

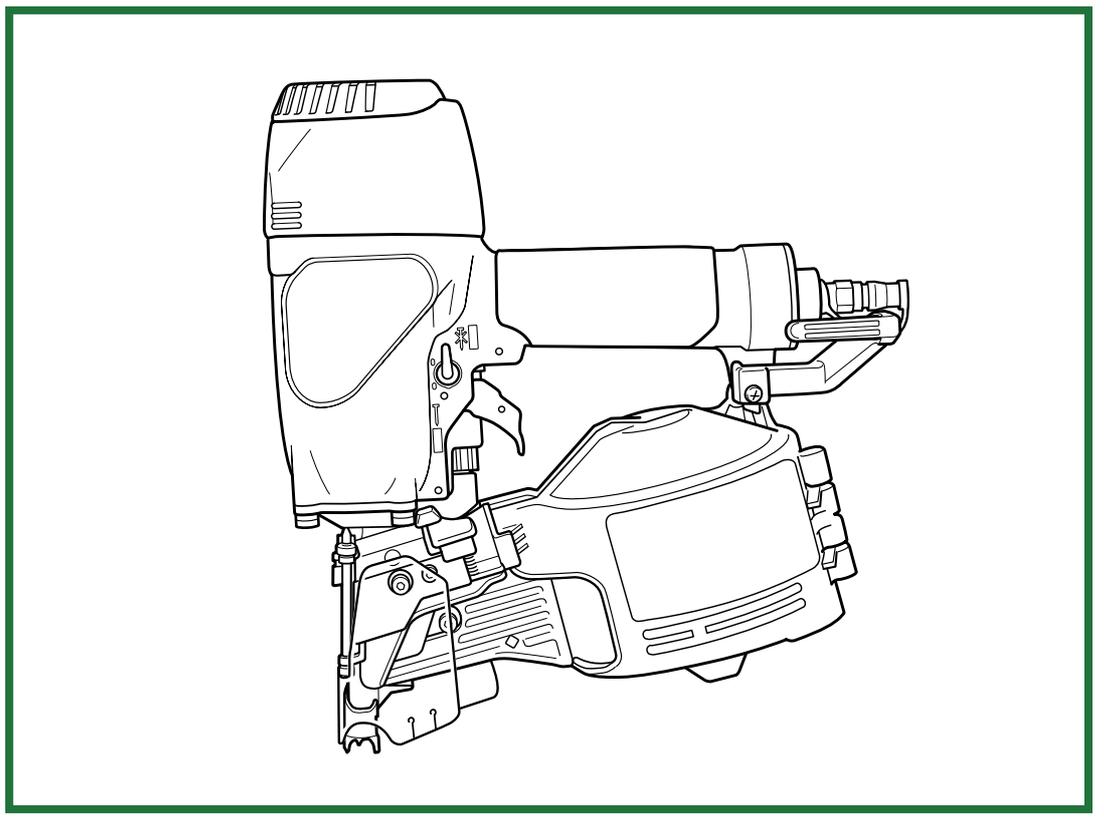
MODEL

NV 65AF3

HITACHI
POWER TOOLS

COIL NAILER
NV 65AF3

TECHNICAL DATA
AND
SERVICE MANUAL



N

LIST No. E005

Aug. 2002

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT

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 | MAX | CN565S |
| C | MAKITA | AN611 |
| Q | SENCO | SCN55S |



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1. PRODUCT NAME

Hitachi 2-1/2" Coil Nailer, Model NV 65AF3

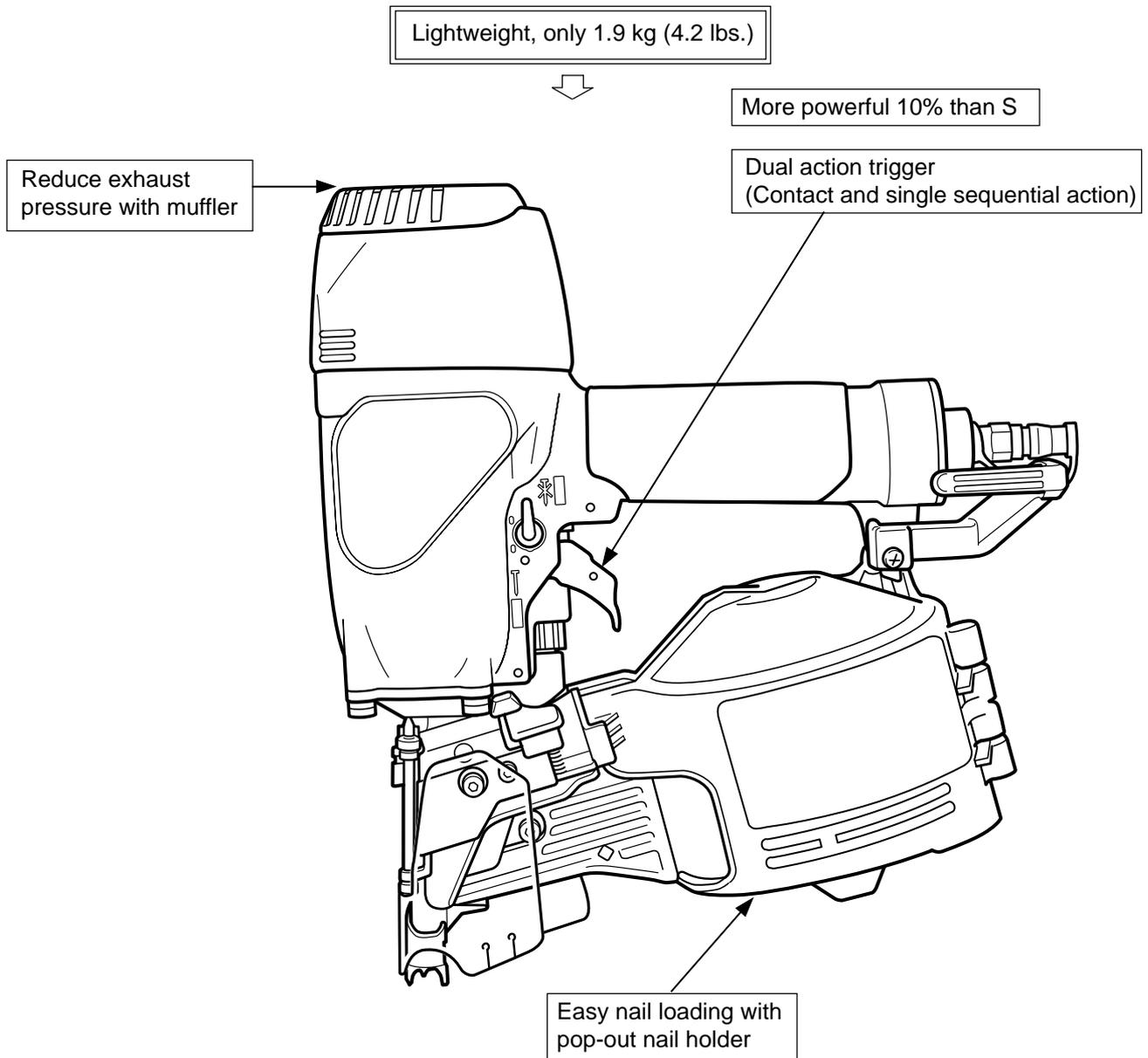
2. MARKETING OBJECTIVE

Hitachi coil nailer Model NV 65AF3 has already been introduced on Japan market. This time, it will be put on Oceania market to compete with S, C and Q. The Model NV 65AF3 is the most lightweight and powerful coil nailer in this class and equipped with a muffler to minimize the exhaust sound and blowing dust. In addition, the pop-out magazine allows easy nail loading from the top of the magazine thanks to the tiltable nail holder. Please expand the sales of the new Model NV 65AF3 on Oceania market.

3. APPLICATIONS

- Floor and wall framing
- Truss and window built-up
- Subflooring and roof decking

4. SELLING POINTS



5. SPECIFICATIONS

5-1. Specifications

| | | |
|---|--|--------------------|
| Model | NV 65AF3 | |
| Driving system | Reciprocating piston type | |
| Operating pressure | 5 – 8.5 kgf/cm ² (Gauge pressure) {70 – 120 psi, 4.9 – 8.3 bar} | |
| Driving speed | Min. 3 nails/sec. | |
| Weight | 1.9 kg (4.2 lbs.) | |
| Dimensions (Length x height x width) | 282 mm x 297 mm x 128 mm (10-13/16" x 11-5/8" x 5") | |
| Applicable nail sizes | Wire collated | Length: 32 – 65 mm |
| | Plastic sheet collated | Length: 32 – 50 mm |
| Nail capacity | 200 – 400 nails (1 coil) | |
| Air consumption | 1.6 ltr/cycle at 7 kgf/cm ² (0.056 ft ³ /cycle at 100 psi) | |
| Air inlet | PT 1/4 Thread | |
| Air plug | PT 1/4 Japanese | |
| Packaging | Corrugated cardboard box (sleeve type) | |
| Packaging dimensions (Length x height x width) | 355 mm x 410 mm x 170 mm (13" x 16-5/32" x 6-11/16") | |
| Standard accessories | *Carrying case • Eye protector • Oiler • Nose cap | |
| Optional accessories | | |

5-2. Nail Selection

The Model NV 65AF3 utilizes common round-head nails collated by wire or plastic sheet into coils from 200 to 400 nails. Applicable nail dimensions 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.

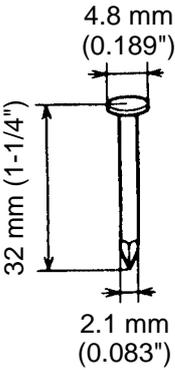
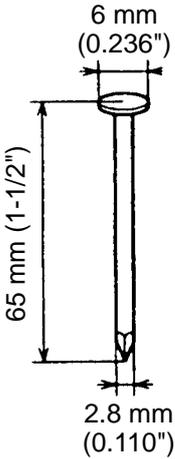
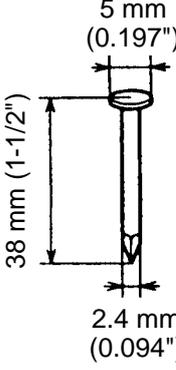
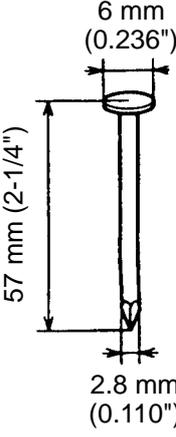
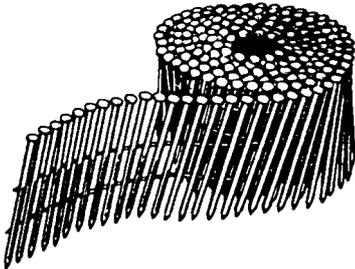
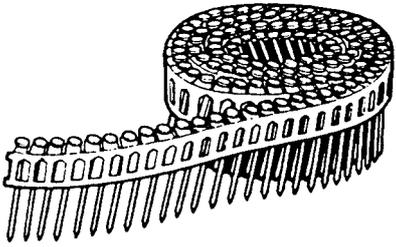
| Wire-collated nails | | Sheet-collated nails | |
|---|---|--|---|
| Min. | Max. | Min. | Max. |
|  <p>4.8 mm (0.189")</p> <p>32 mm (1-1/4")</p> <p>2.1 mm (0.083")</p> |  <p>6 mm (0.236")</p> <p>65 mm (1-1/2")</p> <p>2.8 mm (0.110")</p> |  <p>5 mm (0.197")</p> <p>38 mm (1-1/2")</p> <p>2.4 mm (0.094")</p> |  <p>6 mm (0.236")</p> <p>57 mm (2-1/4")</p> <p>2.8 mm (0.110")</p> |
|  | |  | |

Fig. 1 Dimensions of nails

| Type | L | d | d ₁ | L ₁ | L ₂ | D ₁ | D ₂ | H |
|------|----------------------------|------------------------------|----------------|----------------|-----------------|----------------------------|------------------------|----|
| A | 32 – 57 (1-1/4 – 3-1/4) | 2.1 – 2.3 (0.083 – 0.090) | 0.6 (0.024) | 12 (0.472) | 24 (0.945) | 22 – 30 (0.866 – 1.181) | 118 MAX (4.645 MAX) | 65 |
| B | 45 – 65 (1-3/4 – 2-1/2) | 2.5 – 2.8 (0.099 – 0.110) | 0.7 (0.028) | 19 (0.748) | 37.5 (1.476) | | | 72 |

Unit: mm (inch)

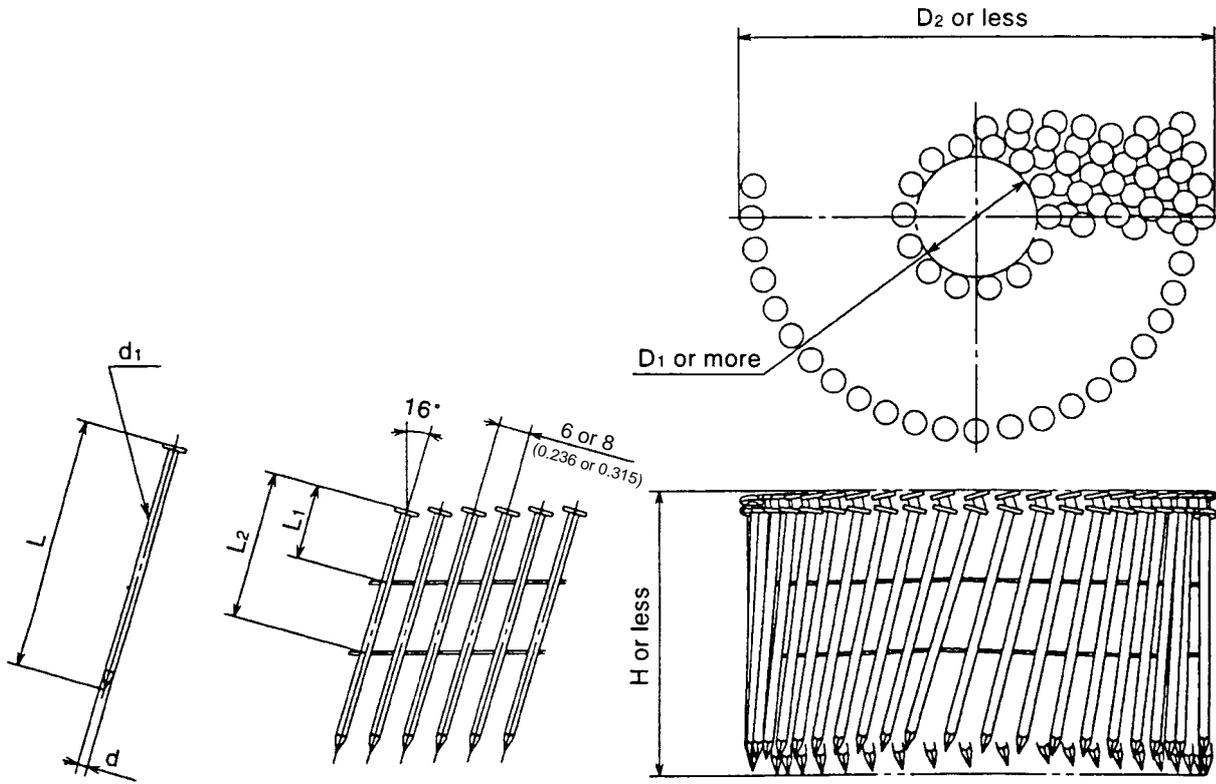


Fig. 2 Dimensions of wire-collated nails

| L | d | D ₁ | D ₂ | H |
|----------------------------|------------------------------|----------------|----------------|-----------------|
| 38 – 57 (1-1/2 – 2-1/4) | 2.3 – 2.8 (0.090 – 0.110) | 20 (0.787) | 118 (4.645) | 61.5 (2.421) |

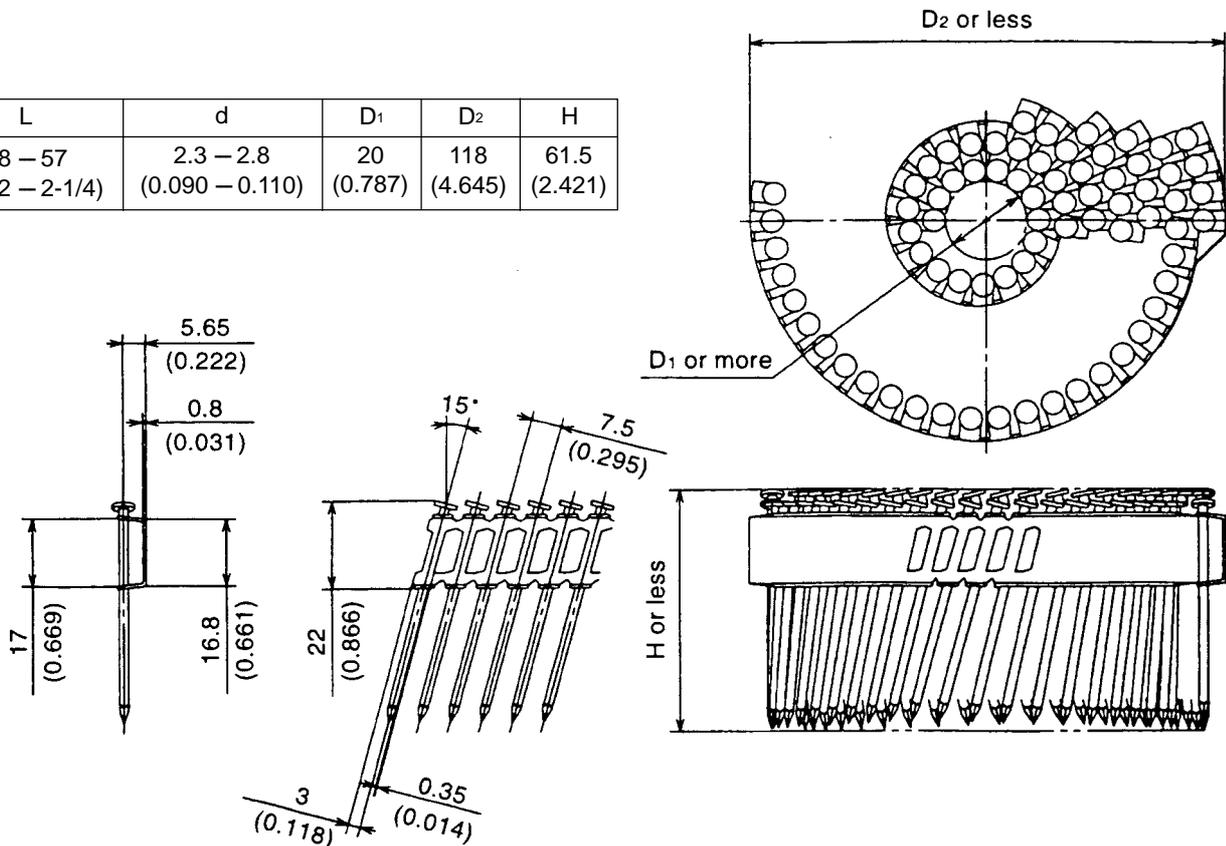


Fig. 3 Dimensions of sheet-collated nails

5-3. Nail Driving Force

Fig. 4 shows by type of wood and nail the nailer output energy provided by the supply pressure and the nailing energy required for driving the nail flush. Air pressure which exceeds the intersecting point between the nailer output energy and the required nailing energy for driving the nail allows the nail to be fully driven.

