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## PRODUCT INFORMATION (PI)

### 1. Product description

#### 1.1 Product status

The TE 25 replaces the TE 24 which was introduced in 1991.

#### 1.2 Product description

The TE 25 is based on the TE 24 and designed for powerful drilling in concrete and stone in the higher diameter range of 12 to 20 mm. Major features are :

#### Interchangeable chuck

The TE 25 has the same type of chuck as the TE 24 including the following two improvements, that is :

1. Stronger spring to hold the chuck on the tool (see MI )
2. Stronger washer to keep different chuck parts stronger together

These improvements have been made following an analysis of repair statistics for the TE24

The transmission of the high force of the TE 25 to the drill-bit is made by two 16-mm long rollers together with two drive webs. When the TE 24 was launched, the transmission was made with 1 ball and two hard-metal (carbide) webs. This resulted in relatively high wear of drill bit connection end and chuck. For about 12 months now, this significant improvement has been incorporated in the TE 24 chuck with clearly better results. Our main competitor, Bosch with the GBH 4 DSC, makes the transmission with only one ball and two webs. This results in high chuck and drill bit wear (smaller contact surface). The hammering of the drill-bit on the concrete with the TE 25 is made to a great extent by the moving chuck because the 2 rollers take almost the complete groove-space on the drill-bit. With the Bosch machine, (fixed chuck) hammering is made possible with the drill-bit moving in the chuck guided by the ball. Tests have shown that the life-time of our chuck, due to the better transmission, is about four times higher than the Bosch GBH 4 DSC.

The same accessories as for the TE 24 can be used.(chiselling adapter, quick-release chuck for wood/steel drilling,..)

#### Two speeds

In order to cover a wide diameter range 2 mechanical gears have been included. Firstly, to reduce vibration when drilling larger diameter holes and secondly, to increase the life-time of the drill bit in the larger diameter range. The Bosch has one gear with a high rotation speed (650 r.p.m. compared to 310 and 640 r.p.m. for the TE 25).

## **New motor**

With the TE 24 we were at a drilling performance level comparable to that of the Bosch GBH4 DSC.

The bigger 830 W motor of the TE 25 puts Hilti at the top level in this class again (see CI section). Together with this high performance motor a new cooling element has been built in which brings a motor temperature decrease of 10 to 20 degrees.

In addition, the slots in the black motor endcap have been made smaller and larger. This has been done to prevent small stones entering the motor section and thus damaging the rotor.

## **New handgrip**

The TE 25 is the first machine which will be equipped with the so called 'TE 2000' Handgrip. In future, this grip will be used for the TE 35 and the next generation of combi-hammers. Customer interviews in different countries have shown that for heavier machines (TE 24 upwards), people prefer a cable exit at the bottom side. The reason is that for heavier machines and sustained work, users like to support/push the machine with their leg. With the TE 24 the cable is in the way and is bent, leading to quicker cable damage. When changing the insert tools, the machine is put vertically, with the handgrip and thus cable, on the ground which again leads more quickly to cable damage. The combination of the new PUR cable together with the exit at the bottom is certainly a significant improvement with regard to reliability.

## **New speed switch**

The new speed switch has been designed for use when working in any direction. When the user wants to drill with support of his leg, the switch can be activated from the upper-side. pinching of the fingers by the switch, as known from the TE 24, can not happen anymore.

## **1.3 Design**

The main difference in design compared to the TE 24 is the new handgrip and the rounded plastic upper section.

## 1.4 Working principle/Functioning/Operation

### 1.4.1 Hammering mechanism/Settings (fig. 1)

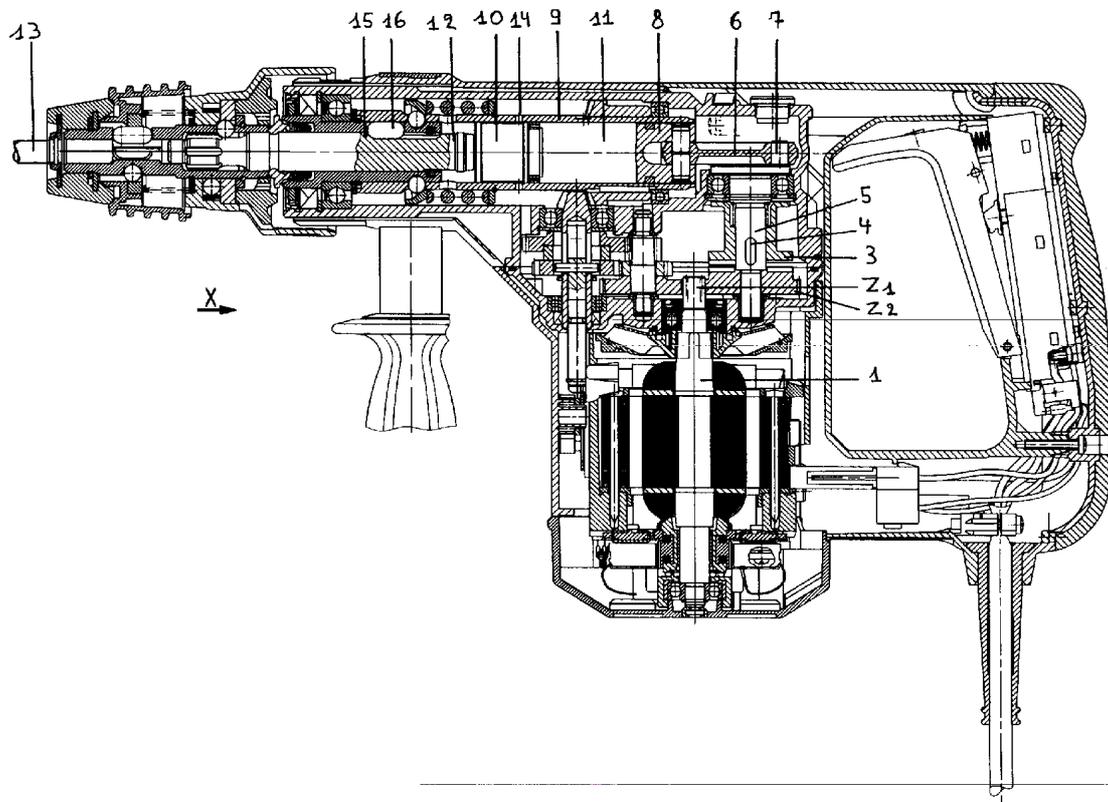
The hammering action is produced electro-pneumatically. The electric motor i.e. the teeth in the spindle (Z1) of the rotor (1), drives the crankshaft (5) via the clutch gear (Z2), coupling sleeve (3), and feather key (4). The rotary motion of the crankshaft pin (7) is converted to a reciprocating motion by the conrod (6) and transferred to the drive piston (8).

