

LUKAS

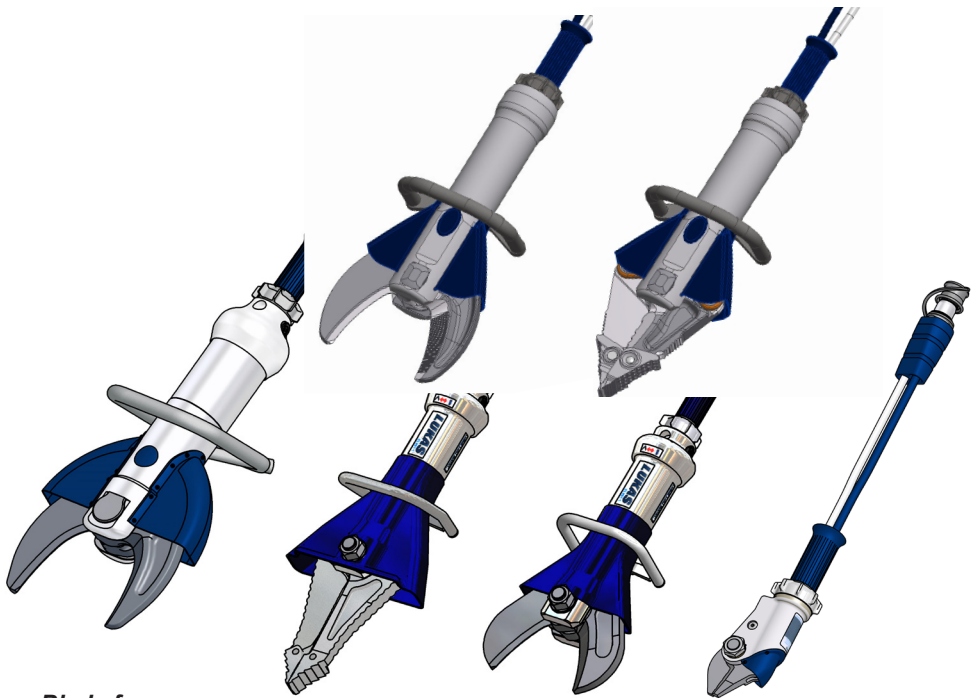
superior equipment for saving lives

Operating instructions for rescue equipment

CE



Cutters and combination tools



Blade forms:



S 3xx
S 7xx



SC

172047085 EN
Edition 03/2023
replaces 06/2021




(Translation of the original operating instructions)

Content	Page
1. Danger classifications	4
2. Product safety	5
3. Proper use	8
4. Functional description	9
4.1 <i>Description</i>	9
4.2 <i>Equipment in detail</i>	10
4.3 <i>Wiring diagram</i>	12
4.4 <i>Operating movement controls</i>	12
4.5 <i>Hydraulic supply</i>	12
4.6 <i>Hose lines</i>	12
5. Connecting the device	13
5.1 <i>General</i>	13
5.2 <i>Coupling the mono-couplings</i>	13
5.3 <i>Coupling the plug couplings</i>	15
6. Operation	15
6.1 <i>Preparatory measures</i>	15
6.2 <i>Operating the star grip</i>	16
7. Cutting, spreading, pulling and squeezing	16
7.1 <i>Safety instructions</i>	16
7.2 <i>Cutting</i>	17
7.3 <i>Spreading (combination tools only)</i>	20
7.4 <i>Pulling (combination tools only)</i>	21
7.5 <i>Squeezing (combination tools only)</i>	22
8. Dismantling the device/deactivation following operation	23
9. Maintenance and service	23
8.1 <i>Cutter or combination tool</i>	23
8.2 <i>Hydraulic unit</i>	23
8.3 <i>Hose lines</i>	23
9.1 <i>Cutter/combination tool, overall</i>	24
9.2 <i>Protective equipment</i>	24

Content	Page
10. Repairs	25
10.1 <i>General</i>	25
10.2 <i>Preventative service</i>	26
10.3 <i>Repairs</i>	27
11. Troubleshooting	39
12. Technical data	42
12.1 <i>Cutters</i>	42
12.2 <i>Combination tools</i>	50
12.3 <i>Torque of the pivot bolt</i>	53
12.4 <i>Cutting capacities</i>	54
12.5 <i>Datasheets for product performance</i>	55
12.6 <i>Recommended hydraulic fluid</i>	66
12.7 <i>Operating and storage temperature ranges</i>	66
13. EC/UKCA declarations of conformity	67
13.1 <i>Cutters</i>	67
13.2 <i>Combination tools</i>	72
14. Notes	75

1. Danger classifications

We differentiate between various different categories of safety instructions. The table shown below provides an overview of the assignment of symbols (pictograms) and signal words to the specific danger and the possible consequences.

Pictogram	Damage/ injury to	Keyword	Definition	Consequences
	Persons	DANGER!	Immediate danger	Death or severe injury
		WARNING!	Potentially dangerous situation	Potential death or serious injury
		CAUTION!	Less dangerous situation	Minor or slight injury
	Property	ATTENTION!	Risk of damage to property/ environment	Damage to the device, damage to the environment, damage to surroundings
		NOTE	Handling tips and other important/ useful information and advice	No injury/ damage to persons/ environment/ device



Wear a helmet with face protection



Wear protective gloves



Wear protective footwear



Proper recycling



Protect the environment



Read and follow the instruction manual

2. Product safety

LUKAS products are developed and manufactured to ensure the best performance and quality when used as intended.

The safety of the operator is the most important consideration in product design. Furthermore, the instruction manual is intended to help you use LUKAS products safely.

In addition to the safety information in these operating instructions, all generally applicable, statutory and other binding national and international accident prevention regulations must be observed and operators must be instructed accordingly.

The device may only be operated by persons with appropriate training in the safety aspects of such equipment, otherwise, there is a risk of injury. All rescue teams working at the place of operation must wear protective clothing. Persons and patients within the rescue equipment's operational range must be protected by placing a shatter guard or suitable alternative device between the working area and the person.

We would like to point out to all users, they should carefully read, understand and follow all operating instructions before using the product.

We further recommend that you have a qualified trainer show you how to use the product.



WARNING / CAUTION!

The operating instructions for the hoses, accessories and connected devices must also be observed!
























Even if you have already received instructions on how to use the device you should still read through the following safety instructions again.










WARNING / CAUTION!

Make sure that the accessories used and the connected devices are suitable for the max. operating pressure!

	Make sure that no body parts or clothing gets caught between the open, visibly moving device parts (e.g. piston claw and cylinder).	Working under suspended loads is not permitted where such loads are being lifted only by means of hydraulic devices. If this work is unavoidable, suitable mechanical supports are also required.	
	Wear protective clothing, a safety helmet with visor, protective footwear and gloves.	Inspect the device before and after use for visible defects or damage.	
 	Immediately report any changes that occur (including changes in operating behavior) to the appropriate persons/departments! If necessary, the device is to be shut down immediately and secured!	All lines, hoses and screw connections must be checked for leaks and externally visible damage. These must be repaired immediately! Escaping hydraulic fluid can cause injuries and fires.	

 	<p>In the event of malfunction, immediately deactivate the device and secure it. Repair the fault immediately (or have it repaired).</p>	<p>Do not carry out any changes (additions or conversions) to the device without obtaining the prior approval of LUKAS.</p>	
 	<p>Observe all safety and danger information on the device and in the instruction manual.</p>	<p>All safety and danger instructions on the device must always be complete and in a legible condition.</p>	 
 	<p>Any mode of operation which compromises the safety and/or stability of the device is forbidden!</p>	<p>Observe all intervals for recurring tests and/or inspections that are prescribed or stated in the instruction manual.</p>	
 	<p>Safety devices must never be disabled!</p>	<p>The maximum permissible operating pressure marked on the device must not be exceeded.</p>	 
	<p>Before switching on/starting up the device and during its operation, make sure that this will not pose any danger to personnel.</p>	<p>Only genuine LUKAS accessories and spare parts are to be used for repairs.</p>	
		<p>Please ensure that you do not become entangled in hose loops and trip when working with or transporting the device.</p>	 
 	<p>When working close to live components and cables, suitable measures must be taken to avoid current transfers or high-voltage transfers to the device.</p>	<p>Please note that, when spreading and cutting, tearing or breaking can cause material to fall, or sudden removal of such can cause it to suddenly catapult off, and necessary precautions must be taken.</p>	
	<p>The build-up of static charges and possible sparking must be avoided when handling the device.</p>	<p>Only touch broken-off or cut-off parts while wearing protective gloves, as the torn/ cut edges can be very sharp.</p>	

	The device is filled with hydraulic fluid. This hydraulic fluid can be detrimental to health if it is swallowed or its vapor is inhaled. Direct contact with the skin must be avoided for the same reason. Also, when handling hydraulic fluid, note that it can negatively affect biological systems.	When working with or storing the device, ensure that the function and the safety of the device are not impaired by the effects of severe external temperatures and that the device is not damaged in any way. Please note that the device can also heat up over a long period of use.	
	When working, ensure sufficient lighting so that the cutting process and the behavior of the cutting device and cutting material is clearly visible.	Before transporting the device, always ensure that the accessories are positioned in such a way that they cannot cause an accident.	
	Always keep this instruction manual easily accessible at the place of operation.	Make sure all parts removed, oil and liquid residues, and packaging materials are disposed of properly!	 

In addition to the safety instructions in these operating instructions, all generally applicable, statutory and other binding national and international accident prevention regulations must be observed, and operators must be instructed accordingly.

WARNING / CAUTION / ATTENTION!

This device is intended **exclusively** for the **purpose described in the instruction manual (see chapter “Proper use”)**. Any other use is **not in accordance with its proper use**. The manufacturer/supplier is not liable for any damage resulting from improper use. The user bears sole responsibility for such use. Proper use includes observance of the instruction manual and compliance with the inspection and maintenance conditions.



Never work in a fatigued or intoxicated state!



3. Proper use

LUKAS “SC” combination tools and LUKAS “S” cutters are designed specifically for rescuing and retrieving victims in traffic, rail or air accidents and for carrying out rescues from buildings. They are used for freeing people injured in accidents e. g. by cutting doors, roof bars and hinges. By using the LUKAS combination tools, trapped persons can also be freed e.g. by spreading out doors and/or by removing obstacles with the aid of a chain set. In general, the combination tool can be used to cut, pull, push, spread, squeeze and lift objects. In general, LUKAS cutters can only be used to cut objects. All objects to be worked on must be secured using stable supports or substructures.

Sample applications of the combination tools:



Sample application of the cutters:



LUKAS cutters and combination tools can also be used under water at a depth of up to 40 m (131 ft).



ATTENTION!

In this case, you must pay strict attention to any leaks in order to prevent risks threatening the environment.



WARNING / CAUTION!

All objects to be worked on must be secured using stable supports or substructures.



WARNING / CAUTION / ATTENTION!

The following may not be cut/squeezed:

- **live** cables
- **preloaded and hardened** parts such as springs, spring steels, steering columns, bodywork reinforcements, hinges and fixing bolts, e.g. for fastening seat belts
- pipes under gas or liquid pressure,
- compound materials (steel/concrete)
- explosive bodies such as air bag cartridges

NEVER operate the rescue equipment at a higher operating pressure than that stated in the chapter "Technical data". A higher setting can cause damage to property and/or lead to injuries.

LUKAS rescue equipment may only be used in an area at risk of explosion if an explosion has been prevented by appropriate measures. You must also take into account the fact that sparks may be created, for example when cutting an object.

When working in potentially explosive atmospheres, all applicable legal, national and international regulations, standards and safety rules for avoiding explosions must be observed without restriction.

You can obtain accessories and replacement parts for the rescue devices from your authorized LUKAS dealer.

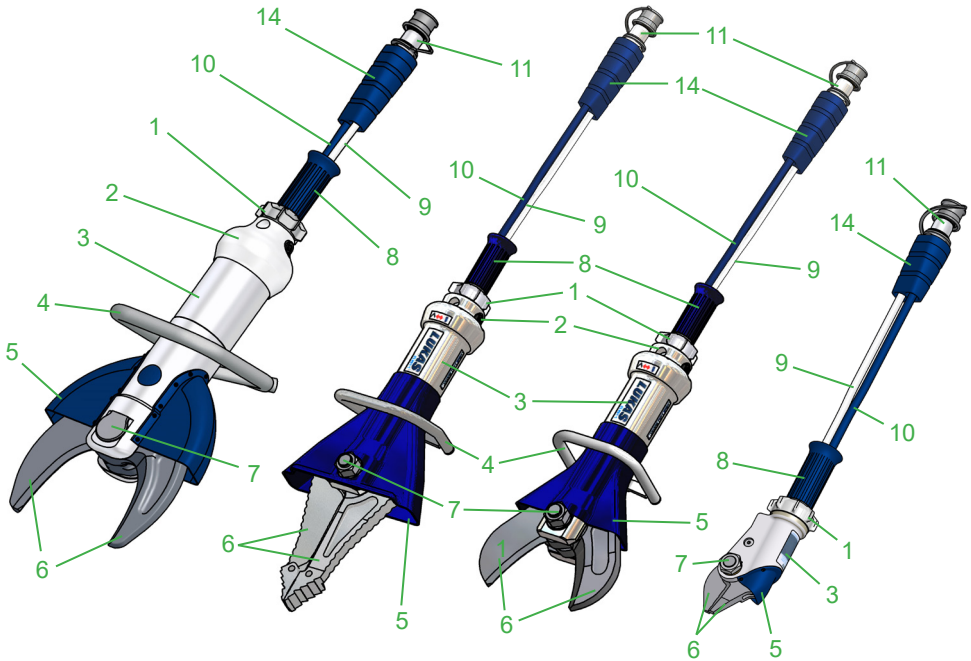
4. Functional description

4.1 Description

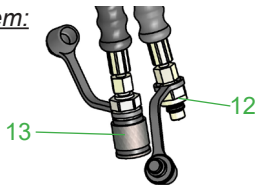
The equipment is designed such that, via a hydraulically activated piston, two equal, opposite blade arms are symmetrically opened/closed by mechanical joints, thereby spreading, squeezing, pulling or cutting objects.

All cutters and combination tools ensure a full load-holding function when disconnected from the hydraulic supply (e.g. when unintentionally decoupled, defective hose, etc.).

