

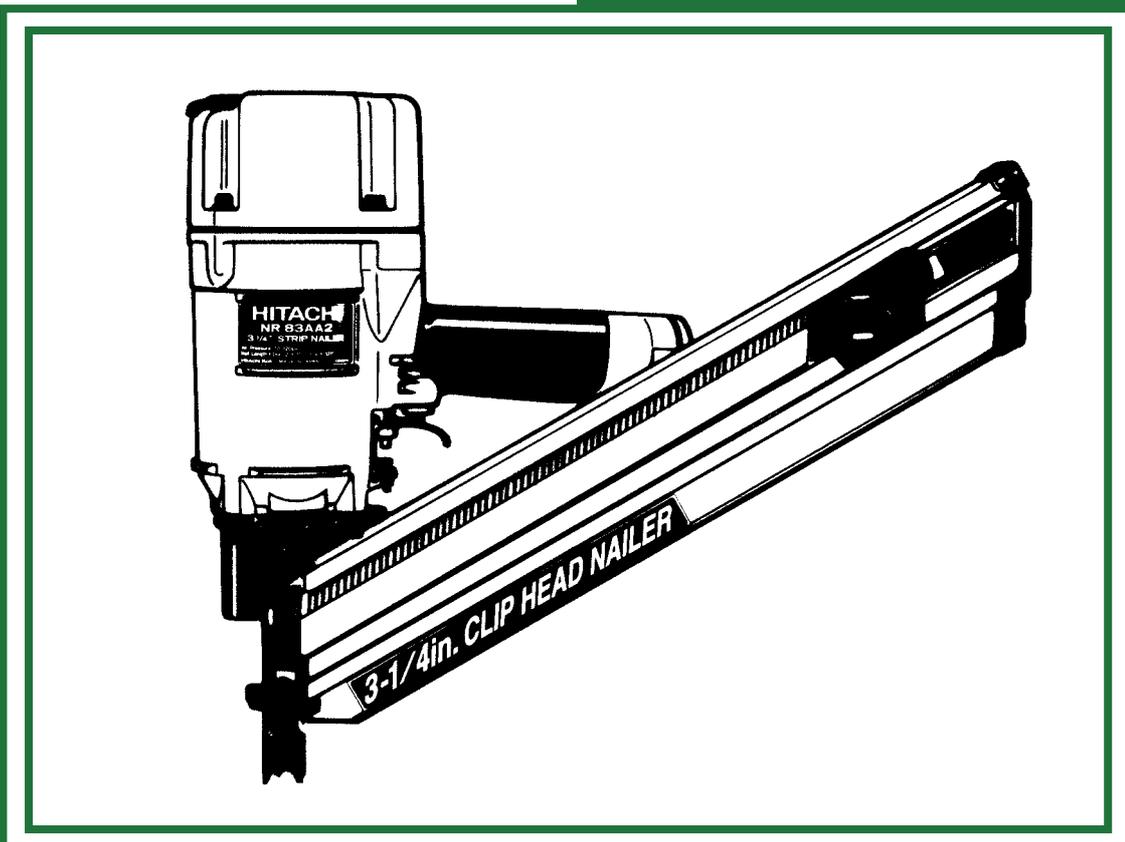
MODEL

NR 83AA2

HITACHI
POWER TOOLS

STRIP NAILER
NR 83AA2

TECHNICAL DATA
AND
SERVICE MANUAL



N

LIST No. E001

May 2001

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
R	SENCO	FP650
Y	PASLODE	P350S

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1. PRODUCT NAME

Hitachi Strip Nailer, Model NR 83AA2 [83 mm (3-1/4")]

2. MARKETING OBJECTIVE

The Model NR 83AA2 strip nailer is an upgraded version of the current Model NR 83AA, equipped with the same output section as the Model NR 83AA that is well reputed with its rapid driving and quick response, and the newly designed driving and magazine sections. Primary differences from the Model NR 83AA are described below.

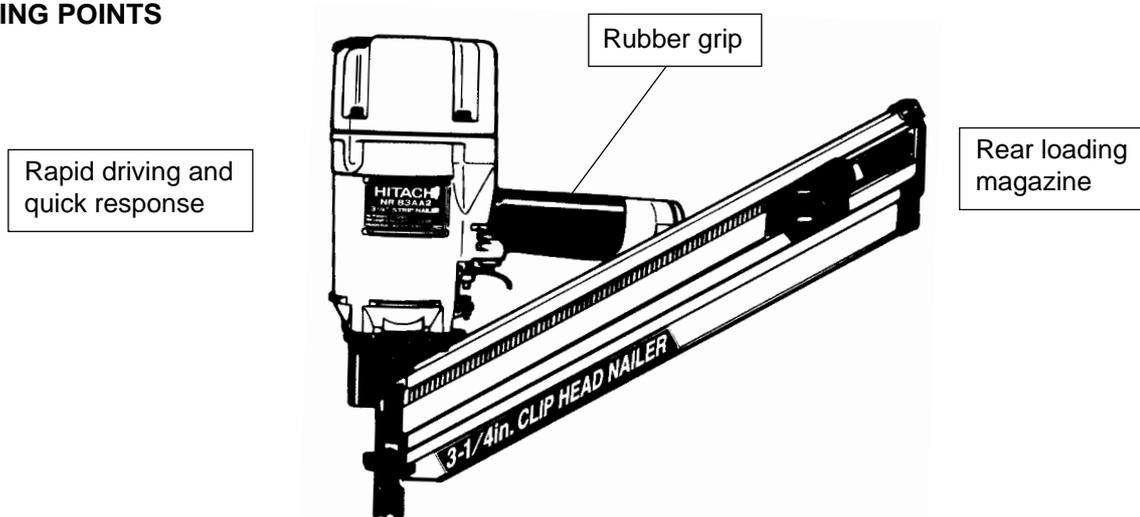
- (1) Construction of the driving port (nose and piston) is changed to cope with the problem that some of the commercially available nails are apt to clog.
- (2) The magazine is changed from top loading type to rear loading type so that long strip nails such as SENCO nails can be loaded without folding. In addition, the magazine is lengthened to increase the nail capacity from 82 nails (3.3 mm (0.131 ") dia., HKU) to 86 nails (Paslode F350S: 84 nails).
- (3) The body handle of the Model NR 83AA is wound with the grip tape, however, dust adheres to the joints of tape and it impairs operability. To cope with this problem, a band-type grip rubber is adopted to the Model NR 83AA2.
- (4) In the Model NR 83AA2, the magazine section is simplified and no washer is used to reduce parts count for easy maintenance.
- (5) The claw at the tip of the pushing lever is hardened to increase the wear resistance and the shape of the claw is changed to prevent slipping even when driving nails in a slanting direction. (The change on the shape of claw has also been applied to the current Model NR 83AA from the production of May 2000.)

The Model NR 83AA2 is far superior to Paslode F350S and SENCO FP650 in nail driving comfort and ease of operation. Please expand our market share with the new Model NR 83AA2.

3. APPLICATIONS

- Floor and wall framing
- Truss build-up, window build-up
- Subflooring and roof decking
- Wall sheathing
- Mobile home and modular housing construction

4. SELLING POINTS



5. SPECIFICATIONS

5-1. Specifications

Model	NR 83AA2
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	3 pcs./sec.
Weight	3.8 kg (8.4 lbs.)
Dimensions (Length x Height x Width)	460 mm x 360 mm x 108 mm (18-1/8" x 14-3/16" x 4-1/4")
Nail feed system	Spiral spring
Nail capacity	86 to 94 nails
Air consumption	2.5 ltr/cycle at 7 kgf/cm ² (0.088 ft ³ /cycle at 100 psi) (2.5 ltr/cycle at 6.9 bar)
Air inlet	3/8 NPT thread
Packaging	Corrugated cardboard box
Package dimensions (Length x Height x Width)	490 mm x 430 mm x 132 mm (19-5/16" x 16-15/16" x 5-3/16")
Standard accessories	<ul style="list-style-type: none"> • Hex. bar wrench for M5 screw (Code No. 944458) 1 • Hex. bar wrench for M6 screw (Code No. 944459) 1 • Hex. bar wrench for M8 screw (Code No. 872422) 1 • Eye protector (Code No. 875769) 1
Optional accessories	Sequential trip mechanism kit (Single-shot) (Code No. 876762) Depth adjustment pushing lever kit (Code No. 883512) Pneumatic tool lubricant (1 oz oil feeder) (Code No. 877153) Pneumatic tool lubricant (4 oz oil feeder) (Code No. 872042) Pneumatic tool lubricant (1 quart can) (Code No. 876212)

5-2. Nail Selection

The Model NR 83AA2 utilizes D-head (clipped head) nails collated with paper tape.

Applicable nail dimensions are shown below. Please note that screw-type nails cannot be used with the Model NR 83AA2.

CAUTION: Ensure that nails are as specified in Fig. 1. The Model NR 83AA2 utilizes D-head (clipped head) nails collated at an angle of 34 degrees which are the same as the nails utilized by a competitor's model Paslode. However, some D-head nails made by other makers are collated at a different angle of 26 degrees. Use of such nails will cause clogging of nails and subsequent damage to the nailer. Also avoid use of misaligned nails or nails collated with a weak paper tape. It is recommended to use genuine HITACHI nails to ensure satisfactory driving quality.

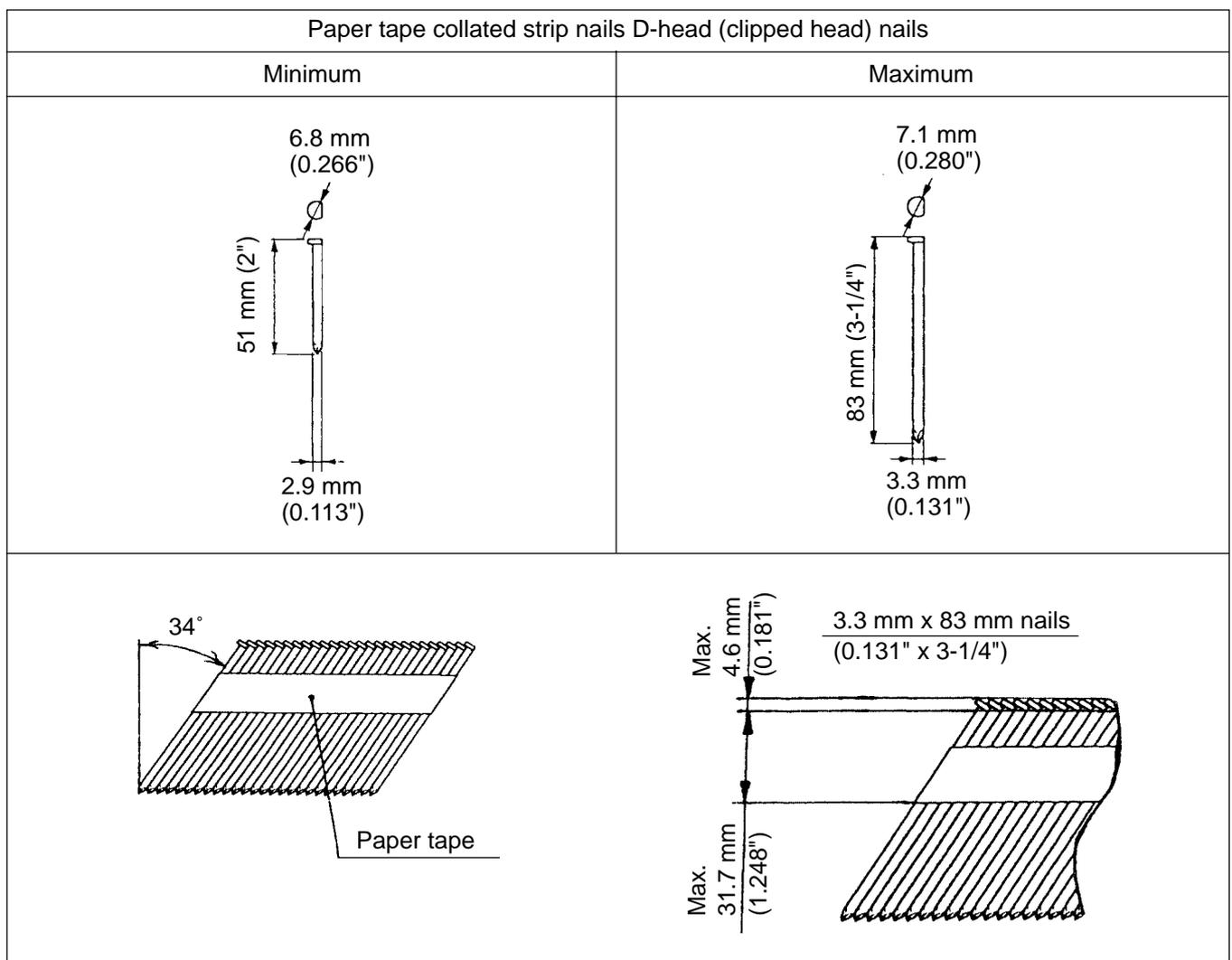


Fig. 1 Dimensions of nail

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 nailing energy required for driving the nail allows the nail to be fully driven.

