DX 860-ENP

CE

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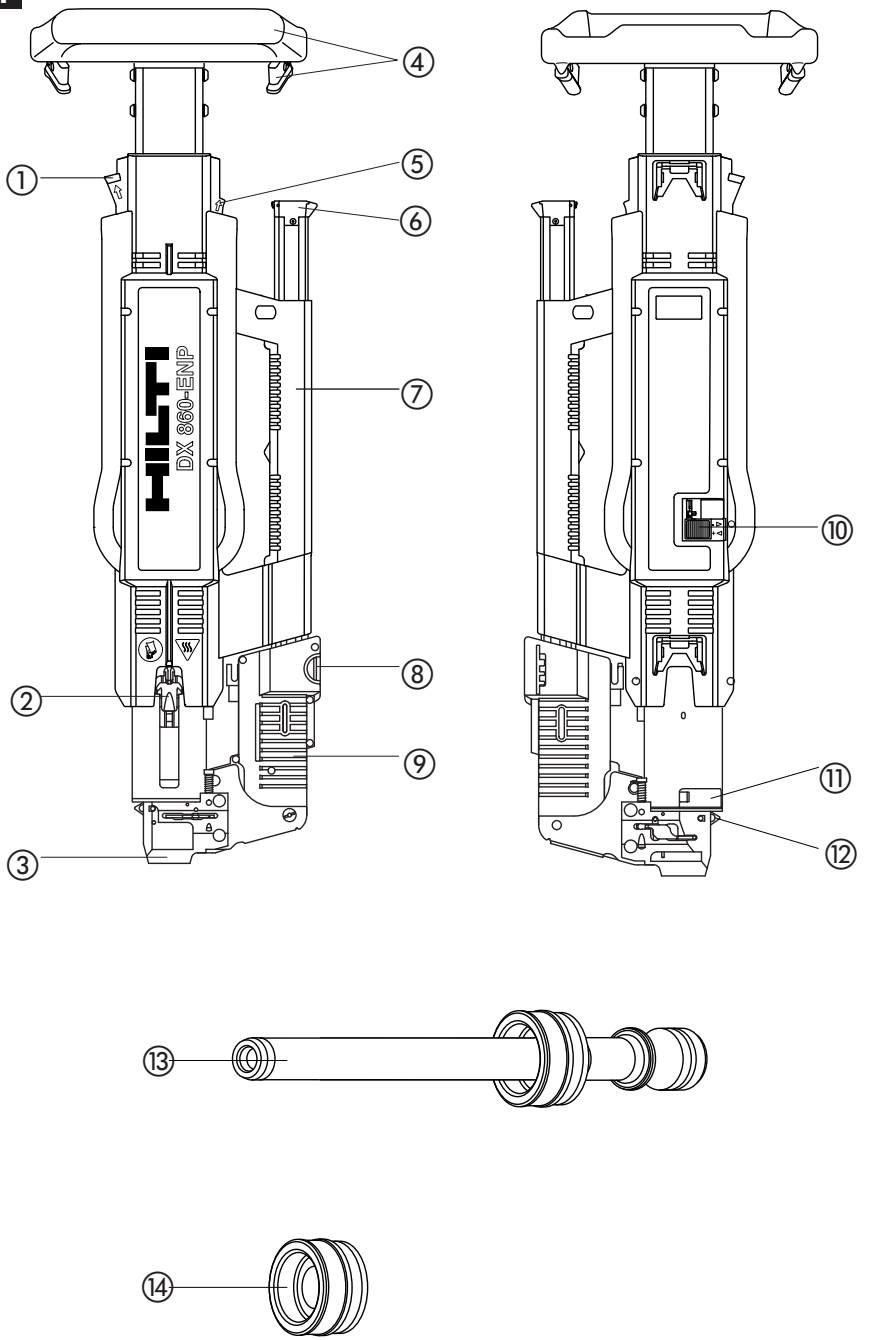

