MARUZEN

# HYDRAULIC
# (MINI BACKHOE)
# BREAKER
# MODEL BH801

## INSTRUCTION MANUAL
## AND
## PARTS LIST

MARUZEN KOGYO CO., LTD.

(Revised November 26, 2016)

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# 1. MACHINE DESCRIPTION

## Specifications

| | |
|---|---|
| Model | BH801 |
| Working Oil Pressure | 9.8 ~ 14.7 MPa (100 ~ 150kgf/cm2) |
| Max Oil Pressure | 27.5 MPa (280kgf/cm2) |
| Mass | 77.5kg (including hoses/bracket) |
| Dimensions (L x W x H ) | 758 x 476 x 218 mm |
| Tool Chuch Size | Dia. 50mm |
| Hose Connection | 1/2" |
| Connection Method | Self Seal Coupling |
| Required Oil Flow/ B.P.M. | 20 ~ 25 l/ min.-->500 ~ 600 b.p.m. |
| | 25 ~ 30 l/ min.-->600 ~ 800 b.p.m. |
| | 30 ~ 35 l/ min.-->800 ~ 950 b.p.m. |

| | |
|---|---|
| Manufacturer | MARUZEN KOGYO CO., LTD. |
| Location | 155-8, Nagabuse Mishima Shi, |
| | Shizuoka Ken 411-0824 JAPAN |

## 2. PURPOSE

1) This machine is used attaching to the arm and boom of excavator or some other construction machine which are capable to operate this breaker.

2) Connect the breaker through hydraulic hose and couplings to a hydraulic power take-off port of excavator and construction machines.

3) Attach the tools (chisels) suitable for the chuck size of this breaker.

4) Operate the hydraulic selector valves in order to start and stop this breaker.

5) Hydraulic energy supplied to the breaker is converted to force for hitting a tool.

   By utilizing this hitting force, the breaker is used the following purposes.

   (1) Breakage of concrete, rocks, and asphalt

   (2) Driving of anchors and stakes

   (3) Digging of solid soil

   (4) Stamping of soft ground such as soil and sand

   (5) Cutting of asphalt

6) Using the breaker in the following manners is strictly forbidden.

   (1) Using the breaker while it is soaked in water, saltwater, or muddy water.

   (2) Connecting the breaker to a hydraulic source which capacity is beyond the allowable specifications.

   (3) Operating the breaker while oil temperature is below-10 or above+100 ℃ .

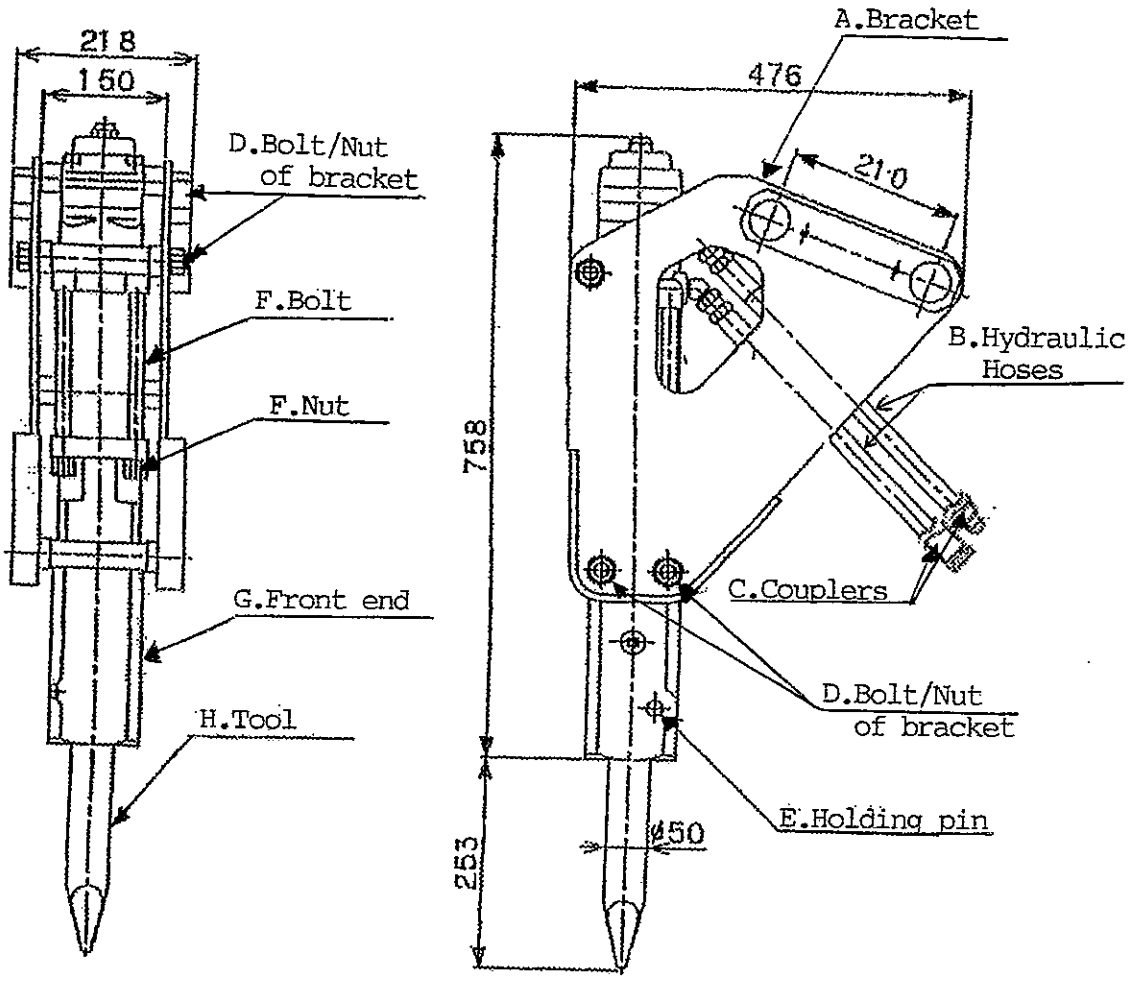
   (4) Dropping the breaker by using its weight and giving an impact to a mounted tool.

   (5) Using a tool which size is different from the breaker chuck size.

   (6) Hanging some objects by the breaker.

   (7) Using the breaker for other purposes than described in this section.

## 3. DESCRIPTION OF EACH PART




**A. Bracket : Hold the breaker and connected to excavator or some other construction machine.**

**B. Hydraulic Hose : Send and return oil between the breaker and excavator.**

**C. Couplers : Connect and disconnect the breaker to excavator.**

**D. Bolt/ Nuts of Bracket : Connect the breaker and the bracket.**

**E. Holding Pin : Lock a tool by the holding pin and extracting the pin a tool is released.**

**F. Bolts and Nuts of Main Body : Connect all the parts.**

**G. Front End : Hold a tool.**

**H. Tool : Transmit impact energy for breaking.**

## 4. USAGE

1) Mount the breaker with its bracket to the links of arm and bucket with 2pcs. of pin.

2) Connect the hoses of the breaker to the power take-off ports of excavator. Be careful not to miss-connect "IN" and "OUT".
Connection should be done surely after stopping the excavator.

3) Extract the retainer pin and mount a suitable tool ( chisel etc. ) .
Then Insert the pin again and set with washer and spring pin.
Check that the mounted tool does not come off easily.

4) Start the excavator and change over the valve so that hydraulic oil may flow into the circuit with which the breaker is connected. The breaker will start hitting accordingly

5) When oil temperature of excavator is low during the winter, warm up the excavator circuit until temperature reaches +10 ℃ .
Also, stop operating the breaker if temperature exceeds 100 ℃ .

6) Notes to Users

(1) After finishing operation, put down the breaker on the ground and always release the oil pressure of breaker circuit of excavator.

(2) When the breaker will be dismounted, always stop engine an dismount making the breaker put on the ground.

(3) Connection and disconnection of the hose should be carefully done so that dust or dirt may not adhere to the couplings.

(4) Other personnel than the operator should not enter the area within 5m from the working position during operation.

(5) Make sure to wear helmet, dust proof glasses, safety boots and other protective clothing as designated.