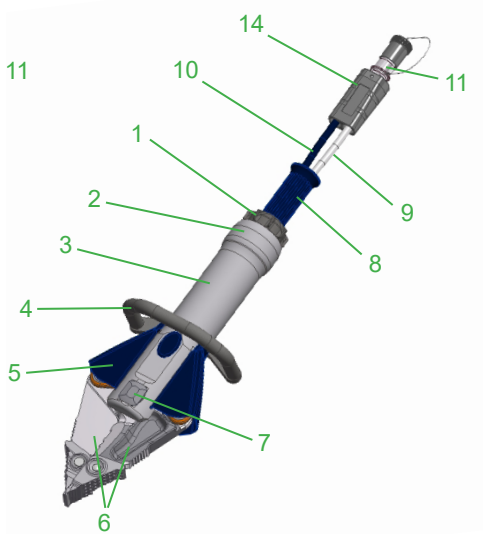
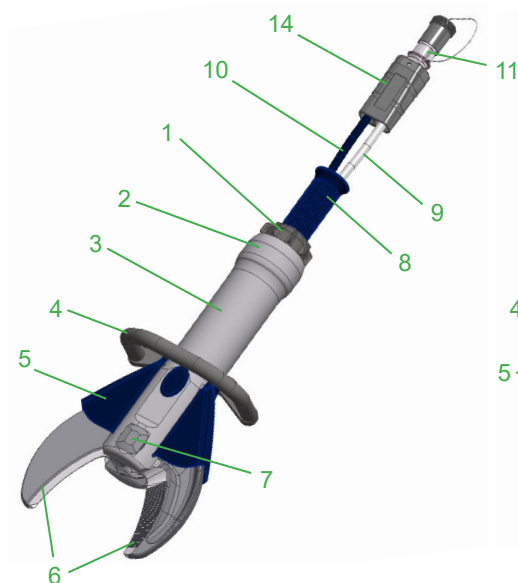
4.2 Equipment in detail



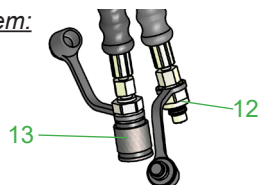
Quick-disconnect coupling system:



- 1 Star grip
- 2 Control valve
- 3 Body of rescue device
- 4 Handle
- 5 Protective hose/protective cover
- 6 Blade arm
- 7 Pivot bolt with self-locking nut
- 8 Handhold
- 9 Pressure hose
- 10 Return hose
- 11 Mono-coupling nipple
- 12 Quick-disconnect coupling nipple
- 13 Quick-disconnect coupling sleeve
- 14 Kink-protection



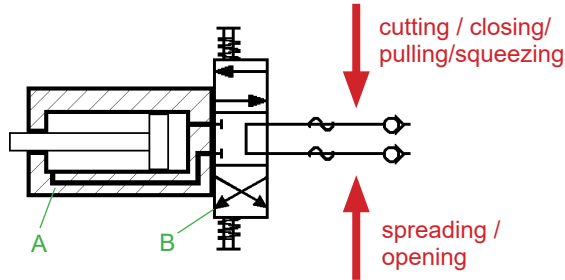
Quick-disconnect coupling system:



- 1 Star grip
- 2 Control valve
- 3 Body of rescue device
- 4 Handle
- 5 Protective hose/protective cover
- 6 Blade arm
- 7 Pivot bolt with self-locking nut
- 8 Handhold
- 9 Pressure hose
- 10 Return hose
- 11 Mono-coupling nipple
- 12 Quick-disconnect coupling nipple
- 13 Quick-disconnect coupling sleeve
- 14 Kink-protection

4.3 Wiring diagram

To facilitate how the system functions, a simplified schematic diagram (hydraulic cylinder of the rescue equipment (A) + hand valve (B)) is shown here.



4.4 Operating movement controls

The piston movement is controlled by the star grip on the attached valve.



Fig. 3

4.5 Hydraulic supply

Only LUKAS motor pumps or hand pumps may be used to drive the equipment. If the pump is made by a different manufacturer, it must be ensured that it has been made according to LUKAS' specifications, otherwise dangerous torques can result for which LUKAS is not responsible. Ensure in particular that the authorized operating pressure for LUKAS equipment is not exceeded.



NOTE:

Before using other pumps made by other manufacturers, you should contact LUKAS or an authorized dealer.

4.6 Hose lines

The pump unit and the rescue device are connected by hoses.

5. Connecting the device

5.1 General

Two short hoses are fitted on the device and connected to the pump unit via a pair of hoses. All hose lines are identified by color and fitted with couplings to prevent any connection errors.



NOTE:

The devices can be equipped with different coupling systems. They differ only by article number but not by designation. Of course, the coupling systems can also be modified at a later stage.

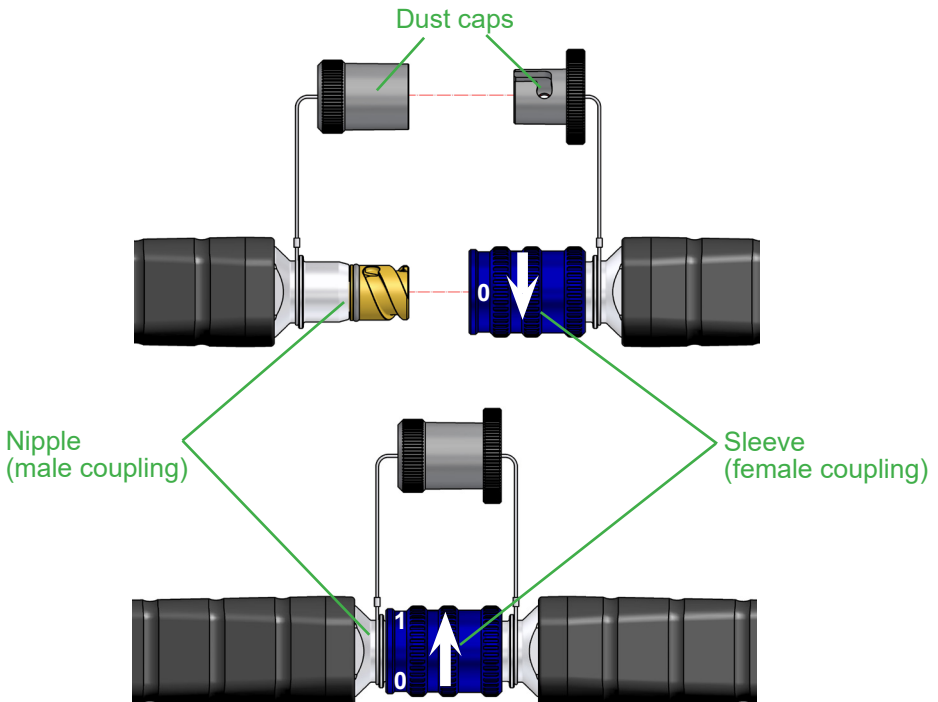


WARNING / CAUTION / ATTENTION!

Prior to connecting the devices, ensure that **all the components being used** are suitable for the **maximum operating pressure of the pump unit**. In case of doubt, you **must contact LUKAS directly**!

5.2 Coupling the mono-couplings

The device is connected to the hydraulic pump via quick-disconnect coupling halves (sleeve and nipple), which eliminates confusion.



Before coupling, remove the dust caps, then connect the nipple and sleeve and turn the locking sleeve of the female coupling in direction “1” until the locking sleeve latches. The connection is now established and secured. Decoupling is accomplished by turning the locking sleeve in direction “0”.

The devices can also be coupled under pressure, provided that the connected work equipment is not activated.



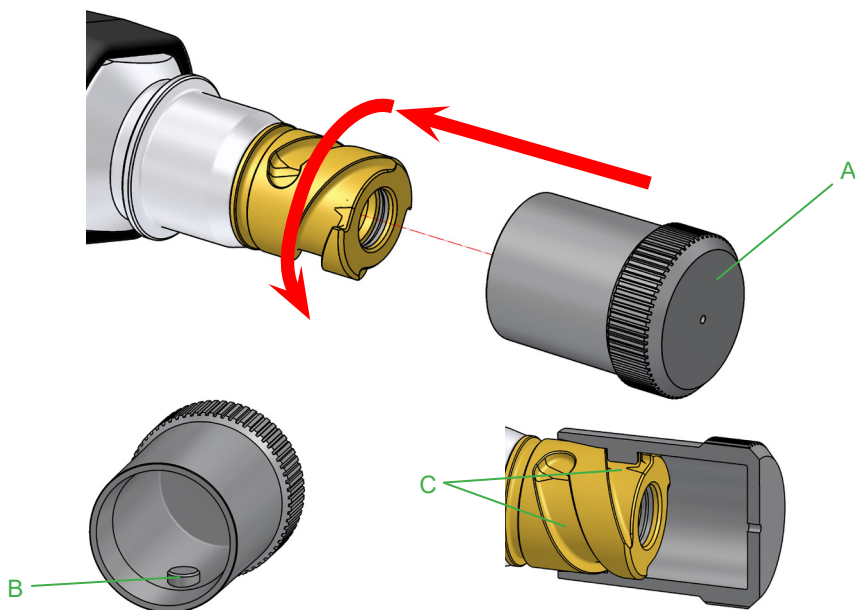
NOTE:

We **recommend** connecting the coupling halves in a **depressurised** state when working in low ambient temperatures, and using extension hose assemblies/hose reels, as otherwise the coupling may require the application of a great deal of force.

The dust caps supplied must be replaced to provide protection against dust.

Mounting the dust caps:

The dust caps “A” have two internal pins “B”. The dust caps must be placed on the coupling nipple in such a way that the pins are guided into the grooves “C”. Screw the dust caps on until the limit stop attaches them to the coupling nipple.



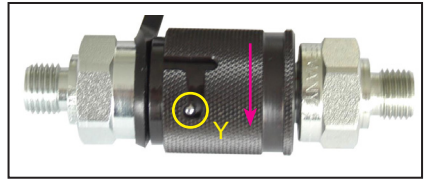
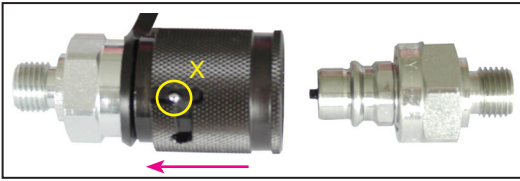
WARNING / CAUTION / ATTENTION!

The mono-couplings must **not** be **screwed** off the hose lines and/or the hose lines must not be **confused**.



5.3 Coupling the plug couplings

The device is connected to the hydraulic pump via quick-disconnect coupling halves (sleeve and nipple), which eliminate confusion.



Before coupling, remove dust protection caps, then pull back and hold the locking sleeve of the coupling sleeve (position X). Push nipple and coupling sleeve together and release the locking sleeve. Finally, turn the locking sleeve to position Y. The connection is now established and secured. Uncoupling is carried out in the reverse order.



ATTENTION!

Always connect the return line first and then the supply line!



NOTE:

Coupling the devices is only possible if the hoses are **depressurized**.

The dust caps supplied must be replaced to provide protection against dust.



WARNING / CAUTION / ATTENTION!

Some of the quick-disconnect couplings have special functions and may therefore **not** be **unscrewed** from the hose lines and/or **interchanged**!

6. Operation

6.1 Preparatory measures

6.1.1 Commissioning

Before initial operation and after repairs, the device must be bled:

- Connect the device to the hydraulic pump (see chapter “Connecting the device”).
- Completely open and close the blade arms of the equipment several times without any load (see “Operating the star grip” chapter).



NOTE:

We recommend that when bleeding the system, the attached power unit for the hydraulic supply should stand on a higher level than the body of the rescue device.

Recommended procedure for bleeding the rescue device:

- 1.) Fully open and close 1x with the blade arms facing **upwards**
- 2.) Fully open and close 1x with the blade arms facing **downwards**
- 3.) Fully open and close 1x with the blade arms facing **upwards**
- 4.) Fully open and close 1x with the blade arms facing **downwards**

6.1.2 Inspecting the pump unit

➔ See the separate operating instructions for the appropriate power unit (or the hand pump).



NOTE:

Before starting up the hydraulic unit each time, make sure that the actuating valves are set to depressurized circulation.



NOTE:

Before coupling the quick-disconnect couplings, the actuating valves of the pump power unit must be set to depressurized circulation.

If you use mono-couplings, you can also couple when the hoses are pressurized.

6.2 Operating the star grip

Opening the device ():

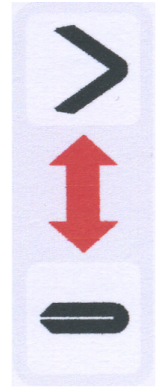
Turn the star grip in a clockwise direction (in the direction of the relevant symbol) and keep in this position.

Closing the device ():

Turn the star grip in a clockwise direction (in the direction of the relevant symbol) and keep in this position.

“Dead-man’s” function:

Following release, the star grip automatically returns to the central/neutral position, fully guaranteeing retention of the load.



7. Cutting, spreading, pulling and squeezing

7.1 Safety instructions

Before the rescue work can commence, the position of the object involved in the accident must be stabilized.

You must ensure an adequate substructure and/or adequate support for the object.

Worldwide safety guidelines pertaining to the specific country must be observed and complied with. In the Federal Republic of Germany, regular safety inspections according to the regulations of the Gesetzlichen Unfallversicherung (GUV; “Legal accident insurance”) are mandatory.

In areas at risk of explosion, the equipment should only be used if an explosion has been prevented by appropriate measures.

The following are to be worn when working with the rescue equipment:

- protective clothing,
- safety helmet with visor or protective goggles,
- protective gloves
- and, if necessary, ear protection

Before operating the rescue device, you must ensure that no participants or bystanders are at risk from the movements of the rescue device or from flying fragments. Avoid unnecessary damage to property belonging to others or to objects not involved in the rescue or damage caused by flying fragments.



Reaching between the blade arms is strictly forbidden!

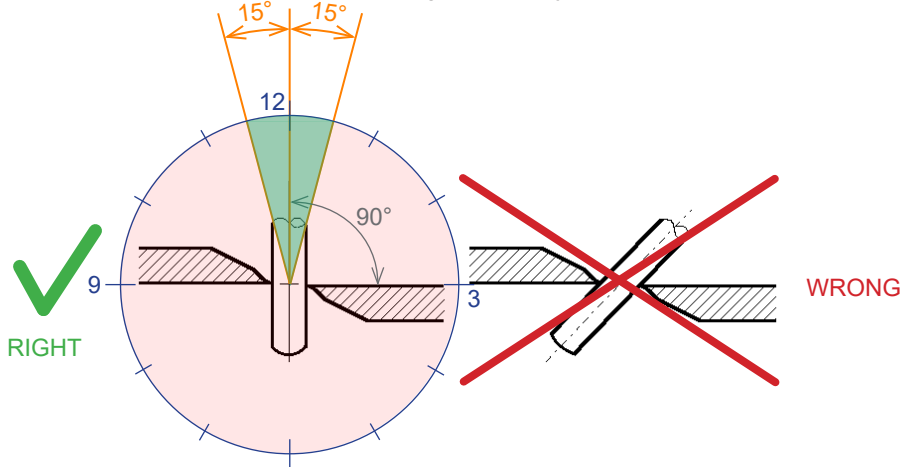


WARNING / CAUTION!

The particular force action of the rescue equipment during operation could cause pieces of the vehicle to break off or fly off, posing a danger to persons. Therefore, those not involved in the rescue operation should **keep at a distance appropriate to the situation**. Persons and patients within the rescue equipment's operational range must be protected by placing a shatter guard or suitable alternative device between the working area and the person.

7.2 Cutting

The blades should be positioned at a 90° angle to the object to be cut, if possible.



WARNING / CAUTION / ATTENTION!

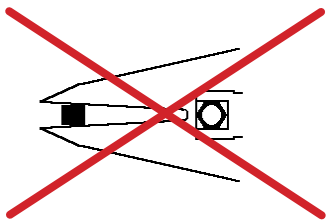
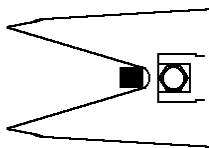
If the cutter twists to the side at an angle of 15° during the cutting process, the cut must be re-positioned, otherwise the transverse load on the blade will be too high and this could damage the device, particularly the blades.



Higher cutting capacities can be achieved by cutting as close as possible to the blade's pivot point.




RIGHT



WRONG

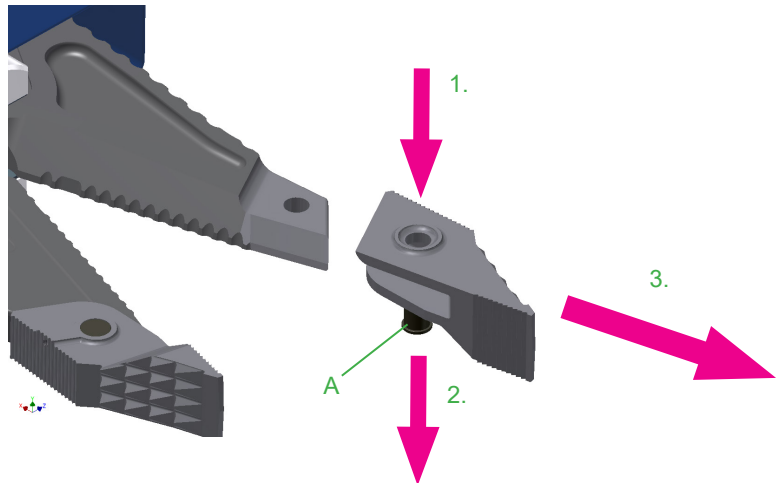
During cutting, the gap between the blade tips (in the transverse direction) must not be exceeded, otherwise the blade is in danger of breaking:

Cutter/combination tool	max. gap at the blade tips [mm] / [in.]
S 120	2 / 0.08
S 312	3 / 0.12
S 377	
S 378	
S 700	
SC 358	
SC 557	
SC 758	
S 788	5 / 0.20
S 789	
S 799	



ATTENTION!
Avoid cutting particularly high-strength parts of the vehicle's bodywork (e.g. side-impact protection): this almost always causes damage to the cutter/combination tool.

