

MODEL NR 90AA

1. DISASSEMBLY AND REASSEMBLY

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

[CAUTION]

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

1-1. General Precautions in Disassembly and Reassembly

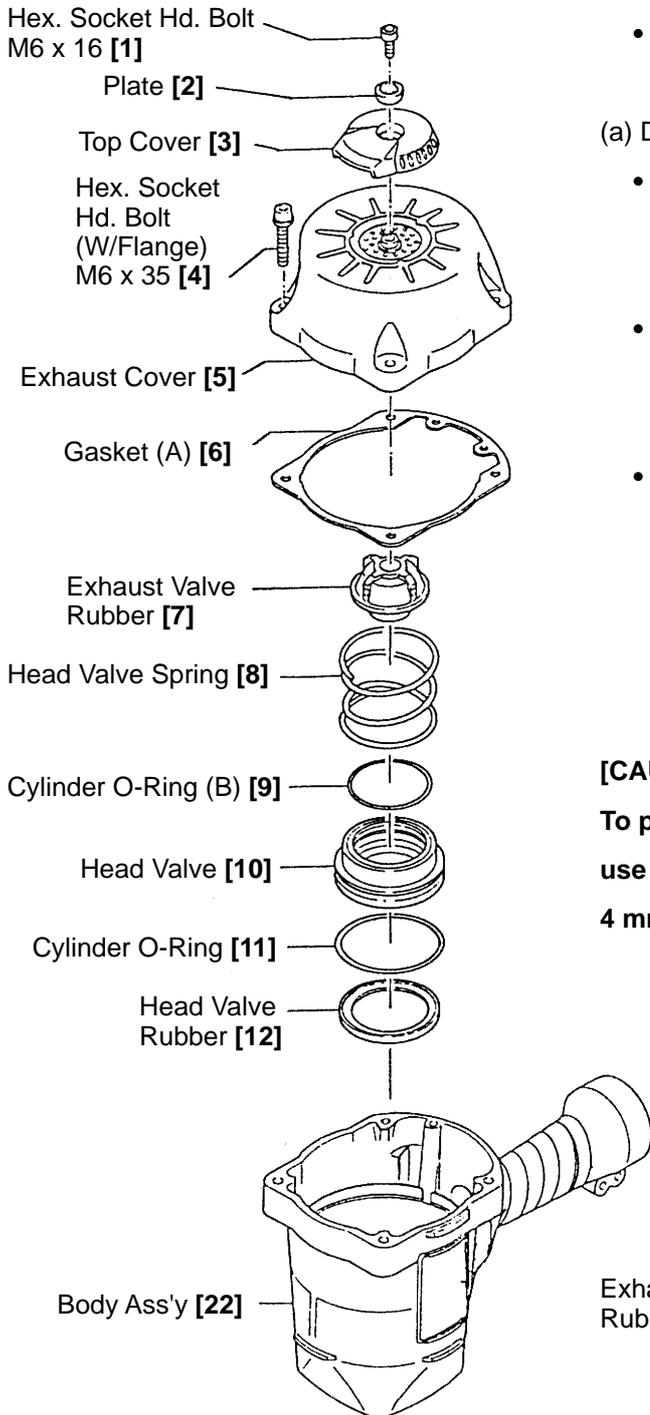
- Apply grease (Nippeco SEP-3A)(Code No. 930035) to the O-rings and O-rings' sliding portion. When installing the O-rings, be careful not to damage the O-rings and prevent dirt entry.
- Oil required: Hitachi pneumatic tool lubricant
 - 1 oz (30 cc) oil feeder (Code No. 877153)
 - 4 oz (120 cc) oil feeder (Code No. 874042)
 - 1 quart (1 ltr) can (Code No. 876212)
- If Gasket (A) **[6]** 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	Tightening torque [N·m (kgf·cm, ft-lb)]
Hex. Socket Hd. Bolt M8 [28]	25.2 ± 2 (260 ± 20, 18.8 ± 1.4)
Hex. Socket Hd. Bolt M6 [1], [37]	12.7 ± 0.8 (130 ± 8, 9.4 ± 0.6)
Hex. Socket Hd. Bolt (W/Flange) M6 [4]	12.7 ± 0.8 (130 ± 8, 9.4 ± 0.6)
Nylock Bolt (W/Flange) M6 [59], [77]	12.7 ± 0.8 (130 ± 8, 9.4 ± 0.6)
Hex. Socket Hd. Bolt M6 [78]	9.8 ± 0.8 (100 ± 8, 7.2 ± 0.6)
Hex. Socket Hd. Bolt M5 [42], [74]	8.3 ± 0.5 (85 ± 5, 6.1 ± 0.4)
Hex. Socket Hd. Bolt M4 [83]	4.4 ± 0.3 (45 ± 3, 3.3 ± 0.2)

1-2. Disassembly and Reassembly of the Output Section

(1) Disassembly and reassembly of the Exhaust Cover [5], Head Valve [10], Exhaust Valve Rubber [7], etc.

(See Fig. 1A and Fig. 1B.)



[Tools required]

- Hex. bar wrench (5 mm)
- Hammer

(a) Disassembly

- Remove the four Hex. Socket Hd. Bolts M6 x 35 [4] with a hex. bar wrench. The entire Exhaust Cover [5] can now be removed from the Body Ass'y [22].
- Remove the Hex. Socket Hd. Bolt M6 x 16 [1] with a hex. bar wrench. The Plate [2] and the Top Cover [3] can now be removed.
- As shown in Fig. 1B, insert a 4 to 5 mm dia. bar into the hole of M6 screw in the Exhaust Cover [5] and force out the Exhaust Valve Rubber [7] with a hammer. Now, the parts forming the Exhaust Valve Rubber [5] can be taken out.

[CAUTION]

To prevent damage to the Exhaust Valve Rubber [7], do not use a pointed bar or a bar with a diameter of less than 4 mm.

