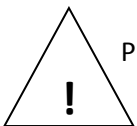
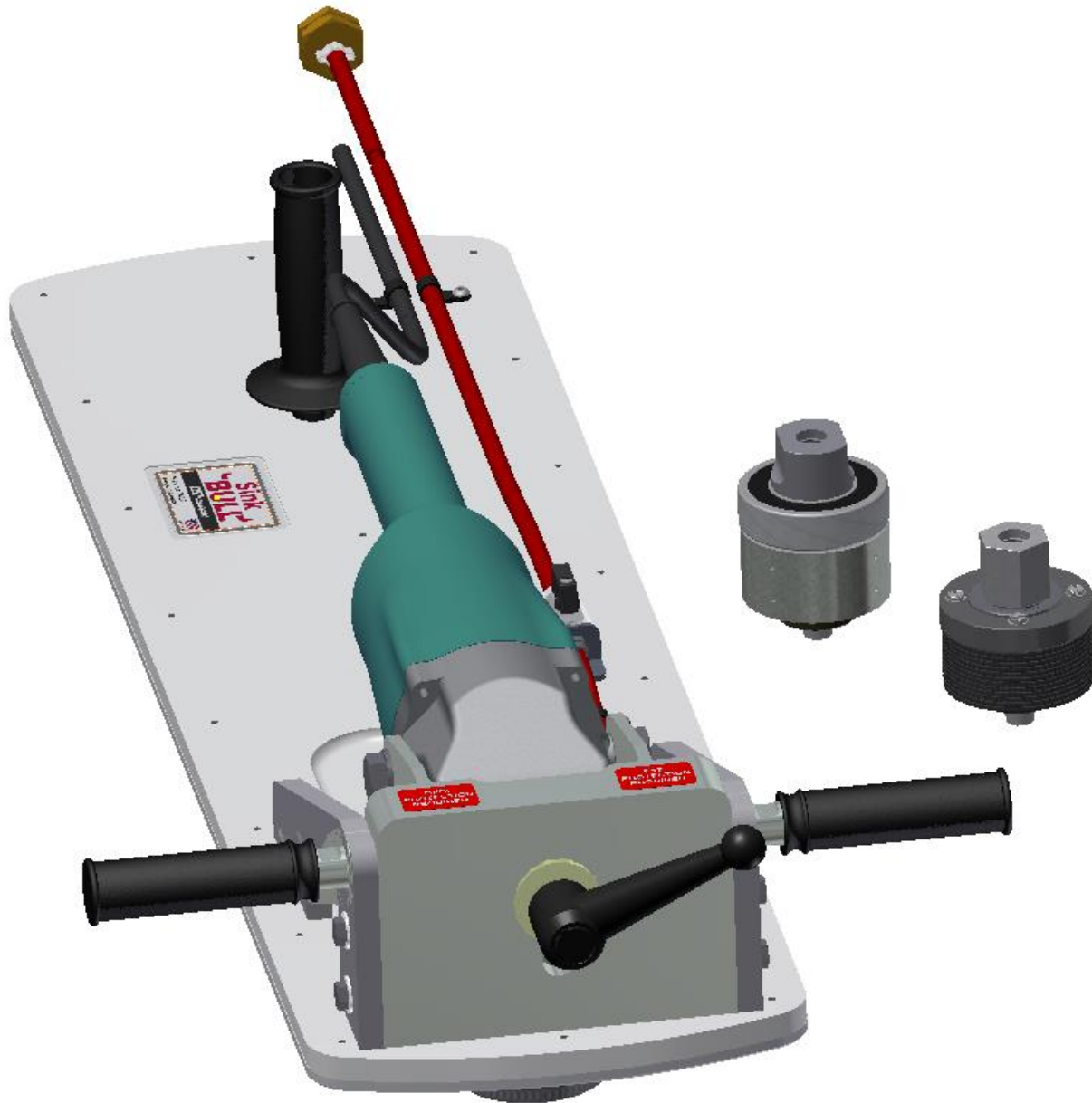


Sink BULL™

with Rapid Z™-CUT & Rapid Z™-DRUM

INSTRUCTION MANUAL



Please read this instruction manual thoroughly to ensure safety and the correct use of this tool. Keep this manual in a place where operators can access it easily, anytime necessary.

INTRODUCTION

Thank you for purchasing the NSI Solutions Sink BULL™. The Sink BULL™ is a machine specifically designed to grind perfect repeatable cutouts for undermount sinks in stone and quartz slabs. Please read this instruction manual thoroughly for assembly instructions, safe operation, tool handling, tool capability information, and all other precautions before using the tool. Keep this manual in a place where operators can access it easily.

