

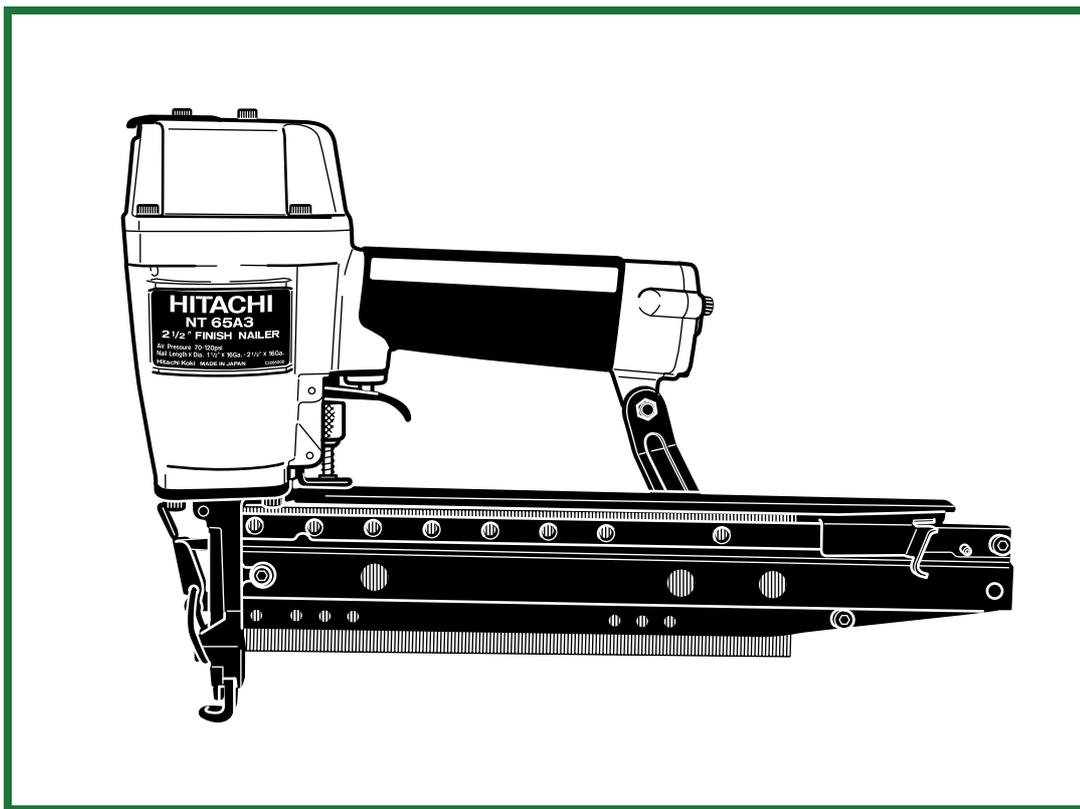
MODEL

NT 65A3

Hitachi Power Tools

**FINISH NAILER
NT 65A3**

**TECHNICAL DATA
AND
SERVICE MANUAL**



N

LIST No. E012

Aug. 2003

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
S	DEWALT	D51256K



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1. PRODUCT NAME

Hitachi Finish Nailer, Model NT 65A3

2. MARKETING OBJECTIVE

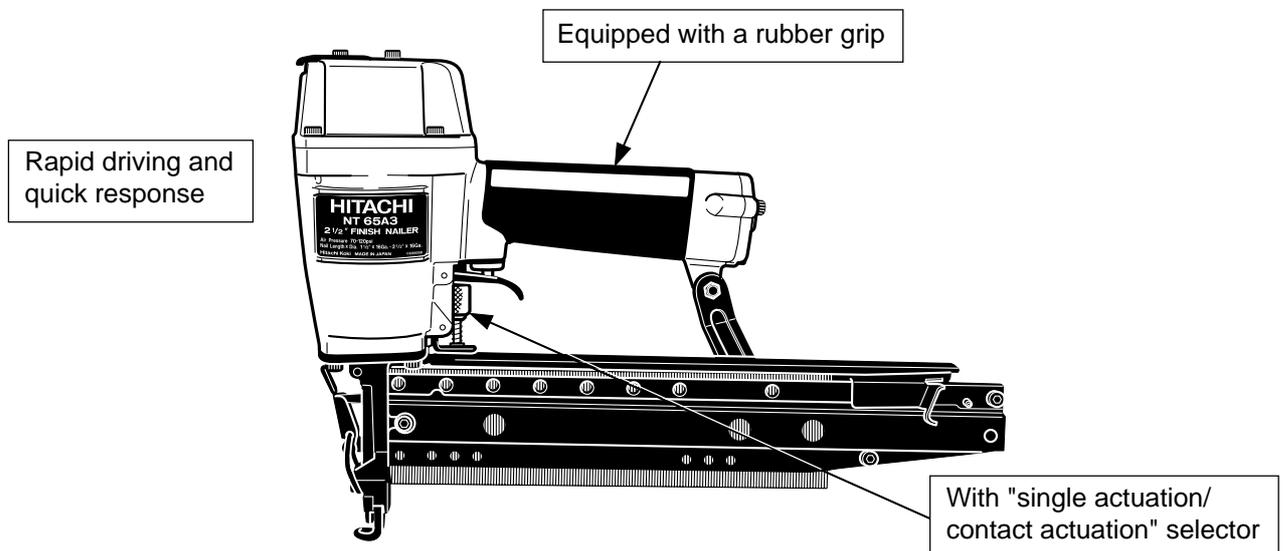
The new Model NT 65A3 finish nailer is a minor-changed version of the current Model NT 65A2. To correspond to the modification of the ANSI standard on the 1st of May 2003, the valve construction was partially changed.

In addition, the switching device (valve sleeve (A)) was provided to make the nailer operation selectable between "single actuation (single sequential actuation) mechanism" and "contact actuation mechanism" (the current Model NT 65A2 is provided with the contact actuation mechanism only). The grip tape wound around the handle of the body was changed to the grip rubber that is common to the Model NR 83A2. The new Model NT 65A3 has the same construction as the current Model NT 65A2 including the well-reputed tool-less clogged nail release mechanism, driving force, response and balance.

3. APPLICATIONS

- Finish-nailing of door casings, window casings and similar frame assemblies.
- Fastening of drawer bottoms and similar assembly work in the construction of various cabinets and cases.

4. SELLING POINTS



5. SPECIFICATIONS

5-1. Specifications

Item	NT 65A3
Driving system	Reciprocating piston type
Applicable air pressure	5 – 8.5 kgf/cm ² (gauge pressure) (70 to 120 psi)
Driving speed	3 nails/sec.
Product weight	2.0 kg (4.4 lbs.)
Dimensions (L x H x W)	380 mm x 254 mm x 76 mm (14-31/32" x 10" x 3")
Nail feed system	Ribbon spring
Loadable number of nails	150 nails
Packaging	Corrugated cardboard box
Package dimensions (L x H x W)	436 mm x 96 mm x 309 mm (17-5/32" x 3-25/32" x 12-5/32")
Standard accessories	<ul style="list-style-type: none"> • Safety glasses (Code No. 875769) 1 • Hex. bar wrench for M5 screw (Code No. 944458) 1 • Nose cap (A) (Code No. 881751) 1
Optional accessories	Full sequential actuation mechanism kit (Code No. 884178) (Sequential trip mechanism kit) 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) Grease (ATTOLUB No. 2) (500 g (1.1 lbs.)) (Code No. 317918) Grease (MULTEMP PS No. 2) (30 g (0.07 lbs.)) (Code No. 939301)

5-2. Nail Selection

The Model NT 65A3 utilizes small-head, T-shaped nails (finish nails) collated by adhesive. Applicable nails are shown below.

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

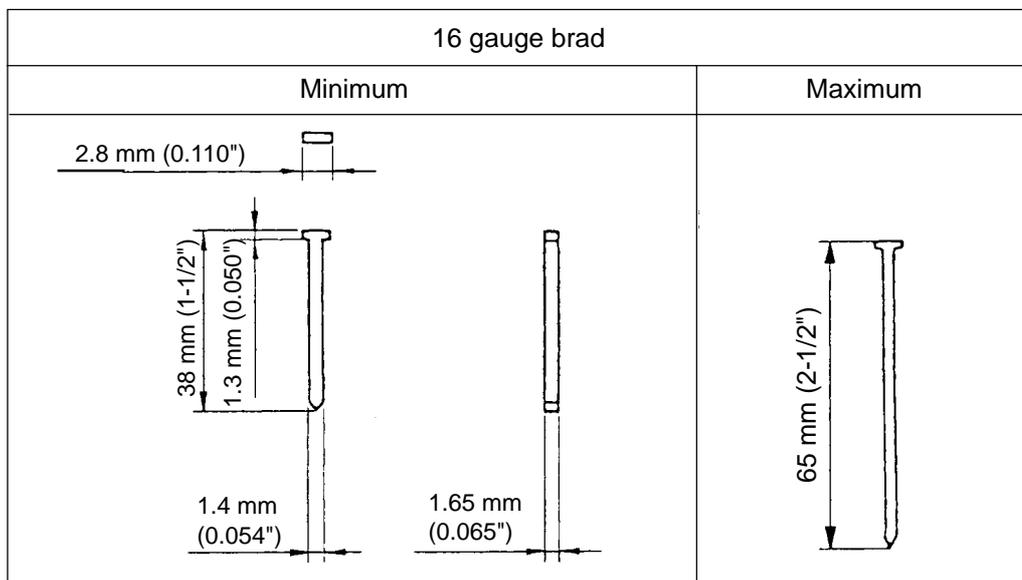


Fig. 1 Dimensions of nails

5-3. Explanation of the Nailing Operation

To meet the requirements of "ANSI SNT-101-2002", the Model NT 65A3 is equipped with a nailing operation switching device at the valve portion as shown in the figures below. Use SINGLE ACTUATION MECHANISM (SINGLE SEQUENTIAL ACTUATION MECHANISM) or CONTACT ACTUATION MECHANISM in accordance with the work to be performed. A FULL SEQUENTIAL ACTUATION MECHANISM KIT (SEQUENTIAL TRIP MECHANISM KIT) is also available as an option. Each nailing operation is as follows.

SINGLE ACTUATION MECHANISM (SINGLE SEQUENTIAL ACTUATION MECHANISM):

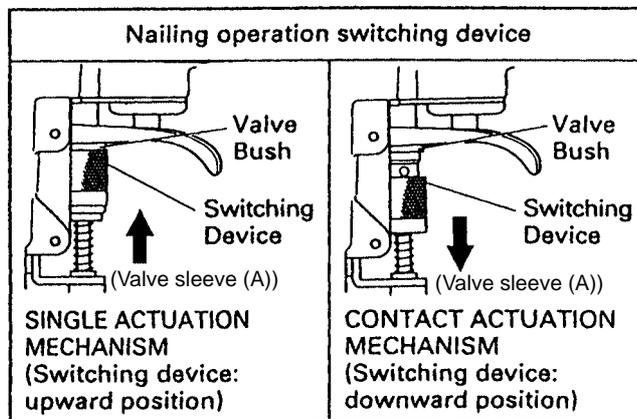
First, press the pushing lever against the wood; next, pull the trigger to drive the nail. First, pull the trigger; next, press the pushing lever against the wood to drive the nail. After nailing once, nailing will not be possible again until the trigger is released and pressed again.

CONTACT ACTUATION MECHANISM:

First, press the pushing lever against the wood; next, pull the trigger to drive the nail. First, pull the trigger; next, press the pushing lever against the wood to drive the nail. If the trigger is held back, a nail will be driven each time the pushing lever is pressed against the wood.

FULL SEQUENTIAL ACTUATION MECHANISM:

First, press the pushing lever against the wood; next, pull the trigger to drive the nail. Follow the same sequence to continue driving nails.



5-4. Nail Driving Force

Figure 2 shows the nailer output energy provided by the supply pressure and the required nailing energy for driving the nail flush with surface of a workpiece with variables of types of wood and nails. 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 65 mm (2-1/2") nail into a hard wood workpiece with the Model NT 65A3, a pressure of about 5.5 kgf/cm² (78 psi, 5.4 bar) allows the nailer to drive the nail flush with the surface. A pressure beyond this value causes the nail head to be driven below the wood surface. Figure 2 should be used as a reference only because those values vary depending on the type of wood, moisture content and grain of wood.

