



# MODEL NV 50AH

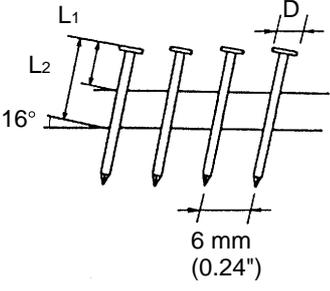
## 1. TROUBLESHOOTING

### 1-1. Troubleshooting and Correction

Fault	Cause (The mark * refers to main causes.)	Inspection methods	Remedy
<b>(1)</b> Nails fail to eject.	<b>&lt; Nail &gt;</b> <ul style="list-style-type: none"> <li>• The nailer is loaded with nails not approved by Hitachi.</li> <li>• The nailer is loaded with abnormal nails (bent nails, nail heads too large, or too small abnormally collated nails, deformed wire).</li> <li>• Nails or link pieces are jammed.</li> <li>• Deformation and breaking of collated nails</li> </ul>	<ul style="list-style-type: none"> <li>• Check whether or not the nailer is normally loaded with nails approved by Hitachi.</li> </ul>	<ul style="list-style-type: none"> <li>• Use specified nails.</li> <li>• Remove abnormal nails and load the nailer with proper nails.</li> </ul>
	<b>&lt; Nail feeding section: nose, feeder, feed piston, etc. &gt;</b> <ul style="list-style-type: none"> <li>• The sliding resistance of the feed piston is too great.</li> <li>• The nail guide face of the nose is abnormal (deformed, jagged, damaged and/or worn).</li> <li>• The feed spring and/or feeder spring is abnormal (damaged and/or fatigued).</li> <li>• The feeder is abnormal (damaged and/or worn).</li> </ul>	<ul style="list-style-type: none"> <li>• Remove the feed piston, and examine the feed piston slide surface of the nose.</li> </ul>	<ul style="list-style-type: none"> <li>• Apply grease.</li> <li>• Polish the scratched section with abrasive paper.</li> <li>• Replace parts</li> </ul>
	<ul style="list-style-type: none"> <li>• The feed spring and/or feeder spring is abnormal (damaged and/or fatigued).</li> <li>• The feeder is abnormal (damaged and/or worn).</li> </ul>	<ul style="list-style-type: none"> <li>• Check whether or not the nail feeding section is abnormal (jagged, deformed, damaged or worn).</li> </ul>	<ul style="list-style-type: none"> <li>• Replace parts.</li> <li>• Smooth jagged areas.</li> <li>• Correct the deformed part.</li> </ul>
	<ul style="list-style-type: none"> <li>• The nose is not correctly loaded with nails in the groove.</li> </ul>	<ul style="list-style-type: none"> <li>• Check whether or not the nailer is correctly loaded with nails in the specified groove.</li> </ul>	<ul style="list-style-type: none"> <li>• Load the nailer with nails in the correct position in the nose.</li> </ul>
	<ul style="list-style-type: none"> <li>• Insufficient oil and/or dust sticking in the chuck groove's slide of the nose.</li> </ul>	<ul style="list-style-type: none"> <li>• Open the nail guide and inject air to check the feeder's action.</li> </ul>	<ul style="list-style-type: none"> <li>• Remove dust and then apply oil.</li> </ul>
	<ul style="list-style-type: none"> <li>• Air pressure is too low.</li> </ul>		<ul style="list-style-type: none"> <li>• Adjust air pressure in a range of 4.9 – 8.3 bar (5 – 8.5 kgf/cm<sup>2</sup>, 70 – 120 psi).</li> </ul>
	<ul style="list-style-type: none"> <li>* The air passage is jammed (with pieces of broken piston bumper, etc.).</li> <li>* The feed piston chamber contains foreign matter such as pieces of broken bumper, etc.</li> </ul>		<ul style="list-style-type: none"> <li>• Remove foreign matter. Replace the piston bumper with a new one.</li> <li>• Body....Remove foreign matter in the return air chamber.</li> <li>• Nose....Remove foreign matter in the air passage and the feed piston chamber.</li> </ul>

Fault	Cause (The mark * refers to main causes.)	Inspection methods	Remedy
(1) Nails fail to eject. (Continued)	<ul style="list-style-type: none"> <li>• Air leaks from a gap between the body and the nose</li> </ul>	<ul style="list-style-type: none"> <li>• Open the nail guide and inject air to check feeder's action.</li> </ul>	<ul style="list-style-type: none"> <li>• Tighten screws and examine the O-rings (1AP-3).</li> </ul>
	<ul style="list-style-type: none"> <li>• O-rings are worn and deformed.</li> </ul>		<ul style="list-style-type: none"> <li>• Examine the O-ring.</li> </ul>
	<ul style="list-style-type: none"> <li>• The O-rings need oil.</li> </ul>		<ul style="list-style-type: none"> <li>• Apply grease or oil.</li> </ul>
	<p><b>&lt; Nail guide section &gt;</b></p> <ul style="list-style-type: none"> <li>• The nail guide face of the nail guide is abnormal (deformed, jagged, damaged and/or worn).</li> </ul>	<ul style="list-style-type: none"> <li>• Check whether or not the nail guide is abnormal (jagged, deformed and/or damaged).</li> </ul>	<ul style="list-style-type: none"> <li>• Correct and replace part.</li> </ul>
	<ul style="list-style-type: none"> <li>• Dust is stuck to the inside of the nail guide groove, and the oil in the groove has depleted.</li> <li>* A spring is abnormal (off, damaged and/or fatigued).</li> <li>• The claw ridge section of the nail stopper is abnormal (damaged, worn and/or jagged).</li> </ul>	<ul style="list-style-type: none"> <li>• Examine the action of nail stopper (A) and nail stopper (B).</li> </ul>	<ul style="list-style-type: none"> <li>• Remove dust and then apply oil.</li> <li>• Replace abnormal parts.</li> </ul>
	<p><b>&lt; Magazine section &gt;</b> <b>&lt; Pushing lever (A) &gt;</b></p> <ul style="list-style-type: none"> <li>• Magazine</li> </ul>	<ul style="list-style-type: none"> <li>• Check whether or not a nail catches on another nail in the magazine.</li> <li>• Check whether or not a nail catches on some part of the magazine.</li> <li>• Check the nail holder for the height.</li> </ul>	<ul style="list-style-type: none"> <li>• Collate the nails normally and reload the nailer with normally collated nails.</li> <li>• Remove burrs and deformed parts and replace parts.</li> <li>• Adjust the height of the nail holder correctly.</li> </ul>
	<ul style="list-style-type: none"> <li>• Pushing lever (A)</li> </ul>	<ul style="list-style-type: none"> <li>• Examine the action of the pushing lever (A).</li> </ul>	<ul style="list-style-type: none"> <li>• Correct or replace parts.</li> </ul>
	<p><b>&lt; Output section: Piston, driver blade, etc. &gt;</b></p> <ul style="list-style-type: none"> <li>• Air pressure is low.</li> </ul>	<ul style="list-style-type: none"> <li>• Open the nail guide and inject air to examine whether or not the driver blade is reset.</li> </ul>	<ul style="list-style-type: none"> <li>• Adjust air pressure in the range of 4.9 – 8.3 bar (5 – 8.5 kgf/cm<sup>2</sup>, 70 – 120 psi).</li> </ul>
	<ul style="list-style-type: none"> <li>* Piston rings are worn.</li> </ul>		<ul style="list-style-type: none"> <li>• Replace the piston ring with a new one.</li> </ul>
	<ul style="list-style-type: none"> <li>* The piston bumper is abnormal.</li> </ul>		<ul style="list-style-type: none"> <li>• Replace the piston bumper with a new one.</li> </ul>
	<ul style="list-style-type: none"> <li>• The O-ring in the cylinder section is abnormal (off, jagged and/or damaged).</li> </ul>		<ul style="list-style-type: none"> <li>• Reassemble or replace the O-ring with a new one.</li> </ul>
	<ul style="list-style-type: none"> <li>• The driver blade is abnormal (deformed, jagged, damaged and/or worn).</li> </ul>		<ul style="list-style-type: none"> <li>• Correct the driver blade or replace it with a new one.</li> </ul>
	<ul style="list-style-type: none"> <li>• The inner face of the cylinder is abnormal (packed with dust and/or worn).</li> </ul>	<ul style="list-style-type: none"> <li>• Examine whether or not nails can be driven at a pressure of 4.9 bar (5 kgf/cm<sup>2</sup>, 70 psi).</li> </ul>	<ul style="list-style-type: none"> <li>• Remove dust and then apply oil. Or replace the cylinder with a new one.</li> </ul>
<ul style="list-style-type: none"> <li>• The sliding face of the head valve is abnormal (seized, damaged, and/or oil has depleted).</li> </ul>	<ul style="list-style-type: none"> <li>• Inject air to check nail driving action.</li> </ul>	<ul style="list-style-type: none"> <li>• Replace parts.</li> <li>• Apply grease.</li> </ul>	

