.
- Climb out of the cab.
- Go sufficiently close to the quick coupler that you can clearly see the parts related to locking the attachment. Take great care within the risk area because the attachment may be incorrectly connected and thereby at risk of coming loose.
- Check that the locking plungers are under the tool rear pin.
- Check that the H cylinder is in the rear position.
- Ready.



12 Disconnection of attachments



IMPORTANT TO REMEMBER

- There is always an element of risk associated with changing attachments.
- No personnel may be within the machine operating area when the attachment is connected to or disconnected from the machine. The attachment can tip and/or fall away during the process.
- The attachment must always be positioned on a horizontal surface that is both hard and stable.
- When opening and locking the quick coupler the machine must be stationary.



NOTE!

Special requirements for disconnection may apply for individual attachments. Refer to the attachment documentation regarding this!

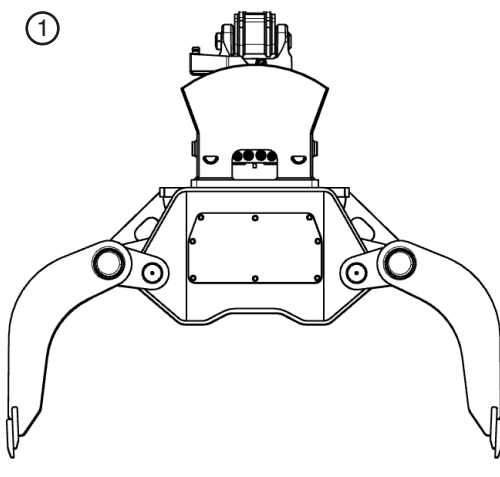


When the quick coupler closes, the PressureBoost function activates, which boosts the pressure in the locking hydraulics automatically. The driver need not take any further action. NOTE! If the PressureBoost option is not installed on the machine, the driver must increase the pressure to the locking hydraulics by using one of the machine's hydraulic functions (however, not an attachment function).



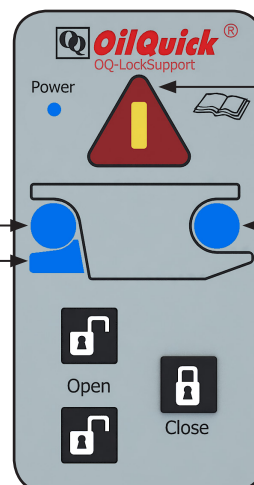
Procedure:

- Check that no-one is within the machine's operating area.
- Position the attachment to be disconnected a little above the ground (1).



The rear pin symbol lights blue.

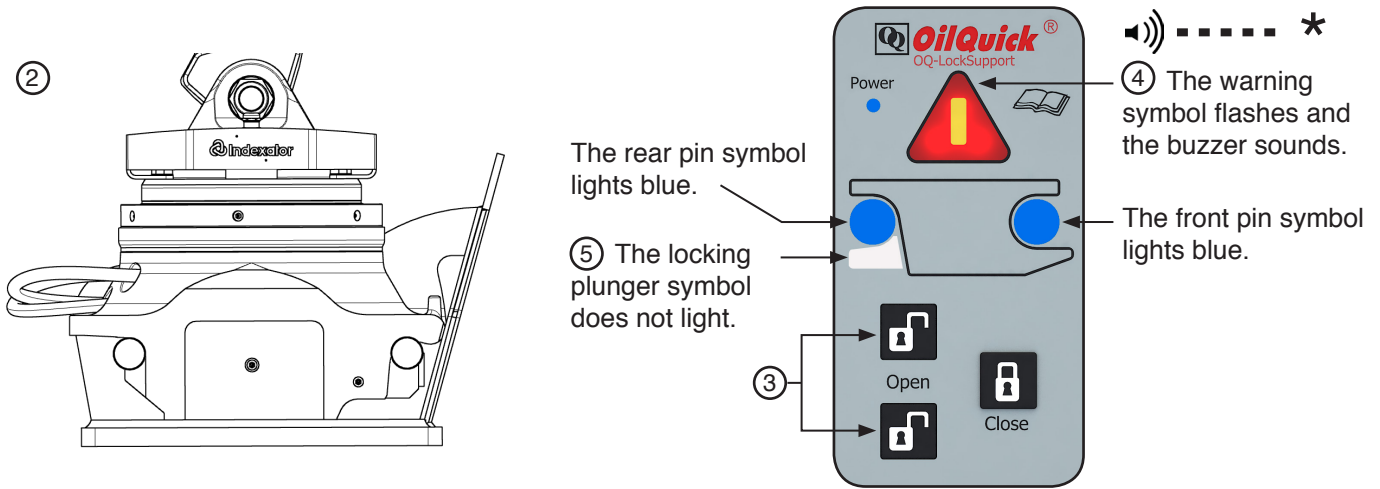
The lock plunger symbol lights blue.



