

# HILTI

## DX 462 CM/HM

Operating instructions

en

Mode d'emploi

fr

操作說明書

zh

取扱説明書

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사용설명서

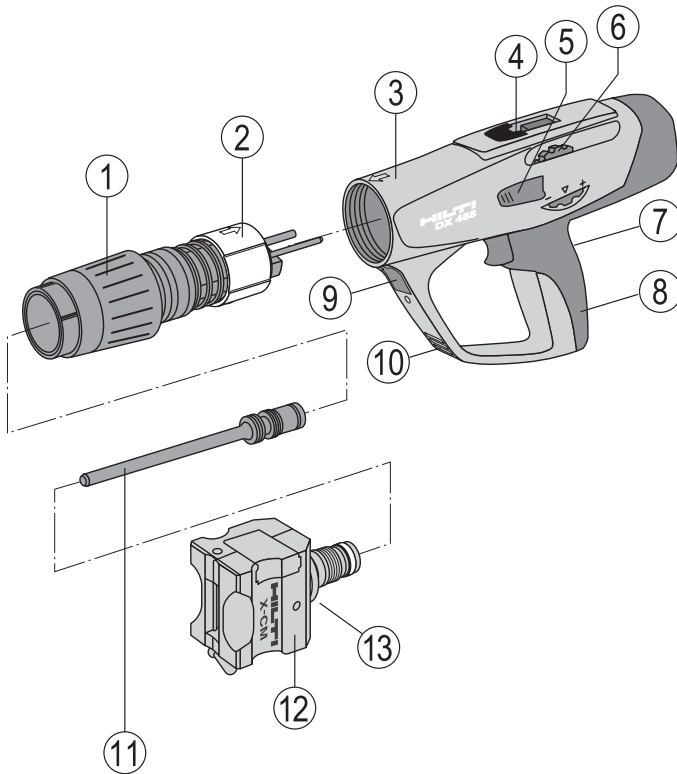
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操作说明书

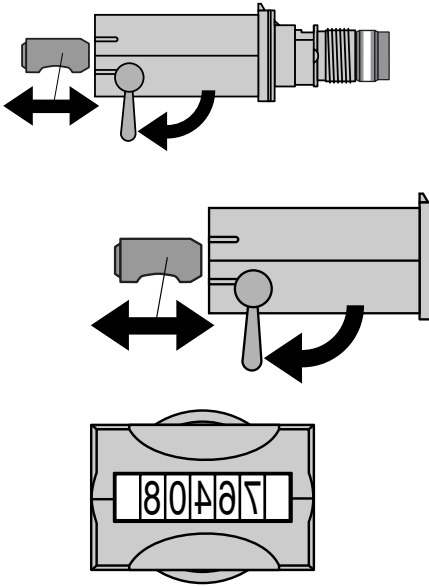
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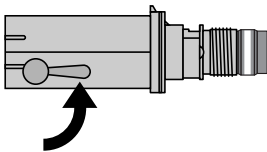
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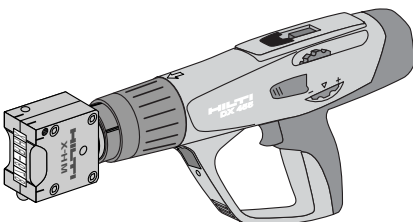
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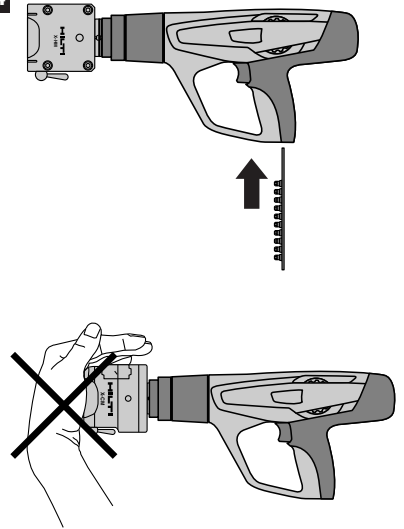
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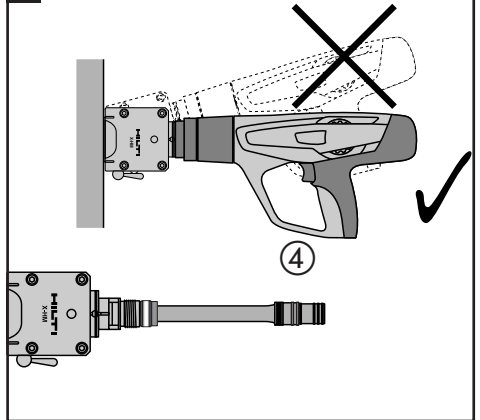
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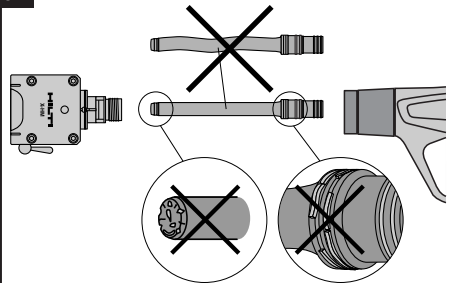
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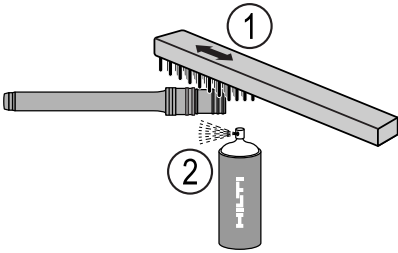
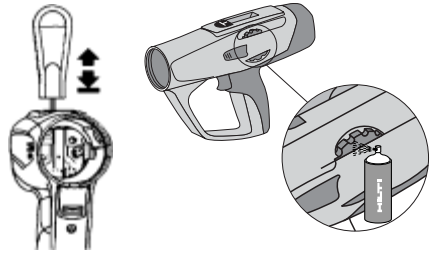
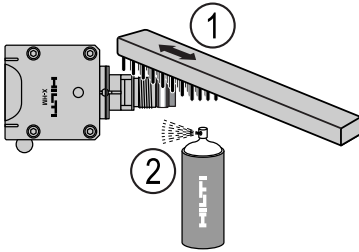
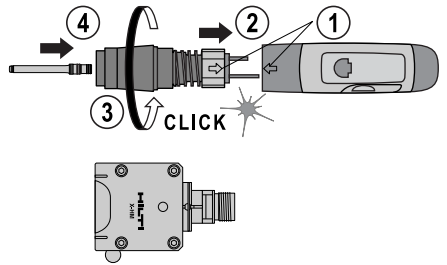
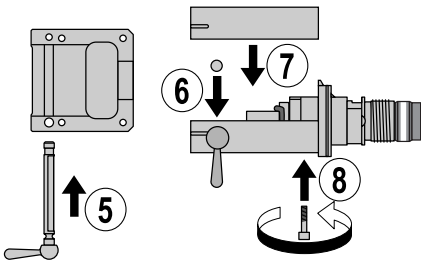
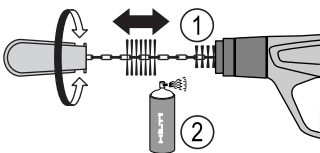
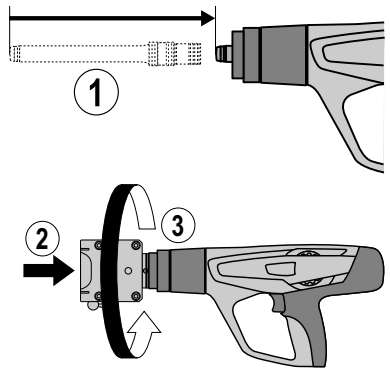


