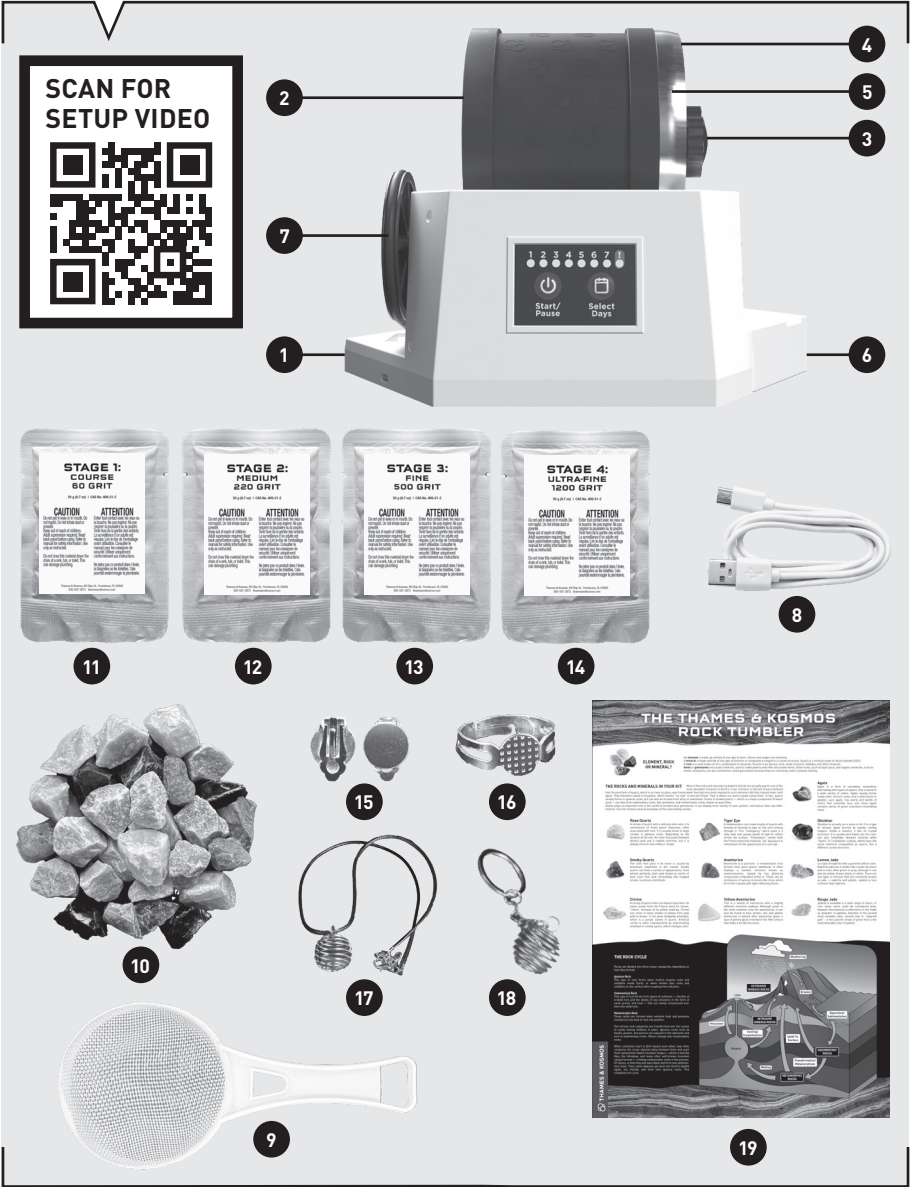


# ROCK TUMBLER

## INSTRUCTION MANUAL



### Checklist:

✓ No.	Description	Qty.
<input type="radio"/> 1	Tumbler base	1
<input type="radio"/> 2	Rubber barrel	1
<input type="radio"/> 3	Hex handle	1
<input type="radio"/> 4	Outer lid	1
<input type="radio"/> 5	Inner lid	1
<input type="radio"/> 6	Drip tray	1
<input type="radio"/> 7	Rubber belt	2
<input type="radio"/> 8	USB-C cable	1
<input type="radio"/> 9	Strainer	1
<input type="radio"/> 10	Assorted rocks [200 g / 7 oz]	1

**YOU WILL ALSO NEED:** USB power adapter (DC 5V), large tray, water

Note: The rocks are natural materials and thus colors, shapes, and sizes will vary.