For example, when driving a nail of 2.5 mm dia. x 65 mm length (0.099" x 2-1/2") into a workpiece of hemlock with the Model NV 65AF3, a pressure of about 6 bar (6.1 kgf/cm², 87 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. 4 should be used as a reference only because those values vary depending on the type of wood, moisture content, and grain of wood.

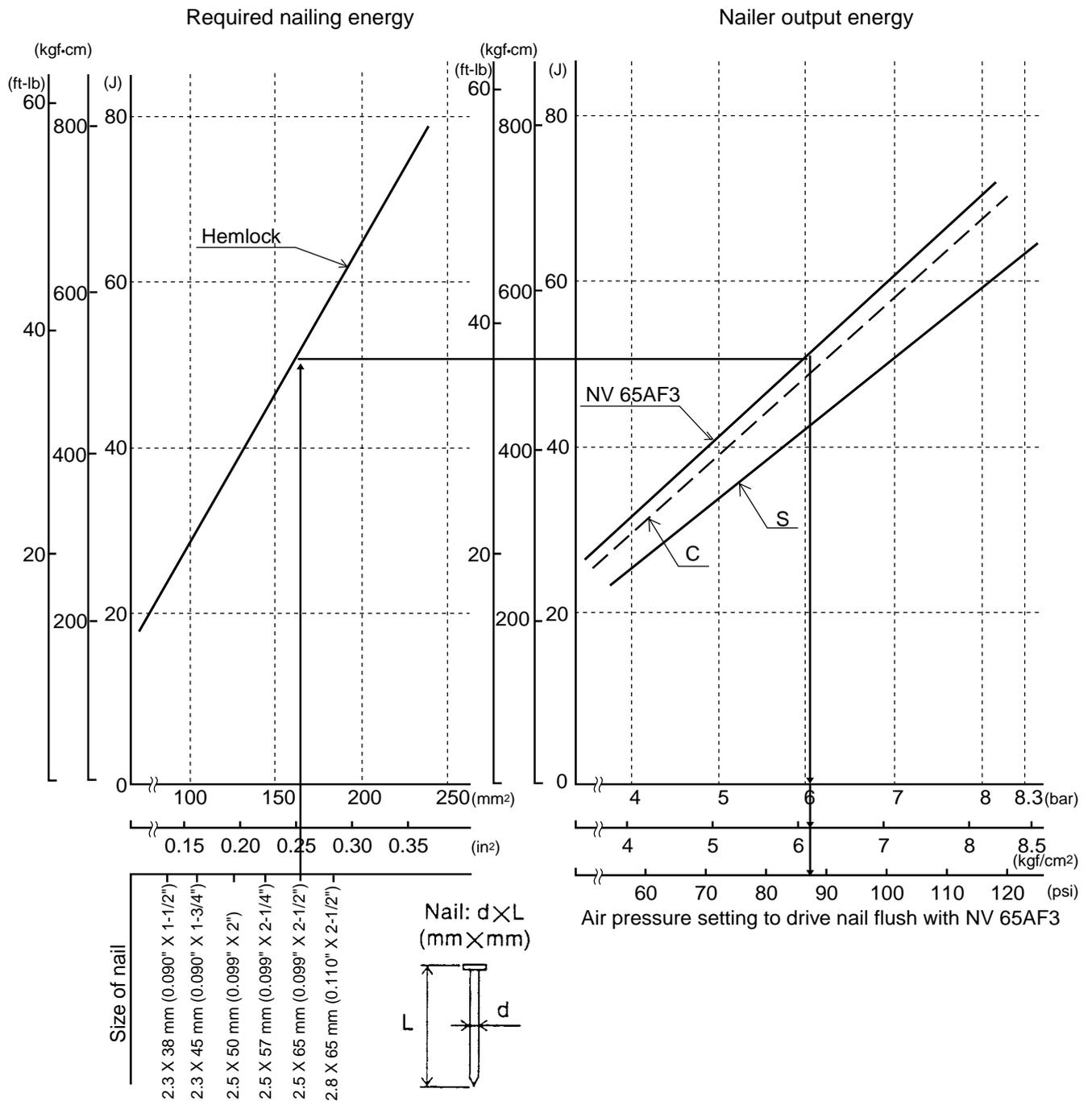


Fig. 4 Required nailing energy and nailer output energy

6. COMPARISONS WITH SIMILAR PRODUCTS

6-1. Specifications

| Maker | | HITACHI | | S | | C | | Q | |
|--------------------------------------|----------------|--|-----------|--|-----------|--|---------|-------------------|---------|
| Model name | | NV 65AF3 | | | | | | | |
| Operating pressure | | 5 – 8.5 kgf/cm ² (70 – 120 psi) (4.9 – 8.3 bar) | | 5 – 7 kgf/cm ² (70 – 100 psi) (4.9 – 6.9 bar) | | 4.5 – 8.5 kgf/cm ² (65 – 120 psi) (4.4 – 8.3 bar) | | – | |
| Weight | | 1.9 kg (4.2 lbs.) | | 2.2 kg (4.9 lbs.) | | 2.2 kg (4.9 lbs.) | | 2.6 kg (5.8 lbs.) | |
| Dimensions | Length | 282 (11-3/32) | | 273 (10-3/4) | | 332 (13-1/16) | | 267 (10-1/2) | |
| | Height | 297 (11-5/8) | | 318 (12-9/16) | | 317 (12-15/32) | | 327 (12-7/8) | |
| | Width | 128 (5) | | 130 (5-1/8) | | – | | – | |
| Air consumption at 100 psi (6.9 bar) | | 1.6 ltr/nail | | 1.5 ltr/nail | | 1.8 ltr/nail | | – | |
| Nail capacity | | 200 – 400 | | 250 – 400 | | 200 – 400 | | 350 | |
| Magazine type | | Poly-carbonate | | 6-nylon | | – | | – | |
| Nail loading | | Side open and pop-out nail holder | | Side open | | Side open | | Side open | |
| Applicable nails | Collation type | Wire | Sheet | Wire | Sheet | Wire | Sheet | Wire | Sheet |
| | Length | 32 – 65 | 38 – 57 | 38 – 65 | 32 – 65 | 32 – 65 | 32 – 50 | 32 – 65 | 32 – 65 |
| | Shank dia. | 2.1 – 2.8 | 2.4 – 2.8 | 2.1 – 2.5 | 2.3 – 2.5 | | | | |
| | Head dia. | 4.8 – 6.0 | 5.0 – 6.0 | 4.8 – 6.0 | 5.0 – 6.0 | | | | |
| Exhaust muffler (noise level) | | Provided (91 dB) | | Not provided (92 dB) | | Not provided (96 dB) | | Not provided (–) | |
| Trigger lock | | Provided | | Provided | | Provided | | Not provided | |
| Nailing system | | Auto contact/single | | Auto contact/single | | Contact/single | | Contact | |
| Depth adjustment | | Dial | | Dial | | Dial | | | |
| Toe nailing | | Aggressive | | Plain | | Aggressive | | Plain | |
| Dust filter | | Not provided | | Provided | | Provided | | Not provided | |
| Belt hook | | Provided | | Not provided | | Not provided | | Not provided | |
| Piston | | Piston ring | | O-ring | | O-ring | | O-ring | |
| Contact top | | Provided | | Provided | | Provided | | Provided | |
| Case | | Provided | | Provided | | – | | Not provided | |

6-2. Adjusting the Nailing Depth

The nailing depth is adjustable by turning the adjuster.

* Adjusting the adjuster (Fig. 5)

- Carry out test driving. If the nails are too deep, turn the adjuster to the shallow side (SHALLOW mark). If the nail depth is too shallow, turn the adjuster to the deep side (DEEP mark) (see Figs. 5 and 6). Depth is changed 1 mm with each rotation of the adjuster.
- Do not push up the pushing lever when turning the adjuster.
- Place the lock lever in "FREE" position when driving nails.

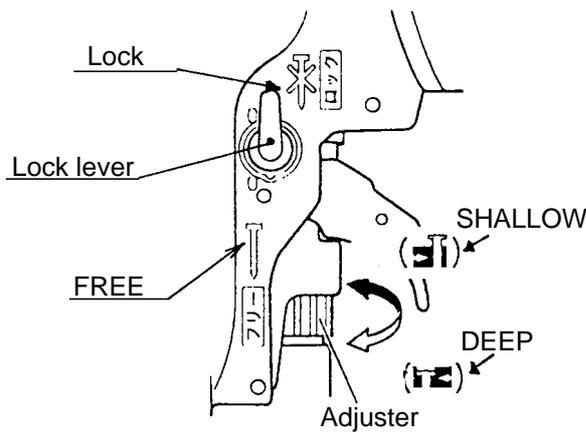


Fig. 5

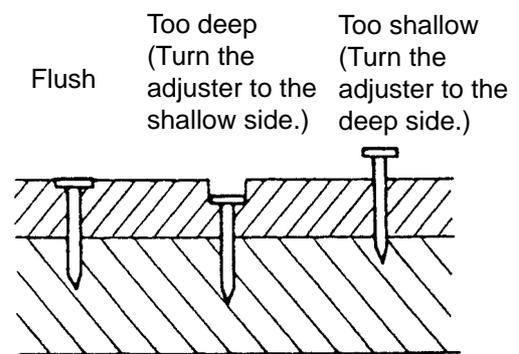
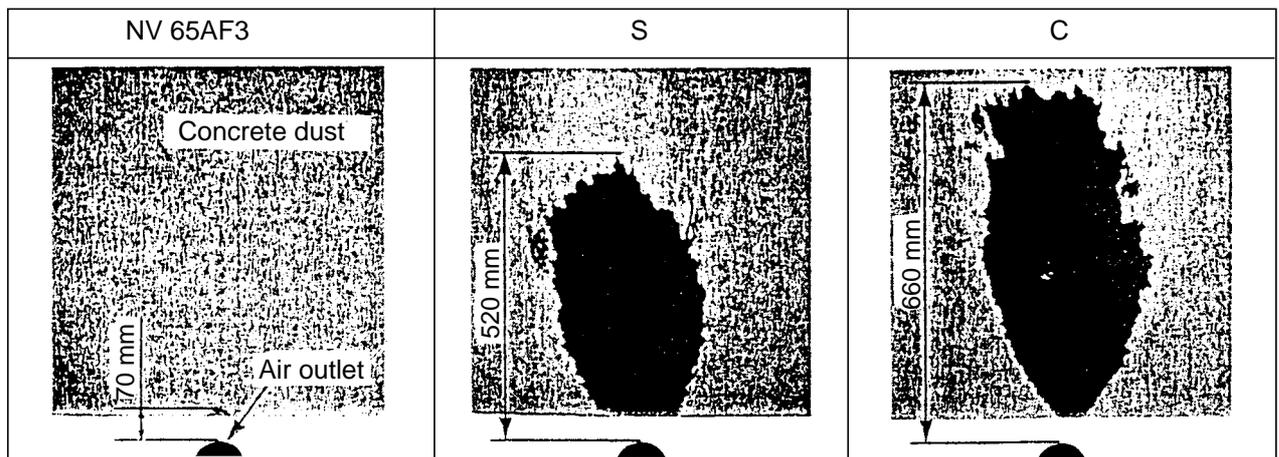


Fig. 6

6-3. Reduction of Exhaust Pressure with Muffler

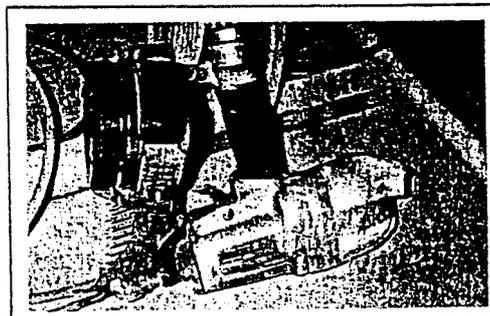
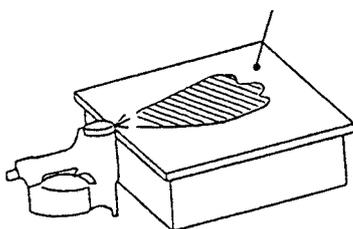
Comparison of blowing dust (The area where concrete dust is blown is shown in black.)



Conditions: Nailed 5 times at 0.69 Mpa {7 kgf/cm²}. Used concrete dust.

Testing method

Concrete dust is placed on a board.

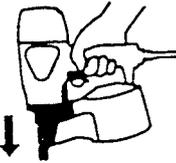
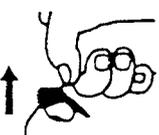
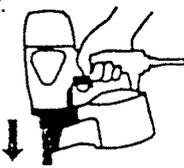


Actual example: A glove was set to the air outlet of the nailer to avoid blowing dust (at the interior finish work site)

6-4. Dual Action Trigger

The Model NV 65AF3 is equipped with a mechanism that allows switching the mode automatically between "single sequential actuation" and "contact action" (see section 9 for the mechanism). Although S features a similar automatic switching function, the mechanism is different from the Model NV 65AF3.

(1) Method of driving operation (automatic switching between single sequential actuation mode and contact action mode)

| | ① | ② | Nail driving | ③ | Nail driving |
|----------------------------------|---|---|--------------|--|-----------------|
| Single sequential actuation mode | Depress the pushing lever.  | Pull the trigger.  | ○ Driven | Depress the pushing lever.  | ✕ Not driven |
| Contact action mode | Pull the trigger.  | Depress the pushing lever.  | ○ Driven | Depress the pushing lever.  | ○ Driven |

(2) Precautions for using dual action trigger

- Nails are not driven even if the pushing lever is pushed against the workpiece again with the trigger pulled in the single sequential actuation mode. To drive nails continuously, remove finger from the trigger and operate according to the procedure of the contact action.
- When the Model NV 65AF3 is raised from the floor (pushing lever was pushed against the floor) with the trigger pulled, the Model NV 65AF3 turns into the single sequential actuation mode. Therefore, nails are not driven even if the pushing lever is pushed against the workpiece. Release the trigger and operate according to the procedure of the desired mode.

6-5. Precautions in Operation

(1) Pay special attention to the pressure, capacity and piping of the air compressor in order to keep the air pressure supplied to the Model NV 65AF3 within the range from 0.44 MPa {4.5 kgf/cm²} to 0.78 MPa {8 kgf/cm²}. Otherwise, ill effect may be given to the performance, service life and safety of the Model NV 65AF3.

(Be sure to install a regulator when using a high-pressure air compressor whose set pressure is 0.9 MPa {10 kgf/cm²} or more. In this case, adjust the air pressure at 0.78 MPa {8 kgf/cm²} or less.)

(2) The sliding portion of the piston is made of special materials and there is no need to lubricate every time before and after operation. However, if dust in the compressed air settles on the sliding portion, the Model NV 65AF3 will not work properly. Lubrication is effective to remove dust and also to prolong the service life of the Model NV 65AF3 keeping good performance. It is recommended to lubricate the Model NV 65AF3 one or two times per month. Supply 5-10 drops of lubricant into the air plug on the Model NV 65AF3.

When not in use for an extended period, supply lubricant and perform idle driving two or three times to lubricate the inside entirely, then apply a thin coat of lubricant to the steel parts to avoid rusting.

○ Usable lubricant is specified in the following table. Please recommend the customers to use Hitachi nailer/tacker oil.

| Type of oil | Brand or product name |
|----------------------------------|--|
| Hitachi Pneumatic Tool Lubricant | Shell sliding oil, Tonna S32 (Old Tonna T32); Code No. 877153 (1 oz. oil feeder) Code No. 874042 (4 oz. oil feeder) Code No. 876212 (1L (1 quart) can) |

(3) Be sure to drain the tank of the compressor securely to prevent deteriorated performance or malfunction of the Model NV 65AF3 due to rusting.

(4) Instruct the customers (especially the heavy users) to perform inspection and maintenance securely.

6-6. Loading Wire-collated Nails

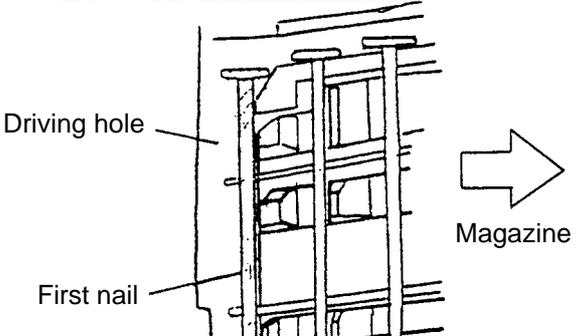
Observe the instructions specified in the caution plate on the magazine when loading wire-collated nails.

LOADING NAILS

- Insert the first nail into the driving hole and the second nail between the two paws of the Feeder.
- Fit the nail heads in the guide slot.
- Pulling the nails to the Magazine, swing the Nail Guide closed.

Driving hole

First nail



7. PRECAUTIONS IN SALES PROMOTION

In the interest of promoting the safest and most efficient use of the Model NV 65AF3 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.

