

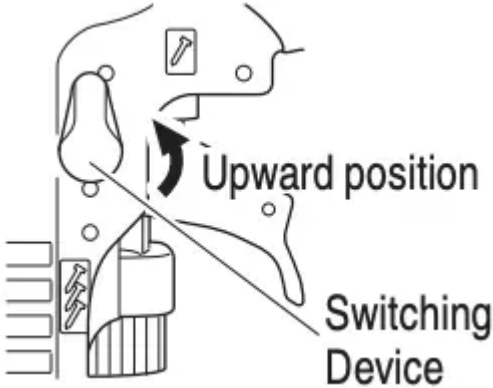
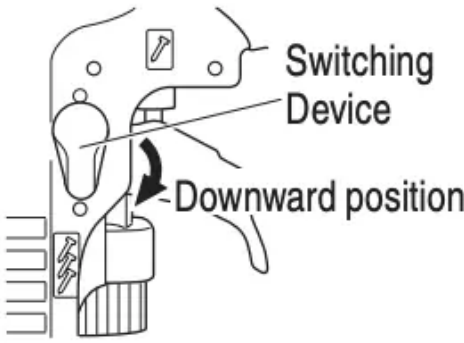
OPERATION

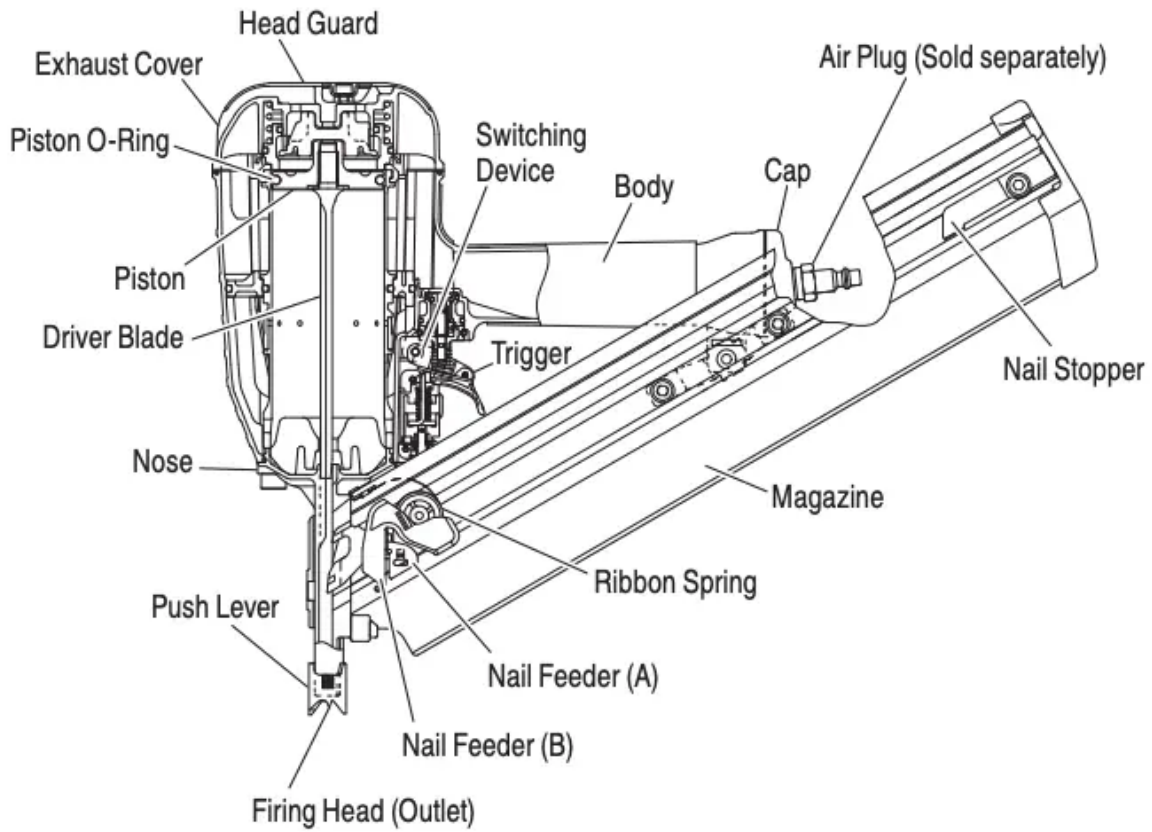
NOTE:

The information contained in this Manual is designed to assist you in the safe operation of the Nailer.

Some illustrations in this Manual may show details or attachments that differ from those on your own Nailer.

