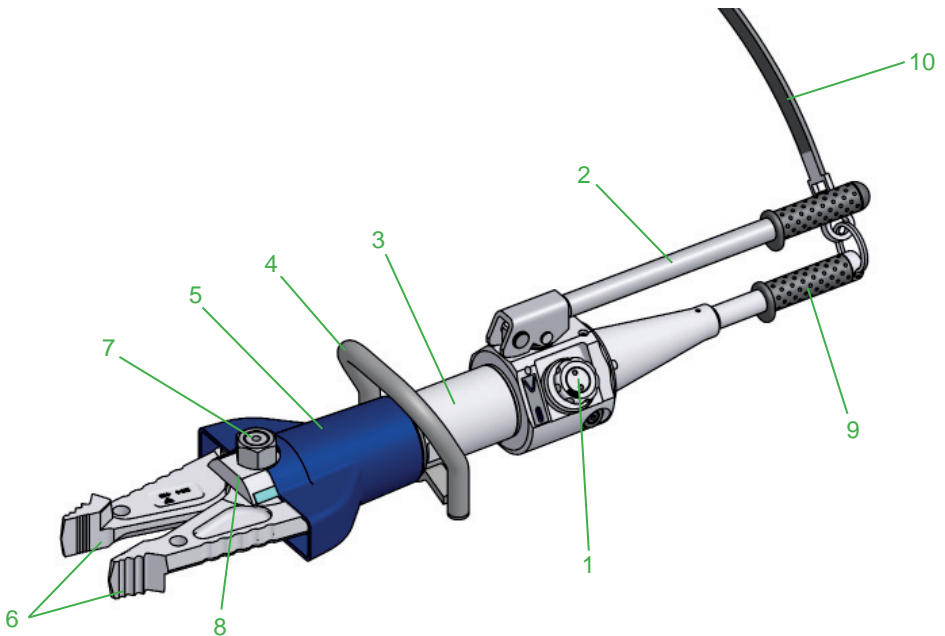


*Instruction manual for rescue equipment*



**Unitool SC 250 M**



- |                               |                                    |
|-------------------------------|------------------------------------|
| 1 Rotary knob (control valve) | 7 Pivot bolt with self-locking nut |
| 2 Hand lever                  | 8 Rotatable tool head              |
| 3 Equipment body              | 9 Grab handle                      |
| 4 Handle                      | 10 Carrying strap                  |
| 5 Protective hose             |                                    |
| 6 Blade arm                   |                                    |




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# 1. Hazard classes

We distinguish between various categories of safety instructions. The table below gives you an overview of the assignment of symbols (pictograms) and key words to the specific hazard and possible consequences.

Pictogram	Damage / injury to	Key word	Definition	Consequences
	human	DANGER!	Immediate danger	Death or major injury
		WARNING!	Potentially dangerous situation	Potential death or major injury
		CAUTION!	Less dangerous situation	Minor or slight injury
	device	CAUTION!	Danger of damage to device / environment	Damage to the equipment, damage to the environment, damage to surrounding materials
	-	NOTE	Advice for application and other important / useful information and advice	No injury / damage to persons / environment / equipment



Wearing helmets with face protection



Wearing safety gloves



Wearing protective footwear



Respecting recycling requirements



Observing environmental protection regulations



Reading and following operating instructions

## 2. Product safety

HURST products are developed and manufactured in order to guarantee the best performance and quality when used properly.

Operator safety is the most important aspect of the product design. Furthermore, the operating instructions are intended to help in using HURST products safely.

The generally applicable, legal and other binding regulations pertaining to the prevention of accidents and protection of the environment apply and are to be implemented in addition to the operating instructions.

The device may only be operated by persons with appropriate training in the safety aspects of such equipment – otherwise, there is a danger of injury occurring.

We would like to point out to all users that they should read carefully the operating instructions and the instructions contained therein before they use the device, and that they should carefully follow such.

We also recommend that you get instructed by a qualified trainer in the use of the product.



