

TUMBLE BEE®

Rock Tumblers



TB-12



TB-14



TB-22

INSTRUCTION MANUAL

SAFETY INSTRUCTIONS



IMPORTANT! READ FIRST



For your safety, please read, understand and follow all warnings, safety rules and instructions in this instruction manual before using this machine. Failure to do so can result in injury. This instruction manual is intended for the following machine models: TB-12, TB-12-220, TB-22, TB-22-220, TB-14, and TB-14-220.

Save these instructions

SETUP

- **Intended for indoor use only.**
- **Avoid dangerous environments.** Do not use this machine near gasoline or other flammable liquids. Use in clean, dry, room temperature conditions only.
- **Machine should be placed on a sturdy, level surface with ample working area and away from open electrical outlets.**
- **Check for damaged parts.** Before use, always check for any damaged parts to determine that the machine will operate properly and perform its intended function. Check for improper alignment of moving parts, binding of moving parts, breakage of parts and/or any other conditions that may affect its operation. A part that is damaged must be replaced through the manufacturer of this machine to avoid risk of injury.

- **Use only identical Tumble-Bee parts for replacement parts.** Use of any other parts not originally intended for the Tumble-Bee may create a hazard or cause product damage.
- **Use only recommended accessories and parts.** The use of improper accessories or parts on this machine may cause risk of injury.
- **Know your power tool.** Read this instruction manual carefully. Learn the correct applications and limitations as well as specific warnings and hazards related to this machine.

USAGE

- **Wear proper apparel.** Do not wear loose clothing, neckties or jewelry that can get caught in machine's moving parts. Secure long hair with rubber band or hair tie.

SAFETY INSTRUCTIONS

- **Keep work area clean and uncluttered at all times.**
- **Never disconnect machine from power source with wet hands.** Make sure to keep all electrical connections dry.
- **Do not leave children unattended while using this machine.** Adult supervision is required at all times.
- **Do not operate this machine while under the influence of drugs, alcohol or any medication that causes drowsiness.**
- **Some rocks contain poisonous elements.** Avoid tumbling rocks that contain uranium, mercury, lead, arsenic, etc. Make sure you know the material you are polishing.
- **Do not overload the Tumble-Bee barrels.** This puts strain on the motor and won't give you the results you expect. Always use appropriate quantities that won't exceed the tumbler's capacity.
- **Never pour rock slurry down the drain.** When emptying and cleaning your barrels, never pour the slurry down the drain. Slurry hardens like a rock and can clog your drain.
- **Do not force the tool** to do a job it is not designed to do.

- **Do not remove thermal overload protector from motor.**

MAINTENANCE

- **Always disconnect from power before servicing.** Disconnect machine from power source before making any adjustments and when not in use.
- **Do not abuse the power cord.** Never carry the machine by the cord or yank it to disconnect from receptacle. Keep cord away from heat, oil and sharp edges.
- **Clean and dry machine after every use.**
- **Do not remove thermal overload protector from motor.**

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THANKS FOR CHOOSING TUMBLE-BEE



ONE-YEAR LIMITED WARRANTY

This Tumble-Bee is warranted by the manufacturer to be free from defect for the period of one full year from the date of purchase.

What does this warranty cover?

This warranty covers all structural and electrical parts of the Tumble-Bee.

What does this warranty not cover?

This warranty does not cover any abuse, misuse, intentional damage, incorrect usage, failure to adequately take care of the machine, improperly following the instructions, servicing by someone other than Tumble-Bee personnel, theft or loss and/or any act of nature. This warranty also does not cover any consumable items, such as the belt and the barrel gasket. The belt and barrel gasket are subject to proper installation and general wear and tear and as such are not covered.

Who is covered under this warranty?

This warranty only covers the original purchaser of the equipment. It is non-transferable.

What is the warranty period?

This warranty service is in force for one full year from the date of your purchase from an authorized dealer. **Please retain the original invoice of your Tumble-Bee for proof of warranty or register your Tumble-Bee.**



Need our warranty service?

