CONCEPT AND MAIN APPLICATIONS
Model GN900 is a cordless clipped head nailer developed for a wide range of framing applications. The main features are as follows:
- Using fuel gas as the power source to provide freedom from hoses and compressors
- Equipped with LED indication lamp with battery power warning and trouble detection functions for convenience of operation and repair

This product is available in the following variations.

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Battery*1</th>
<th>Charger</th>
</tr>
</thead>
<tbody>
<tr>
<td>GN900SE</td>
<td>BL7010</td>
<td>DC07SA</td>
</tr>
<tr>
<td>GN900S</td>
<td>(Li-ion 1.0Ah)</td>
<td>1</td>
</tr>
<tr>
<td>GN900ZK</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

The model also includes the accessories listed below in "Standard equipment".
- *1 Battery is used as the power source for ignition spark, gas mixing, air intake/exhaust and supply of cooling air.

Specification

<table>
<thead>
<tr>
<th>Cell</th>
<th>Li-ion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage: V</td>
<td>7.2</td>
</tr>
<tr>
<td>Capacity: Ah</td>
<td>1.0</td>
</tr>
<tr>
<td>Charging time (approx.): min.</td>
<td>30 with DC07SA/DC10WA</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Head type</th>
<th>Clipped-head</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gauge (Shank diameter): mm (&quot;)</td>
<td>2.9 - 3.3 (0.113 - 0.131)</td>
</tr>
<tr>
<td>Length: mm (&quot;)</td>
<td>50 - 90 (2 - 3-1/2)</td>
</tr>
<tr>
<td>Nail collation angle</td>
<td>34 degree</td>
</tr>
</tbody>
</table>

| Magazine capacity | 44 nails (1 strip) |
| Motor*3 | Coreless DC motor |
| Battery life*4 | 4,000 nails (approx.) |
| Fuel cell life*5 | 1,200 nails (approx.) |
| Anti-dry-fire mechanism | Yes |
| Net weight: kg (lbs) | without Battery and Fuel cell with Battery and Fuel cell |
| | 3.2 (7.0) | 3.4 (7.5) |

*3 The motor is used for gas mixing, air intake/exhaust, supply of cooling air.
*4 Battery life: the number of nails on a single full battery charge
*5 Fuel cell life: the number of nails per Fuel cell

Standard equipment
- Safety goggles ................. 1
- Hex wrench 4 ................... 1
- Plastic carrying case ............ 1

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

Optional accessories
- Nail fuel pack
- Fuel cell
- Cleaner kit (contains the following accessories in a special Tool bag: Cleaner/ 1, Lubricating oil/ 1, Hex wrench 4/ 1, Brush/ 1, Cotton waste/ 1)
Repair

CAUTION: 1) Remove Battery, Fuel cell, Nail from the machine for safety before repair/ maintenance in accordance with the instruction manual!
2) Loosen Hex socket head bolts with L-shape wrench in advance before removing them using cordless impact driver with 1R228/ 1R229, or the top of 1R228/ 229 will damage.

[1] NECESSARY REPAIRING TOOLS

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Description</th>
<th>Use for</th>
</tr>
</thead>
<tbody>
<tr>
<td>1R005</td>
<td>Retaining ring pliers RT-2N</td>
<td>Disassembling / Assembling Retaining ring R-58</td>
</tr>
<tr>
<td>1R228</td>
<td>1/4” Hex shank bit for M4</td>
<td>Disassembling / Assembling M4 Hex socket head bolt</td>
</tr>
<tr>
<td>1R229</td>
<td>1/4” Hex shank bit for M5</td>
<td>Disassembling / Assembling M5 Hex socket head bolt</td>
</tr>
<tr>
<td>1R268</td>
<td>Spring pin extractor 3</td>
<td>Disassembling / Assembling Spring pin 3-32</td>
</tr>
<tr>
<td>1R291</td>
<td>Retaining ring S and R pliers</td>
<td>Disassembling / Assembling Retaining ring R-24</td>
</tr>
</tbody>
</table>

[2] LUBRICATIONS AND ADHESIVES

Apply a little amount of Lubricant and Adhesives illustrated in Fig. 1.