(6) Place the breaker flat on the ground while it is not being used and apply oil on the chisel and cover the breaker with sheet.

(7) If the same position is hit repeatedly for more than 30 seconds without broken, change to another position and try again.

(8) When connecting the breaker to an excavator, check that the oil pressure flow are within the allowable range under specifications.

(9) If the hoses is damaged accidentally and cause oil injection, stop engine of excavator immediately.

(10) Deteriorated or damaged hose should not be used as it is hazardous.

(11) Stop the engine of excavator before connecting or disconnecting the hose

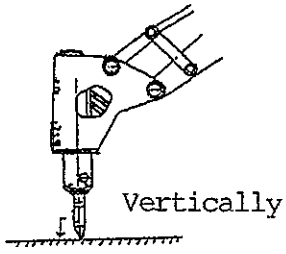
(12) While the breaker is being used, temperature of each section rises as oil temperature rises. Use gloves to avoid unnecessary damage due to high temperature when disconnecting the breaker from excavator.

(13) When operating, refer to the below operating notice.

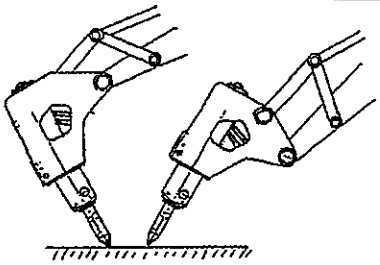
**Operating Notice**

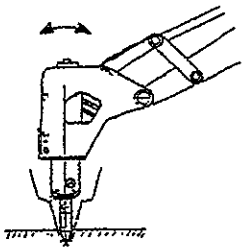
1. Operate breaker parallel to crawler movement of excavator.
2. Don't operate breaker with swing boom.
3. Operate breaker with the provided flow rate. Excess flow rate causes troubles.
4. Keep the relief-set pressure in the range of 140 - 170 kg/cm2.
5. Put a chisel vertically to the breaking object and push vertically when striking.
6. Don't apply twist to the chisel during striking. It causes bite and break of the chisel
7. Don't apply twist also after striking the chisel into the object.
8. If harder and bigger object has to be broken, break it from the corner. Change the striking position if it does not break after 30-60 seconds striking.
9. Don't use breaker in water.
10. Don't strike breaker with excavator arm.

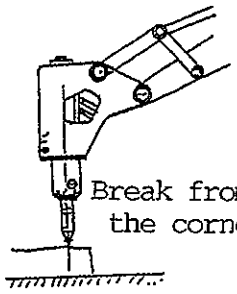
Right operation

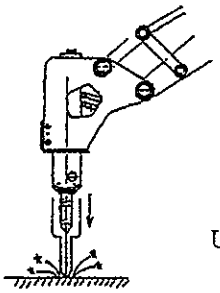


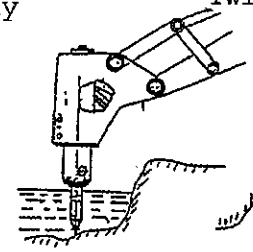

Avoid the following operation

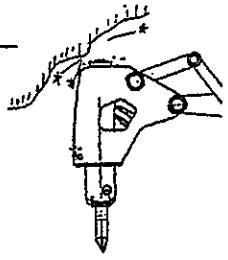


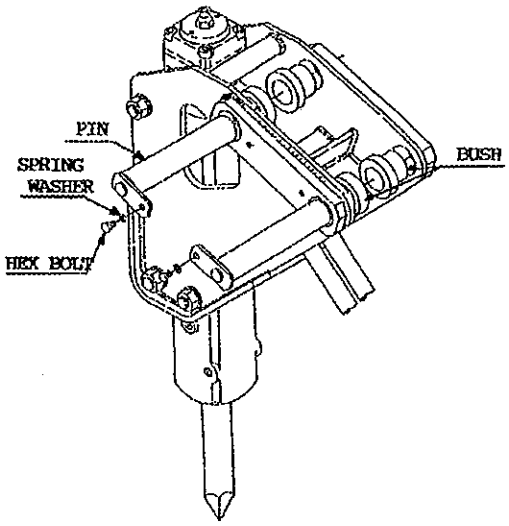

**Connection to the Excavator**

(1) **Prepare 4 PCs. of bush according to the width of arm, bucket link.**

(2) **Attach the bushes inside of the bracket of breaker as below figure.**

(3) **Put the holes of bracket together with the hole of arm and bucket link of excavator for pin inserting.**

(4) **Insert 2 pieces of the pin and fix the bracket with M10x20 hex bolts and spring washers.**



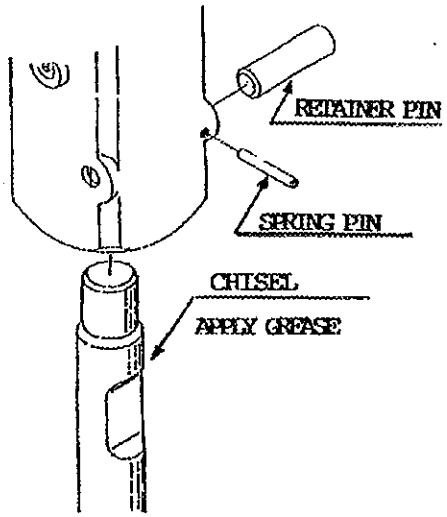
## How to Mount and Dismount a Tool (Chisel)

(1) Extract pin and washer from retainer pin and remove the retainer pin.

(2) Applying grease on the inserting part of a chisel, mount the chisel into front end.

(3) Insert the retainer pin and attach washer and spring pin to fix.

(4) To dismount a tool, follow (1) and dismount a tool.



## 5. SAFETY PRECAUTION

(1) Check that excavator or other construction machines to connect to the breaker satisfies the following conditions.

1) Max. pressure : 14.7 ~ 27.5 MPa (150 ~ 280kg/cm2)

2) Oil flow : As indicated in the specifications

(2) A tool to use should conform to a chuck size of the breaker.

(3) When using the breaker, wear protective clothing as described below.

1) Helmet · · · · · · · · To avoid chips and damages caused by stumbling.

2) Dustproof glasses · · · To protect eyes from being damaged by a splash of workpiece chips.

3) Safety boots · · · · · To protect feet from being damaged in operation.

4) Thick gloves · · To prevent hands from touching high temperature section directly or from vibrating.

5) Ear plugs or covers · · · To protect ears from being damaged by excessive noise.

(4) Check the following points before using the breaker.

1) Check that no clamping bolts or nuts of breaker are loosened and no oil leakage.

2) Check that the hose mounted on the breaker is not loosened, damaged, or cracked externally. Also check there is no oil leakage.

3) Check that there is no cracks on the bracket.

4) Check that a tool to use has no damage or crack on the surface, as it may result in breakage.

5) Check that the accumulator is securely tightened, and there is no oil leakage.

6) Apply grease by grease gun 3 ~ 4 times from grease nipple when using breaker.

7) Check that there is enough hydraulic oil in the tank of excavator. Also check that the oil is not dirty.

## 6. MAINTENANCE AND INSPECTION

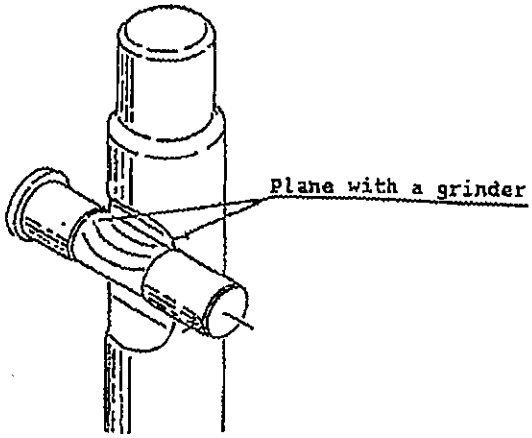
### 1. Daily Checking

1) Tighten the nut for the pin that fixed the breaker and the bracket.

2) Check if the hydraulic oil is short or dirty. If so, add it or replace, as the dirty oil causes malfunction of the piston.

3) Grease the chisel sufficiently and cover with sheet when reserving. Be careful that grease is not out during operating, or the chisel burns stuck or wears earlier. Grease to the nipple on the front end if the chisel grease is dry during operation. (Grease with a gun with the chisel inserted) Grease 4-5 times with a grease gun at the beginning of daily operation.