For example, when driving a nail of 3.3 mm dia. by 83 mm length (0.131" x 3-1/4") into nine sheets of 12 mm plywood (108 mm thick) with the Model NR 83AA2, a pressure of about 7.0 bar (7.1 kgf/cm², 102 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 data because those values vary depending on the type, moisture content, and grain of wood.

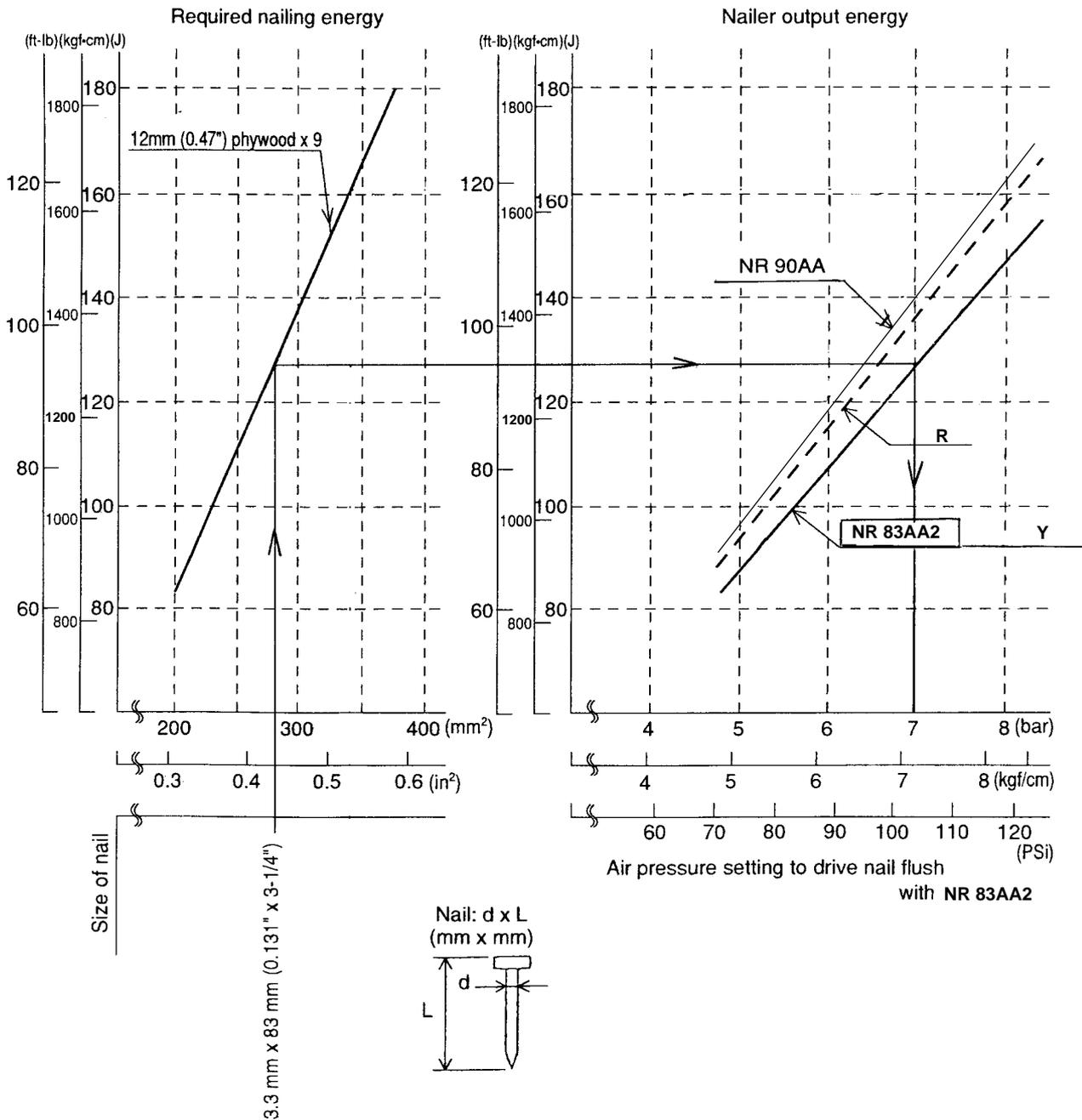


Fig. 2 Required nailing energy and nailer output energy

5-4. Optional Accessories

(1) Sequential trip mechanism kit (Single shot) (Code No. 876762)

A sequential trip mechanism kit is provided as an optional accessory for the Model NR 83AA2. By using this optional accessory, a nail is driven by pressing the push 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 push 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 NR 83AA2 thoroughly for correct use.

(2) Depth adjustment pushing lever kit (Code No. 883512)

The depth adjustment pushing lever kit is available as an optional accessory of the Model NR 83AA2 to adjust the nail driving depth (the adjustment procedure is the same as the current Models NR 90AC and NV 65AH). Salespersons must instruct the customers to read the Handling Instructions attached to the depth adjustment pushing lever kit and also the Handling Instructions of the Model NR 83AA2 thoroughly for correct use.

6. COMPARISONS WITH SIMILAR PRODUCTS

Maker	HITACHI		Y	R
	NR 83AA2	NR 83AA		
Model name	NR 83AA2	NR 83AA		
Operating pressure	5 – 8.5 kgf/cm ² (70 – 120 psi)	5 – 8.5 kgf/cm ² (70 – 120 psi)	5.5 – 8.5 kgf/cm ² (80 – 120 psi)	5 – 8.5 kgf/cm ² (70 – 120 psi)
Weight	3.8 kg (8.4 lbs.)	3.8 kg (8.4 lbs.)	3.7 kg (8.2 lbs.)	3.8 kg (8.4 lbs.)
Dimensions (L x H x W)	460 mm x 360 mm x 108 mm (18-1/8" x 14-3/16" x 4-1/4")	425 mm x 360 mm x 108 mm (16-3/4" x 14-3/16" x 4-1/4")	465 mm x 330 mm x 114 mm (18-5/16" x 13" x 4-1/2")	381 mm x 362 mm x 106 mm (15" x 14-1/4" x 4-9/64")
Air consumption at 7 kgf/cm ² (100 psi)	2.5 ltr/cycle (0.088 ft ³ /cycle)	2.5 ltr/cycle (0.088 ft ³ /cycle)	2.6 ltr/cycle (0.092 ft ³ /cycle)	2.7 ltr/cycle (0.095 ft ³ /cycle)
Nail capacity (0.131" nail)	86 nails	80 nails	84 nails	67 nails
Magazine type	Rear loading	Top loading	Top loading	Rear loading
Driving depth adjustment mechanism	None (Optional accessory: Toolless)	None	With wrench	With wrench
Direction change of exhaust air	None	None	With wrench (360°)	With wrench (Four directions)
Grip	Rubber	Racket grip	Rubber	Leather
Applicable nails	Dia.	2.9 mm – 3.3 mm (0.113" – 0.131")	2.9 mm – 3.3 mm (0.113" – 0.131")	2.9 mm – 3.8 mm (0.113" – 0.148")
	Length	50 mm – 83 mm (2" – 3-1/4")	50 mm – 90 mm (2" – 3-1/2")	50 mm – 90 mm (2" – 3-1/2")

7. PRECAUTIONS IN SALES PROMOTION

In the interest of promoting the safest and most efficient use of the Model NR 83AA2 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 NR 83AA2 Nailer is designed for continuous nail driving (however, some of the Model NR 83AA2 are designed for single-shot operation only for some destinations). At time of sale, the salesperson must inform the customer that the sequential trip mechanism kit which can change the Model NR 83AA2 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 NR 83AA2 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.



The following label is adhered to the Model NR 83AA2 for Europe to prohibit the use of the Model NR 83AA2 standing on a stepladder. Carefully ensure that customers fully understand and follow the precaution 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. 4, the Model NR 83AA2 can be generally divided into four sections: output section, control valve section, driving section and magazine section.

The driving section (nose and piston) and the magazine section have been newly designed though its basic construction is the same as that of the Model NR 83AA (valve section is common to the Model NR 83AA).

Primary differences from the Model NR 83AA are described below.

- Whole body No washer is used for reduction of parts count.
(The washer of the exhaust cover mounting screw is integrated with the screw.)
- Output section
 - The piston (driver blade) has been newly designed to correspond to the nose shape. Owing to the enlargement of the driver blade, the driver blade hole in the piston bumper is also enlarged.
 - The body handle is wound with a band-type grip rubber instead of the racket-grip tape. (Conventional grip tape is supplied as a repair part because the grip rubber cannot be mounted to the body handle by hand.)
The other parts are common to the Model NR 93AA.
- Driving section
 - All the parts have been newly designed.
 - The nail head supporting portion of the nose is widened as shown in Fig. 3 (same construction as Paslode F-350s) to cope with the problem that some of the commercially available nails are apt to clog due to the nail supporting portion is narrow and is apt to wear. Two spring supporters are provided to mount the depth adjustment pushing lever kit (optional accessory).
- Magazine section
 - All the parts have been newly designed.
The magazine section is simpler than the Model NR 83AA for reduction of parts count.
 - The magazine is changed from top loading type to rear loading type (same construction as SENCO FP650).
 - The magazine can be easily mounted by inserting the magazine into the nose and securing the handle arm to the body with a screw.

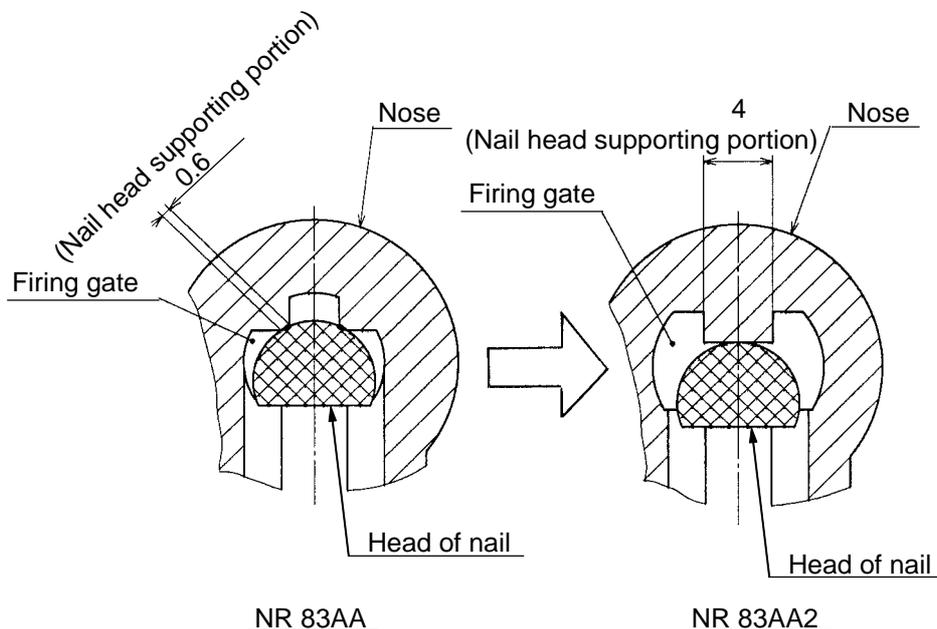


Fig. 3

The **<Bold>** numbers in the figure below correspond to the numbers in "8-3. Operation Principle".

