

MODEL NV 45AB

1. PRECAUTIONS IN DISASSEMBLY AND REASSEMBLY:

As described above, the Model NV45AB basically consists of four sections: The Output Section (Main Body), Valve Section, Nail Feeding Section, and Magazine Section. The descriptions below describe important points in the disassembly and reassembly of these four sections. The circled numbers in the description correspond to the item numbers in the Parts List and exploded assembly diagram.

CAUTION: Prior to disassembly/reassembly, ensure without fail that the air hose is disconnected from the Nailer, the compressed air is completely discharged, and all nails are removed.

1-1. Disassembly and Reassembly of the Output Section:

(1) Piston Damper (28), Damper Sheet (29), Damper Ring (27) and related parts.

Tools Required:

- 5 mm (0.197") Hexagon Bar Wrench
- Plus Screwdriver
- $\phi 3$ (0.118") Roll Pin Remover

(a) Disassembly: (Refer to Fig. 9)

- Remove the M5 x 20 Machine Screw (38), and the Magazine Ass'y (107) can be disassembled.

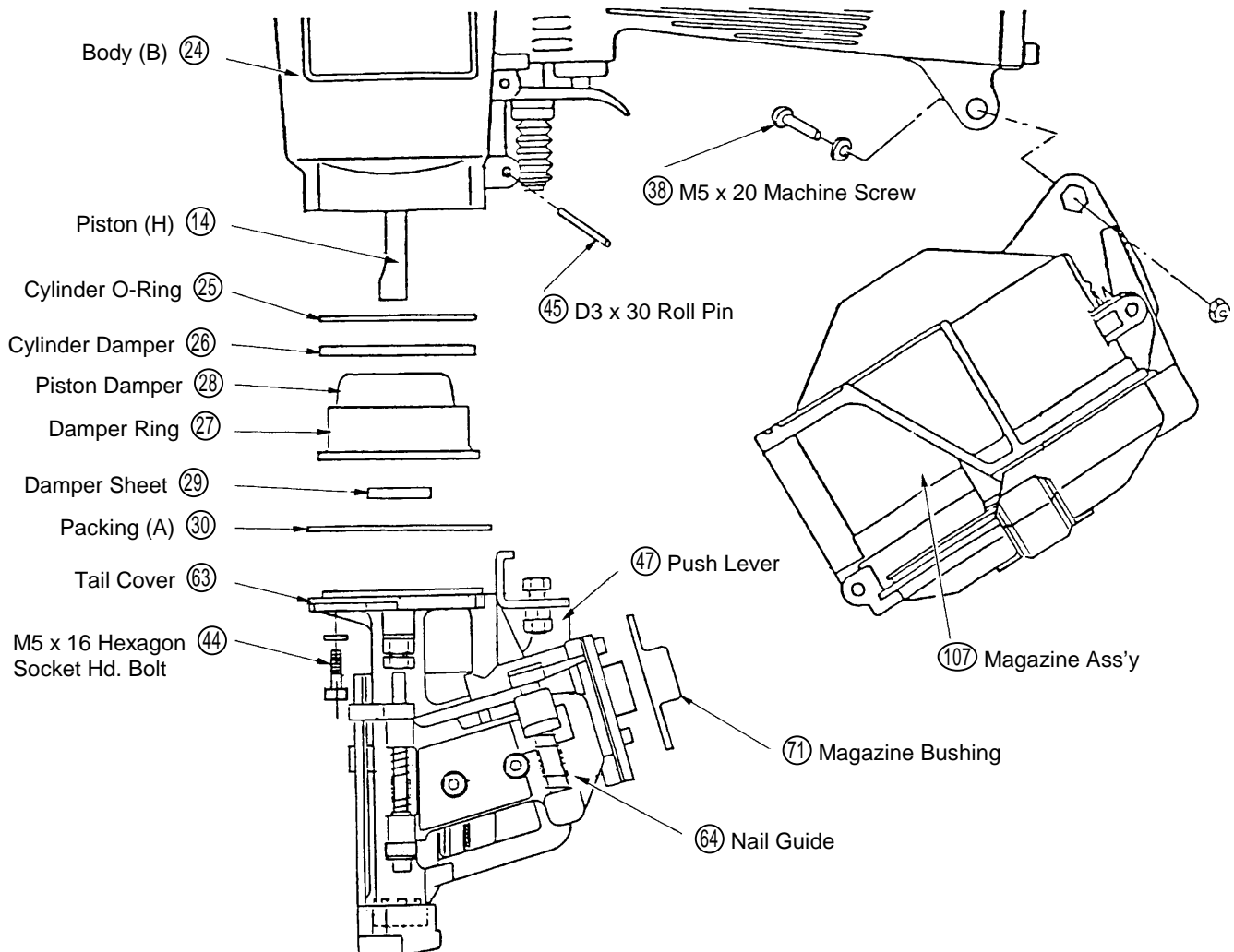


Fig. 9

- From Body (B) (24), extract the D3 x 30 Roll Pin (45) which fastens and guides the Push Lever (47). Then remove the M5 x 16 Hexagon Socket Hd. Bolts (44) which fasten the Tail Cover (63), and remove the Tail Cover and Push Lever (47) from Body (B) (24) in a single body. (At this time, the four M5 x 16 Hexagon Socket Hd. Bolts (44) can be easily removed after opening the Nail Guide (64).)

At this time, it is easy to remove the four M5 x 16 Hexagon Socket Hd. Bolts (44) by opening the Nail Guide (64).

- When disassembly as described above is completed, Packing (A) (30), the Damper Sheet (29), Piston Damper (28), Damper Ring (27), and Cylinder Damper (26) can be taken out in sequence from the lower portion of Body (B) (24). As illustrated in Fig. 10, when extracting the Damper Sheet (29) from Piston (H) (14) from Body (B) (24), (do not take out completely) and push the top end of Piston (H) (14) with your thumbs. At this time, pay particular attention not to damage the holes of the Damper Sheet (29).

