



MODEL

DH 40SA

1. 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.

1-1. Disassembly

(1) Piston and Striker

Remove the four M5 x 16 Nylock Bolts **[35]** at the Crank Case Cover Ass'y **[37]**, and remove the latter.

Remove the four M6 Nylock Bolts **[60]** at the Cylinder Case **[61]** and pull the Cylinder Case out of the Crank Case **[39]**. Pull out the Piston Pin **[57]** and remove the Piston **[56]**. Remove the Connecting Rod Ass'y **[58]** from the Crank Shaft **[41]** by removing the Retaining Ring for D12 Shaft **[40]**.

Pull out the Striker **[54]** by hammering the Cylinder Case with a plastic hammer. If it is difficult to pull out the Striker, push the removed Piston together with the Connecting Rod Ass'y into the Cylinder **[52]** and quickly pull them out, and the Striker will jump out together with the Piston.

(2) Gear within the Crank Case

Remove the Slip Clutch Ass'y **[34]** by hammering the Crank Case **[39]** end face on the Gear Cover **[50]** side with a plastic hammer.

The First Gear **[48]** can be removed by supporting the flat surface of the Crank Case for mounting the Rubber Seal **[38]** on a flat-top table and releasing the Crank Shaft **[41]** from press-fitting by pushing it from the Gear Cover side using a hand press.

The Slip Clutch Ass'y can be removed in the following procedure. First pull out the Ball Bearing 629VV **[33]** with a bearing puller, support the Washer (A) **[27]** on a sleeve as shown in Fig. 11 and release the Bevel Pinion **[22]** from the press-fitting by pushing it from the Spacer **[32]** side using a hand press. When removing the Gear Holder **[28]** from the Second Gear **[31]**, it is recommended to keep them inside a vinyl bag during disassembly to prevent the Springs (C) **[29]** and Needle Pins **[30]** from scattering.

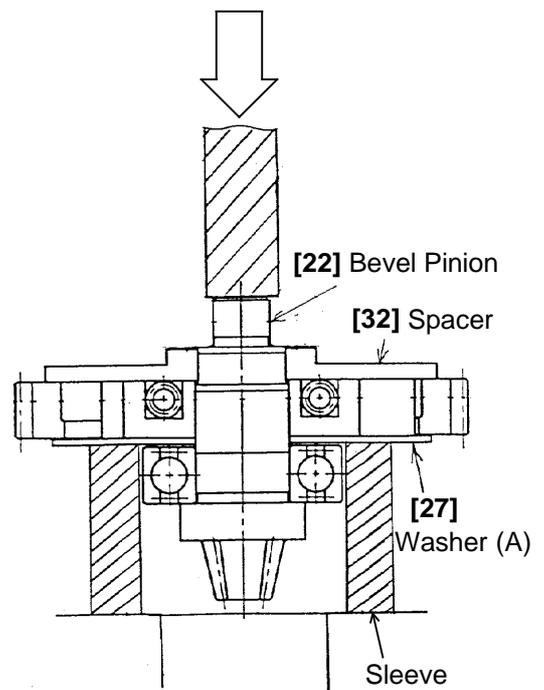
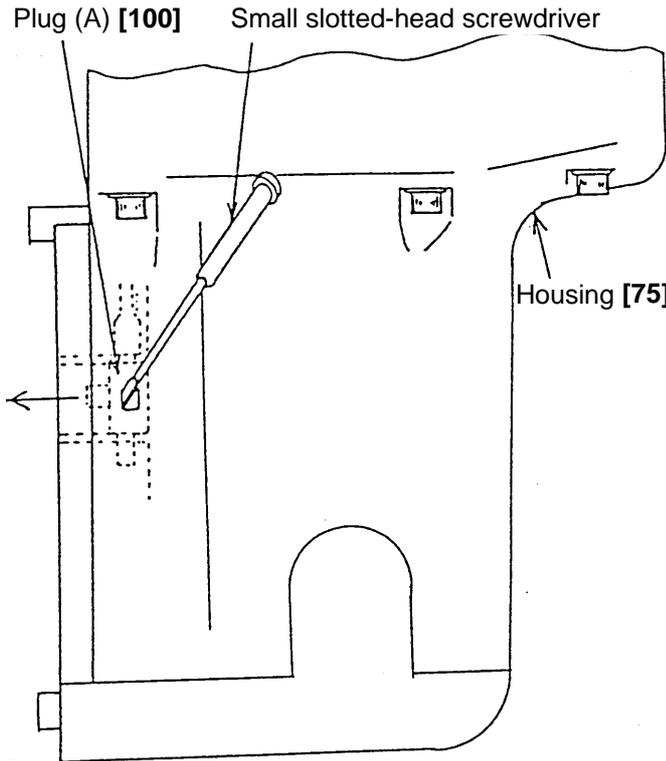