**WARNING / CAUTION!**

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






















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










**WARNING / CAUTION!**


Ensure that the Technical Data of any accessories used comply with the maximum power rating of the equipment!

	<p>Please ensure that no body parts or clothing get stuck between the visibly moving parts (e.g. blade arms).</p>	<p>It is prohibited to work under load if this load is lifted exclusively by hydraulic equipment. If this work is absolutely imperative, additional mechanical supports must be used.</p>	
	<p>Wear protective clothing, safety helmet with visor, protective gloves</p>	<p>Inspect the equipment before and after use for visible defects or damage</p>	
	<p>Immediately report any changes that occur (including changes in operating behaviour) to the appropriate persons/departments! If necessary, the device is to be deactivated immediately and secured!</p>	<p>Check all screwed fittings for leaks and externally detectable damage and rectify immediately! Squirting hydraulic fluid can result in injuries and fires.</p>	

 	<p>In the event of malfunctions, immediately deactivate the equipment and secure it. The malfunction is to be repaired immediately.</p>	<p>Do not carry out any changes (additions or conversions) to the device without obtaining the prior approval of HURST</p>	
 	<p>Observe all safety and danger notes on the device and in the operating instructions.</p>	<p>All safety and danger notes on the device are to be kept complete in a legible condition.</p>	 
 	<p>Any mode of operation which impairs safety and/or stability of the device is forbidden!</p>	<p>Comply with all specified dates or dates specified in the operating instructions pertaining to regular controls / inspections on the equipment.</p>	
 	<p>Safety devices may never be deactivated!</p>	<p>The maximum permitted operating pressure noted on the equipment must not be exceeded.</p>	 
	<p>Before the device is switched on/started up, and during its operation, it must be ensured that nobody is endangered by the operation of the device.</p>	<p>Only original HURST accessories and spare parts may be used for repairs.</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 equipment.</p>	<p>Please note, when cutting or spreading: cutting, tearing or breaking can cause material falling down or being catapulted away because of sudden removal. Necessary precautions need to be taken!</p>	
	<p>The build-up of static charge with the potential consequence of spark formation is to be avoided when handling the device.</p>	<p>Only touch any broken-off parts or the cut-off parts wearing protective gloves, since the torn / cut edges can be very sharp.</p>	

	<p>The device is filled with a hydraulic fluid. These hydraulic fluids can be dangerous to health if swallowed or their vapours inhaled. Direct contact with the skin is to be avoided for the same reason. Please also note that hydraulic liquids can also have a negative effect on biological systems.</p>	<p>When working with or storing the device, ensure that the function and the safety of the device are not impaired by the effects of stark external temperatures or that the device is damaged in any way. Please note that the device can also heat up over a long period of use.</p>	
	<p>Ensure adequate lighting when you are working.</p>	<p>Before transporting the device, always ensure that the accessories are positioned such that they cannot cause an accident.</p>	
	<p>Always keep these operating instructions within reach where the device is used.</p>	<p>Ensure the proper disposal of all removed parts, left-over oil and hydraulic fluid as well as packaging materials!</p>	 

In addition to the safety information accompanying these operating instructions, all generally applicable, legal and other mandatory national and international regulations pertaining to the prevention of accidents and protection of the environment apply and must be complied with!

 **WARNING / CAUTION!** Sparking can occur when the equipment is used on metallic materials or when metallic parts come into contact with hard or uneven surfaces!  
 Assess the nature of the working environment before operating the equipment!

## WARNING / ATTENTION / CAUTION!

The equipment **is to be used exclusively** for the **purpose stated in the operating instructions (see Chapter entitled 'Intended Use')** . Use of the equipment for any purpose other than that stated or for any duty beyond its rated capacity shall be regarded as **imintended use**. The manufacturer / supplier is not liable for any damages resulting from imintended use. The risk shall be borne solely by the user.

Observance of the operating instructions and compliance with the inspection and maintenance conditions are part of the intended use.