Each stroke of the drive piston in the cylinder (9) builds up pressure which acts on and moves the striker piston (10) via a cushion of air (11). Owing to this movement, the impact piston (10) hammers on the ram (12) which, in turn, strikes the end of the insert tool (13).

However, the hammering action can only be produced, as long as the ram (12) is in the operating position. This position is only obtained when the TE25, equipped with the insert tool, is pressed against the base material. This pushes back the chuck with the ram as far as they will go, thus closing the cylinder vent ports (14).

When pushed back, the chuck and ram are stopped when the rollers (16) reach the end of the grooves (15) in the ram. When pushing the chuck and ram into the operating position, a slight remaining hold by the ram brake has to be overcome.

Fig. 1



### 1.4.2 No-load hammering/braking systems (figs. 1 and 2)

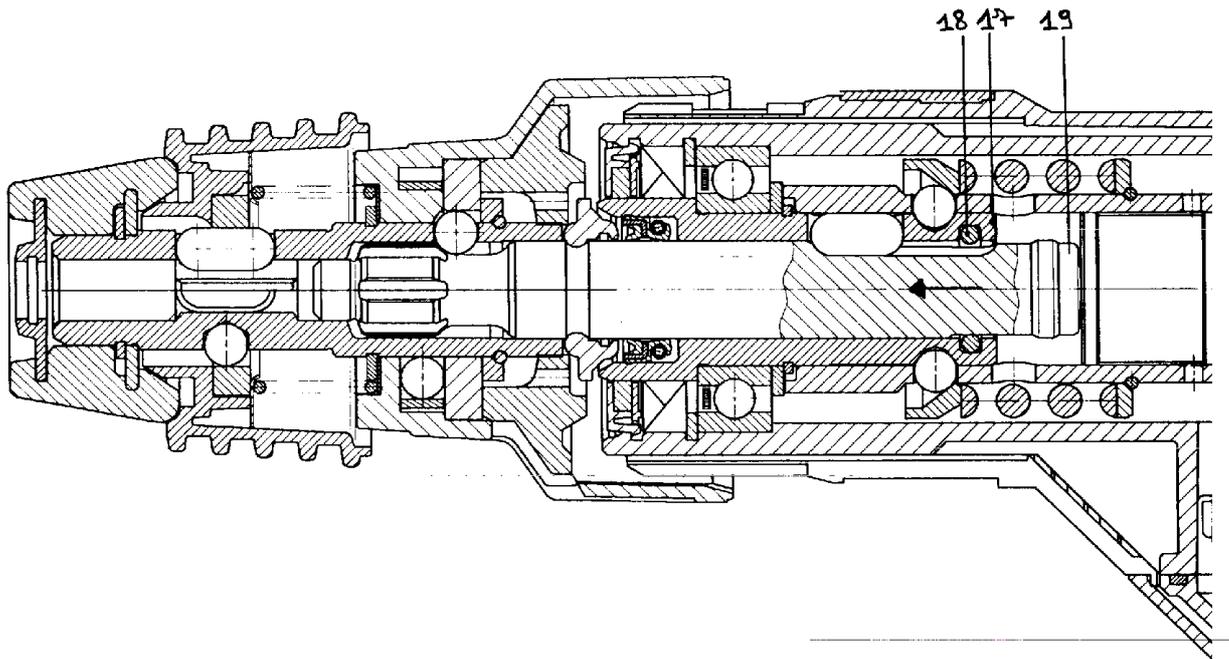
When working with the TE25, the ram is in the operating position. If the TE25 and insert tool are lifted away from the base material, the striker piston impact on the ram moves it and the chuck forward into the no-load position. This opens the vent ports (14) and no pressure can build up in the cylinder. The hammering mechanism then cuts out automatically.

A ram brake has been built in to ensure that the TE25 also stops hammering when working overhead i.e. the chuck and ram remain in the foremost position and do not drop back under their own weight.

This feature prevents the loud noise, which otherwise results when working overhead if the machine is no longer pressed against the base material and the ram strikes the insert tool.

The brake takes the form of a coupling (17) fitted with a round cord (18) which stops the ram (19) dropping back under its own weight into the operating position when the TE25 is lifted away from the base material .

Fig. 2



### 1.4.3 Rotary drilling only (fig 3)

The TE25 has a hammering cut-out (a claw coupling in the hammering mechanism drive chain) so as to permit drilling without hammering.

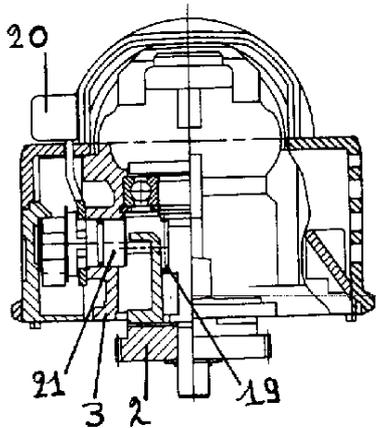
When the TE25 is set at rotary hammering (fig. 3), the clutch gear (2) engages with the clutch sleeve (3). The compression spring (19) ensures that the clutch sleeve (3) is in the right position.

To set the TE25 to rotary drilling only, the switch lever (20) is moved to the rearmost position. The clutch sleeve (3) is lifted by the eccentric pin (21) against pressure from the compression spring (19), thus disengaging these parts. This method of disengagement has the advantage that the TE25 runs more smoothly because there are no out-of-balance forces caused by the otherwise reciprocating parts of the hammering mechanism drive.

When the quick-release chuck is used, the hammering action is cut out automatically. Nonetheless, we still recommend that the hammering mechanism be disengaged by the lever to obtain the advantage of smoother running.