Fig. 11

(3) Tool holder

Remove the Front Cap **[3]** fitted into the Front Washer (A) **[5]**, remove the Retainer Ring D32 **[4]**, and remove the Front Washer (A), Damper Ring **[6]**, Front Washer (B) **[7]** and Grip **[8]**. Turn the C-type Spring **[1]** on the Saddle Key Holder **[10]**, and with the Steel Ball **[2]** partly seen through the Split of C-type Spring, slowly pull the Saddle Key Holder, C-type Spring and Steel Balls out of the Front Cover **[15]**. The Front Sleeve **[14]** can be removed from the Front Cover by removing the Retainer Ring for D38 Shaft **[11]**.

(4) Plug (A) and (B) Ass'ys



Remove the M5 x 16 Nylock Bolt (W/Flange) [35] and D5 x 25 Tapping Screw (W/Flange) (black) [97] and remove the Handle [89] from Housing [75] and Crank Case [39].

Then, as indicated in Fig. 12, insert a small slotted-head screwdriver into the square hole of the Housing and pull out the Plug (A) Ass'y in the arrow indicated direction while pushing its projection with a tip end of the screwdriver. Pull the Stator [87] internal wire out of the Plug (A) Ass'y by hand. The Plug (B) Ass'y [101] can be removed from the Handle in the same way as the Plug (A) Ass'y.

Fig. 12

1-2. Reassembly

Perform reassembly generally in reverse order of disassembly, following the precautions given below.

(1) Lubrication

Apply the special grease (for hammer and hammer drill) to the Needle Bearing [59] of the Connecting Rod Ass'y [58], O-Rings [55] attached to Striker [54] and Piston [56], O-Ring (C) [17], Oil Seal (A) [24] and Oil Seal (B) [44]. 70 g of such special grease should be filled in the Crank Case [39] on its Connecting Rod side and 20 g in the Cylinder Case [61]. Apply No. 29 power tool grease to the Needle Bearing [47] and Armature Pinion. Fill 20 g of No. 29 grease in the Gear Cover.

(2) Oil Seal and others

Handle with care not to damage the Rubber Seal [38] in the Crank Case [39], O-Rings [55] in the Piston [56] and Striker [54], Oil Seal (A) [24] and Oil Seal (B) [44] in the Crank Case [39], O-Ring [16] in the Cylinder Case Ass'y, O-Ring (C) [17] in the Second Hammer [18] and O-Ring [71] in the Gear Cover [50].

(3) Slip Clutch Ass'y

Press-fit the Ball Bearing 6002DD [25] into the Bevel Pinion [22] and insert Washer [26] and then Washer (A) [27] into the Bevel Pinion. After mounting the 3x3x8 Feather Key [23] in the Bevel Pinion, press-fit the Gear Holder [28] into the Bevel Pinion.

Then install the Second Gear [31] on the outer circumference of the Gear Holder and place the Needle Pins [30] without inclination as indicated in Fig. 13, then press in the Spring (C) [29]. Fill the spaces "B" in Fig. 13 with No. 20 power tool grease, 2 g for each (8 g in total) and press in the Spacer [32] and then Ball Bearing 629 [33].

