MODEL

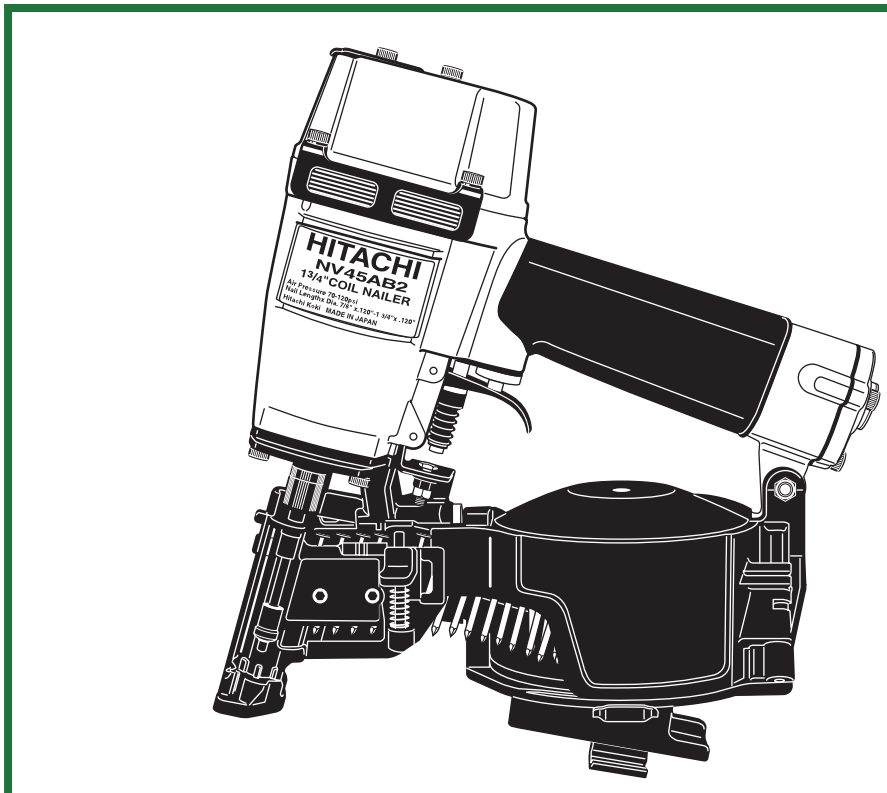
NV 45AB2

HITACHI
POWER TOOLS

COIL NAILER
NV 45AB2

TECHNICAL DATA
AND
SERVICE MANUAL

N



LIST No. E004

Mar. 2002

REMARK:

Throughout this TECHNICAL DATA AND SERVICE MANUAL, a symbol(s) is(are) used in the place of company name(s) and model name(s) of our competitor(s). The symbol(s) utilized here is(are) as follows:

Symbols Utilized	Competitors	
	Company Name	Model Name
P	BOSTITCH	RN45B
Q	SENCO	SCN40R
R	PORTER CABLE	RN175
S	MAX	CN450R

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1. PRODUCT NAME

Hitachi 1-3/4" Coil Nailer, Model NV 45AB2

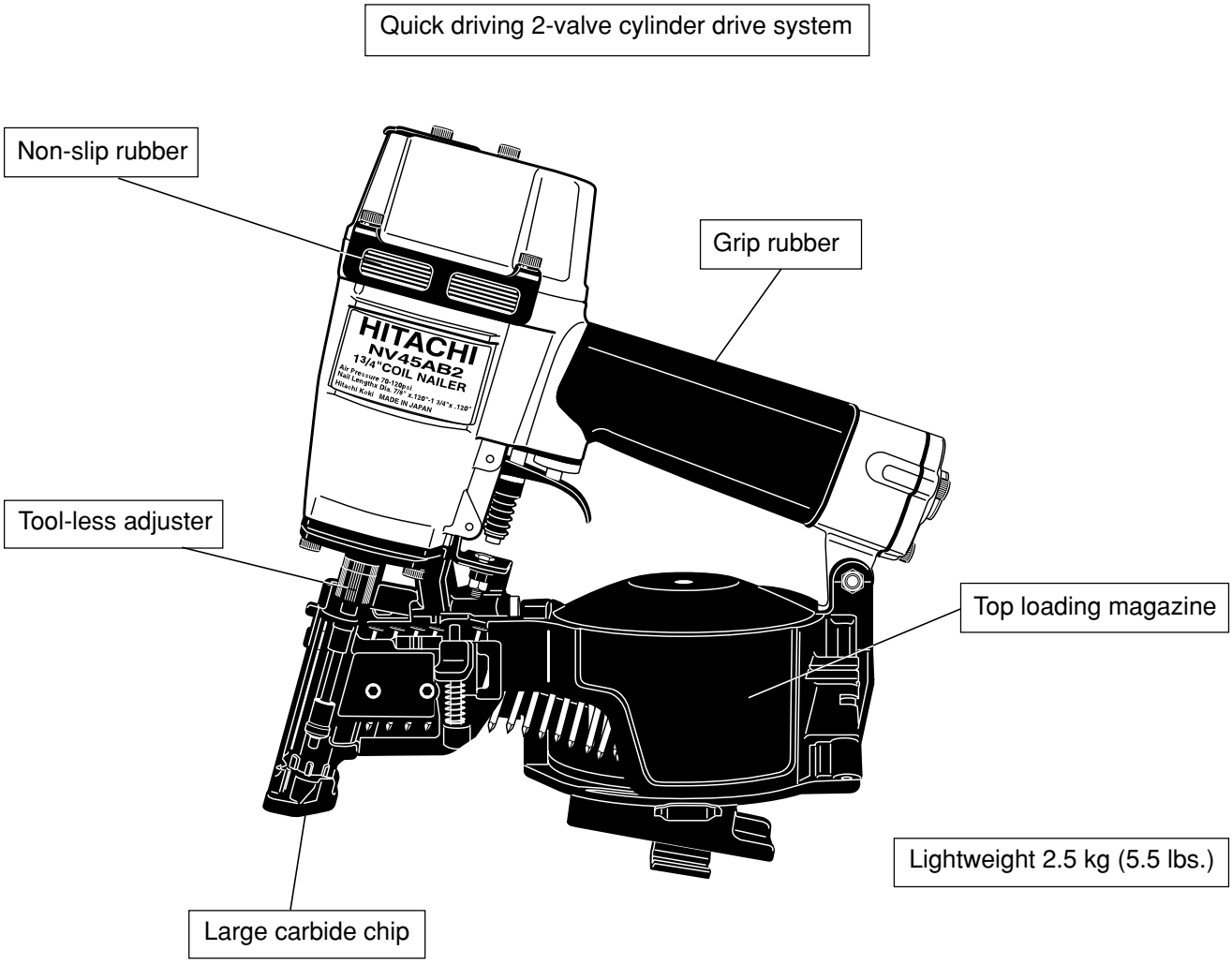
2. MARKETING OBJECTIVE

The current Model NV 45AB coil nailer is well-reputed in the U.S.A. market as a roofing nailer suitable for roofing asphalt shingles in building construction. However, competitively priced roofing nailers have been put on the U.S.A. market recently. The newly introduced Model NV 45AB2 is developed by making minor changes to the Model NV 45AB to meet the market demands. The output section is basically common to that of the Model NV 45AB and the 2-valve cylinder drive system that is well reputed for quick driving is adopted. To meet the market demands, the Model NV 45AB2 is equipped with a tool-less nailing depth adjuster, top loading magazine, non-slip rubber, etc. Applicable nails are the same as those of the Model NV 45AB. The Model NV 45AB2 weighs only 2.5 kg (same as the Model NV 45AB).

3. APPLICATIONS

- Installation of asphalt roofing shingles in building construction.
- Installation of insulation boards in building construction.

4. SELLING POINTS

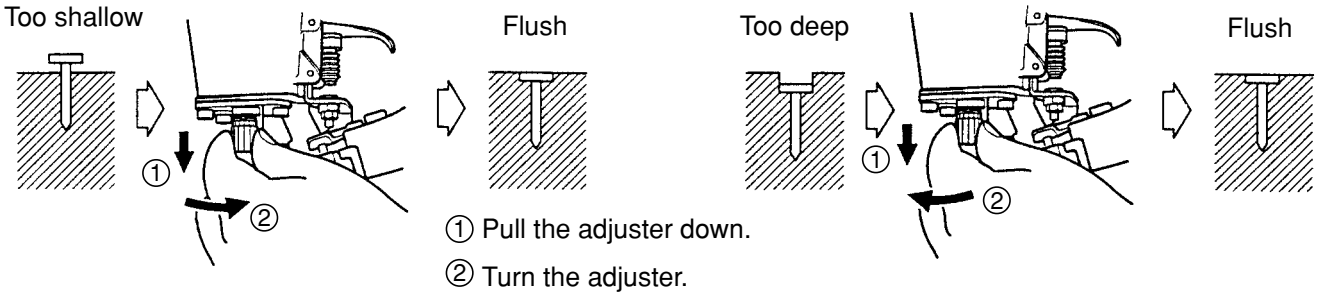


(1) Output section

The basic construction is the same as that of the Model NV 45AB except the 2-valve cylinder drive system that is well reputed for quick driving is adopted.

(2) Adjuster

While the Model NV 45AB requires a wrench to adjust the nailing depth, the Model NV 45AB2 requires no tool for adjustment.



① Pull the adjuster down.

② Turn the adjuster.

(3) Magazine

While the Model NV 45AB is equipped with a bottom loading magazine, the Model NV 45AB2 is equipped with a top loading magazine. The magazine can be opened/closed just by the nail guide operation. (The Model NV 45AB requires operation of both the nail guide and the latch at the rear of the magazine.)

(4) Carbide chip

The carbide chips provided at the tip of the pushing lever are larger than the competitive products to prevent wear .

Maker	HITACHI		P	Q	R	S
Model	NV 45AB2	NV 45AB				
Size of carbide chip (area ratio)	7.5 mm dia. (1)	4.5 mm x 10 mm (1)	6 mm dia. (0.6)	6 mm dia. (0.6)	5 mm dia. (0.4)	4 mm dia. (0.3)

(5) Non-slip rubber

Although the Model NV 45AB is equipped with only a steel body guard at the side of the body, a non-slip rubber is added to the Model NV 45AB2.

(6) Handle grip

Thanks to the adoption of the grip rubber that is common to the Model NR 90AC2, the handle grip of the Model NV 45AB2 is more durable than that of the Model NV 45AB.

5. SPECIFICATIONS

5-1. Specifications

Model	NV 45AB2
Driving system	Reciprocating piston type
Operating pressure	5 -- 8.5 kgf/cm^2 (70 – 120 psi, 4.9 – 8.3 bar) (Gauge pressure)
Driving speed	Min. 3 pcs./sec.
Weight	2.5 kg (5.5 lbs.)
Dimensions (Length x Height x Width)	250 mm x 264 mm x 117 mm (9-27/32" x 10-3/8" x 4-5/8")
Nail feed system	Reciprocating piston type
Nail capacity	120 (1 roll)
Air consumption	1.3 ltr/cycle at 7 kgf/cm^2 (.046 ft^3/cycle at 100 psi) (1.3 ltr/cycle at 6.9 bar)
Air inlet	3/8 NPT thread
Packaging	Corrugated cardboard box
Packaging dimensions (Length x Height x Width)	335 mm x 155 mm x 320 mm (13-3/16" x 1-1/8" x 12-5/8")
Standard accessories	• Hex. bar wrench for M4 screw (Code No. 943277) • Hex. bar wrench for M5 screw (Code No. 944458) • Eye protector (Code No. 875769)
Optional accessories	• Sequential trip mechanism kit (Single-shot) (Code No. 878226) • Pneumatic tool lubricant (1 oz oil feeder) (Code No. 877153) • Pneumatic tool lubricant (4 oz oil feeder) (Code No. 874042) • Pneumatic tool lubricant (1) (Code No. 876212)

5-2. Nail Selection

The Model NV 45AB2 utilizes roofing nails which are common round-head nails collated by wire into coils from 120 nails. Applicable nail dimensions are shown below. However, it is recommended to use genuine HITACHI nails to ensure satisfactory driving quality.

CAUTION: Ensure that nails are as specified in Fig. 1. Other nails will cause clogging of nails and subsequent damage to the nailer.

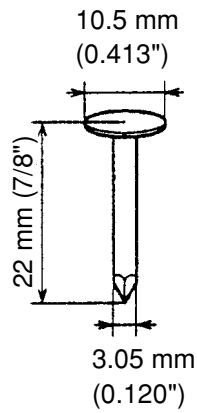
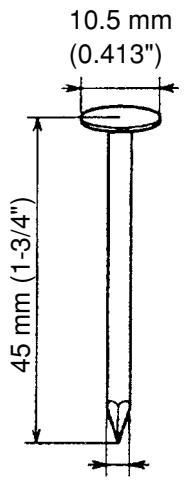
<table>
<tr><td rowspan="2"></td><td colspan="2">Wire-collated nails</td></tr>
<tr><td>Min.</td><td>Max.</td></tr>
<tr><td></td><td> 
</td><td> 
</td></tr>
</table>

Fig. 1 Dimensions of nails

5-3. Nail Driving Force

Fig. 2 shows by type of wood and nail the nailer output energy provided by the supply pressure and the nailing energy required for driving the nail flush. Air pressure which exceeds the intersecting point between the nailer output energy and the required nailing energy for driving the nail allows the nail to be fully driven.

For example, when driving a nail of 3.05 mm dia. x 45 mm length (0.120" x 1-3/4") into a workpiece of hemlock with the Model NV 45AB2, a pressure of about 6.5 bar (6.6 kgf/cm^2, 94 psi) allows the nailer to drive the nail flush with the wood surface. A pressure beyond this value causes the nail head to be driven below the wood surface. Fig. 2 should be used as reference only because those values vary depending on the type of wood, moisture content, and grain of wood.

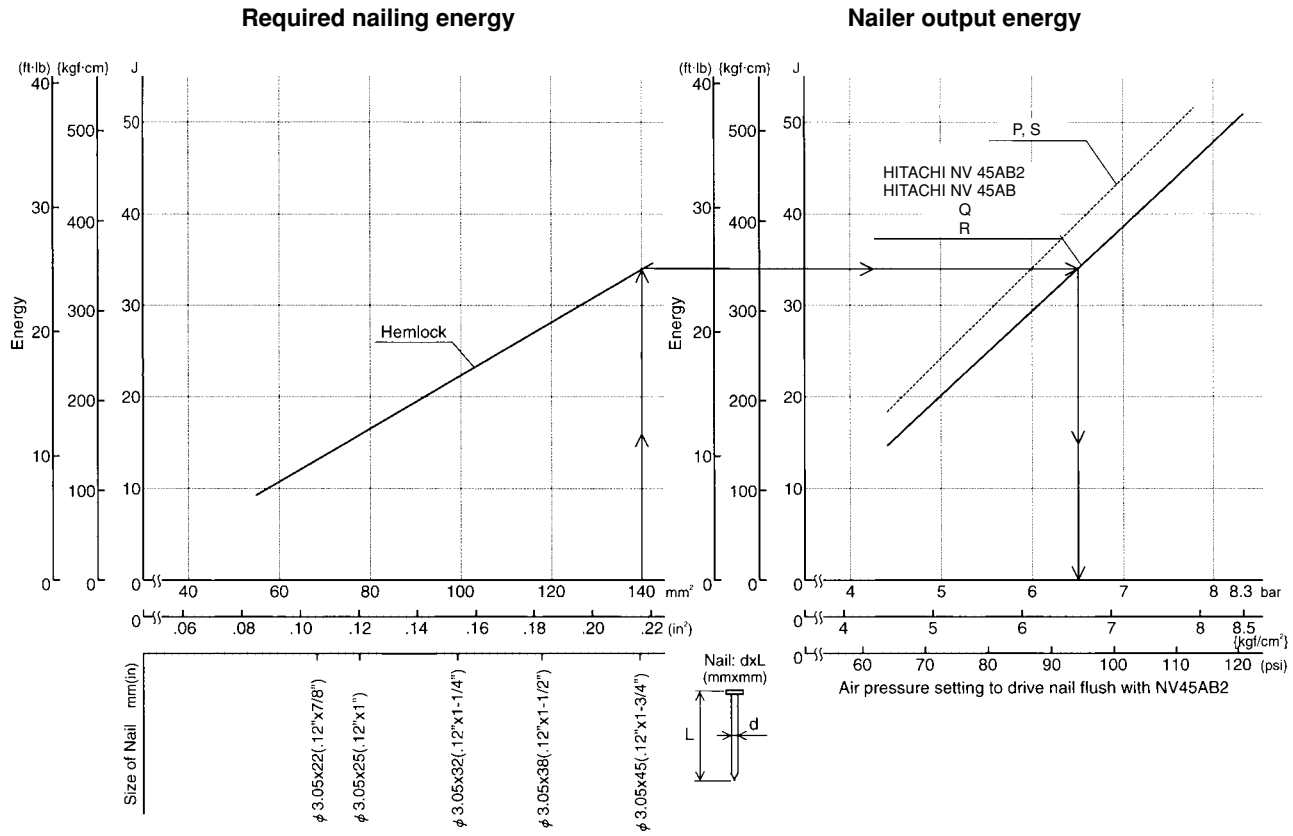


Fig. 2 Required nailing energy and nailer output energy

5-4. Optional Accessories

Sequential trip mechanism kit (Single shot) (Code No. 878226)

A sequential trip mechanism kit is provided as an optional accessory for the Model NV 45AB2. By using this optional accessory, a nail is driven by pressing the pushing lever first against a workpiece and then pulling the trigger (single-shot operation), and no nail is driven when pulling the trigger first and then pressing the pushing lever against a workpiece. Please recommend the sequential trip mechanism kit to the customers who want to use it. Salespersons must instruct the customers to read the Handling Instructions attached to the sequential trip mechanism kit and also the Handling Instructions of the Model NV 45AB2 thoroughly for correct use.

