

MODELS

DH 25PA

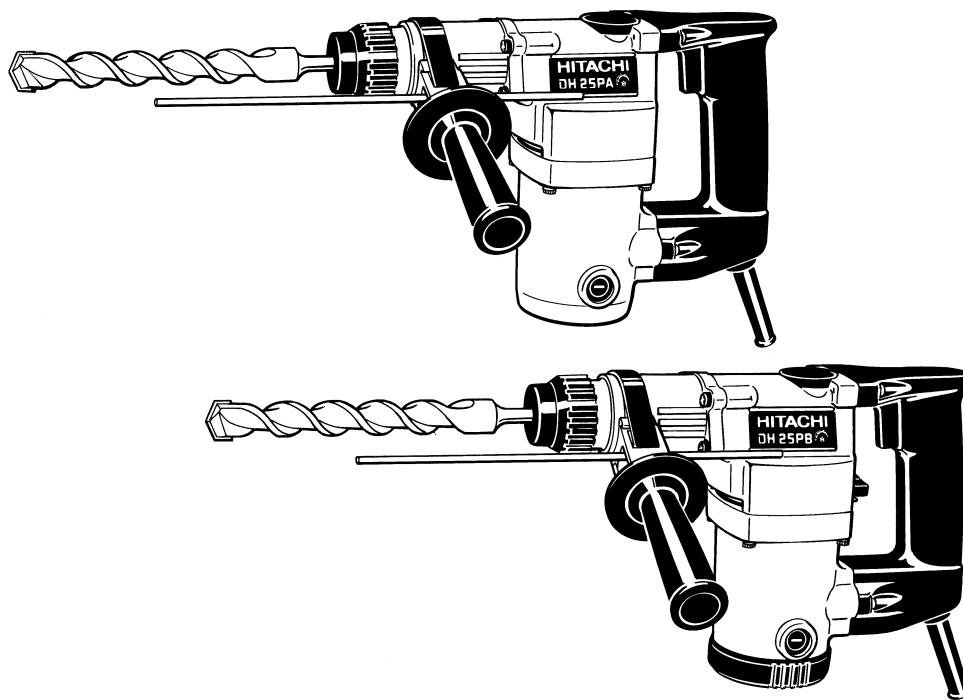
DH 25PB

HITACHI

POWER TOOLS

HAMMER DRILL DH 25PA, DH 25PB

TECHNICAL DATA AND SERVICE MANUAL



LIST Nos. DH 25PA: E453
DH 25PB: E454

Nov. 1999

REMARK:

Throughout this TECHNICAL DATA AND SERVICE MANUAL, a symbol(s) is(are) used in the place of company name(s) and model name(s) of our competitor(s). The symbol(s) utilized here is(are) as follows:

Symbols Utilized	Competitors	
	Company Name	Model Name
C	MAKITA	HR2010

Notice for use

Specifications and parts are subject to change for improvement.
Refer to Hitachi Power Tool Technical News for further information.

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1. PRODUCT NAME

Hitachi Hammer Drill (Rotation + Striking: single-mode), Model DH 25PA

Hitachi Hammer Drill (Rotation + Striking, Rotation only: dual-mode), Model DH 25PB

2. MARKETING OBJECTIVE

The Model DH 25PB is a major modification of the Model DH 20V. With a more powerful motor and striker, this hammer drill provides improved concrete drilling capacity (maximum drill bit dia. 25 mm) and faster drilling speed than the previous model.

The Model DH 25PB is compact and lightweight, and the double-layer molded handle consists of a plastic resin base covered with a soft plastic layer to ensure a soft touch and firm, non-slip grip. This series includes the single-mode operation hammer drill Model DH 25PA equipped with a "Rotation + Striking" function, which is based on the Model DH 25PB.

3. APPLICATIONS

(1) Rotation and striking function

- Drilling anchor holes
- Drilling holes in concrete, tile, brick and similar materials

(2) Rotation only function

- Drilling holes in steel and wood (with chuck adapter)
- Tightening and loosening machine screws and wood screws (with chuck adapter)

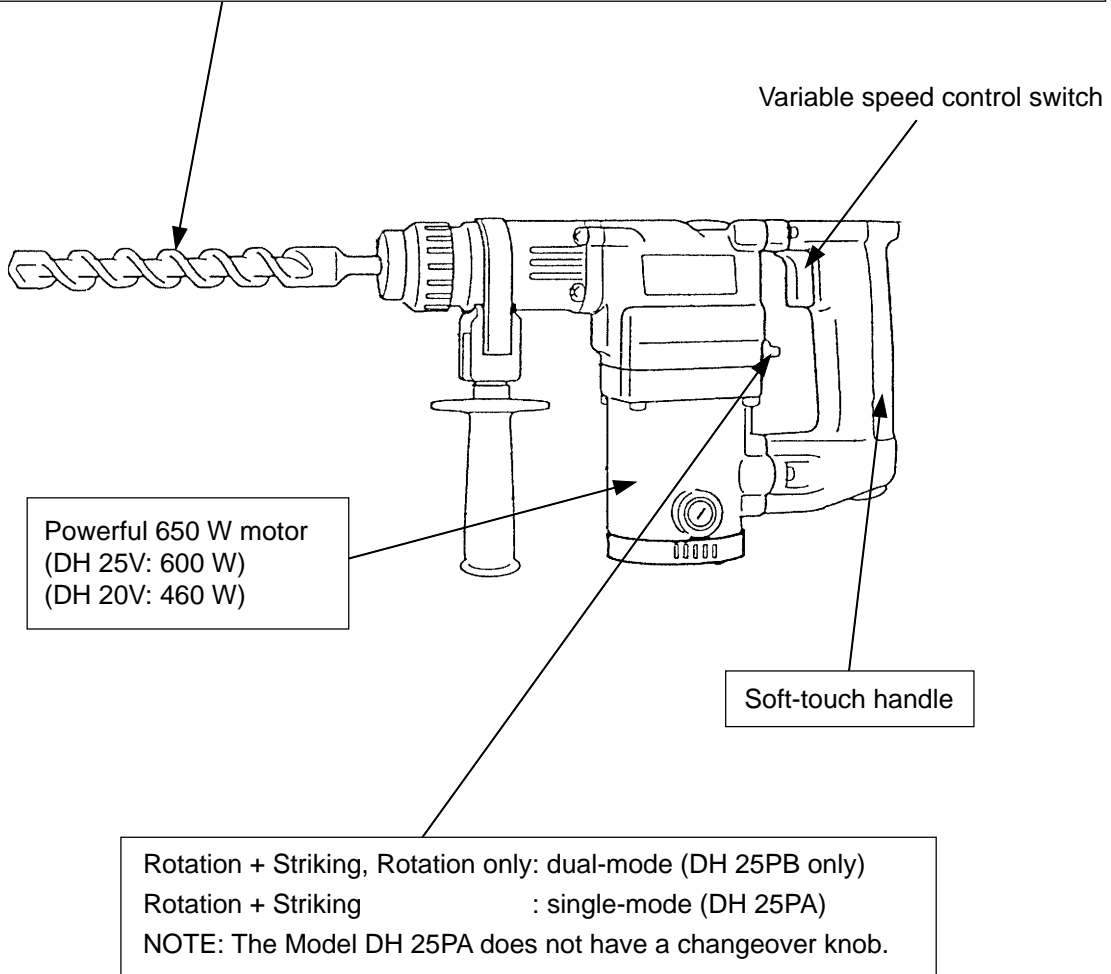
[Typical applications]

- Air conditioning Installation of air conditioners, water coolers and heaters, and air ducts
- Piping and plumbing Installation of gas, water, and sanitary facilities
- Electrical work Installation of light fixtures and various electric appliances
- Interior decoration Installation of seating, display stands, and partitions
- Other civil engineering, construction and repair work

4. SELLING POINTS

Compact and lightweight: Overall length 318 mm (12-17/32"), Weight	{ DH 25PA 3.3 kg (7.3 lbs.) DH 25PB 3.4 kg (7.5 lbs.)
DH 25V: Overall length 352 mm (13-7/8"), Weight 4.4 kg (9.7 lbs.) DH 20V: Overall length 352 mm (13-7/8"), Weight 3.1 kg (6.8 lbs.) B : Overall length 287 mm (11-5/16"), Weight 3.1 kg (6.8 lbs.)	

Fast drilling speed: About 20% faster than the Model DH 20V when the pressing force is 10 kgf.



4-1. Selling Point Descriptions

4-1-1. Fast drilling speed

The drilling speed is 20% faster than the Model DH 20V as the Models DH 25PA and DH 25PB have great striking energy owing to the optimum design of the rotation speed, striking frequency and the weight of striker. The Models DH 25PA and DH 25PB can drill holes in concrete with a maximum drill bit diameter of 25 mm.

4-1-2. Powerful 650 W motor

Although the motor is the same size as the Model DH 20V, power consumption was raised to 650 W by improving the winding specifications and the motor cooling efficiency. These are powerful hammer drills that are also compact and lightweight.

4-1-3. Variable-speed control switch

The variable-speed control switch allows the rotation speed to be changed freely throughout the drilling operation. This permits easy centering and positioning, and ensures more effective drilling of fragile materials such as tile and brick.

4-1-4. Soft-touch handle

The double-layer molded handle consists of a plastic resin base covered with a soft plastic layer to ensure a soft touch and firm, non-slip grip of the handle.

5. SPECIFICATIONS

5-1. Specifications

Model		DH 25PA				DH 25PB			
Capacity	Concrete	3.4 – 25 mm (1/8" – 1")							
	Steel	13 mm (1/2")							
	Wood	32 mm (1-1/4")							
Power source		AC single phase 50 Hz or 60 Hz							
Voltage, current and power input		Voltage (V)	110	115	120	127	220	230	240
		Current (A)	6.2	5.9	5.7	5.4	3.1	3.0	2.8
		Power input (W)	650						
Rotation speed	No-load	0 – 1100 /min							
	Full-load	0 – 800 /min							
Full-load blow rate		0 – 4000/min							
Type of motor		AC single-phase commutator motor							
Type of switch		Variable switch							
Type of handle		D-type handle and side handle							
Enclosure		Materials:							
		Gear cover Crank case Cylinder case		} Aluminum alloy die casting (silver)					
		Housing Handle cover Handle Tail cover Grip		} Glassfiber reinforced polyamide resin				} (green) (gray) (black)	
		Function mode(s)		Rotation and striking				Rotation and striking Rotation only	
Weight	Net*	3.3 kg (7.3 lbs.)				3.4 kg (7.5 lbs.)			
	Gross	5.9 kg (13.0 lbs.)				6.0 kg (13.2 lbs.)			
Packaging		Corrugated cardboard box with case							
Standard accessories		(1) Case 1 (2) Side handle 1 (3) Stopper 1 (4) Dust cup 1							

*: Weight excludes cord and side handle.