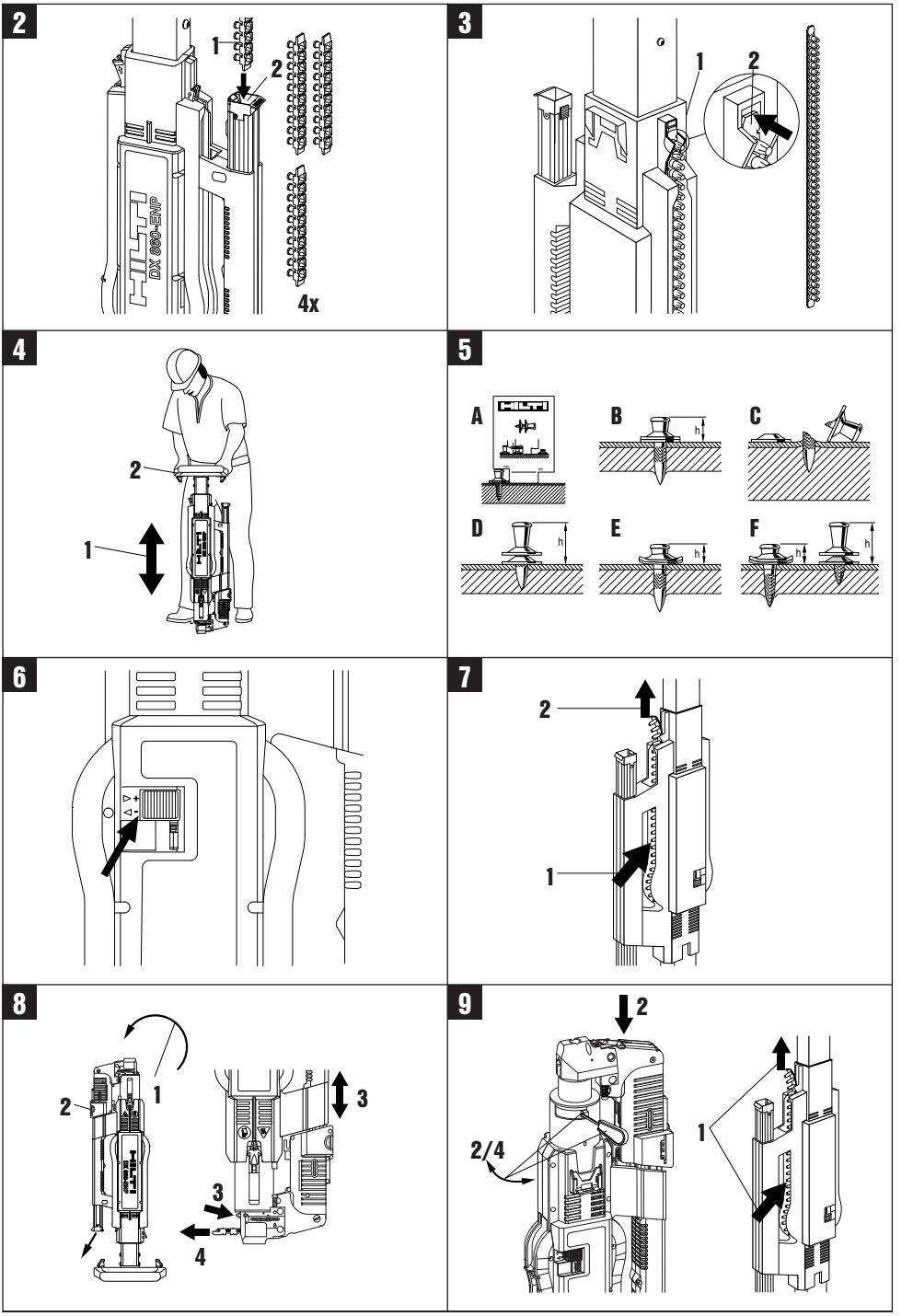

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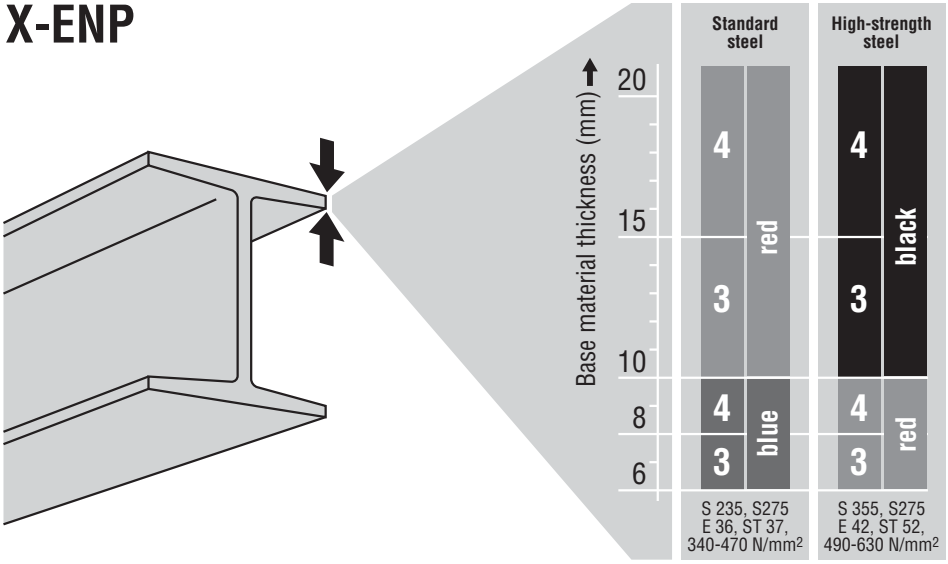
Base material thickness (mm)
20
15
10
8
6
Standard steel
4
3
red
4
blue
3
High-strength steel
4
3
black
4
red
3
S 235, S275
E 36, ST 37,
340-470 N/mm²
S 355, S275
E 42, ST 52,
490-630 N/mm²