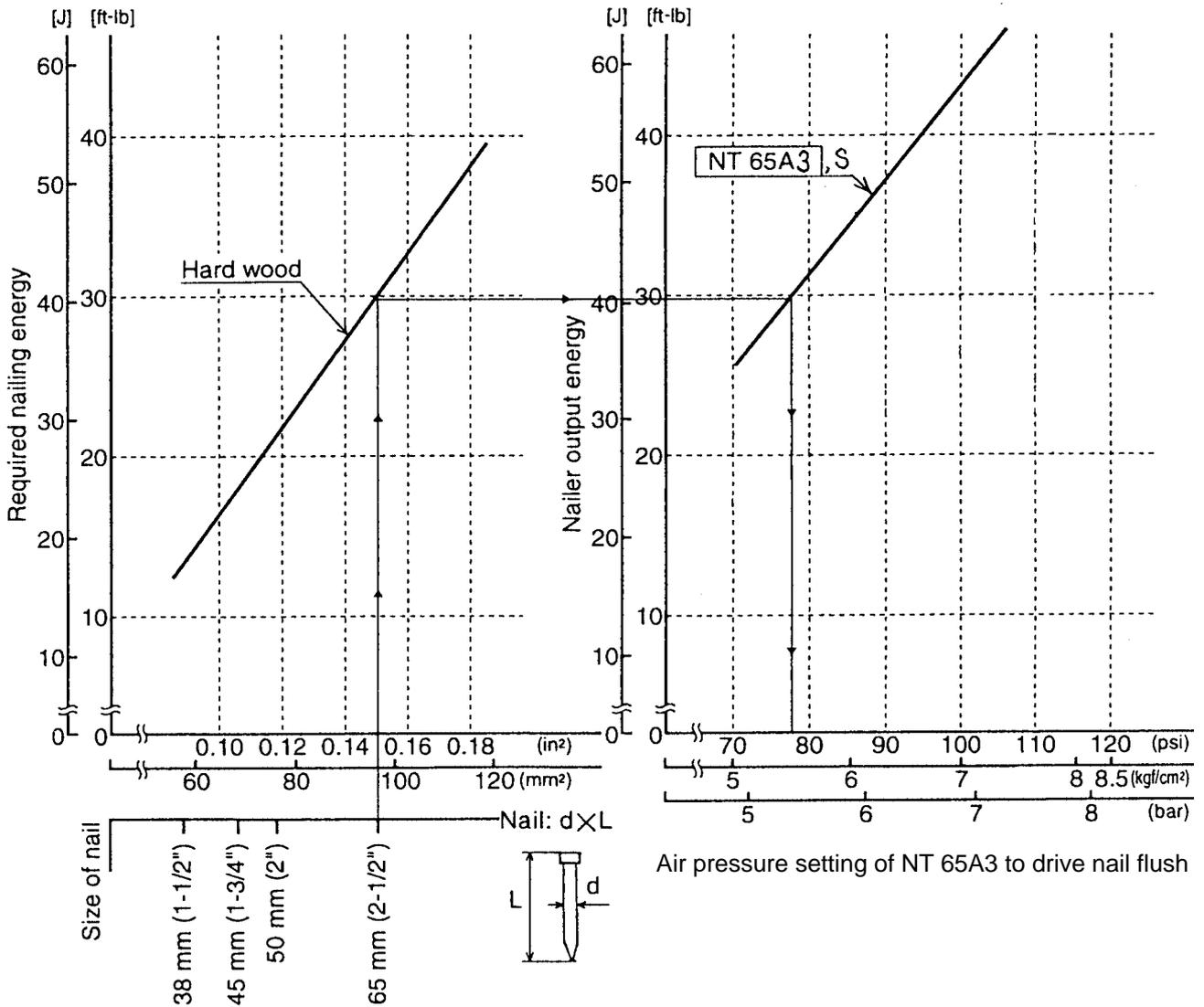


Fig. 2 Required nailing energy and nailer output energy

5-5. Optional Accessory: Full Sequential Actuation Mechanism Kit (Sequential Trip Mechanism Kit)

Full sequential actuation mechanism kit (sequential trip mechanism kit) (Code No. 884178) is provided as an optional accessory for the Model NT 65A3. When using this optional accessory, a nail is driven when pressing the pushing lever first against a workpiece and then pulling the trigger, and no nail is driven when pulling the trigger first and then pressing the pushing lever against a workpiece (single-shot operation). Please recommend the sequential fire parts set to customers who may want to use it. Salespersons must instruct the customers to read the Instruction Manual attached to the sequential fire parts set and also the Handling Instructions of the Model NT 65A3 thoroughly for correct use.

6. COMPARISONS WITH SIMILAR PRODUCTS

Maker, model		HITACHI		S
		NT 65A3	NT 65A2	
Operating pressure		5 to 8.5 kgf/cm ² (70 to 120 psi)	5 to 8.5 kgf/cm ² (70 to 120 psi)	5 to 8.5 kgf/cm ² (70 to 120 psi)
Weight		2.0 kg (4.4 lbs.)	2.0 kg (4.4 lbs.)	1.9 kg (4.2 lbs.)
Dimensions (L x H x W)		380 mm x 254 mm x 76 mm (14-31/32" x 10" x 3")	380 mm x 254 mm x 76 mm (14-31/32" x 10" x 3")	318 mm x 241 mm x 76 mm (12-1/2" x 9-1/2" x 3")
Air consumption at 7 kgf/cm ² (100 psi)		1.14 ltr/cycle (0.042 ft ³ /cycle)	1.14 ltr/cycle (0.042 ft ³ /cycle)	1.00 ltr/cycle (0.035 ft ³ /cycle)
Nail capacity		150 pcs.	150 pcs.	160 pcs.
Magazine type		Top loading	Top loading	Rear loading
Jam cleaning mech.		Tool less	Tool less	Tool less
Driving depth- adjustment mechanism		None	None	Tool less
Handle grip		Rubber	Racket grip	Rubber
Single actuation/contact actuation selector		Provided	None	None
Applicable nails	Dia.	1.4 mm to 1.65 mm (#16) (0.054" to 0.065")	1.4 mm to 1.65 mm (#16) (0.054" to 0.065")	1.4 mm to 1.65 mm (#16) (0.054" to 0.065")
	Length	38 mm to 65 mm (1-1/2" to 2-1/2")	38 mm to 65 mm (1-1/2" to 2-1/2")	32 mm to 65 mm (1-1/4" to 2-1/2")

7. PRECAUTIONS IN SALES PROMOTION

In the interest of promoting the safest and most efficient use of the Model NT 65A3 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 Handling Instructions, and fully understands the meaning of the precautions listed on the Warning Label attached to each tool.

7-1. Handling Instructions

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 the use of pneumatic tools, and specific precautions and suggestions for the use of the pneumatic nailer are listed in the Handling Instructions to enhance the safe, efficient use of the tool by the customer.

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

7-2. Warning Label

Each Model NT 65A3 unit is provided with a Warning Label (illustrated below) which lists basic safety precautions in its use. Carefully ensure that the customers fully understand and follow these precautions before using the tool.



7-3. Related Laws and Regulations

As nailers or staplers are designed to instantaneously drive nails or 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 Handling Instructions 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 advise the customer properly. 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-101-2002	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 NT 65A3 can be generally divided into four sections:

output section, control valve section, driving section and magazine section.

The basic construction of the Model NT 65A3 is the same as that of the Model NT 65A2. The magazine section is common to that of the Model NT 65A2. However, most of the parts of the control valve section were changed to provide the single actuation (single sequential actuation)/contact actuation mechanisms in order to correspond to the modification of the ANSI standard. The pushing lever of the driving section was newly designed. Besides, some parts of the output section were changed.

Primary differences from the Model NT 65A2 are described below.

- Output section ◦ Cylinder: Newly designed. {A hole (1-mm dia.) was provided to prevent malfunction when selecting the single actuation (single sequential actuation) mechanism.}
- Cylinder spring: Newly designed.
- Exhaust valve: Newly designed.
- Body An air escape groove was provided at the inmost position of the trigger valve bushing ass'y. (Refer to 8-2 (1) for details.)
- Driving section ◦ Pushing lever: Newly designed.
- Control valve section Following parts were changed or added owing to the change of the construction (selectable either the single actuation mechanism or the contact actuation mechanism).
- Plunger (A): Newly designed.
- Plunger (B): Newly designed.
- Plunger (B) spring: Newly designed.
- Valve bushing: Newly designed.
- Valve sleeve (switching device): Newly designed.

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

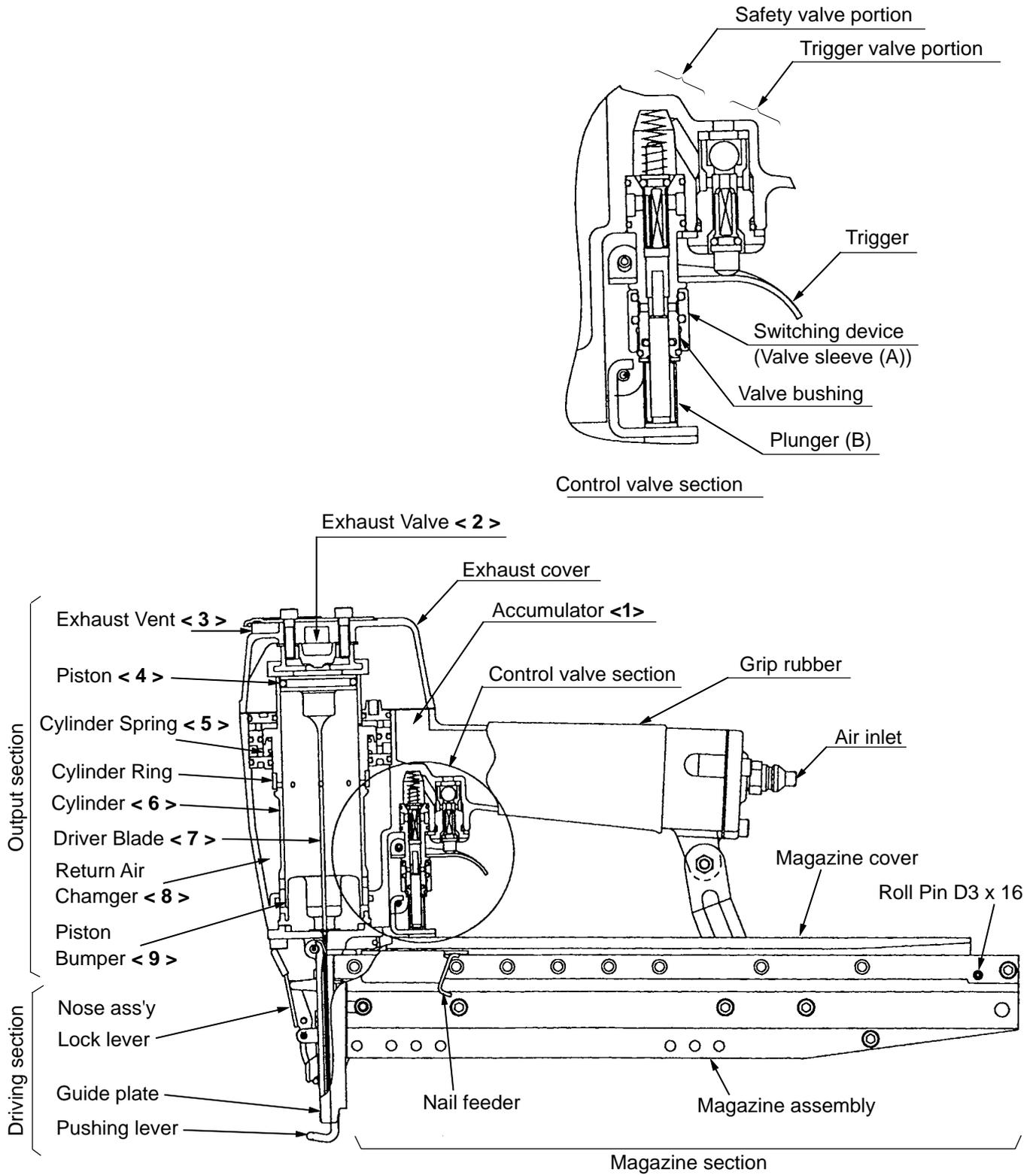


Fig. 3 Construction

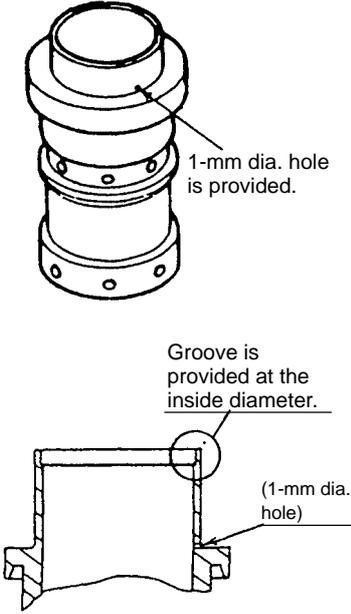
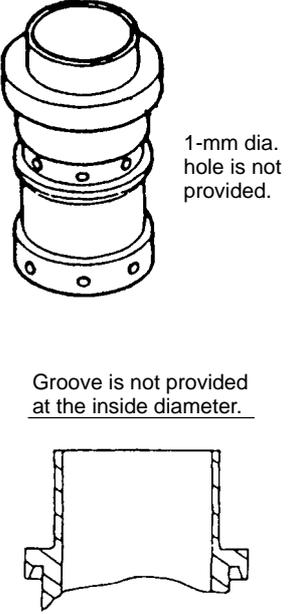
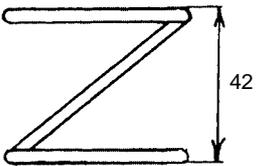
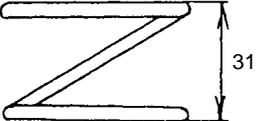
8.2 Interchangeability

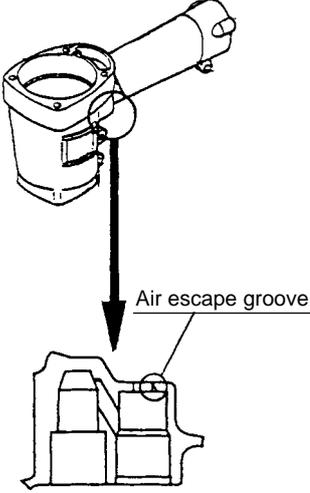
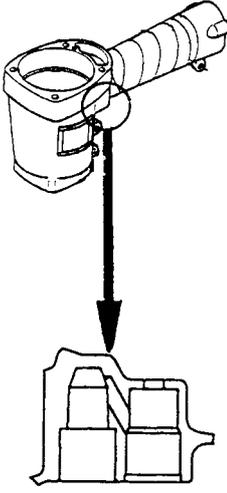
- Interchangeability of the parts between the Model NT 65A3 and the Model NT 65A2 is described below.

As described in 8-1, the magazine section is common to that of the Model NT 65A2 and all the parts are interchangeable. The parts that are newly designed or changed for the Model NT 65A3 and not interchangeable with those of the Model NT 65A2 are described in detail.

(1) Output section

- Be careful not to make mistakes in mounting the following parts that were changed for the Model NT 65A3 because these parts are similar to those of the Model NT 65A2 but not interchangeable.

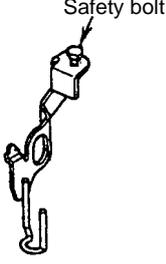
Part	NT 65A3	NT 65A2	Caution
Cylinder [13]	 <p>1-mm dia. hole is provided.</p> <p>Groove is provided at the inside diameter.</p> <p>(1-mm dia. hole)</p>	 <p>1-mm dia. hole is not provided.</p> <p>Groove is not provided at the inside diameter.</p>	<ul style="list-style-type: none"> ○ Never mount the cylinder for the Model NT 65A2 to the Model NT 65A3 by mistake. Otherwise, it may cause a malfunction when selecting the single actuation (single sequential actuation) mechanism. ○ There is no problem in mounting the cylinder for the Model NT 65A3 to the Model NT 65A2.
Cylinder Spring [15]	<p>Free length of spring</p>  <p>42</p>	<p>Free length of spring</p>  <p>31</p>	<ul style="list-style-type: none"> ○ Never mount the cylinder spring for the Model NT 65A2 to the Model NT 65A3. Otherwise, the cylinder may not return properly and it may cause a malfunction. ● There is no problem in mounting the cylinder for the Model NT 65A3 to the Model NT 65A2.
Exhaust Valve [6]	<p>No inside difference</p> 	<p>Inside difference</p> 	<ul style="list-style-type: none"> ○ Do not mount the exhaust valve for the Model NT 65A2 to the Model NT 65A3. Otherwise, it may cause a malfunction when selecting the single actuation (single sequential actuation) mechanism depending on the temperature. ● There is no problem in mounting the exhaust valve for the Model NT 65A3 to the Model NT 65A2.