**Fig. 3**

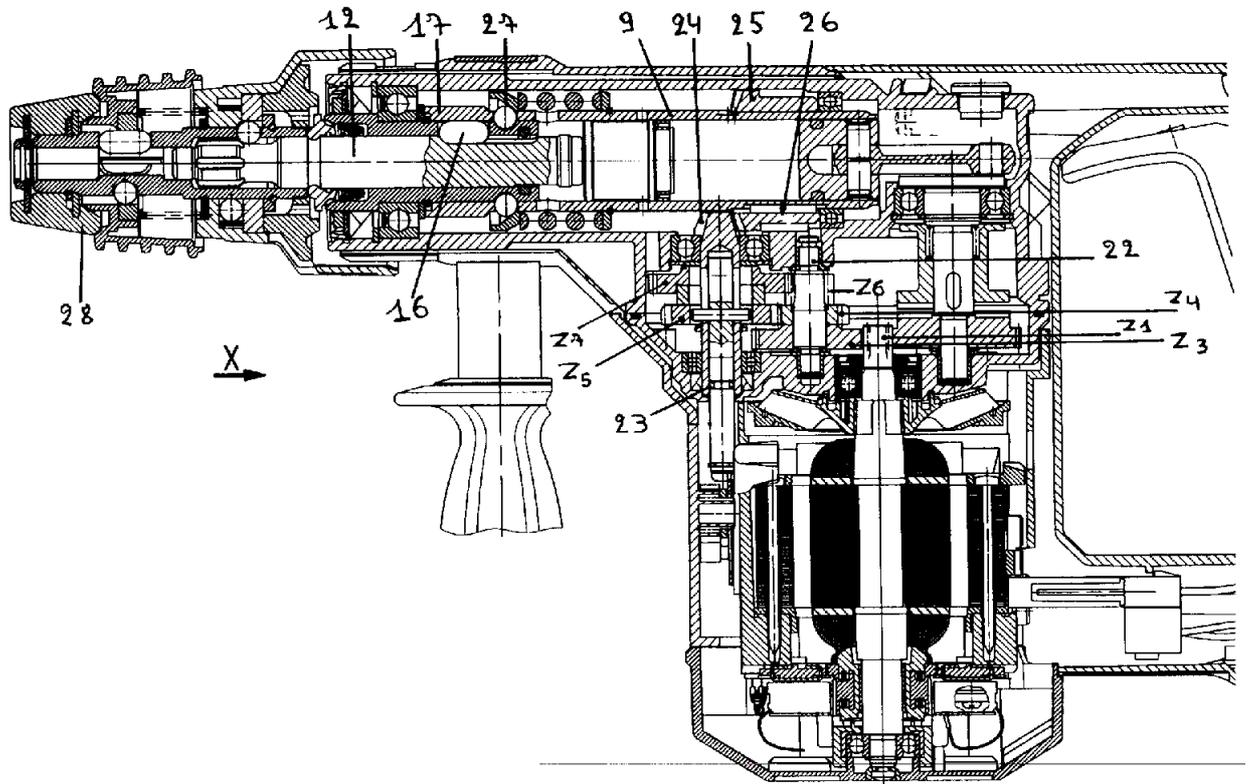
Bereich der Rastung



### 1.4.4 Rotary drive (fig. 4)

Both the TE25 and TE24 have two speeds. The rotor (1, Z1) of the electric motor transmits the rotary motion to the toothed gear (Z3) of the intermediate spindle (22) and then via the compound gear (Z6/Z7) for the first speed and the compound gear (Z4/Z5) for the second speed to the bevel pinion spindle (23). The rotary action is transmitted further by the bevel pinion (24), bevel gear (25), feather key (26), cylinder (9), safety clutch (27), coupling (17) and rollers (16) to the ram (12) and the chuck (28).

Fig. 4



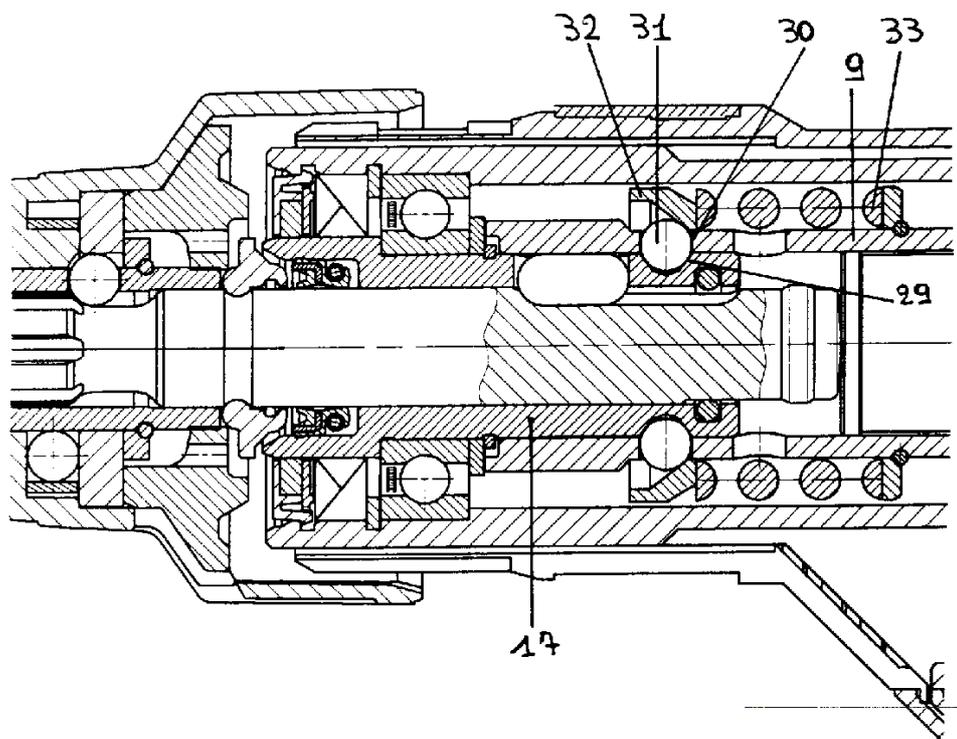
### 1.4.5 Safety clutch (figs. 4 and 5)

The safety clutch is positioned on the centreline of the TE25 cylinder. It is secured firmly in place between the cylinder(9) and coupling (17) and has eight recesses (29) positioned uniformly around the circumference in which eight bearings engage. These bearings are located in bores (30) in the cylinder (9). These bearings (31) are pressed down in a radial direction by a ring (32) with internal taper as a result of pressure from the compression spring (33).

If a certain torque in the rotary drive chain is exceeded, these spring-loaded bearings are forced out of the recesses in the coupling (17) with the result that the cylinder (9), with all safety clutch parts, slips on the blocked coupling (17).

The release torque of the safety clutch is approx. 40 Nm.