Cutting with SC 358 and SC 758



The spreading tip can be removed from the SC 358 and SC 758. This prevents the object to be cut from getting stuck between the spreader tips, hindering the cutting process.

Removing the tip

Step 1:

To remove the spreader tips, first push out bolt "A" a little, with your finger or an object. A fair amount of force needs to be applied initially, as the bolt has a ball catch to prevent it from falling out unintentionally.

Step 2:

The bolt can then be gripped by the flange and pulled out up to the limit stop. The limit stop will prevent the bolt from being pulled out entirely. This means that it cannot be lost.

Step 3:

Pull the spreader tip forwards to remove it.

Attaching the spreader tip:

Attachment of the spreader tip takes place in the reverse sequence.

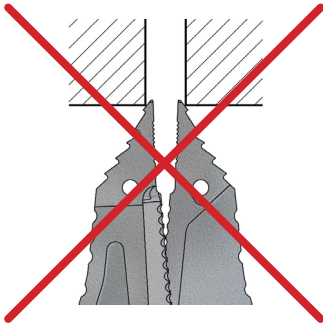


Ensure that the bolt is always completely pushed in and engages. If the bolt has not engaged, this may result in the tip inadvertently coming loose while in use. This in turn could result in damage to the rescue equipment. The rescue device could also slip or parts could be flung off, resulting in injuries to both the operator and the crash victim.

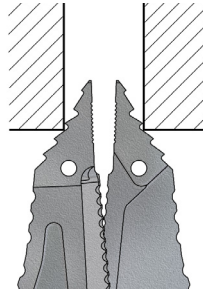
Care must also be taken that the bolt does not inadvertently come loose while the device is in use.

7.3 Spreading (combination tools only)

Only use the front area of the tips to increase the gap. Full spreading capacity can be achieved when approximately half of the grooved area of the tips is used. The greatest force is created in the rear area of the spreading range of the combination blade.

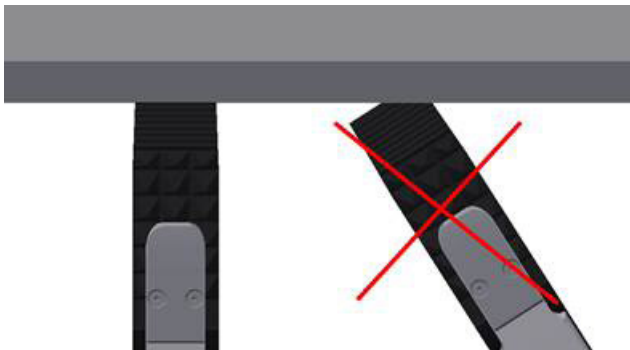


Working surface is too small,
tips slip off.
Only for increasing the size
of a gap (not suitable for
spreading)



Tips get a safe grip.

When carrying out spreading and lifting work, make sure that the tips are force-fitted across their full width (see figure below). Otherwise there is a risk that the parts will jump away.



7.4 Pulling (combination tools only)

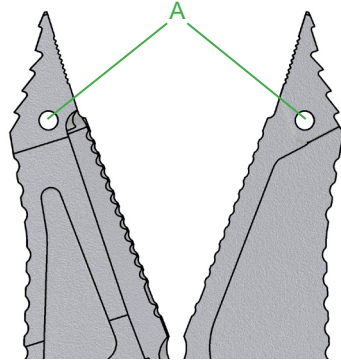
You may only use LUKAS chain sets for pulling purposes.
During the pulling process, ensure that the bolt and hook fit correctly to prevent the chain from slipping.
Only chain sets in a perfect condition may be used.
The traction chains must be checked by an expert at least once a year.

See separate operating instructions for the relevant LUKAS chain set in order to correctly attach, affix and use the chain sets.

The connecting pieces for LUKAS chain sets are fastened to the blades using load bolts in the holes "A". (see illustration on the right)

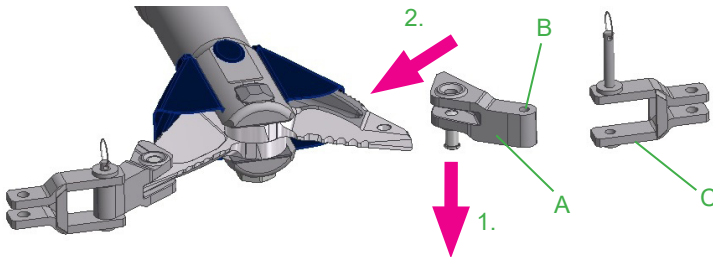
Chain sets:

for SC 358: KSV 11
for SC 557: KSV 13
for SC 758: KSV 13



Cutting with SC 358 and SC 758

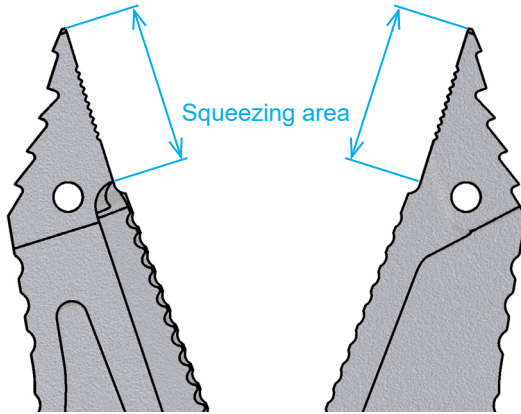
To use the SC 358 and the SC 758 for pulling, the spreader tip must first be removed (see 7.2).
Then attach the pulling attachment "A".
First pull out the bolt of the pulling attachment up to the limit stop, push the pulling attachment onto the arm and push in the bolt completely until it engages (see also Section 7.2, "Removing and attaching the spreader tip").



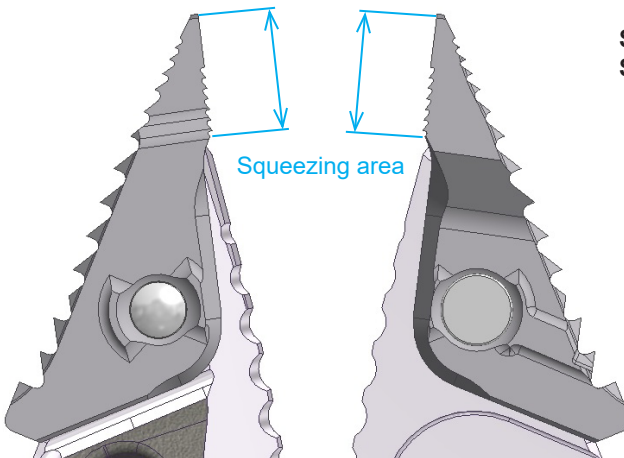
The matching chain lock "C" can then be fixed to the hole "B" of the pulling attachment (see separate operating instructions for the chain lock).

7.5 Squeezing (combination tools only)

In principle, squeezing can only take place near the tips (see figure below).



SC 557



SC 358

SC 758

8. Dismantling the device/ deactivation following operation

8.1 Cutter or combination tool

Once the work has been completed, close the blade arms so that the distance to the tip is just a few mm. This relieves hydraulic and mechanical strain on the device.



NOTE:

Never store the cutter/combination device with fully closed blade arms. Complete closure of the blade arms can cause hydraulic and mechanical stress to build up again in the device.

Clean the rescue equipment of any stubborn dirt that may have become attached during use. If the device is to be stored for a longer period of time, clean the outside of the device completely and oil the mechanically moving parts.

Avoid storing the rescue equipment in a damp environment.

Also observe the separate operating instructions for the hoses.

8.2 Hydraulic unit

Upon completion of the work, the power unit must be deactivated.

8.3 Hose lines

Decoupling is done as described in the “Connecting the device” chapter.

Make sure that you put the dust caps back on the couplings.

9. Maintenance and service

The devices are subject to very high mechanical stress. For this reason, a visual inspection must be carried out after each use, but at least once every six months. These inspections enable the early detection of wear and tear, which means that punctual replacement of these wearing parts prevents breakage. Also regularly check the torque of the pivot bolt.

(Torque M_A see “Technical Data”)

A crack test of the shear blades is also essential every three years. A special crack testing kit is available for this purpose.

Every three years – or if you have any doubts about safety or reliability – an additional functional check must be carried out. (Comply with the applicable national and international regulations regarding the maintenance intervals of hydraulic devices). In the Federal Republic of Germany, regular safety inspections according to the regulations of the Gesetzlichen Unfallversicherung (GUV; “Legal accident insurance”) are mandatory.



ATTENTION!

Clean any soiling from the device before checking!



WARNING / CAUTION / ATTENTION!

To perform maintenance and repairs, personal safety equipment appropriate for the work is a mandatory requirement.



9.1 Cutter/combination tool, overall

Inspections to be carried out:

Visual inspection

Cutter/combination tool

- Opening width of the blade arms at the tips (see chapter “Technical data”),
- General tightness (leaks),
- Operability of the star grip,
- Existence and stability of handle,
- Labels complete and legible,
- Covers in perfect condition,
- Check the torque of the pivot bolt (for torque M_A , see “Technical Data”),
- Couplings easy to couple,
- Dust protection caps present.

Blade arms

- Blade arms free of cracks and nicks or deformations on the cutting surfaces,
- Cutting surfaces fit on top of each other without making contact,
- Pins and locking rings on the spreader arms are present and in a proper condition,
- Grooving of the tips must be clean and squared, and not have any tears (applies to combination tools).

Hoses (see also operating instructions for hose lines)

- Visual inspection for visible damage,
- Check for leaks.
- Check date of manufacture (note the 10-year replacement period).

Functional check

- Flawless opening and closing upon activation of the star grip,
- No suspicious noises,
- No further movement of the blade arms when the valve activation is interrupted during the process (dead-man's function),

9.2 Protective equipment

- Check the guards on/around the rescue equipment, especially the protective cover for the moving parts (this must be free of cracks).

10. Repairs

10.1 General

Service work may only be performed by the device manufacturer or by personnel trained by the device manufacturer and authorized LUKAS dealers.

Only LUKAS spare parts may be used to replace all components (see spare parts list), as special tools and compliance with, assembly instructions, safety aspects and inspections are required (see also chapter "Maintenance and Servicing").

During assembly, ensure that all components are particularly clean, as dirt can damage the rescue equipment!



WARNING / CAUTION / ATTENTION!

Protective clothing must be worn when repairs are being carried out, as the devices may also be pressurized when not in operation.



NOTE:

Always register your device on the LUKAS website. This is the only way to guarantee extended warranty cover.



NOTE:

Before using couplings from other manufacturers, you should always contact LUKAS or an authorized dealer.



NOTE when using the quick-disconnect coupling system:

Overpressure protection of the rescue equipment

(Version with yellow coupling nipple on the return hose)

If the device's short hoses are not connected to a power unit, temperature increases can inadvertently cause pressure to build up in the equipment. Therefore, the return hose of the device is equipped with a safety coupling (quick-disconnect coupling nipple, yellow). Unwanted overpressure (approx. 1.5 MPa) is automatically relieved via this nipple: hydraulic fluid leaks out. Should hydraulic fluid be released more frequently from the coupling nipple, please contact your dealer or LUKAS directly.

If couplings from a different company are used which do not have this function, the overpressure protection can react in the valve of the rescue equipment. Hydraulic fluid leaks out in the area of the star grip. Following the reduction in pressure, the valve is tight once again.

Should the valve leak permanently, please immediately contact your dealer or LUKAS directly.



ATTENTION!

Because LUKAS rescue devices are designed for highest performance, only components specified in the spare parts list for the appropriate equipment may be replaced.

Other components in the device may only be replaced if:

- You have participated in an appropriate LUKAS service training course.
- You have the express permission of the LUKAS Customer Service (following application, assessment for granting permission - assessment necessary in each individual case!).

10.2 Preventative service

10.2.1 Care instructions

The device must be cleaned externally from time to time to protect it from external corrosion, and the metal surfaces must be rubbed with oil.

10.2.2 Function and load test

If you have any doubts about safety or reliability, an additional function and load test must be carried out.

LUKAS offers appropriate test equipment for this.

10.2.3 Changing the hydraulic fluid

- Replace the hydraulic fluid after approx. 200 operations, or after three years at the latest,
- It must always be changed whenever the hydraulic fluid for the accompanying pump (motor/hand pump) is replaced. This prevents the fresh hydraulic fluid from becoming contaminated by the used fluid in the rescue equipment.

Procedure:

1. Close the blade arms (until the tips are almost touching).
2. Change the hydraulic fluid at the pump. Observe the separate operating instructions for the pump being used.
3. Unscrew the return hose at the pump:
 - **when the hose is connected directly to the pump:**
Completely unscrew the connection nut of the connection piece of the blue return hose.
 - **when the hose is connected via the mono-coupling to the pump:**
Remove the kink protection from the mono-coupling nipple.
Completely unscrew the connection nut on the blue return hose of the mono-coupling nipple.
 - **when the hose is connected via the quick-disconnect coupling to the pump:**
Completely unscrew the connection nut of the quick-disconnect coupling nipple on the blue return hose.
4. Put the return hose in a separate collecting basin to collect any hydraulic fluid remaining in the equipment.
5. Slowly open the rescue device (the pump should be operating during this time). The old hydraulic fluid from the ring space side runs via the return hose into the separate collecting basin, and must be disposed of in the same manner as the pump's old hydraulic fluid.
6. Switch off the (motor) pump/no longer activate it (e.g. hand pump).
7. Reconnect the return hose to the pump:
 - **when the hose is connected directly to the pump:**
Screw the connection nut of the connection piece of the blue return hose back on. (Observe the necessary torque of $M_A = 40 \text{ Nm}$)
 - **when the hose is connected via the mono-coupling to the pump:**
Screw the connection nut of the blue return hose on the mono-coupling nipple back on. (Observe the necessary torque of $M_A = 40 \text{ Nm}$)
Pull back the kink protection on the couplings as far as the limit stop.
 - **when the hose is connected via the quick-disconnect coupling to the pump:**
Screw the connection nut on the quick-disconnect coupling of the blue return hose back on.
(Observe the necessary torque of $M_A = 35 \text{ Nm}$)
8. Bleed the rescue device as described in the "Preparatory measures" chapter.

10.3 Repairs

10.3.1 Changing the blades of cutter S 120

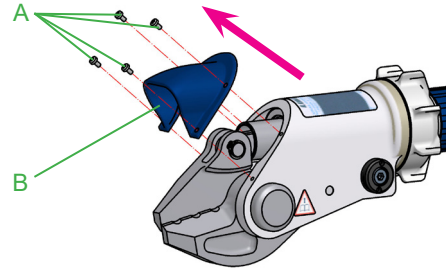
1. First of all, carefully clean the rescue equipment.
2. Next, close the blade arms so that the tips are almost touching.



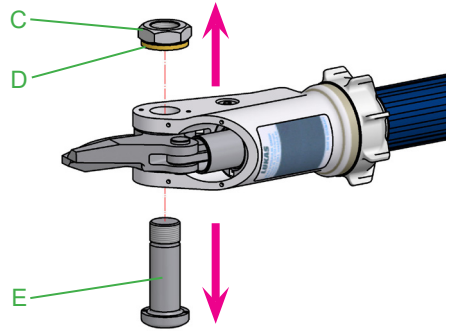
NOTE:

The blade bolts are only accessible when the blade arms are almost touching.