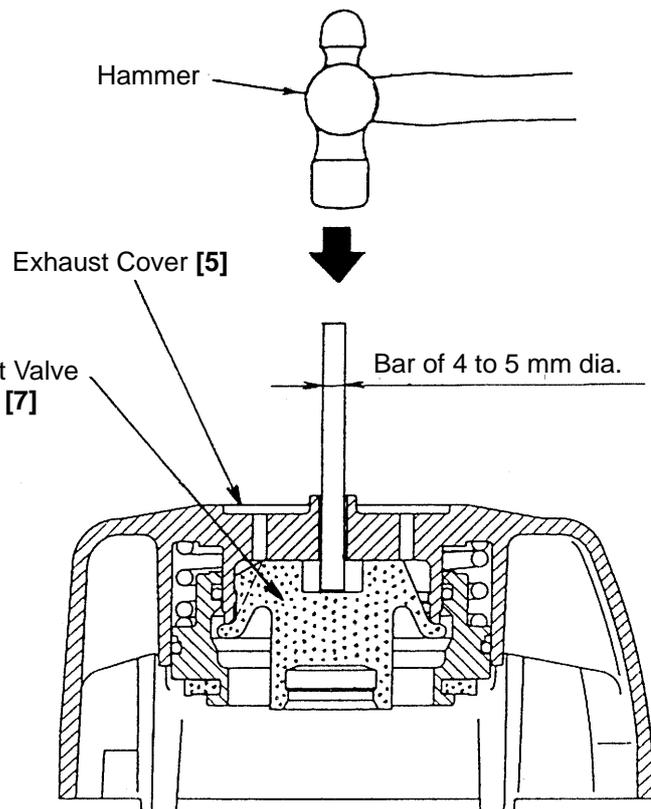


Fig. 1B

Fig. 1A Disassembly and reassembly of the Exhaust Cover, Head Valve, Exhaust Valve Rubber, etc.

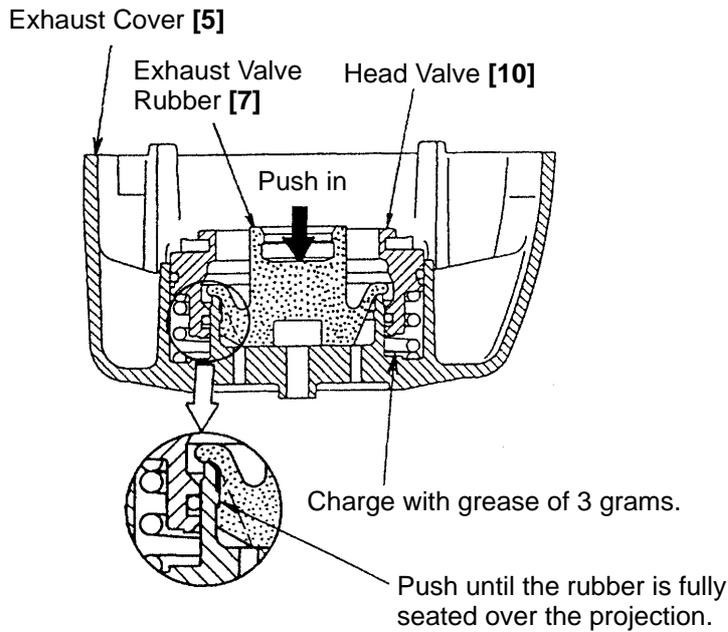


Fig. 2

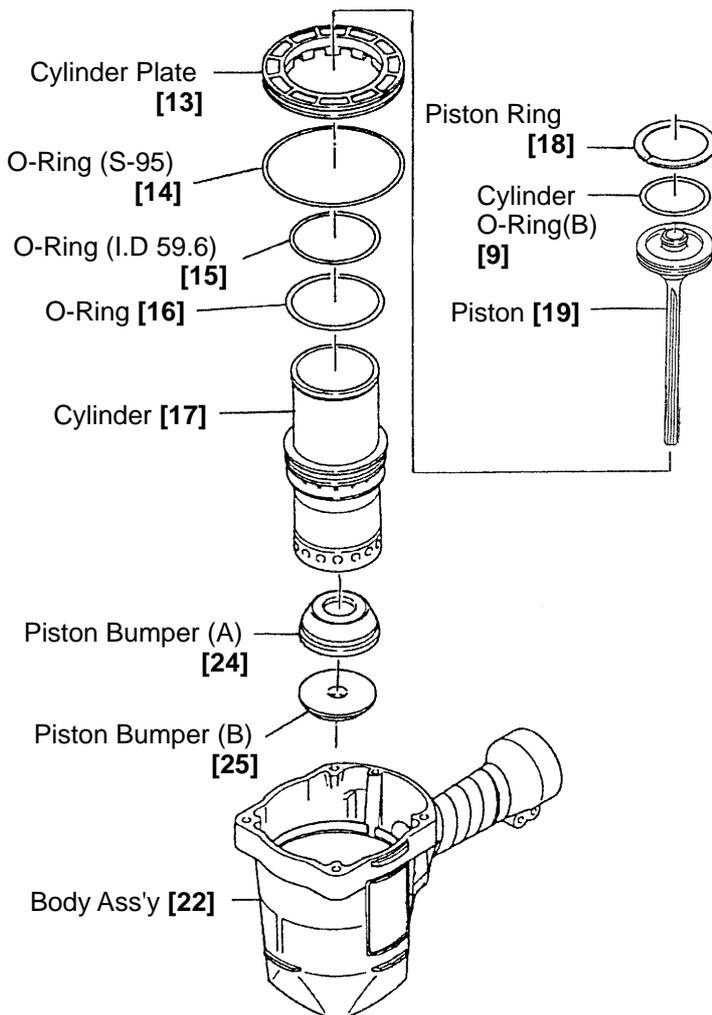
(b) Reassembly

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

- Charge the sliding portion of the Head Valve [10] of the Exhaust Cover [5] with about 3 grams of grease and apply grease to each surface of the O-rings.
- As shown in Fig. 2, firmly push the Exhaust Valve Rubber [7] until it is fully seated over the projection of the Exhaust Cover [5].