Fig. 5:

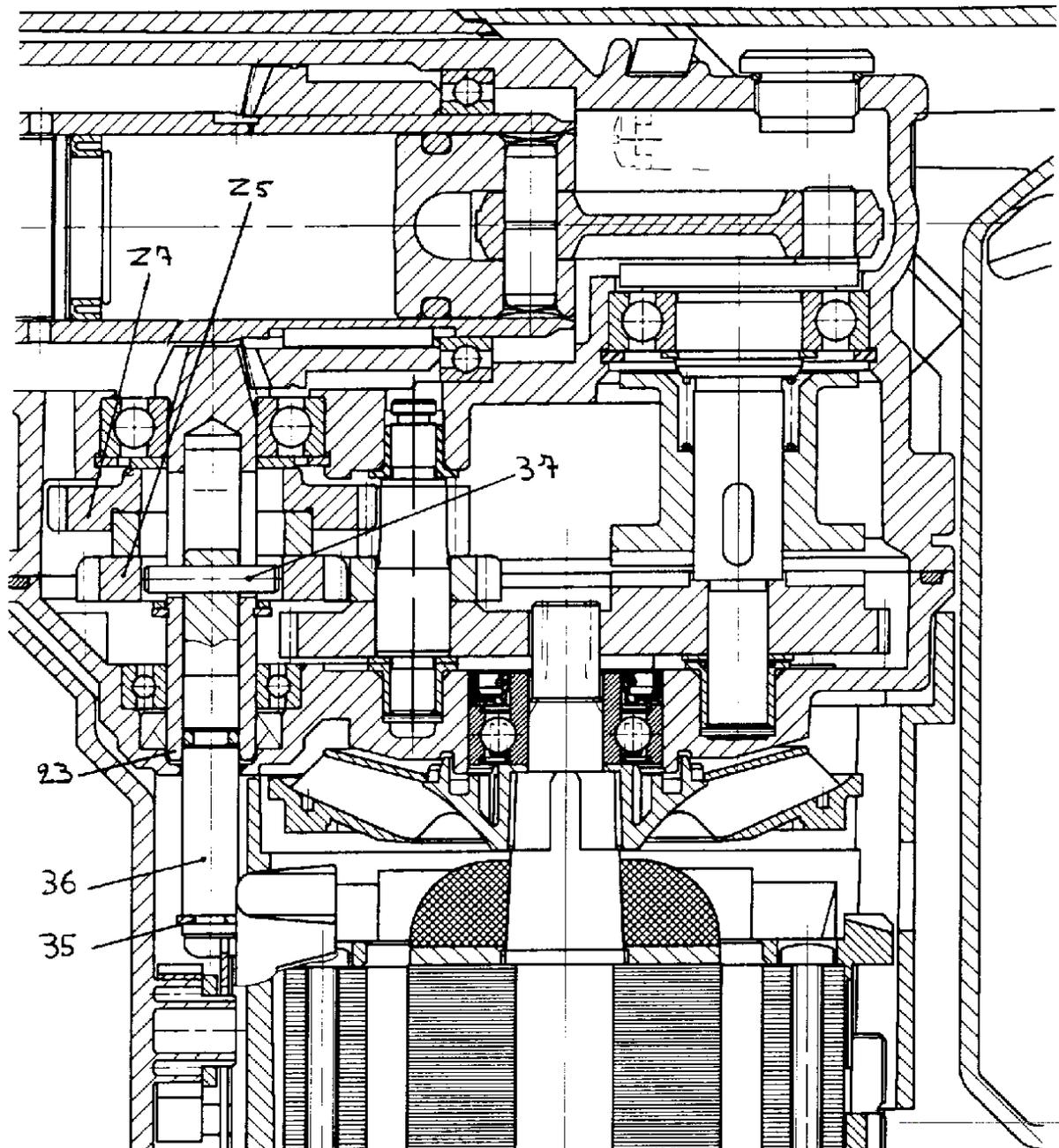


### 1.4.6 Switching of two speeds (fig 6)

The speed switch is positioned at the front of the motor. The switch lever at the side clicks into two positions: the first speed (310 r.p.m.), when the switch is in the top position, and the second speed (640 r.p.m.), where the switch is in the bottom position.

The switch lever pushes a rod (36) into the hollow bevel pinion spindle (23) by means of a fork device (35). A transverse pin (37) passes through the rod (36) and keys the selected speed gear (Z5 or Z7) to the bevel pinion spindle (23). Information about proper speed selection is given in the plastic case of the TE25.

Fig. 6



### 1.4.7 Chuck/Interface (fig 7)

The TE-C chuck supplied as standard is secured to the ram (12) and is a so-called interface. On the ram, this interface takes the form of a spline (39). It is opened and closed by a rotary locking arrangement. Axially, it is held by three balls (40) which engage in the turned section (41) on the ram. The interface is opened and closed by turning the sleeve (42).

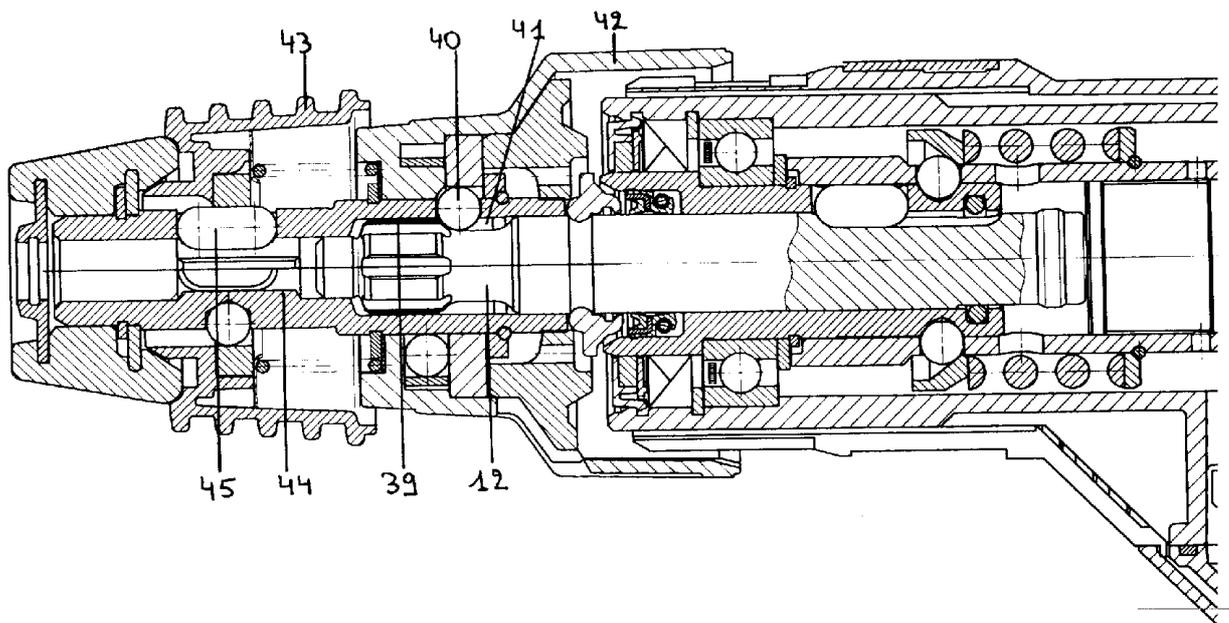
A drill bit/insert tool is locked by the well-proven sliding sleeve (43).

