



## 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 **[27]** at the Crank Case Cover Ass'y **[29]**, and remove the latter.

Remove the four M6 Nylock Bolts **[54]** at the Cylinder Case **[55]** and pull the Cylinder Case out of the Crank Case **[31]**. Pull out the Piston Pin **[51]** and remove the Piston **[50]**. Remove the Connecting Rod Ass'y **[52]** from the Crank Shaft **[33]** by removing the Retaining Ring for D12 Shaft **[32]**.

Pull out the Striker **[47]** by tapping on 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 **[44]** and quickly pull them out, and the Striker will jump out together with the Piston.

#### (2) Removing Gears from the Crank Case

Remove the Slip Clutch Ass'y **[26]** by tapping on the Crank Case **[31]** end face on the Gear Cover **[42]** side with a plastic hammer.

The First Gear **[40]** can be removed by supporting the flat surface of the Crank Case for mounting the Rubber Seal **[30]** on a table top and releasing the Crank Shaft **[33]** from press-fitting by pushing it from the Gear Cover side using a hand press.

The Slip Clutch Ass'y can be removed with the following procedure. First pull out the Ball Bearing 629VV **[25]** with a bearing puller (Code No. 970804), support the Washer (A) **[19]** on a sleeve as shown in Fig. 13 and release the Bevel Pinion **[14]** from the press-fitting by pushing it from the Spacer **[24]** side using a hand press. When removing the Gear Holder **[20]** from the Second Gear **[23]**, it is recommended to keep them inside a vinyl bag during disassembly to prevent the Springs (C) **[21]** and Needle Pins **[22]** from scattering.

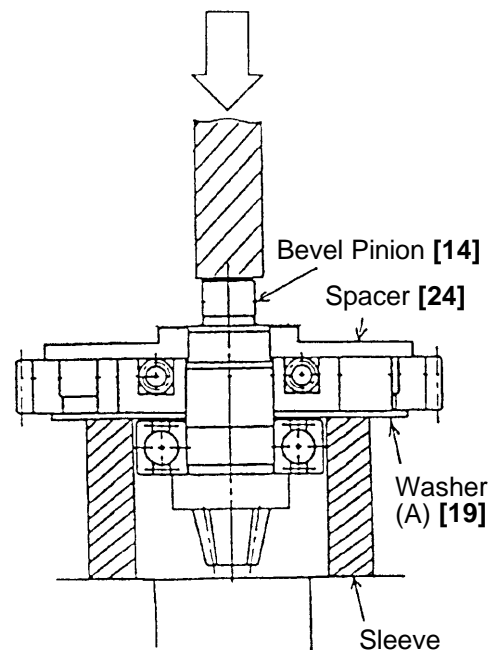


Fig. 13

(3) Tool Retainer

Disassembly procedures are illustrated in Fig. 14. Pull the Knob (A) [3] outward in the direction indicated by the arrow, and turn it slightly so that its end surface comes to rest on the flange portion of the Front Cover [7]. Push in the Stop Washer [1] with two minus screwdrivers to compress the Stopper Spring [2], and insert a steel rod (less than 3 mm in diameter) into the 3 mm diameter hole in the Knob (A) [3] to push out the Needle Roller [4]. The Stop Washer [1], Stopper Spring [2], Stop Lever [5], and Knob (A) [3] can then be taken off.

Slide the end surface of Knob (A) [3] onto the frange of the Front Cover [7]