(2) Disassembly and reassembly of the Cylinder [17], Piston [19], Piston Bumper (A) (B) [24] [25], etc.

(See Fig. 3.)



(a) Disassembly

- Remove the Exhaust Cover [5] as described in item (1). Now, the Cylinder [17], Cylinder Plate [13], Piston [19], Piston Bumper (A), (B) [24], [25], etc. can be taken out.

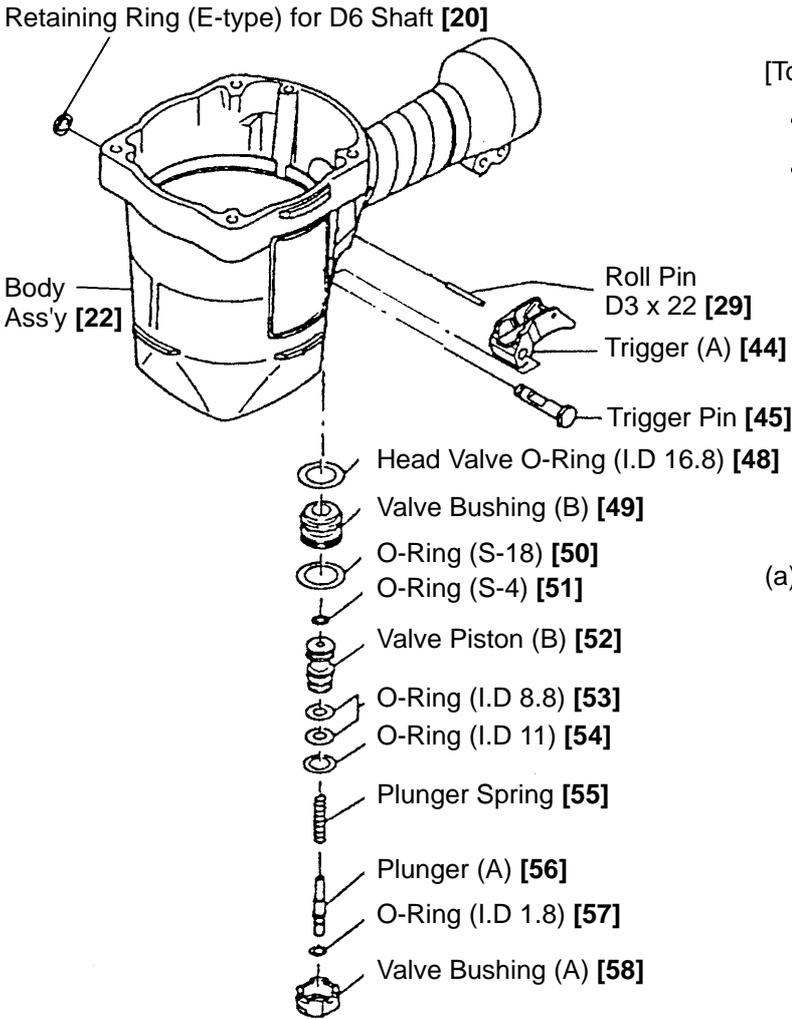
(b) Reassembly

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

- Apply the supplied oil (Hitachi pneumatic tool lubricant) to the Piston Ring [18], Cylinder O-Ring (B) [9] and the internal side of the Cylinder [17].
- Apply grease to the O-Ring (S-95) [14], O-Ring (I.D 59.6) [15] and the O-Ring [16], and then install them.

Fig. 3 Disassembly and reassembly of the Cylinder, Piston, Piston Bumper, etc.

1-3. Disassembly and Reassembly of the Control Valve Section (See Fig. 4)



[Tools required]

- Flat-blade screwdriver
- Roll pin puller (3 mm dia.)

(a) Disassembly

- Remove the Retaining Ring (E-type) for D6 Shaft [20] with the flat-blade screwdriver and pull out the Trigger Pin [45], then Trigger (A) [44] can be removed.
- To remove the Trigger (A) [44] together with the driving section (Pushing Lever (B) [31], Nose [27], etc.), remove Trigger (A) [44] while forcing down Plunger (A) [56] with the blade of a flat-blade screwdriver, as shown in Fig. 5.