Two 16-mm long rollers, and two fix wedges, for greater resistance to wear, are provided in the chuck to transmit the rotary action to the four-grooves TE-C drill/insert tools.

In an axial direction, insert tools tools are secured by the two rollers (45).

A quick-release chuck or chisel adaptor can also be mounted on the end face.

Fig. 7



#### Interface/Positioning:

The distance that the ram has to move to cut out the hammering action when the machine is away from the base material, is larger in the TE25 than the free movement permitted by the groove length in the TE insert tool. This is thus a telescopic arrangement as in the TE22.

#### Interface/Operation:

It should not be possible for insert tool and interface locking to be mixed up for safety reasons. This is why a rotary lock was selected.

### 1.4.8 Lubrication

The gears and the hammering mechanism of the TE25 are oil lubricated and maintenance free.

The motor has permanently lubricated ball bearings and is also maintenance free.

The so-called interface of the chuck is lubricated with high-temperature resistant grease at the spline where it snaps into place.

If this interface cannot be unlocked after a long period of use, Hilti lubricant can be sprayed into the interface from behind to free it again.

### 1.4.9 Design/Styling

The TE25 has a modular design consisting of the main assemblies of gear section, motor, speed switch, grip, chuck and side handle.

#### **Other design features are as follows:**

- Aluminium gear housing with rounded plastic casing
- Motor with plastic housing bolted to gear section
- Grip mounted on gear section with vibration damping arrangement and secured to motor section with two screws; current supply to motor via plug connection in grip and flat bars on motor
- Speed switch plugged in and held via housing endcap; two-speed drive-key switching
- Chuck interface designed for four-groove TE-C drill bits
- TE25 cooling by radial fan, cooling air is drawn through housing endcap and vented at side and front of gear section.

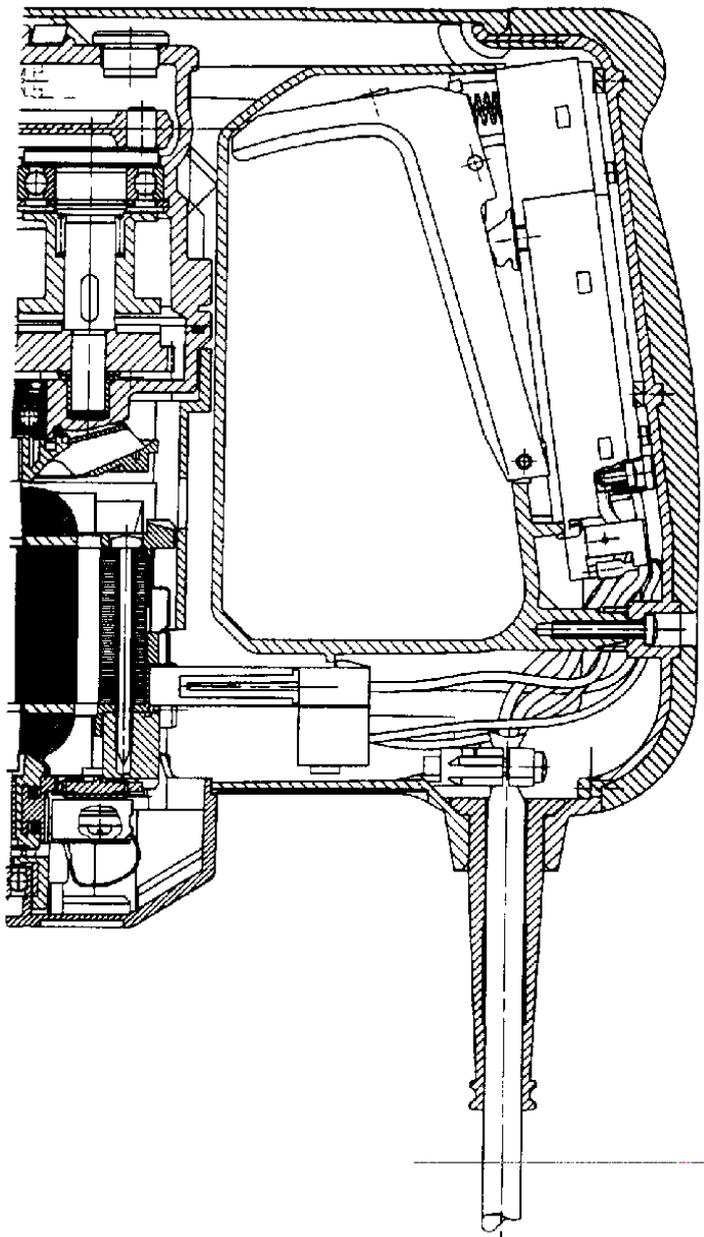
### 1.4.10 Grip (fig 8)

The grip of the TE 25 is the first one of the so called TE 2000 generation. This grip will be used in future for the next generation of combihammers, including the TE35, and offers the following: The grip can be removed from the TE25 as a complete assembly by undoing two screws. At the top, it is mounted on the gear section by means of a damping arrangement and it also has elastic padding. Both features are to protect the operator from vibration.

The electric supply from the grip to the motor takes the form of a plug connection in the grip and flat bars on the motor.

The TE25 has a variable speed control switch (electronic) with full-wave control. As its name implies, the speed can be varied infinitely between the min. and max. r.p.m. Above all, the r.p.m. required to start a hole without difficulty can be readily obtained.

**Fig. 8**

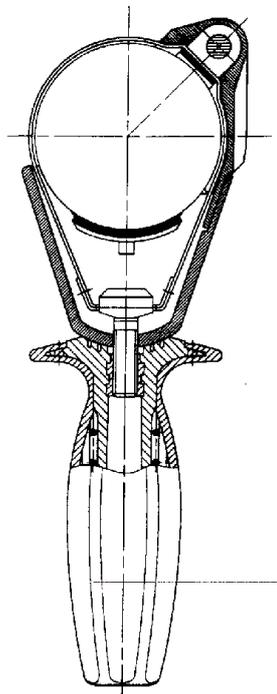


### 1.4.11 Side handle (fig 9)

The side handle with the depth gauge is a complete assembly which is clamped on the TE25's neck. On twisting the grip, the clamping bolt (T-type) tensions or releases the clamping strap. The side handle can be positioned and locked in any position around the circumference of the neck. The depth gauge can be set in any position in a longitudinal direction.

The system is the same as those on the TE 15 and TE 18-M.

Fig. 9



## 1.5 Servicing concept

The servicing concept is the same as that of the TE15.

Where the multiple-use of parts is concerned, special attention was paid to taking over parts from the TE25 and thus the combihammer line.