NAME OF PARTS

Nailing operation switching device	
 <p>SINGLE SEQUENTIAL ACTUATION MECHANISM (Switching device: upward position)</p>	 <p>CONTACT ACTUATION MECHANISM (Switching device: downward position)</p>

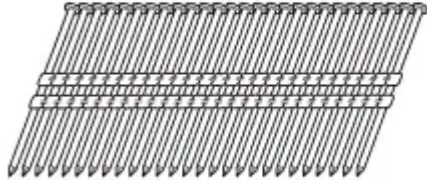
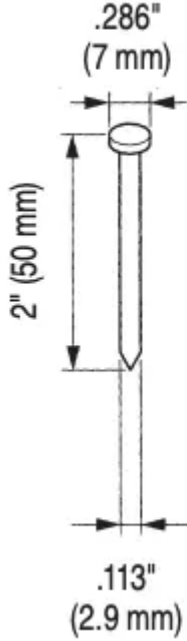


NAIL SELECTION

WARNING

- Be sure to use only the genuine HITACHI nails for the NR90AD (S1) or the NR90AE (S1). The use of any other nails can result in tool malfunction and/or nail breakdown, leading to serious injuries.

Only nails shown in the Table below can be driven with this Nailer.

Plastic-collated strip nails Full-head nails	Min.	Max.
		

BEFORE OPERATION

Read section titled "SAFETY" (pages 4 – 7).

Make sure of the followings before operation.

WORKING ENVIRONMENT

WARNING

- No flammable gas, liquid or other flammable objects at worksite.
- Clear the area of children or unauthorized personnel.

AIR SUPPLY

DANGER



NEVER use oxygen or other bottled gases. Explosion may occur.

WARNING

- Never connect Nailer to pressure which potentially exceeds 200 psi (13.7 bar 14 kgf/cm²).
- Never use non relieving coupler on Nailer.

1. Power source

- Use only clean, dry, regulated compressed air as a power source for this Nailer.
- Air compressors used to supply compressed air to this Nailer must comply with the requirements of the latest version of ANSI Standard B 19.3 “Safety Standard For Compressors For Process Industries”.
- Moisture or oil in the air compressor may accelerate wear and corrosion in the Nailer. Drain daily.

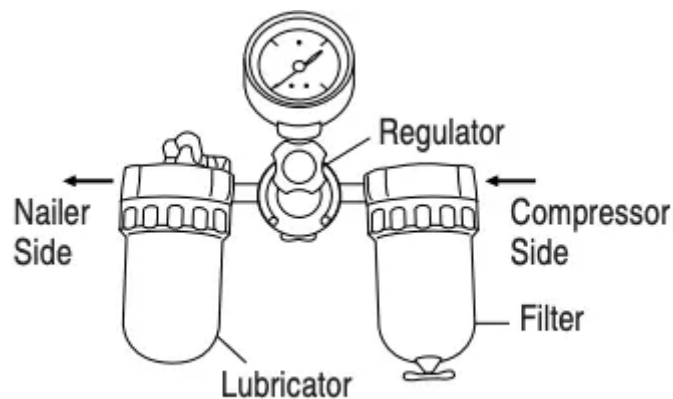
2. Filter-Regulator-Lubricator

- Use a regulator with a pressure range of 0 – 120 psi (0 – 8.3 bar 0 – 8.5 kgf/cm²).
- Filter-regulator-lubricator units supply an optimum condition for the Nailer and extend the Nailer life. These units should always be used

FilterThe filter removes moisture and dirt mixed in compressed air. Drain daily unless fitted with an automatic drain. Keep the filter clean by regular maintenance.

Regulator...The regulator controls the operating pressure for safe operation of the Nailer. Inspect the regulator before operation to be sure it operates properly.

Lubricator...The lubricator supplies an oil mist to the nailer. Inspect the lubricator before operation to be sure the supply of lubricant is adequate. Use Hitachi pneumatic tool lubricant



3. Air hose

- Air hose must have a minimum working pressure rating of 150 psi (10.4 bar 10.6 kgf/cm²) or 150% of the maximum pressure produced in the system, whichever is higher.

4. Air consumption

Using the Air consumption table and the Air compressor size formula, find a correct compressor size.

Air consumption table

Operating pressure	psi	80	90	100
	(bar)	(5.5)	(6.2)	(6.9)
Air consumption	(kgf/cm ²)	(5.6)	(6.3)	(7)
	ft ³ /cycle	.062	.075	.088
	(ltr/cycle)	(1.7)	(2.1)	(2.5)

Air compressor size formula

Amount of air required = number of Nailers

× average nails driven each minute per Nailer

× air consumption at given air pressure

× safety factor (always 1.2)

Example: 2 Nailers operating at 100 psi driving 30 nails per minute

Amount of air required

$$= 2 \times 30 \times .088 (2.5) \times 1.2$$

$$= 6.3 \text{ CFM (ft}^3\text{/min) (180 ltr/min)}$$

After making the calculations as shown above, you should find a compressor providing 6.3 CFM of air that is required.

LUBRICATION

It is important that the Nailer be properly lubricated. Without proper lubrication, the Nailer will not work properly and parts will wear prematurely.