Contact us *directly* by phone at (347)-6-TUMBLE or email us at info@tumble-bee.com. All defective parts must be returned for inspection. After warranty service is authorized, return defective parts to Tumble-Bee, all ship charges prepaid. Do not return parts for service without prior authorization. Shipping damage is not included in this warranty but is the responsibility of the shipping carrier. All claims for shipping damage must be filed by the recipient with the delivering carrier. **You must prove that you are under warranty by providing us with the original invoice of your Tumble-Bee or by registering your tumbler to receive our warranty service.**

MACHINE DETAILS

The images below show all parts and accessories included with your Tumble-Bee:

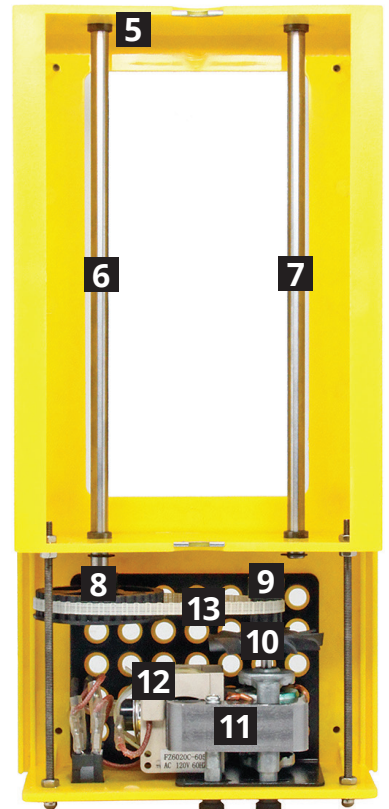
1. Plastic housing
2. Black motor cover
3. On/off switch
4. Thumbscrews
5. Bearings
6. Drive shaft
7. Support shaft
8. Drive pulley
9. Motor pulley
10. Fan
11. Motor
12. Thermal overload protector
13. Timing belt
14. Oil
15. Allen wrench
16. 4lb. barrel
17. 2lb. barrel
18. Barrel inner lid
19. Barrel outer lid
20. Barrel washer
21. Barrel nut



1 barrel for TB-12
2 barrels for TB-22



1 barrel for TB-14



OPERATING INSTRUCTIONS

1 Unpack your bee: Carefully unpack the Tumble-Bee and remove all packaging material and accessories. Make sure all parts are present. If you find any missing or damaged parts, call us immediately at (347)-6-TUMBLE or email us at info@tumble-bee.com.

2 Location: The Tumble-Bee operates continuously, so choose a convenient location for your tumbler with an electrical outlet nearby. We strongly suggest a location in room temperature on a flat, sturdy surface with at least 6" clearance around the motor for proper ventilation. Do not operate your Tumble-Bee by valuables or on carpet or rugs, as a spill can happen.



Helpful hint: Place your Tumble-Bee in a large pan so if the barrel spills open while tumbling, all of your material is in one place.

3 Open the barrel: To open the barrel, unscrew the barrel nut, turning counter-clockwise, and remove the washer. Next, remove the outer lid by inserting the washer between the outer lid and barrel, moving the washer in an up-and-down motion (Fig. A). This allows the outer lid to pop off. Remove the inner lid by lifting it by the center bolt.

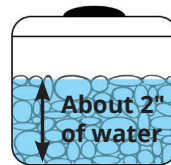
4 Add your material: Fill the barrel with 1/2 (minimum) to 2/3 (maximum) of the stones, glass or metals you want to polish. Do not fill past the maximum. Add clean water to the barrel, just enough to barely cover the top layer of your material (Fig. B).



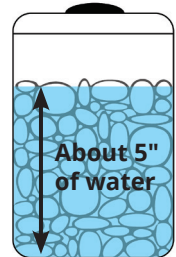
Fig. A



Helpful hint: Don't add too much water to your barrels or your material won't tumble effectively.