Fig. 4 Disassembly and reassembly of the Control Valve Section

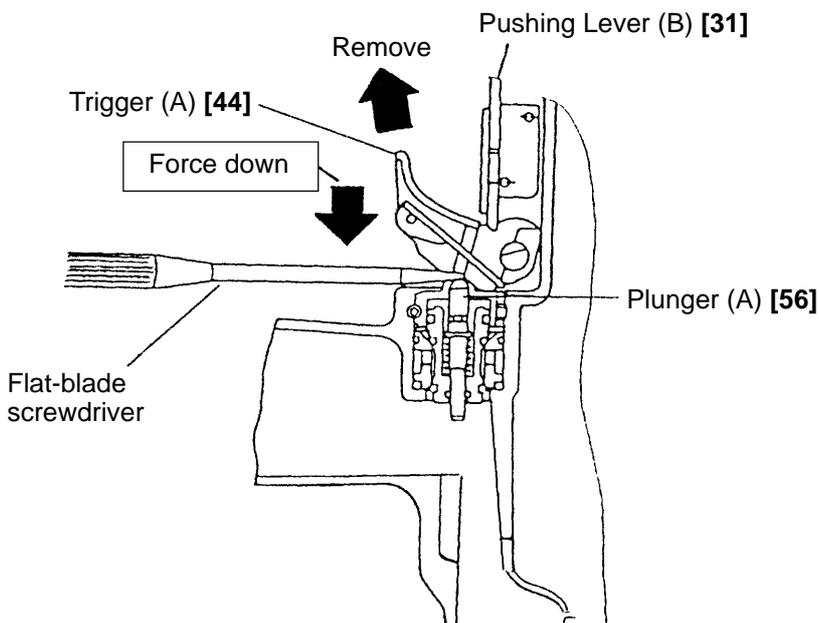


Fig. 5

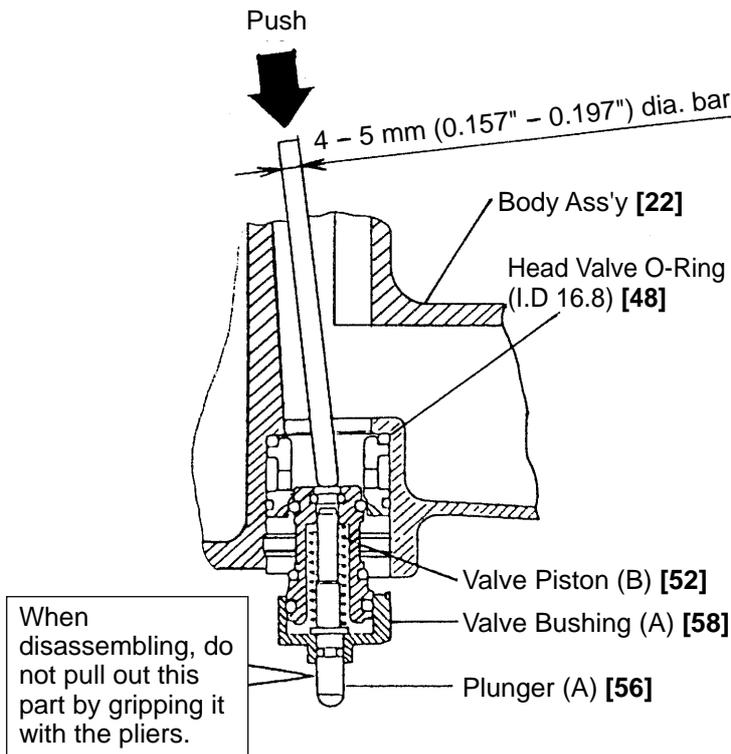


Fig. 6

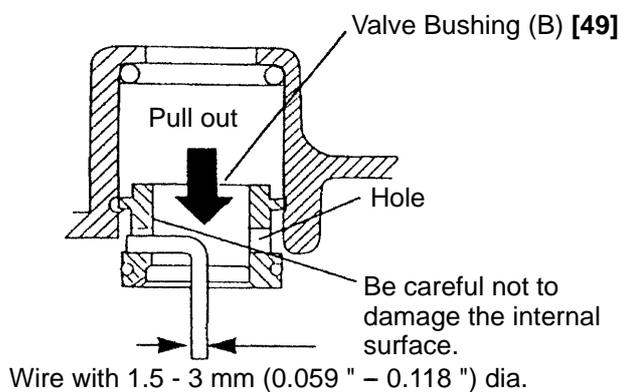


Fig. 7

- Pull out the Roll Pin D3 x 22 [29] with the roll pin puller (3 mm dia.), and take out the control valve in the following manner.
- 1) Remove the Exhaust Cover [5] by following the procedure in (1), item 10-2.
 - 2) As shown in Fig. 6, put in the 4 – 5 mm (0.157" – 0.197") dia. bar from the upper side of the Body Ass'y [22] and push the top of the Valve Piston (B) [52]. Now, the parts forming the control valve can be taken out except the Valve Bushing (A) [58] and the Head Valve O-Ring (I.D 16.8) [48].

[CAUTIONS]

- Be careful not to damage Valve Piston (B) [52], Valve Bushing (A) [58] and (B) [49], etc.
- Do not pull out the end of Plunger (A) [56] with the pliers.

- 3) To take out Valve Bushing (B) [49], put a 1.5 – 3 mm (0.059" – 0.018") dia. wire with its end hooked into the hole in the bushing and pull it out while being careful not to damage the internal surface of Valve Bushing (B) [49], as shown in Fig. 7.

(b) Reassembly

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

- Be extremely careful to prevent the entry of foreign particles into the control valve section.
- Thoroughly apply grease to the O-Ring (I.D 1.8) [57] of Plunger (A) [56], the O-Rings (S-4), (I.D 8.8) and (I.D 11) [51], [53] and [54] of Valve Piston (B) [52], and the shaft of Plunger (A) [56] shown in Fig. 8.
- As shown in Fig. 8, install Valve Bushing (A) [58] so that the roll pin groove in Valve Bushing (A) [58] will be aligned with the roll pin hole in the Body Ass'y [22]. First, insert the roll pin puller (3 mm dia.) into the roll pin hole. Then, upon confirming that the puller passes through the hole, drive in the Roll Pin D3 x 22 [29].

[If an attempt is made to drive the roll pin with force when the roll pin groove in Valve Bushing (A) [58] is not aligned with the roll pin hole in the Body Ass'y [22], it will damage the periphery of Valve Bushing (A) [58] and prevent disassembly or reassembly.]