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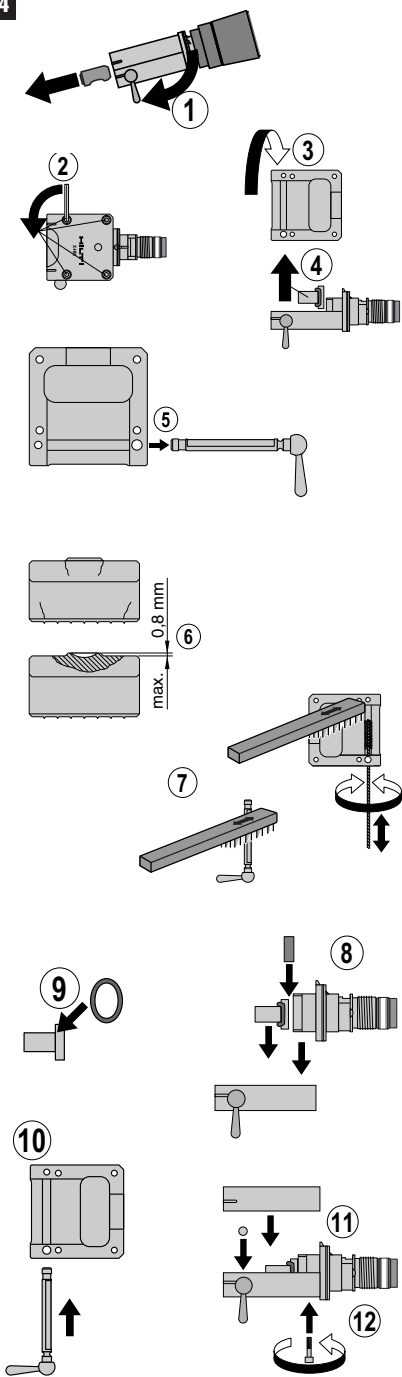


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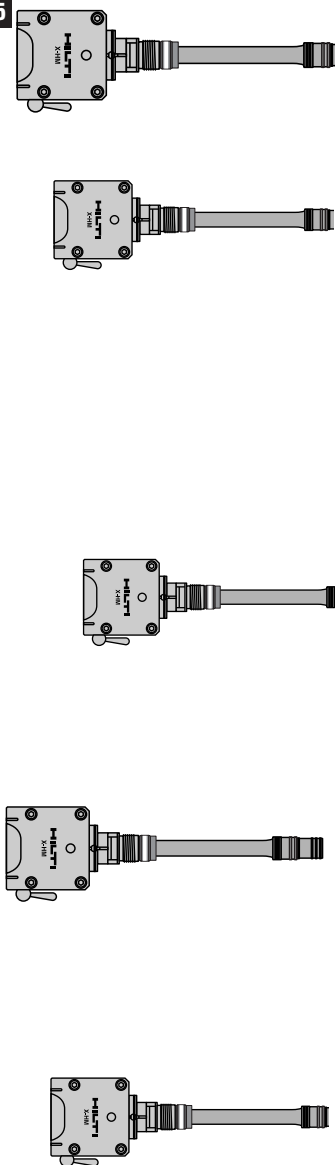


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# ORIGINAL OPERATING INSTRUCTIONS

# DX 462 CM / DX 462 HM powder-actuated tool

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It is essential that the operating instructions are read before the tool is operated for the first time.

Always keep these operating instructions together with the tool.

Ensure that the operating instructions are with the tool when it is given to other persons.

## Description of main parts **1**

- ① Exhaust gas piston return unit
- ② Guide sleeve
- ③ Housing
- ④ Cartridge guideway
- ⑤ Powder regulation wheel release button
- ⑥ Power regulation wheel
- ⑦ Trigger
- ⑧ Grip
- ⑨ Piston return unit release button
- ⑩ Ventilation slots
- ⑪ Piston\*
- ⑫ Marking head\*
- ⑬ Marking head release button

\* These parts may be replaced by the user/operator.

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## 1. General information

### 1.1 Signal words and their meaning

#### WARNING

The word WARNING is used to draw attention to a potentially dangerous situation which could lead to severe personal injury or death.

#### CAUTION

The word CAUTION is used to draw attention to a potentially dangerous situation which could lead to minor personal injury or damage to the equipment or other property.

### 1.2 Pictograms

#### Warning signs



General warning



Warning: hot surface

#### Symbols



Read the operation instructions before use

#### Obligation signs



Wear eye protection



Wear a safety helmet



Wear ear protection

**1** The numbers refer to the illustrations. The illustrations can be found on the fold-out cover pages. Keep these pages open while you read the operating instructions.

In these operating instructions, the designation “the tool” always refers to the DX 462 CM / DX 462 HM powder-actuated tool.

#### Location of identification data on the tool

The type designation and the serial number are printed on the type plate on the tool. Make a note of this information in your operating instructions and always refer to it when making an enquiry to your Hilti representative or service department.