Part	NT 65A3	NT 65A2	Caution
Body Ass'y [19]			<p>⊙ Do not mount the body ass'y for the Model NT 65A2 to the Model NT 65A3. Otherwise, air may be remained in the valve if the air hose is removed with the trigger pulled when selecting the single actuation (single sequential actuation) mechanism. (It is prohibited to remove the air hose with the trigger pulled and it is also specified in the Handling Instructions.)</p> <p>○ There is no problem in mounting the body ass'y for the Model NT 65A3 to the Model NT 65A2.</p>

The parts of the output section except the above are common to those of the Model NT 65A2.

(2) Driving section

- Parts that were changed for the Model NT 65A3 and not interchangeable with those of the Model NT 65A2 though they are similar to those of the Model NT 65A2

Part	NT 65A3	NT 65A2	Caution
Pushing Lever [65]	<p>Without safety bolt</p> 	<p>Safety bolt</p> 	<p>○ The pushing lever for the Model NT 65A3 is not interchangeable with that of the Model NT 65A2 because the adjustment method is different (safety bolt is not provided).</p>

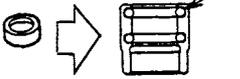
The parts of the driving section except the above are common to those of the Model NT 65A2.

(3) Control valve section

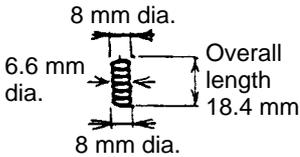
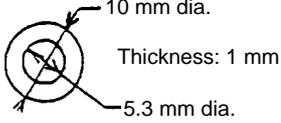
- ① Be careful not to make mistakes in mounting the following parts that were changed for the Model NT 65A3 because these parts are similar to those of the Model NT 65A2 but not interchangeable.

Part	NT 65A3	NT 65A2	Caution
O-ring (I.D 10.7) [44] (O-ring mounted to the outside of the Valve Bushing [45])	Inside diameter 10.7 mm	Inside diameter 11.5 mm	<p>⊙ Never mount the O-ring (S12) for the Model NT 65A2 to the valve bushing of the Model NT 65A3 by mistake. Otherwise, the O-ring may be damaged when mounting the valve bushing to the body, and the damaged O-ring may cause a malfunction when selecting the single actuation (single sequential actuation) mechanism.</p> <p>○ Do not mount the O-ring (ID 10.7) for the Model NT 65A3 to the valve bushing of the Model NT 65A2. Otherwise, air leakage may occur.</p>

- ② Parts that were changed for the Model NT 65A3 and not interchangeable with those of the Model NT 65A2 (except the parts described in ①)

Part	NT 65A3	NT 65A2	Caution
Valve Bushing [45]			○ These parts were newly designed to provide the single actuation (single sequential actuation)/contact actuation selector. They are not interchangeable.
Plunger (B) [52]			
Valve Sleeve [47] (Switching device) O-ring (P-9) [46]	<p>O-ring (P-9) Wire dia. 1.9 mm Inside dia. 8.8 mm</p>  <p>Cross-sectional view</p>	_____	○ These parts are exclusive to the Model NT 65A3.
Plunger O-ring [49] (Mounted to the inside of the Valve Bushing [45])	Wire dia. 1.5 mm Inside dia. 4.5 mm	_____	

② (Continued)

Part	NR 83A2	NR 83A	Caution
Plunger (B) Spring [51]	*Outside diameters at both ends are greater. 	_____	○ These parts are exclusive to the Model NT 65A3.
O-ring (S-7) [48] (To prevent Valve Sleeve [47] (switching device) from coming off)	Wire dia. 1.5 mm Inside dia. 6.5 mm	_____	
Washer M5 [50] (Receiver of Plunger (B) Spring [51] at the Valve Bushing [45] side)		_____	

The parts of the control valve section except the above are common to those of the Model NT 65A2.

8-3. Operation Principle

The operation of the Model NT 65A3 is illustrated and described in Figs. 4 through 9. The **<Bold>** numbers in the descriptions correspond to the item numbers shown in the construction illustrated in Fig. 3. In Fig. 5, Fig. 7, Fig. 8 and Fig. 9, read the descriptions in alphabetical order.

