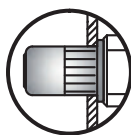
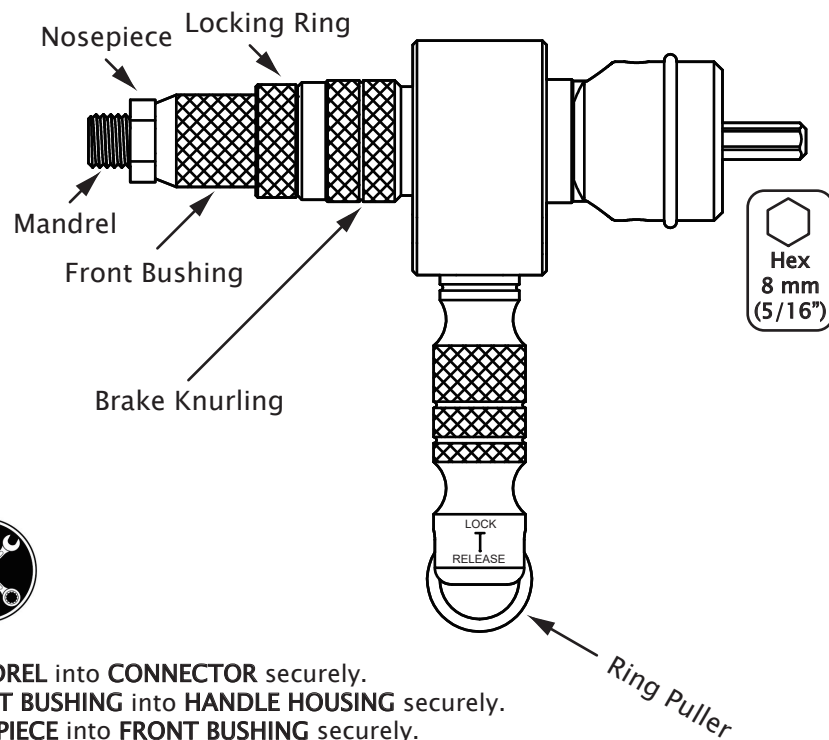


# USER'S MANUAL

B-RNA60285 - BATO 60285



## Rivet Nut Drill Adapter



1. Tighten **MANDREL** into **CONNECTOR** securely.
2. Tighten **FRONT BUSHING** into **HANDLE HOUSING** securely.
3. Tighten **NOSEPIECE** into **FRONT BUSHING** securely.
4. Tighten **LOCKING RING** with **HANDLE HOUSING** securely.



### WARNING



Read User's Manual before Use!

**WARNING**

Read and understand User's Manual before use, and always give it to user.



**WARNING!**

Side Handle may swivel and hit any object within its spin, including hand. Hold Side Handle & Drill Firmly at any time drill is driving the adapter. Always drive adapter in low speed. In any emergency, power off drill immediately!



**CAUTION!**

Continuous uses will significantly heat up the main body. Caution on HOT SURFACE.



**WARNING!** The objects to be riveted **MUST** be all time securely fixed!



**WARNING!** Standard mandrels included are not compatible with plus nut! Any abuse will damage mandrel & fail the tool.



**CRITICAL!** Switch drill to low speed mode and manipulate its running rotation speed < 20 RPM. Low speed for better control of drill & riveting adapter, and for better fastening quality. In any emergency, power off drill immediately!



**CRITICAL!** Over-Riveting occurs when working torque is greater than Max Allowed Drive Torque for the rivet nut. Over-Riveting will result in rivet nut's threads stripping and or break the mandrel.



**IMPORTANT!** Tighten all parts securely in position at any time when changing spares and or any losing occurs. Loosing part(s) may result in damage to mandrel, threads stripping and or failing the tool.