The following assemblies/part groupings can be replaced by customers or salesmen:

- Chuck
- Side handle
  
- Grip\*
- Switch\*
- Supply cord\*
- Carbon brushes\*

\* Electric tools, comply with the respective safety regulations etc. Only an electrical specialist may carry out work involving electrical components, parts etc. (those marked with an \*) otherwise the risk of an accident could arise for the operator.

### Servicing of carbon brushes

The TE25 is equipped with automatic cut-out carbon brushes, as in all other rotary hammers. First of all, they prevent the commutator from being damaged by worn brushes. Secondly, when they cut out, this is an indication for the customer that the TE25 should be taken to Hilti for servicing and replacement of various wearing parts to extend the life of this rotary hammer.

#### For customers this means:

If an electrical specialist who can change the carbon brushes is available, they must decide whether or not Hilti should service the TE25. If not, they can have the carbon brushes changed and then continue to use the TE25.

If customers do not have or know an electrical specialist, the carbon brushes must be changed by Hilti. In this case, wearing parts must also be replaced on principle.

### Servicing of chuck

The TE25 has a so-called servicing interface for the chuck. This means that customers have the possibility of replacing the chuck themselves without loss of time.

In the same way, Hilti service points can also change the complete chuck or carry out chuck repair in a very short time.

## 1.6 Cleaning and maintenance

The TE25 is maintenance free, as are the other rotary hammers.

Care should be taken not to get dirt and dust onto the ram when the chuck has been removed. The interface should be lubricated occasionally.

### Cleaning of drill bit

Connection ends of TE drill bits/insert tools should be cleaned and lubricated regularly.

## 1.7 Warranty

Normally, the TE25 is covered by a 12-month warranty (differences specific to MO are possible). If required, warranty extensions/servicing agreements should be concluded by MO's in their countries.

## 1.8 Accessories

### 1.8.1 Chisel adaptor (fig 10)

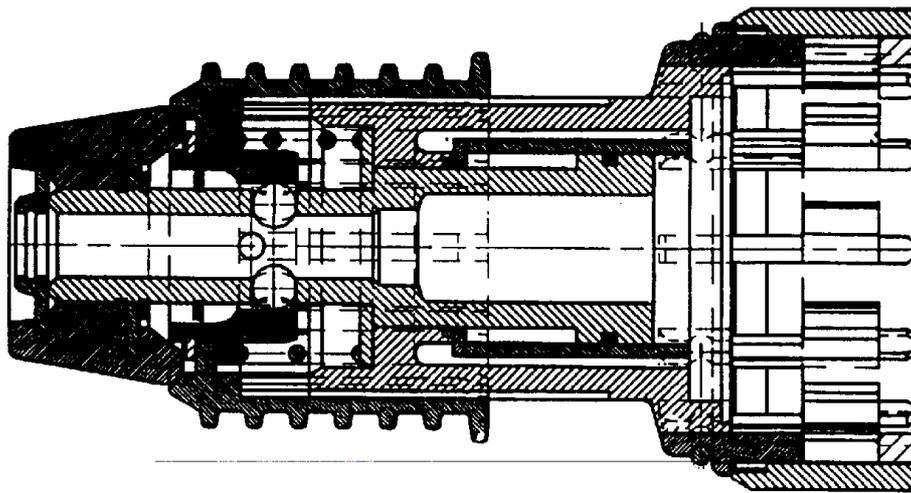
The standard chuck which comes with the TE25 can be replaced at the so-called interface by a chisel adaptor (item no. 30211) so that the TE25 can be used for light chiselling work.

This chisel adaptor is simply mounted on the neck of the TE25 and secured by turning a locking ring. The TE25 neck has a spline-like cross-section for indexing in 12 positions so that the chisel blade can be adjusted in 30° increments.

The ram interface is not functional when the chisel adaptor is used. The ram with its spline continues to run, but without contact with other parts. The rotary action is automatically cut out.

The chisel is locked in the adaptor by two balls (axially and circumferentially). Only Hilti chisels which have the TE-C connection end can be used.

Fig. 10



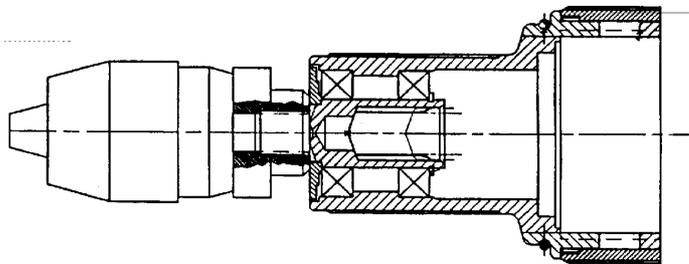
### 1.8.2 Quick-release chuck (capacity up to 13 mm dia.)

The chuck supplied as standard can also be replaced via the interface by a quick-release chuck.

This quick-release chuck is also mounted on the TE25 neck, like the chisel adaptor, and then secured by turning the locking ring.

The spline on the ram transmits the rotary motion to the quick-release chuck. If the hammering action is not cut out, the ram is held in the foremost position by the ram brake and this automatically stops the hammering action.