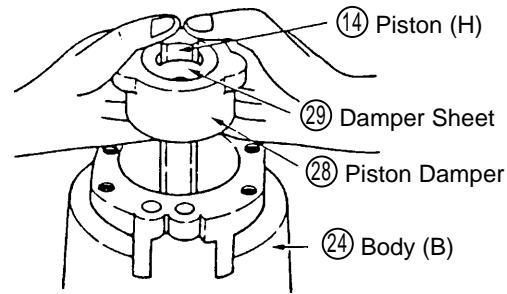


Fig. 10

(b) Reassembly:

Assembly can be accomplished by following the disassembly procedures in reverse. However, special attention should be given to the following items.

- When reassembling Piston (H) (14), ensure that the semi-circular groove side is facing toward the Magazine side. (See Fig. 11)
- When reassembling the Damper Sheet (29) onto Piston (H) (14), pry open the slit portion of the Damper Sheet and press it on from the Drive Bit side, ensuring without fail that the groove on the outer circumference of the Damper Sheet is on the semicircular groove side of Piston (H) as illustrated in Fig. 11.

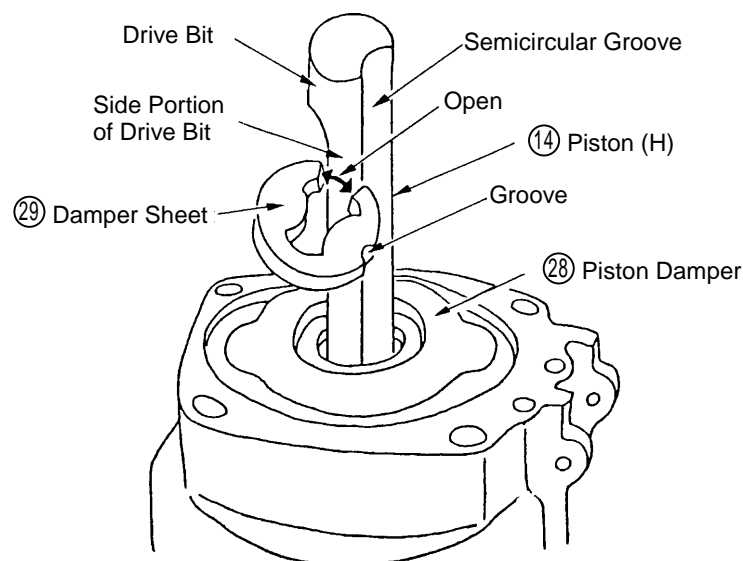


Fig. 11

- Reassemble Packing (A) (30) so that its air vents are properly aligned with the matching air vents on the Tail Cover (63) and Body (B) (24).
 - Assemble Body (B) (24), Tail Cover (63), and Magazine Ass'y (107) in accordance with the following procedures:
 - (I) First, assemble the Tail Cover (63) and Push Lever (47). Then, fasten Body (B) (24) and the Tail Cover (63) with the four M5 x 16 Hexagon Socket Hd. Bolts (44), and tighten them to rated torque.
 - (II) Fasten the Push Lever (47) with the D3 x 30 Roll Pin (45).
 - (III) With the Magazine Bushing (71), assemble the Tail Cover (63) and Magazine Ass'y (107) and confirm that they are securely fastened. Then, fasten the Magazine Ass'y (107) to Body (B) (24) with the M5 x 20 Machine Screw (38).
 - Confirm that each fastening nut and screw is tightened to rated torque as set forth in Paragraph 1-5.
- (2) Cylinder (18), Piston (H) (14) and Related Parts:
- Tools Required:
- 5 mm (0.197") Hexagon Bar Wrench
 - Plus Screwdriver
- (a) Disassembly: (Refer to Fig. 12)
- As described in Paragraph 1-1- (1), disassemble the Tail Cover portion, and remove Damper Sheet (29) from the Piston Damper (28).