7-1. Instruction Manual

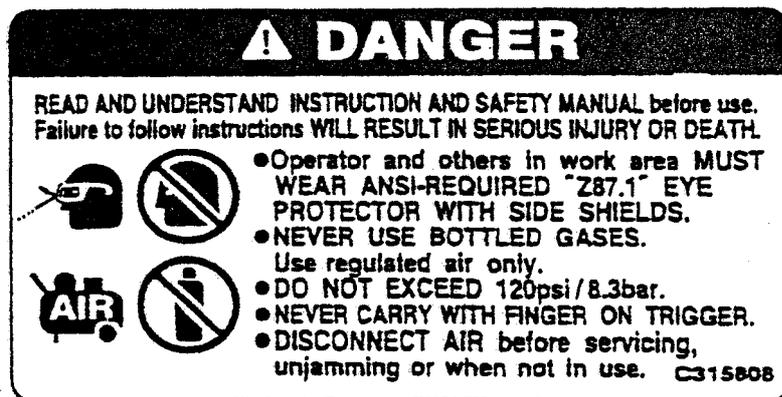
Although every effort is made in each step of design, manufacture, and inspection to provide protection against safety hazards, the dangers inherent in the use of any pneumatic tool cannot be completely eliminated.

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 and efficient use of the tool by the customer.

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

7-2. Warning Label

Each Model NV 65AF3 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 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 advise the customer properly. Please check your national and/or local regulations for applicable items. Some applicable items are outlined below.

| | |
|-------------------|--|
| 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 |
| AS/NZS | 1337: 1992 Eye Protection for Industrial Application |

8. MECHANISM AND OPERATION PRINCIPLE

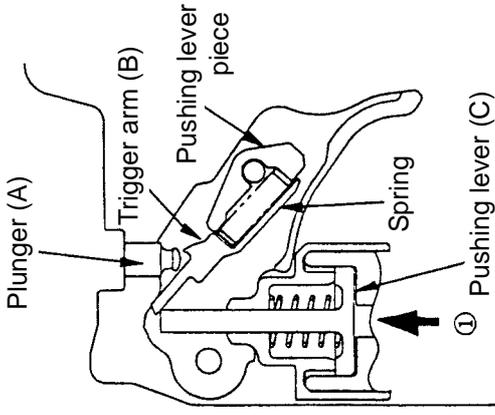
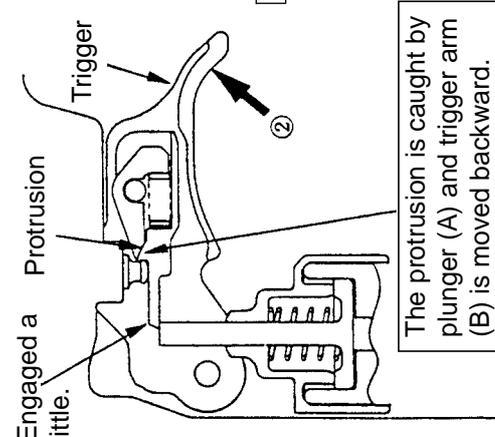
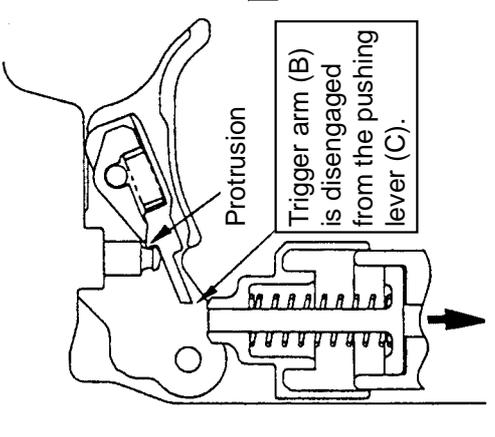
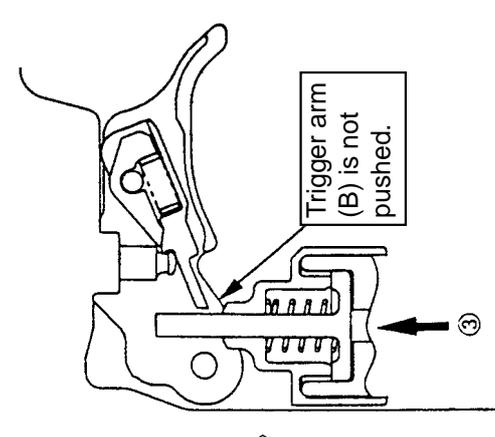
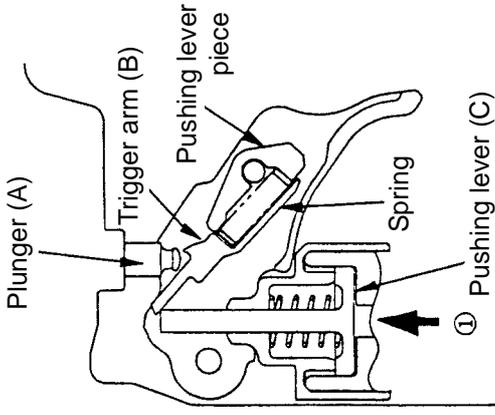
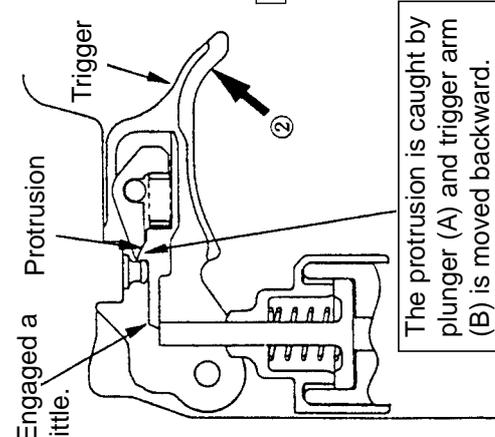
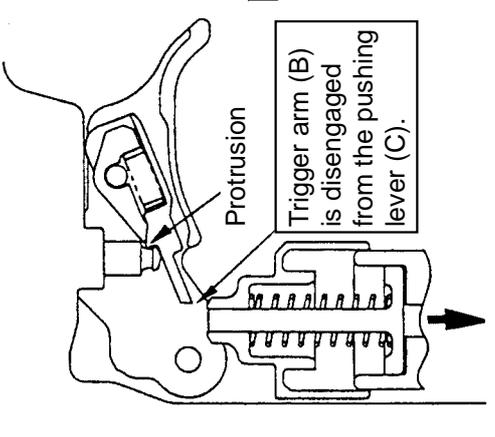
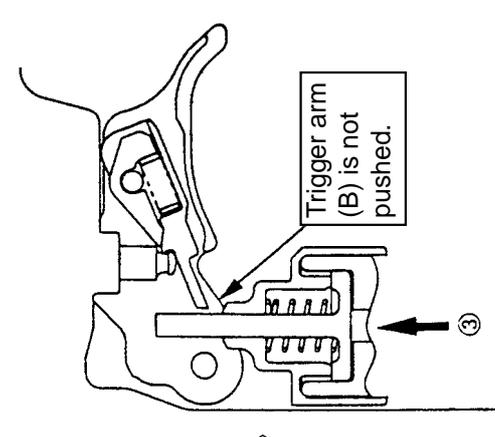
8-1. Mechanism

As illustrated in Fig. 7, the Model NV 65AF3 can be generally divided into four sections: output section, control valve section, driving section and magazine section.

Most of the parts of the above sections have been newly designed to allow the use of nails of 65 mm (2-1/2") length, though its basic construction is the same as that of the Model NV 65AD3. Primary differences from the Model NV 65AD3 are described below.

- Output section The body and exhaust cover have been newly designed for greater power output. In addition, the piston (driver blade), cylinder and cylinder plate have been newly designed to lengthen the piston stroke.
- Control valve section Trigger (A), trigger pin, valve bushing (A), valve piston (B) and plunger (A) have been newly designed for dual action trigger. Note that these parts are not interchangeable with those of the Model NV 65AD3.
- Driving section The nose feeder, nail guide, nail stopper (A), nail stopper (B) and pushing lever (B) have been newly designed for driving 65 mm (2-1/2") long nails.
- Magazine section The magazine cover, nail holder and holder shaft have been newly designed for driving 65 mm (2-1/2") long nails.

Mechanism of dual action trigger

| | | | | | | | |
|---|---|-------------------------------------|---|---|--|--|---|
| <p>① Depress the pushing lever.</p> |  | <p>② Pull the trigger.</p> |  | <p>The pushing lever is lowered by lifting the main body.</p> |  | <p>③ Even if the pushing lever is depressed, Not driven.</p> |  |
| <p>① Pull the trigger.</p> |  | <p>② Depress the pushing lever.</p> |  | <p>The pushing lever is lowered by lifting the main body.</p> |  | <p>③ If the pushing lever is depressed, Driven.</p> |  |
| <p>Single sequential actuation mode</p> | | <p>Contact action mode</p> | | | | | |

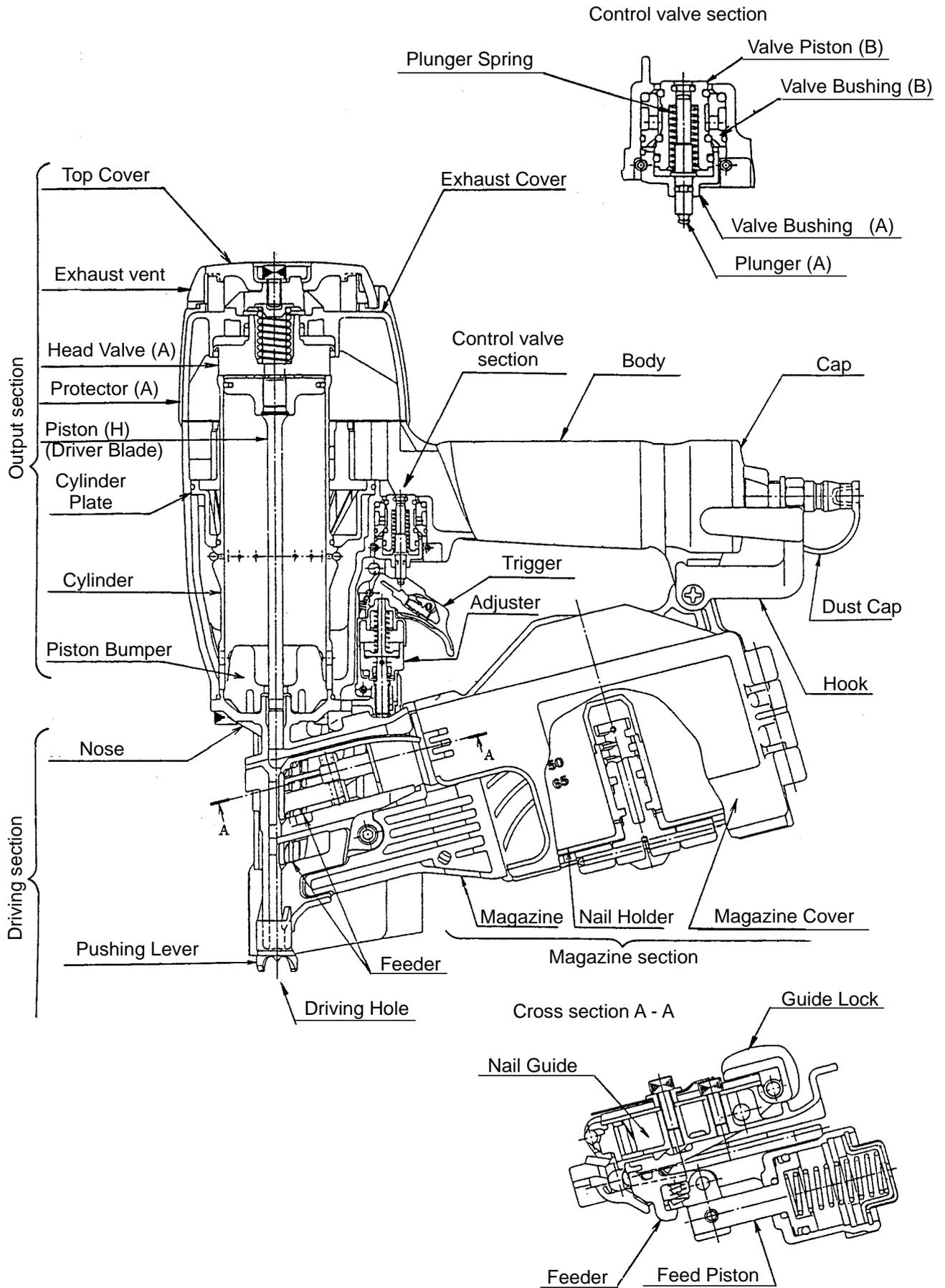


Fig. 7 Construction

8-2. Operation Principle

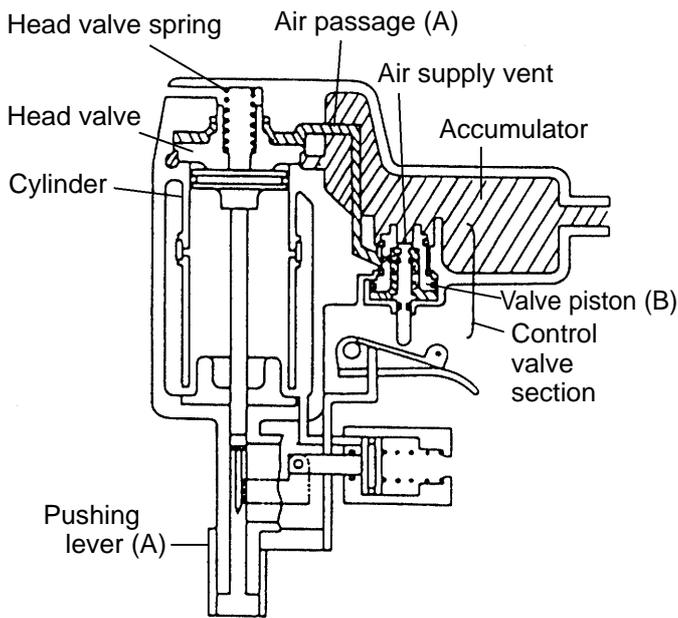


Fig. 8 Prior to nailing

(1) Prior to nailing (see Fig. 8)

1. When compressed air is supplied to the main body, it fills the accumulator (see diagram).
2. At the same time, the compressed air flows into the valve piston lower chamber of the control valve section, and pushes up the valve piston. Also, the compressed air flows from the air supply vent, through air passage (A), and into the head valve upper chamber where it simultaneously pushes down the head valve and the head valve spring to seal the upper surface of the head valve and the cylinder.

(2) During nailing (I) (see Fig. 9)

1. When plunger (A) is pushed up by operating both the pushing lever and trigger (A), the compressed air in the valve piston lower chamber is exhausted from the lower part of plunger (A). Then, the valve piston is pushed down by the compressed air from the accumulator so that it shuts off the air supply vent and releases the exhaust valve.

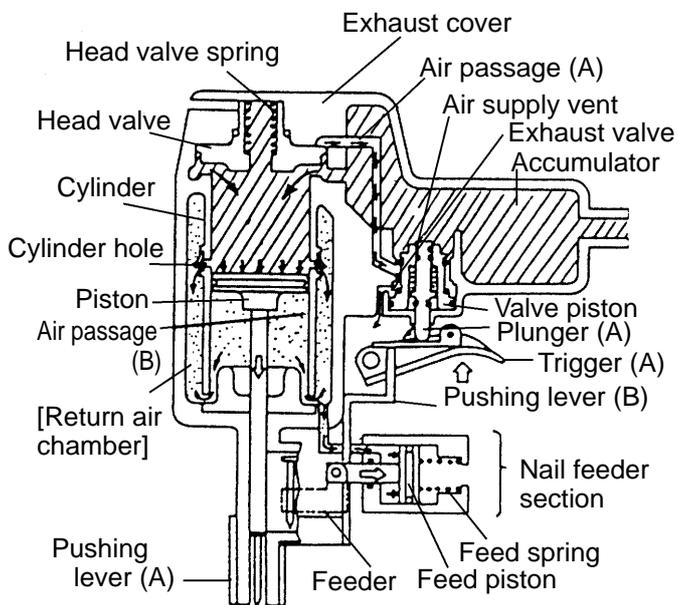


Fig. 9 During nailing (I)

2. When the exhaust valve opens, the compressed air in the head valve upper chamber is exhausted into the atmosphere through air passage (A).
3. The air pressure applied against the lower surface of the head valve soon exceeds the force of the head valve spring, and pushes the head valve up. The head valve is pushed fully upward by the compressed air, and seals the upper surface of the exhaust cover and the head valve.
4. When the head valve is pushed up, the compressed air flows rapidly into the cylinder and pushes down the piston to drive a nail. At this time, the compressed air flows through the cylinder hole, into the return air chamber, through air passage (B), and into the chamber at the left side of the feed piston in the nail feeder section. When the air pressure exceeds the force of the feed spring, the feeder moves to the right.

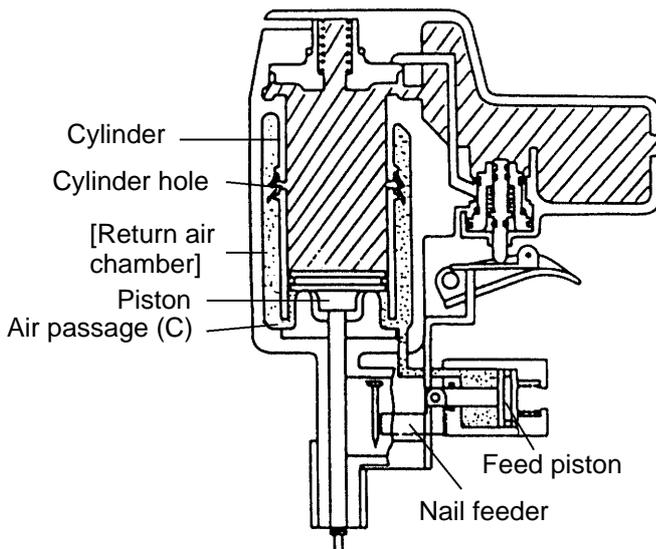


Fig. 10 During nailing (II)

(3) During nailing (II) (see Fig. 10)

1. When the piston moves down inside the cylinder, the air below the piston flows through air passage (C) under the cylinder and is accumulated in the return air chamber together with the compressed air flowing through the cylinder hole.
2. When the compressed air in the left chamber of the feed piston moves the feed piston fully to the right, the nail feeder (feed pawl) engages the next nail.