5-2. Optional Accessories

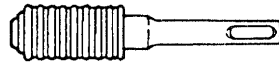
A. Drilling anchor holes (rotation + striking)

- Drill bit (slender shaft)



(1) Drill bit (slender shaft)

+



(2) Adapter for slender shaft
(SDS-plus shank)

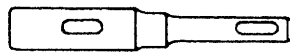
Drill bit (slender shaft)				Adapter for slender shaft
Outer dia. (mm)	Effective length (mm)	Overall length (mm)	Code No.	Code No.
3.4 (1/8")	45 (1-25/32")	90 (3-17/32")	306369	306370
3.5 (9/64")	45 (1-25/32")	90 (3-17/32")	306368	

- Drill bit (taper shank)

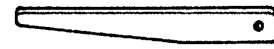


(1) Drill bit (taper shank)

+



(2) Taper shank adapter
(SDS-plus shank)



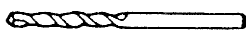
(3) Cotter

(1) Drill bit (taper shank)		(2) Taper shank adapter		(3) Cotter
Outer dia. (mm)	Code No.	Type	Code No.	Code No.
11 (7/16")	944460	Morse taper No. 1	303617	944477
12.3 (31/64")	944461			
12.7 (1/2")	993038			
14.3 (9/16")	944462			
14.5 (73/128")	944500			
17.5 (11/16")	944463			
21.5 (27/32")	944464	Morse taper No. 2	303618	

Part name	Code No.	
A-taper	303619	Taper shank adapter (A-taper or B-taper) is provided as an optional accessory, but drill bit is not provided.
B-taper	303620	

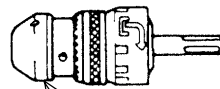
- 13 mm Hammer drill chuck (DH 25PB only)

For drilling operations when using a straight shank bit for impact drilling with a hammer drill



(Straight shank bit for
impact drills)

+



Rubber cap
13mm (1/2") Hammer drill
chuck (SDS-plus shank)



Chuck wrench

Part name	Code No.
13mm (1/2") Hammer drill chuck (including chuck wrench)	303332
Chuck wrench	303334
Rubber cap	303335

B. Anchor setting

- Anchor setting bar to permit anchor setting operation with the hammer drill

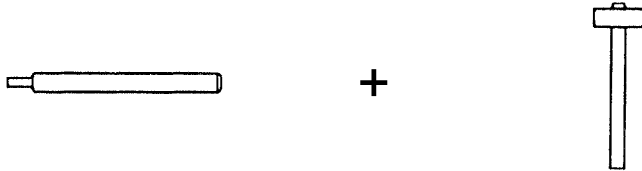
Anchor setting bar



Anchor setting adapter (SDS-plus shank)

Part name	Overall length	Code No.	Part name	Overall length	Code No.
W - 1/4 Anchor setting adapter - A	260	302976	W - 1/4 Anchor setting adapter - B	260	302979
W - 5/16 Anchor setting adapter - A	260	302975	W - 5/16 Anchor setting adapter - B	260	302978
W - 3/8 Anchor setting adapter - A	160	303621	W - 3/8 Anchor setting adapter - B	160	303622
W - 3/8 Anchor setting adapter - A	260	302974	W - 3/8 Anchor setting adapter - B	260	302977
Internal cone type			External cone type		

- Anchor setting bar for manual anchor setting



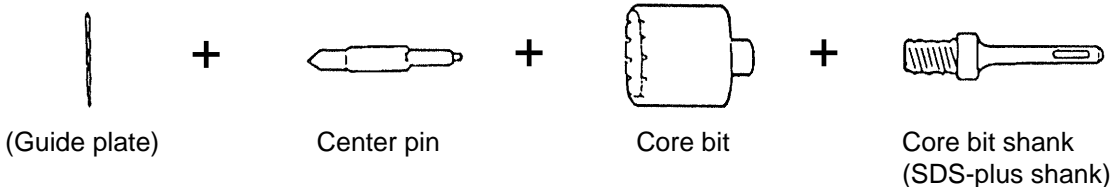
Anchor setting adapter

Manual hammer

Part name	Code No.	Part name	Code No.
W - 1/4 Anchor setting adapter - A	971794	W - 1/4 Anchor setting adapter - B	971799
W - 5/16 Anchor setting adapter - A	971795	W - 5/16 Anchor setting adapter - B	971800
W - 3/8 Anchor setting adapter - A	971796	W - 3/8 Anchor setting adapter - B	971801
W - 1/2 Anchor setting adapter - A	971797	W - 1/2 Anchor setting adapter - B	971802
W - 5/8 Anchor setting adapter - A	971798	W - 5/8 Anchor setting adapter - B	971803
Internal cone type		External cone type	

C. Large hole boring (rotation + striking)

- Center pin, core bit, core bit shank and guide plate



(Guide plate)

Center pin

Core bit

Core bit shank
(SDS-plus shank)

(1) Center pin (Do not use bit with outer diameter of 25 mm (31/32") and 29 mm (1-5/32").

Center pin (A)	Core bit (outer diameter) 32, 35, 38 mm (1-1/4", 1-3/8", 1-1/2")	Code No. 982684
Center pin (B)	Core bit (outer diameter) 45, 50, 65, 80, 90 mm (1-25/32", 2", 2-9/16", 3-5/32", 3-9/16")	Code No. 982685

(2) Guide plate

Core bit (outer diameter) (mm)	Code No.	Core bit (outer diameter)	Code No.
32 (1-1/4")	982686	50 (2")	982690
35 (1-3/8")	982687	65	982691
38 (1-1/2")	982688	80	982692
45 (1-25/32")	982689	90	982693

(3) Core bit with guide plate (the guide plate is not required for 25 mm (31/32") and 29 mm (1-5/32") outer diameter core bits.)

Outer diameter (mm)	Code No.	Outer diameter (mm)	Code No.
25 (31/32")	982672	45 (1-25/32")	982677
29 (1-5/32")	982673	50 (2")	982678
32 (1-1/4")	982674	65	982679
35 (1-3/8")	982675	80	982680
38 (1-1/2")	982676	90	982681

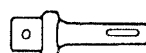
(4) Core bit shank (SDS-plus shank)

Core bit shank (A)	Core bit (outer diameter) 25 – 38 mm (31/32" – 1-1/2")	Overall length 105 mm (4-1/8")	Code No. 303625
		Overall length 300 mm (11-52/64")	Code No. 303626
Core bit shank (B)	Core bit (outer diameter) 45 – 90 mm (1-25/32" – 3-9/16")	Overall length 300 mm (11-52/64")	Code No. 303627

D. Bolt placing operations with chemical anchor (rotation + striking)



+

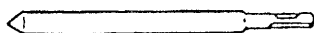


(Standard sockets available on the market)

12.7 mm (1/2") Chemical anchor adapter (SDS-plus shank)
19 mm (3/4") Chemical anchor adapter (SDS-plus shank)

Part name	Code No.
12.7 mm (1/2") Chemical anchor adapter	303044
19 mm (3/4") Chemical anchor adapter	303045

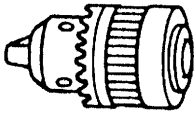
E. Demolishing operations (rotation + striking)



Bull point (round type only)
(SDS-plus shank)

Code No. 303046

F. Drilling hole (rotation only) ... for drilling holes in steel and wood (DH 25PB only)

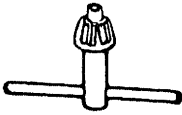


Drill chuck
(13VLA)

+



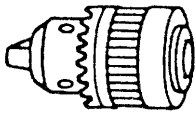
Chuck adapter (D)
(SDS-plus shank)



Chuck wrench

Part name	Code No.
Chuck adapter (D) (for SDS-plus shank type)	303624
13 mm (1/2") Drill chuck 13VLA (with chuck wrench)	950272

G. Driving screws (rotation only) (DH 25PB only)

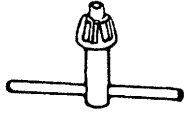


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Drill chuck
(13VLA)

Chuck adapter (D)
(SDS-plus shank)

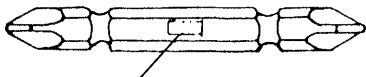


Chuck wrench

(1) Cross-recessed head (Phillips) bit

[Overall length: 70 mm]

(For use with cross-recessed head (Phillips) screw)



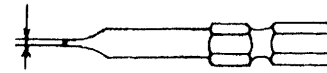
Stamped bit No.

Bit No.	Code No.	Applicable screw dia. (mm)
No. 2	955654	3 – 5
No. 3	955655	6 – 8

(2) Slotted-head (minus) bit

[Overall length: 50 mm]

(For use with slotted-head (minus) screw)

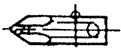


Tip thickness

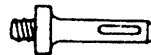
Bit tip thickness	Code No.	Applicable screw dia. (mm)
0.8	955658	4
1	955673	5 – 6

H. Drilling screws (rotation only) (DH 25PB only)

- Plus (Phillips) driver bit [overall length: 25 mm] (for cross-recessed head (Phillips) screws)



+



Bit No.

Chuck adapter (D)
(SDS-plus shank)

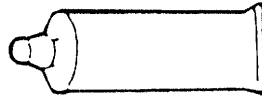
Bit No.	Screw size	Code No.
No. 2	3 – 5 mm	971511Z
No. 3	6 – 8 mm	971512Z

I. Grease for electric impact drill

- Containing 500 g (17.64 oz): Code No. 980927

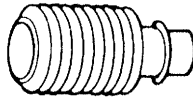


- Containing 30 g (1.06 oz): Code No. 981840
70 g (2.5 oz): Code No. 308471



J. Dust cup, dust collector (B)

Dust collector (B) ass'y



Code No. 306885

6. COMPARISONS WITH SIMILAR PRODUCTS

6-1. Specification Comparisons

Maker			Hitachi				C
Model			DH 25PA	DH 25PB	DH 20V	DH 25V	
Capacity	Concrete	mm	25 (1")	25 (1")	20 (25/32")	25 (1")	20 (25/32")
	Steel	mm	13 (1/2")	13 (1/2")	13 (1/2")	13 (1/2")	13 (1/2")
	Wood	mm	32 (1-1/4")	32 (1-1/4")	15 (19/32")	—	24 (15/16")
Power input	W		650	650	460	520	600
No-load rotation speed	/min.		0 – 1,100	0 – 1,100	0 – 900	0 – 800	0 – 900
Full-load rotation speed	/min.		0 – 800	0 – 800	0 – 700	0 – 650	0 – 735
Full-load blow	/min.		0 – 4,000	0 – 4,000	0 – 3,500	0 – 3,150	0 – 4,000
No-load sound pressure level	dB(A)		89	89	92	85	82
Variable speed control (Note 1)			○	○	○	○	○
Change mode			1 mode	2 modes	2 modes	2 modes	1 mode
Safety-release clutch (Note 1)			○	○	○	○	○
Bit drive system			SDS-plus shank	SDS-plus shank	SDS-plus shank Round shank	SDS-plus shank Round shank	SDS-plus shank Round shank
Dimensions	Length	mm	318 (12-1/2")	318 (12-1/2")	320 (12-19/32")	352 (13-7/8")	287 (11-9/32")
	Height	mm	200 (7-7/8")	210 (8-1/4")	200 (7-7/8")	221 (8-43/64")	214 (8-15/32")
	Width	mm	92 (3-5/8")	92 (3-5/8")	94 (3-43/64")	100 (4")	91 (3-19/32")
Weight (Note 2)	kg		3.3 (7.3 lbs.)	3.4 (7.5 lbs.)	3.1 (6.8 lbs.)	4.4 (9.7 lbs.)	3.1 (6.8 lbs.)

Note 1) Mark "○" …Equipped, Mark "×" …Not equipped.

2) Weight excludes cord and side handle.

6-2. Drilling Speed Comparisons

Drilling speed depends on the operating conditions. The test results shown in Fig. 1 are based on actual tests at the factory and should be used as a reference only.

The drill bits which used in the test are the Hitachi genuine SDS-plus shank bits.

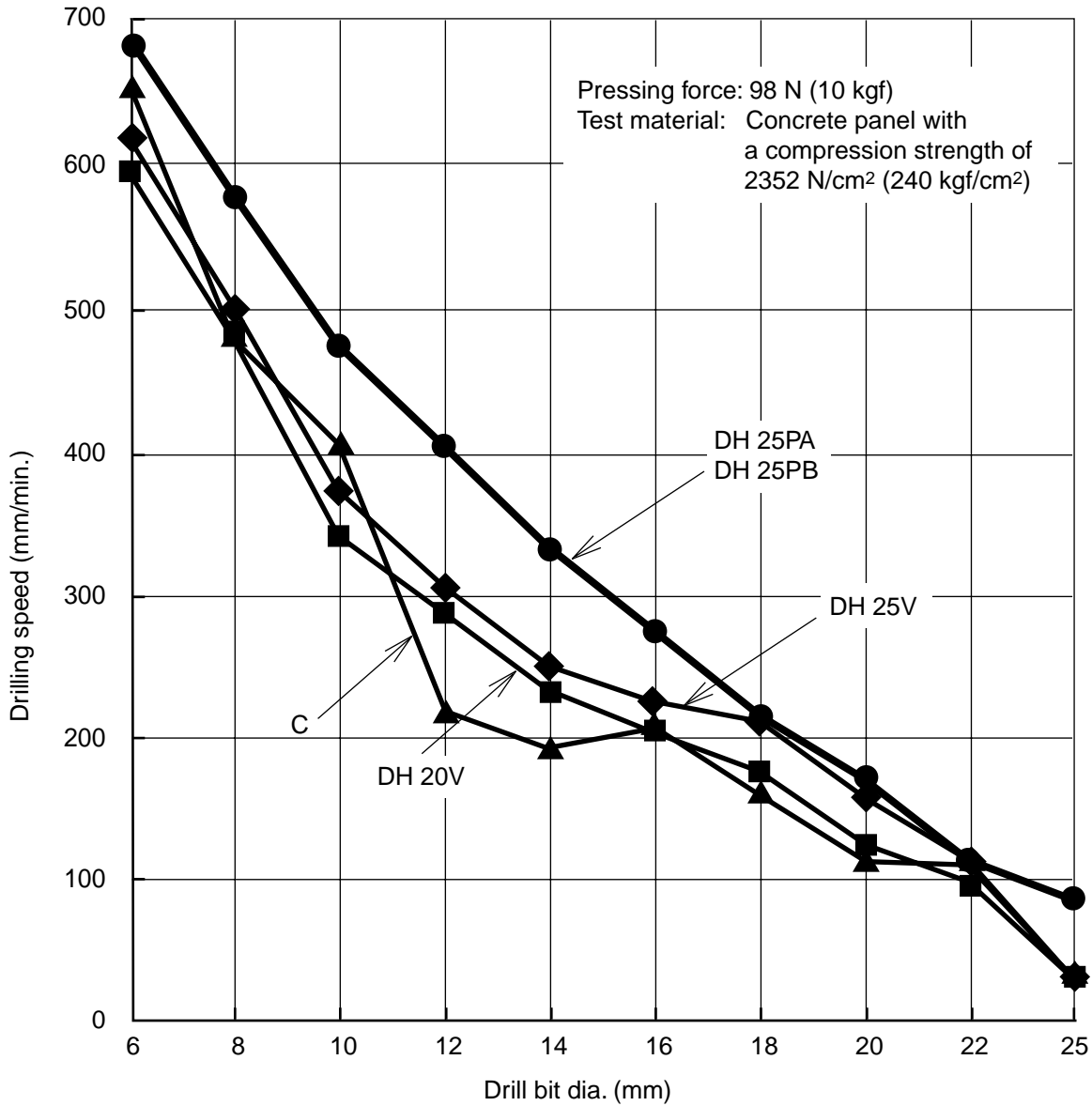


Fig. 1 Drilling speed comparisons (downward drilling)

7. PRECAUTIONS IN SALES PROMOTION

In the interest of promoting the safest and most efficient use of the Models DH 25PA/PB Hammer Drills by all of our customers, it is very important that at the time of sales the salesperson carefully ensures that the buyer seriously recognizes the importance of the contents of the Handling Instructions, and fully understands the meaning of the precautions listed on the Caution Plate attached to each tool.