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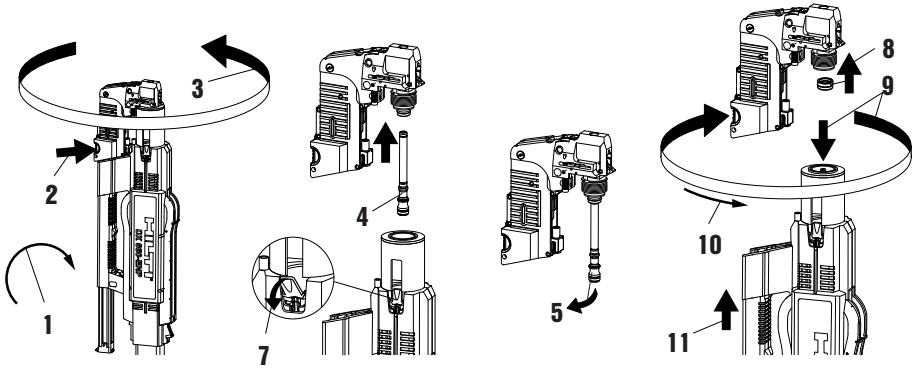
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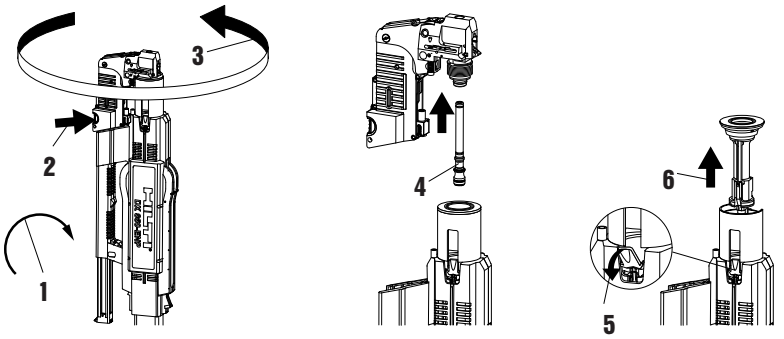

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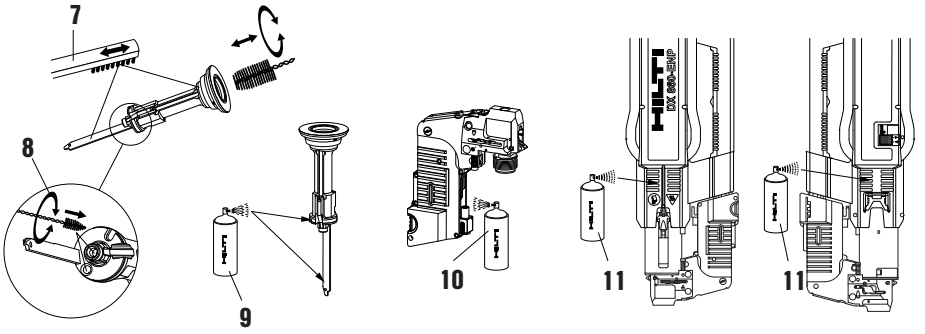

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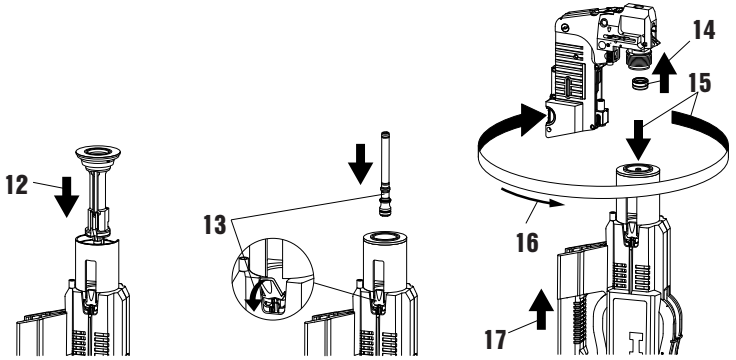

DX 860-ENP powder-actuated fastening tool

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.

Parts of the tool 1

DX 860-ENP powder-actuated fastening tool
① Cartridge loading channel
② Catch
③ Base plate
④ Grip and trigger mechanism
⑤ Cartridge strip exit point
⑥ Magazine
⑦ Carrying handle
⑧ Release button
⑨ Fastener transport system
⑩ Power regulation wheel
⑪ Rotating sleeve
⑫ Stop piece

Wearing parts
⑬ Piston with piston stopper
⑭ Piston stopper

1. General information

1.1 Safety notices and their meaning

-DANGER-
Draws attention to imminent danger that could lead to serious bodily injury or fatality.

-WARNING-
Draws attention to a potentially dangerous situation that could lead to serious personal injury or fatality.

-CAUTION-
Draws attention to a potentially dangerous situation that could lead to slight personal injury or damage to the equipment or other property.

-NOTE-
Draws attention to an instruction or other useful information.

1.2 Pictograms

Warning signs


General warning


Warning: explosive substance


Warning: hot surface

Obligation signs


Wear eye protection


Wear a hard hat


Wear ear protection


Wear protective gloves

Symbols


Read the operating instructions before use.

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 860-ENP.

Location of identification data on the tool
The type designation and 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 860-ENP

Serial no.:

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2. Description

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- The tool is intended for use in the construction industry and associated trades for driving fasteners into steel.
- The tool is for stand up use only.
- Modification of the tool is not permissible.
- The tool may not be used in an explosive or flammable atmosphere unless it has been approved for use under these conditions.
- To avoid the risk of injury use only genuine 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.
- The tool and its ancillary equipment may present hazards when used incorrectly by untrained personnel or when used not as directed.
- The tool may be operated, serviced and repaired only by trained personnel. This personnel must be informed of any special hazards that may be encountered.
- As with all powder-actuated fastening tools, the tool, magazine, cartridges and fasteners form a technical unit. This means that trouble-free fastening with this system can be assured only if the Hilti fasteners and cartridges specially manufactured for it, or products of equivalent quality, are used. The fastening and application recommendations given by Hilti apply only when these conditions are observed.
- For optimum results and maximum reliability we recommend use of Hilti cartridges or products of equivalent quality.
- The following also applies in EU and EFTA countries: For maximum safety with this tool, the cartridges must comply with the requirements of the applicable C.I.P. tests (source: Comprehensive edition of adopted C.I.P. decisions, Liège, Belgium, 2005) as well as the cartridge tests described at www.hilti.com/cartridgetest.
- The tool features a 5-way safety system for the safety of the user and all bystanders.

