AF550H Pneumatic Brad Nailer

CONCEPT AND MAIN APPLICATIONS

Model AF550H is a pneumatic finish nailer powered by high pressure air. Drives 18Ga Finish nails and Super finish nails of the following length:
- Finish nails: 15 to 55mm (5/8 to 2-3/16")
- Super finish nails: 15 to 50mm (5/8 to 2")

Its main benefits are:
- Ultra-fine finish with almost invisible driver tip marking
- Compact and lightweight design for high maneuverability
- Slim contact arm and nose adapter for easy access to tight places
- Contact arm with an extra-short stroke and non-marring rubber nose adapter for protection of workpiece surface from damages/scratches

Note: The standard equipment for the tool shown above may vary by country.

<table>
<thead>
<tr>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gauge (Shank diameter)</td>
</tr>
<tr>
<td>Type/ Head size: mm</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Nail collation angle</td>
</tr>
<tr>
<td>Nails per strip</td>
</tr>
<tr>
<td>Magazine capacity: nails</td>
</tr>
<tr>
<td>Operating air pressure: MPa</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Net weight: kg (lbs)</td>
</tr>
</tbody>
</table>

Safety goggles ................................................. 1
Oil supply (containing 30ml of turbine oil) .... 1
Nose adapter ................................................... 2
Hex wrench 3 ................................................... 1
Hook ................................................................. 1
Plastic carrying case ....................................... 1

Note: The standard equipment for the tool shown above may vary by country.

Optional accessories

Finish nails, Super finish nails
Air hoses
Repair kit for trigger (containing O rings)
NECESSARY REPAIRING TOOLS

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Description</th>
<th>Use for</th>
</tr>
</thead>
<tbody>
<tr>
<td>1R003</td>
<td>Retaining ring pliers ST-2N</td>
<td>Pulling off Pipe</td>
</tr>
<tr>
<td>1R237</td>
<td>Round bar for Arbor 8-100</td>
<td>Removing Front seal and Front cushion</td>
</tr>
<tr>
<td>1R266</td>
<td>Spring pin extractor 2</td>
<td>Removing/ mounting Spring pins 2-8</td>
</tr>
<tr>
<td>1R268</td>
<td>Spring pin extractor 3</td>
<td>Removing/ mounting Spring pins 3-28 and 3-26</td>
</tr>
<tr>
<td>1R274</td>
<td>Insert jig for Type 72 Field</td>
<td>Supporting Knob when removing Pin 2-8</td>
</tr>
</tbody>
</table>

LUBRICATIONS

Apply Isoflex NB52 to the following portions designated with the black arrows to protect parts and product from unusual abrasion.

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
<th>Portion to lubricate</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>③</td>
<td>O ring 31</td>
<td>Whole portion</td>
<td></td>
</tr>
<tr>
<td>⑤</td>
<td>O ring 14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>⑦</td>
<td>O ring 29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>⑧</td>
<td>D ring 21.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>⑨</td>
<td>Cylinder</td>
<td>Inside where Driver complete moves</td>
<td>a little</td>
</tr>
<tr>
<td>⑫,⑬</td>
<td>O ring 9.5</td>
<td>Whole portion</td>
<td></td>
</tr>
<tr>
<td>⑭</td>
<td>O ring 11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>⑮</td>
<td>Idler guide</td>
<td></td>
<td></td>
</tr>
<tr>
<td>⑯</td>
<td>Pin 3</td>
<td>Whole portion</td>
<td></td>
</tr>
<tr>
<td>⑰</td>
<td>Pin 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>⑱</td>
<td>Stopper</td>
<td>The portion where Trigger base contacts</td>
<td></td>
</tr>
</tbody>
</table>

CAUTION: Disconnect the air hose from the machine and then remove remaining nails for safety before repair/ maintenance in accordance with the instruction manual!
Apply Isoflex NB52 to the following portions designated with the black arrows to protect parts and product from unusual abrasion.