When reassembly of the Slip Clutch is complete, retain the Slip Clutch Ass'y on the Second Gear block J-271 (Code No. 313499) clamped to the vice, put the Socket Ass'y J-272 (Code No. 313500) over the teeth of Bevel Pinion, and make sure that slipping takes place by turning it in the C direction (clockwise when viewed from above) with a wrench.

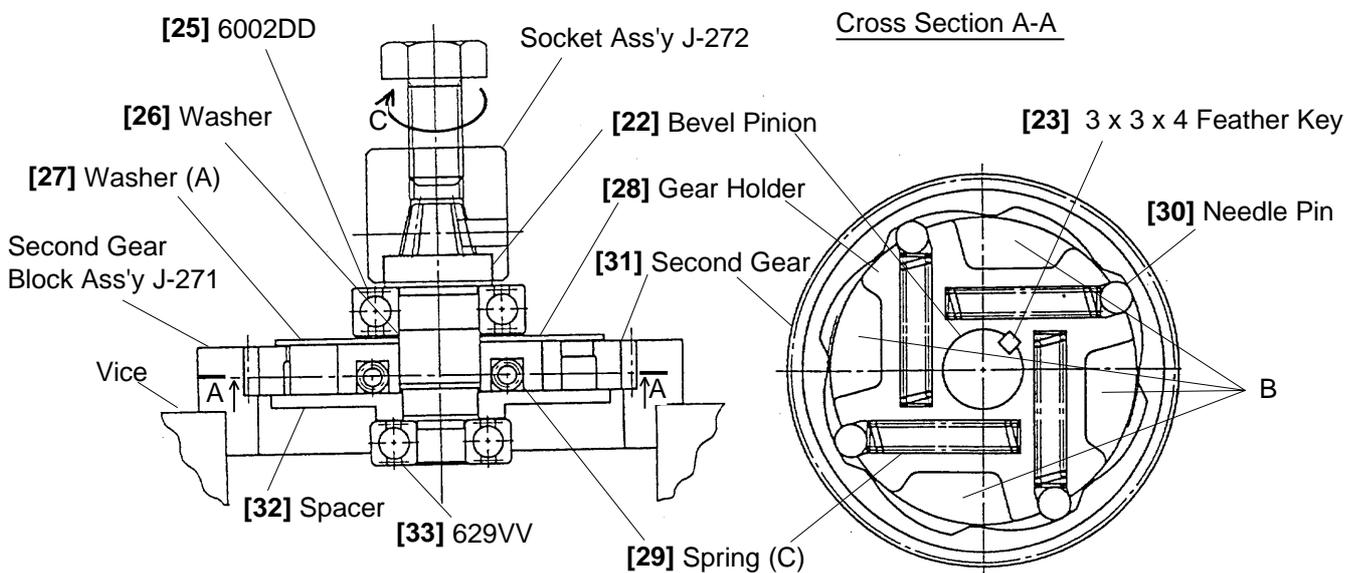


Fig. 13

(4) Tool holder

Insert the Front Sleeve [14] into the Front Cover [15] and secure it with the Retaining Ring for D38 Shaft [11]. The Rubber Ring [12] should be installed on the Front Sleeve [14] in advance. Then fill No. 29 power tool grease in the three elongated holes of the Front Cover and place the Saddle Keys [9] in the elongated holes.

After filling No. 29 power tool grease in the two spot faces of the Front Cover and the holes of the Saddle Key Holder [10], insert the Saddle Key Holder fitted with C-type Spring [1] so that the Front Cover spot faces are aligned with the Saddle Key Holder holes as indicated in Fig. 14. Then place the Steel Balls [2] in the Saddle Key Holder holes while shifting the position of C-type Spring [1].

Bring the bent portion of C-type Spring [1] into alignment with the groove of Grip [8] and put the Grip together.

Finally, insert the Front Washer (B) [7], Damper Ring [6] and Front Washer (A) [5] in this sequence into the Front Cover, put the C-Type Retainer Ring D32 [4] around the Front Cover and place the Front Cap [3] on the Front Washer (A) [5] to complete reassembly. Confirm smooth rotation after reassembly.