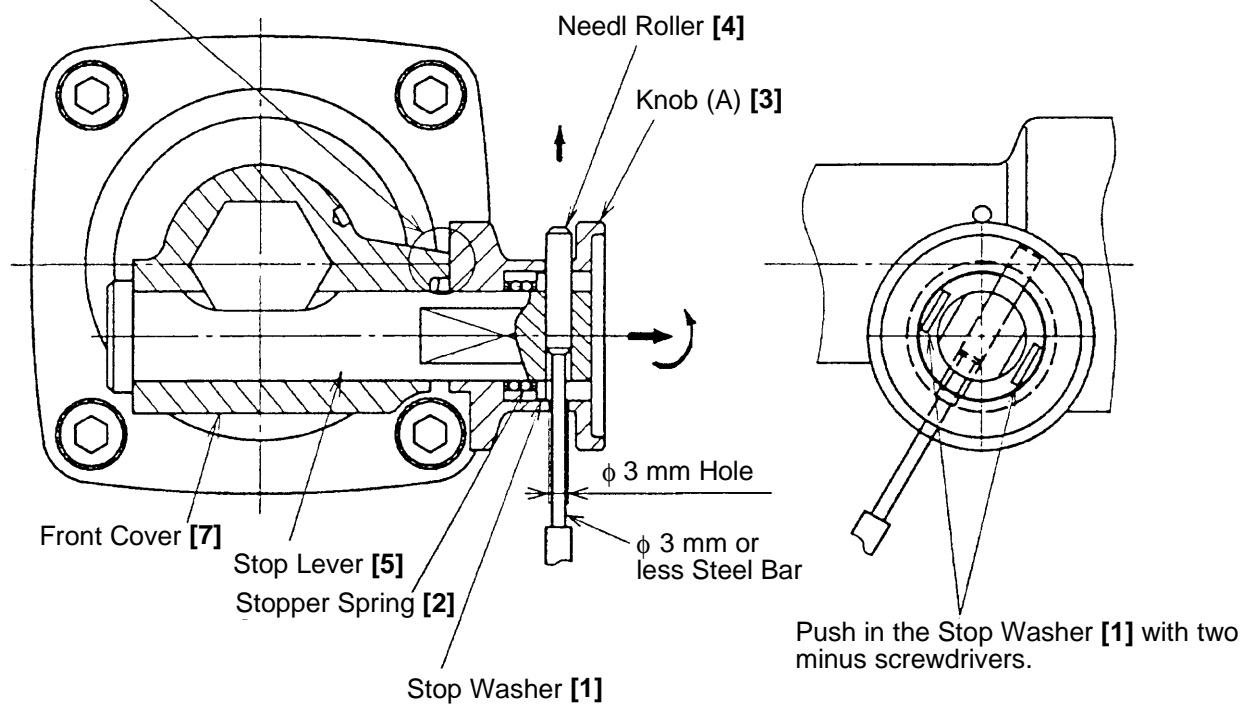
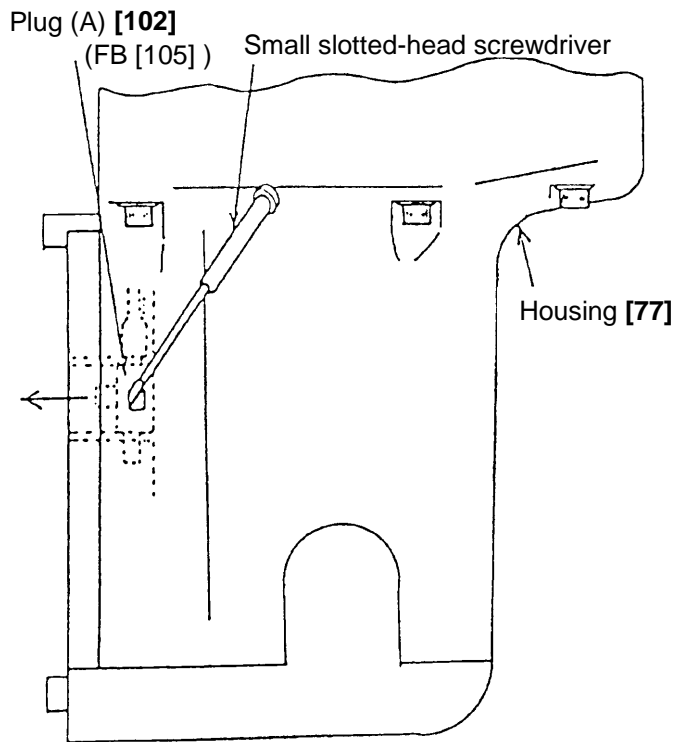


Fig. 14

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



**Fig. 15**

Remove the M5 x 16 Nylock Bolt (W/Flange) [27] and the D4 x 25 Tapping Screw (W/Flange) (black) [94] and remove the Handle [91] from the Housing [77] and Crank Case [31].

Then, as indicated in Fig. 15, insert a small slotted-head screwdriver into the square hole of the Housing and pull out the Plug (A) Ass'y [102] (FB [105]) in the direction indicated by the arrow while pushing on the projection with the tip of the screwdriver.