6. COMPARISONS WITH SIMILAR PRODUCTS

Maker		HITACHI		P	Q	R	S
Model name		NV 45AB2	NV 45AB				
Operating pressure		4.9 – 8.3 bar (5 – 8.5 kgf/cm^2) (70 – 120 psi)	4.9 – 8.3 bar (5 – 8.5 kgf/cm^2) (70 – 120 psi)	4.9 – 6.9 bar (5 – 7 kgf/cm^2) (70 – 100 psi)	4.9 – 8.3 bar (5 – 8.5 kgf/cm^2) (70 – 120 psi)	4.9 – 8.3 bar (5 – 8.5 kgf/cm^2) (70 – 120 psi)	4.5 – 6.9 bar (4.6 – 7 kgf/cm^2) (65 – 100 psi)
Weight		5.5 lbs. (2.5 kg)	5.5 lbs. (2.5 kg)	6.0 lbs. (2.7 kg)	5.2 lbs. (2.35 kg)	5.1 lbs. (2.3 kg)	5.3 lbs. (2.4 kg)
Dimensions (L x H x W)		250 mm x 264 mm x 117 mm (9-27/32" x 10-3/8" x 4-5/8")	250 mm x 264 mm x 124 mm (9-27/32" x 10-3/8" x 4-7/8")	277 mm x 269 mm x 117 mm (10-29/32" x 10-19/32" x 4-5/8")	248 mm x 264 mm x117 mm (9-3/4" x 10-3/8" x 4-5/8")	300 mm x 257 mm x 110 mm (11-13/16" x 10-1/8" x 4-11/32")	275 mm x 268 mm x 111 mm (10-13/16" x 10-9/16" x 4-3/8")
Air consumption at 7 kgf/cm^2 (100 psi)		1.3 ltr/cycle (0.046 ft^3/cycle)	1.3 ltr/cycle (0.046 ft^3/cycle)	1.8 ltr/cycle (0.064 ft^3/cycle)	1.3 ltr/cycle (0.046 ft^3/cycle)	1.4 ltr/cycle (0.049 ft^3/cycle)	2.0 ltr/cycle (0.070 ft^3/cycle)
Nail capacity		120 nails	120 nails	120 nails	120 nails	120 nails	120 nails
Magazine type (Material)		Top loading (Plastic)	Bottom loading (Plastic)	Top loading (Plastic)	Top loading (Plastic)	Top loading (Plastic)	Top loading (Plastic)
Driving depth adjustment mechanism		Tool not required	With wrench	None	Tool not required	Tool not required	Tool not required
Trigger valve		2-valve	2-valve	1- valve	1- valve	1- valve	1- valve
Handle grip		Rubber	Racket grip	Rubber	Foam rubber (Apt to peel off)	Rubber	Rubber
Non-slip rubber		Provided	Not provided	Provided	Provided	Provided	Not provided
Carbide chip		7.5 mm dia.	4.5 mm x 10 mm	6 mm dia.	6 mm dia.	5 mm dia.	4 mm dia.
Applicable nails	Collation	Wire	Wire	Wire	Wire	Wire	Wire
	Head dia.	10.5 mm (0.413")	10.5 mm (0.413")	10.5 mm (0.413")	10 mm (0.394")	9.8 mm (0.385")	10.5 mm (0.413")
	Shank dia.	3.05 mm (0.120")	3.05 mm (0.120")	3.05 mm (0.120")	3.05 mm (0.120")	3.05 mm (0.120")	3.05 mm (0.120")
	Length	22 mm – 45 mm (7/8" – 1-3/4")	22 mm – 45 mm (7/8" – 1-3/4")	19 mm – 45 mm (3/4" – 1-3/4")	19 mm –38 mm (3/4" – 1-1/2")	22 mm – 45 mm (7/8" – 1-3/4")	19 mm – 45 mm (3/4" – 1-3/4")

7. PRECAUTIONS IN SALES PROMOTION

In the interest of promoting the safest and most efficient use of the Model NV 45AB2 Nailer by all of our customers, it is very important that at the time of sale the salesperson carefully ensures that the buyer seriously recognizes the importance of the contents of the Instruction Manual, and fully understands the meaning of the precautions listed on the Warning Label attached to each tool.

The Model NV 45AB2 Nailer is designed for continuous nail driving. At time of sale, the salesperson must inform the customer that the sequential trip mechanism kit which can change the Model NV 45AB2 to a single-shot nailer is optionally available, and recommend it to the customers who want to use it. Refer to the leaflet attached together with the Instruction Manual for details.

7-1. Instruction Manual

Although every effort is made in each step of design, manufacture, and inspection to provide protection against safety hazards, the dangers inherent in the use of any pneumatic tool cannot be completely eliminated. Accordingly, general precautions and suggestions for use of pneumatic tools, and specific precautions and suggestions for the use of the pneumatic nailer are listed in the Instruction Manual to enhance the safe, efficient use of the tool by the customer.

Salespersons must be thoroughly familiar with the contents of the Instruction Manual to be able to offer appropriate guidance to the customers during sales promotion.

7-2. Warning Label

Each Model NV 45AB2 unit is provided with a Warning Label (illustrated below) which lists basic safety precautions in its use. Carefully ensure that customers fully understand and follow these precautions before using the tool.

7-3. Related Laws and Regulations

As nailers and staplers are designed to instantaneously drive nails and staples, there is an ever-present danger of misfiring and subsequent possible serious injury. Accordingly, close attention in handling is absolutely necessary at all times. Carefully ensure that the customer is fully aware of the precautions listed in the Instruction Manual provided with each unit.

While there are no specific safety regulations, there are related items in various general safety regulations with which the salespersons should be familiar in order to properly advise the customer. Please check your national and/or local regulations for applicable items. Some applicable items are outlined below.

The U.S.A:

OSHA	1926.102 Eye and face protection
	1926.302 Power-operated hand tools
ANSI SNT-101-1993	Portable, Compressed-Air-Actuated,
	Fastener Driving Tools-Safety Requirements for

8. MECHANISM AND OPERATION PRINCIPLE

8-1. Mechanism

As illustrated in Fig. 3, the Model NV 45AB2 can be generally divided into four sections:
output section, control valve section, driving section and magazine section.
Although the output section and the valve section are basically common to those of the Model NV 45AB, most of the parts of the driving section and the magazine section have been newly designed.
Primary differences from the Model NV 45AB are described below.

- Output section ····· The handle employs a grip rubber (Model NV 45AB: grip tape). The body guard has been newly designed to mount the non-slip protector.
- Driving section ····· The nose, nail guide shaft, etc. have been newly designed to adopt the tool-less adjuster.
- Magazine section ···· Most of the parts of the magazine section have been newly designed to make the magazine top-loading type.

The **[Bold]** numbers in the figure below correspond to the numbers in "8-2. Operation Principle".

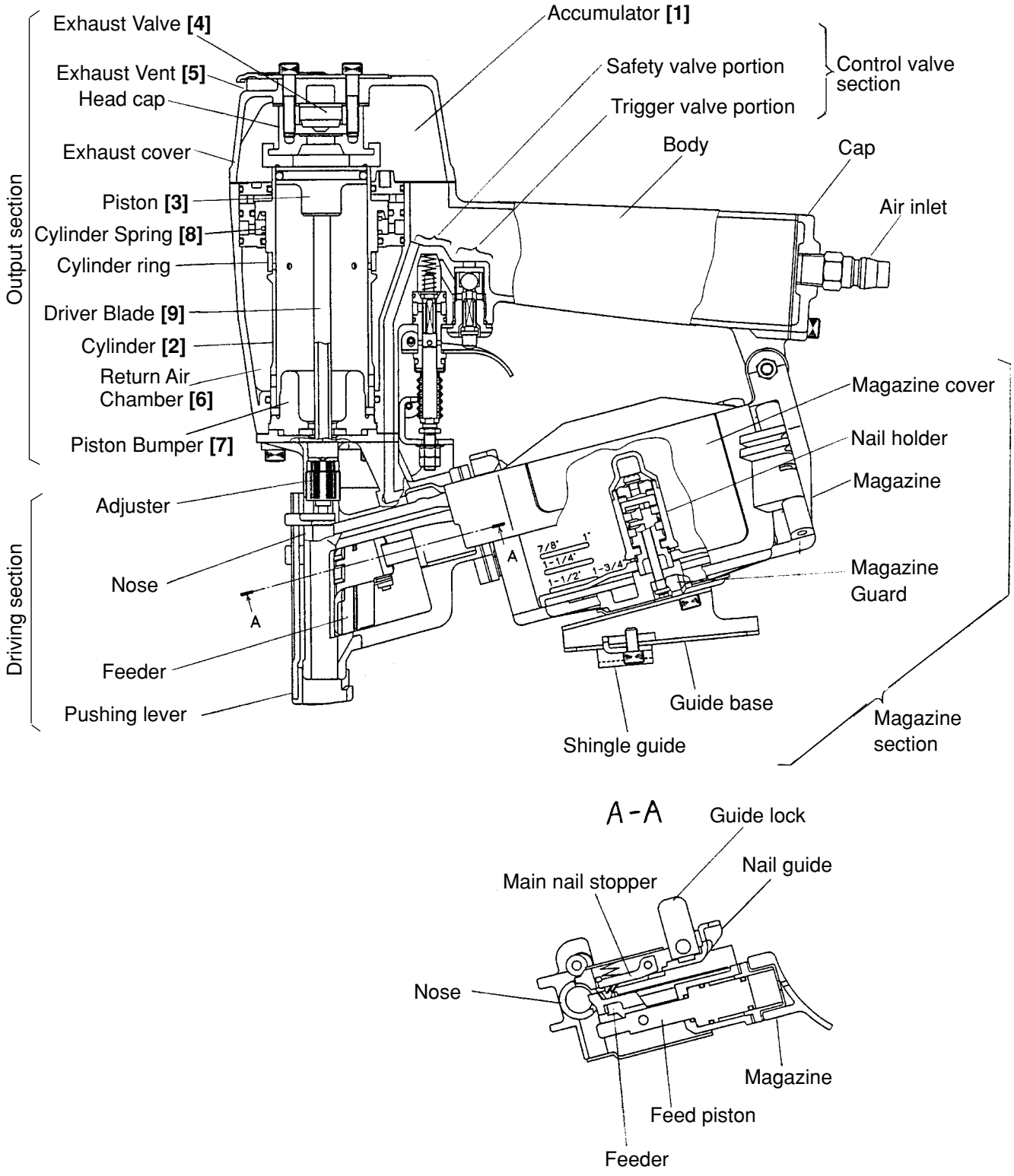


Fig. 3 Construction

8-2. Operation Principle

The operation of the Model NV 45AB2 is illustrated and described in Figures 4 through 7. The **[Bold]** numbers in the descriptions correspond to the item numbers shown in the mechanism illustration in Fig. 3. In Figures 5 and 7, read the descriptions in alphabetical order.