2.2 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. Due to use of this piston principle, the tool is classified as a low velocity tool. Approximately 95 % of the kinetic energy is taken up by the piston when the tool is fired. As the piston is always stopped as it reaches the end of its travel, excess energy is absorbed by the tool. Accordingly, when the tool is used correctly, dangerous through-shots with a fastener exit velocity in excess of 100 m/sec therefore become virtually impossible.

2.3 Drop-firing safety device

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

2.4 Trigger safety device

The trigger safety device ensures that a fastener cannot be driven simply by pulling the trigger only. The tool must be pressed against a firm surface before a fastener can be released.

2.5 Contact pressure safety device

The tool can be fired only when pressed fully against a firm surface with a force of at least 50 N.

2.6 Unintentional firing safety device

The tools is also equipped with an unintentional firing safety device. This prevents the tool from firing if the trigger is first pulled and the tool then pressed against the work surface. The tool can be fired only when it is first pressed correctly against the work surface and the trigger subsequently pulled.

3. Fasteners, consumables and accessories

3.1 Fasteners

Ordering designation	Comments
X-ENP-19 L15 MXR	10 nails per magazine strip

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3.2 Cartridges

Ordering designation	Comments
6.8/18 M40 black	Extra heavy (=.27 CAL long, purple)
6.8/18 M40 red	Extra heavy (=.27 CAL long, red)
6.8/18 M40 blue	Heavy (=.27 CAL long, blue)

3.3 Wearing parts

Ordering designation	Comments
X-76-PS	Piston stopper
X-76-P-ENP	Piston

3.4 Accessories

Ordering designation	Comments
Cleaning set DX 76 / 860-ENP	Flat brush, 25 mm dia. round brush, 8 mm dia. round brush, scraper, cleaning cloth
I-VO 805 PS	Protective glasses, clear
I-VO 808 PS	Protective glasses, tinted
Ear protectors	Small
Hilti lubricant spray	

4. Technical data

Tool	DX 860-ENP powder-actuated fastening tool
Weight	12.02 kg
Dimensions (L × W × H)	970 mm × 320 mm × 145 mm (38.2″ × 12.6″ × 5.7″)
Magazine capacity	40 nails/40 cartridges
Contact movement	89 mm (3.5″)
Contact pressure	approx. 360 N
Operating/ambient temp. range	–15 °C to +50 °C (5 °F to 122 °F)
Maximum fastener driving rate *	1000 per hour

* For trouble-free operation

5. Safety precautions

5.1 Basic information concerning safety

In addition to the information relevant to safety given in each of the sections of these operating instructions, the following points must be strictly observed at all times.

5.1.1 Personal safety

a) **Stay alert, watch what you are doing and use common sense when operating a direct fastening tool. Do not use tool while tired or under the influence of drugs, alcohol or medication.** A moment of inattention while operating tools may result in serious personal injury.

b) **Avoid unfavorable body positions. Make sure you work from a safe stance and stay in balance at all times.**

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c) **Never point the tool toward yourself or other persons.**
d) **Never press the nosepiece of the tool against your hand or against any other part of your body (or other person's hand or part of their body).**
e) **Keep other persons, especially children, away from the area in which the work is being carried out.**
f) **Keep the arms slightly bent while operating the tool (do not straighten the arms).**

5.1.2 Use and care of powder-actuated fastening tools

a) **Use the right tool for the job. Do not use the tool for purposes for which it was not intended. Use it only as directed and when in faultless condition.**
b) **Press the tool against the working surface at right angles.**
c) **Never leave a loaded tool unattended.**
d) **Always unload the tool (remove cartridges and fasteners) before cleaning, before maintenance, before work breaks and before storing the tool.**
e) **When not in use, tools must be unloaded and stored in a dry place, locked up or out of reach of children.**
f) **Check the tool or machine and its accessories for any damage. Guards, safety devices and any slightly damaged parts must be checked carefully to ensure that they function faultlessly and as intended. Check that moving parts function correctly without sticking and that no parts are damaged. All parts must be fitted correctly and fulfill all conditions necessary for correct operation of the tool or machine. Damaged guards, safety devices and other parts must be repaired or replaced properly at a Hilti service center unless otherwise indicated in the operating instructions.**
g) **Pull the trigger only when the tool is fully pressed against the working surface at right angles.**
h) **Always hold the tool securely and at right angles to the working surface when driving in fasteners. This will help to prevent fasteners being deflected by the working surface.**
i) **Never redrive a fastener. This may cause the fastener to break and the tool may jam.**
j) **Never drive fasteners into existing holes unless this is recommended by Hilti.**
k) **Always observe the application guidelines.**