- Use Hitachi pneumatic tool lubricant. Do not use detergent oil or additives. These lubricants will harm the O-rings and other rubber parts. This will cause the Nailer to malfunction.
- Filter-regulator-lubricator units should always be used. Keep the lubricator filled with Hitachi pneumatic tool lubricant.
- If a lubricator is not available, supply 5 – 10 drops of Hitachi pneumatic tool lubricant into the air plug on the Nailer twice a day

COLD WEATHER CARE

- Do not store the Nailer in a cold weather environment. Keep the Nailer in a warm area until beginning the work.
 - If the Nailer is already cold, bring it in a warm area and allow the Nailer to warm up before use.
1. Reduce the air pressure to 64 psi (4.4 bar 4.5 kgf/ cm²)
 2. Remove all nails from the Nailer
 3. Connect the air hose and free-fire (blank-fire) the Nailer.

The lowered air pressure will be enough to free-fire the Nailer

Slow speed operation tends to warm up the moving part.

CAUTION

- Do not free-fire the Nailer at high pressure.

TESTING THE NAILER

DANGER



Operators and others in work area **MUST** wear safety glasses with side shields which conforms to ANSI Z87.1 specifications.

WARNING Never use Nailer unless push lever is operating properly.

Before actually beginning the nailing work, test the Nailer by using the checklist below. Conduct the tests in the following order.

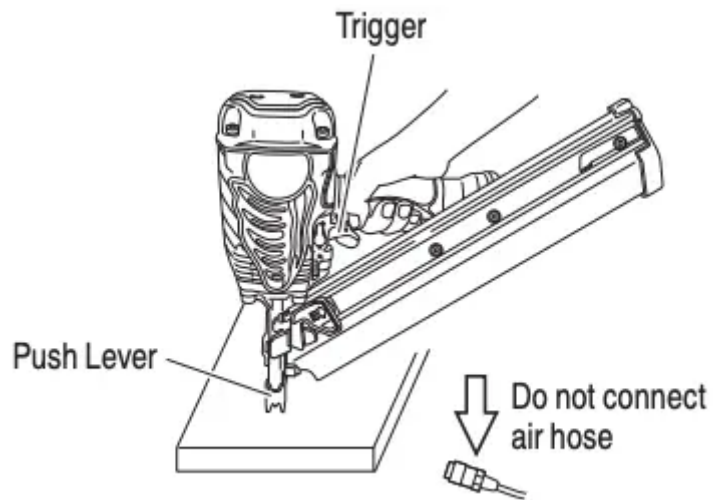
If abnormal operation occurs, stop using the Nailer and contact a Hitachi authorized service center immediately

1. DISCONNECT AIR HOSE FROM NAILER. REMOVE ALL NAILS FROM NAILER.

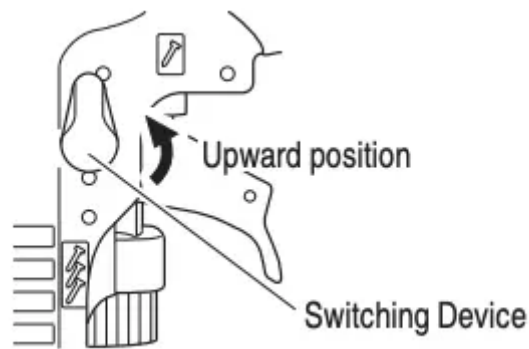
- ALL SCREWS MUST BE TIGHTENED. If any screws are loose, tighten them.



- THE PUSH LEVER AND TRIGGER MUST MOVE SMOOTHLY



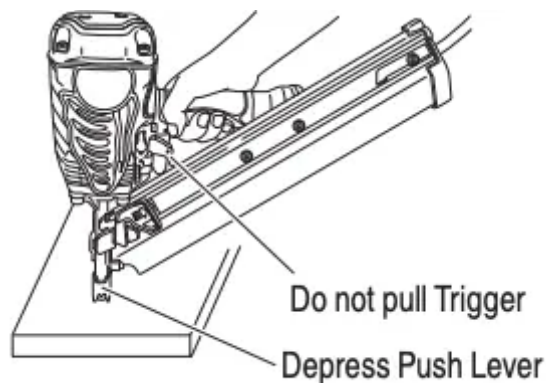
2. Adjust the air pressure to 70 psi (4.9 bars 5 kgf/cm²). Connect the air hose. Do not load any nails in the Nailer. Set the switching device to the upward position(SINGLE SEQUENTIAL ACTUATION MECHANISM).(Set the switching device to the upward position completely as shown in the diagram. Otherwise, it will not operate properly.)



- THE NAILER MUST NOT LEAK AIR.

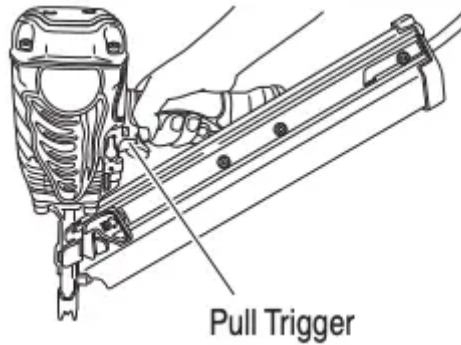
3. Remove the finger from the trigger and press the push lever against the workpiece.

