

Subject ▶ Changes of Flat Washer 49, Guide Ring , etc.

For Models ▶ HM1202, HM1202C, HM1242C

Country ▶ All countries

Description ▶ For improvement in durability, the following modifications have been implemented;

1. Cylinder and Parts Around Cylinder

1) Each thickness of Flat washer 49 and Guide ring has been changed.

2) Two O ring 38's have been added on Cylinder liner 44.

Accordingly, two grooves for the rings have been additionally engraved on Cylinder liner 44.

2. The Ball bearing on the armature's fan side has been changed for improved anti-dust construction.

3. The material of Urethane ring 43 has been changed for improved durability.

4. Tool Holder and Parts around Tool Holder

[2) to 5) are applicable only to HM1202 and HM1202C.]

1) Steel ball guide has been modified.

2) Impact bolt has been modified.

3) Ring spring 34 and Flat washer 37 has been replaced by new parts, and Tool holder have been modified.

4) Chuck ring and Tool holder cover has been modified.

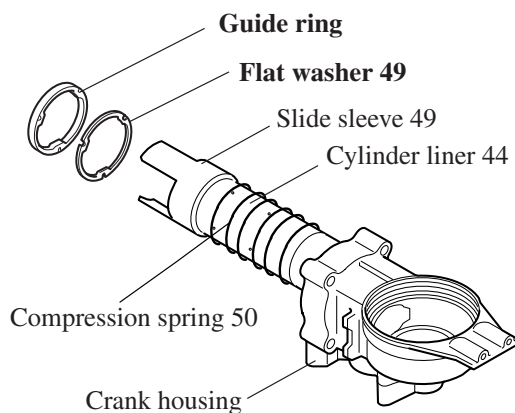
Compression spring 51 has been eliminated.

Sleeve 39 has been added.

1. Cylinder and Parts Around Cylinder Liner

(HM1202, HM1202C, HM1242C)

1-1) Change of Flat Washer 49 and Guide Ring



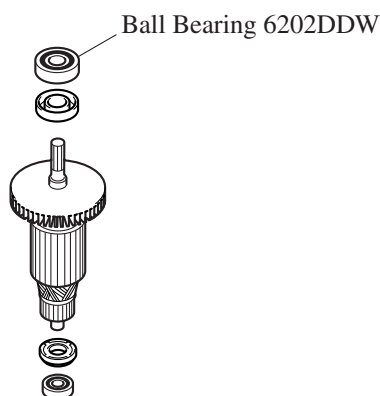
	▶ Current	▶ New
Flat Washer 49 [cross section]	Part No.344790-8 thickness (t): 1.0mm	Part No.344998-4 thickness (t): 2.0mm
Guide Ring [cross section]	Part No.416927-8 thickness (t): 8.0mm	Part No.417600-3 thickness (t): 7.0mm

1-2) Addition of O Ring 38 (2pcs.) and Modification of Cylinder Liner 44

	▶ Current	▶ New
	<p>Cylinder Liner 44 O Ring 38 (1pc.)</p> <p>one groove for O Ring 38</p>	<p>Cylinder Liner 44 O Ring 38 (3pcs.)</p> <p>three grooves for O Ring 38</p>
O Ring 38 (Part No.213508-7)	1 pc.	3 pcs.
Cylinder Liner 44	Part No.331554-9	Part No.331608-2

2. Change of Ball Bearing on the Armature's Fan Side

(HM1202, HM1202C, HM1242C)



► Current	► New
Ball Bearing 6202DDW (Part No.211228-7)	Ball Bearing 6202LLU (Part No.211238-4)

Note:

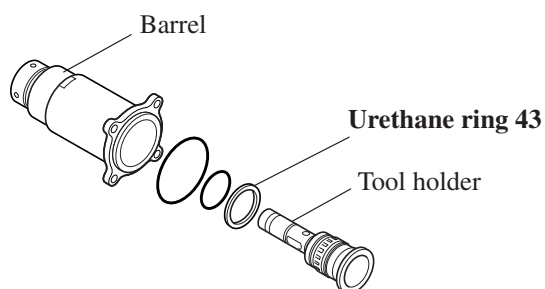
It is impossible to distinguish the new part from the current one by appearances.

Therefore, always control these items with their part numbers.

3. Change of the material of Urethane Ring 43

(HM1202, HM1202C, HM1242C)

Urethane ring 43 has been replaced by Urethane ring 41.



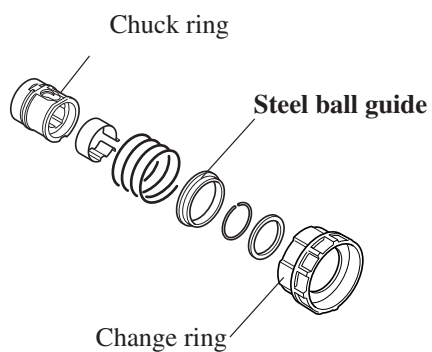
	► Current	► New
	Urethane ring 43 (Part No. 262083-0)	Urethane ring 41 (Part No. 262095-3)
Color	brown	milky-white

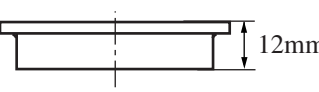
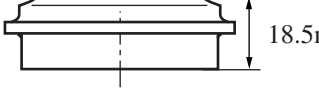
Note: Its shape remains unchanged.

4. Tool Holder and Parts Around Tool Holder

4-1) Modification of Steel Ball Guide

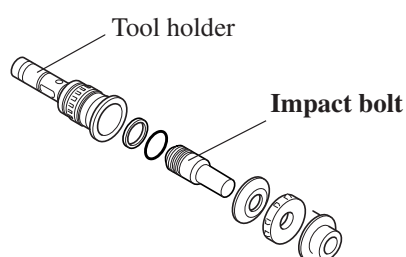
(HM1202, HM1202C, HM1242C)

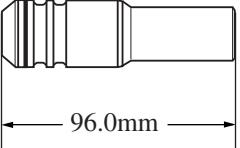
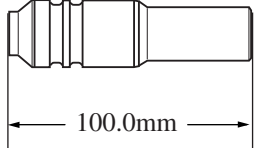


	► Current	► New
cross section	 12mm	 18.5mm
Part No.	323876-1	324131-4

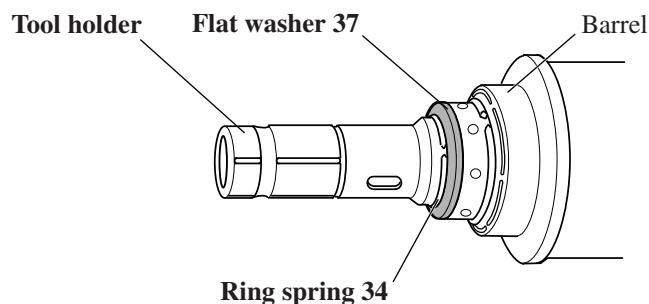
4-2) Modification of Impact Bolt

(HM1202, HM1202C)



	► Current	► New
	 96.0mm	 100.0mm
Part No.	323908-4	324132-2

4-3) Modifications of Ring Spring 34, Flat Washer 37 and Tool Holder (HM1202, HM1202C)



● Change of Ring Spring 34

Ring spring 34 has been replaced by Ring spring 33.