### 1. Preparation Instructions:



- 1.1 For safety, wear adequate ANSI approved rubber coated thick gloves, safety goggles and else needed personal protective equipment(s);
- 1.2 Check and ensure the object(s) to be riveted are all the time securely fixed;
- 1.3 Check and ensure the paired nosepiece/mandrel are in correct size and tightened in position securely by wrench included in the kit, and threads on the mandrel are clean and in formation;
- 1.4 Confirm the rivet nuts to be used are in good quality. Inferior rivet nut would damage mandrel;

- 1.5 Install the rivet nut drill adapter onto drill's chuck and lock it tightly. To protect power drill from over-loaded running, use power drill with higher torque supply than the min reference torque listed on below "Torque Reference Table";
- 1.6 Switch drill to low speed mode and refer to below Max Allowed Drive Torque against selected rivet nut. When required Max Allowed Drive Torque is within clutch limited torque, switch power drill to "DRIVER" mode and set limit of "Max Allowed Drive Torque" from low clutch to high. When the required "Max Allowed Drive Torque" exceeds clutch limit torque, switch to use "DRILL" mode and feel when to stop drill to avoid over-riveting. Always drive the adapter in low speed <20 RPM.



**CRITICAL!**



Note: Above torques recorded in low drive speed < 20 RPM & on the basis of manufacturer's lab test conditions, for reference only.

**Torque Reference Table**

Rivet Nut Size	In material	Max Allowed Driving Torque ( N.M )	Recommended Drill's Min Torque Supply ( N.M )	Recommended Drill's Min Torque Supply ( lbf.ft )
<b>M12</b>	Stainless	15.7	28.26	20.84175
	Steel	14.8	26.64	19.647
	Aluminum	9	16.2	11.9475
<b>M10</b>	Stainless	12.5	22.5	16.59375
	Steel	11	19.8	14.6025
	Aluminum	6.2	11.16	8.2305
<b>M8</b>	Stainless	11.8	21.24	15.6645
	Steel	10.8	19.44	14.337
	Aluminum	6	10.8	7.965
<b>M6</b>	Stainless	11.2	20.16	14.868
	Steel	10	18	13.275
	Aluminum	5.6	10.08	7.434
<b>M5</b>	Stainless	10.4	18.72	13.806
	Steel	9	16.2	11.9475
	Aluminum	4.5	8.1	5.97375
<b>M4</b>	Stainless	5.8	10.44	7.6995
	Steel	4.7	8.46	6.23925
	Aluminum	1.3	2.34	1.72575

**WARNING! DO NOT USE IMPACT DRIVER AS DRIVING TOOL!**

## 2. Operation Instructions:

Introduction of Locker Handle's working positions:



**LOCK:** Side handle gets locked together with main body.

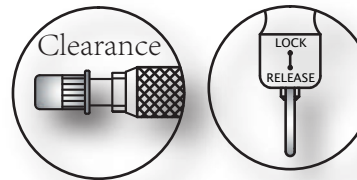
When the ring puller is pulled out from **RELEASE** position and turned into slot, it will retract into slot itself but may not get locked with main body. Manually turn main body in less than half round it will get in **LOCK** with main body automatically.



**RELEASE:** Side handle can rotate around main body.

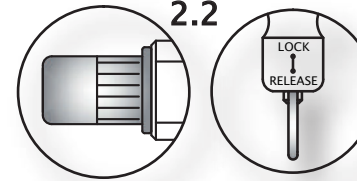
When the ring puller is pulled down from **LOCK** and turned to well get seated on side handle's bottom, side handle at **RELEASE** position will hang on main body. When necessary, use side handle to guide main body but it will not impede it from rotation.

**2.1**



- 2.1 **RELEASE** side handle. Screw rivet nut onto mandrel and make rivet nut fully but losing threads engaged on mandrel. Or, tight threads engagement will obstruct the release of mandrel from riveted nut. Clearance exists between rivet nut and nosepiece. If power drill has capable clutch to limit torque for the rivet nut, switch to DRIVER mode and test the rivet nut from low to high clutch. Make sure that over-riveting does not happen. In case broken mandrel or threads stripping happens during test, refer to "3. Trouble-Shooting" for more information.