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
<th>Portion to lubricate</th>
<th>Lubrication</th>
</tr>
</thead>
<tbody>
<tr>
<td>②3</td>
<td>Cylinder</td>
<td>a: Inside with which Driver complete contacts</td>
<td>Lubrication oil VG100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b: Outside with which Chamber contacts</td>
<td>Molybdenum disulfide</td>
</tr>
<tr>
<td>②4</td>
<td>Cylinder ring</td>
<td>Whole portion</td>
<td></td>
</tr>
<tr>
<td>④2</td>
<td>O ring 60</td>
<td>Whole portion</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
<th>Portion to glue</th>
<th>Adhesive</th>
</tr>
</thead>
<tbody>
<tr>
<td>②3</td>
<td>Cylinder</td>
<td>c: Rib portion on which Exhaust plate is attached</td>
<td>ThreeBond 1215</td>
</tr>
<tr>
<td>⑨</td>
<td>M5x35 Hex socket head bolt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>⑧</td>
<td>M5x16 Hex socket head bolt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>⑩</td>
<td>M5x10 Hex socket head bolt</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Repair

[3] DISASSEMBLY/ASSEMBLY

[3]-1. Driver, Front cushion

DISASSEMBLING

(1) Disassemble Driver complete as illustrated in Figs. 2 and 3.

**Fig. 2**

1) Remove M5x35 Hex socket head bolt (2pcs.)
2) Remove M5x25 Hex socket head bolt (4pcs.) and Top cap.
3) Hold Housing by hand and slide it straightly and gently in order not to hook with Fan 60, then lift Housing obliquely as designated in black arrow.

**Note:** Do not deform Fan 60.

**Fig. 3**

1) Remove Retaining ring (INT) R-58 from Cylinder with 1R005.
2) Insert slotted screwdriver along with an vertical groove of Cylinder.
3) While holding Piston ring (2pcs.) with the slotted screwdriver to prevent them from being caught in the groove for Retaining ring (INT) R-58, push Driver complete with another slotted screwdriver toward Top cap side.

**Note:** Sleeve 8 (2pcs.) may be fallen from Handle set in the disassembling step. Therefore, pay attention not to lose Sleeve 8.

**Note:** Do not deform Fan 60.
[3] DISASSEMBLY/ASSEMBLY
[3]-1. Driver, Front cushion (cont.)

DISASSEMBLING

(2) Separate Cylinder section from Housing. And then disassemble Front cushion.  (Fig. 4)

ASSEMBLING

(1) Assemble Front cushion to Cylinder as illustrated in Fig. 5.
(2) Mount two Piston rings to Driver complete. (Fig. 6)

(3) Insert Driver complete into Cylinder as illustrated in Fig. 7.

(4) Inserting Cylinder section into Housing, tighten Front plate with M5x16 Hex socket head bolt (3pcs.). Assemble Contact top and Arm plate. (Fig. 4)
(5) Assemble Retaining ring (INT) R-58 to the groove in Cylinder. (Fig. 3)
(6) Assemble Handle set to Housing. (Fig. 2)
Repair

[3] DISASSEMBLY/ASSEMBLY

[3]-2. Exhaust valve section

When the tip of Driver complete does not hit the nail head in use, disassemble exhaust valve section to check malfunctions as illustrated in Fig. 8.

**Fig. 8**

<table>
<thead>
<tr>
<th>Normal condition of Exhaust valve and Exhaust plate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exhaust valve is attached to four holes on Exhaust plate when Driver complete moves to the lowest position.</td>
</tr>
<tr>
<td>Exhaust plate under Exhaust valve seals Cylinder at the frame on Cylinder.</td>
</tr>
</tbody>
</table>

**Exhaust plate**
<table>
<thead>
<tr>
<th>Exhaust valve</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silencer</td>
</tr>
</tbody>
</table>

**Silencer**

**Exhaust valve**

**Exhaust plate**

**Exhaust cover**

**M4x10 Hex socket head bolt (2pcs.)**

**Disassemble Exhaust cover, Silencer and Exhaust valve.**

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**Note:** It is possible that the tip of Driver complete does not hit the nail head in use because of the corrosion of adhesive even if Exhaust valve and Exhaust plate do not look deformed/ damaged.