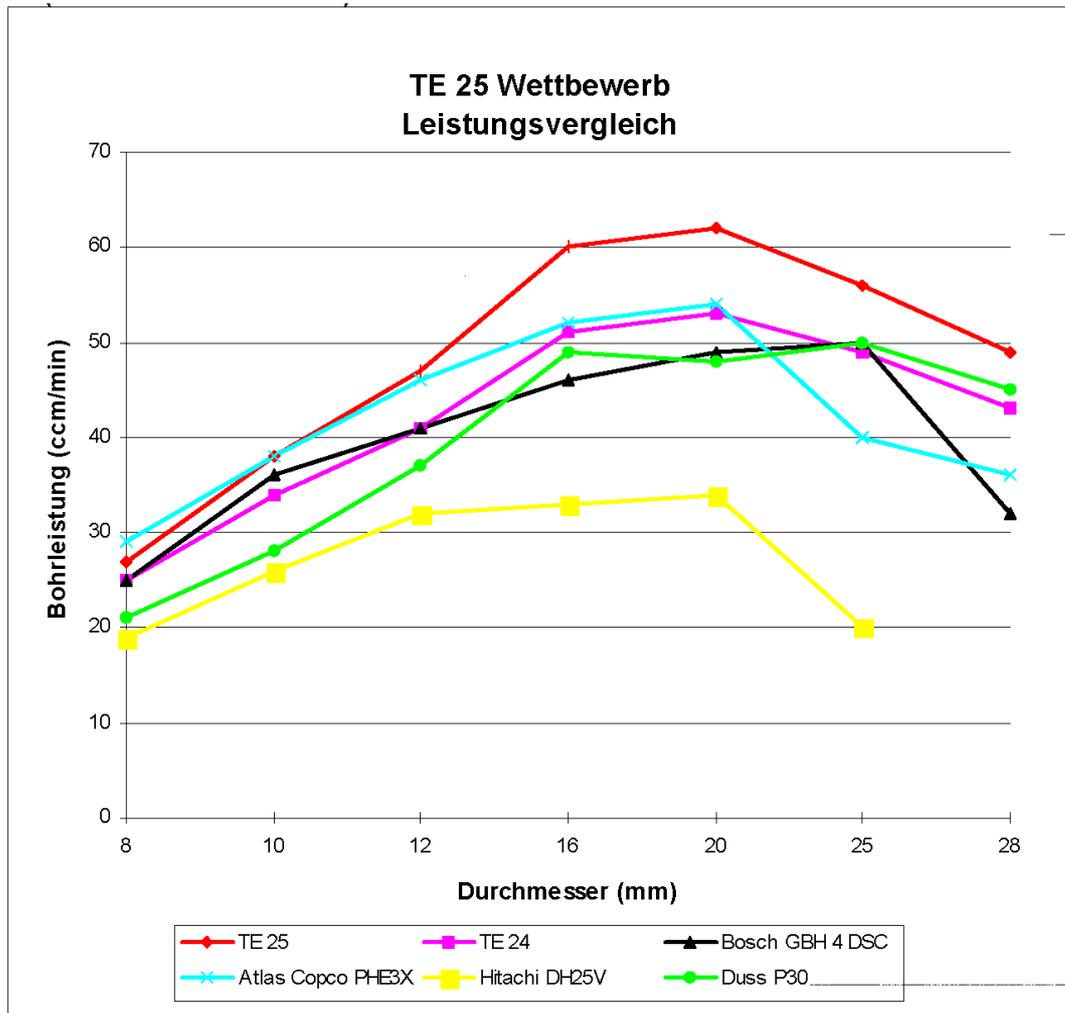
The hammering action should, in fact, be switched off to improve the ease of operation and working convenience (move the switch lever to the "Rotary drilling only" position)



## 2. Technical data

### 2.1 Performance data

Drill bit dia. (mm)	8	10	12	16	20	25	28
<b>TE 25 (QE2)</b>	27	38	47	60	62	56	49
<b>TE 24 (reference)</b>	25	34	41	51	53	49	43
<b>Drill bit</b>	TE-CX		TE-C				
<b>Bosch GBH 4 DSC</b>	25	36	41	46	49	50	32
<b>Atlas Copco PHE3X</b>	29	38	46	52	54	40	36
<b>Hitachi DH25V</b>	19	26	32	33	34	20	
<b>Duss P30</b>	21	28	37	49	48	50	45
<b>Drill bit</b>	System manufacturer						



## 2.2 Machine data (dimensions, weight, etc.)

Machine data	TE 24	TE 25
Power input	740 W	830W
Current input	3.5 A(230-V version)	3.8 A (230-V version)
Frequency	50-60 Hz	50-60 Hz
Machine weight (incl. SDS chuck)	4.9 kg	4.9 kg
Speed under load	1st speed 0-275 r.p.m.2nd speed 0-570 r.p.m.	1st speed 0-310 r.p.m.2nd speed 0-640 r.p.m.
Hammering frequency		
Hammering speed under load	0-3180 blows/min	0-3720 blows/min
Recommended drilling range	12-20 mm dia.	12-20 mm dia.
Single impact energy	3.5 Joule	3.8 Joule
Dimensions length (mm)	440	440
height (mm)	220	220
width (mm)	100	100
Supply cord length (m)	4	4

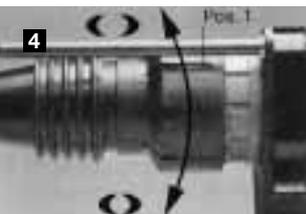
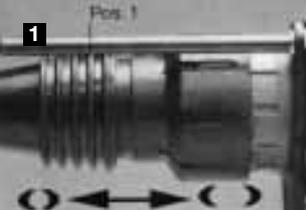
**TE 25**

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**Bedienungsanleitung  
Operating instructions**



# Hilti TE 25 Rotary Hammer Drill



## EG declaration of conformity

Designation: Rotary Hammer

Serial numbers: XX/0000001-9999999/XX

Model/type: TE 25

Year of design: 1996

We declare under our sole responsibility that this product is in conformity with the following standards or standardisation documents:

EN 50144, EN 55014 or EN 55011, EN 60555 according to the provisions of the directives 73/23/EEC, 89/336/EEC, 89/392/EEC

Hilti Corporation

Martin A.C. Messner  
Vice President D&ET Division  
11/1996

Dr. Heinrich Schäperkötter  
Development Manager D&ET Division  
11/1996

## Technical data

Input power:	830 W					
Voltage (versions):	100 V	110 V	120 V	220 V	230 V	240 V
Input current:	8.7 A	7.9 A	7.2 A	3.9 A	3.8 A	3.6 A
Frequency:	50–60 Hz					
Machine weight:	4,9 kg					
Speed under load:	1 <sup>st</sup> speed 0–310 r.p.m. 2 <sup>nd</sup> speed 0–640 r.p.m.					
Hammering under load:	0–3720 blows/min.					
Single impact energy:	3.8 Joule					
Drill bits for concrete:	5–38.5 mm dia.					
Recommended diameter range:	12–20 mm dia.					
Drilling performance in medium-grade concrete:	16 mm dia. = 60 cm <sup>3</sup> /min. = 300 mm/min.					
TE-CX/C drill bit	5–17.5 mm dia.					
TE-C-S drill bit	8–28 mm dia.					
TE-C-GB drill bit	30–38.5 mm (1 1/2")					
TE-C-BK percussion core bit	66–90 mm dia.					
TE-C-HB bit for concrete forms	10–35 mm dia.					
Chuck type:	TE-C					
Automatic cut-out brushes						
Double insulation, class II, CENELEC EN 50144						
Radio and T.V. interference suppression as per EN 55014						
Slip clutch for protection against overloading and accidents						
Dust-tight enclosure; permanent lubrication (maintenance free)						
Variable speed control switch						
Adjustable side handle with depth gauge						
Typically the A-weighted noise levels of the tool are:						
– sound pressure level:	89 dB (A)					
– sound power level:	102 dB (A)					
Wear ear protection.						
The typical weighted acceleration is 11 m/s <sup>2</sup> .						
Right of technical modifications reserved						

**Do not use this product in any way other than as directed by these operating instructions.**

**The respective regulations of your trade association and the enclosed safety precautions must be observed.**

**The operating instructions should always be kept with the machine!**

## Remember before starting to work:

When working with the machine, it must be held two hands. Always make sure that you have a safe stance / foothold.