 **Never work in a fatigued or intoxicated state!** 

### 3. Intended use

HURST handheld combi tools are specially designed for the rescue of casualties in road accidents, rail accidents and in air travel, and for rescue from buildings. They serve the purpose of freeing injured people in accidents e. g. by cutting doors, roof bars and hinges. Trapped persons can also be freed using them e. g. by forcing open doors and/or by removing obstacles with the aid of a chain set. HURST handheld combi tools can basically be used to cut, pull, open, squeeze and lift objects.



HURST handheld combi tools are also suitable for use underwater to depths of 40 m (131 ft).



#### **CAUTION!**

In this case, you must strictly observe any leaks in order to avoid threats to the environment.



#### **WARNING / CAUTION!**

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



#### **WARNING / ATTENTION / CAUTION!**

The following may not be cut / squeezed:



- **live electric** cables
- **pre-tensioned or hardened** components, such as springs, spring steels, steering columns and rollers
- pressurised piping containing gases or liquids,
- composite materials (steel/concrete)
- explosive objects, such as airbag cartridges

NEVER operate the rescue equipment at a higher operating pressure than that stated in the chapter entitled 'Technical Data'. A higher setting can result in material damage and/or injuries.

You can obtain accessories and spare parts for the rescue device from your authorised HURST dealer!



## 4. Description of function

### 4.1 Description

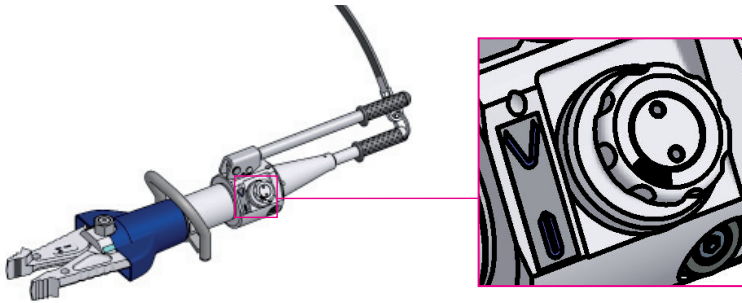
The HURST handheld combi tools are a combi tool and handpump rolled into one unit. Hydraulic power packs and energy supply or accumulators are therefore not required to generate the required hydraulic pressure.

This is generated by moving the attached handle, in exactly the same manner as a hand pump.

The working section of the tool is configured so that two equal opposing blade arms with mechanical joints open or close symmetrically in order to open, squeeze, pull or cut objects. In addition, HURST handheld combi tools are fitted with a tool head that can rotate through 360° to allow optimum application of the blade arms at all times and ensure optimum pumping.

### 4.2 Operational control

The working direction is adjusted before actuating the hand lever by turning the rotary knob to the desired switching end point (see Cover Sheet Item 1).

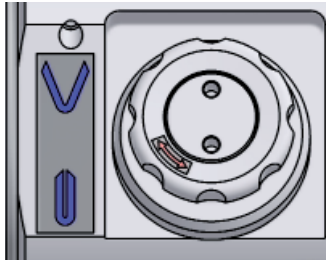


The hand lever is actuated to move the two blade arms in the specified working direction.

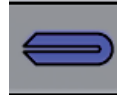
## 5. Operation

### 5.1 Controlling the working direction

The working direction is adjusted before actuating the hand lever by turning the rotary knob to the desired switching end point.



Counterclockwise= closing blade arms - Cutting

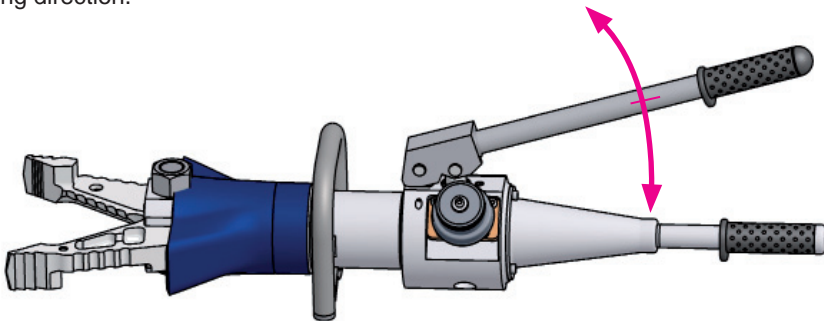


Clockwise = opening blade arms - Spreading



### 5.2 Blade arm movement

Actuate the hand lever (up and down movement) to move the two blade arms in the set working direction.