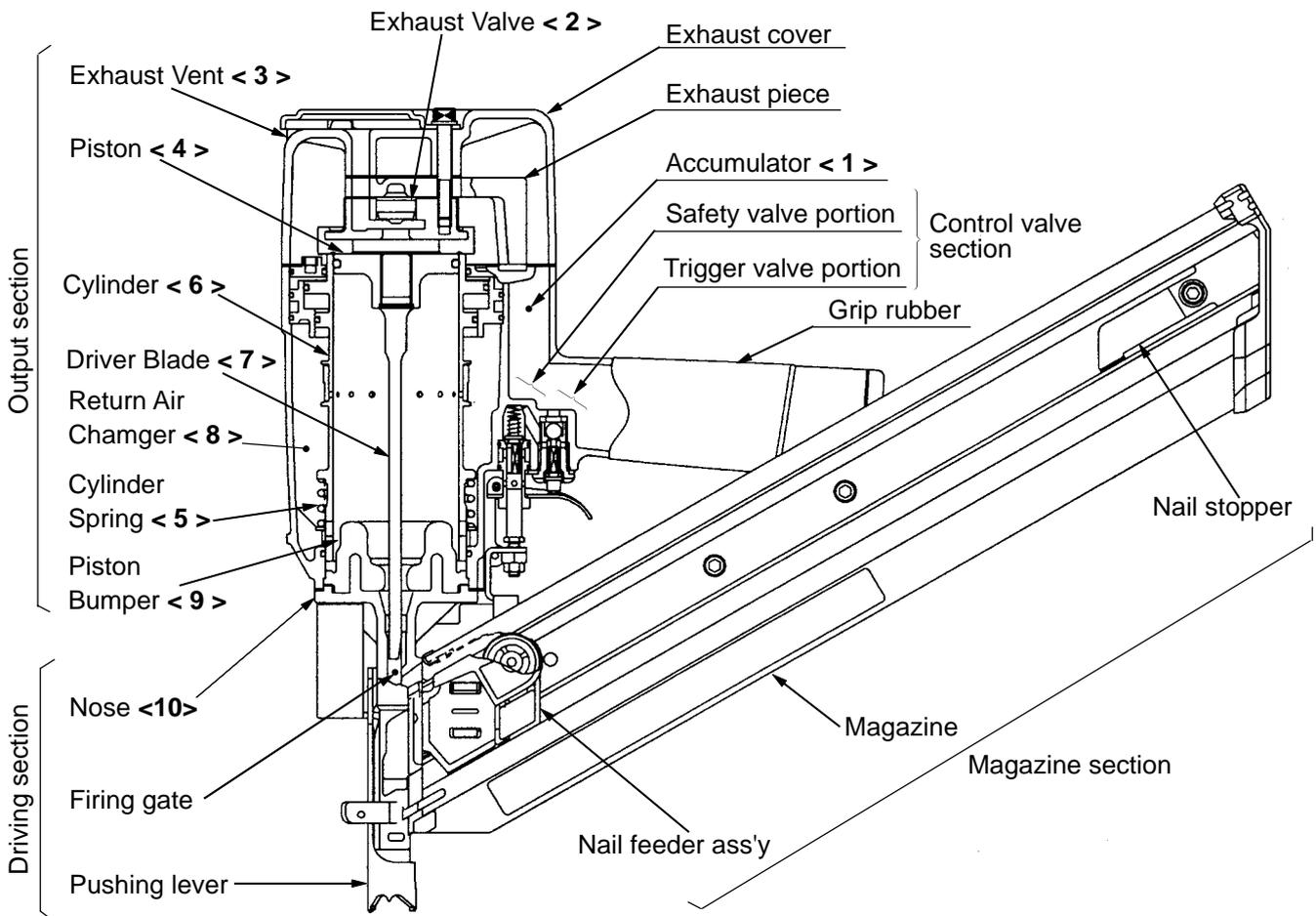
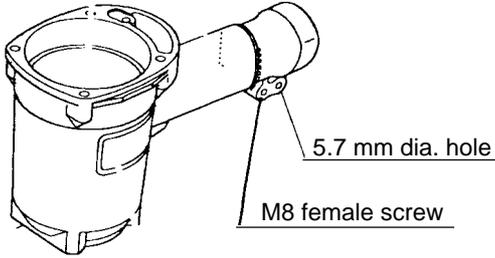
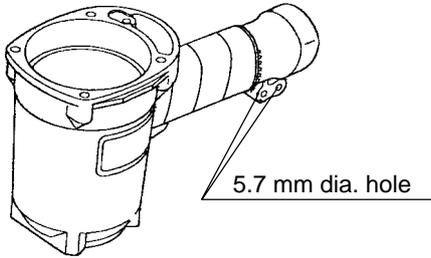
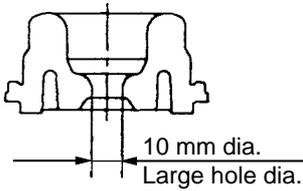
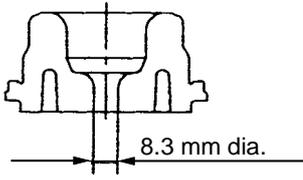
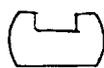
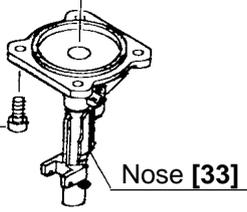
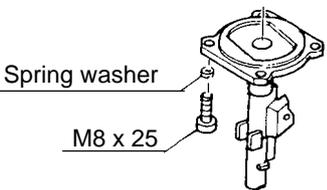
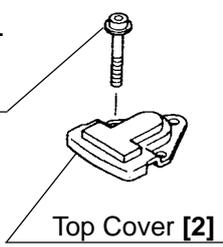
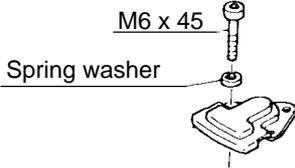
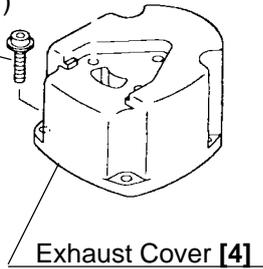
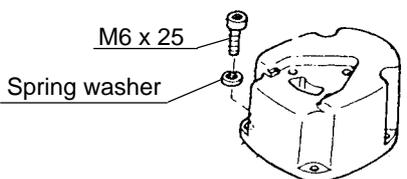


Fig. 4 Construction

8-2. Interchangeability

The driving section and the magazine section are not interchangeable between the Model NR 83AA2 and the NR 83AA because these sections of the Model NR 83AA2 have been newly designed. The output section and the control valve section are interchangeable except the following parts.

Part	NR 83AA2	NR 83AA
Body Ass'y [26]	 <p>5.7 mm dia. hole M8 female screw</p>	 <p>5.7 mm dia. hole</p>
Piston Bumper (B) [28]	 <p>10 mm dia. Large hole dia.</p>	 <p>8.3 mm dia.</p>
Piston [12] (Driver blade)	<p>Sectional view</p> 	<p>Sectional view</p> 
Nylock Hex. Socket Hd. Bolt M8 x 22 [32] (for mounting the Nose [33])	<p>Nylock Hex. Socket Hd. Bolt M8 x 22 [32]</p> <ul style="list-style-type: none"> • Short length • No spring washer  <p>Nose [33]</p>	<p>Spring washer</p> <p>M8 x 25</p> 
Hex. Socket Hd. Bolt (W/Flange) M6 x 45 [1] (for mounting the Top Cover [2])	<p>Hex. Socket Hd. Bolt (W/Flange) M6 x 45 [1]</p>  <p>Top Cover [2]</p>	<p>M6 x 45</p> <p>Spring washer</p> 
Hex. Socket Hd. Bolt (W/SP. Washer) M6 x 25 [3] (for mounting the Exhaust Cover [4])	<p>Hex. Socket Hd. Bolt (W/SP. Washer) M6 x 25 [3]</p>  <p>Exhaust Cover [4]</p>	<p>M6 x 25</p> <p>Spring washer</p> 

8-3. Operation Principle

The operation of the Model NR 83AA2 is illustrated and described in Fig. 5 through 8. The circled numbers in the descriptions correspond to the item numbers shown in the mechanism illustrated in Fig. 4. In Fig. 6 and Fig. 8, read the descriptions in alphabetical order.