In order to be used, the Sink BULL™ is assembled to an angle grinder and has grinding tools installed. Observe all of the operational and safety instructions contained in the instruction manual supplied with the angle grinder and the associated Rapid Z™-CUT and Rapid Z™-DRUM grinding wheels.

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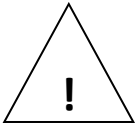
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GENERAL SAFETY RULES



WARNING: Read and understand all instructions. Failure to follow all instructions listed below may result in electric shock, fire and/or serious personal injury. Additionally, observe all safety instructions provided with the electric grinder and all associated grinding wheels, tools and other accessories.

ASSEMBLY

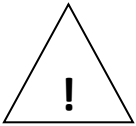
Sink BULL™ Package and Accessories

	Included with Sink BULL™	Purchased separately
MAIN BOX		
(1) Sink BULL™ base assembly	•	
(1) 3" Rapid Z™-CUT- Grinding wheel with template bearing	•	
(1) 3" Rapid Z™-Drum - COARSE grinding drum with template bearing (Starting February 2018)	•	
(1) 3" Rapid Z™-Drum- FINE grinding drum with template bearing (Starting February 2018)	•	
(1) Sink BULL™ Instruction Manual	•	
BOX LABELED CARRIAGE (located inside main box)		
(1) Carriage	•	
(1) Height adjustment handle	•	
(1) 5/8" square head bolt	•	
(1) 5/8" washer	•	
BOX LABELED HANDLES, HARDWARE AND ACCESSORIES (located inside main box)		
(2) Handle Assemblies	•	
(1) Splash guard angle	•	
(2) 14mm hex head bolts	•	
(2) 14mm washers	•	
(4) 6mm socket head cap screws	•	
(2) 6mm washers	•	
(1) Angel Guard Products – Cord Connect	•	
(1) GFCI adapter	•	
ALSO REQUIRED		
(1) Makita GA7021, 7" angle grinder		•
(1) Accessory grip handle (included with Makita grinder)		•
OPTIONAL ACCESSORIES		
1" Rapid Z™-DRUM - COARSE grinding drum with template bearing		•
1" Rapid Z™-DRUM - FINE grinding drum with template bearing		•

Tools Needed For Assembly

- 5/8" Open End Wrench or Crescent Wrench
- 22mm Open End Wrench or Crescent Wrench
- 5 mm Allen (Hex) Wrench
- 1/8" Allen (Hex) Wrench

Assembly Instructions



CAUTION: Always be sure that the tool is switched off and unplugged before performing any work on the tool.

Prepare Grinder

1. A Makita grinder, model number GA7021, must be purchased separately for use with the Sink BULL™.
2. If installed, remove the wheel guard from grinder (see Figure 1). The Guard will not be required for use with the Sink BULL™.
3. If installed, remove the grip handle from grinder (see Figure 1). Save the handle to reinstall on the Sink BULL™ in a later step.
4. Using a 5mm Allen or hex wrench, remove quantity (4) socket head cap screws from the head of grinder at locations shown (see Figure 2). Do not remove the grinder head. Screws can be discarded or saved for future use of the grinder.