Type: \_\_\_\_\_

Serial no.: \_\_\_\_\_

## 2. Description

The Hilti DX 462HM and DX 462CM are suitable for the marking of a wide variety of base materials.

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The tool works on the well-proven piston principle and is therefore not related to high-velocity tools. The piston principle provides an optimum of working and fastening safety. The tool works with cartridges of 6.8/11 caliber.

The piston is returned to the starting position and the cartridges are fed to the firing chamber automatically by gas pressure from the fired cartridge.

The system permits a high quality mark to be comfortably, quickly and economically applied to a variety of base materials with temperatures up to 50°C for the DX 462CM and with temperatures up to 800°C with DX 462HM. A mark can be made every 5 seconds or roughly every 30 seconds if characters are changed.

The X-462CM polyurethane and the X-462HM steel marking heads accept either 7 of the 8 mm type characters or 10 of the 5,6 mm type characters, with heights of 6, 10 or 12 mm.

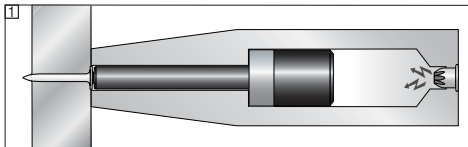
As with all powder-actuated tools, the DX 462HM and the DX 462CM, the X-462HM and X-462CM marking heads, the marking characters and the cartridges form a "technical unit". This means that troublefree marking with this system can only be assured if the characters and cartridges specially manufactured for the tool, or products of equivalent quality, are used. The marking and application recommendations given by Hilti are only applicable if this condition is observed.

For optimum performance and the highest level of reliability we recommend use of Hilti cartridges or cartridges of equivalent quality.

For EU and EFTA states the following also applies: To ensure safe use in this tool, the cartridges must have passed the relevant tests described in the CIP approval requirements (source: Comprehensive edition of adopted C.I.P. decisions, Liège, 2005) as well as the tests described at [www.hilti.com/cartridgetest](http://www.hilti.com/cartridgetest).

The tool features 5-way safety – for the safety of the operator and bystanders.

### The piston principle



The energy from the propellant charge is transferred to a piston, the accelerated mass of which drives the fas-

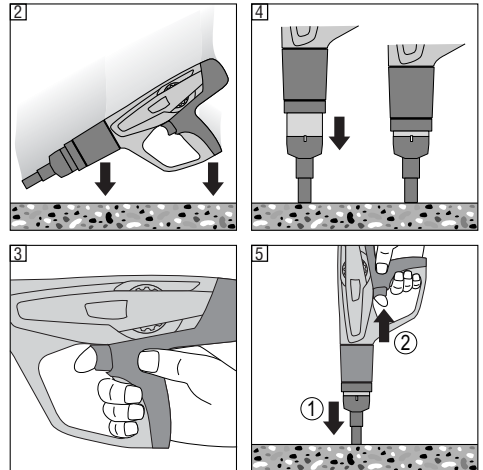
tener into the base material. As approximately 95 % of the kinetic energy is absorbed by the piston, the fastener is driven into the base material at much reduced velocity (less than 100 m/sec.) in a controlled manner. The driving process ends when the piston reaches the end of its travel. This makes dangerous through-shots virtually impossible when the tool is used correctly.

The drop-firing safety device [2] is the result of coupling the firing mechanism with the cocking movement. This prevents the Hilti DX tool from firing when it is dropped onto a hard surface, no matter at which angle the impact occurs.

The trigger safety device [3] ensures that the cartridge cannot be fired simply by pulling the trigger only. The tool can be fired only when pressed against the work surface.

The contact pressure safety device [4] requires the tool to be pressed against the work surface with a significant force. The tool can be fired only when pressed fully against the work surface in this way.

In addition, all Hilti DX tools are equipped with an unintentional firing safety device [5]. This prevents the tool from firing if the trigger is pulled and the tool then pressed against the work surface. The tool can be fired only when it is first pressed (1.) against the work surface correctly and the trigger then pulled (2.).



### 3. Cartridges, accessories and characters

#### Marking heads

Ordering designation	Application
X-462 CM	Polyurethane head for marking up to 50°C
X-462 HM	Steel head for marking up to 800°C

#### Pistons

Ordering designation	Application
X-462 PM	Standard piston for marking applications

#### Accessories

Ordering designation	Application
X-PT 460	Also known as the pole tool. An extension system that allow marking on very hot materials at a safe distance. Used with DX 462HM
Spares pack HM1	To replace the screws and the O ring. Only with X 462HM marking head
Centering devices	For marking on curve surfaces. Only with X-462CM marking head. (Axle A40-CML always required when centering device is used)

#### Characters

Ordering designation	Application
X-MC-S characters	Sharp characters cut into the surface of the base material to form an impression. They can be used where the influence of marking on the base material is non-critical
X-MC-LS characters	For use in more sensitive applications. With a rounded radius, low-stress characters deform, rather than cut, the surface of the base material. In this way, their influence on it is reduced
X-MC-MS characters	Mini-stress characters exert even less influence on the base material surface than low-stress. Like these, they have a rounded, deforming radius, but derive their mini-stress characteristics from the interrupted dot pattern (only available on special)

Please contact your local Hilti Center or Hilti representative for details of other fasteners and accessories.

#### Cartridges

Ordering designation	Colour code	Power level
6.8x11 M green	Green	Low
6.8x11 M yellow	Yellow	Medium

90% of all marking can be carried out using the green cartridge. Use the cartridge with the lowest possible power in order to keep wear on the piston, impact head and marking characters to a minimum

#### Safety accessory and cleaning set

Safety goggles, earplugs, Hilti spray, ramrod, flat brush, large round brush, small round brush, scraper, cleaning cloth.



## 4. Technical data

	<b>DX 462CM</b>	<b>DX 462HM</b>
Weight	3.92 kg (8.64 lb)	4.62 kg (10.19 lb)
Tool length	435 mm (17.13")	425 mm (16.73")
Recommended maximum fastening rate	700 per hour	
Cartridges	6.8/11 M green and yellow	

Right of technical changes reserved!

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## 5. Safety rules

### 5.1 Basic safety instructions

In addition to the safety rules listed in the individual sections of these operating instructions, the following points must be strictly observed at all times.

### 5.2 Use as intended

The tool is designed for professional use in the marking of steel.