7-1. Handling Instructions

Although every effort is made in each step of design, manufacture and inspection to provide protection against safety hazards, the dangers inherent in the use of any electric power tool cannot be completely eliminated. Accordingly, general precautions and suggestions for the use of electric power tools, and specific precautions and suggestions for the use of the Hammer Drill are listed in the Handling Instructions to enhance the safe, efficient use of the tool by the customer. Salespersons must be thoroughly familiar with the contents of the Handling Instructions to be able to offer appropriate guidance to the customer during sales promotion.

7-2. Caution Plate

The following basic safety precautions are listed on the Name Plate attached to the main body of each tool. However, these precautions are not listed for European countries.

- For Asia and Oceania

CAUTION

- Read thoroughly **HANDLING INSTRUCTIONS** before use.

- For the U.S.A and Canada

WARNING

- To reduce the risk of injury, user must read and understand instruction manual.

AVERTISSEMENT

- Afin de réduire le risque de blessures, l'utilisateur doit lire et bien comprendre le mode d'emploi.

8. REFERENCES

8-1. Grease Replacement Procedures

The electro-pneumatic hammering section and gear change section each use a different kind of grease. It is not necessary to replenish the grease unless the tool is disassembled for repair or there is grease leakage due to a damaged seal.

A special grease is used for the hammering section. To change the grease in the hammering section (Cylinder Case and Crank Case), carefully wipe the old grease off the parts, and supply 20 g in the Cylinder Case and 17.5 g in the Crank Case (on the Connecting Rod side). Take care not to overfill the grease as an excessive amount of grease can cause hammering failure.

The gear change section (in the Gear Cover) uses Hitachi Motor Grease No. 29 for power tools. Supply with 60 g of this grease. Do not use the special grease used for the hammering section, or it will leak into the motor parts and result in a failure of the tool.

8-2. O-Ring Replacement

The O-ring (attached to the Striker and Piston) plays an important role to ensure air tightness. Despite its prolonged service life due to a special rubber material, it will inevitably wear out. Early replacement, preferably once every six months, is recommended.

8-3. Structure of the DH 25PA and DH 25PB Hammer Drills

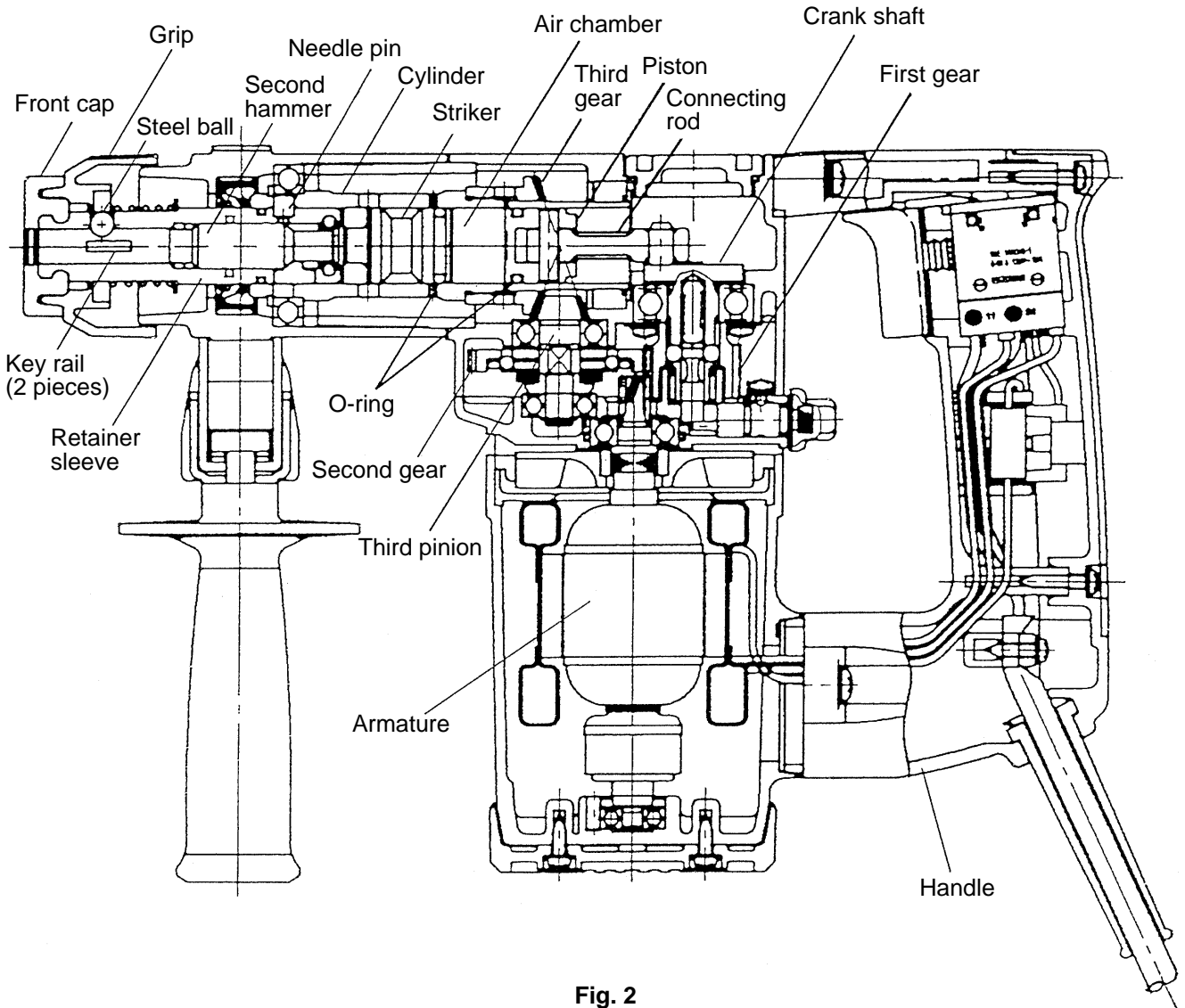


Fig. 2

- Transmission of rotation

Transmission of rotation is described with reference to Fig. 2. The gear arrangement of the Models DH 25PA and DH 25PB is the same as that of Model DH 20V.

Rotation of the armature is transmitted to the second gear to rotate the third gear via the slip mechanism between the second gear and the third pinion shaft. Rotation of the third gear is then transmitted to the cylinder threaded onto the third gear. Rotation of the cylinder is transmitted to the retainer sleeve coupled together by means of three needle pins, and then to the drill bit inserted into the retainer sleeve by way of two key rails and a steel ball which hold the bit.

- Striking function

Rotation of the armature is transmitted to the crank shaft and the connecting rod, and the piston reciprocates within the cylinder. As the piston reciprocates, the changing air pressure inside the air chamber between the piston and the striker causes the striker to move and continuously strike against the end of the second hammer. At the same time, the changing air pressure within the air chamber which moves the striker also provides an "air cushion" which absorbs the impact of the striking action.

- Idle striking prevention mechanism

The idle striking prevention mechanism in the Models DH 25PA and DH 25PB is different from that of conventional hammer drills. When the drill bit is lifted from the concrete surface on completion of drilling, the second hammer moves to the position indicated by the continuous lines in Fig. 3, and the protruding portion at the tip of the striker is gripped by the O-ring mounted on the inner wall of the retainer sleeve. Accordingly, the air-escape slot is opened and there is no change in the air pressure within the air chamber. That prevents movement of the striker (idle striking operation). The gripping force of the O-ring on the striker is so small in comparison with the conventional mouth system that practically no pressing force at all is required to restart the striking operation.

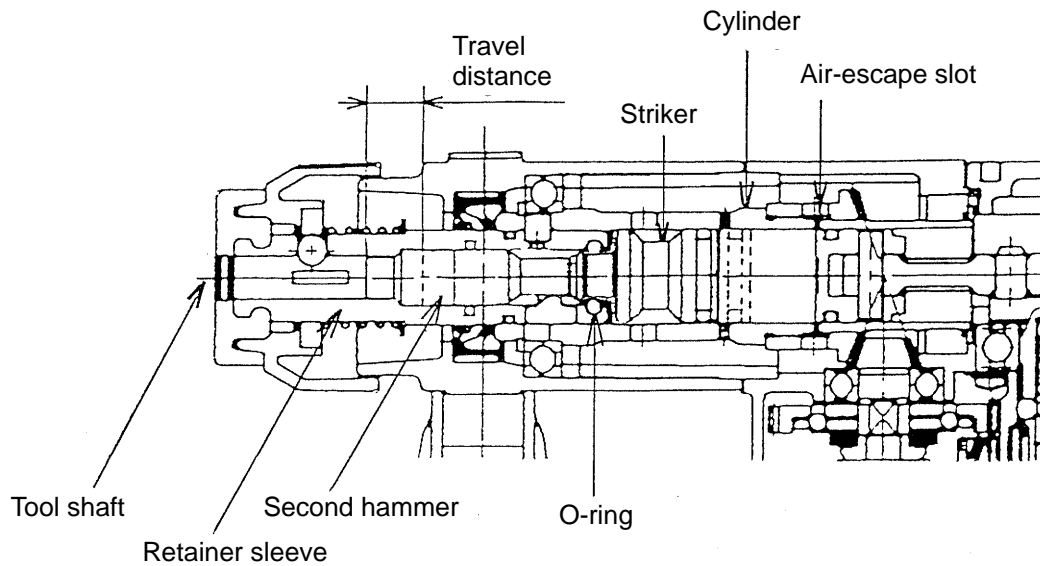


Fig. 3

- Slip mechanism

A clutch plate holding a steel ball is inserted between the second gear and the spring plate as a slip mechanism in the Models DH 25PA and DH 25PB. If an excessively large torque is applied to the tool shaft, the second gear idles and does not transmit rotation.

The slip torque is adjusted by the slip plate and the belleville (coned disk) spring pressure. Even if the drill bit comes in contact with a reinforcing bar within concrete, causing sudden excessive torque, the slip mechanism functions to prevent damage to the gears and possible loss of control of the tool by the operator. The slip torque is set at 2.1 to 3.1 kg·m on the tool shaft.

- Sealed and dust-proof construction

The cylinder case is totally enclosed by oil seals, O-rings and other devices to prevent leakage of lubricating grease, and to keep dust and dirt out of the internal mechanisms.

The drill bit chuck portion is protected by a rubber cap (front cap) to keep out dust and chips which could cause improper fitting of the drill bit and/or other faulty operation of the chuck portion. The switch is also fully dust-proofed to prevent dust and chips from entering the handle section and causing possible operational trouble or a breakdown of the insulation.

- Speed control

The Models DH 25PA and DH 25PB are equipped with a variable speed control switch which permits free adjustment of the rotation speed and striking force. When drilling fragile materials, pull the switch trigger gently for low rotation speed (striking force) to achieve optimum results.

