



## Homberg + Brusius e.K.

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01/21

### Operating – and handling instructions

For “Tumblers” TRM-A (1 Barrel) and TRM-2A (2 Barrels) \*

This tumbler has been designed for the efficient grinding and polishing of gemstones. Also, which is a different procedure, it is being used for burnishing and polishing jewellery or metal. It is designed for continuous operation and runs almost noiselessly. Barrel capacity : (barrel Nr. 2): Approx. 0,7 litres 1 kg (2,2 lbs.) of stones.

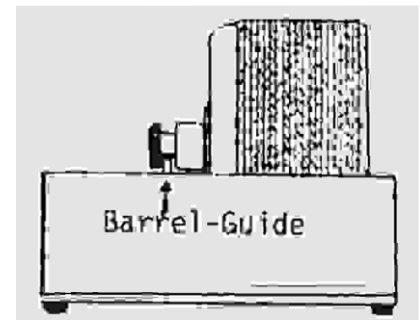
Good results may be achieved if you take the time to carefully read and follow these instructions. Patience is important. In a river it takes the following water many years to shape and smooth rocks by constantly rolling and rubbing them against each other. This machine needs only some weeks to accomplish the same. If, in the beginning, you should be tempted to “save a couple of days”, it may be that in the end you will not be satisfied with the final shape or polish of the stones. Therefore we recommend to defer experiments, like using less powder or omitting a grit, until some experience has been gained.

Please also note the safety instructions under Warnings.

#### Inspection before operation:

Position the machine horizontally, then it will function best. Take the rubber barrel(s) off. TRM-A is being packed with barrel placed separately in front of the machine i.e. not on the shafts. The two shafts, on which the barrel(s) rotate(s), can be seen now. Start the machine. You can see that only one shaft, the driver shaft, is turning. The powder second shaft, the idler-shaft, only rotates when a barrel is mounted. Unplug the powder cord and check, using two fingers, if the idler-shaft can be turned easily. This is just a precaution, because unfortunately we have learned that careless handling of parcels by the post office or railroad can cause the loosening of one of the four bearings for the shafts. The bearing might sit crooked in the housing, such hindering proper rotation of the shaft. Should this be the matter, just push the bearing firmly downward to tighten it. Now place the barrel(s) on the shafts. The nut of the barrel's lid must rest with its groove on the barrel-guide of the housing.

TRM-2A: Both barrels must be placed on the shafts bottom to bottom, the nuts facing outward and resting on the barrel guides. Start the machine again. The barrel(s) must rotate now.



#### To open rubber barrel:

To open, remove the closure button and washer. Then press your thumb on the lid screw and pull up the outer lid with your fingers. Or if this is difficult, insert the washer between the outer lid and the rubber rim and loosen the lid by light, short rotation of the hand, all around until the outer lid has come loose. Then pull up the inner cover (with its coated rubber seal) on the screw thread. Get into the habit of always opening the inner lid so that it is first opened on the side facing away from you.



#### To close barrel:

Before closing, always clean the inner and outer edge at the top of the barrel, as well as the edge of the (rubber) inner lid and the inner edge of the aluminium outer lid with a clean, dry cloth. To close, press the inner lid firmly into the rubber barrel so that it rests all around on the inner (clean) barrel edge (= pressed

horizontally in the barrel), then place the aluminum outer cover on the barrel and press down from above until it also sits completely evenly + horizontally + as deep as possible on the barrel. It is best to press all around with the fist / palm of the hand, on top of the edge of the lid. Now hold this lid down with one hand and place the washer with the other hand. Then turn the closure knob firmly on. If the inner or outer lid does not fit properly, the lock button on the machine housing can tarnish irregularly and cause the lid to come loose after some time and the contents to leak.