#### **NOTE:**

We recommend using full strokes when pumping. This means moving the hand lever the full distance from one end stop to the other.



#### **WARNING / CAUTION!**

The hand lever can spring back when operating. This can be caused by excess hydraulic pressure within the equipment or by external loading.

When operating the equipment, therefore, position yourself in such a way that you will not be injured if the lever springs back.

## 6. Cutting, spreading, pulling and squeezing

### 6.1 Safety information

Before rescue works can commence, the position of the obstacle must be stabilised. You must ensure an adequate substructure and / or adequate support of the object. World-wide, safety guidelines pertaining to the specific country are to be observed and complied with. In the Federal Republic of Germany, safety testing is carried out on a regular basis, in accordance with **GUV** (German Legal Accident Insurance) regulations.

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

- protective clothing,
- helmet with visor or goggles,
- safety gloves
- and ear defenders

Before activating the rescue equipment, always ensure that there is no danger to persons either involved / uninvolved in the action by the movement of the rescue equipment or by flying fragments. Further avoid unnecessary damage to property belonging to others, objects not involved by the rescue equipment / flying fragments.



**Reaching between the blade arms is strictly forbidden!**

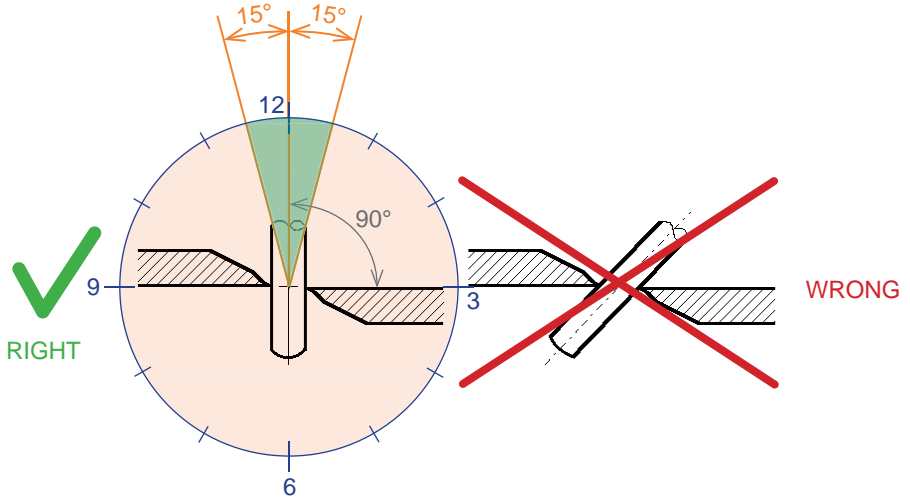


***WARNING / CAUTION!***

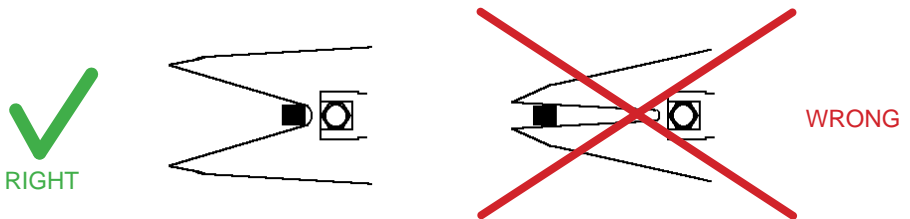
The particular effect of the force of the rescue equipment during operation could cause pieces of the vehicle to break off or fly off, posing a danger to persons. Ensure that any persons not participating in the rescue are kept **at an appropriate** distance from the equipment.