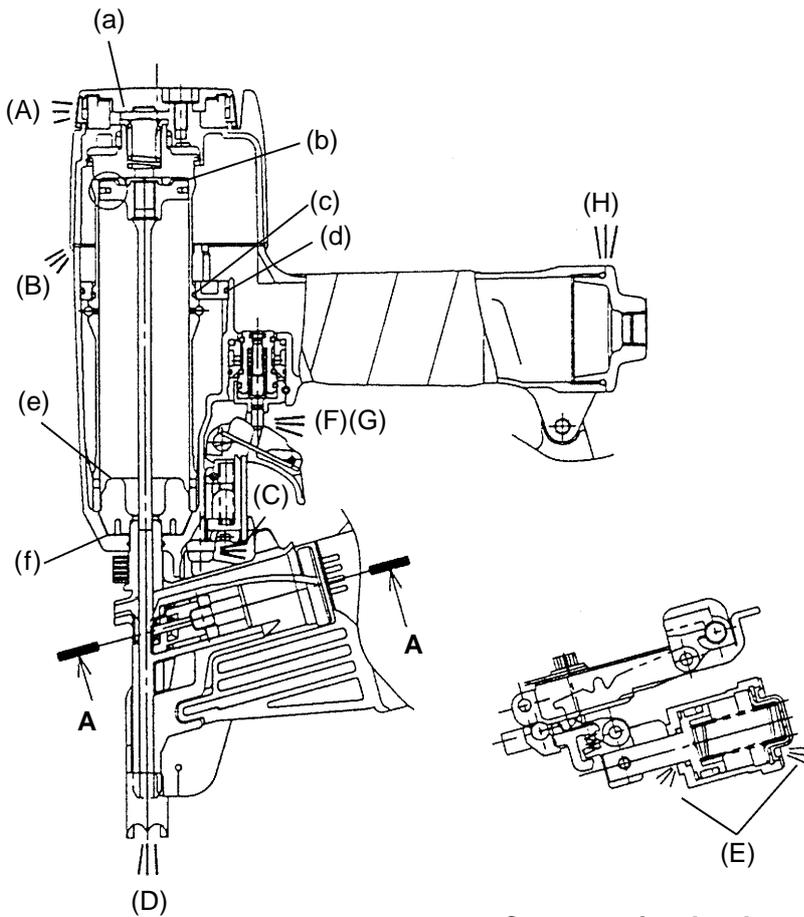
Fault	Cause (The mark * refers to main causes.)	Inspection methods	Remedy
<b>(1)</b> Nails fail to eject. (Continued)	<ul style="list-style-type: none"> <li>The spring of the head valve is abnormal (fatigued and/or damaged).</li> </ul>	<ul style="list-style-type: none"> <li>Inject air to check whether or not the driver blade is left lowered.</li> </ul>	<ul style="list-style-type: none"> <li>Replace parts.</li> </ul>
	<p><b>&lt; Control valve section &gt;</b></p> <ul style="list-style-type: none"> <li>Plunger (A), valve piston (B), valve bushing (A) and valve bushing (B) are abnormal (seized and/or damaged).</li> </ul>	<ul style="list-style-type: none"> <li>Inject air to check whether or not the driver blade is left lowered.</li> </ul>	<ul style="list-style-type: none"> <li>Replace abnormal parts.</li> </ul>
	<ul style="list-style-type: none"> <li>O-rings are worn.</li> </ul>	<ul style="list-style-type: none"> <li>Disassemble the control valve and check the O-rings.</li> </ul>	<ul style="list-style-type: none"> <li>Apply grease or replace it.</li> </ul>
<b>(2)</b> Nails are driven bent.	<ul style="list-style-type: none"> <li>When driving a short nail, the adjuster set for insufficient depth.</li> </ul>	<ul style="list-style-type: none"> <li>Check whether or not the adjuster is set for insufficient depth.</li> </ul>	<ul style="list-style-type: none"> <li>Use the nailer with the adjuster set to greater depth. (Decrease the pressure.)</li> </ul>
	<ul style="list-style-type: none"> <li>Nails are not completely fed in the injection port.</li> <li>Nails not approved by Hitachi are used.</li> </ul>	<ul style="list-style-type: none"> <li>Refer to Item 1.</li> </ul>	<ul style="list-style-type: none"> <li>Refer to Item 1.</li> </ul>
	<ul style="list-style-type: none"> <li>* The driver blade is worn.</li> </ul>	<ul style="list-style-type: none"> <li>Check whether or not the driver blade head is abnormally worn.</li> </ul>	<ul style="list-style-type: none"> <li>Replace it.</li> </ul>
	<ul style="list-style-type: none"> <li>The wood being nailed is very hard.</li> </ul>	<ul style="list-style-type: none"> <li>Check whether or not the nail is bent, even when it is driven into soft wood.</li> </ul>	<ul style="list-style-type: none"> <li>The nailer cannot be used because the material is beyond its applicable range.</li> </ul>
	<ul style="list-style-type: none"> <li>Nails not approved by Hitachi are used.</li> </ul>	<ul style="list-style-type: none"> <li>Check whether or not the nail is appropriate for metal reinforcing plates.</li> </ul>	<ul style="list-style-type: none"> <li>Use nails approved by Hitachi.</li> </ul>
<b>(3)</b> Nails cannot be driven into the wood completely: the heads cannot be made flush.	<ul style="list-style-type: none"> <li>The adjuster is incorrectly set.</li> </ul>	<ul style="list-style-type: none"> <li>Try to drive nails with the adjuster set to maximum depth.</li> </ul>	<ul style="list-style-type: none"> <li>Adjust the adjuster to the optimum depth.</li> </ul>
	<ul style="list-style-type: none"> <li>Air pressure is low.</li> </ul>		<ul style="list-style-type: none"> <li>Adjust air pressure in the range of 4.9 – 8.3 bar (5 – 8.5 kgf/cm<sup>2</sup>, 70 – 120 psi).</li> </ul>
	<ul style="list-style-type: none"> <li>The wood being nailed is excessively hard.</li> </ul>	<ul style="list-style-type: none"> <li>Check whether or not the nail head are flush with the surface when driven into soft wood.</li> </ul>	<ul style="list-style-type: none"> <li>The nailer cannot be used because the material is beyond its applicable range.</li> </ul>
	<ul style="list-style-type: none"> <li>* The driver blade is worn.</li> </ul>	<ul style="list-style-type: none"> <li>Inject air and check whether or not the driver blade sticks out from the nose.</li> </ul>	<ul style="list-style-type: none"> <li>Replace it.</li> </ul>
	<ul style="list-style-type: none"> <li>* The piston ring is abnormal (worn and/or damaged).</li> <li>The inner face of the cylinder is abnormal (worn and/or rough).</li> </ul>	<ul style="list-style-type: none"> <li>Disassemble the output section and check whether or not the piston ring, the O-ring and the cylinder are normal.</li> </ul>	<ul style="list-style-type: none"> <li>Replace the abnormal parts.</li> </ul>
	<ul style="list-style-type: none"> <li>The cylinder plate or the O-ring is abnormal (dislocated, deformed and/or broken).</li> </ul>	<ul style="list-style-type: none"> <li>Disassemble the cylinder plate section and check for abnormality.</li> </ul>	<ul style="list-style-type: none"> <li>Replace the abnormal parts.</li> </ul>
	<ul style="list-style-type: none"> <li>The sliding face of the head valve is abnormal (seized, damaged, and/or oil has depleted).</li> </ul>	<ul style="list-style-type: none"> <li>Check whether or not the sliding face is abnormal and oil has depleted.</li> </ul>	<ul style="list-style-type: none"> <li>Replace abnormal parts.</li> <li>Apply grease.</li> </ul>

Fault	Cause (The mark * refers to main causes.)	Inspection methods	Remedy												
<p><b>(4)</b> Nail jamming</p>	<p><b>&lt; Nail &gt;</b>            * Nails not approved by Hitachi are used.            * Abnormal nails are mixed.            • Abnormality in wire collation nails (Breakage, wrong welding, deformation and/or wrong welding position) (Wire collation nails)            * Wire collated nails are deformed. (Deformation in collation angle, collation pitch, etc.)            * The diameter of nail head is too small. (Wire collation nails whose head diameter is 4.3 mm (0.17") or less are liable to cause jamming)</p>	<ul style="list-style-type: none"> <li>• Check whether or not nails approved by Hitachi are used.</li> <li>• Check nails referring to the following figures.</li> </ul> <p>(Wire collation nails)</p>  <p>The diagram shows four wire collation nails. Dimension L1 is the length of the top wire. Dimension L2 is the length of the bottom wire. Dimension D is the diameter of the nail head. The angle between the wire and the nail shaft is 16 degrees. The distance between the centers of two adjacent nails is 6 mm (0.24 inches).</p> <table border="1" data-bbox="667 1012 1396 1236"> <thead> <tr> <th colspan="3" style="text-align: right;">Unit : mm</th> </tr> </thead> <tbody> <tr> <td>Dimension L1</td> <td>7.6 (0.30")</td> <td>12 (0.47")</td> </tr> <tr> <td>Dimension L2</td> <td>19.2 (0.76")</td> <td>24 (0.94")</td> </tr> <tr> <td>Dimension D</td> <td>4.6 – 4.7 (0.18" – 0.19")</td> <td>4.8 (0.19")</td> </tr> </tbody> </table>	Unit : mm			Dimension L1	7.6 (0.30")	12 (0.47")	Dimension L2	19.2 (0.76")	24 (0.94")	Dimension D	4.6 – 4.7 (0.18" – 0.19")	4.8 (0.19")	<ul style="list-style-type: none"> <li>• Use the nails approved by Hitachi.</li> <li>• Remove abnormal nails and refill the nailer with normal nails.</li> </ul>
Unit : mm															
Dimension L1	7.6 (0.30")	12 (0.47")													
Dimension L2	19.2 (0.76")	24 (0.94")													
Dimension D	4.6 – 4.7 (0.18" – 0.19")	4.8 (0.19")													