Pull the Stator [89] Internal Wire out of the Plug (A) Ass'y by hand. The Plug (B) Ass'y [103] (FB [106]) can be removed from the Handle in the same way as the Plug (A) Ass'y.

## **1-2. Reassembly**

Perform generally in reverse to the disassembly procedure, with some notes to be taken as indicated below.

### **(1) Application of lubricant**

Apply special grease (for hammer and hammer drill) to the Needle Bearing [53] of the Connecting Rod Ass'y [52], the O-Rings [48] attached to the Striker [47] and Piston [50], O-Ring (C) [9], Oil Seal (A) [16], and Oil Seal (B) [36]. 70 g of such special grease should be filled in the Crank Case [31] on its Connecting Rod side and 20 g in the Cylinder Case [55]. Apply No. 29 power tool grease to the Needle Bearing [39] and Armature Pinion. Fill 20 g of No. 29 power tool grease in the Gear Cover.

### **(2) Oil seal and others**

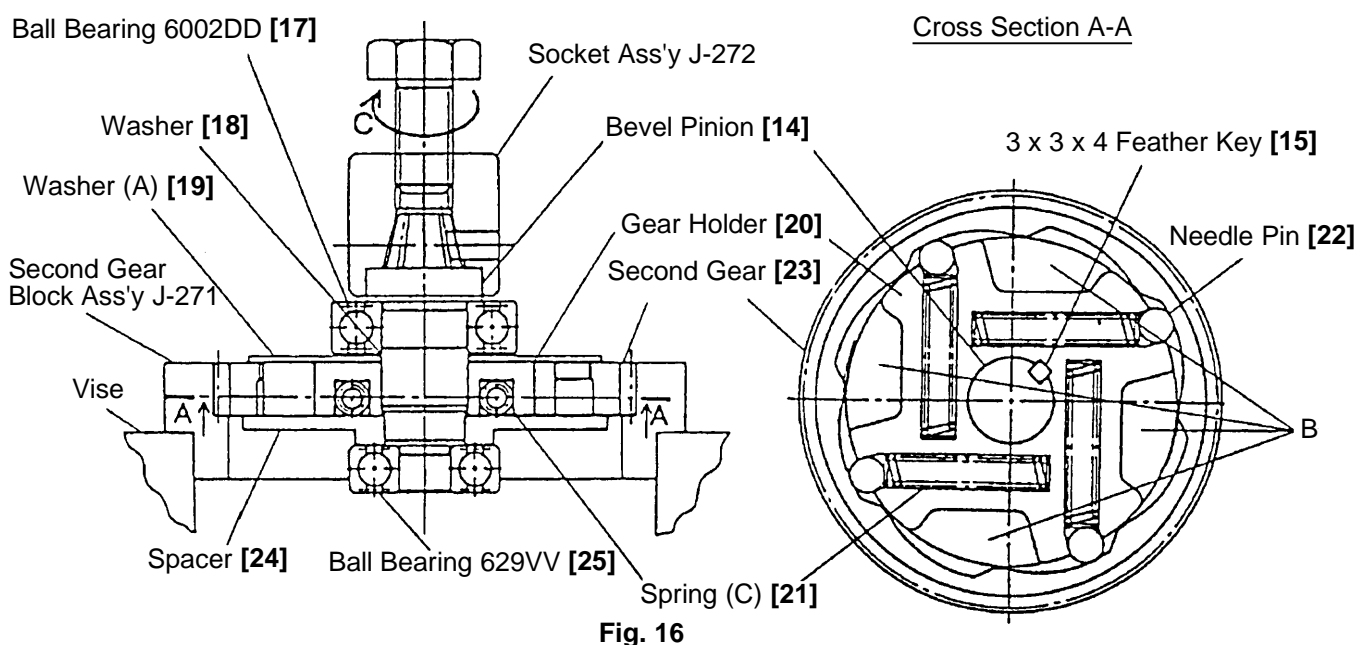
Handle with care not to damage the Rubber Seal [30] in the Crank Case [31], O-Rings [48] in the Piston [50] and Striker [47], Oil Seal (A) [16] and Oil Seal (B) [36] in the Crank Case [31], O-Ring [8] in the Cylinder Case Ass'y, O-Ring (C) [9] in the Second Hammer [10] and O-Ring [73] in the Gear Cover [42].