5.1.3 Work area safety

a) **Ensure that the workplace is well lit.**
b) **Operate the tool only in well-ventilated working areas.**
c) **Do not attempt to drive fasteners into unsuitable materials:** Materials that are too hard, e.g. welded steel and cast iron. Materials that are too soft, e.g. wood and drywall panel (gypsum board). Materials that are too brittle, e.g. glass and ceramic tiles. Driving a fastener into these materials may cause the fastener to break, shatter or to be driven right through.
d) **Never attempt to drive fasteners into materials such as glass, marble, plastic, bronze, brass, copper, rock, insulation material, hollow brick, ceramic brick, thin sheet metal (< 3 mm), cast iron or cellular concrete.**
e) **Before driving fasteners, check that no one is present immediately behind or below the working surface.**
f) **Keep the workplace tidy. Objects which could cause injury should be removed from the working area.** Untidiness at the workplace can lead to accidents.
g) **Keep the grips dry, clean and free from oil and grease.**
h) **Wear non-skid shoes.**
i) **Take the influences of the surrounding area into account. Do not expose the tool to rain or snow and do not use it in damp or wet conditions. Do not use the tool where there is a risk of fire or explosion.**

5.1.4 Mechanical hazards

a) Never use worn or damaged pistons and do not tamper with or modify the piston.
b) Use only fasteners of a type approved for use with the tool.

5.1.5 Thermal hazards

a) **If the tool has overheated, allow it to cool down. Do not exceed the recommended fastener driving rate.**
b) **Always wear gloves if the tool has to be dismantled for cleaning or maintenance before it has been allowed to cool down.**
c) **The tool must be allowed to cool down if the plastic cartridge strip begins to melt.**
d) Do not dismantle the tool while it is still hot. If this cannot be avoided, wear protective gloves when dismantling the tool.
e) Do not exceed the recommended fastener driving rate. The tool may otherwise overheat.

5.1.6 Danger of explosion

a) **Use only cartridges of a type approved for use with the tool.**

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b) **Remove the cartridge strip from the tool carefully.**
c) If a cartridge fails to fire or misfires, always proceed as follows:
1. Keep the tool pressed at right angles against the working surface for 30 seconds.
2. If the cartridge still fails to fire, lift the tool away from the working surface, taking care to avoid pointing it at yourself or other persons.
3. Load the next cartridge on the strip by cycling the tool. Use up the remaining cartridges on the strip and remove the used cartridge strip from the tool. The (partly) used cartridge strip must then be disposed of suitably in order to prevent further use or misuse of any unfired cartridges.

d) **Do not attempt to forcibly remove cartridges from the magazine strip or tool.**
e) **Unused cartridges must be stored in a dry, high place, locked up or out of reach of children.**

5.1.7 Requirements to be met by users

a) The tool is intended for professional use.
b) The tool may be operated, serviced and repaired only by authorized, trained personnel. This personnel must be informed of any special hazards that may be encountered.
c) Always concentrate on your work. Proceed carefully and do not use the tool if your full attention is not on the job.
d) Wear non-slip shoes when working outdoors.
e) Avoid unfavorable body positions. Work from a secure stance and stay in balance at all times.
f) Keep the arms flexed while using the tool (do not straighten the arms). If you experience pain or feel unwell, stop using the tool immediately.

5.1.8 Personal protective equipment

The user and any other persons in the vicinity must wear suitable eye protection, a hard hat and ear protection while the tool is in use or when checking the tool for faults etc. The user must also wear protective gloves.

6. Before use

6.1 Check the tool

- Check that no cartridge strip is loaded in the tool. If a cartridge strip is present in the tool, push it forward in the direction of cartridge transport until it can be gripped at the cartridge exit opening and pulled out of 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 function correctly. If necessary, have the tool repaired at a Hilti service centre.
- Check the piston stopper and piston for wear and ensure that the parts have been fitted correctly.

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7. Operation

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-WARNING-

- Driving the fastener may cause flying fragments (i.e. fragments of the material fastened, the fastener or cartridge strip etc.).
- Flying fragments may injure parts of the body or the eyes.
- The operator and bystanders must wear protective glasses and a hard hat.

-WARNING-
The material may splinter or fragments of the magazine strip may fly off when the fastener is driven. The user of the tool and other persons in the immediate vicinity must wear protective glasses and a hard hat. Splintering material presents a risk of injury to the eyes and body.

-CAUTION-
The fastener driving action is initiated by ignition of a propellant charge. The user of the tool and other persons in the immediate vicinity must wear ear protectors. Exposure to noise can cause hearing loss.

-WARNING-
Never make the tool ready to fire by pressing it against a part of the body (e.g. the hand). This could cause a nail or the piston to be driven into a part of the body. Never press the tool against a part of the body.

-CAUTION-
Never redrive a fastener. This may cause the fastener to break and the tool may jam.

-CAUTION-
Never drive fasteners into existing holes unless this is recommended by Hilti.

-CAUTION-
If the tool has overheated, allow it to cool down. Do not exceed the recommended fastener driving rate.

7.1 Using the tool

Fastening guidelines: These guidelines must be observed at all times.

-NOTE-
For detailed information, please ask your local Hilti representative for a copy of the applicable technical guidelines or national technical regulations.

7.2 Driving fasteners

7.2.1 Loading MXR fastener strips 2

1. Insert 4 fastener strips in the magazine from above.
2. Press the last fastener strip into the magazine as far as it will go.

7.2.2 Selecting the cartridge 10

1. Determine the thickness of the material to be fastened and the strength of the supporting steel.
2. Select a suitable type of cartridge and power setting for normal steel or high-strength steel (according to cartridge recommendations).

7.2.3 Loading a strip of Hilti 6.8/18 M40 (=.27 CAL long) cartridges 3

1. Slide the cartridge strip into the cartridge loading channel from above.
2. Press the cartridge strip into the cartridge loading channel until flush with the top edge of the channel.