## 6.2 Cutting

The blades must be positioned at a 90° angle to the object to be cut.



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



During cutting, the gap between the blade tips (in the transverse direction) must not be exceeded of 3 mm (0.12 in.), otherwise the blade is in danger of breaking.

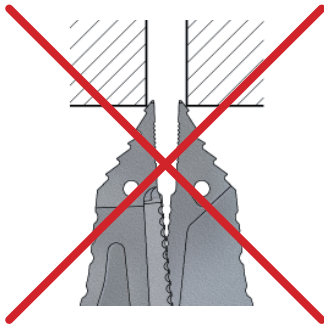


### **CAUTION!**

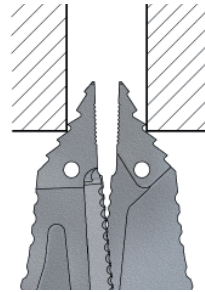
Avoid cutting particularly high-strength parts of the vehicle's bodywork (e.g. side-impact protection): this almost always damages the combi tool!

### 6.3 Spreading

Use the front area of the tips for increasing the gap only. 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 combi 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.

### 6.4 Pulling

You may only use HURST chain sets for pulling purposes.

Before the pulling process can be performed, ensure that the bolt and hook fit correctly to prevent the chain from slipping.

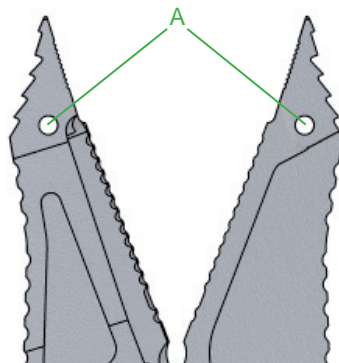
Only chain sets in perfect condition may be used!

The pull chains are to be inspected at least once per year by an expert!

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

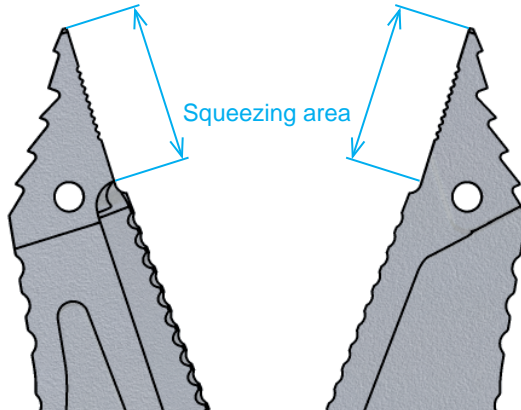
Use load bolts to fasten the HURST chainset connecting pieces to the blades (drilled holes 'A'). (see diagram right)

recommended chainset: KSV 8/50



## 6.5 Squeezing

Basically, squeezing may only be carried out in the area of the tips (see figure below).



## 7. Dismantling the equipment / deactivation after use

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



### **NOTE:**

Never store the combi tool with the blade arms fully closed! The complete closure of the blade arms can cause hydraulic and mechanical stress to build up again.

Free the rescue equipment of any stubborn dirt which may have become attached during use.

If the equipment is to be stored for a longer period of time, the exterior is to be cleaned completely and the mechanically mobile parts are to be lubricated.

Avoid storing the rescue equipment in a damp environment.

## 8. Care and maintenance

The equipment are subject to very high mechanical stresses. A visual inspection is to be carried out after every use: however, at least one visual inspection is to be carried out every six months. These inspections enable the early detection of wear and tear, which means that punctual replacement of this wearing parts prevents breakages from occurring. Also regularly check the torque of the pivot bolt. (For tightening torques  $M_A$  see 'Technical Data') Fracture testing of the blades must be carried out after 3 years. Therefore a special crack testing kit is available.