2lb. barrel



4lb. barrel

Fig. B

5 Add your abrasive: The abrasives you use depends on the material you are tumbling. Be sure to get the right abrasives, which can be bought at your local rock shop. See pages 11, 12, 13 for our recommended abrasives and tablespoon quantities. **Max tumbling weight including barrels, material and water is 6lbs., 10oz. Overloading will cause motor to overheat.**

OPERATING INSTRUCTIONS

6 Close the barrel: Wipe the inner lid of the barrel clean with a damp cloth so the inner and outer lids go back on a clean surface. Place the inner lid back in the barrel so there's a snug fit. Place the outer lid on top of the inner lid so that the center bolt is sticking out of the middle and the edge of the lid is flush with the side of the barrel. Place the washer on top and screw on the barrel nut, turning clockwise. Make sure the barrel nut is very tight so it won't spin loose. Manually spin your barrel to test for leaks.

7 Time to tumble: If this is your first time tumbling with the Tumble-Bee, **oil the motor bearings before tumbling.** A few drops is all you need. Make sure to clean up any excess oil. If you are not sure where your motor bearings are located, refer to the parts list on page 6. Once your bearings are oiled, manually rotate the drive shaft and support shaft. Place your barrel onto the two shafts and make sure the groove in the barrel nut rests over the barrel guide (Fig. C). Plug your Tumble-Bee into an outlet and turn the tumbler on using the on/off switch. Your barrel should be rotating at this point. If not, manually spin the barrel to give it a kick start. Please note, when turned on, it is normal for your tumbler to make noise. Follow the directions on your abrasives to know how long to tumble with each grit.



Helpful hint: Check your Tumble-Bee AT LEAST once a day to make sure it's running properly and there are no spills.



Fig. C

8 Changing the abrasive: Open the barrel and pour your tumbling material in a bucket or strainer and rinse it with clean water (Fig. D). Inspect your material. Rough edges should start to wear down and a polish should start appearing with each step used in the abrasive sequence. Put the inspected material back in your barrel with the correct abrasive and close your barrel.



Fig. D

OPERATING INSTRUCTIONS

9 Restart tumbling: Before you start tumbling with the next abrasive, clean and oil the bearings. Simply wipe your bearings with a clean cloth to collect any dust that may build-up while tumbling. Next, oil your bearings, about a few drops should suffice. Do this every time you change abrasives to keep your Tumble-Bee tumbling properly. Once you have cleaned and oiled the bearings, turn your power switch on and start tumbling.



Helpful hint: Keep a log of your tumbling progress. By doing so, it can be a useful reference for when you tumble similar material in the future.

MAINTENANCE

Barrel exterior and interior: Your barrels may form a dust while tumbling. It's important to keep the outside and inside of your barrel clean to protect the rubber and to keep a clean unit. Simply wipe the outside and inside of your barrel with a wet, soapy cloth between grit changes. Rinse the soap off with clean water. These barrels aren't dishwasher safe and should not be exposed to harsh cleaning solvents.

Bearings: Before you start your very first tumble with the Tumble-Bee, oil the four bearings (Fig. E). After that, oil every time you change your grit. The oil that comes with the Tumble-Bee is a lightweight motor oil, so you will need to oil the bearings more frequently. Also, clean the bearings with a clean cloth between grit changes to pick-up any dust that may build-up while tumbling.



Fig. E



Helpful hint: You can use store-bought 10W30 motor oil to oil the Tumble-Bee's bearings. DO NOT use spray-on lubricants.

Are your tumbler's bearings noisy? See Troubleshooting on page 11 for a quick fix.