- THE NAILER MUST NOT OPERATE



4. Separate the push lever from the workpiece. Next, point the nailer downward, pull the trigger and then wait in that position for 5 seconds or longer.

- THE NAILER MUST NOT OPERATE.



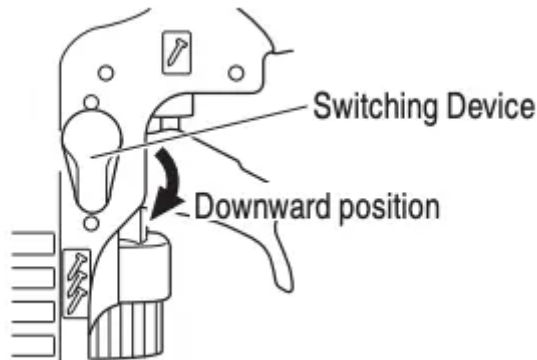
5.1. Without touching the trigger, depress the push lever against the workpiece. Pull the trigger.

- THE NAILER MUST OPERATE.

5.2. Remove the finger from the trigger.

- Nailer operation will end (the driver blade will return to the top).

6. Set the switching device to the downward position (CONTACT ACTUATION MECHANISM). (Set the switching device to the downward position completely as shown in the diagram. Otherwise, it will not operate properly.)



With the Nailer off the workpiece, pull the trigger. Depress the push lever against the workpiece.

- THE NAILER MUST OPERATE

7. If no abnormal operation is observed, you may load nails in the Nailer. Drive nails into the workpiece that is the same type to be used in the actual application.

- THE NAILER MUST OPERATE PROPERLY

ADJUSTING AIR PRESSURE

WARNING



Do not exceed 120 psi (8.3 bar/8.5 kgf/cm²).

Adjust the air pressure at recommended operating pressure 70 – 120 psi (4.9 – 8.3 bar 5 – 8.5 kgf/cm²) according to the length of nails and the hardness of workpiece.

The correct air pressure is the lowest pressure which will do the job. Using the Nailer at a higher than required air pressure unnecessarily over stresses the Nailer

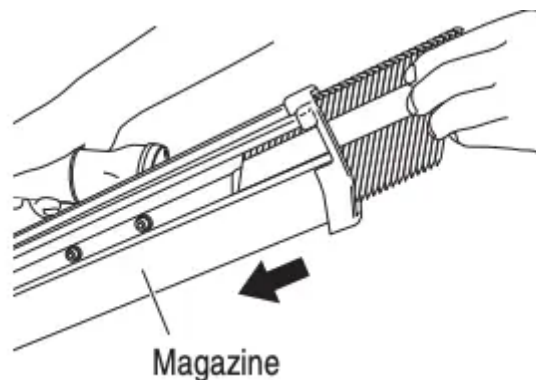
LOADING NAILS

WARNING

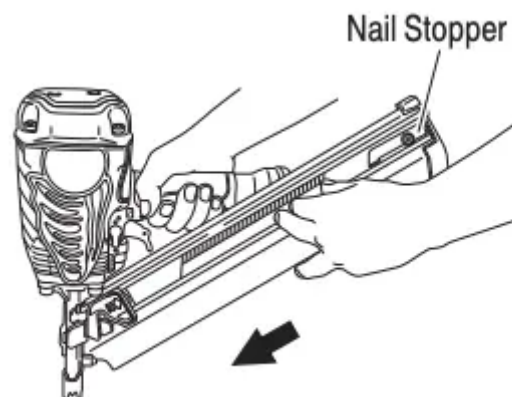
When loading nails into Nailer,

- 1) do not pull trigger;
- 2) do not depress push lever; and
- 3) keep Nailer pointed downward

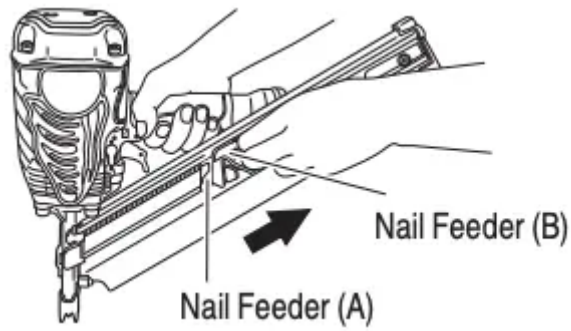
(1) Insert nail strip into the back of the magazine.



(2) Slide the nail strip forward in the magazine. The nail strip should pass the nail stopper.

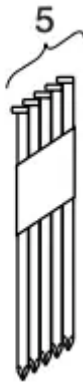


(3) Pull the nail feeder (B) back to engage the nail feeder(A) to the nail strip.



