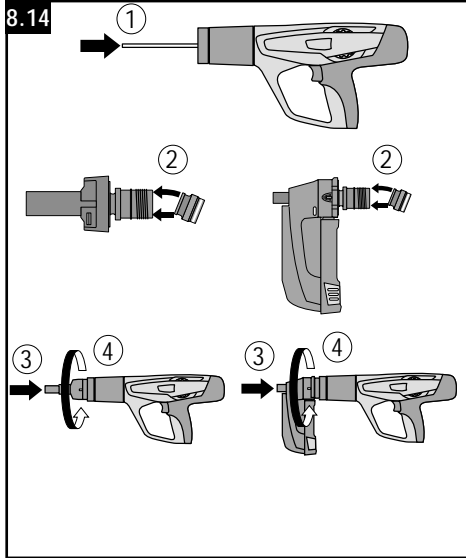
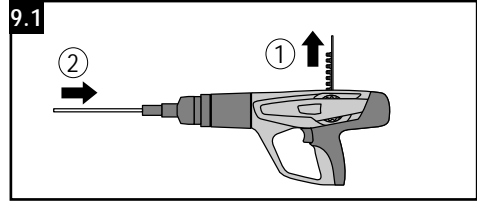


**8.12**

8.14



9.1



# DX 460 powder-actuated tool

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 Power regulation wheel release button
- ⑥ Power regulation wheel
- ⑦ Trigger
- ⑧ Grip
- ⑨ Piston return unit release button
- ⑩ Ventilation slots
- ⑪ Piston rings
- ⑫ Piston \*
- ⑬ Fastener guide \*
- ⑭ Fastener guide release button
- ⑮ Buffer \*
- ⑯ Magazine \*
- ⑰ Magazine cover
- ⑱ Magazine cover release button
- ⑲ Magazine release button
- ⑳ Load status indicator
- ㉑ Replaceable fastener guide nosepiece \*

\* 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 460 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: DX 460

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

## 2. Description

The tool is designed for professional use in fastening applications where nails, threaded studs and composite fasteners are driven into concrete, steel and sand-lime block masonry.

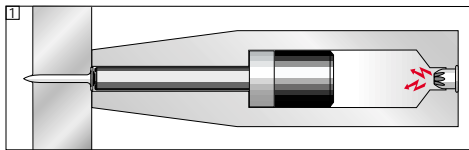
The tool works on the well-proven piston principle and is therefore not related to high-velocity tools. The piston principle provides an optimum of working and fastening safety. The tool works with cartridges of 6.8/11 caliber.

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. This permits fastenings to be made very quickly and economically with nails and threaded studs. The use of a nail magazine greatly increases the speed and convenience of fastening with the tool, above all when making large numbers of identical fastenings of all kinds.

As with all powder-actuated tools, the tool, magazine, fastener program and cartridge program form a "technical unit". This means that optimal fastening with this system can only be assured if the fasteners and cartridges are specially manufactured for it, or products of equivalent quality, are used. The fastening and application recommendations given by Hilti are only applicable if these conditions are observed.

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

### The piston principle



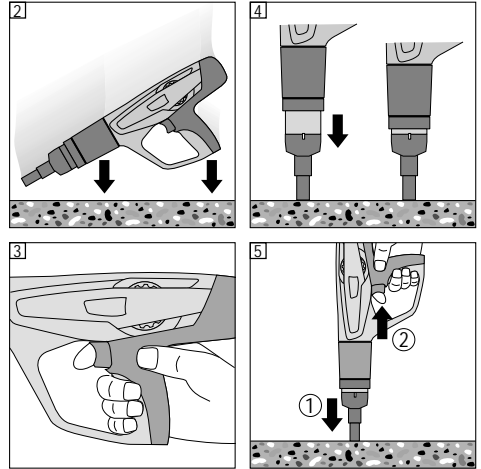
The energy from the propellant charge is transferred to a piston, the accelerated mass of which drives the fastener into the base material. As approximately 95 % of the kinetic energy is absorbed by the piston, the fastener is driven into the base material at much reduced velocity (less than 100 m/sec.) 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 fasteners