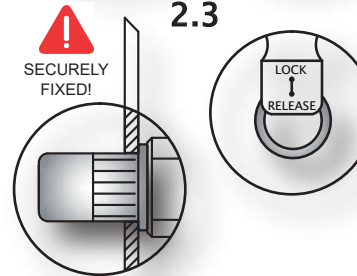
**2.2**



- 2.2 Keep side handle in **RELEASE**. Drive adapter in low speed < 20 RPM, slightly brake knurling on main body by hand and drive away the clearance between rivet nut and nosepiece. When rivet nut flange gets contacted with nosepiece, main body will start to rotate with drill.

**WARNING! DO NOT USE IMPACT DRIVER AS DRIVING TOOL!**

**2.3**

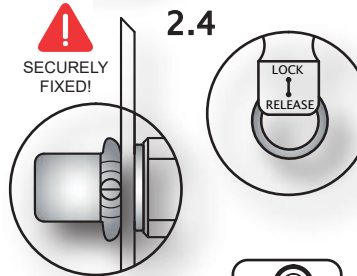


- 2.3 Switch side handle to **LOCK** position and make sure main body is fully locked together with side handle, adjust side handle to the position for firm holding. Insert the rivet nut into pre-bored hole and keep it center aligned with hole center.

Check and confirm:

- A. the object(s) to be riveted is securely fixed
- B. drill in low speed mode
- C. if drill in DRIVER mode, clutch setting is correct
- D. if drill in DRILL mode, noted to run the adapter in low speed
- E. adjust adapter to ensure hole center-aligned with it well.

**2.4**

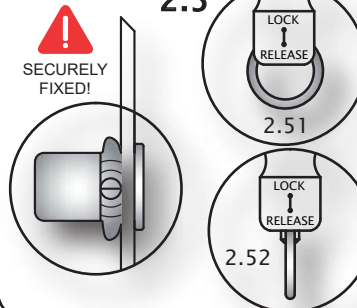


- 2.4 Side handle in **LOCK** with main body. Before power on drill, make sure you are prepared hold side handle & drill firmly and rivet nut is straight aligned with the object(s) well.

**Note: Referring to 1.6**, when the rivet nut's "MAX Allowed Driving Torque" is within clutch limit, set it in DRIVER mode by testing to sample rivet nut(s) from low to high clutched torque. When "MAX Allowed Driving Torque" is out of clutch range, use DRILL mode. Take note in riveting both hands are required to feel the torques and decide when to power off drill.

**WARNING!** When riveting, one hand needs to hold side handle to withstand driving torque while another hand to hold drill to withstand reverse torque. **Take note that the torques to be resisted vary with rivet nut size/material. To secure the control of riveting, run the adapter in low speed <20 RPM all the time, and the lower the better. In any emergency, power off drill immediately.**

**2.5**



- 2.51 After rivet nut gets pulled properly in place, reverse the rotation of power drill, keep side handle in **LOCK** and still hold both side handle & drill firmly in order to drive mandrel to release mandrel from the tightened threads engagement between rivet nut and mandrel.

**Note:** In releasing mandrel, both hands still need to withstand the coupled counter torques from adapter/ drill from riveting process. Power on drill and run it in low speed < 20 RPM until nosepiece and rivet nut get apart.

- 2.52 Then, change side handle to **RELEASE**. Hold side handle to align mandrel straight centered with riveted nut. Keep the Center Alignment and then power on drill to release mandrel.

### 3. Trouble-Shooting:

Issue	Possible Causes	Solutions
Thread stripping on rivet nut	Inferior rivet nuts	Always use quality standard rivet nuts when working with the rivet nut adapter. In case thread stripping occurs at the first test rivet as required on Nut Riveting Operation 2.1 or during nut setting 2.4, verify the quality of rivet nuts before test or use.
	Over riveting	Reset the max allowed driving torque for the rivet nut upon tests to samples. Ensure to control the driving torque less than max allowed limit of the rivet nut. Thoroughly get rid of nut's broken threads attached on mandrel and ensure the mandrel was not damaged before resuming.
	Damaged or bad mandrel	Replace the damaged or bad mandrel with new spare.
Broken mandrel	Inferior rivet nuts	Always use quality standard rivet nuts when working with the rivet nut adapter.
	Over riveting	When driving torque is higher than "MAX ALLOWED DRIVING TORQUE" for the rivet nut", over riveting will occur. Ensure to control the driving torque less than max allowed limit of the rivet nut.
	Damaged or bad mandrel	Replace the damaged or bad mandrel with new spare.
	Mandrel got twisted or bent during operation	Keep the adapter aligned with the hole angle as best you can during riveting and releasing mandrel. Insufficient accuracy of angle alignment might also impede releasing mandrel after riveting.
	Not standard rivet nut	Standard mandrels included in the kit are not compatible with plus nut! Any abuse will damage mandrel & fail the tool.