(4) After nailing (see Fig. 11)

1. When the trigger is released, the plunger goes down, the air supply vent opens, the valve piston goes up, and the compressed air in the accumulator passes through air passage (A) into the head valve upper chamber. The head valve is then pushed down by the head valve spring and the air pressure against the upper surface of the head valve. At the same time, the exhaust valve opens and the upper chamber of the cylinder is opened to the atmosphere.
2. When the head valve seals the upper surface of the cylinder, the compressed air accumulated in the return air chamber passes through air passage (C), presses on the lower surface of the piston, and forces the piston to return upward to its original position. Also, the compressed air above the piston is exhausted through the head valve hole.
3. The compressed air accumulated in the left chamber of the feed piston passes through air passage (B), goes into the return air chamber, and is then exhausted through the nose hole. The feed piston is then moved to the left by the force of the feed spring, and the feed pawl feeds the next nail into the ejection port. This completes one full nailing cycle.

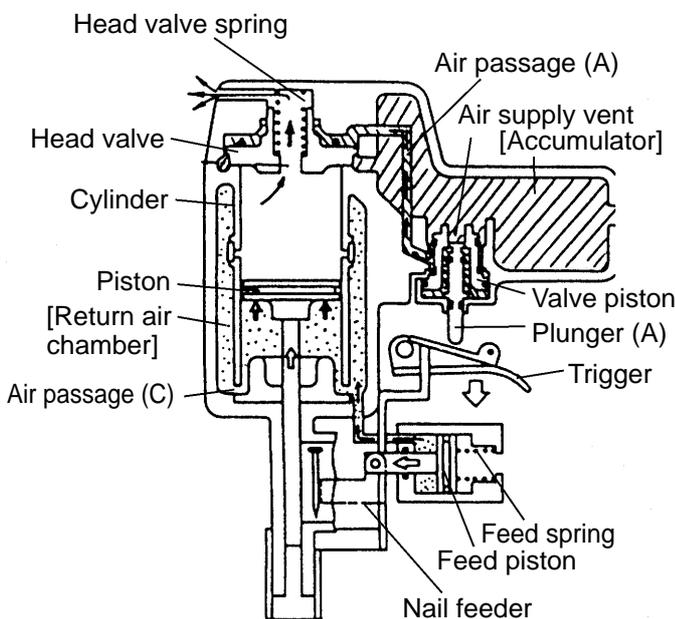


Fig. 11 During return

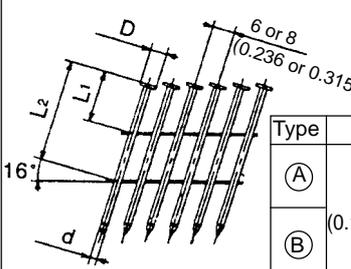
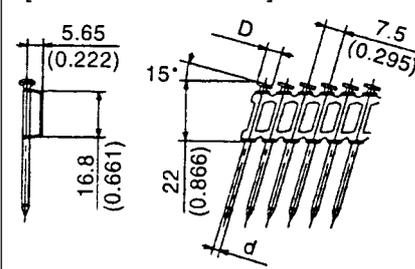
9. TROUBLESHOOTING GUIDE

9-1. Troubleshooting and Correction

| Problem | Possible cause (* : Most-common 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, too large or too small nail heads, abnormal collation, others). Nails or link pieces are jammed. Link pieces are deformed or broken. | <ul style="list-style-type: none"> Check that the magazine is correctly loaded with specified nails. | <ul style="list-style-type: none"> Use specified nails. Remove the abnormal nails and load the nailer with proper nails. |
| | <p><Driving section: Nose, feeder, feed piston, etc.></p> <ul style="list-style-type: none"> Sliding resistance of the feed piston is too high. | <ul style="list-style-type: none"> Remove the feed piston and check the feed piston sliding surface of the nose. | <ul style="list-style-type: none"> Apply grease to the sliding surface. Polish the scratched portion with sandpaper. Replace the parts. |
| | <ul style="list-style-type: none"> Nail guide face of the nose is abnormal (deformed, burrs or damaged). Feed spring or feeder spring is abnormal (damaged or fatigued). Feeder is abnormal (damaged or worn). | <ul style="list-style-type: none"> Check that the driving section is not abnormal (burrs, deformed, damaged or worn). | <ul style="list-style-type: none"> Debur the nail guide face. Correct the deformed part. Replace the abnormal parts. |
| | <ul style="list-style-type: none"> Nails are not correctly loaded in the groove of the nose. | <ul style="list-style-type: none"> Check that nails are correctly loaded in the groove of the nose. | <ul style="list-style-type: none"> Load nails in the correct position in the nose. |
| | <ul style="list-style-type: none"> Dust sticks to the feeder sliding portion of the nose, or lubrication is needed. | <ul style="list-style-type: none"> Open the nail guide and perform idle driving to check the feeder's operation. | <ul style="list-style-type: none"> Remove dust and then lubricate the sliding surface. |
| | <ul style="list-style-type: none"> Air pressure is too low. | | <ul style="list-style-type: none"> Adjust the air pressure to 5 – 8.5 kgf/cm² (4.9 – 8.3 bar, 70 – 120 psi). |
| | <ul style="list-style-type: none"> * • Air passage is clogged with broken pieces of piston bumper, etc. * • Feed piston chamber contains foreign matter such as broken pieces of piston bumper, etc. | | <ul style="list-style-type: none"> Remove foreign matter. Replace the piston bumper with new one. •Body ... Remove foreign matter in the return air chamber. •Nose ... Remove foreign matter in the air passage and the feed piston chamber. |

| Problem | Possible cause (* : Most-common cause) | Inspection method | Remedy |
|---|---|---|--|
| 1) Nails cannot be driven. (continued) | <ul style="list-style-type: none"> • Air leaks from the gap between the body and the nose. | | <ul style="list-style-type: none"> • Tighten screws and check the O-rings. |
| | <ul style="list-style-type: none"> • O-rings are worn or deformed. | | <ul style="list-style-type: none"> • Replace the O-ring. |
| | <ul style="list-style-type: none"> • O-rings need lubrication. | | <ul style="list-style-type: none"> • Apply grease or lubricate. |
| | <Nail guide section> <ul style="list-style-type: none"> • Nail guide face is abnormal (deformed, burrs or damaged). | <ul style="list-style-type: none"> • Check that the nail guide is not abnormal (worn, deformed, damaged, etc.). | <ul style="list-style-type: none"> • Correct or replace the parts. |
| | <ul style="list-style-type: none"> • Dust sticks to the inside of the nail guide groove, or lubrication is needed. | <ul style="list-style-type: none"> • Check the operation of nail stopper (A) and nail stopper (B). | <ul style="list-style-type: none"> • Remove dust and then lubricate. |
| | <ul style="list-style-type: none"> *• Spring is abnormal (missing, damaged or fatigued). • The claw ridge section of the nail stopper is abnormal (damaged, worn or burrs). | | <ul style="list-style-type: none"> • Replace the abnormal parts. |
| | <Magazine section> <Push lever> <ul style="list-style-type: none"> • Magazine | <ul style="list-style-type: none"> • Check that a nail does not catch on another nail in the magazine. • Check that a nail does not catch on some part of the magazine. • Check the height of the nail holder. | <ul style="list-style-type: none"> • Collate the nails correctly and reload the nailer with them. • Remove burrs or deformed part. Replace the parts. • Adjust the height of the nail holder correctly. |
| | <ul style="list-style-type: none"> • Push lever | <ul style="list-style-type: none"> • Check the operation of the push lever. | <ul style="list-style-type: none"> • Correct or replace the parts. |
| | <Output section: piston, driver blade, etc.> <ul style="list-style-type: none"> • Air pressure is too low. | <ul style="list-style-type: none"> • Open the nail guide and perform idle driving to check that the driver blade is returned. | <ul style="list-style-type: none"> • Adjust the air pressure to 5 – 8.5 kgf/cm² (4.9 – 8.3 bar, 70 – 120 psi). |
| | <ul style="list-style-type: none"> *• Piston ring is abnormal (worn or damaged). | | <ul style="list-style-type: none"> • Replace the piston ring. |
| | <ul style="list-style-type: none"> *• Piston bumper is abnormal. | | <ul style="list-style-type: none"> • Replace the piston bumper. |
| | <ul style="list-style-type: none"> • O-ring in the cylinder is abnormal (removed, deformed or damaged). | | <ul style="list-style-type: none"> • Reassemble or replace the parts. |
| | <ul style="list-style-type: none"> • Driver blade is abnormal (deformed, burrs or damaged). | | <ul style="list-style-type: none"> • Correct or replace the part. |

| Problem | Possible cause (* : Most-common cause) | Inspection method | Remedy |
|--|--|---|--|
| 1) Nails cannot be driven. (continued) | <ul style="list-style-type: none"> • Cylinder inside surface is abnormal (packed with dust, or worn). | <ul style="list-style-type: none"> • Check that nails can be driven at 5 kgf/cm² (4.9 bar, 70 psi). | <ul style="list-style-type: none"> • Remove dust and then lubricate. • Replace the part. |
| | <ul style="list-style-type: none"> • Head valve sliding surface is abnormal (seized or damaged, or lubrication is needed). | <ul style="list-style-type: none"> • Perform idle driving to check the driving operation. | <ul style="list-style-type: none"> • Replace the part. • Apply grease. |
| | <ul style="list-style-type: none"> • Head valve rubber (A) is abnormal (removed or damaged). | <ul style="list-style-type: none"> • Perform idle driving to check that the driver blade is not held in the down position. | <ul style="list-style-type: none"> • Replace the part. |
| | <ul style="list-style-type: none"> • Head valve spring is abnormal (fatigued or damaged). | | |
| | <Control valve section> <ul style="list-style-type: none"> • Plunger (A), valve piston (B), valve bushing (A) or valve bushing (B) is abnormal (seized or damaged). | <ul style="list-style-type: none"> • Disassemble the control valve section and check the O-rings. | <ul style="list-style-type: none"> • Replace the abnormal part. |
| | <ul style="list-style-type: none"> • O-rings or sliding surfaces are worn or need lubrication. | | <ul style="list-style-type: none"> • Replace the abnormal part. • Apply grease. |
| 2) Nails are driven but bent. | *• Adjuster is raised too high for short nails. | <ul style="list-style-type: none"> • Check that the adjuster is not raised too high. | <ul style="list-style-type: none"> • Turn the adjuster lower (lower the pressure). |
| | <ul style="list-style-type: none"> • Nails are not completely fed into the injection port. *• Unspecified nails are used. | <ul style="list-style-type: none"> • See item 1). | <ul style="list-style-type: none"> • See item 1). |
| | *• Driver blade is worn. | <ul style="list-style-type: none"> • Check that the driver blade tip is not abnormally worn. | <ul style="list-style-type: none"> • Replace the part. |
| | <ul style="list-style-type: none"> • Workpiece is too hard. | <ul style="list-style-type: none"> • Check if a nail is bent even when driven into soft wood. | <ul style="list-style-type: none"> • Nailer cannot be used because the material is beyond its applicable range. |
| 3) Nails cannot be driven into the workpiece completely: the heads cannot be made flush. | <ul style="list-style-type: none"> • Adjuster is incorrectly set. | <ul style="list-style-type: none"> • Turn the adjuster to the lowest position and then drive nails. | <ul style="list-style-type: none"> • Set the adjuster to the optimum position. |
| | <ul style="list-style-type: none"> • Air pressure is too low. | | <ul style="list-style-type: none"> • Adjust air pressure to 5 – 8.5 kgf/cm² (4.9 – 8.3 bar, 70 – 120 psi). |
| | <ul style="list-style-type: none"> • Workpiece is too hard. | <ul style="list-style-type: none"> • Check if a nail is bent even when driven into soft wood. | <ul style="list-style-type: none"> • Nailer cannot be used because the material is beyond its applicable range. |

| Problem | Possible cause (* : Most-common cause) | Inspection method | Remedy | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|--|---|-----------------|--|--|--|------|---|---|----------------|----------------|---|----------------------------|------------------------------|---------------|---------------|------------------------------|---------------|-----------------|---|--|--|--|--|-----------------|--|---|---|--------------------------|------------------------------|--|
| 3) Nails cannot be driven into the workpiece completely: the heads cannot be made flush. (continued) | *• Driver blade is worn. | • Perform idle driving to check the driver blade is projected from the nose tip. | • Replace the part. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | *• Piston ring is abnormal (worn or damaged). • Cylinder inside surface is abnormal (worn or rough). | • Disassemble the output section and check the piston ring and the inside of the cylinder for abnormality. | • Replace the abnormal part. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | • Exhaust valve rubber (A) is abnormal (worn or damaged, or seal face is scratched). | • Disassemble the exhaust valve rubber (A) and check for abnormality. | • Replace the part. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | • Head valve sliding surface is abnormal (seized or damaged, or lubrication is needed). | • Check the sliding surface for abnormality and lubrication. | • Replace the abnormal part. • Apply grease. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4) Nails jam. | <p><Nails></p> <ul style="list-style-type: none"> *• Unspecified nails are used. *• Abnormal nails are mixed. *• Nail heads are too large or too small. <p>[Wire-collated nails]</p> <ul style="list-style-type: none"> • Collating wires are abnormal (broken, welding failed, deformed or welding position failed). *• Collating wires are deformed (deformed in collation angle or collation pitch). <p>[Sheet-collated nails]</p> <ul style="list-style-type: none"> *• Collating sheets are abnormal (deformed or broken). • Nails are removed from the sheets. | <ul style="list-style-type: none"> • Check if the specified nails are used. • Check the nails as follows. <p>[Wire-collated nails]</p>  <table border="1" data-bbox="989 1164 1500 1344"> <thead> <tr> <th colspan="5">Unit: mm (inch)</th> </tr> <tr> <th>Type</th> <th>D</th> <th>d</th> <th>L₁</th> <th>L₂</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Ⓐ</td> <td rowspan="2">4.8 – 6 (0.189 – 0.236)</td> <td>2.1 – 2.3 (0.083 – 0.090)</td> <td>12 (0.472)</td> <td>24 (0.945)</td> </tr> <tr> <td>2.5 – 2.8 (0.099 – 0.110)</td> <td>19 (0.748)</td> <td>37.5 (1.476)</td> </tr> <tr> <td>Ⓑ</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>[Sheet-collated nails]</p>  <table border="1" data-bbox="1149 1523 1500 1657"> <thead> <tr> <th colspan="2">Unit: mm (inch)</th> </tr> <tr> <th>D</th> <th>d</th> </tr> </thead> <tbody> <tr> <td>5 – 6 (0.197 – 0.236)</td> <td>2.4 – 2.8 (0.094 – 0.110)</td> </tr> </tbody> </table> | Unit: mm (inch) | | | | | Type | D | d | L ₁ | L ₂ | Ⓐ | 4.8 – 6 (0.189 – 0.236) | 2.1 – 2.3 (0.083 – 0.090) | 12 (0.472) | 24 (0.945) | 2.5 – 2.8 (0.099 – 0.110) | 19 (0.748) | 37.5 (1.476) | Ⓑ | | | | | Unit: mm (inch) | | D | d | 5 – 6 (0.197 – 0.236) | 2.4 – 2.8 (0.094 – 0.110) | <ul style="list-style-type: none"> • Use specified nails. • Remove the abnormal nails and load the nailer with proper nails. |
| Unit: mm (inch) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Type | D | d | L ₁ | L ₂ | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ⓐ | 4.8 – 6 (0.189 – 0.236) | 2.1 – 2.3 (0.083 – 0.090) | 12 (0.472) | 24 (0.945) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 2.5 – 2.8 (0.099 – 0.110) | 19 (0.748) | 37.5 (1.476) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ⓑ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Unit: mm (inch) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D | d | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 – 6 (0.197 – 0.236) | 2.4 – 2.8 (0.094 – 0.110) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