(1) When the compressed air source (air hose) is connected to the nailer

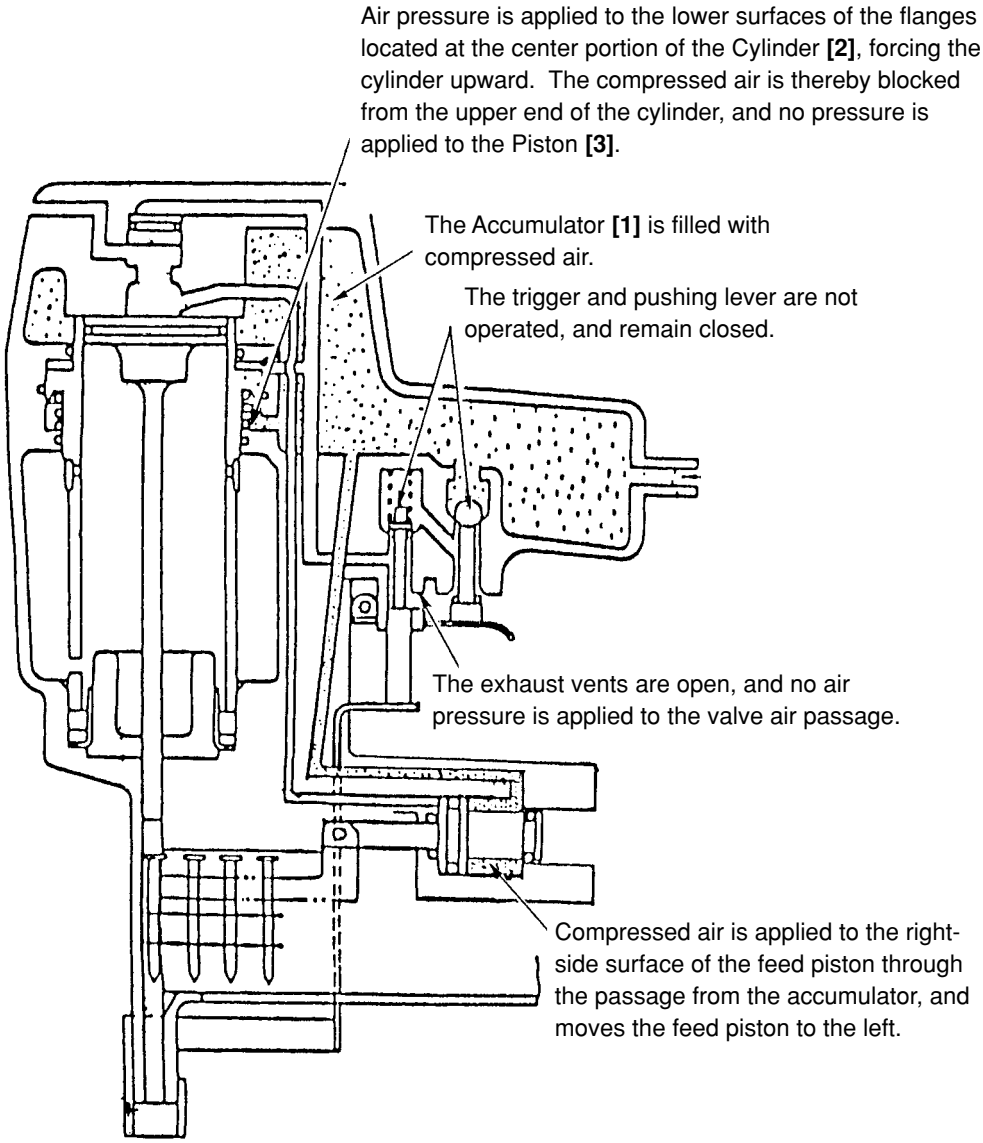


Fig. 4

(2) When the trigger and pushing lever are operated

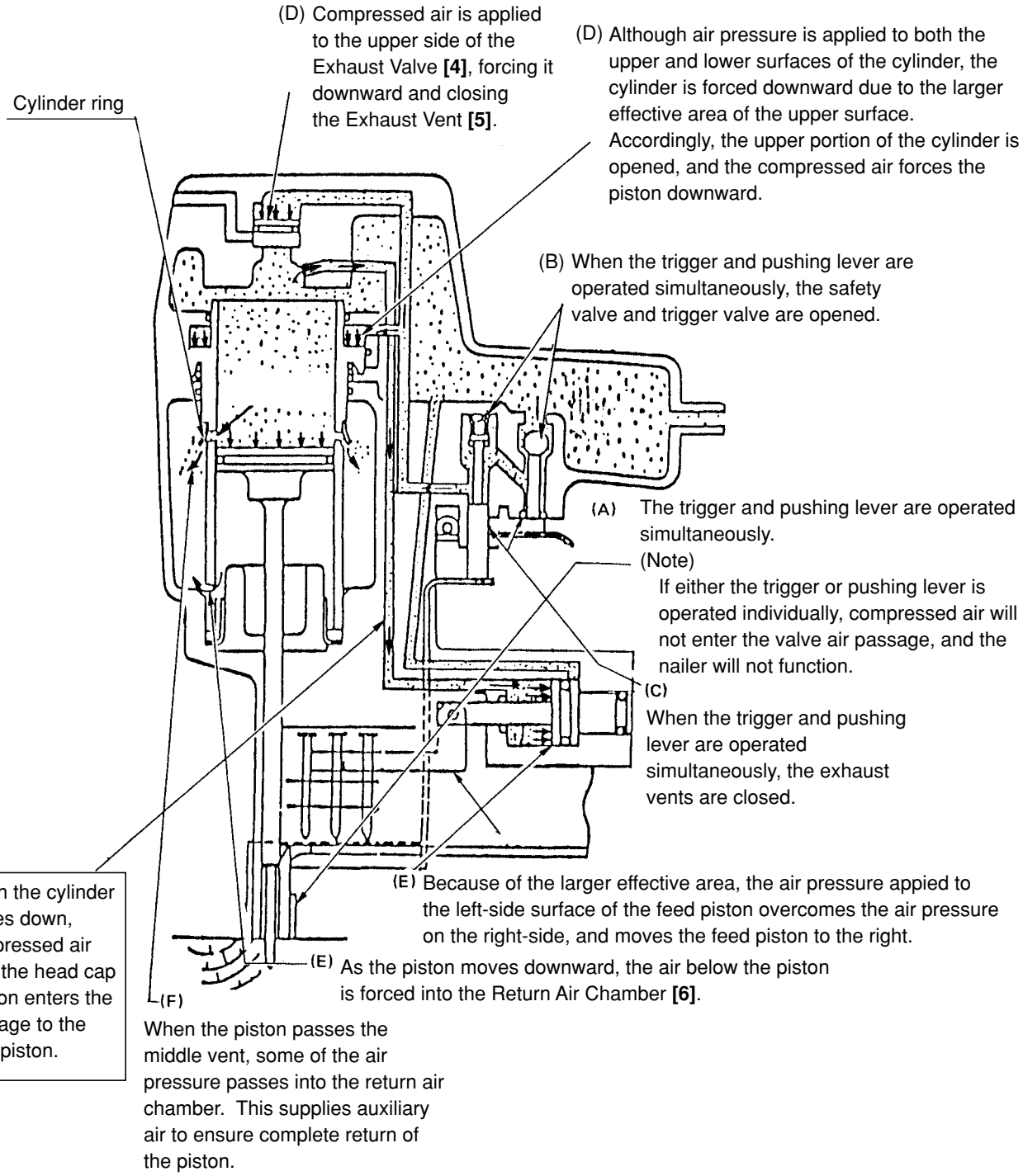


Fig. 5

(3) If the trigger and pushing lever are kept pressed

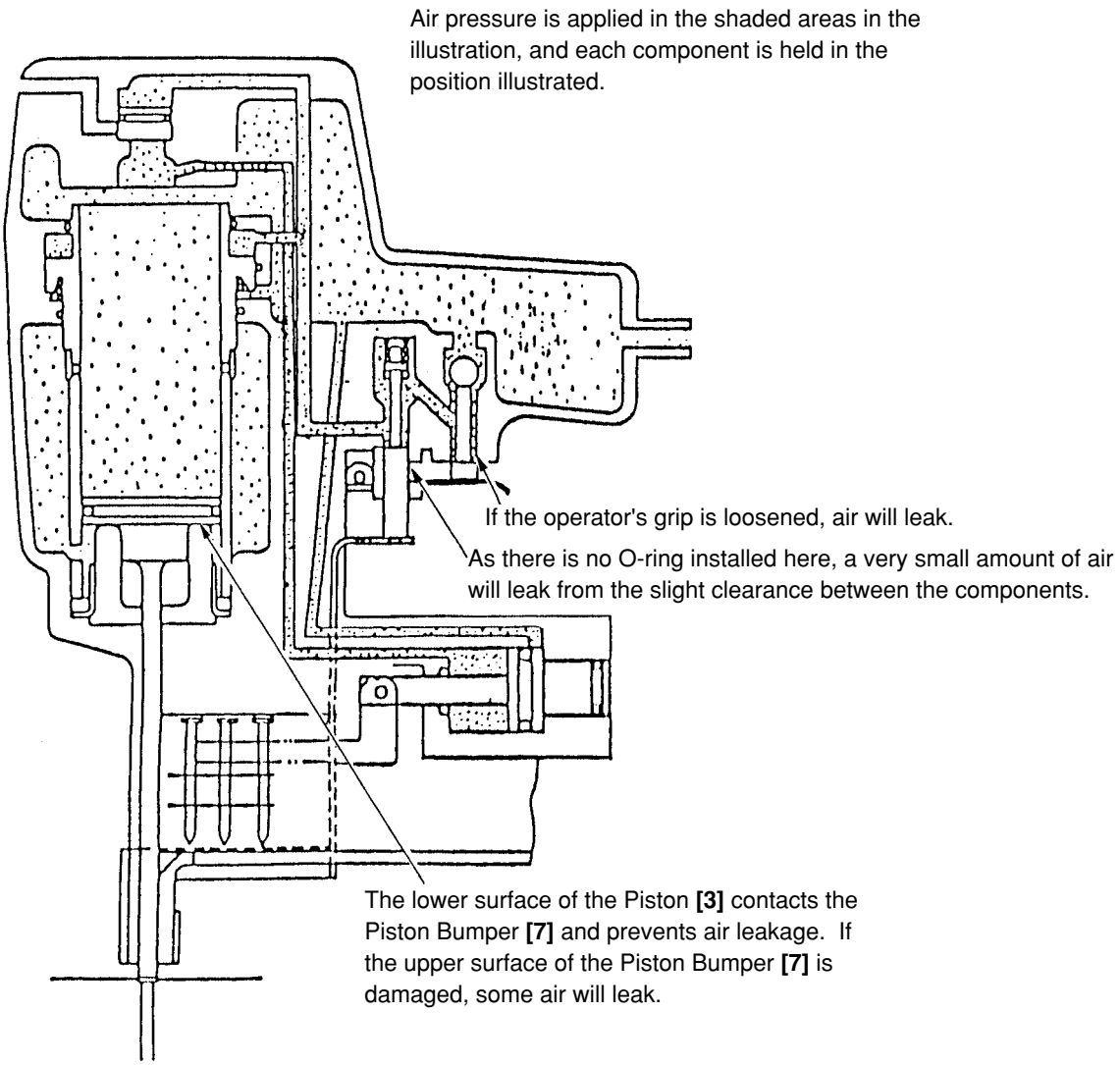


Fig. 6

(4) When the trigger and/or pushing lever are released

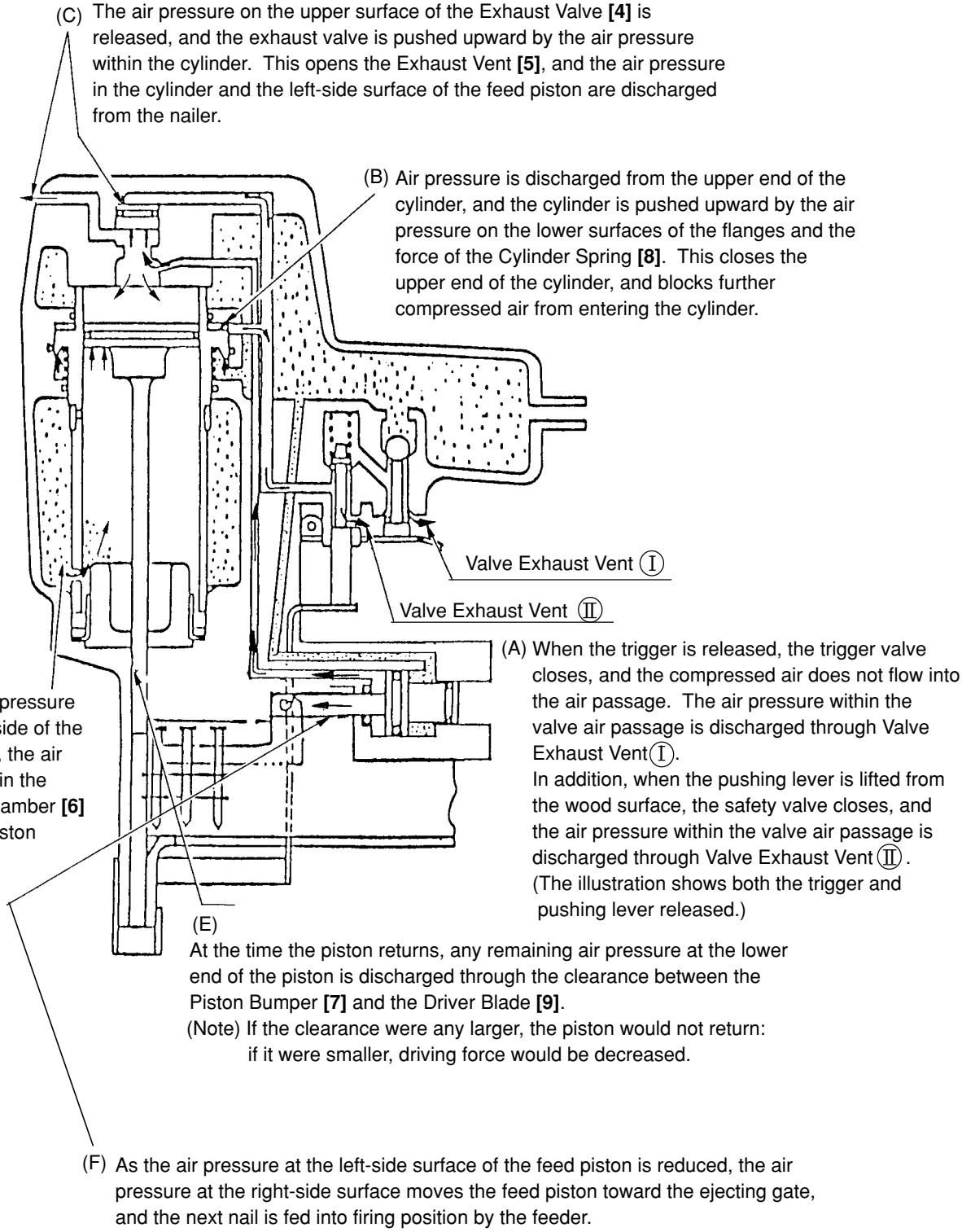
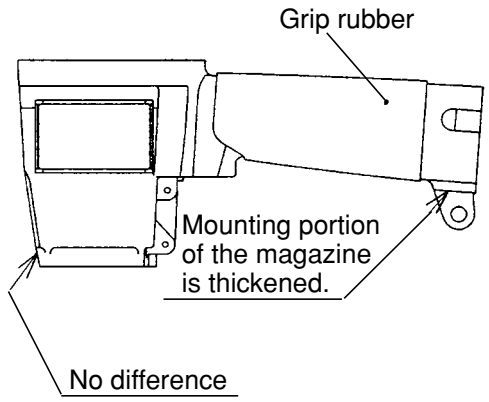
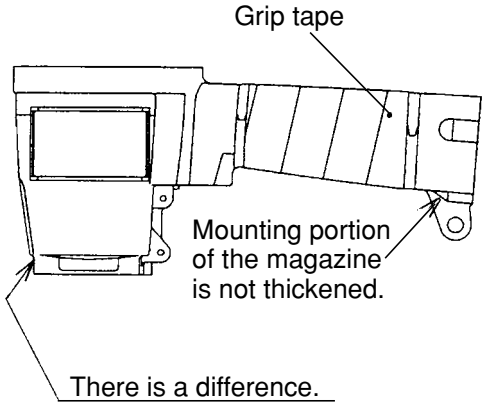
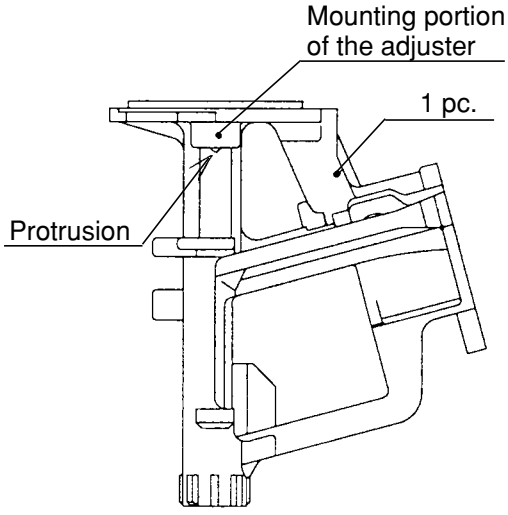
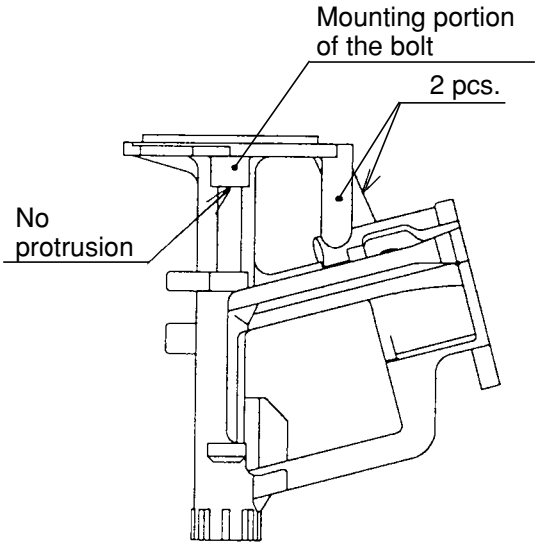
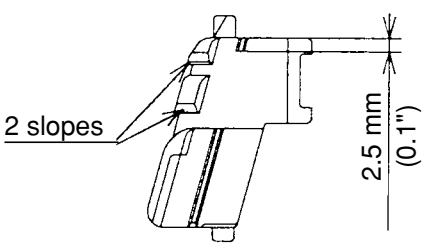
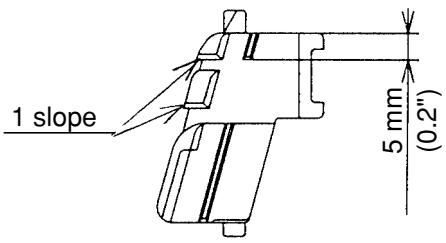


Fig. 7

8-3. Interchangeability

Although the output section and the control valve section are basically common to those of the Model NV 45AB, most of the parts of the driving section and the magazine section have been newly designed. The parts listed below are not interchangeable with the Model NV 45AB. (The **[Bold]** numbers in the descriptions below correspond to the item numbers in the Parts List.)

<table>
<tr><th>Part</th><th>NV 45AB2</th><th>NV 45AB</th></tr>
<tr><td>Body Ass'y [24]</td><td>• The mounting portion of the magazine is different in shape.
 
</td><td> 

Spare parts will be unified to the ones for the Model NV 45AB2.</td></tr>
<tr><td>Gasket (A) [29]</td><td>• Thickness: 0.5 mm</td><td>• Thickness: 0.4 mm</td></tr>
<tr><td>Nose [32]</td><td>• A protrusion is provided at the mounting portion of the adjuster.
 
</td><td> 
</td></tr>
<tr><td>Feeder (A) [70]</td><td>• The hooks are different in shape.
 
</td><td>Spare parts will be unified to the ones for the Model NV 45AB2.
 
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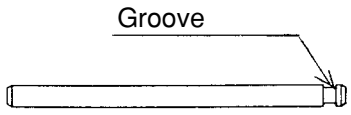
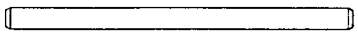
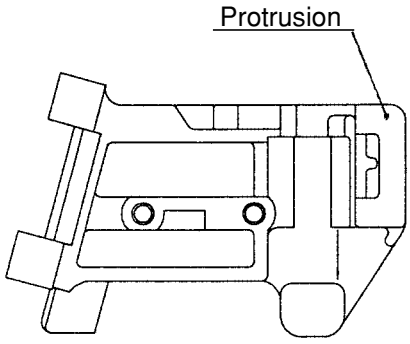
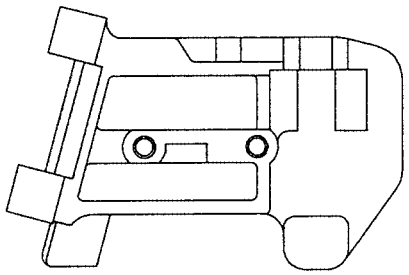
Part	NV 45AB2	NV 45AB
Nail Guide Shaft **[74]**	• A groove for mounting the shaft ring is provided. 	
Nail Guide **[78]**	• A protrusion for holding the magazine cover is provided. 	
Magazine Ass'y **[109]**	• Top loading type • The newly designed nail guide is required to close the magazine cover. • **It can be mounted to the newly designed body only.** • Following parts are common to the Model NV 45AB. Plate Nut **[104]** Guide Base **[105]** Shingle Guide **[107]** Hex. Socket Hd. Bolt M5x10 **[108]**	• Bottom loading type

9. TROUBLESHOOTING GUIDE

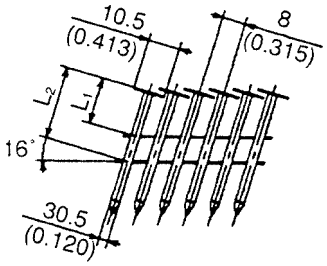
9-1. Troubleshooting and Correction

Problem	Possible cause (∗ : most-common cause)	Inspection method	Remedy
1) Nails cannot be driven.	<Nails> • Magazine is not loaded with specified genuine nails. • Magazine is loaded with abnormal nails (bent nails, too large or too small nail heads, abnormal collation, others). • Nails or link pieces are jammed. • Link pieces are deformed or broken.	• Check that the magazine is correctly loaded with specified nails.	• Use specified nails. • Remove the abnormal nails and load the nailer with proper nails.
	<Driving section: Nose, feeder, feed piston, etc.> • Sliding resistance of the feed piston is too high.	• Remove the feed piston and check the feed piston sliding surface of the nose.	• Apply grease to the sliding surface. • Polish the scratched portion with sandpaper. Replace the parts.
	• Nail guide face of the nose is abnormal (deformed, burrs or damaged). • Spring or feeder spring is abnromal (damaged or fatigued). • Feeder is abnormal (damaged or worn).	• Check that the driving section is not abnormal (burrs, deformed, damaged or worn).	• Deburr the nail guide face. • Correct the deformed parts. • Replace the abnormal parts.
	• Nails are not correctly loaded in the groove of the nose.	• Check that nails are correctly loaded in the groove of the nose.	• Load nails in the correct position in the nose.
	∗• Dust sticks to the feeder sliding portion of the nose, or lubrication is needed.	• Open the nail guide and perform idle driving to check the feeder's operation.	• Remove dust and then lubricate the sliding surface.
	• Air pressure is too low.		• Adjust the air pressure to 4.9 – 8.3 bar (5 – 8.5 kgf/cm^2, 70 –120 psi).
	• Air passage is clogged with broken pieces of piston bumper, etc. • Feeder piston chamber contains foreign matter such as broken pieces of piston bumper, etc.		• Remove foreign matter. • Replace the piston bumper with new one. • Body ··· Remove foreign matter in the return air chamber. • Nose ··· Remove foreign matter in the air passage and the feed piston chamber.

Problem	Possible cause (∗ : most-common cause)	Inspection method	Remedy
1) Nails cannot be driven.	• Air leaks from Gasket (A) or Gasket (E).		• Tighten screws and replace gaskets.
	• O-rings are worn or deformed.		• Replace the O-rings.
	∗• O-rings need lubrication.		• Apply grease or lubricate.
	<Nail guide section> • Nail guide face is abnormal (deformed, burrs or damaged).	• Check that the nail guide is not abnormal (worn, deformed, damaged, etc.)	• Correct or replace the parts.
	• Dust sticks to the inside of the nail guide groove, or lubrication is needed.	• Check the operation of main nail stopper and nail stopper.	• Remove dust and then lubricate.
	∗• Spring is abnormal (missing, damaged or fatigued). • The claw ridge section of the nail stopper is abnormal (damaged, worn or burrs).		• Replace the abnormal parts.
	< Magazine section > < Pushing lever > • Magazine	• Check that a nail does not catch on another nail in the magazine. • Check that a nail does not catch on some part of the magazine. • Check the height of the nail holder.	• Collate the nails correctly and reload the nailer with them. • Remove burrs or deformed part. Replace the parts. • Adjust the height of the nail holder correctly.
	• Incorrect attachment of magazine.	• Check for looseness of magazine ass'y.	• Secure screws.
	• Safety belt is not adjusted properly.	• Check that the distance between the lower end of the nose and the lower end of the pushing lever is 5 ± 0.5 mm (0.197 ± 0.020") under the following conditions. • Pull up plunger (B) until it contacts plunger (A). • Pull up the pushing lever until plunger (B) contacts the safety bolt.	• Readjust the safety bolt according to 10-3-(2).