► Current	► New
<p>$d = 34.0\text{mm}$</p>	<p>$d = 33.5\text{mm}$</p>
Ring Spring 34 (Part No.231988-5)	Ring Spring 33 (Part No.233909-3)

● Change of Flat Washer 37

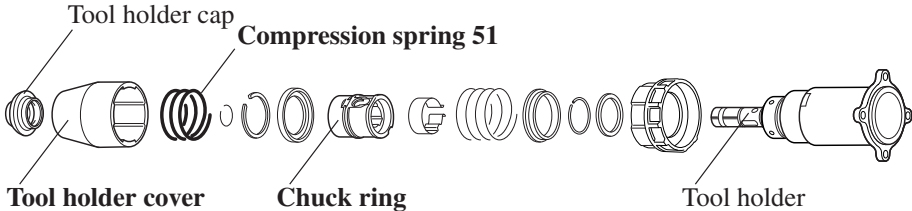
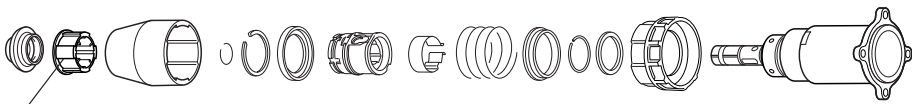
Flat washer 37 has been replaced by Washer 37.

► Current	► New
	<p>Barrel side</p>
Flat Washer 37 (Part No.267197-0)	Washer 37 (Part No.267760-9)

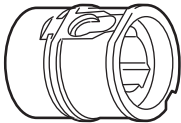
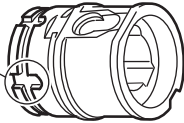
● Modification of Tool Holder

► Current	► New
<p>groove for Roller 8</p> <p>46.5mm</p> <p>73.0mm</p> <p>43.5mm</p> <p>Part No.323878-7</p>	<p>42.5mm</p> <p>77.0mm</p> <p>41.0mm</p> <p>Part No.324109-7</p> <p>The total length (148.0mm) remains unchanged.</p>

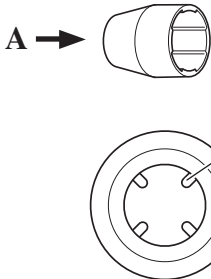
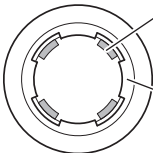
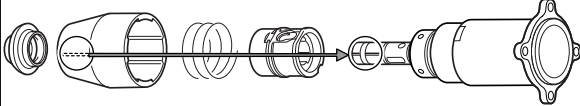
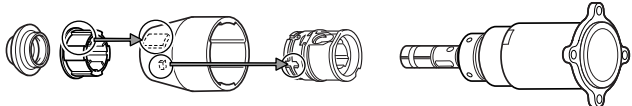
4-4) Modification of Chuck Ring and Tool Holder Cover
Addition of Sleeve 39, Elimination of Compression Spring 51
(HM1202, HM1202C)

<p>► Current</p>	
<p>► New</p>	 <p>See below for detailed information.</p>

● **Modification of Chuck Ring**

► Current	► New
 <p>(Part No.323773-1)</p>	<p>In order to join Chuck ring and Tool holder cover together, four grooves have been added to receive the projections on Tool holder cover.</p>  <p>(Part No.324108-9)</p>


● **Modification of Tool Holder Cover**

► Current	► New
<p>Part No.416933-3</p>  <p>four projections which engage with the grooves in Tool holder</p> <p>[view from A]</p>	<p>Part No.417577-2</p>  <p>four projections which engage with the grooves in the new Chuck ring</p> <p>four projections which engage with the grooves in Sleeve 39</p> <p>[view from A]</p> <p>NOTE : In order to distinguish the new part from the current one, see the inside structure of Tool holder cover from the side of A to find the difference as illustrated above.</p>
	

● **Addition of Sleeve 39**

► Added
 <p>(Part No.417576-4)</p>

● **Elimination of Compression Spring 51**

► Current	► New
 <p>(Part No.233217-2)</p>	<p>eliminated</p>

Interchangeability(I/C)

Item No.	Current part		Q'ty	I/C	New part		Q'ty	Note
041	Flat Washer 49 344790-8		1	No	Flat Washer 49 344998-4		1	<div style="display: flex; align-items: center; justify-content: center;"> <div style="text-align: center;"> ↑ HM1202 HM1202C HM1242C ↓ </div> <div style="margin: 0 10px;"> Interchangeable as a set </div> <div style="text-align: center;"> ↑ ↓ </div> </div>
040	Guide Ring 416927-8		1	No	Guide Ring 417600-3		1	
See the list below.					O Ring 38 213508-7		2	
042	Cylinder Liner 44 331554-9		1	No	Cylinder Liner 44 331608-2		1	
068	Ball Bearing 6202DDW 211228-7		1	←	Ball Bearing 6202LLU 211238-4		1	
031	Urethane Ring 43 262083-0		1	←	Urethane Ring 41 262095-3		1	
011	Steel Ball Guide 323876-1		1	←	Steel Ball Guide 324131-4		1	HM1242C Changed for standardization
	Steel Ball Guide 323876-1		1	No	Steel Ball Guide 324131-4		1	<div style="display: flex; align-items: center; justify-content: center;"> <div style="text-align: center;"> ↑ HM1202 HM1202C ↓ </div> <div style="margin: 0 10px;"> Interchangeable as a set </div> <div style="text-align: center;"> ↑ ↓ </div> </div>
036	Impact Bolt 323908-4		1	No	Impact Bolt 324132-2		1	
012	Ring Spring 34 231988-5		1	No	Ring Spring 33 233909-3		1	
013	Flat Washer 37 267197-0		1	No	Washer 37 267760-9		1	
032	Tool Holder 323878-7		1	No	Tool Holder 324109-7		1	
008	Chuck Ring 323773-1		1	No	Chuck Ring 324108-9		1	
002	Tool Holder Cover 416933-3		1	No	Tool Holder Cover 417577-2		1	
See the list below.					Sleeve 39 417576-4		1	
003	Compression Spring 51 233217-2		1					

[Item No.]