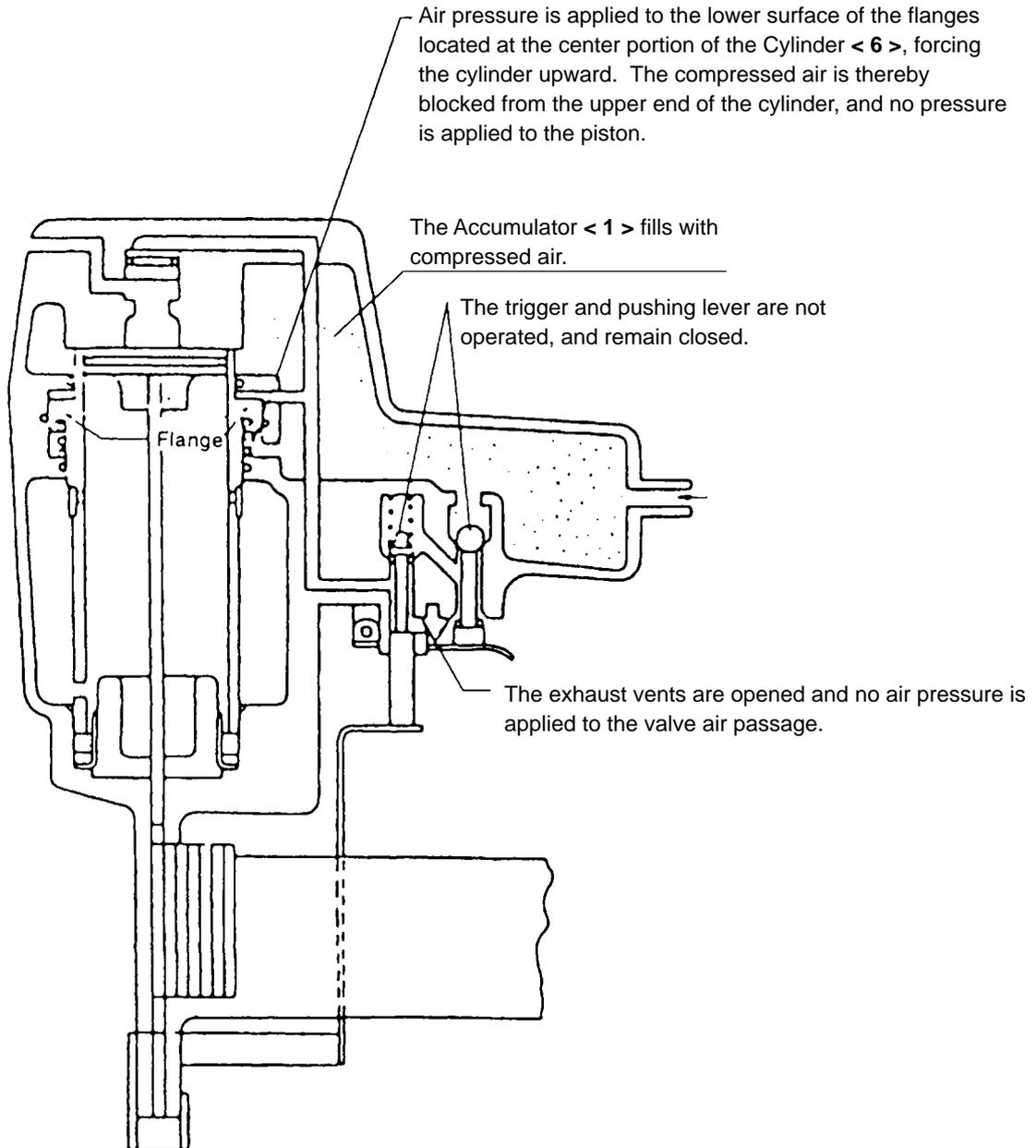


Fig. 4 When the compressed air source (air hose) is connected to the nailer

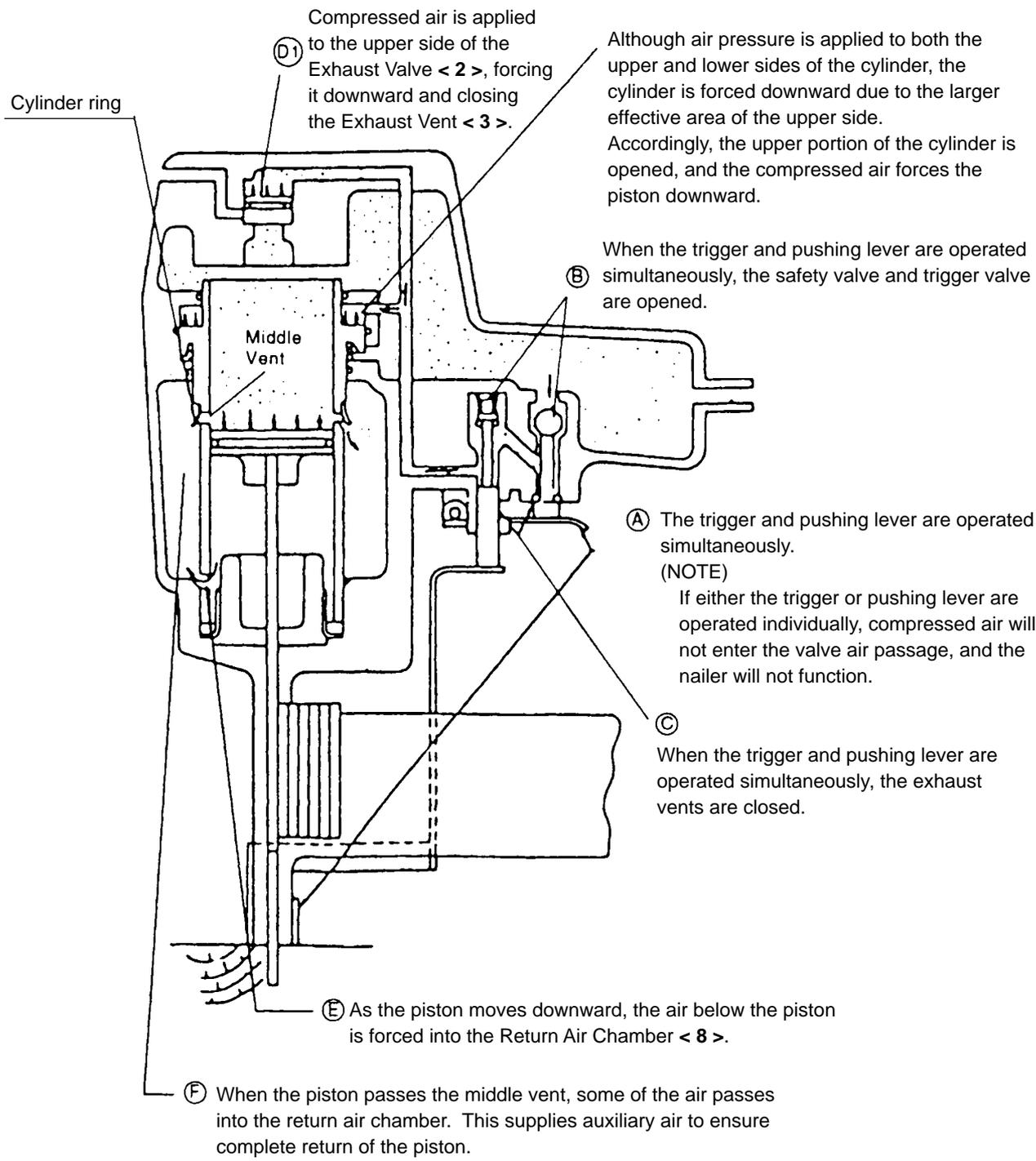


Fig. 5 When the trigger and pushing lever are operated

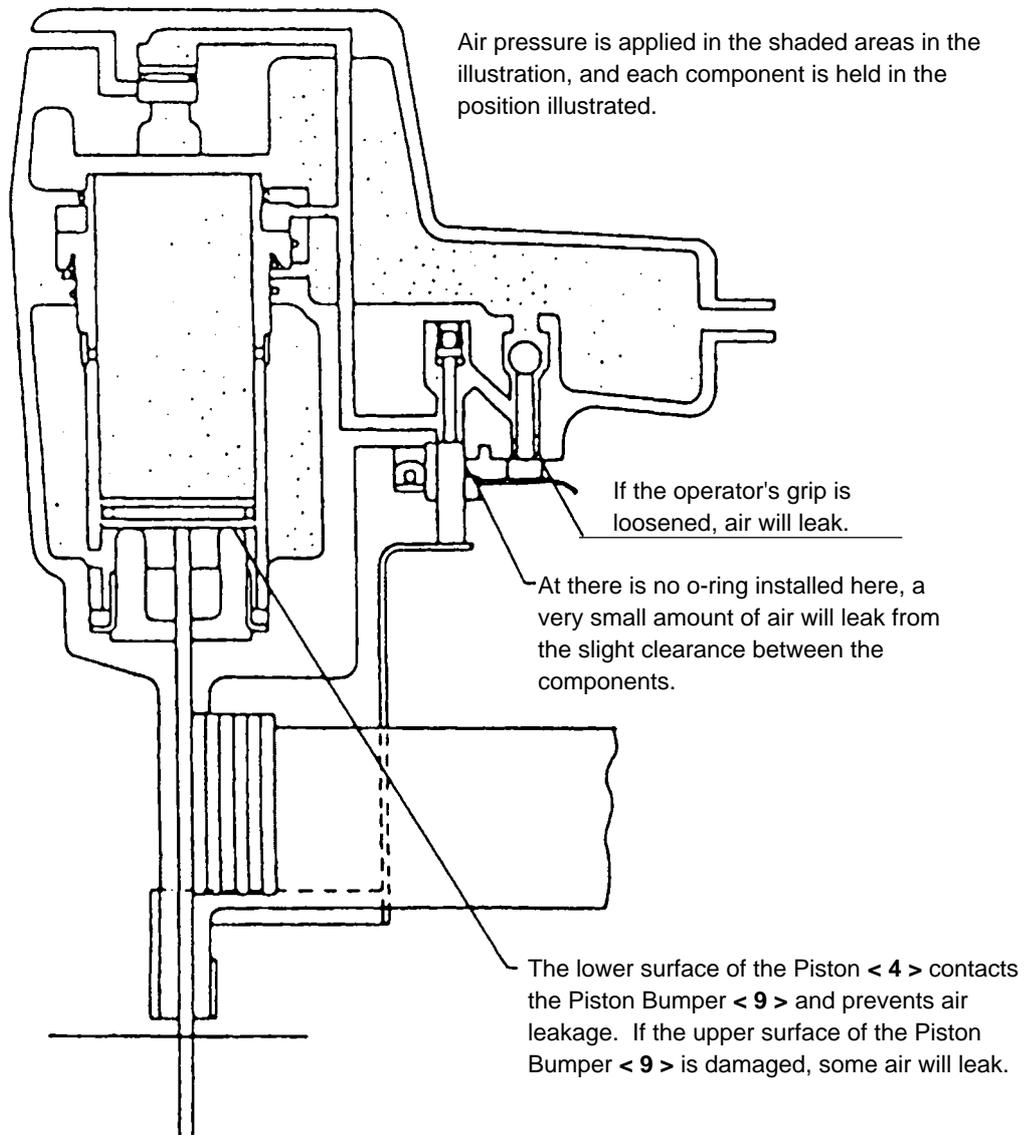


Fig. 6 When the trigger and pushing lever are kept pressed

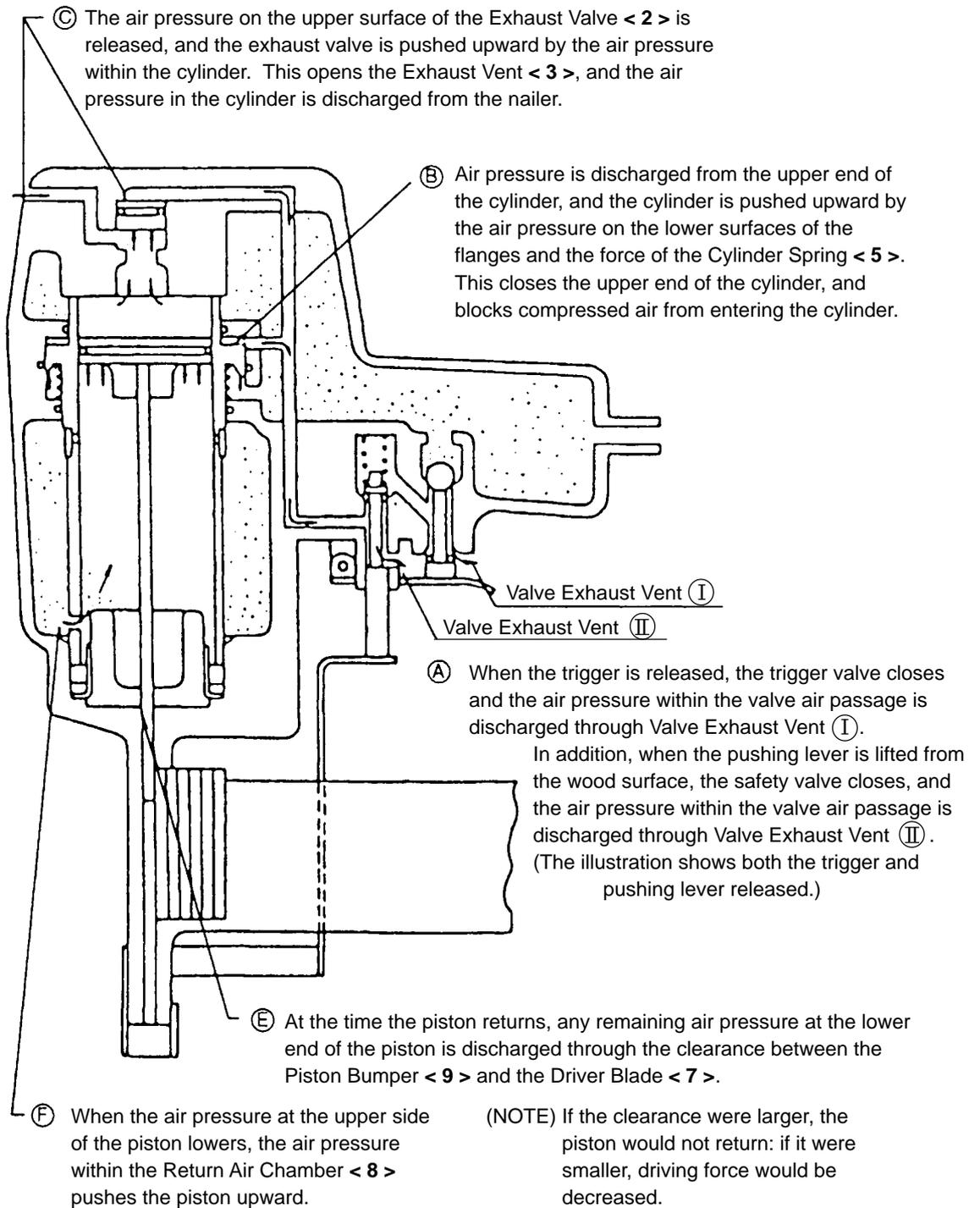
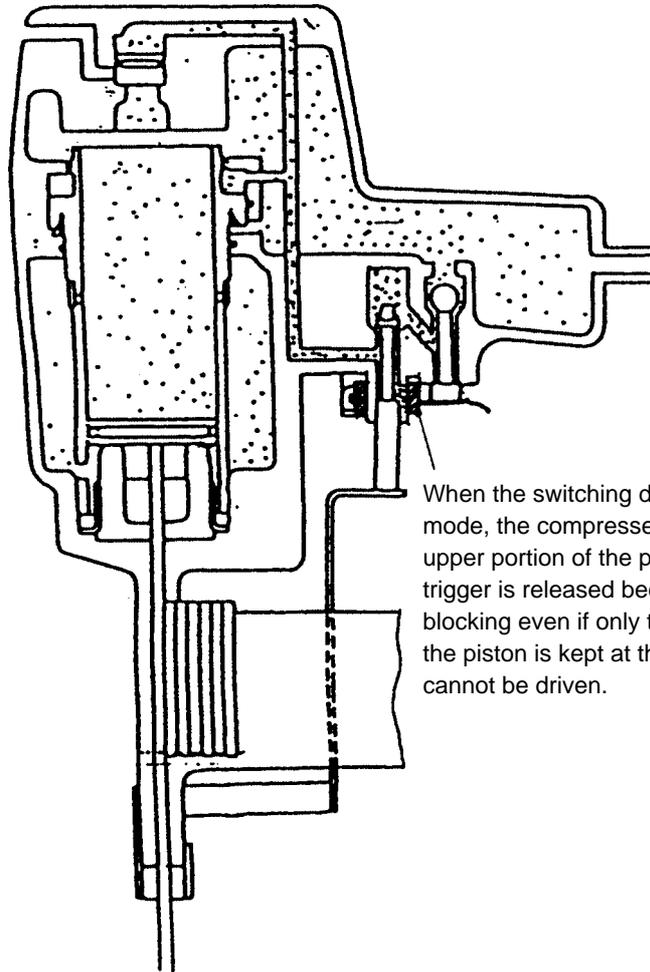
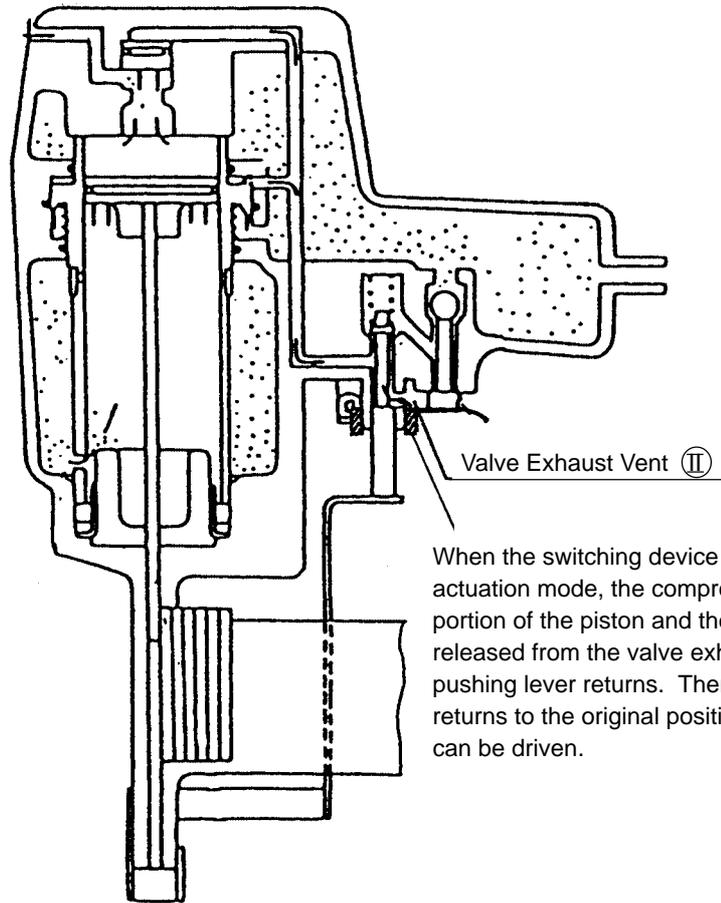


Fig. 7 When the trigger and/or pushing lever are released



When the switching device is set to the single actuation mode, the compressed air cannot be released from the upper portion of the piston and the air passage until the trigger is released because the valve exhaust vent (II) is blocking even if only the pushing lever returns. Therefore, the piston is kept at the lowermost position and the next nail cannot be driven.

Fig. 8 When the pushing lever returns after driving a nail in the single actuation (single sequential actuation) mode



When the switching device is set to the contact actuation mode, the compressed air in the upper portion of the piston and the air passage is released from the valve exhaust vent ② if the pushing lever returns. Therefore, the piston returns to the original position and the next nail can be driven.

Fig. 9 When the pushing lever returns after driving a nail in the contact actuation mode

9. TROUBLESHOOTING GUIDE

9-1. Troubleshooting and Correction

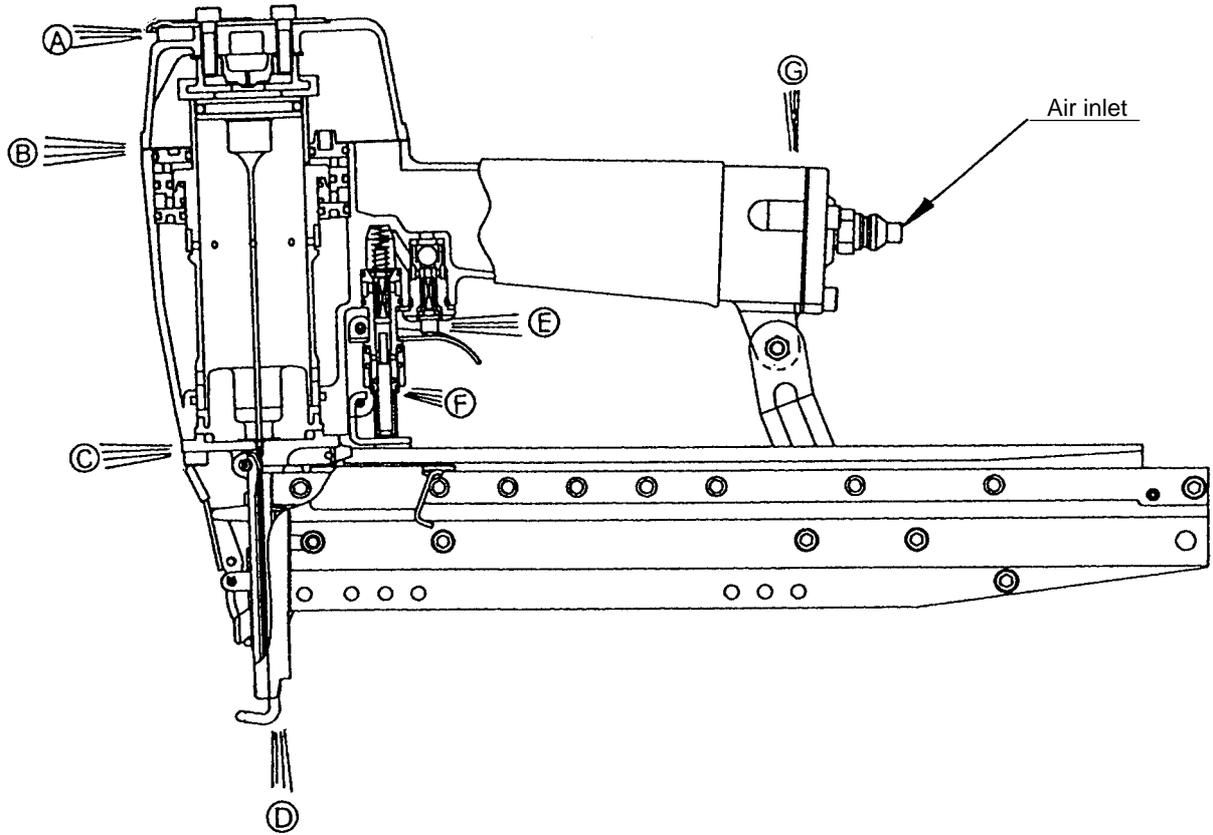
Problem	Possible cause	Inspection method	Remedy
1) Nails cannot be driven.	<p><Nails></p> <ul style="list-style-type: none"> Magazine is not loaded with specified genuine nails. Magazine is loaded with abnormal nails (bent nails, large or small head nails, abnormal collation, etc.). Collating band is abnormally adhesive. 	<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. Remove the abnormal nails and load the magazine with normal nails.
	<p><Magazine></p> <ul style="list-style-type: none"> Nail groove of the magazine is abnormal (too wide, too narrow, deformed or damaged). Magazine is abnormal (deformed or damaged). Nail feeder is abnormal (deformed or damaged). Ribbon spring is abnormal (deformed or damaged). Magazine cover is abnormal (deformed, damaged or fatigued). 	<ul style="list-style-type: none"> Check the nail feeding section for abnormal conditions (burrs, fatigued, deformed or damaged). Check if the nail feeder operates smoothly in the magazine. Check if nails (one strip) move smoothly in the magazine. 	<ul style="list-style-type: none"> Repair or replace the defective part. Remove the adhesive fragments and apply oil to the nail feeder, ribbon spring and the nail rail.
	<p><Nose></p> <ul style="list-style-type: none"> Nail inlet groove of the nose is abnormal (deformed, burrs or damaged). Adhesive fragments are in the nail inlet groove. 	<ul style="list-style-type: none"> Check if nails (one strip) are fed smoothly into the nail injection port of the nose. 	<ul style="list-style-type: none"> Repair or replace the defective part. Remove the adhesive fragments.