### 5.3 Improper use

- Manipulation or modification of the tool is not permissible.
- Do not operate the tool in an explosive or flammable atmosphere, unless the tool is approved for such use.
- To avoid the risk of injury, use only original Hilti characters, cartridges, accessories and spare parts or those of equivalent quality.
- Observe the information printed in the operating instructions concerning operation, care and maintenance.
- Never point the tool at yourself or any bystander.
- Never press the muzzle of the tool against your hand or other part of your body.
- Do not attempt to mark excessively hard or brittle materials such as glass, marble, plastic, bronze, brass, copper, rock, hollow brick, ceramic brick or gas concrete.

### 5.4 Technology

- This tool is designed with the latest available technology.
- The tool and its ancillary equipment may present hazards when used incorrectly by untrained personnel or not as directed.



### 5.5 Make the workplace safe

- Objects which could cause injury should be removed from the working area.
- Operate the tool only in well-ventilated working areas.
- The tool is for hand-held use only.
- Avoid unfavorable body positions. Work from a secure stance and stay in balance at all times
- Keep other persons, children in particular, outside the working area.
- Keep the grip dry, clean and free from oil and grease.



### 5.6 General safety precautions

- Operate the tool only as directed and only when it is in faultless condition.
- If a cartridge misfires or fails to ignite, proceed as follows:
  1. Keep the tool pressed against the working surface for 30 seconds.
  2. If the cartridge still fails to fire, withdraw the tool from the working surface, taking care that it is not pointed towards your body or bystanders.
  3. Manually advance the cartridge strip one cartridge. Use up the remaining cartridges on the strip. Remove the used cartridge strip and dispose of it in such a way that it can be neither reused nor misused.
- After 2-3 misfires (no clear detonation is heard and the resulting marks are obviously less deep), proceed as follows:
  1. Stop using the tool immediately.
  2. Unload and disassemble the tool (see 8.3).
  3. Check the piston
  4. Clean the tool for wear (see 8.5–8.13)
  5. Do not continue to use the tool if the problem per-

sists after carrying out the steps described above. Have the tool checked and repaired if necessary at a Hilti repair center

- Never attempt to pry a cartridge from the magazine strip or the tool.
- Keep the arms flexed when the tool is fired (do not straighten the arms).
- Never leave the loaded tool unattended.
- Always unload the tool before beginning cleaning, servicing or changing parts and before storage.
- Unused cartridges and tools not presently in use must be stored in a place where they are not exposed to humidity or excessive heat. The tool should be transported and stored in a toolbox that can be locked or secured to prevent use by unauthorized persons.



### 5.7 Temperature

- Do not disassemble tool when it is hot.
- Never exceed the recommended maximum fastener driving rate (number of marks per hour). The tool may otherwise overheat.
- Should the plastic cartridge strip begin to melt, stop using the tool immediately and allow it to cool down.

### 5.8 Requirements to be met by users

- The tool is intended for professional use.
- The tool may be operated, serviced and repaired only by authorised, trained personnel. This personnel must be informed of any special hazards that may be encountered.
- Proceed carefully and do not use the tool if your full attention is not on the job.
- Stop working with the tool if you feel unwell.

### 5.9 Personal protective equipment



- The operator and other persons in the immediate vicinity must always wear eye protection, a hard hat and ear protection.

## 6. Before use



### 6.1 Tool inspection

- Ensure that there is no cartridge strip in the tool. If there is cartridge strip in the tool, remove it by hand from the tool.
- Check all external parts of the tool for damage at regular intervals and check that all controls operate properly. Do not operate the tool when parts are damaged or when the controls do not operate properly. If necessary, have the tool repaired at a Hilti service centre.
- Check the piston for wear (see "8. Care and maintenance").

### 6.2 Changing the marking head

1. Check that no cartridge strip is present in the tool. If a cartridge strip is found in the tool, pull it upwards and out of the tool by hand.
2. Press the release button on the side of marking head.
3. Unscrew the marking head.
4. Check the marking head piston for wear (see "Care and maintenance").
5. Push the piston into the tool as far as it will go.
6. Push the marking head firmly onto the piston return unit.
7. Screw the marking head onto the tool until it engages.

## 7. Operation



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<b>CAUTION</b>	
 	<ul style="list-style-type: none"> <li>■ The base material may splinter or fragments of the cartridge strip may fly off.</li> <li>■ Flying fragments may injure parts of the body or the eyes.</li> <li>■ Wear safety goggles and a hard hat (users and bystanders).</li> </ul>

<b>CAUTION</b>	
	<ul style="list-style-type: none"> <li>■ The marking is achieved by a cartridge being fired.</li> <li>■ Excessive noise may damage the hearing.</li> <li>■ Wear ear protection (users and bystanders).</li> </ul>

<b>WARNING</b>	
	<ul style="list-style-type: none"> <li>■ The tool could be made ready to fire if pressed against a part of the body (e.g. hand)..</li> <li>■ When in the “ready to fire” state, a marking head could be driven into a part of the body.</li> <li>■ Never press the marking head of the tool against parts of the body.</li> </ul>

<b>WARNING</b>	
	<ul style="list-style-type: none"> <li>■ Under certain circumstances, the tool could be made ready to fire by pulling back the marking head.</li> <li>■ When in the “ready to fire” state, a marking head could be driven into a part of the body.</li> <li>■ Never pull back the marking head by hand.</li> </ul>

### 7.1 Loading the characters

The marking head can receive 7 characters 8 mm width or 10 characters 5.6 mm width

1. Insert the characters according to the mark desired. Locking lever in the unblocked position.
2. Always insert the marking characters in the middle of the marking head. An equal number of space characters should be inserted on each side of the string of characters.
3. If necessary, compensate an uneven edge distance by using the <-> marking character. This helps ensure an even impact.
4. After inserting the desired marking characters, they must be secured by turning the locking lever.
5. The tool and head are now in the ready to operate position.

#### CAUTION :

- Use only original space characters as blank space. In emergency, a normal character can be ground off and used.
- Do not insert marking characters upside-down. This results in shorter life length of the impact extractor and reduces the marking quality

### 7.2 Inserting the cartridge strip

Load the cartridge strip (narrow end first) by inserting it into the bottom of the tool grip until flush. If the strip has been partly used, pull it through until an unused cartridge is in the chamber. (The last visible number on the back of the cartridge strip indicates which cartridge is next to be fired.)