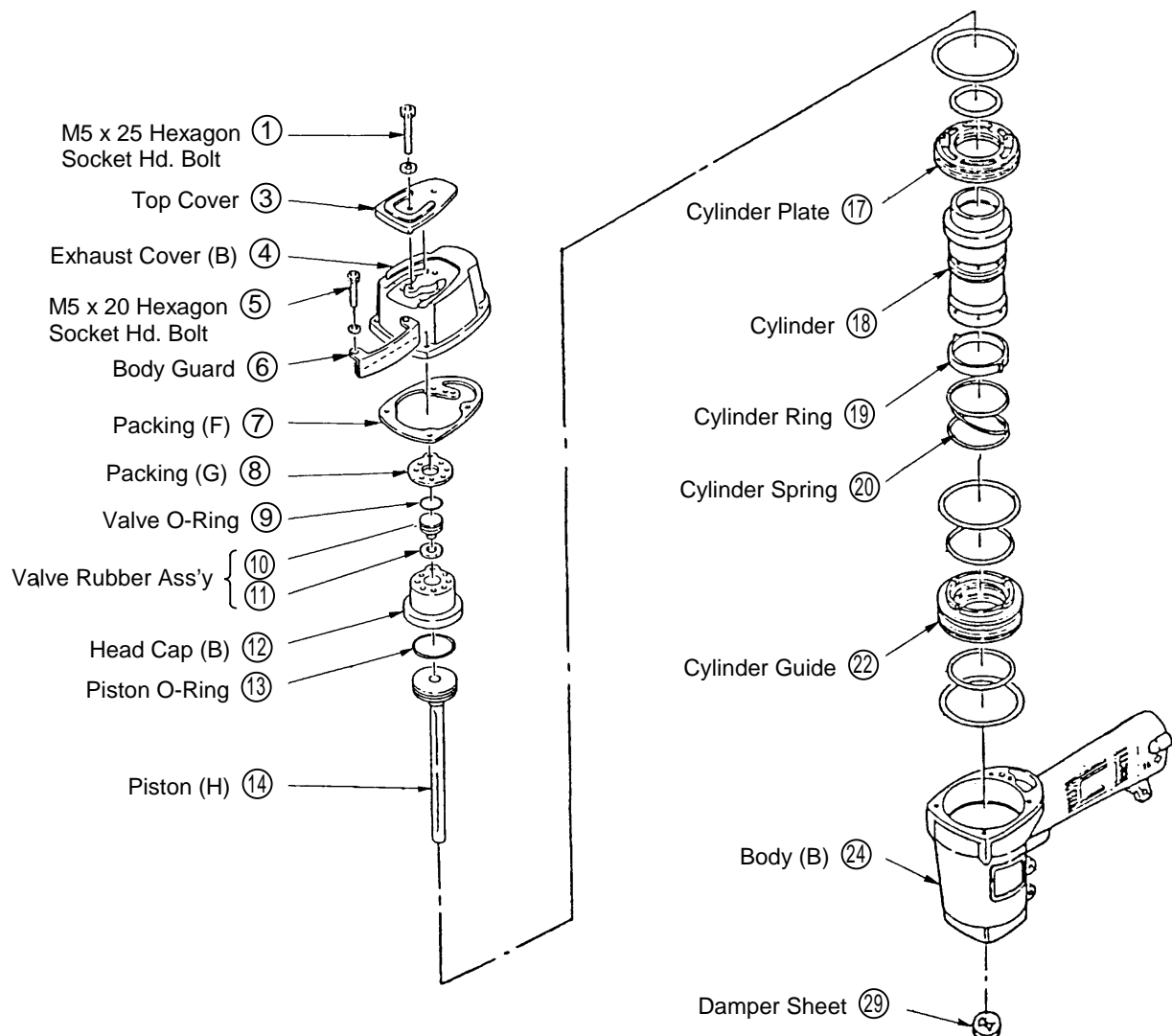


Fig. 12

- After removing the four M5 x 20 Hexagon Socket-Hd. Bolts (5) and Exhaust Cover (B) (4), Piston (H) (14) can be disassembled.
- Next, insert two of the M5 x 20 Hexagon Socket Hd. Bolts (5) into the provided threaded holes in the Cylinder Plate (17). Holding the two bolts, lift upward while turning the Cylinder Plate. When the Cylinder Plate (17) has been removed, the Cylinder (18), Cylinder Spring (20) and related parts which make up the Output Section can be removed. If the Cylinder (18) is difficult to remove, it may be pushed downward and removed from the lower parts of Body (B) Ass'y (24).

(b) Reassembly:

Reassembly can be accomplished by following the disassembly procedures in reverse. However, special attention should be given to the following items.

- Assemble Piston (H) (14) so that its semi-circular grooved side is facing toward the Magazine side. (Same as Paragraph 1-1- (1) (b))
- Ensure that the air vent holes on Packing (F) (7) are properly aligned with the matching holes in Body (B) Ass'y (24).

(3) Hard Cap (B) Ass'y (12), Valve Rubber Ass'y (10), and related parts: (Refer to Fig. 12)

(a) Disassembly:

- Remove Exhaust Cover (B) Ass'y (4). (Refer to Paragraph 1-1- (2).)
- Remove the two M5 x 25 Hexagon Socket Hd. Bolts (1), and disassemble Head Cap (B) Ass'y (12), the Valve Rubber Ass'y (10), and Packing (G) (8).

(b) Reassembly:

Reassembly can be accomplished by following the disassembly procedures in reverse. However, special attention should be given to the following items.

- Ensure that the air vent holes in Packing (G) (8) are properly aligned with the matching holes in Head Cap (B) Ass'y (12) and Exhaust Cover (B) Ass'y (4).

1-2. Disassembly and Reassembly of the Valve Section: (Refer to Fig. 13)

(1) Trigger Valve Bushing (60), Valve Bushing (53), and related parts:

Tools Required:

- ϕ 3 mm (0.118") Roll Pin Remover
- Minus and Plus Screwdrivers
- 5 mm (0.197") Hexagon Bar Wrench

(a) Disassembly:

- Disassemble the Magazine Section and Tail Cover portion from the main body. (Refer to Paragraph 1-1)
- Extract the D3 x 30 Roll Pin (45), and remove the Trigger (62), Trigger Plunger (61) and Plunger (B) (55).
- Insert the minus screwdriver into the groove on the Trigger Valve Bushing (60) and, while being very careful not to damage the groove, turn it counter-clockwise to loosen it.
- Next, extract the Trigger Valve Bushing (60) and Valve Bushing (53).

(b) Reassembly:

Reassembly can be accomplished by following the disassembly procedures in reverse. However, special attention should be given to the following items.

- Thoroughly remove any tar or dirt which may be stuck on the nose portion of the Tail Cover (63) and the inside sliding portion of the Push Lever (47).
- Pay particular attention not to twist the Plunger Spring (50), and break or damage the O-Rings.

- After mounting the Valve Rubber Cover (56) on Plunger (B) (55), reassemble Plunger (B) into the Valve Bushing (53). As illustrated in Fig. 14, ensure that the lips of the Valve Rubber Cover (56) are properly inserted into grooves provided between the Valve Bushing (53) and Plunger (B) (55). (Refer to Fig. 14)
- On completion of reassembly, ensure that when Plunger (B) (55) is pushed up with a finger and released, it smoothly returns to its original position.