4) Check if the contacting parts of the retainer pin and the chisel is swollen. If so, plane it with a grinder.




### 2. Periodical check and replacement

| Check item | Check item |
|---|---|
| Accumulator gas pressure 40 kg/cm2 | Replacement of the bolt, nuts, etc. |
| Replacement of the seals | every 300 hours or a year |
| Replacement of the accumulator diaphragm | every 300 hours or a year |
| Replacement of the retainer pin. | depending on wear degree |
| Replacement of the hydraulic hose. | when damaged or oil leaks |
| Replacement of the bolt, nuts, etc. | when damaged |

## 7.CAUSE OF TROUBLE AND COUNTERMEASURE

| Unusual phenomenon | Important / Main cause | Countermeasure |
|---|---|---|
| • Not strike | • Insufficient operational oil | • Supply needed oil. |
| | • Hose coupler connection incomplete. | • Connect hose. Check coupler. |
| | • High pressure side and return path incorrectly connected. | • Verify upper breaker hose connected to high pressure side + lower side hose to lower side. |
| | • Oil is not flowing. | • Check circuit. |
| | • Oil pressure source relief valve established power is low. | • Suitable pressure power adjusted to 150-280kg/cm2. |
| | • Control valve operation is poor. | • Carry out disassembly control valve, fit valve body, and remove dust. |
| | • Control valve damaged. | • Replace. |
| • Strike power weak Nos. of strike few | • Amount of flow to oil pressure source is low. | • Adjust to suitable flow . (Check engine rpm) |
| | • Oil pressure source relief valve established power is low. | • Adjust to suitable pressure power to 150-280 kg/cm2. |
| | • Control valve operation is poor. | • Carry out disassembly control valve, fit valve body, and remove dust. |
| | • Moil point burn. | • Extract the damaged moil point bush parts and apply grease as needed. |
| • The nos. of strike normal, but strike power is weak | • Accumulator gas pressure deteriorated. | • Replenish nitrogen gas pressure power 40 kg/cm2. |
| | • Accumulator diaphragm damaged. | • Replace. |

| Unusual phenomenon | Important / Main cause | Countermeasure |
|---|---|---|
| • No. of strikes many, reaction strong | • Amount of oil flow excessive | • Adjust to suitable flow (Check engine rpm) |
| • During utilization, suddenly stops | • Quick coupler is dis-connected<br>• Damaged control valve. | • Check each pipe coupling<br>• Replace. |
| • Large amount of oil leak from the moil point insertion | • Abrasion to u-cup packing<br>• Abrasion to piston rod.<br>• Damage to u-cup packing depending on damage of piston rod. | • Replace.<br>• Replace.<br>• Replace packing, remove piston rod, damaged oil stone brush. |
| • Oil leakage in joint of valve body and cylinder | • Abrasion + hardening of o-ring steel surface.<br>• Slackness of throttle bolt. | • Replace.<br>• Increase throttle. |
| • Oil leakage from main hose. | • Slackness of hose.<br>• Hoses damaged. | • Increase throttle.<br>• Replace. |
| • Hose on high pressure side, feeling unusual vibration | • Accumulator gas pressure is high.<br>• Accumulator diaphragm is damaged.<br>• Accumulator gas pressure is low. | • Adjust (40 kgf /cm2)<br>• Replace.<br>• Adjust (40 kgf /cm2) |

## 8. DISASSEMBLING

1. Notice before Disassembling

Carry out disassembling of breaker in a clean environment.

Dust etc. will impede the proper operation of the breaker.

2. Disassembling of Breaker Bracket (Fig. 1)

(1) Put up the breaker on a stand.

(2) Loose the nut no.10 and remove the washer no.9 and the bolt no.8 and dismount the breaker bracket no.1.

3. Disassembling of Main Body

3-1 Chisel (Fig. 2)

(1) Extract the spring pin no. 31.

(2) Remove the retainer pin no. 14.

(3) Extract the chisel.

3-2 Main Body (Fig. 3)

(1) Remove the hydraulic hoses no. 35 and the elbow nipple no. 34.

(2) Remove 4 pcs. of bolt no. 19 and accumulator ass'y no. 39.

(3) Remove 4 pcs. of nut no. 18 and the washer no. 30.

(4) Remove the valve body no. 1.

(5) Remove the control valve no. 6.

(6) Extract the cylinder no. 2 from the front end.

(7) Extract the hammer piston no. 4 from the cylinder.

(8) Pick out the inner tube no.5.

4. Disassembling of Accumulator (Fig. 4)

(1) Fix the accumulator ass'y on a vise.

(2) Remove the cap no. 7.

(3) Turn the cap bolt no. 18 slowly and allow the enclosed gas to discharge.

(4) Using the special tool T-2408 handle, loose the lid no. 9 and remove it.

(5) Take out the diaphragm no. 10 from the lid no. 9 by using to tool such as screw driver not damaging it.

5. Taking out of Seals

(1) Pick out the o-ring, back-up ring in the shell.

(2) Pick out the dust seal no. 29 and u-cup packing no.28 from the cylinder. ** U-cup packing is picked out by using edge- pointed tool and can not be used again.

(3) O-ring can not be used again in principle but can be used if there are no damages on it.

6. Extraction of chisel bushes (Fig. 5)

(1) Use 15 ~ 20 ton press machine to extract the chisel bushes.

(2) Put up the front end on a stand as in Fig. 5.

(3) Set the special tool T-6004 up and push out the pushes (A) and (B) slowly.

7. Remove of Stud Bolts

(1) Heat up the stud bolts by burner where they are fixed on the valve body.

(2) After burning the grew of stud bolt, remove them.

## 9. POST DISASSEMBLING INSPECTION AND REPAIR (Fig.6-A,B)

1. Inspection of Seals

(1) O-ring which has scratch, abrasion, cracks, and hardness should be replaced.

(2) Back-up ring which is deformed, abrasion should be replaced.

(3) Dust seal which has scratches and is worn should be replaced.

2. Inspection of Moving Parts

(1) Valve body · · · · If there is erosion or interior damage to the cavitation, replace it.

(2) Cylinder · · · · · · · If there are scratches to the interior, replace it.

(3) Control Valve · · Where there is damage to the surface and cracks, replace it

(4) Hammer Piston · · Using the oil stone, remove the scratches on the outside of the arrow mark in the places where u-cup packing will be damaged by the scratches. If the hammer edge worn more than 1.5mm, replace it.

(5) Liner (B) · · · · · · If there are scratches or wear inside in figure or on its surface, replace it.

(6) Inner Tube · · · · · If there are scratches or wear out side in figure or on its surface, replace it.

(7) Chisel bush · · · · The chisel bush of excessive wear should be replaced.