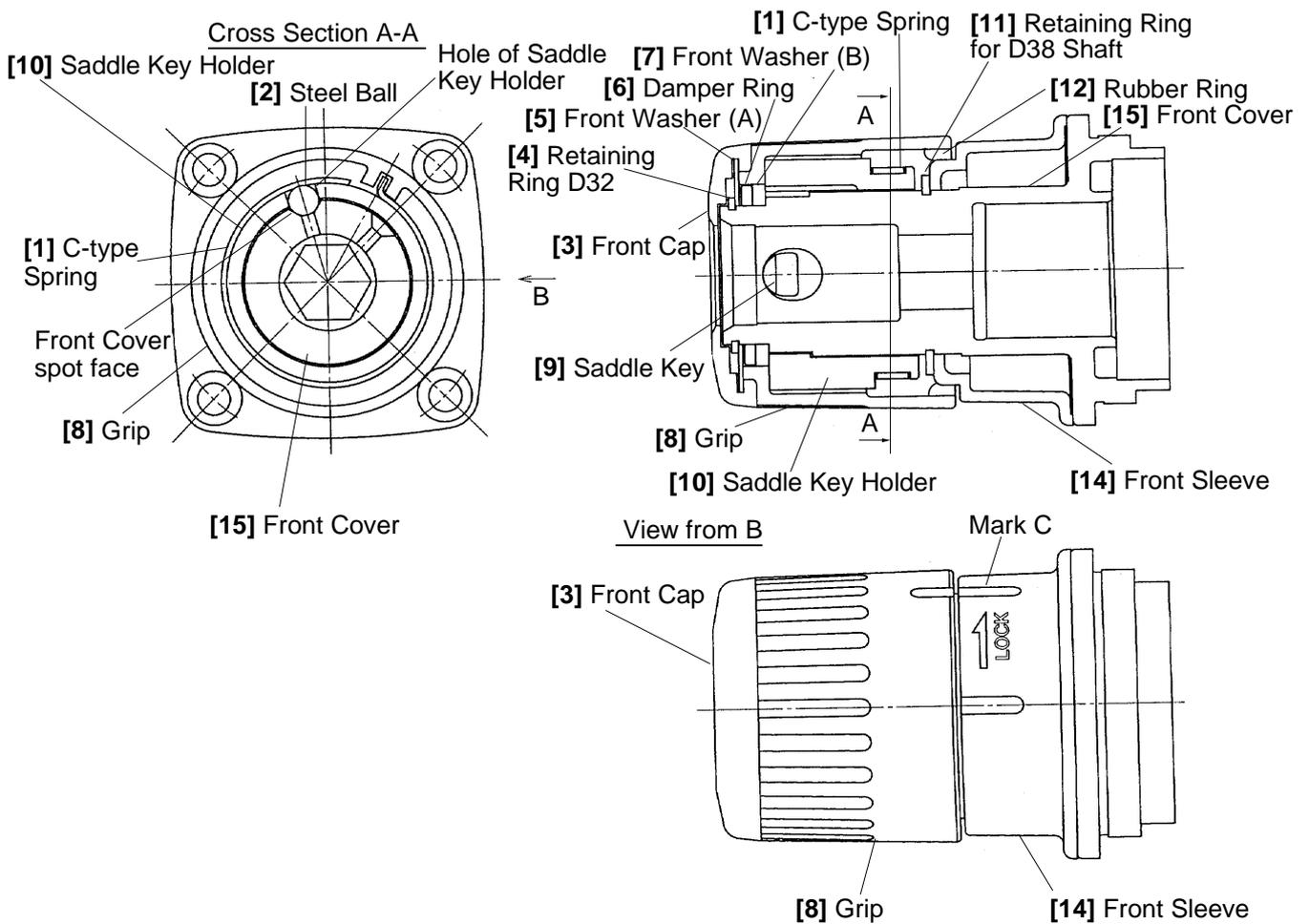


Fig. 14

(5) Carbon Brush Inspection

The motor section incorporates a pair of Carbon Brushes [78] as a consumable item. Since significantly worn Carbon Brushes may cause a motor failure, replace with new ones when they approximately reach their maximum wear limit (7 mm). Be sure to use the Hitachi 12 Z Carbon Brushes of the number indicated in Fig. 15.