	HM1202	HM1202C	HM1242C
O Ring 38 (213508-7)	094	092	093
Sleeve 39 (417576-4)	095	093	/

Note

- 1) Interchangeability mark ; ← means that the new part is substituted for the current.
- 2) The following current parts have been discontinued;
Flat Washer 49, Guide Ring, Cylinder Liner 44, Urethane Ring 43, Steel Ball Guide, Tool Holder, Tool Holder Cover
- 3) The following current parts can be used as replacement parts for HM1242C;
Impact Bolt, Ring Spring 34, Flat Washer 37
- 4) The following parts can be used as replacement parts for HR5001C;
Chuck Ring, Compression Spring 51
- 5) Ball Bearing 6202DDW can be used as a replacement part for various models.

Implementation

HM1202 : From serial No.4711E (Sept., 2000)
HM1202C : From serial No.15197E (Sept., 2000)
HM1242C : From serial No.2143E (Sept., 2000)

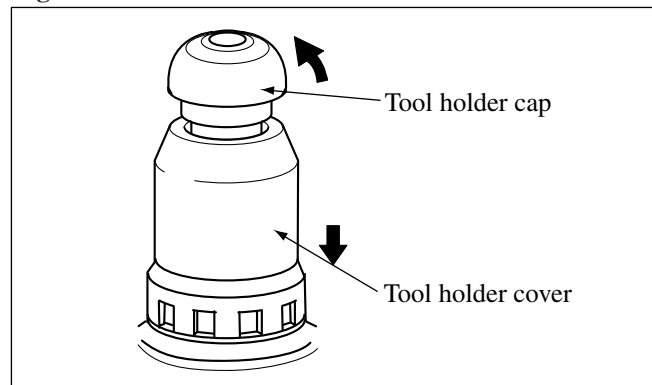
● Disassembling and Assembling of HM1202 and HM1202C for Replacing Current Parts by New Ones

[Disassembling]

[1] Disassembling of Chuck Section

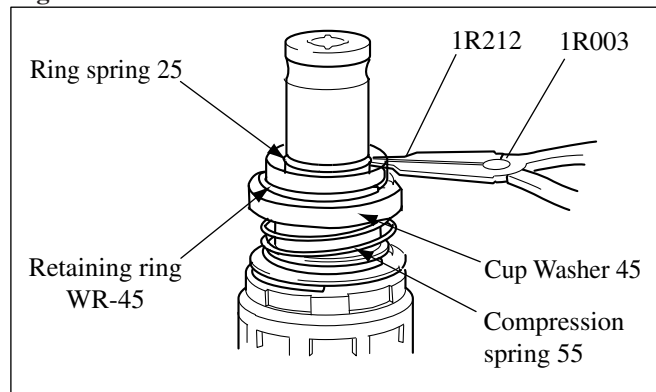
- (1) Pull Tool holder cover down in the direction of Motor housing, and remove Tool holder cap. And then, remove Tool holder cover and Compression spring 51. (**Fig.1**)

Fig.1



- (2) While pressing Chuck ring down in the direction of Motor housing, remove Ring spring 25 with a Retaining plier (Part No. 1R003) and Pawls (Part No.1R212). (**Fig.1**)

Fig.2



- (3) Turn Leaf spring 41 so that Pin 8 can be seen through the slit of Leaf spring 41. Insert a hammer bit to lift Chuck ring up, and the head of Pin 8 comes out a little. And then, take pin 8 out of Chuck ring by hand.

After Pin 8 is removed, the following parts can be removed (**Fig.3**) ;

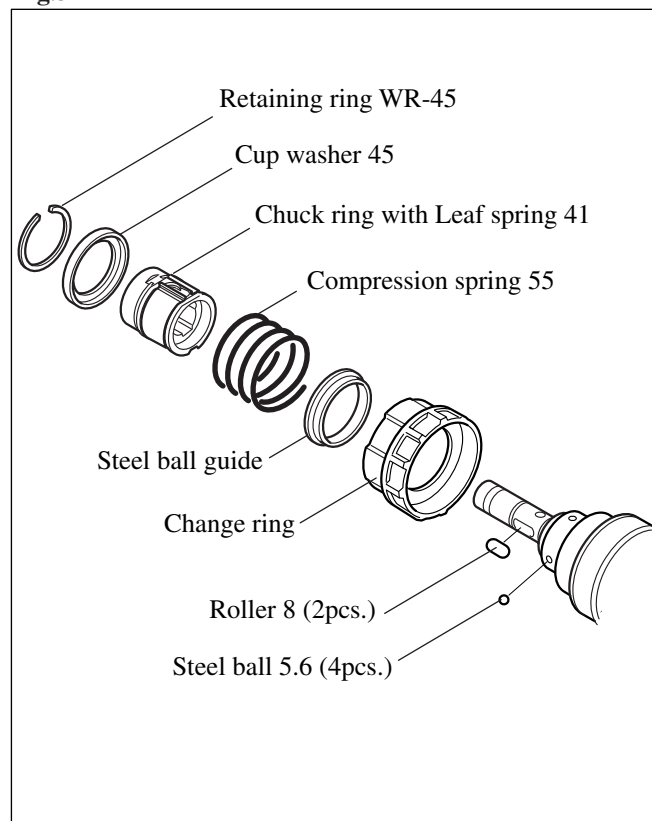
- Retaining ring WR-45
- Cup washer 45,
- The unit of Chuck ring and Leaf spring 41
- Compression spring 55

Note: Place a mark for distinction on Compression spring 55 (with a felt-tip pen, etc.) in order to distinguish it from Compression spring 50 on Cylinder liner.

- Roller 8 (2pcs.)
- Steel ball guide
- Change ring
- Steel ball 5.6 (4 pcs.)

Note: When taking Steel ball 5.6 out of Barrel, first, turn Tool holder to make the top of Steel ball 5.6 get a little above the surface of Barrel. And then, remove it with a magnet.