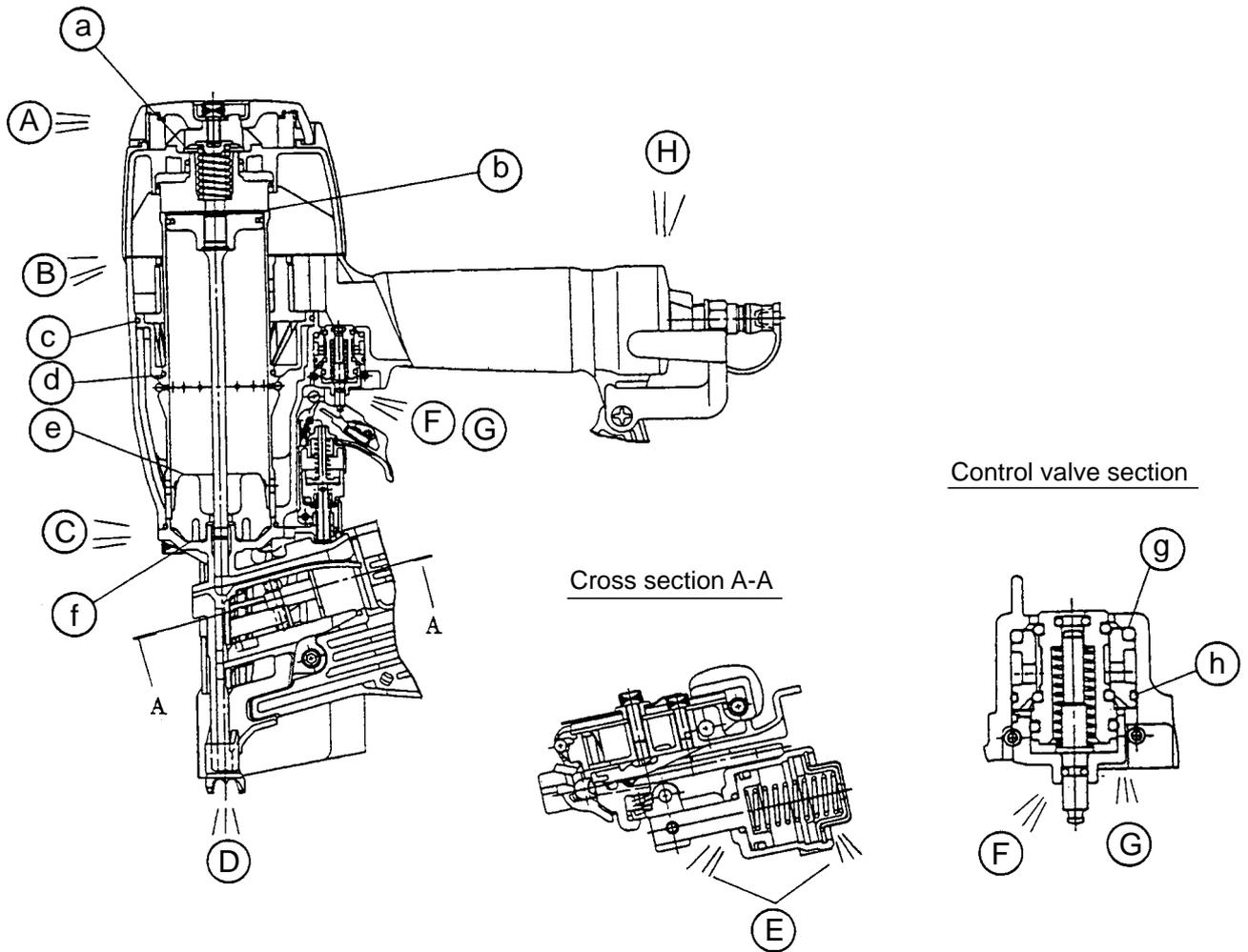
| Problem | Possible cause (* : Most-common cause) | Inspection method | Remedy |
|------------------------------|---|--|--|
| 4) Nails jam. (continued) | <Body: Nail feeding is incomplete.> <ul style="list-style-type: none"> • Feeder is worn and the sliding section is abnormal. • Nail guide face of the nose or the sliding section of the feeder is abnormal (deformed, burrs or damaged). • Feed spring or feeder spring is abnormal (damaged, fatigued or removed). | <ul style="list-style-type: none"> • Open the nail guide and check the position of the feeder claw. | <ul style="list-style-type: none"> • Replace the abnormal part. |
| | <Body: Nail guide section> <ul style="list-style-type: none"> • Nail guide section is abnormal. | <ul style="list-style-type: none"> • See item "1) Nail guide section". | <ul style="list-style-type: none"> • See item "1) Nail guide section". |
| | <Driver blade is not returned completely.> <ul style="list-style-type: none"> • See item "1) Output section: piston, driver blade, etc." | <ul style="list-style-type: none"> • Perform idle or actual driving to check if the driver blade is returned completely. | <ul style="list-style-type: none"> • See item "1) Output section: piston, driver blade, etc." |
| | <ul style="list-style-type: none"> • Air pressure is too high. | <ul style="list-style-type: none"> • Nails may be jammed if driven at a high pressure and high speed. Check pressure and driving speed. | <ul style="list-style-type: none"> • Adjust the air pressure to 5 – 8.5 kgf/cm² (4.9 – 8.3 bar, 70 – 120 psi). |

9-2. Possible Causes and Corrections of Air Leakage

Air leakage repair location

- Repair procedure

- (1) Check the points of the following parts marked by an asterisk for abnormal condition.
- (2) Next, check the seal parts (marked with a double circle) for wear, flaws or damage.
- (3) And then, check other places.



| Air leakage portion | Possible cause | |
|-----------------------------------|---|---|
| | When the Trigger is turned off | When the Trigger is turned on |
| Ⓐ Exhaust port | <ul style="list-style-type: none"> ○ Abnormality in Head Valve (A) [12] and Cylinder [17] [Wear and deformation of the sealed face of the ⓑ section] ○ Abnormality in O-ring (P-22) [11] or wear, deformation and/or breakage of Head Valve (A) [12] ● Abnormality (damage) in the Exhaust Cover [7] | <ul style="list-style-type: none"> ○ Abnormality in Head Valve (A) [12] [Wear, deformation and/or breakage of the section ⓐ] * Abnormality in the inner face [the section ⓐ] in the Exhaust Cover [7] [Deformation and dust clogging in the section ⓐ] |
| Ⓑ Exhaust cover | <ul style="list-style-type: none"> ● Looseness of the Hex. Socket Hd. Bolt M5 x 25 [6] ○ Damage of Gasket (A) [8] ● Abnormality in the sealed face of the Body [23], the Exhaust Cover [7] and the Cylinder [17] | / |
| Ⓒ Nose 1 (Feed piston passage) | | |
| Ⓓ Nose 2 | <ul style="list-style-type: none"> * Abnormality (breakage and/or scratches) in the O-Ring (S-70) [13] of the Cylinder Plate [14] ● Abnormality in the sealing faces [the sections Ⓒ and/or Ⓓ] of the Cylinder Plate [14], Body [23] and/or the Cylinder [17] | <ul style="list-style-type: none"> ○ Abnormality [deformation, crack and/or damage of the sections ⓔ and ⓕ] in the Piston Bumper [25] ● Deformation of the Piston (H) [20] (The deformation of driver blade abnormality in sealed faces) ● The deformation of the face ⓕ of the Body [23] ○ Abnormality (wear, deformation, breakage and/or scratches) in the O-Ring (S-46) [15] |
| Ⓔ Feed piston | | <ul style="list-style-type: none"> ○ Abnormality (wear, breakage and/or scratches) in the O-ring (P-21) [78] of the Feed Piston [79], or the wear and/or deformation of the Nose [27] on the sliding face ○ Abnormality (wear, breakage and/or scratches) in the O-ring (S-46) [15] of the Nose [27], or wear, deformation and/or scratches of the Feed Piston [79] on the sliding face |
| Ⓕ Control valve 1 | <ul style="list-style-type: none"> ○ Abnormality (wear, breakage and/or scratches) in the O-ring (I.D11) [71] of Valve Piston (B) [70] ○ Abnormality (wear, breakage and/or scratches) in the O-ring (I.D 8.8) [69] (lower side) of Valve Piston (B) [70] ○ Abnormality (breakage and/or scratches) in the O-ring (S-18) [68] of Valve Bushing (B) [67] * Abnormality in the inner face [the section (h)] of the valve chamber of the Body [23] | <ul style="list-style-type: none"> ○ Abnormality (wear, breakage and/or scratches) in the O-ring (I.D 8.8) [69] (upper side) of Valve Piston (B) [70] ○ Abnormality (breakage and/or scratches) in the Head Valve O-ring (I.D 16.8) [66] of Valve Bushing (B) [67] * Abnormality in the upper face [the section (g)] of the valve chamber of the Body [23] |

| Air leakage portion | Possible cause | |
|---------------------|---|---|
| | When the Trigger is turned off | When the Trigger is turned on |
| Ⓒ Control valve 2 | <ul style="list-style-type: none"> ◦ Abnormality (wear, breakage and/or scratches) in the O-ring (I.D 1.8) [74] ◦ Abnormality (deformation and/or scratches) of the sliding face of Plunger (A) [73] • Abnormality (deformation and/or scratches of the sliding face of Plunger (A) [73] in Valve Bushing (A) [75] | <ul style="list-style-type: none"> ◦ Abnormality (wear, breakage and/or scratches) in the O-ring (S-4) [55] in the inside of Valve Piston (B) [70] ◦ Abnormality (deformation and/or scratches of the sliding face of Plunger (A) [73] in Valve Piston (B) [70] |
| Ⓓ Cap | <ul style="list-style-type: none"> ◦ Abnormality (wear, breakage and/or scratches) in O-ring (I.D 37.2) [37]. • Looseness of the Cap [38] • Abnormality (damage, deformation and/or scratches) in the sealed faces of the Body [23] and the Cap [38] | |

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

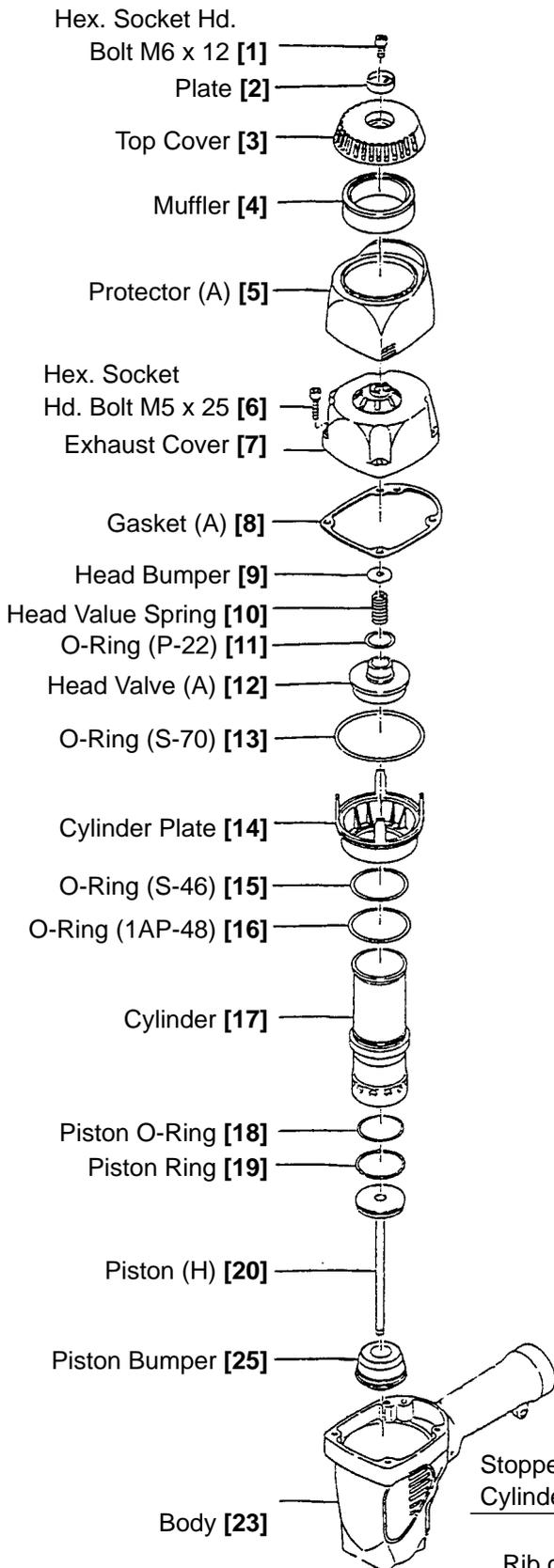
- Apply grease (Nippeco SEP-3A, Code No. 930035) to the O-rings and O-rings' sliding portions. When installing the O-rings, be careful not to damage the O-rings and prevent dirt entry.
- Oil required: Hitachi pneumatic tool lubricant
 - 1 oz (30 cc) Oil feeder (Code No. 877153)
 - 4 oz (120 cc) Oil feeder (Code No. 874042)
 - 1 quart (1 ltr) Can (Code No. 876212)
- If Gasket (A) **[8]** 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

| Bolt, screw and cap | Tightening torque [N·m (kgf·cm, ft-lbs)] |
|---|---|
| Nylock High Tension Bolt M6 x 20 [28] | 16.2 ± 1.5 (165 ± 15, 11.9 ± 1.1) |
| Hex. Socket Hd. Bolt M6 x 12 [1] | 9.8 ± 2.0 (100 ± 20, 7.2 ± 1.5) |
| Hex. Socket Hd. Bolt M5 [6] [101] | 8.3 ± 0.5 (85 ± 5, 6.7 ± 0.4) |
| Nylock Hex. Socket Hd. Bolt M4 [110] [114] | 4.4 ± 0.3 (45 ± 3, 3.2 ± 0.2) |
| Machine Screw M5 x 35 (Black) [65] | 2.0 ± 0.5 (20 ± 5, 1.5 ± 0.4) |
| Cap [38] | 24.5 ± 4.9 (250 ± 50, 18 ± 3.6) |

10-2. Disassembly and Reassembly of the Output Section

(1) Disassembly and reassembly of the Exhaust Cover [7], Head Valve (A) [12], Piston (H) [20], Cylinder [17], etc.

(See Figs. 12, 13 and 14.)



[Tools required]

- 4 mm hex. bar wrench
- 5 mm hex. bar wrench

(a) Disassembly (Fig. 12)

- Loosen the Hex. Socket Hd. Bolt M6 x 12 [1]. Then the Plate [2], Top Cover [3], Muffler [4] and Protector (A) [5] can be removed.

- Loosen the four Hex. Socket Hd. Bolts M5 x 25 [6] and remove the Exhaust Cover [7]. Then the parts forming the output section such as Piston (H) [20], Cylinder [17] and Piston Bumper [25] can be taken out.

(b) Reassembly

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

- Apply SHELL TONNA S32 oil (standard accessory) to the inside of the Piston Ring [19], Piston O-ring [18] and Cylinder [17].
- Apply grease to O-Ring (S-46) [15] and O-ring (1AP-48) [16].
- Fit the Cylinder [17] in the Cylinder Plate [14] facing the stopper to the Piston Bumper [25] side. Mount the Cylinder Plate [14] to the Body [23] aligning the stopper groove of the Cylinder Plate [14] with the rib of the Body [23].

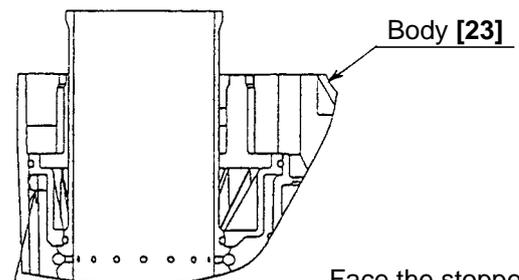


Fig. 13

Face the stopper of the Cylinder Plate [14] to the Piston Bumper [25] side.

Stopper of the Cylinder Plate [14]

Rib of the Body [23]

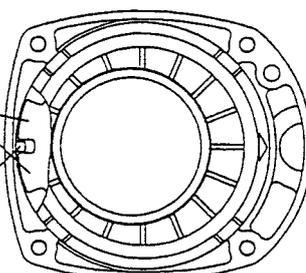


Fig. 14

Fig. 12 Disassembly and reassembly of piston, cylinder and exhaust cover

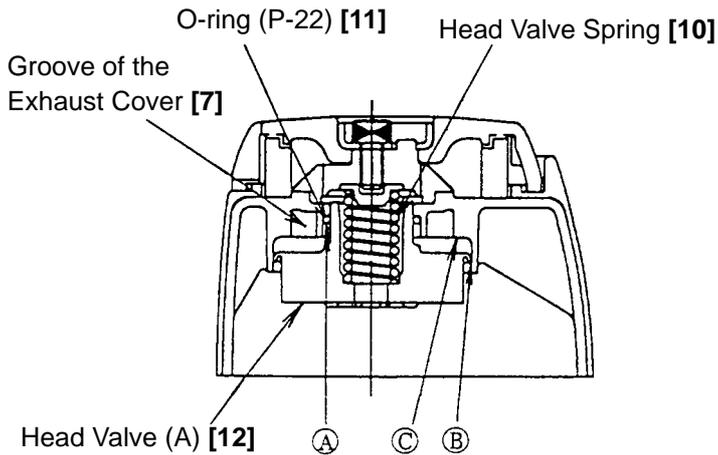


Fig. 15

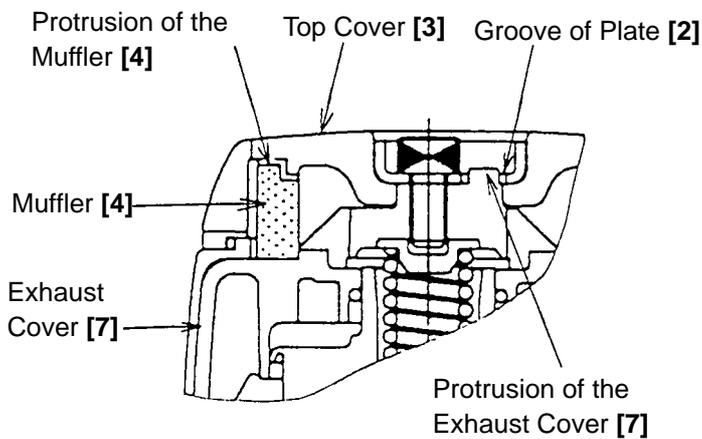


Fig. 16

- Push Head Valve (A) [12] in the Exhaust Cover [7] together with O-ring (P-22) [11] for easier mounting. Before mounting, apply grease to the sliding portion (A) and the lip portions (B) and (C) of Head Valve (A) [12] and seal about 0.5 g of grease into the groove of the Exhaust Cover [7] (Fig. 15).
- Apply SHELL TONNA S32 oil (standard accessory) to the inside of the Cylinder [17] before mounting.
- Align the hole of Gasket (A) [8] with the air hole of the Body [23].
- Apply grease to the sealing surface and O-ring (S-70) [13] before mounting.
- Mount the Muffler [4] facing its protruded side to the Top Cover [3] side.
- Fit the protrusion of the Exhaust Cover [7] in the groove of the Plate [2].

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

[Tools required] Roll pin pullers (3 mm dia. and 2.5 mm dia.)

(a) Disassembly (Fig. 17)

- Remove the Retaining Ring (E-type) for D4 Shaft [21] to remove the lock knob.
- Pull out the two Roll Pins D3 x 28 [60] with the roll pin puller (3 mm dia.). Then the trigger unit can be removed from the Pushing Lever Guide [47]. The trigger unit can be disassembled by removing the Roll Pin D2.5 x 16 [44].
- Pull out the Roll Pins D3 x 22 [59] and the Roll Pins D3 x 28 [60] with the roll pin puller (3 mm dia.). Remove the control valve section in accordance with the following procedure.
 - ① Remove the Exhaust Cover [7] in accordance with the procedure of 2.2 (1) on the previous page.
 - ② Insert a thin rod into the Body [23] through the top hole and push the top surface of Valve Piston (B) [70] as shown in Fig. 18. Then the parts forming the control valve section except Valve Bushing (B) [67], O-ring (S-18) [68] and Head Valve O-ring (I.D 16.8) [66] can be taken out.