Keep the Carbon Brushes clean and away from dust so that they can freely slide within the Brush Holder.

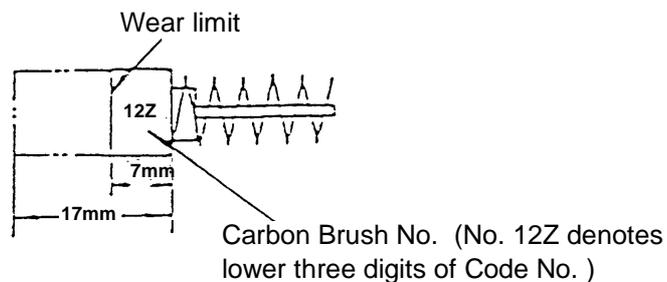


Fig. 15

1-3. Screw Lock TB 1401

Apply thread lock compound to all the M5 Hexagon Socket Head Bolts (except for M7 for front cover mounting and M6 Hexagon Socket Head Bolts for Cylinder Case mounting, which are special bolts to be treated as service parts).

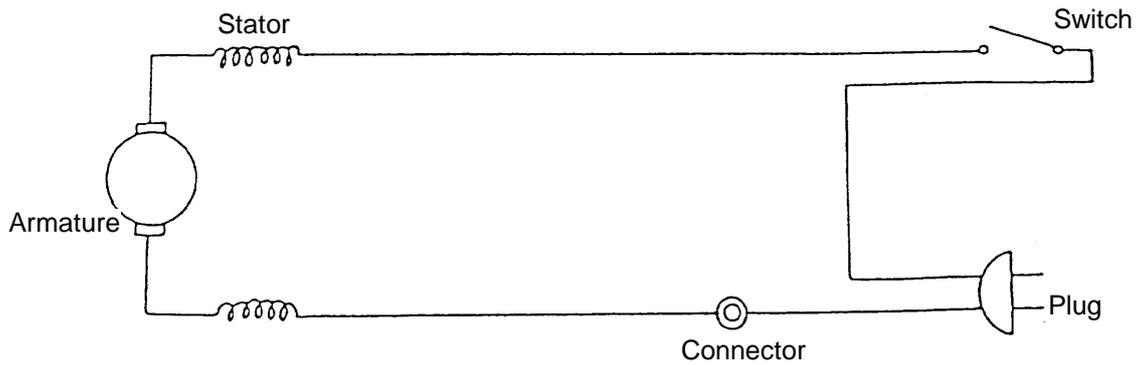
(Note) Be sure to apply thread lock compound to the threads during reassembly, as the bolts loosened with vibrations may cause damage to the tool body.

1-4. Tightening Torque

M5 Hexagon Socket Head Bolt.....	7.9	$\begin{matrix} +2.0 \\ 0 \end{matrix}$	Nm (80	$\begin{matrix} +20 \\ 0 \end{matrix}$	kgfcm)
D4 Tapping Screw.....	2.0	± 0.5	Nm (20	± 5	kgfcm)
D5 Tapping Screw.....	2.9	± 0.5	Nm (30	± 5	kgfcm)
Handle Mounting Bolt.....	3.9	± 0.5	Nm (40	± 5	kgfcm)
(Nylock Bolt (W/Flange) M5x16)					
Crank Case Cover Mounting Bolt.....	4.9	± 1.0	Nm (50	± 10	kgfcm)
(Nylock Bolt (W/Flange) M5x16)					
Housing Mounting Bolt.....	3.9	± 0.5	Nm (40	± 5	kgfcm)
(Nylock Bolt (W/Flange) M5x25)					
Front Cover Mounting Bolt.....	19.6	$\begin{matrix} +1.0 \\ 0 \end{matrix}$	Nm (200	$\begin{matrix} +10 \\ 0 \end{matrix}$	kgfcm)
(Nylock High Tension Bolt M7x25)					
Cylinder Case Mounting Bolt.....	9.8	$\begin{matrix} +2.0 \\ 0 \end{matrix}$	Nm (100	$\begin{matrix} +20 \\ 0 \end{matrix}$	kgfcm)
(Nylock Bolt (W/Flange) M6x25)					