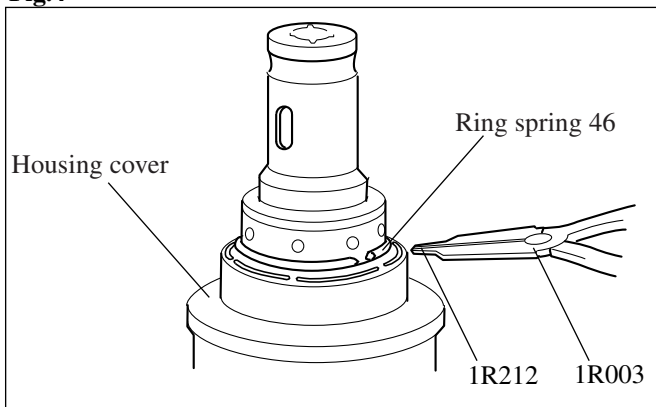
Fig.3



[2] Disassembling of Cylinder Section

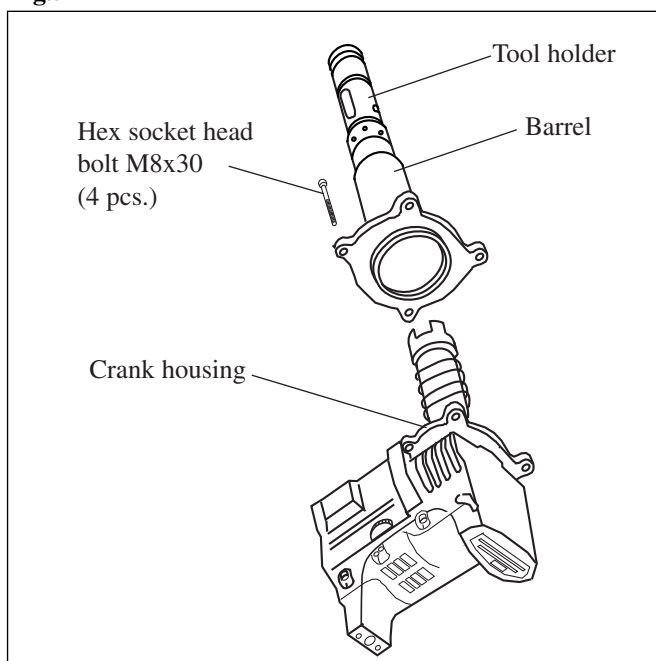
- (1) Remove Ring spring 46 with a Retaining plier (Part No.1R003) and Pawls (Part No.1R212). And then, remove Housing cover and O ring 58. (**Fig.4**)

Fig.4



- (2) Remove four Hex socket head bolts (M5x30) to separate Barrel joined with Tool holder from Crank housing. (**Fig.5**)

Fig.5



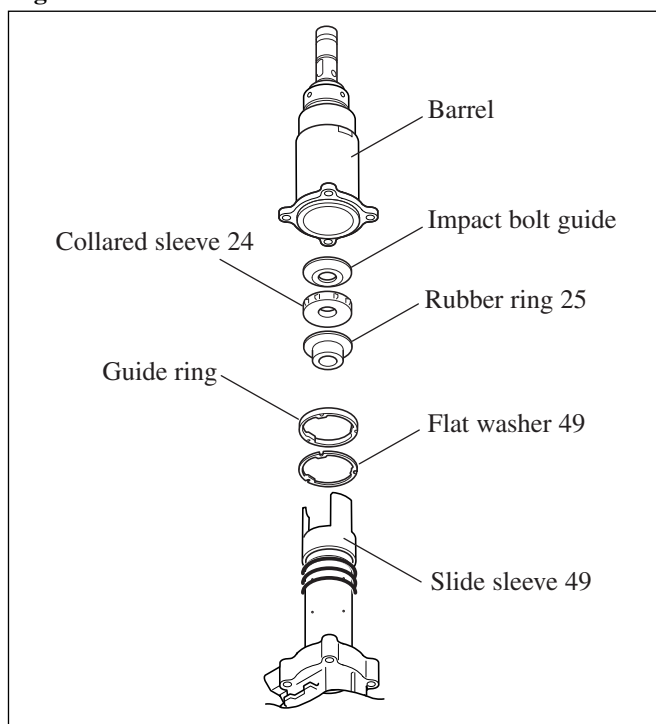
And then, take the following parts out of Barrel (**Fig.6**) ;

- Impact bolt guide
- Rubber ring 25
- Collared sleeve 24

And also remove the following parts from Slide sleeve 49 (**Fig.6**) ;

- Guide ring
- Flat washer 49

Fig.6



- (3) Turn the machine so that Cylinder liner 44 comes down.
Take Striker out of Cylinder liner 44 by hitting
Crank housing with a plastic or wooden hammer. (**Fig.7**)

And then, insert an L-shaped hex wrench through the holes
positioned around the top of Cylinder liner 44.
And hit the wrench to take Cylinder liner 44 out of
Crank housing. (**Fig.8**)
Compression spring 50 can be removed
after Cylinder liner 44 is separated from Crank housing.

Note: Always be sure not to mistake Compression spring 55
(used in Chuck section) for Compression spring 50.

Fig.7

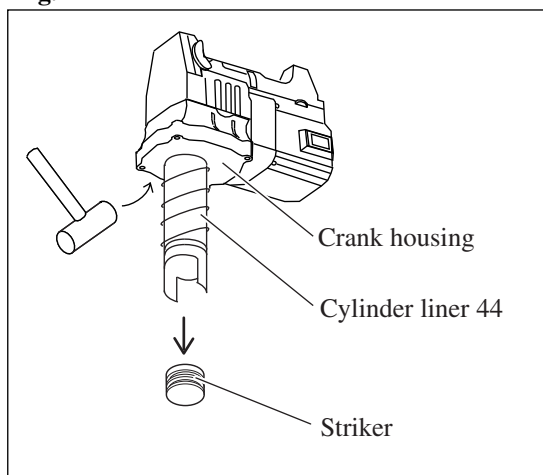
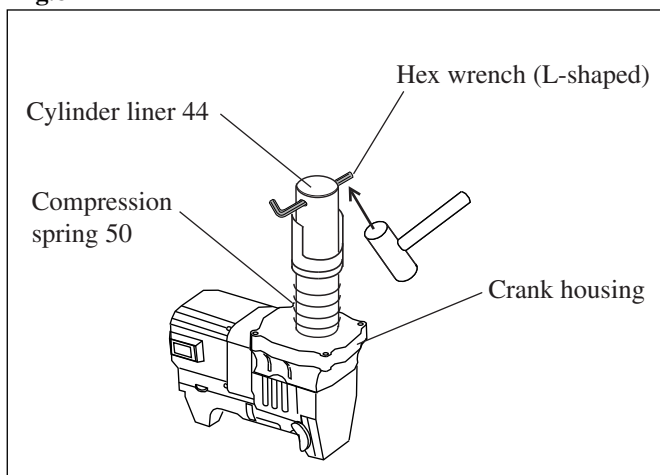


Fig.8



[Assembling]

[1] Assembling of Cylinder Section

(1) Install the following parts on the outside of Cylinder liner 44 (**Fig.9**) ;

First : Slide sleeve 49

Second: Ring 49

Third : O ring 38 (3pcs.)