8-4. "Rotation Only" and "Rotation + Striking" Changeover Mechanism (DH 25PB only)

The change lever on the Model DH 25PB permits quick and easy changeover between the "Rotation Only" and "Rotation + Striking" functions.

Armature rotation is transmitted to the first gear, and then to the crank shaft via the two steel balls in the groove of the first gear. When the change lever is set to the "Rotation Only" position, the eccentric pin of the change lever pushes up the clutch shaft and the steel balls fall in the groove. Thus the first gear idles on the crank shaft. When the change lever is returned to the "Rotation + Striking" position, the force of the spring in the crank shaft presses the clutch shaft back and the steel balls connect the crank shaft hole and the first gear groove to transmit rotation to the crank shaft.

8-5. "Rotation Only" (no striking) (DH 25PB only)

To use the tool for drilling holes in steel or wood, the chuck adapter and a drill chuck (optional accessories) must be used. Turn the change lever fully clockwise to the drill mark position to obtain "Rotation Only" function. Since the Model DH 25PB is equipped with a change lever for changeover between "Rotation Only" and "Rotation + Striking" functions, merely mounting the chuck adapter will not stop the striking action; it is absolutely necessary to turn the change lever to the "Rotation Only" setting for drilling holes in steel or wood. **Should the change lever be set to the "Rotation + Striking" position when the tool is used for drilling, the striking action may cause the drill chuck to be broken or damaged.** Sales personnel should carefully ensure that the buyer is thoroughly advised on this point.

8-6. Drill Bits

The chuck section is designed exclusively for the popular and widely available SDS-plus shank bits, as shown in Fig. 4. Rotating torque is transmitted to the drill bit by two key rails provided in the tool holding section. A steel ball is used to prevent the bit from coming off. Compared with a conventional design that uses two needle rollers to both transmit rotating torque and prevent the bit from coming off, this new design reduces damage to the shank of the drill bit and extends the service life of the chuck section.

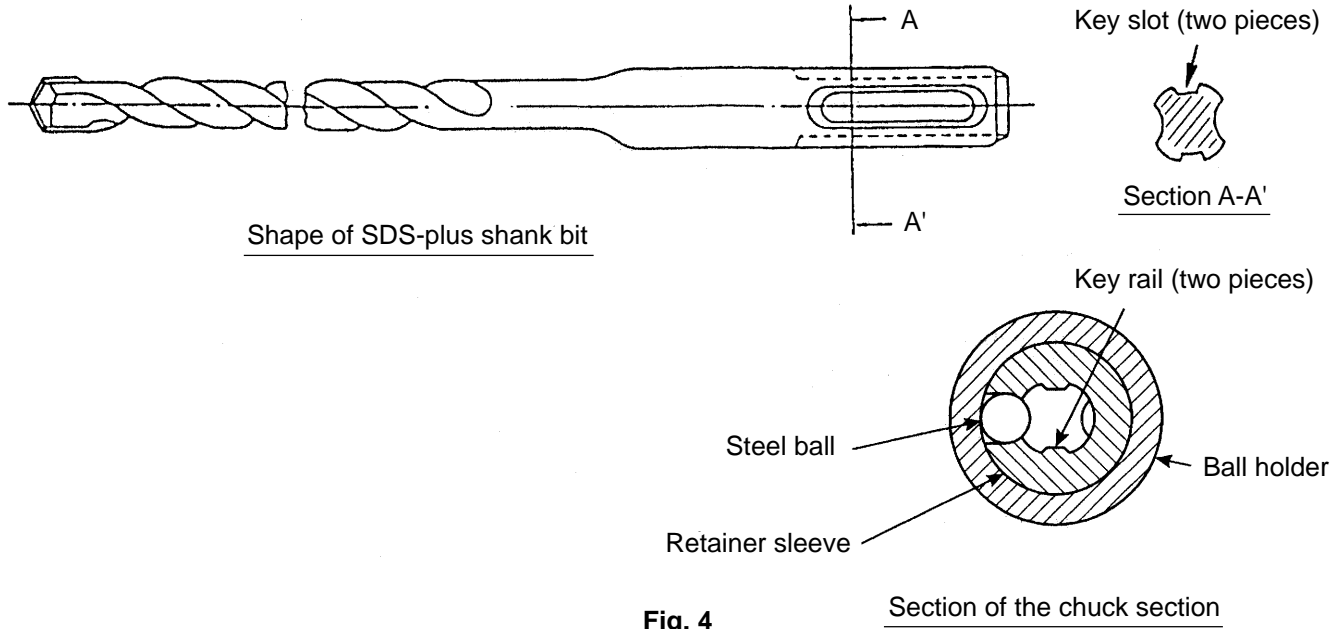


Fig. 4

The service life of a drill bit with a diameter of 8 mm is approximately 300 holes when drilling into concrete to a depth of 30 mm. If reground before the end of its service life, the drill bit will continue to provide efficient drilling.

Fig. 5 shows the regrinding angle.

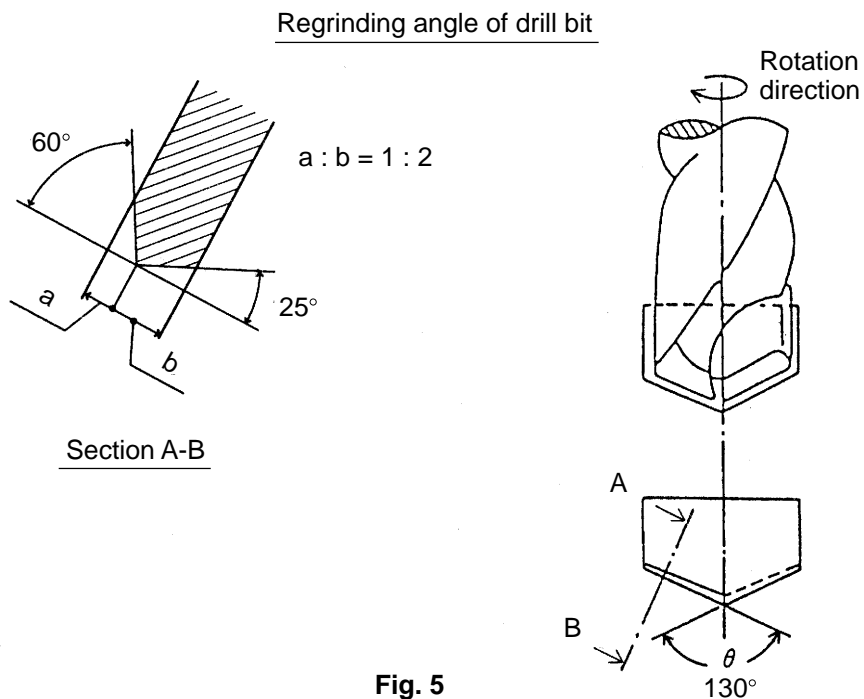


Fig. 5

8-7. Chuck Section

Fig. 6 shows the construction of the chuck section.

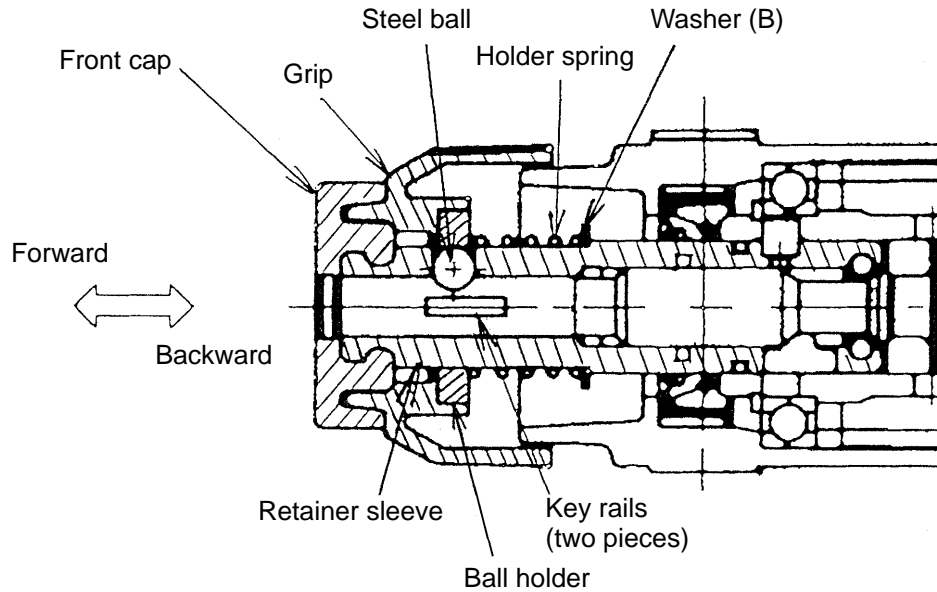


Fig. 6

The opening where the drill bit is inserted is covered with a front cap (rubber) to prevent dust from entering inside. When the drill bit is inserted, the steel ball fits in to the matching groove on the drill bit to lock it in place and prevent it from coming off. Two key rails transmit rotating torque to the drill bit. The drill bit can be released by simply pulling the grip back. The grip is held forward by a holder spring. To mount a drill bit, pull the grip back to compress the holder spring. The steel ball then moves outward. While turning the drill bit, push it until it makes contact and is fully inserted. Then release the grip so that it moves forward and fixes the drill bit. To remove the drill bit, simply pull the grip backward fully and pull the drill bit out.

8-8. Dust Collector (B)

While drilling holes overhead, dust collector (B) can be mounted on the Models DH 25PA/PB to prevent dust and chips from falling downward. Dust collector (B) is intended solely for use when drilling holes in concrete, and cannot be used for drilling holes in steel or wood. It is designed for use with drill bits with overall lengths of 110 mm, 160 mm or 166 mm, and cannot be used with any longer bits. When using a drill bit with an overall length of 166 mm with dust collector (B), drilling up to a depth of approximately 72 mm is possible. When using dust collector (B), ensure it is securely fastened to the grip on the main body with socket adapter (B). Although the socket and socket adapter (B) rotate together with the tool shank, there is a steel ball between the outer race and the socket which serves as a ball bearing. Should the dust cover be forced against the concrete surface, it will not rotate even though the tool shank continues to rotate. Should the tool be operated when the dust cover is not being held against a concrete surface, inertia may cause dust collector (B) to become disconnected from the grip. Accordingly, caution the customer to press dust collector (B) and drill bit firmly against the concrete surface before turning on the switch to start drilling. When dust collector (B) is used, almost no dust and chips are scattered about. However, since the chips and dust remaining in the collector may scatter after completion of the drilling operation, the customer should be advised to always wear protective glasses. When dust collector (B) is disassembled for repair or maintenance, be very careful to prevent oil or grease from adhering to the steel balls. Grease or oil on the steel balls may cause concrete dust to enter the unit and cause defective rotation.

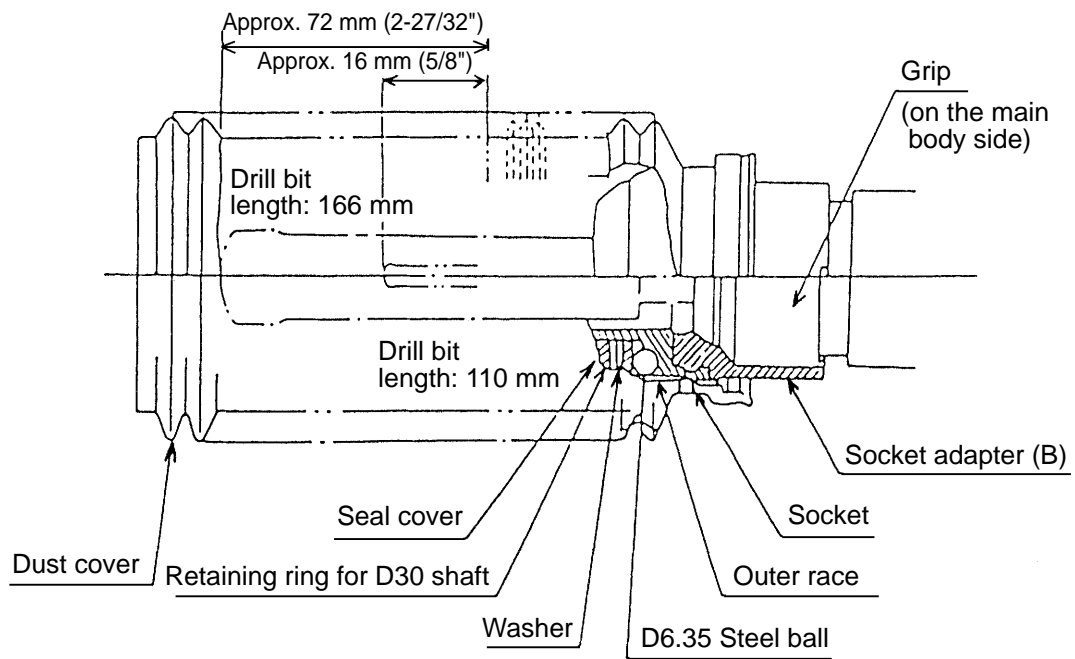


Fig. 7 Dust collector (B) structure

9. PRECAUTIONS IN DISASSEMBLY AND REASSEMBLY

The **[Bold]** numbers in the descriptions below correspond to the item numbers in the Parts List and exploded assembly diagram for DH 25PA and the <bold> numbers to those in the Parts List and exploded assembly diagram for DH 25PB.