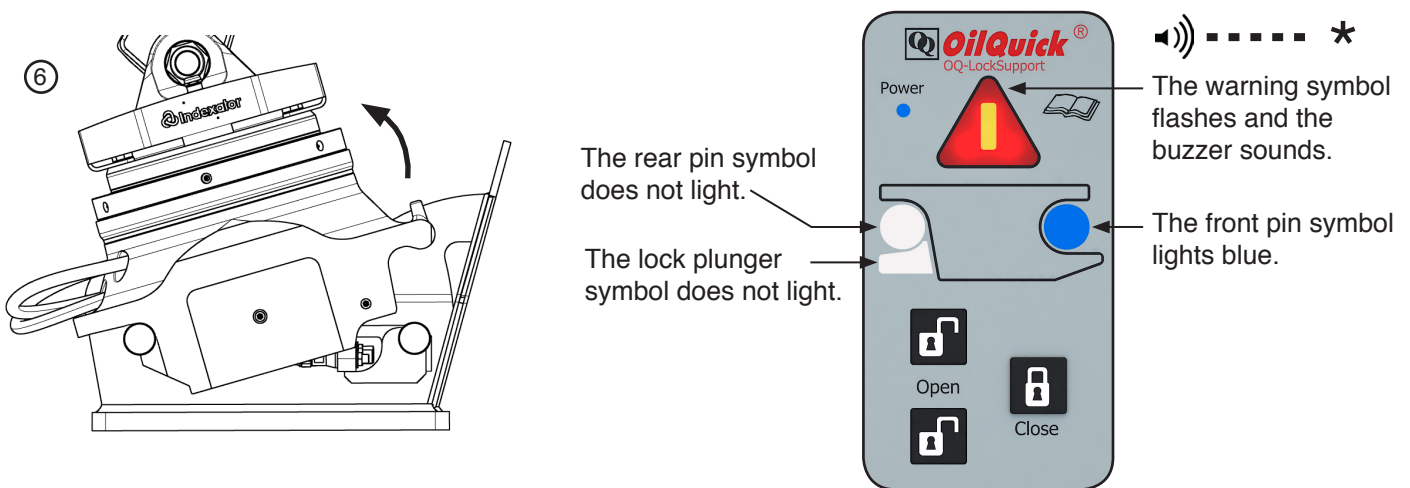
The warning symbol does not light and the buzzer does not sound.

The front pin symbol lights blue.

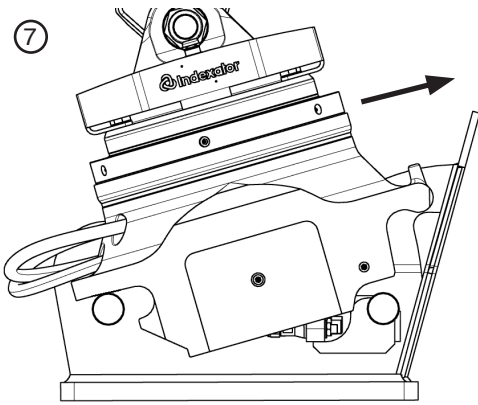
- Lower the attachment to the ground so that it is stable and supports itself, but is not pushed down by the crane. The surface must be hard and even (2).
- Open the quick coupler by depressing both buttons (3, OPEN) for three seconds until the warning symbol (4) starts flashing and the buzzer sounds.
- Release the buttons, wait one second and press the buttons again until the buzzer changes frequency.
- The quick coupler is opened and the locking plunger symbol (5) goes out because the locking plungers are no longer in lock mode.
- The quick coupler is now open and the attachment can be disconnected.



- Angle the quick coupler so that its front pin holder engages the attachment adapter's front pin and is free of the attachment frame's rear pin (6).
- The rear pin symbol goes out when the quick coupler leaves the rear attachment pin.

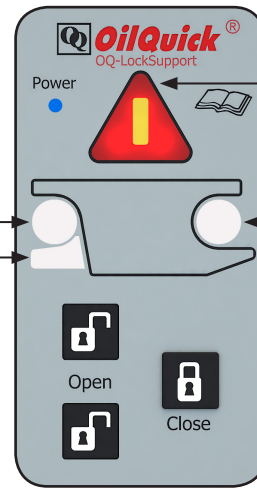


- Move the quick coupler diagonally upwards towards the guide lug until its rear support lies against the guide lug on the attachment adapter (7).
- The front pin symbol goes out when the quick coupler leaves the front attachment pin.



The rear pin symbol does not light.

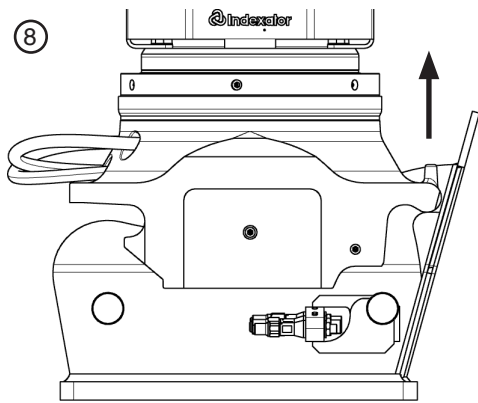
The lock plunger symbol does not light.