### (3) Slip Clutch Ass'y

Press-fit the Ball Bearing 6002DD [17] into the Bevel Pinion [14] and insert the Washer [18] and then the Washer (A) [19] into the Bevel Pinion. After mounting the 3 x 3 x 8 Feather Key [15] in the Bevel Pinion, press-fit the Gear Holder [20] into the Bevel Pinion.

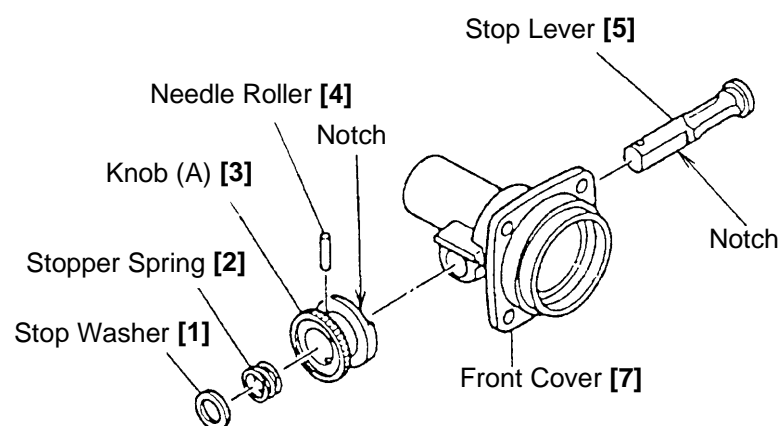
Next, install the Second Gear [23] on the outer circumference of the Gear Holder and place the Needle Pins [22] without inclination as indicated in Fig. 16, then press in the Springs (C) [21]. Fill the spaces "B" in Fig. 16 with No. 20 power tool grease, 2 g for each (8 g in total) and press in the Spacer [24] and then Ball Bearing 629 [25].

When reassembly of the Slip Clutch is complete, retain the Slip Clutch Ass'y on the Second Gear block J-271 (Code No. 313499) by clamping it in a vise, 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 direction "C" (clockwise when viewed from above) with a wrench.



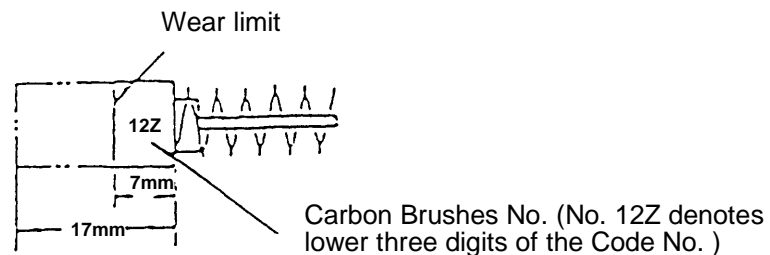
### (4) Tool Holder

As illustrated in Fig. 17, ensure that the notched portions of the Stop Lever [5] and Knob (A) [3] are properly aligned during reassembly. If not properly aligned and assembled, the tool (drill bit, bull point, etc.) cannot be properly inserted into the retainer.



## (5) Carbon Brush Inspection

The motor section incorporates a pair of Carbon Brushes [80], which are consumable items. Since significantly worn Carbon Brushes may cause a motor failure, they should be replaced with new ones when they reach approximately their maximum wear limit (7 mm). Be sure to use the Hitachi 12Z Carbon Brushes as indicated in Fig. 18. Keep the Carbon Brushes clean and free from dust so that they can freely slide within the Brush Holders.



**Fig. 18**

## 1-3. Screw Locking Agent TB 1401

Apply screw locking agent ThreeBond TB1401 to all of 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 screw locking agent ThreeBond TB1401 to the threads during reassembly, as the bolts loosened with vibration may cause damage to the tool body.