Problem	Possible cause (⁎ : most-common cause)	Inspection method	Remedy
1) Nails cannot be driven. (continued)	<Output section: Piston, driver blade, etc.> • Air pressure is too low.	• Open the nail guide and perform idle driving to check that the driver blade is returned.	• Adjust the air pressure to 4.9 — 8.3 bar (5 — 8.5 kgf/cm², 70 — 120 psi).
	⁎• Piston O-ring is abnormal (worn or damaged).		• Replace the O-ring.
	⁎• Piston bumper or bumper sheet is abnormal.		• Replace the piston bumper or bumper sheet.
	• Cylinder ring is abnormal (removed, deformed or damaged).		• Reassemble or replace the parts.
	• Driver blade is abnormal (deformed, burrs or damaged).		• Correct or replace the parts.
	• Cylinder inside surface is abnormal (packed with dust, or worn).	• Check that nails can be driven at 4.9 bar (5 kgf/cm², 70 psi).	• Remove dust and then lubricate. • Replace the part.
	• Sliding surface between the cylinder and the cylinder guide or sliding surface between the cylinder and the cylinder plate is abnormal (seized or damaged, or lubrication is needed).	• Perform idle driving to check the driving operation.	• Replace the part. • Apply grease.
	< Control valve section> • Trigger plunger, plunger (A), (B), trigger valve bushing, valve bushing or urethane ball (C) is abnormal (seized or damaged).		• Replace the abnormal part.
	• O-ring or sliding surface is worn or needs lubrication.	• Disassemble the control valve section and check the O-rings.	• Replace the abnormal part. • Apply grease.
2) Nails are driven but bent.	• Nails are not completely fed into the injection port. • Unspecified nails are used.	• See item 1).	• See item 1).
	⁎• Driver blade is worn.	• Check that the driver blade tip is not abnormally worn.	• Replace the part.
	• Workpiece is too hard.	• Check if a nail is bent even when driven into soft wood.	• Nailer cannot be used because the material is beyond its applicable range.

Problem	Possible cause (✱ : most-common cause)	Inspection method	Remedy
3) Nails cannot be driven into the workpiece completely: the heads cannot be made flush.	• Adjuster is incorrectly set.	• Turn the adjuster to the deepest driving position and then drive nails.	• Set the adjuster to the optimum position.
	• Air pressure is too low.		• Adjust air pressure to 4.9 — 8.3 bar (5 — 8.5 kgf/cm^2, 70-120 psi).
	• Workpiece is too hard.	• Check if a nail is bent even when driven into soft wood.	• Nailer cannot be used because the material is beyond its applicable range.
	• Driver blade is worn.	• Perform idle driving to check the driver blade is projected from the nose tip.	• Replace the part.
	✱• Piston O-ring is abnormal (worn or damaged). • Cylinder inside surface is abnormal (worn or rough). • Cylinder O-ring is abnormal (worn or damaged). • Sliding surface of the circumference of the cylinder is abnormal (worn or damaged).	• Disassemble the output section and check inside and outside surfaces of the O-ring and the cylinder for abnormality.	• Replace the abnormal part.
	✱• Short of oil on both inside and outside surfaces of the cylinder (worn or damaged).	• Check for shortage of grease on the sliding surface of the O-ring.	• Apply grease.
	• Exhaust valve is abnormal or short of oil (worn or scratches on seat side).	• Disassemble the exhaust valve section and check for abnormality or shortage of oil.	• Apply grease. • Replace the abnormal part.
	• Safety belt is not adjusted properly.	• Check that the distance between the lower end of the nose and the lower end of the pushing lever is 5 ± 0.5 mm (0.197 ± 0.020") under the following conditions. • Pull up plunger (B) until it contacts plunger (A). • Pull up the pushing lever until plunger (B) contacts the safety bolt.	• Readjust the safety bolt according to 10-3-(2).

<table>
<tr><th>Problem</th><th>Possible cause
(∗ : most-common cause)</th><th>Inspection method</th><th>Remedy</th></tr>
<tr><td rowspan="6">4) Nails jam.</td><td>< Nails>
∗• Unspecified nails are used.
∗• Abnormal nails are mixed.
∗• Nail heads are too large or too small.
• Collating wires are abnormal (broken, welding failed, deformed or welding position failed).
∗• Collating wires are deformed (deformed in collation angle or collation pitch).</td><td>• Check if the specified nails are used.
Check the nails as follows.
 
</td><td>• Use specified nails.
• Remove the abnormal nails and load the nailer with proper nails.
UNIT: mm (inch)
<table><tr><th>Type</th><th>L1</th><th>L2</th></tr><tr><td>Ⓐ</td><td>7
(0.276)</td><td>16
(0.630)</td></tr><tr><td>Ⓑ</td><td>7
(0.630)</td><td>25
(0.984)</td></tr></table></td></tr>
<tr><td>< Body: Nail feeding is incomplete.>
• Feeder is worn and the sliding section is abnormal.
• Nail guide face of the nose or the sliding section of the feeder is abnormal (deformed, burrs, or damaged).
• Spring or feeder spring is abnormal (damaged, fatigued or removed).</td><td>• Open the nail guide and check the position of the feeder claw. Check that the feeder claw holds a nail, and the first nail is positioned in the injection port. (Check that the second claw holds the nail shaft and feeds it.)</td><td>• Replace the abnormal part.</td></tr>
<tr><td>•∗ Foreign matter enters in the feed piston chamber.</td><td></td><td>• Remove the foreign matter from the feed piston chamber.</td></tr>
<tr><td>< Body: Nail guide section >
• Nail guide section is abnormal.</td><td>• See item "1) Nail guide section".</td><td>• See item "1) Nail guide section".</td></tr>
<tr><td>< Driver blade is not returned completely.>
• See item "1) Output section: piston, driver blade, etc.".</td><td>• Perform idle or actual driving to check if the driver blade is returned completely.</td><td>• See item "1) Output section: piston, driver blade, etc.".</td></tr>
<tr><td></td><td></td><td></td></tr>
</table>

9-2. Possible Causes and Corrections of Air Leakage

Air leakage repair location

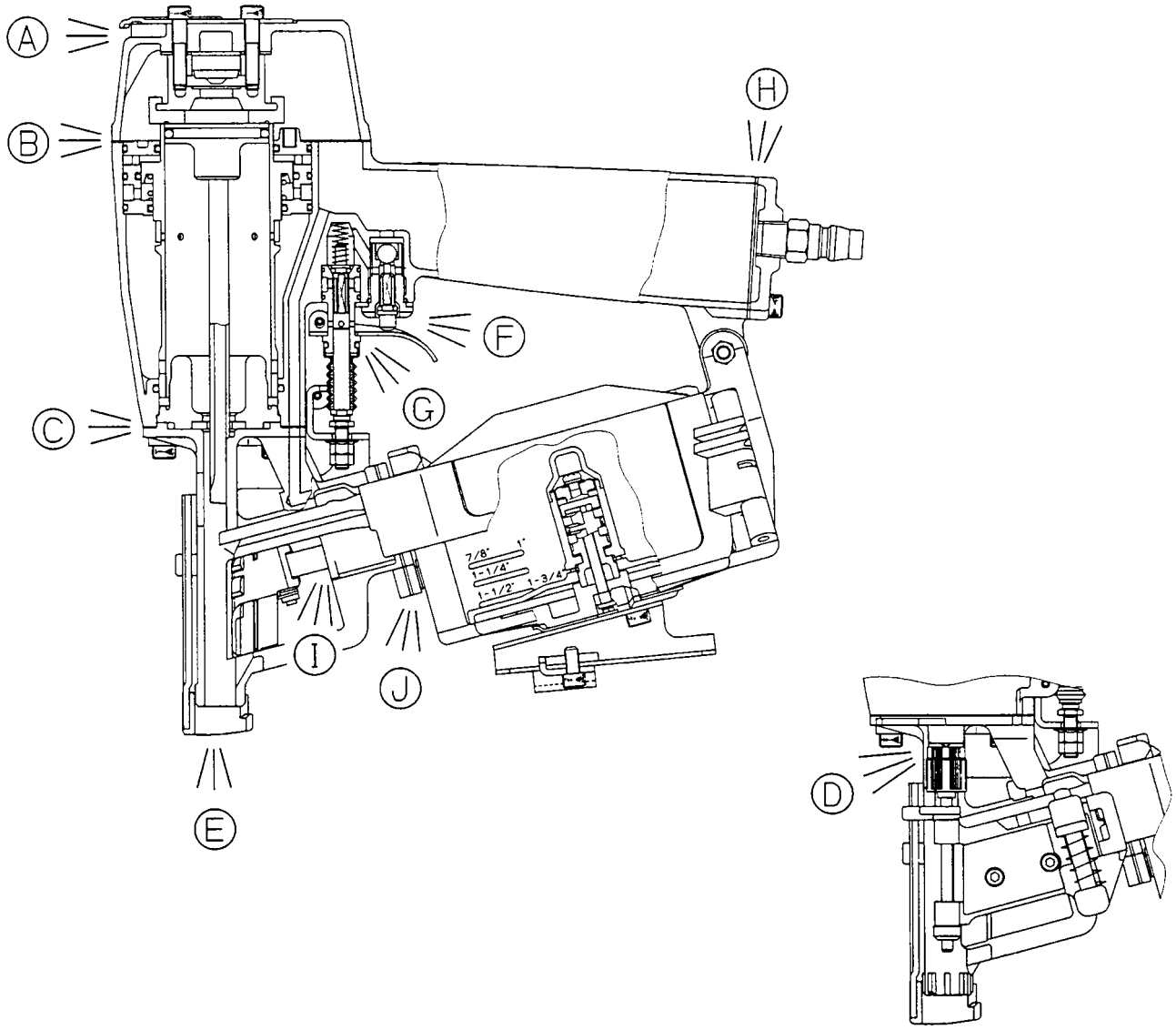


Fig. 8

Inspection priorities:

In the table below, possible causes of air leakage and their repair procedures are marked in accordance with the likelihood of possible failure.

(1) First priority items are marked with an asterisk (∗).

(2) Second priority items (seal portions) are marked with a double circle (◎).

(3) Remaining items are marked with a single circle (○). (See Parts List and exploded assembly diagram for part name and location.)

Air leak part	Cause		
	When trigger valve/safety valve are OFF	When trigger valve/ safety valve are ON	When trigger valve ON/ safety valve OFF
Ⓐ Exhaust vent	∗ Cylinder **[17]** does not return. ○ Swollen Cylinder O-ring (D) **[15]** (Use of unsuitable oil causes swelling. Advise the customer to use Shell Tonna Oil S32.) ○ Deformed Cylinder **[17]** or Cylinder Guide **[21]** ○ Yielded or broken Cylinder Spring **[19]** ◎ Defective Head Cap **[11]** (worn rubber portion or broken) ◎ Broken Gaskets (G) **[9]** ○ Loose Hex. Socket Hd. Bolt M5 x 25 **[1]** ○ Broken Exhaust Cover (B) **[4]**	Defective Exhaust Valve **[10]** (worn, deformed, or broken)	
Ⓑ Exhaust cover	○ Loose Hex. Socket Hd. Bolt M5 x 25 **[1]** ◎ Broken Gasket (F) **[8]** ○ Damaged seal surfaces of Body Ass'y **[24]** and Exhaust Cover (B) **[4]**		
Ⓒ Nose		◎Broken or deformed Gasket (A) **[29]** ○Loose Nylock Hex. Socket Hd. Bolt M5 x 16 **[34]**	
Ⓓ Nose		○ Air will leak slightly from around adjustment bolt due to construction.	
Ⓔ Nose	○ Damaged Cylinder O-ring (B) **[22]** or O-ring of Cylinder Guide **[21]** (worn, deformed or broken) ○ Defective Body Ass'y **[24]** or Nose **[32]** (worn, corroded or deformed)	∗ Broken or cracked Piston Bumper **[27]** ○ Deformed Piston (H) **[13]** ○ Deformed Nose **[32]**	
Ⓕ Trigger valve	○ Defective Urethane Ball (C) D7.14 **[54]** (damaged or deformed) ○ Defective ball sheet surface of Trigger Valve Bushing **[56]** (damaged, deformed or worn) ○ Defective Valve Packing **[53]** (damaged, deformed or broken) ○ Soiled or damaged valve packing sheet surface of Body Ass'y **[24]** ◎ Incursion of foreign materials		○Defective Plunger O-ring **[49]** (worn, deformed or broken) ○Defective outside O-ring (S-12) **[52]** of Trigger Valve Bushing **[56]**
Ⓖ Safety valve	∗ Defective Gaskets (F) (G) **[8] [9]** (damaged or yielded) ∗ Discorded air vent of Gasket (F) **[8]** ○ Defective O-ring (S-65) **[14]** or Cylinder O-ring (D) **[15]** of the Cylinder Plate **[16]** (worn, deformed or broken) ○ Defective Cylinder O-ring (D) **[15]** (worn, deformed or broken)	○ Air will leak slightly from the lower portion due to construction.	○Defective outside O-ring (S-12) **[52]** of the Valve Bushing **[51]** (worn, deformed or broken) ○Defective Plunger O-ring **[49]** (worn, deformed or broken) ○Defective Plunger Spring **[48]** (deformed or broken) ○Defective Valve Bushing **[51]** (deflected, deformed or broken) ○Defective plunger (deformed or deflected)

Air leak part	Cause		
	When trigger valve/safety valve are OFF	When trigger valve/ safety valve are ON	When trigger valve ON/ safety valve OFF
Ⓗ Cap	○ Loose Hex. Socket Hd. Bolt M5 x 16 **[44]** ◎ Broken Gasket (D) **[42]** ○ Defective seal surface of the Body Ass'y **[24]** or Cap **[43]**		
Ⓘ Feed piston		○ Defective front side O-Ring **[61]** of Feed Piston **[63]** (worn, deformed or cut) ○ Defective Feed Piston **[63]** sliding portion (damaged, deformed or broken)	
Ⓙ Between feed piston cover and nose	○ Defective seal surfaces of Nose **[32]** and Feed Piston Cover **[66]** ◎ Broken Gasket (E) **[65]** ○ Defective rear side O-Ring **[61]** of Feed Piston **[63]** (worn, deformed or cut)		
	○ Slight amount of air is always leaked out of the Feed Piston Cover **[66]** structurally.		

10. DISASSEMBLY AND REASSEMBLY

The items particularly necessary for disassembly and reassembly are described below. The **[Bold]** numbers in the descriptions below correspond to the item numbers in the Parts List and exploded assembly diagram.

[CAUTION]

- **Before disassembly or reassembly, be sure to remove all nails and disconnect the air hose from the nailer (with your finger released from the trigger) to exhaust all the compressed air.**

10-1. General Precautions in Disassembly and Reassembly

- As the Valve Bushing **[51]**, Plunger (A) **[50]**, and Plunger (B) **[59]** are not interchangeable with similar parts on such models as the Model NV 50AA and NV 50A1, be very careful to ensure that parts from other models are not inadvertently assembled on the Model NV 45AB2. Inadvertent assembly of such parts could result in malfunction, misfiring, etc., and is very hazardous.
- Apply grease (Nippeco SEP-3A, Code No. 930035) to the O-rings and O-rings' sliding portions.
  When installing the O-rings, be careful not to damage the O-rings and prevent dirt entry.
- Coat a small amount of grease (a silicone-based grease is recommended) on the sliding portions of the nail feeding section.
- Oil 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 ltr) can (Code No. 876212)
- If the packings are damaged, replace them and ensure that there is no air leakage after repair.
- Be especially careful to prevent the entry of foreign particles into the control valve section.
- Use the conventional grip tape for repair of the grip rubber because the grip rubber cannot be mounted without the specifically designed jig.
- Tightening torque for each part

Bolt and screw	Tightening torque N·m (kgf·cm, ft-lb.)
Hex. Socket Hd. Bolt M5 x 25 ..... **[1]** Hex. Socket Hd. Bolt M5 x 16 ..... **[44]** Hex. Socket Hd. Bolt M5 x 10 ..... **[108]**	6.4 ±0.5 (65 ± 5, 4.7 ± 0.4)
Hex. Socket Hd. Bolt M5 x 20 ..... **[5]** Hex. Socket Hd. Bolt M5 x 8 ..... **[30]** Nylock Hex. Socket Hd. Bolt M5 x 16 ..... **[34]** Hex. Socket Hd. Bolt M5 x 10 ..... **[68]**	8.3 ± 0.5 (85 ± 5, 6.1 ± 0.4)
Nut M5 ..... **[37]** Machine Screw M5 x 22 ..... **[39]**	3.4 ± 0.3 (35 ± 3, 2.5 ± 0.2)
Hex. Socket Hd. Bolt M4 x 6 ..... **[84]**	3.9 ± 0.3 (40 ± 3, 2.9 ± 0.2)
Machine Screw M4 x 50 ..... **[92]**	0.5 to 1 (5 to 10, 0.36 to 0.72)
Hex. Socket Hd. Bolt M5 x 14 ..... **[106]**	2 ± 0.3 (20 ± 3, 1.4 ± 0.2)

10-2. Disassembly and Reassembly of the Output Section

(1) Piston Bumper **[27]**, Bumper Sheet **[28]** and related parts

Tool required:

○ Hex. bar wrench (4 mm)

○ Phillips screwdriver

○ Roll pin puller (3 mm (0.118"))

(a) Disassembly (See Figs. 9 and 10.)

○ Remove the Machine Screw M5 x 22 **[39]**, and the Magazine Ass'y **[109]** can be disassembled.