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
<th>Portion to be lubricated</th>
</tr>
</thead>
<tbody>
<tr>
<td>96</td>
<td>O ring 20</td>
<td>Whole portion</td>
</tr>
<tr>
<td>97</td>
<td>O ring 22</td>
<td></td>
</tr>
<tr>
<td>99</td>
<td>O ring 11.2</td>
<td>Whole portion for smooth action in Main valve</td>
</tr>
<tr>
<td>100</td>
<td>O ring 12.5</td>
<td></td>
</tr>
<tr>
<td>101</td>
<td>O ring 18</td>
<td></td>
</tr>
<tr>
<td>103</td>
<td>Compression Spring 7</td>
<td>Whole portion for smooth action in Main valve</td>
</tr>
<tr>
<td>104</td>
<td>O ring 12</td>
<td></td>
</tr>
<tr>
<td>105</td>
<td>O ring 18</td>
<td></td>
</tr>
<tr>
<td>107</td>
<td>O ring 6</td>
<td>Whole portion</td>
</tr>
<tr>
<td>108</td>
<td>O ring 6</td>
<td></td>
</tr>
<tr>
<td>109</td>
<td>O ring 12</td>
<td></td>
</tr>
<tr>
<td>111</td>
<td>Compression Spring 3</td>
<td>Whole portion for smooth action in Pilot valve</td>
</tr>
<tr>
<td>112</td>
<td>O ring 3</td>
<td>Whole portion</td>
</tr>
<tr>
<td>114 115</td>
<td>O-ring 3</td>
<td><strong>Note:</strong> O ring 3 is different from O-ring 3. Distinguish them by the parts numbers.</td>
</tr>
<tr>
<td>116</td>
<td>O ring 22</td>
<td>Whole portion</td>
</tr>
</tbody>
</table>

**Fig. 2**

**Trigger Valve Section**

- Main valve
- Trigger valve guide A
- Trigger valve guide B
- Pilot valve
- Trigger valve stem
- Trigger valve case
[3] Adhesive for One touch joint H22PM and Bolts

Apply Loctite 242 or ThreeBond 1342 to the threads of One touch joint H22PM and bolts listed below.

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
<th>Q'ty</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>One touch joint H22PM</td>
<td>1</td>
</tr>
<tr>
<td>14</td>
<td>M4x12 Hex socket head bolt</td>
<td>2</td>
</tr>
<tr>
<td>64</td>
<td>M5x20 Hex socket head bolt</td>
<td>2</td>
</tr>
<tr>
<td>68</td>
<td>M4x12 Hex socket head bolt</td>
<td>2</td>
</tr>
<tr>
<td>93</td>
<td>M4x12 Hex socket head bolt</td>
<td>2</td>
</tr>
<tr>
<td>94</td>
<td>M5x14 Hex socket head bolt</td>
<td>1</td>
</tr>
</tbody>
</table>

Fig. 3
[4] DISASSEMBLY/ASSEMBLY

[4]-1. Driver complete

**DISASSEMBLING**

Disassemble Driver complete and O rings in the order of Figs. 4 to 8.

**Fig. 4** Pull off Top cap cover by hand.

**Fig. 5** Fix the hex portion of Top cap with vise. And turn the machine counter clockwise. Top cap can be removed.

**Fig. 6** Cylinder Rear cushion

**Fig. 7** Pull off Cylinder together with Driver complete. Remove Driver complete from Cylinder.

**Fig. 8** Remove O rings.

**ASSEMBLING**

Take the disassembling step in reverse.

**Note:**
1) Apply Lubricant to O rings and fit them into each groove on Driver complete and Top cap. (Fig. 8)
2) Insert the round shape of Driver complete on the bottom of Cylinder, and face the vertical groove of Driver complete in the opposite direction to Magazine, then set the assembled part in place as illustrated in Fig. 9.
3) Rear cushion is directional. Therefore, set it in place as illustrated in Fig. 6. Do not pinch O ring 31 between threads of Top cap and Housing set.
Repair

[4] DISASSEMBLY/ASSEMBLY
[4]-2. Front cushion

**DISASSEMBLING**
(1) Remove Driver complete in the order of Figs. 4 to 7.
(2) Separate Magazine and Trigger section from Housing set. Front cushion and Front seal can be removed as illustrated in Figs. 10 and 11.

**Fig. 10**
Remove Spring pin 3-28 with 1R268.
Remove M5x20 Hex socket head bolt (2pcs.) and M5x14 Hex socket head bolt.
Magazine section and Trigger section can be disassembled from Housing set.