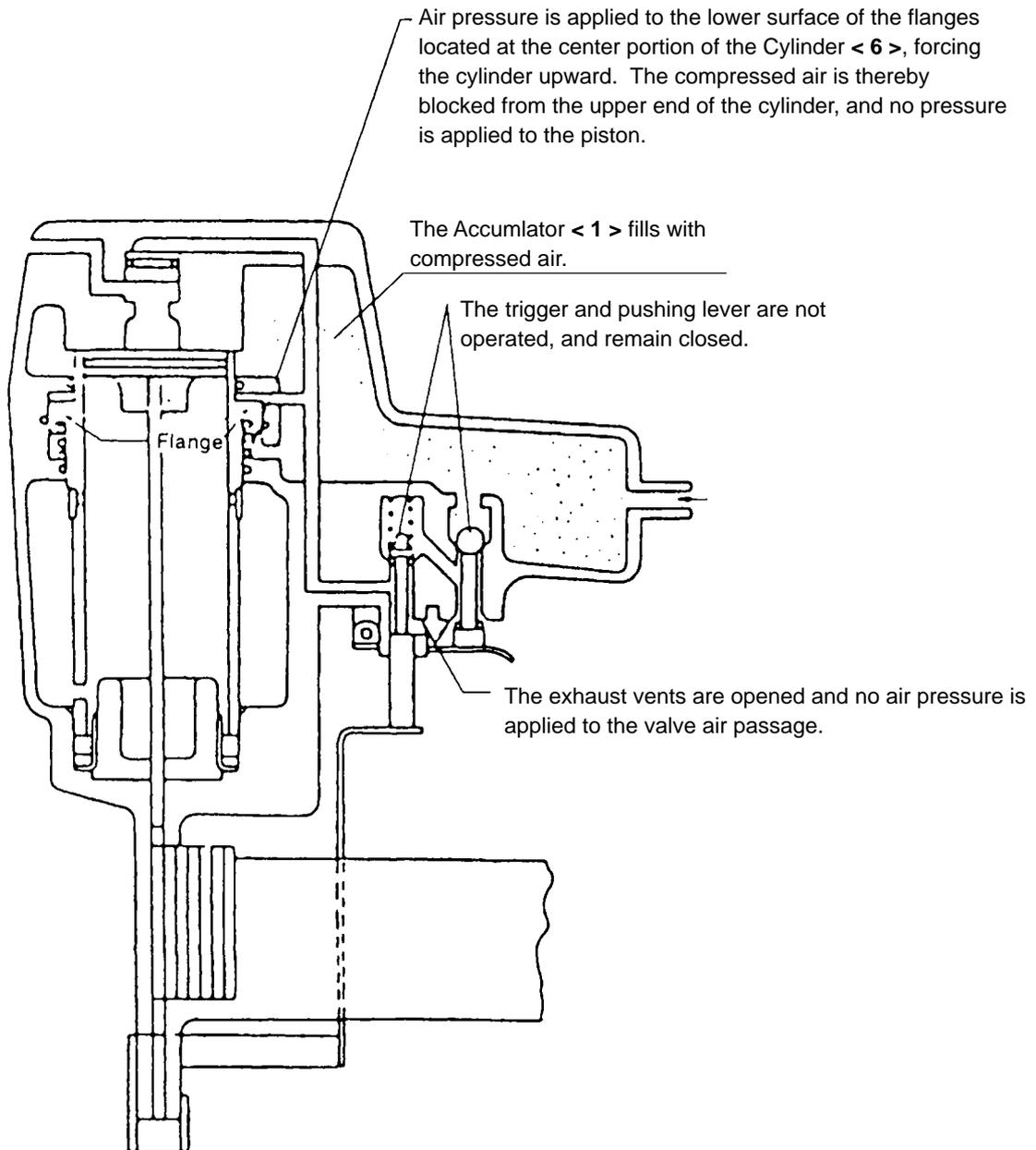


Fig. 5 When the compressed air source (air hose) is connected to the nailer

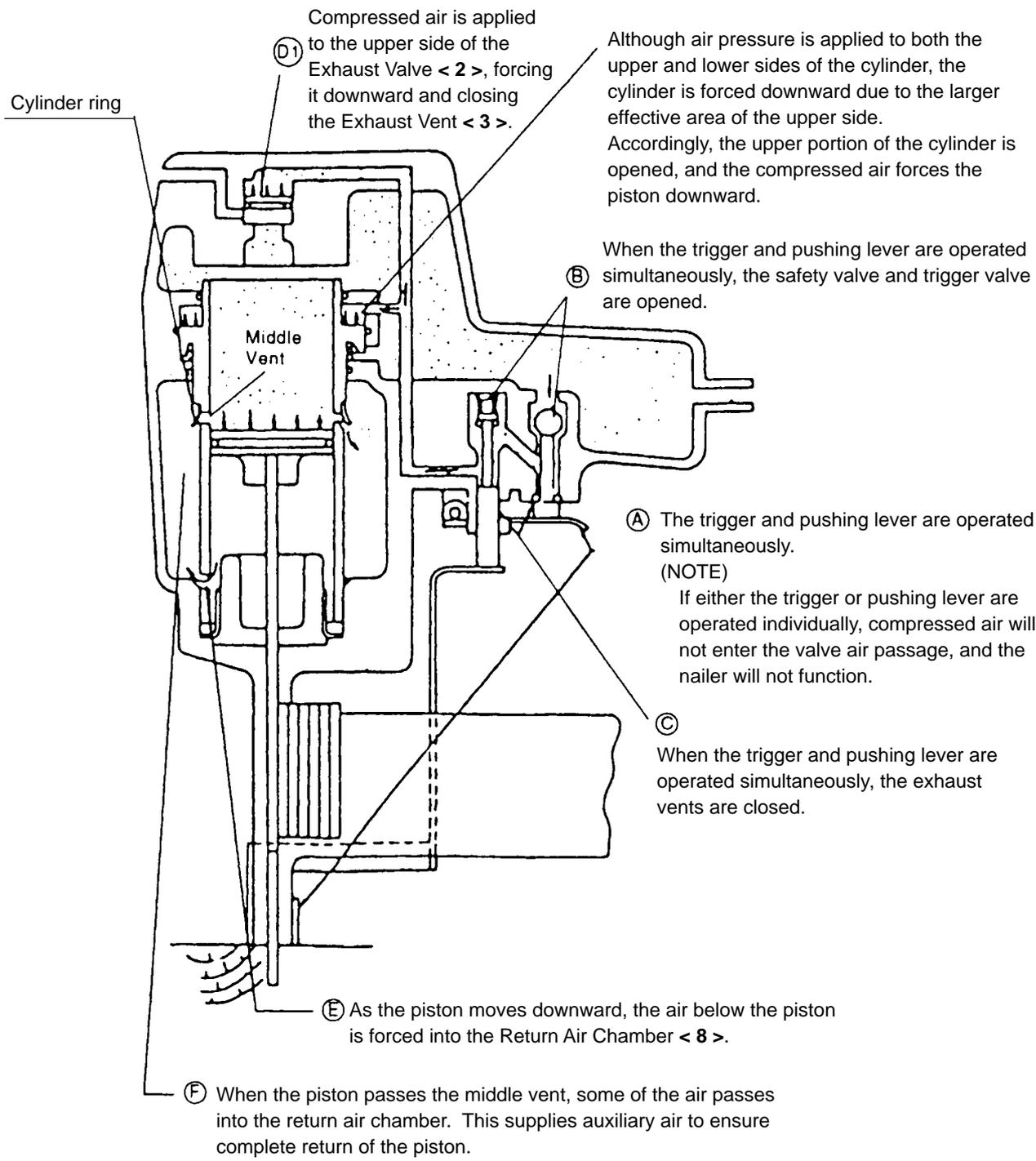


Fig. 6 When the trigger and pushing lever are operated

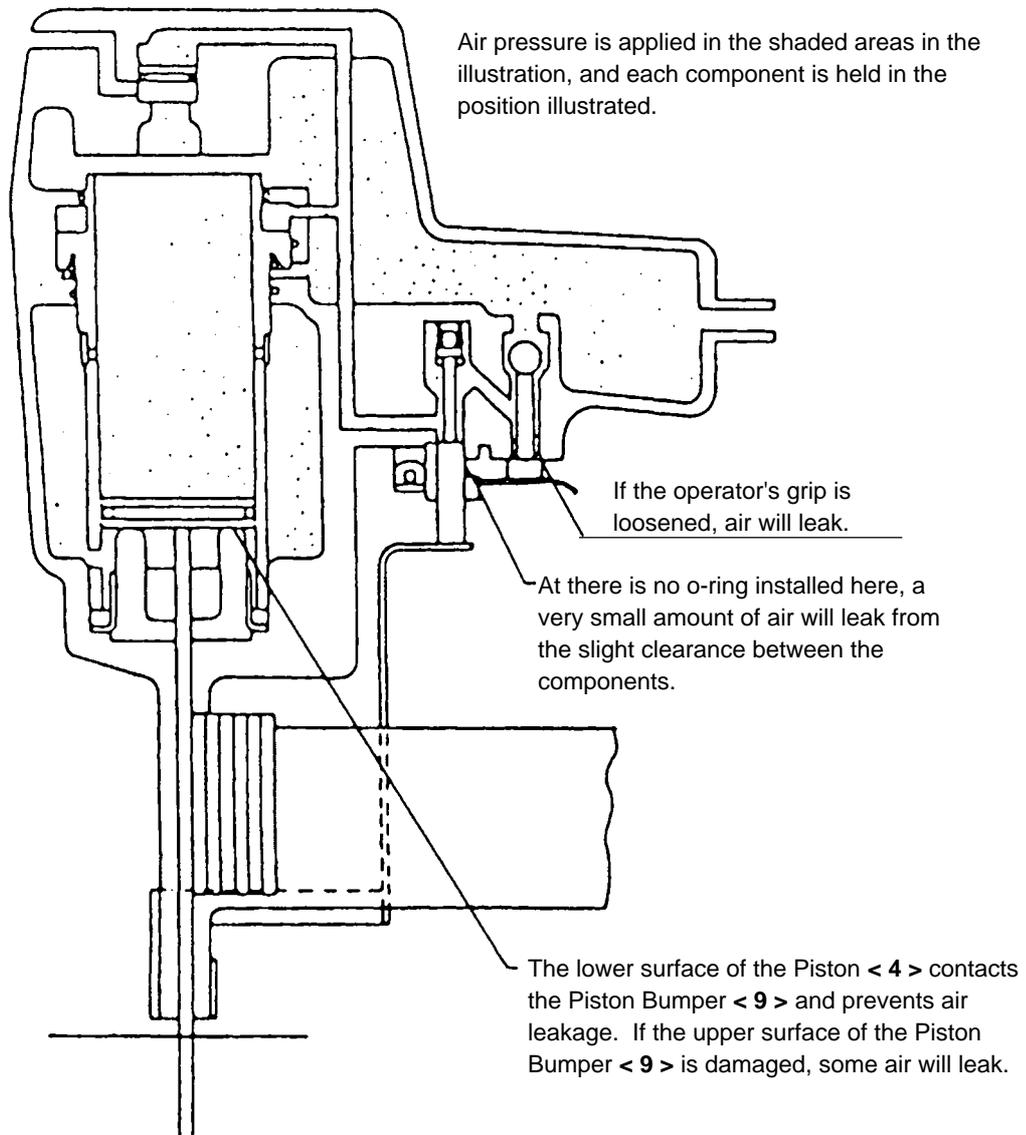


Fig. 7 If the trigger and pushing lever are kept pressed

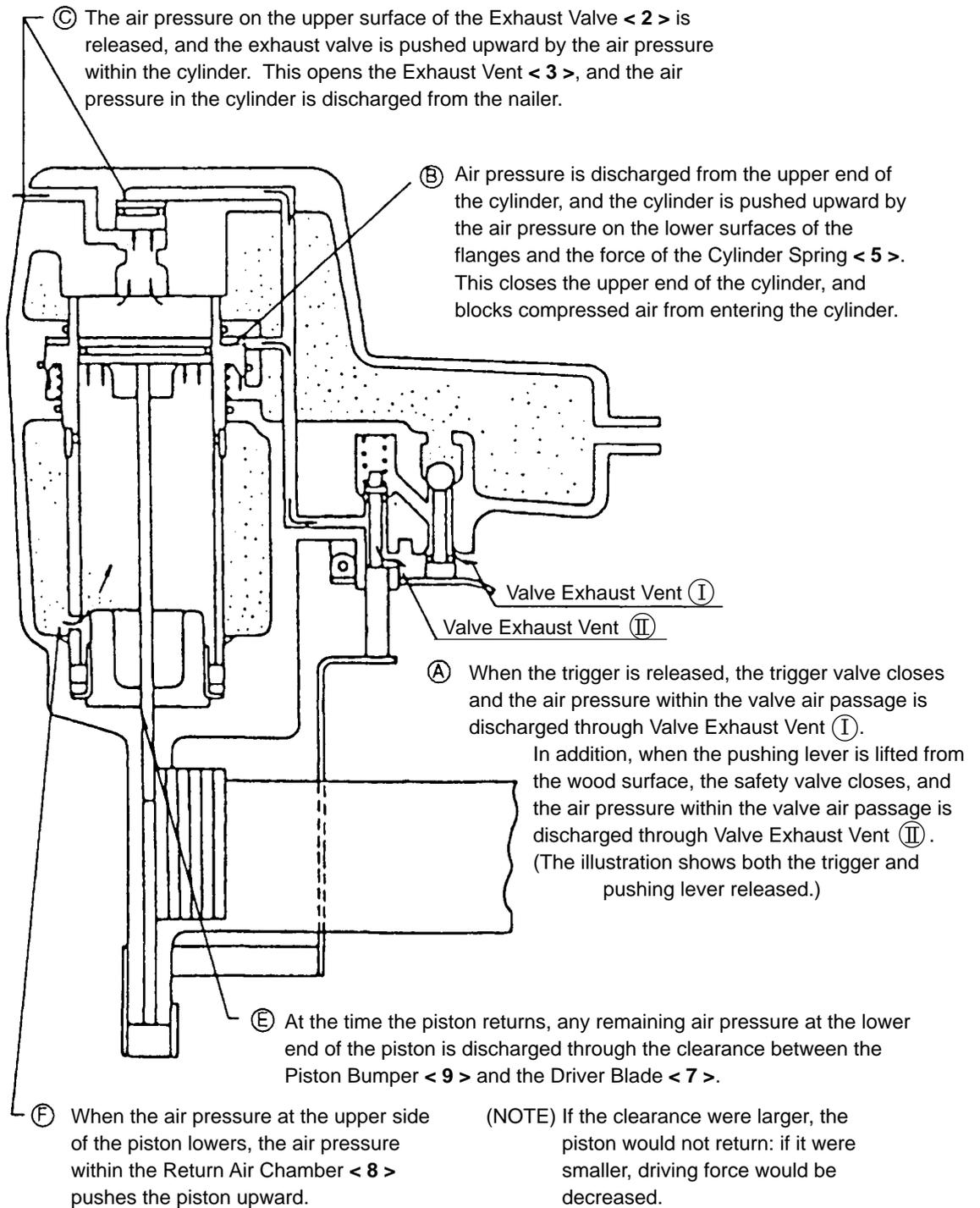


Fig. 8 When the trigger and/or pushing lever are released

9. TROUBLESHOOTING GUIDE

9-1. Troubleshooting and Correction

Problem	Possible cause (* : most-common cause)	Inspection method	Remedy
1) Nails cannot be driven.	<Nails>	<ul style="list-style-type: none"> • Check if the magazine is normally loaded with specified nails. 	<ul style="list-style-type: none"> • Use specified nails.
	<ul style="list-style-type: none"> • The magazine is not loaded with specified genuine nails. • The magazine is loaded with abnormal nails (bent nails, abnormal collation, other). 		<ul style="list-style-type: none"> • Remove the abnormal nails and load the magazine with normal nails.
	<Magazine>	<ul style="list-style-type: none"> • Check the nail feeding section for abnormal conditions (burrs, fatigued, deformed, damaged). 	<ul style="list-style-type: none"> • Correct the burred or deformed portion. • Replace the defective part.
	<ul style="list-style-type: none"> • Nail feeder abnormal (burrs, deformed, damaged). • Ribbon spring abnormal (fatigued, damaged). 		<ul style="list-style-type: none"> • Replace the defective part.
	<ul style="list-style-type: none"> • Magazine groove too wide or too narrow. 	<ul style="list-style-type: none"> • Check if they move smoothly after putting nails and check if the nail feeder operates smoothly. 	<ul style="list-style-type: none"> • Replace the defective part.
	<ul style="list-style-type: none"> • Nail rail groove width too wide or too narrow. 		<ul style="list-style-type: none"> • Replace the defective part.
	<ul style="list-style-type: none"> • Nail groove in the nose abnormal (burrs). 		<ul style="list-style-type: none"> • Replace the defective part.
	<ul style="list-style-type: none"> • Magazine cover abnormal (deformed, damaged). 		<ul style="list-style-type: none"> • Replace the defective part.
	<ul style="list-style-type: none"> *• Adhesive fragments and wood chips are on the magazine, nail feeder or nail rail. 		<ul style="list-style-type: none"> • After removing the adhesive fragments and wood chips, apply oil to the nail rail and magazine.
	<Output section: Piston, driver blade, etc.>	<ul style="list-style-type: none"> • Keep the nail feeder ass'y pulling backward and perform idle driving. Then check that the driver blade returns to its original position. 	<ul style="list-style-type: none"> • Adjust for 5 to 8.5 kgf/cm² (4.9 – 8.3 bar, 7 – 120 psi).
	<ul style="list-style-type: none"> • Air pressure too low. *• Piston ring worn. 		<ul style="list-style-type: none"> • Replace the Piston O-ring.
	<ul style="list-style-type: none"> *• Piston O-ring worn. 		<ul style="list-style-type: none"> • Replace the piston bumper.
	<ul style="list-style-type: none"> *• Piston bumper abnormal. 		<ul style="list-style-type: none"> • Reassemble or replace.
	<ul style="list-style-type: none"> • Cylinder ring abnormal (dislocated, deformed, damaged). 		<ul style="list-style-type: none"> • Touch up or replace.
	<ul style="list-style-type: none"> • Driver blade abnormal (deformed, burrs, damaged). 	<ul style="list-style-type: none"> • Check if nails can be driven at 5 kgf/cm² (4.9 bar, 70 psi). 	<ul style="list-style-type: none"> • After removing the dirt, apply oil or replace.
<ul style="list-style-type: none"> • Cylinder's internal surface abnormal (deposits of dirt, worn). 	<ul style="list-style-type: none"> • Check adjustment. 	<ul style="list-style-type: none"> • Adjust the protruded amount within 3.5 ± 0.5 mm (0.138" ± 0.02"). 	
<Pushing lever>	<ul style="list-style-type: none"> • Pushing lever incorrectly adjusted. 	<ul style="list-style-type: none"> • Check adjustment. 	<ul style="list-style-type: none"> • Adjust the protruded amount within 3.5 ± 0.5 mm (0.138" ± 0.02").

Problem	Possible cause (* : most-common cause)	Inspection method	Remedy
2) Nails bent while being driven.	• Nails are not fully fed into the injection port.	• See item 1).	• See item 1).
	• Unspecified nails used.	• See item 1).	• See item 1).
	*• Driver blade worn.	• Check if the driver blade tip is abnormally worn.	• Replace the part. • Regrind. (See 9-2, "Regrinding the Driver Blade".)
	• The material being driven into is very hard.	• Check if a nail is bent even when driven into soft wood.	• Unusable because the tool is not designed for such usage.
3) The nail is driven into the material but the head is raised above the surface.	• Air pressure too low.		Adjust for 5 to 8.5 kgf/cm ² (4.9 – 8.3 bar, 70 – 120 psi).
	• The material being driven into is very hard.	• Drive the nail into soft wood and check if the head is raised or not.	• Unusable because the tool is not designed for such usage.
	*• Driver blade worn.	• Check if the driver blade tip is worn.	• Replace the part. • Regrind. (See 9-2, "Regrinding the Driver Blade".)