#### Fasteners

Ordering designation	Application
X-DNI, X-ZF	Nails with differing application profile for a wide variety of fastenings
X-SL	Easily removable formwork nail for temporary fastenings
X-EDNI	Magazined standard nails for efficient fastening to steel
X-CR	Stainless-steel nails for fastenings in damp or corrosive surroundings
X-AL-H	High-strength nails for fastening to steel and concrete of higher strength
X-FS	The ideal fastener for positioning formwork
X-IE	The ideal fastener for fastening insulation material to concrete, plastered solid masonry and steel
X-SW	Flexible washer fasteners for fastening insulating foils / sheeting to concrete and steel
23/36 mm	Washers for Hilti nails: simple securing of joint seals, foils / sheeting and timber to concrete and steel using the X-460 WH23/36 washer holder
X-(E)M/W/6/8 ... P8, X-M/W10 ... P10	Studs for bolted fastenings on concrete and steel
X-(D)FB	Metal conduit clip for fastening conduits or cable ducts and insulated pipes (hot or cold) for plumbing and heating
X-EFC	Plastic conduit clip for fastening flexible electric cable ducts and water or heating pipes (hot or cold)
X-EKB	Cable clasp for fastening electric cables flat on ceilings and walls
X-ECH	Bunched cable holder for fastening cables on ceilings and walls
X-JH	For fastening electric cables in accordance with fire prevention regulations (LAR)
X-ET	Fastener for plastic (PVC) electric cable trunking
X-CC	Clip for securing suspended fastening systems using wires or chains
X-HS	Suspension system with threaded connection

For further equipment contact your local Hilti organisation.

#### Magazine

MX 72	Magazine – For quick and convenient fastenings
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#### Fastener guides

Ordering designation	Application
X-460-F8	Standard
X-460-F8N15	15 mm width for improved accessibility
X-460-F8N10	10 mm width for improved accessibility
X-460-S12	Fastener guide for fasteners with a 12 mm steel washer – higher pull over values
X-460-F8SS	Spall stop for 8 mm studs – reduces spalling
X-460-F10	For 10 mm studs and nails
X-460-F10SS	Spall stop for 10 mm studs – reduces spalling
X-460-FIE	For driving X-IE insulation fasteners
X-460-FIE-L	For driving XI-FV and X-IE insulation fasteners

## Accessories

Ordering designation	Application
X-SGF8	Splinter guard for the X-460-F8 standard fastener guide
X-460-SGMX	Splinter guard for the X-460-MX72
X-460-STAB	For the X-460-F10 fastener guide
X-460-TIE	Replacement nosepiece for the X-460-FIE fastener guide
X-460-TIE-L	Replacement nosepiece for the X-460-FIE-L fastener guide
X-EF adaptor	X-EF adaptor for stabilizing the tool perpendicular to the work surface and for reducing concrete spalling when fastening the X-EKB and X-ECH (only with X-460-F8 fastener guide)
X-460-B	Rubber buffer – protects the fastener guide when the tool is used incorrectly
X-460-WH23/36	Washer holder – For fastening 23 and 36 mm steel washers with the magazine. The washer holder can be mounted on the magazine.
X-PT 460	Pole tool extension – Extension system for various ceiling application

## Pistons

Ordering designation	Application
X-460-P8	Standard piston
X-460-P8AL	AL piston – Only for AL nails. Gives the nail better guidance and increases the application limit.
X-460-P8W	Wood piston – With a tapered point. For applications when overdriving the nail into wood is desired. Allows proper piston return.
X-460-P10	10 mm piston – For fastening M 10 / W10 studs
X-460-PIE	Piston for driving X-IE insulation fasteners using the X-460-FIE fastener guide
X-460-PIE-L	Piston for driving X-IE insulation fasteners using the X-460-FIE-L fastener guide

## Cartridges

Ordering designation	Colour code	Power level
6.8/11 M green	Green	Low
6.8/11 M yellow	Yellow	Medium
6.8/11 M red	Red	Heavy
6.8/11 M black	Black/purple	Extra heavy

## 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

### DX 460 tool

Weight	3.25 kg (7.16 lb), 3.51 kg (7.78 lb) with magazine
Tool length	458 mm (18.03"), 475 mm (18.7") with magazine
Nail length	Max. 72 mm (2 <sup>7</sup> / <sub>8</sub> ")
Recommended maximum fastening rate	700 per hour
Cartridges	6.8/11 M (27 cal. short) green, yellow, red, black
Power regulation	4 cartridge power levels, regulation wheel with locking function

### MX 72 magazine

Weight	0.653 kg (1.44 lb)
Nail length	Max. 72 mm (2 <sup>7</sup> / <sub>8</sub> ")
Magazine capacity	Max. 13 nails

Right of technical changes reserved

## 5. Safety precautions

### 5.1 Basic safety instructions

In addition to the safety precautions 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 fastening applications in construction where nails, threaded studs and composite fasteners are driven into concrete, steel and sand-lime block masonry.