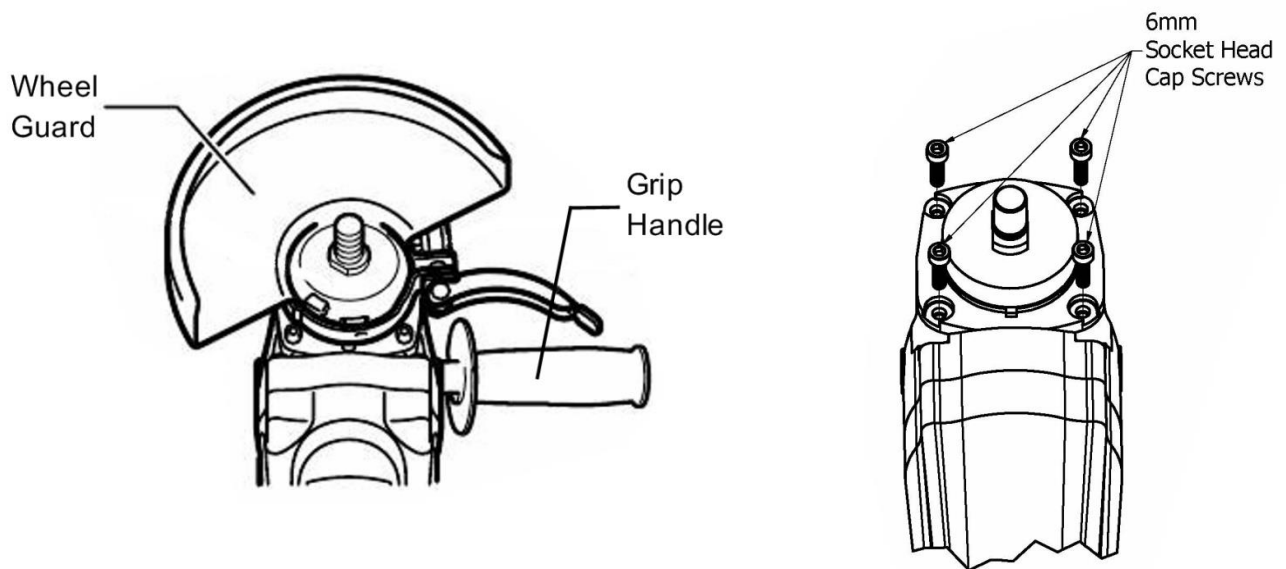


FIGURE 1 – Prepare Grinder

FIGURE 2 – Remove Screws

Install Grinder into Carriage

5. Insert the 5/8" square head bolt into the carriage with the head nested in the recess (see Figure 3).

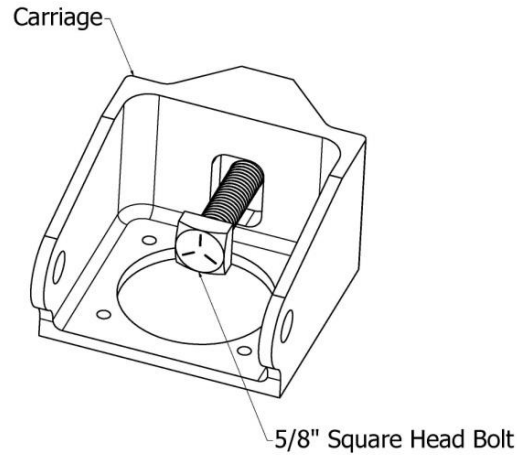


FIGURE 3 – Insert 5/8" Bolt

6. With the 5/8" bolt inserted into the carriage, place the carriage over the head of the grinder (see Figure 4).
7. Using a 5mm Allen or hex wrench, install quantity (2) of the supplied 6mm socket head cap screws through the splash guard angle, and through the carriage holes closest to the grinder body into the grinder head holes exposed in step 4 above (see Figure 4). Do not tighten until all screws and bolts have been started.
8. Using a 5mm Allen or hex wrench, install quantity (2) of the supplied 6mm socket head cap screws and 6mm washers through the remaining carriage holes into the remaining grinder head holes exposed in step 4 above (see Figure 4). Do not tighten until all screws and bolts have been started.
9. Using a 22mm open end wrench or Crescent wrench, install quantity (1) 14mm hex head bolt and 14mm washer through the large holes on the side of the carriage and into the threaded holes on the side of the grinder head. Install these bolts on both sides of the carriage. Do not tighten until all screws and bolts have been started.
10. Tighten all screws and bolts.