### 7.3 Adjusting the driving power

Select a cartridge power level and power setting to suit the application. If you cannot estimate this on the basis of previous experience, always begin with the lowest power.

1. Press the release button.
2. Turn the power regulation wheel to 1.
3. Fire the tool.
4. If the mark is not clear enough (i.e. not deep enough), increase the power setting by turning the power regulation wheel. If necessary, use a more powerful cartridge.

### 7.4 Marking with the tool

1. Press the tool firmly against the work surface at right angle.
2. Fire the tool by pulling the trigger

#### WARNING

- Never press the marking head with the palm of your hand. This is an accident hazard.
- Never exceed the maximum fastener driving rate.

### 7.5 Reloading the tool

Remove the used cartridge strip by pulling it upwards out of the tool. Load a new cartridge strip.

## 8. Care and maintenance


When this type of tool is used under normal operating conditions, dirt and residues build up inside the tool and functionally relevant parts are also subject to wear. Regular inspections and maintenance are thus essential in order to ensure reliable operation. We recommend that the tool is cleaned and the piston and piston brake are checked at least weekly when the tool is subjected to intensive use, and at the latest after driving 10,000 fasteners.

### 8.1 Care of the tool

The outer casing of the tool is manufactured from impact-resistant plastic. The grip comprises a synthetic rubber section. The ventilation slots must be unobstructed and kept clean at all times. Do not permit foreign objects to enter the interior of the tool. Use a slightly damp cloth to clean the outside of the tool at regular intervals. Do not use a spray or steam-cleaning system for cleaning.

### 8.2 Maintenance

Check all external parts of the tool for damage at regular intervals and check that all controls operate properly. Do not operate the tool when parts are damaged or when the controls do not operate properly. If necessary, have the tool repaired at a Hilti service centre.

CAUTION	
	<ul style="list-style-type: none"><li>■ The tool can get hot while operating.</li><li>■ You could burn your hands.</li><li>■ Do not disassemble the tool while it is hot. Let the tool cool down.</li></ul>

### Servicing the tool

The tool should be serviced if:

1. Cartridges misfire
2. Fastener driving power is inconsistent
3. If you notice that:
  - contact pressure increases,
  - trigger force increases,
  - power regulation is difficult to adjust (stiff),
  - the cartridge strip is difficult to remove.

### CAUTION while cleaning the tool:

- Never use grease for maintenance/lubrication of tool parts. This may strongly affect the functionality of the tool. Use only Hilti spray or such of equivalent quality.
- Dirt from DX tool contains substances that could be endangering your health.
  - Do not breath in the dust from cleaning.
  - Keep dust away from food.
  - Wash your hands after cleaning the tool.

### 8.3 Disassemble the tool

1. Check that no cartridge strip is present in the tool. If

- a cartridge strip is found in the tool, pull it upwards and out of the tool by hand.
2. Press the release button at the marking head side.
3. Unscrew the marking head.
4. Remove the marking head and the piston.

### 8.4 Check the piston for wear

Replace the piston if:

- It is broken
- The tip is heavily worn (i.e. a 90° segment is chipped off)
- Piston rings are broken or missing
- It is bent (check by rolling on a even surface)

### NOTE

- Do not use worn pistons. Do not modify or grind pistons

### 8.5 Cleaning the piston rings

1. Clean the piston rings with the flat brush until they move freely..
2. Spray the piston rings lightly with Hilti spray.

### 8.6 Clean the threaded section of the marking head

1. Clean the thread with the flat brush.
2. Spray the thread lightly with Hilti spray.

### 8.7 Disassemble the piston return unit

1. Press the release button at the gripping part.
2. Unscrew the piston return unit.

### 8.8 Clean the piston return unit

1. Clean the spring with the flat brush.
2. Clean the front end with the flat brush.
3. Use the small round brush to clean the two holes at the end face.
4. Use the large round brush to clean the large hole.
5. Spray the piston return unit lightly with Hilti spray.

### 8.9 Clean inside the housing

1. Use the large round brush to clean inside the housing.
2. Spray the inside of the housing lightly with Hilti spray.

### 8.10 Clean the cartridge strip guideway

Use the scraper provided to clean the right and left cartridge strip guideways. The rubber cover must be lifted slightly to facilitate cleaning of the guideway.

### 8.11 Spray the power regulation wheel lightly with Hilti spray.

### 8.12 Fit the piston return unit

1. Bring the arrows on the housing and on the exhaust gas piston return unit into alignment.
2. Push the piston return unit into the housing as far as it will go.
3. Screw the piston return unit onto the tool until it engages.

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**8.13 Assemble the tool**

1. Push the piston into the tool as far as it will go.
2. Press the marking head firmly onto the piston return unit.
3. Screw the marking head onto the tool until it engages.

**8.14 Cleaning and servicing the X-462 HM steel marking head**

The steel marking head should be cleaned: after a large number of markings (20,000) / when problems occur e.g. impact extractor damaged / when marking quality disimproves

1. Remove the marking characters by turning the locking lever to the open position
2. Remove the 4 locking screws M6x30 with an Allen key
3. Separate the upper and lower housing parts by applying some force, for example by using a rubber hammer
4. Remove and individually check for wear and tear, the impact extractor with O-ring, the absorbers and adaptor assembly
5. Remove the locking lever with axle
6. Pay special attention to the wear on the impact extractor. Failure to replace a worn or cracked impact extractor can cause premature breakage and poor marking quality.
7. Clean the inside head and the axle
8. Install the adaptor piece in the housing
9. Mount a new rubber O-ring on the impact extractor
10. Insert the axle with locking lever in the bore
11. After installing the impact extractor place the absorbers
12. Join the upper and lower housing. Secure the 4 locking screws M6x30 using loctite and Allen key.