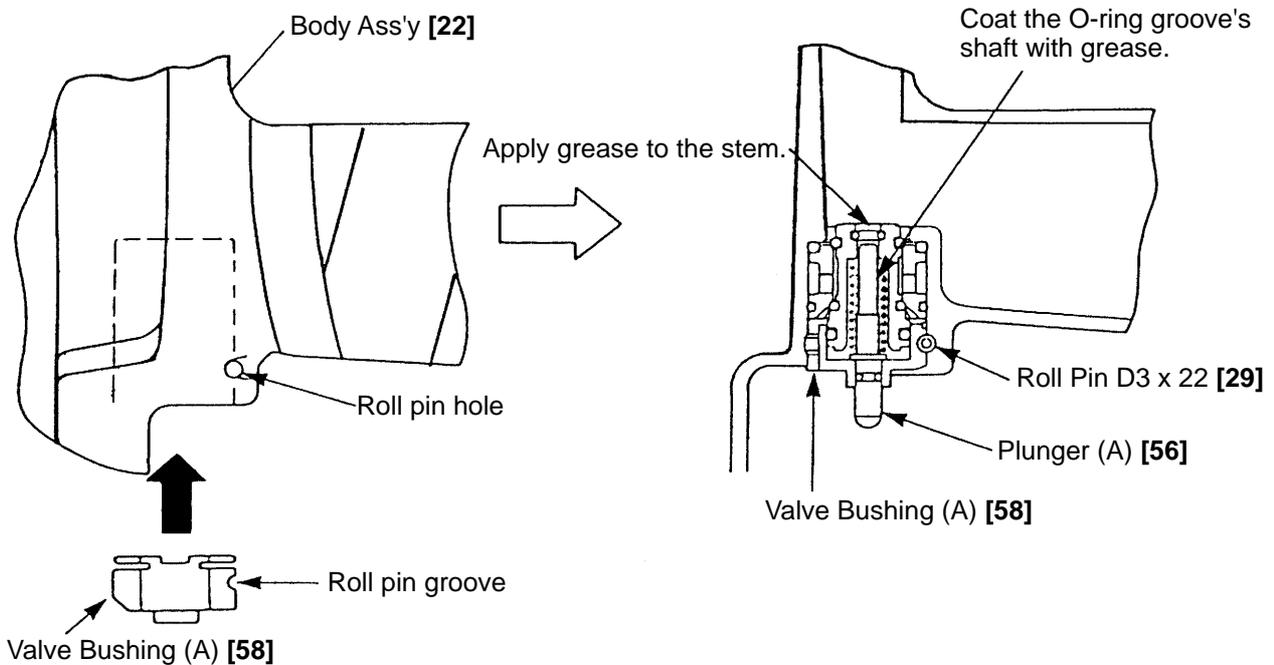


Fig. 8

After assembly, make sure that Plunger (A) [56] moves smoothly.

1-4. Disassembly and Reassembly of the Driving Section (See Fig. 9)

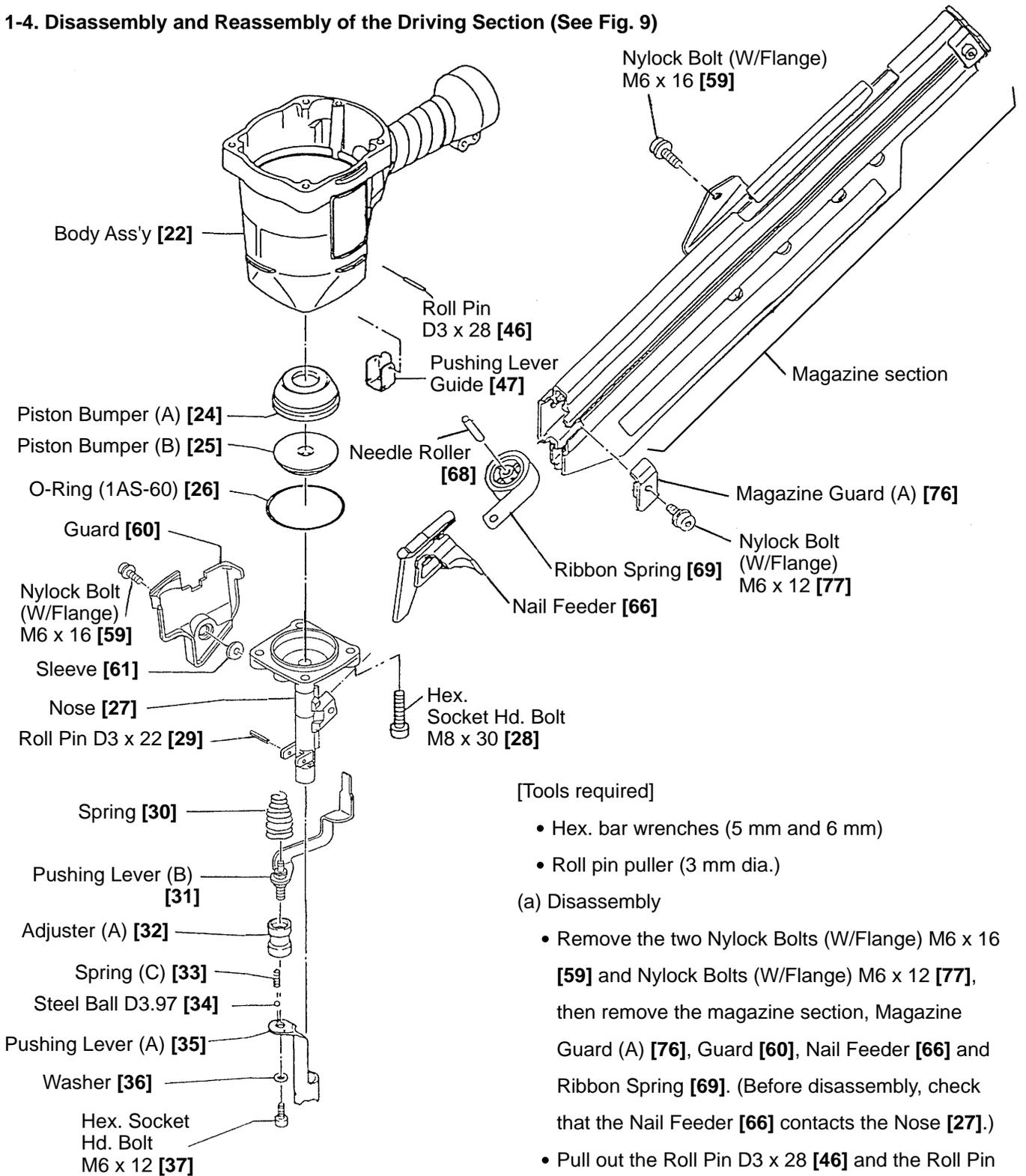


Fig. 9 Disassembly and reassembly of the driving section

[Tools required]

- Hex. bar wrenches (5 mm and 6 mm)
- Roll pin puller (3 mm dia.)

(a) Disassembly

- Remove the two Nylock Bolts (W/Flange) M6 x 16 [59] and Nylock Bolts (W/Flange) M6 x 12 [77], then remove the magazine section, Magazine Guard (A) [76], Guard [60], Nail Feeder [66] and Ribbon Spring [69]. (Before disassembly, check that the Nail Feeder [66] contacts the Nose [27].)
- Pull out the Roll Pin D3 x 28 [46] and the Roll Pin D3 x 22 [29]. Remove the Hex. Socket Hd. Bolt M8 x 30 [28], then the Nose [27], Pushing Lever (B) [31] and others can be removed.