9-1. Disassembly

(1) Disassembly of the Striking Mechanism Section

With a drill bit or screwdriver, push in the Second Hammer **[19]** <19> to release the Striker **[3]** <3> from the O-Ring (FPM 810) **[20]** <20>. Remove the Hex. Socket Hd. Bolt (W/Flange) **[32]** <32> from the Cylinder Case **[31]** <31> and then remove the Cylinder Case **[31]** <31> from the Crank Case **[46]** <46>. Remove the Connecting Rod **[9]** <9> from the Crank Shaft **[47]** <47> to remove the Piston **[7]** <7> from the Crank Case **[46]** <46>. Lightly tap the Cylinder **[2]** <2> with a plastic hammer to remove the Striker **[3]** <3>. If the Striker **[3]** <3> is hard to be removed, push the Piston **[7]** <7> connected with the Connecting Rod **[9]** <9> in the Cylinder **[2]** <2> and pull it out with a jerk. Then the Striker **[3]** <3> can be pulled out together with the Piston **[7]** <7>.

(2) Disassembly of the Retainer Section

As shown in Fig. 8, slide the Grip **[27]** <27> in the direction indicated by the arrow, and remove the Front Cap **[26]** <26>. The Grip **[27]** <27>, the Ball Holder **[28]** <28> inside the Grip, the Holder Spring **[29]** <29>, Washer (B) **[30]** <30> and the Steel Ball **[14]** <14> can then be removed from the Retainer Sleeve **[15]** <15>.

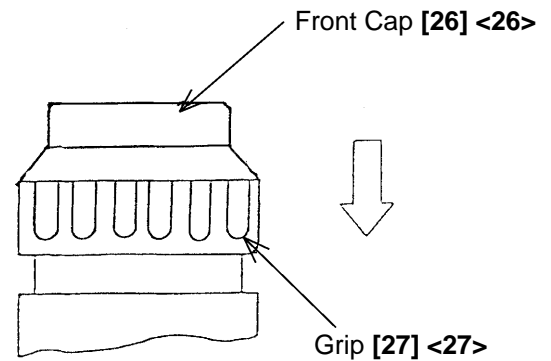


Fig. 8

(3) Disassembly of the Cylinder

Remove the Cylinder Case [31] <31> from the Crank Case [46] <46> and disassemble the retainer section. Remove the Pipe [25] <25>, then the Cylinder [2] <2> from the Cylinder Case [31] <31> by pulling it straight toward the crank case side being careful not to scratch the Oil Seal [21] <21>.

Remove the Retaining Ring for D30 Shaft [22] <22> from the Cylinder [2] <2> and remove the Ball Bearing 6906 [23] <23> press-fitted onto the Cylinder [2] <2> with a hand press. The Retainer Sleeve [15] <15> and the Cylinder [2] <2> can then be removed together. Remove the three Needle Pins [1] <1> from the perimeter of the Cylinder [2] <2> and push the Retainer Sleeve [15] <15> to the outside from the inside of the Cylinder [2] <2> with a hand press to remove the Retainer Sleeve [15] <15> and the Cylinder [2] <2>.

Remove the three Needles [16] <16> from the perimeter of the Retainer Sleeve [15] <15> and extract the O-Ring [20] <20> from the inner part of the Retainer Sleeve [15] <15>. The Second Hammer [19] <19> can then be removed from the Retainer Sleeve [15] <15>. For easy extraction of this O-Ring [20] <20>, fit a Special Repair Tool J-201 Spring Hook H-75 [J-201] onto the outer circumference of the O-Ring [20] <20>, and pull it out. As the O-Ring [20] <20> is employed to prevent idle striking, please advise customers to replace it with new one whenever it is disassembled. Be careful not to lose the three Needle Pins [1] <1> and the three Needles [16] <16>.

(4) Disassembly of the Gear and the Crank Shaft in the Crank Case

The slip clutch section can be removed from the Crank Case [46] <46> by tapping the end surface of the Crank Case [46] <46> from the gear cover side with a plastic hammer.

Remove the Retaining Ring for D8 Shaft [45] <45> and the Ball Bearing [44] <44> from the slip clutch section. Remove the Third Pinion [34] <34> press-fitted in the Bushing [43] <43> with a hand press.

Push the Clutch Shaft <54> in the Crank Shaft [47] <47> up to the end surface with a stick having a flat edge, then pull out the First gear [53] <51>.

Be careful not to lose the Clutch Shaft, Clutch Spring <53> and two Steel Balls D4.76 <48> in the crank shaft hole.

(5) Disassembly of the Change Lever Ass'y in the Gear Cover

Insert the blade of a flat-blade screwdriver between the Gear Cover <57> and the Stopper Spring <56> and twist to remove the Stopper Spring <56>.

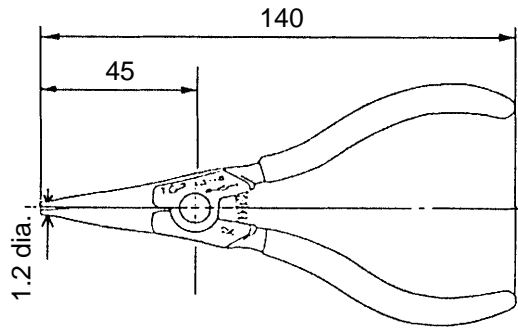
- Use of Special Repair Tools

- Snap ring pliers [J-200] (See Fig. 9.)

Used to remove the Retaining Ring for D30 Shaft [22] <22> which fixes the Ball Bearing 6906 [23] <23> at the tip end of the Cylinder [2] <2>.

- Spring hook [J-201] (See Fig. 10.)

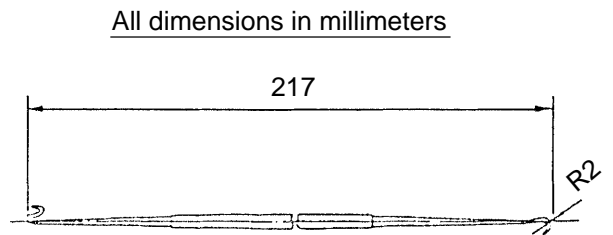
Used to extract the O-Ring [20] <20> inserted at the inner part of the Retainer Sleeve [15] <15> which is designed to catch and grip the striker to prevent idle hammering. As shown in Fig. 11, fit the Spring Hook [J-201] onto the O-Ring [20] <20> from the outer circumference of the O-Ring [18] <18>, and pull it out.



(1) Snap ring pliers [J-200]

Code No. 970976

Fig. 9



(2) Spring hook [J-201]

Code No. 970977

Fig. 10

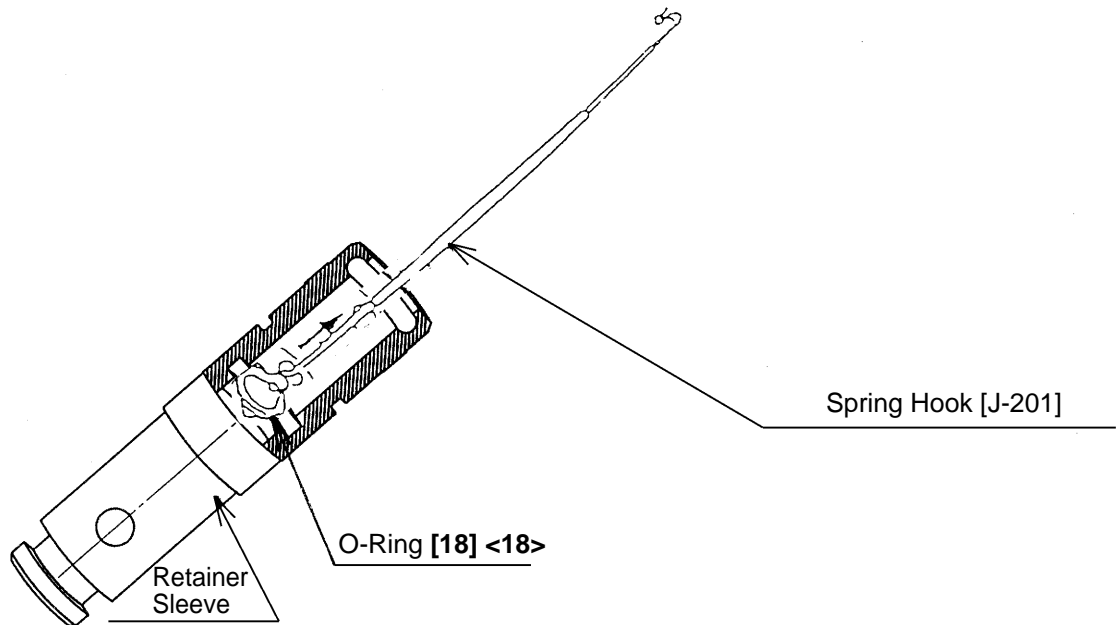


Fig. 11

9-2. Reassembly

Perform reassembly in the reverse order of disassembly while observing the given precautions and taking care of the following points.

(1) Lubrication

Apply special grease to the following portions.

- Both holes of the Connecting Rod [9] <9>
- Inside of the Cylinder [2] <2> and the Piston Pin [8] <8>
- Piston [7] <7>, outer circumference of the Striker [3] <3> and the O-Rings [4] <4>, [6] <6>
- Outer circumference of the Second Hammer [19] <19>
- O-Rings [18] <18>, [20] <20> for Retainer Sleeve [15] <15> and the O-Ring (D) [17] <17>
- Lip portion of the Oil Seal [21] <21>

Fill 20 g of special grease in the Cylinder Case [31] <31> and 17.5 g of special grease in the Crank Case [46] <46>. Fill 60 g of power tool grease No. 29 in the Gear Cover [54] <57>.

* Apply power tool grease No. 29 to the Steel Balls [14] <14>, [39] <39>, <48> and <72>, and Needle [16] <16> to make reassembly work easier.

(2) Mounting the First Gear (DH 25PB only)

Insert the Clutch Spring <53> and the Clutch Shaft <54> (from the constricted side) into the hole of the Crank Shaft <47>. Apply power tool grease No. 29 to the side hole of the crank shaft and then insert the Steel Ball D4.76 <48>. Insert a steel bar of about 10 mm diameter having flat ends into the First Gear <51>. Pressing the Clutch Shaft <54> so that the end surface becomes level with the end surface of the Crank Shaft <47>, push in the First Gear <51> adjusting the first gear groove to the steel ball position.

(3) Mounting of Oil Seal [21] <21>

Prior to reassembly, apply grease to the inner circumference of the Oil Seal [21] <21>.

However, do not apply grease to its outer circumference. Also, when press-fitting the Oil Seal [21] <21>, ensure that it is straight and level.

(4) Screw Locking Agent TB1401

Apply screw locking agent TB1401 to all hexagon socket head bolts and the Seal Lock Screw (W/Washers) M5 x 25 [77] <87> prior to reassembly.