Fourth : Compression spring 50

And then, apply Makita grease R No.00 on each O ring 38.

While inserting Piston into Cylinder liner 44, mount Cylinder liner 44 on Crank housing.

(If the top end of Piston is positioned below that of Crank housing, turn the armature's fan till the top end of Piston becomes above that of Crank housing.)

When mounting Cylinder liner 44 on Crank housing, do it in the following way (**Fig.10**) ;

Keeping the top end of Slide sleeve 49 below that of Cylinder liner 44, hit only the top end of Cylinder liner 44 with a plastic or wooden hammer to insert Cylinder liner 44 completely into Crank housing.

(2) After putting 5.0g of Makita grease R No.00 into Cylinder liner 44, insert Striker into Cylinder liner. (**Fig.11**)

Important: Always be sure to insert Striker with its "O ring side" down towards Cylinder liner 44.

Fig.9

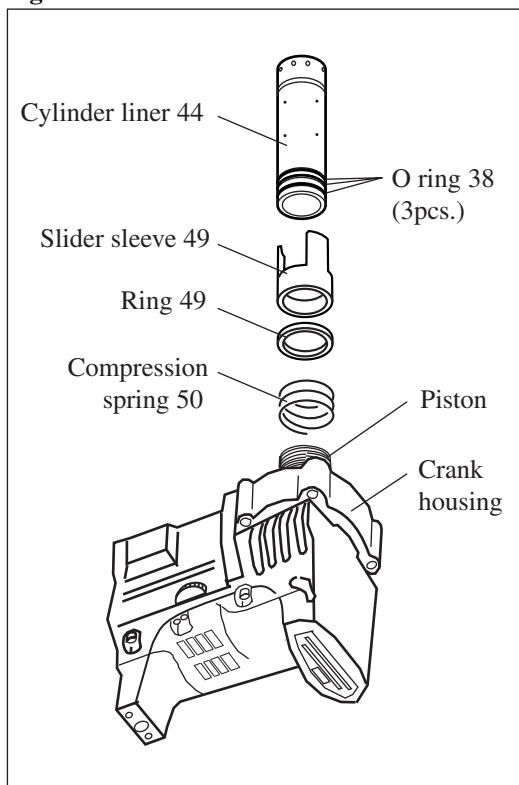


Fig.10

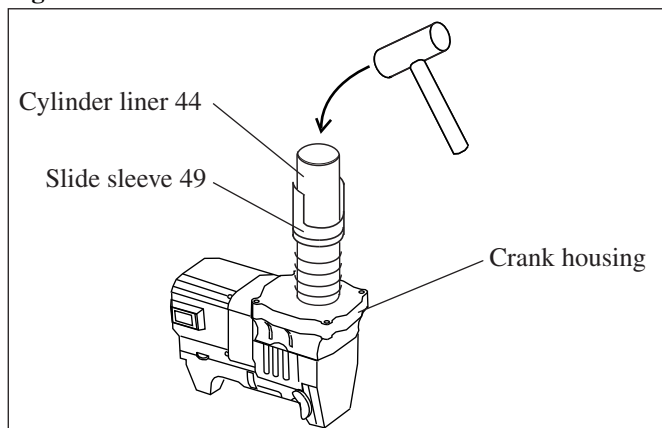
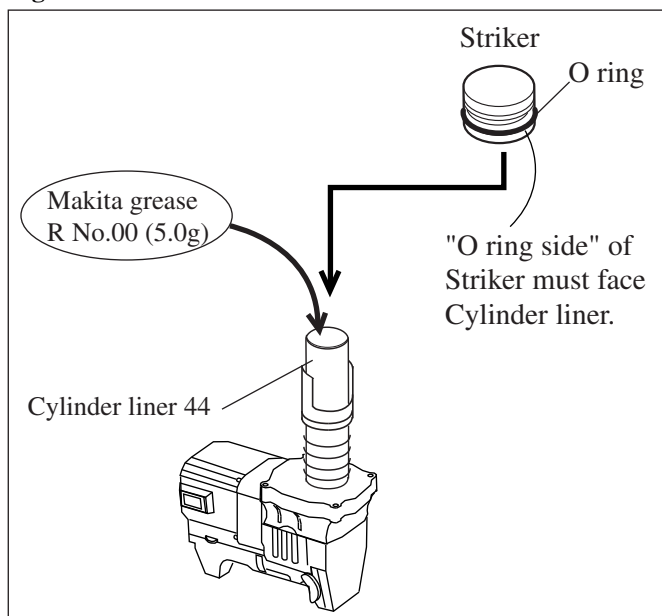


Fig.11



[2] Assembling of Tool Holder and Barrel

(1) Join Tool holder, Barrel and Impact bolt together by taking the following steps of procedure.

First, install each two of O ring 23 and Fluoride ring 28 on Impact bolt (Fig.12) ;

1. Fluoride ring 28 can not be set correctly in the groove on Impact bolt by hand.
2. Therefore, after putting Fluoride rings and O rings in the grooves of Impact bolt,

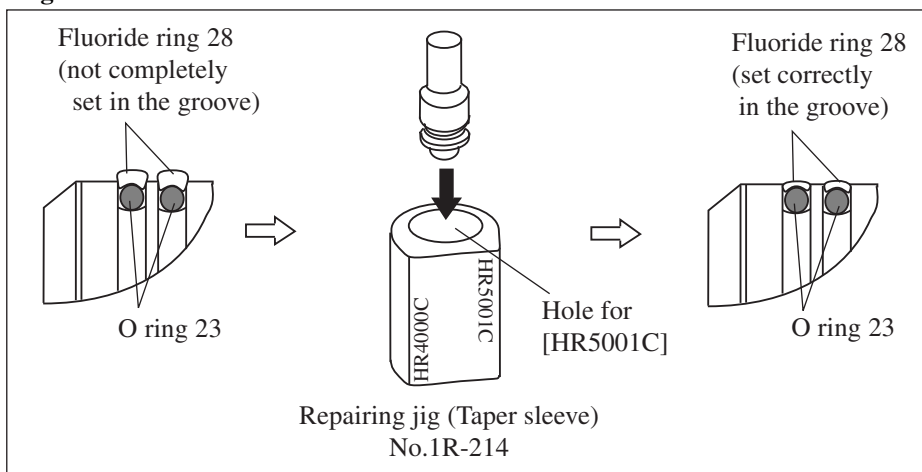
insert Impact bolt into repairing jig No.1R-214.

At this time Impact bolt has to be inserted into the hole for "HR5001C".