Fault	Cause (The mark * refers to main causes.)	Inspection methods	Remedy
<p><b>(4)</b> Nail jamming (Continued)</p>	<p><b>&lt; Body: Nail feeding is incomplete. &gt;</b></p> <ul style="list-style-type: none"> <li>• The feeder is worn, and the sliding section is abnormal.</li> <li>• The nail guide face of the nose and the sliding section of the feeder are abnormal (deformed, warped and/or damaged).</li> <li>• The nail guide face of the nail guide is worn.</li> <li>• The driver blade head is worn.</li> <li>• The feed spring and the feeder spring are abnormal (damaged, fatigued and/or damaged).</li> </ul> <p>* The feed piston chamber contains foreign matter such as piston bumper pieces.</p>	<ul style="list-style-type: none"> <li>• Open the nail guide to check the position of the feeder claw. Claw whether or not the chuck of the feeder holds a nail, and the first nail is positioned in the injection port. (Check that the second claw chucks the nail shaft and feeds it)</li> </ul>	<ul style="list-style-type: none"> <li>• Replace abnormal parts.</li> <li>• Nose...Remove the foreign matter in the feed piston chamber.</li> </ul>
	<p><b>&lt; Body: Abnormality in nail guide section &gt; Refer to Item 1 &lt; Nail guide section &gt;</b></p>		
	<p><b>&lt; The driver blade is not completely returned. &gt;</b> Refer to Item 1 <b>&lt; Output section: Piston, driver blade, etc.&gt;</b></p>	<ul style="list-style-type: none"> <li>• Check whether or not when injecting air or actually injecting nails, the driver blade is completely returned.</li> </ul>	<p><b>&lt; Output section: Piston, driver blade, etc. &gt;</b></p>
<ul style="list-style-type: none"> <li>• Air pressure is too high.</li> </ul>	<ul style="list-style-type: none"> <li>• When nails are driven at a high pressure and speed, nails can cause jamming. Check pressure and driving speed.</li> </ul>	<ul style="list-style-type: none"> <li>• Adjust the air pressure in a range of 4.9 – 8.3 bar (5 – 8.5 kgf/cm<sup>2</sup>, 70 – 120 psi).</li> </ul>	
<p><b>(5)</b> Single shot is impossible.</p>	<ul style="list-style-type: none"> <li>* The O-ring of plunger (A) is worn.</li> <li>* The O-ring of valve piston (B) is worn.</li> <li>• The sliding face of plunger (A) of valve piston (B) is abnormal (seized and/or deformed).</li> <li>• Plunger (A), trigger (A) and pushing lever (B) are abnormal (worn and/or deformed).</li> <li>• The single shot/continuous shot switch lever is positioned incorrectly.</li> </ul>	<ul style="list-style-type: none"> <li>• Disassemble the control valve section to check the O-rings of plunger (A) and valve piston (B).</li> <li>• Check for the abnormality (wear, damage and/or deformation) in each part.</li> <li>• Check where the single shot/continuous shot change knob is positioned.</li> </ul>	<ul style="list-style-type: none"> <li>• Replace abnormal parts.</li> <li>• Set the single shot/continuous shot change knob to a correct position.</li> </ul>

## 1-2. Possible Causes and Corrections for Air Leakage

### • Air leakage repairing position



**Cross section A – A**

**Control valve section**

### • Repairing step

- (1) Check for abnormality in the parts marked \*(asterisk) out of the following parts.
- (2) Check for wear, scratches and damage in the parts marked ◦ (circle).
- (3) Next, examine other portions. (The numbers in **[bold]** correspond to the item numbers in Parts List and the exploded assembly diagrams.)

Air leakage portion	Cause	
	When the Trigger is turned off	When the Trigger is turned on
(A) Exhaust port	<ul style="list-style-type: none"> <li>◦ Abnormality in Head Valve (A) <b>[12]</b> and Cylinder <b>[20]</b> [Wear and deformation of the sealed face of the (b) section].</li> <li>◦ Abnormality in the Head Valve O-ring <b>[11]</b> or wear, deformation and/or breakage of Head Valve (A) <b>[12]</b></li> <li>• Abnormality (damage) in the Exhaust Cover <b>[8]</b></li> </ul>	<ul style="list-style-type: none"> <li>◦ Abnormality in Head Valve (A) <b>[12]</b> [Wear, deformation and/or breakage of the section (a)]</li> <li>* Abnormality in the inner face [the section (a)] in the Exhaust Cover <b>[8]</b> [Deformation and dust clogging in the section (a)]</li> </ul>
(B) Exhaust cover	<ul style="list-style-type: none"> <li>• Looseness of the Hex. Socket Hd. Bolt M5 <b>[7]</b></li> <li>◦ Damage of Gasket (A) <b>[9]</b></li> <li>• Abnormality in the sealed face of the Body Ass'y <b>[22]</b>, the Exhaust Cover <b>[8]</b> and the Cylinder <b>[20]</b></li> </ul>	
(C) Nose 1 (Feed piston passage)		<ul style="list-style-type: none"> <li>• Looseness of the Hex. Socket Hd. Bolt M6 <b>[35]</b></li> <li>◦ Scratched and/or the broken O-ring (1AP-3) <b>[33]</b></li> <li>• Abnormality in the sealed faces of the Body Ass'y <b>[22]</b> and the Nose <b>[34]</b></li> </ul>

Air leakage portion	Cause	
	When the Trigger is turned off	When the Trigger is turned on
(D) Nose 2	<ul style="list-style-type: none"> <li>* Abnormality (breakage and/or scratches) in the O-Ring <b>[16]</b> of the Cylinder Plate <b>[17]</b></li> <li>• Abnormality in the sealing faces [the sections (c) and/or (d)] of the Cylinder Plate <b>[17]</b>, Body Ass'y <b>[22]</b> and/or the Cylinder <b>[20]</b></li> </ul>	<ul style="list-style-type: none"> <li>◦ Abnormality [deformation, crack and/or damage of the sections (e) and (f)] in the Piston Bumper <b>[21]</b></li> <li>• Deformation of the Piston <b>[15]</b> (The deformation of driver blade abnormality in sealed faces)</li> <li>• The deformation of the face (f) of the Body Ass'y <b>[22]</b></li> <li>◦ Abnormality (wear, deformation, breakage and/or scratches) in the O-Ring <b>[25]</b></li> </ul>
(E) Feed piston		<ul style="list-style-type: none"> <li>◦ Abnormality (wear, breakage and/or scratches) in the O-ring <b>[72]</b> of the Feed Piston <b>[71]</b>, or the wear and/or deformation of the Nose <b>[34]</b> on the sliding face</li> <li>◦ Abnormality (wear, breakage and/or scratches) in the O-ring <b>[70]</b> of the Nose <b>[34]</b>, or wear, deformation and/or scratches of the Feed Piston <b>[71]</b> on the sliding face</li> </ul>
(F) Control valve 1	<ul style="list-style-type: none"> <li>◦ Abnormality (wear, breakage and/or scratches) in the O-ring <b>[60]</b> of Valve Piston (B) <b>[59]</b></li> <li>◦ Abnormality (wear, breakage and/or scratches) in the O-ring <b>[57]</b> (lower side) of Valve Piston (B) <b>[59]</b></li> <li>◦ Abnormality (breakage and/or scratches) in the O-ring (S-18) <b>[56]</b> of Valve Bushing (B) <b>[55]</b></li> <li>* Abnormality in the inner face [the section (h)] of the valve chamber of the Body Ass'y <b>[22]</b></li> </ul>	<ul style="list-style-type: none"> <li>◦ Abnormality (wear, breakage and/or scratches) in the O-ring <b>[57]</b> (upper side) of Valve Piston (B) <b>[59]</b></li> <li>◦ Abnormality (breakage and/or scratches) in the Head Valve O-ring <b>[11]</b> of Valve Bushing (B) <b>[55]</b></li> <li>* Abnormality in the upper face [the section (g)] of the valve chamber of the Body Ass'y <b>[22]</b></li> </ul>
(G) Control valve 2	<ul style="list-style-type: none"> <li>◦ Abnormality (wear, breakage and/or scratches) in the O-ring <b>[63]</b> of Plunger (A) <b>[62]</b></li> <li>• Abnormality (deformation and/or scratches of the sliding face of Plunger (A) <b>[62]</b> in Valve Bushing (A) <b>[64]</b></li> </ul>	<ul style="list-style-type: none"> <li>◦ Abnormality (wear, breakage and/or scratches) in the O-ring <b>[58]</b> in the inside of Valve Piston (B) <b>[59]</b></li> <li>◦ Abnormality (deformation and/or scratches of the sliding face of Plunger (A) <b>[62]</b> in Valve Piston (B) <b>[59]</b></li> </ul>
(H) Cap	<ul style="list-style-type: none"> <li>◦ Abnormality (wear, breakage and/or scratches) in the O-ring <b>[45]</b></li> <li>• Looseness of the Cap <b>[46]</b></li> <li>• Abnormality (damage, deformation and/or scratches) in the sealed faces of the Body Ass'y <b>[22]</b> and Cap <b>[46]</b></li> </ul>	

## 2. DISASSEMBLY AND REASSEMBLY

The following describes procedures considered essential for proper disassembly and reassembly.

The numbers in **[bold]** correspond to the item numbers in the Parts List and the exploded assembly diagrams.

The structure of the Model NV50AH can be generally divided into four sections: the output section, the control valve section, the driving section and the magazine section.

Since the Model NV50AH is new, the parts are almost completely incompatible with those of other models.

**(Note)** Prior to disassembling and reassembling, be sure to remove the hose with your finger off of the trigger and exhaust the internal compressed air completely.

When reassembling O-rings, be careful not to scratch them and not to let dust enter the tool. Apply grease to the O-rings and O-ring sliding sections.

### 2-1. General Precautions in Disassembly and Reassembly

- Apply grease [Nippeco SEP-3A (Code No. 930035) or Multemp PS No.2 (Code No. 939536)] to the O-rings and the O-ring sliding area.

When installing the O-rings, exercise care to avoid scratches and dust.