✓ No.	Description	Qty.
<input type="radio"/> 11	Stage 1 grit packet (60 grit)	1
<input type="radio"/> 12	Stage 2 grit packet (220 grit)	1
<input type="radio"/> 13	Stage 3 grit packet (500 grit)	1
<input type="radio"/> 14	Stage 4 grit packet (1200 grit)	1
<input type="radio"/> 15	Earring	2
<input type="radio"/> 16	Ring	1
<input type="radio"/> 17	Necklace	1
<input type="radio"/> 18	Keychain	1
<input type="radio"/> 19	Poster	1

### Good to know!

If you are missing any parts, please contact Thames & Kosmos technical support.



## SAFETY INFORMATION

### WARNING

**WARNING:** Not suitable for children under 3 years. Choking hazard — small parts may be swallowed or inhaled. Strangulation hazard — long cords may become wrapped around the neck.

**WARNING:** This toy is only intended for use by children over the age of 8 years due to accessible electronic components. Instructions for parents or caregivers are included and shall be followed.

Keep packaging and instructions as they contain important information.

- Do not touch or insert body parts into any of the moving parts, including the barrel, rollers, and drive wheels.
- Do not allow long hair or loose clothing to dangle into the tumbling area.
- Do not disassemble. No user-serviceable parts inside.
- Unplug this device during lightning storms or when unused for long periods of time.
- Inspect the product before use. If damage is suspected, discontinue use immediately.
- The toy is not intended for children under 3 years old.
- The toy must only be used with the recommended transformer (USB power adapter, DC 5V).
- The transformer is not a toy.
- The transformer or power supply used with the toy shall be regularly examined for damage to the supply cord, plug, enclosure or other parts, and in the event of damage, it shall not be used until the damage has been repaired.
- The toy is not to be connected to more than the recommended number of power supplies. This means only use the included USB-C cable.
- The wires are not to be inserted into socket outlets.
- This toy is only to be connected to equipment bearing either of the following symbols:  or 
- Toys liable to be cleaned with liquids are to be disconnected from the transformer or power supply before cleaning.
- Do not allow the transformer (USB power adapter) or USB-C cable to get wet. If the barrel leaks, immediately unplug the device from the transformer.



### Information about the Grit Powders (Silicon Carbide)

None of the substances in this kit are classified as hazardous substances in the quantities included and the applications presented in this kit. However, you must read these safety instructions before use, follow them, and keep them for reference.

The following applies to all chemicals:

**CAUTION:** Do not get in eyes or in mouth. Do not ingest. Do not inhale dust or powder.

Adult supervision required. Read cautions on individual containers and in this manual carefully. Use only as instructed. Keep out of reach of children. This primarily applies to young children, but also to older children who — unlike the experimenter — have not been appropriately instructed by adults. Wash hands after use.

**Waste Disposal:**

Please dispose of leftover grit in the household garbage. Do not rinse this material down the drain of a sink, tub, or toilet. This can damage plumbing.

### First Aid Information

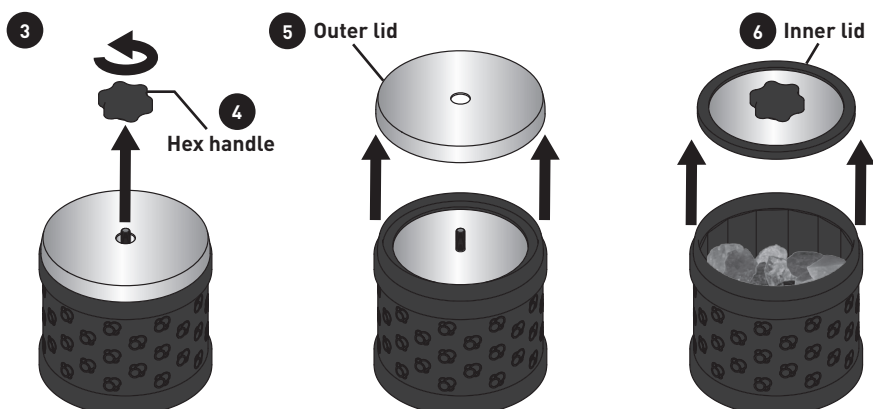
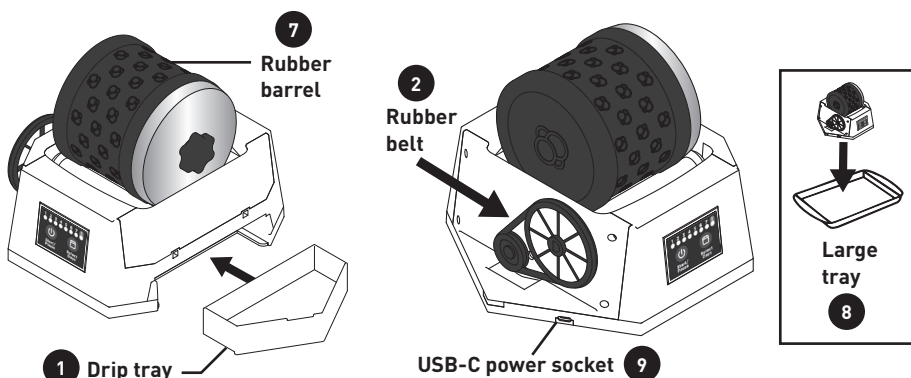
- 1) In case of eye contact: Wash out eye with plenty of water, holding eye open if necessary. Seek immediate medical advice.
- 2) If swallowed: Wash out mouth with water, drink some fresh water. Do not induce vomiting. Seek immediate medical advice.
- 3) In case of inhalation: Remove person to fresh air.
- 4) In case of skin contact and burns: Wash affected area with plenty of water for at least 10 minutes.
- 5) In case of doubt, seek medical advice without delay. Take the chemical and its container with you.
- 6) In case of injury always seek medical advice.