⦿ *
The warning symbol flashes and the buzzer sounds.

The front pin symbol does not light.

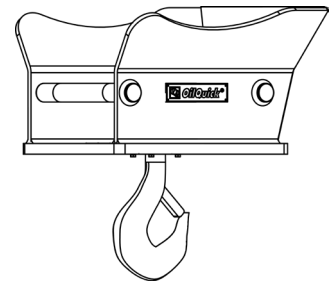
- Angle the coupler up so that it hangs straight and then lift it up away from the attachment adapter (8).



- If a new attachment is to be connected, see the instructions under chapter 10-11.

13 Use of hoisting hook


A separate attachment adapter with hook is available as an accessory. Its MAX lifting capacity is 32 tonnes. The hook is classified according to: "2m V - DIN 15400".




The machine's MAX lifting capacity is restricted by the following factors:

1. The hoisting hook max load, this is based on the marking on the hook/the adapter's identification plate.
2. Max load for rotator, OQC quick coupler or lifting aid such as lifting strap or chain.
3. Machine lifting capacity. This information is provided by the machine's lifting diagram which should be in the cab.
4. The machine's lifting capacity within the work area. This information can be found in the machine manual.

It is forbidden to exceed the lower of either of these values!
Also check that all other materials used during a lift have the correct classification.

 **The load on the hoisting hook must never exceed the max load of the hook, the max load of the rotator, OQC quick coupler, other lifting aids or the machine's lifting capacity. The load must never be greater than the lower of these values.**

 **Never go under hanging loads!**


Safety regulations in relation to a lift:

- MAX lifting capacity must not be exceeded.
- Approved lifting chains or straps of the correct classification must be used.
- Never go under a raised crane arm.
- Never go under a raised load.
- No load may exceed the permitted load of the crane, rotator, OQC or other lifting aid.
- Lifting may not occur in a direction that puts a load on the hoisting hook interlock.
- Towing using the hoisting hook is prohibited.
- The hoisting hook must not be subjected to lateral load.

14 Start and stop of machine at service and maintenance


This section primarily applies to the coming chapters, but also generally.

The hydraulic pressure and electrical system will be affected by the starting and stopping of the machine. This can lead to uncontrolled movements in the locking plungers if the quick coupler lock switch is in the open mode when the machine engine is started or stopped. Therefore, no-one may be near the machine when it is started or stopped if the quick coupler lock switch is in the OPEN position.

 **No-one may be near or touching the quick coupler when the machine engine is started or stopped if the quick coupler lock switch is in the OPEN position. Risk of uncontrolled movement of the H-cylinder because of residual pressure in the hydraulic system and changed valve positions.**



- **When working with hydraulic oil, protective gloves must be worn to avoid direct skin contact with the hydraulic oil. There is a risk of skin irritation and allergies.**
- **Be aware of and protect the environment. Collect all waste oil and clean up any spillage.**

 **Cleanliness must be observed when working on hydraulic systems. There is a risk of malfunction if contaminants enter the system.**

15 Inspection and maintenance



**Any faults must be rectified immediately.
These faults are related to workplace safety.**

Regular inspection and maintenance of the OilQuick quick coupler system is essential to retain good function and reliability.

15.1 Daily inspection

At start of day

- Carry out maintenance procedures according to chapter 16.
- Open the quick coupler.
- Buzzer should sound.
- The warning symbol on the OQLS control panel must flash.
- The locking plungers must be retracted.
- Close the quick coupler.
- Buzzer should be silent.
- The warning symbol on the OQLS control panel must flash.
- The locking plungers must be extended.
- In event of snow and ice, the quick coupler and attachment adapter must be cleaned of ice and snow.
- If necessary, rinse or wipe off mud, slush or anything else that does not belong on the quick coupler or attachment adapter (high pressure washing is not recommended). This is especially important during the winter because it can freeze together and cause damage to piston rods, couplings and other things in the quick coupler.

At end of day

- Checks according to 15.1.
- Check that the dirt guard functions as intended.
- Check that there is no leakage.
- In event of snow and ice, the quick coupler and attachment adapters must be cleaned of ice and snow.
- If necessary, rinse or wipe off mud, slush or anything else that does not belong on the quick coupler (high pressure washer is not recommended). This is especially important during the winter because it can freeze together and cause damage to piston rods, couplings and other things in the quick coupler.
- Clean the female couplings in the quick coupler.
- Lubricate the lock pistons and side planes. There are 4 x grease nipples for this purpose.
- Wipe off the tool's quick couplings.
- Inspection of rotator according to the rotator manufacturer's instructions.

15.2 Monthly inspection

A more extensive check should be carried out every month.

- Checks according to 15.1.
- Check that there is no play in the lock pistons.
- Check for cracks in the rotor body, mount, quick coupler or attachment adapter.

Faults detected during inspections may be rectified immediately in order not to impact on the reliability and function of the quick coupler. Replacement parts can be obtained from the nearest OilQuick representative that also offers servicing.