- Lubricants required: Hitachi pneumatic tool lubricant

1 oz. (30 cc)	Oil feeder	(Code No. 877153)
4 oz. (120 cc)	Oil feeder	(Code No. 874042)
1 quart (1 liter)	Can	(Code No. 876212)

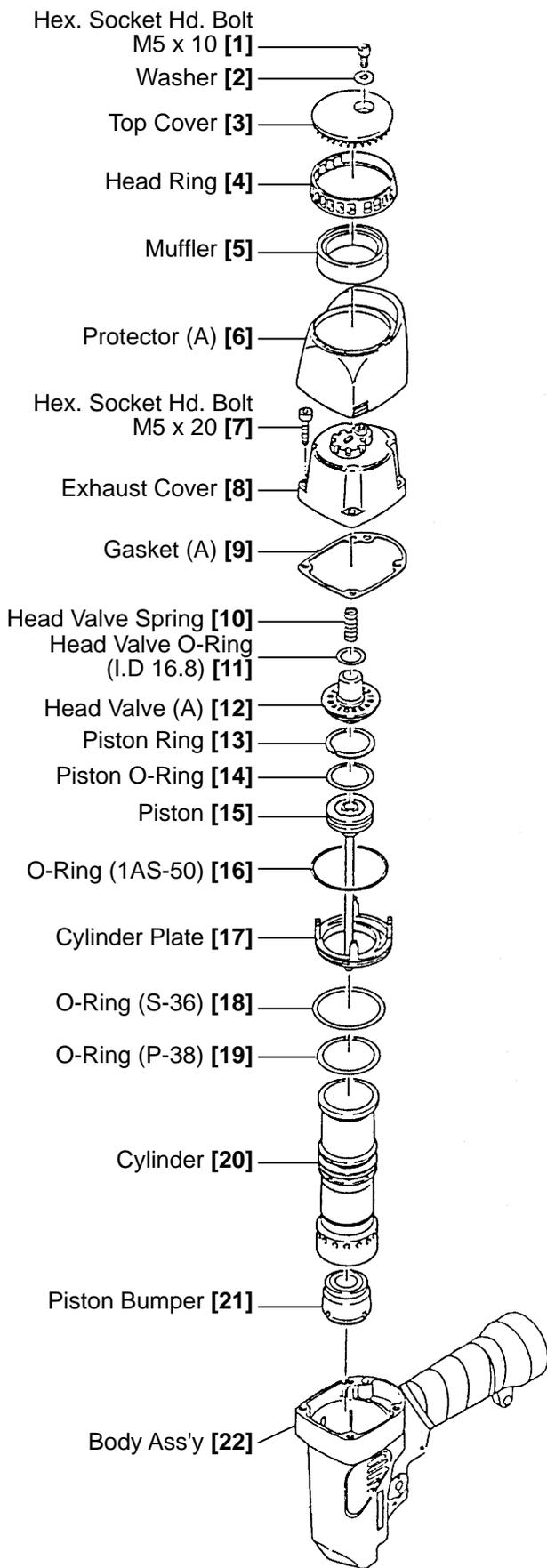
- Replace gasket (A) if broken, and make sure that there is no air leak after installation.
- Exercise care to protect the valve area from any foreign substance.
- Lubricate the sliding area of the feeder unit.
- Rated tightening torque for bolts and screws

Bolt and nuts	Tightening torque [N·m (kgf·cm, ft-lbs)]
Hex. Socket Hd. Bolt M6 ..... <b>[36]</b>	12.7 ± 0.8 (130 ± 8, 9.4 ± 0.6)
Hex. Socket Hd. Bolts M5 ..... <b>[1] [7]</b>	6.4 ± 0.5 ( 65 ± 5, 4.7 ± 0.4)
Nylock Hex. Socket Hd. Bolt M4 ..... <b>[100]</b>	4.4 ± 0.3 ( 45 ± 3, 3.2 ± 0.2)
Machine Screw M5 ..... <b>[49]</b>	2.0 ± 0.5 ( 20 ± 5, 1.4 ± 0.4)
Cap ..... <b>[46]</b>	24.5 ± 4.9 (250 ± 50, 18.0 ± 3.6)

- Before replacing the Piston Bumper **[21]**, make sure that anything, such as broken chips of the old Piston Bumper **[21]**, are not stuffed in the passages of the Body Ass'y **[22]** or the Nose **[34]**.

## 2-2. Disassembly and Reassembly of the Output Section

### (1) Disassembly and reassembly of the Exhaust Cover [8], Head Valve (A) [12], the Piston [15] and the Cylinder [20]



**Fig. 1 Disassembly and reassembly of piston, cylinder and exhaust cover**

[Tool required] 4 mm Hex. bar wrench

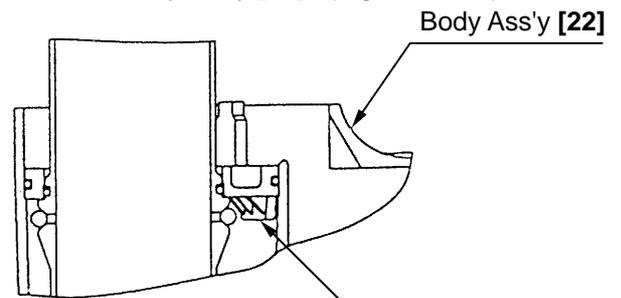
(a) Disassembly (See Fig. 1.)

- Loosen the Hex. Socket Hd. Bolt M5 x 10 [1]. Then the Top Cover [3], the Head Ring [4], the Muffler [5] and Protector (A) [6] can be removed.
- Loosen the four Hex. Socket Hd. Bolts M5 x 20 [7] to remove the Exhaust Cover [8]. Then the parts forming the output section, such as the Piston [15], the Cylinder [20] and the Piston Bumper [21], can be removed.

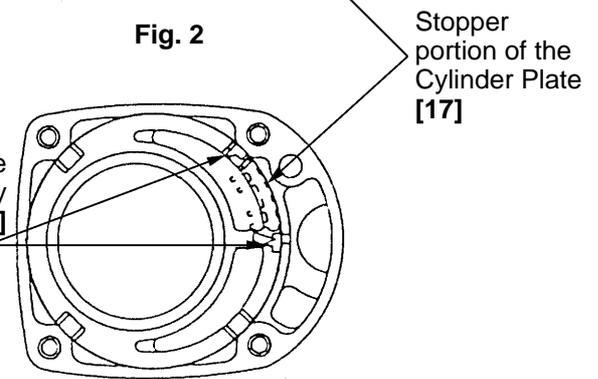
(b) Reassembly

Proceed in reverse to the disassembly procedure, while taking care to observe the following procedures.

- Apply Shell Tonna Oil T32 to the Piston Ring [13], the Piston O-Ring [14] and the inside of the Cylinder [20].
- Apply grease to the O-Ring (S-36) [18] and the O-Ring (P-38) [19] and then install them.
- Mount the Cylinder Plate [17] to the Cylinder [20] facing the stopper portion of the Cylinder Plate [17] towards the Piston Bumper [21]. Locate the assembled Cylinder [20] so that the stopper portion of the Cylinder Plate [17] is positioned between the ribs of the Body Ass'y [22]. (Figs. 2 and 3)



**Fig. 2**



**Fig. 3**

Face the stopper portion of the Cylinder Plate [17] towards the Piston Bumper [21].

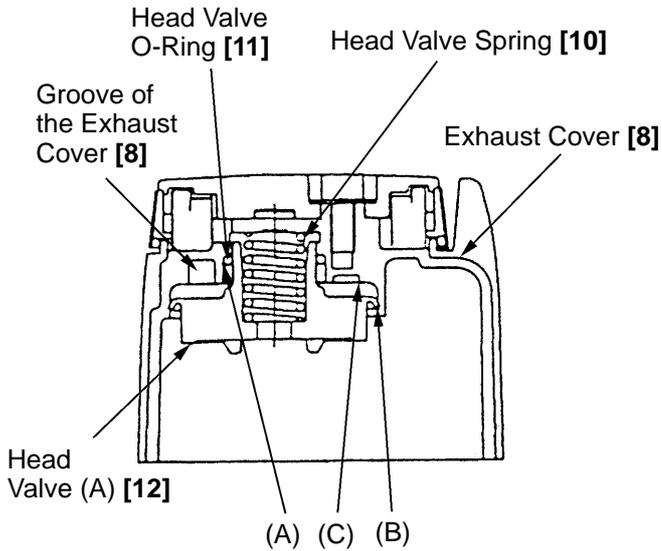


Fig. 4

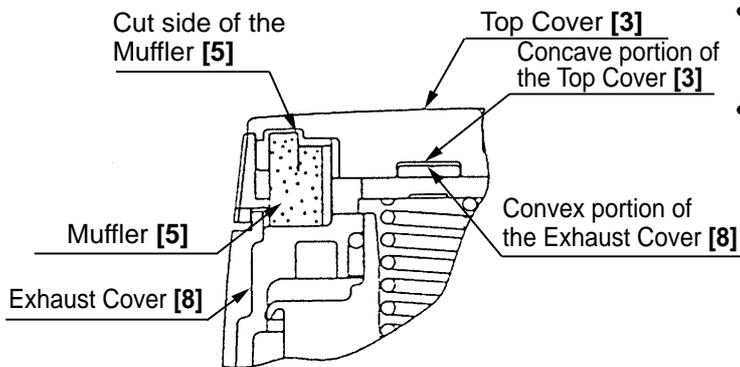
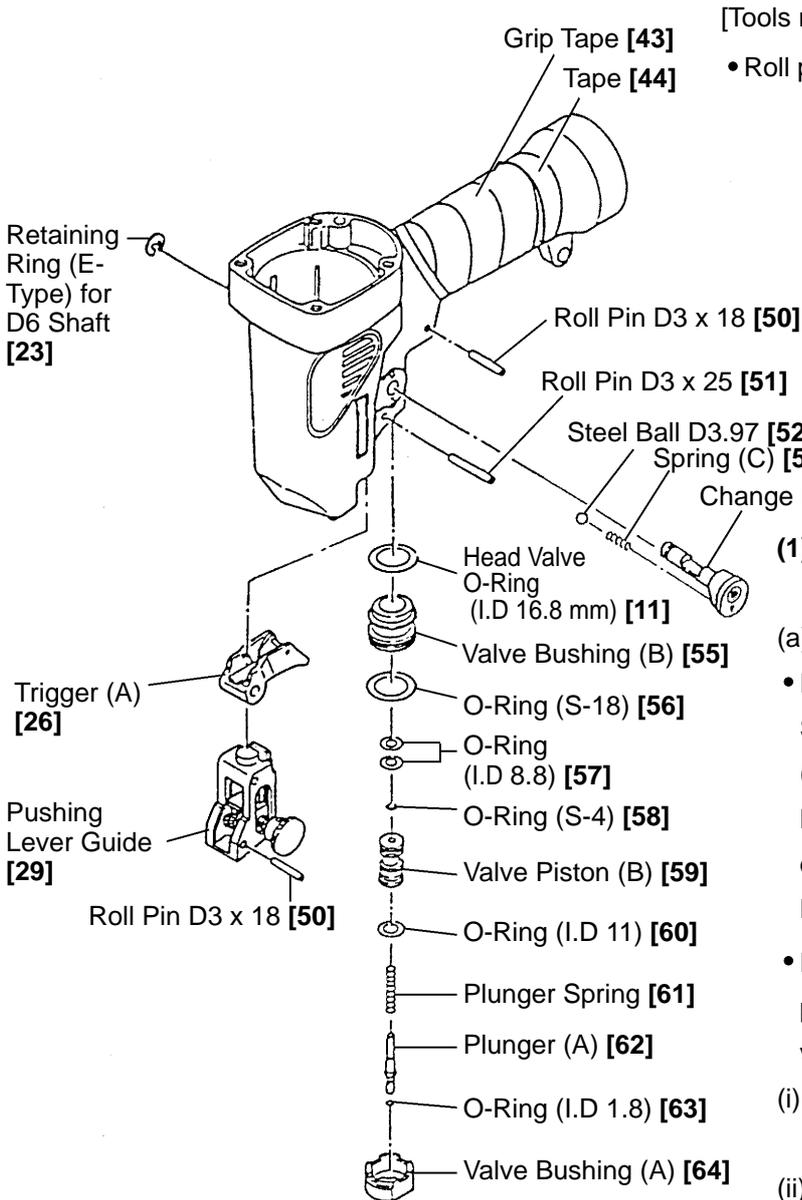