9-3. Tightening Torque

(1) Tightening torque of each screw and bolt

- Hex. Socket Hd. Bolt (W/Flange) M5 x 25 [32] <32> $4.9^{+1.96}_0 \text{ N}\cdot\text{m}$ ($50^{+20}_0 \text{ kgf}\cdot\text{cm}$)
- Hex. Socket Hd. Bolt (W/Flange) M5 x 45 [63] <66> $3.43^{+1.47}_0 \text{ N}\cdot\text{m}$ ($35^{+15}_0 \text{ kgf}\cdot\text{cm}$)
- Hex. Hd. Tapping Screw D5 x 45 [58] <61> $2.94 \pm 0.49 \text{ N}\cdot\text{m}$ ($30 \pm 5 \text{ kgf}\cdot\text{cm}$)
- Seal Lock Screw (W/Washers) M5 x 25 [77] <87> $2.94 \pm 0.49 \text{ N}\cdot\text{m}$ ($30 \pm 5 \text{ kgf}\cdot\text{cm}$)
- Tapping Screw (W/Flange) D5 x 25 (Black) [74] <84> $2.94 \pm 0.49 \text{ N}\cdot\text{m}$ ($30 \pm 5 \text{ kgf}\cdot\text{cm}$)
- Tapping Screw (W/Flange) D4 x 20 (Black) [83] <93> $1.96^{+0.49}_0 \text{ N}\cdot\text{m}$ ($20^{+5}_0 \text{ kgf}\cdot\text{cm}$)
- Tapping Screw (W/Flange) D4 x 12 (Black) <81> $1.96^{+0.49}_0 \text{ N}\cdot\text{m}$ ($20^{+5}_0 \text{ kgf}\cdot\text{cm}$)
- Seal Lock Screw (W/SP.Washer) M4 x 12 [52] <52> $1.96^{+0.49}_0 \text{ N}\cdot\text{m}$ ($20^{+5}_0 \text{ kgf}\cdot\text{cm}$)
- Seal Lock Screw (W/SP.Washer) M4 x 8 <70> $1.96^{+0.49}_0 \text{ N}\cdot\text{m}$ ($20^{+5}_0 \text{ kgf}\cdot\text{cm}$)
- Oil Cap [12] <12> $2.94 \pm 0.49 \text{ N}\cdot\text{m}$ ($30 \pm 5 \text{ kgf}\cdot\text{cm}$)

(2) Special grease

Although the newly developed grease (light yellow) is used in the Models DH 25PA and DH 25PB, the conventional grease for hammer drill (yellow) will be supplied for the time being (Code Nos. 980927, 981840 and 308471). There is no problem even if both greases are used during servicing.

9-4. Wiring Diagrams

(1) Products with noise suppressor

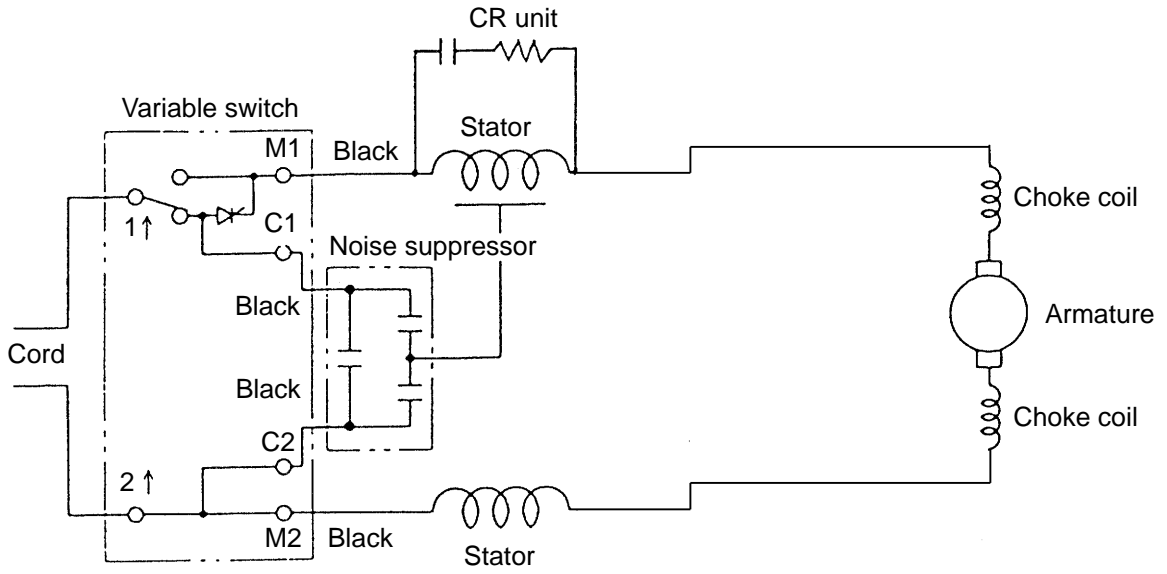


Fig. 12

(2) Products without noise suppressor

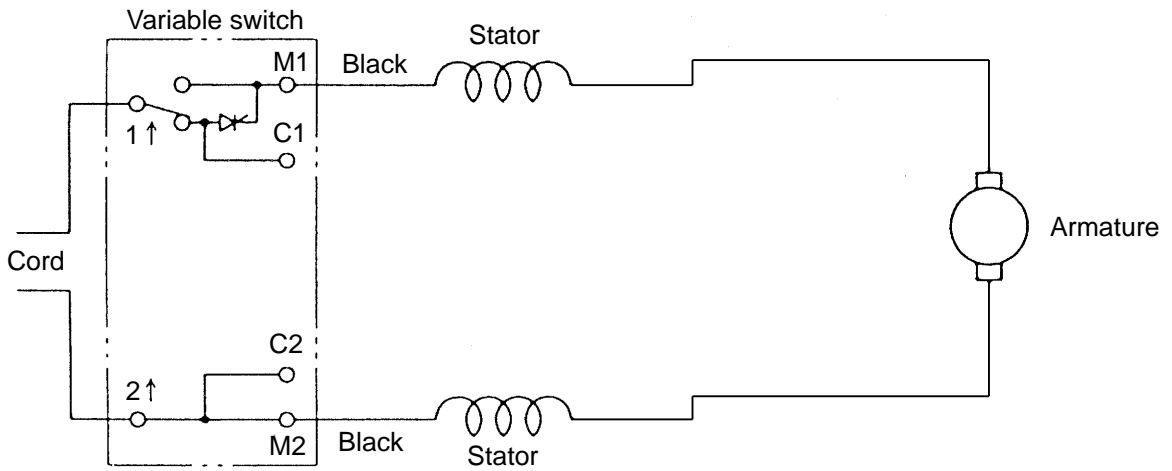


Fig. 13

9-5. Wiring Work

Wiring of variable switch

Insert each cord into the terminal 1 ↑ and terminal 2 ↑ of the variable switch as shown in Fig. 14 and tighten the screw (tightening torque: $0.6 \pm 0.2 \text{ N}\cdot\text{m}$ ($6 \pm 2 \text{ Kgf}\cdot\text{cm}$, $5.2 \pm 1.7 \text{ in}\cdot\text{lbs.}$)). Insert the lead wire (black) coming from the Stator Ass'y [68] <76> into the terminal M1 and the lead wire (black) into the terminal M2. Insert each lead wire (black) coming from the Noise Suppressor [79] <89> into the terminals C1 and C2. After the insertion, pull each lead wire slightly to check that the lead wires do not come off. To disconnect the lead wires, insert a small flat-blade screwdriver into the windows near the lead wires and pull out the lead wires.

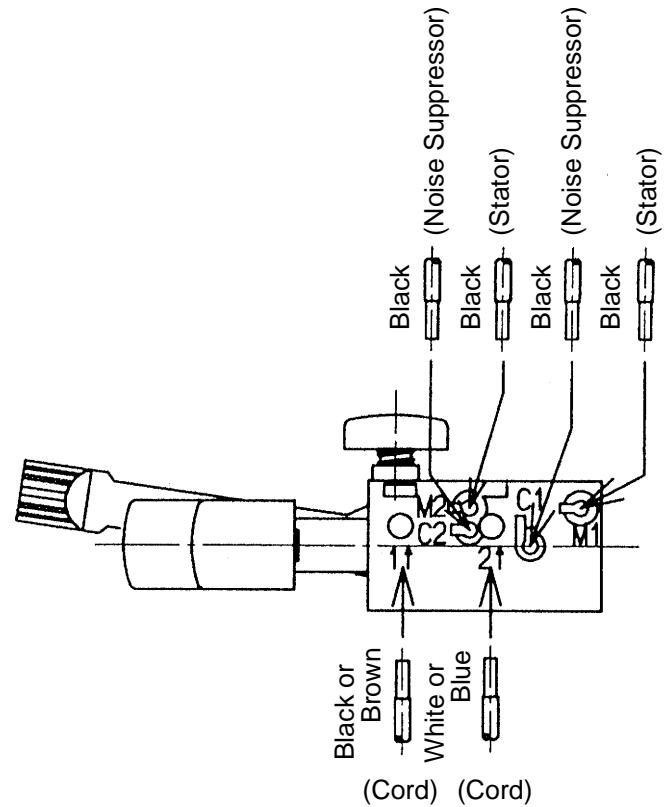


Fig. 14 Connection of variable switch

9-6. Insulation Tests

On completion of reassembly after repair, measure the insulation resistance and conduct the dielectric strength test.

Insulation resistance: 7 MΩ or more with DC 500 V Megohm Tester

Dielectric strength : AC 4,000 V/1 minute, with no abnormalities 220 V – 240 V
(and 110 V for U.K. products)
AC 2,500 V/1 minute, with no abnormalities 110 V – 127 V
(except for U.K. products)

9-7. No-Load Current Value

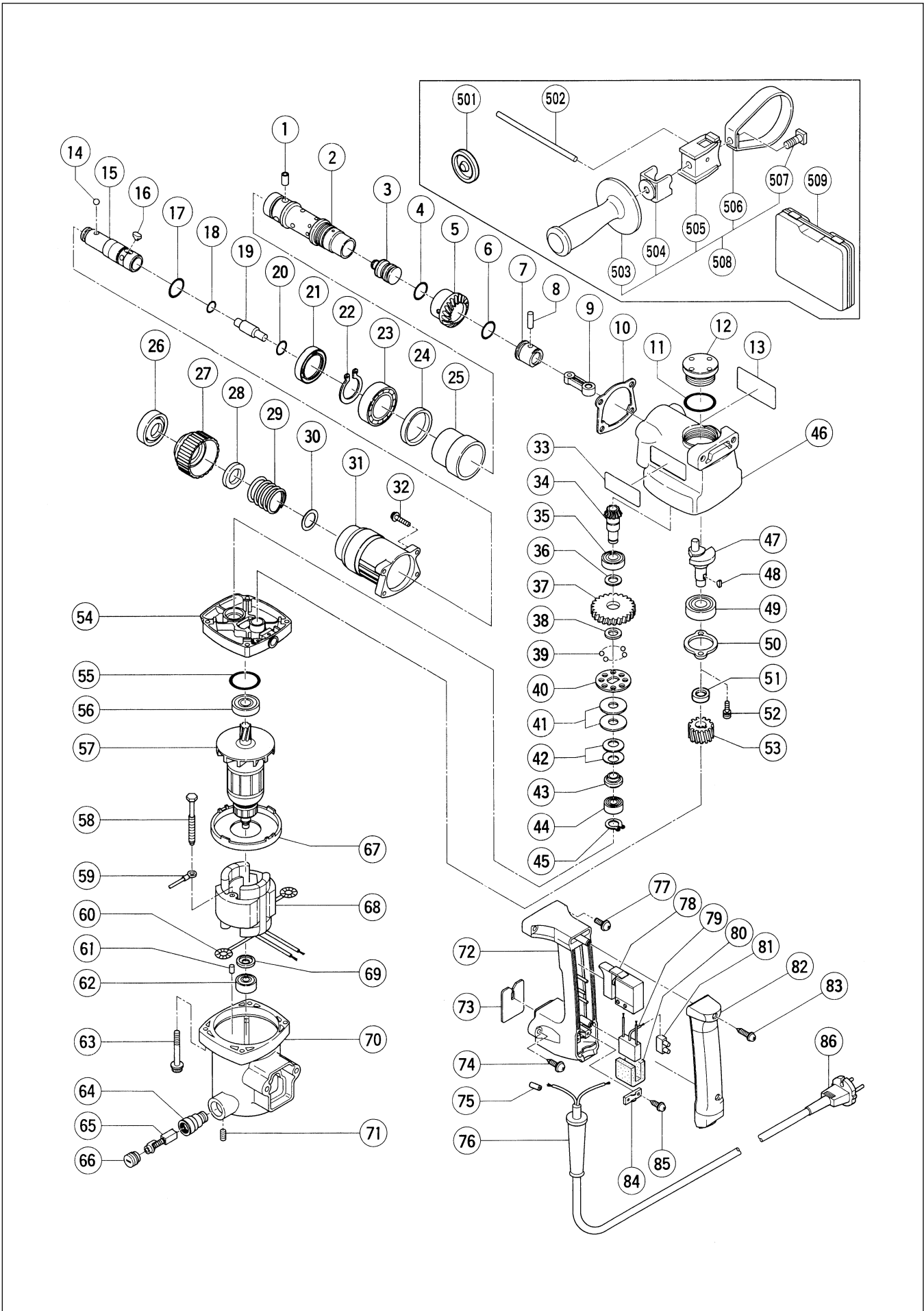
After no-load operation for 30 minutes, the no-load current value should be as follows.

