



311400

**DX 450**

# Operating instructions

11-19

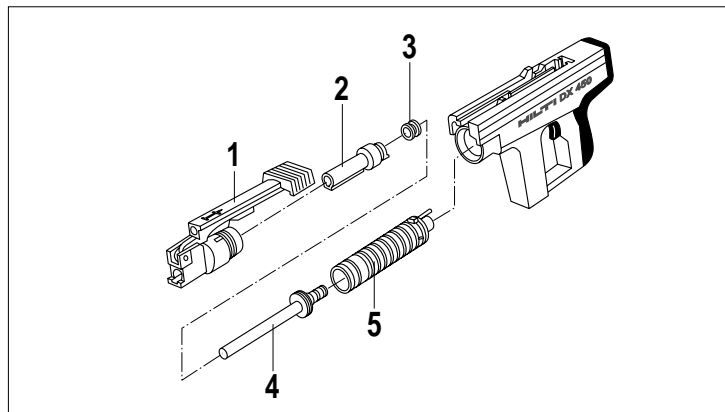
**HILTI**

## DX450 fastening tool



### Technical data

Weight:	3.2 kg
Tool length:	350 mm
Nail length:	max. 72 mm
Cartridges:	6.8/11M black, red, yellow, green



### Spare parts

Designation	Item no.
① Baseplate 45/S1	731/0
② Fastener guide 45/F1	729/4
③ Stop ring	855/7
④ Piston 45/NK	748/4
⑤ Piston guide	728/6

## Technical description

The Hilti DX450 is a powder-actuated tool designed for driving nails (see Fastening Technology Manual). The DX450 employs the well-proven piston principle, thus providing an optimum of working and fastening safety.

As with all powder-actuated tools, the tool, magazine, fastener programme and cartridge programme form a «technical unit». This means that troublefree fastening with this system can only be assured if the fasteners and cartridges specially manufactured for it, or products of equivalent quality, are used. The fastening and application recommendations given by Hilti are only applicable if this condition is observed. The recommended maximum fastening rate is 500 fastenings per hour.

### Spare parts

The user/owner of the tool may replace the parts listed on page 2 (parts 1–5). Only the procedures described in these operating instructions (disassembly/assembly/operation/care and maintenance) should be used. Any other unauthorised manipulations may negatively affect functional safety of the tool.

## Safety precautions

Failure to follow these precautions may result in personal injury.

### ⚠ Warnings

1. Never attempt to use the tool without first having received proper instruction on its use and associated safety precautions. Contact your local Hilti sales representative for assistance.
2. Always use the tool strictly in accordance with the operating instructions. The operating instructions should always be kept with the tool.
3. Never point the tool at yourself or any bystander.
4. Never press the muzzle of the tool against your hand or other part of your body.
5. The operator, and any other persons in the immediate vicinity, must wear suitable protective goggles and a helmet while the tool is in use.

### Safety precautions

6. Use the stabiliser/guard whenever possible.
7. Never leave a loaded tool unattended. Always unload the tool before beginning cleaning and servicing, before putting the tool away at the end of the day, before work breaks, and before changing parts.
8. Wear ear protectors when using the tool indoors or in confined areas.
9. Always check that the tool is undamaged and fully functional before it is used. Never attempt to use an incomplete or malfunctioning tool.

10. Keep the arms flexed when the tool is fired (do not straighten the arms). Stop working with the tool if you feel unwell.
11. Always hold the tool perpendicular to the working surface and material in which the fastener is to be driven.
12. Always use genuine Hilti fasteners, cartridges and spare parts, or those of equivalent quality.
13. Never attempt to pry a cartridge from magazine strip or tool.
14. If a cartridge misfires or fails to ignite, proceed as follows:
  - Keep the tool against the working surface for 30 seconds.
  - 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.
  - Cycle the tool so that the magazine strip is transported to the next 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.
15. Never attempt to drive a fastener in an existing hole, except where recommended by Hilti, e. g. when using the DX-Kwik system.
16. Always keep the tool and cartridges in a closed container in a safe place when not in use.
17. Do not make fastenings in an explosive or flammable atmosphere, except when tool is approved for such use.
18. Application recommendations must always be observed.
19. Before using the tool, make sure that no one is standing behind or below the point where fasteners are to be driven.
20. Do not disassemble the tool while it is hot.
21. Never exceed the recommended maximum fastener driving rate (number of fastenings per hour). The tool may otherwise overheat.