16 Maintenance - OQLS system components



NOTE! Never use chemicals or abrasives when cleaning the instrument and components.

All units in the system are either cast or sealed so that the necessary IP classification is maintained. The maintenance by the user is therefore limited to the following periodic checks:

- Wipe the control panel using a damp cloth. It is very important that the symbols light brightly and clearly so that all information reaches the user. If the control panel's silicone coating becomes worn or is damaged so that the symbols and LEDs are difficult to see, it is essential that the control panel be replaced even if the function is otherwise good.
- Regularly check the cables and pins at the control panel mountings for damage such as wear, open-circuits or trapped cables. Any damaged parts must be replaced immediately, even if the function remains good.
- Regularly check the control panel mountings so that the adhesive does not release from the base. A badly mounted control panel is a safety risk.
- Check that the main unit, other enclosed units and their cable connections are undamaged.
- Ensure that the cable routing does not cause abrasion and wear on cables.

17 Maintenance of quick couplings in H-cylinder



When working with hydraulic oil, protective gloves must be worn to avoid direct skin contact with the hydraulic oil. There is a risk of skin irritation and allergies.
Be aware of and protect the environment. Collect all waste oil and clean up any spillage.



Cleanliness must be observed when working on hydraulic systems.
There is a risk of malfunction if contaminants enter the system.

Quick couplings that connects the attachment to the machine wear and age with use. If these start to leak they must be maintained or replaced. If there is leakage when the attachment is connected and used then the nose seal is probably damaged and must be replaced. For instructions, see section 17.1. If there is leakage regardless of whether the attachment is connected or not then the female coupling is probably damaged internally and must be replaced. For instructions, see section 17.2.

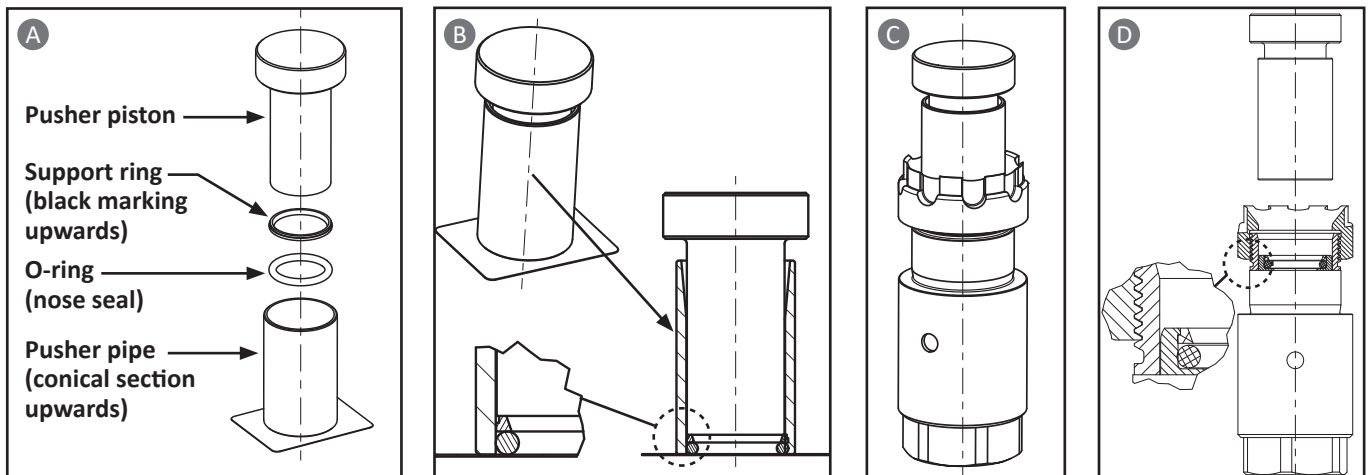
17.1 Replacement of nose seal in female coupling

1. Remove the damaged nose seal.
2. Clean the seat for the coupling thoroughly.
3. New nose seal is installed using the special installation tool called a "Pusher".
4. Insert the O-ring, followed by the support ring (black marking upwards) in the pusher pipe, see image (A). NOTE! Pusher pipe conical section (upper section) must be turned upwards. For 1/4" and 3/8" female coupling, see point 6 below.



NOTE!

Insert the O-ring first and then the support ring (Does not apply to 1/4" or 3/8" female coupling). The support ring's black marked side must be turned towards the pusher piston.