FIG. 1

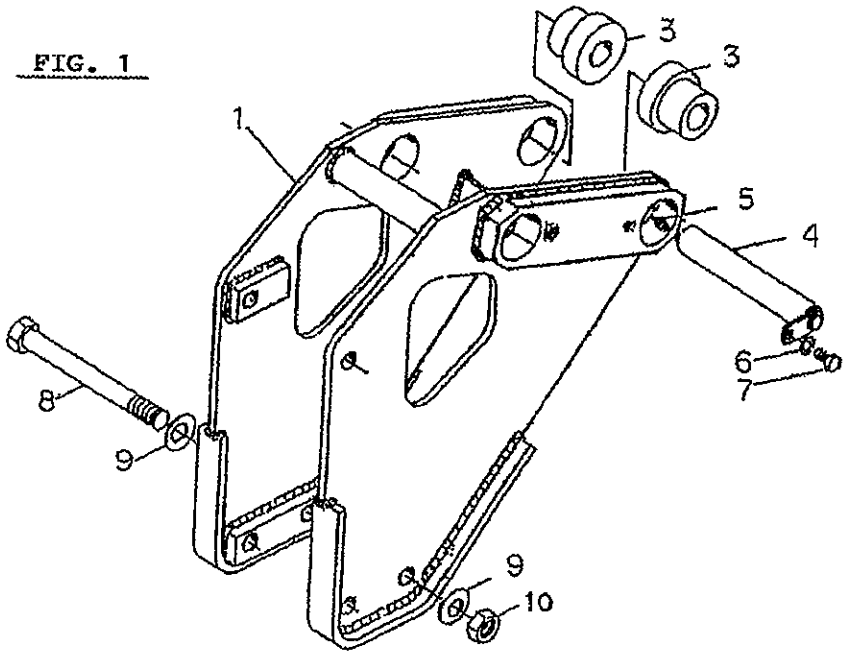



FIG.2

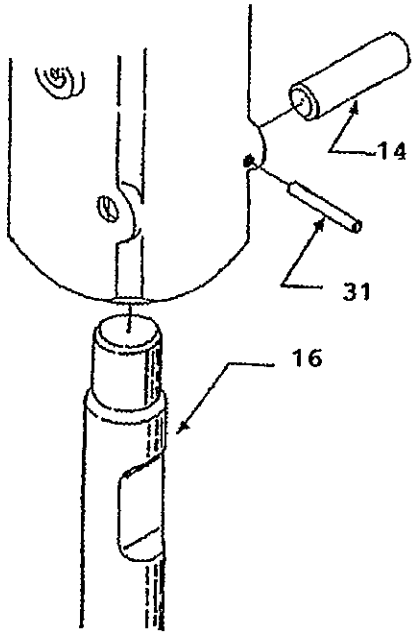


FIG.3

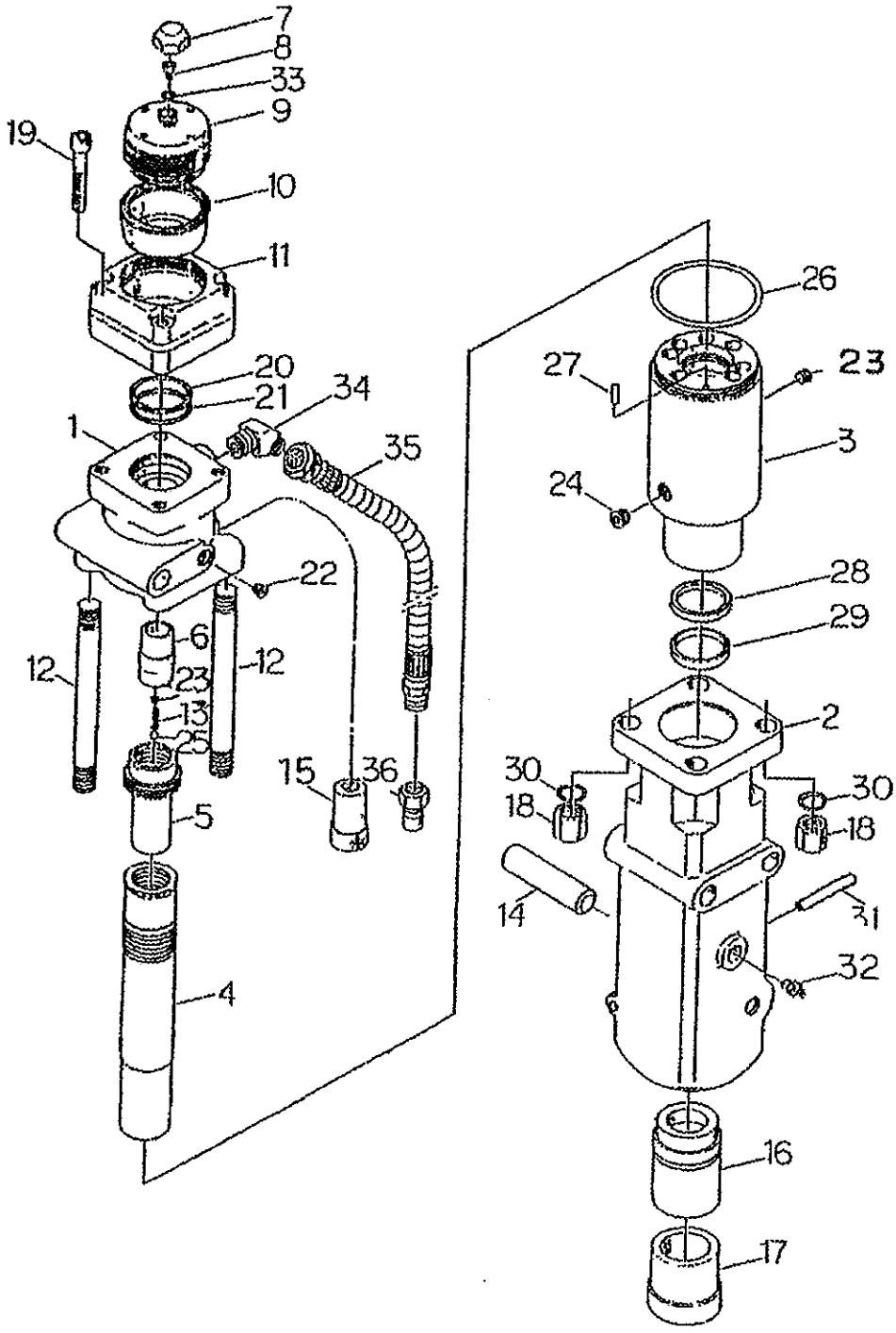

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FIG.4

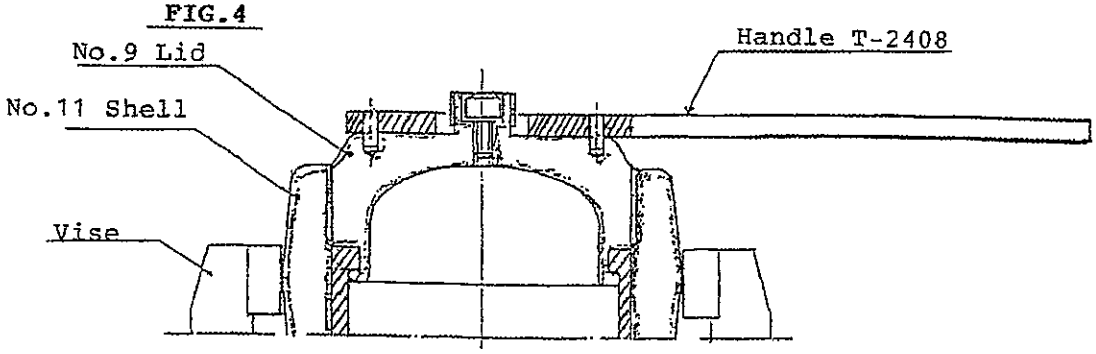



FIG.5

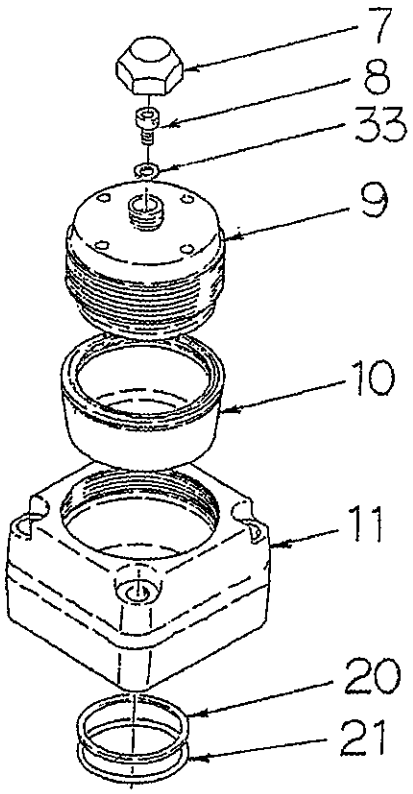
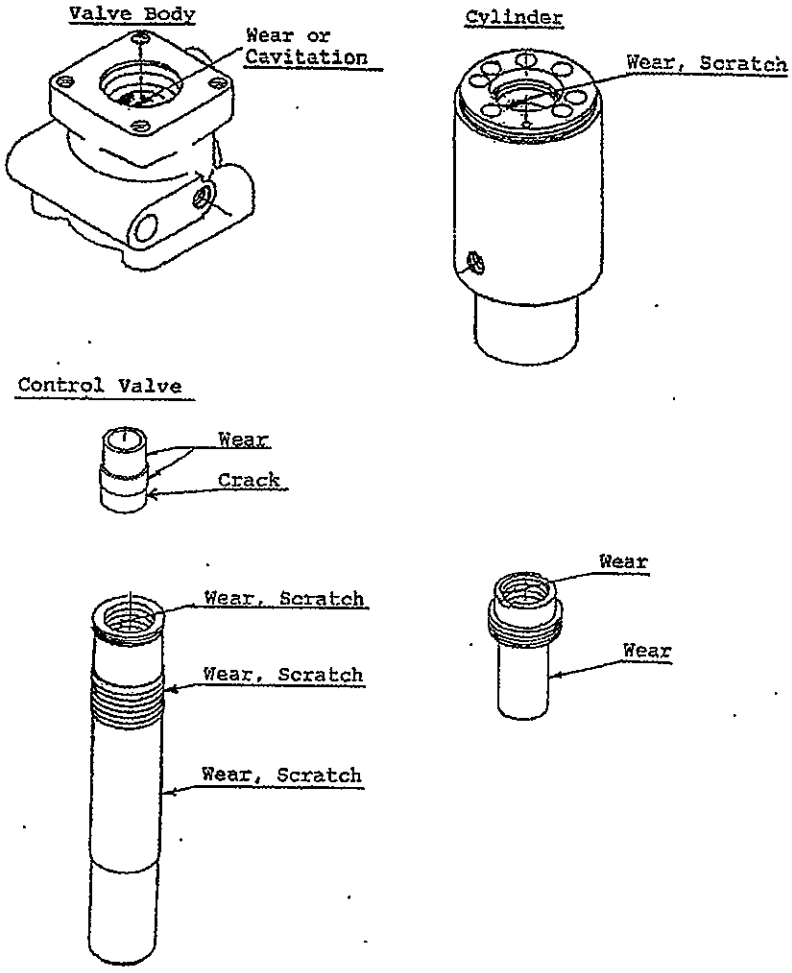


FIG.6-A

## V POST INSPECTION AND REPAIR




Chisel Bushes - Limit of wear

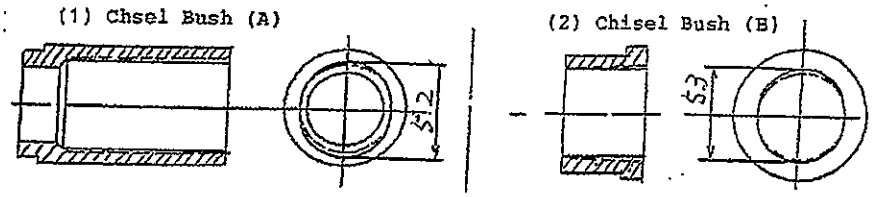
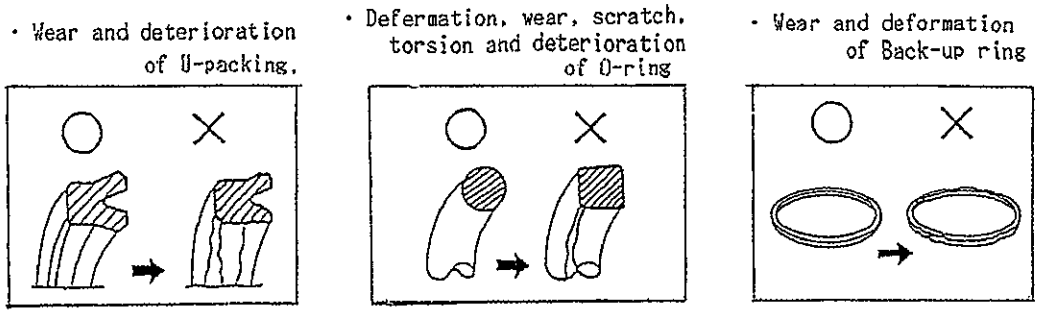
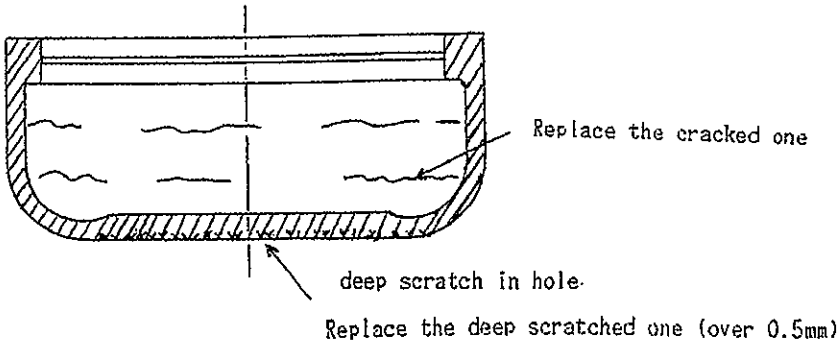


FIG.6-B

U-packing O-ring Back-up ring




Inspection of diaphragm Replace the cracked one



## 10. ASSEMBLING

1. Notice before assembling

(1) Wash and thoroughly clean all the parts.

(2) Assemble in appropriate conditions, dust will hinder the efficiency of the breaker

(3) When you assemble the seals (packing, o-rings), always apply hydraulic oil.

(4) Be careful not to damage the moving parts ( piston and cylinder ).

2. Assembling

(1) Pressing the bushes into front end ( see Fig. 1 )

To press the bush (A) / (B) into no.2 front end, use the hydraulic press machine which has over 10-15 ton power and 60 mm stroke.

(A) After washing the inside of front end by gasoline, put up it on a stand and apply hydraulic oil.

(B) Apply hydraulic oil to the outside surface of no.4 bush A and set the pushing rod on it.

(C) Press the bush A slowly into the front end.

(D) By the same method, insert no.5 bush B.

(2) Assembling of accumulator ( see Fig. 2 )

(A) Wash no.11 shell and fix it on the vise.

(B) Put no.10 diaphragm into no.9 lid.

(C) Apply hydraulic oil inside of shell and on the threads of it.
Apply the oil outside surface of diaphragm, too.

(D) Being careful with the threads of the shell, assemble the shell and lid slowly using the special tool T-2408 handle.

(E) Screw them until the surface of the seal and the threads of the lid have reached the same level using a torque at over 20 kgf · m.

(F) Thrust no.33 seal washer and no.8 cap bolt into the screw of the center of the lid.