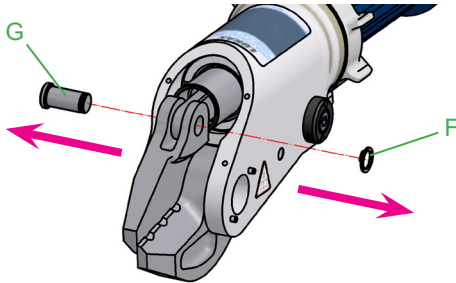
Further procedure:



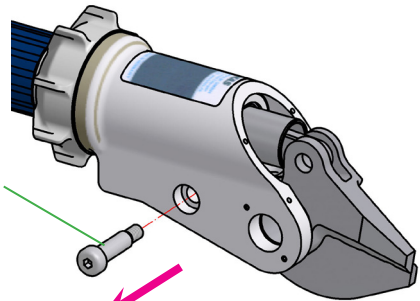
3. Remove screws "A" and hand guard "B".



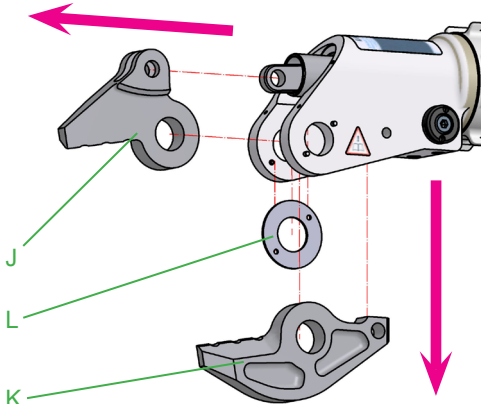
4. Remove nut "C" and Nord-Lock washer "D" (stuck together). Then push out the pivot bolt "E".



5. Remove retaining ring "F" and push out blade bolt "G".



6. Remove fitting screw "H".

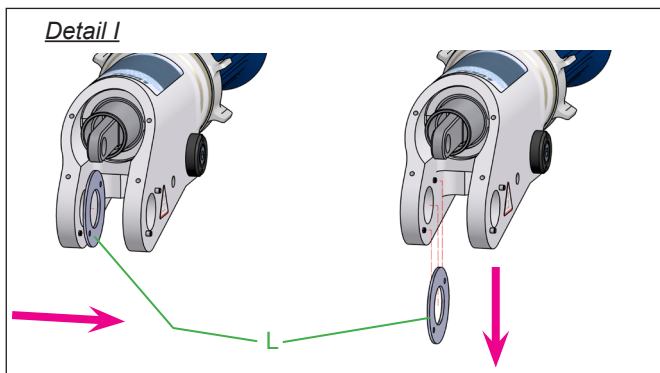


7. You can now remove blades "J" and "K", remove the sliding washer "L" and, if necessary, replace the blades and/or sliding washer.

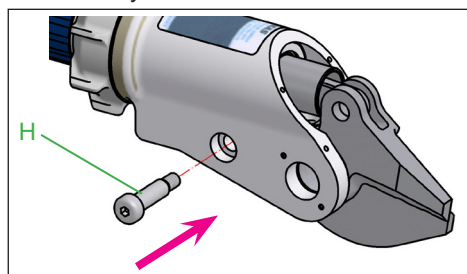


NOTE:

To remove the sliding washer, it must first be removed from the dowel pins (see detail I).



8. Assembly of the new blades is carried out in reverse order.



NOTE:

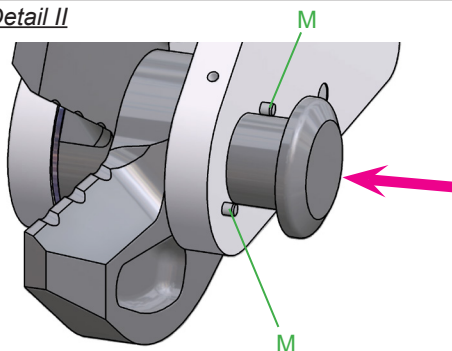
Tighten the fitting screw "H" during assembly with a torque of $M_A = 40 \text{ Nm}$.



NOTE:

When assembling the pivot bolt, ensure that it is fixed with the dowel pins "M" as shown in detail II, and that it is prevented from twisting.

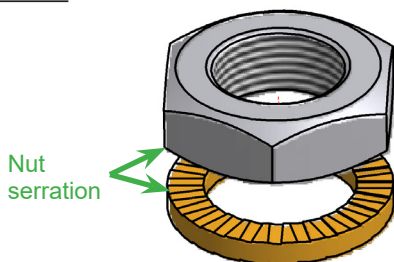
Detail II



NOTE:

Should the adhesion between the Nord-Lock washer and the nut become unstuck, they can still be used. However, during assembly, always ensure that the serrations of the nut and the Nord-Lock washer are positioned on top of each other (see detail III).

Detail III



ATTENTION!

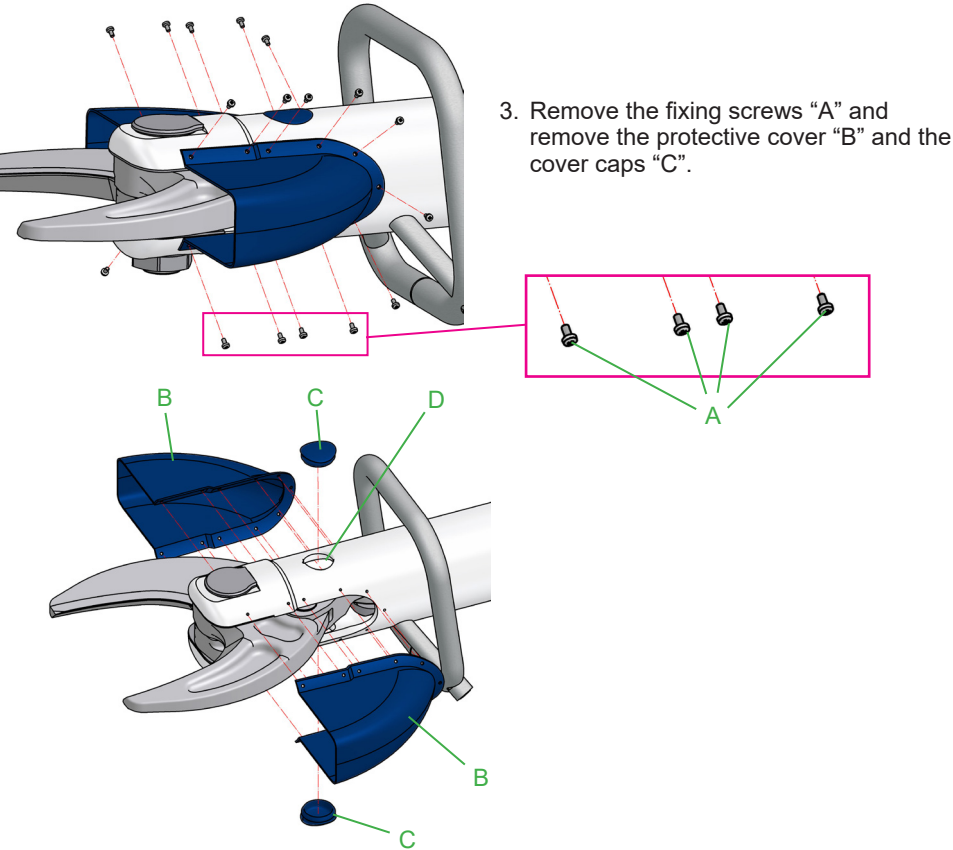
Don't forget to apply LUKAS special grease to all sliding surfaces.

10.3.2 Replacing the blade, protective cover and hand grip of cutter S7xx

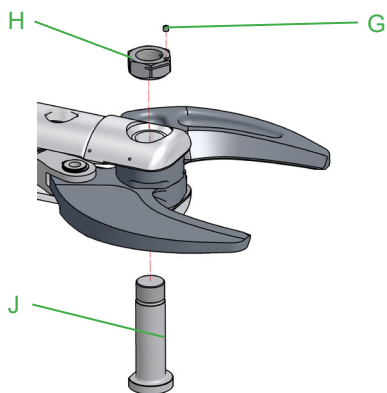
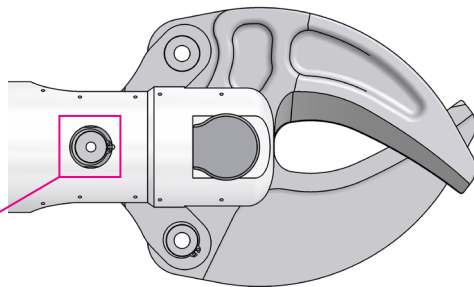
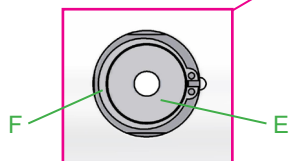
<i>Components to be replaced</i>	<i>Required work steps</i>
Protective cover	1. - 3. and 8.
Pivot bolt	1. - 5. and 8.
Handle	1. 6. and 8.
Blade	1. - 7. and 8.

Work steps:

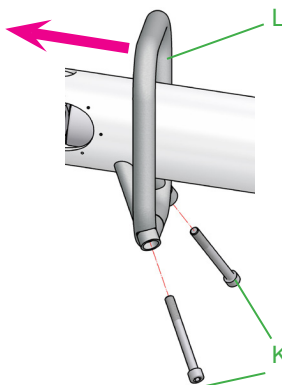
- 1. First of all, carefully clean the rescue equipment.
- 2. Next, close the blade arms so that the tips are almost touching.



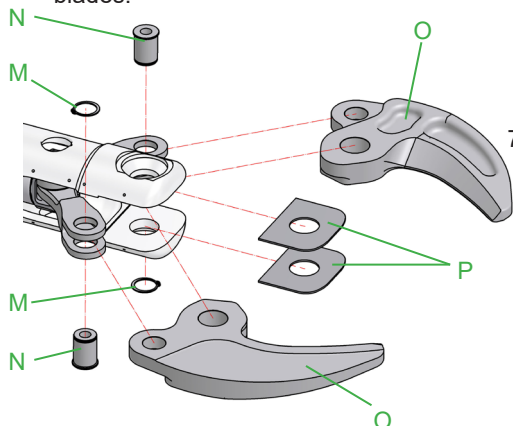
4. Move the blade arms on the unit until the pin "E" and the locking rings "F" can be accessed through the hole "D". Then turn the unit off and disconnect it from the hydraulic supply (uncouple).



5. First remove the grub screw "G", then the pivot bolt nut "H" and then pull out the pivot bolt "J".



6. Release the fixing screws "K" and remove them. The handle "L" can now be pulled out forwards over the blades.



7. Remove the locking rings "M" and push the pin "N" out. You can then pull out the blades "O" and the slide plates "P".

8. The work steps must be carried out in reverse order to fit the new parts.



ATTENTION!

Don't forget to apply LUKAS special grease to all sliding surfaces.



NOTE:

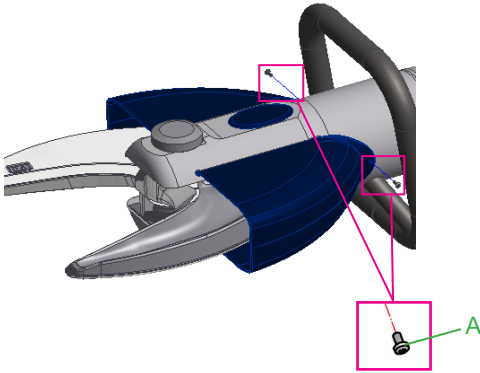
The torque required can be taken from the spare parts list of your particular unit.

**10.3.3 Replacing the blade, protective cover and hand grip on
cutterS 312, S 377, S 378, S 789 and on
combination tool SC 358, SC 557 and SC 758**

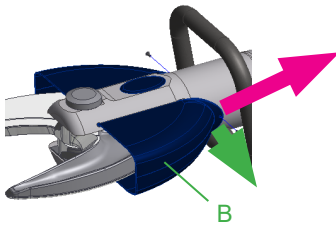
<i>Components to be replaced</i>	<i>Required work steps</i>
Protective cover	1., 2. and 7.
Pivot bolt	1. ., 4. and 7.
Handle	1. 6. and 7.
Blade	1. - 5. and 7.

Work steps:

1. First of all, carefully clean the rescue equipment.



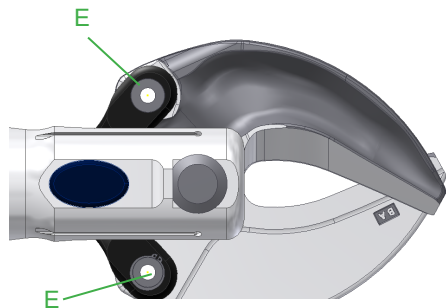
2. Remove the two fixing screws "A" and remove the protective cover "B". To do this, first pull the rounded rear edge outwards and then backwards through the hand grip, as the edges of the protective cover adjoining the cylinder body are kept in place by guide grooves. If necessary, loosen the hand grip and move it backwards to obtain sufficient space to pull it out.

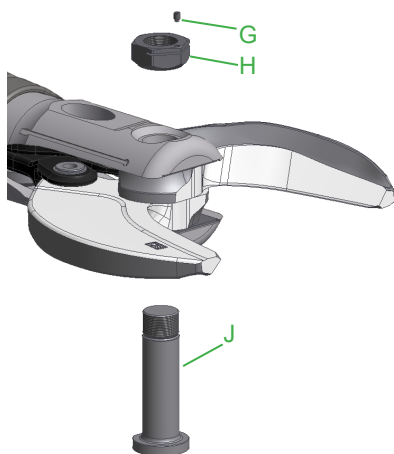


WARNING / CAUTION!

When operating the device with the hand guard removed, there is an increased risk of injury caused by the exposed, moving elements.

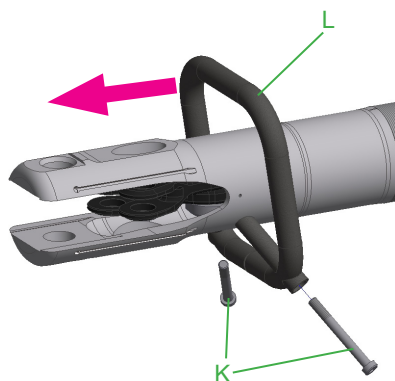
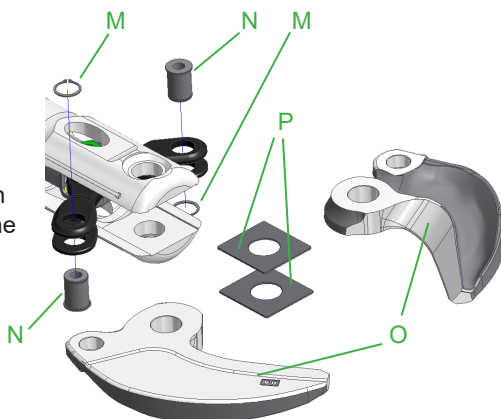
3. Move the cutting arms of the device until the bolt "E" is easily accessible. Now switch off the device and remove the battery or unplug the power supply from the device.





4. First remove the grub screw "G", then the pivot bolt nut "H" and then pull out the pivot bolt "J".

5. Remove the locking rings "M" and push the pin "N" out. You can then pull out the blades "O" and the slide plates "P".



6. Release the fixing screws "K" and remove them. Handle "L" can now be pulled off forwards.

7. The work steps must be carried out in reverse order to fit the new parts.



ATTENTION!

Apply LUKAS special grease to all sliding surfaces!



NOTE:

The torque required can be taken from the spare parts list of your particular unit.

10.3.4 Replacing or tightening hoses

The hoses of the pressure and/or return pipe are leaking or defective. Tighten the hose connections on the safety valve.

(Warning! Observe torque of $M_A = 40 \text{ Nm.}$)



NOTE when using mono-couplings:

If you wish to replace the hoses, you must first dismantle the mono-couplings.



CAUTION (when using the mono-coupling-system)!

Make sure that the connection "T" of the rescue device is always connected to the connection "T" of the mono-coupling.



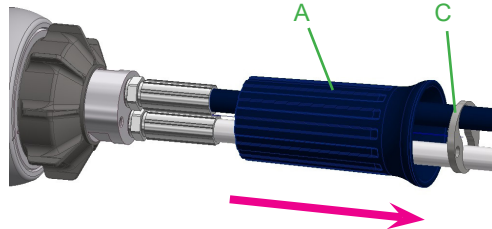
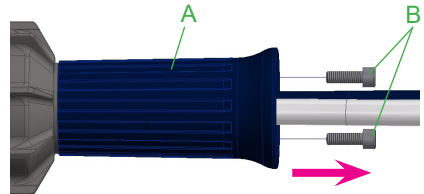
CAUTION (when using a quick-disconnect coupling system)!