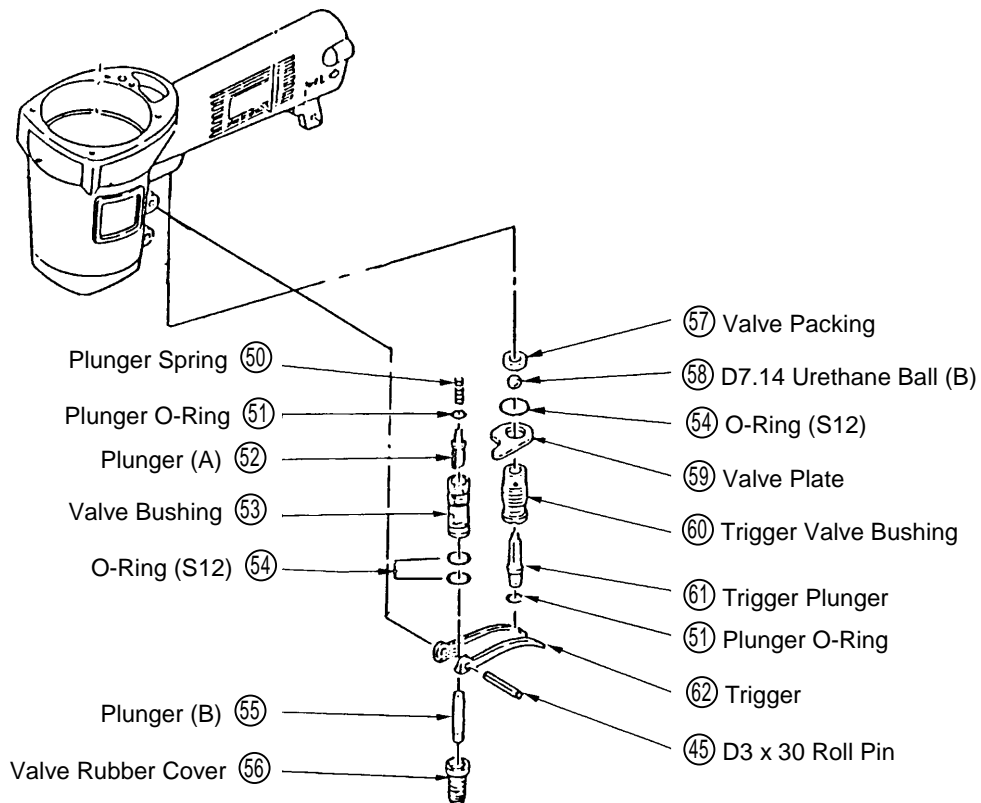


Fig. 13

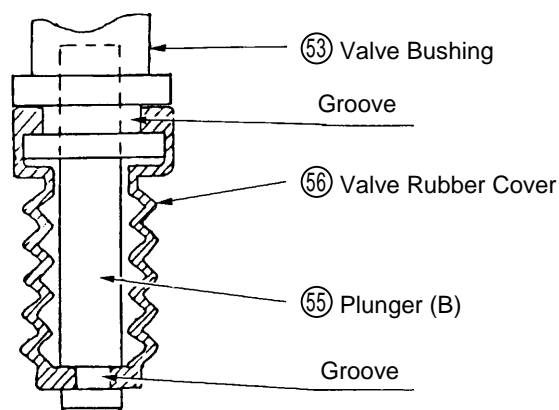


Fig. 14

(2) Adjustment of the Push Lever (47):

(Refer to Fig. 15)

Tools Required:

- 8 mm (0.315") Spanner

- (a) To adjust the Push Lever (47), loosen the M5 Nut (49), and turn the Safety Bolt (48).
- (b) Perform adjustment so that the distance between the bottom end of the Tail Cover (63) and the bottom end of the Push Lever (47) is $5 \pm 0.5 \text{ mm}$ ($0.197 \pm 0.0020''$) when the Push Lever (47) is pushed up so that it pushes up Plunger (B) (55) to a position where it, in turn, begins to push up Plunger (A) (52). (When Plunger (B) is pushed upward, you will feel the slight resistance when it reaches the position where it begins to push up Safety Plunger (A).)
- (c) On Completion of adjustment, securely tighten the M5 Nut (49).

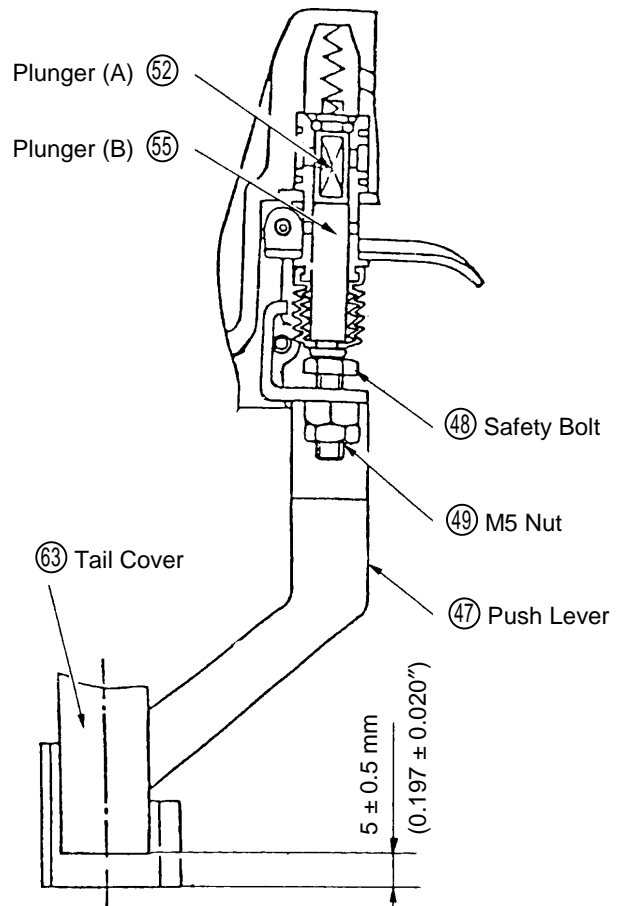


Fig. 15

1-3. Disassembly and Ressembly of the Nail Feeding Section:

(1) Nail Guide Portion:

Tools Required:

- 4 mm (0.157") Hexagon Bar Wrench, 5 mm (0.197") Hexagon Bar Wrench
- Plus Screwdriver
- $\phi 3 \text{ mm}$ (0.118") Roll Pin Remover

(a) Disassembly: (Refer to Fig. 16)

- By following the procedures in Paragraph 1-1- (1), disassemble the Push Lever (47) from the main body.
- Next, after the Nail Guide Shaft (86) has been extracted from the Tail Cover (63), the entire Nail Guide Section, Spring (A) (90) and Plunger O-Ring (51) can be taken out.
- After removing the M4 x 6 Hexagon Socket Hb. Bolts (78), the Nail Guide Cover (77), Main Stopper Spring (83) and Sub Stopper Spring (82) can be taken out.
- After removing the D3 x 28 Roll Pin (79), the main Nail Stopper (80) and Nail Stopper (81) can be taken out.
- To disassemble the Guide Lock portion, extract the D3 x 10 Roll Pin (74) and take off the Lock Shaft (73). The Guide Lock (75) and Spring (76) can then be taken off.

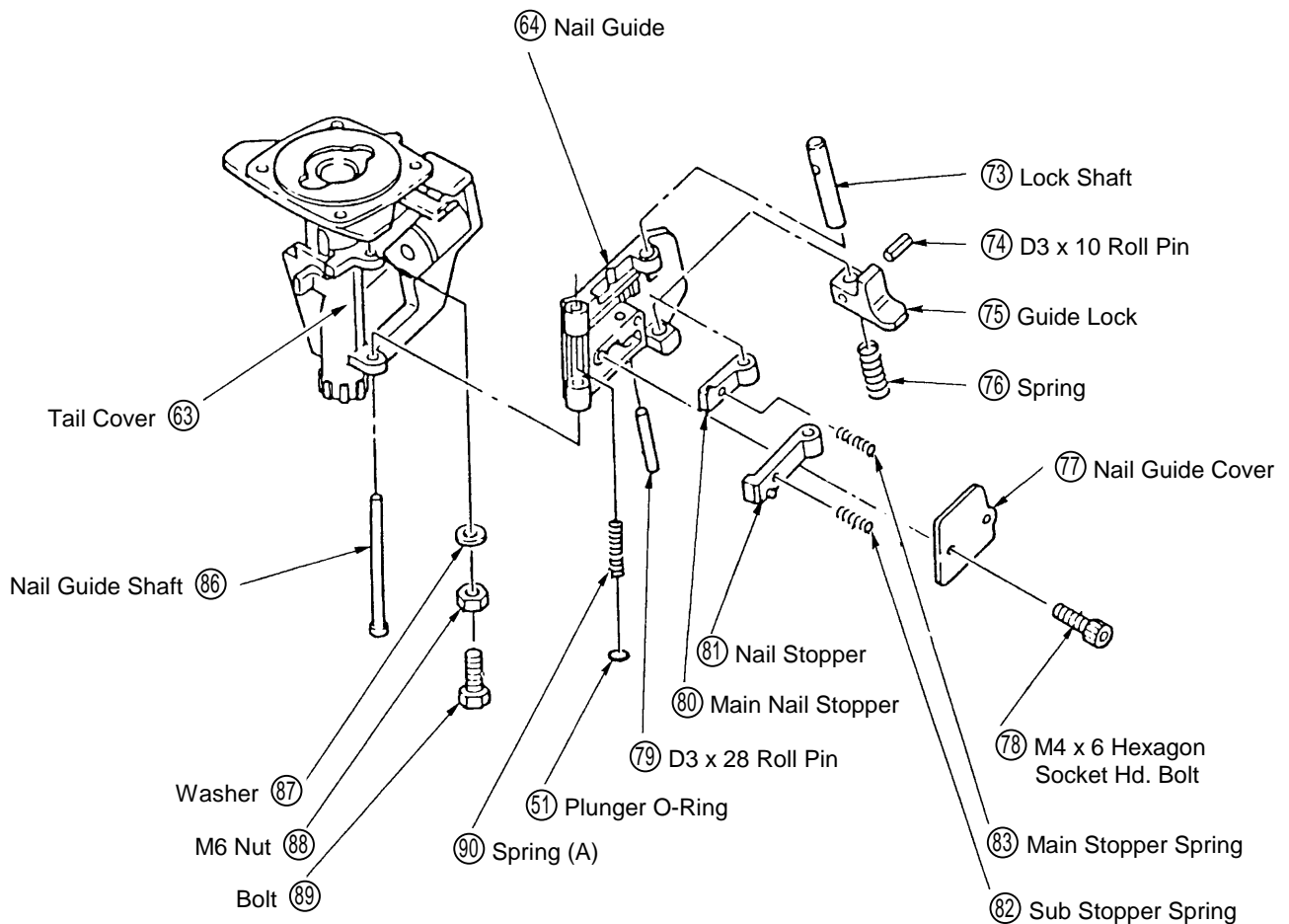


Fig. 16

(b) Reassembly:

Reassembly can be accomplished by following the disassembly procedures in reverse. However, special attention should be given to the following items.

- Prior to reassembly, thoroughly remove tar, dirt and other foreign matter from the latch groove on the Nail Guide ⑥4.
- When reassembling the Main Stopper Spring ⑧3 and Sub Stopper Spring ⑧2, carefully ensure that they are properly inserted into the holes on the Main Nail Stopper ⑧0 and Nail Stopper ⑧1.
- On completion of reassembly, push up the Main Nail Stopper ⑧0 and Nail Stopper ⑧1 by hand, and confirm that they return smoothly.