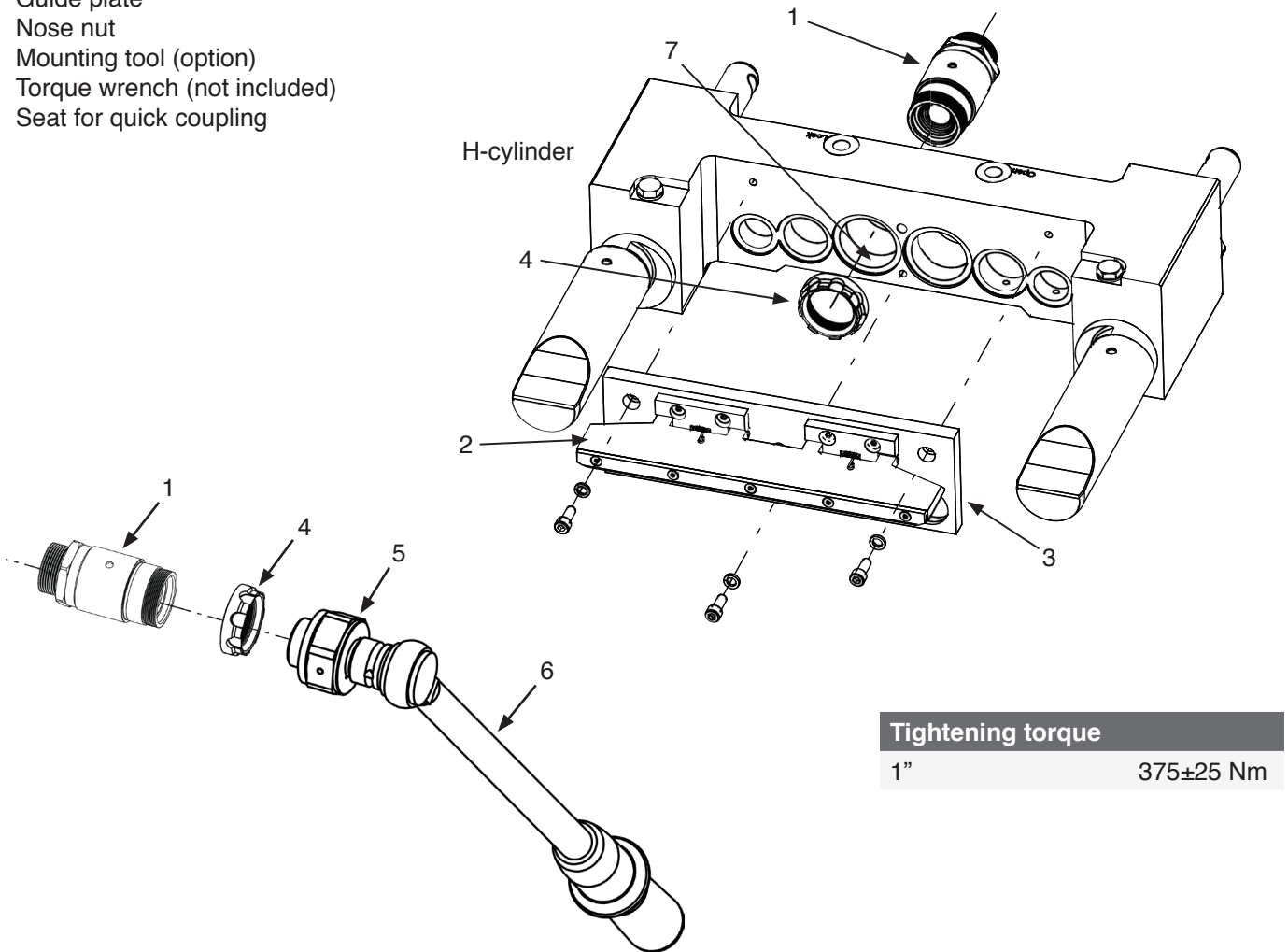


5. Female couplings sized: 1/2", 3/4" and 1": Feed the nose seal into the pusher pipe's lower end by placing the pusher against a table or other flat surface and then pressing the seal down to the bottom position using the pusher piston. See image (B).
6. When loading the pusher when it applies to 1/4" and 3/8" female coupling the support ring and O-ring must be inserted from the other end of the pusher pipe (bottom end) compared with image (A). NOTE! The support ring must be inserted first, black marking upwards towards the pusher, followed by the O-ring. Place the pusher against a table or other flat surface and then press the seal down to the bottom position using the pusher piston. See image (B).
7. Place the pusher against the female coupling and press the pusher piston firmly. See image (C).
8. Check that the nose seal is correctly installed. See image (D).

17.2 Replacement of nose nut secured quick couplings

Constituent parts:

1. Quick coupling
2. Dirt guard
3. Guide plate
4. Nose nut
5. Mounting tool (option)
6. Torque wrench (not included)
7. Seat for quick coupling



Procedure:

- Shut off the machine and depressurise the operating hydraulics.
- Detach the hydraulic pipe from the relevant quick coupling (1).
- Open the dirt guard (2).
- Unscrew the guide plate (3).
- The nose nut (4) on the quick coupling (1) is now accessible.
- Remove the nose nut (4) using the installation tool (5) and handle.
- Pull the quick coupling out of the H-cylinder.
- Discard the quick coupling.
- Before installing a new quick coupling the seat (7) in the H-cylinder must be cleaned and degreased.
- Reinstall the hydraulic connection on a new quick coupling.
- Insert a quick coupling (1) in the H-cylinder seat and hand tighten the nose nut (4).
- Then use the installation tool (5) and torque wrench (6) to tighten the nose nut on the quick coupling to the stated tightening torque.
- Reinstall other parts in reverse order.