	*• Piston O-ring abnormal (worn, damaged).	• Disassemble the output section and check the Piston O-ring and the internal surface of the cylinder for abnormal condition.	• Replace the defective part.
	• Cylinder's internal surface abnormal (worn, rough).		• Replace the defective part.
4) Nails clog the mechanism.	• Unspecified nails used.	• Check if the nails are specified ones.	• Use specified nails.
	< Improper nail feed > • See <Magazine> in item 1).	• Check if they move smoothly after putting nails, and check if the nail feeder operates smoothly.	• See <Magazine> in item 1).
	• Driver blade worn.	• Check if the driver blade tip is worn.	• Replace the part. • Regrind. (See 9-2, "Regrinding the Driver Blade".)
	< The driver blade has not returned completely. > • See <Output section: Piston, driver blade, etc.> in item 1).	• Perform idle driving or actually drive with nails, and check if the driver blade has returned completely.	• See <Output section: Piston, driver blade, etc.> in item 1).

9-2. Regrinding the Driver Blade

The tip of the driver blade should be ground as shown in Fig. 9. To grind with a grinder, gradually grind the tip while cooling the ground area with water to prevent it from being excessively heated. Excessive grinding will rapidly reduce the service life of the driver blade. In such a case, replace the driver blade.

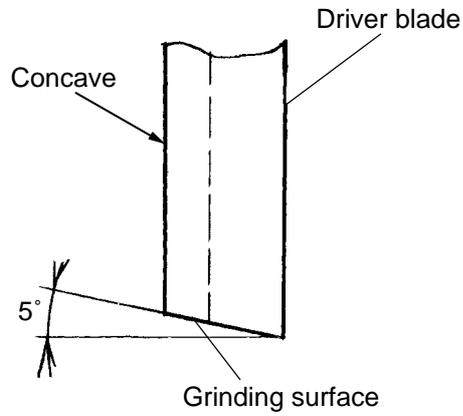
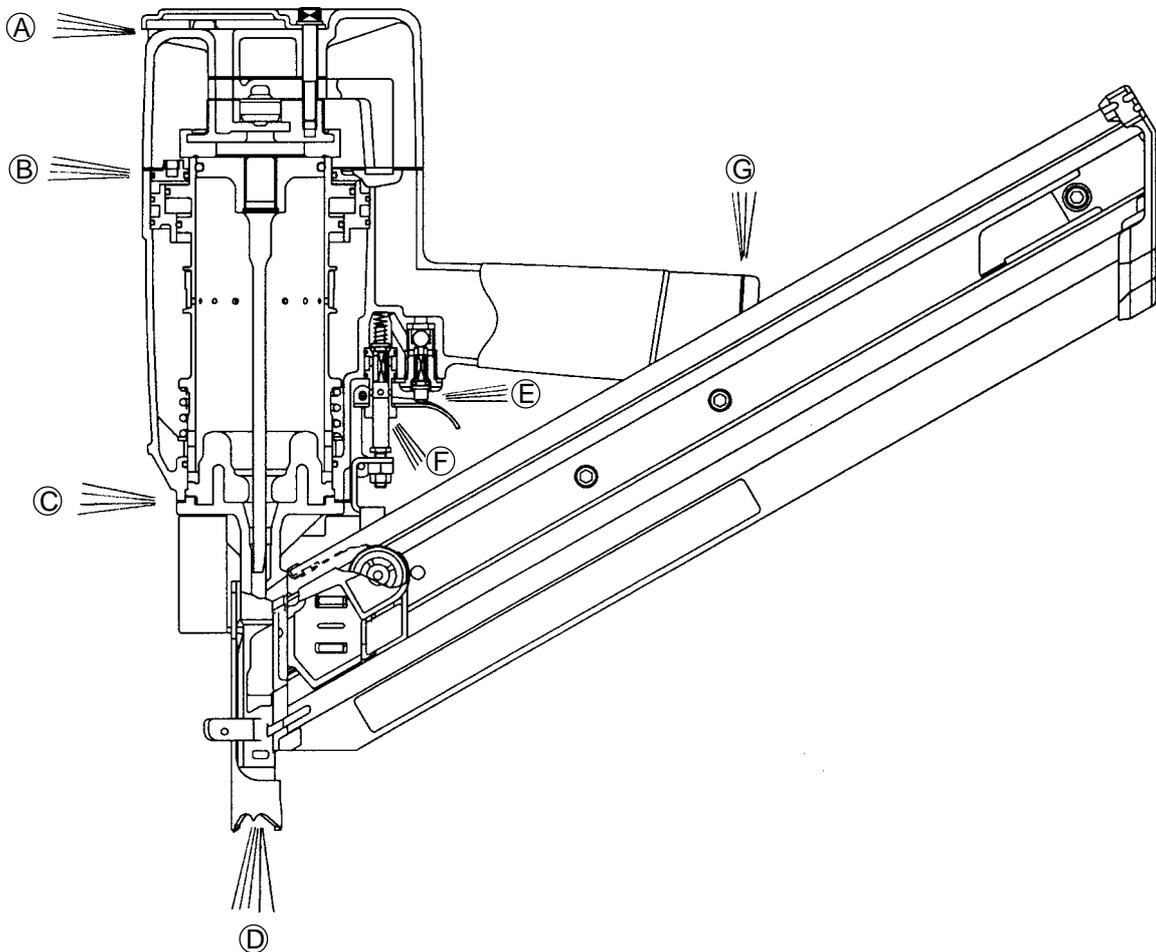


Fig. 9

9-3. Possible Causes and Corrections of Air Leakage

Air leakage repair location



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
(A) Exhaust vent	<ul style="list-style-type: none"> * Cylinder [17] does not return. ○ Swollen Cylinder O-ring [16] (Use of unsuitable oil causes swelling. Advise the customer to use Shell Tonna Oil T32.) ○ Deformed Cylinder [17] or Cylinder Guide [22]. ○ Yielded or broken Cylinder Spring [20]. ⊙ Defective Head Cap and Gasket Set [10] (worn rubber portion or broken) ⊙ Broken Gaskets (C) (F) [8] [6] ○ Loose Hex. Socket Hd. Bolt (W/Flange) M6 x 45 [1] ○ Broken Exhaust Cover [4] 	Defective Exhaust Valve [9] (worn, deformed, or broken)	
(B) Exhaust cover	<ul style="list-style-type: none"> ○ Loose Hex. Socket Hd. Bolt (W/SP. Washer) M6 x 25 [3] ⊙ Broken Gasket (B) [5] ○ Damaged seal surfaces of Body Ass'y [26] and Exhaust Cover [4] 		
(C) Nose		<ul style="list-style-type: none"> ○ Deformed Nose [33] ○ Loose Nylock Hex. Socket Hd. Bolt M8 x 22 [32] 	
(D) Nose	<ul style="list-style-type: none"> ○ Damaged Cylinder O-ring [18] or O-ring of Cylinder Guide [22] (worn, deformed or broken) ○ Defective Body Ass'y [26] (worn, corroded or deformed) 	<ul style="list-style-type: none"> * Broken or cracked Piston Bumper (B) [28] ○ Deformed Piston [12] ○ Deformed Nose [33] 	
(E) Trigger valve	<ul style="list-style-type: none"> ○ Defective Urethane Ball (C) D7.14 [56] (damaged or deformed) ○ Defective ball sheet surface of Trigger Valve Bushing [58] (damaged, deformed or worn) ○ Defective Valve Packing [55] (damaged, deformed or broken) ○ Soiled or damaged valve packing sheet surface of Body Ass'y [26] ⊙ Incursion of foreign materials 		<ul style="list-style-type: none"> ○ Defective Plunger O-ring [60] (worn, deformed or broken) ○ Defective outside O-ring [52] of Trigger Valve Bushing [58]
(F) Safety valve	<ul style="list-style-type: none"> * Defective Gaskets (C) (F) [8] [6] (damaged or yielded) * Deformed or broken Gasket (G) [23] ○ Defective O-ring [13] or Cylinder O-ring [14] of the Cylinder Plate [15] (worn, deformed or broken) ○ Defective Cylinder O-ring [16] (worn, deformed or broken) 	○ Air will leak slightly from the lower portion due to construction.	<ul style="list-style-type: none"> ○ Defective outside O-ring [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 safety Valve Bushing [51] (deflected, deformed or broken)
(G) Cap	<ul style="list-style-type: none"> ○ Loose Hex. Socket Hd. Bolt M5 x 18 [40] ⊙ Broken Gasket (D) [38] ○ Defective seal surface of the Body Ass'y [26] or Cap [39] 		

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

- 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.
- 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 Gasket (B) **[5]** is damaged, replace it and check that no air is leaking.
- 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 **[37]** because the Grip Rubber **[37]** cannot be mounted without the specifically designed jig.
- Tightening torque for each part

Bolt	Tightening torque N•m (kgf•cm, ft-lb)
Nylock Hex. Socket Hd. Bolt M8 x 22 [32]	30.4 ± 2 (310 ± 20, 22.4 ± 1.4)
Nylock Bolt (W/Flange) M8 x 16 [34]	25.5 ± 1 (260 ± 10, 18.8 ± 0.7)
Hex. Socket Hd. Bolt (W/Flange) M6 x 45 [1]	12.7 ± 0.8 (130 ± 8, 9.4 ± 0.6)
Nylock Bolt (W/Flange) M6 x 12 [30]	12.7 ± 0.8 (130 ± 8, 9.4 ± 0.6)
Hex. Socket Hd. Bolt (W/SP. Washer) M6 x 25 [3]	9.8 ± 0.8 (100 ± 8, 7.2 ± 0.6)
Hex. Socket Hd. Bolt (W/Flange) M6 x 12 [74]	9.8 ± 0.8 (100 ± 8, 7.2 ± 0.6)
Hex. Socket Hd. Bolt M5 x 18 [40]	8.3 ± 0.5 (85 ± 5, 6.1 ± 0.4)

10-2. Disassembly and Reassembly of the Output Section

(1) Piston [12], Cylinder [17] and related parts

Tool required:

- Hexagon bar wrench (5 mm)

(a) Disassembly (See Figs. 10, 11 and 12.)