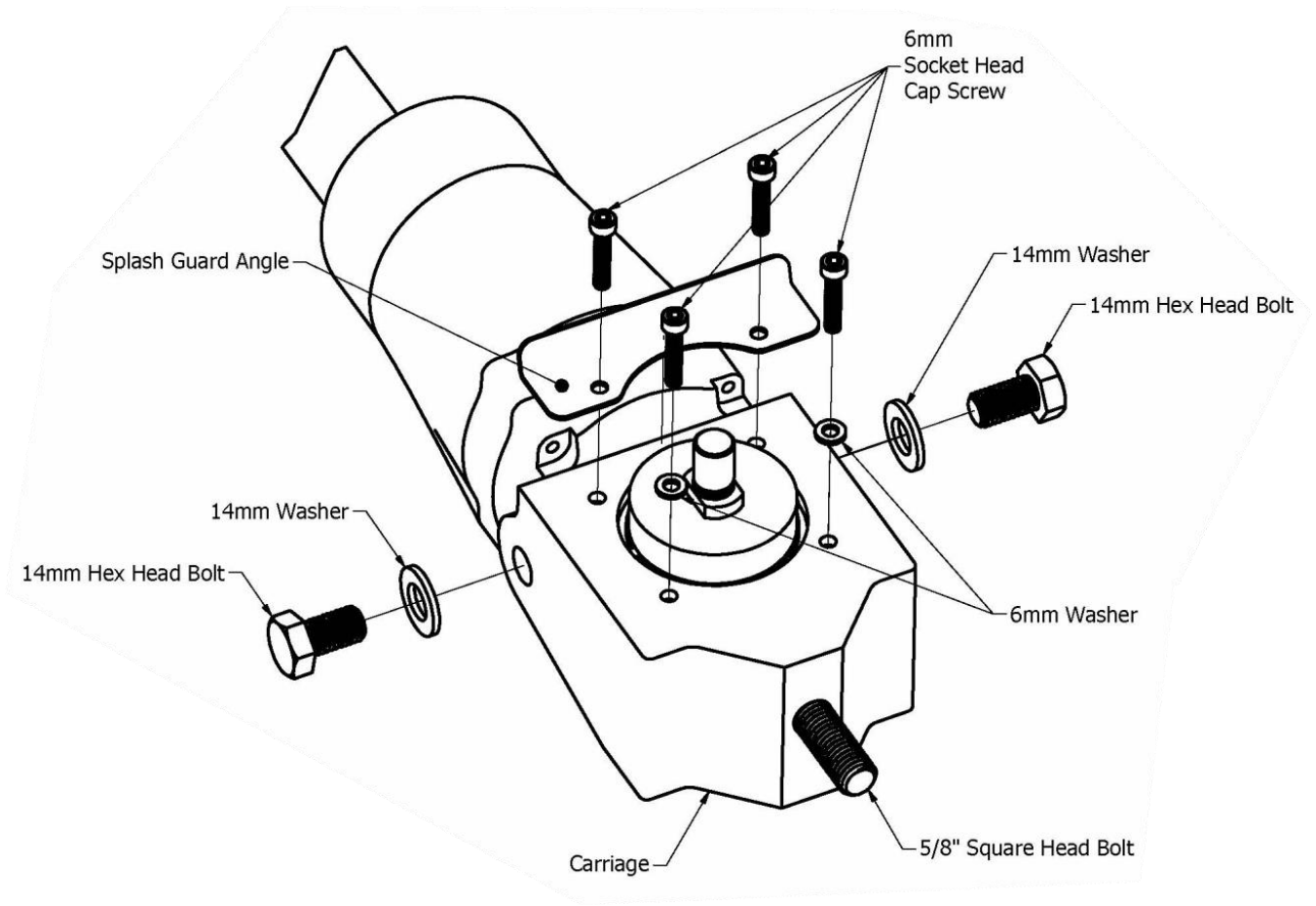


FIGURE 4 – Install Grinder into Carriage

Install Carriage and Handles

11. Place the "V" nose of the carriage assembly (with the grinder installed) into the "V" notch of the base assembly with the 5/8" bolt protruding through the slot (see Figure 5).
12. Place the 5/8" washer over the bolt and install the height adjustment handle by hand tightening it onto the 5/8" bolt (see Figure 5).
13. Note – the height adjustment handle can be adjusted to many different positions by pulling the handle straight out after it is tightened and rotating to the desired position.
14. Using a 5/8" open end wrench or Crescent wrench, tighten the handle assemblies into place on each side of the Sink BULL™ as shown (see Figure 5).