**8.15 Cleaning and servicing the X-462CM polyurethane marking head**

The polyurethane marking head should be cleaned: after a large number of markings (20,000) / when problems occur e.g. impact extractor damaged / when marking quality disimproves

1. Remove the marking characters by turning the locking lever to the open position
2. Unscrew the locking screw M6x30 approximately 15 times with an Allen key
3. Remove the breech from the marking head
4. Remove and individually check for wear and tear, the impact extractor with O-ring, the absorbers and adaptor assembly. If it is necessary, insert a drift punch through the bore.
5. Remove the locking lever with axle by turning it to the unlocked position and applying some force.
6. Pay special attention to the wear on the impact extractor. Failure to replace a worn or cracked impact extractor can cause premature breakage and poor marking quality.
7. Clean the inside head and the axle

8. Insert the axle with locking lever in the bore and firmly press it until it clicks into place
9. Mount a new rubber O-ring on the impact extractor
10. After placing the absorber on the impact extractor, insert them into the marking head
11. Insert the breech into the marking head and secure the locking screw M6x30 with an Allen key

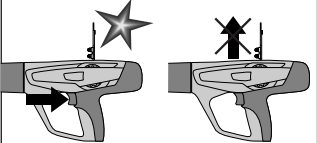
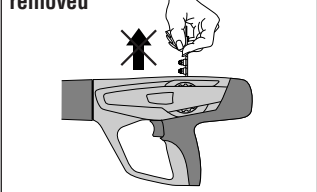
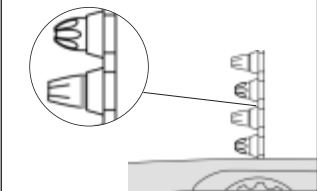
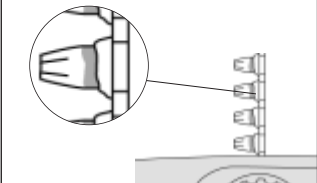
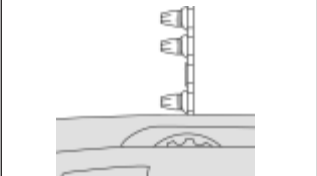
**8.16 Checking the tool following care and maintenance**

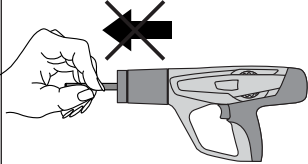
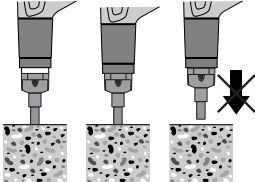
After carrying out care and maintenance on the tool, check that all protective and safety devices are fitted and that they function correctly.

**NOTE**

- The use of lubricants other than Hilti spray could damage rubber parts.

## 9. Troubleshooting

Fault	Cause	Possible remedies
<p><b>Cartridge not transported</b></p> 	<ul style="list-style-type: none"> <li>■ Damaged cartridge strip</li> <li>■ Carbon build-up</li> <li>■ Tool damaged</li> </ul>	<ul style="list-style-type: none"> <li>■ Change cartridge strip</li> <li>■ Clean the cartridge strip guide-way (see 8.10)</li> </ul> <p>If the problem persists:</p> <ul style="list-style-type: none"> <li>■ Contact Hilti Repair Centre</li> </ul>
<p><b>Cartridge strip cannot be removed</b></p> 	<ul style="list-style-type: none"> <li>■ Tool overheated because of high setting rate</li> <li>■ Tool damaged</li> </ul> <p><b>WARNING</b> Never attempt to pry a cartridge from the magazine strip or tool.</p>	<ul style="list-style-type: none"> <li>■ Let the tool cool down and then carefully try to remove the cartridge strip</li> </ul> <p>If not possible:</p> <ul style="list-style-type: none"> <li>■ Contact Hilti Repair Centre</li> </ul>
<p><b>Cartridge cannot be fired</b></p> 	<ul style="list-style-type: none"> <li>■ Bad cartridge</li> <li>■ Carbon build-up</li> </ul> <p><b>WARNING</b> Never attempt to pry a cartridge from the magazine strip or the tool.</p>	<ul style="list-style-type: none"> <li>■ Manually advance the cartridge strip one cartridge</li> </ul> <p>If the problem occurs more often: Clean the tool (see 8.3–8.13)</p> <p>If the problem persists:</p> <ul style="list-style-type: none"> <li>■ Contact Hilti Repair Centre</li> </ul>
<p><b>Cartridge strip melts</b></p> 	<ul style="list-style-type: none"> <li>■ Tool is compressed too long while fastening.</li> <li>■ Fastening frequency is too high</li> </ul>	<ul style="list-style-type: none"> <li>■ Compress the tool less long while fastening.</li> <li>■ Remove the cartridge strip</li> <li>■ Disassemble the tool (see 8.3) for fast cooling and to avoid possible damage</li> </ul> <p>If the tool cannot be disassembled:</p> <ul style="list-style-type: none"> <li>■ Contact Hilti Repair Centre</li> </ul>
<p><b>Cartridge falls out of the cartridge strip</b></p> 	<ul style="list-style-type: none"> <li>■ Fastening frequency is too high</li> </ul> <p><b>WARNING:</b> Never attempt to pry a cartridge from the magazine strip or tool.</p>	<ul style="list-style-type: none"> <li>■ Immediately discontinue using the tool and let it cool down</li> <li>■ Remove cartridge strip</li> <li>■ Let the tool cool down.</li> <li>■ Clean the tool and remove loose cartridge.</li> </ul> <p>If it is impossible to disassemble the tool:</p> <ul style="list-style-type: none"> <li>■ Contact Hilti Repair Centre</li> </ul>

Fault	Cause	Possible remedies
<p><b>The operator notices:</b></p> <ul style="list-style-type: none"> <li>- increased contact pressure</li> <li>- increased trigger force</li> <li>- power regulation stiff to adjust</li> <li>- cartridge strip is difficult to remove</li> </ul>	<ul style="list-style-type: none"> <li>■ Carbon build-up</li> </ul>	<ul style="list-style-type: none"> <li>■ Clean the tool (see 8.3–8.13)</li> </ul>
<p><b>Piston is stuck in the piston return unit and cannot be removed</b></p> 	<ul style="list-style-type: none"> <li>■ Damaged piston</li> <li>■ Carbon build-up</li> </ul>	<ul style="list-style-type: none"> <li>■ Remove cartridge strip</li> <li>■ Unscrew piston return unit and push out the piston through the cartridge chamber using the pushrod provided</li> <li>■ Check piston, if necessary, change (see 8.4)</li> <li>■ Clean the tool (see 8.3–8.13)</li> </ul>
<p><b>Piston return unit is stuck</b></p> 	<ul style="list-style-type: none"> <li>■ Carbon build-up</li> </ul>	<ul style="list-style-type: none"> <li>■ Manually pull the front part of the piston return unit out of the tool</li> <li>■ Clean the tool (see 8.3–8.13)</li> </ul> <p>If the problem persists:</p> <ul style="list-style-type: none"> <li>■ Contact Hilti Repair Centre</li> </ul>
<p><b>Variation in marking quality</b></p>	<ul style="list-style-type: none"> <li>■ Piston damaged</li> <li>■ Damaged parts (impact extractor, O-ring) into the marking head</li> <li>■ Worn characters</li> </ul>	<ul style="list-style-type: none"> <li>■ Check the piston. Replace if necessary</li> <li>■ Cleaning and servicing the marking head (see 8.14–8.15)</li> <li>■ Check quality of marking characters</li> </ul>