1-5. Wiring Diagrams

* For products without noise suppressor



* For products with noise suppressor

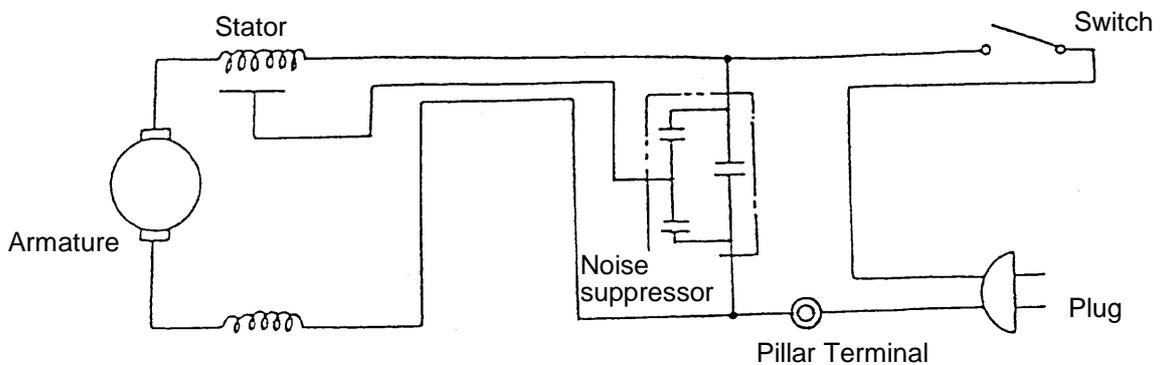


Fig. 15

1-6. Insulation Tests

On completion of disassembly and repair, measure the insulation resistance and dielectric strength.

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

AC 2,500 V/1 minute, with no abnormalities.....110 V - 127 V

1-7. No-load Current Values

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

Voltage	110 V	115 V	120 V	127 V	220 V	230 V	240 V
Current (A) Max.	6.4 A	6.1 A	5.9 A	5.5 A	3.2 A	3.1 A	2.9 A

2. STANDARD REPAIR TIME (UNIT) SCHEDULES

Model	Variable		10	20	30	40	50	60
	Fixed							
DH 40SA		Work Flow						
		Handle Cover Switch (C) Cord Cord Armor					Seal Packing Gear Cover Needle Bearing	Housing Stator Ass'y
		Tail Cover Bearing Holder					Armature Ass'y Ball Bearing (6202VV) Dust Washer (B) Dust Washer (A) O-Ring Ball Bearing (629VV)	
		Crank Case Cover Rubber Seal						
	General Assembly				Handle Plug (A) Plug (B)			
		Front Cap Front Washer (A) Damper Ring Front Washer (B) Grip Saddle Key x 3 pcs. Saddle Key Holder Rubber Ring	Front Sleeve Front Cover Steel Ball O-Ring (1AS-60) O-Ring (C) Second Hammer Damper Washer Damper x 2 pcs. Washer Bevel Gear				Crank Shaft Feather Key (3 x 3x 10) Ball Bearing (6204VV) Oil Seal(B) Bearing Cover First Gear	Crank Case
							Bevel Pinion Feather Key (3 x 3 x 8) Oil Seal (A) Ball Bearing (6002DD) Washer (A) Gear Holder Spring (C) Needle Pin (D6 x 6) Second Gear Spacer Ball Bearing (629VV)	
					Connecting Rod Ass'y Needle Bearing Piston Piston Pin Striker O-Ring x 2 pcs.		Cylinder Case O-Ring (1AS-60) Needle Bearing (B) Cylinder Valve Band	