Scrape away the adhesive and apply fresh ThreeBond to treat such a case. (Refer to next page.)

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**DISASSEMBLING**

(1) Disassemble Handle set from Housing. (Fig. 2.)

(2) Remove Contact top, Arm plate and Front plate from Cylinder. And separate Cylinder section from Housing. (Fig. 4)

(3) Disassemble Exhaust mechanism as illustrated in Figs. 9 and 10.

**Fig. 9**

**Fig. 10**
Repair

[3] DISASSEMBLY/ASSEMBLY

[3]-2. Exhaust valve section (cont.)

ASSEMBLING

1. Use slotted screwdriver to scrape away adhesive left on the frame on Cylinder.
   **Note:** The incomplete scraping causes the leakage of gas.

2. Take the assembling step as illustrated in Figs. 11 and 12.

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**Fig. 11**

- Set Punching metal in place.
- Apply ThreeBond 1215 on the frame of Cylinder as illustrated below.
- Attach Exhaust plate and tighten it with M4x10 Hex socket head bolt (2pcs.) so that the protrusions face Exhaust valve installation side.

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**Fig. 12**

- Set Exhaust valve and Silencer in place.
- Tighten Exhaust cover with M4x10 Hex socket head bolt (2pcs.).

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(3) Insert Cylinder section to Housing and assemble Front plate.
   Assemble Contact top and Arm plate to the Driver guide section of Cylinder. Refer to Fig. 4.
(4) Assemble Handle set to Housing as illustrated in Fig. 2.

**Note:** Wait until ThreeBond 1215 dries at least **three hours**, and then try nailing before actual work. Incomplete drying causes the leakage of gas.
Repair

[3] DISASSEMBLY/ASSEMBLY

[3]-3. Chamber

**DISASSEMBLING**

1. Disassemble Handle set from Housing as illustrated in Fig. 2.
2. Remove Contact top, Arm plate and Front plate from Cylinder. Separate Cylinder section from Housing as illustrated in Fig. 4.
3. The removed Cylinder section can be disassembled as illustrated in Figs. 13 and 14.

**Fig. 13**

- Cylinder
- IR268
- Chamber
- Spring pin 3-32 (2pcs.)

Remove these Spring pin 3-32 (2pcs.) for joining Cylinder section and Chamber.

Pull Chamber carefully so that Compression spring 8 does not spring out of Cylinder.

**Fig. 14**

- Arm
- Arm connector
- Cylinder ring

Note: Pay attention not to lose Arm connector.

While opening Arm’s ends, pull Arm in the direction designated with black arrow.

- M4x16 Hex socket head bolt (4pcs.)
- Chamber top
- Chamber seal ring
- Chamber

Remove Chamber top and Chamber seal ring from Chamber.
[3] DISASSEMBLY/ASSEMBLY

[3]-3. Chamber (cont.)

ASSEMBLING

(1) Assemble Cylinder rings to Cylinder as illustrated in Fig. 15. 
*Note*: Apply the specific lubricants in accordance with the instruction shown in Fig. 1.

Fig. 15

Assemble Cylinder rings to Cylinder so that the angle of the two notches is more than 90 degrees.

(2) Put Chamber seal ring on the edge of Chamber, and assemble Chamber top to Chamber by fastening with M4x16 Hex socket head bolt (4pcs.). Refer to the right illustration in Fig. 14.

(3) Setting Arm connector to Arm, assemble them to Cylinder. Refer to the left illustration in Fig. 14.

(4) Assemble Stop rubber and Compression spring 8 to Cylinder. Refer to the right illustration in Fig. 13.

(5) Applying Molybdenum disulphide lubricant to the outside of Cylinder (Fig. 1), insert it into Chamber. Refer to right illustration in Fig. 13.

(6) Connect Cylinder with Chamber as illustrated in Fig. 16.

Fig. 16

Insert Spring pin 3-32 for approx. 5mm depth with aligning two holes of Chamber with those of Cylinder for Spring pin 3-32. And then, set Spring pin 3-32 in place with water pump pliers. Insert the other Spring pin 3-32 in the same manner.