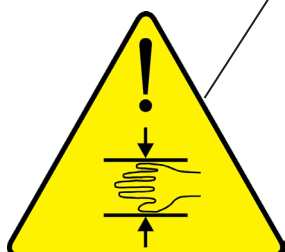
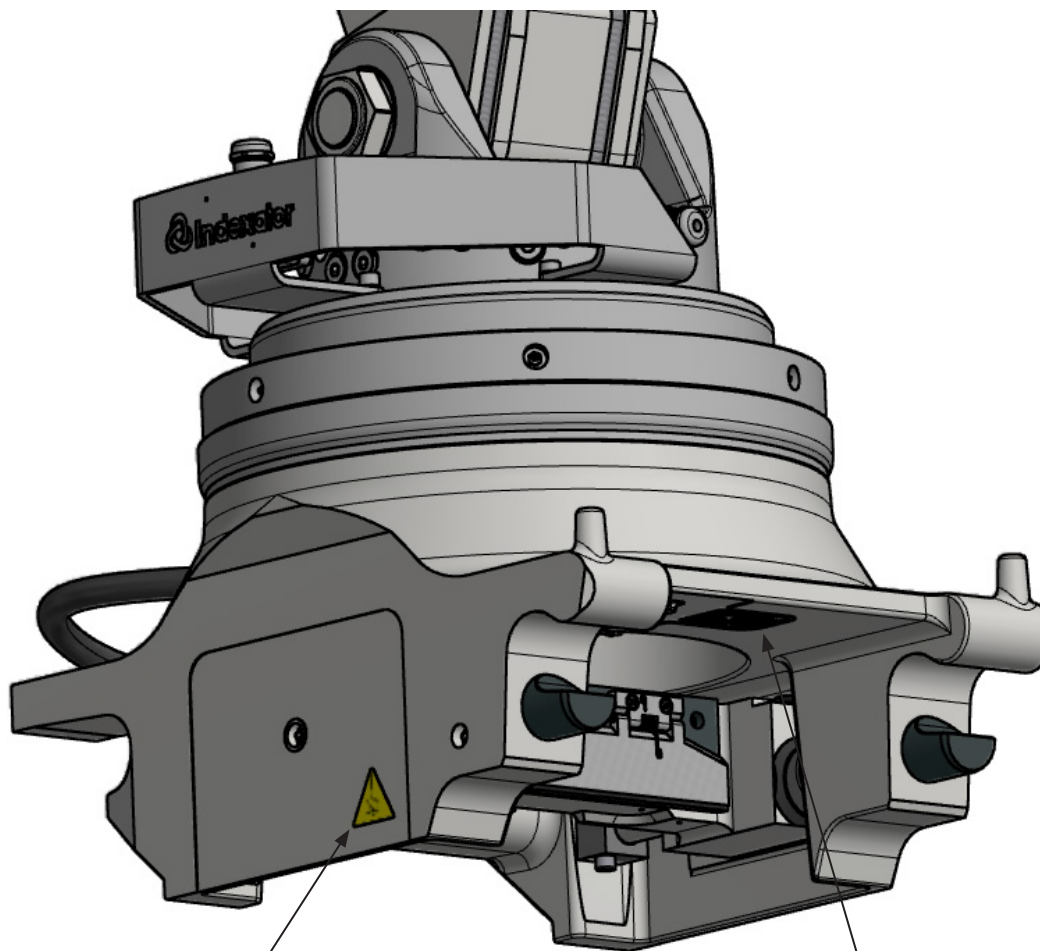
18 Troubleshooting

Fault	Cause	Action
Quick coupler cannot be closed.	Faulty connection of attachment.	Check according to chapter: 10-11.
	The hydraulic pressure in the locking circuit is too low to close the quick coupler.	Check the pressure in the lock circuit. If this is too low, check the lock valve function. If the lock valve is correct the fault is in the machine.
	Dirt guard is not opened and presses against the male coupling. Dirt guard opening bar is missing.	Install new opening bar.
	One or several male couplings have moved out of position and do not fit the female couplings.	Contact OilQuick service.
Quick coupler cannot be opened.	The hydraulic pressure in the locking circuit is too low to open the quick coupler.	Check the pressure in the lock circuit. If this is too low, check the lock valve function. If the lock valve is correct the fault is in the machine.
	One of the two pilot operated check valves in the H-cylinder is defective and will not open.	Contact OilQuick service.
	Pressure relief valve defective.	
Oil leakage from quick coupling when attachment is connected.	Nose seal missing or damaged.	Replace nose seal according to section: 17.1.
	The quick coupling is dirty or damaged.	Clean or install new quick coupling according to chapter: 17.
Oil leakage from quick coupling.	The quick coupling is dirty or damaged.	Clean or install new quick coupling according to chapter: 17.
Attachment hydraulics do not function.	Faulty connection of attachment.	Check according to chapter: 10-11.
	The machine does not give the attachment the pressure and/or flow that the attachment requires.	Check the manual for the machine or contact the supplier of the machine.
	Male couplings out of position.	Contact OilQuick service.
	Fault in the attachment's hydraulic and/or electrical systems.	Check the manual for the attachment or contact the supplier of the attachment.
Attachment's hydraulic and/or electrical systems do not function.	Defective electrical coupling between quick coupler and attachment.	Check the wiring and electrical couplings. Replace or repair defective parts. Refer to the manual for the electrical couplings.