(2) Feed Piston ⑥7 Feeder ③4 and related parts: (Refer to Fig. 17)

Tools Required:

- 5 mm (0.197") Hexagon Bar Wrench
- Plus Screwdriver

(a) Disassembly:

- By following the procedures in Paragraph 1-1- (1) , disassemble the Magazine Ass'y ⑩7 from the Output Section.
- Remove the Magazine Bushing ⑦1 from the Tail Cover ⑥3.
- Remove the M5 x 8 Hexagon Socket Hd. Bolts ③1, and detach the Guard ③2 from the Tail Cover ⑥3.

- After removing the M5 x 10 Hexagon Socket Hd. Bolts (72), the Feed Piston Cover (70) and Packing (E) (69) can be taken out.
- Remove the Feeder Shaft Ring (36) from the Feeder Shaft (35), and extract the Feeder Shaft (35) from the Feed Piston (67). The Feeder (34) Feeder Spring (33) can then be removed.
- Next, the Feed Piston (67) can be taken out of the Tail Cover (63).

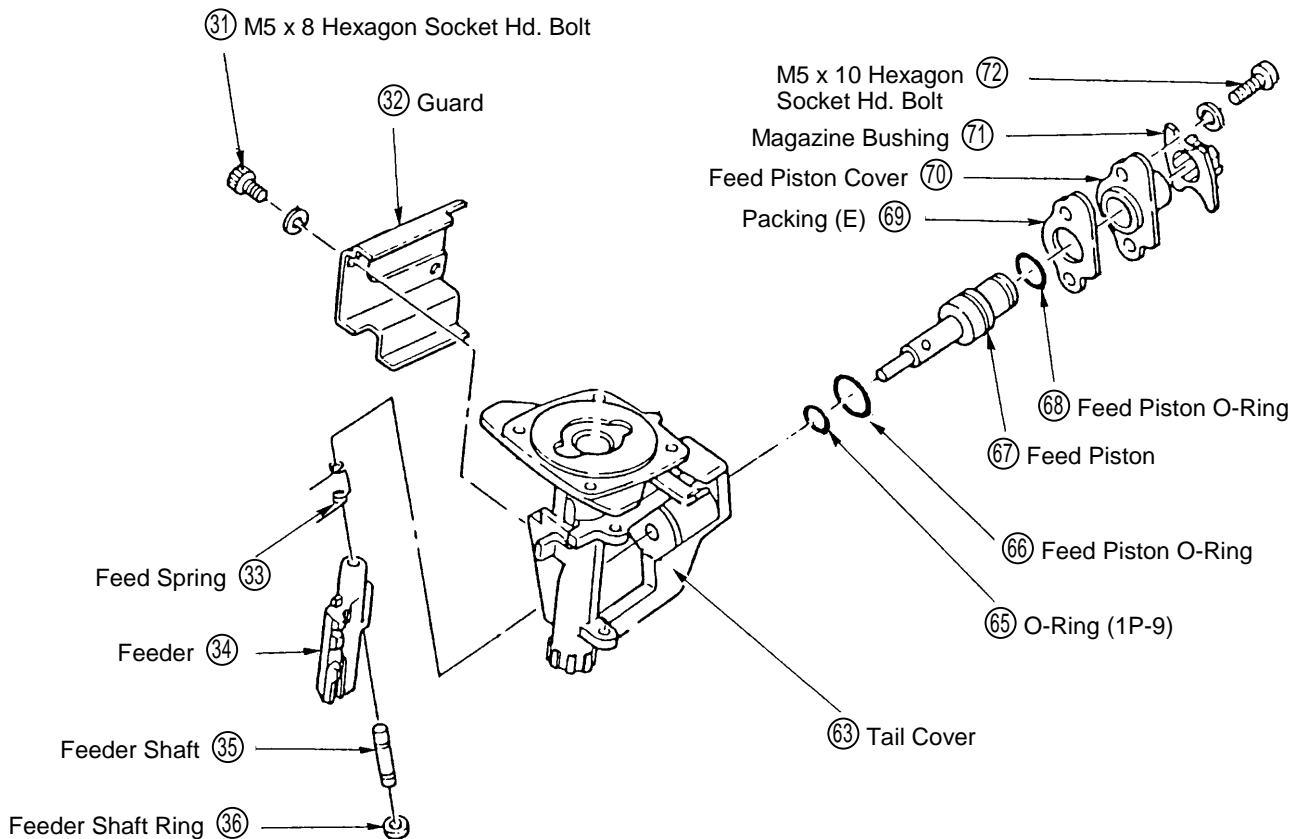


Fig. 17

(b) Reassembly:

Reassembly can be accomplished by following the disassembly procedures in reverse. However, special attention should be given to the following items.

- Prior to reassembly, thoroughly remove any tar or dirt which may be stuck on the Guard (32) or on the sliding portion of the Feeder (34).
- Assemble the Feeder Shaft Ring (36) onto the Feeder Shaft (35) so that the chamfered inner surface is facing toward the Feeder Spring (33) side.
- Ensure that the hooked portions at both ends of the Feeder Spring (33) are properly inserted into the provided grooves on the Feeder (34).
- Prior to reassembly, coat grease (Hitachi Motor Grease No. 29, Code No. 930035, is recommended) on the O-Ring (1P-9) (65), the Feed Piston O-Ring (66) (68), and the O-Ring sliding portions of the Feed Piston (67) and Tail Cover (63). However, as excessive grease will cause improper movement of the Feed Piston (67), be very careful during grease application. (This is particularly important if the tool is to be used at relatively low air pressures.)
- Carefully clean the air passage of the Tail Cover (63). Any dust or foreign matter in the air passage will cause malfunction of the Feed Piston (67).

(3) Disassembly and Resassembly of the Bolt (89) (for driving depth adjustment) : (Refer to Fig. 18)

Tools Required:

- Wrench for M6 Bolt

(a) Disassembly:

- Loosen the M6 Nut (88) .
- Next, rotate the Bolt (89) to push the Nail Guide Shaft (86) down to its lowest possible position.