MAINTENANCE

Belt: The non-slip timing belt installed in your Tumble-Bee comes pre-aligned, but may shift during shipping or during continuous tumbling. Adjusting the timing belt is simple and part of normal maintenance to keep your Tumble-Bee buzzing. To adjust, remove the black motor cover by unscrewing the two motor cover screws located on both sides of the cover, then manually pull it off. Check to see if the timing belt is on the motor pulley and drive pulley. If it is not, slide the belt back onto the pulleys. Check the tension of the belt, it should be straight and tight, but NOT too tight. Reinstall motor cover. Now you need to adjust the belt tension. Loosen the three black thumbscrews (Fig. F) turning counter-clockwise. If your belt needs to be loosened, SLOWLY slide the three thumbscrews to the left. If your belt needs to be tightened, SLOWLY slide the three thumbscrews to the right. Do NOT over tighten the belt, as this can result in a motor bearing failure. Tighten the thumbscrews, turning clockwise, after adjusting.

Fig. F



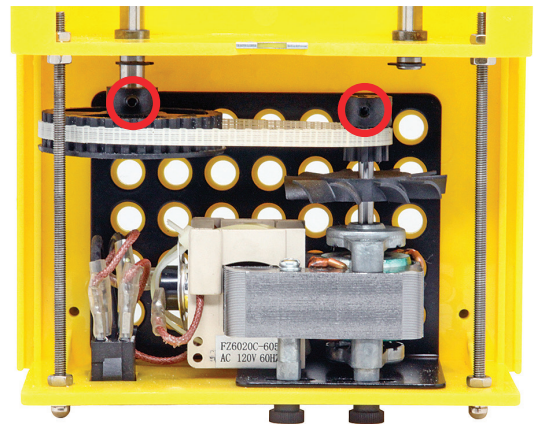
Motor cover screw

Motor: After continuous use, the motor may become hot. If the motor overheats, the thermal overload protector installed in your Tumble-Bee automatically shuts off your tumbler. If this happens, let the motor completely cool off. The motor will automatically restart on its own.

Overheating is a sign of exceeding weight limits and can shorten motor life. DO NOT REMOVE THERMAL OVERLOAD PROTECTOR.

Pulleys: If the drive pulley and motor pulley are slipping off or loose, simply tighten their set screw (Fig. G) using the included Allen wrench, turning clockwise. Do NOT over tighten, as this can strip the set screw.

Fig. G



Gasket: Through normal wear and tear, the gasket will need to get replaced. If you plan on doing a lot of tumbling, we suggest purchasing a few extra gaskets.

TROUBLESHOOTING

Should you need further assistance, please email us at info@tumble-bee.com.

BARREL DOES NOT TURN

If the barrel does not move or turns very slowly, remove the barrel from the Tumble-Bee. Check to make sure the support shaft is spinning freely or that the belt is not too tight. These are the two main causes of rotation problems. If the support shaft does not spin freely, clean and oil the support shaft until it does. Once it is spinning freely, place the barrel back onto the shafts and manually spin the barrel, giving your tumbler a “kick-start.” If the barrel still does not turn or turns very slowly, you most likely overloaded the barrel. Remove some of the material from the barrel to lighten the load so the barrel rotates properly. **Do not exceed the capacity limit of 2/3 full.**

BELT DOES NOT SPIN

The position of the motor is too far to the right, causing too much tension in the belt. Reduce this tension by repositioning the motor. Loosen the three thumbscrews to move the position of the motor so that the belt is loose. Do not over-loosen the belt or it will not fit properly into the grooved pulleys. If the motor still does not spin, test to see if it spins without the belt. If the motor still does not spin, replace the motor.

INNER LID DOES NOT SEAL CORRECTLY

Wipe the inner lid and edge of the barrel clean so material does not get in the way of sealing the inner lid.

MOTOR AND BELT SPIN BUT DRIVE SHAFT DOES NOT

Using the included Allen wrench, tighten the set screw in the drive pulley.

BELT IS LOOSE

Adjust the motor so there is adequate tension, but do not over-tighten or the motor will not spin. Refer to page 10 for more details on how to adjust the motor.