The return hose, which is screwed onto the port "T" of the rescue device, must always be equipped with a quick-disconnect coupling nipple.

However, the supply hose line must be equipped with a quick-disconnect coupling sleeve.

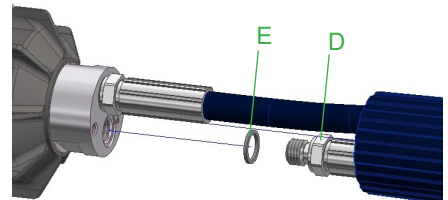
Procedure:

1. Release the two screws "B" (hexagonal socket) in the handle sleeve "A".



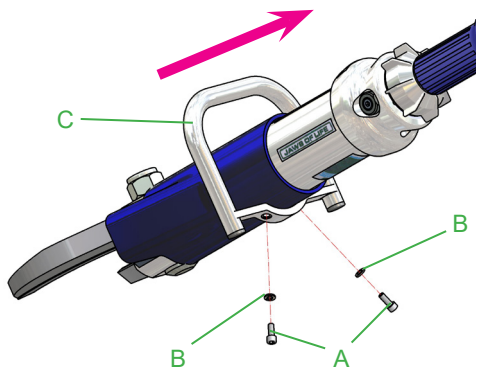
2. Remove the handle sleeve "A" and washer "C". Tighten the screw connections, if necessary, replace the seals.

3. Dismantle the hose "D" and sealing ring "E". (This point is omitted if the hoses are just being tightened.)
4. Screw the hose with the sealing ring back on.
5. Tighten the hose connection on the safety valve. (Warning! Observe a torque of $M_A = 40 \text{ Nm.}$)



6. Then replace the handle sleeve, washer and screws, and tighten (torque: 5 Nm) and secure with threadlocking fluid (e.g. LOCTITE 243).

10.3.5 Replacing the handle (except S 120)

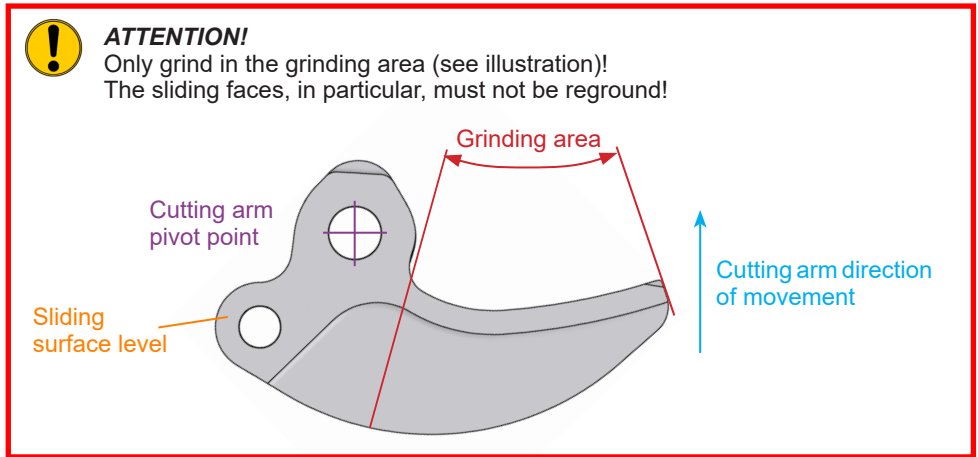


Remove screws "A" and spring washers "B" from handle "C". The handle can then be removed in the direction of the connecting hoses of the device.

10.3.6 Sharpening the blades

Remove and smoothen any burrs!

Chips or deep grooves cannot be ground away. The blades must be replaced in this case.

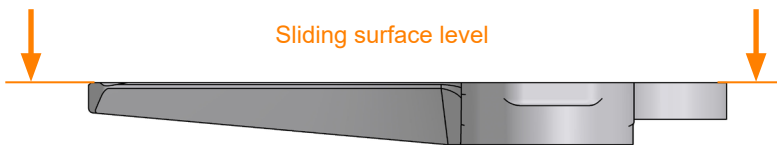


Tools required:

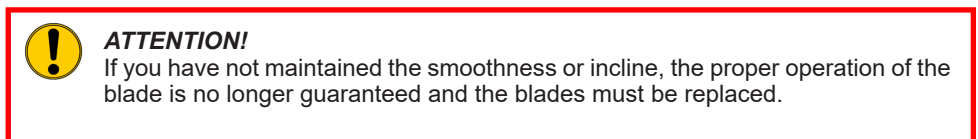
1. Jaw protection on clamping device (e.g. vice) in order not to damage the blades
2. Grinder (e.g. flex or belt grinder) with an abrasive that has a grain size of 80.

Procedure:

1. Clamp the blade securely into the clamping device so that it cannot move, but with the grinding area exposed.
2. Using the grinder, carefully and evenly smooth the burr until you reach the sliding surface level. (see illustration)



In addition, when grinding, you must make sure that the inclination of the cutting surface in the direction of the blade arm movement is not changed. Check the incline and smoothness of the ground surface, using a suitable measuring tool.



10.3.7 Mono-couplings

The mono-couplings must be replaced if:

- there is external damage,
- the lock does not work,
- hydraulic fluid is constantly escaping in the coupled and/or uncoupled state.



WARNING / CAUTION / ATTENTION!

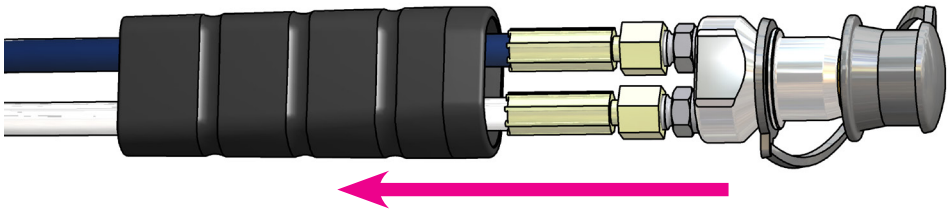
The repairing of couplings is not permitted, they must be replaced with original LUKAS parts!



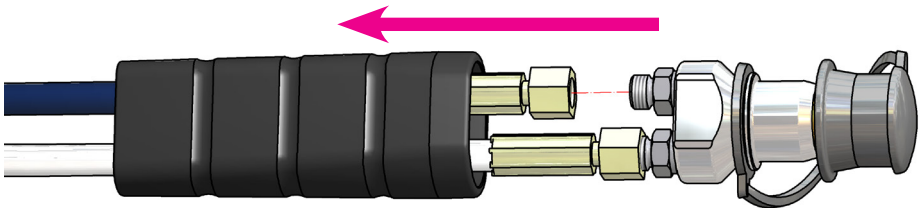
During assembly, tighten the union nuts on the hose line to a torque of $M_A = 40 \text{ Nm}$.

Procedure:

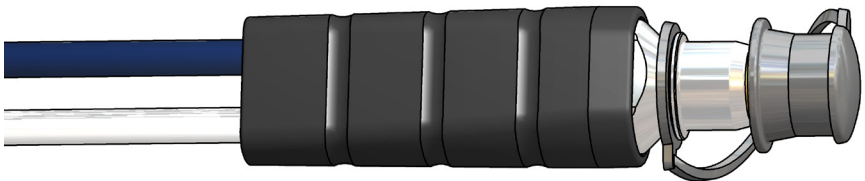
1. Pull the kink protection back from the couplings.



2. Loosen the union nuts on the hose line and remove the coupling.



3. Position the new coupling and tighten the union nuts on the hose assemblies to a torque of $M_A = 40 \text{ Nm}$, and push the kink protection of the couplings back on.



ATTENTION!

Make sure that the connection "T" of the rescue device is always connected to the connection "T" of the mono-coupling.

10.3.8 Quick-disconnect couplings

The quick-disconnect couplings must be replaced if:

- there is external damage,
- the lock does not work,
- hydraulic fluid is constantly escaping in the coupled and/or uncoupled state.



WARNING / CAUTION / ATTENTION!

The repairing of couplings is not permitted, they must be replaced with original LUKAS parts!



During assembly, tighten the union nuts on the hose line to a torque of $M_A = 35 \text{ Nm}$.

Procedure:

1. Loosen the union nuts on the hose line and remove the coupling.
2. Position the new coupling and tighten the union nut on the hose lines to a torque of $M_A = 35 \text{ Nm}$.



ATTENTION!

The return hose, which is screwed onto the port "T" of the rescue device, must always be equipped with a quick-disconnect coupling nipple. However, the supply hose line must be equipped with a quick-disconnect coupling sleeve.

10.3.9 Control valve

Should the safety valve become so severely deformed that the star grip no longer functions correctly, the valve must be replaced in its entirety.

Have these repairs carried out by an authorized LUKAS dealer, by personnel specially trained by LUKAS, or by LUKAS customer service only.

10.3.10 Labels

All damaged and/or illegible labels (safety notices, type plate, etc.) must be replaced.

Procedure:

1. Remove damaged and/or illegible labels.
2. Clean surfaces with industrial alcohol.
3. Affix new labels.

Make sure to affix the labels in the correct positions. If this is no longer known, you should contact your authorized LUKAS dealer or LUKAS directly.

11. Troubleshooting

Fault	Check	Cause	Solution
Blade arms move slowly or jerkily when activated.	Hose lines properly connected?	Air in the hydraulic system.	Deaerate the pump system.
	Pump unit running?		
Device doesn't perform at its given power.	Check the hydraulic fluid level in the supplying pump.	Too little hydraulic fluid in the pump.	Top up hydraulic fluid and deaerate.
Following release, the star grip doesn't return to the central/neutral position.	Cover damaged or star grip hard to move?	Damage to the torsion spring for reset.	Repair by an authorized dealer, by personnel specially trained by LUKAS, or by LUKAS itself.
		Soiled valve or star grip.	
		Defective valve.	
		Other mechanical damage (e.g. star grip).	
<u>With mono-coupling-system:</u> Hose lines cannot be coupled.		Pressure too high (e.g. caused by too-high ambient temperature).	Set hydraulic pump to unpressurized circulation.
		Coupling defective.	Coupling must be replaced immediately.
<u>With mono-coupling-system:</u> Hose lines frequently cannot be coupled.	Check the degree of viscosity and application temperature of the hydraulic fluid used.	Hydraulic fluid not adapted to the application situation.	Hydraulic fluid must be replaced (see chapter "Hydraulic fluid recommendation").
		Coupling defective.	Coupling must be replaced immediately.
<u>For the quick-connect system:</u> Hose lines cannot be coupled.	Is the pump working?	Pressurized.	Relieve pump.
		Coupling defective.	Coupling must be replaced immediately.

Fault	Check	Cause	Solution
Hydraulic fluid leak on the hoses or fittings.	Are the hoses defective?	Leak, possible damage.	Replace hoses.
Damage on the surface of the hydraulic hoses.		Mechanical damage or contact with aggressive media.	Replace hoses.
Hydraulic fluid leaks on the piston rod.		Defective rod seal.	Repair by an authorized dealer, by personnel specially trained by LUKAS, or by LUKAS itself.
		Damage to the piston.	
Leak on the handhold.	Increase load? (combination tool when spreading).	Load increase (e.g. something has fallen onto the part to be lifted, suddenly increasing the load).	Secure the load and move it elsewhere.
			Apply the device at a point where the load to be moved is lighter.
			Use supporting equipment to move the load.
	Does the pressure set on the pump comply with the maximum permissible pressure on the rescue equipment?	Reduce the pressure in the rescue device.	There are no more leaks after the pressure has been reduced.
			However, should there be a further leak on the handhold, immediately deactivate the rescue device, and contact an authorized dealer or LUKAS directly.
	Hoses in handhold loose?	Hoses in handhold not tightened.	Tighten hoses.
<u><i>Especially when using the quick-disconnect system:</i></u> Leak on the handhold.	Check the connections of the mono-coupling sleeve	Supply and return connection of the mono-coupling sleeve inverted	Correctly reconnect the hoses of the mono-coupling sleeve
	Is the return hose connected correctly?	Return hose is not connected correctly or not connected at all.	Reconnect the return hose and secure it.

Fault	Check	Cause	Solution
<u><i>Especially when using the mono-coupling system:</i></u> Leak on the handhold.	Check the connections of the hoses.	Hose connection to the coupling interchanged.	Correctly reconnect the hoses to the coupling.
		Return hose disabled.	Disconnect the return hose from the coupling, clean it and reconnect it.
<u><i>With mono-coupling-system:</i></u> Leak at the couplings.	Coupling damaged?	Coupling defective.	Coupling must be replaced immediately.
<u><i>For the quick-connect system:</i></u> Leak at the couplings.	Coupling damaged?	Coupling defective	Coupling must be replaced immediately.
	Is the leak only on the coupling nipple (in an uncoupled state)?	Safety valve has reacted.	There are no more leaks after the pressure has been reduced.

Contact an authorized LUKAS dealer or the LUKAS Customer Service Department directly if the malfunctions cannot be rectified.

The address for the LUKAS Customer Service department is:

LUKAS Hydraulik GmbH

Weinstrasse 39, 91058 Erlangen

Tel.: (+49) 09131 / 698 - 348

Fax.: (+49) 09131 / 698 - 353

12. Technical data

As all values are subject to tolerances, there may be minor differences between the data on your device and the data in the following tables.



NOTE:

The following tables contain only the most important technical data for normal approval.

Further information about your device is available directly from LUKAS on request.