Fig. 5

- Before reassembly, apply grease to the sliding portion (A) of the Exhaust Cover [8] and Head Valve (A) [12], lip portions (B) and (C) of Head Valve (A) [12], and charge about 0.5 g of grease into the groove of the Exhaust Cover [8] (Fig. 4). Push Head Valve (A) [12] in the Exhaust Cover [8] together with the Head Valve O-Ring [11]
- Matching the cut side of the Muffler [5] to the Top Cover [3], mount the Muffler [5] without curling it (Fig. 5).
- Apply Shell Tonna Oil T32 to the inside of the Cylinder [20] and mount the Cylinder [20].
- Mount Gasket (A) [9] so that its hole matches the blowhole of the Body Ass'y [22].
- Apply grease to the O-Ring (1AS-50) [16] and its sealing surface and mount it.
- Fit the convex portion of the Exhaust Cover [8] in the concave portion of the Top Cover [3].

## 2-3. Disassembly and Reassembly of the Control Valve Section



[Tools required]

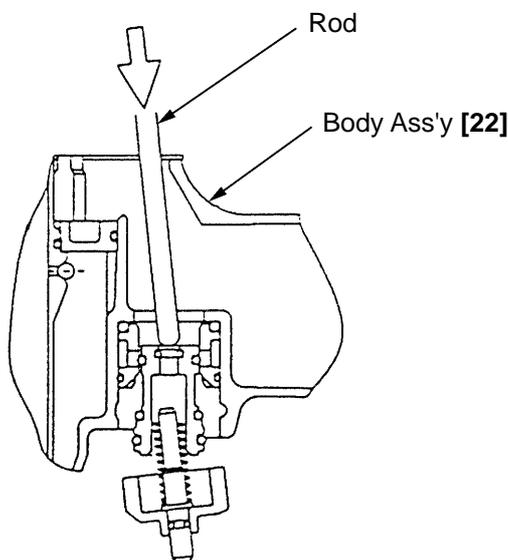
- Roll pin puller (3 mm dia. and 2.5 mm dia.)

### (1) Disassembly and reassembly of the control valve unit

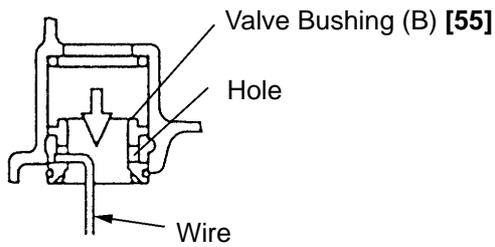
(a) Disassembly (See Fig. 6)

- Remove the Retaining Ring (E-Type) for D6 Shaft [23]. Trigger (A) [26] and Change Knob (B) [54] can then be removed. The Pushing Lever Guide [29] can be removed by pulling off the Roll Pin D3 x 25 [51] and the Roll Pin D3 x 18 [50].
- Pull off the Roll Pins D3 x 18 [50] with a roll pin puller (3 mm dia.) and remove the control valve unit following the procedures below.
  - (i) Remove the Exhaust Cover [8] as indicated in item 2-2-(1).
  - (ii) Insert a small rod from top of the Body Ass'y [22] and push the top surface of Valve Piston (B) [59] as illustrated in Fig.13, and then the parts forming the control valve unit excluding Valve Bushing (B) [55], the O-ring (S-18) [56] and the Head Valve O-ring [11] can be removed.
  - (iii) Valve Bushing (B) [55] can be pulled out using a wire by hooking a bent end into the hole of Valve Bushing (B) [55]. Exercise care not to cause any damage to Valve Bushing (B) [55] interior with such a wire hooked portion.
- Exercise care not to damage Valve Piston (B) [59] and Valve Bushing (B) [55].
- Do not pull off Plunger (A) end with pliers or a similar tool.

**Fig. 6 Disassembly and reassembly of the control valve section**



**Fig. 7**



**Fig. 8**

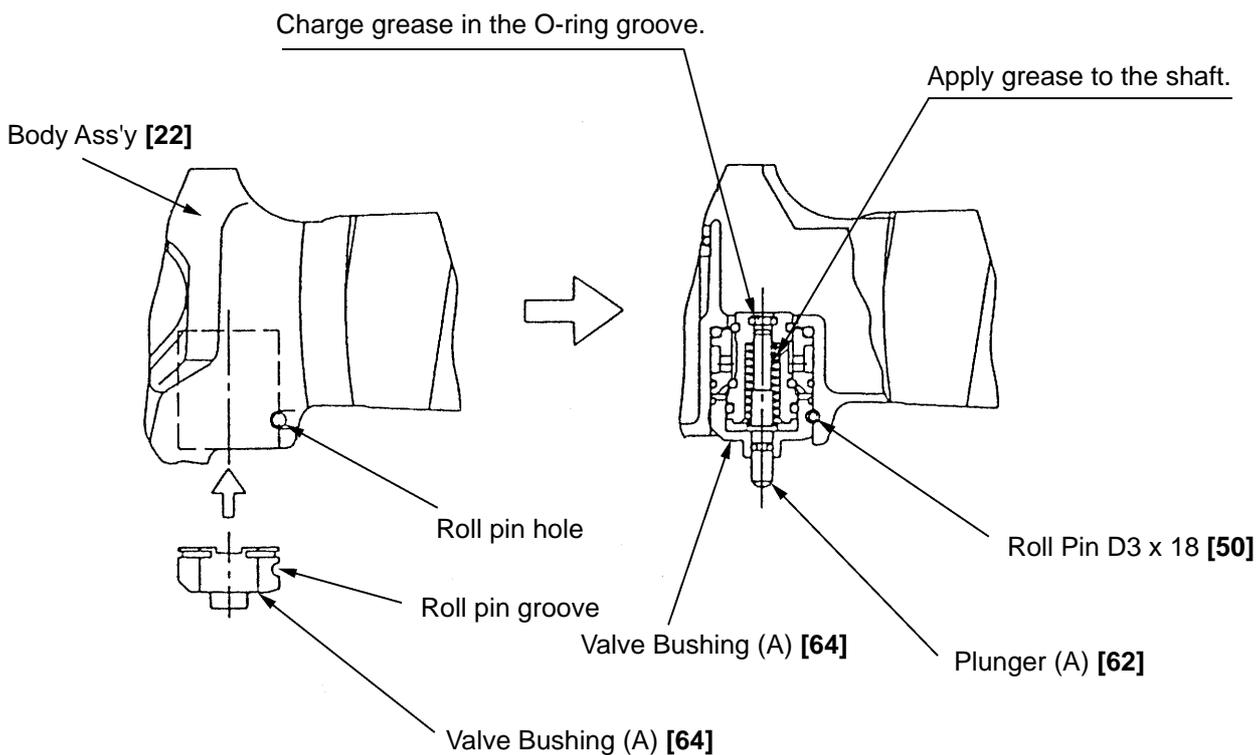
(b) Reassembly

Proceed in reverse to the disassembly procedure, taking care of the following points.

- Exercise enough care to keep the control valve unit away from foreign substances.
- Apply enough lubricant to Plunger (A) [62], the O-ring [63] and the O-rings [57], [58], [60] of Valve Piston (B) [59].

- Fit Valve Bushing (A) [64] into the Body Ass'y [22] so that its roll pin groove is aligned with the roll pin hole of the Body Ass'y [22] as illustrated in Fig.9. First insert a roll pin puller (3 mm dia.) and hammer in the Roll Pin D3 x 18 [50] after making sure that it can pass through the roll pin hole.

(If the Roll Pin is hammered in with the roll pin groove of Valve Bushing (A) [64] out of alignment with the roll pin hole at the Body Ass'y [22], the circumferential area of Valve Bushing (A) [64] may be damaged, resulting in difficulty of reassembly and disassembly.)



**Fig. 9**

- Make sure that Plunger (A) [62] moves smoothly after reassembly.

## (2) Winding the Grip Tape [43] and Tape [44]

The Grip Tape [43] and the Tape [44] are self-adhesive. Peel the backing sheets off the Grip Tape [43] and the Tape [44] before adhering them to the Body Ass'y [22]. First, adhere the end of the Grip Tape [43] near the roll pin hole of the Body Ass'y [22] and start to wind it around the Body Ass'y [22]. When the winding is completed, fix both wound ends of the Grip Tape [43] with the Tape [44] (Fig. 10). Be careful that the Grip Tape [43] and the Tape [44] cannot be peeled off once they are adhered.