BARREL LEAKED

Either the barrel lids were not sealed properly or there was a gas build-up inside the barrel. Depending on the material you are tumbling, a chemical reaction may occur and form a gas inside the barrel, causing the lids to pop off and spilling the insides.

TUMBLER IS NOISY

In general, tumbling is a noisy process. Our non-slip timing belt is slightly louder than the less efficient O-ring design. However, this noise can be dampened by loosening the tension in the belt. To do this, loosen the three thumbscrews, slowly slide them to the left, then tighten. Do not over-loosen belt or it will not fit properly into the grooved pulleys. **Always keep bearings oiled.**

TUMBLER BEARINGS ARE NOISY

First, oil the bearings. If the bearings are still noisy, oil the **OUTSIDE** of the bearings. This requires you to remove the motor cover to oil the two bearings underneath it.

INTRODUCTION TO TUMBLING

For millions of years, our earth has naturally tumbled stones of all different material through waves of our oceans and rivers. The natural movement of the waves and sand produced beautiful, polished rocks without a machine. Now YOU can control this natural process with your Tumble-Bee tumbler.

Welcome to rock tumbling. A fun and addicting hobby that the whole family can enjoy together. Tumbling is the best way to spark your interest in lapidary. Whether you are a beginner or professional, rock tumbling is something for everyone to enjoy at every level and age. Just like every new hobby, there are some basics you need to know before you jump right in. The rest of this section explains the general knowledge of rock tumbling and what material you can successfully tumble with. For a better understanding about what grits to use with the appropriate material, we suggest asking your local rock shop. All abrasive kits come with instructions. Also, searching the internet and experimentation will help further your understanding.

Before you start tumbling, you need to know the Mohs Scale. The Mohs Scale of mineral hardness will help you determine what material can be successfully tumbled together. As a general rule, always tumble material of the same hardness. If you don't you can end up scratching your material. If you are not sure of the hardness of your material, you can always conduct a hardness test.

Mohs scale	Hardness scratch test
1. TALC	Fingernail scratch.....2-2.5
2. GYPSUM	Penny scratch.....3
3. CALCITE	Knifblade scratch.....5.5
4. FLUORITE	Window glass scratch.....5.5
5. APATITE	Steel file scratch.....6.5
6. ORTHOCLASE	Garnet scratch.....7-7.5
7. QUARTZ	Carborundum scratch.....9.5
8. TOPAZ	
9. CORUNDUM	
10. DIAMOND	

SOFTEST
↓
HARDEST

INTRODUCTION TO TUMBLING STONES



General information for tumbling stones

So you're ready to start tumbling some stones, but how do you know what stones to tumble together? Always follow the Mohs Scale. If you are tumbling softer stones (usually those below 6 on the hardness scale) don't add harder stones to the mix. Select stones that are around the same size that have colors and patterns that appeal to you. If you have stones that have deep cracks or are fractured, discard them. More than likely, your rock tumbler won't be able to help these misfit stones. Be sure to check your stones daily.

Basic formula for tumbling stones in 2lb. barrels and 4lb. barrels:

STEP	MEDIA	MEDIA QUANTITY	TIME
1	Coarse silicon carbide grit 60/90	2lb. = 3 tbsp / 4lb. = 6 tbsp	1 week min.
2	Medium silicon carbide grit 120/220	2lb. = 3 tbsp / 4lb. = 6 tbsp	1 week
3	Fine silicon carbide grit 500/600	2lb. = 3 tbsp / 4lb. = 6 tbsp	1 week
4	Polish	2lb. = 3 tbsp / 4lb. = 6 tbsp	5-7 days

Fill your barrel with clean water to barely reach the top layer of rocks. Do not overfill with water or your rocks will not tumble effectively. If you see that grit is left over in the barrel when you remove your stones, reduce your tablespoon amount. Adding more grit to your stones will NOT shorten the tumbling process or tumble your stones faster, it will just waste your grit.