19 Plates and decals

19.1 Identification plate and decals

Identification plate and decals are positioned as follows.



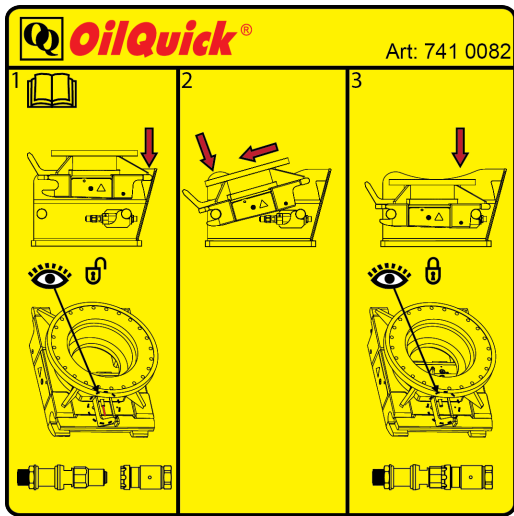
Warning decal, risk of crushing



Identification plate

19.2 Information decals

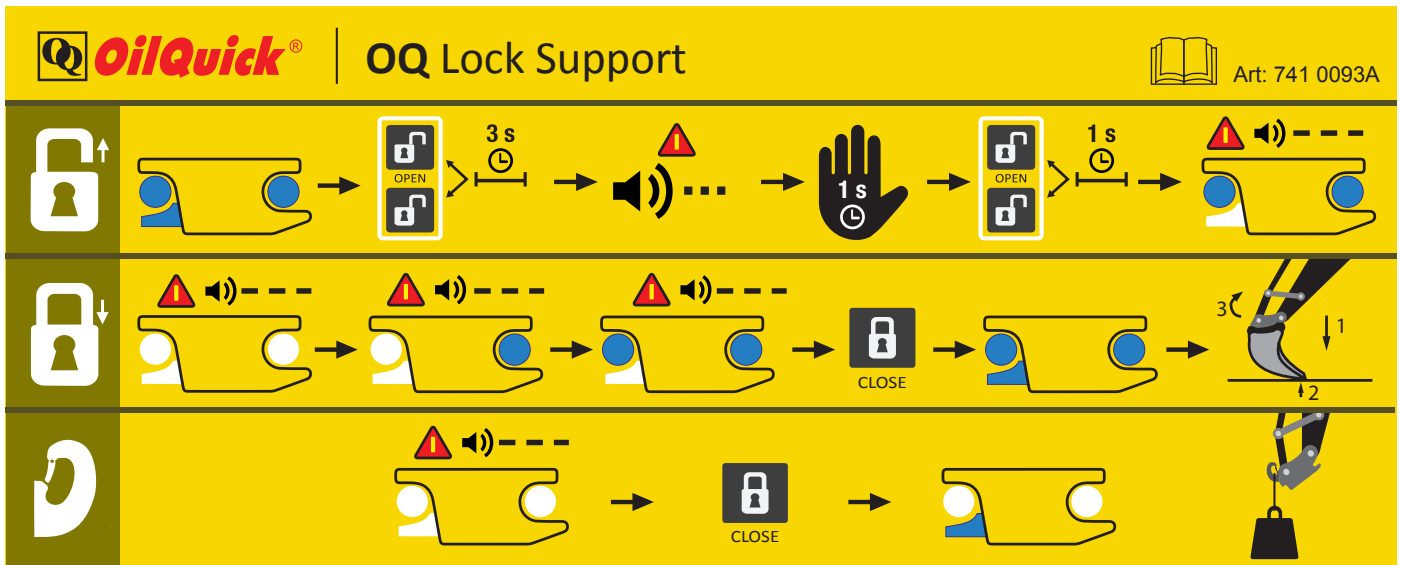
These information decals must be attached in an easily visible position in the cab. If these are unclear because of damage they must be replaced immediately!