12.1 Cutters

Device type		S 120	
Item number		112001000	81-20-10 (172001000)
Dimensions L x W x H (w/o connection hoses)	[mm] <i>[in.]</i>	346 x 130 x 87 <i>13.6 x 5.1 x 3.4</i>	
Min. cutting opening	[mm] <i>[in.]</i>	53 <i>2.1</i>	
max. cutting force (rear end of cutting surface)	[kN] <i>[lbf.]</i>	183 <i>41140</i>	
Weight including hydraulic fluid	[kg] <i>[lbs.]</i>	4.3 <i>9.5</i>	
Max. operating pressure	[MPa] * <i>[psi.]</i>	70 <i>10000</i>	
Volume (hydraulic fluid)	[cm ³] ** <i>[gal.-US]</i>	17 <i>0.005</i>	
Coupling connection		Quick-disconnect coupling	Mono-coupling
Classification acc. to DIN EN 13204		AC 53B - 4.3	
Classification acc. to NFPA 1936		A4/B3/C2/D3/E3	

* 1 MPa = 10 bar

** Necessary volume of hydraulic fluid in the hydraulic unit to operate the unit
(differential volume on piston / rod side)

Device type		S 312
Item number		81-20-22
Dimensions L x W x H (w/o connection hoses)	[mm] <i>[in.]</i>	723 x 228 x 172 <i>28.5 x 9.0 x 6.8</i>
Min. cutting opening	[mm] <i>[in.]</i>	162 <i>6.4</i>
max. cutting force (rear end of cutting surface)	[kN] <i>[lbf.]</i>	680 <i>152900</i>
Weight including hydraulic fluid	[kg] <i>[lbs.]</i>	14.5 <i>32.0</i>
Max. operating pressure	[MPa] * <i>[psi.]</i>	70 <i>10000</i>
Volume (hydraulic fluid)	[cm ³] ** <i>[gal.-US]</i>	110 <i>0.029</i>
Coupling connection		Mono-coupling
Classification acc. to DIN EN 13204		BC 160I - 14.5
Classification acc. to NFPA 1936		A7/B8/C7/D7/E7

* 1 MPa = 10 bar

** Volume of hydraulic fluid required in the hydraulic unit to operate the device
(differential volume on piston / rod side)

Device type		S 377
Item number		81-20-23
Dimensions L x W x H (w/o connection hoses)	[mm] <i>[in.]</i>	736 x 228 x 172 <i>29.0 x 8.98 x 6.77</i>
Min. cutting opening	[mm] <i>[in.]</i>	206 <i>8.11</i>
max. cutting force (rear end of cutting surface)	[kN] <i>[lbf.]</i>	650 <i>146133</i>
Weight including hydraulic fluid	[kg] <i>[lbs.]</i>	15.3 <i>33.7</i>
Max. operating pressure	[MPa] * <i>[psi.]</i>	70 <i>10000</i>
Volume (hydraulic fluid)	[cm ³] ** <i>[gal.-US]</i>	110 <i>0.029</i>
Coupling connection		Mono-coupling
Classification acc. to DIN EN 13204		BC 180I - 15.3
Classification acc. to NFPA 1936		A7/B8/C7/D7/E8

* 1 MPa = 10 bar

** Volume of hydraulic fluid required in the hydraulic unit to operate the device
(differential volume on piston / rod side)

Device type		S 378
Item number		81-20-24
Dimensions L x W x H (w/o connection hoses)	[mm] <i>[in.]</i>	742 x 228 x 172 <i>29.2 x 8.98 x 6.77</i>
Min. cutting opening	[mm] <i>[in.]</i>	202 <i>7.95</i>
max. cutting force (rear end of cutting surface)	[kN] <i>[lbf.]</i>	760 <i>170854</i>
Weight including hydraulic fluid	[kg] <i>[lbs.]</i>	14.8 <i>32.6</i>
Max. operating pressure	[MPa] * <i>[psi.]</i>	70 <i>10000</i>
Volume (hydraulic fluid)	[cm ³] ** <i>[gal.-US]</i>	140 <i>0.037</i>
Coupling connection		Mono-coupling
Classification acc. to DIN EN 13204		BC 180I - 14.8
Classification acc. to NFPA 1936		A7/B8/C7/D8/E8/F4

* 1 MPa = 10 bar

** Volume of hydraulic fluid required in the hydraulic unit to operate the device
(differential volume on piston / rod side)

Device type		S 700	
Item number		112081000	81-20-70 (172081000)
Dimensions L x W x H (w/o connection hoses)	[mm]	790 x 300 x 258	
	[in.]	31.1 x 11.8 x 10.2	
Min. cutting opening	[mm]	185	
	[in.]	7.28	
Weight including hydraulic fluid	[kg]	21.3	
	[lbs.]	47.0	
Max. operating pressure	[MPa] *	70	
	[psi.]	10000	
Volume (hydraulic fluid)	[cm ³] **	325	
	[gal.-US]	0.09	
Coupling connection		Quick-disconnect coupling	Mono-coupling
Classification acc. to DIN EN 13204		BC 180J - 21.3	
Classification acc. to NFPA 1936		A8/B9/C8/D9/E9	

* 1 MPa = 10 bar

** Volume of hydraulic fluid required in the hydraulic unit to operate the device
(differential volume on piston / rod side)

Device type		S 788
Item number		81-20-42
Dimensions L x W x H (w/o connection hoses)	[mm] <i>[in.]</i>	801 x 279 x 187 <i>31.6 x 11.0 x 7.35</i>
Min. cutting opening	[mm] <i>[in.]</i>	200 <i>7.97</i>
max. cutting force (rear end of cutting surface)	[kN] <i>[lbf.]</i>	1101 <i>247515</i>
Weight including hydraulic fluid	[kg] <i>[lbs.]</i>	18.7 <i>41.2</i>
Max. operating pressure	[MPa] * <i>[psi.]</i>	70 <i>10000</i>
Volume (hydraulic fluid)	[cm ³] ** <i>[gal.-US]</i>	295 <i>0.078</i>
Coupling connection		Mono-coupling
Classification acc. to DIN EN 13204		CC 200K - 18.7
Classification acc. to NFPA 1936		A8/B9/C8/D9/E9/F4

* 1 MPa = 10 bar

** Volume of hydraulic fluid required in the hydraulic unit to operate the device
(differential volume on piston / rod side)

Device type		S 789
Item number		81-20-44
Dimensions L x W x H (w/o connection hoses)	[mm] <i>[in.]</i>	805 x 279 x 187 <i>31.7 x 11.0 x 7.35</i>
Min. cutting opening	[mm] <i>[in.]</i>	205 <i>8.1</i>
max. cutting force (rear end of cutting surface)	[kN] <i>[lbf.]</i>	1100 <i>247302</i>
Weight including hydraulic fluid	[kg] <i>[lbs.]</i>	18.8 <i>41.4</i>
Max. operating pressure	[MPa] * <i>[psi.]</i>	70 <i>10000</i>
Volume (hydraulic fluid)	[cm ³] ** <i>[gal.-US]</i>	295 <i>0.078</i>
Coupling connection		Mono-coupling
Classification acc. to DIN EN 13204		CC 200K - 18.8
Classification acc. to NFPA 1936		A8/B9/C8/D9/E9/F5

* 1 MPa = 10 bar

** Volume of hydraulic fluid required in the hydraulic unit to operate the device
(differential volume on piston / rod side)

Device type		S 799
Item number		81-20-43
Dimensions L x W x H (w/o connection hoses)	[mm] <i>[in.]</i>	828 x 291 x 194 <i>32.6 x 11.5 x 7.64</i>
Min. cutting opening	[mm] <i>[in.]</i>	204 <i>8.03</i>
max. cutting force (rear end of cutting surface)	[kN] <i>[lbf.]</i>	1376 <i>309600</i>
Weight including hydraulic fluid	[kg] <i>[lbs.]</i>	21.3 <i>47.0</i>
Max. operating pressure	[MPa] * <i>[psi.]</i>	70 <i>10000</i>
Volume (hydraulic fluid)	[cm ³] ** <i>[gal.-US]</i>	394 <i>0.104</i>
Coupling connection		Mono-coupling
Classification acc. to DIN EN 13204		CC 200K - 21.3
Classification acc. to NFPA 1936		A9/B9/C9/D9/E9/F5

* 1 MPa = 10 bar

** Volume of hydraulic fluid required in the hydraulic unit to operate the device
(differential volume on piston / rod side)

12.2 Combination tools

Device type		SC 358
Item number		81-30-22
Dimensions L x W x H (w/o connection hoses)	[mm] [in.]	774 x 228 x 172 30.5 x 9.0 x 6.8
Min. cutting opening	[mm] [in.]	309 12.2
max. cutting force (rear end of cutting surface)	[kN] [lbf.]	492 110600
max. spreading distance (on the blade tips)	[mm] [in.]	372 14.7
max. spreading force (25 mm from the tips)	[kN] [lbf.]	38 8543
HSF spreading force (according to NFPA)	[kN] [lbf.]	43 9667
LSF spreading force (according to NFPA)	[kN] [lbf.]	33 7419
HPF pulling force (according to NFPA)	[kN] [lbf.]	62 13940
LPF pulling force (according to NFPA)	[kN] [lbf.]	43 9667
Weight including hydraulic fluid	[kg] [lbs.]	14.8 32.6
Max. operating pressure	[MPa] * [psi.]	70 10000
Volume (hydraulic fluid)	[cm³] ** [gal.-US]	110 0.029
Coupling connection		Mono-coupling
Classification acc. to DIN EN 13204		CK 38/368 - I - 14.8
Classification acc. to NFPA 1936		A7/B8/C7/D8/E7/F4

* 1 MPa = 10 bar

** Volume of hydraulic fluid required in the hydraulic unit to operate the device (differential volume on piston / rod side)

Device type		SC 557	
Item number		113047000	81-30-30 (173047000)
Dimensions L x W x H (w/o connection hoses)	[mm] [in.]	840 x 295 x 190 33.1 x 11.6 x 7.48	
Min. cutting opening	[mm] [in.]	355 14	
max. cutting force (rear end of cutting surface)	[kN] [lbf.]	810 182095	
max. spreading distance (on the blade tips)	[mm] [in.]	430 16.9	
Min. spreading force (25 mm from the tips)	[kN] [lbf.]	41.5 9300	
HSF spreading force (according to NFPA)	[kN] [lbf.]	47 10600	
LSF spreading force (according to NFPA)	[kN] [lbf.]	39 8770	
HPF pulling force (according to NFPA)	[kN] [lbf.]	67 15100	
LPF pulling force (according to NFPA)	[kN] [lbf.]	52 11700	
Weight including hydraulic fluid	[kg] [lbs.]	19.8 43.7	
Max. operating pressure	[MPa] * [psi.]	70 10000	
Volume (hydraulic fluid)	[cm ³] ** [gal.-US]	108 0.029	
Coupling connection		Quick-disconnect coupling	Mono-coupling
Classification acc. to DIN EN 13204		CK 41/430 - J - 19.8	
Classification acc. to NFPA 1936		A8/B9/C8/D9/E9	

* 1 MPa = 10 bar

** Volume of hydraulic fluid required in the hydraulic unit to operate the device
(differential volume on piston / rod side)

Device type		SC 758
Item number		81-30-35
Dimensions L x W x H (w/o connection hoses)	[mm] <i>[in.]</i>	876 x 301 x 206 <i>34.5 x 11.85 x 8.1</i>
Min. cutting opening	[mm] <i>[in.]</i>	408 <i>16.1</i>
max. cutting force (rear end of cutting surface)	[kN] <i>[lbf.]</i>	885 <i>198955</i>
max. spreading distance (on the blade tips)	[mm] <i>[in.]</i>	475 <i>18.7</i>
Min. spreading force (25 mm from the tips)	[kN] <i>[lbf.]</i>	43 <i>9667</i>
HSF spreading force (according to NFPA)	[kN] <i>[lbf.]</i>	49 <i>11016</i>
LSF spreading force (according to NFPA)	[kN] <i>[lbf.]</i>	38 <i>8543</i>
HPF pulling force (according to NFPA)	[kN] <i>[lbf.]</i>	69 <i>15512</i>
LPF pulling force (according to NFPA)	[kN] <i>[lbf.]</i>	52 <i>11690</i>
Weight including hydraulic fluid	[kg] <i>[lbs.]</i>	20.7 <i>45.6</i>
Max. operating pressure	[MPa] * <i>[psi.]</i>	70 <i>10000</i>
Volume (hydraulic fluid)	[cm³] ** <i>[gal.-US]</i>	235 <i>0.062</i>
Coupling connection		Mono-coupling
Classification acc. to DIN EN 13204		CK 43/475 - J - 20.7
Classification acc. to NFPA 1936		A8/B9/C9/D9/E9/F5

* 1 MPa = 10 bar

** Volume of hydraulic fluid required in the hydraulic unit to operate the device
(differential volume on piston / rod side)

12.3 Torque of the pivot bolt

Device type	Pivot bolt	Wrench size	Torque
		[mm]	[Nm]
		<i>[in.]</i>	<i>[lbf.in.]</i>
S 120	M 22 x 1.5	34 <i>1.34</i>	80 + 10 <i>708 + 89</i>
S 312	M 28 x 1.5	38 <i>1.50</i>	130 + 10 <i>1151 + 89</i>
S 377	M 28 x 1.5	38 <i>1.50</i>	130 + 10 <i>1151 + 89</i>
S 378	M 28 x 1.5	38 <i>1.50</i>	130 + 10 <i>1151 + 89</i>
S 700	M 32 x 1.5	46 <i>1.81</i>	150 + 10 <i>1328 + 89</i>
S 788	M 32 x 1.5	46 <i>1.81</i>	150 + 10 <i>1328 + 89</i>
S 789	M 32 x 1.5	46 <i>1.81</i>	150 + 10 <i>1328 + 89</i>
S 799	M 36 x 1.5	50 <i>1.97</i>	230 + 10 <i>2036 + 89</i>
SC 358	M 28 x 1.5	38 <i>1.50</i>	130 + 10 <i>1151 + 89</i>
SC 557	M 27 x 1.5	41 <i>1.61</i>	130 + 10 <i>1151 + 89</i>
SC 758	M 32 x 1.5	46 <i>1.81</i>	150 + 10 <i>1328 + 89</i>

12.4 Cutting capacities






Device type	Max. cutting material dimensions				
	Round material [mm] [in.]	Flat material [mm] [in.]	Round tube [mm] [in.]	Square tube [mm] [in.]	Rectangular tube [mm] [in.]
S 120	22 0.9	50x5 1.97x0.2	26.4x2.3 1.04x0.09		
S 312	35 1.38	120x10 4.72x0.39	88.9x4.0 3.5x0.16	70x4 2.76x0.16	100x50x4.0 3.94x1.97x0.16
S 377	33 1.30	130x10 5.12x0.39	88.9x4.0 3.5x0.16	70x4 2.76x0.16	100x50x5.0 3.94x1.97x0.20
S 378	33 1.30	130x10 5.12x0.39	88.9x4.0 3.5x0.16	70x5 2.76x0.20	100x50x5.0 3.94x1.97x0.20
S 700	38 1.49	140x10 5.51x0.39	101.6x4.0 4.0x0.16	70x5 2.76x0.20	100x50x5.0 3.94x1.97x0.20
S 788	42 1.65	140x10 5.51x0.39	101.6x4.0 4.0x0.16	70x5 2.76x0.20	100x50x5.0 3.94x1.97x0.20
S 789	42 1.65	140x10 5.51x0.39	101.6x4.0 4.0x0.16	70x5 2.76x0.20	100x50x5.0 3.94x1.97x0.20
S 799	45 1.77	140x10 5.51x0.39	101.6x4.0 4.00x0.16	70x5 2.76x0.20	100x50x5.0 3.94x1.97x0.20
SC 358	35 1.38	130x10 5.12x0.39	88.9x4.0 3.5x0.16	70x4 2.76x0.16	100x50x4.0 3.94x1.97x0.16
SC 557	38 1.49	140x10 5.51x0.39	101.6x4.0 4.0x0.16	70x5 2.76x0.20	100x50x5.0 3.94x1.97x0.20
SC 758	40 1.57	140x10 5.51x0.39	101.6x4.0 4.0x0.16	70x5 2.76x0.20	100x50x5.0 3.94x1.97x0.20

The tensile strength of all materials meets the testing criteria of DIN EN 13204.