## CARE & MAINTENANCE

1. Do not attempt to pick up or hold the rock tumbler by the barrel. Hold it underneath the base.
2. When it is running, the rock tumbler may tend to move around due to vibration. Place it on slightly rough table surfaces or on the floor to avoid it moving too far or off any surface.
3. The cable and transformer are to be regularly examined for damage to the cord, plug, enclosure and other parts. In the event of damage, do not use until the damage has been repaired.
4. Unplug the tumbler when not in use.
5. Clean the rock tumbler with a wet cloth or paper towels. Do not submerge in water or wash it in the dishwasher. Unplug from the power source before cleaning.
6. Should the rubber belt connecting the two drive wheels wear out, a spare belt is included. Additional parts can be ordered by contacting Thames & Kosmos.

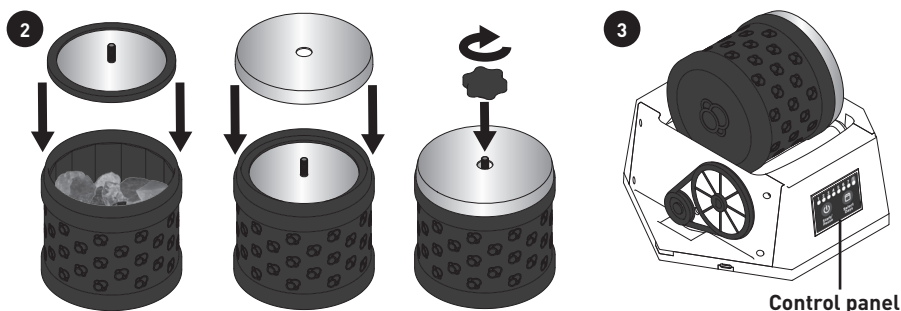
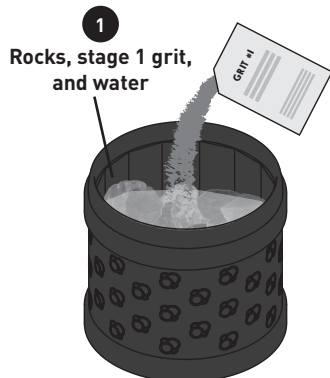
## ROCK TUMBLER SETUP

1. Slide the **drip tray** into the **tumbler base**.
2. Make sure the **rubber belt** is fixed in place. (One spare rubber belt is also included.)
3. Remove the rocks from the **rubber barrel** by following steps 4-6.
4. Unscrew the **hex handle**.
5. Pry off the **outer lid**. You may use a flat tool such as a screwdriver to help with this.
6. Screw the hex handle back on and use it to pull out the **inner lid**. Remove the rocks and replace the lids on the rubber barrel.
7. Place the **rubber barrel** so it sits on the rollers in the rock tumbler.
8. Set up the rock tumbler on a large tray to catch any excessive leakage.
9. Insert the **USB-C cable** into the power socket in the back of the rock tumbler's base. Plug the other end of the USB-C cable into a USB power adapter, which must be plugged into a power outlet either directly or via an extension cord.