- Remove the four Hex. Socket Hd. Bolts (W/SP. Washer) M6 x 25 [3], and take off the Exhaust Cover [4].

The Piston [12] can then be taken out.

- Next, as illustrated in Fig. 11, screw two of the previously removed Hex. Socket Hd. Bolts (W/SP. Washer) M6 x 25 [3] into the provided holes on the Cylinder Plate [15].
- Gripping these two bolts, simultaneously turn and pull upward to remove the Cylinder Plate [15]. When this has been accomplished, the Cylinder [17] and other parts which make up the output section can be removed, as illustrated in Fig. 12.
- If it is difficult to remove the Cylinder [17], remove the Nose [33] by referring para. 10-2-(3) procedures, and push out the Cylinder [17] from the lower part of the main body.

(b) Reassembly

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

- Confirm that Gasket (G) [23] is reassembled.
- Check that the Base Washer [21] is securely and properly mounted to its position in the Body Ass'y [26].

Then mount the other parts.

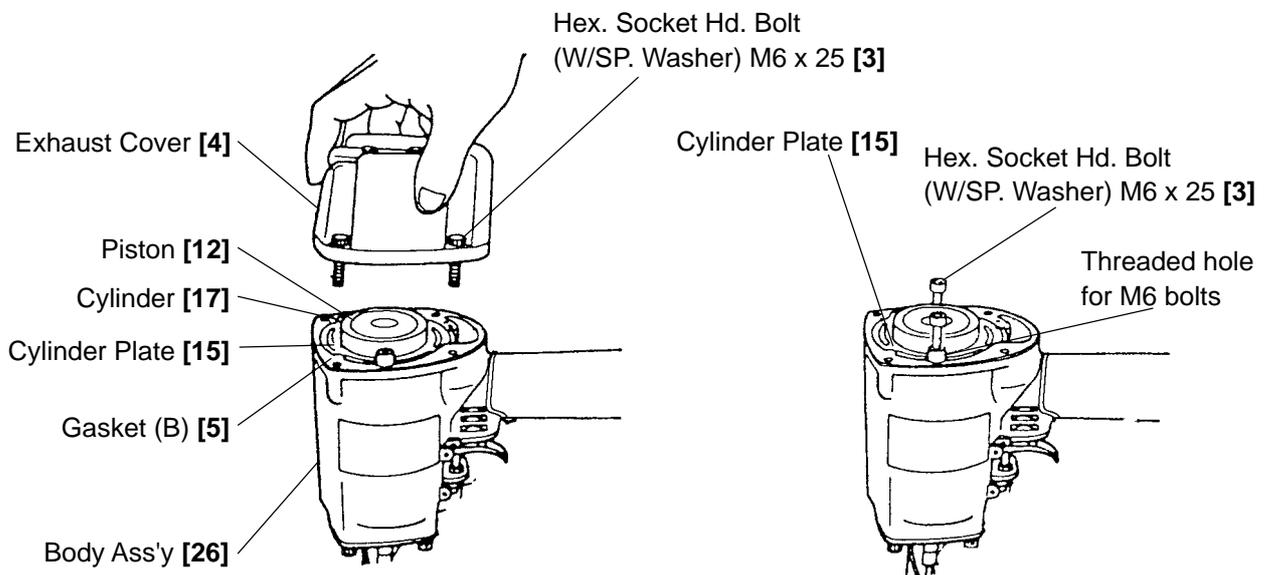


Fig. 10

Fig. 11

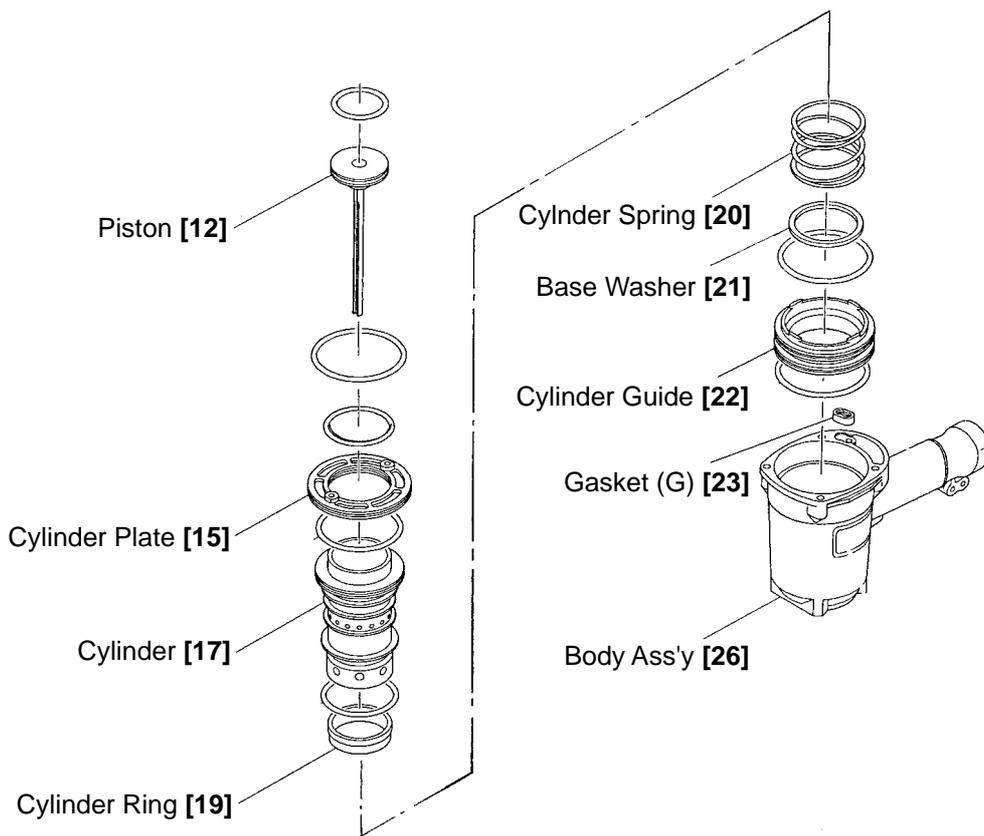


Fig. 12

(2) Head Cap and Gasket Set [10], Exhaust Piece [7] and related parts (See Fig. 13.)

Tool required:

- Hexagonal bar wrench (5 mm)

(a) Disassembly

- Remove the Exhaust Cover [4] as described in section 10-2-(1).
- Loosen the three Hex. Socket Hd. Bolts (W/Flange) M6 x 45 [1] and as illustrated in Fig. 13, remove the Head Cap and Gasket Set [10], Exhaust Valve [9], Exhaust Piece [7], Gasket (C) [8] and Gasket (F) [6].

(b) Reassembly

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

- Gasket (C) [8] and Gasket (F) [6] should be replaced with new genuine Hitachi parts.
- Apply the designated grease to the outer circumference of the Exhaust Valve [9] prior to reassembly.

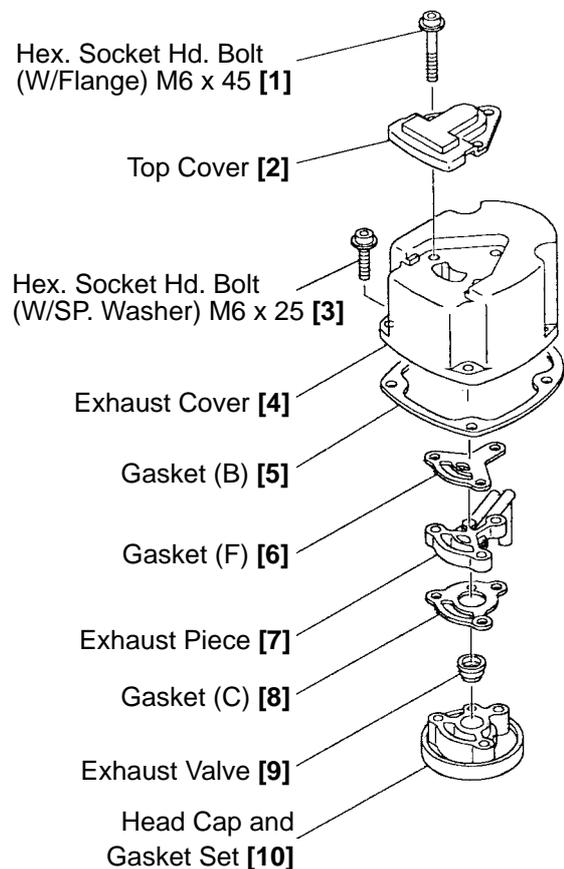


Fig. 13 Disassembly of main body, upper part

(3) Piston Bumper (B) [28], Gasket (A) [29] and related parts (See Figs. 14 and 15.)

Tools required

- Hexagon bar wrench (5 mm, 6 mm)
- Roll pin puller (3 mm (0.118" dia.)
- Screwdriver

(a) Disassembly

- Pull out the Roll Pin D3 x 30 [43] and remove the Nylock Bolt (W/Flange) M6 x 12 [30] to remove the Guard [31].
- Pull the Nail Feeder Ass'y [69] backward and insert a screwdriver or a rod into the stopper hole for the Nail Feeder Ass'y [69] as shown in Fig. 15. (This is to prevent the Nail Feeder Ass'y [69] from moving forward when removing the Magazine [72].)
- Remove the Nylock Bolt (W/Flange) M8 x 16 [34] and pull out the entire magazine section backward.
- Remove the four Nylock Hex. Socket Hd. Bolts M8 x 22 [32]. Then Piston Bumper (B) [28] and Gasket (A) [29] can be removed together with the Nose [33].

(b) Reassembly

Disassembly procedures should be followed in the reverse order. Note the following points.

- Plunger (B) [54] is apt to come off during disassembly. Be sure to check that Plunger (B) [54] is securely mounted during reassembly.
- Pressing the Magazine [72] against the Nose [33], secure them with the Nylock Bolt (W/Flange) M8 x 16 [34] with a minimum clearance between the Magazine [72] and the Nose [33].
- Mount the Roll Pin D3 x 30 [43] without fail.