### General notes

22. Never attempt to redrive the same fastener.
23. The applicable national regulations must always be observed, particularly those relating to accident prevention.

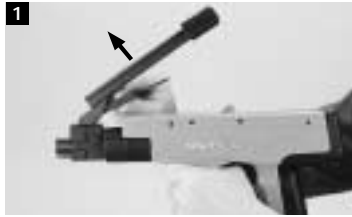
### Through-shot and ricochet prevention

The piston principle employed results in low fastener velocity and dissipation of excess driving power.

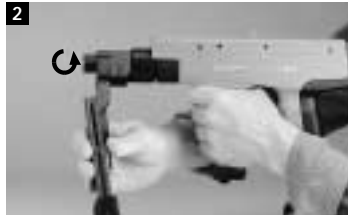
### Contact pressure safety device

This safety device prevents the loaded tool from being fired unless it is pressed against a firm working surface. The tool can only be fired after it has been cocked by pressing it against the working surface, overcoming a cocking force of at least 90 N and cocking movement of 18 mm.

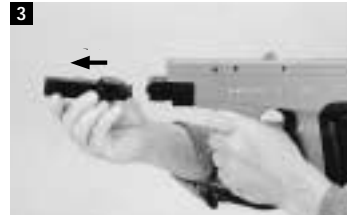
# Disassembly



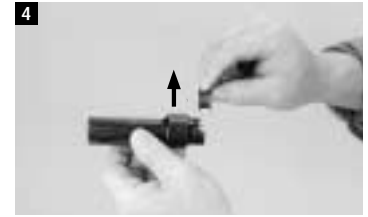
1 Pivot cocking lever forward. Press forward connector in housing while lifting catch (link) to disengage.



2 Screw off baseplate.



3 Pull fastener guide off piston guide.



4 Pull stop ring off fastener guide to one side.



5 Let piston guide slide out of housing.



6 Push piston out of piston guide using supplied rod.

## Assembly



Insert piston in its guide.



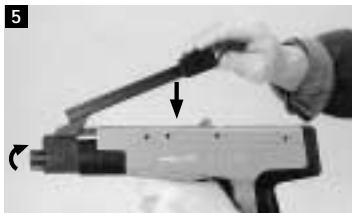
Insert piston guide in housing. (Slot in piston guide must align with silencer).



Press stop ring on fastener guide.  
Insert fastener guide in piston guide.



Slide over baseplate.  
(Recess in baseplate must align with raised part of fastener guide.)

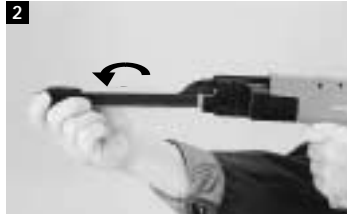


Screw on baseplate as far as it goes, then screw back until it snaps in place. Swing over cocking lever to resting position. Connector and link will automatically latch again.

# Operation



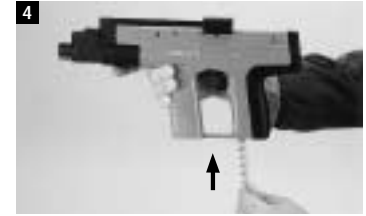
Hold tool with muzzle upwards. Insert fastener point first in cocking lever and let it slide down.



Pull firmly to release and swing over cocking lever till aligned with muzzle.



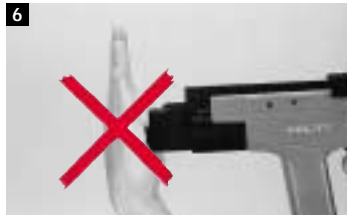
Pull back loading grip on cocking lever as far as it goes. This positions fastener correctly in guide. Return grip and pivot cocking lever back to original position.