(G) Make gas charging into it. See a separate paragraph about nitrogen charging.

(H) Install no.3 cap and screw it.

(I) Thrust no.20 back-up ring, no.21 o-ring G50 on it.

(3) Assembling of valve body ( see Fig.2 and parts list )

(A) Install no.6 control valve into no.1 valve body and confirm the control valve moves smoothly with your finger. If the movement is not smooth, file inside of valve body with such as sand paper etc..

(B) Install 4 pieces of no.15 stud bolts into no.2 valve body. Then, apply the high strength screw binding agent (three-bond no.1303B) into the thread part and screw them into valve body.

(C) Install 2 pieces of no.22 plug into the valve body.

(D) Install no.23 steel ball, no.13 spring into no.5 inner tube and screw no.23 plugs

(E) Insert inner tube ass'y into the valve body and reconfirm if the control valve moves smoothly with your finger.

(4) Assembling cylinder (see Fig.3 of disassemble and Fig.3 of assemble

(A) Apply oil to no.28 u-cup packing, no.29 dust seal and inside of no.3.

(B) Insert u-cup packing into the cylinder and set it firmly in the groove of the cylinder as in Fig.3.

(C) By the same method, insert no.29 dust seal.

(D) Drive-in no.27 spring pin ( dia 6 x 20 L ).

(E) Attach no.26 o-ring.

(F) Screw 1 pce of no.22 plug and 3 pieces of no.24 plug in the cylinder.

(5) Whole complete assembling (see Fig.3/4 disassemble/ assemble)

(A) Set the front end ass'y to a suitable stand.

(B) Apply oil to the outside of no.4 hammer piston and insert it into cylinder assembly. Insert no.12 inner tube ass'y into the inside of the piston.

(C) Insert cylinder ass'y into the front end.

At this time, confirm the spring pin on the cylinder is in the same position described in the drawing of parts list.

(D) Apply oil onto no.26 o-ring attached in the cylinder and install the valve body ass'y into the cylinder. Fit the end of stud bolts into the holes of the front end and press the all components firmly.