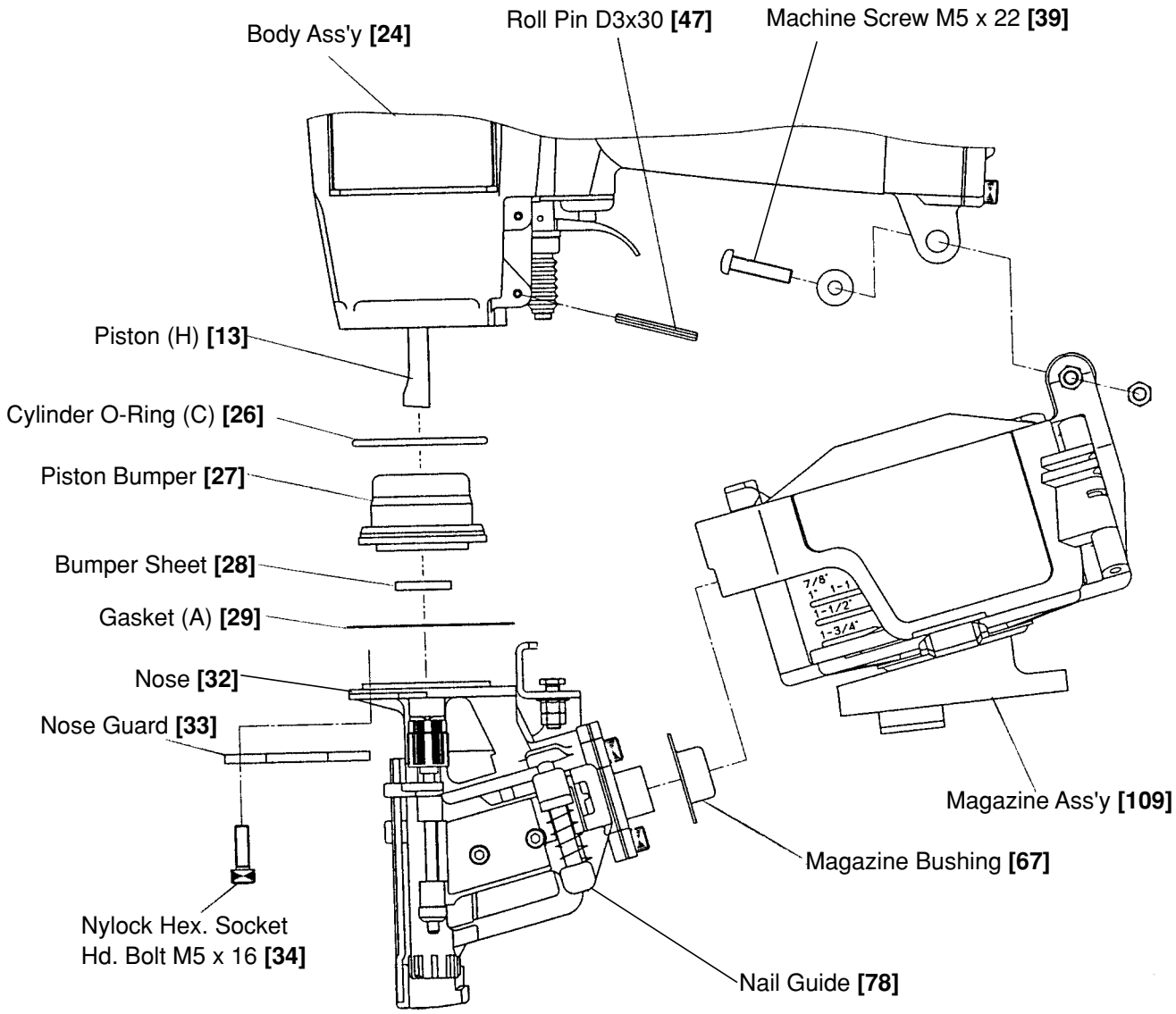


Fig. 9

○ Remove the Hex. Socket Hd. Bolt M5 x 8 **[30]** and remove the Guard **[31]** from the Nose **[32]**. From Body Ass'y **[24]**, extract the Roll Pin D3 x 30 **[47]** which fastens and guides the Pushing Lever **[38]**. Then remove the Nylock Hex. Socket Hd. Bolt M5 x 16 **[34]** which fasten the Nose **[32]**, and remove the Nose **[32]** together with Pushing Lever **[38]** from Body Ass'y **[24]**. (Opening the Nail Guide **[78]** beforehand makes it is easier to remove the Nylock Hex. Socket Hd. Bolt M5 x 16 **[34]**.)

○ When disassembly as described above is completed, Gasket (A) **[29]**, Bumper Sheet **[28]**, Piston Bumper **[27]** can be taken out in sequence from the lower portion of Body Ass'y **[24]**. Remove the Bumper Sheet **[28]** from Piston (H) **[13]** by opening the cut of the Bumper Sheet **[28]** (Fig. 10). At this time, be careful not to scratch the hole of the Bumper Sheet **[28]**.

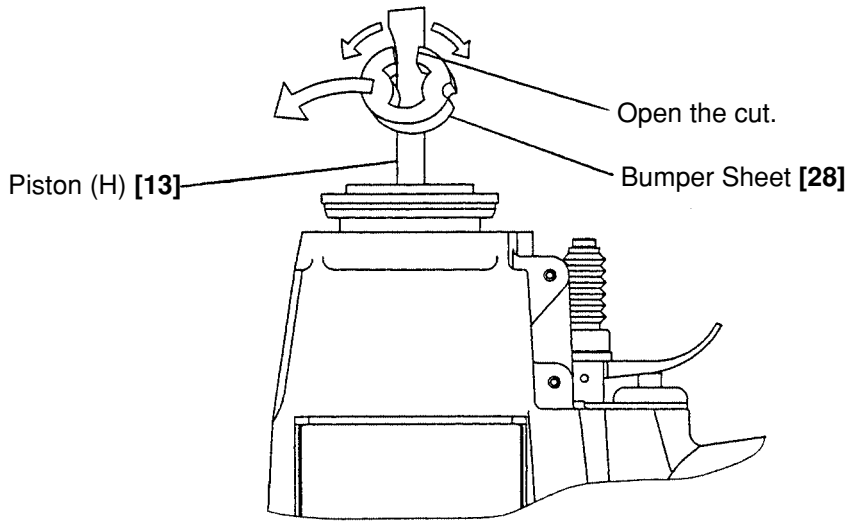


Fig. 8

(b) Reassembly

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

○ When reassembling Piston (H) **[13]**, ensure that the semi-circular grooved side is facing toward the Magazine side. (See Fig. 11.)

○ When mounting the Bumper Sheet **[28]** to Piston (H) **[13]**, open the cut of the Bumper Sheet **[28]** and put the driver blade in the Bumper Sheet **[28]** from its thin side facing the groove on the circumference of the Bumper Sheet **[28]** to the semi-circular grooved side at the tip of Piston (H) **[13]** surely.

○ Reassemble Gasket (A) **[29]** so that its air vents are properly aligned with the matching air vents on the Nose **[32]** and Body Ass'y **[24]**.

○ Assemble Body Ass'y **[24]**, Nose **[32]** and Magazine Ass'y **[109]** in accordance with the following procedures:

(Ⅰ) First, assemble the Nose **[32]** and Pushing Lever **[38]**. Then, fasten Body Ass'y **[24]** and the Nose **[32]** with the four Nylock Hex. Socket Hd. Bolts M5 x 16 **[34]**, and tighten them to rated torque.

(Ⅱ) Fasten the Pushing Lever **[38]** with the Roll Pin D3 x 30 **[47]**.

(Ⅲ) With the Magazine Bushing **[67]**, assemble the Nose **[32]** and Magazine Ass'y **[109]** and confirm that they are securely fastened. Then, fasten the Magazine Ass'y **[109]** to Body Ass'y **[24]** with the Machine Screw M5 x 22 **[39]**.

○ Confirm that each fastening nut and screw is tightened to rated torque as set forth in paragraph 10-1.

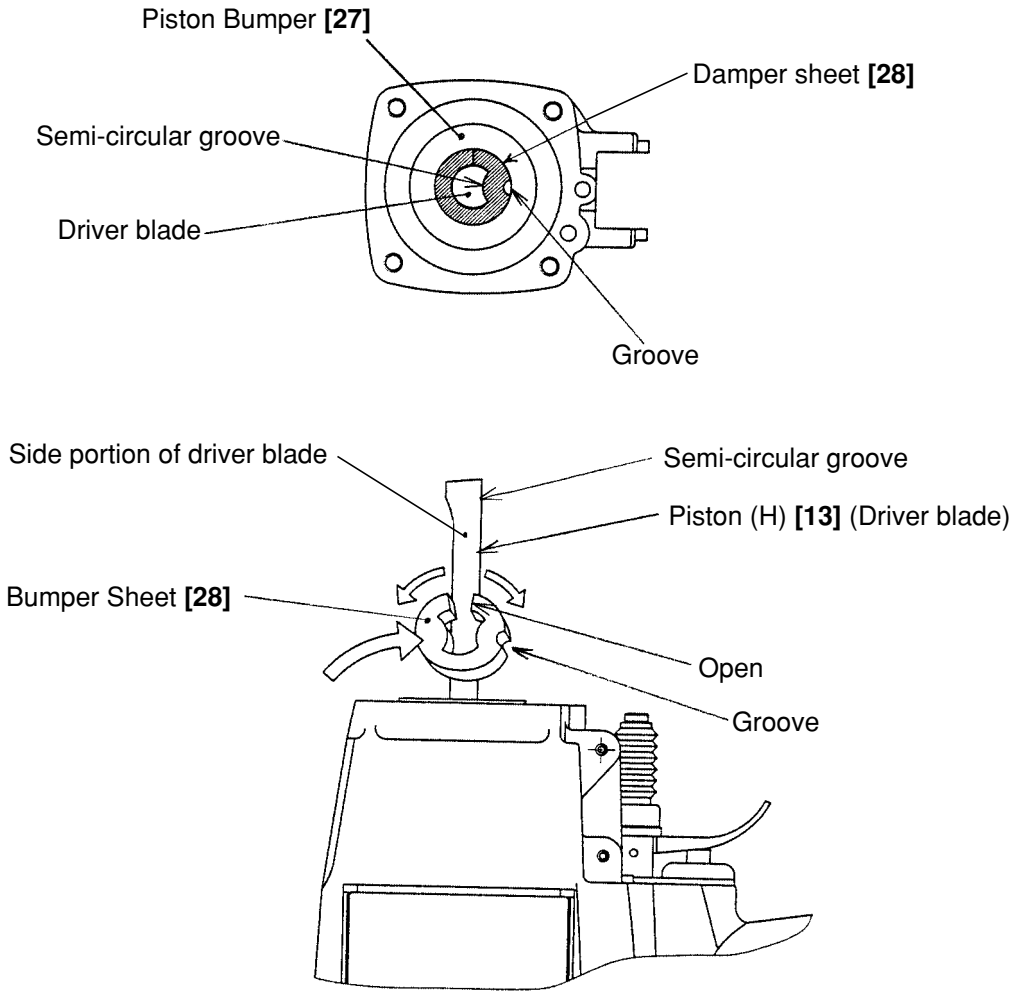


Fig. 11

(2) Cylinder **[17]**, Piston (H) **[13]** and related parts:

Tools required:

- ○ Hex. bar wrench (4 mm)
- ○ Phillips screwdriver
- ○ Roll pin puller (3 mm (0.118"))

(a) Disassembly (See Figs. 12 and 13.)

- ○ As described in paragraph 10-2-(1), disassemble the nose portion, and remove the Bumper Sheet **[28]** from the Piston Bumper **[27]**.
- ○ After removing the four Hex. socket Hd. Bolts M5 x 20 **[5]** and Exhaust Cover (B) **[4]**, Piston (H) **[13]** can be disassembled.
- ○ Next, insert two of the Hex. Socket Hd. Bolts M5 x 20 **[5]** into the provided threaded holes in the Cylinder Plate **[16]**. Holding the two bolts, lift upward while turning the Cylinder Plate **[16]**. When the Cylinder Plate **[16]** has been removed, the Cylinder **[17]**, Cylinder Spring **[19]** and related parts which make up the output section can be removed . If the Cylinder **[17]** is difficult to remove, it may be pushed downward and removed from the lower part of Body Ass'y **[24]**.

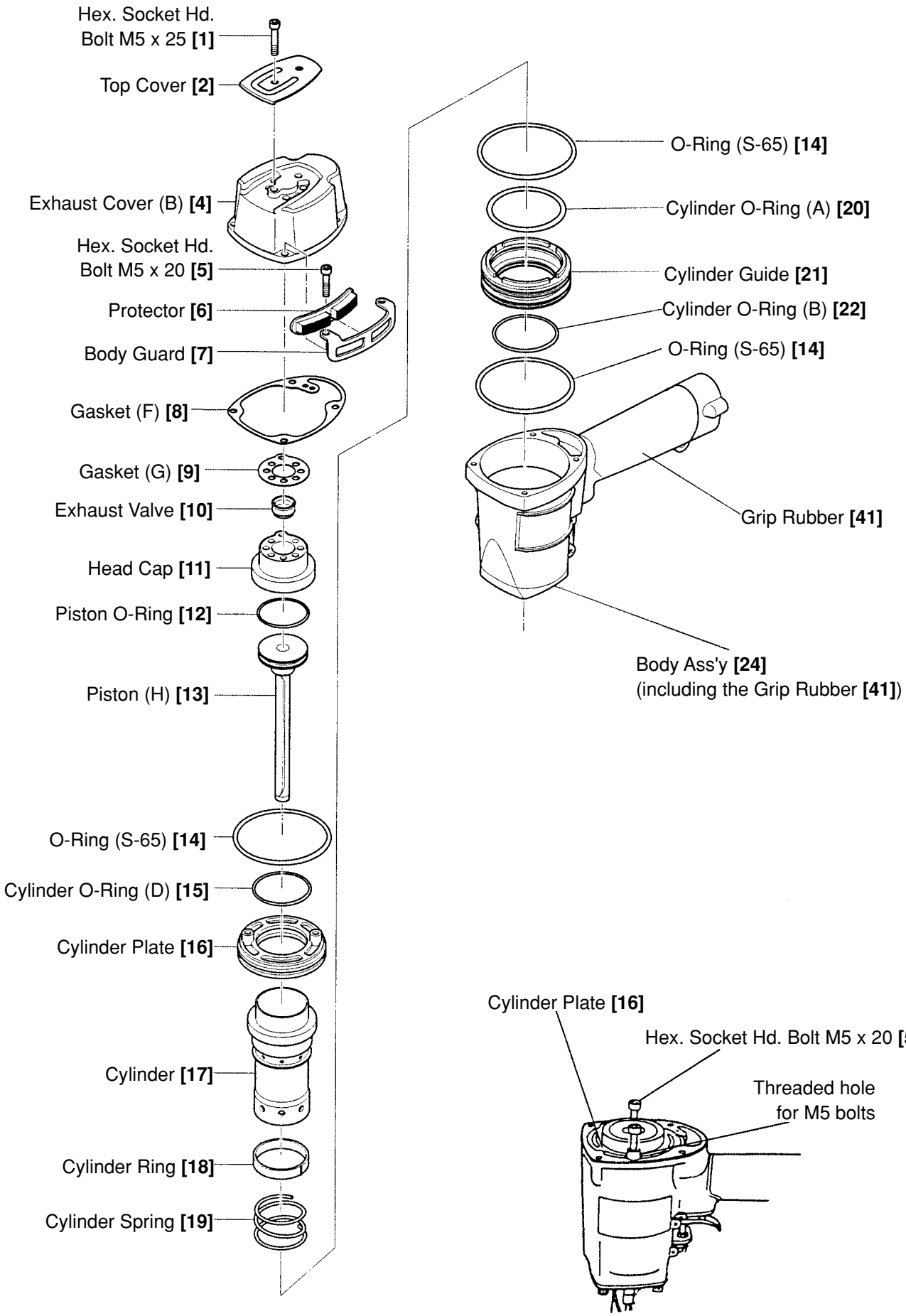

Hex. Socket Hd. Bolt M5 x 25 [1]
Top Cover [2]
Exhaust Cover (B) [4]
Hex. Socket Hd. Bolt M5 x 20 [5]
Protector [6]
Body Guard [7]
Gasket (F) [8]
Gasket (G) [9]
Exhaust Valve [10]
Head Cap [11]
Piston O-Ring [12]
Piston (H) [13]
O-Ring (S-65) [14]
Cylinder O-Ring (D) [15]
Cylinder Plate [16]
Cylinder [17]
Cylinder Ring [18]
Cylinder Spring [19]
O-Ring (S-65) [14]
Cylinder O-Ring (A) [20]
Cylinder Guide [21]
Cylinder O-Ring (B) [22]
O-Ring (S-65) [14]
Grip Rubber [41]
Body Ass'y [24]
(including the Grip Rubber [41])

Fig. 12

Cylinder Plate [16]
Hex. Socket Hd. Bolt M5 x 20 [5]
Threaded hole for M5 bolts

Fig. 13

(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) **[13]** so that its semi-circular grooved side is facing toward the Magzine side. (Same as paragraph 10-2-(1)-(b))

○ Ensure that the air vent holes on Gasket (F) **[8]** are properly aligned with the matching holes in Body Ass'y **[24]**.

(3) Head Cap **[11]** and related parts: (See Fig. 12.)

(a) Disassembly:

○ Remove Exhaust Cover **[11]**. (Refer to paragraph 10-2-(2).)

○ Remove the two Hex. Socket Hd. Bolts M5 x 25 **[1]** and disassemble Head Cap **[11]**, Exhaust Valve **[10]** and Gasket (G) **[9]**.

(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 Gasket (G) **[9]** are properly aligned with the matching holes in Head Cap **[11]** and Exhaust Cover (B) **[4]**.

(4) Grip Rubber

○ The Grip Rubber **[41]** assembled in the Body Ass'y **[24]** is not supplied singly because the disassembly and reassembly are not easy. When replacement of the Grip Rubber **[41]** is required, replace the Body Ass'y **[24]** (Body Ass'y **[24]** comes with the Grip Rubber **[41]**) or install grip tape (A) according to the following procedure.

○ Installation of grip tape (A) and tape

Adhere the adhesive-backed grip tape (A) and the tape to the Body Ass'y **[24]**. First, adhere the end of grip tape (A) under the trigger valve of the Body Ass'y **[24]** and wind around the Body Ass'y **[24]**. Wind the Tape at both ends of grip tape (A) (see Fig. 14). Be careful that grip tape (A) and tape cannot be removed once they are adhered.

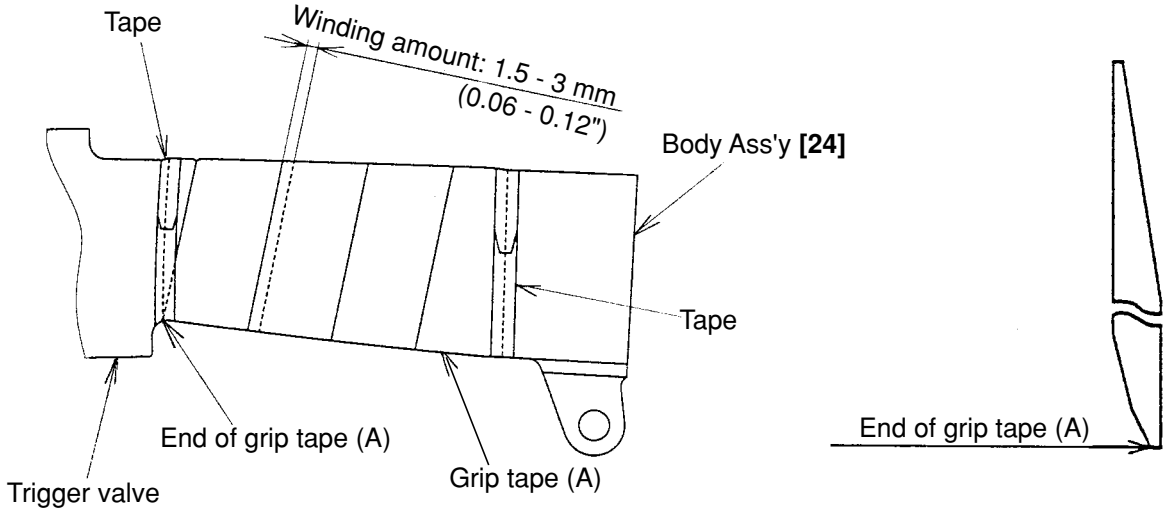


Fig. 14

10-3. Disassembly and Reassembly of the Valve Section: (See Figs. 15 and 16.)