**Note**: Pin 3 (2pcs.) may be removed during disassembly. Therefore, take care not to fall them off.

**Fig. 11**
Strike Front seal with 1R237 through the hole of Housing set.
Front cushion and Front seal can be removed.

**ASSEMBLING**
(1) Assemble Cylinder section to Housing set.
As the fitting of Front cushion is very tight, take the step illustrated in Fig. 12.

**Fig. 12**
Put Front cushion and Front seal on Cylinder. Then cover them with Housing set, and strike the designated portion of Housing set.
The slit has to be parallel to the holes pitch of Housing set.
[4] DISASSEMBLY/ASSEMBLY

[4]-3. Trigger valve section

DISASSEMBLING

1. Separate Magazine and Trigger section from Housing set as illustrated in **Fig. 10**.
2. Remove Trigger valve case as illustrated in **Fig. 13**. Trigger valve section are disassembled as illustrated in **Fig. 14**.

ASSEMBLING

Take the disassembling step in reverse. Refer to **Figs. 14 and 13**.
When assembling Trigger valve case, use 1R268 to guide Spring pin to the far side hole of Housing set. (**Fig. 15**)
DISASSEMBLY/ASSEMBLY

[4]-4 Inlet cap, One touch joint H22PM

DISASSEMBLING

Inlet cap and One touch joint H22PM are removed in the order of Figs. 16 to 21.

Fig. 16

Remove Cap 9.

Cap 9

Clamping the hex portion of One touch joint H22PM with vise, turn the machine clockwise. One touch joint can be removed.

If it is difficult to do in the above way, do the disassembling in the order of Figs. 17 to 21.

Fig. 17

Separate Exhaust cover by removing M2x12 Hex socket head bolt. And take out Filter A and Filter B.

Fig. 18

Remove Inlet cap by removing M4x16 Hex socket head bolt (4pcs.). Pipe (for exhaust) comes into sight.

Pipe (for exhaust)

Inlet cap

M4x16 Hex socket head bolt (4pcs.)

ASSEMBLING

(1) Applying Loctite 242 or “ThreeBond 1321/1342 to the thread of One Touch Joint H22PM, assemble One Touch Joint H22PM to Inlet cap by turning counterclockwise. Refer to Figs. 21 and 20.

(2) Take the disassembling step in reverse. Refer to Fig. 19, 18, 17 and 16.
DISASSEMBLY/ASSEMBLY

5. Magazine section

DISASSEMBLING

Magazine section is disassembled by removing Slide door complete.

(1) Remove M4x12 and M5x14 Hex socket head bolts and remove Slide door complete from Magazine as illustrated in Fig. 22.

(2) The following parts can be removed from Slide door complete as illustrated in Figs. 23 and 24.
   * Guide pipe in which Compression spring 6 are assembled.
   * Pusher to which Stopper and Compression spring 3 are assembled.
   * Cover plate.
   * Nail guide plate A (8 pcs.) and Nail guide plate B (2 pcs.)

Fig. 22

![Diagram of Magazine section disassembly](image)

Pulling Slide door complete, remove M4x12 and M5x14 Hex socket head bolts with which Joint is fixed to Magazine. And disassemble Slide door complete from Magazine together with Joint.

Fig. 23

![Diagram of Slide door complete disassembly](image)

While pressing Pusher with your finger, lift it up together with Guide pipe. And remove Pusher while depressing the pressure to it.

Pay attention not to lose Stopper and Compression spring 3 when disassembling them from Pusher.

Fig. 24

![Diagram of Nail guide plates removal](image)

Separate Cover plate by removing 4x12 Tapping screw. And remove Guide pipe and Joint.

Nail guide plates can be removed as follows.
1. Lift up
2. Push to the direction designated with white arrow.
Repair
[4] DISASSEMBLY/ASSEMBLY
[4]-5. Magazine section (cont.)

ASSEMBLING

(1) Assemble Slide door complete in the order of Figs. 25 to 27.

Fig. 25

After setting Leaf spring (2pcs.) to Slide door complete, put Nail guide plate A (8pcs.) and Nail guide B (2pcs.) as illustrated left.

Nail guide plate B (2 pcs.)

Fig. 26

Pass Guide pipe through Joint.

Set the Guide pipe to Slide door complete together with Joint. And assemble Cover plate by tightening with M4x12 Tapping screw.