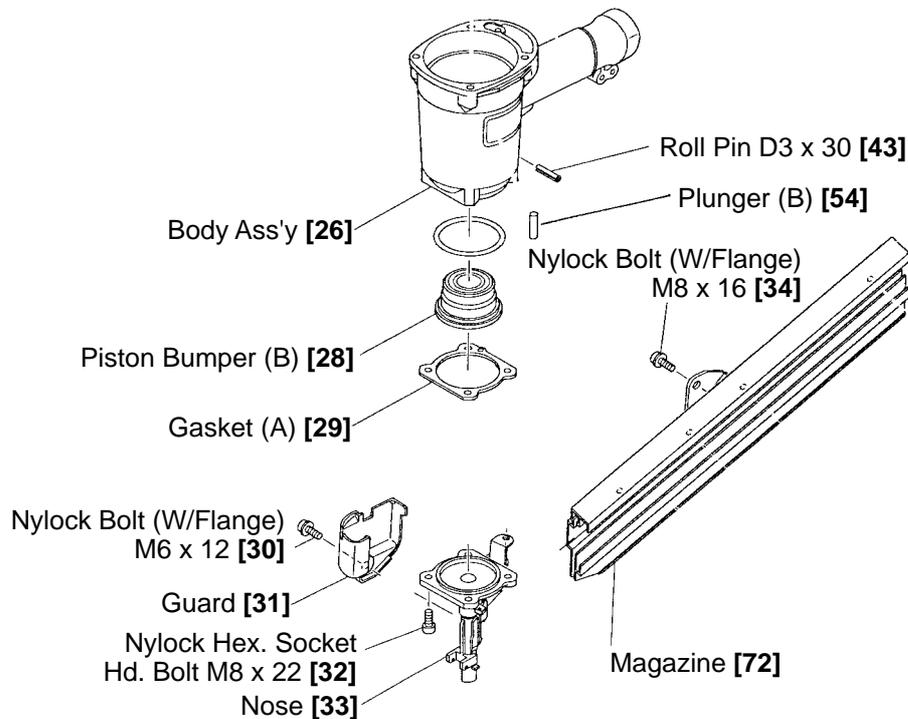
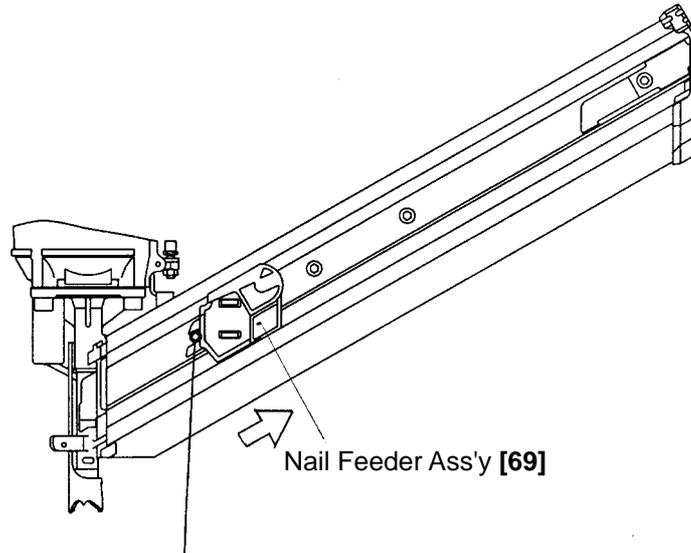


Fig. 14



Insert a bar such as a screwdriver into this hole.

Fig. 15

10-3. Disassembly and Reassembly of the Control Valve Section

Tools required:

- Roll pin puller (3 mm (0.118") dia.)
- Minus-hd. screwdriver

(a) Disassembly (See Fig. 16.)

- Remove the Magazine [72] as described in section 10-2-(3).
- Remove the Pushing Lever [46] as described in section 10-2-(3).
- With the roll pin puller (3 mm (0.118") dia.), take out the Roll Pin D3 x 30 [43], and remove the Trigger [53], Trigger Plunger [59] and Plunger (B) [54].
- Insert the minus-hd. screwdriver into the groove of the Trigger Valve Bushing [58], and loosen it by turning it to the left, being careful not to damage the groove.
- After removing the Trigger Valve Bushing [58], pull down strongly on the Valve Bushing [51] to remove the Valve Bushing [51], Plunger (A) [50] and the Plunger Spring [48].

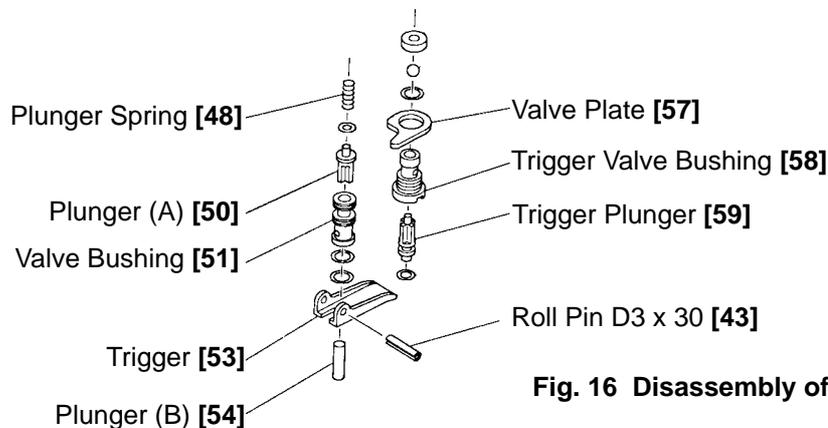


Fig. 16 Disassembly of valve

(b) Reassembly

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

- Be very careful in handling the Plunger Spring [48], as it can become twisted very easily.
- To prevent the two O-rings on the outside of the Valve Bushing [51] from being damaged when inserted into the body, carefully apply grease to the body hole and the outer circumference of the O-rings prior to assembly.

(c) Adjustment of the Pushing Lever [46] (See Fig. 17.)

- The Pushing Lever [46] can be adjusted by loosening the Nut M5 [47] and turning the Safety Bolt [44].
- Perform adjustment to a point where the resistance of Plunger (B) [54] pushing up Plunger (A) [50] is felt when the pushing lever is raised. At this point, the lower end of the Nose [33] should be separated from the lower end of the pushing lever by $3.5 \pm 0.5 \text{ mm}$ (.138" \pm .020").

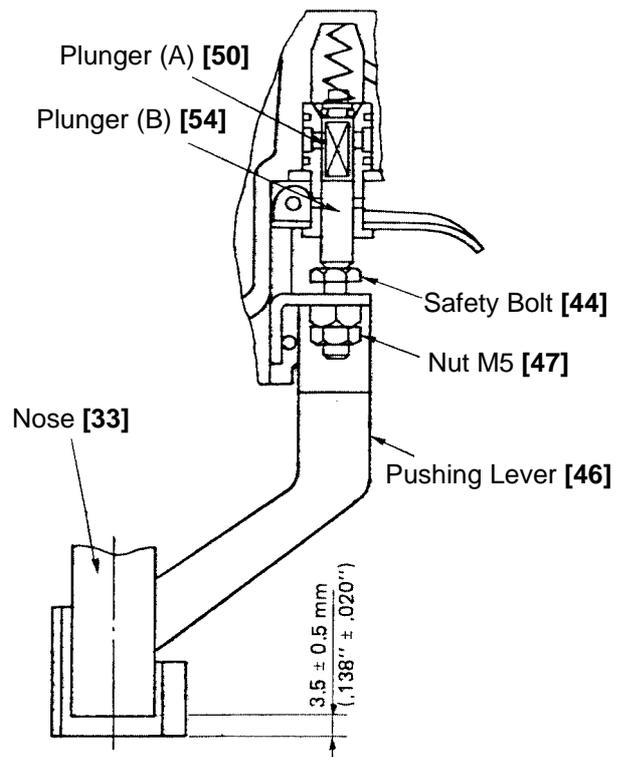


Fig. 17 Pushing lever adjustment

10-4. Disassembly and Reassembly of the Driving Section and the Magazine Section

(1) Nose [33], Pushing Lever [46] and the related parts (See Fig. 18.)

Tool required

- Hexagon bar wrench (5 mm)

(a) Disassembly

- Perform disassembly according to 10-2-(3) to remove the Nose [33], Pushing Lever [46], and the other parts.
- Remove the Nose Rubber [61] from the Nose [33] by stretching the Nose Rubber [61] with a thin rod.

(b) Reassembly

Disassembly procedures should be followed in the reverse order. Note the following points.

- Be careful of the mounting direction of the Nose Rubber [61]. Mount the Nose Rubber [61] aligning with the shape of the Nose [33].
- Hook the Spring [45] in the 3 mm dia. hole of the Nose [33] aligning with the shape of the Pushing Lever [46]. (The Nose [33] has two 3 mm dia. holes, one is for hooking the Spring [45] and the other is for the depth adjustment pushing lever kit (optional accessory).)
- Do not insert a roll pin into the other 3 mm dia. hole. This hole is for the depth adjustment pushing lever kit (optional accessory).

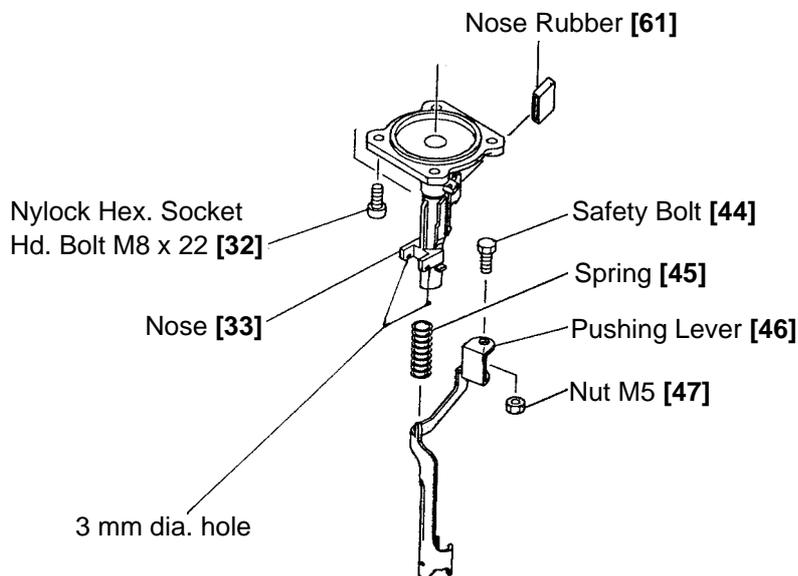


Fig. 18

(2) Magazine [72], Nail Feeder Ass'y [69] and the related parts (See Fig. 19.)

Tool required

- Hexagon bar wrench (5 mm)

(a) Disassembly

- Perform disassembly according to 10-2-(3) to remove the entire magazine section.
- Remove a screwdriver or a rod from the the stopper hole for the Nail Feeder Ass'y [69]. Then the Nail Feeder Ass'y [69], Ribbon Spring [70] and Needle Roller D4 x 20 [71] can be removed from the front of the Magazine [72].
- Remove the three Hex. Socket Hd. Bolts (W/Flange) M6 x 12 [74]. Then Handle Arm [36], Nail Stopper [75] and Magazine Cover [64] can be removed together with the other parts.
- The Nail Rail [62] that is press-fitted into the Magazine [72] has a protrusion at the rear end to prevent coming off. Tap at the front of the Magazine [72] using a hammer and a bar being careful not to scratch the parts.

(b) Reassembly

Disassembly procedures should be followed in the reverse order. Note the following points.

- Insert the Nail Rail [62] from the rear of the Magazine [72] and press-fit the Nail Rail [62] into the Magazine [72] by tapping with a wooden hammer so that the protrusion of the Nail Rail [62] becomes flush with the rear end of the Magazine [72].
- Hook the hook of the Ribbon Spring [70] on the Magazine [72] then mount the Nail Feeder Ass'y [69] to the Magazine [72]. Slide the Nail Feeder Ass'y [69] backward and insert a screwdriver or a rod into the stopper hole for the Nail Feeder Ass'y [69] as shown in Fig. 15.
- Press the mounting surface of the Nail Stopper [75] against the Magazine [72] and slide it backward until the "A" portion fits into the concave portion of the Magazine Cover [64] then secure them with the bolt. At this time, mount the Sleeve [63] without fail.

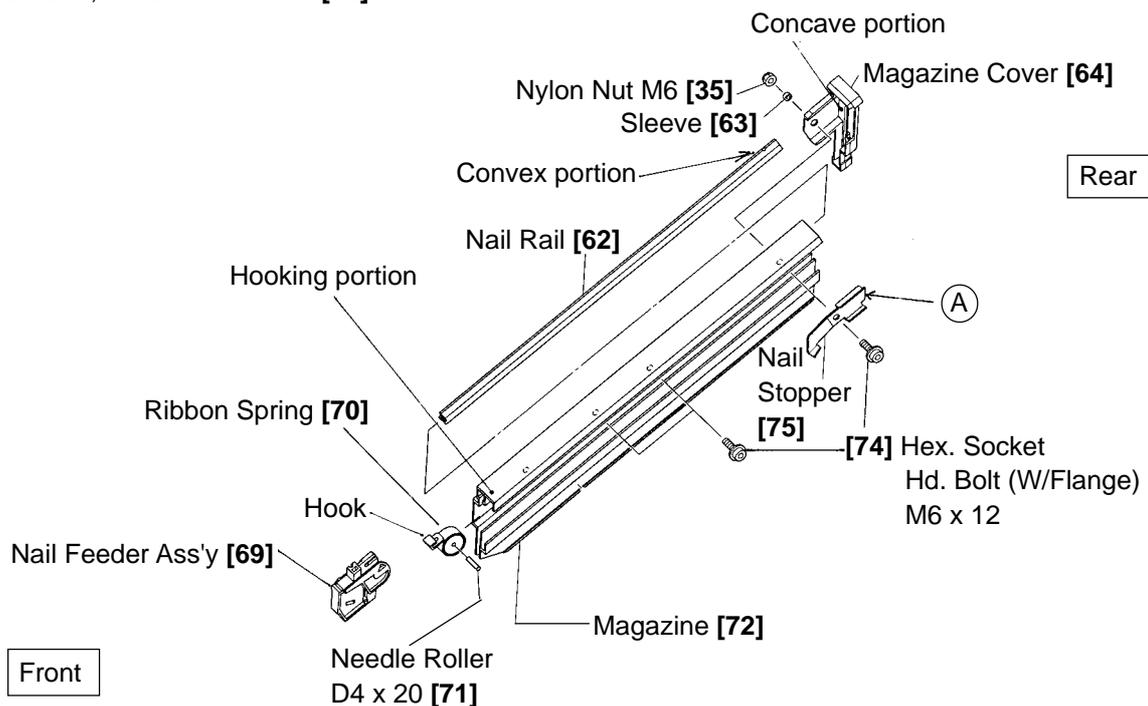


Fig. 19

(3) Nail Feeders (A) [65], (B) [67] and the related parts (See Fig. 20.)