### 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 fasteners, 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 drive nails into materials such as glass, marble, plastic, bronze, brass, copper, natural rock, insulation material, hollow brick, glazed tile, thin-gauge sheet metal (< 4 mm), grey cast iron, spheroidal cast iron and 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 Making the workplace safe

- Avoid unfavourable body positions.
- Objects which could cause injury should be removed from the working area.
- The tool is for hand-held use only.
- Keep other persons, children in particular, outside the working area.
- Before using the tool, make sure that no one is standing behind or below the point where fasteners are to be driven.
- 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.
- Use the stabiliser/splinter guard when the application permits.
- 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.

● If 2–3 cartridge misfires occur in succession (without clearly audible noise of the cartridge firing and the fastener being driven with significantly less power), proceed as follows:

1. Stop using the tool immediately.
  2. Disassemble the tool (see 8.3).
  3. Check that the correct combination of fastener guide, piston and fastener are used (see 6.2).
  4. Check the buffer, piston and fastener guide / magazine for wear and replace the parts if necessary (See 6.3 and 8.4. X-IE see 8.5).
  5. Clean the tool.
  6. Do not continue to use the tool if the problem persists 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.
  - Store cartridges and unused tools unloaded, in a dry, high or locked place out of the reach of children.



### 5.7 Temperature

- Do not disassemble the tool while it is hot.
- Never exceed the recommended maximum fastener driving rate (number of fastenings 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 a 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 buffer and piston for wear (see "8. Care and maintenance").

### 6.2 Choosing the right fastener guide / piston / fastener combination



Use of the wrong combination may result in damage to the tool and / or affect fastening quality (see table on last page of these instructions).


### 6.3 Conversion from single-fastener tool to magazine tool (changing the fastener guide)

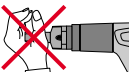
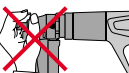
1. Ensure that no cartridge strip or fastener is loaded in the tool. Remove the cartridge strip by pulling it upwards out of the tool and remove the fastener from the fastener guide / magazine.
2. Press the release button on the side of the fastener guide.
3. Unscrew the fastener guide.
4. Check the buffer and piston for wear (see "Care and maintenance").
5. Push the piston into the tool as far as it will go.
6. Press the buffer onto the magazine until it snaps into place.
7. Push the magazine firmly onto the piston return unit.
8. Screw the magazine onto the tool until it engages.


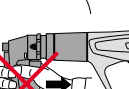
## 7. Operation



<b>CAUTION</b>	
 	<ul style="list-style-type: none"> <li>■ The base material may splinter when a fastener is driven 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 nail or stud is driven by a cartridge being fired.</li> <li>■ Excessive noise may damage the hearing.</li> <li>■ Wear ear protection (users and bystanders).</li> </ul>

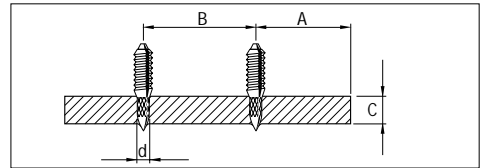
<b>WARNING</b>	
 	<ul style="list-style-type: none"> <li>■ The tool could be made ready to fire if pressed against a part of the body (e.g. hand)..</li> <li>■ This could cause a nail to be driven into a part of the body.</li> <li>■ Never press the muzzle of the tool against parts of the body.</li> </ul>

<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 magazine, fastener guide or the fastener by hand.</li> <li>■ When in the "ready to fire" state, a fastener could be driven into a part of the body.</li> <li>■ Never pull back the magazine, fastener guide or fastener by hand.</li> </ul>

## Fastening guidelines

### NOTE

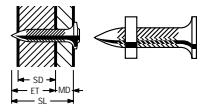
These application recommendations must always be observed. For more specific information, refer to the Hilti Fastening Technology Manual, which is available from your local Hilti organisation.