## 10. Disposal

Most of the materials from which Hilti power actuated tools are manufactured can be recycled. The materials must be correctly separated before they can be recycled. In many countries, Hilti has already made arrangements for taking back your old powder actuated tools for recycling. Please ask your Hilti customer service department or Hilti sales representative for further information.

Should you wish to return the power actuated tool yourself to a disposal facility for recycling, proceed as follows: Dismantle the tools as far as possible without the need for special tools.

### Separate the individual parts as follows:

Part / assembly	Main material	Recycling
Toolbox	Plastic	Plastics recycling
Outer casing	Plastic / synthetic rubber	Plastics recycling
Screws, small parts	Steel	Scrap metal
Used cartridge strip	Plastic / steel	According to local regulations

## 11. Manufacturer's warranty – DX tools

Hilti warrants that the tool supplied is free of defects in material and workmanship. This warranty is valid so long as the tool is operated and handled correctly, cleaned and serviced properly and in accordance with the Hilti Operating Instructions, and the technical system is maintained. This means that only original Hilti consumables, components and spare parts, or other products of equivalent quality, may be used in the tool.

This warranty provides the free-of-charge repair or replacement of defective parts only over the entire lifespan of the tool. Parts requiring repair or replacement as a result of normal wear and tear are not covered by this warranty.

**Additional claims are excluded, unless stringent national rules prohibit such exclusion. In particular, Hilti is**

**not obligated for direct, indirect, incidental or consequential damages, losses or expenses in connection with, or by reason of, the use of, or inability to use the tool for any purpose. Implied warranties of merchantability or fitness for a particular purpose are specifically excluded.**

For repair or replacement, send tool or related parts immediately upon discovery of the defect to the address of the local Hilti marketing organization provided.

This constitutes Hilti's entire obligation with regard to warranty and supersedes all prior or contemporaneous comments an.

## 12. EC declaration of conformity (original)

Designation:	Powder-actuated tool
Type:	DX 462 HM/CM
Year of design:	2003

**Technical documentation filed at:**  
 Hilti Entwicklungsgesellschaft mbH  
 Zulassung Elektrowerkzeuge  
 Hiltistrasse 6  
 86916 Kaufering  
 Deutschland

We declare, on our sole responsibility, that this product complies with the following directives and standards: 2006/42/EC, 2011/65/EU.

**Hilti Corporation, Feldkircherstrasse 100,  
 FL-9494 Schaan**

<b>Norbert Wohlwend</b> Head of Quality & Processes Management BU Direct Fastening 08/2012	<b>Tassilo Deinzer</b> Head BU Measuring Systems BU Measuring Systems 08/2012
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## 13. CIP approval mark

The following applies to C.I.P. member states outside the EU and EFTA judicial area:

The Hilti DX 462 HM/CM has been system and type tested. As a result, the tool bears the square approval mark showing approval number S 812. Hilti thus guarantees compliance with the approved type.

Unacceptable defects or deficiencies, etc. determined during use of the tool must be reported to the person responsible at the approval authority (PTB, Braunschweig) and to the Office of the Permanent International Commission (C.I.P.) (Permanent International Commission, Avenue de la Renaissance 30, B-1000 Brussels, Belgium).

## 14. Health and safety of the user

### Noise information

#### Powder-actuated tool

Type:	DX 462 HM/CM
Modell:	Serial production
Caliber:	6.8/11 green
Power setting:	4
Application:	Marking steel blocks with embossed characters (400×400×50 mm)

#### Declared measured values of noise characteristics according to 2006/42/EC

Machinery Directive in conjunction with E DIN EN 15895		DX 462 HM	DX462 CM
Noise (power) level:	$L_{WA, 1s}^1$	110 dB(A)	108 dB(A)
Emission noise-pressure level in the work station:	$L_{pA, 1s}^2$	108 dB(A)	107 dB(A)
Peak sound pressure emission level:	$L_{pC, peak}^3$	135 dB(C)	134 dB(C)

#### Operation and set-up conditions:

Set-up and operation of the pin driver in accordance with E DIN EN 15895-1 in the semi-anechoic test room of Müller-BBM GmbH. The ambient conditions in the test room conform to DIN EN ISO 3745.

#### Testing procedure:

Enveloping surface method in anechoic room on reflective surface area in accordance with E DIN EN 15895, DIN EN ISO 3745 and DIN EN ISO 11201.

NOTE: The noise emissions measured and the associated measurement uncertainty represent the upper limit for the noise values to be expected during the measurements.

Variations in operating conditions may cause deviations from these emission values.

<sup>1</sup> ± 2 dB (A)

<sup>2</sup> ± 2 dB (A)

<sup>3</sup> ± 2 dB (C)