1. The electric supply must be the same as given on the TE25 nameplate.
2. The TE25 is double insulated and **must not**, therefore, **be grounded** (earthed).
3. Applying excessive pressure will not increase the TE25's performance. Just position the bit and guide it into the hole.
4. Check that you have set the right speed.

**Please refer to the enclosed safety precautions.**

**Clean the drill bit:** The chucks is not incorporated in the lubricating system of the TE25. Drill bit connection ends must therefore be cleaned regularly and lubricated with Hilti grease.

**Shorten the start-up time at low temperatures** by jolting the drill bit briefly against the work surface when starting the TE25.

## Operation:

### Fig. 1: Insertion of TE-C-drill bit/tool

Insert connection end in any position, turn it until the grooves engage and it can be inserted further.

Pull back sleeve (1) and push tool as far as it will go. Release sleeve (1).

To remove tool, pull back sleeve (1) and take out tool.

### Fig. 2: Rotary hammer drilling

To hammer drill into concrete, masonry and stone, shift setting lever to indicated rotary hammer drilling position (symbol ).

### Fig. 3: Rotary drilling only

Shift setting lever to indicated rotary drilling only position (symbol ). At this setting, only the rotary action is transmitted to the drill bit.

### Fig. 4: Changing the chuck

Turn sleeve (1) to right (symbol ) and take off complete chuck. When attaching chuck, press on until it touches striker. Turn sleeve (1) to left (symbol ) and lock. Always make sure the chuck is locked properly.

### Fig. 5: Selecting the correct speed

If the wrong speed is selected, the life of the TE25 and drill bit/tool will be shortened. Select the correct speed, as shown in the following table: 1 = low r.p.m., 2 = high r.p.m.

**Don't change speeds while the TE25 is under load.**

Recommended speeds:	1 <sup>st</sup> speed: 0-310 r.p.m.	2 <sup>nd</sup> speed: 0-640 r.p.m.
TE-CX/C Drill bit	22-38.5 mm dia.	5-20 mm dia.
TE-C-BK Percussion core bit	66-90 mm dia.	

### Light-duty chiselling:

Using an additional chisel adaptor from Hilti, the TE25, can also be used for light chiselling work individual cases. Never use a chisel in the TE-C chuck. The rotary action could cause accidents and the life of the TE25 will be greatly reduced. Please refer to the separate operating instructions for the chisel adaptor.

### Rotary drilling:

The TE25 can also be used for rotary drilling

using an additional quick-release chuck from Hilti. Change procedure: a) put quick-release chuck onto striker; b) turn chuck until it snaps into the double spline; c) lock as shown by photo 4.

### Servicing:

**Electric tools comply with respective safety regulations. Servicing must, therefore, be carried out only by qualified electrical specialists. For your safety, only use original Hilti spare parts.**

months 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 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.

## Warranty

Hilti warrants that the tool supplied is free of defects in material and workmanship. This warranty is valid as 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 12

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## 1. Production stop TE 24

Dear Colleagues,

In June the production of the TE 24 will be completely changed over to the TE 25. Please change your TE 24 orders to TE 25 orders. If this would cause you a problem, please contact me in the shortest delay by E-mail [vanaert@hilti.com](mailto:vanaert@hilti.com) or fax(2034) or phone (2893).

Best regards,

BMT/ Jo Van Aert

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## Additions/Changes (New)

### 2. Changes to TE 25 item numbers





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### 3. Subject: TE 25

Ladies and Gentlemen,

Many thanks for your contribution towards the successful launch of the TE 25. World-wide, sales figures are already up 26 % on last year! (For the period June - October.)

At the moment, we are working on two further improvements:

#### 1. Chuck

A further improvement to the rigidity of the drill bit locking mechanism will be introduced in January 1998. Detailed information will follow in the form an RI.

#### 2. Switch

We have received reports from MO D, USA and Japan about the switch in the grip sticking in some machines (the switch rocker sticks when fully depressed). On investigating the matter, it was found that the dimensions of some lots of the switch deviated from the specification (0.8 mm too long). We immediately checked our stock of all machines (and replacement switches) and made the necessary modifications. As of November 11 (as of serial no. 32523), only machines with modified switches will be supplied.

We recommend that the MO's take the following action:

1. If a complaint is received concerning a sticking switch, the switch should be removed from the machine and modified, as shown in the drawing below, by filing off approx. 0.8 mm from the plastic switch rocker.
2. Switch functionality should be checked at every repair and the switch modified if necessary.
3. Existing stocks of the TE 25 should be checked for correct operation of the switch and modified if necessary.

We would like to wish you every success with your sales efforts with the TE 25.

Best regards,

BMT/ Jo Van Aert



## 2.1 Background information

Although Hilti offers a wide range of machines, various additional versions of these machines are necessary due to differing market requirements.

In the course of time, the number of different versions of each machine has greatly increased and, when examined more closely, this was shown to lead to additional costs at several different levels (manufacturing, logistics).

This problem has now been analysed, taking the TE 5 as an example. By reducing the number of different versions, it has been possible to achieve the following objectives:

- o Increase in the Just In Time share in assembly/shipping of machines to 80% of ex factory sales
- o Shorter throughput times and, therefore, the ability to supply the marketing organisations more quickly and more flexibly
- o Reduction of costs in manufacturing and logistics by HAG and the marketing organisations

## 2.2 Reduction of the number of versions of the TE 25

The following steps have contributed towards a considerable reduction in the number of versions of the TE 25:

- o Merging of the operating instructions, taking into account the necessary languages
- o The elimination of MO-specific, self-adhesive labels

Please refer to the table below to find out whether the changes are applicable to the versions for your market:

Old item no.	Designation	Voltage	New item no.	Designation	Voltage
308319/3	TE 25 toolbox	230V	308317/7	TE 25 toolbox	230V
308322/7	TE 25 toolbox	230V	308324/3	TE 25 toolbox	230V
308323/5	TE 25 toolbox	230V	308321/9	TE 25 toolbox	230V
308326/8	TE 25 toolbox	230V			

## 2.3 Implementation of the changes

The TE 25 can be ordered under the old item nos. up to the end of 1997. As of 1998, the TE 25's supplied will take the changes listed above into account.

## 2.4 Pricing

No changes to the ex factory prices will be made due to the reduction in the number of versions and no additional changes will be made to list prices besides the usual price adjustments.

## 2.5 Item groups

These will be assigned to the corresponding items during the course of the changeover from the present group to the international item group for 1998.

	1997 range	New Code for 1998
TE 25	136 04	256 0300

We would like to thank you for your assistance and wish you every success with your sales efforts with the TE 25.