#### Steel

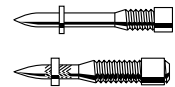
- A = min. edge distance = 15 mm ( $\frac{1}{2}$ " )
- B = min. spacing = 20 mm ( $\frac{3}{4}$ " )
- C = min. base material thickness = 4 mm ( $\frac{1}{2}$ " )

#### X-EDNI nail (steel)

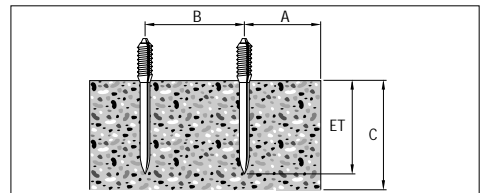


- Penetration depth (ET)  $12 \pm 2$  mm
- + material thickness (MD)
- = shank length (SL) min.
- steel thickness (SD) = min. 4 mm

#### Threaded studs for concrete or steel



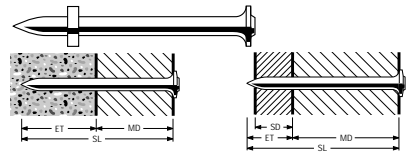
- Penetration depth concrete:  $27 \pm 5$  mm
- steel:  $12 \pm 2$  mm



#### Concrete

- A = min. edge distance = 70 mm ( $2\frac{7}{8}$ " )
- B = min. spacing = 80 mm ( $3\frac{1}{8}$ " )
- C = min. base material thickness = 100 mm (4" )

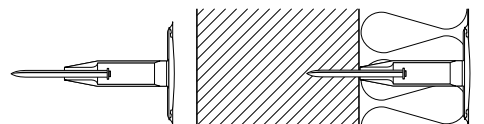
#### X-DNI nail (concrete/steel)



- Length of nail for concrete
- Penetration depth (ET)  $27 \pm 5$  mm
- + material thickness (MD) = shank length

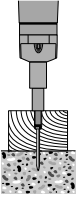
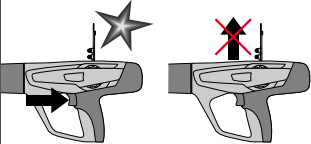
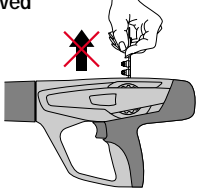
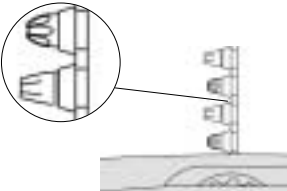
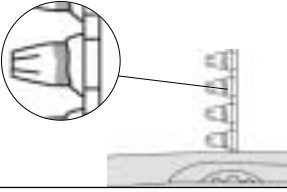
- Length of nails for steel
- Penetration depth (ET)  $22 \pm 5$  mm (nail point must protrude)
- + material thickness (MD) = shank length
- steel thickness (SD) = min. 4 mm, max. 10 mm

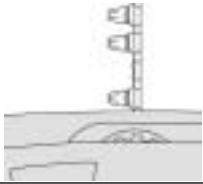
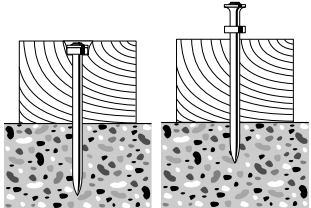
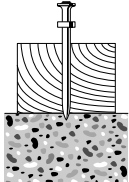
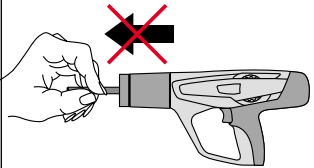
#### X-IE fastener (concrete, solid rendered masonry, steel)

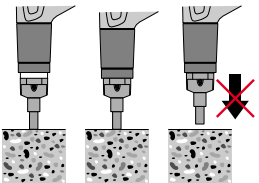
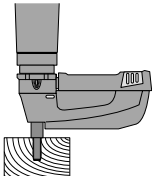
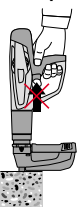
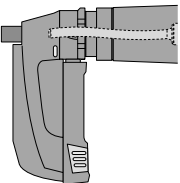
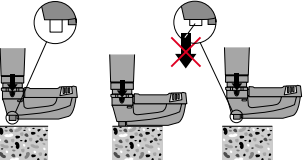


On all base materials, fastener length corresponds to thickness of insulating material.