The Bolt (89), M6 Nut (88) and Washer (87) can then be taken out.

(b) Reassembly:

Reassembly can be accomplished by following the disassembly procedures in reverse. However, special attention should be given to the following items.

- After pushing the Nail Guide Shaft (86) up to its highest possible position, tighten the M6 Nut (88) to the Tail Cover side so that the clearance between the Bolt (89) and the Nail Guide Shaft (86) becomes 0 - 1 mm (0 - 0.04"), as illustrated in Fig. 18.
- If the Bolt (89) is positioned higher than the tolerance prescribed above, it may push up the Piston Damper (28) and cause air leakage. Be very careful to ensure correct assembly.

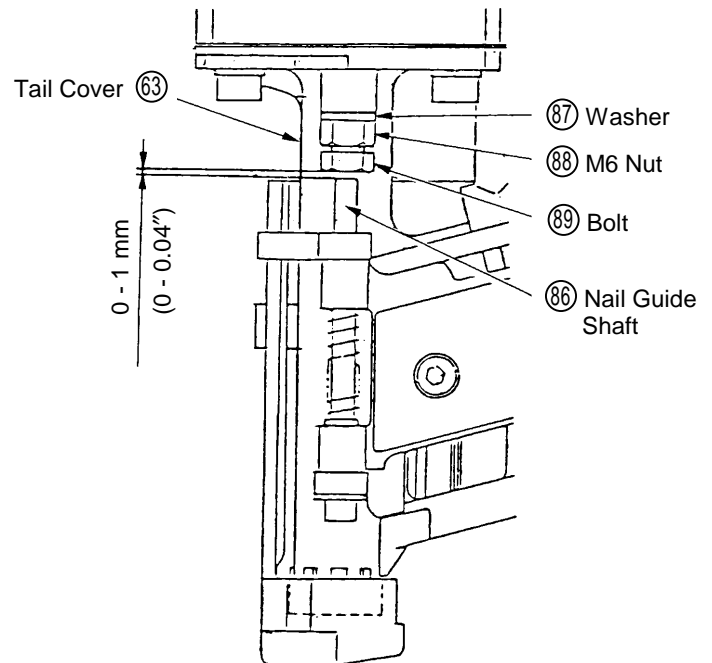


Fig. 18

1-4. Disassembly and Reassembly of the Magazine Section: (Refer to Fig. 19)

(1) Magazine Ass'y (107):

Tools Required:

- Plus Screwdriver

(a) Disassembly:

- Remove the M5 x 20 Machine Screw (38) which fixes the Magazine Ass'y (107) to Body (B) Ass'y (24), and remove the Magazine Ass'y. (Refer to Paragraph 1-1-(1))

(b) Reassembly:

Reassembly can be accomplished by following the disassembly procedures in reverse.

(2) Magazine Cover (102):

Tools Required:

- Minus Screwdriver (with tip thickness of 0.5 - 1 mm [0.02 - 0.04 inches]) or appropriate steel plate.

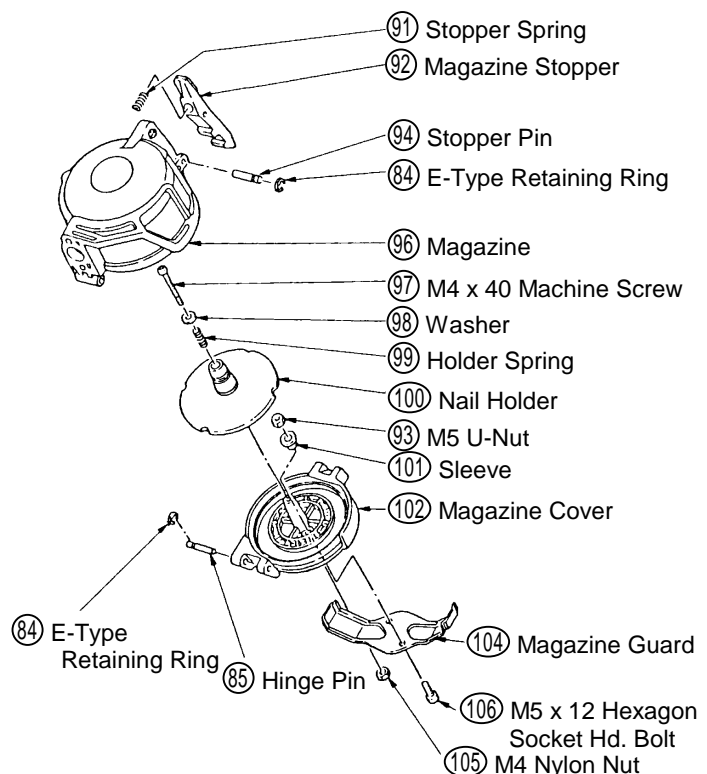


Fig. 19

(a) Disassembly:

- Insert the minus screwdriver (or steel plate) into the gap between the Magazine Cover (102) and the Magazine (96), and push down forcibly to remove the 3 mm E-Type Retaining Ring (84). (See Fig. 20). At this time, be very careful not to lose the 3 mm E-Type Retaining Ring (84).
- After extracting the Hinge Pin (85), the Magazine Cover (102) can be taken off.