Tool required

- Roll pin puller (4 mm (0.157") dia.)

(a) Disassembly

- Fix the Nail Feeder Ass'y [69] using a V-block and pull out the Roll Pin D4 x 40 [66] from the top using a roll pin puller (4 mm (0.157") dia.). Then Nail Feeder (A) [65], Nail Feeder (B) [67] and Feeder Spring [68] can be removed.

(b) Reassembly

Disassembly procedures should be followed in the reverse order. Note the following points.

- Insert the Roll Pin D4 x 40 [66] into Nail Feeder (B) [67]. Insert the Feeder Spring [68] into the hole of the Nail Feeder (B) [67] and compress the Feeder Spring [68] until it is engaged with the protrusion of Nail Feeder (A) [65].

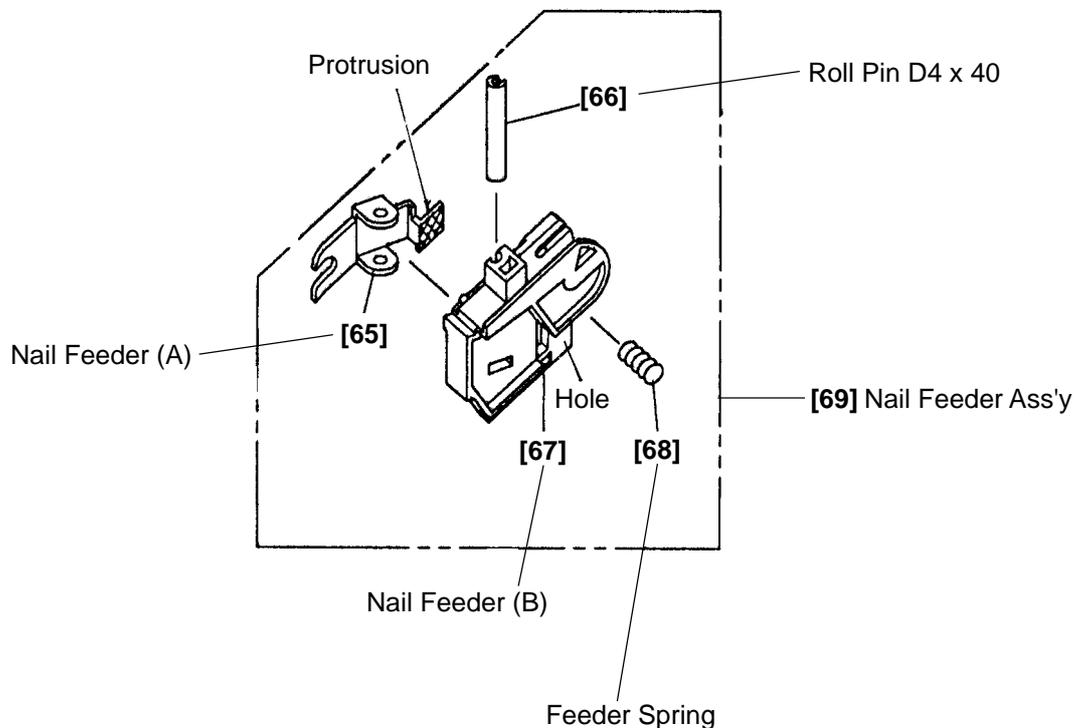


Fig. 20

11. INSPECTION AND CONFIRMATION AFTER REASSEMBLY

- Check that Plunger (B) [54] and Trigger Plunger [59] move smoothly.
- Check that there is no air leakage from each part.
- While driving nails with an air pressure of 4.5 kgf/cm² (63 psi), check that there is no idle driving and bending of nails.
- Recheck the tightening torque of each screw.
- Check that Pushing Lever [46] slides smoothly.
- Check that the machine will not operate only by actuating Trigger [53]. Also check that the machine will not operate only by depressing Pushing Lever [46].

12. STANDARD REPAIR TIME (UNIT) SCHEDULES

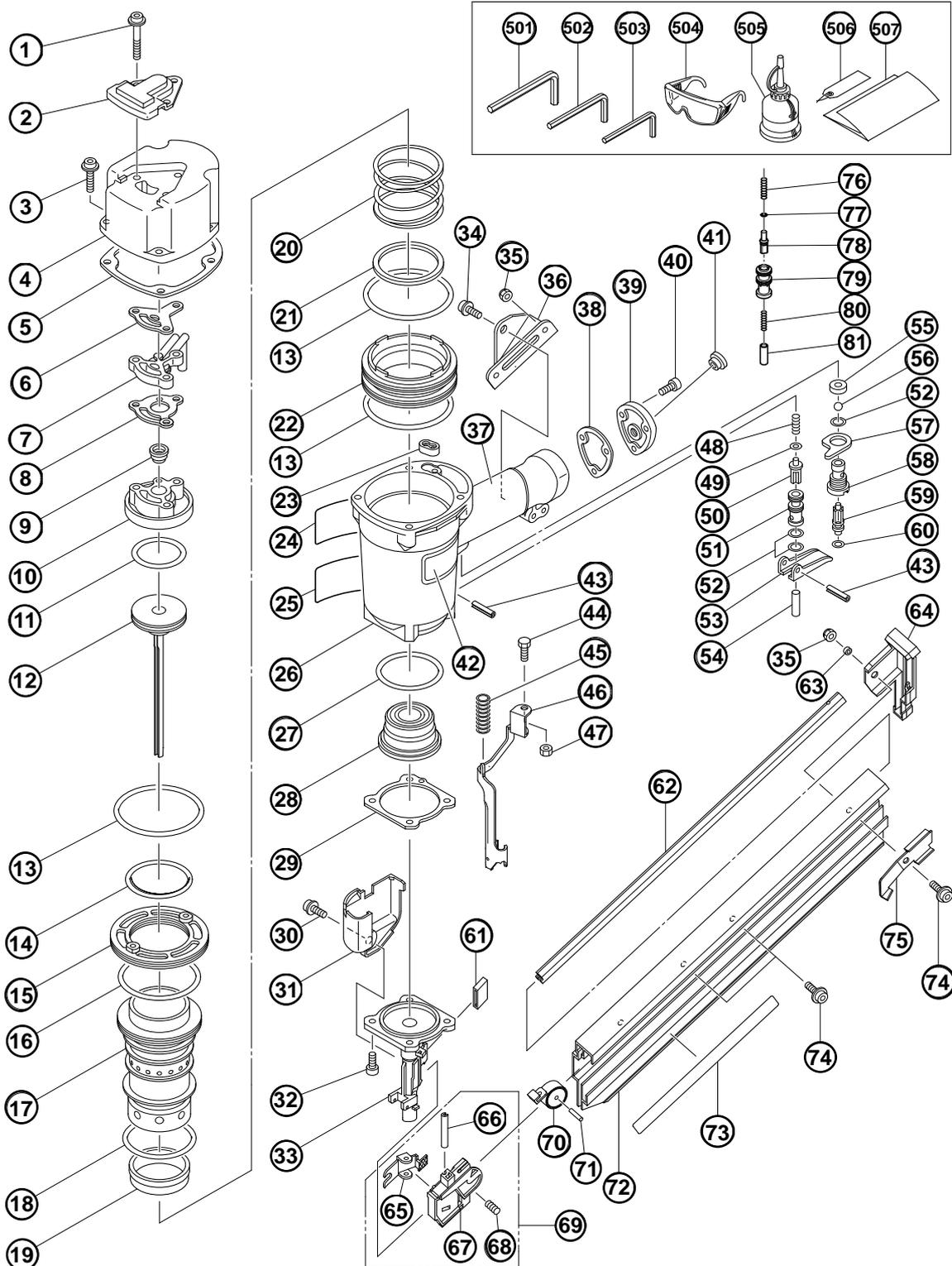
MODEL	Variable		10	20	30	40	50	60 min.
	Fixed							
NR 83AA2		Work Flow						
				Top Cover Exhaust Cover Gasket x 3 Exhaust Piece Exhaust Valve Head Cap and Gasket Set	Tail Cover Magazine Magazine Cover Ribbon Spring Nail Feeder Ass'y			
	General Assembly			Pushing Lever Spring Plunger Spring Plunger (A) Valve Bushing Trigger Plunger (B) O-ring x 3 Valve Packing O-ring x 2 Trigger Valve Bushing Trigger Plunger Piston O-ring (1AP-48)	Cylinder Plate Cylinder Cylinder Spring O-ring x 7 Piston Bumper (B)			Body Ass'y
				Adjustment (Cylinder, Body)	Adjustment (Valve, Return Valve)			

PNEUMATIC TOOL PARTS LIST



STRIP NAILER
Model NR 83AA2

2001•3•15
(E1)



PARTS

NR 83AA2

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS
1	883-509	HEX. SOCKET HD. BOLT (W/FLANGE) M6X45	3	
2	877-330	TOP COVER	1	
3	883-507	HEX. SOCKET HD. BOLT (W/SP.WASHER) M6X25	4	
4	877-324	EXHAUST COVER	1	
5	877-325	GASKET (B)	1	
6	877-329	GASKET (F)	1	
7	877-328	EXHAUST PIECE	1	
8	877-854	GASKET (C)	1	
9	878-417	EXHAUST VALVE	1	
10	877-307	HEAD CAP AND GASKET SET	1	
11	877-368	O-RING (1AP-48)	1	
12	883-510	PISTON	1	
13	877-316	O-RING (S-90)	3	
14	877-312	CYLINDER O-RING (I.D 63.1)	1	
15	877-318	CYLINDER PLATE	1	
16	877-313	CYLINDER O-RING (I.D 79.3)	1	
17	877-810	CYLINDER	1	
18	877-314	CYLINDER O-RING (I.D 69.3)	1	
19	877-317	CYLINDER RING	1	
20	877-321	CYLINDER SPRING	1	
21	877-322	BASE WASHER	1	
22	877-310	CYLINDER GUIDE	1	
23	877-327	GASKET (G)	1	
24	878-184	WARNING LABEL	1	
* 25	878-183	WARNING LABEL	1	FOR FRA
26	883-506	BODY ASS'Y	1	INCLUD.37
27	877-315	CYLINDER O-RING (I.D 63.9)	1	
28	883-511	PISTON BUMPER (B)	1	
29	877-334	GASKET (A)	1	
30	882-974	NYLOCK BOLT (W/FLANGE) M6X12	1	
31	883-493	GUARD	1	
32	883-492	NYLOCK HEX. SOCKET HD. BOLT M8X22	4	
33	883-490	NOSE	1	
34	883-505	NYLOCK BOLT (W/FLANGE) M8X16	1	
35	963-837	NYLON NUT M6	3	
36	883-504	HANDLE ARM	1	
37		GRIP RUBBER	1	(SUPPLIED WITH ITEM NO.602,603)
38	877-331	GASKET (D)	1	
39	878-311	CAP	1	
40	949-658	HEX. SOCKET HD. BOLT M5X18 (10 PCS.)	3	
41	872-035	DUST CAP	1	
42		NAME PLATE	1	
43	949-866	ROLL PIN D3X30 (10 PCS.)	2	
44	875-650	SAFETY BOLT	1	
* 45	877-365	SPRING	1	
* 45	878-423	SPRING	1	FOR FRA
46	883-494	PUSHING LEVER	1	
47	949-555	NUT M5 (10 PCS.)	1	
* 48	875-643	PLUNGER SPRING	1	FOR TPE,FRA,USA,CAN
49	874-436	O-RING (P-4)	1	
* 50	877-338	PLUNGER (A)	1	FOR TPE,FRA,USA,CAN