(1) Trigger Valve Bushing **[56]**, Valve Bushing **[51]** and related parts:

Tools required:

- ○ Roll pin puller (3 mm (0.118"))
- ○ Flat-blade screwdriver
- ○ Phillips screwdriver
- ○ Hex. bar wrench (4 mm)

(a) Disassembly:

- ○ Disassemble the magazine section and nose portion from the main body. (Refer to paragraph 10-2-(1)-(a).)
- ○ Extract the Roll Pin D3 x 30 **[47]**, and remove the Trigger **[58]**, Trigger Plunger **[57]** and Plunger (B) **[59]**.
- ○ Insert the flat-blade screwdriver into the groove on the Trigger Valve Bushing **[56]** and, while being very careful not to damage the groove, turn it counterclockwise to loosen it.
- ○ Next, extract the Trigger Valve Bushing **[56]** and Valve Bushing **[51]**.

(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 tip of the Nose **[32]** and the inside sliding portion of the Pushing Lever **[38]**.
- ○ Pay particular attention not to twist the Plunger Spring **[48]**, and break or damage the O-Rings.
- ○ After mounting the Valve Rubber Cover **[60]** on Plunger (B) **[59]**, reassemble Plunger (B) **[59]** into the Valve Bushing **[51]**. As illustrated in Fig. 15, ensure that the lips of the Valve Rubber Cover **[60]** are properly inserted into the grooves provided between the Valve Bushing **[51]** and Plunger (B) **[59]**.
- ○ On completion of reassembly, ensure that when Plunger (B) **[59]** is pushed up with a finger and released, it smoothly returns to its original portion.

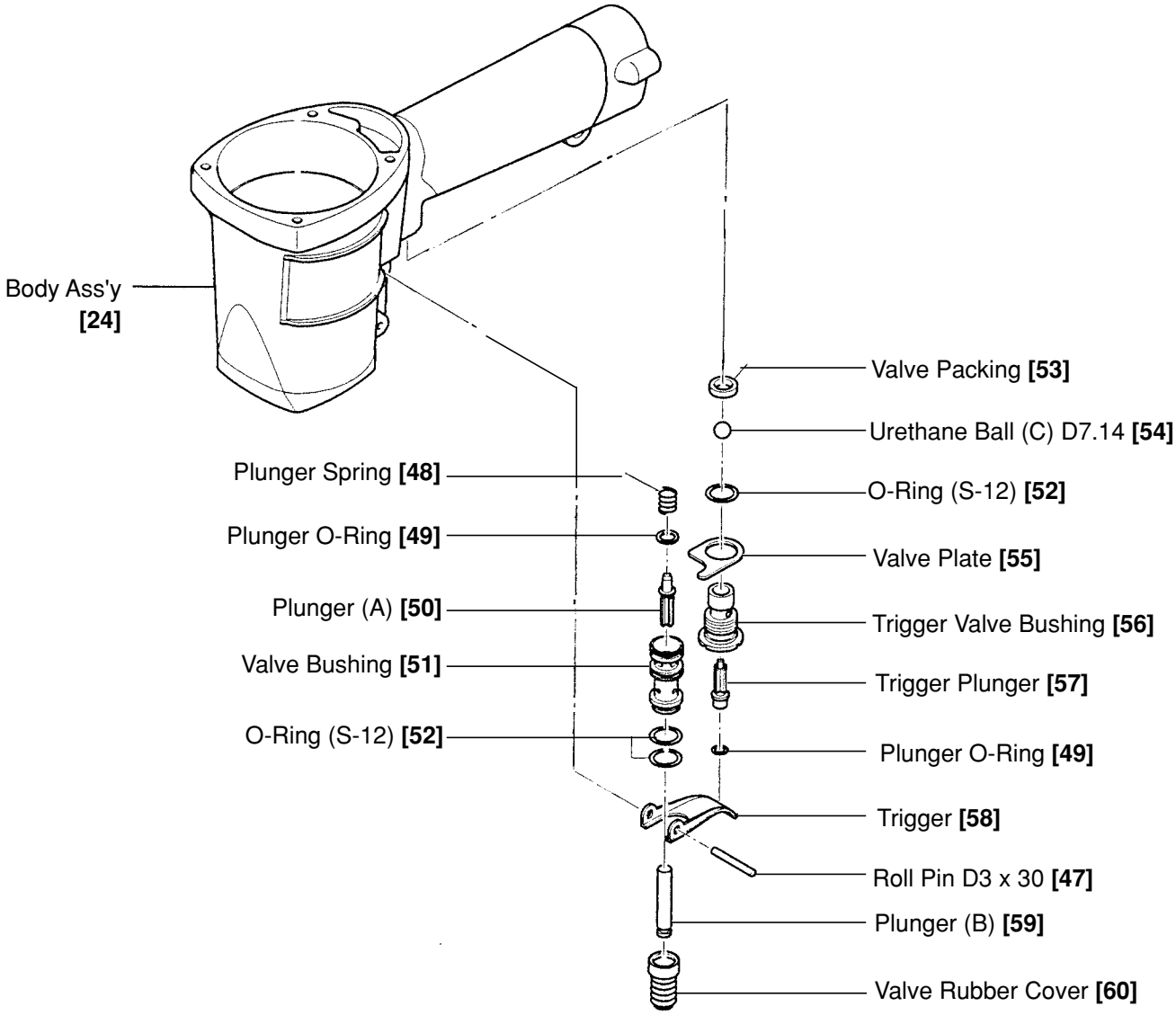

Body Ass'y
[24]
Valve Packing [53]
Urethane Ball (C) D7.14 [54]
Plunger Spring [48]
O-Ring (S-12) [52]
Plunger O-Ring [49]
Valve Plate [55]
Plunger (A) [50]
Trigger Valve Bushing [56]
Valve Bushing [51]
Trigger Plunger [57]
O-Ring (S-12) [52]
Plunger O-Ring [49]
Trigger [58]
Roll Pin D3 x 30 [47]
Plunger (B) [59]
Valve Rubber Cover [60]

Fig. 15

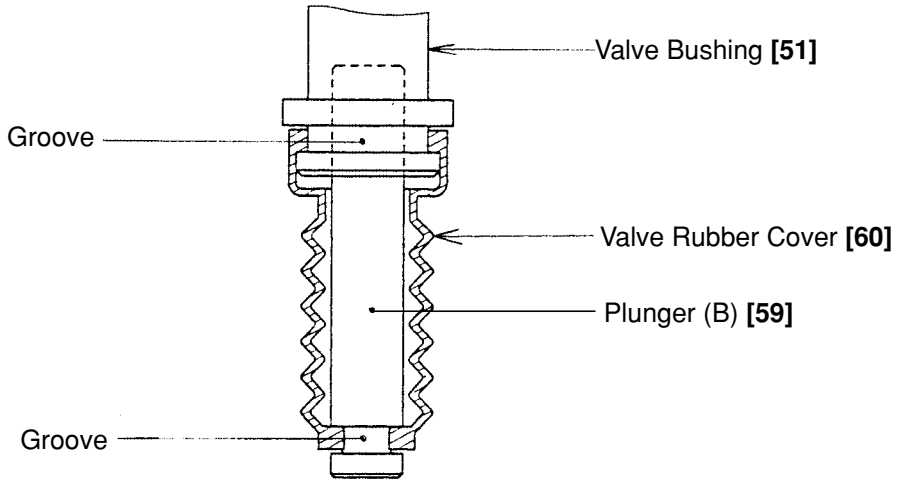

Valve Bushing [51]
Groove
Valve Rubber Cover [60]
Plunger (B) [59]
Groove

Fig. 16

(2) Adjustment of Safety Bolt **[36]** (See Fig. 17.)

Tool required:

○ 8 mm (0.315") spanner

(a) To adjust the Safety Bolt **[36]**, loosen the Nut M5 **[37]** and turn the Safety Bolt **[36]**.

(b) Perform adjustment so that the distance between the bottom end of the Nose **[32]** and the bottom end of the Pushing Lever **[38]** is 5 ± 0.5 mm (0.197 ± 0.020") when the Pushing Lever **[38]** is pushed up so that Safety Bolt **[36]** pushes up Plunger (B) **[59]** to a position where it, in turn, begins to push up Plunger (A) **[50]**. (When Plunger (B) **[59]** is pushed upward, you will feel the slight resistance when it reaches the position where it begins to push up Plunger (A) **[50]**.)

(c) On completion of adjustment, securely tighten the Nut M5 **[37]**.

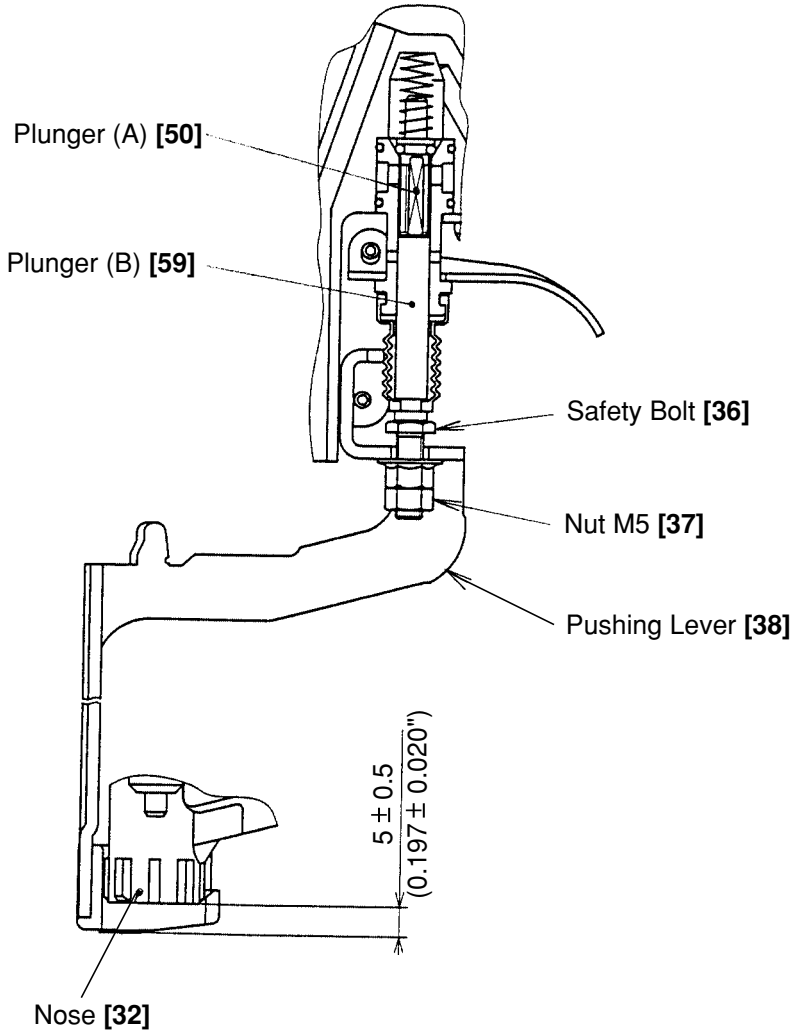


Fig. 17

10-4. Disassembly and Reassembly of the Driving Section

(1) Nail guide portion and adjuster portion

Tools required

○ Hex. bar wrench (3 mm, 4 mm)

○ Phillips screwdriver

○ Roll pin puller (3 mm (0.118"))

○ Pliers

(a) Disassembly (See Figs. 18 and 19.)

○ By following the procedures in paragraph 10-2-1-(a), disassemble the Pushing Lever **[38]** from the main body.

○ Next, pinch the lower tip of the Nail Guide Shaft **[74]** with pliers and pull down (Fig. 19 (a)). Then the Shaft Ring **[73]** can be removed from the Nail Guide Shaft **[74]** and the Nail Guide Shaft **[74]** can be pulled out of the Nose **[32]**. The entire nail guide section can be removed from the Nose **[32]**. Do not remove the Nail Guide Shaft **[74]** with a flat-blade screwdriver as shown in Fig. 19 (b). Otherwise the Adjuster **[75]** may be scratched. Take out the removed Shaft Ring **[73]** from between the Adjuster **[75]** and the Nose **[32]**.

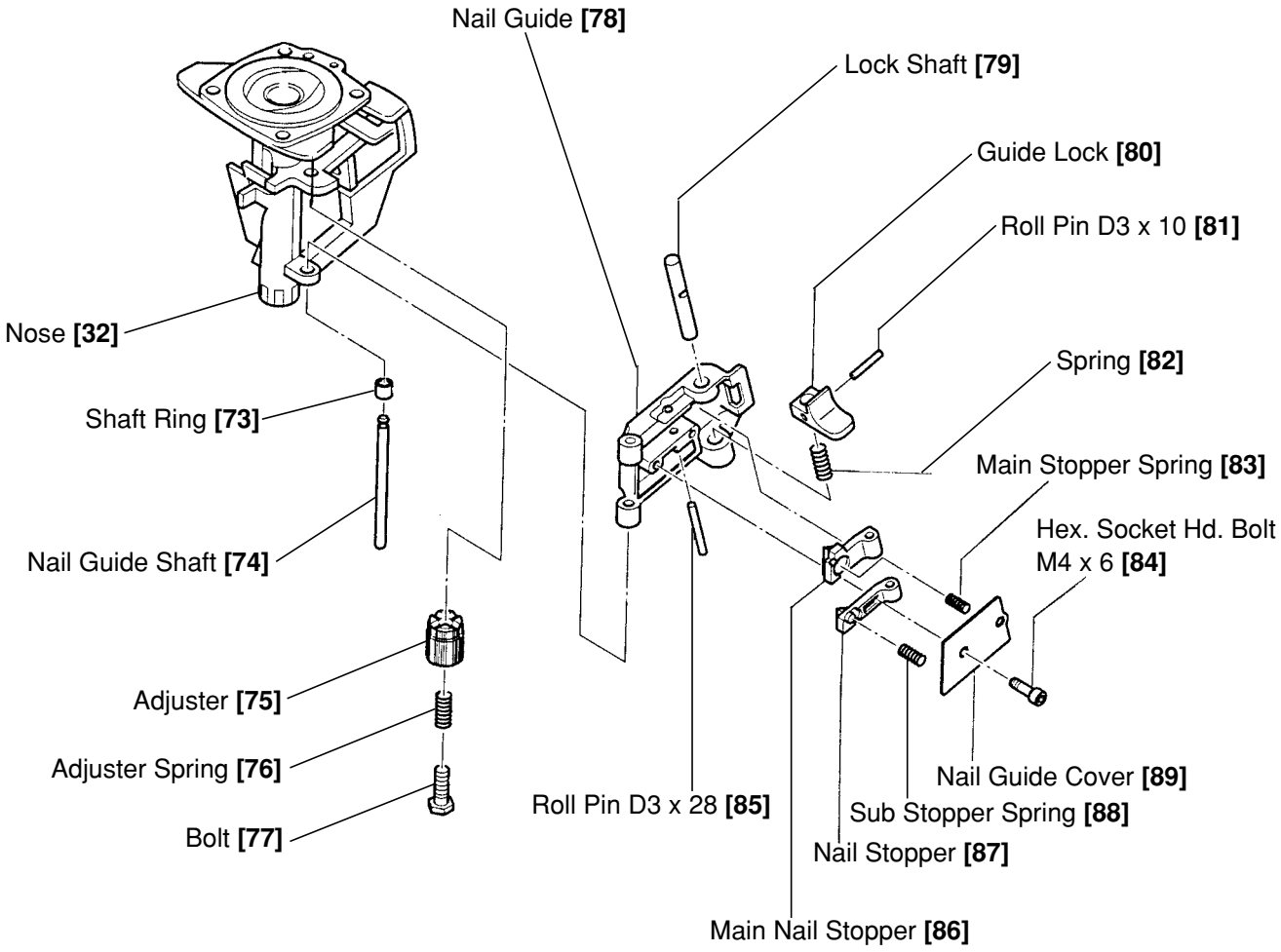


Fig. 18

○ After removing the Hex. Socket Hd. Bolt M4 x 6 **[84]**, the Nail guide Cover **[89]**, Main Stopper Spring **[83]** and Sub Stopper Spring **[88]** can be taken out.

○ After removing the Roll Pin D3 x 28 **[85]**, the Main Nail Stopper **[86]** and Nail Stopper **[87]** can be taken out.

○ To disassemble the guide lock portion, extract the Roll Pin D3 x 10 **[81]** and take off the Lock Shaft **[79]**. The Guide Lock **[80]** and Spring **[82]** can then be taken off.

○ Turn the Adjuster **[75]** counterclockwise pulling toward the lower end of the Nose **[32]**. Then the Bolt **[77]** can be removed from the Nose **[32]** and the Adjuster **[75]**, Adjuster Spring **[76]** and Bolt **[77]** can be removed in a unit.