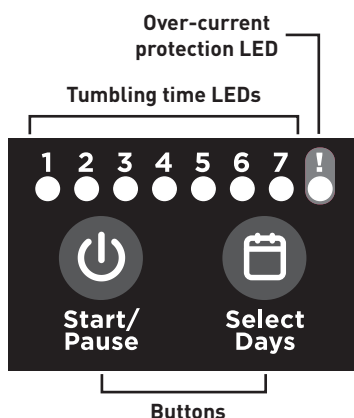
## PREPARING TO TUMBLE

1. Open the **rubber barrel** and fill it with the rocks. Pour the contents of the **stage 1 grit packet** onto the rocks, then fill the barrel with water so the tops of the rocks are just under the water level.
2. Replace the **inner and outer lids**, making sure they sit tightly in place. Make sure the two lids are level with the top of the barrel and not askew. If the lids are not placed correctly, water may leak out during tumbling. Screw the **hex handle** back on tightly (but not so tight that it will be hard to unscrew later) to seal the **rubber barrel**.
3. Place the barrel on the rollers. Proceed to the next page to learn how to operate the **control panel** and start tumbling.



## OPERATING INSTRUCTIONS

- Once plugged in, the **Day 1 LED** should light up. If not, press the **Select Days** button once and the Day 1 LED will light up.
- Set the tumbling time by pressing the Select Days button until the LED below your desired tumbling time lights up. You can choose from 1 to 7 days. (For stage 1, set the tumbling time to 4 days.)
- Press the **Start/Pause** button to begin tumbling.
- Pause the tumbling at any time by pressing the Start/Pause button. Press the Start/Pause button again to resume the tumbling.
- After the set number of days, the motor will automatically stop. The tumbler will automatically enter sleep mode a minute after the motor is stopped.
- This rock tumbler is equipped with **over-current protection**. If the current exceeds 600-700mA under any circumstances, the motor will stop and the **! LED** will light up. In such cases, pause the tumbler and check if anything is obstructing the movement of the **rollers**; for example, the **rubber belt** on the pulleys. If everything looks good, press Start/Pause to resume tumbling.



## RINSE AND REPEAT

- At the end of day 4, open the barrel and inspect the rocks. If they are rounded down to your liking, pour the rocks into the **strainer** held over a bucket and rinse the grit off with water.

**! DO NOT** rinse the rocks in a sink, tub, or toilet. The grit particles can damage plumbing.

It is best to do this outdoors. If you want the rocks more rounded, close the barrel and keep tumbling until they are rounded to your liking.

- Thoroughly rinse any leftover grit from the barrel before moving on to the next stage.
- Repeat the process of tumbling the rocks three more times, with the stage 2, stage 3, and stage 4 grit packets, in this order. Refer to the suggested times in the table below.
- After tumbling the rocks with the stage 4 grit, they will be smooth and polished.
- Optional: To make them even shinier, use some mineral oil. Dip a cloth or paper towel in mineral oil and wipe down the rocks with it, removing any excess oil.

## TUMBLING TIMES

Stage	Grit Type	Suggested Tumbling Time
1	Course, 60 grit	4 days
2	Medium, 220 grit	7 days
3	Fine, 500 grit	7 days
4	Ultra-fine, 1200 grit	7 days (+3 for best results)

## TIPS

- Do not overload the barrel.**  
If there are too many rocks in the barrel, there won't be enough space for them to tumble and smooth each other out. The barrel has a 1-lb capacity. The rock tumbler's motor may stop running if the barrel is too heavy. For best results, fill the barrel up to one-half to two-thirds of its capacity.
- Do not make the hex handle too tight before tumbling.**  
The hex handle may get tighter during the tumbling action making it harder to unscrew later.
- Test your rocks before moving to the next stage.**  
At the end of any stage, wash a few rocks from the barrel to see if you're satisfied with the smoothness, before changing the grit. If you feel the need to, put the rocks back in and tumble for some more time.
- For rounder rocks, spend more time in stage 1.**  
The tumbling times provided in this manual are recommendations. Feel free to move to the next stage only when you are happy with the results.
- Tumbling times will vary.**  
Depending on the hardness of the rocks and how rounded you want your tumbled rocks to be, the amount of tumbling time needed will vary. Experiment, observe, and learn!

## CREATE ACCESSORIES

Create fun trinkets with the polished rocks using the included accessory attachments!