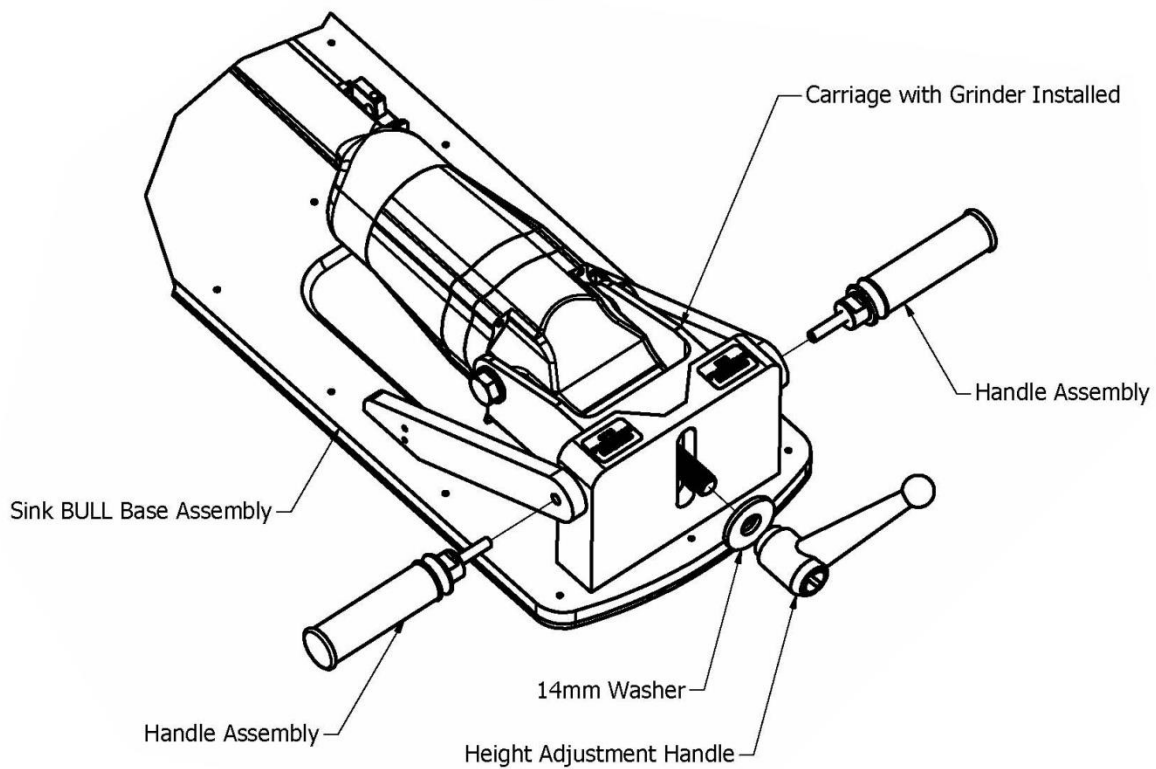


FIGURE 5 – Install Carriage and Handles

Final Assembly

15. On the Sink BULL™ base assembly, on the opposite end from the height adjustment handle, there is an unused "P" clamp next to the red hose. Using a 1/8" Allen or hex wrench, remove quantity (1) #10-24 screw attaching the "P" clamp. Place the clamp around the grinder cord and reinstall the screw (see Figure 6).
16. Install the accessory grip handle that came with the Makita grinder into the threaded hole provided (see Figure 6).

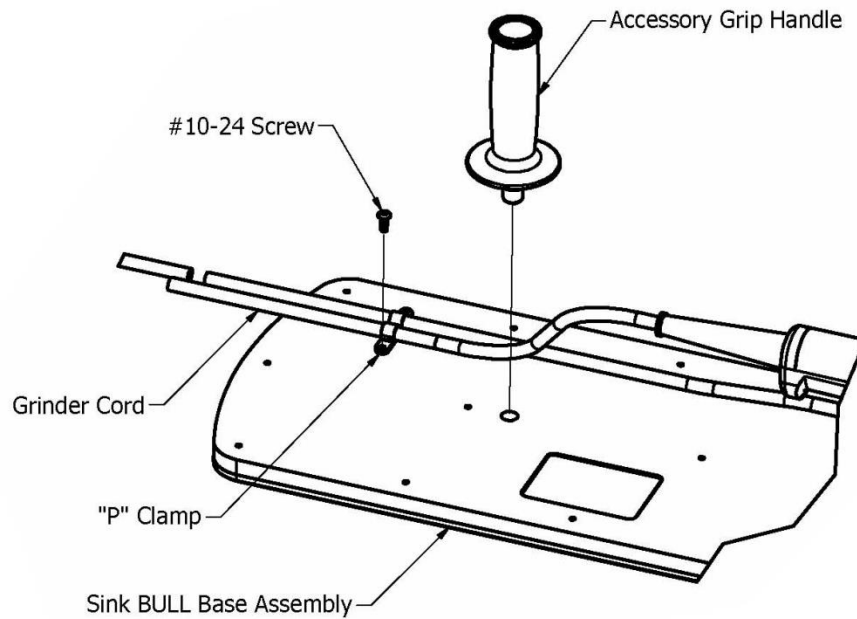


FIGURE 6 – Final Assembly

17. NSI Solutions LLC has provided an Angel Guard Products - Cord Connect with the Sink BULL™ kit. When using an extension cord with the grinder, install the Cord Connect and gasket per the manufacturer's instructions to help keep water out of the electrical connection (see Figure 7).



FIGURE 7 – Angel Guard – Cord Connect



CAUTION: Ensure the Angel Guard - Cord Connect remains on the grinder/extension cord connection at all times.

18. NSI Solutions LLC has provided a GFCI adapter with the Sink BULL™ kit. Ensure the grinder or extension cord is plugged into this GFCI adapter or other GFCI protected circuit when in use (see Figure 8).



FIGURE 8 – GFCI Adapter



CAUTION: Ensure GFCI remains connected to grinder at all times when in use or that the grinder is plugged into other GFCI protected circuit.