Problem	Possible cause	Inspection method	Remedy
	<p><Output section></p> <ul style="list-style-type: none"> • Air pressure too low. • Piston O-ring is worn or damaged. • Piston bumper is abnormal (dislocated, deformed or damaged.) • Cylinder ring is abnormal (dislocated, deformed or damaged). • Driver blade is abnormal (deformed, burrs, damaged or fatigued). • Cylinder's external surface (sliding surface between the cylinder guide and the cylinder plate) is abnormal (deposits of dirt or worn). • Cylinder spring is abnormal (fatigued or damaged). • Cylinder's internal surface is abnormal (deposits of dirt, or worn). 	<ul style="list-style-type: none"> • Set the single actuation/contact actuation selector to the contact actuation. Pull the nail feeder backward to perform idle driving. Check if the driver blade has returned. • Check if nails can be driven at 5 kgf/cm². 	<ul style="list-style-type: none"> • Adjust for 5 to 8.5 kgf/cm². • Replace the piston o-ring. • Replace the piston bumper. • Reassemble or replace. • Repair or replace. • Remove the dirt and apply oil, or replace. • Replace the defective part. • Apply grease. • Replace the head valve spring.
	<p><Control valve section></p> <ul style="list-style-type: none"> • Plunger (A), plunger (B) or valve bushing is abnormal (galled or damaged). • O-ring is worn or oiling is needed. 	<ul style="list-style-type: none"> • After making idle driving, check if the driver blade is kept in the down position. • Disassemble the control valve and check the O-ring. 	<ul style="list-style-type: none"> • Replace the defective part. • Apply grease or replace.
<p>2) Nails are bent when being driven.</p>	<ul style="list-style-type: none"> • Nails are not fully fed into the injection port. • Unspecified nails are used. • Driver blade is worn. • Workpiece is very hard. 	<ul style="list-style-type: none"> • See item 1). • Check if the driver blade tip is abnormally worn. • Drive a nail into soft wood workpiece and check if the nail is bent. 	<ul style="list-style-type: none"> • See item 1). • Replace the driver blade. • Do not use unspecified workpiece.

Problem	Possible cause	Inspection method	Remedy
3) Head of a nail driven into a workpiece protrudes from the wood surface.	<ul style="list-style-type: none"> • Air pressure is too low. • Workpiece is very hard. • Driver blade is worn. • Piston O-ring is abnormal (worn or damaged). • Cylinder's internal surface is abnormal (worn or rough). 	<ul style="list-style-type: none"> • Drive a nail into soft wood workpiece and check if the head protrudes from the wood surface. • Operate the nailer without nails and check if the driver blade is projected from the nose tip. • Disassemble the output section and check the piston O-ring, O-ring and the inner/outer surfaces of the cylinder for abnormal condition. 	<ul style="list-style-type: none"> • Adjust for 5 to 8.5 kgf/cm². • Do not use unspecified workpieces. • Replace the driver blade. • Replace the defective part.
4) Nails clog the mechanism.	<ul style="list-style-type: none"> • Unspecified nails used. <p>< Improper nail feed ></p> <ul style="list-style-type: none"> • See <Magazine> in item 1). • Driver blade worn. <p>< The driver blade has not returned completely. ></p> <ul style="list-style-type: none"> • See <Output section: Piston, driver blade, etc.> in item 1). 	<ul style="list-style-type: none"> • Check if the nails are specified ones. • Check if they move smoothly after putting nails, and check if the nail feeder operates smoothly. • Check if the driver blade tip is worn. • Perform idle driving or actually drive with nails, and check if the driver blade has returned completely. 	<ul style="list-style-type: none"> • Use specified nails. • See <Magazine> in item 1). • Replace the part. • See <Output section: Piston, driver blade, etc.> in item 1).
5) Single actuation impossible.	<ul style="list-style-type: none"> • Plunger O-ring (inside the valve bushing) is abnormal (worn or broken). • O-ring (P-9, inside the valve sleeve) is abnormal (worn or broken). 	<ul style="list-style-type: none"> • Set the single actuation/contact actuation selector to the single actuation. Perform idle driving once and keep the trigger pulled backward. Check that no air leaks from the inside of plunger (B) and valve sleeve (A). 	<ul style="list-style-type: none"> • Replace the defective part.
6) Piston actuates just by pulling the trigger (when single actuation is selected).	<ul style="list-style-type: none"> • O-ring (I.D 10.7) at the outside of the valve bushing is abnormal (worn, damaged or broken). 	<ul style="list-style-type: none"> • Disassemble the control valve and check the O-ring. 	<ul style="list-style-type: none"> • Replace the defective part.

9-2. Possible Causes and Countermeasures for Air Leakage

Primary areas of the air leakage



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	<ul style="list-style-type: none"> * Cylinder [13] does not return. ○ Swollen Cylinder O-rings (D) [11] or (A) [16] or (B) [18] (Use of unsuitable oil causes swelling. Advise the customer to use Shell Tonna Oil T32.) ○ Deformed Cylinder [13] or Cylinder Guide [17]. ○ Yielded or broken Cylinder Spring [15]. ⊙ Defective Head Cap [7] (worn rubber portion or broken) ⊙ Broken Gaskets (C) [5] ○ Loose Hex. Socket Hd. Bolt M5 x 20 [1] ○ Broken Exhaust Cover [3] 	<ul style="list-style-type: none"> ○ Defective Exhaust Valve [6] (worn, deformed or broken) 	<ul style="list-style-type: none"> ○ Scratched or damaged O-ring [44] outside the Valve Bushing [45] at the safety valve portion (When single actuation is selected)
Ⓑ Exhaust cover	<ul style="list-style-type: none"> ○ Loose Hex. Socket Hd. Bolt M5 x 20 [5] ⊙ Broken Gasket (B) [4] ○ Damaged seal surfaces of Body Ass'y [19] and Exhaust Cover [3] 	/	/
Ⓒ Nose	/	<ul style="list-style-type: none"> ○ Deformed Nose Ass'y [22] ○ Loose Nylock Hex. Socket Hd. Bolt M5 x 16 [24] 	/
Ⓓ Guide Plate	<ul style="list-style-type: none"> ○ Damaged Cylinder O-ring (B) [18] or O-ring of Cylinder Guide [17] (worn, deformed or broken) ○ Defective Body Ass'y [19] (worn, corroded or deformed) 	<ul style="list-style-type: none"> * Broken or cracked Piston Bumper [21] ○ Deformed Piston [9] ○ Deformed Nose Ass'y [22] 	/
Ⓔ Trigger valve	<ul style="list-style-type: none"> ○ Defective Urethane Ball (C) D7.14 [54] (damaged or deformed) ○ Defective ball sheet surface of Trigger Valve Bushing [57] (damaged, deformed or worn) ○ Defective Valve Packing [53] (damaged, deformed or broken) ○ Soiled or damaged valve packing sheet surface of Body Ass'y [19] ⊙ Incursion of foreign materials 	/	<ul style="list-style-type: none"> ○ Defective Plunger O-ring [43] (worn, deformed or broken) ○ Defective outside O-ring [55] of Trigger Valve Bushing [57] (When contact actuation is selected)
Ⓕ Safety valve	<ul style="list-style-type: none"> * Defective Gaskets (B) [4] or (C) [5] (damaged or yielded) * Discarded air vent of Gasket (B) ○ Defective O-ring [10] or Cylinder O-ring (D) [11] of the Cylinder Plate [12] (worn, deformed or broken) ○ Defective Cylinder O-ring (A) [16] or (B) [18] (worn, deformed or broken) 	<ul style="list-style-type: none"> ○ Air will leak slightly from the lower portion due to construction. 	<ul style="list-style-type: none"> ○ Scratched or damaged O-ring [44] outside the Valve Bushing [45] and the Plunger O-ring [49] inside the Valve Bushing [45] ○ Defective Plunger O-ring [43] (worn, deformed or broken) ○ Defective Plunger Spring [41] (deformed or broken) ○ Defective Valve Bushing [45] (deflected, deformed or broken) ○ Scratched or damaged O-ring [46] inside the Valve Sleeve [47] (When single actuation is selected)
Ⓖ Cap	<ul style="list-style-type: none"> ○ Loose Hex. Socket Hd. Bolt M5 x 16 [36] ⊙ Broken Gasket (D) [34] ○ Defective seal surface of the Body Ass'y [19] or Cap [35] 	/	/

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 disconnect the air hose from the nailer (with your finger released from the trigger) to exhaust all the compressed air and remove all nails.**

10-1. General Precautions in Disassembly and Reassembly

- Apply grease (ATTOLUB No. 2 Code No. 317918) to the O-rings and the sliding portions. Note that another grease (MULTEMP PS No. 2 Code No. 939301) must be applied to the O-rings and the sliding portions of the control valve section. Do not scratch the O-rings nor adhere dust to them when mounting.
- 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) **[4]** 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.
- Tightening torque for each part

Screw	Tightening torque
Nylock Hex. Socket Hd. Bolt M5	85 ± 5 kgf·cm (8.3 ± 0.5 N·m, 6.1 ± 0.4 ft-lbs.)
Nylock Hex. Socket Hd. Bolt (W/Flange) M5	
Hex. Socket Hd. Bolt M5	
Hex. Socket Hd. Bolt (W/Flange) M5	

10-2. Disassembly and Reassembly of the Output Section

(1) Piston Bumper [21] and the related parts

Tools required

- 3 mm dia. (0.118") roll pin remover
- 4 mm (0.157") hexagonal bar wrench
- 8 mm (0.315") spanner

(a) Disassembly (Refer to Fig. 10.)

- Extract the Roll Pin D3 x 30 [38] with a roll pin remover.
- Remove the Hex. Socket Hd. Bolt M5 x 18 [31] and the four Nylock Hex. Socket Hd. Bolts M5 x 16 [24] which retain the Nose Ass'y [22], and take off the Nose Ass'y [22], the Magazine Ass'y [63] and connected parts in a single body. At this time, Plunger (B) [52] and Plunger (B) Spring [51] and Washer M5 [50] may fall out, so exercise care not to lose it. The Piston Bumper [21] can then be taken out from the lower part of the main body (Body Ass'y [19]).

(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 Piston [9] is properly engaged in the groove of the Guide Plate [25].
- Confirm that Plunger (B) [52], Plunger (B) Spring [51] and Washer M5 [50] have not fallen out and become lost.
- Loosely fasten the Nose Ass'y [22] onto Body Ass'y [19] with the four Nylock Hex. Socket Hd. Bolts M5 x 16 [24], and fully tighten the Hex. Socket Hd. Bolts M5 x 18 [31] to specified torque of 85 ± 5 kg-cm (6.1 ± 0.4 ft-lb).
- Then fully tighten the four Nylock Hex. Socket Hd. Bolts M5 x 16 [24] to specified torque of 85 ± 5 kg-cm (6.1 ± 0.4 ft-lb).

[CAUTION] Ensure without fail that tightening of bolts is accomplished in the order described above. If the four Nylock Hex. Socket Hd. Bolts M5 x 16 [24] are fully tightened to specified torque before tightening the Hex. Socket Hd. Bolt M5 x 18 [31], it will apply excessive strain on the Magazine Ass'y [63] which will cause deformation of the magazine ass'y and irregular feeding of nails.

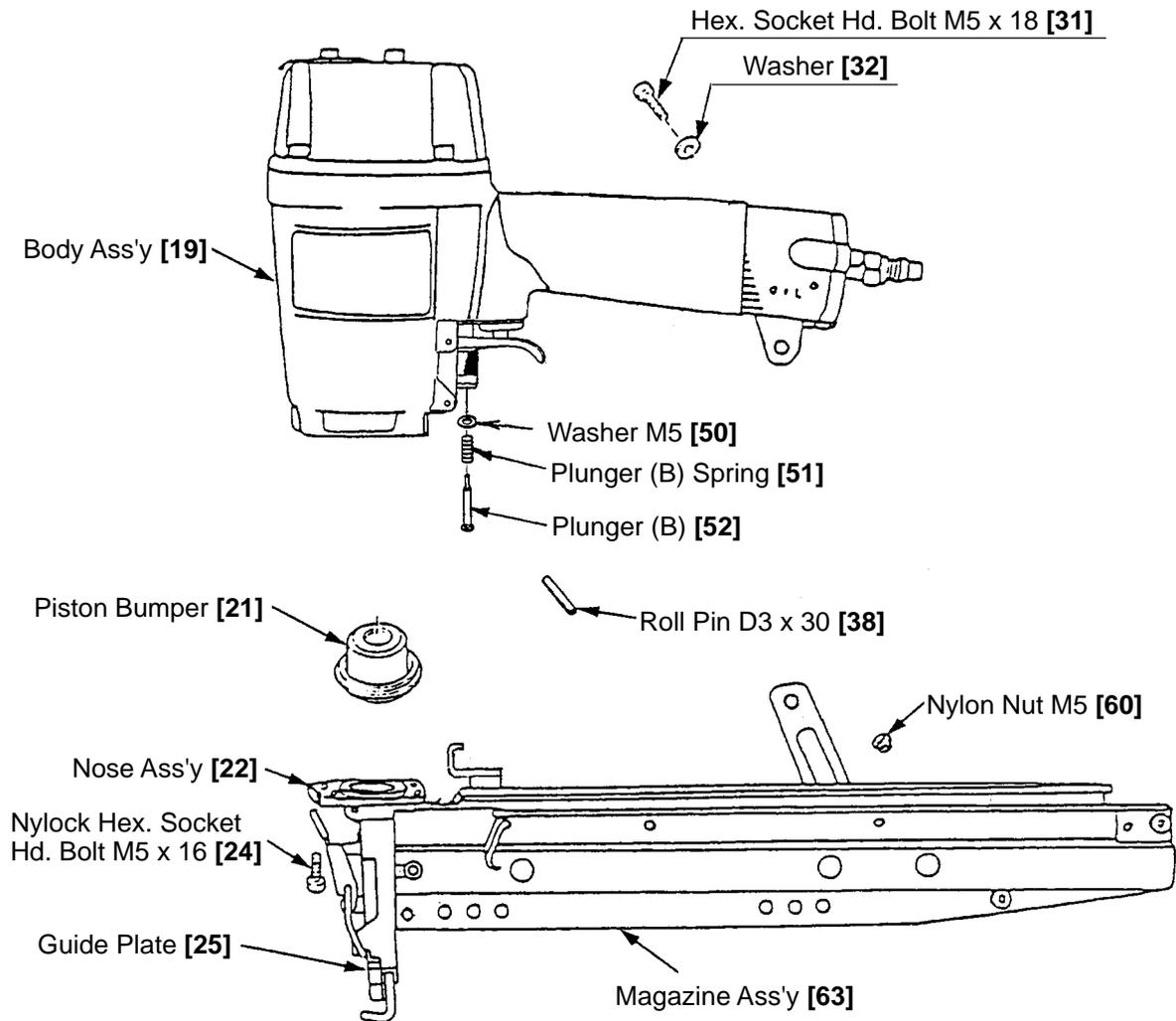


Fig. 10

(2) Piston [9], Cylinder [13] and the related parts

Tool required

- 4 mm (0.157") hexagonal bar wrench

(a) Disassembly (Refer to Figs. 11, 12 and 13.)