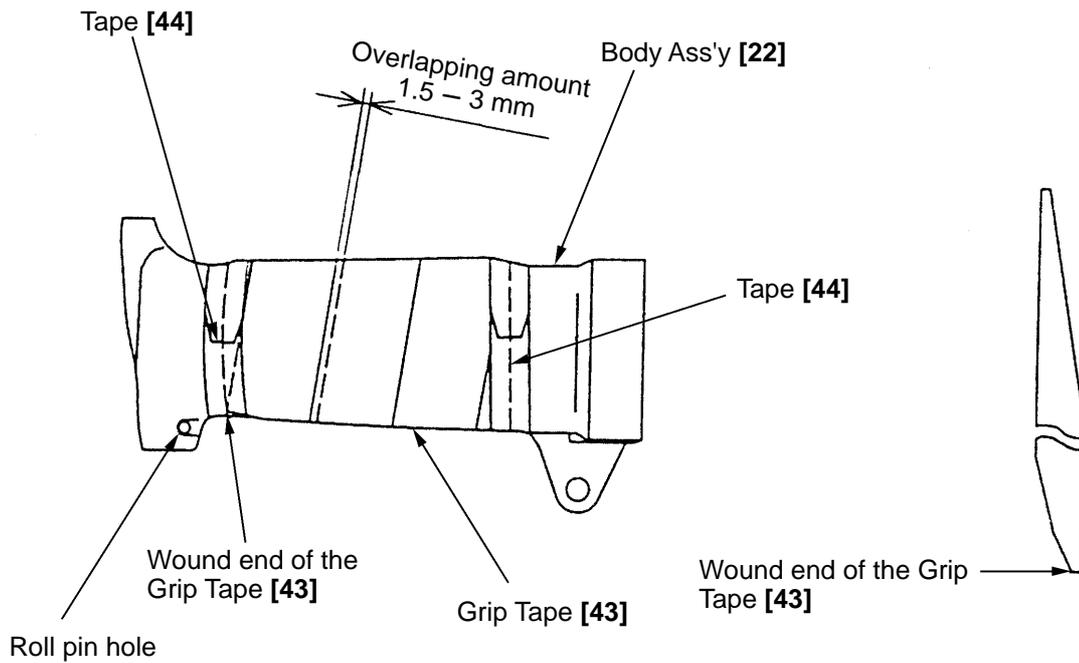


Fig. 10

## 2-4. Disassembly and Reassembly of the Cap and the Magazine Section

[Tools required]

- 21 mm-Width wrench
- Philips head screwdriver
- Roll pin pullers (2.5 mm dia. and 4 mm dia.)

### (1) Disassembly and reassembly of the cap unit

#### (a) Disassembly

The cap [46], united with the M42 screw, can be removed by gripping and turning it with a wrench.

#### (b) Reassembly

Proceed in reverse to the disassembly procedure, with lubricant applied to the O-ring [45].

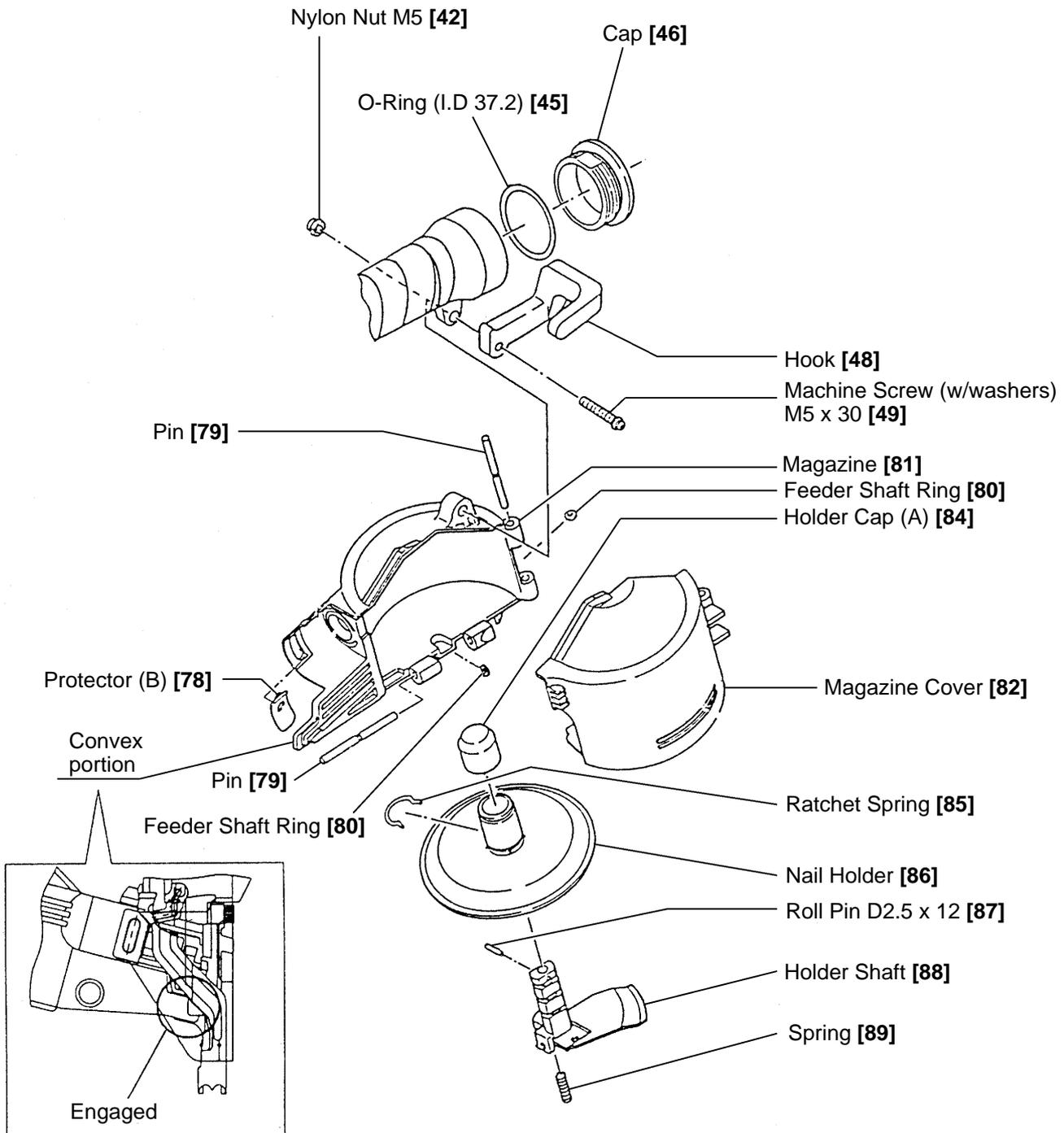


Fig. 11 Disassembly and reassembly of the cap and the magazine section

## (2) Disassembly and reassembly of the Magazine Ass'y [102]

### (a) Disassembly

Loosen the Machine Screw (W/Washers) M5 x 30 [49] securing the Body Ass'y [22]. Then the Magazine Ass'y [102], the Hook [48] and Protector (B) [78] can be removed.

### (b) Reassembly

Proceed in reverse to the disassembly procedure, fitting the convex portion of the Magazine [81] into the Nose [34].

## (3) Disassembly and reassembly of the Nail Holder [86], the Holder Shaft [88], etc.

### (a) Disassembly

Remove the two Pins [79] with a roll pin puller (4 mm dia.). Then the Magazine [81] and the Magazine Cover [82] can be removed. Remove Holder Cap (A) [84], and remove the Roll Pin D2.5 x 12 [87] with a roll pin puller (2.5 mm dia.). Then the Nail Holder [86], the Holder Shaft [88] and the Spring [89] can be removed.

### (b) Reassembly

Proceed in reverse to the disassembly procedure, taking care of the following points.

- Check that the Spring [89] is inserted between the concave portion of the Magazine [81] and the convex portion of the Holder Shaft [88]. Then insert the Pin [79] when mounting the Holder Shaft [88] to the Magazine [81] (Fig. 12).
- Check that the Feeder Shaft Rings [80] (2 pcs.) are fitted in the grooves of the Pins [79] (2 pcs.). Be careful not to lose the Feeder Shaft Rings [80].
- Check the following after reassembly.
  - The Nail Holder [86] tilts when the Magazine Cover [82] is opened.
  - The Nail Holder [86] moves smoothly in the Magazine [81] when the Magazine Cover [82] is closed.