Every three years or if there is any doubt regarding the safety or reliability of the equipment, a function test must also be performed. (Please also observe the relevant valid national and international regulations pertaining to service intervals of rescue equipment). In the Federal Republic of Germany, safety testing is carried out on a regular basis, in accordance with **GVU** (German Legal Accident Insurance) regulations.

**CAUTION!**

Clean off any dirt before checking the device!  
When cleaning the equipment, ensure that no cleaning agents are used with pH values outside the range 5 - 8!

**WARNING / ATTENTION / CAUTION!**

In order to carry out maintenance and repair works, tools appropriate for the job and personal protecting equipment are essential.

**Inspections to be carried out:****Visual inspection**

- Opening width of the blade arms at the tips (see chapter 'Technical Data'),
- General tightness (leaks),
- Ease of movement of the hand lever,
- Ease of movement of the rotary knob,
- Handle present and secure,
- Ease of rotational movement of tool head through 360°,
- Labeling complete and legible,
- Covers in undamaged condition,
- Check the pivot bolt tightening torque (tightening torque  $M_A$  see 'Technical Data'),
- Blade arms free of cracks and nicks or deformations on the cutting surfaces,
- Shearing surfaces pass over each other without making contact,
- Pins and circlips on the blade arms are present and in a proper condition,
- Grooving at the blade tips to be clean and square-edged with no evidence of cracking (applies to combi tools)

**Function test**

- problem-free opening and closing when operating the hand lever and adjusting the rotary knob,
- no suspicious noises.
- blade arms stop moving when the movement of the pump is interrupted during the process (dead man's handle)

# 9. Repairs

## 9.1 General

Servicing may only be carried out by the manufacturer or personnel trained by the manufacturer and by authorised HURST dealers.

When replacing components, only original HURST spare parts must be used (as detailed in the Spare Parts List) and instructions relating to the use of special tools, assembly procedures, safety aspects and testing must be complied with (see also the chapter entitled 'Maintenance and Servicing').

**During assembly, ensure the complete cleanliness of all components, because dirt can damage the rescue equipment!**



### **WARNING / ATTENTION / CAUTION!**

Protective clothes must be worn when repairs are being carried out, because the equipment can also be pressurised in an idle state.



### **NOTE:**

Register your equipment on the HURST Hydraulik GmbH Internet website. The extended warranty will only be provided for equipment which has already been registered.



### **CAUTION!**

Because HURST rescue equipment is designed for the highest level of performance, components may only be replaced with those specified in the spare parts list for the appropriate equipment.

Other components may be replaced only when:

- you have attended the relevant HURST training course.
- you have received explicit permission from the HURST Customer Service Department. (After inquiry, examination for the distribution of permission. Examination in each individual case necessary!)



### **CAUTION!**

When cleaning the equipment, ensure that no cleaning agents are used with pH values outside the range 5 - 8!

## 9.2 Preventative maintenance

### 9.2.1 Care of the equipment

The equipment casing should be kept clean and oil should be regularly applied to the external metal services to protect them from corrosion.

### 9.2.2 Function and load testing

Function and load testing should be carried out in the event of there being any doubt as to the safety or reliability of the equipment.

HURST offers appropriate test equipment to this end.



## 9.3 Repairs

### 9.3.1 Replacing the blades, protection hose and handle

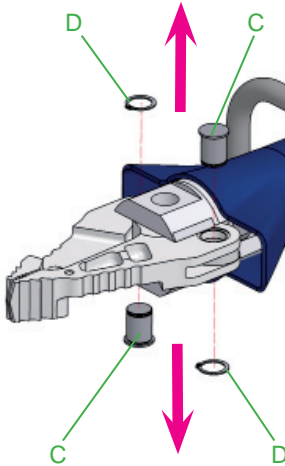
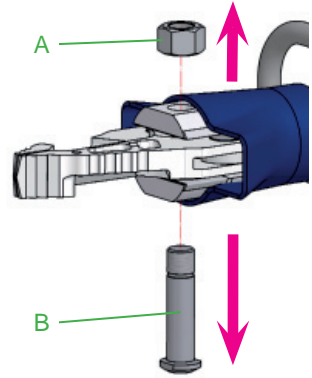
1. Start by carefully cleaning the rescue equipment.
2. Next, close the blade arms so that the tips are almost touching.