- As illustrated in Fig. 10, loosen the four Hex. Socket Hd. Bolts M5 x 20 [1], and remove the Exhaust Cover [3]. The Piston [9] can then be taken out.
- Perform the following operation first if the Piston [9] cannot be removed because the top surface of the Piston [9] is flush with the top surface of the Cylinder [13].
- Next, as illustrated in Fig. 11, screw the two previously removed Hex. Socket Hd. Bolts M5 x 20 [1] into the provided holes on the Cylinder Plate [12]. Gripping these two bolts, simultaneously turn and pull upward to remove the Cylinder Plate [12], the Cylinder [13] and the related parts.
- If the Cylinder [13] is difficult to remove as described above, remove the Nose Ass'y [22] as described in paragraph 10-2-(1), and push down on the cylinder to remove it from the lower portion 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:

- Be sure to check that the Cylinder [13] is provided with a 1-mm dia. hole (Fig. 15) before reassembly. Note that mounting a wrong cylinder may cause a malfunction. There is no problem in facing the 1-mm dia. hole in any direction when mounting.
- Check that the free length of the Cylinder Spring [15] is about 42 mm.
- Ensure that the convex surface side of the Piston [9] (illustrated in Fig. 14) is facing toward the Guide Plate [25] side.
- Reassembly of the Piston [9] can be most easily accomplished by inserting the Piston [9] into the Cylinder [13] as illustrated in Fig. 13, and inserting the Piston [9] into the grooves on the Guide Plate [25] while pulling the piston out in a downward direction.
- When assembling Gasket (B) [4], ensure that its air vents are properly aligned with the air vents on the Body Ass'y [19].
- Tighten the four Hex. Socket Hd. Bolts M5 x 20 [1] to specified torque (85 ± 5 kg-cm, 6.1 ± 0.4 ft-lb).

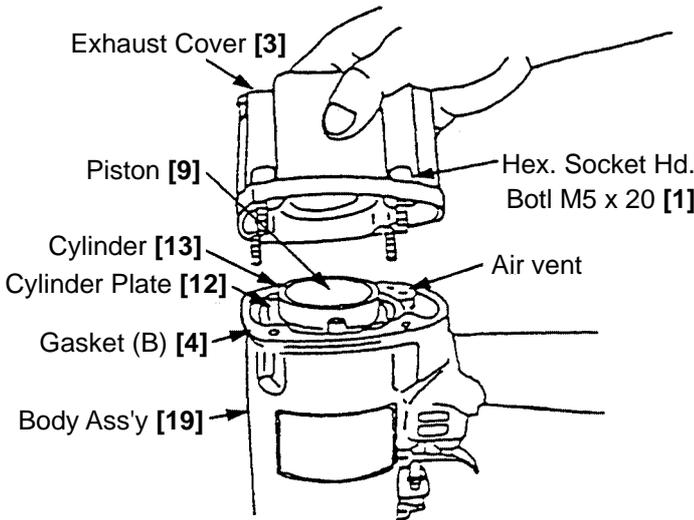


Fig. 11

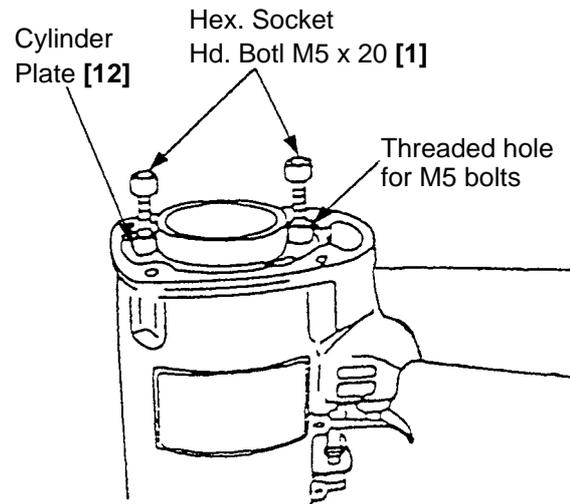


Fig. 12

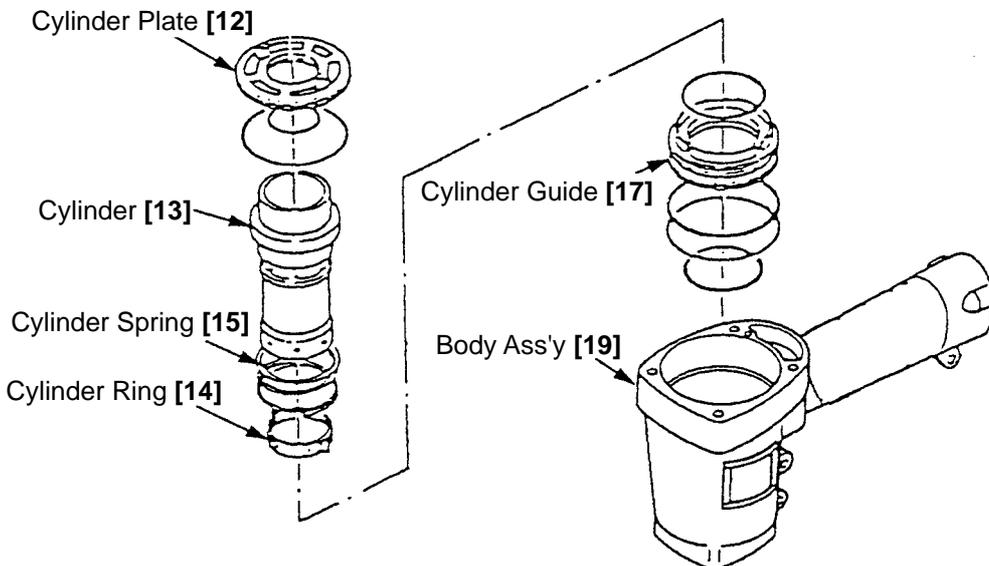


Fig. 13

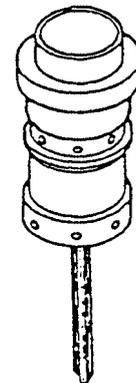


Fig. 14

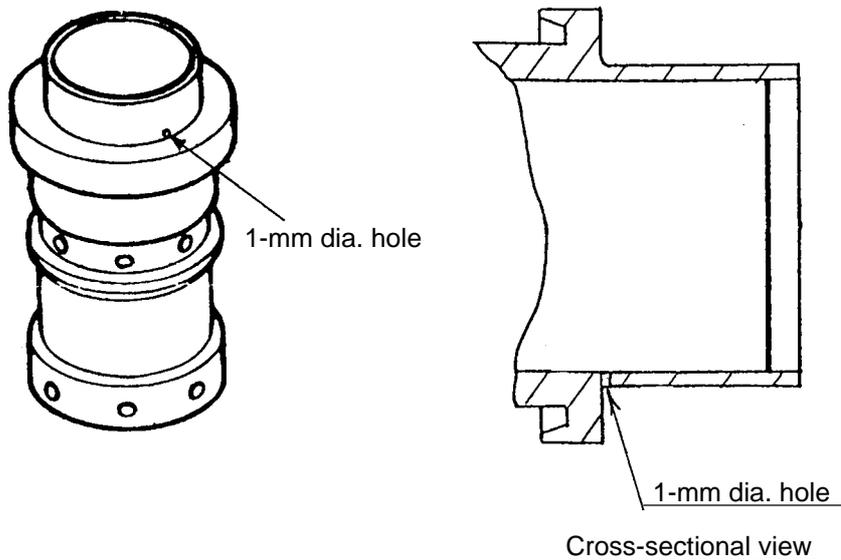


Fig. 15

(3) Head Cap [7] and Exhaust Valve [6]

Tool required

- 4 mm (0.157") hexagonal bar wrench

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

- As described in paragraph 10-1-(2), remove the Exhaust Cover [3].
- Remove the two Hex. Socket Hd. Bolts M5 x 20 [1], and as illustrated in Fig. 15, disassemble the Head Cap [7], the Exhaust Valve [6] and Gasket (C) [5] in that order.

(b) Reassembly

Reassembly can be accomplished by following the disassembly procedures in reverse. Ensure that the Hex. Socket Hd. Bolts M5 x 20 [1] are properly tightened to specified torque (85 ± 5 kg·cm, 6.1 ± 0.4 ft-lb).

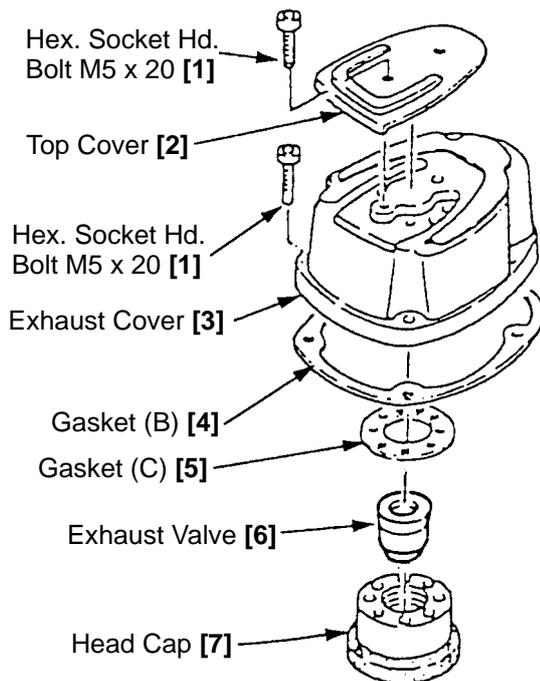


Fig. 16

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

Tools required

- 3 mm dia. (0.118") roll pin remover
- Flat-blade screwdriver [J-125 valve bushing spanner (special repair tool, Part No. 97893) is recommended in place of a screwdriver.]
- Setting pin (with a rounded tip)

(a) Disassembly (Refer to Fig. 17.)

- Disassemble the Nose Ass'y [22], the Magazine Ass'y [63] and the related parts in a single body as described in paragraph 10-1-(1).
- Extract the Roll Pin D3 x 30 [38] with a 3-mm dia. roll pin remover, and take out Plunger (B) [52], Plunger (B) Spring [51], Washer M5 [50], Trigger [59], and the Trigger Plunger [58].
- Insert a flat-blade screwdriver (or J-125 valve bushing spanner) into the groove on the Trigger Valve Bushing [57] and, being very careful not to damage or deform the groove portion, turn it counterclockwise to loosen it. After the Trigger Valve Bushing [57] has been removed, the Valve Packing [53] and Urethane Ball (C) D7.14 [54] can be taken out. (Please note that the Trigger Valve Bushing [57] can be most easily and safely removed with the J-125 valve bushing spanner.)
- After removing the Trigger Valve Bushing [57], pull down strongly on the Valve Bushing [45] to remove the Valve Bushing [45], Valve Sleeve [47], Plunger (A) [42], and the Plunger Spring [41].
- Remove the Plunger O-ring [49] inside the Valve Bushing [45] and the two O-rings (P-9) [46] inside the Valve Sleeve [47] by means of a setting pin with a rounded tip (Fig. 18).

(b) Reassembly

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

- Plunger Spring [41] and Plunger (B) Spring [51] are small and apt to be twisted and lost. Be careful when handling them.
- To prevent the two O-rings (I.D 10.7) [44] on the outside of the Valve Bushing [45] 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.
 - * If damaged O-rings (I.D 10.7) [44] are mounted, a malfunction may occur. Be careful when handling them.
- The Plunger O-ring [49] inside the Valve Bushing [45] is small and hard to mount a little. Be careful not to lose the O-ring when handling.
- Mount the Valve Bushing [45] again facing the four 2.5-mm dia. holes at its center to the Body Ass'y [19] side (Fig. 19).