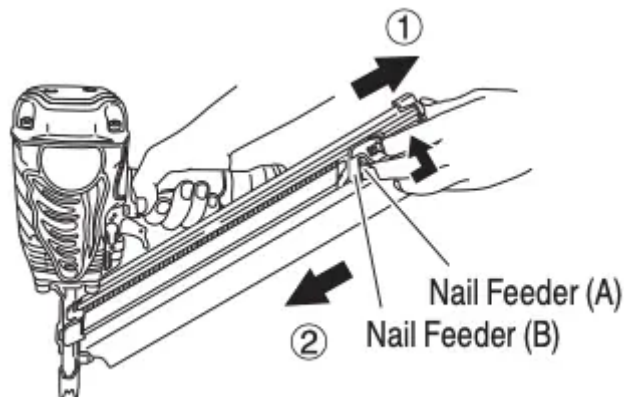
NOTE

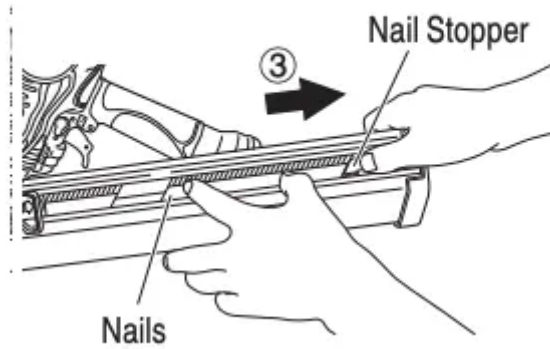
- Quietly push the Nail Feeders (A) and (B) against the nail. If the Nail Feeders (A) and (B) are released from backward the magazine and bumped against the nail, the connecting paper of the nail can be damaged.
- Use nail strip of more than 5 nails.



The Nailer is now ready to operate. Removing the nails:

1. Pull the nail feeder (B) backward.
2. Return the nail feeder (B) forward quietly while pushing the nail feeder (A).
3. Push the nail stopper toward the magazine side, and pull out nails from the back of the magazine.





NAILER OPERATION

Read section titled "SAFETY"(pages 4 – 7).

DANGER



Operators and others in work area **MUST** wear safety glasses with side shields which conforms to ANSI Z87.1 specifications.

WARNING



- NEVER point tool at yourself or others in work area
- Keep fingers **AWAY** from trigger when not driving nails to avoid accidental firing.
- Choice of triggering method is important. Please read and understand "Methods of Operations" below.
- Before starting work, check the nailing operation switching device. This Hitachi nailer includes a nailing operation switching device. Before starting work, make sure that the switching device is properly set. If the switching device is not set properly, the nailer will not operate correctly.
- Never place your hands or feet closer than 8 inches (200 mm) from firing head when using.
- Do not drive nails on the top of other nails or with Nailer at too steep of an angle; nails can ricochet and hurt someone.

- Do not drive nails into thin boards or near corners and edges of workpiece. Nails can be driven through or away from workpiece and hit someone.
- Never drive nails from both sides of a wall at the same time. Nails can be driven into and through the wall and hit a person on the opposite side.
- Never use Nailer which is defective or operating abnormally.
- Do not use Nailer as hammer.
- Disconnect air hose from Nailer when:

- 1) it is not in use;
- 2) leaving work area;
- 3) moving it to another location;
- 4) handing it to another person; and
- 5) changing switching device.

This Hitachi nailer is equipped with a nailer operation switching device.

Use SINGLE SEQUENTIAL ACTUATION MECHANISM or CONTACT ACTUATION MECHANISM in accordance with the work to be performed.

Explanation of the various nailing operations

- SINGLE SEQUENTIAL ACTUATION MECHANISM: First, press the push lever against the workpiece; next, pull the trigger 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 push lever against the workpiece; next, pull the trigger to drive the nail. Or, pull the trigger; next, press the push lever against the workpiece to drive the nail. If the trigger is held back, a nail will be driven each time the push lever is pressed against the workpiece

METHODS OF OPERATION

This Nailer is equipped with the push lever and does not operate unless the push lever is depressed (upward position).

There are two methods of operation to drive nails with this nailer. They are:

1. Intermittent operation (Trigger fire):
2. Continuous operation (Push lever fire):

(1) Intermittent operation (Trigger fire)

Use the SINGLE SEQUENTIAL ACTUATION MECHANISM setting

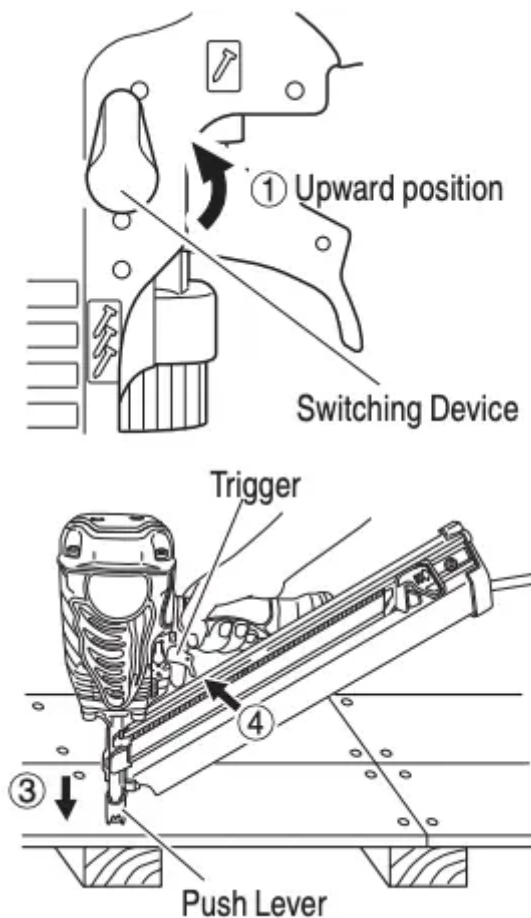
WARNING

- For intermittent operation, set the switching device to the upward position completely.(i.e. Set to SINGLE SEQUENTIAL ACTUATION MECHANISM.)
- To avoid double firing or accidental firing due to recoil.