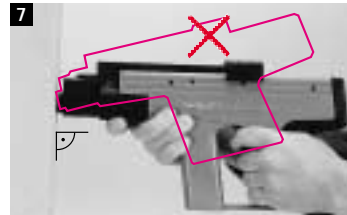
Insert cartridge magazine in base of grip.  
**Caution!**  
Do not insert magazine until fastener has been loaded.  
If this sequence is not observed the first cartridge will be missed (not fired).



Check power regulation.  
Indicator in rear position means max. power.



**Caution!**  
Never use the palm of the hand to push back the fastener guide and never attempt to pull it back by way of the nail / washer. This could present a risk of injury to the operator!



Hold the tool at right angles to the material in which the fastener is to be driven, press the muzzle against the surface and pull the trigger.

## Cleaning and servicing

The surfaces should be cleaned with the supplied brushes.



1  
Inside housing



2  
Inside of cartridge chamber



3  
Inside of piston guide



4  
Outside of piston guide



5  
Piston



6  
Outside of fastener guide



7  
Inside of fastener guide



8  
Outside of baseplate



9  
Inside of baseplate

Before reassembling, lubricate all parts sparingly with Hilti spray.

The tool should be cleaned once a week or after a large number of fasteners have been driven (approx. 2500 fasteners).

## Malfunctioning and remedies

Malfunction	Remedies
Misfire:	See "Cartridge misfire". (See paragraph 14 on page 12).
Repeated misfires:	Service the tool
Very significant drop in driving power:	Service the tool
Widely varying depth of penetration:	Cycle the tool fully, i.e. pull out the assembly all the way. It may be necessary to lubricate the baseplate and piston guide slightly using Hilti spray.
Stiff cycling action:	Use Hilti spray to lubricate the piston guide and baseplate.

## Replacing a deformed stop ring



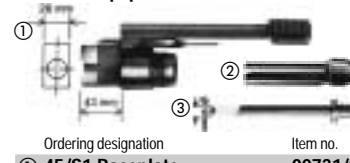
A deformed stop ring may jam on the piston. The fastener guide and piston bind together and have to be separated.

### Procedure

Strike protruding piston sharply against a hard surface. This will separate piston and stop ring. Remove piston completely from fastener guide. Pull stop ring off fastener guide to one side and press in a new one.

## Equipment

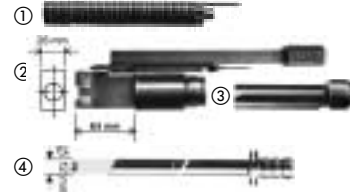
### Standard equipment



Ordering designation	Item no.
① 45/S1 Baseplate	00731/0
② 45/F1 Fastener guide	00729/4
③ 45/NK Piston	00748/4

### L equipment

For long fasteners and for fastening in sections / flutes up to 65 mm deep.



Ordering designation	Item no.
① L Piston guide	00787/2
② 45/SL1 Baseplate	00732/8
③ 45/FL1 Fastener guide	00730/2
④ 45/NKL Piston	00757/5

Note: All short NK fasteners can also be driven using this equipment.

### Spall stop

Prevents concrete spalling, reduces failures, increases holding power.



Ordering designation	Item no.
① 45/S4 Spall stop	00733/6
② 45/F1 Fastener guide	00729/4
③ 45/NK Piston	00748/4

### Stabilizer



Ordering designation	Item no.
Stabilizer	00885/4

### Special cartridges, 6.8/11 M in magazine strips of 10



Colour code	Power level (power regulation possible on the tool)	Ordering designation	Item no.
Green	light	6.8/11M green	50351/6
Yellow	medium	6.8/11M yellow	50352/4
Red	heavy	6.8/11M red	50353/2
Black	magnum	6.8/11M black	50354/0



## Threaded studs and nails

### X-M6 studs



Shank length mm	Thread length mm	Ordering designation	Item no.
22	11	X-M6-11-22 D12	306054/8
27	11	X-M6-11-27 D12	306055/5
32	11	X-M6-11-32 D12	306056/3
42	11	X-M6-11-42 D12	306057/1
Piston used		45/M6-11 Piston	00751/8