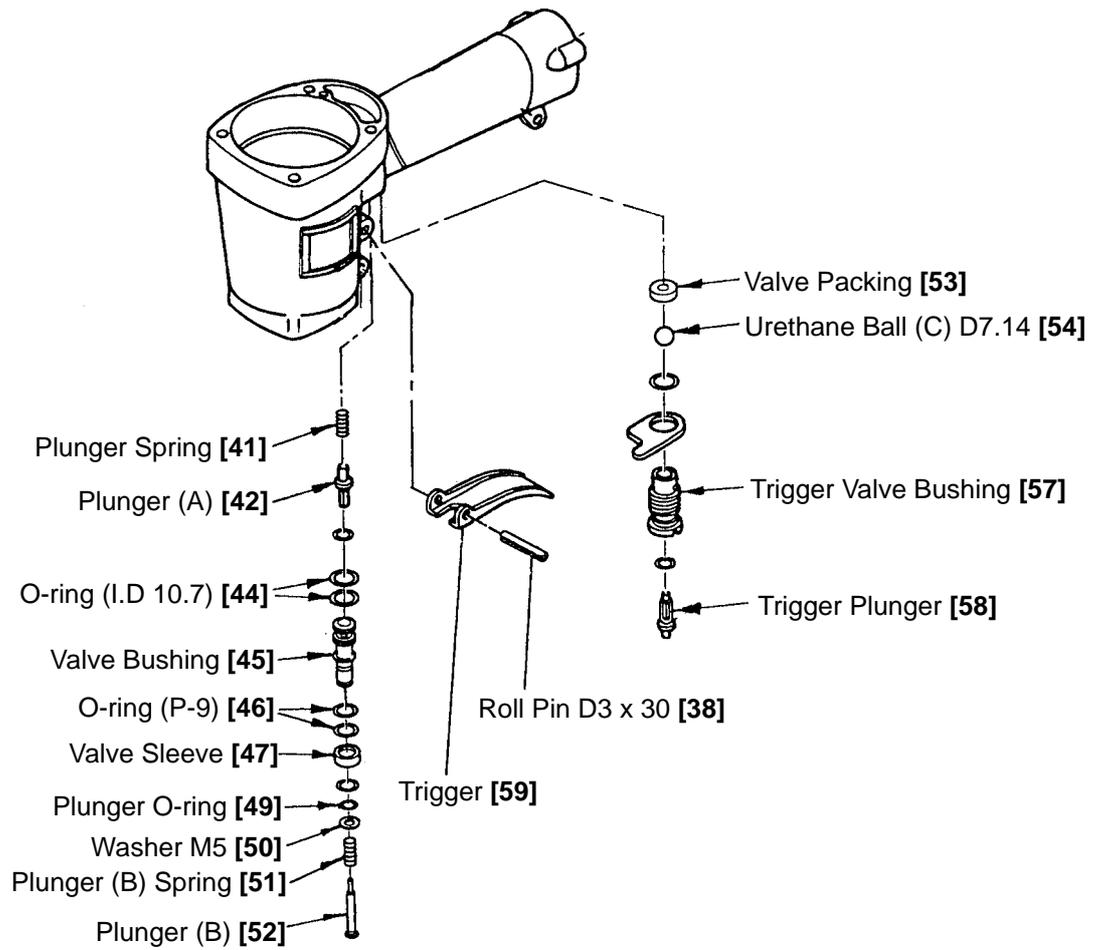


Fig. 17

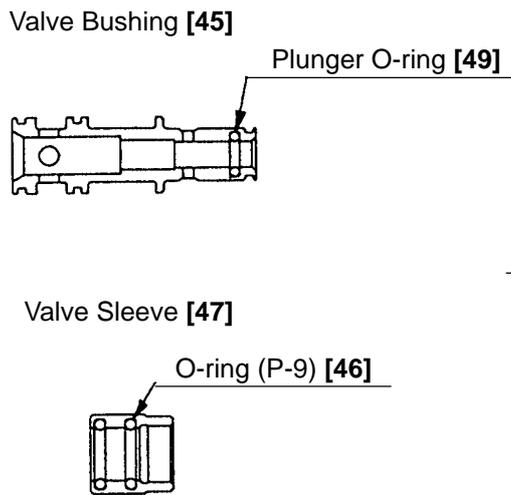


Fig. 18

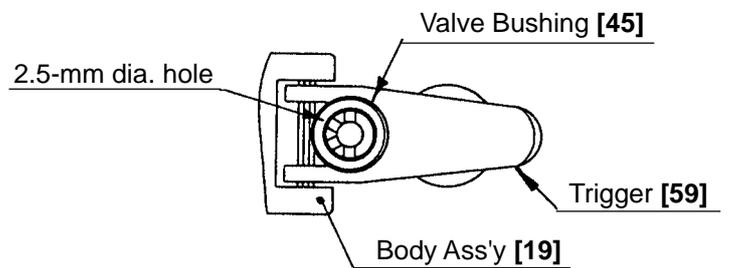


Fig. 19

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

(1) Guide Plate [25], Pushing Lever [65] and the related parts

Tools required

- 4 mm (0.157") hexagonal bar wrench
- 3 mm dia. (0.118") roll pin remover
- 4 mm dia. (0.157") roll pin remover

(a) Disassembly (Refer to Fig. 20.)

- Pull out the Roll Pin D4 x 36 [23] with a 4-mm dia. roll pin remover, and then the Guide Plate [25] can be removed.
- Pull out the Roll Pin D3 x 20 [27] with a 3-mm dia. roll pin remover, and then the Lock Lever [26] can be removed.
- Remove Spring (B) [28] by hand and pull out the Roll Pin D3 x 30 [38] with a 3-mm dia. roll pin remover, and then the Pushing Lever [65] can be removed.

(b) Reassembly

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

- Check that Plunger (B) [52] and the related parts are mounted without fail.

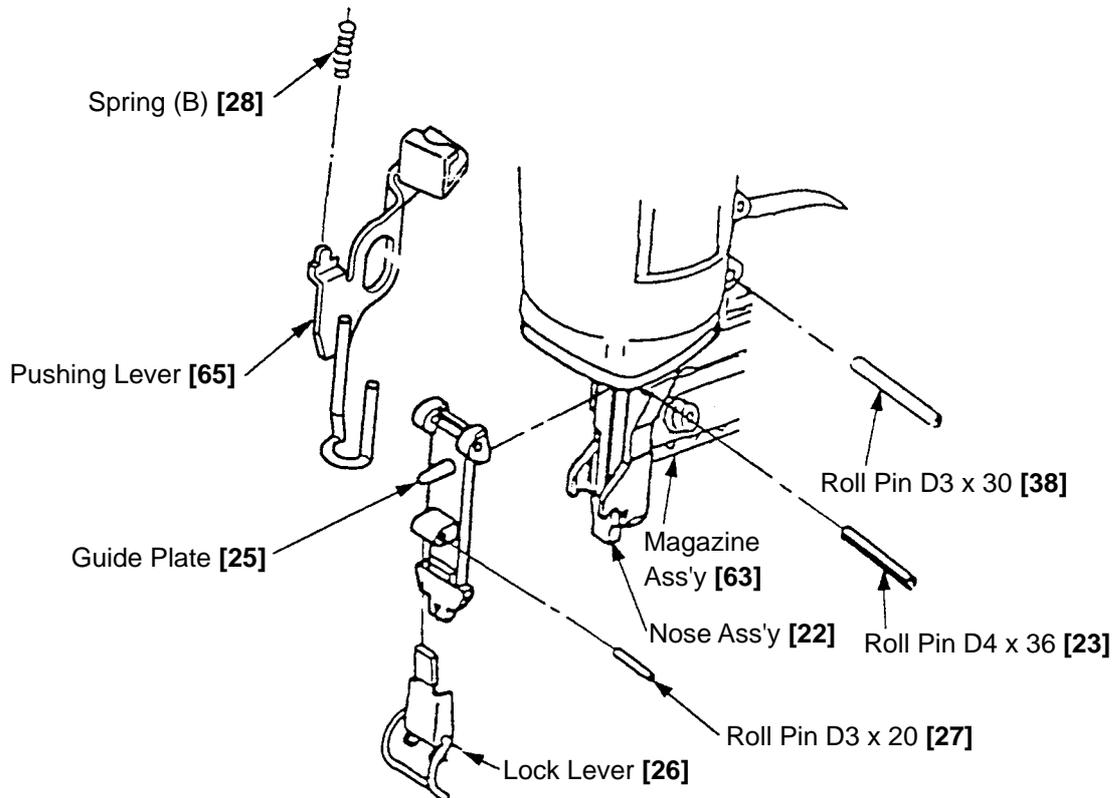


Fig. 20

(2) Magazine Ass'y [63], Nail Feeder [67] and the related parts

Tools required

- 4 mm (0.157") hexagonal bar wrench
- 8 mm (0.315") spanner
- 3 mm dia. (0.118") roll pin remover

[CAUTION] When handling the Ribbon Spring [66], wear approved eye protector without fail.

(a) Disassembly (Refer to Fig. 21.)

- Ensure without fail that the Nail Feeder [67] is positioned at the Guide Plate [25] side before attempting further disassembly.
- Remove the Hex. Socket Hd. Bolt M5 x 18 [31], the Nylock Bolt (W/Flange) M5 x 8 [68] and the Nylock Hex. Socket Hd. Bolt M5 x 12 [29]. Pull the Magazine Ass'y [63] backward while pressing the Nail Feeder [67] against the Nose Ass'y [22], and then the Magazine Ass'y [63] and Sleeve (A) [30] can be removed.
- After removal of the Magazine Ass'y [63], the Nail Feeder [67] and the Ribbon Spring [66] can be removed by hand.
- Remove the three Hex. Socket Hd. Bolts (W/Flange) M5 x 12 [69], and then the Handle Arm [61] and the Magazine Cover [62] can be removed.

(b) Reassembly (Refer to Figs. 21, 22 and 23.)

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

- Tighten the Nylock Bolt (W/Flange) M5 x 8 [68] and the Nylock Hex. Socket Hd. Bolt M5 x 12 [29] for mounting the Magazine Ass'y [63] and the Nose Ass'y [22] while pressing the Magazine Ass'y [63] against the Nose Ass'y [22] and Body Ass'y [19]. (Press the Magazine Ass'y [63] in "A" and "B" directions as shown in Fig. 21. Check that there is no space between the Nose Ass'y [22] and the Magazine Ass'y [63] as shown in Fig. 22.)
- Temporarily tighten the two Hex. Socket Hd. Bolts (W/Flange) M5 x 12 [69] and the Hex. Socket Hd. Bolt M5 x 18 [31] for mounting the Handle Arm [61]. Mount the Magazine Ass'y [63] and the Nose Ass'y [22]. Perform positioning of the Handle Arm [61] to the Body Ass'y [19] so that the Hex. Socket Hd. Bolt M5 x 18 [31] for mounting them can be tightened easily, and then tighten the bolt with the specified torque.
- Tighten the other bolts with the specified torque.