1.Set the switching device to SINGLESEQUENTIAL ACTUATION MECHANISM.

2. Pull the trigger rapidly and firmly.

1. Set the switching device to the upward position(to set to SINGLE SEQUENTIAL ACTUATION MECHANISM).(Set the switching device to the upward position completely as shown in the diagram. Otherwise,it will be set to CONTACT ACTUATION MECHANISM.)
2. Position the nail outlet on the workpiece with a finger off the trigger.
3. Depress the push lever firmly until it is completely depressed.
4. Pull the trigger to drive a nail.
5. Remove finger from the trigger.To continue nailing in a separate location, move the nailer along the wood, repeating steps 2 – 5 as required



WARNING A nail will fire each time the trigger is pressed as long as the push lever remains pressed.

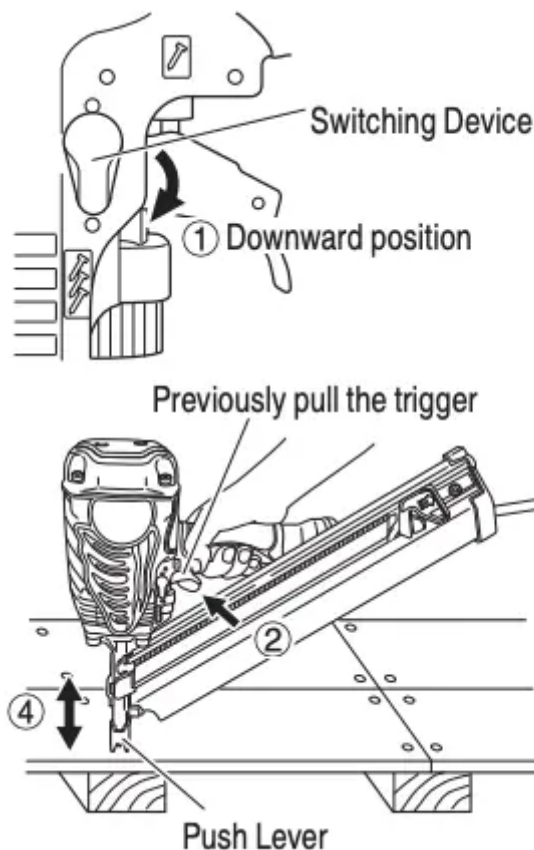
(2) Continuous operation (Push lever fire)

Using CONTACT ACTUATION MECHANISM

WARNING To avoid double firing or accidental firing due to recoil

- 1) Do not press the nailer against the wood with excessive force.
- 2) Separate the nailer from the wood as it recoils after nailing
 1. Set the switching device to the downward position (to set to CONTACT ACTUATION MECHANISM). (Set the switching device to the downward position completely as shown in the diagram. Otherwise, it will not operate properly.)
 2. Pull the trigger with the Nailer off the workpiece.
 3. Depress the push lever against the workpiece to drive a nail.
 4. Move the Nailer along the workpiece with a bouncing motion. Each depression of the push lever will drive a nail.

As soon as the desired number of nails have been driven, remove finger from the trigger.



WARNING

- Keep your finger off the trigger except during fastening operation, because serious injury could result if the push lever accidentally contacts you or others in work area.

- Keep hands and body away from the discharge area. This Hitachi nailer may bounce from the recoil of driving a fastener and unwanted subsequent fastener may be driven, possibly causing injury.
- Some types of loaded nails can spark out of the muzzle during a nail driving operation. Exercise caution

The SINGLE SEQUENTIAL ACTUATION MECHANISM is for use where precision fastener placement is desired.

The SINGLE SEQUENTIAL ACTUATION MECHANISM may reduce the possibility of bodily injury to you or others in the work area compared to the CONTACT ACTUATION MECHANISM. This is because it is less likely to drive an unwanted nail if you keep the trigger pulled and accidentally bump the push lever against yourself or others.

The SINGLE SEQUENTIAL ACTUATION MECHANISM may also reduce the speed of operation compared to the CONTACT ACTUATION MECHANISM. The SINGLE SEQUENTIAL ACTUATION MECHANISM is recommended to inexperienced users.