And then, keep Impact bolt in the repairing jig for approx. 10 seconds to set Fluoride ring 28 correctly in the groove.

Note: Be sure not to damage Fluoride ring 28 when Impact bolt is inserted into Tool holder.

Fig.12

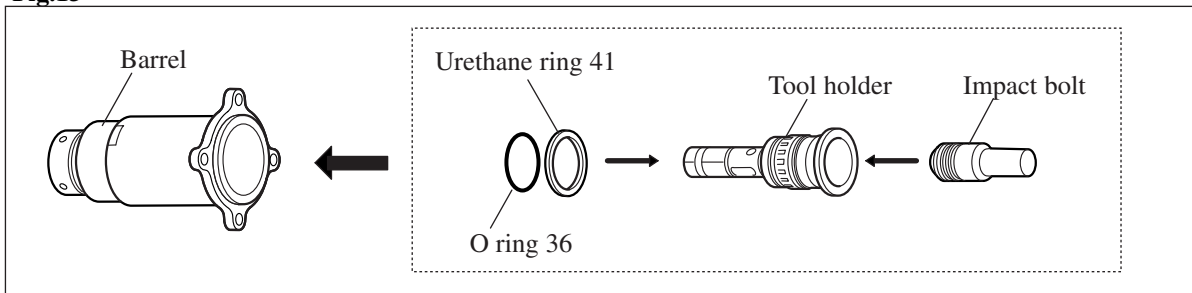


Second, insert Impact bolt into Tool holder.

And then, insert the unit of Impact bolt and Tool holder firmly into Barrel. (Fig.13)

Note: Always make sure that Urethane ring 41 and O ring 36 are installed on Tool holder before joining Tool holder and Barrel together.

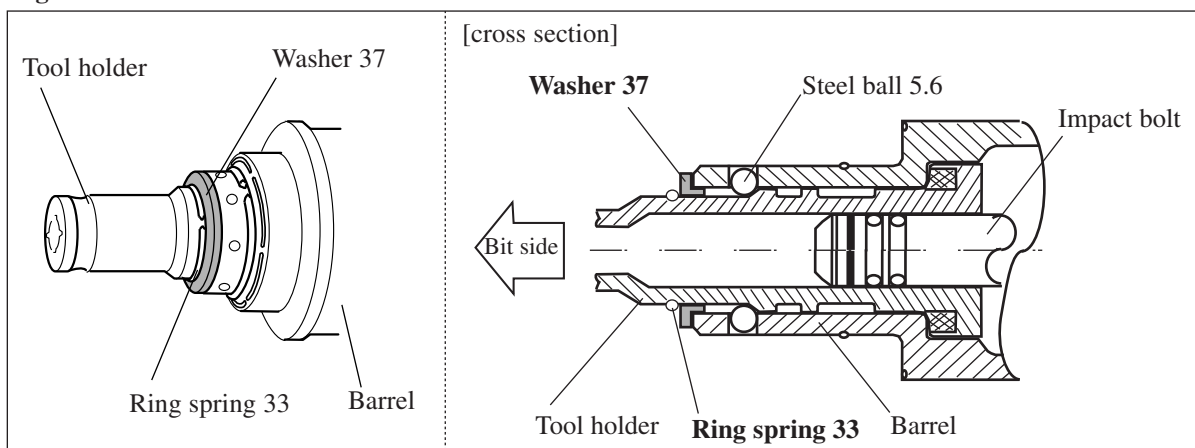
Fig.13



Third, insert Washer 37 between Barrel and Tool holder and then, set Ring spring 33 in place to lock Washer 37.

(Fig.14)

Fig.14



- (2) Apply Makita grease R No.00 on the three projections of Guide ring, and firmly engage the projections with the three notches of Flat washer 49. And then, install the unit of Guide ring and Flat washer 49 on the three legs of Slide sleeve 49.
- When installing the unit on Slide sleeve 49, always be sure to place it so that Flat washer 49 faces Crank housing side. (**Fig.15**)

- (3) Set the following parts among the three legs of Slide sleeve 49 (**Fig.15**) ;

- Collared sleeve 24
- Rubber ring 25
- Impact bolt guide

- (4) While being careful not to get the three parts be out of the legs of Slide sleeve 49, set the unit of Tool holder and Barrel (assembled in page 10) on Cylinder liner 44.

And then, pushing Compression spring 50 towards Crank housing, fasten the unit of Tool holder and Barrel to Crank housing with four Hex socket head bolts (M8x30).

Note:

1. The two flat portions on Barrel must face up and down. (**Fig.16**)
2. Turn Tool holder so that its hole for Pin 8 faces upside. (**Fig.16**)
3. Always use new Hex socket head bolts(M8x30) for fastening the unit of Tool holder and Barrel to Crank housing.

(The fastening torque: 29.4 to 39.2 N.m [300 to 400kgf])