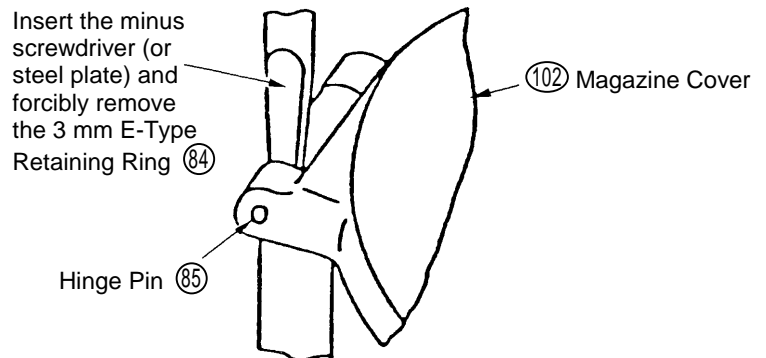


Fig. 20

(b) Reassembly

Reassembly can be accomplished by following the disassembly procedures in reverse. However, special attention should be given to following items.

- Carefully align the groove on the Hinge Pin (85), and mount the 3 mm E-Type Retaining Ring (84). Confirm that it is properly assembled.
- Be very careful not to lose the 3 mm E-Type Retaining Ring (84).

(3) Nail Holder (100), Magazine Guard (104) and related parts; (Refer to Fig. 19)

Tools Required:

- Plus Screwdriver
- 5 mm (0.197") Hexagon Bar Wrench
- 8 mm (0.315") Spanner or Slender Hd. Pliers

(a) Disassembly:

- Open the Magazine Cover (102), and remove the M4 x 40 Machine Screw (97). The Nail Holder (100) and Holder Spring (99) can then be disassembled.
- Supporting the M5 U-Nuts (93) with the 8 mm Spanner, loosen and remove the M5 x 12 Hexagon Socket Hd. Bolts (106). The Magazine Guard (104) and sleeve (101) can then be taken out.

(b) Reassembly:

Reassembly can be accomplished by following the disassembly procedures in reverse. However, special attention should be given to the following items.

- Confirm that the Sleeve (101), is properly inserted into the hole in the Magazine Cover (102).
- Firmly support the M5 U-Nuts (93) with the 8 mm Spanner, and tighten the M5 x 12 Hexagon Socket Hd. Bolts (106) to rated torque: 20 ± 3 kg-cm (1.45 ± 0.22 ft-lbs).
- Carefully ensure that the M4 x 40 Machine Screw (97) is tightened to rated torque of 5 - 10 kg-cm (0.36 - 0.72 ft-lbs).

(4) Magazine Stopper (92): (Refer to Fig. 19)

Tools Required:

- Minus Screwdriver (with tip thickness of 0.5 - 1 mm [0.02 - 0.04"]) or appropriate plate.

(a) Disassembly:

- Insert the minus screwdriver (or steel plate) into the gap between the Magazine (96) and the Magazine Stopper (92), and push down forcibly to remove the 3 mm E-Type Retaining Ring (84).
- After extracting the Stopper Pin (94), the Magazine Stopper (92), and Stopper Spring (91) can be taken off.

(b) Reassembly:

Reassembly can be accomplished by following the disassembly procedures in reverse. However, special attention should be given to the following items.

- Carefully align the groove on the Stopper Pin ⑨④, and mount the 3 mm E-Type Retaining Ring ⑧④. Confirm that it is properly assembled.
- Be very careful not to lose the 3 mm E-Type Retaining Ring ⑧④.

1-5. General Precautions on Reassembly:

- As the Valve Bushing ⑤③, Plunger (A) ⑤②, and Plunger (B) ⑤⑤, are not interchangeable with similar parts on such models as the Model NV45AA and NV50A1, be very careful to ensure that parts from other models are not inadvertently assembled on the Model NV45AB. Inadvertent assembly of such parts could result in malfunction, misfiring etc., and is very hazardous.
- Apply grease (Hitachi Motor Grease No. 29, Code No. 930035 is recommended) to the O-Rings and the O-Ring sliding portions. When reassembling the O-Rings, be particularly careful not to damage them, or permit dust or other foreign matter to enter the mechanism.
- If the Packings are damaged, replace them and ensure that there is no air leakage after repair.
- Be particularly careful not to permit dust or other foreign matter to enter the Valve Section.
- Coat small amount of grease (a silicone-based grease is recommended) on the sliding portions of the nail feeding section.
- Rated tightening torques for fastening Bolts, Nuts and Screws for components are as follows:

| Nut/Bolt/Screw Type | Rated Tightening Torque |
|--|--|
| M5 Hexagon Socket Hd. Bolts | 65 ± 5 kg-cm (4.7 ± 0.4 ft-lb) (For Magazine Guard fixing bolts Only) 20 ± 3 kg-cm (1.45 ± 0.22 ft-lb) |
| M4 Hexagon Socket Hd. Bolts | 40 ± 3 kg-cm (2.9 ± 0.2 ft-lb) |
| M6 Nut | 50 ± 5 kg-cm (3.6 ± 0.4 ft-lb) |
| M5 Nut | 35 ± 3 kg-cm (2.5 ± 0.2 ft-lb) |
| M5 Machine Screws | 35 ± 3 kg-cm (2.5 ± 0.2 ft-lb) |
| M4 Machine Screws (on Magazine Cover Section) | 5 - 10 kg-cm (0.36 - 0.72 ft-lb) |

1-6. Inspection and Confirmation After Reassembly or Repair:

- Ensure that the Main Nail Stopper ⑧⑩, Nail Stopper ⑧①, and Feeder ③④, return properly when they are pushed with a finger.
- Confirm that the Feed Piston ⑥⑦ and Piston (H) ①④ return properly when the Nailer is operated with an air pressure of 5 kg/cm² (70 psi) . (Conduct check under the idle driving condition, with the Nail Guide open.)
- Operate the Nailer with an air pressure of 5 kg/cm² (70 psi) , and confirm that there is no abnormal driving or bending of nails.
- With appropriate Torque Wrenches and Torque Drivers, confirm the correct tightening torque of Screws, Nuts and Bolts.

[NOTE] When carrying out trial nailing, ensure that the Bolts ⑧⑨ (for driving depth adjustment) is properly positioned as described in Paragraph 1-3-(3).