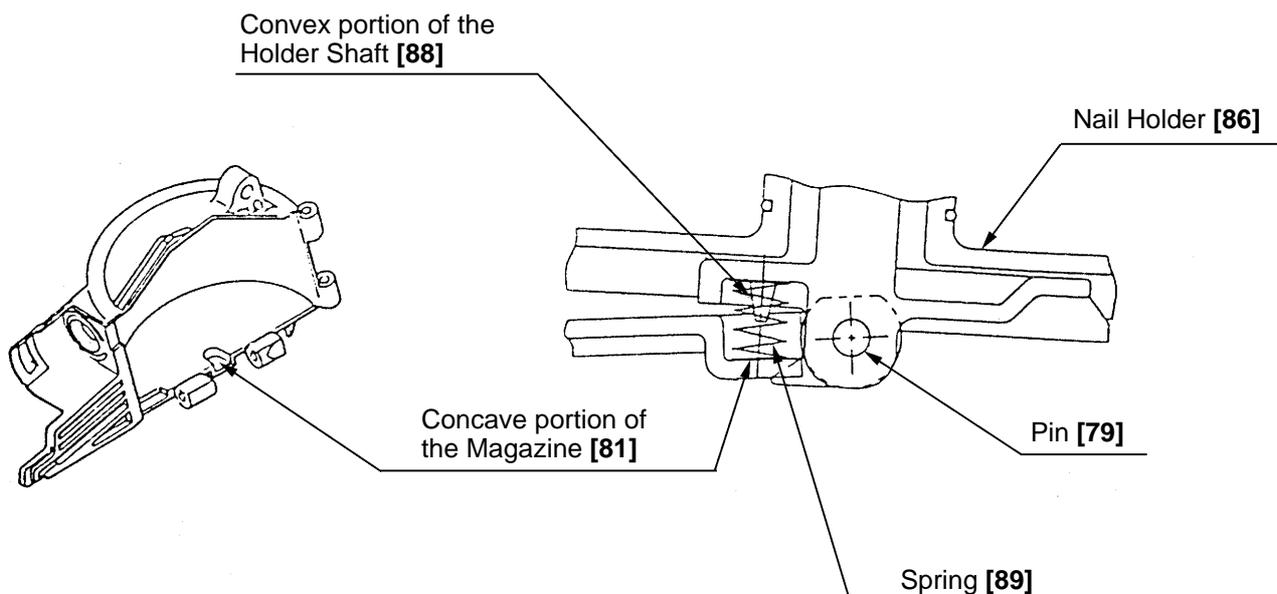
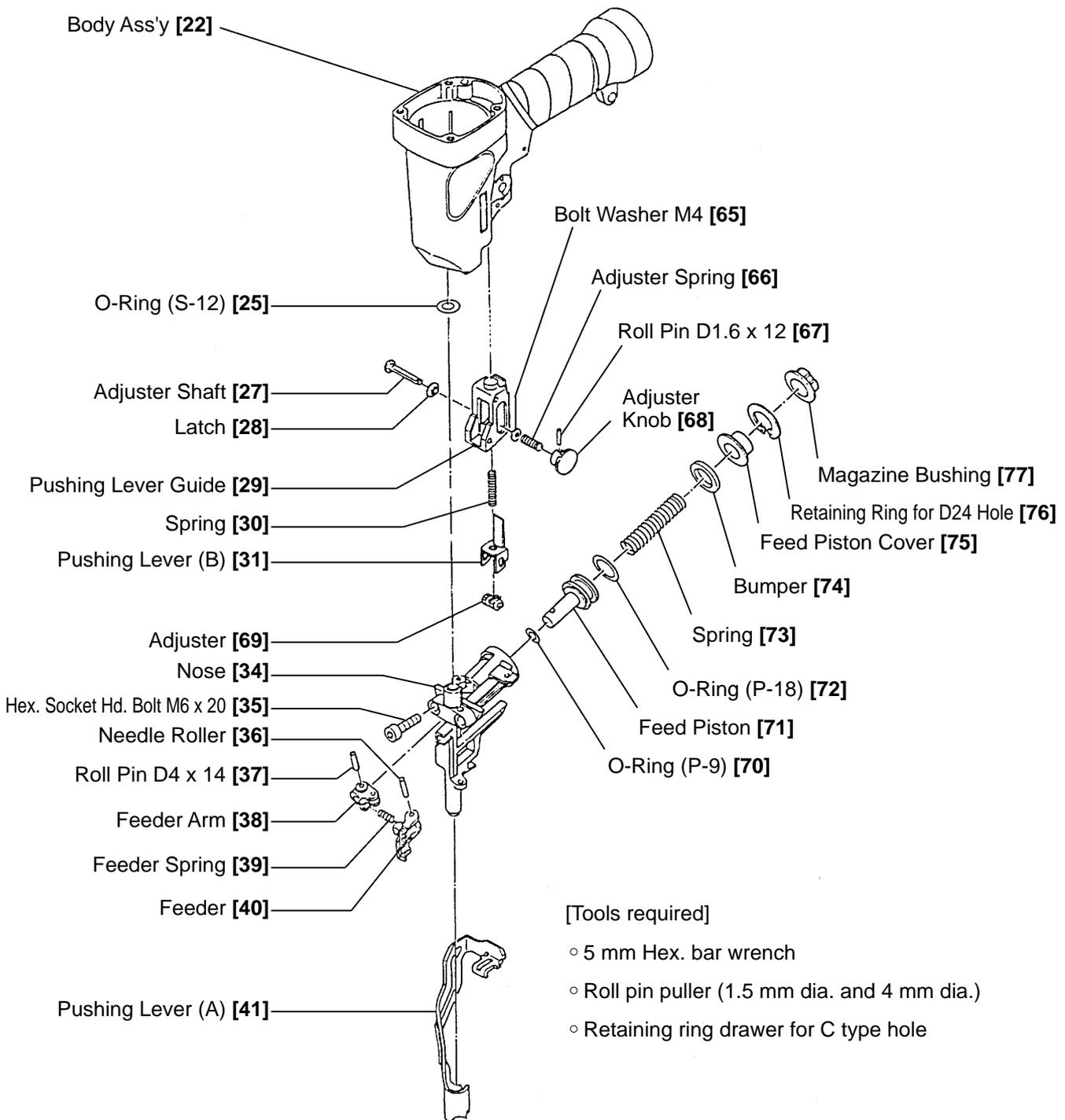


Fig. 12

## 2-5. Disassembly and Reassembly of the Driving Section



**Fig. 13 Disassembly and reassembly of the driving section**

### (1) Disassembly and reassembly of the nose [34] and pushing lever (A) [41]

#### (a) Disassembly

Remove the two Hex. Socket Hd. Bolts M6 x 20 [35]. Then the Nose [34] and Pushing Lever (A) [41] can be removed.

(b) Reassembly

Proceed in reverse to the disassembly procedure, taking care of the following points.

- Before reassembly, check that the end surface of Pushing Lever (A) [41] is fitted in the opening of the Pushing Lever Guide [29] (Fig. 14).
- After reassembly, check that Pushing Lever (A) [41] operates smoothly.

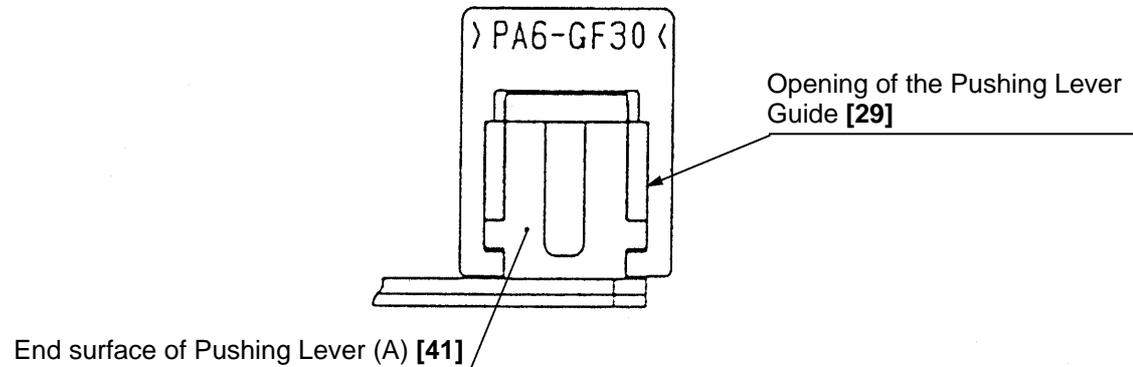


Fig. 14

(2) Disassembly and reassembly of the adjuster

(a) Disassembly

Remove the Roll Pin D1.6 x 12 [67]. Then the Adjuster Knob [68], the Adjuster Spring [66], the Bolt Washer M4 [65], the Latch [28], the Adjuster Shaft [27], the Spring [30], Pushing Lever (B) [31] and the Adjuster [69] can be removed.

(b) Reassembly

Proceed in reverse to the disassembly procedure, taking care of the following points.

- Align the dihedral width portion and the radiused portion of the Latch [28] to the window of Pushing Lever (B) [31] when reassembling (Fig. 15).
- Mount the Adjuster [69] and the Adjuster Knob [68] as shown below (Fig. 16).
- Apply the provided oil (SHELL TONNA T32 Oil) to Pushing Lever (B) [31] and the Bolt Washer M4 [65] before reassembly.
- After reassembly, check that the Adjuster [69] and Pushing Lever (B) [31] operate smoothly.