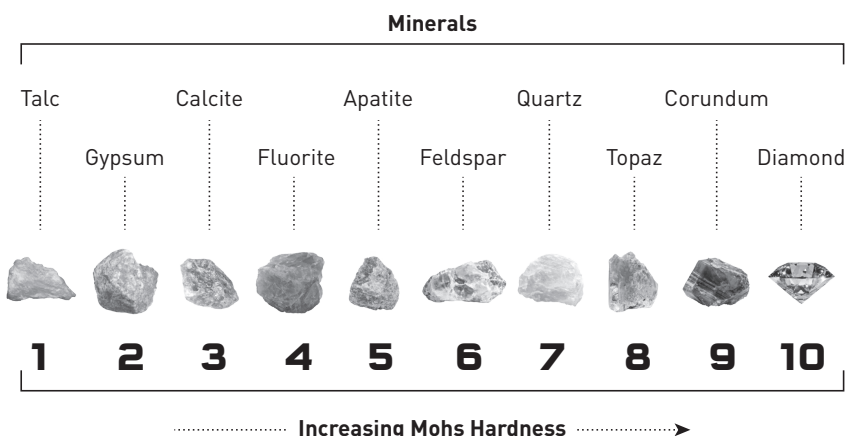
1. To create a necklace or keychain, insert the desired rock into the metal cages.
2. Use hot glue or an all-purpose adhesive to secure a polished rock to the ring or earring attachments. **Ask an adult for help when using the hot glue gun.**



## PICKING ROCKS

Not all rocks are suitable candidates for tumbling! Here are some things to look out for when choosing a good rock for tumbling:

1. **Hardness** is one of the most important properties to keep in mind. The hardness of a rock is a measure of how much it can resist being scratched. German mineralogist Friedrich Mohs developed the **Mohs scale** of hardness that is used to determine the relative hardness of rocks and minerals. The best rocks to use for anyone new to rock tumbling are ones that have a Mohs hardness of about 7.
2. The rock should have little to no cracks, pores, or abrasions. These can collect grit when tumbling the rocks and, if not cleaned thoroughly, can scratch other rocks and prevent a good polish.
3. The rock should not have fractures. The fractures can make the rock weaker during tumbling, causing it to break apart instead of getting smoother.



## WHAT'S HAPPENING?

In the process of rock tumbling, you are using tiny, abrasive grit particles to repeatedly smooth out the surface of rough rocks over a period of time, thus turning them into beautiful, polished stones. The grit works like sandpaper: when the hard, sharp grit particle hits the surface of the rock, it chips off a small amount of the rock. The higher the grit number (e.g., 60, 120, 220), the smaller the grit particles. The smaller the particle, the smaller the portion of rock that gets chipped off, and thus the smoother the surface becomes. This process is called **abrasion** and it is part of the larger natural process of **weathering**, which is the breaking down or dissolving of rocks and minerals on Earth's surface. You have probably picked up a smooth rock at a beach or by a river. These are rocks that have been tumbled by the force of water over millions of years!



## WHAT ELSE CAN YOU TUMBLE?

If you try tumbling unusual materials, it's best to experiment in small batches with different grits and tumbling times to understand how each material reacts.

1. **Shells and Coral:** They can get smooth but may lose their natural patterns and colors. Softer shells may break easily and porous coral may wear down quickly.
2. **Coins:** They can get shiny but may lose details. Be careful not to tumble rare or valuable ones!
3. **Wood:** It smooths out but doesn't get shiny. Try tumbling dry with fine grit instead of water. Avoid soft woods; hardwoods (like oak or walnut) can hold up better.
4. **Marbles:** They can get cloudy or shiny, like sea glass, depending on the grit. You can use a special polish to make them clear again.

## REFILLS AVAILABLE

Refill packs containing rough rocks, grit packets, and jewelry settings are available from Thames & Kosmos's website and at retailers nationwide.



**thamesandkosmos.com**

### FCC Part 15 Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Warning: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

### ICES Statement

CAN ICES-3 (B)/NMB-3(B)

This Class B digital apparatus complies with Canadian ICES-003.

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

### Notes on Disposal of Electrical and Electronic Components

The electronic components of this product are recyclable. For the sake of the environment, do not throw them into the household trash at the end of their lifespan. They must be delivered to a collection location for electronic waste, as indicated by the following symbol: Please contact your local authorities for the appropriate disposal location.



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