Voltage (V)	110	115	120	127	220	230	240
Current (A) Max.	6.2	5.9	5.7	5.4	3.1	3.0	2.8

10. STANDARD REPAIR TIME (UNIT) SCHEDULES

MODEL	Variable		10	20	30	40	50	60 min.
	Fixed							
(DH 25PB) (DH 25PA)		Work Flow						
		Switch (A) Cord				Gear Cover Armature Ass'y Ball Bearing 6000DDCMPS2L Ball Bearing 626VVC2PS2L	Housing Ass'y Stator Ass'y	
	General Assembly			Handle		Crank Shaft Ball Bearing 6202DD First Gear Clutch Spring Clutch Shaft	Crank Case Only DH 25PB	
						Third Pinion Ball Bearing 6001DDCMPS2L Second Gear Clutch Plate Spring Plate Ball Bearing 608VVC2PS2L		
			Front Cap Grip Holder Spring		Cylinder Case Third Gear Pipe Urethane Ring	Oil Seal Retainer Sleeve Second Hammer Ball Bearing (6906)		
		Oil Cap O-Ring			Connecting Rod Striker O-Ring x 2 Piston	Cylinder Steel Ball		

Assembly Diagram for DH 25PA



PARTS

DH 25PA

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS
1	318-200	NEEDLE PIN	3	
2	318-022	CYLINDER	1	
3	318-024	STRIKER	1	
4	971-760	O-RING	1	
5	992-933	THIRD GEAR	1	
6	971-760	O-RING	1	
7	992-930	PISTON	1	
8	992-931	PISTON PIN	1	
9	318-020	CONNECTING ROD	1	
10	980-896	SEAL PACKING (B)	1	
11	980-948	O-RING	1	
12	980-880	OIL CAP	1	
13		NAME PLATE	1	
14	959-156	STEEL BALL D7.0 (10 PCS.)	1	
15	318-023	RETAINER SLEEVE	1	
16	318-026	NEEDLE	3	
17	980-890	O-RING (D)	1	
18	318-199	O-RING	1	
19	318-025	SECOND HAMMER	1	
20	301-680	O-RING (FPM 810)	1	
21	318-027	OIL SEAL	1	
22	948-310	RETAINING RING FOR D30 SHAFT	1	
23	690-6BB	BALL BEARING 6906	1	
24	992-906	URETHANE RING	1	
25	980-891	PIPE	1	
26	318-028	FRONT CAP	1	
27	318-029	GRIP	1	
28	318-030	BALL HOLDER	1	
29	306-342	HOLDER SPRING	1	
30	984-118	WASHER (B)	1	
31	318-021	CYLINDER CASE	1	
32	992-253	HEX. SOCKET HD. BOLT (W/FLANGE) M5X25	4	
33		HITACHI LABEL	1	
34	992-914	THIRD PINION	1	
35	600-1DD	BALL BEARING 6001DDCMPS2L	1	
36	992-503	WASHER	1	
37	992-928	SECOND GEAR	1	
38	971-087	STOPPER WASHER	1	
39	959-155	STEEL BALL D3.97 (10 PCS.)	8	
40	992-916	CLUTCH PLATE	1	
41	992-926	SPRING PLATE	2	
42	980-877	BELLEVILLE SPRING	2	
43	992-504	BUSHING	1	
44	608-VVM	BALL BEARING 608VVC2PS2L	1	
45	940-079	RETAINING RING FOR D8 SHAFT	1	
46	980-920	CRANK CASE	1	
47	318-038	CRANK SHAFT	1	
48	940-220	WOODRUFF KEY 2.5X8	1	
49	620-2DD	BALL BEARING 6202DDCMPS2L	1	
50	980-871	BEARING COVER	1	
51	318-040	DISTANCE COLLAR	1	

* : ALTERNATIVE PARTS

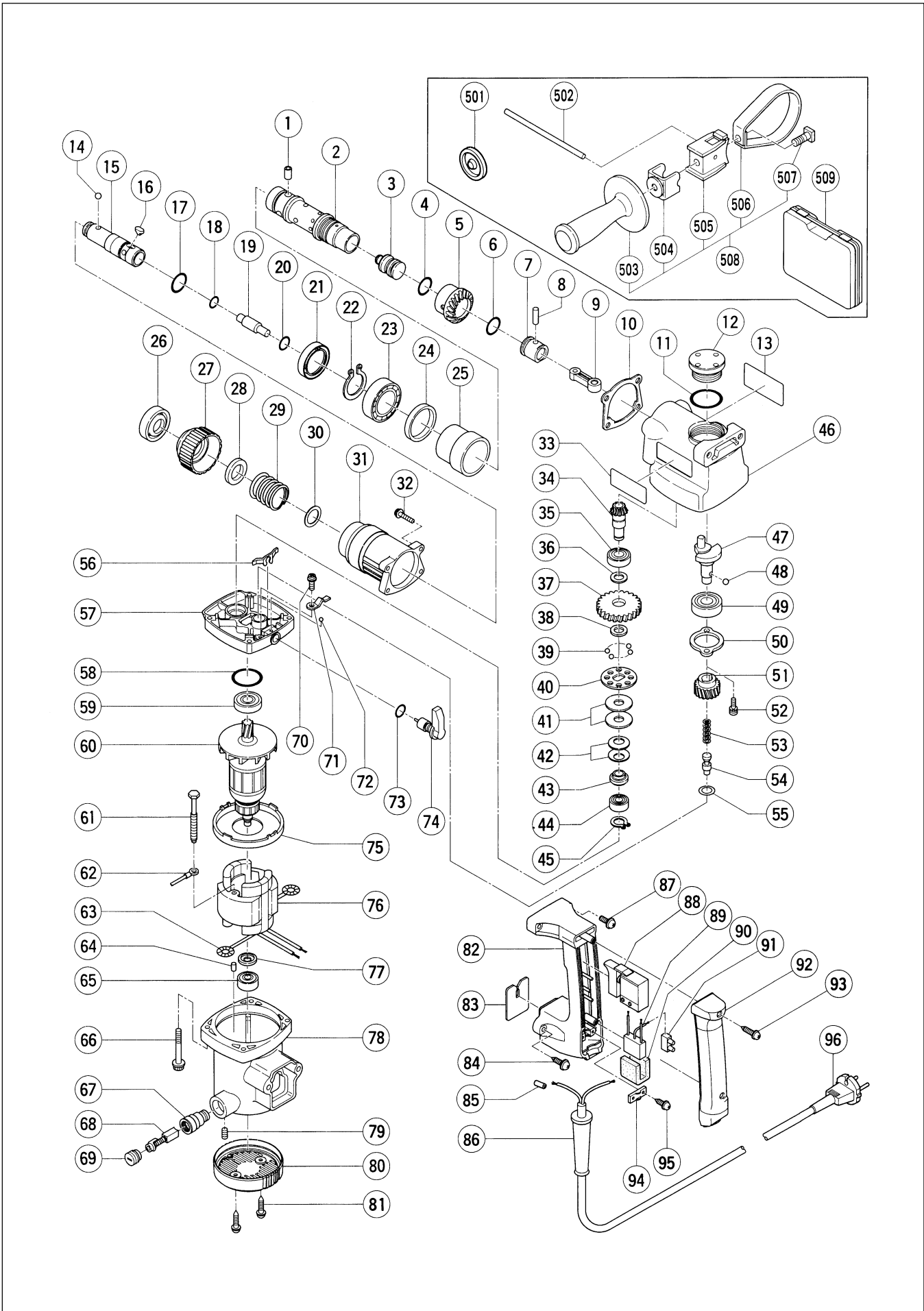
8 - 99

OPTIONAL ACCESSORIES

DH 25PA

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS
628	303-608	DRILL BIT (SDS PLUS) D12.7X260	1	
629	303-594	DRILL BIT (SDS PLUS) D13.0X166	1	
630	303-595	DRILL BIT (SDS PLUS) D14.0X166	1	
631	303-596	DRILL BIT (SDS PLUS) D14.3X166	1	
632	303-609	DRILL BIT (SDS PLUS) D14.3X260	1	
633	303-597	DRILL BIT (SDS PLUS) D14.5X166	1	
634	303-610	DRILL BIT (SDS PLUS) D14.5X260	1	
635	303-598	DRILL BIT (SDS PLUS) D15.0X166	1	
636	303-599	DRILL BIT (SDS PLUS) D16.0X166	1	
637	303-611	DRILL BIT (SDS PLUS) D16.0X260	1	
638	303-600	DRILL BIT (SDS PLUS) D16.5X166	1	
639	303-601	DRILL BIT (SDS PLUS) D17.0X166	1	
640	308-485	DRILL BIT (SDS PLUS) D17.0X260	1	
641	303-602	DRILL BIT (SDS PLUS) D17.5X166	1	
642	303-612	DRILL BIT (SDS PLUS) D17.5X260	1	
643	303-603	DRILL BIT (SDS PLUS) D18.0X166	1	
644	303-613	DRILL BIT (SDS PLUS) D19.0X260	1	
645	303-614	DRILL BIT (SDS PLUS) D20.0X250	1	
646	303-615	DRILL BIT (SDS PLUS) D22.0X250	1	
647	308-486	DRILL BIT (SDS PLUS) D24.0X250	1	
648	303-616	DRILL BIT (SDS PLUS) D25.0X450	1	
649	944-460	TAPER SHANK DRILL BIT D11X100	1	
650	944-461	TAPER SHANK DRILL BIT D12.3X110	1	
651	993-038	TAPER SHANK DRILL BIT D12.7X110	1	
652	944-462	TAPER SHANK DRILL BIT D14.3X110	1	
653	944-500	TAPER SHANK DRILL BIT D14.5X110	1	
654	944-463	TAPER SHANK DRILL BIT D17.5X120	1	
655	944-464	TAPER SHANK DRILL BIT D21.5X140	1	
656	303-617	TAPER SHANK ADAPTER (SDS PLUS) NO.1	1	
657	303-618	TAPER SHANK ADAPTER (SDS PLUS) NO.2	1	
658	944-477	COTTER	1	
659	302-976	ANCHOR SETTING ADAPTER A (SDS+)W1/4X260L	1	
660	302-975	ANCHOR SETTING ADAPTER A(SDS+)W5/16X260L	1	
661	303-621	ANCHOR SETTING ADAPTER A (SDS+)W3/8X160L	1	
662	302-974	ANCHOR SETTING ADAPTER A (SDS+)W3/8X260L	1	
663	302-979	ANCHOR SETTING ADAPTER B (SDS+)W1/4X260L	1	
664	302-978	ANCHOR SETTING ADAPTER B(SDS+)W5/16X260L	1	
665	303-622	ANCHOR SETTING ADAPTER B (SDS+)W3/8X160L	1	
666	302-977	ANCHOR SETTING ADAPTER B (SDS+)W3/8X260L	1	
667	971-794	ANCHOR SETTING ADAPTER A W1/4" (MANUAL)	1	
668	971-795	ANCHOR SETTING ADAPTER A W5/16"(MANUAL)	1	
669	971-796	ANCHOR SETTING ADAPTER A W3/8"(MANUAL)	1	
670	971-797	ANCHOR SETTING ADAPTER A W1/2" (MANUAL)	1	
671	971-798	ANCHOR SETTING ADAPTER A W5/8" (MANUAL)	1	
672	971-799	ANCHOR SETTING ADAPTER B W1/4" (MANUAL)	1	
673	971-800	ANCHOR SETTING ADAPTER B W5/16" (MANUAL)	1	
674	971-801	ANCHOR SETTING ADAPTER B W3/8" (MANUAL)	1	
675	971-802	ANCHOR SETTING ADAPTER B W1/2" (MANUAL)	1	
676	971-803	ANCHOR SETTING ADAPTER B W5/8" (MANUAL)	1	
677	303-044	CHEMICAL ANCHOR ADAPTER (SDS+)12.7MMX90L	1	
678	303-045	CHEMICAL ANCHOR ADAPTER(SDS+)19.0MMX100L	1	