(7) Inserting Cylinder section into Housing, tighten Front plate with M5x16 Hex socket head bolt (3pcs.). Refer to Fig. 4.

(8) Assemble Contact top and Arm plate. Refer to Fig. 4.

(9) Assemble Handle set to Housing. Refer to Fig. 2.
[3] DISASSEMBLY/ASSEMBLY

[3]-4. Pusher, Handle section

**DISASSEMBLING**

(1) Separate Handle set from Housing as illustrated in Fig. 2.
(2) Handle set (L) can be separated from Handle set (R) as illustrated in Fig. 17. And remove Lock bar and Compression spring 4 as illustrated in Fig. 18.

**Fig. 17**

1. Pressing the end of Handle set, remove Magazine support by sliding it toward rear side.

2. And then remove the following screws.
   * M5x10 Hex socket head bolt
   * 5x25 Tapping screw (3pcs.)
Handle set (L) and Nail feeding section can be separated from Handle set (R).

**Fig. 18**

Sliding Pusher lever toward the rear side, insert Screwdriver to stop Pusher lever’s return.

*Note*: Lock bar and Compression spring 4 easily fall off in this step. Pay attention not to lose Lock bar and compression spring 4.
[3] DISASSEMBLY/ASSEMBLY

[3]-4. Pusher, Handle Section (cont.)

DISASSEMBLING

(3) Pusher section can be disassembled from Handle set (L) as illustrated in Fig. 19.
(4) The other parts in Handle set can be disassembled as illustrated in Fig. 20.

Fig. 19

Remove Pusher, Pusher holder Compression and spring 4 from Pusher lever by unscrewing M4x20 Pan head screw.

Remove Spiral spring complete from Drum portion of Pusher lever.

Fig. 20
**Repair**

[3] DISASSEMBLY/ASSEMBLY

[3]-4. Pusher, Handle section (cont.)

**ASSEMBLING**

(1) Assemble Pusher section as illustrated in Fig. 21.

Fig. 21

![Diagram of Pusher assembly](image)

(2) Referring to Fig. 18, assemble Lock bar and Compression spring 4 to Handle set (L).

(3) Assemble Nail feeding section as illustrated in Fig. 22.

Fig. 22

![Diagram of Nail feeding assembly](image)

(4) Referring to Fig. 20, assemble the necessary parts to Handle set (R).

(5) Referring to Fig. 19, assemble Nail feeding section, and fasten Handle set (L) to Handle set (R) with 5x25 Tapping screws (3pcs.) and M5x10 Hex socket head bolt. Assemble Magazine support.

(6) Assemble Handle set to Housing as illustrated in Fig. 2.
Repair

[3] DISASSEMBLY/ASSEMBLY

[3]-5. DC motor and Spark plug

DISASSEMBLING

(1) Separate Handle set from Housing as illustrated in Fig. 2.
(2) Disconnect Spark plug and DC motor from Spark unit and Terminal as illustrated in Fig. 23.
(3) DC motor can be removed from Cylinder head as illustrated in Figs. 24 and 25.

Fig. 23

Remove Plug cap from Spark plug.

1. Remove Spark plug with 8mm box wrench.
2. Disconnect Earth terminal
3. Disconnect Connectors of DC motor.

Fig. 24

Remove Fan 60 by unscrewing M3x4 set screw.
Remove Retaining ring R-24 with 1R291 while passing Motor’s lead wires through the Retaining ring.

Fig. 25

Flat washer 10, Conical compression springs 12-18, DC Motor and Motor sleeve can be removed from Cylinder head.

Pull Lead wires of DC motor through Flat washer 10 and Conical compression spring 12-18.
And remove Epoxy washer 2 from Motor shaft.
Repair

[3] DISASSEMBLY/ASSEMBLY
[3]-5. DC motor and Spark plug (cont.)

ASSEMBLING

(1) Assemble DC Motor to Cylinder head as illustrated in Figs. 26, 27 and 27A.

Fig. 26


After putting grease to Steel ball 3, assemble Steel ball 3 to DC Motor. Facing the Steel ball to the slit of Motor sleeve, insert the DC motor into Motor sleeve.

Fig. 27

Put the another Conical compression spring 12-18 into Motor box as illustrated above.