NOTE

- If all warnings and instructions are followed, safe operation is possible with all two systems: SINGLE SEQUENTIAL ACTUATION MECHANISM and CONTACT ACTUATION MECHANISM.
- Always handle nails and package carefully. If nails are dropped, collating plastic may be broken.
- After nailing:
 - 1) disconnect air hose from the Nailer;
 - 2) remove all nails from the Nailer;
 - 3) supply 5 – 10 drops of Hitachi pneumatic tool lubricant into the air plug on the Nailer; and
 - 4) open the petcock on the air compressor tank to drain any moisture.

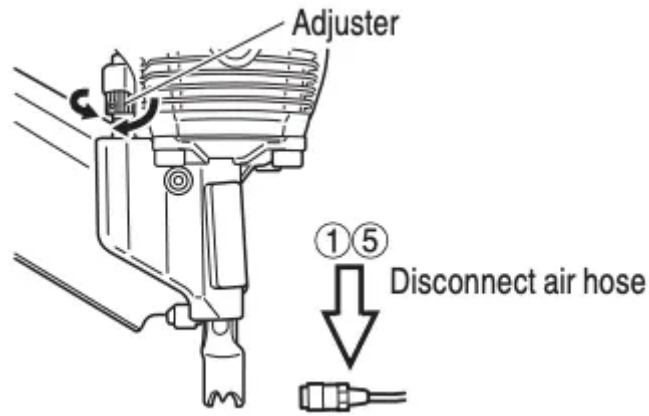
ADJUSTING THE NAILING DEPTH

To assure that each nail penetrates to the same depth, be sure that:

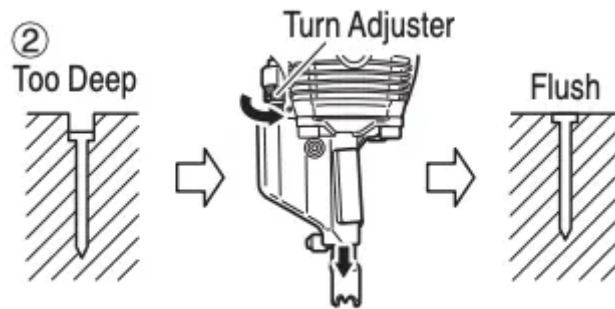
- 1) the air pressure to the Nailer remains constant (regulator is installed and working properly), and
- 2) the Nailer is always held firmly against the workpiece.

If nails are driven too deep or shallow into the workpiece, adjust the nailing in the following order.

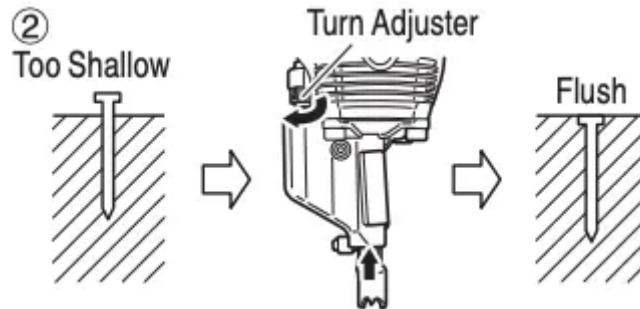
1. DISCONNECT AIR HOSE FROM NAILER.



2. If nails are driven too deep, turn the adjuster to the shallow side.



If nails are driven too shallow, turn the adjuster to the deep side.



3. Stop turning the adjuster when a suitable position is reached for a nailing test.
4. Connect the air hose. ALWAYS WEAR EYE PROTECTOR. Perform a nailing test.
5. DISCONNECT AIR HOSE FROM NAILER.
6. Choose a suitable position for the adjuster.

MAINTENANCE

NOTE: The information contained in this Manual is designed to assist you in the safe maintenance of the Nailer. Some illustrations in this Manual may show details or attachments that differ from those on your own Nailer.

MAINTENANCE AND INSPECTION

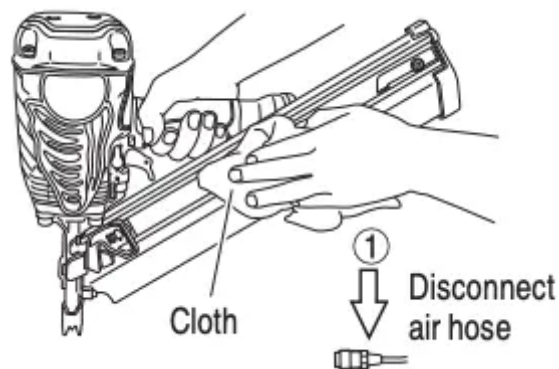
Read section titled "SAFETY" (pages 4 – 7).

WARNING Disconnect air hose and remove all nails from Nailer when:

- 1) doing maintenance and inspection; and
- 2) clearing a jam.

1. Inspecting the magazine

1. DISCONNECT AIR HOSE.
2. Clean the magazine. Remove paper chips or wooden chips which may have accumulated in the magazine. Lubricate it with Hitachi pneumatic tool lubricant



CAUTION

- Check that the nail feeder slides smoothly by pulling it with finger. If not smooth, nails can be driven at an irregular angle and hurt someone.