Assembly Diagram for DH 25PB



PARTS

DH 25PB

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS
1	318-200	NEEDLE PIN	3	
2	318-022	CYLINDER	1	
3	318-024	STRIKER	1	
4	971-760	O-RING	1	
5	992-933	THIRD GEAR	1	
6	971-760	O-RING	1	
7	992-930	PISTON	1	
8	992-931	PISTON PIN	1	
9	318-020	CONNECTING ROD	1	
10	980-896	SEAL PACKING (B)	1	
11	980-948	O-RING	1	
12	980-880	OIL CAP	1	
13		NAME PLATE	1	
14	959-156	STEEL BALL D7.0 (10 PCS.)	1	
15	318-023	RETAINER SLEEVE	1	
16	318-026	NEEDLE	3	
17	980-890	O-RING (D)	1	
18	318-199	O-RING	1	
19	318-025	SECOND HAMMER	1	
20	301-680	O-RING (FPM 810)	1	
21	318-027	OIL SEAL	1	
22	948-310	RETAINING RING FOR D30 SHAFT	1	
23	690-6BB	BALL BEARING 6906	1	
24	992-906	URETHANE RING	1	
25	980-891	PIPE	1	
26	318-028	FRONT CAP	1	
27	318-029	GRIP	1	
28	318-030	BALL HOLDER	1	
29	306-342	HOLDER SPRING	1	
30	984-118	WASHER (B)	1	
31	318-021	CYLINDER CASE	1	
32	992-253	HEX. SOCKET HD. BOLT (W/FLANGE) M5X25	4	
33		HITACHI LABEL	1	
34	992-914	THIRD PINION	1	
35	600-1DD	BALL BEARING 6001DDCMPS2L	1	
36	992-503	WASHER	1	
37	992-928	SECOND GEAR	1	
38	971-087	STOPPER WASHER	1	
39	959-155	STEEL BALL D3.97 (10 PCS.)	8	
40	992-916	CLUTCH PLATE	1	
41	992-926	SPRING PLATE	2	
42	980-877	BELLEVILLE SPRING	2	
43	992-504	BUSHING	1	
44	608-VVM	BALL BEARING 608VVC2PS2L	1	
45	940-079	RETAINING RING FOR D8 SHAFT	1	
46	980-920	CRANK CASE	1	
47	318-034	CRANK SHAFT	1	
48	959-149	STEEL BALL D4.76 (10 PCS.)	2	
49	620-2DD	BALL BEARING 6202DDCMPS2L	1	
50	980-871	BEARING COVER	1	
51	992-902	FIRST GEAR	1	

* : ALTERNATIVE PARTS

PARTS

DH 25PB

ITEM No.	CODE NO.	DESCRIPTION	NO. USED	REMARKS
52	987-203	SEAL LOCK SCREW (W/SP. WASHER) M4X12	2	
53	992-937	CLUTCH SPRING	1	
54	992-938	CLUTCH SHAFT	1	
55	992-506	THRUST WASHER	1	
56	986-276	STOPPER SPRING	1	
57	992-925	GEAR COVER	1	
58	872-470	O-RING (S-26)	1	
59	600-0DD	BALL BEARING 600DDCMPS2L	1	
*	60	360-505C	ARMATURE 110V	1 FOR GBR(110V)
*	60	360-505E	ARMATURE 220V-230V	1
*	60	360-505F	ARMATURE 240V	1
61	992-509	HEX. HD. TAPPING SCREW D5X45	2	
*	62	318-035	INTERNAL WIRE	1 EXCEPT THA
63	930-630	BRUSH TERMINAL	2	
64	946-362	BEARING LOCK	1	
65	626-VVM	BALL BEARING 626VVC2PS2L	1	
66	980-951	HEX. SOCKET HD. BOLT (W/FLANGE) M5X45	4	
67	990-721	BRUSH HOLDER	2	
68	999-021	CARBON BRUSH (1 PAIR)	1	
68	999-070	CARBON BRUSH (AUTO STOP TYPE) (1 PAIR)	1	
69	937-847	BRUSH CAP	2	
70	991-207	SEAL LOCK SCREW (W/SP. WASHER) M4X8	1	
71	992-936	BALL SPRING	1	
72	959-148	STEEL BALL D3.175 (10 PCS.)	1	
73	992-912	O-RING (S-8)	1	
74	302-140	CHANGE LEVER ASS'Y	1	INCLUD.73
75	992-911	FAN GUIDE	1	
*	76	340-451H	STATOR ASS'Y 110V	1 INCLUD.63 FOR GBR(110V)
*	76	340-451F	STATOR ASS'Y 220V	1 INCLUD.63 FOR THA
*	76	340-451K	STATOR ASS'Y 220V-240V	1 INCLUD.63
77	992-500	WASHER (A)	1	
78	986-812	HOUSING ASS'Y	1	INCLUD.67,79
79	938-477	HEX. SOCKET SET SCREW M5X8	2	
80	318-031	TAIL COVER	1	
81	309-470	TAPPING SCREW (W/FLANGE) D4X12 (BLACK)	2	
82	318-018	HANDLE	1	
83	980-900	PLATE	1	
84	305-558	TAPPING SCREW (W/FLANGE) D5X25 (BLACK)	2	
*	85	981-373	TUBE (D)	2 FOR CORD
*	86	953-327	CORD ARMOR D8.8	1
*	86	938-051	CORD ARMOR D10.1	1
87	993-880	SEAL LOCK SCREW (W/WASHERS) M5X25	2	
*	88	318-033	SWITCH (B)	1
*	88	318-032	SWITCH (A)	1 FOR GBR(110V)
*	89	994-273	NOISE SUPPRESSOR	1 EXCEPT THA
*	90	317-492	SUPPORT (B)	1 FOR NOISE SUPPRESSOR
*	91	938-307	PILLAR TERMINAL	1 EXCEPT THA
92	318-019	HANDLE COVER	1	
93	301-653	TAPPING SCREW (W/FLANGE) D4X20 (BLACK)	2	
94	937-631	CORD CLIP	1	
95	984-750	TAPPING SCREW (W/FLANGE) D4X16	2	

PARTS

DH 25PB

ITEM No.	CODE NO.	DESCRIPTION	NO. USED	REMARKS
* 96	500-439Z	CORD	1	(CORD ARMOR D8.8) FOR AUS
* 96	500-391Z	CORD	1	(CORD ARMOR D10.1) FOR SUI
* 96	500-446Z	CORD	1	(CORD ARMOR D10.1) FOR GBR(230V)
* 96	500-457Z	CORD	1	(CORD ARMOR D8.8) FOR CHN
* 96	500-390Z	CORD	1	(CORD ARMOR D8.8) FOR HOL
* 96	500-454Z	CORD	1	(CORD ARMOR D8.8) FOR SAF,GBR(110V)

STANDARD ACCESSORIES

ITEM No.	CODE NO.	DESCRIPTION	NO. USED	REMARKS
501	971-787	DUST CUP	1	
502	980-906	STOPPER ROD	1	
503	980-901	SIDE HANDLE	1	
504	980-905	ROD HOLDER	1	
505	980-902	SIDE HANDLE HOLDER	1	
506	980-904	BAND	1	
507	980-903	SQUARE BOLT M8	1	
508	980-939	SIDE HANDLE ASS'Y	1	INCLUD.503-507
509	318-307	CASE	1	

OPTIONAL ACCESSORIES

ITEM No.	CODE NO.	DESCRIPTION	NO. USED	REMARKS
601	303-571	DRILL BIT (SDS PLUS) D4.0X110	1	
602	303-572	DRILL BIT (SDS PLUS) D4.3X110	1	
603	303-573	DRILL BIT (SDS PLUS) D4.5X110	1	
604	303-574	DRILL BIT (SDS PLUS) D4.8X110	1	
605	303-575	DRILL BIT (SDS PLUS) D5.0X110	1	
606	303-578	DRILL BIT (SDS PLUS) D5.0X160	1	
607	303-576	DRILL BIT (SDS PLUS) D5.5X110	1	
608	303-577	DRILL BIT (SDS PLUS) D6.0X110	1	
609	303-579	DRILL BIT (SDS PLUS) D6.0X160	1	
610	303-580	DRILL BIT (SDS PLUS) D6.4X160	1	
611	303-581	DRILL BIT (SDS PLUS) D6.5X160	1	
612	303-582	DRILL BIT (SDS PLUS) D7.0X160	1	
613	303-583	DRILL BIT (SDS PLUS) D7.5X160	1	
614	303-584	DRILL BIT (SDS PLUS) D8.0X160	1	
615	303-585	DRILL BIT (SDS PLUS) D8.5X160	1	
616	303-586	DRILL BIT (SDS PLUS) D9.0X160	1	
617	303-587	DRILL BIT (SDS PLUS) D9.5X160	1	
618	303-588	DRILL BIT (SDS PLUS) D10.0X160	1	
619	303-604	DRILL BIT (SDS PLUS) D10.0X260	1	
620	303-589	DRILL BIT (SDS PLUS) D10.5X160	1	
621	303-605	DRILL BIT (SDS PLUS) D10.5X260	1	
622	303-590	DRILL BIT (SDS PLUS) D11.0X160	1	

* : ALTERNATIVE PARTS

OPTIONAL ACCESSORIES

DH 25PB

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS
623	303-591	DRILL BIT (SDS PLUS) D12.0X166	1	
624	303-606	DRILL BIT (SDS PLUS) D12.0X260	1	
625	303-592	DRILL BIT (SDS PLUS) D12.5X166	1	
626	303-607	DRILL BIT (SDS PLUS) D12.5X260	1	
627	303-593	DRILL BIT (SDS PLUS) D12.7X166	1	
628	303-608	DRILL BIT (SDS PLUS) D12.7X260	1	
629	303-594	DRILL BIT (SDS PLUS) D13.0X166	1	
630	303-595	DRILL BIT (SDS PLUS) D14.0X166	1	
631	303-596	DRILL BIT (SDS PLUS) D14.3X166	1	
632	303-609	DRILL BIT (SDS PLUS) D14.3X260	1	
633	303-597	DRILL BIT (SDS PLUS) D14.5X166	1	
634	303-610	DRILL BIT (SDS PLUS) D14.5X260	1	
635	303-598	DRILL BIT (SDS PLUS) D15.0X166	1	
636	303-599	DRILL BIT (SDS PLUS) D16.0X166	1	
637	303-611	DRILL BIT (SDS PLUS) D16.0X260	1	
638	303-600	DRILL BIT (SDS PLUS) D16.5X166	1	
639	303-601	DRILL BIT (SDS PLUS) D17.0X166	1	
640	308-485	DRILL BIT (SDS PLUS) D17.0X260	1	
641	303-602	DRILL BIT (SDS PLUS) D17.5X166	1	
642	303-612	DRILL BIT (SDS PLUS) D17.5X260	1	
643	303-603	DRILL BIT (SDS PLUS) D18.0X166	1	
644	303-613	DRILL BIT (SDS PLUS) D19.0X260	1	
645	303-614	DRILL BIT (SDS PLUS) D20.0X250	1	
646	303-615	DRILL BIT (SDS PLUS) D22.0X250	1	
647	308-486	DRILL BIT (SDS PLUS) D24.0X250	1	
648	303-616	DRILL BIT (SDS PLUS) D25.0X450	1	
649	303-619	A-TAPER SHANK ADAPTER (SDS PLUS)	1	
650	303-620	B-TAPER SHANK ADAPTER (SDS PLUS)	1	
651	303-624	CHUCK ADAPTER (D) (SDS PLUS)	1	
652	944-460	TAPER SHANK DRILL BIT D11X100	1	
653	944-461	TAPER SHANK DRILL BIT D12.3X110	1	
654	993-038	TAPER SHANK DRILL BIT D12.7X110	1	
655	944-462	TAPER SHANK DRILL BIT D14.3X110	1	
656	944-500	TAPER SHANK DRILL BIT D14.5X110	1	
657	944-463	TAPER SHANK DRILL BIT D17.5X120	1	
658	944-464	TAPER SHANK DRILL BIT D21.5X140	1	
659	303-617	TAPER SHANK ADAPTER (SDS PLUS) NO.1	1	
660	303-618	TAPER SHANK ADAPTER (SDS PLUS) NO.2	1	
661	944-477	COTTER	1	
662	303-332	HAMMER DRILL CHUCK SET 13MM	1	INCLUD.663,664
663	303-334	CHUCK HANDLE	1	
664	303-335	RUBBER CAP	1	
665	302-976	ANCHOR SETTING ADAPTER A (SDS+)W1/4X260L	1	
666	302-975	ANCHOR SETTING ADAPTER A(SDS+)W5/16X260L	1	
667	303-621	ANCHOR SETTING ADAPTER A (SDS+)W3/8X160L	1	
668	302-974	ANCHOR SETTING ADAPTER A (SDS+)W3/8X260L	1	
669	302-979	ANCHOR SETTING ADAPTER B (SDS+)W1/4X260L	1	
670	302-978	ANCHOR SETTING ADAPTER B(SDS+)W5/16X260L	1	
671	303-622	ANCHOR SETTING ADAPTER B (SDS+)W3/8X160L	1	
672	302-977	ANCHOR SETTING ADAPTER B (SDS+)W3/8X260L	1	
673	971-794	ANCHOR SETTING ADAPTER A W1/4" (MANUAL)	1	