USE INSTRUCTIONS

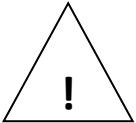
Before Using the Sink BULL™

Before using the assembled Sink BULL™ be sure to complete the following preparations.



Supply the Specified Voltage

Supply the voltage specified on the nameplate of the grinder. Otherwise damage could result to the machine, or increase the risk of personal injury.



Install a Ground Fault Circuit Interrupter (GFCI)

WARNING: To prevent electrical shocks, be sure that the power circuit being used is protected by a GFCI device, or be sure to install the supplied ground fault circuit interrupter (GFCI) between the main power supply and the cord of the machine.



Keep Water Out of the Grinder

WARNING: Do not let water into the motor of the electric grinder. Water inside the machine will weaken the electrical insulation of the motor and may result in electric shock. Ensure the splash guard angle is installed at all times during use (see Figure 4) .



Organize the Work Area for Safe Operation

Before beginning operations, make sure that the work area conditions are well organized for safe operation of the Sink BULL™.



Use Proper Safety Gear

To prevent damage to eyes from flying debris, wear protective glasses or face shield. Be sure to wear waterproof safety boots, appropriate hearing protection and dust protection as required.

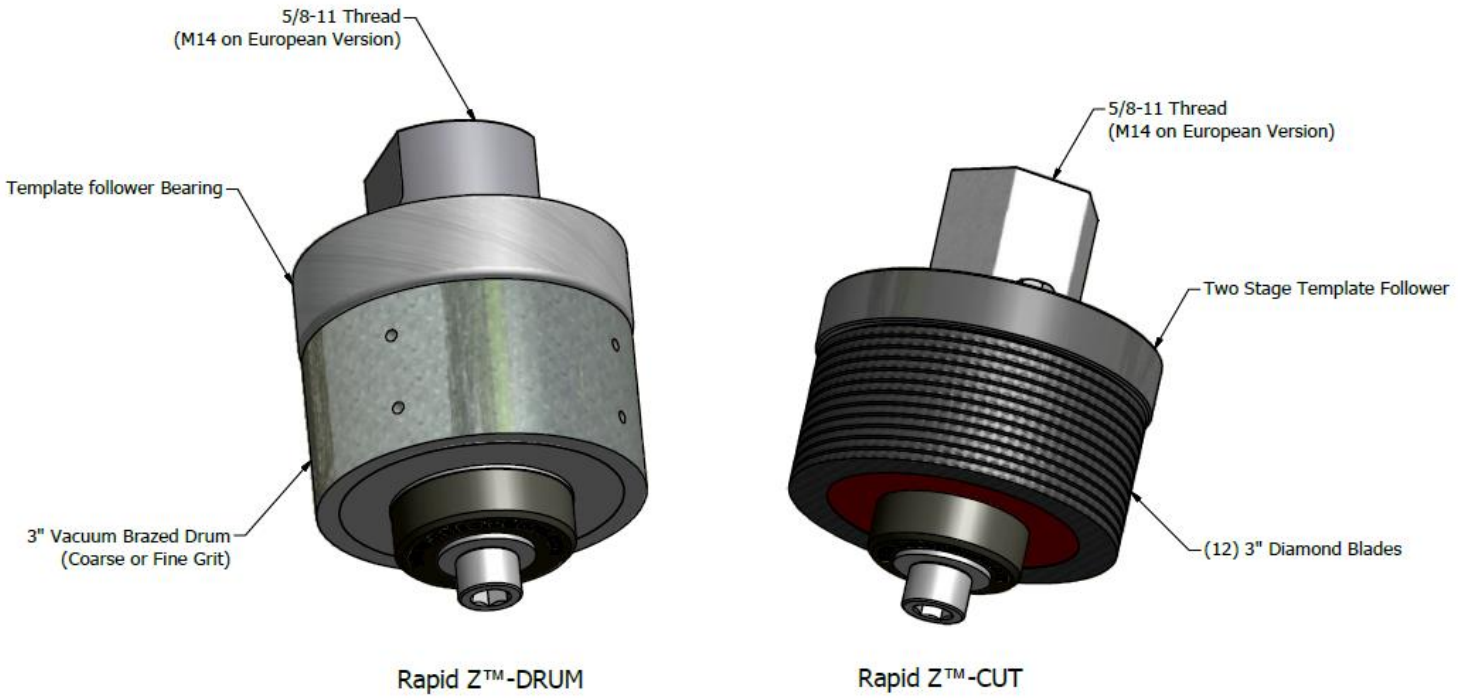
How to Operate

Overview

1. Creating a perfect cutout for an undermount sink is a multi-step process. The Sink BULL™ helps simplify this process and reduces the skill level required to quickly achieve excellent results.
2. Follow these basic steps to produce the perfect sink cutout:
 - a. Drop the center of the sink hole with an appropriate saw.
 - b. Rough grind the hole to shape with the Sink BULL™ and the Rapid Z™-CUT grinding wheel utilizing a simple, inexpensive, shop made template.
 - c. With the template still clamped in place clean up the hole with the Sink BULL™ and the **COARSE** Rapid Z™-DRUM or other vacuum brazed drum wheel.
 - d. With the template still clamped in place finish smoothing the hole with the Sink BULL™ and the **FINE** Rapid Z™-DRUM.
 - e. Remove the template and polish the edges of the cutout.