### 4. Maintenance:



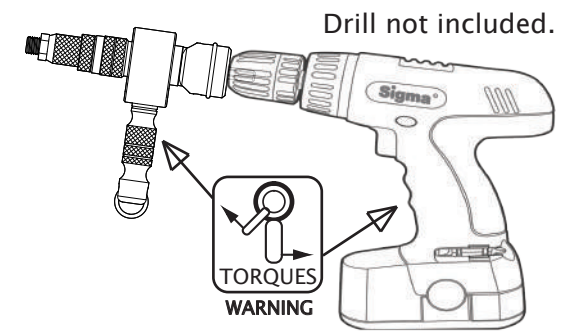
Tighten all parts securely in position at any time when changing spares and or any loosing occurs. Loosing part(s) may result in damage to mandrel, threads stripping and or failing the tool.



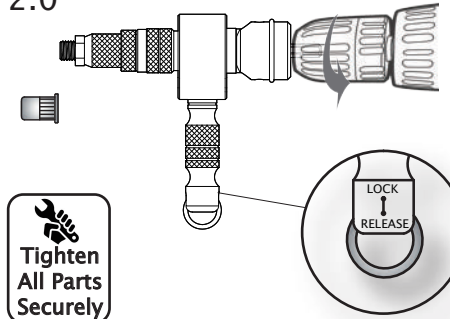
Recommend cleaning and replenishing #2 Lithium grease (working temperature -20~120°C) for transmission system every 2,000 nut rivetings or earlier.



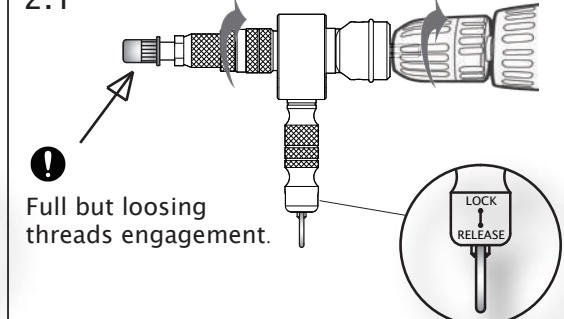
### 5. Operation Diagram



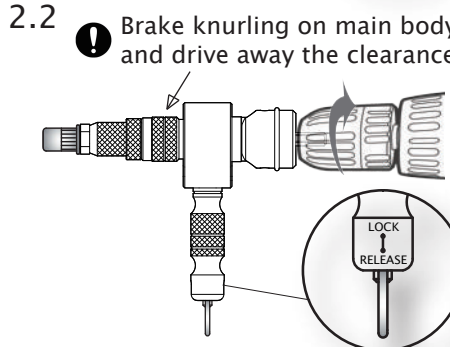
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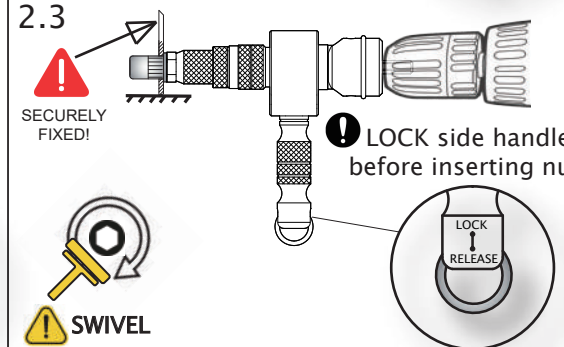
2.1