(b) Reassembly

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

- Apply grease to the O-Ring (1AS-60) [26] and then install it.
- Before mounting the magazine section to the Nose [27] and the Body Ass'y [22], temporarily secure the Nail Feeder [66], Ribbon Spring [69], Needle Roller [68] and Magazine Guard (A) [76] without tightening the bolts completely as shown in Fig. 10.

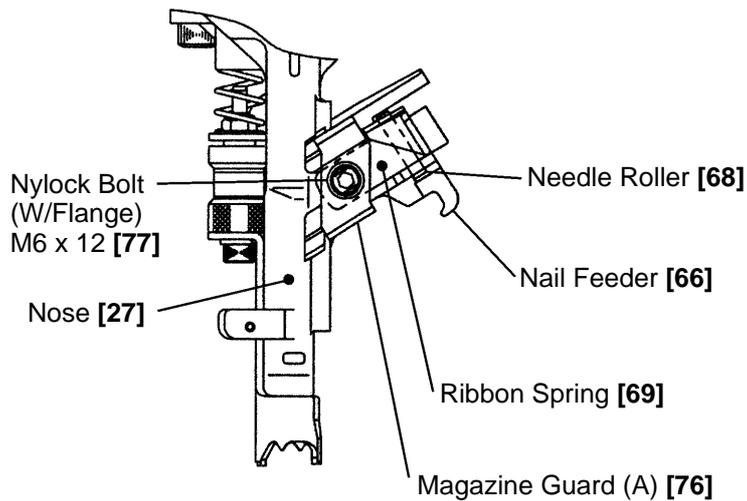


Fig. 10 Mounting of the Nail Feeder and Ribbon Spring

- Slide the Nail Feeder [66] backward and then tighten the Nylock Bolt (W/Flange) M6 x 12 [77] for smooth movement. After reassembly, check that the Nail Feeder [66] slides smoothly.

1-5. Disassembly and Reassembly of the Cap and the Magazine Section

(1) Disassembly and reassembly of the cap (See Fig. 11)

[Tool required]

- Hex. bar wrench (4 mm)

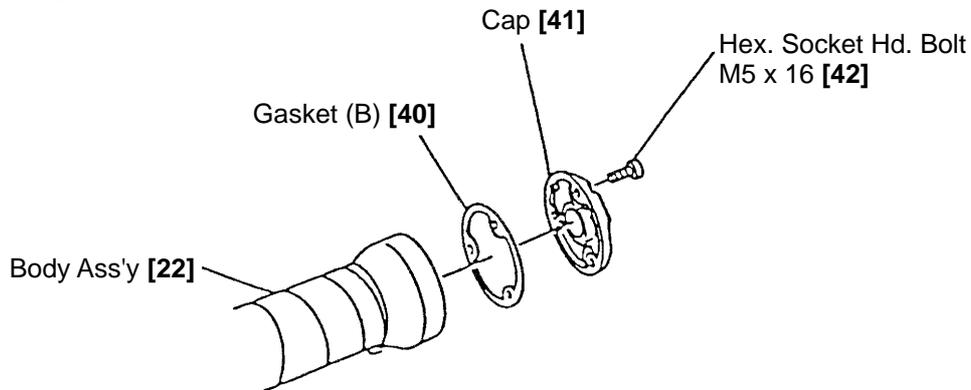


Fig. 11 Disassembly and reassembly of the Cap

(a) Disassembly

- Remove the three Hex. Socket Hd. Bolts M5 x 16 [42] with the hex. bar wrench so that the Cap [41] and Gasket (B) [40] can be removed.

(b) Reassembly

- Disassembly procedures should be followed in the reverse order.

(2) Disassembly and reassembly of the magazine section (See Fig. 12)

[Tools required]