Helpful hint: The type of polish you use depends on what material you are tumbling. Most common rock polishing abrasives used are cerium oxide, aluminum oxide or TXP aluminum oxide.

Remember, practice and experimentation are keys to success. You must have patience, do not rush the sequence. Once you have mastered the basic rock tumbling formula, you will be able to add more steps and create your own unique formula that works for you.

INTRODUCTION TO TUMBLING GLASS



General information for tumbling glass

Since glass is much softer than most rocks on the Mohs Scale, it takes less time to tumble. Glass has a hardness between 5 and 6, so you will need to reduce your tumble time significantly. Tumbling glass is one of the more challenging materials to tumble. Since it is softer, particles may break off while tumbling. Be sure to fill the barrel with the right amount of material. Some use large ceramic pellets to fill the barrel to prevent the glass from breaking. Remember to follow your abrasive kit instructions closely to avoid broken glass.



Helpful hint: Use ceramic pellets as a filler for tumbling glass. Ceramic pellets "cushion" your tumbling glass to prevent from breaking. Be sure to use pellets that have been previously used, new pellets can scratch your glass because they often have sharp edges.

Basic formula for tumbling glass in 2lb. barrels and 4lb. barrels:

STEP	MEDIA	MEDIA QUANTITY	TIME
1	Coarse silicon carbide grit 60/90	2lb. = 3 tbsp / 4lb. = 6 tbsp	4-5 days
2	Medium silicon carbide grit 120/220	2lb. = 3 tbsp / 4lb. = 6 tbsp	2-3 days
3	Fine silicon carbide grit 500/600	2lb. = 3 tbsp / 4lb. = 6 tbsp	3 days
4	Polish	2lb. = 2 tbsp / 4lb. = 4 tbsp	4-7 days



Helpful hint: For the polishing process, we recommend using TXP aluminum oxide. It produces a higher luster than most polishes. You can also use cerium oxide or #61 rapid polish.

Feel free to add steps as you go along. Some people prefer using beach sand instead of silicon carbide grit for tumbling glass. If you choose this route, sand will require more days of tumbling than the silicon carbide grit. Experiment for best results.

INTRODUCTION TO POLISHING METALS



General information for polishing jewelry and metals

Many people polish jewelry, coins, cartridge cases and remove burs from bullet casings using a rock tumbler. Polishing metal gives you a high-polish finish. If you plan on polishing valuable jewelry, or are unsure on how to polish jewelry, we highly suggest you ask a professional jeweler permission to tumble. Some jewelry pieces can be ruined using a rock tumbler. **NEVER** tumble jewelry that has gems or stones.

Basic formula for polishing jewelry and metals in 2lb. barrels and 4lb. barrels:

MEDIA	MEDIA QUANTITY	TIME
Stainless steel shot	Approximately 1lb.	Tumble media with jewelry/metals for 15-30 minutes
Chlorine-free, clean water	Cover jewelry and steel shot	
Burnishing soap/mild dishwasher detergent	1-2 drops	

The above polishing formula will brighten your rings, earrings, chains, sterling silver, gold, precious metals and other pieces of jewelry you may have. Please note that this process will not remove scratches, nicks or other surface imperfections previously made.



Helpful hint: Once you are done tumbling with the stainless steel shot, completely dry and store in a container for a later use. You can reuse stainless steel shot more than just once.

IMPORTANT SAFETY NOTE: Do not tumble loaded ammo. This is a very dangerous process and poses serious safety hazards. Tumbling loaded ammo can break down the kernel powder that is inside the case. If this happens, the powder can cause extreme pressure buildups.

TUMBLE BEE®

MANUFACTURED BY

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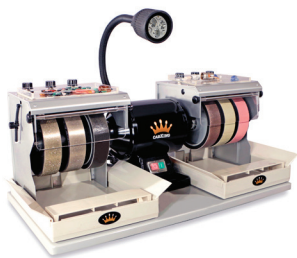
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SHOP OUR OTHER BRANDS



cabking.com



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