7.2.4 Driving fasteners 4

-CAUTION-
Never attempt to redrive a fastener that has already been driven. Use the tool only in an upright position with the tool nosepiece (fastener exit aperture) pointing downwards.

-WARNING-
Never point the tool toward other persons.

1. Press the tool against the work surface at right angles.
2. Drive the fastener by pressing the trigger on the hand grip.

7.2.5 Checking and adjusting fastener stand-off 5 6 10

Fastener stand-off (an indication of depth of penetration) can be adjusted by turning the power regulation wheel on the tool (6).
Setting 1 = minimum
Setting 4 = maximum

1. Check the fastener stand-off. (5A)
2. If a fastener is not driven deeply enough, driving power must be increased. Adjust the power regulation wheel to the next higher setting. (5D) If a fastener is driven too deeply, driving power must be decreased. (5E) Adjust the power regulation wheel to the next lower setting.
3. Drive a fastener.
4. Check the stand-off. (5A)
5. If the fastener is still not driven deeply enough or, respectively, is driven too deeply, steps 2 to 4 must be repeated until the correct depth is achieved. If necessary, use a cartridge with a higher or lower power rating.

7.3 Unloading the tool

7.3.1 Removing cartridges from the tool 7

-WARNING-

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Do not attempt to forcibly remove cartridges from the cartridge strip or from the tool.
1. Push the cartridge strip into the tool at the cartridge loading channel, in the direction of cartridge transport, as far as it will go.
2. Pull the cartridge strip out of the tool at the cartridge strip exit area.

7.3.2 Removing fastener strips from the tool 8

-NOTE-
It is not absolutely essential to remove fastener strips from the tool.

-WARNING-
Check that the cartridge strip has been removed from the tool. If a cartridge strip is present in the tool, remove it by pulling it out of the tool by hand at the cartridge strip exit area.
1. Stand the tool upright on the grip (upside down).
2. Press the release button (red button) above the fastener magazine and allow the fastener strips to slide out of the magazine.
3. Press the stop piece and cycle the tool until the fastener strip projects from the tool.
4. While pressing the stop piece, pull the fastener strip from the tool.

7.4 Remedying malfunctions

7.4.1 If the tool misfires or a cartridge fails to fire, proceed as follows:

1. Press the tool fully against the work surface and pull the trigger.
2. If the cartridge still fails to fire, lift the tool away from the work surface. Do not point the tool toward yourself or other persons.
3. At the cartridge loading side, advance the cartridge strip by one cartridge by pushing the strip further into the tool or, alternatively, by pulling the strip through the tool by hand (by one cartridge) at the cartridge strip exit area.
4. Use up the remaining cartridges on the strip. Remove the used cartridge strip and dispose of it correctly to prevent possible misuse.

7.4.2 If the tool jams, proceed as follows 9

-WARNING-
All cartridges must be removed from the tool.

-WARNING-
Do not attempt to forcibly remove cartridges from the cartridge strip or from the tool.
1. Pull the cartridge strip out of the tool at the cartridge strip exit area.

-NOTE-
Turning the rotating sleeve releases the catch. It jumps open automatically and allows the tool to be opened.
2. Press the nosepiece of the tool in slightly and turn the rotating sleeve through 90° (use the accessory scraper as an aid if necessary).
3. Carry out the steps described at 8.2.1 or 8.2.2.
4. Turn the rotating sleeve subsequently back through 90° to its original position.

8. Care and maintenance

-CAUTION-
When this type of tool is used under normal operating conditions, dirt and residues build up inside it and functionally relevant parts are subject to wear. Regular inspections and maintenance are thus essential in order to ensure reliable operation.

Recommended interval for cleaning the tool and checking the condition of the piston and piston stopper:

- **At least daily when the tool is subjected to intensive use.**
- **After driving 5,000 fasteners, at the latest.**

-WARNING-
The tool must be unloaded before carrying out care and maintenance.

-CAUTION-

- The tool may become hot during operation.
- You could burn your hands.
- Wear protective gloves before carrying out care and maintenance.

8.1 Care of the tool

Clean the casing of the tool at regular intervals with a damp cloth.

-NOTE-
Do not use a spray or steam-cleaning system for cleaning. Never operate the tool when the ventilation slots are

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obstructed. Do not permit foreign objects to enter the interior of the tool.

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 center.
Use the tool only with the recommended cartridges and power settings. Use of the wrong cartridges or use of excessively high power settings may lead to premature failure of parts of the tool.

-CAUTION- when cleaning:
Never use grease for the maintenance/lubrication of parts of the tool. This may lead to malfunctions. Use only Hilti lubricant spray or a product of comparable quality.
The residues deposited inside DX tools contain substances that may be injurious to your health:
– Do not inhale any dust or dirt while cleaning.
– Keep the dust or dirt away from foodstuffs.
– Wash your hands after cleaning the tool.

8.2.1 Checking and replacing the piston and piston stopper 11

-NOTE-
– If the tool is used incorrectly (e.g. no fastener loaded in the tool before firing or the fastener is driven into unsupported sheet metal), the piston may become jammed against the piston stopper. Should the piston and piston stopper become fully seized in this way, these parts have reached the end of their life. The tool cannot be cycled when in this status.
– The condition of the piston and piston stopper must be checked at regular intervals and at least daily.