Assemble DC motor covered with Motor sleeve while paying attention to the descriptions in Fig. 27A

Fig. 27A

Fitting the Protrusion of Motor sleeve to either of the grooves of Motor box, assemble DC motor to Cylinder head.
[3] DISASSEMBLY/ASSEMBLY
[3]-5. DC motor and Spark plug (cont.)

ASSEMBLING

Note: Conical compression springs 12-18 have to be assembled as mentioned below and shown in Fig. 28.

Fig. 28

(2) In order to fix DC Motor, assemble Retaining ring R-24 with 1R291, while pressing down the upper Conical compression spring 12-18. Refer to the right illustration in Fig. 24.

(3) Assemble Fan 60. Refer to the left illustration in Fig. 24.

(4) Connect the connectors of DC Motor in the Handle set. Refer to the right illustration in Fig. 23.

(5) Connect Body earth terminal to Cylinder head. Assemble O ring 10 and Spark plug to Cylinder head. Refer to the right illustration in Fig. 23.

(6) Connect plug cap to Spark plug. Refer to the left illustration in Fig. 23.

(7) Assemble Handle set to Housing. Refer to Fig. 2.

[4] How to check of Spark and DC motor

(1) Separate Handle set from Housing as illustrated in Fig. 2. And Disassemble Handle set (L) as illustrated in Fig. 17.

(2) Remove Fan 60 from DC Motor as illustrated in Fig. 24.

Note: Be sure to remove Fan 60 for safe maintenance.

(3) Setting Battery to the machine, start the following tests.

* Ignition by pushing the terminal of Switch unit A See Fig. 29.

* DC Motor by pushing the terminal of Switch unit B See Fig. 29.
[5] Diagnosis by Indication lamp

Color of the indication lamp means the followings.

**Blinking green**: Normal status

**Blinking red**: Need to recharge the battery cartridge

**Lighting-up-red**: Recharge the battery cartridge. Nailing can not be performed due to no remaining battery capacity.

**Blinking orange after blinking green and red alternatively for 10 seconds**: Fault detection is running. Remove and reinsert the battery cartridge to reset. If fault detection is running again, it is malfunction condition as shown in Fig. 30.

### Fig. 30

<table>
<thead>
<tr>
<th>Number of blinking orange</th>
<th>Possible electrical-malfunction</th>
<th>Possible mechanical-malfunction</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Melting a part of Switch in Contact arm / Disconnection of Trigger switch</td>
<td>Returning Contact arm incompletely</td>
</tr>
<tr>
<td>2</td>
<td>Melting a part of Switch in Contact arm / Melting a part of Trigger switch</td>
<td>Returning Trigger incompletely</td>
</tr>
<tr>
<td>3</td>
<td>Melting a part of Switch in Contact arm</td>
<td>Returning Contact arm incompletely</td>
</tr>
<tr>
<td>4</td>
<td>Melting a part of Trigger switch</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Disconnection of DC motor</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Malfunction on Spark unit</td>
<td></td>
</tr>
</tbody>
</table>

### Circuit diagram

**Fig. D-1**

![Circuit diagram image]

**Color index of lead wires' sheath**

<table>
<thead>
<tr>
<th>Color</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td></td>
</tr>
<tr>
<td>Red</td>
<td></td>
</tr>
<tr>
<td>Yellow</td>
<td></td>
</tr>
</tbody>
</table>

Earth terminal for connecting to Housing

Motor

Spark plug

Connector

Switch unit for DC motor

Line filter

Band

Connector

Switch unit for Trigger

Terminal

Spark unit

Straight receptacle

Flag receptacle
When putting the following lead wires into lead wire holders, do not cross them in this area.

* lead wire (red) to DC motor
* lead wire (black) to DC motor
* lead wire (white) to Switch unit for DC motor
* lead wire (black) to Switch unit for DC motor

Wind lead wires (red and black) to Line filter one time, passing them through Line filter. And connect them to connector of DC Motor.

Facing the wire connecting portion to plus mark side, connect Flag receptacle to Minus terminal.

Lead wire to Spark plug has to be put on the other lead wires viewed from Top cover side.

Pass DC motor’s lead wires (red, black) through the notch of the rib for setting DC Motor.