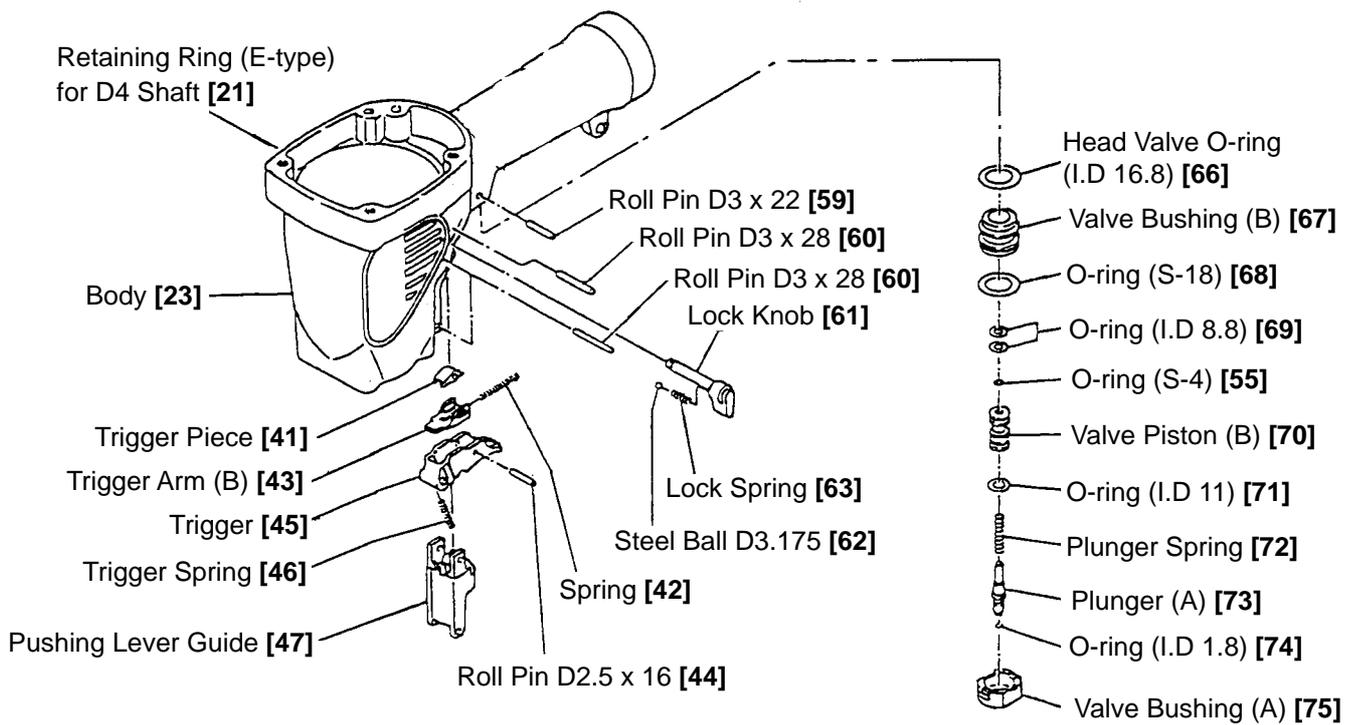


Fig. 17 Disassembly and reassembly of the control valve section

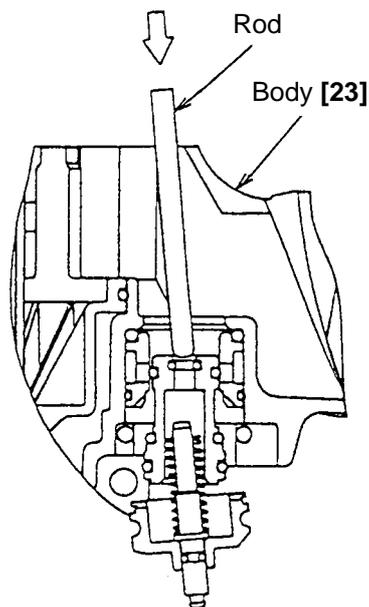


Fig. 18

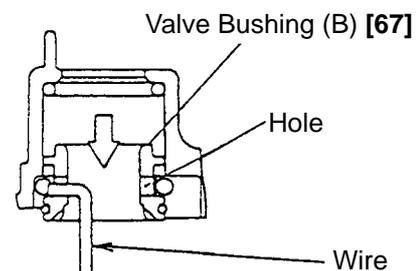


Fig. 19

- ③ Insert a hooked wire into the hole of Valve Bushing (B) [67] as shown in Fig. 19 and take out Valve Bushing (B) [67] being careful not to scratch the inside of Valve Bushing (B) [67].
- Be careful not to scratch Valve Piston (B) [70] and Valve Bushing (B) [67].
- Do not pull out the tip of Plunger (A) [73] with pliers or other tools.

(b) Reassembly

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

- Reassembly of the control valve section
 - Pay special attention not to get foreign matter in the control valve section.
 - Apply grease sufficiently to the O-ring (I.D 1.8) [74] of Plunger (A) [73], O-ring (S-4) [55] and O-ring (I.D 8.8) [69] of Valve Piston (B) [70].
 - Mount Valve Bushing (A) [75] so that the roll pin groove of Valve Bushing (A) [75] aligns with the roll pin hole of the Body [23]. Insert a roll pin puller (3 mm dia.) to check that it is put through the roll pin hole, then drive the Roll Pin D3 x 28 [60] and the Roll Pin D3 x 22 [59].

If the roll pins are driven forcibly in spite of the roll pin groove of Valve Bushing (A) [75] does not align with the roll pin hole of the Body [23], the outside of Valve Bushing (A) [75] will be damaged, and disassembly and reassembly will be impossible.

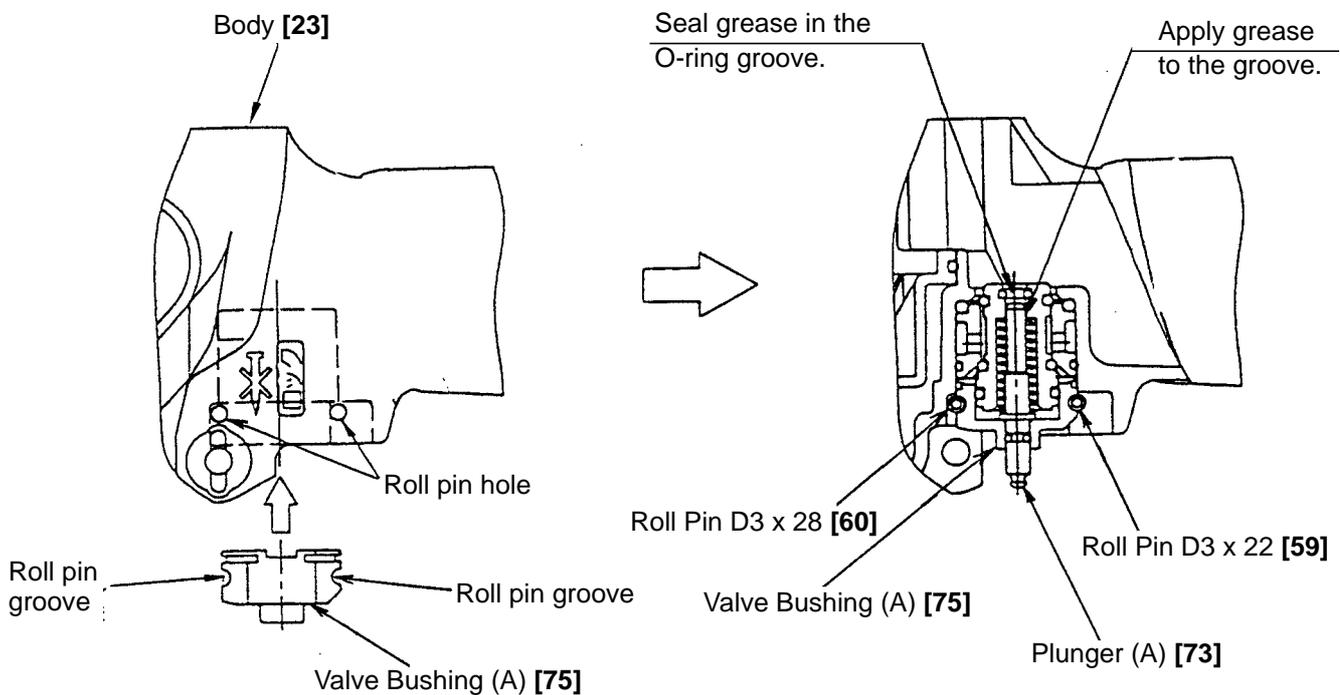


Fig. 20

- After reassembly, check that Plunger (A) [73] moves smoothly.

• Reassembly of the trigger unit

- Mount Trigger Arm (B) [43] facing its protrusion upward (Fig. 21).
- Mount the Roll Pin D2.5 x 16 [44] facing its split downward.

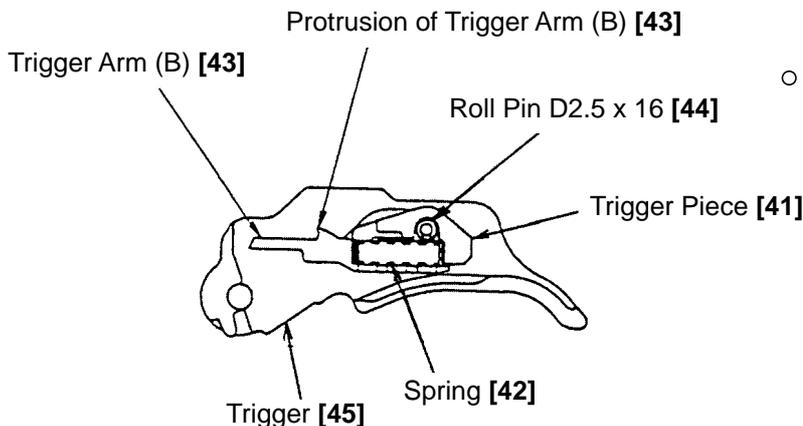


Fig. 21

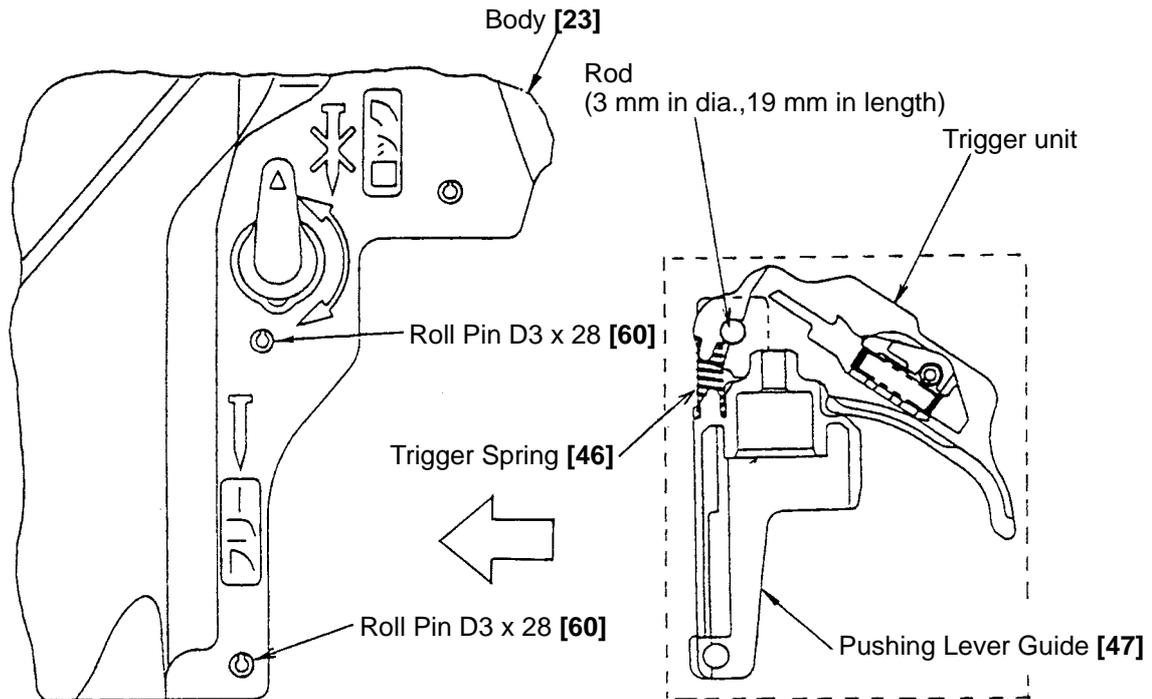
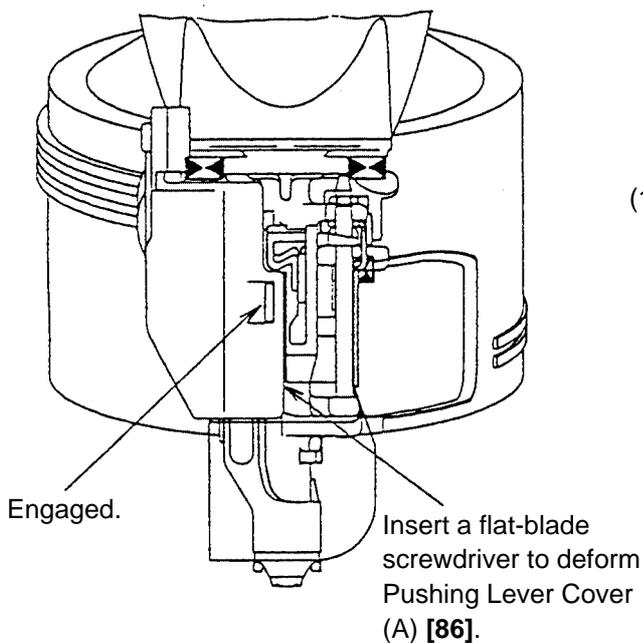


Fig. 22

- Mount the Trigger Spring [46] and the trigger unit to the Pushing Lever Guide [47] using a rod 3 mm diameter and 19 mm long before mounting the trigger unit to the Body [23] for easier mounting.
- Mount the Roll Pin D3 x 28 [60] facing its split upward.

10-4. Disassembly and Reassembly of the Magazine Section

- [Tools required]
- Phillips screwdriver
 - Roll pin pullers (4 mm and 2.5 mm dia.)
 - 4 mm hex. bar wrench
 - M5 wrench



- (1) Disassembly and reassembly of the magazine section
- (a) Disassembly (Fig. 24)
- Loosen the Hex. Socket Hd. Bolt M5 x 20 [101] and the Nylon Nut M5 [36] and remove the Sleeve [85].
 - Deform Pushing Lever Cover (A) [86] using a flat-blade screwdriver and disengage it from the Nose [27].
 - Loosen the Machine Screw M5 x 35 (Black) [65] of the Body [23]. Then the magazine section and the Hook [64] can be removed.

(b) Reassembly

- Disassembly procedures should be followed in the reverse order. Note that the protrusion of the Magazine [90] is engaged in the Nose [27].

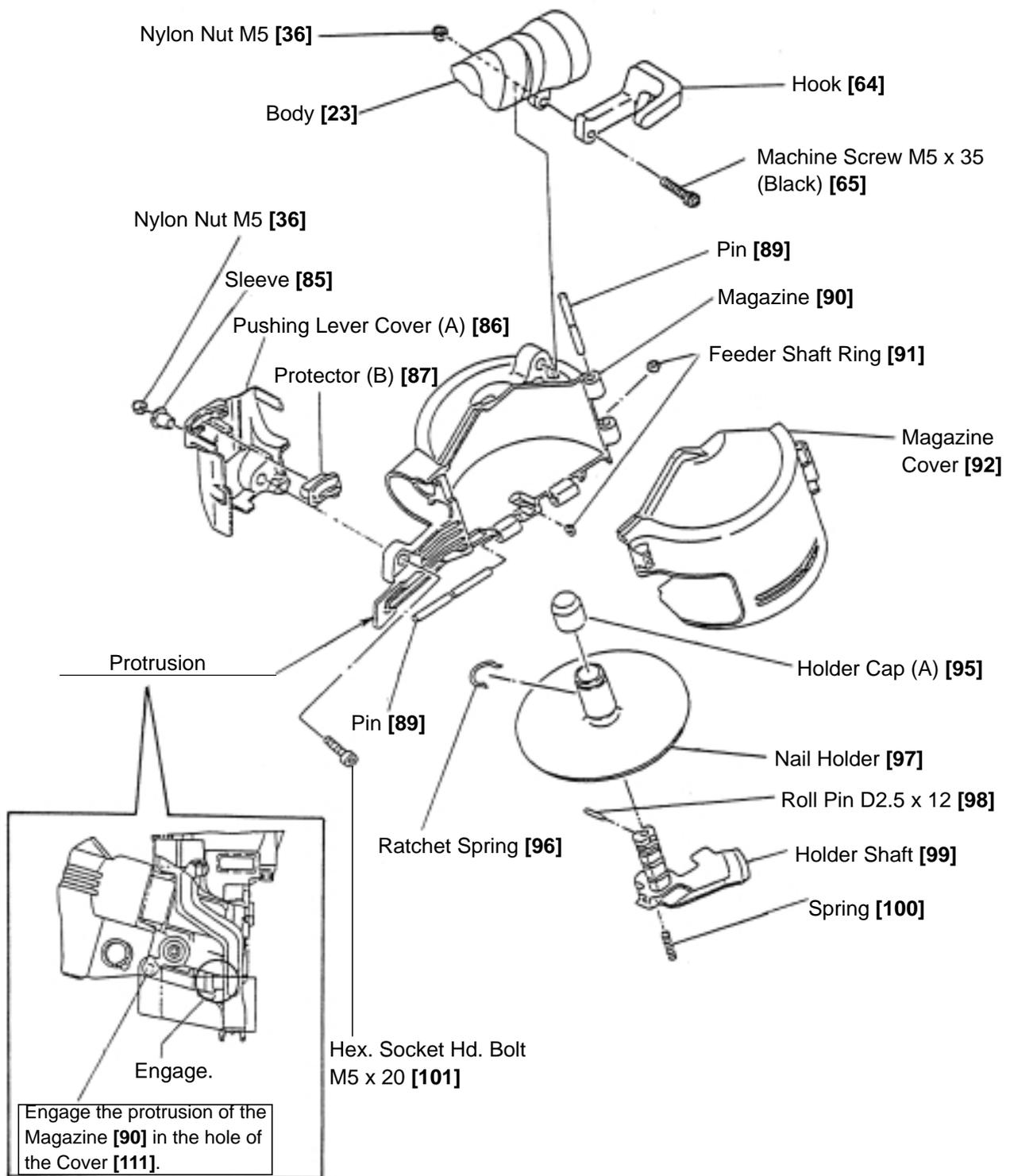


Fig. 24 Disassembly and reassembly of magazine section

(2) Disassembly and reassembly of Nail Holder [97], Holder Shaft [99] and others

(a) Disassembly

Pull out the two Pins [89] using a roll pin puller (4 mm dia.). Then the Magazine [90] and the Magazine Cover [92] can be removed. Remove Holder Cap (A) [95] and pull out the Roll Pin D2.5 x 12 [98] using a roll pin puller (2.5 mm dia.). Then the Nail Holder [97], Holder Shaft [99] and Spring [100] can be removed.