-WARNING-
All cartridges must be removed from the tool.
1. Stand the tool on its grip (upside down).
2. Press the red button above the magazine and allow the fastener strips to slide out of the magazine.

-CAUTION-
Parts of the tool may become very hot after a period of use. Protective gloves must be worn if the following maintenance procedure is carried out before the tool has been allowed to cool down.
3. Unscrew the base plate with the fastener transport system in a counter-clockwise direction until it is released from the tool. Lift the base plate and fastener transport system away from the tool.
4. Pull the piston out of the piston guide.
5. Also pull the piston stopper out of the base plate (with the aid of the piston, if necessary).
6. Check the piston and piston stopper for damage. If signs of damage are found or the piston is jammed against the piston stopper, the piston and piston stopper must be replaced.

-NOTE-
Check the piston for straightness by rolling it on a smooth surface.
Never use a worn or damaged piston and do not tamper with or modify the piston in any way.
7. Pull out the catch before inserting the piston. Hold the catch in this position until the piston is fully inserted and its tip no longer projects from the tool.
8. Insert the piston stopper the right way round in the base plate (rubber part toward the front).
9. Press the base plate and the fastener transport system against the threaded section on the tool and rotate it in a clockwise direction until it is screwed on as far as it will go.
10. Turn the base plate with the fastener transport system back to its original position over the magazine.
11. Push the magazine back until it engages with the fastener transport system.

8.2.2 Cleaning the piston guide 12 13 14

-WARNING-
All cartridges must be removed from the tool.
1. Stand the tool on its grip (upside down).
2. Press the red button above the magazine and allow the fastener strips to slide out of the magazine.

-CAUTION-
Parts of the tool may become very hot after a period of use. Protective gloves must be worn if the following maintenance procedure is carried out before the tool has been allowed to cool down.
3. Unscrew the base plate with the fastener transport system in a counter-clockwise direction until it is released from the tool. Lift the base plate and fastener transport system away from the tool.
4. Pull the piston out of the piston guide.
5. Pull out the catch and hold it securely in this position.
6. Pull the piston guide upwards and out of the tool and then release the catch.
7. Use the large wire brush (accessory) to clean the outside and inside surfaces of the piston guide, including the threaded section.
8. Use the small round brush to clean the cartridge chamber and the adjacent bore for the power regulating pin.
9. Lubricate the slider and the piston guide collar with Hilti spray.

-NOTE-
Use of lubricants other than Hilti lubricant spray may cause damage to rubber parts of the tool, especially the piston stopper.
10. Lubricate the moving part of the fastener transport system with Hilti lubricant spray.
11. Lubricate the guide channels in the tool with Hilti lubricant (accessible through the ventilation slots).
12. Slide the piston guide into the tool from above until the catch engages.

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13. Pull out the catch before inserting the piston. Hold the catch in this position until the piston is fully inserted and its tip no longer projects from the tool.
14. Press the base plate and the fastener transport system against the threaded section on the tool and rotate it on in a clockwise direction until it is screwed on as far as it will go.
15. Turn the base plate with the fastener transport system back to its original position over the magazine.
16. Push the magazine back until it engages with the fastener transport system.

8.3 Checking the tool after care and maintenance

After carrying out care and maintenance and before loading the cartridges, check that all safety devices have been fitted and that they function faultlessly.

-NOTE-

Use of lubricants other than Hilti lubricant spray may cause damage to rubber parts of the tool, especially the piston stopper.

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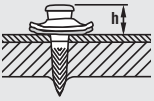
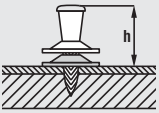
9. Troubleshooting

-WARNING-

The tool must be unloaded before taking any steps to remedy faults.

Fault	Possible cause	Remedy
Cartridge is not transported.	Damaged cartridge strip.	Change the cartridge strip. **(see 7.3.1 and 7.2.3)**
	The tool is damaged.	Contact Hilti.
Cartridge strip cannot be removed from the tool.	The tool is damaged or has overheated due to an excessively high fastener driving rate.	Allow the tool to cool down and then try again to carefully remove the cartridge strip. If still not possible, contact Hilti. **-NOTE-** Do not attempt to forcibly remove cartridges from the strip or from the tool.
Cartridge doesn't fire.	Misfire.	See "Remedying malfunctions" **(7.4)**.
	The tool needs to be cleaned.	Clean the tool.
	The cartridge track is dirty.	Brush the ignition area and cartridge track.
	The base plate and fastener transport system section are not screwed on fully.	Screw the base plate and fastener transport system on fully.
	The tool is not pressed down fully.	Press the tool down fully before pulling the trigger.
	All cartridges on the strip have been used up.	Remove the cartridge strip and reload with a new strip.
	Fastener transport malfunction.	Check the movement of the fasteners; unload defective fasteners if necessary.
	A single cartridge is defective.	Advance the cartridge strip manually by one cartridge at the cartridge loading side by pushing it further into the tool and then use up the remaining cartridges.
	The tool or cartridges are defective.	Contact Hilti.
Fastener penetrates too deeply (inadequate fastener stand-off). **5 E** 	Fastener missed the steel beam.	Mark the position of the beam. Drive another fastener into the beam.
	Power setting too high.	Reduce fastener driving power according to the recommendations for the cartridge **10** or use a less powerful cartridge.
	The piston is worn.	Replace the piston and piston stopper.
	The wrong piston has been fitted.	Check that the right combination of piston and fastener is used.
Fastener does not penetrate deeply enough (excessive fastener stand-off). **5 D** 	Fastener driven into the rib of the beam.	Reposition the tool and drive another fastener.
	Different thickness and/or strength of supporting material.	Increase fastener driving power in accordance with recommendations **10** or use a more powerful cartridge.
	Fastener driving power is too low.	Increase fastener driving power in accordance with recommendations **10** or use a more powerful cartridge.
	The tool needs to be cleaned.	Clean the tool.
	The piston is broken.	Change the piston and piston stopper.
	The tool is damaged.	Contact Hilti.
	The wrong piston has been fitted.	Check that the right combination of piston and fastener is used.