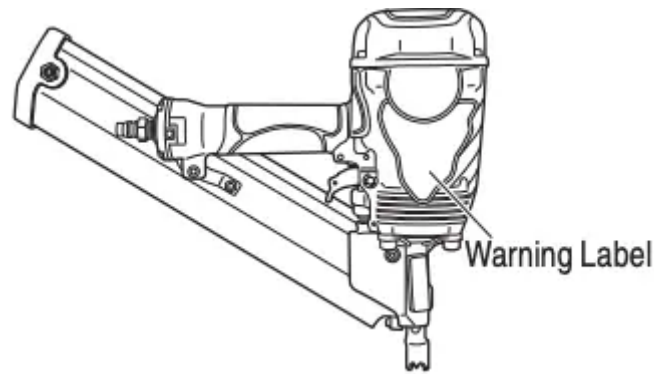
2. Storing

- When not in use for an extended period, apply a thin coat of the lubricant to the steel parts to avoid rust.
- Do not store the Nailer in a cold weather environment. Keep the Nailer in a warm area.
- When not in use, the Nailer should be stored in a warm and dry place. Keep out of reach children.

3. WARNING LABEL

Change the WARNING LABEL if missing or damaged.

A new WARNING LABEL is available from a Hitachi authorized service center.



4. Maintenance chart (See page 18)

5. Operator troubleshooting (See page 19)

6. Service parts list

A: Item No.

B: Code No.

C: No. Used

D: Remarks

CAUTION

• Repair, modification and inspection of Hitachi Power Tools must be carried out by a Hitachi Authorized Service Center. This Parts List will be helpful if presented with the tool to the Hitachi Authorized Service Center when requesting repair or other maintenance. In the operation and maintenance of power tools, the safety regulations and standards prescribed in each country must be observed.

MODIFICATIONS

Hitachi Power Tools are constantly being improved and modified to incorporate the latest technological advancements.

Accordingly, some parts (i.e. code numbers and/or design) may be changed without prior notice.

SERVICE AND REPAIRS WARNING

- Only service personnel trained by Hitachi, distributor or employer shall repair the Nailer.
- Use only parts supplied or recommended by Hitachi for repair.

All quality Nailers will eventually require servicing or replacement of parts because of wear from normal use.

NOTE

Specifications are subject to change without any obligation on the part of HITACHI

Maintenance chart

ACTION	WHY	HOW
Drain air line filter daily.	Prevent accumulation of moisture and dirt.	Open manual petcock.
Keep lubricator filled.	Keep the Nailer lubricated.	Fill with Hitachi pneumatic tool lubricant.
Clean filter element — then blow air through filter in direction opposite to normal flow	Prevent clogging of filter with dirt.	Follow manufacturer's instructions.
Clean magazine and feeder mechanism.	Prevent a jam.	Blow clean daily.
Keep push lever working properly.	Promote operator safety and efficient Nailer operation	Blow clean daily.
Lubricate the Nailer after nailing.	Extend the Nailer life.	Supply 5 – 10 drops of lubricant into the Nailer.
Drain air compressor.	Keep the Nailer operated properly.	Open petcock on air

Operator troubleshooting

Most minor problems can be resolved quickly and easily using the table below. If problems persist, contact a Hitachi authorized service center for assistance.



PROBLEM	CHECK METHOD	CORRECTION
Nailer operates, but no nail is driven.	Check for a jam	Clear a jam.
	Check function of nail feeder per page 17.	Clean and lubricate.
	Ribbon spring weakened or damaged?	Replace ribbon spring.
	Check for proper nails.	Use only recommended nails.
Weak drive. Slow to cycle	Check air pressure.	Increase air pressure. (Do not exceed 120 psi (8.3 bars, 8.5 kgf/cm ²))
	-	Use Hitachi pneumatic tool lubricant.
	Driver blade worn?	Contact Hitachi for replacement.
	Piston O – ring worn or damaged?	
Drives too deep.	Check air pressure.	Reduce air pressure. (Adjust 70 – 120 psi)
Skipping nails. Intermittent feed.	Check for proper nails.	Use only recommended nails.
	Check function of nail feeder per page 17.	Clean and lubricate.
		Replace ribbon spring.

	Ribbon spring weakened or damaged?	
	-	Use Hitachi pneumatic tool lubricant.
	Piston O – ring cut or heavily worn?	Contact Hitachi for replacement.
	Nail feeder (A) worn or damaged?	Replace nail feeder (A).
Nails jam. Driven nail is bent.	Check for proper nails.	Use only recommended nails
	Driver blade worn?	Contact Hitachi for replacement.
	Nail feeder (A) worn or damaged?	Replace nail feeder (A).
Drives properly during normal operation, but does not drive fully at faster nailing speeds.	Check inside diameter of air hose.	Use larger air hose.

Warning

This content is compiled from multiple sources and is provided for reference purposes only. It may not be complete or fully applicable to all situations. If you are unable to resolve your issue, please contact the product manufacturer or an authorized service provider for official support.