#### Loading of the barrel:

Fill the rubber barrel about 1/2 (recommended) to 2/3 (at most) full (or a little more than half full) with stones of different sizes. This is very important for the mobility of the stones to achieve good results! If you want to put a larger stone into it, there should only be a few large stones and many small stones that you fill in additionally, so that it is ensured that all stones can move easily during the rotations and do not wedge / tilt. Make sure that if you work different types of stone, they have about the same hardness. If you want to process stones already rolled in the river (already naturally ground stones) and very raw, angular (quarry) stones, please fill each group separately into the barrel.

#### Abrasive-/Polishing powders:

To a load of approx. 1 kg of stones (2,2 lbs.) add about 30 millilitres of abrasive powder, which is about 45 grams of grit 80. From experience you will learn when to use more or less powder. The final run will be done with polishing powder. We suggest to use the powders in the following sequence of grits: 80, 220, 400, 800 and finally the well-known “X-3” polishing powder. After stones and powder have been filled into the barrel, add water up to 1 or 2 cm below upper layer of stones.

**Operation:**

Close the barrel, as described before, and start the tumbler by plugging power supply cord into socket. Then place the barrel(s) in the shafts and check the contents of rotate properly. If necessary a slight push will start rotation.

Check after 1-2 hours how the grinding sludge looks. It should, if you e.g. Put your finger a few inches deep into the barrel and "stir", not be too thick (this would slow down the movement of the stones, which should be easy to move) but also not too thin (then the grinding effect would be low).

Check the contents of the barrel daily, at least every second day. Care should be taken when opening the loaded barrel, because during operation a certain air pressure builds up, and dirty water might squirt out. Start opening the lid on the side facing away from you, such further improvement is noticeable. Then the next finer grit should be used. Of course it is a matter of experience to know when to change grits. The following periods of time should serve as guidance:

Run with abrasive powder grit 80 – approx. 2 weeks

“ 220 – “ 1 week

“ 400 - “ 1 week

“ 800 / 1200 - “ 3 days

Run with our famous polishing powder X-3 “ 3 days (X-3 is used for most kind of stones)

For quick results, renew the powder in the barrel every 24 hours = carefully pour the barrel contents into a spacious container (bowl), remove stones and pour them back into the barrel. Fill up to 1-2 cm below the stone surface, sprinkle fresh powder of the same type as usual, close the barrel, wipe/clean the barrel with old but clean cloth all around, dry hands, plug Schuko plug into the wall socket, so that the TRM is running, place the barrel, check if the barrel runs properly on the arbours and in its retaining bridge.

A grinding process (in the same grain size over and over again) is finished when you can no longer notice any surface improvement on the dried stone (i.e., no difference compared to yesterday). It is best to record your experiences/observations/results in writing (in between)! So you do not forget your experiences and at the same time have found your own "program".

**Cleanliness:**

It is extremely important to wash/clean the rubber barrel, the stones and also the hands thoroughly when changing the type of powder. (It is easier to use an extra barrel for each type of powder, which eliminates the need for thorough cleaning between each powder change). In any case, at least one additional barrel is recommended for the polishing powder / polishing process (then clearly mark the barrel with a large dot or letters).

Outside of the rubber roller barrel: Make sure that the barrel always stays clean and dry on the outside before it is placed on the shaft. With a new barrel, a slight rubber abrasion can show up on the arbour at first. This is normal. Then clean the barrel with a dry cloth and the arbour possibly additionally with some white spirit. If the barrel has served for a long time, it may be that the surface is no longer so grippy and slips a bit on the arbours. Then roughen the outside of the rubber barrel slightly with e.g. a fine brass wire brush; or with fine sandpaper.

**Soft Stones:**

If you want to polish particularly soft stones (this can be a bit problematic), it is recommended to fill our special granulate into the barrel as a buffer. This prevents the direct rubbing against each other from stone to stone, because this can easily cause scratches in the polishing stage (possibly also in the pre-polishing stage, i.e. in the SiC 800 or 1200 grinding process), which make a good polish impossible. (Attention: In terms of volume, fill in more granules than stones! So halve the stone section at least. Order at least half a kilo of granules per barrel filling.) Do not forget to continue adding the powder.