M4x12 Tapping screw

Fig. 27

Assemble Pusher while referring to the left illustration in Fig. 28.

(2) Assemble Magazine to Joint by tightening it with M4x12 Hex socket head bolt. (2pcs.)
And assemble Housing set to Joint by tightening it with M5x14 Hex socket head bolt.
Refer to Fig. 27.
[4] DISASSEMBLY/ASSEMBLY

[4]-6 Trigger base section

DISASSEMBLING

(1) Disassemble Magazine section together with Trigger section as illustrated in Fig. 10.
(2) Separate Trigger base section from Magazine section as illustrated in Figs. 25 to 27.

Fig. 25

Cover Trigger base with adhesive tape, so that Pin 3 does not fall off Trigger base, during disassemble.

Support Knob with 1R274 and remove Spring pin 2-8 by striking 1R266 applied on the Spring pin.

Pull off 1R266 while pushing the head of Lock pin which is opposite side of Knob.

Fig. 26

Remove Knob and Lock pin. Trigger base section gets free from Magazine section.

Remove Trigger base section while paying attention not to lose Compression spring 5.

Fig. 27

Taking off adhesive tape, remove Pin 3 from Trigger base. The parts illustrated right can be removed from Trigger base.
Repair
[4] DISASSEMBLY/ASSEMBLY
[4]-6 Trigger base section (cont.)

ASSEMBLING

(1) Assemble Trigger base section in the order of Figs. 28 to 31.

Fig. 28

1. Assemble Torsion spring 4 to Link lever.

2. Assemble the Link lever to Trigger base with Tweezers as illustrated below.
And stabilize Link lever by inserting 2pcs. of Pin 3 halfway from the both side of holes.

Note: Tails of Torsion spring 4 have to be put on the fence of Trigger base when Link lever is assembled to Trigger base.

Fig. 29

Assemble Idler guide and Tension spring 4 to Link block and then secure them with Pin 2 as illustrated above.

Setting Link block together with Idler guide and Tension spring 4 to the valley of Link lever, pass Pin 3 through Link lever. the other Pin 3 is pushed out.

Fig. 30

Assemble Idler to Trigger by passing Spring pin 2-14 through Trigger and Idler.

Set Trigger to Trigger base by passing Pin 3 as illustrated above.

Fig. 31

Interlock Idler with Idler guide while moving Trigger as illustrated above.
And bring the loop portion of Tension spring 4 to Idler side.

Arm interferes with Trigger in moving to the direction designated with arrow. However, Trigger can be pushed to the place as it is without trouble.

Hook the loop of Tension spring 4 to Idler as illustrated above.
[4] DISASSEMBLY/ASSEMBLY
[4]-6 Trigger base section (cont.)

ASSEMBLING

(2) Mount the assembled Trigger base section to Magazine section in the order of Figs. 32 and 33.

**Fig. 32**

1. Align the elliptic hole of Arm with the hole of Stopper.

2. Install Compression spring 5 on Arm.

3. While passing this hook portion into Trigger in Trigger base, set Trigger base section to Magazine.

4. Pass Lock pin from the opposite side of Cam portion through Arm and Stopper. And turn Lock pin to fit its half moon section to that of Knob.

**Fig. 33**

5. While pressing Lock pin toward Knob side, pass 1R266 through Knob and Lock pin to reserve the inserting route for Pin 2-8.

6. Putting Pin 2-8 onto 1R266, press the Pin with water pump pliers. Pin 2-8 can be inserted to the original position.
[4] DISASSEMBLY/ASSEMBLY

[4]-7 Contact arm section

DISASSEMBLING

(1) Disassemble Magazine section together with Trigger section as illustrated in Fig. 10.
(2) Separate Trigger base section from Magazine section as illustrated in Fig. 25.
(3) Contact arm complete can be disassembled in the order of Figs. 34 and 35.

**Fig. 34**

Remove Push nut 3 with slotted screwdriver. Pin 4, Compression spring 5, Stopper and Adjuster can be removed from Adjuster as illustrated above.

**Fig. 35**

Disassemble Arm, while paying attention, not to lose Compression spring 3. And remove Driver guide cover while paying attention not to lose Compression spring 3.

ASSEMBLING

Take the disassembling step in reverse.

**Note:** Use new Push nut 3. Because it is deformed when disassembling.