### X-M6 studs



Shank length mm	Thread length mm	Ordering designation	Item no.
22	20	X-M6-20-22 D12	306059/7
27	20	X-M6-20-27 D12	306060/5
32	20	X-M6-20-32 D12	306061/3
42	20	X-M6-20-42 D12	306062/1
52	20	X-M6-20-52 D12	306063/9
Piston used		45/M6-20 Piston	00752/6

### X-EM6 studs



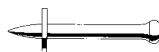
Shank length mm	Thread length mm	Steel thickness mm	Piston used	Ordering designation	Item no.
9	11	4-10	45/M6-11	X-EM6-11- 9P12 *	21509/5
12	11	4 to solid steel	45/M6-11	X-EM6-11-12P12 *	21516/0
12	20	4 to solid steel	45/M6-20	X-EM6-20-12P12 **	21522/8
* Piston used				45/M6-11 Piston	00751/8
** Piston used				45/M6-20 Piston	00752/6

### X-M8 studs



Shank length mm	Thread length mm	Ordering designation	Item no.
27	15	X-M8-15-27 D12	306097/7
32	15	X-M8-15-32 D12	306098/5
52	15	X-M8-15-52 D12	306099/3
Piston used		45/NK Piston	00748/4

### NK nails



Shank length mm	For use on	Ordering designation	Item no.
22	concrete (steel using ENK)	NK22 S12	41057/1
27	concrete / steel	NK27 S12	41058/9
32	concrete / steel	NK32 S12	41059/5
37	concrete / steel	NK37 S12	41060/5
42	concrete / steel	NK42 S12	41061/3
47	concrete / steel	NK47 S12	41062/1
54	concrete / steel	NK54 S12	41070/4
62	only to concrete	NK62 S12	41064/7
72	only on concrete	NK72 S12	41065/4
82	only on concrete (L equipment or predriving)	NK82 S12	41270/0
97	only on concrete (L equipment or predriving)	NK97 S12	41271/8
Piston used		45/NK Piston	00748/4

### ENK nails for steel of UTS up to 45 kgf/mm<sup>2</sup>.

For steel of higher UTS and for vibratory loading ask for technical advice.



Shank length mm	Ordering designation	Item no.
16	ENK16 S12	41503/4
19	ENK19 S12	41505/9
Piston used		45/NK Piston
		00748/4

## Warranty

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, all warranty claims are made within 5 years for the tool from the date of the sale (invoice date), 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. 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 and/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 and oral or written agreements concerning warranties.

## Confirmation of CIP testing

The Hilti DX 450 has been system and type tested. As a result, the tool bears the PTB approval mark of square shape showing approval number **S 805**.

In this way, Hilti guarantees compliance with the approved type.

Unacceptable/inadmissible defects, deficiencies, etc. that are determined during use of the tool must be reported to the manager responsible at the approval authority (PTB) and to the Office of the Permanent International Commission (C.I.P.).

## Noise information

as per 3. GSGV dated January 18, 1991

The noise (power) level  $L_{WA, 1S}$  as per § 1 (2) 1b) applicable to the tool and, due to different workplaces depending on the application for which the tool is used, also the noise (pressure) level  $L_{pA, lmax}$  at the measurement surface of 1 metre as per § 1 (2) 1e), are given in addition to the workplace related noise emission value in accordance with the noise measurement standard. Operating conditions and circumstances of use: most powerful cartridge power load in accordance with instructions for use with suitable nail or stud fired vertically downwards into a steel plate and in accordance with the means of measurement DIN 45 635, part 34 «Measurement of the noise emitted by powder-actuated fastening tools».

**Noise information** With black cartridge and maximum power setting

1b) Noise (power) level	$L_{WA}$	= 117 dB (A)
workplace relevant emission value (measured at operator ear level)	$L_{pA, lmax}$	= 108 dB (A)

1e) Noise (pressure) level	$L'_{pA, lmax}$	= 104 dB (A)
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Variations in operating conditions may cause deviations from these noise emission values.