## 9. Troubleshooting

	Cause	Possible remedies
<p><b>Piston is stuck in the base material</b></p> 	<ul style="list-style-type: none"> <li>■ Fastener too short</li> <li>■ Fastener without washer</li> <li>■ Driving power too high</li> </ul>	<ul style="list-style-type: none"> <li>■ Remove cartridge strip and use pushrod provided to push piston fully back (See 9.1)</li> <li>■ Use longer fastener</li> <li>■ Use fastener with washer for wood applications</li> <li>■ Reduce power setting               <ul style="list-style-type: none"> <li>• Power regulation</li> <li>• Lower cartridge power level</li> </ul> </li> </ul>
<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</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 8.7) 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>

	Cause	Possible remedies
<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>
<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>Varying depths of penetration</b></p> 	<ul style="list-style-type: none"> <li>■ Incorrect piston position</li> <li>■ Carbon build-up</li> </ul>	<ul style="list-style-type: none"> <li>■ Remove cartridge strip and use enclosed pushrod to push piston fully back (see 9.1)</li> </ul> <p>If problem persists:</p> <ul style="list-style-type: none"> <li>■ Clean the tool (see 8.3–8.13)</li> <li>■ Check piston and buffer, replace if necessary (see 8.4)</li> </ul>
<p><b>Misfire: the nail is only partly driven into the base material</b></p> 	<ul style="list-style-type: none"> <li>■ Incorrect piston position</li> <li>■ Bad cartridge</li> </ul>	<ul style="list-style-type: none"> <li>■ Remove cartridge strip and use enclosed pushrod to push piston fully back (see 9.1)</li> </ul> <p>If problem persists:</p> <ul style="list-style-type: none"> <li>■ Change cartridge strip (possibly use a new/dry package)</li> <li>■ Clean the tool (see 8. –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>■ Buffer debris inside the piston return unit</li> <li>■ Damaged buffer</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 buffer and piston, if necessary, change (see 8.4)</li> <li>■ Clean the tool (see 8.3–8.13)</li> </ul>

	Cause	Possible remedies
<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>The tool fires but no nail is driven</b></p> 	<ul style="list-style-type: none"> <li>■ Incorrect piston position</li> </ul>	<ul style="list-style-type: none"> <li>■ Remove cartridge strip and use enclosed pushrod to push piston fully back (see 9.1)</li> </ul> <p>If problem persists:</p> <ul style="list-style-type: none"> <li>■ Clean the tool (see 8.3–8.13)</li> </ul>
<p><b>Trigger cannot be pulled</b></p> 	<ul style="list-style-type: none"> <li>■ Tool not fully compressed</li> <li>■ Safety mechanism activated because: <ul style="list-style-type: none"> <li>– Magazine not loaded</li> <li>– Plastic debris inside the magazine</li> <li>– Incorrect piston position</li> <li>– Nail incorrectly positioned in magazine</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>■ Release the tool and fully compress it again</li> <li>■ Load fastener strip</li> <li>■ Open magazine, remove fastener strip and plastic debris</li> <li>■ Remove cartridge strip and use pushrod provided to push piston fully back (see 9.1)</li> </ul> <p>If problem persists:</p> <ul style="list-style-type: none"> <li>■ Clean the tool (see 8.3–8.13)</li> </ul>
<p><b>Piston stuck in magazine fastener guide</b></p> 	<ul style="list-style-type: none"> <li>■ Piston and/or buffer damaged</li> <li>■ Plastic debris inside the magazine</li> <li>■ Excess power when fastening on steel</li> <li>■ Tool fired with high power without fastener in place</li> </ul>	<ul style="list-style-type: none"> <li>■ Unscrew the magazine</li> <li>■ Check buffer and piston and replace if necessary (see 8.4)</li> <li>■ Open magazine, remove fastener strip and plastic debris</li> </ul>
<p><b>Magazine fastener guide is stuck</b></p> 	<ul style="list-style-type: none"> <li>■ Fastener guide damaged</li> </ul>	<ul style="list-style-type: none"> <li>■ Change magazine</li> </ul>