**NOTE:**

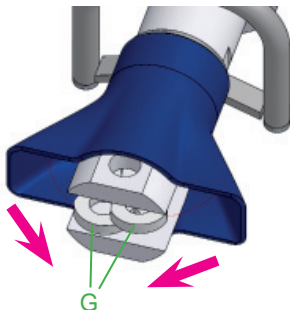
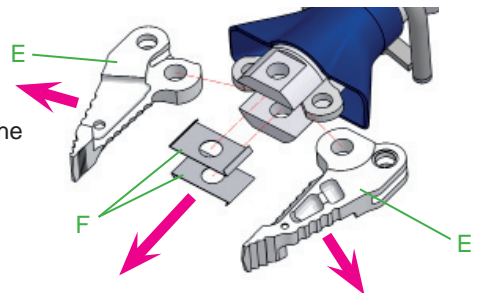
The blade bolts are only accessible when the blade arms are almost touching

3. Remove the self-locking nut 'A' and push the pivot bolt 'B' out.

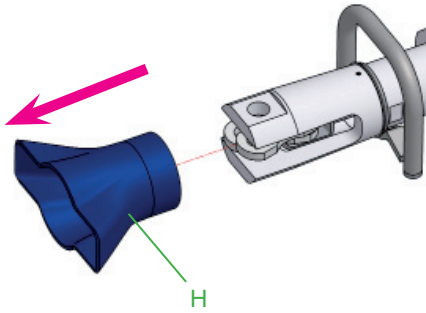


4. Slide the protection hose slightly away until the locking bolts 'C' are easily accessible.
5. Remove the retaining rings 'D' and push out bolt 'C'.

6. Now, you can remove the blade 'E' and the sliding plates 'F'.

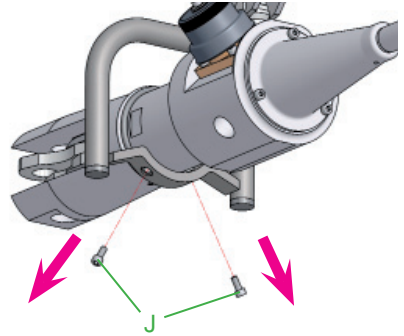


7. Fold down then the lever elements 'G'.

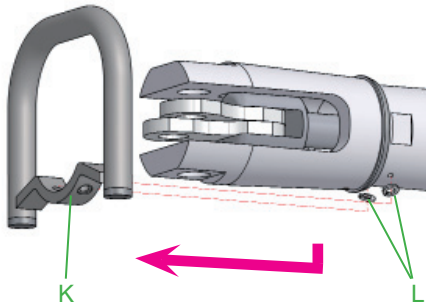


8. Finally, remove the protection hose 'H' from the tool as shown.

9. Unfasten the screws 'J' and remove them.



10. Take the handle 'K' away in direction of the lever elements and also remove the washers 'L' underneath.



11. Assembly is carried out in the reverse order.



**NOTE:**

If only the blade arms need replacing, follow the procedure as far as Step 6 and then go on to Step 11.

If the protection hose needs changing, follow the procedure as far as Step 8 and then go on to Step 11.



**CAUTION!**

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



**CAUTION!**

A special process is used to match the pivot bolt and the self-locking nut. When replacing, therefore, always exchange both the pivot bolt and the self-locking nut for a new pair! Because of the special procedure an unscrewing of the nut while working will be minimized and a resulting blade crack will be prevented.

The nuts can be unscrewed and retightened up to 10 times without affecting service performance!

### 9.3.2 Labels

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

Procedure:

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

Ensure that you attach the labels in the right position. If you are no longer sure about this, then please contact your authorised HURST dealer or HURST itself.