(b) Reassembly

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

- When mounting the Holder Shaft [99] to the Magazine [90], check that the Spring [100] is securely inserted between the concave portion of the Magazine [90] and the convex portion of the Holder Shaft [99], then insert the Pin [89] (Fig. 25).
- Check that the two Feeder Shaft Rings [91] are securely inserted into the grooves of the Pins [89] (2 pcs.). Be careful not to lose the Feeder Shaft Rings [91].
- Check the following after reassembly:
 - The Nail Holder [97] tilts when opening the Magazine Cover [92].
 - The Nail Holder [97] is housed in the Magazine [90] smoothly when closing the Magazine Cover [92].

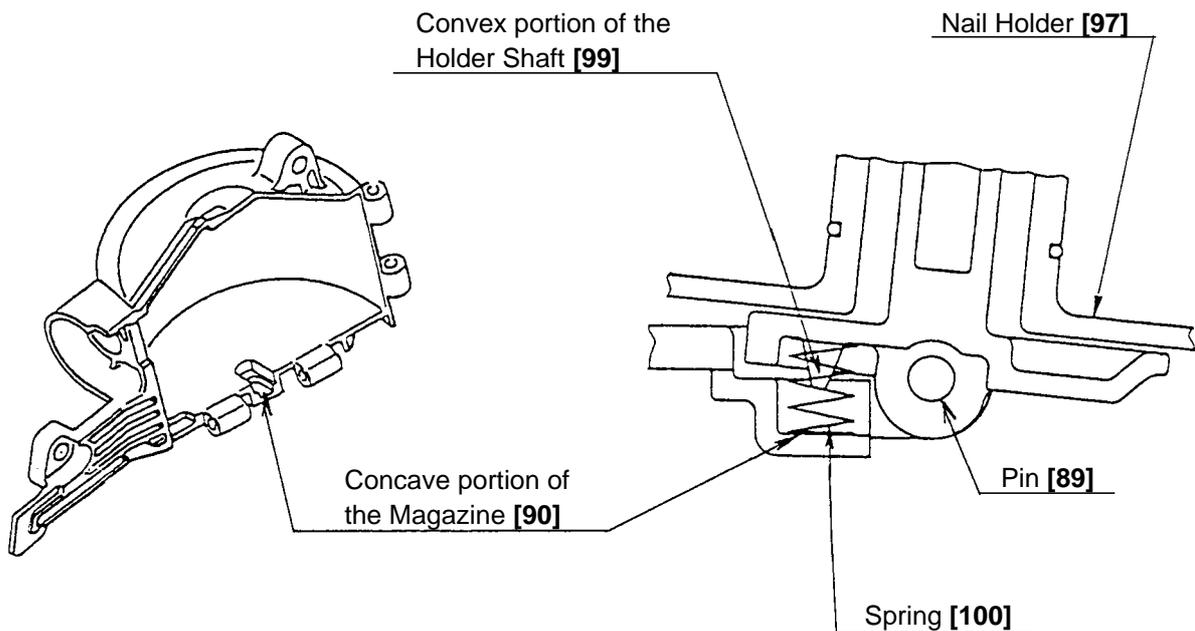


Fig. 25

10-5. Disassembly and Reassembly of the Driving Section

[Tools required] ○ 5 mm hex. bar wrench

○ Roll pin pullers (4 mm and 2 mm dia.)

○ Retaining ring puller

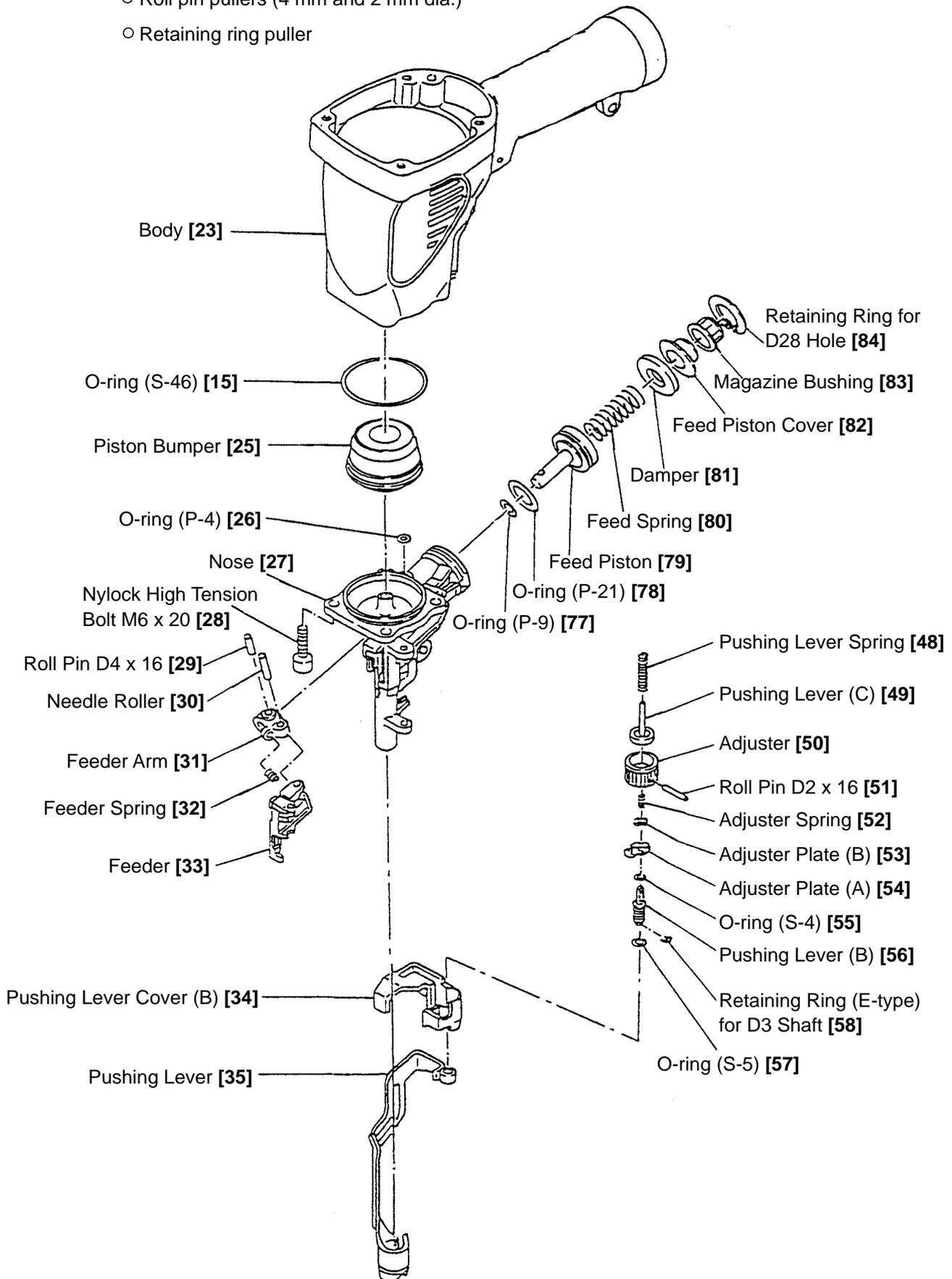


Fig. 26 Disassembly and reassembly of the driving section

(1) Disassembly and reassembly of Nose [27], Pushing Lever [35] and others

(a) Disassembly (Figs. 26 and 27)

Remove the four Nylock High Tension Bolts M6 x 20 [28]. Then the Nose [27], Pushing Lever [35] and other parts can be removed.

(b) Reassembly

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

- Apply grease to the O-ring (S-46) [15] and mount it in the groove of the Nose [27].
- Align the bent portion of Adjuster Plate (A) [54] with the concave portion of the Pushing Lever Guide [47].
- After reassembly, check that the components of the pushing lever and the Adjuster [50] move smoothly.

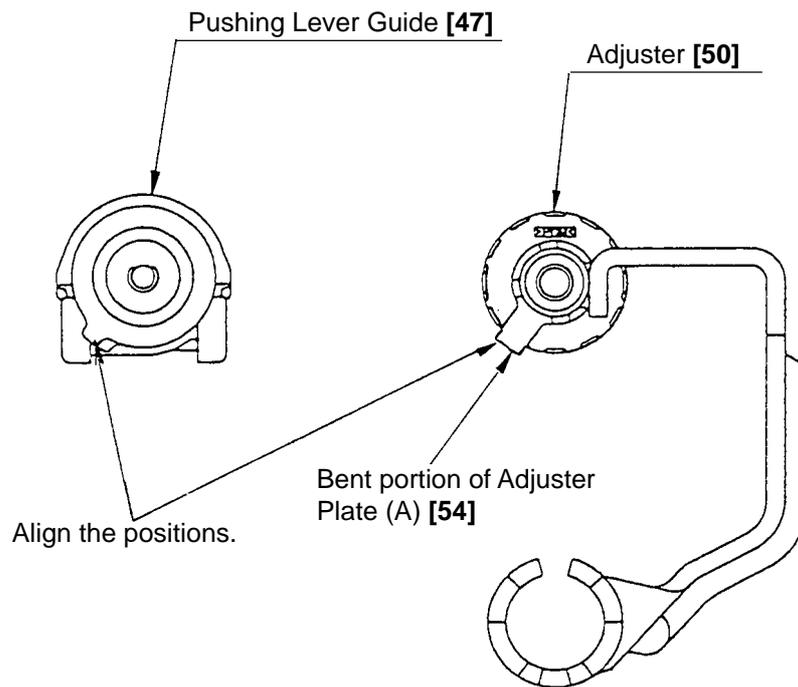


Fig.27

(2) Disassembly and reassembly of the adjuster unit

(a) Disassembly (Fig. 28)

- Remove the Retaining Ring (E-type) for D3 Shaft [58]. Then the Pushing Lever [35], Pushing Lever Cover (B) [34] and the adjuster unit can be removed.
- Pull out the Roll Pin D2 x 16 [51]. Then the adjuster unit can be disassembled.

(b) Reassembly

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

- Mount Adjuster Plate (A) [54] facing its bent portion toward the Adjuster [50].
- Mount Adjuster Plate (B) [53] facing its convex portion toward Adjuster Plate (A) [54].

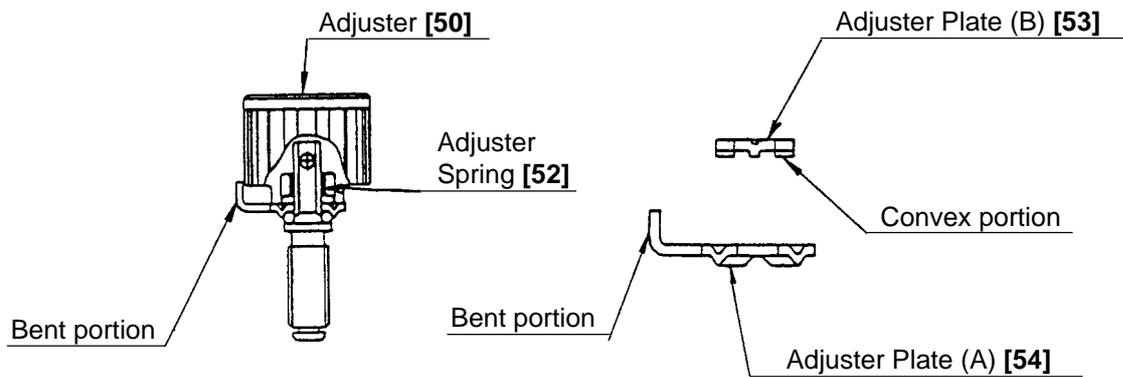


Fig.28

(3) Disassembly and reassembly of Piston Bumper [25], Feeder [33], Feed Piston [79] and other parts (Fig. 29)

(a) Disassembly

- Remove the Nose [27] and the parts forming the pushing lever from the output section in accordance with the procedure in 2.5 (1). Then the Piston Bumper [25] can be removed.
- Holding the Feed Piston Cover [82] with fingers, remove the Retaining Ring for D28 Hole [84] with a retaining ring puller. Then the Feed Piston Cover [82], Bumper [81] and Feed Spring [80] can be removed.
- Pull out the Roll Pin D4 x 16 [29] with a roll pin puller (4 mm dia.). Then the Feed Piston [79] and the Feeder Arm [31] can be removed.
- Push out the Needle Roller [30] with a roll pin puller (4 mm dia.). Then the Feeder Arm [31], Feeder [33] and Feeder Spring [32] can be removed.

(b) Reassembly

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

- Before replacing the Piston Bumper [25], clean the passages of the Body [23] and the Nose [27] (Fig. 29) and the inside of the feed piston chamber (Fig. 30). If clogged with fragments of the Piston Bumper [25], the Feed Piston [79] will not work properly.

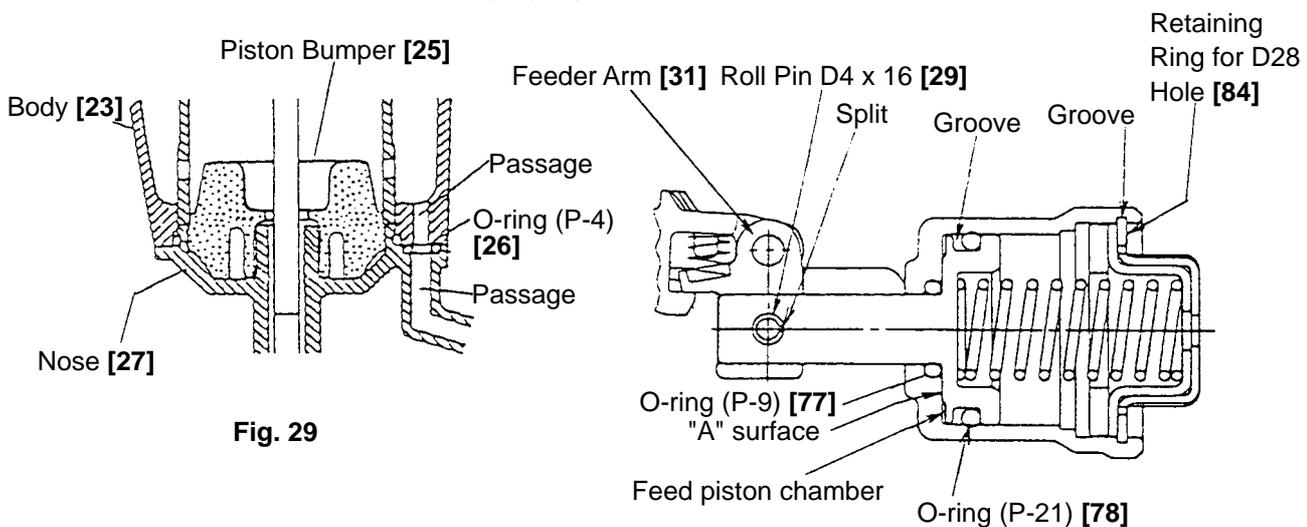


Fig. 29

Fig. 30

- Apply grease to O-ring (P-9) [77] and O-ring (P-21) [78].
- Seal grease in the groove of the Feed Piston [79] (Fig. 30).

- Apply grease to the sliding surfaces of the Feed Piston [79] and the Nose [27]. However, be careful not to apply too much grease to the "A" surface shown in Fig. 30. Otherwise, the Feed Piston [79] operates improperly at the low pressure.
- Mount the Roll Pin D4 x 16 [29] facing its split toward the magazine. The amount of protrusion at both ends must be equal after reassembly (amount of protrusion: 1.5 mm).
- Check that the Retaining Ring for D28 Hole [84] is securely inserted into the groove of the Nose [27].

(4) Disassembly and reassembly of Nail Guide [105], Nail Stopper (A) [103], Nail Stopper (B) [108] and other parts (Fig. 31)

- [Tools required]
- Flat-blade screwdriver
 - 3 mm hex. bar wrench

(a) Disassembly

- Remove the Shaft Ring [76] from the Nail Guide Shaft [102] with a flat-blade screwdriver and remove the Nail Guide Shaft [102]. Then the Nail Guide [105] and other parts can be removed in an assembly.
- Remove the Nylock Hex. Socket Hd. Bolt M4 x 10 [110] and the Nylock Hex. Socket Hd. Bolt M4 x 12 [114] with a hex. bar wrench (3 mm). Then the Nail Guide Cover [112], Stopper Spring [109], Nail Stopper Spring [104] and Cover [111] can be removed.
- Remove the Shaft Ring [76] from the Guide Lock [106] with a flat-blade screwdriver and pull out the Guide Lock [106]. Then Nail Stopper (A) [103] and Nail Stopper (B) [108] can be removed.