Fig.15

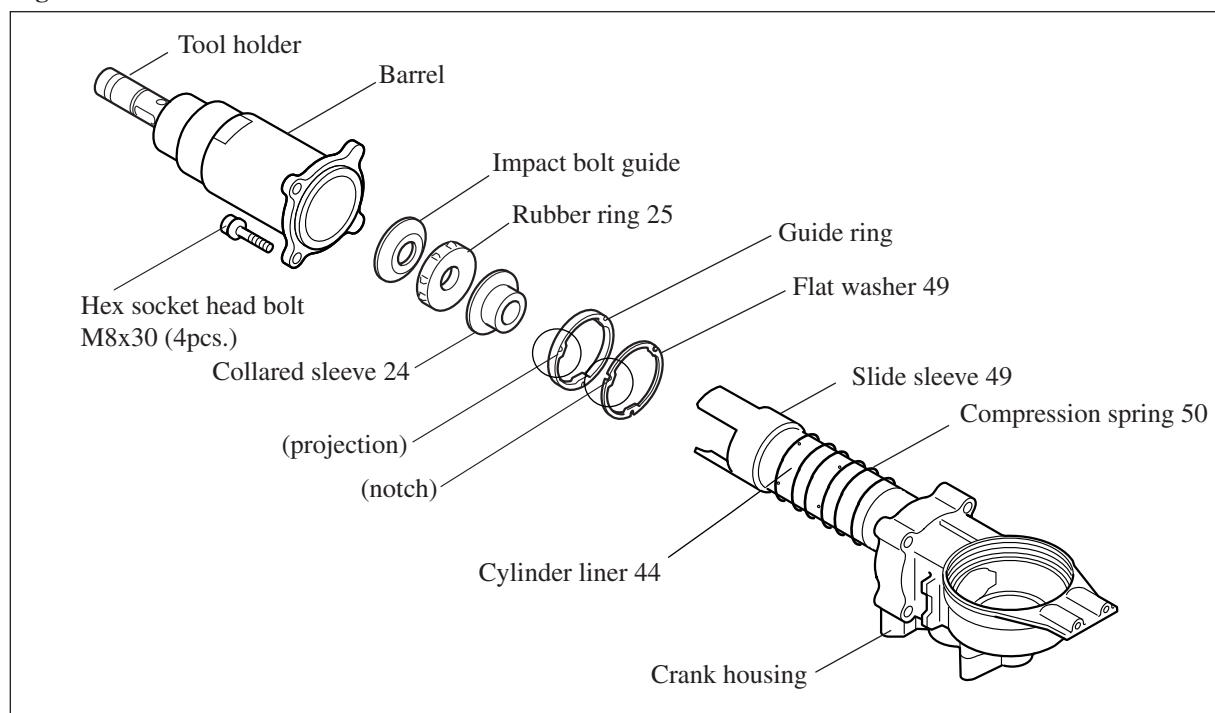
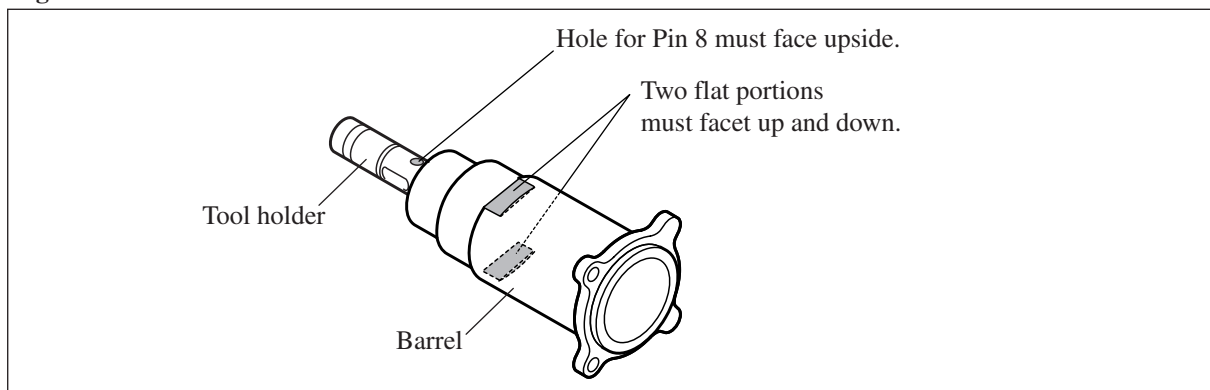


Fig.16



[3] Assembling of Chuck Section

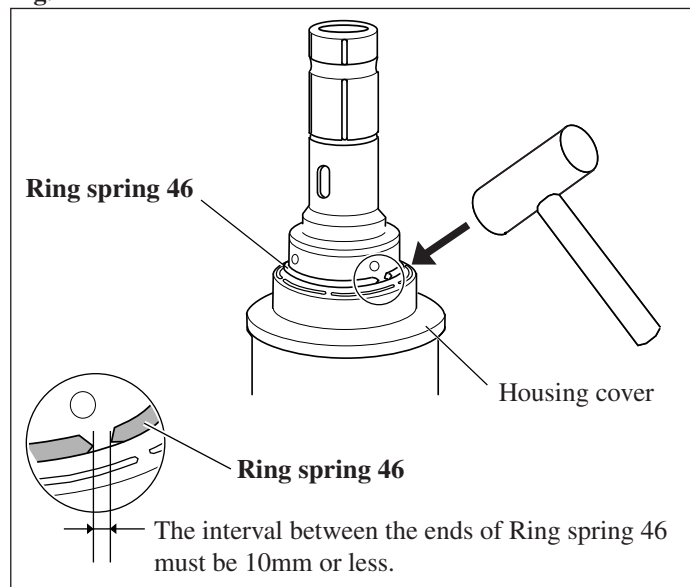
- (1) First, install O ring 58 on Barrel.
Put Housing cover over Barrel, and push Housing cover till it stops.
And then, set Ring spring 46 on Barrel with a Retaining plier (Part No.1R003) and Pawls (Part No.1R212).

And hit Housing cover with a plastic or wooden hammer in order to set Ring spring 46 completely in the groove of Barrel; the interval between the ends of Ring spring 46 is 10mm or less when the spring is correctly set in the groove. (**Fig.17**)

Note:

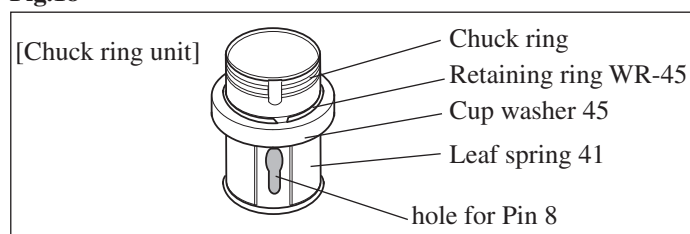
Always make sure that Ring spring is correctly set in the groove of Barrel because, if not, Housing cover gets out of position while operating the machine.

Fig.17



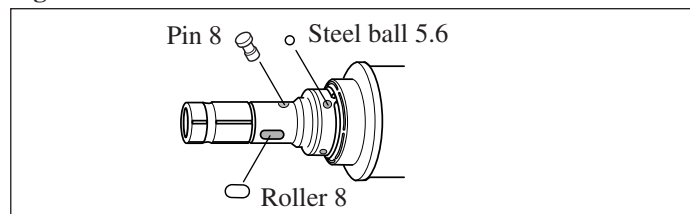
- (2) Install the following parts on Chuck ring to make a Chuck ring unit (**Fig.18**);
 - Cup washer 45
 - Retaining ring WR-45
 - Leaf spring 41
 After installing these parts, Turn Leaf spring 41 so that Chuck ring's hole for Pin 8 can be seen.

Fig.18



- (3) Put Makita grease N No.2 in the following holes (**Fig.19**) ;
 - Four holes for Steel ball 5.6 (in Barrel)
 - Two holes for Roller 8 (in Tool holder)
 - One hole for Pin 8 (in Tool holder)

Fig.19



1. Align the four through holes (for Steel ball 5.6) of Barrel with the grooves (for receiving Steel ball 5.6) in Tool holder.