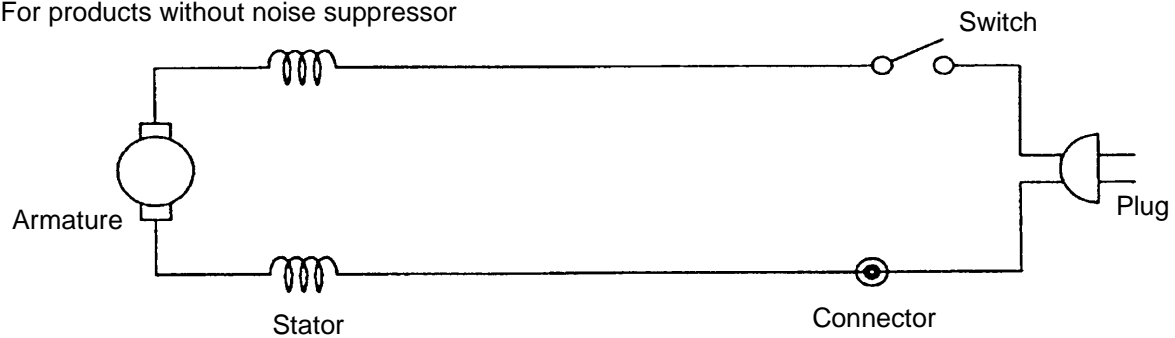
## 1-4. Tightening Torque

M4 Hexagon Socket Head Bolt	.....	$4.4 \pm 0.5$ Nm ( $45 \pm 5$ kgfcm)
M5 Hexagon Socket Head Bolt	.....	$7.9 + \frac{2.0}{0}$ Nm ( $80 + \frac{20}{0}$ kgfcm)
D4 Tapping Screw	.....	$2.0 \pm 0.5$ Nm ( $20 \pm 5$ kgfcm)
D5 Tapping Screw	.....	$2.9 \pm 0.5$ Nm ( $30 \pm 5$ kgfcm)
Handle Mounting Bolt	.....	$3.9 \pm 0.5$ Nm ( $40 \pm 5$ kgfcm)
(Nylock Bolt (W/Flange) M5 x 16)		
Crank Case Cover Mounting Bolt	...	$4.9 \pm 1.0$ Nm ( $50 \pm 10$ kgfcm)
(Nylock Bolt (W/Flange) M5 x 16)		
Housing Mounting Bolt	.....	$3.9 \pm 0.5$ Nm ( $40 \pm 5$ kgfcm)
(Nylock Bolt (W/Flange) M5 x 25)		
Front Cover Mounting Bolt	.....	$19.6 + \frac{1.0}{0}$ Nm ( $200 + \frac{10}{0}$ kgfcm)
(Nylock High Tension Bolt M7 x 25)		
Cylinder Case Mounting Bolt	.....	$9.8 + \frac{2.0}{0}$ Nm ( $100 + \frac{20}{0}$ kgfcm)
(Nylock Bolt (W/Flange) M6 x 25)		