12.5 Datasheets for product performance






Manufacturer Name and type of device	LUKAS Hydraulik GmbH S 120 (172001000, 81-20-10)
---	---

Classification given

Type	Cutter opening [mm]	Classification based on the minimum performance of the cutter	Weight [kg] (accurate to one decimal place)		Performance of the cutter
AC	53	B	4.3		1D-2C-3B
Profile type →	1 Round material	2 Flat material	3 Round tube	4 Square tube	5 Rectangular tube
Category letter ↓					
A	≥ 14	30 x 5	21.3 x 2.3		
B	≥ 16	40 x 5	26.4 x 2.3		
C	≥ 18	50 x 5	33.7 x 2.6	35 x 3	
D	≥ 20	60 x 5	42.6 x 2.6	40 x 4	50 x 25 x 2.5
E	≥ 22	80 x 8	48.3 x 2.9	45 x 4	50 x 30 x 3.0
F	≥ 24	80 x 10	60.3 x 2.9	50 x 4	60 x 40 x 3.0
G	≥ 26	100 x 10	76.1 x 3.2	55 x 4	80 x 40 x 3.0
H	≥ 28	110 x 10	76.1 x 4.0	60 x 4	80 x 40 x 4.0
I	≥ 32	120 x 10	88.9 x 4.0	60 x 5	80 x 40 x 5.0
J	≥ 36	130 x 10	88.9 x 5.0	70 x 4	100 x 50 x 4.0
K	≥ 40	140 x 10	101.6 x 4.0	70 x 5	100 x 50 x 5.0
	[mm]	[mm]	[mm]	[mm]	[mm]






Manufacturer Name and type of device	LUKAS Hydraulik GmbH S 312 (81-20-22)
---	--

Classification given

Type	Cutter opening [mm]	Classification based on the minimum performance of the cutter	Weight [kg] (accurate to one decimal place)		Performance of the cutter
BC	162	I	14.5		1I-2I-3I-4J-5J
Profile type →	1 Round material	2 Flat material	3 Round tube	4 Square tube	5 Rectangular tube
Category letter ↓					
A	≥ 14	30 x 5	21.3 x 2.3		
B	≥ 16	40 x 5	26.4 x 2.3		
C	≥ 18	50 x 5	33.7 x 2.6	35 x 3	
D	≥ 20	60 x 5	42.6 x 2.6	40 x 4	50 x 25 x 2.5
E	≥ 22	80 x 8	48.3 x 2.9	45 x 4	50 x 30 x 3.0
F	≥ 24	80 x 10	60.3 x 2.9	50 x 4	60 x 40 x 3.0
G	≥ 26	100 x 10	76.1 x 3.2	55 x 4	80 x 40 x 3.0
H	≥ 28	110 x 10	76.1 x 4.0	60 x 4	80 x 40 x 4.0
I	≥ 32	120 x 10	88.9 x 4.0	60 x 5	80 x 40 x 5.0
J	≥ 36	130 x 10	88.9 x 5.0	70 x 4	100 x 50 x 4.0
K	≥ 40	140 x 10	101.6 x 4.0	70 x 5	100 x 50 x 5.0
	[mm]	[mm]	[mm]	[mm]	[mm]






Manufacturer Name and type of device	LUKAS Hydraulik GmbH S 377 (81-20-23)
---	--

Classification given

Type	Cutter opening [mm]	Classification based on the minimum performance of the cutter	Weight [kg] (accurate to one decimal place)		Performance of the cutter
BC	206	I	15.3		1I-2J-3I-4J-5J
Profile type →	1 Round material	2 Flat material	3 Round tube	4 Square tube	5 Rectangular tube
Category letter ↓					
A	≥ 14	30 x 5	21.3 x 2.3		
B	≥ 16	40 x 5	26.4 x 2.3		
C	≥ 18	50 x 5	33.7 x 2.6	35 x 3	
D	≥ 20	60 x 5	42.6 x 2.6	40 x 4	50 x 25 x 2.5
E	≥ 22	80 x 8	48.3 x 2.9	45 x 4	50 x 30 x 3.0
F	≥ 24	80 x 10	60.3 x 2.9	50 x 4	60 x 40 x 3.0
G	≥ 26	100 x 10	76.1 x 3.2	55 x 4	80 x 40 x 3.0
H	≥ 28	110 x 10	76.1 x 4.0	60 x 4	80 x 40 x 4.0
I	≥ 32	120 x 10	88.9 x 4.0	60 x 5	80 x 40 x 5.0
J	≥ 36	130 x 10	88.9 x 5.0	70 x 4	100 x 50 x 4.0
K	≥ 40	140 x 10	101.6 x 4.0	70 x 5	100 x 50 x 5.0
	[mm]	[mm]	[mm]	[mm]	[mm]






Manufacturer Name and type of device	LUKAS Hydraulik GmbH S 378 (81-20-24)
---	--

Classification given

Type	Cutter opening [mm]	Classification based on the minimum performance of the cutter	Weight [kg] (accurate to one decimal place)		Performance of the cutter
BC	202	I	14.8		1I-2J-3K-4J-5J
Profile type →	1 Round material	2 Flat material	3 Round tube	4 Square tube	5 Rectangular tube
Category letter ↓					
A	≥ 14	30 x 5	21.3 x 2.3		
B	≥ 16	40 x 5	26.4 x 2.3		
C	≥ 18	50 x 5	33.7 x 2.6	35 x 3	
D	≥ 20	60 x 5	42.6 x 2.6	40 x 4	50 x 25 x 2.5
E	≥ 22	80 x 8	48.3 x 2.9	45 x 4	50 x 30 x 3.0
F	≥ 24	80 x 10	60.3 x 2.9	50 x 4	60 x 40 x 3.0
G	≥ 26	100 x 10	76.1 x 3.2	55 x 4	80 x 40 x 3.0
H	≥ 28	110 x 10	76.1 x 4.0	60 x 4	80 x 40 x 4.0
I	≥ 32	120 x 10	88.9 x 4.0	60 x 5	80 x 40 x 5.0
J	≥ 36	130 x 10	88.9 x 5.0	70 x 4	100 x 50 x 4.0
K	≥ 40	140 x 10	101.6 x 4.0	70 x 5	100 x 50 x 5.0
	[mm]	[mm]	[mm]	[mm]	[mm]






Manufacturer Name and type of device	LUKAS Hydraulik GmbH S 700 (172081000, 81-20-70)
---	---

Classification given

Type	Cutter opening [mm]	Classification based on the minimum performance of the cutter	Weight [kg] (accurate to one decimal place)		Performance of the cutter
BC	185	J	21.3		1J-2K-3K-4K-5K
Profile type →	1 Round material	2 Flat material	3 Round tube	4 Square tube	5 Rectangular tube
Category letter ↓					
A	≥ 14	30 x 5	21.3 x 2.3		
B	≥ 16	40 x 5	26.4 x 2.3		
C	≥ 18	50 x 5	33.7 x 2.6	35 x 3	
D	≥ 20	60 x 5	42.6 x 2.6	40 x 4	50 x 25 x 2.5
E	≥ 22	80 x 8	48.3 x 2.9	45 x 4	50 x 30 x 3.0
F	≥ 24	80 x 10	60.3 x 2.9	50 x 4	60 x 40 x 3.0
G	≥ 26	100 x 10	76.1 x 3.2	55 x 4	80 x 40 x 3.0
H	≥ 28	110 x 10	76.1 x 4.0	60 x 4	80 x 40 x 4.0
I	≥ 32	120 x 10	88.9 x 4.0	60 x 5	80 x 40 x 5.0
J	≥ 36	130 x 10	88.9 x 5.0	70 x 4	100 x 50 x 4.0
K	≥ 40	140 x 10	101.6 x 4.0	70 x 5	100 x 50 x 5.0
	[mm]	[mm]	[mm]	[mm]	[mm]






Manufacturer Name and type of device	LUKAS Hydraulik GmbH S 788 (81-20-42)
---	--

Classification given

Type	Cutter opening [mm]	Classification based on the minimum performance of the cutter	Weight [kg] (accurate to one decimal place)		Performance of the cutter
CC	200	K	18.7		1K-2K-3K-4K-5K
Profile type →	1 Round material	2 Flat material	3 Round tube	4 Square tube	5 Rectangular tube
Category letter ↓					
A	≥ 14	30 x 5	21.3 x 2.3		
B	≥ 16	40 x 5	26.4 x 2.3		
C	≥ 18	50 x 5	33.7 x 2.6	35 x 3	
D	≥ 20	60 x 5	42.6 x 2.6	40 x 4	50 x 25 x 2.5
E	≥ 22	80 x 8	48.3 x 2.9	45 x 4	50 x 30 x 3.0
F	≥ 24	80 x 10	60.3 x 2.9	50 x 4	60 x 40 x 3.0
G	≥ 26	100 x 10	76.1 x 3.2	55 x 4	80 x 40 x 3.0
H	≥ 28	110 x 10	76.1 x 4.0	60 x 4	80 x 40 x 4.0
I	≥ 32	120 x 10	88.9 x 4.0	60 x 5	80 x 40 x 5.0
J	≥ 36	130 x 10	88.9 x 5.0	70 x 4	100 x 50 x 4.0
K	≥ 40	140 x 10	101.6 x 4.0	70 x 5	100 x 50 x 5.0
	[mm]	[mm]	[mm]	[mm]	[mm]






Manufacturer Name and type of device	LUKAS Hydraulik GmbH S 789 (81-20-44)
---	--

Classification given

Type	Cutter opening [mm]	Classification based on the minimum per- formance of the cutter	Weight [kg] (accurate to one decimal place)		Performance of the cutter
CC	205	K	18.8		1K-2K-3K-4K-5K
Profile type →	1 Round material	2 Flat material	3 Round tube	4 Square tube	5 Rectangular tube
Category letter ↓					
A	≥ 14	30 x 5	21.3 x 2.3		
B	≥ 16	40 x 5	26.4 x 2.3		
C	≥ 18	50 x 5	33.7 x 2.6	35 x 3	
D	≥ 20	60 x 5	42.6 x 2.6	40 x 4	50 x 25 x 2.5
E	≥ 22	80 x 8	48.3 x 2.9	45 x 4	50 x 30 x 3.0
F	≥ 24	80 x 10	60.3 x 2.9	50 x 4	60 x 40 x 3.0
G	≥ 26	100 x 10	76.1 x 3.2	55 x 4	80 x 40 x 3.0
H	≥ 28	110 x 10	76.1 x 4.0	60 x 4	80 x 40 x 4.0
I	≥ 32	120 x 10	88.9 x 4.0	60 x 5	80 x 40 x 5.0
J	≥ 36	130 x 10	88.9 x 5.0	70 x 4	100 x 50 x 4.0
K	≥ 40	140 x 10	101.6 x 4.0	70 x 5	100 x 50 x 5.0
	[mm]	[mm]	[mm]	[mm]	[mm]






Manufacturer Name and type of device	LUKAS Hydraulik GmbH S 799 (81-20-43)
---	--

Classification given

Type	Cutter opening [mm]	Classification based on the minimum performance of the cutter	Weight [kg] (accurate to one decimal place)		Performance of the cutter
CC	204	K	21.3		1K-2K-3K-4K-5K
Profile type →	1 Round material	2 Flat material	3 Round tube	4 Square tube	5 Rectangular tube
Category letter ↓					
A	≥ 14	30 x 5	21.3 x 2.3		
B	≥ 16	40 x 5	26.4 x 2.3		
C	≥ 18	50 x 5	33.7 x 2.6	35 x 3	
D	≥ 20	60 x 5	42.6 x 2.6	40 x 4	50 x 25 x 2.5
E	≥ 22	80 x 8	48.3 x 2.9	45 x 4	50 x 30 x 3.0
F	≥ 24	80 x 10	60.3 x 2.9	50 x 4	60 x 40 x 3.0
G	≥ 26	100 x 10	76.1 x 3.2	55 x 4	80 x 40 x 3.0
H	≥ 28	110 x 10	76.1 x 4.0	60 x 4	80 x 40 x 4.0
I	≥ 32	120 x 10	88.9 x 4.0	60 x 5	80 x 40 x 5.0
J	≥ 36	130 x 10	88.9 x 5.0	70 x 4	100 x 50 x 4.0
K	≥ 40	140 x 10	101.6 x 4.0	70 x 5	100 x 50 x 5.0
	[mm]	[mm]	[mm]	[mm]	[mm]






Manufacturer Name and type of device	LUKAS Hydraulik GmbH SC 358 (81-30-22)
---	---

Classification given

Type	Spreading force [kN] / Spreading width [mm]	Classification based on the minimum performance of the cutter	Weight [kg] (accurate to one decimal place)		Performance of the cutter
CK	38 / 372	I	14.8		1I-2J-3I-4J-5J
Profile type →	1 Round material	2 Flat material	3 Round tube	4 Square tube	5 Rectangular tube
Category letter ↓					
A	≥ 14	30 x 5	21.3 x 2.3		
B	≥ 16	40 x 5	26.4 x 2.3		
C	≥ 18	50 x 5	33.7 x 2.6	35 x 3	
D	≥ 20	60 x 5	42.6 x 2.6	40 x 4	50 x 25 x 2.5
E	≥ 22	80 x 8	48.3 x 2.9	45 x 4	50 x 30 x 3.0
F	≥ 24	80 x 10	60.3 x 2.9	50 x 4	60 x 40 x 3.0
G	≥ 26	100 x 10	76.1 x 3.2	55 x 4	80 x 40 x 3.0
H	≥ 28	110 x 10	76.1 x 4.0	60 x 4	80 x 40 x 4.0
I	≥ 32	120 x 10	88.9 x 4.0	60 x 5	80 x 40 x 5.0
J	≥ 36	130 x 10	88.9 x 5.0	70 x 4	100 x 50 x 4.0
K	≥ 40	140 x 10	101.6 x 4.0	70 x 5	100 x 50 x 5.0
	[mm]	[mm]	[mm]	[mm]	[mm]






Manufacturer Name and type of device	LUKAS Hydraulik GmbH SC 557 (173047000, 81-30-30)
---	--

Classification given

Type	Spreading force [kN] / Spreading width [mm]	Classification based on the minimum performance of the cutter	Weight [kg] (accurate to one decimal place)		Performance of the cutter
CK	41.5 / 430	J	19.8		1J-2K-3K-4K-5K
Profile type →	1 Round material	2 Flat material	3 Round tube	4 Square tube	5 Rectangular tube
Category letter ↓					
A	≥ 14	30 x 5	21.3 x 2.3		
B	≥ 16	40 x 5	26.4 x 2.3		
C	≥ 18	50 x 5	33.7 x 2.6	35 x 3	
D	≥ 20	60 x 5	42.6 x 2.6	40 x 4	50 x 25 x 2.5
E	≥ 22	80 x 8	48.3 x 2.9	45 x 4	50 x 30 x 3.0
F	≥ 24	80 x 10	60.3 x 2.9	50 x 4	60 x 40 x 3.0
G	≥ 26	100 x 10	76.1 x 3.2	55 x 4	80 x 40 x 3.0
H	≥ 28	110 x 10	76.1 x 4.0	60 x 4	80 x 40 x 4.0
I	≥ 32	120 x 10	88.9 x 4.0	60 x 5	80 x 40 x 5.0
J	≥ 36	130 x 10	88.9 x 5.0	70 x 4	100 x 50 x 4.0
K	≥ 40	140 x 10	101.6 x 4.0	70 x 5	100 x 50 x 5.0
	[mm]	[mm]	[mm]	[mm]	[mm]

Manufacturer Name and type of device	LUKAS Hydraulik GmbH SC 758 (81-30-35)
---	---

Classification given

Type	Spreading force [kN] / Spreading width [mm]	Classification based on the minimum performance of the cutter	Weight [kg] (accurate to one decimal place)		Performance of the cutter
CK	43 / 475	J	20.7		1J-2K-3K-4K-5K
Profile type →	1 Round material	2 Flat material	3 Round tube	4 Square tube	5 Rectangular tube
Category letter ↓					
A	≥ 14	30 x 5	21.3 x 2.3		
B	≥ 16	40 x 5	26.4 x 2.3		
C	≥ 18	50 x 5	33.7 x 2.6	35 x 3	
D	≥ 20	60 x 5	42.6 x 2.6	40 x 4	50 x 25 x 2.5
E	≥ 22	80 x 8	48.3 x 2.9	45 x 4	50 x 30 x 3.0
F	≥ 24	80 x 10	60.3 x 2.9	50 x 4	60 x 40 x 3.0
G	≥ 26	100 x 10	76.1 x 3.2	55 x 4	80 x 40 x 3.0
H	≥ 28	110 x 10	76.1 x 4.0	60 x 4	80 x 40 x 4.0
I	≥ 32	120 x 10	88.9 x 4.0	60 x 5	80 x 40 x 5.0
J	≥ 36	130 x 10	88.9 x 5.0	70 x 4	100 x 50 x 4.0
K	≥ 40	140 x 10	101.6 x 4.0	70 x 5	100 x 50 x 5.0
	[mm]	[mm]	[mm]	[mm]	[mm]

12.6 Recommended hydraulic fluid

Oil for LUKAS hydraulic devices, mineral oil DIN ISO 6743-4 and others

	Oil temperature range	Oil designation	Viscosity class	Note
A	-20 +55°C	HM 10	VG 10	

	Oil temperature range	Oil designation	Viscosity class	Note
A	-4.0 +131°F	HM 10	VG 10	

Recommended viscosity range: 10...200 mm²/s **(10...200 cSt.)**

Delivered with HM 10 DIN ISO 6743-4.



ATTENTION!

Before using hydraulic fluids which do not correspond to the above-mentioned specifications and/or are not purchased from LUKAS, you must contact LUKAS itself.