- Hex. bar wrenches (5 mm, 4 mm and 3 mm)
- 10 mm Spanner

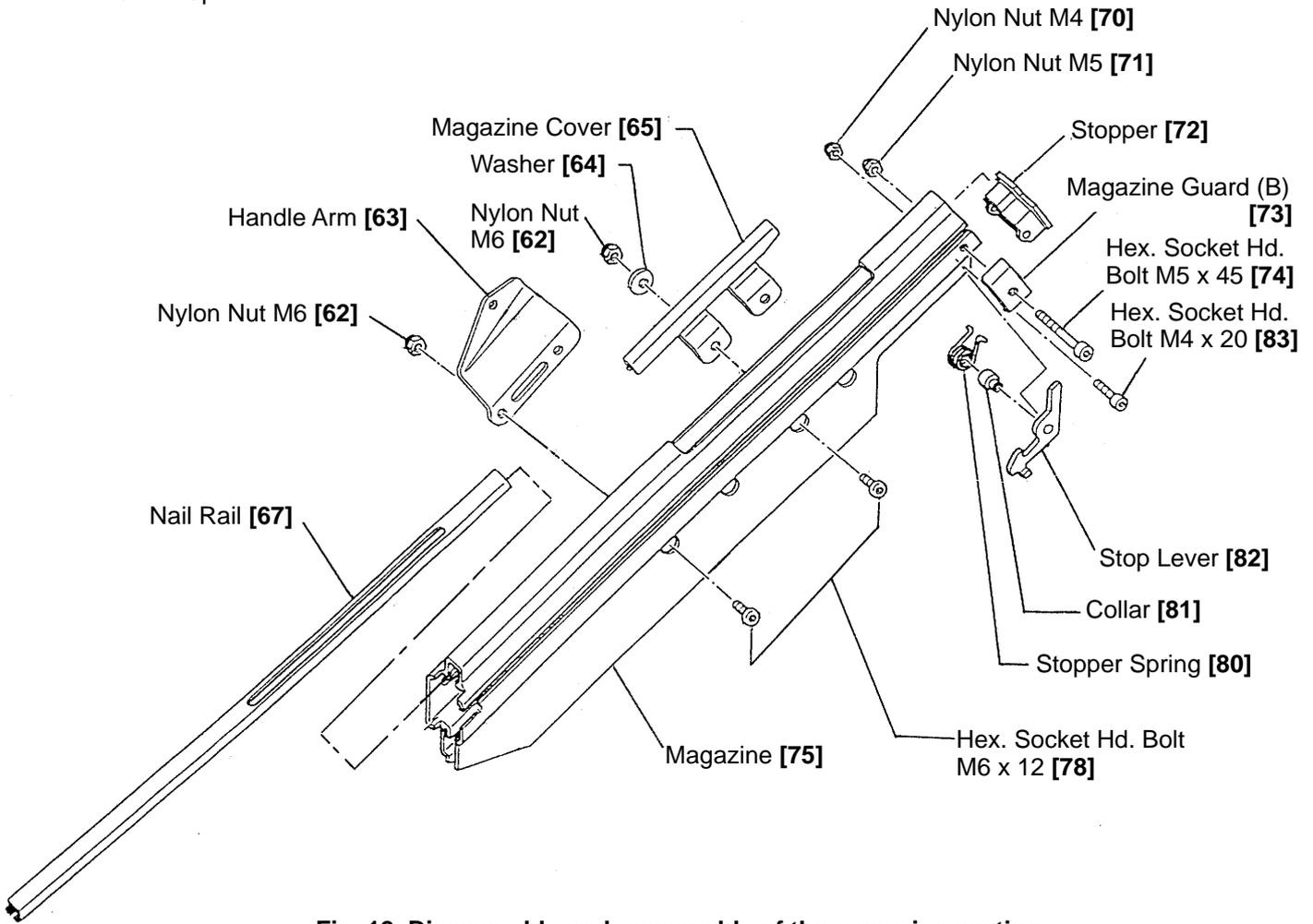


Fig. 12 Disassembly and reassembly of the magazine section

(a) Disassembly

- Loosen the four Hex. Socket Hd. Bolts M6 x 12 [78] and remove the Handle Arm [63] and the Magazine Cover [65].
- Loosen the Hex. Socket Hd. Bolt M5 x 45 [74] and the Hex. Socket Hd. Bolt M4 x 20 [83], and remove the Stop Lever [82], Collar [81], Stopper Spring [80], Magazine Guard (B) [73] and Stopper [72].

(b) Reassembly

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

- Temporarily secure the Stopper [72] and Magazine Guard (B) [73] with the Hex. Socket Hd. Bolt M5 x 45 [74] before mounting the Stopper [72], Stop Lever [82], Stopper Spring [80] and the related parts. As shown in Fig. 13, insert the Collar [81] into the Stop Lever [82] and secure it with the Hex. Socket Hd. Bolt M4 x 20 [83] together with the Stopper Spring [80]. At this time, hitch a hook of the Stopper Spring [80] on the Stop Lever [82] and the other hook on the Magazine [75].

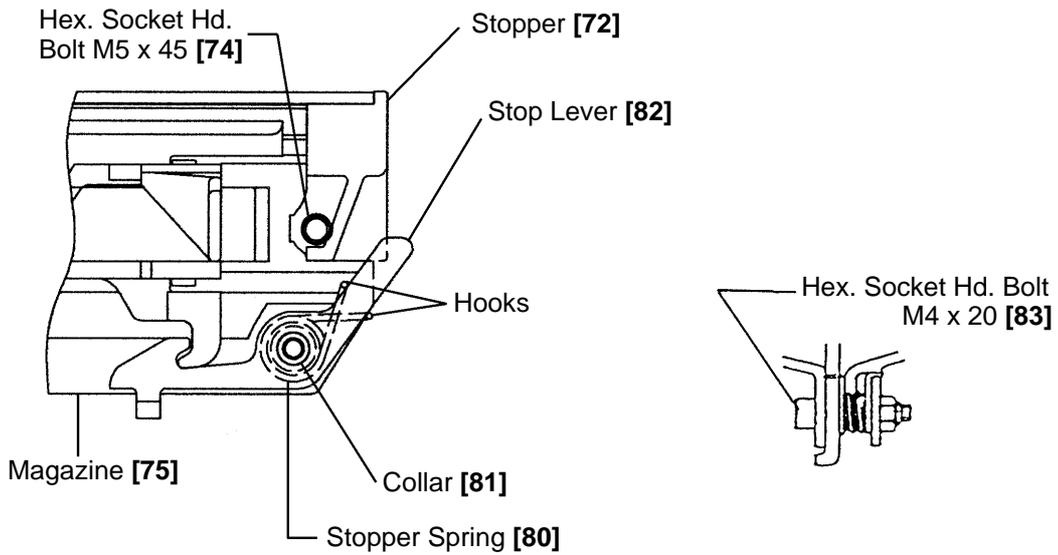


Fig. 13 Reassembly of the Stop Lever, Stopper Spring, etc.

- Secure the Magazine Cover [65] to the Magazine [75] with the Hex. Socket Hd. Bolt M6 x 12 [78] at the specified tightening torque (see section 10) as shown in Fig. 14. Load the 3.8 mm x 90 mm (0.148" x 3-1/2") nails specified in Fig. 15 in the Magazine [75]. Check that the Nail Feeder [66] feeds the nails smoothly. Otherwise, reassemble the Magazine Cover.