(E) Apply the low-strength screw binding agent (Three bond no.1342) to the threads of stud bolts and attach 4 pieces of no.18 nuts together with no.30 spring washers.

(F) Tighten the 4 nuts evenly (Tightening torque 13kgf · m ).

(G) Then, put your finger into the center of the valve body and confirm the control valve can move up and down smoothly.

(H) Apply oil to the o-ring of no.38 accumulator ass'y and install the ass'y into the valve body.

(I) Install 4 pieces of no.19 bolts and tighten them (Tightening torque10kgf · m)

(J) Tape the seal tape on 2 pieces of no.34 male 450 elbow nipple and screw them to the valve body (Tightening torque 8 kgf · m ).

(K) Install the hose with male coupler to the upper side of no. 34 elbow nipple and the hose with female coupler to the lower side of it. (Tightening torque 8 kgf · m )

(L) Attach no.31 grease nipple to the front end.

(6) Assembling of breaker bracket (see Fig. 1 of disassemble )

(A) Set up the breaker on a suitable stand.

(B) Mount no.1 bracket to breaker body.

(C) Install no.2 pipes to the bracket and insert no.8 bolts in the pipes. Tighten them with no.9 spring washers and no.10 nuts. (tightening torque 20 kgf · m)

(D) In the same method, tighten the nuts for valve body and front end.

(E) According to the excavators, install 4 pieces of no.4 bush and 2 pcs. of pin.

FIG.1

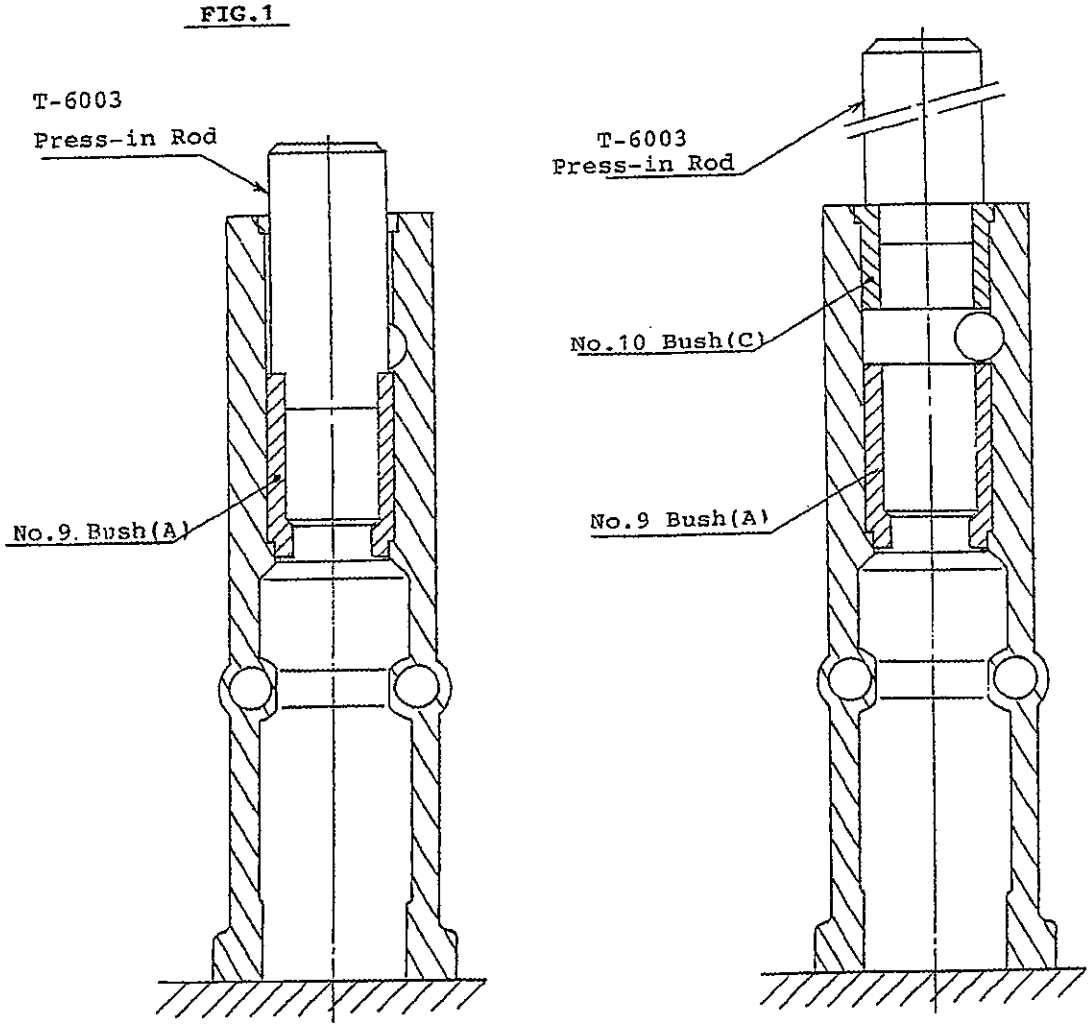

T-6003
Press-in Rod
No.9 Bush(A)
T-6003
Press-in Rod
No.10 Bush(C)
No.9 Bush(A)

FIG.2

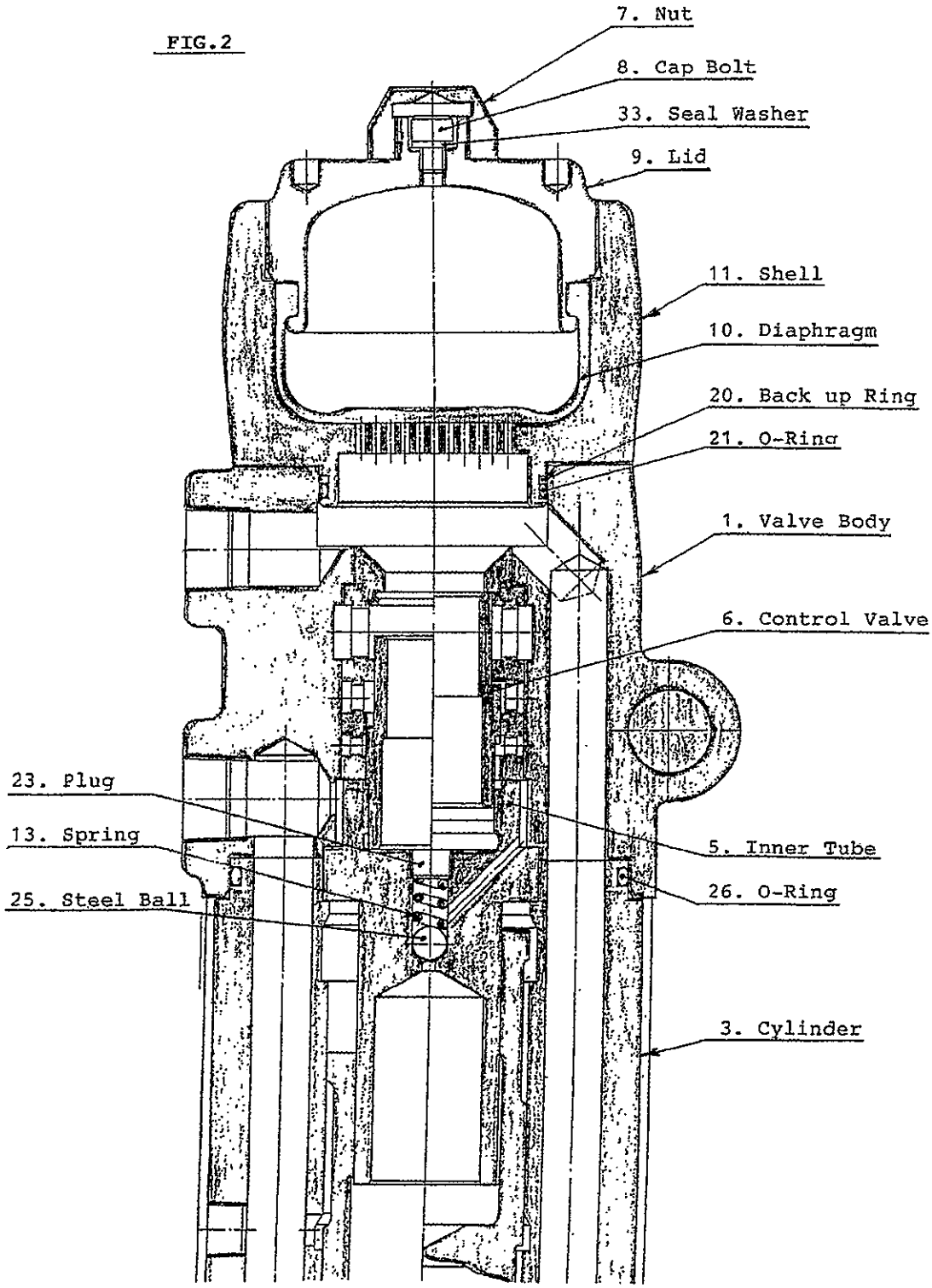
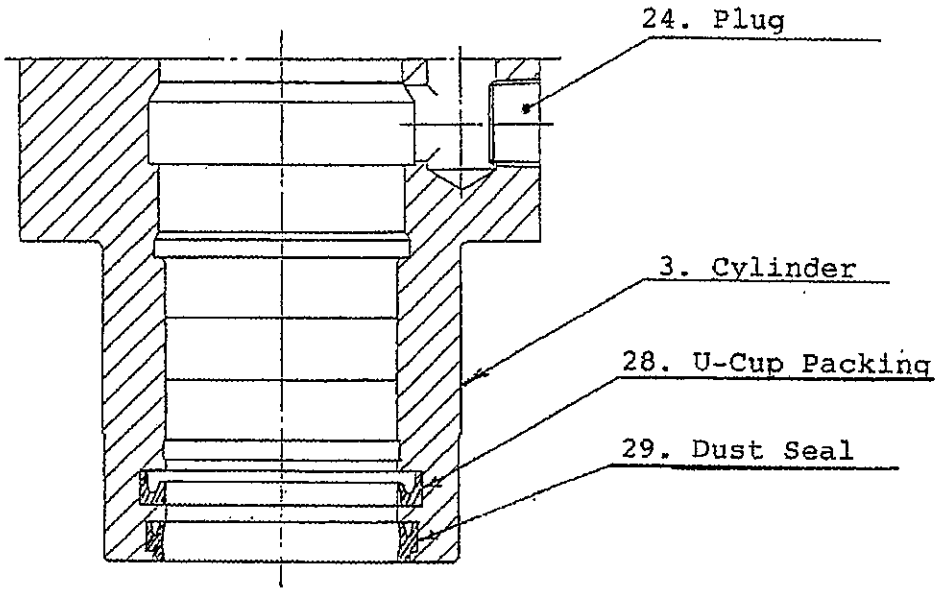