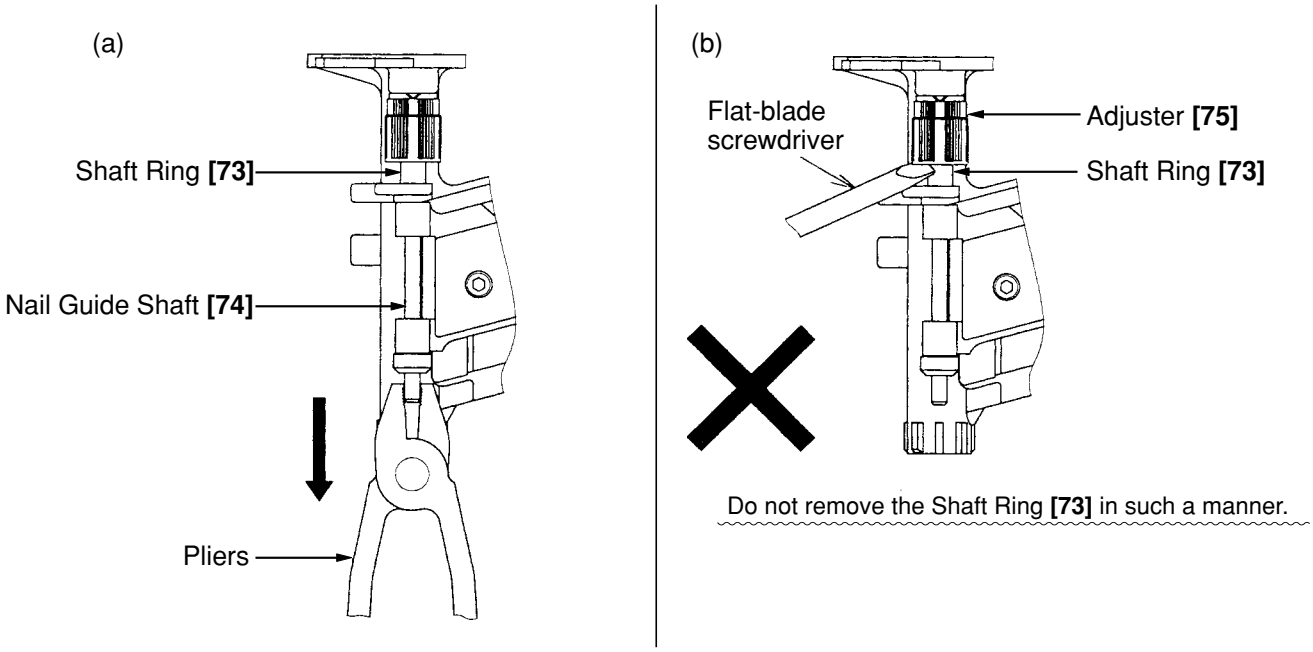


Fig. 19

(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 **[78]**.

○ When reassembling the Main Stopper Spring **[83]** and Sub Stopper Spring **[88]**, carefully ensure that they are properly inserted into the holes on the Main Nail Stopper **[86]** and Nail Stopper **[87]**.

○ On completion of reassembly, push up the Main Nail Stopper **[86]** and Nail Stopper **[87]** by hand, and confirm that they return smoothly.

○ Mount the Adjuster **[75]** before mounting the Nail Guide Shaft **[74]**. Otherwise the Adjuster **[75]** cannot be mounted. Mount the Adjuster **[75]** according to the following procedure (see Fig. 20).

(I) Mount the Adjuster Spring **[76]** and the Bolt **[77]** to the inside of the Adjuster **[75]**.

(II) Insert the Nail Guide Shaft **[74]** into the Nose **[32]**. Pressing the head of the Bolt **[77]**, align the tip of the Bolt **[77]** with the female screw for mounting the adjuster. Turn the Adjuster **[75]** clockwise and screw in pulling it toward the tip of the Nose **[32]**.

○ Mount the Nail Guide Shaft **[74]** according to the following procedure (see Fig. 21).

(I) Insert the Shaft Ring **[73]** between the protrusion of the Nose **[32]** and the Bolt **[77]**. Turn the Adjuster **[75]** counterclockwise to narrow the distance between the protrusion of the Nose **[32]** and the Bolt **[77]** for easier operation (Shaft Ring **[73]** becomes stable).

(II) Insert the Nail Guide Shaft **[74]** into the Nose **[32]** so that its grooved side faces the adjuster. Push the tip in aligning with the Shaft Ring **[73]** until the Shaft Ring **[73]** snaps in the groove.

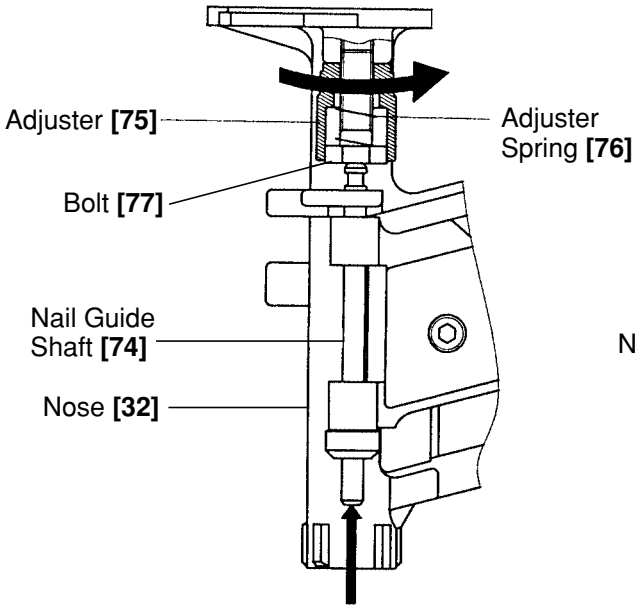


Fig. 20

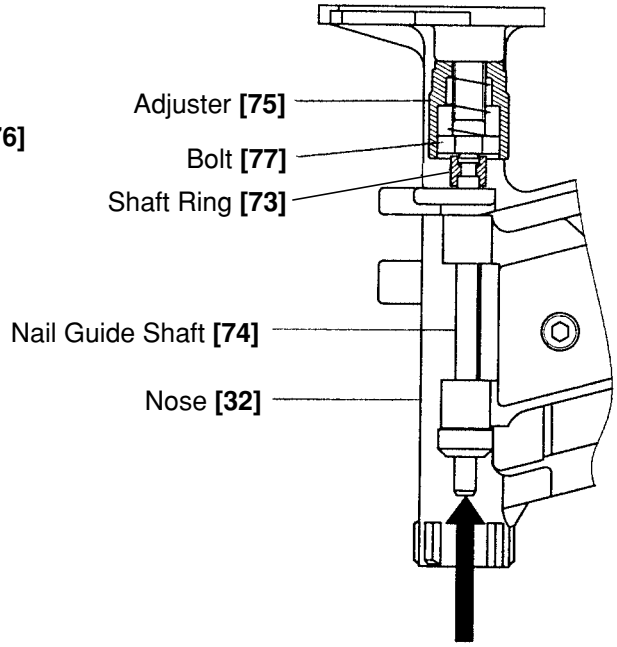


Fig. 21

(2) Feed Piston **[63]**, Feeder (A) **[70]** and related parts: (See Fig. 22.)

Tools required:

○ Hex. bar wrench (4 mm)

○ Phillips screwdriver

(a) Disassembly

○ By following the procedures in paragraph 10-2-(1)-(a), disassemble the Magazine Ass'y **[109]** from the output section.

○ Remove the Magazine Bushing **[67]** from the Nose **[32]**.

○ Remove the Hex. Socket Hd. Bolt M5 x 8 **[30]**, and detach the Guard **[31]** from the Nose **[32]**.

○ After removing the Hex. Socket Hd. Bolt M5 x 10 **[68]**, the Feed Piston Cover **[66]** and Gasket (E) **[65]** can be taken out.

○ Remove the Feeder Shaft Ring **[72]** from the Feeder Shaft **[71]**, and extract the Feeder Shaft **[71]** from the Feed Piston **[63]**. The Feeder (A) **[70]** and Feeder Spring **[69]** can then be removed.

○ Next, the Feed Piston **[63]** can be taken out of the Nose **[32]**.

(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 **[31]** or on the sliding portion of the Feeder (A) **[70]**.

○ Assemble the Feeder Shaft Ring **[72]** onto the Feeder Shaft **[71]** so that the chamfered inner surface is facing toward the Feeder Spring **[69]** side.

○ Ensure that the hooked portions at both ends of the Feeder Spring **[69]** are properly inserted into the provided grooves on Feeder (A) **[70]**.

○ Prior to reassembly, coat grease on the O-Ring (P-9) **[61]**, the Feed Piston O-Rings **[62] [64]**, and the O-Ring sliding portions of the Feed Piston **[63]** and Nose **[32]**. However, as excessive grease will cause improper movement of the Feed Piston **[63]**, 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 Nose **[32]**. Any dust or foreign matter in the air passage will cause malfunction of the Feed Piston **[63]**.

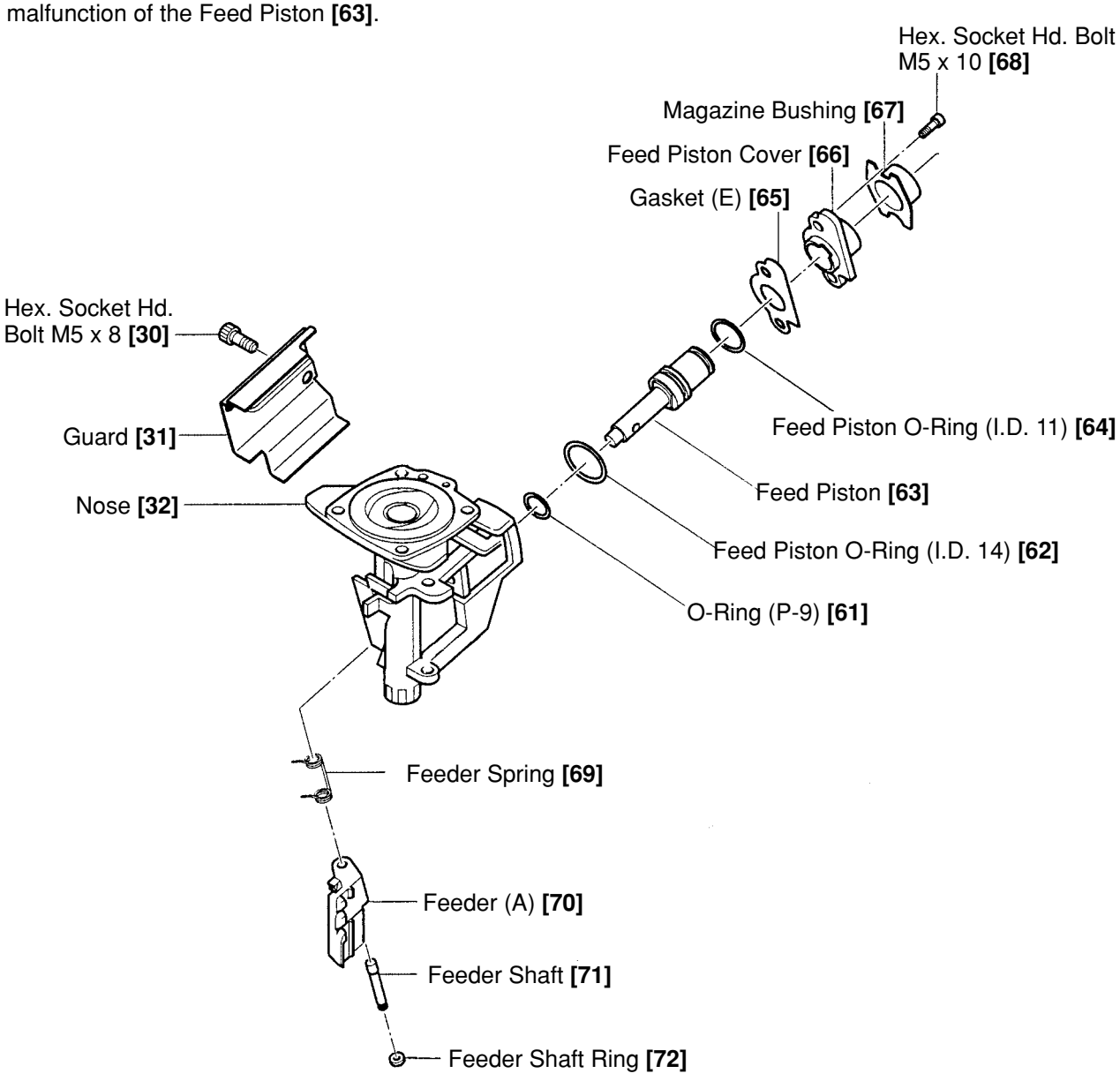


Fig. 22

10-5. Disassembly and Reassembly of the Cap and the Magazine

(1) Cap portion

Tool required:

○Hex. bar wrench (4 mm)

(a) Disassembly (See Fig. 24.)

○Remove the Hex. Socket Hd. Bolt M5 x 16 **[44]**. Then Gasket (D) **[42]** and the Cap **[43]** can be removed.

(b) Reassembly

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

○Before reassembly, check that no dust is adhered to the end surfaces of the Body Ass'y **[24]** and the Cap **[43]**, and Gasket (D) **[42]**.

(2) Magazine portion

Tool required:

○Hex. bar wrench (4 mm)

○Philips screwdriver

○Roll pin puller (4 mm (0.157"))

○Small flat-blade screwdriver

(a) Disassembly (See Fig. 23.)

○ Remove the Machine Screw M5 x 22 **[39]** from the Body Ass'y **[24]**. Then the Magazine Ass'y **[109]** can be removed.

○ Push out the Pin **[101]** using a roll pin puller (4 mm (0.157")). Then the Magazine Cover **[90]** and the Feeder Shaft Ring **[72]** that prevents the Pin **[101]** from coming off can be removed.

○ Insert a small flat-blade screwdriver between the Holder Cap **[91]** and the Nail Holder **[99]** to widen the clearance. Then the Holder Cap **[91]** can be removed (Fig. 23). At this time, be careful not to scratch the Nail Holder **[99]** and the Holder Cap **[91]**. Remove the Machine Screw M4 x 50. Then the Holder Shaft **[95]**, Nail Holder **[99]** and other parts can be removed.

○ Put the small flat-blade screwdriver on the end of the Ratchet Spring **[98]** and push the Ratchet Spring **[98]** out of the groove on the Nail Holder **[99]**.

(b) Reassembly

○ Disassembly procedures should be followed in the reverse order.

○ Drop the Feeder Shaft Ring **[72]** in the groove at the center of the hinge of the Magazine Cover **[90]** and put the Pin **[101]** through the hole of the hinge before mounting the Magazine Cover **[90]** to the Magazine **[100]**. After reassembly, check that the Feeder Shaft Ring **[72]** fits in the notch at the center of the Pin **[101]**.

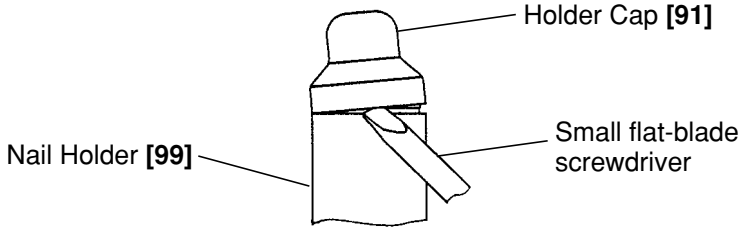


Fig. 23

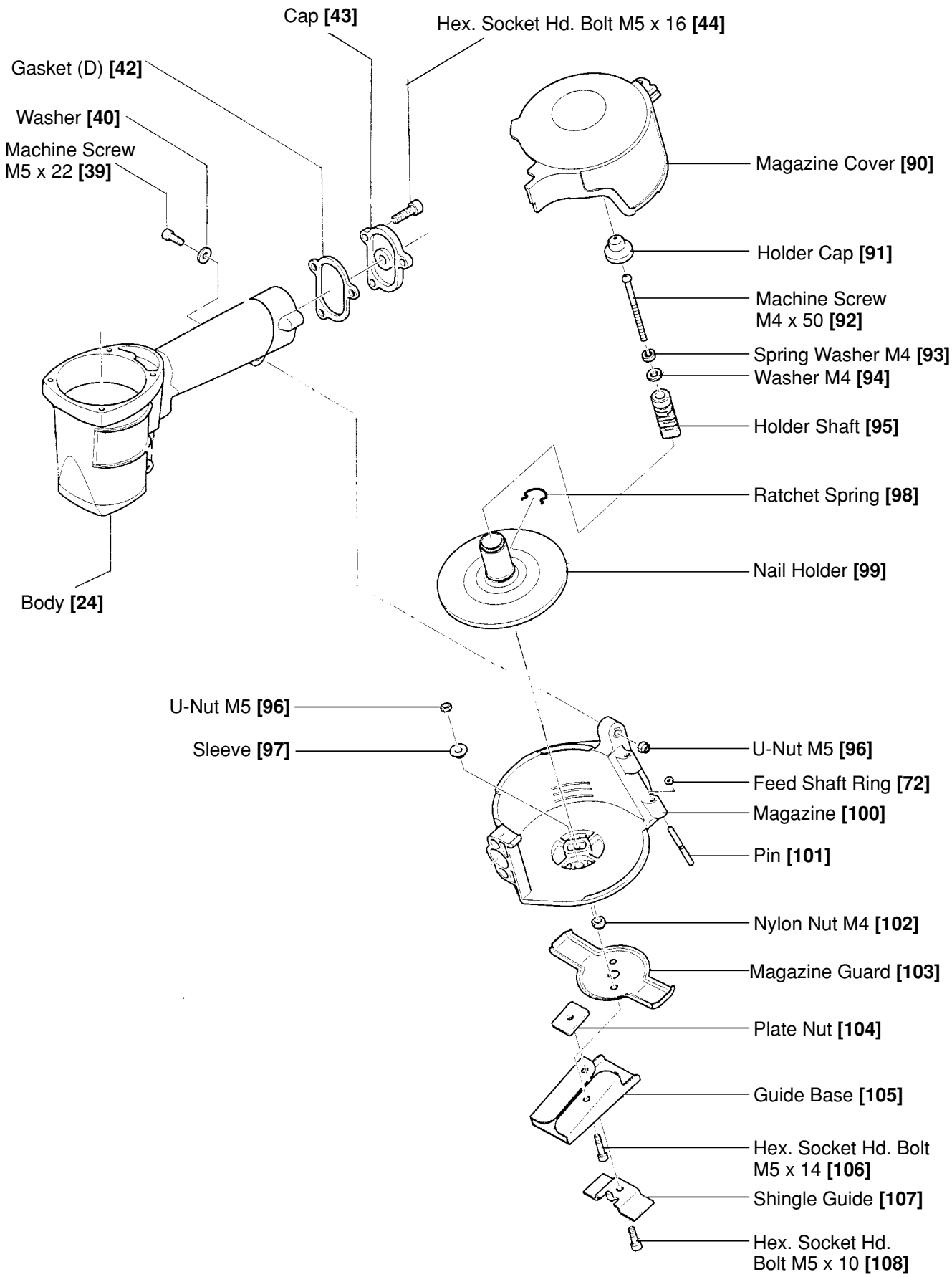

Cap [43]
Hex. Socket Hd. Bolt M5 x 16 [44]
Gasket (D) [42]
Washer [40]
Machine Screw
M5 x 22 [39]
Magazine Cover [90]
Holder Cap [91]
Machine Screw
M4 x 50 [92]
Spring Washer M4 [93]
Washer M4 [94]
Holder Shaft [95]
Ratchet Spring [98]
Nail Holder [99]
Body [24]
U-Nut M5 [96]
Sleeve [97]
U-Nut M5 [96]
Feed Shaft Ring [72]
Magazine [100]
Pin [101]
Nylon Nut M4 [102]
Magazine Guard [103]
Plate Nut [104]
Guide Base [105]
Hex. Socket Hd. Bolt
M5 x 14 [106]
Shingle Guide [107]
Hex. Socket Hd.
Bolt M5 x 10 [108]

Fig. 24

(3) Single guide portion

Tools required:

○ Hex. bar wrench (4 mm)

○ Spanner (8 mm) or slender hd. pliers

(a) Disassembly (See Fig. 22.)