Coupling decal



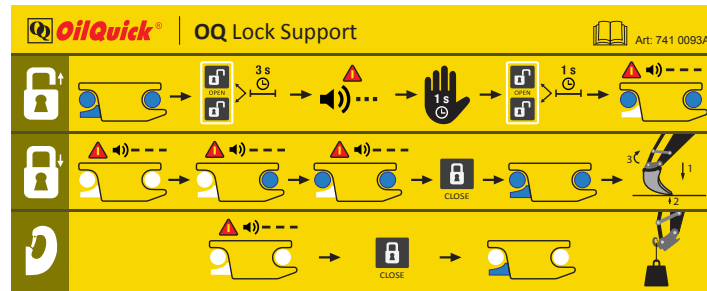
Decal, depressurise



Lock decals in the cab

19.3 Explanation of lock decals

The lock decal supplied with OQLS must be located visibly in the cab. This decal show illustrations that explain step by step what is indicated and what must be done next in the operating sequence.

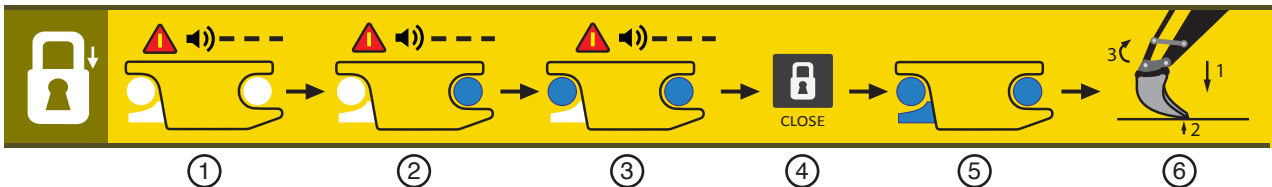


OPEN:



1. Attachment is connected. Both the pin symbols and the locking plunger symbol light up.
2. Open the quick coupler by depressing both buttons (OPEN) for three seconds until the warning symbol starts flashing and the buzzer sounds.
3. Release the buttons, wait one second and press the buttons again until the buzzer changes frequency.
4. The quick coupler is opened and the locking plunger symbol goes out because the locking plungers are no longer in lock mode. The quick coupler is now open and the attachment can be disconnected.

CLOSE:



1. The warning symbol flashes and the buzzer sounds. The quick coupler is open and not in position to be able to lock the attachment.
2. Hook the front pin holder of the quick coupler around the front pin of the attachment. The pin symbol for the front pin lights.
3. With the quick coupler front pin holder around the front pin the quick coupler is twisted towards the rear pin of the attachment. The pin symbol for the rear pin lights. The coupler is in position to lock.
4. Press the Close button to close the quick coupler.
5. The quick coupler is locked, the warning symbol goes out and the buzzer stops. The pin symbols and the locking plunger symbol light up.
6. Carry out a lock test according the instructions in the quick coupler manual.

Closing without attachment, for hoisting hook, transport etc.:



1. The warning symbol flashes and the buzzer sounds. The quick coupler is open and not in position to be able to lock the attachment. The driver has decided to close without an attachment, for hook hoisting, transport etc.
2. The Close button must be pressed.
3. The H-cylinder is closed, the locking plungers move out. The lock plunger symbol lights. The warning lamp goes out, the buzzer is silent. No attachment is connected (Closed without attachment, for hook hoist, transport etc.).

20 Warranty conditions

The following warranty conditions apply to OilQuick products:

- OilQuickUSA provides a warranty against technical faults regarding materials and construction.
- The warranty means that OQUSA of its own volition will replace or repair parts of supplied products, that have become unusable due to a material or manufacturing fault.
- **The warranty period is 12 months or 1200 machine hours, whichever comes sooner. The warranty applies from the date on which the product was supplied to the end customer or a maximum of 18 months after delivery from the factory, whichever comes first unless documented differently on the sales agreement.**
- The 12 month warranty period applies from and including the date of delivery to the end customer. A condition of OQUSA handling warranty claims is that the registration card has been properly sent in to OQUSA.
- Replacement parts and repair time are paid by OQUSA on the condition that the claim has been approved. However, reimbursement is not available for travel costs, travel times, consumable materials, hydraulic oil or down time.
- The warranty does not cover faults that have arisen due to natural wear, negligence, incorrect installation or other circumstances outside OQUSA's control.
- The warranty becomes invalid if the OilQuick product has been rebuilt or modified without OQUSA's written approval, or if the product is serviced with parts that are not OilQuick original replacement parts. Replacement parts supplied after the end of the warranty period, have a 3 month guarantee, at which only the replacement part is replaced on the condition that the replacement part has been fitted by an OQUSA approved workshop or representative and that it confirms that no play, contamination, wear or similar has adversely affected the part.
- Faults that occur during the warranty period are replaced by OQUSA on the condition that the claim form is sent to OQUSA within 30 days of the damage occurring and that the fault is eligible for a warranty claim.
- The warranty applies on the condition that the product is installed and controlled according to the requirements and installation instructions given in the applicable manual.
- The warranty only applies if original OilQuick parts are used together with our OilQuick quick coupler systems.
- Warranty parts are sent on a "no charge" order. Failed parts must be available to be returned to OQUSA for no less than 30 days from issue of Warranty Authorization number, this is for review and analysis of failed part upon OQUSA request.

Dealer:



800.321.3396
nascoop.com