Prepare the organic granules: Put in a bowl and spray wet with a spray bottle, then stir well and let it absorb a little. Repeat this process several times until the granules have absorbed water well. This prevents it from becoming lumpy.

For amber, you should use hard pre-shipped tumbled stones to get weight. When polishing, use polished tumbled stones or our polishing bodies. Fill the barrel about 1/2 with it, then a few ambers and the respective powder.

For soft stones, the X-3 is too "aggressive". Here you should usually work with our Titanium 2//7

**ALREADY "ROLLED" STONES:**

If you want to fill in already rolled stones (e.g. from the Baltic or northern North Sea, from river banks, gravel pits), the slightly different order applies here. Then only fill in such rounded/levelled stones. (Don't add rough stones! They are too edgy)

1st operation in Sic Korn 80 perhaps up to 1 week \*. 2nd operation in grain 800. Up to one week \*. 3. Up to a week in X-3 polishing powder\*.

(\* Check in between ! As soon as no surface improvement is recognizable, you can switch to finer powder). Take notes to collect your experience....

**Even better cleaning:**

After some experience has been gained on can try to achieve even better tumbling results with the following method: Between each change of grits clean (rinse) the stones as well as the barrel, and then let the load run for ¼ to ½ hour on our special burnishing soap IRPS (amount of water as described before). Under no circumstances use a sharp soap because it might impair the stones as well as the rubber of the barrel.

**Disposal of grinding powder:** The little bit of abrasive powder and stone abrasion that is left over (usually every 24 hours) is not worth storing for reuse (also the abrasive powder has become too fine to achieve sufficient abrasive effect). Collect the powder in e.g. an empty container. Once enough has been collected and dried, dispose of it in a local dump (household waste).

**Maintenance:**

**Care:** Shafts and bearings should always be kept clean and be free of accumulated dust and dirt, especially the ends of the shafts, so that the bearings don't get clogged. If, after a longer period of operation, one of the shafts does not rotate well anymore or squeaks, you should apply a drop of oil to each and of the shaft. The rotation will transport the oil into the bearing. You will understand that it is important to always keep the whole machine clean.

### Defects/Breakdowns:

The tumbler hardly needs any maintenance with the exception of being kept clean. However, if an unusual noise is being noticed, check at once:

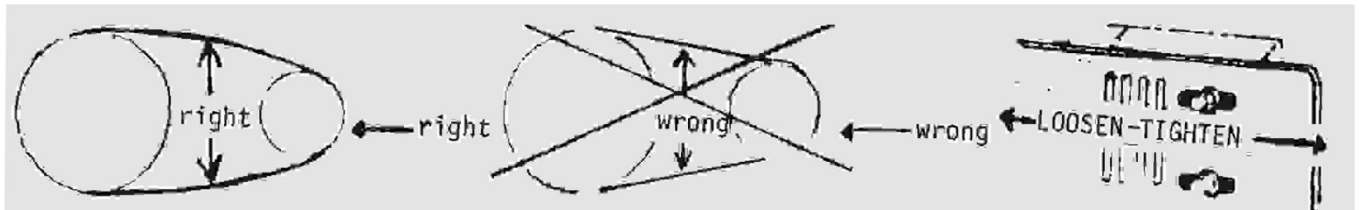
1. If the barrel(s) rotate properly
2. If both drive- and idler-shafts turn well. If not, the drive belt may have torn or slipped
3. whether the tracking shaft (when the machine is switched off. With dry hands, pull the appliance plug out of the socket) can be easily rotated with 2-3 fingers.
4. The bearings are clean (otherwise the plain bearings are dirty and almost glued to the shaft.) If all this is in order, then there must be another cause.

Within the warranty period, please do not try to repair anything else on your own.