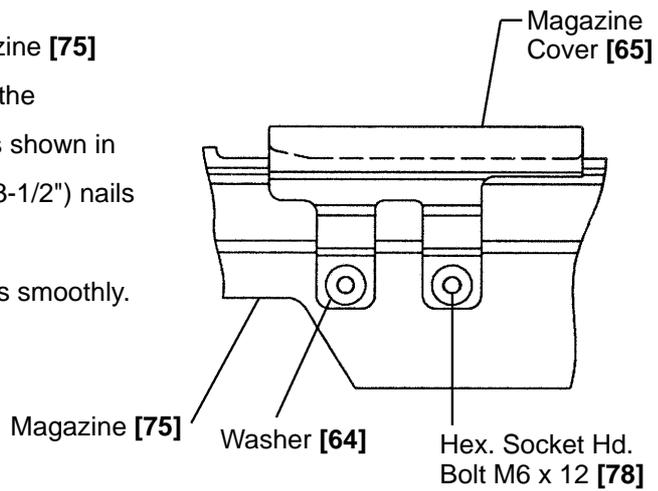


Fig. 14 Reassembly of the Magazine Cover

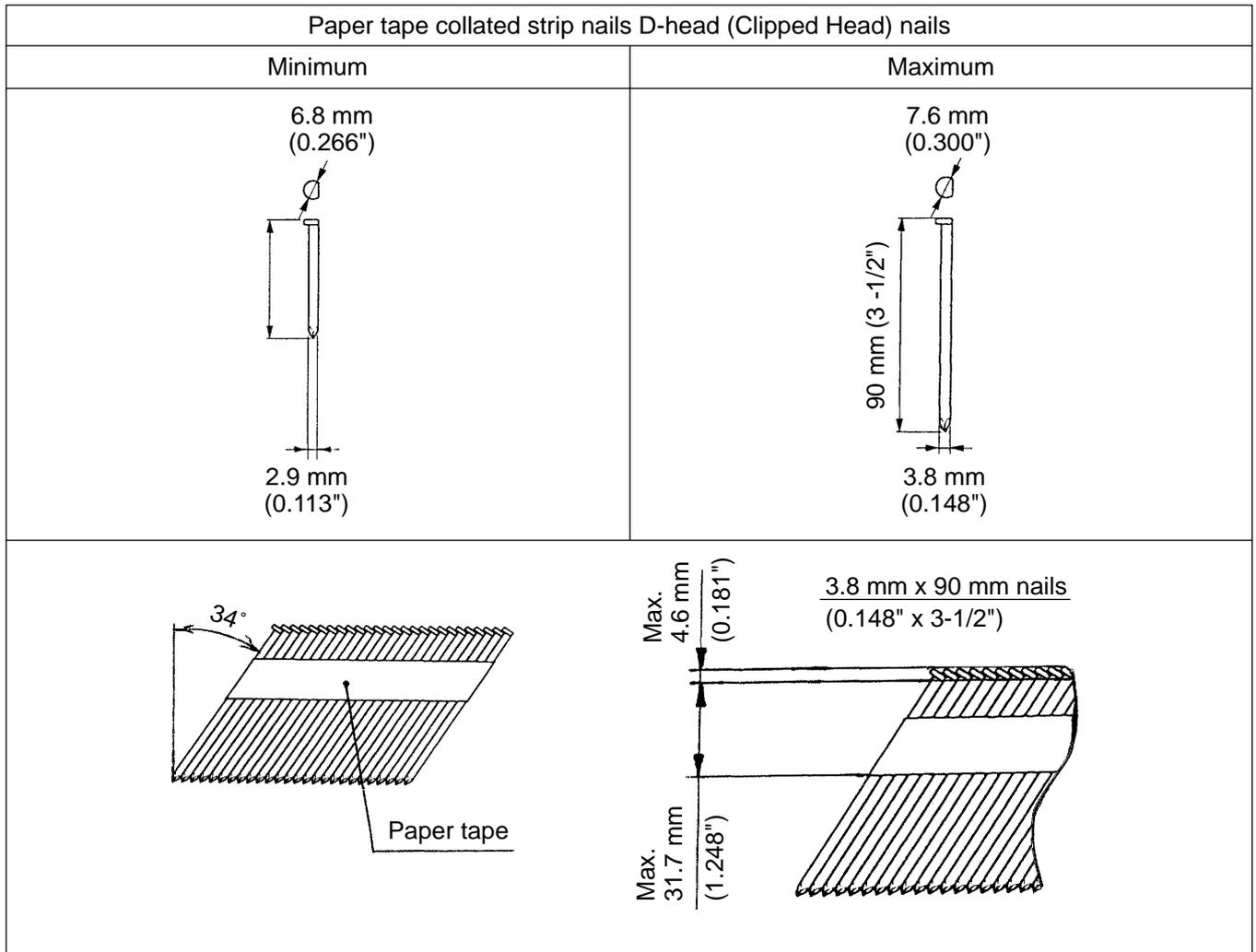


Fig. 15 Dimensions of nail

2. INSPECTION AND CONFIRMATION AFTER REASSEMBLY

- Check that Plunger (A) [56] moves smoothly.
- Check that there is no air leakage from each part.
- While driving nails with an air pressure of 4.5 kgf/cm² (63 psi), check that there is no misfiring and bending of nails.

Note: Before conducting the driving test, turn the Adjuster (A) [32] to the deepest position.

- Recheck the tightening torque of each screw.
- Check that the Pushing Lever (A) [35] slides smoothly.
- Check that the machine will not operate only by pulling Trigger (A) [44]. Also check that the machine will not operate only by depressing Pushing Lever (A) [35].

3. STANDARD REPAIR TIME (UNIT) SCHEDULES

MODEL	Variable		10	20	30	40	50	60	
	Fixed								
NR 90AA		Work Flow							
				Top Cover					
				Exhaust Cover					
				Gasket (A)		Nose			
				Exhaust Valve Rubber		Nail Rail			
				Head Valve Spring		Ribbon Spring			
				Cylinder O-Ring		Magazine			
				Head Valve Cylinder O-Ring (B)					
				Head Valve Rubber					
			General Assembly						
			Pushing Lever (B)	Cylinder				Body Ass'y	
			Spring	Cylinder Plate					
			Adjuster (A)	O-Ring x 4					
			Pushing Lever (A)	Piston Bumper (A)					
				Piston Bumper (B)					
			Piston						
			Piston Ring						
			Cylinder O-Ring (B)						
			Pushing Lever Guide						
			Trigger (A)						
			Trigger Pin						
			Valve Bushing (A)						
			Valve Bushing (B)						
			O-Ring x 7						
			Plunger						
			Plunger Spring						
			Valve Piston (B)						
			Adjustment (Cylinder Body Valve)						