## 10. Troubleshooting

Problem	Check	Cause	Solution
The blade arms cannot be fully opened or closed		Insufficient hydraulic fluid in the tool	Repair by an authorised dealer, by personnel specially trained by HURST, or by HURST itself
Tool does not deliver the specified power		Device defective	
The blade arms move under load independent without operating the hand pump		Device defective	
Slow movement of the blade arms when pumping in the off-load condition	More than 45 pump strokes required to open or close the device?	Device defective	
Rotary knob on the control valve difficult to turn under load conditions		Device defective	
The leaking of hydraulic fluid from the pump lever or from the blade arm piston rod		Defective piston rod seal	
		Damage to the piston	
Material to be cut slides between the blade arms during cutting	Check pivot bolt	Pivot bolt not tightened with the prescribed torque	Tighten the pivot bolt.
Tool head cannot be turned		Tool under pressure	Depressurise the tool


If it is not possible to remedy the malfunctions, inform an authorised HURST dealer or the HURST Customer Service department directly!

The address of the HURST Customer Service Department is:

**HURST** **JAWS OF LIFE, INC**  
**A Unit of IDEX Corporation**  
 711 N. Post Road  
 Shelby, NC 28150 USA  
 Phone: (704) 487-6961  
 Fax: (704) 487-7271  
 e-mail: [contacthurst@idexcorp.com](mailto:contacthurst@idexcorp.com)

## 11. Technical data

Since all values are subject to tolerances, minor differences may occur between the data on your device and the data in the following schedules! The values can also differ due to reading inaccuracies and/or the tolerances of the measuring equipment used.



**NOTE:**  
 The following tables contain only the technical data required for standard acceptance.  
 Additional data concerning your unit can be obtained from HURST on request

### 11.1 Combi tools

Type	<b>SC 250 M</b>	
<b>Ref. no.</b>	273055000	
<b>Dimensions</b> (l x w x h)	[mm] <i>[in.]</i>	850 x 190 x 158 <i>33.47 x 7.49 x 6.23</i>
<b>max. cutting opening</b>	[mm] <i>[in.]</i>	225 <i>8.9</i>
<b>max. cutting force</b> (rear end of the cutting surface)	[kN] <i>[lbf.]</i>	261 <i>58,673</i>
<b>max. spreading distance</b> (on the blade tips)	[mm] <i>[in.]</i>	308 <i>12.1</i>
<b>max. spreading force</b> (25mm from the tips)	[kN] <i>[lbf.]</i>	34 <i>7,643</i>
<b>Mass incl. hydraulic fluid</b>	[kg] <i>[lbs.]</i>	11,9 <i>43.7</i>
<b>Cutting classification acc. to NFPA 1936</b>	A6/B6/C6/D7/E7	

## 11.2 Pivot bolt tightening torques

Type		SC 250 M
Pivot bolt		M24 x 1,5
Wrench size	[mm]	36
	<i>[in.]</i>	<i>1.42</i>
Torque	[Nm]	100 +10
	<i>[lbf.in.]</i>	<i>885 + 89</i>

## 11.3 Cutting performance

Cutting material	Cutting material dimensions
	<p><b>SC 250 M</b></p> <p>max.</p> <p>[mm]</p> <p><i>[in.]</i></p>
Round material steel (acc. to EN 13204) ○	<p>26</p> <p><i>1.02</i></p>

## 11.4 Temperature ranges for operating and storage

Operating temperature	[°C] / [°F]	-20 ... +55	<i>-4 ... +131</i>
Ambient temperature (device in operation)	[°C] / [°F]	-25 ... +45	<i>-13 ... +113</i>
Storage temperature (device not in operation)	[°C] / [°F]	-30 ... +60	<i>-22 ... +140</i>

## **12. EC declarations of conformity**

## 13. Notes



Please dispose of all packaging materials and dismantled parts properly

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**HURST** JAWS OF LIFE, INC  
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