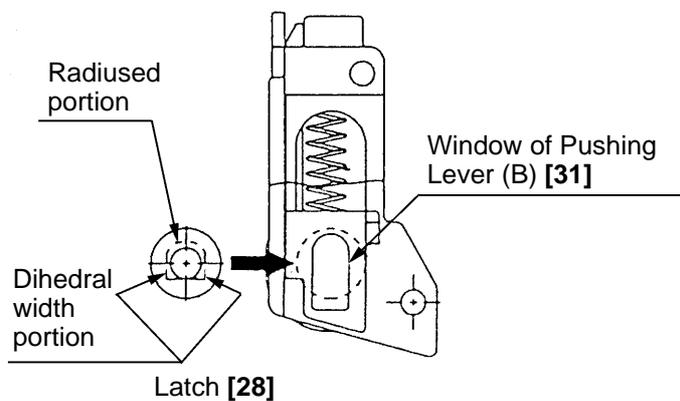


Fig. 15

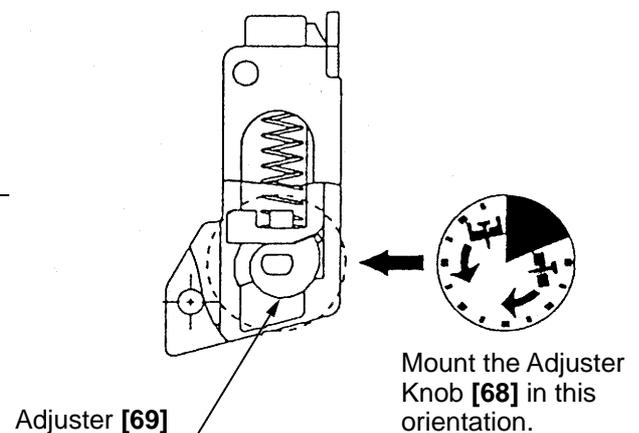


Fig. 16

### (3) Disassembly and reassembly of the Feeder [40] and the Feed Piston [71]

#### (a) Disassembly

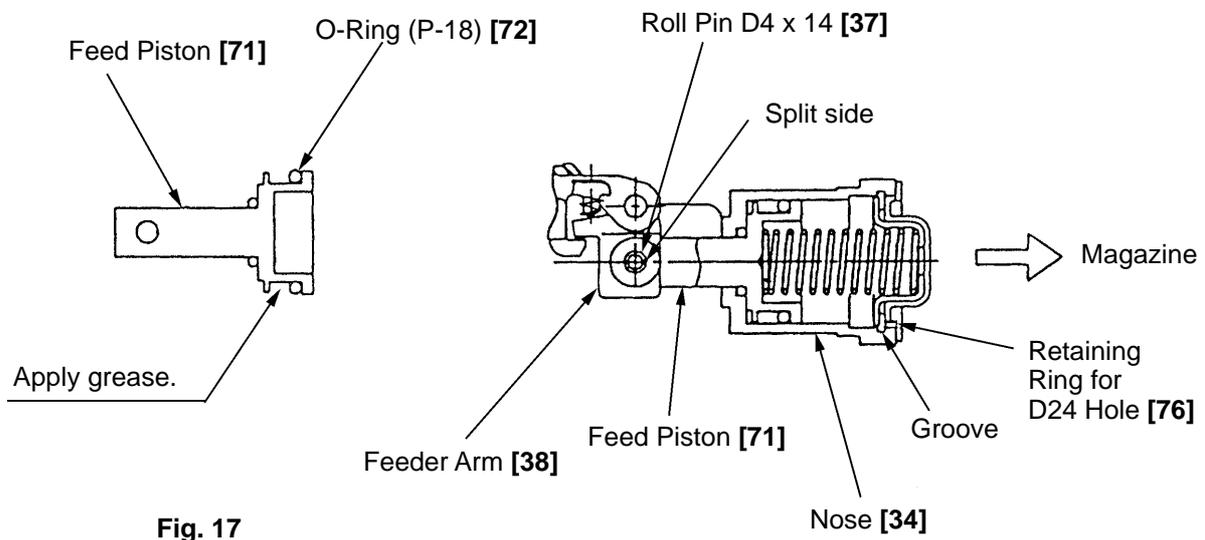
Remove the Magazine [81] from the Body Ass'y [22] as indicated in item 2-4-(2).

- Remove the Retaining Ring for D24 Hole [76] to take out the Feed Piston Cover [75], the Bumper [74] and the Spring [73].
- Pull out the Roll Pin D4 x 14 [37] to remove the Feed Piston [71] and the Feeder Arm [38].
- Remove the Needle Roller [36] to remove the Feeder Arm [38] and the Feeder [40].

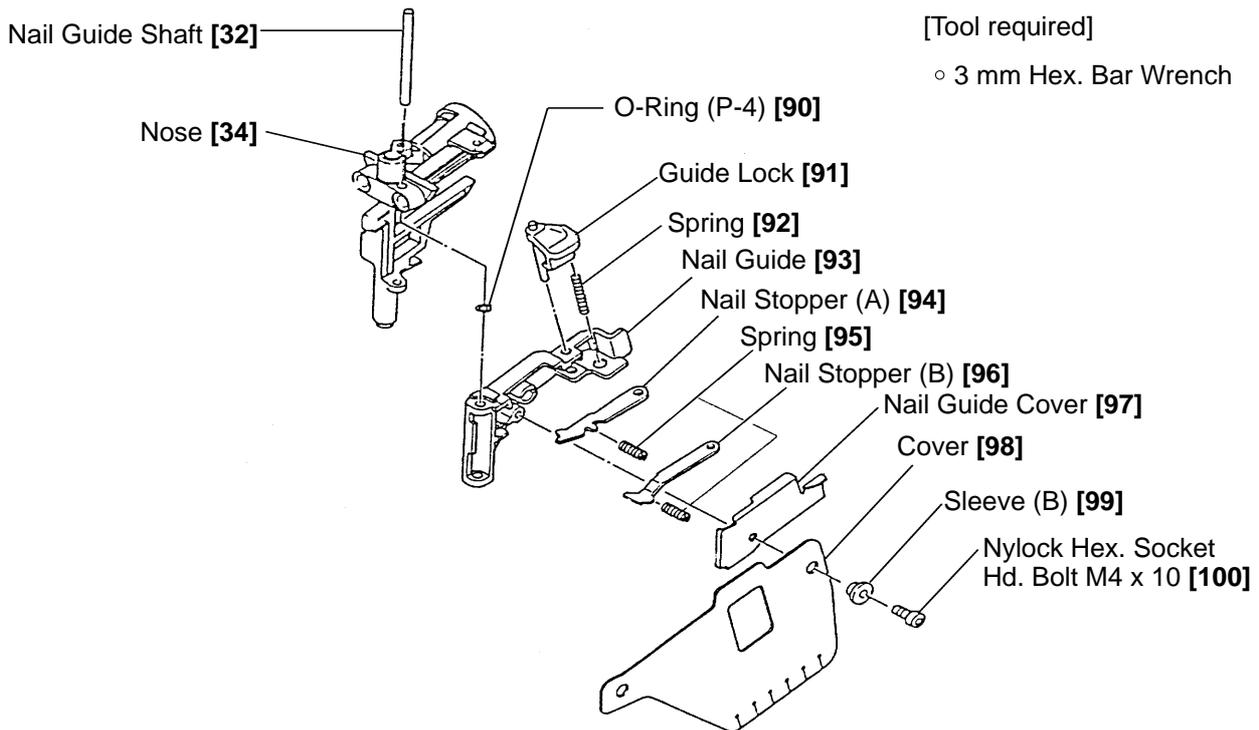
#### (b) Reassembly

Proceed in reverse to the disassembly procedure, taking care of the following points.

- Broken chips from the Piston Bumper [21], if caught in the air passage of the Nose [34] and the feed piston chamber, may make the movement of the Feed Piston [71] dull. Carefully clean with a clean rag before reassembly.
- Lubricate the O-Ring (P-9) [70] and O-Ring (P-18) [72] before reassembly.
- Move the O-Ring (P-18) [72] of the Feed Piston [71] toward right and fill the channel with lubricant.
- Apply grease to the O-ring sliding surfaces of the Feed Piston [71] and the Nose [34] before reassembly, though too much lubricant may make the Feed Piston movement sluggish.
- Make sure that the Retaining Ring for D24 Hole [76] is completely received in the Nose [34] groove.
- Push in the Roll Pin D4 x 14 [37] with its split end facing the magazine as indicated in Fig. 18.



### (3) Disassembly and reassembly of the Nail Guide [93] (See Fig. 19)



**Fig. 19 Disassembly and reassembly of the nail guide**

#### (a) Disassembly

- Remove the feeder unit from the output section as indicated in item 2-5-(1).
- Remove the Nail Guide [93] by pulling up the Nail Guide Shaft [32] beyond the Nose [34].
- Remove the Nylock Hex. Socket Hd. Bolt M4 x 10 [100] with the 3 mm dia. hex bar wrench and remove the Nail Guide Cover [97], the Cover [98] and the Guide Spring [95] (2 pcs.).
- Then pull the Guide Lock [91] out of the Nail Guide [93] to remove Nail Stopper (A) [94] and Nail Stopper (B) [96].

#### (b) Reassembly

Proceed in reverse to the disassembly procedure, taking care of the following points.

- Carefully remove any dust stuck in the Nail Guide [93] before reassembly.
- Degrease the Nail Guide [93] screw before tightening the Nylock Hex. Socket Hd. Bolt M4 x 10 [100].
- After reassembly, push Nail Stopper (A) [94] and Nail Stopper (B) [96] with a finger and make sure that they quickly return to position.
- Mount the Nail Guide Shaft [32] facing the chamfered side upward.

### 3. INSPECTION AND CONFIRMATION AFTER REASSEMBLY

Make sure that:

- Plunger (A) [62] moves smoothly.
- Pushing Lever (A) [41] moves smoothly.
- Nail Stopper (A) [94] and Nail Stopper (B) [96] pushed with a finger completely returns to position.
- There is no air leak at any part of the assembly.
- The main body is brought into operation by a simple pull on Trigger (A) [26] and by light pressure on the Pushing Lever (A) [41].
- The Feed Piston [71] reliably operates with an air pressure of 5 kgf/cm<sup>2</sup>. (Open the Nail Guide and perform a nailing operation with no nail being fed.)
- Nails do not jam and are not bent when nailed with an air pressure of 4.9 bar (5 kgf/cm<sup>2</sup>, 70 psi).  
**(Note)** Perform test-nailing with the Adjuster Knob [68] turned to the lowermost position.
- The tightening torque for each screw is proper.

#### 4. STANDARD REPAIR TIME (UNIT) SCHEDULES

MODEL	Variable		10	20	30	40	50	60 min.	
	Fixed								
NV50AH		Work Flow							
				Exhaust Cover Top Cover Gasket (A) Head Valve Spring Head Valve O-Ring Head Valve (A)	Cylinder Plate Cylinder Piston Bumper O-Ring x 3				
		General Assembly	Pushing Lever (A) Adjuster Pushing Lever (B) Pushing Lever Spring Pushing Lever Guide	Valve Bushing (A) Plunger (A) Plunger Spring Valve Piston (B) Valve Bushing (B) O-Ring x 7					Body Ass'y
			Feed Piston O-Ring x 2 Spring Bumper Feed Piston Cover Magazine Bushing	Piston Piston O-Ring Piston Ring  Change Knob (B) Spring (C) Steel Ball					
			Change Knob (B) Valve Bushing Plunger (A) Plunger Spring Valve Bushing (A) O-Ring x 3	Feeder Arm Feeder Feeder Spring	Tail Cover Nail Guide Nail Stopper (A), (B) Guide Lock Nail Guide Cover Magazine Magazine Cover Nail Holder				
				Adjustment (Cylinder, Body and Valve)					