Grinding Wheel Selection

3. For the first rough grinding step (step b. above) we supply our Rapid Z™-CUT - a 3" stacked blade "Z" wheel. This grinding wheel has 12 stacked diamond blades, and a bearing mounted stainless ring to ride against the template. It was specifically designed for use with the Sink BULL™. The blades grind quickly and can be rearranged easily to correct "apple coring" for maximum blade life. When they are completely worn out the blades are inexpensive to replace. The template follower ring incorporates a two stage design to help compensate for blade wear (see Figure 9). Other grinding wheels may be used but have not been tested by NSI Solutions LLC.
4. For the second and third grinding step (step c. and d. above) we supply our Rapid Z™-DRUMS – two 3" Vacuum brazed drum wheels (COARSE grit and FINE grit) with top mounted bearings to ride against the template. This 3" diameter version will accomplish most work but a 1" diameter version will be required for tight corners and are available for purchase separately. The Rapid Z™-DRUMS are sized to work in sequence with the Rapid Z™-CUT. Each leaving a small amount of material to be removed with the next tool. The FINE grit drum produces a ready to polish surface flush to the template. The Rapid Z™-DRUMS are reversible to extend tool life and when completely dull the drum portion is inexpensive to replace. Additionally the height of the Rapid Z™ products have been matched so that height adjustment between grinding tools is not required.



- Center Water Feed Compatible
- Corrosion Resistant Construction

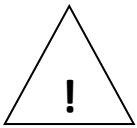
FIGURE 9 – Rapid Z™-CUT and Rapid Z™-DRUM by NSI Solutions LLC

Rough Cut the Hole

1. Set your work piece on the work bench and secure it using appropriate clamps if required.
2. Using your template, trace the sink profile onto the stone at the correct location.
3. Remove the bulk of the sink cutout with a saw and appropriate blade as close to the line as feasible. Multiple types of saws can be used depending on the size and shape of the sink cutout. A Small, water feed, circular saw, a bridge saw/core bit combination, or a blade mounted on an angle grinder are popular options.
4. Take precautions to support the cutout so it does not drop when the cut is complete.

Setup the Sink BULL™

5. Install the Rapid Z™-CUT grinding wheel or other appropriate initial grinding wheel onto the Sink BULL™. The grinder has an arbor lock to aid installation and removal of the grinding wheel.
6. Connect the Sink BULL™ to a garden hose. Make sure the valve on the Sink BULL is off and turn the water on at the hose bib.
7. Plug the Sink BULL™ into a GFCI protected outlet or use the GFCI adapter provided.



CAUTION: Follow all instructions and safety precautions provided with the Rapid Z™-CUT and Rapid Z™-DRUM and follow all manufacturer's instructions and safety precautions for any other grinding wheels used.



CAUTION: Ensure grinder remains connected to a GFCI protected outlet at all times when in use or that the grinder is plugged into other GFCI protected circuit.

Clamp the Template in Place

8. Place the template over the rough cutout and align it to the previously traced line.
9. Clamp the template in place with C-clamps. Two clamps are usually sufficient. Place the clamps at the corners of the template.

Initial Grinding/Shaping

10. Place the Sink BULL™ onto the template, spanning the hole, with the Rapid Z™-CUT grinding wheel inside the hole.
11. Adjust the height of the grinder until the bearing is riding on the template and the grinding wheel is removing the stone (see Figure 10).
12. Turn on the water valve and adjust the nozzle to spray a sufficient fan of water onto the side of the grinding wheel. Ensure plenty of water is used. If you are creating dust during grinding, then more water is required.
13. Start the grinder and lock the switch in the ON position.
14. Pull the Sink BULL™ into the template until the bearing is riding against the template and work the Sink BULL™ back and forth grinding the cutout to the shape of the template. This is accomplished when the bearing is riding on the template and no more stone is being removed. Work the Sink BULL™ back and forth until the cutout is ground half way around. The Rapid Z™-CUT will leave a small amount of material for removal with the COARSE Rapid Z™- DRUM
15. Turn off the power and the water.
16. Pick up the Sink BULL™ and lift it over the C-clamps to the opposite side of the cutout.
17. Complete the rough grinding of the remaining half of the cutout moving the C-clamps to new locations if required.
18. Turn off the power and the water.