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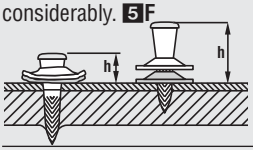
Fastener stand-off varies considerably. **5F** 	Irregular driving power.	Clean the tool. Replace the wearing parts. Contact Hilti if irregular driving power is still experienced.
Shear breakage. **5C** 	Fastener driven into the rib of the beam.	Reposition the tool and drive another fastener.
	The supporting material is thicker and/or of higher strength.	Check that the recommended type of fastener is being used and then increase driving power in accordance with recommendations for the cartridge or, respectively, use a more powerful cartridge.
The tool remains compressed (does not extend when pressure is released).	The piston is jammed against the piston stopper.	Replace the piston and piston stopper. **(7.4.2)**
	The tool needs to be cleaned. The cartridge strip has jammed, the tool has overheated.	Clean the tool. **(8.2.2)** Please refer to "Cartridge strip cannot be removed." Do not exceed the maximum recommended fastener driving rate.
The tool cannot be fired.	Trigger pulled before the tool is fully pressed down.	Press the tool down fully and then pull the trigger.
	Fastener transport malfunction.	Load fastener strip **(7.2.1)**; check that strip is free to move; remove any damaged or distorted fasteners **(7.3.2)**.
	The tool needs to be cleaned.	Clean the tool. **(8.2.2)**
	The base plate and fastener transport system are not screwed on fully.	Screw the base plate and fastener transport system on fully.
	The tool is damaged.	Contact Hilti.
No fastener is driven.	Fastener strip transport mechanism is defective.	Contact Hilti.
	No piston in the tool.	Fit the piston.
	The piston is broken.	Replace the piston and piston stopper.
	The base plate needs to be cleaned.	Use the brushes provided to clean the base plate and associated parts. Lubricate with Hilti spray.
	Fasteners are jammed in the base plate.	Remove the jammed fasteners. Avoid shear breakage (see above). Avoid missing the beam (driving the fastener into unsupported sheet metal); mark the position of the beams accurately if necessary.
The base plate cannot be screwed on to the tool fully.	The piston stopper has been inserted the wrong way round.	Unscrew and remove the base plate. Fit the piston stopper the right way round and screw on the base plate.
	The piston guide needs to be cleaned at the end of the threaded section.	Clean and lubricate the thread.
The piston cannot be fitted.	The tool, the piston guide in particular, needs to be cleaned.	Clean the piston guide and refit the piston.
The piston guide cannot be fitted.	The catch remains in the closed position.	Open the catch. **(8.2.2)**
	The piston guide is incorrectly positioned.	Position the piston guide correctly when inserting it. **(8.2.2)**
Stiff cycling action (high force required to press the tool down).	The tool needs to be cleaned.	Clean the piston guide. Check the piston for straightness. Clean the tool. **(8.2.1 and 8.2.2)**

If these measures fail to remedy the problem, please contact Hilti.

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10. Disposal

Most of the materials from which Hilti tools or appliances 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 old tools and appliances for recycling. Ask Hilti customer service or your Hilti representative for further information. If you wish to bring the tool to a recycling facility yourself: Follow regional and international directives and regulations.

en

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 and oral or written agreements concerning warranties.

12. EC declaration of conformity (original)

Designation:	Powder-actuated fastening tool
Type:	DX 860-ENP
Year of design:	2004

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

Norbert Wohlwend
Head of Quality & Processes Management
BU Direct Fastening
08/2012

Tassilo Deinzer
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86916 Kaufering
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13. Confirmation of CIP testing

The Hilti DX 860-ENP has been system and type tested. As a result, the tool bears the rectangular PTB approval mark showing approval number S 814. 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) and to the Office of the Permanent International Commission (C.I.P.).

14. Health and safety of the operator

14.1 Noise information

Powder-actuated fastening tool

Type	DX 860-ENP
Model	Series
Caliber	6.8/18 red
Power regulation	2
Application	Fastening to 8 mm steel (390 MPa) with X-ENP 19L15MX R

Declared measured values of noise characteristics according to 2006/42/EC Machinery Directive in conjunction with E DIN EN 15895

Noise (power) level:	$L_{WA,\ 1s}$[1]	115 dB(A)
Emission noise-pressure level in the work station:	$L_{pA,\ 1s}$[2]	104 dB(A)
Peak sound pressure emission level:	$L_{pC,\ peak}$[3]	137 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.

[1] ± 2 dB (A)
[2] ± 2 dB (A)
[3] ± 2 dB (C)

14.2 Vibration

Total vibration in accordance with 2006/42/EC does not exceed 2.5 m/s².

Further information about user health and safety can be found at www.hilti.com/hse.

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