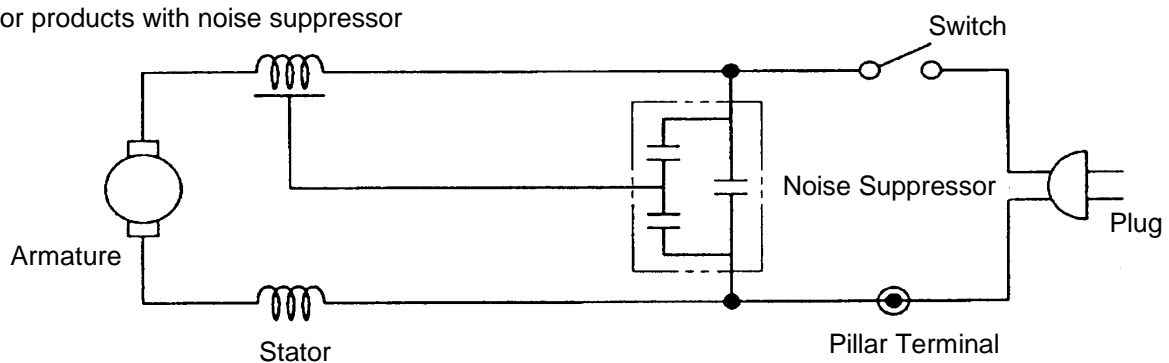
## 1-5. Wiring Diagrams

### (1) Model DH 40FA

\* For products without noise suppressor

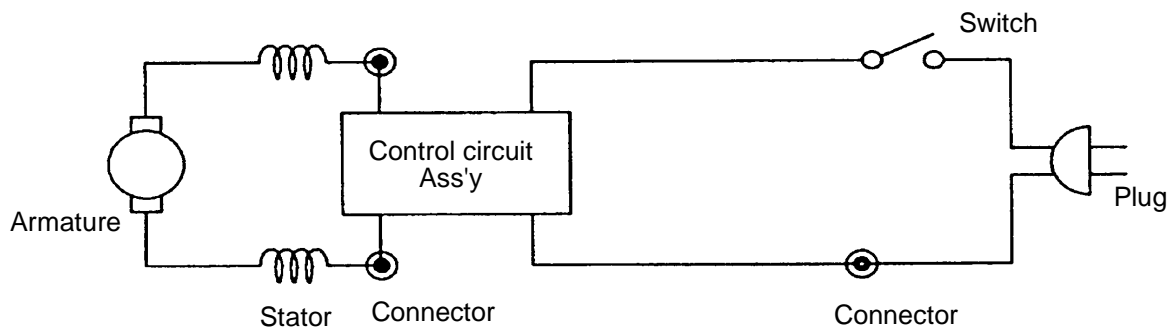


\* For products with noise suppressor

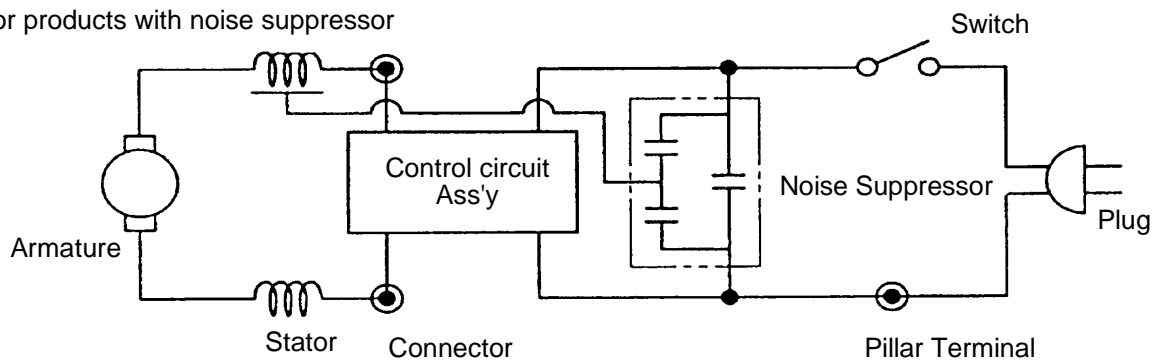


### (2) Model DH 40FB

\* For products without noise suppressor



\* For products with noise suppressor



## 1-6. Insulation Test

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  
(and 110 V for U.K. products)

AC 2,500 V/1 minute, with no abnormalities ..... 110 V - 127 V  
(except U.K. products)

## 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	Fixed	Variable	10	20	30	40	50	60
<div>DH 40FA</div> <div>DH 40FB</div>	<div>General Assembly</div>	<div>Work Flow</div>						Housing Stator Ass'y
		<div>Handle Cover Switch (C) Cord Cord Armor</div>					<div>Seal Packing Gear Cover Needle Bearing</div>	
		<div>Tail Cover Bearing Holder</div>					<div>Armature Ass'y Ball Bearing (6202VV) Dust Washer (B) Dust Washer (A) O-Ring Ball Bearing (629VV)</div>	
		<div>Crank Case Cover Rubber Seal</div>						
					<div>Handle Plug (A) Plug (B) Control Circuit</div>		<div>Crank Shaft Feather Key (3 x 3 x 10) Ball Bearing (6204VV) Oil Seal (B) Bearing Cover First Gear</div>	Crank Case
		<div>O-Ring Lever Shaft Under Cover Shaft Cover Lever Spring Sleeve</div>					<div>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)</div>	
		<div>Front Cover Second Hammer Knob (A) Stop Lever Damper O-Ring Stopper Ring</div>			<div>Clutch Connecting Rod Ass'y Needle Bearing Piston Piston Pin Striker O-Ring</div>		<div>Feather Key Cylinder Clutch Spring O-Ring Valve Band Cylinder Case Needle Bearing Bevel Gear</div>	