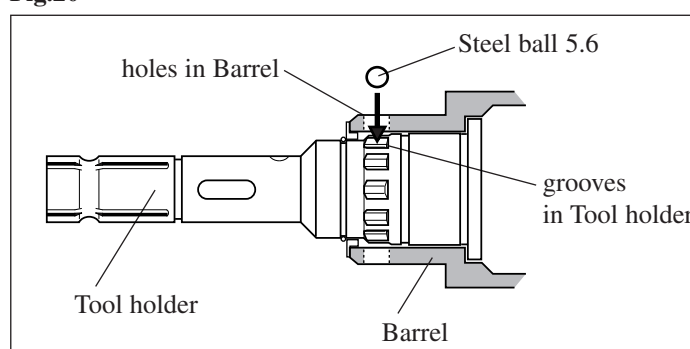
And then, insert four Steel ball 5.6's through the holes of Barrel into the grooves in Tool holder. (**Fig.20**)

Note:

If the holes in Barrel are not aligned with the grooves in Tool holder, the top of inserted Steel ball 5.6 stays above Barrel and prevents Steel ball guide from getting in place.

2. Install Change ring.
3. Install Steel ball guide.
4. Install Roller 8 (2pcs.) on Tool holder.
5. Install Compression spring 55; remember the mark you have put for distinction.
6. Install the Chuck ring unit on Tool holder.

Fig.20



And then, pushing down Chuck ring, align the hole in Chuck ring (for Pin 8) with that in Tool holder (for Pin 8), and insert Pin 8 into the holes.

Turn Leaf spring 41 to cover Pin 8 completely. At this time, Fit the convex surface of Leaf spring 41 to the concave surface of Chuck ring.

Note:

Be sure to cover the head of Pin 8 with Leaf spring 41. Failure to do this causes Pin 8 to get out of Chuck ring while using the machine.

[4] Assembling of Parts Around the Top of the Machine

- (1) Put Tool holder cover over Change ring so that the inside concave surfaces on Tool holder cover's bottom side meet the convex surfaces of Change ring. And then, turn Tool holder cover so that its inside projections engage with the grooves in Chuck ring. **(Fig.21)**
- (2) Turn Tool holder cover by 45° so that the four grooves in Tool holder and the four inside concave surfaces on Tool holder cover's top are positioned as illustrated in **Fig.22**.

Fig.22

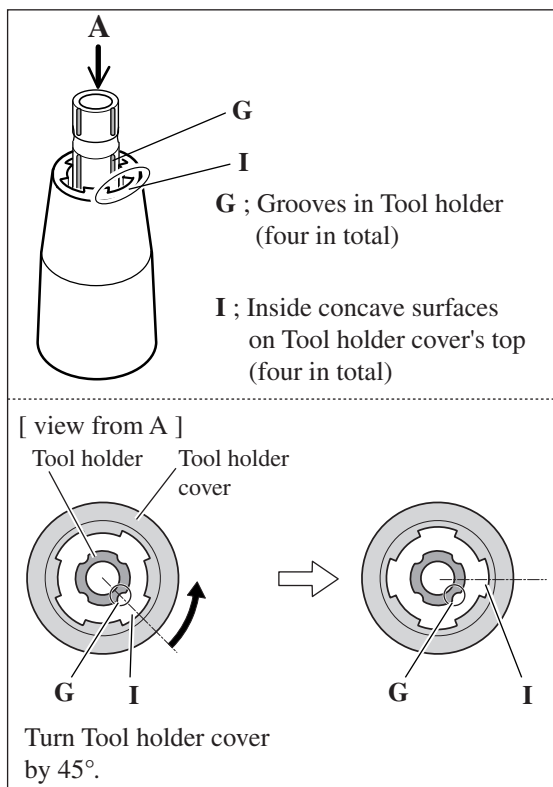
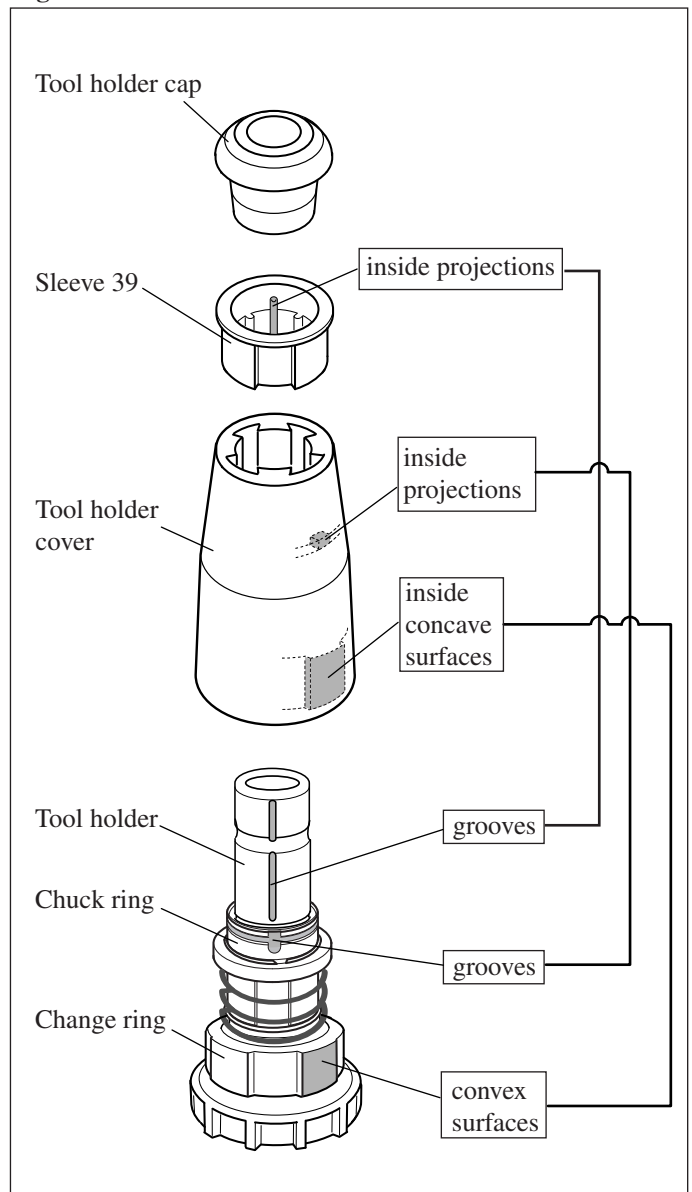


Fig.21



- (3) Aligning the inside projections of Sleeve 39 with the groove in Tool holder, install Sleeve 39 on Tool holder cover. And then, install Tool holder cap firmly on Tool holder. **(Fig.21)**
- (4) Insert a hammer bit to lift up Tool holder cover and Sleeve 39. And then, pull up Sleeve 39 and Tool holder cover for no gap between Sleeve 39 and Tool holder cap. **(Fig.23)**

Fig.23