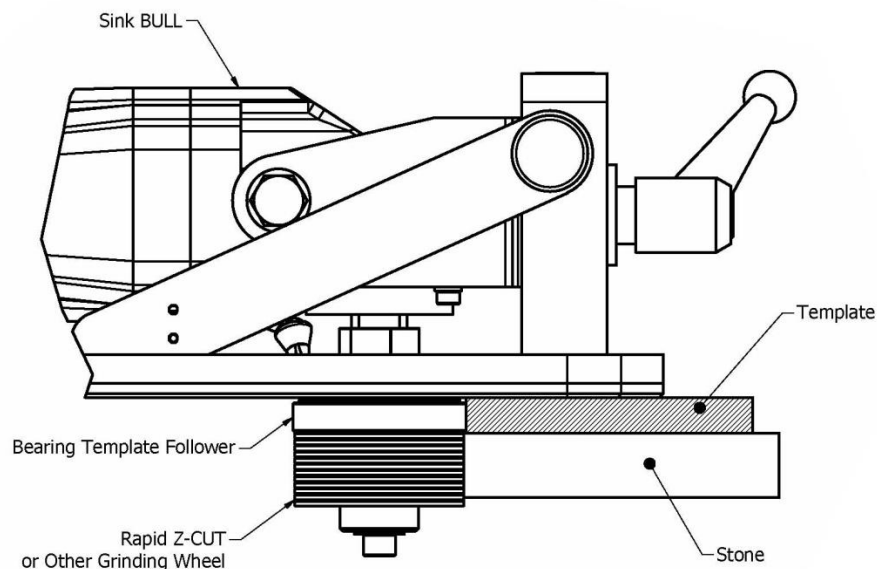


FIGURE 10 – Set Grinding Wheel Height so Bearing Rides on Template

Final Grinding/Shaping

19. Unplug the grinder from the power supply.
20. Replace the Rapid Z™-CUT with the COARSE Rapid Z™-DRUM or other vacuum brazed drum wheel, approximately 40 grit.
21. Adjust the height of the grinder as required so the bearing rides against the template. If NSI Solutions Rapid –Z™ products are used the height will not have to be adjusted since they are all designed specifically for use with the Sink BULL™
22. Plug the grinder back into a GFCI protected power supply.
23. Repeat steps 12 through 19 above. The COARSE Rapid Z™-DRUM will leave approximately .020" (.5mm) of material proud of the template. The cutout could be polished after this step but cleaning it up further with a fine drum will yield an easier to polish edge.
24. Replace the COARSE Rapid Z™-DRUM with a FINE Rapid Z™-DRUM (approximately 120 grit) and repeat steps 12 through 19 above except this grinding wheel will leave the edge of the cutout flush with the template and smooth enough for easy polishing.
25. After all grinding is complete; remove the Sink BULL™ and template. The cutout is ready to polish.

Visit <https://nsisolutions.com/sink-bull/> to view a video of this process

After Use

Clean and dry the electric grinder as noted in the Cleaning and Maintenance section.

CLEANING AND MAINTENANCE



CAUTION: Always be sure that the tool is switched off and unplugged before attempting to perform inspection or maintenance.

The grinder air vents need to be kept clean. Regularly clean the grinder air vents or clean the vents whenever they start to become obstructed.

To maintain product SAFETY and RELIABILITY, repairs of the grinder should be done by an Authorized or Factory Service Center.

Blow out Electric Grinder

Blow out grinder vents after each use using a dry air supply to remove any dust and moisture. This will extend the life of the electric motor.

Dry the Template Follower Bearings

The ball bearings in the Rapid Z™ products will last longer if it is blown dry, with compressed, air after each use.

Cleaning Height Adjustment Mechanism

Occasionally cleaning the height adjustment mechanism will keep it working easily and smoothly.

- a. Remove the height adjustment handle and washer (see Figure 5).
- b. Remove the carriage with grinder installed.
- c. Wipe the “V” ways clean on both the carriage and the base assembly.
- d. Wipe the threads of the 5/8” bolt clean.
- e. Re-assemble (see Figure 5).

CONTACT NSI SOLUTIONS

Whether it's for replacement parts, technical support or other questions, feel free to contact us. For problems with the electric grinder please contact the grinder manufacturer directly.

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