7. Nut
8. Cap Bolt
33. Seal Washer
9. Lid
11. Shell
10. Diaphragm
20. Back up Ring
21. O-Ring
1. Valve Body
6. Control Valve
23. Plug
13. Spring
25. Steel Ball
5. Inner Tube
26. O-Ring
3. Cylinder

FIG.3




Attachment of packing and dust seal

## 11. ACCUMULATOR GAS CHARGING

**1. Charging preparation.**

**1) Remove the accumulator surface protection nut.**

**2) Attach the charging valve to the screw on the accumulator surface and tighten it using your hand.**

**3) By means of the charging valve rubber hose connect the nitrogen gas valve and charging valve.**

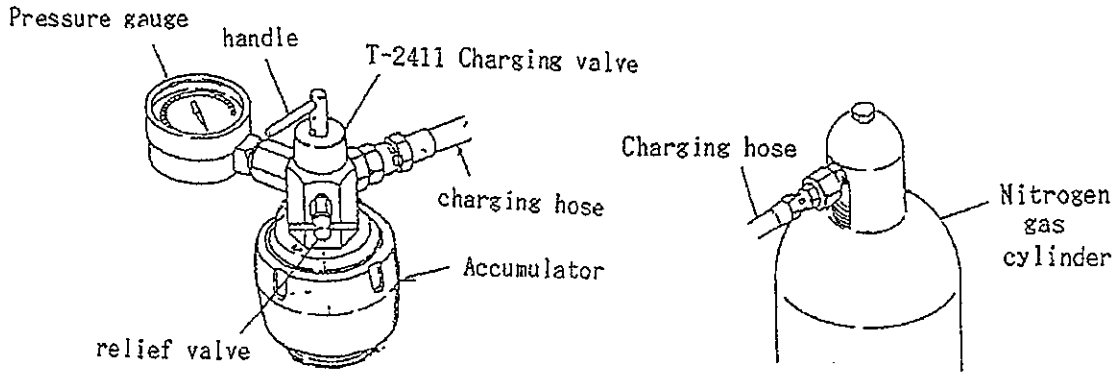
**4) Shut the charging valve relief valve.**

**2. Charge**

**1) Confirm that the accumulator bolt is shut and turn the nitrogen gas valve to the right, using the pressure gauge to open the mouth of the cylinder confirm that the nitrogen gas pressure is over 65kg/cm2. After confirming this, immediately turn the handle to the right and close the mouth of the cylinder.**

**2) Verify the condition by using the pressure gauge and confirm whether the gas is leaking or not.**

**3) While looking at the pressure gauge turn the handle of the charging valve to the left slowly; open the accumulator relief valve so that the reading on the pressure gauge indicator goes down, at this point stop the operation.**



4) While looking at the pressure gauge turn the valve of the nitrogen cylinder to the right, adjust the pressure gauge reading until it reaches 40 kg/cm2. Adjust the valve so that it opens and closes intermittently.

5) When it reaches 40 kg/cm2, close the valve of the nitrogen gas cylinder and keep the pressure at a constant level for about 1 minute.

6) When the pressure drops open the valve of the nitrogen gas cylinder and supply gas, when the pressure is high, open the relief valve and adjust the pressure.

7) Open fully the mouth of the nitrogen gas cylinder and close the mouth of the accumulator by turning the handle of charging valve to the right.

8) Next open the relief valve of charging valve; discharge the gas inside of the rubber hose.

9) When the pressure indicator drops, remove the charging valve.

10) Install the accumulator nut.

## 12. MAINTENANCE STANDARDS

1. Tightening torque of bolts andt nuts.

| No. | Item | Torque Standard | Remarks |
|---|---|---|---|
| 9 | M80, Lid | 20kgm | |
| 18 | M18 x 1.5, Nut | 13kgm±0.5 | w/locktight (low) |
| 19 | M12, Bollt | 10kgm±0.5 | |
| 22 | PT 1/4, Plug | 3kgm | |
| 23 | PT 1/8, Plug | 2.5kgm | |
| 24 | PT 3/8, Plug | 5kgm | |
| 34 | PT 1/2, Elbow Nipple, Male | 8kgm±1 | |
| 35 | PF 1/2, High Pressure Hose | 6kgm±0.5 | |
| 8 | M6, Cap Bolt | 1.2kgm±0.3 | |
| 10 | M20, Nut For Bracket | 20kgm±1 | w/locktight (low) |

2. Accumulator gas charging pressure is 40+2,-0kg/cm2

3. After assembling, supply grease from grease nipple.

## 13. PARTS LIST

(MAIN BODY)

| No. | Part No. | Part Name | Q'ty |
|---|---|---|---|
| 1 | MB13Z015A | VALVE BODY ASS'Y | 1 |
| 2 | MB13X002A | FRONT END | 1 |
| 3 | MB13X104A | CYLINDER | 1 |
| 4 | MB13Y105A | PISTON | 1 |
| 5 | MB13Z007A | INNER TUBE | 1 |
| 6 | MB13Z008A | CONTROL VALVE | 1 |
| 7 | MIKTE108A | NUT | 1 |
| 8 | 1120-413 | CAP BOLT | 1 |
| 9 | MB13Z009A | LID | 1 |
| 10 | 1110-421 | DIAPHRAGM | 1 |
| 11 | 1110-310-01 | SHELL | 1 |
| 12 | MB13Z010A | STUD BOLT | 4 |
| 13 | MIHTE107A | SPRING (P) | 1 |
| 14 | MB13Z013A | RETAINER PIN | 1 |
| 15 | MB850-040 | EXPANDER | 2 |
| 16 | MB13Z011A | BUSH (A) | 1 |
| 17 | MB13Z012A | BUSH (C ) | 1 |
| 18 | MIKTE115A | NUT (M18) | 4 |
| 19 | BH-12*70 | BOLT | 4 |
| 20 | OBG-50 | BACK-UP RING | 1 |
| 21 | OG-50 | O-RING G50 | 1 |
| 22 | BPH1-PT1/4 | HEX SOCKET TAPER PLUG PT1/4 | 2 |
| 23 | BPH1-PT1/8 | HEX SOCKET TAPER PLUG PT1/8 | 4 |
| 24 | BPH1-PT3/8 | HEX SOCKET TAPER PLUG PT3/8 | 3 |
| 25 | QB-5/16 | STEEL BALL | 1 |
| 26 | OG-95 | O-RING | 1 |