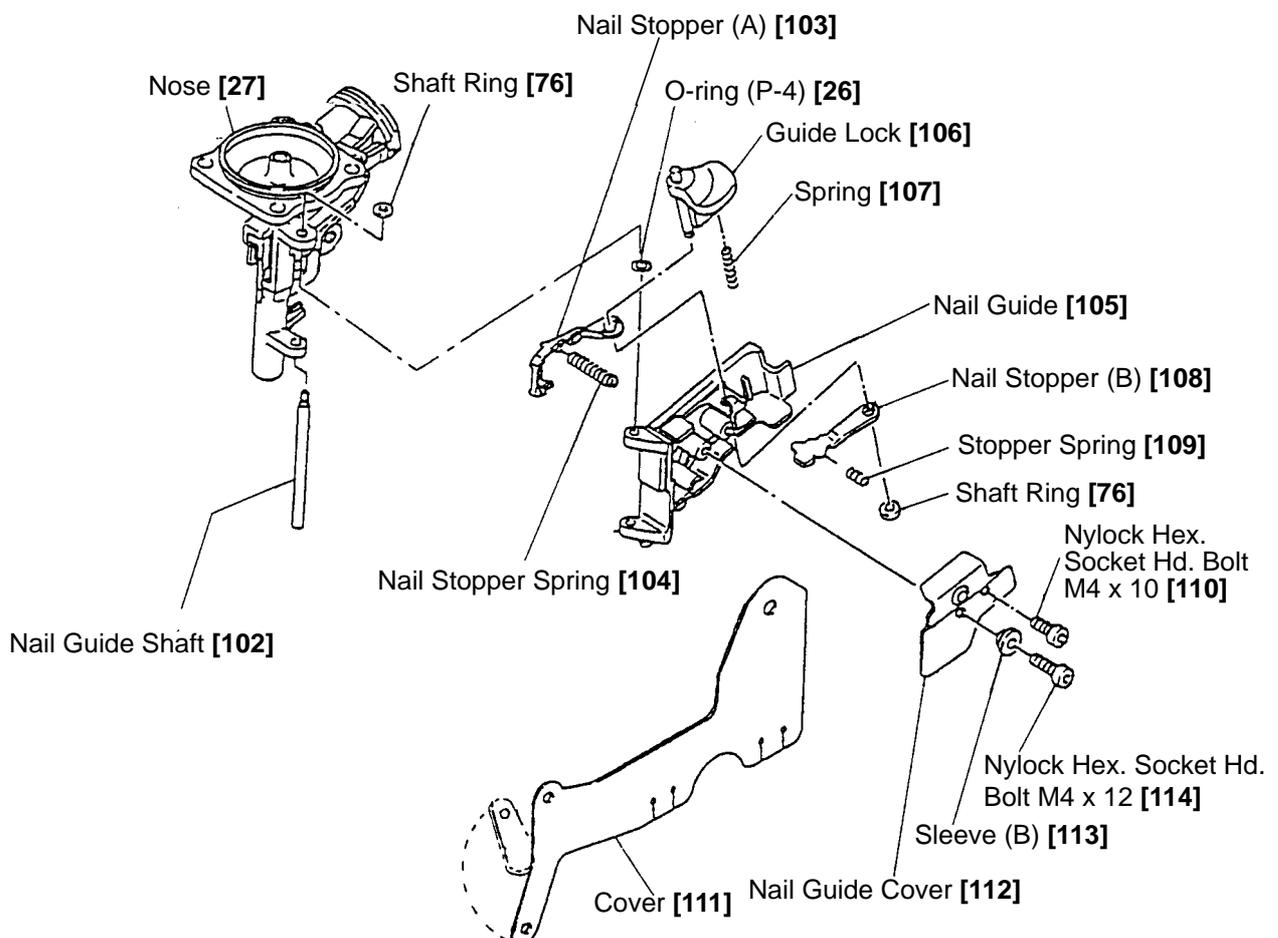


Fig. 31 Disassembly and reassembly of nail guide, nail stopper (A), nail stopper (B) and other parts

(b) Reassembly

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

- Before reassembly, remove dust from the groove of the Nail Guide [105].
- Fit the convex portions of Nail Stopper (A) [103] and Nail Stopper (B) [108] in the Nail Stopper Spring [104] and the Stopper Spring [109] securely.
- After reassembly, push Nail Stopper (A) [103] and Nail Stopper (B) [108] with fingers to check that they return smoothly.
- Mount the Nail Guide Shaft [102] facing its chamfered side upward.
- Bend the tip of the Cover [111] and engage it with the convex portion of the Magazine [90] (Fig. 24).

11. INSPECTION AND CONFIRMATION AFTER REASSEMBLY

- Check that Plunger (A) [73] moves smoothly.
- Check that the Pushing Lever [35] slides smoothly.
- Push Nail Stopper (A) [103] and Nail Stopper (B) [108] with fingers to check that they return securely.
- Check that there is no air leakage from each part.
- Check that the Model NV 65AF3 will not operate only by pulling the Trigger [45]. Also check that the Model NV 65AF3 will not operate only by depressing the Pushing Lever [35].
- Check that the Feed Piston [79] operates properly with an air pressure of 0.44 MPa {4.5 kgf/cm²}. (Open the nail guide and perform idle driving.)
- Check that there is no idle driving or bending nails when driving nails with an air pressure of 0.44 MPa {4.5 kgf/cm²}.
- (Note) Before conducting the driving test, turn the Adjuster [50] to the deepest position.
- Check the tightening torque of each screw again.

12. STANDARD REPAIR TIME (UNIT) SCHEDULES

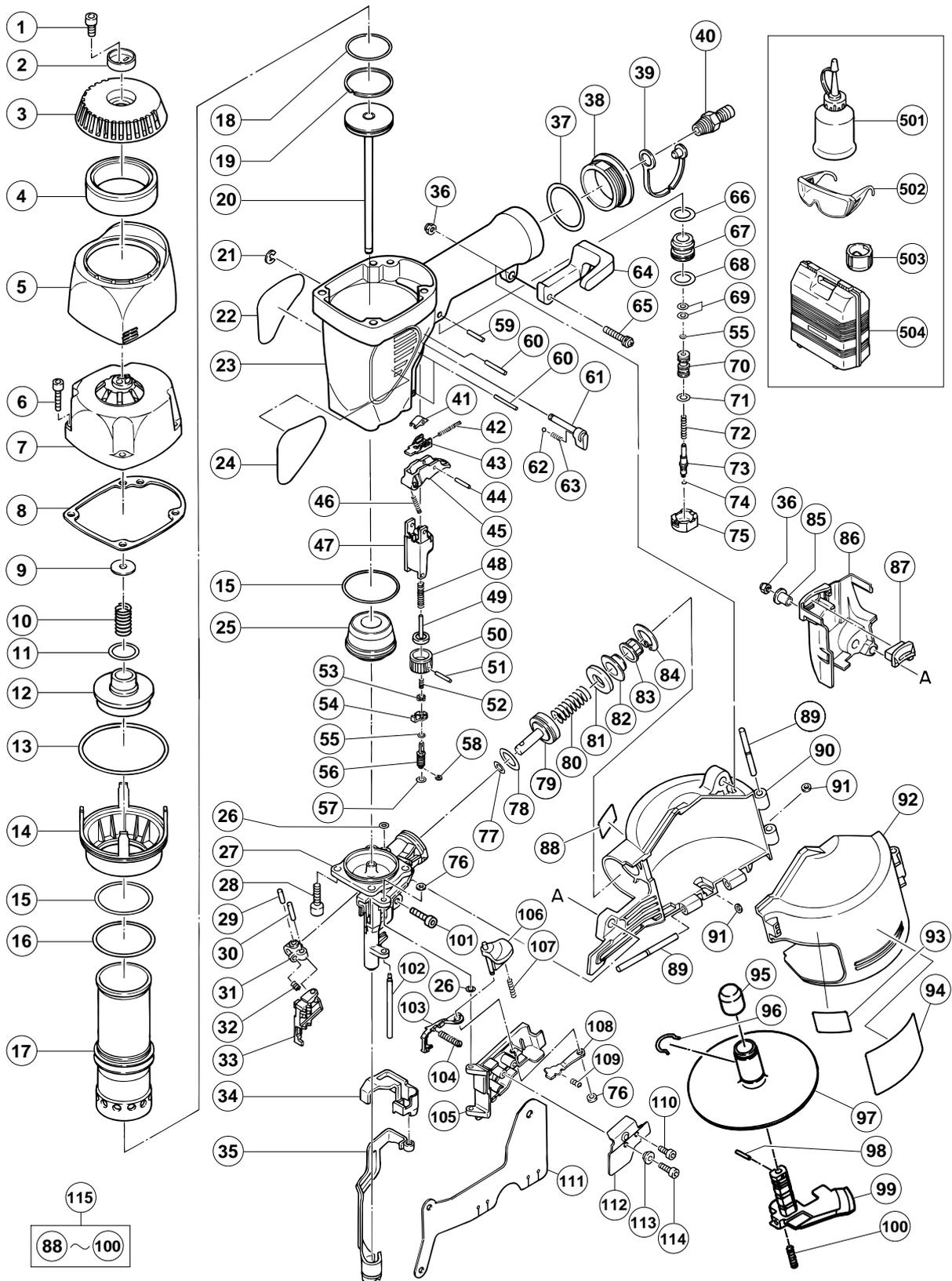
| MODEL | Variable | | 10 | 20 | 30 | 40 | 50 | 60 min. |
|----------|----------|------------------|---|---|---|----|----|---------|
| | Fixed | | | | | | | |
| NV 65AF3 | | Work Flow | | | | | | |
| | | | | | | | | |
| | | | | Exhaust Cover Top Cover Packing (A) Head Valve Spring Head Valve O-ring Head Valve (A) | Cylinder Plate Cylinder Piston Bumper O-ring x 3 | | | |
| | | General Assembly | | | | | | |
| | | | Pushing Lever (A) Adjuster Pushing Lever (B) Pushing Lever Spring Pushing Lever Guide | Valve Bushing (A) Plunger (A) Plunger Spring Valve Piston (B) Valve Bushing (B) O-ring x 7 | | | | Body |
| | | | Feed Piston O-ring x 2 Spring Bumper Feed Piston Cover | Piston Piston Ring Cylinder O-ring | | | | |
| | | | Magazine Bushing | Change Knob Spring (C) Steel Ball | Tail Cover Nail Guide Nail Stopper (A) Nail Stopper (B) Guide Lock Nail Guide Cover | | | |
| | | | Knob Valve Bushing Plunger Spring Valve Packing O-ring x 3 | Feeder Arm Feeder Feeder Spring | Magazine Magazine Cover | | | |
| | | | | Adjustment (Cylinder, Body, Valve) | Nail Holder | | | |

PNEUMATIC TOOL PARTS LIST

COIL NAILER Model NV 65AF3

2002 • 8 • 30

(E1)



PARTS

NV 65AF3

| ITEM NO. | CODE NO. | DESCRIPTION | NO. USED | REMARKS |
|----------|----------|--------------------------------------|----------|---------|
| 1 | 949-657 | HEX. SOCKET HD. BOLT M6X12 (10 PCS.) | 1 | |
| 2 | 882-919 | PLATE | 1 | |
| 3 | 882-917 | TOP COVER | 1 | |
| 4 | 882-918 | MUFFLER | 1 | |
| 5 | 882-916 | PROTECTOR (A) | 1 | |
| 6 | 949-662 | HEX. SOCKET HD. BOLT M5X25 (10 PCS.) | 4 | |
| 7 | 882-911 | EXHAUST COVER | 1 | |
| 8 | 882-915 | GASKET (A) | 1 | |
| 9 | 882-914 | HEAD BUMPER | 1 | |
| 10 | 882-913 | HEAD VALVE SPRING | 1 | |
| 11 | 876-796 | O-RING (P-22) | 1 | |
| 12 | 882-912 | HEAD VALVE (A) | 1 | |
| 13 | 878-863 | O-RING (S-70) | 1 | |
| 14 | 882-910 | CYLINDER PLATE | 1 | |
| 15 | 882-874 | O-RING (S-46) | 2 | |
| 16 | 877-368 | O-RING (1AP-48) | 1 | |
| 17 | 882-909 | CYLINDER | 1 | |
| 18 | 882-871 | PISTON O-RING | 1 | |
| 19 | 882-872 | PISTON RING | 1 | |
| 20 | 882-870 | PISTON (H) | 1 | |
| 21 | 968-643 | RETAINING RING (E-TYPE) FOR D4 SHAFT | 1 | |
| 22 | | NAME PLATE | 1 | |
| 23 | 883-857 | BODY | 1 | |
| 24 | | HITACHI LABEL | 1 | |
| 25 | 882-873 | PISTON BUMPER | 1 | |
| 26 | 874-436 | O-RING (P-4) | 2 | |
| 27 | 882-875 | NOSE | 1 | |
| 28 | 880-675 | NYLOCK HIGH TENSION BOLT M6X20 | 4 | |
| 29 | 949-497 | ROLL PIN D4X16 (10 PCS.) | 1 | |
| 30 | 880-659 | NEEDLE ROLLER | 1 | |
| 31 | 878-132 | FEEDER ARM | 1 | |
| 32 | 882-924 | FEEDER SPRING | 1 | |
| 33 | 883-785 | FEEDER | 1 | |
| 34 | 882-900 | PUSHING LEVER COVER (B) | 1 | |
| 35 | 882-884 | PUSHING LEVER | 1 | |
| 36 | 877-371 | NYLON NUT M5 | 2 | |
| 37 | 880-183 | O-RING (I.D 37.2) | 1 | |
| 38 | 883-177 | CAP | 1 | |
| 39 | 877-914 | DUST CAP | 1 | |
| 40 | 874-782 | AIR PLUG PT 1/4 | 1 | |
| 41 | 882-896 | TRIGGER PIECE | 1 | |
| 42 | 882-897 | SPRING | 1 | |
| 43 | 882-895 | TRIGGER ARM (B) | 1 | |
| 44 | 881-951 | ROLL PIN D2.5X16 | 1 | |
| 45 | 882-894 | TRIGGER | 1 | |
| 46 | 883-759 | TRIGGER SPRING | 1 | |
| 47 | 882-885 | PUSHING LEVER GUIDE | 1 | |
| 48 | 882-892 | PUSHING LEVER SPRING | 1 | |
| 49 | 882-891 | PUSHING LEVER (C) | 1 | |
| 50 | 882-889 | ADJUSTER | 1 | |
| 51 | 880-093 | ROLL PIN D2X16 | 1 | |

PARTS

NV 65AF3

| ITEM NO. | CODE NO. | DESCRIPTION | NO. USED | REMARKS |
|----------|----------|---------------------------------------|----------|---------|
| 52 | 882-890 | ADJUSTER SPRING | 1 | |
| 53 | 882-887 | ADJUSTER PLATE (B) | 1 | |
| 54 | 882-886 | ADJUSTER PLATE (A) | 1 | |
| 55 | 981-317 | O-RING (S-4) | 2 | |
| 56 | 882-888 | PUSHING LEVER (B) | 1 | |
| 57 | 872-822 | O-RING (S-5) | 1 | |
| 58 | 872-971 | RETAINING RING (E-TYPE) FOR D3 SHAFT | 1 | |
| 59 | 949-864 | ROLL PIN D3X22 (10 PCS.) | 1 | |
| 60 | 949-865 | ROLL PIN D3X28 (10 PCS.) | 3 | |
| 61 | 882-922 | LOCK KNOB | 1 | |
| 62 | 959-148 | STEEL BALL D3.175 (10 PCS.) | 1 | |
| 63 | 882-923 | LOCK SPRING | 1 | |
| 64 | 883-763 | HOOK | 1 | |
| 65 | 302-197 | MACHINE SCREW M5X35 (BLACK) | 1 | |
| 66 | 877-699 | HEAD VALVE O-RING (I.D 16.8) | 1 | |
| 67 | 882-925 | VALVE BUSHING (B) | 1 | |
| 68 | 878-885 | O-RING (S-18) | 1 | |
| 69 | 878-925 | O-RING (I.D 8.8) | 2 | |
| 70 | 880-672 | VALVE PISTON (B) | 1 | |
| 71 | 878-887 | O-RING (I.D 11) | 1 | |
| 72 | 878-884 | PLUNGER SPRING | 1 | |
| 73 | 882-921 | PLUNGER (A) | 1 | |
| 74 | 878-888 | O-RING (I.D 1.8) | 1 | |
| 75 | 882-920 | VALVE BUSHING (A) | 1 | |
| 76 | 880-319 | SHAFT RING | 2 | |
| 77 | 872-645 | O-RING (P-9) | 1 | |
| 78 | 880-330 | O-RING (P-21) | 1 | |
| 79 | 882-673 | FEED PISTON | 1 | |
| 80 | 882-883 | FEED SPRING | 1 | |
| 81 | 877-711 | BUMPER | 1 | |
| 82 | 880-331 | FEED PISTON COVER | 1 | |
| 83 | 878-305 | MAGAZINE BUSHING | 1 | |
| 84 | 939-555 | RETAINING RING FOR D28 HOLE (10 PCS.) | 1 | |
| 85 | 882-907 | SLEEVE | 1 | |
| 86 | 882-899 | PUSHING LEVER COVER (A) | 1 | |
| 87 | 882-901 | PROTECTOR (B) | 1 | |
| 88 | 878-184 | WARNING LABEL | 1 | |
| 89 | 881-825 | PIN | 2 | |
| 90 | 882-903 | MAGAZINE | 1 | |
| 91 | 877-826 | FEEDER SHAFT RING | 2 | |
| 92 | 882-904 | MAGAZINE COVER | 1 | |
| 93 | | CAUTION PLATE (B) | 1 | |
| 94 | | CAUTION PLATE (A) | 1 | |
| 95 | 881-003 | HOLDER CAP (A) | 1 | |
| 96 | 880-398 | RATCHET SPRING | 1 | |
| 97 | 882-906 | NAIL HOLDER | 1 | |
| 98 | 878-791 | ROLL PIN D2.5X12 | 1 | |
| 99 | 882-905 | HOLDER SHAFT | 1 | |
| 100 | 881-826 | SPRING | 1 | |
| 101 | 949-757 | HEX. SOCKET HD. BOLT M5X20 (10 PCS.) | 1 | |
| 102 | 880-658 | NAIL GUIDE SHAFT | 1 | |