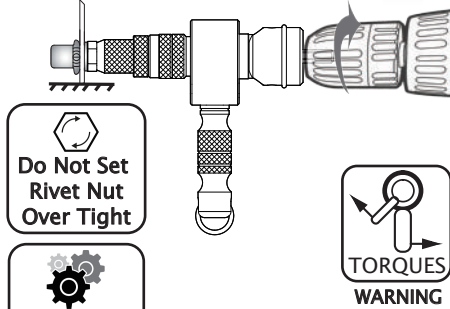
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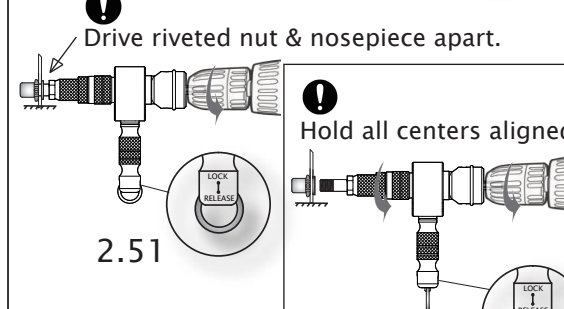
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2.4

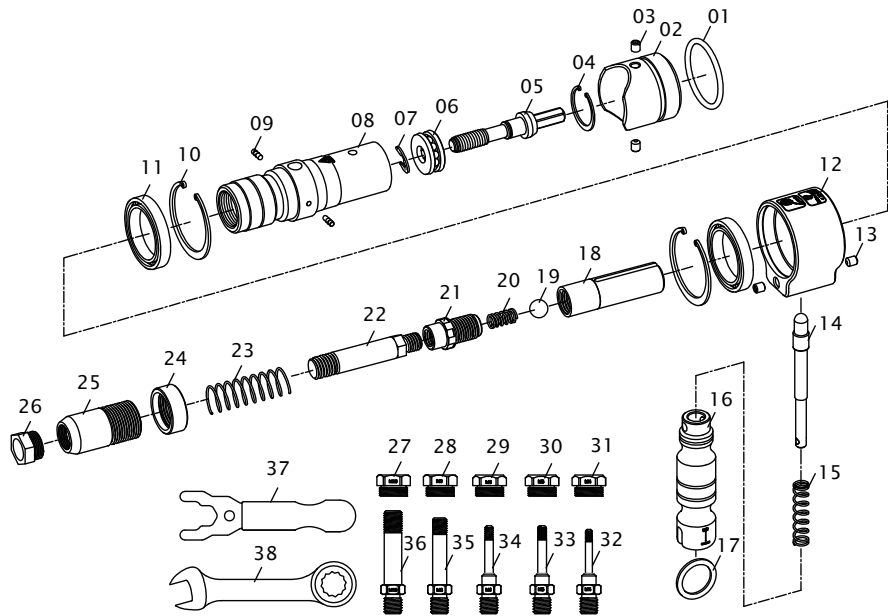


2.5



Refer to Section "2. Operation Instructions" for more detailed information.

## 6. Explosion & Part List



No.	Description	QTY
01	O-ring	1
02	Rear Housing	1
03	Set Screw	2
04	C-clip	1
05	Hex Drive Shaft	1
06	Thrust Ball Bearing	1
07	E-clip	1
08	Handle Housing	1
09	Insert Pin	2
10	C-clip Large	2
11	Ball Bearing	2
12	Side Handle Case	1
13	Side Handle Set Screw	2

14	Side Handle Plunger	1
15	Side Handle Spring	1
16	Side Handle	1
17	Ring Puller	1
18	Inner Tube	1
19	Steel Ball	1
20	Spring	1
21	Connector	1
22	M12 Mandrel	1
23	Bushing Spring	1
24	Locking Ring	1
25	Front Bushing	1
26	M12 Nosepiece	1
27	M10 Nosepiece	1

28	M8 Nosepiece	1
29	M6 Nosepiece	1
30	M5 Nosepiece	1
31	M4 Nosepiece	1
32	M4 Mandrel	1
33	M5 Mandrel	1
34	M6 Mandrel	1
35	M8 Mandrel	1
36	M10 Mandrel	1
37	Simple Wrench	1
38	Ratchet Wrench	1

Note: Extension mandrels & nosepieces for SAE rivet nuts available upon separate purchasing.