Outside the warranty period: Open (with the machine switched off. Remove the appliance plug from the socket with dry hands) by loosening the 2 small fastening screws on each narrow side of the upper part of the housing and lift off the hood to determine whether:

5. The small drive pulley on the motor sits firmly on the shaft. If not, please tighten the screw tightly.
6. The drive strap on the small wedge disc slips. (To do this, turn on the device briefly).

It is important that the strap has an extremely slight tension. It must not show a tight/tensioned line from small to large V-belt pulley, but must necessarily represent a loose/curved line (see Fig.). If you cannot/do not want to carry out these tests yourself, have it checked by an electrician and submit the above test instructions to him. If the machine still does not work properly, please contact us for a possible agreement to send in your machine. (Whereby you do not send the barrel(s))



If the barrel no longer rotates properly, the motor can be moved 1mm (max. 2mm) to the right to tighten the belt a little (see figure). Now reassemble the upper part of the case (red side panels must be inserted inside the black bottom edges on the sides!) and screw it tight properly. Test the machine one more time. If the malfunction is still present, do not try to repair anything yourself!

**Disposal:** The machine is durable. If the engine is defective, it is detached from the machine and replaced. Otherwise, it belongs to the disposal of electrical appliances.

We hope that you enjoy working with your tumbler and wish you much success, your H + B – Team

### Warnings:

- Read the operating instructions carefully and observe all safety instructions! Check that the information on the label matches your power supply.
- The machine / equipment must not be exposed to the weather or stand in a damp room and must not stand/run with flammable liquids or gases.
- Do not place the device and cable on heat sources (e.g. stove, heater).
- With dry hands, unplug the power outlet when the device is not in use.
- If the device "wanders", please check with the plug pulled out whether a better parking space is necessary.
- If it smells burnt, unplug it immediately. Determine if the smell comes from this device or if it is due to the socket. Have it checked by a specialist (electrician).
- Do not use multiple sockets.
- Do not use extension cables.
- Plug into grounded socket only.
- Only remove the plug from the socket with dry hands. Also keep this in mind when plugging the plug into the socket.
- Do not pull the machine by the cable, never unplug the plug from the socket by the cable.
- Do not use the machine if the power cord or plug is damaged, the machine is not working properly, has fallen or is otherwise damaged.
- We recommend a DI personal protection adapter plug, which switches off the current in fractions of milliseconds in the event of a short circuit, for example.
- Always keep the machine clean and do not clean it in a water bath.
- Do not remove the barrels from the shaft while the machine is running.
- Before turning on the machine, check if there are things in the housing or around the shafts. Take it out.
- Do not try to get something that has fallen in or lying down while the machine is running. Check your machine before each power on.
- Do not wear loose garments, ties, jewelry and the like, which could wrap around the machine arbours. Tie your hair together.
- In the presence of children, always keep children under supervision.
- Use the machine out of the reach of pets.
- Do not run the machine in a closed cabinet/box. Don't put anything over it.
- Do not place the machine in a tub/box. The engine needs air.
- Do not move or carry back and forth while running.
- Place the machine only on a straight, solid floor or table.
- In case of unknown / disturbing noises that you cannot assign: Switch off the machine and use it again only after clarification.
- Use only suitable tools and do not make do with unsuitable or sharp aids. These could cause accidents or injuries.

## Certificate of Conformity



***Homberg + Brusius e.K.***

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### **Rolling-Tumbler, Type TRM**

**with shaded-pole motor with cross-flow fan  
32 Watt, 220V / 50Hz**

**52 db with unfilled barrels, 62 db filled with stones  
2 kg ultimate load**

**The machine is herewith declared to conform with the following guidelines  
Machine guidelines 2006/42/EU**

**Protective resistance measure - 0,1 Ohm (borderline 0,3 Ohm)**

**Kirschweiler, 2019**

**Kitty Homberg, Owner**

A handwritten signature in blue ink, appearing to read 'Kitty Homberg', written over a faint blue line.