○ Remove the Nail Holder **[99]** from the Magazine Ass'y **[109]**.

○ Remove the Hex. Socket Hd. Bolt M5 x 10 **[108]**. Then the Shingle Guide **[107]** can be removed from the Guide Base **[105]**.

○ Secure the U-Nut M5 **[96]** with a spanner (8 mm) or a slender hd. pliers. Insert a hex. bar wrench (4 mm) from the two holes at the bottom of the Guide Base **[105]** and remove the Hex. Socket Hd. Bolt M5 x 14 **[106]**. Then the Guide Base **[105]**, Magazine Guard **[103]** and Sleeve **[97]** can be removed. The Nylon Nut M4 **[102]** can be taken out of the hexagonal hole at the bottom of the Magazine **[100]**.

(b) Reassembly

○ Disassembly procedures should be followed in the reverse order.

○ Drop the Nylon Nut M4 **[102]** in the hexagonal hole at the bottom of the Magazine **[100]** and before mounting the Guide Base **[105]** and the Magazine Guard **[103]** to the Magazine **[100]**. If the Guide Base **[105]** is mounted first, the Nylon Nut M4 **[102]** cannot be mounted to the Magazine **[100]**.

○ Be careful of each tightening torque. (Refer to paragraph 10-1.)

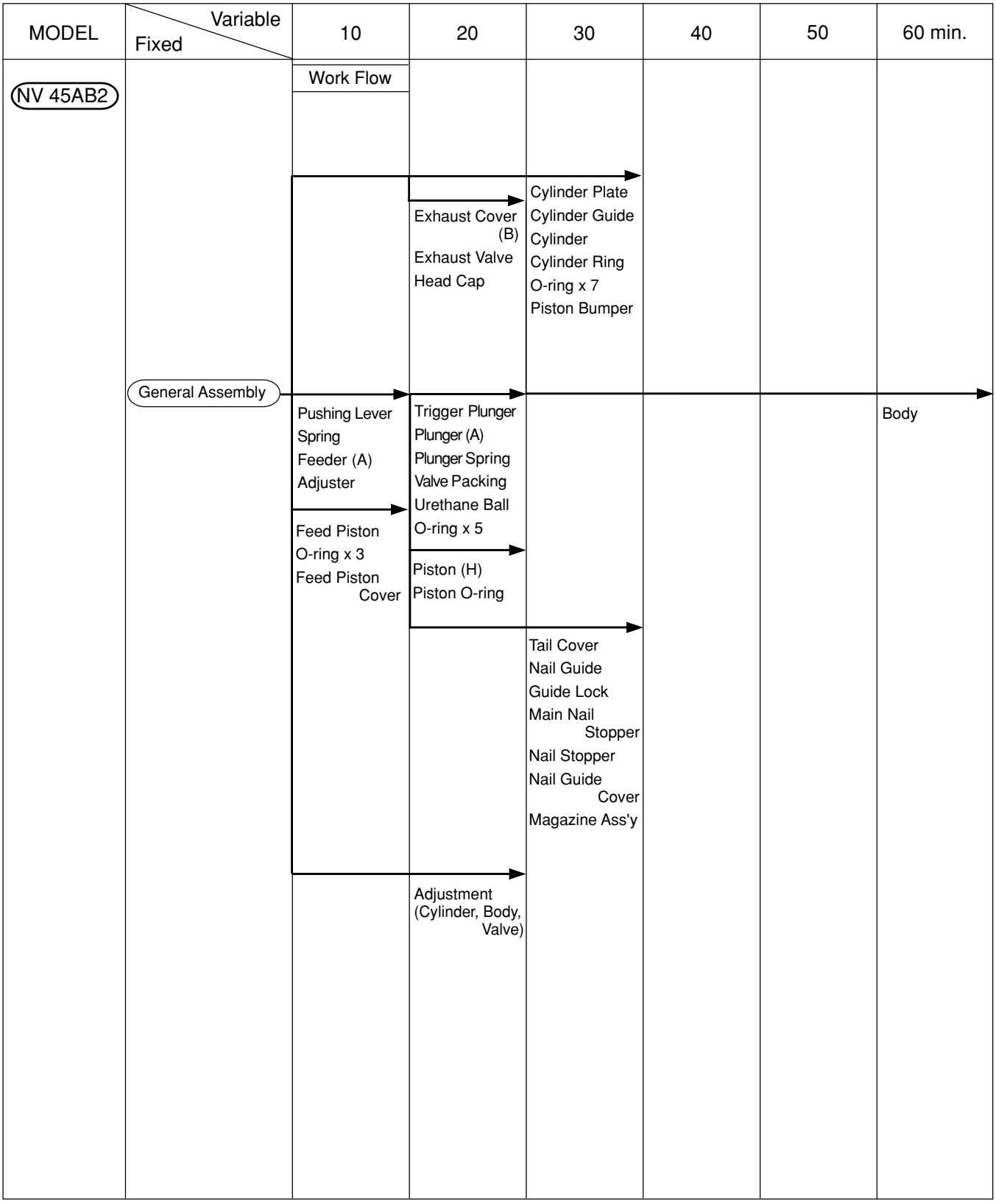
11. INSPECTION AND CONFIRMATION AFTER REASSEMBLY

- Check that Plunger (B) **[59]** and Trigger Plunger **[57]** move smoothly.
- Check that there is no air leakage from each part.
- Ensure that the Main Nail Stopper **[86]**, Nail Stopper **[87]**, and Feeder (A) **[70],** return properly when they are pushed with a finger.
- Confirm that the Feed Piston **[63]** and Piston (H) **[13]** return properly when the nailer is operated with an air pressure of 5 kg/cm^2 (70 psi). (Conduct check under the idle driving condition, with the nail guide open.)
- Operate the nailer with an air pressure of 5 kg/cm^2 (70 psi), and confirm that there is no abnormal driving or bending of nails.

  Note: Before conducting the driving test, turn the Adjuster **[75]** to the deepest position.

- Recheck the tightening torque of each screw.
- Check that the Pushing Lever **[38]** slides smoothly.
- Check that the machine will not operate only by actuating the Trigger **[58]**. Also check that the machine will not operate only by depressing the Pushing Lever **[38]**.

12. STANDARD REPAIR TIME (UNIT) SCHEDULES



HITACHI

LIST NO. E004

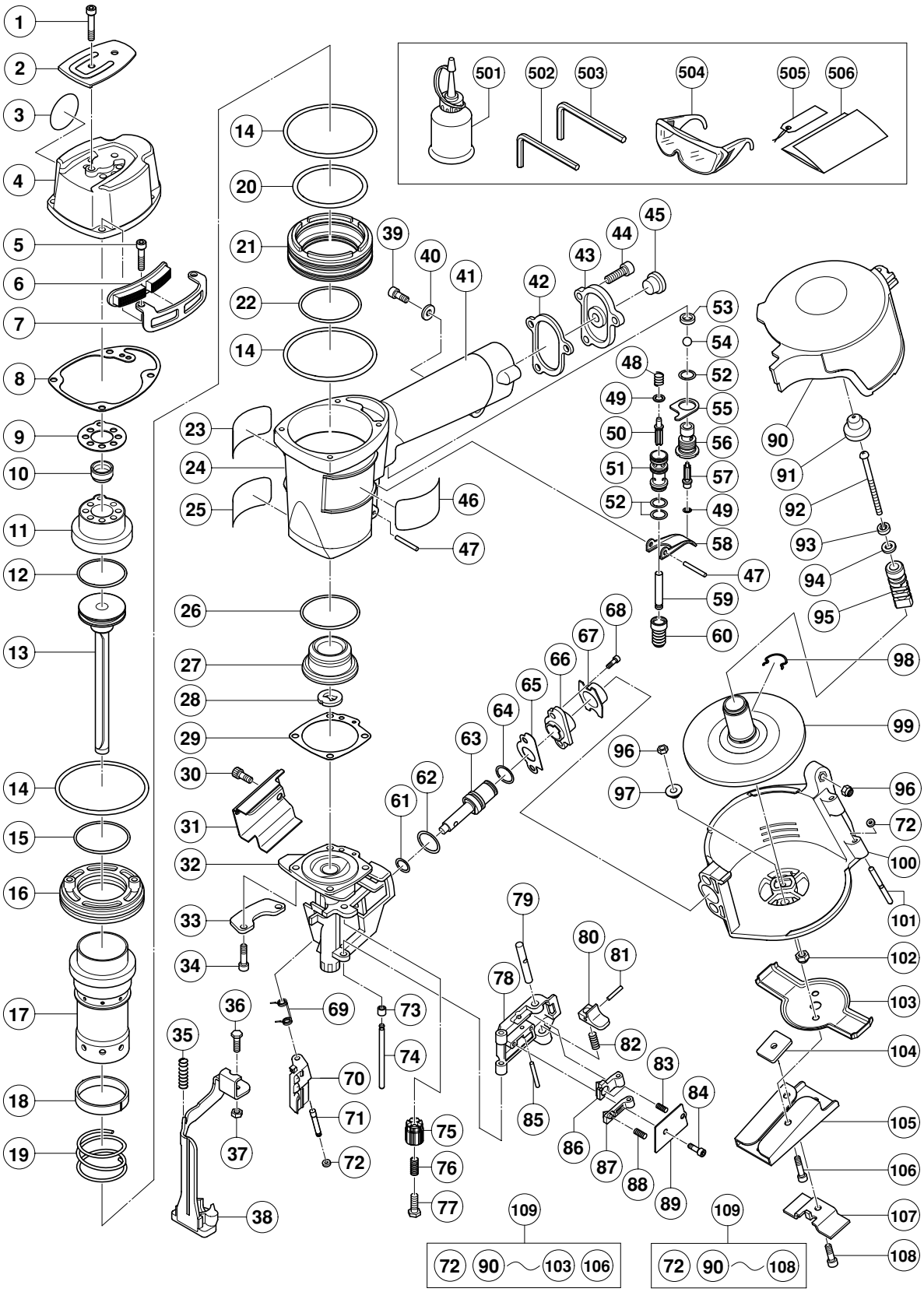
PNEUMATIC TOOL PARTS LIST

■ COIL NAILER

2002・3・15

Model NV 45AB2

(E1)



	ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS	
	1	949-662	HEX. SOCKET HD. BOLT M5X25 (10 PCS.)	2		
	2	876-179	TOP COVER	1		
*	3	883-513	WARNING LABEL (A)	1	FOR EUROPE	
	4	880-275	EXHAUST COVER (B)	1		
	5	949-757	HEX. SOCKET HD. BOLT M5X20 (10 PCS.)	4		
	6	883-891	PROTECTOR	2		
	7	883-890	BODY GUARD	2		
	8	883-892	GASKET (F)	1		
	9	876-713	GASKET (G)	1		
	10	878-417	EXHAUST VALVE	1		
	11	876-711	HEAD CAP	1		
	12	876-174	PISTON O-RING	1		
	13	878-156	PISTON (H)	1		
	14	876-161	O-RING (S-65)	3		
	15	877-126	CYLINDER O-RING (D)	1		
	16	876-168	CYLINDER PLATE	1		
	17	877-486	CYLINDER	1		
	18	876-167	CYLINDER RING	1		
	19	876-172	CYLINDER SPRING	1		
	20	877-123	CYLINDER O-RING (A)	1		
	21	877-122	CYLINDER GUIDE	1		
	22	877-124	CYLINDER O-RING (B)	1		
	23	878-184	WARNING LABEL	1		
	24	883-889	BODY ASS'Y	1	INCLUD.41	
*	25	878-183	WARNING LABEL	1	FOR EUROPE	
	26	877-125	CYLINDER O-RING (C)	1		
	27	878-179	PISTON BUMPER	1		
	28	877-993	BUMPER SHEET	1		
	29	883-881	GASKET (A)	1		
	30	949-818	HEX. SOCKET HD. BOLT M5X8 (10 PCS.)	2		
	31	878-151	GUARD	1		
	32	883-880	NOSE	1		
	33	878-173	NOSE GUARD	2		
	34	878-181	NYLOCK HEX. SOCKET HD. BOLT M5X16	4		
	35	878-178	SPRING	1		
	36	875-650	SAFETY BOLT	1		
	37	949-555	NUT M5 (10 PCS.)	1		
	38	883-888	PUSHING LEVER	1		
	39	949-242	MACHINE SCREW M5X22 (10 PCS.)	1		
	40	876-205	WASHER	1		
	41		GRIP RUBBER	1	(SUPPLIED WITH ITEM NO.602,603)	
	42	877-131	GASKET (D)	1		
	43	880-036	CAP	1		
	44	949-821	HEX. SOCKET HD. BOLT M5X16 (10 PCS.)	3		
	45	872-035	DUST CAP	1		
	46		NAME PLATE	1		
	47	949-866	ROLL PIN D3X30 (10 PCS.)	2		
	48	875-643	PLUNGER SPRING	1		
	49	874-820	PLUNGER O-RING	2		
	50	878-155	PLUNGER (A)	1		
	51	878-166	VALVE BUSHING	1		

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS	
52	875-638	O-RING (S-12)	3		
53	878-734	VALVE PACKING	1		
54	875-645	URETHANE BALL (C) D7.14	1		
55	875-644	VALVE PLATE	1		
56	877-335	TRIGGER VALVE BUSHING	1		
57	878-121	TRIGGER PLUNGER	1		
58	876-203	TRIGGER	1		
59	878-171	PLUNGER (B)	1		
60	878-170	VALVE RUBBER COVER	1		
61	872-645	O-RING (P-9)	1		
62	877-763	FEED PISTON O-RING (I.D.14)	1		
63	878-152	FEED PISTON	1		
64	877-764	FEED PISTON O-RING (I.D.11)	1		
65	877-767	GASKET (E)	1		
66	877-766	FEED PISTON COVER	1		
67	877-479	MAGAZINE BUSHING	1		
68	949-819	HEX. SOCKET HD. BOLT M5X10 (10 PCS.)	2		
69	877-761	FEEDER SPRING	1		
70	883-901	FEEDER (A)	1		
71	877-825	FEEDER SHAFT	1		
72	877-826	FEEDER SHAFT RING	2		
73	883-885	SHAFT RING	1		
74	883-884	NAIL GUIDE SHAFT	1		
75	883-882	ADJUSTER	1		
76	883-883	ADJUSTER SPRING	1		
77	958-805	BOLT	1		
78	883-887	NAIL GUIDE	1		
79	877-820	LOCK SHAFT	1		
80	877-821	GUIDE LOCK	1		
81	949-776	ROLL PIN D3X10 (10 PCS.)	1		
82	877-372	SPRING	1		
83	876-681	MAIN STOPPER SPRING	1		
84	949-766	HEX. SOCKET HD. BOLT M4X6 (10 PCS.)	2		
85	949-865	ROLL PIN D3X28 (10 PCS.)	1		
86	878-185	MAIN NAIL STOPPER	1		
87	878-186	NAIL STOPPER	1		
88	877-468	SUB STOPPER SPRING	1		
89	877-469	NAIL GUIDE COVER	1		
90	883-899	MAGAZINE COVER	1		
91	883-900	HOLDER CAP	1		
92	949-230	MACHINE SCREW M4X50 (10 PCS.)	1		
93	949-453	SPRING WASHER M4 (10 PCS.)	1		
94	949-423	WASHER M4 (10 PCS.)	1		
95	883-897	HOLDER SHAFT	1		
96	945-255	U-NUT M5	3		
97	878-164	SLEEVE	2		
98	880-398	RATCHET SPRING	1		
99	883-896	NAIL HOLDER	1		
100	883-895	MAGAZINE	1		
101	883-111	PIN	1		
102	876-465	NYLON NUT M4	1		

PARTS

	ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS	
	103	883-898	MAGAZINE GUARD	1		
*	104	878-213	PLATE NUT	1	FOR USA	
*	105	878-176	GUIDE BASE	1	FOR USA	
	106	949-665	HEX. SOCKET HD. BOLT M5X14 (10 PCS.)	2		
*	107	878-175	SHINGLE GUIDE	1	FOR USA	
*	108	949-819	HEX. SOCKET HD. BOLT M5X10 (10 PCS.)	1	FOR USA	
*	109	883-893	MAGAZINE ASS'Y	1	INCLUD.72,90-103,106	
*	109	883-894	MAGAZINE ASS'Y	1	INCLUD.72,90-108 FOR USA	

STANDARD ACCESSORIES

	ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS	
*	501	877-153	PNEUMATIC TOOL LUBRICANT (30CC)	1	FOR EUROPE	
	502	943-277	HEX. BAR WRENCH 3MM	1		
	503	944-458	HEX. BAR WRENCH 4MM	1		
	504	875-769	EYE PROTECTOR	1		
*	505	878-188	CAUTION TAG	1	FOR USA	
*	506	882-414	LEAFLET	1	FOR USA	

OPTIONAL ACCESSORIES

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS	
601	878-226	SEQUENTIAL TRIP MECHANISM SET	1		
602	881-768	GRIP TAPE (A)	1		
603	880-407	TAPE	2		
604	317-918	GREASE (ATTOLUB NO.2) 500G	1		

Hitachi Koki Co., Ltd.
Tokyo Japan