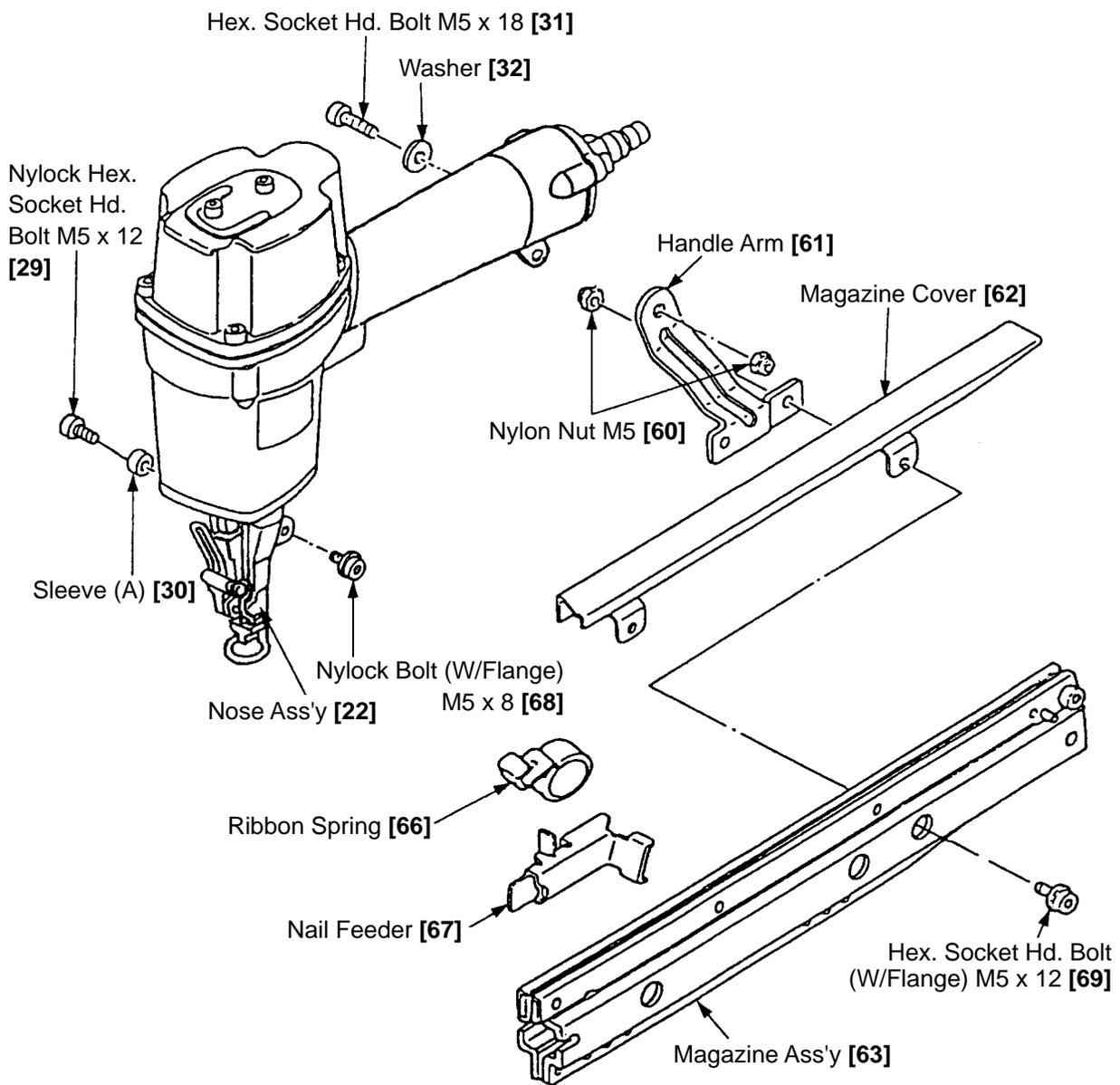


Fig. 21

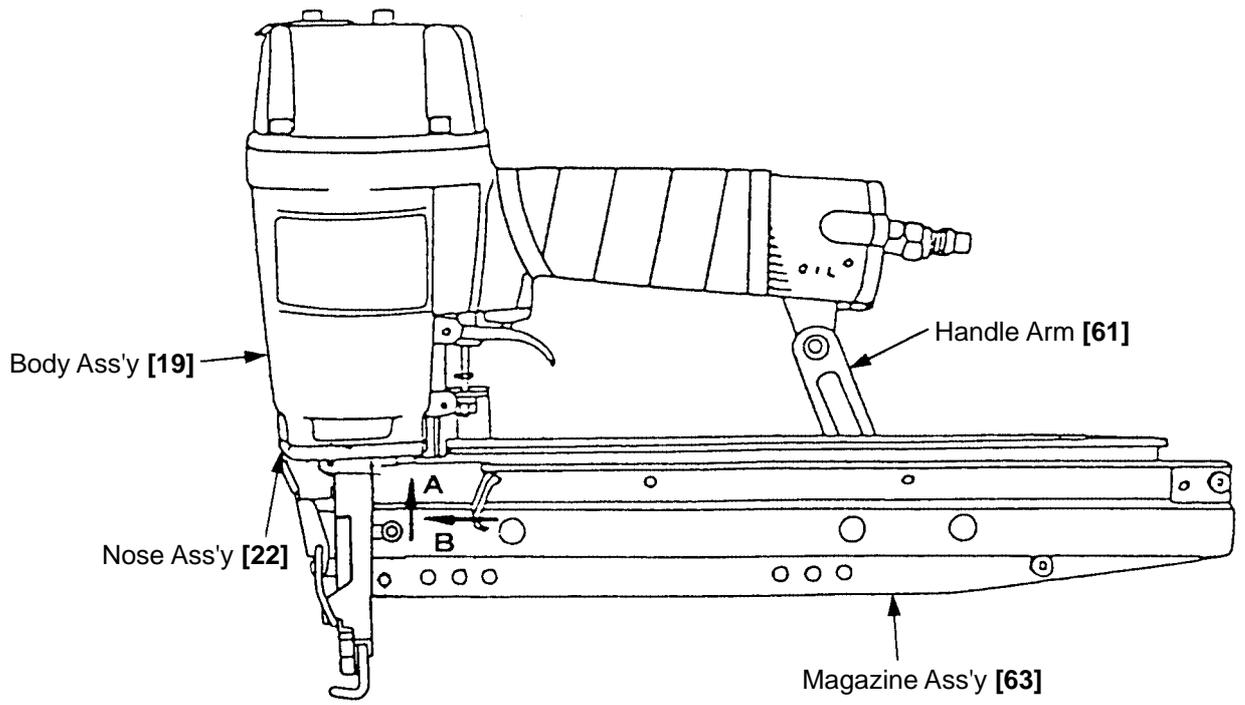


Fig. 22

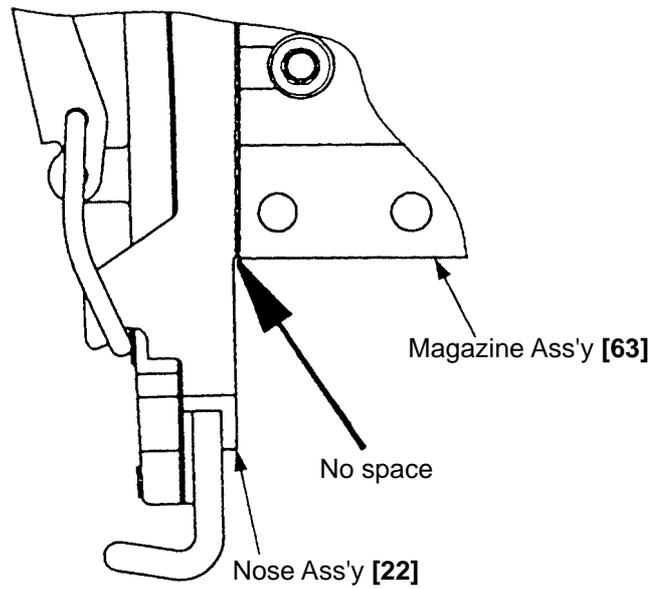


Fig. 23

11. INSPECTION AND CONFIRMATION AFTER REASSEMBLY

- Be sure to check the following items after reassembly. Pay special attention to the items (2) and (4) about the single actuation (single sequential actuation) mechanism that is not provided to the Model NT 65A2 but the Model NT 65A3. Before checking the following items except (5), check that no nail is loaded in the Magazine Ass'y [63] and the Nose Ass'y [22].

- (1) Check that the Pushing Lever [65], Trigger [59], Trigger Plunger [58], Plunger (A) [42], Plunger (B) [52] and Valve Sleeve [47] operate smoothly without connecting to an air compressor. Then check that the Nail Feeder [67] moves smoothly in the Magazine Ass'y [63].
- (2) Connect the Model NT 65A3 to an air compressor and set the Valve Sleeve [47] to "single actuation (single sequential actuation)" (see 5-3). Check the following when the pressure is 3.5 kgf/cm (49 psi) and 8.5 kgf/cm (120 psi).
 - Check that there is no air leakage and the Model NT 65A3 does not operate (i.e., check that the Piston [9] does not come out of the Nose Ass'y [22] tip (outlet of nails) when it is left for five seconds or more).
- (3) Set the Valve Sleeve [47] to "contact actuation" (see 5-3). Check the following when the pressure is 8.5 kgf/cm (120 psi).
 - ① Check that the Model NT 65A3 does not operate just by pulling the Trigger [59].
 - ② Check that the Model NT 65A3 does not operate just by pressing the Pushing Lever [65] against a test piece (wood etc.).
 - ③ Check that the Model NT 65A3 operates by pulling the Trigger [59] first then pressing the Pushing Lever [65] against a test piece (at this time, keep the Nail Feeder [67] pulled backward).
- (4) Set the Valve Sleeve [47] to "single actuation (single sequential actuation)". Check the following when the pressure is 8.5 kgf/cm (120 psi).
 - ① Check that the Model NT 65A3 does not operate just by pulling the Trigger [59] (i.e., check that the Piston [9] does not come out of the Nose Ass'y [22] tip (outlet of nails) when keeping the Trigger [59] pulled for five seconds or more).
 - ② Check that the Model NT 65A3 does not operate just by pressing the Pushing Lever [65] against a test piece.
 - ③ Check that the Model NT 65A3 operates by pressing the Pushing Lever [65] against a test piece first then pulling the Trigger [59]. Check that the Piston [9] is still showing from the Nose Ass'y [22] tip (outlet of nails) after the Pushing Lever [65] is released from the test piece with the Trigger [59] pulled.
- (5) Set the Valve Sleeve [47] to "contact actuation". Set the pressure to 4.5 kgf/cm (63 psi) and load nails in the Magazine Ass'y [63]. Perform nailing operation and check that nails are properly driven (no idling and bent nails).
- (6) Recheck the tightening torque of each screw without connecting to an air compressor.

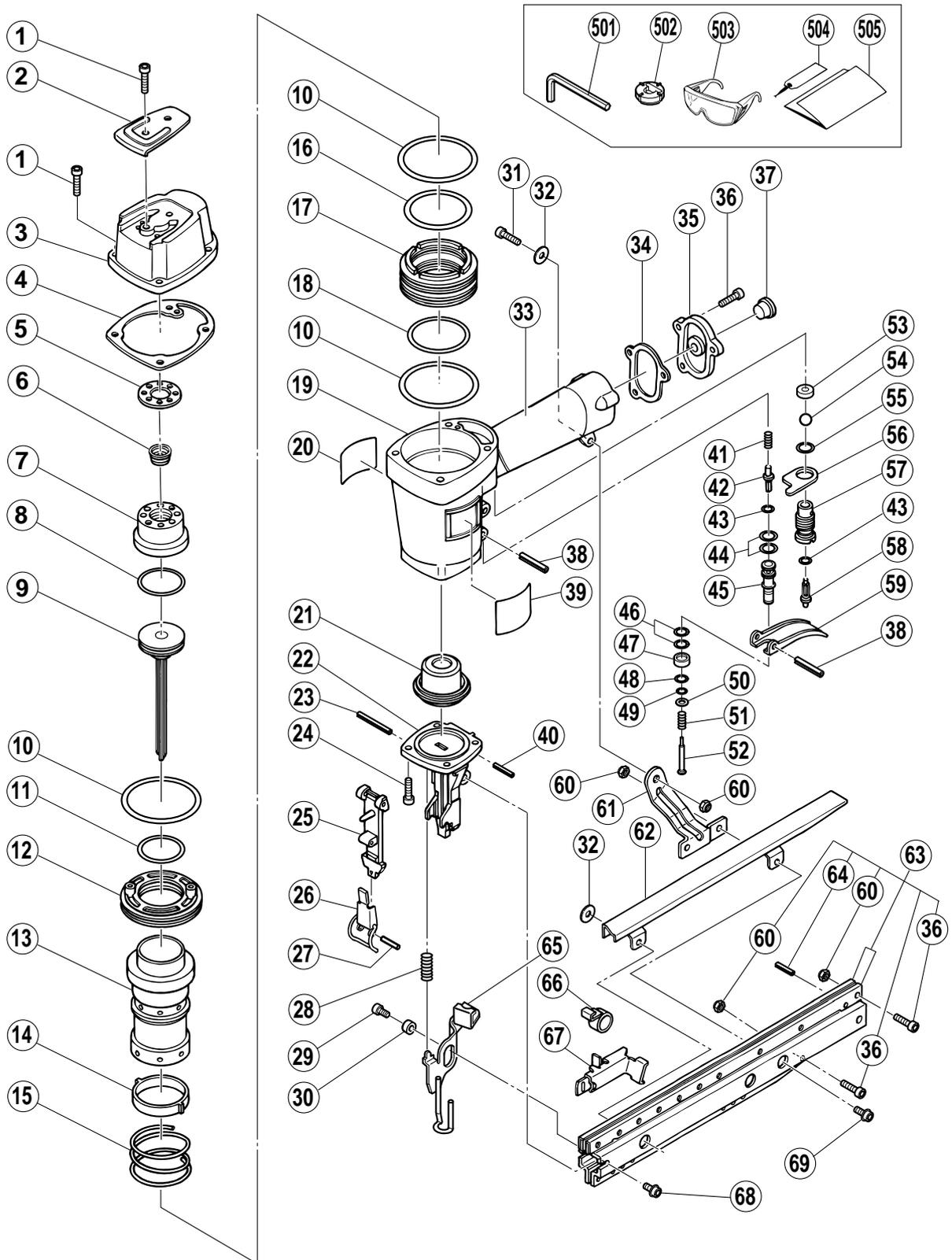
12. STANDARD REPAIR TIME (UNIT) SCHEDULES

MODEL	Variable		10	20	30	40	50	60 min.	
	Fixed								
NT 65A3		Work Flow							
				Exhaust Cover Gasket x 2 Exhaust Valve Head Cap					
						Nose Ass'y Magazine Ass'y Nail Feeder Ribbon Spring			
		General Assembly		Pushing Lever Spring (B)	Cylinder Cylinder Plate Cylinder Ring Cylinder Spring Cylinder Guide Cylinder O-ring x 3 O-ring x 3 Piston Bumper			Body Ass'y	
				Trigger Plunger Trigger Valve Bushing Plunger O-ring x 3 Valve Packing Valve Bushing Plunger (A) O-ring x 6 Plunger Spring Plunger (B)					
			Piston Piston O-ring						
			Adjustment (Cylinder, Body, Valve)						

PNEUMATIC TOOL PARTS LIST

FINISH NAILER
Model NT 65A3

2003 • 8 • 25
(E1)



PARTS

NT 65A3

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS
1	949-757	HEX. SOCKET HD. BOLT M5X20 (10 PCS.)	6	
2	876-179	TOP COVER	1	
3	877-917	EXHAUST COVER	1	
4	876-176	GASKET (B)	1	
5	876-178	GASKET (C)	1	
6	884-173	EXHAUST VALVE	1	
7	878-026	HEAD CAP	1	
8	876-174	PISTON O-RING	1	
9	882-402	PISTON	1	
10	876-161	O-RING (S-65)	3	
11	877-126	CYLINDER O-RING (D)	1	
12	876-168	CYLINDER PLATE	1	
13	884-172	CYLINDER	1	
14	876-167	CYLINDER RING	1	
15	884-179	CYLINDER SPRING	1	
16	877-123	CYLINDER O-RING (A)	1	
17	877-122	CYLINDER GUIDE	1	
18	877-124	CYLINDER O-RING (B)	1	
19	884-171	BODY ASS'Y	1	INCLUD. 33
20	878-184	WARNING LABEL	1	
21	878-359	PISTON BUMPER	1	
22	882-400	NOSE ASS'Y	1	INCLUD. 40
23	949-547	ROLL PIN D4X36 (10 PCS.)	1	
24	878-181	NYLOCK HEX. SOCKET HD. BOLT M5X16	4	
25	882-404	GUIDE PLATE	1	
26	881-747	LOCK LEVER	1	
27	949-685	ROLL PIN D3X20 (10 PCS.)	1	
28	877-873	SPRING (B)	1	
29	880-830	NYLOCK HEX. SOCKET HD. BOLT M5X12	1	
30	882-403	SLEEVE (A)	1	
31	949-658	HEX. SOCKET HD. BOLT M5X18 (10 PCS.)	1	
32	876-205	WASHER	2	
33		GRIP RUBBER	1	(SUPPLIED WITH ITEM NO. 601, 602)
34	877-131	GASKET (D)	1	
35	880-036	CAP	1	
36	949-821	HEX. SOCKET HD. BOLT M5X16 (10 PCS.)	5	
37	872-035	DUST CAP	1	
38	949-866	ROLL PIN D3X30 (10 PCS.)	2	
39		NAME PLATE	1	
40	949-540	ROLL PIN D2.5X20 (10 PCS.)	1	
41	875-643	PLUNGER SPRING	1	
42	878-155	PLUNGER (A)	1	
43	874-820	PLUNGER O-RING	2	
44	884-112	O-RING (I.D 10.7)	2	
45	884-174	VALVE BUSHING	1	
46	872-645	O-RING (P-9)	2	
47	884-177	VALVE SLEEVE	1	
48	876-316	O-RING (S-7)	1	
49	878-723	PLUNGER O-RING	1	
50	949-424	WASHER M5 (10 PCS.)	1	
51	884-176	PLUNGER (B) SPRING	1	