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| No. | Part No. | Part Name | Q'ty |
|---|---|---|---|
| 27 | PR-10*25 | SPRING PIN | 1 |
| 28 | IUIS-50-60-6 | U-CUP PACKING | 1 |
| 29 | LBI50,58,5,6.5 | DUST SEAL | 1 |
| 30 | WF-18-2L(JISB1252) | WASHER | 4 |
| 31 | PR-8*50 | SPRING PIN | 1 |
| 32 | A-PT1/8H | GREASE NIPPLE | 1 |
| 33 | W6S1 | SEAL WASHER | 1 |
| 34 | OS-22.4 | O-RING S22.4 | 1 |
| | | | |
| | | | |
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| | | | |
|---|---|---|---|
| A1 | MB13Z501A | ACCUMULATOR ASS'Y | 1 |
| A2 | MB13Z510A | CYLINDER EXZ ASS'Y | 1 |
| A3 | MB13Z503A | INNER TUBE ASS'Y | 1 |
| A4 | MB13Z504A | FRONT END ASS'Y | 1 |
| A5 | MB13Z513A | VALVE BODY EXZ ASS'Y | 1 |
| A6 | MB24Z509A | CAP BOLT ASS'Y | 1 |
| A7 | MB24Z508A | CAP NUT ASS'Y | 1 |
| A8 | MB13Z512A | ACCUMULATOR SEAL KIT | 1 |
| A9 | MB13Z039A | SEAL KIT | 1 |

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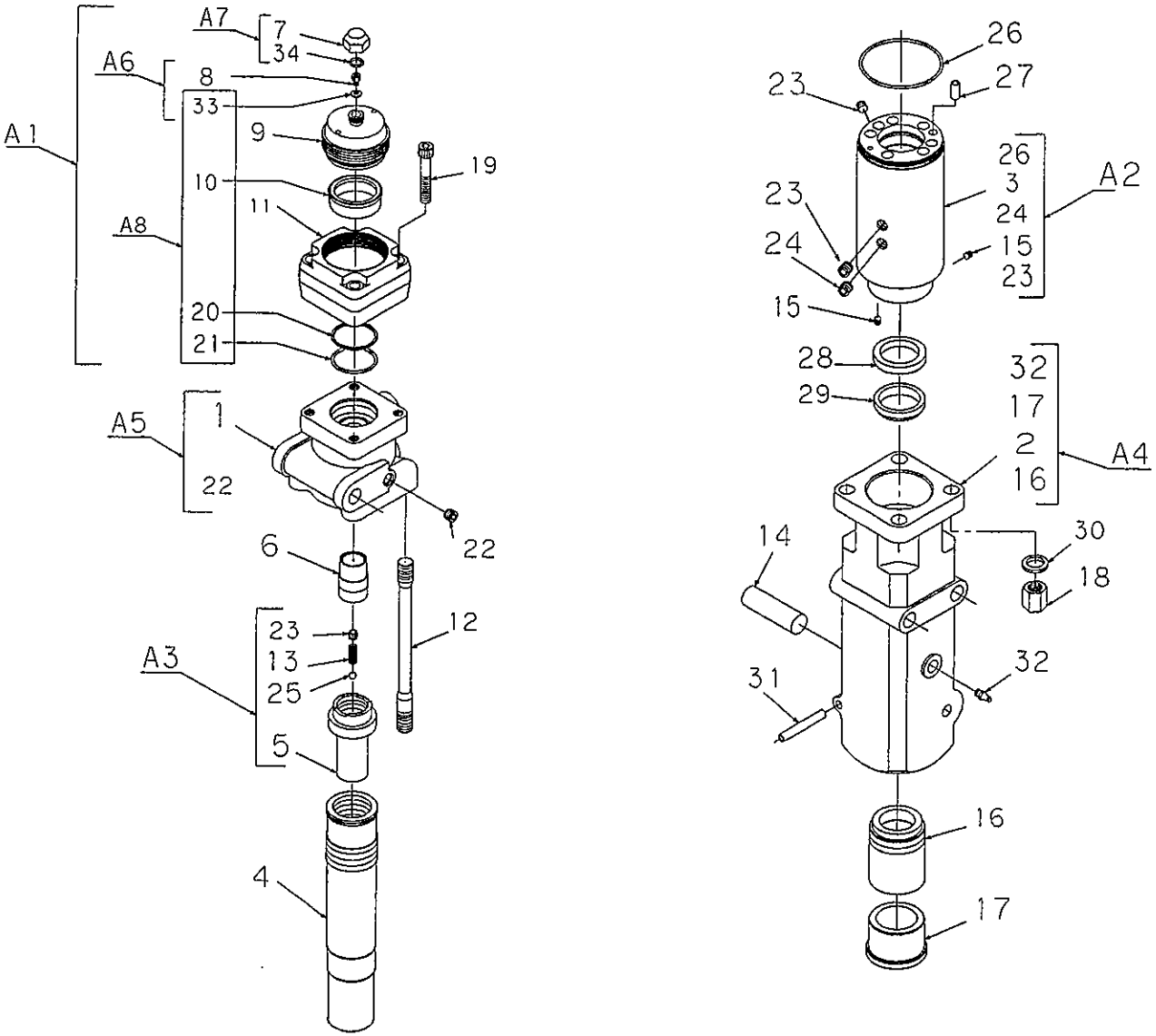
A1
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# EC DECLARATION OF CONFORMITY
DECLARATION DE CONFORMITE CE
EG-KONFORMITÄTSERKLÄRUNG
EG-VERKLARING VAN OVEREENSTEMMING

CE

MARUZEN KOGYO CO., LTD
155-8 NAGABUSE MISHIMA-SHI
SHIZUOKA KEN 411-0824 JAPAN

Declare that the machine described below
Déclare que la machine décrite ci-dessous
Erklärt, daβ die unten beschriebene Maschine
Verklaart dat onderstaande beschreven machine

Hydraulic Breaker / Marteau Hydraulique / Martello Idraulico / Hydraulik Hämmer
BH801
Serial number/Numéro de série/Serien nummer/Reeksnummer/ : 8171159～

Complies to the provision of the "machinery directive" 98/37/EC
est conforme aux dispositions de la directive "machines" 98/37/CE
mit den Anforderungen der Richtline 98/37/EG übereinstimmt
overeenstemt met de voorschiften inzake "machine richtlijnen" 98/37/EG

Also complies with the provisions of the "noise emission by equipment for use outdoors" 2000/14/EC
est également conforme aux dispositions de la directive "emission sonore des equipments utilisés à l' éxtérieur des bâtiments" 2000/14/CE
Und auch die Richtline "Geräuschemissionen von zur Verwendung im Freien vorgsehen Geräten und Maschinen" 2000/14/EG
Stemt eveneens overeen met de voorschriften inzake "geluidsproductie door het materiel veroorzaakt buiten de gebouwen" 2000/14/EG

Measured sound power level: 118dB LwA
Niveau de puissance acoutique measuré: 118dB LwA
Gemessener Schalleistungspegel: 118dB LwA
Opgemeten Geluidsvermogensniveau: 118dB LwA

Guaranteed sound power level: 121dB LwA
Niveau de puissance acoustique garanti: 121dB LwA
Garantierter Schalleistungspegel: 121dB LwA
Gewaardorgd geluidsvermogensniveau: 121dB LwA

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