12.7 Operating and storage temperature ranges

Operating temperature	[°C]	-20 ... +55
Storage temperature (device not in operation)	[°C]	-30 ... +60

Operating temperature	[°F]	-4 ... +131
Storage temperature (device not in operation)	[°F]	-22 ... +140

13. EC/UKCA declarations of conformity

13.1 Cutters



LUKAS Hydraulik GmbH
Weinstraße 39
91058 Erlangen
Deutschland



Dinglee, LUKAS, Hurst, Vetter

IDEX Europe GmbH
Weinstraße 39
91058 Erlangen
Germany

EG-Konformitätserklärung / EC Declaration of Conformity / Déclaration CE de conformité / Declaración de conformidad CE

Im Sinne der EG-Maschinenrichtlinie 2006/42/EG, Anhang II A

In accordance with the EC Machinery Directive 2006/42/EC, Appendix II A

Selon la directive Machines 2006/42/CE, annexe II A

A los efectos de la Directiva comunitaria de máquinas 2006/42/CE, anexo II A

Hiermit erklären wir, dass die nachfolgend bezeichneten Schneidgeräte

We hereby declare that the following cutters

Par la présente déclaration CE de conformité, nous attestons que le vérin mentionné Cisailler

Con la presente declaramos que los Herramientas de corte indicados a continuación

Artikelnr. / Item no.	Modell / Type
81-20-10	S 120
81-20-22	S 312
81-20-23	S 377
81-20-70	S 700
81-20-42	S 788
81-20-43	S 799

- in der von uns gelieferten Ausführung den Bestimmungen der Maschinenrichtlinie 2006/42/EG (ersetzt Richtlinie 98/37/EG) und den sie umsetzenden nationalen Rechtsvorschriften entsprechen.
Berücksichtigt wurden insbesondere die Normen:
 - DIN EN ISO 12100:2010, Ausgabe: 2011-03 - Sicherheit von Maschinen – Allgemeine Gestaltungsgrundsätze – Risikobeurteilung und Risikominderung
 - DIN EN 13204: 2016-12 – Doppelt wirkende hydraulischen Rettungsgeräte für die Feuerwehr und Rettungsdienste – Sicherheits- und Leistungsanforderungen
- *in the versions supplied by us conform to the EC Machinery Directive 2006/42/EC (replaced directive 98/37/EC) and the national statutory provisions that implement them.*
The following standards have particularly been taken into consideration:
 - *DIN EN ISO 12100:2010, publication date: 2011-03 – Safety of machinery - General principles for design - Risk assessment and risk reduction*
 - *DIN EN 13204: 2016-12 – Double acting hydraulic rescue tools for fire and rescue service use – Safety and performance requirements*
- *satisfait, dans la version que nous avons livrée, aux dispositions de la directive Machines 2006/42/CE et des législations nationales destinées à assurer son application.*
Les normes suivantes ont notamment été prises en compte :
 - *DIN EN ISO 12100, édition : 2011-03 - Sécurité des machines – Principes généraux de conception – Appréciation du risque et réduction du risque.*
 - *DIN EN 13204, édition : 2016-12 - Matériels hydrauliques de dés-incarcération à double effet à usage des services d'incendie et de secours - Prescriptions de sécurité et de performance*



LUKAS Hydraulik GmbH
Weinstraße 39,
91058 Erlangen
Deutschland



Dinglee, LUKAS, Hurst, Vetter

IDEX Europe GmbH
Weinstraße 39
91058 Erlangen
Germany

- *cumplen, en la versión suministrada por nosotros, las disposiciones de la Directiva de máquinas 2006/42/CE y la legislación nacional en vigor.*
Se han tomado en consideración, en particular, las normas:
 - *DIN EN ISO 12100, edición: 2011-03 - Seguridad de las máquinas. Principios generales para el diseño. Evaluación del riesgo y reducción del riesgo.*
 - *DIN EN 13204, edición: 2016-12 - Herramientas de rescate hidráulicos de doble acción para uso de los servicios contra incendios y de rescate. Prescripciones de seguridad y de funcionamiento.*

Bei einer nicht mit uns abgestimmten Änderung oder Verwendung der Maschine/Ausrüstung verliert diese Erklärung ihre Gültigkeit.


This declaration loses its validity in the case of alterations or usage of the machinery/equipment not approved by LUKAS.

Cette déclaration perd sa validité en cas de modification ou d'utilisation de la machine/de l'équipement sans concertation préalable avec nous.

La presente declaración quedará invalidada en caso de efectuarse cambios o modificaciones en la máquina/el equipamiento no acordados con nosotros.

Erlangen, 10.07.2019

ppA 
Carsten Sauerbier
Director of Technical Innovation and Development
IDEX Europe GmbH

i. A. 
Manuela Gumbert
Konstrukteur / Engineering Designer
LUKAS Hydraulik GmbH

EG-Konformitätserklärung / EC Declaration of Conformity / Déclaration CE de conformité / Declaración de conformidad CE

Im Sinne der EG-Maschinenrichtlinie 2006/42/EG, Anhang II A

In accordance with the EC Machinery Directive 2006/42/EC, Appendix II A

Selon la directive Machines 2006/42/CE, annexe II A

A los efectos de la Directiva comunitaria de máquinas 2006/42/CE, anexo II A

Hiermit erklären wir, dass die nachfolgend bezeichneten Schneidgeräte

We hereby declare that the following cutters

Par la présente déclaration CE de conformité, nous attestons que le vérin mentionné Cisailier

Con la presente declaramos que los Herramientas de corte indicados a continuación

Artikelnr. / Item no.	Modell / Type
81-20-24	S 378
81-20-44	S 789

- in der von uns gelieferten Ausführung den Bestimmungen der Maschinenrichtlinie 2006/42/EG (ersetzt Richtlinie 98/37/EG) und den sie umsetzenden nationalen Rechtsvorschriften entsprechen.
Berücksichtigt wurden insbesondere die Normen:
 - DIN EN ISO 12100:2010, Ausgabe: 2011-03 - Sicherheit von Maschinen – Allgemeine Gestaltungsleitsätze – Risikobeurteilung und Risikominderung
 - DIN EN 13204: 2016-12 – Doppelt wirkende hydraulischen Rettungsgeräte für die Feuerwehr und Rettungsdienste – Sicherheits- und Leistungsanforderungen
- in the versions supplied by us conform to the EC Machinery Directive 2006/42/EC (replaced directive 98/37/EC) and the national statutory provisions that implement them.
The following standards have particularly been taken into consideration:
 - DIN EN ISO 12100:2010, publication date: 2011-03 – Safety of machinery - General principles for design - Risk assessment and risk reduction
 - DIN EN 13204: 2016-12 – Double acting hydraulic rescue tools for fire and rescue service use – Safety and performance requirements
- satisfait, dans la version que nous avons livrée, aux dispositions de la directive Machines 2006/42/CE et des législations nationales destinées à assurer son application.
Les normes suivantes ont notamment été prises en compte :
 - DIN EN ISO 12100, édition : 2011-03 - Sécurité des machines – Principes généraux de conception – Appréciation du risque et réduction du risque.
 - DIN EN 13204, édition : 2016-12 - Matériels hydrauliques de dés-incarcération à double effet à usage des services d'incendie et de secours - Prescriptions de sécurité et de performance



LUKAS Hydraulik GmbH
Weinstraße 39,
91058 Erlangen
Deutschland



Dinglee, LUKAS, Hurst, Vetter

IDEX Europe GmbH
Weinstraße 39
91058 Erlangen
Germany

- *cumplen, en la versión suministrada por nosotros, las disposiciones de la Directiva de máquinas 2006/42/CE y la legislación nacional en vigor.*
Se han tomando en consideración, en particular, las normas:
 - *DIN EN ISO 12100, edición: 2011-03 - Seguridad de las máquinas. Principios generales para el diseño. Evaluación del riesgo y reducción del riesgo.*
 - *DIN EN 13204, edición: 2016-12 - Herramientas de rescate hidráulicos de doble acción para uso de los servicios contra incendios y de rescate. Prescripciones de seguridad y de funcionamiento.*


Bei einer nicht mit uns abgestimmten Änderung oder Verwendung der Maschine/Ausrüstung verliert diese Erklärung ihre Gültigkeit.

This declaration loses its validity in the case of alterations or usage of the machinery/equipment not approved by LUKAS.

Cette déclaration perd sa validité en cas de modification ou d'utilisation de la machine/de l'équipement sans concertation préalable avec nous.

La presente declaración quedará invalidada en caso de efectuarse cambios o modificaciones en la máquina/el equipamiento no acordados con nosotros.

Erlangen, 12.08.2019


ppA
Carsten Sauerbier
Director of Technical Innovation and Development
IDEX Europe GmbH


i. A.
Dietmar Lindner
Konstrukteur / Engineering Designer
LUKAS Hydraulik GmbH



Lukas Hydraulik GmbH
Weinstraße 39,
91058 Erlangen
Deutschland



Dinglee, LUKAS, Hurst, Vetter

IDEX Europe GmbH
Weinstraße 39,
91058 Erlangen
Deutschland

de UK-Konformitätserklärung
Schneidgerät


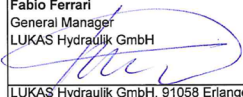
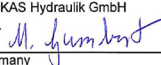
Artikelnummer

Hiermit erklären wir, dass die bezeichneten Geräte in der von uns
gelieferten Ausführung den aufgeführten Bestimmungen und den sie
umsetzenden nationalen Rechtsvorschriften entsprechen.

en UK Declaration of Conformity
Cutter

Item number

We hereby declare that the described devices in the format supplied by us
conform to the specified conditions and the implementing national
regulations.

S 120	81-20-10	Supply of Machinery (Safety) Regulations 2008 BS EN ISO 12100: 2010-12-31 BS EN 13204: 2016-09-30
S 312	81-20-22	
S 377	81-20-23	
S 378	81-20-24	
S 700	81-20-70	
S 788	81-20-42	
S 799	81-20-43	
S 789	81-20-44	
		<div><div> Fabio Ferrari General Manager LUKAS Hydraulik GmbH  LUKAS Hydraulik GmbH, 91058 Erlangen, Germany Erlangen, 30.08.2022</div><div>LUKAS Hydraulik GmbH Weinstraße 39, 91058 Erlangen Deutschland Manuela Gumbert R&D LUKAS Hydraulik GmbH i.A. </div></div>

13.2 Combination tools

LUKAS

LUKAS Hydraulik GmbH
Weinstraße 39,
91058 Erlangen
Deutschland

IDEX
RESCUE

Dinglee, LUKAS, Hurst, Vetter

IDEX Europe GmbH
Weinstraße 39
91 058 Erlangen
Germany

EG-Konformitätserklärung / EC Declaration of Conformity / Déclaration CE de conformité / Declaración de conformidad CE

Im Sinne der EG-Maschinenrichtlinie 2006/42/EG, Anhang II A

In accordance with the EC Machinery Directive 2006/42/EC, Appendix II A

Selon la directive Machines 2006/42/CE, annexe II A

A los efectos de la Directiva comunitaria de máquinas 2006/42/CE, anexo II A

Hiermit erklären wir, dass die nachfolgend bezeichneten Geräte

We hereby declare that the following tools

Par la présente déclaration CE de conformité, nous attestons que le ci-dessous outils

Con la presente declaramos que los nombrados indicados a continuación dispositivos

Artikelnr. / Item no. / N° d'article / Número del artículo	Modell / Type / Modèle / Modelo y tipo
81-30-22	SC 358
81-30-30	SC 557
81-30-35	SC 758

- in der von uns gelieferten Ausführung den Bestimmungen der Maschinenrichtlinie 2006/42/EG und den sie umsetzenden nationalen Rechtsvorschriften entsprechen.
Berücksichtigt wurden insbesondere die Normen:
 - DIN EN ISO 12100:2010, Ausgabe: 2011-03 – Sicherheit von Maschinen – Allgemeine Gestaltungsgrundsätze – Risikobeurteilung und Risikominderung
 - DIN EN 13204: 2016-12 – Doppelt wirkende hydraulischen Rettungsgeräte für die Feuerwehr und Rettungsdienste – Sicherheits- und Leistungsanforderungen
- *in the versions supplied by us conform to the EC Machinery Directive 2006/42/EC and the national statutory provisions that implement them.*
The following standards have particularly been taken into consideration:
 - *DIN EN ISO 12100:2010, publication date: 2011-03 – Safety of machinery – General principles for design – Risk assessment and risk reduction*
 - *DIN EN 13204: 2016-12 – Double acting hydraulic rescue tools for fire and rescue service use – Safety and performance requirements*
- *satisfait, dans la version que nous avons livrée, aux dispositions de la directive Machines 2006/42/CE et des législations nationales destinées à assurer son application.*
Les normes suivantes ont notamment été prises en compte :
 - *DIN EN ISO 12100, édition : 2011-03 – Sécurité des machines – Principes généraux de conception – Appréciation du risque et réduction du risque.*
 - *DIN EN 13204, édition : 2016-12 – Matériels hydrauliques de dés-incarcération à double effet à usage des services d'incendie et de secours - Prescriptions de sécurité et de performance*

LUKAS

LUKAS Hydraulik GmbH
Weinstrasse 39,
91058 Erlangen
Deutschland



Dinglee, LUKAS, Hurst, Vetter

IDEX Europe GmbH
Weinstraße 39
91 058 Erlangen
Germany

- *cumplen, en la versión suministrada por nosotros, las disposiciones de la Directiva de máquinas 2006/42/CE y la legislación nacional en vigor.*
Se han tomando en consideración, en particular, las normas:
 - *DIN EN ISO 12100, edición: 2011-03 - Seguridad de las máquinas. Principios generales para el diseño. Evaluación del riesgo y reducción del riesgo.*
 - *DIN EN 13204, edición: 2016-12 - Herramientas de rescate hidráulicos de doble acción para uso de los servicios contra incendios y de rescate. Prescripciones de seguridad y de funcionamiento.*

Bei einer nicht mit uns abgestimmten Änderung oder Verwendung der Maschine/Ausrüstung verliert diese Erklärung ihre Gültigkeit.

This declaration loses its validity in the case of alterations or usage of the machinery/equipment not approved by LUKAS.

Cette déclaration perd sa validité en cas de modification ou d'utilisation de la machine/de l'équipement sans concertation préalable avec nous.

La presente declaración quedará invalidada en caso de efectuarse cambios o modificaciones en la máquina/el equipamiento no acordados con nosotros.

Erlangen, 10.07.2019

ppA


Carsten Sauerbier
Bevollmächtigter / Authorized Representative
Director of Technical Innovation and Development
IDEX Europe GmbH

i. A.


Qibo Yan
Konstrukteur / Engineering Designer

de UK-Konformitätserklärung
Kombigerät

Artikelnummer

Hiermit erklären wir, dass die bezeichneten Geräte in der von uns
gelieferten Ausführung den aufgeführten Bestimmungen und den sie
umsetzenden nationalen Rechtsvorschriften entsprechen.

en UK Declaration of Conformity
Combination tool

Item number

We hereby declare that the described devices in the format supplied by us
conform to the specified conditions and the implementing national
regulations.

SC 358	81-30-22	Supply of Machinery (Safety) Regulations 2008 BS EN ISO 12100: 2010-12-31 BS EN 13204: 2016-09-30
SC 557	81-30-30	
SC 758	81-30-35	
		<div> <div>  </div> <div> <p>LUKAS Hydraulik GmbH Weinstraße 39, 91058 Erlangen Deutschland</p> </div> </div> <div> <div> <p>Fabio Ferrari General Manager LUKAS Hydraulik GmbH</p>  </div> <div> <p>Manuela Gumbert R&D LUKAS Hydraulik GmbH i.A. </p> </div> </div> <div> <p>LUKAS Hydraulik GmbH, 91058 Erlangen, Germany Erlangen, 30.08.2022</p> </div>

14. Notes



Please duly dispose of all packaging materials
and removed items.

LUKAS Hydraulik GmbH

A unit of the IDEX Corporation

Weinstrasse 39, 91058 Erlangen

Tel.: (+49) 0 91 31 / 698 - 0

Fax.: (+49) 0 91 31 / 698 - 394

email: lukas.info@idexcorp.com

www.lukas.com

MADE IN GERMANY