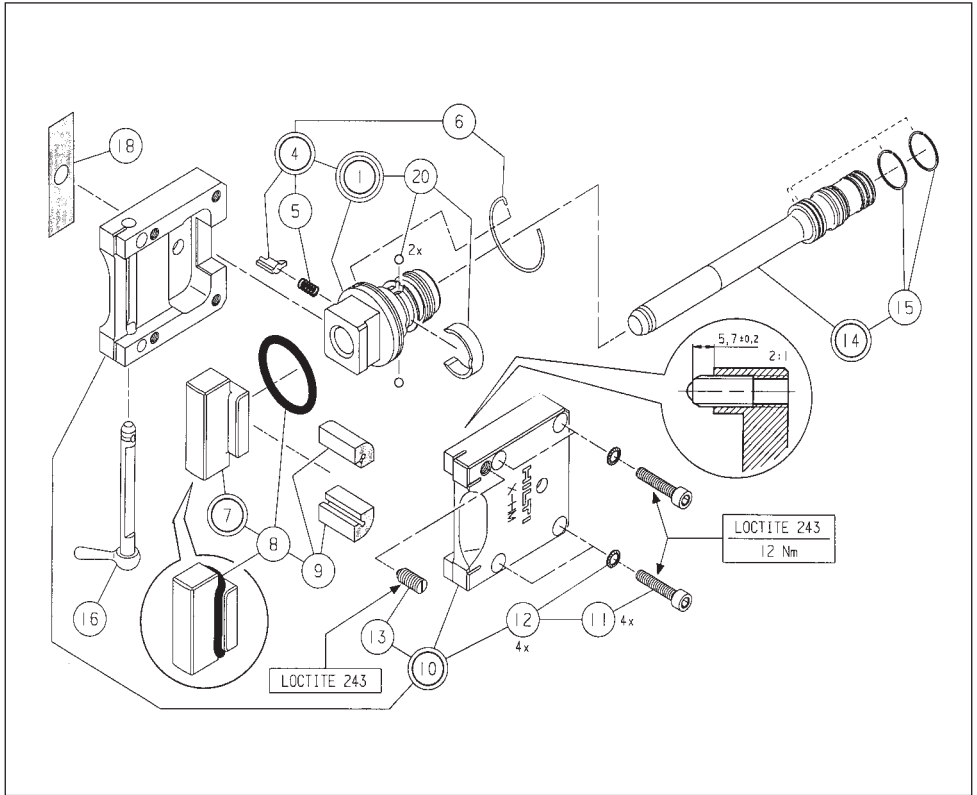
## Vibration

The declared total vibration value according to 2006/42/EC does not exceed 2.5 m/s<sup>2</sup>.

Further information regarding the health and safety of the user can be found at the Hilti web site: [www.hilti.com/hse](http://www.hilti.com/hse)

# X-462 HM marking head:

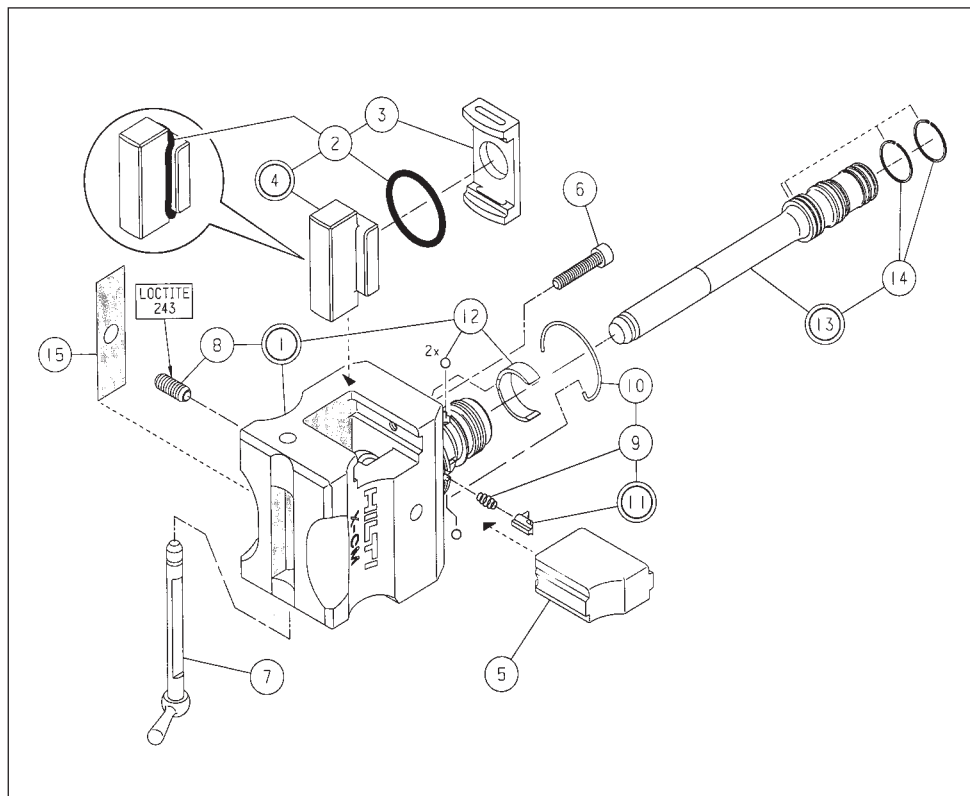
en



	Quantity	Ordering designation	Item no.
①	1	Piece adaptor piece assy	267920
④	1	Piece detent HM assy	268017
⑤	1	Piece compression spring 0,4x5,4x10,9	4892
⑥	1	Piece annular spring NM	267979
⑦	1	Piece impact extractor HM assy	268014
⑧	1	Piece o-ring 34x5	268003
⑨	2	Piece absorber HM	268000
⑩	1	Piece housing HM assy	268013
⑪	4	Piece hex skt hd cap screw M6x30	72477
⑫	4	Piece retaining washer SCHNORR 6	70489
⑬	1	Piece pressure piece M8 ctd.	268002
⑭	1	Piece piston X-462PM	267900
⑮	2	Piece lamellar ring AS 22,1	4667
⑯	1	Piece adhesive label WARNING	23579
⑳	1	Piece piston-retainer-kid 5,556	268205

## X-462 CM marking head:

en



	Quantity	Ordering designation	Item no.
①	1	Piece marking head DXA-CM	268057
②	1	Piece o-ring 34×3	268164
③	1	Piece absorber CM	268158
④	1	Piece impact extractor CM assy	268056
⑤	1	Piece breech	23586
⑥	1	Piece hex skt hd cap screw M6×30	72477
⑦	1	Piece axle A40-CM assy	268054
⑧	1	Piece pressure piece M8 ctd.	268002
⑨	1	Piece compression spring 0,4×5,4×10,9	4892
⑩	1	Piece annular spring NM	267979
⑪	1	Piece detent HM assy	268017
⑫	1	Piece piston-retainer-kid 5,556	268205
⑬	1	Piece piston X-462PM	267900
⑭	2	Piece lamellar ring AS 22,1	4667
⑮	1	Piece adhesive label WARNUNG	23579



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[www.hilti.com](http://www.hilti.com)

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