

## Care of your Tumble Polisher

### PROBLEM SOLVING:

This tumbler has been tested and should be trouble-free but to ensure successful operation the rollers must turn absolutely freely; never use less stones if the operation is hesitant. Check all the bearings as too light a load may glaze the rollers and barrel through slippage, requiring a slight sanding with coarse sandpaper to restore a positive drive. Don't get oil on the rollers.

Excessive belt wear can be caused by a faulty belt (outside manufacturers control) or by pulleys that have been knocked out of alignment (they can be gently prised back into line)

Always realize that, although the machine has adequate power, it cannot operate with bearings that are locked solid with grit and sludge. KEEP IT CLEAN.

Remember to remove the plug from the mains supply when cleaning or oiling the machine.

If problems persist then read the instructions carefully again. It is almost certain that the problem is trivial and can be rectified with a few moments thought - the most common problem encountered is where drive belts have been tightened, thus robbing the motor of power.

If the rollers cannot spin freely it is like driving a car with the handbrake on !

### OILING & MAINTENANCE:

The machine is oiled when it leaves the factory and is ready for immediate use but will require periodic lubrication, while in use, as follows. Auto engine oil is better than thin cycle or sewing machine oil.

#### Weekly.

Apply ONE DROP of oil to the steel shafts on the rollers where they pass through the bearings.

#### Monthly

Apply ONE DROP of oil to the motor shaft where it protrudes - allowing it to run back into the motor bearing. If the machine is fitted with a barrel stop, it will help if a small amount of oil is applied, to the stop, to reduce friction.



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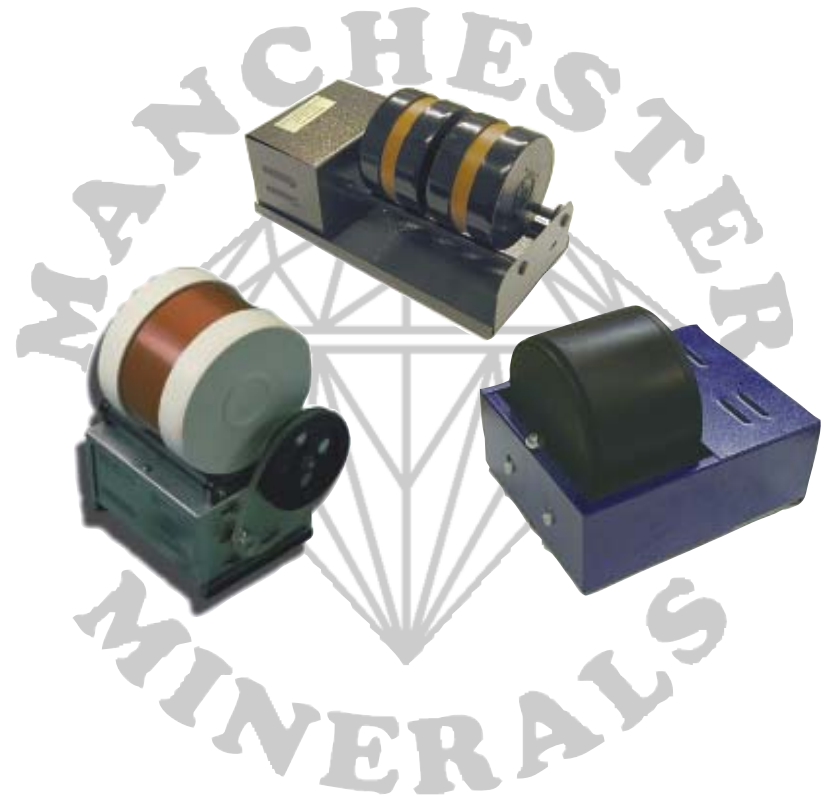
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# Tumble-Polishing INSTRUCTIONS



# Operation of a Tumble Polisher.

First connect the unit to a three-pin plug (if one is not already fitted); a 3-amp fuse is adequate and should be inserted in place of those with a higher rating.

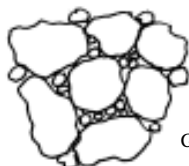
## General Instructions.

Select stones that are generally 1" diameter or smaller; one or two larger stones may be polished in a loads consisting mainly of smaller stones.

To open the long-life plastic barrel, push either end cap off with

### No small stones

Very little contact on grinding



### Range of stone sizes

Good contact and fast grinding of all faces

your thumbs. (When new they are sometimes tight, but if the barrel lid is held under running hot water for a few moments it expands -faster than the body - and can be removed more easily.) When replacing the lid ensure that all the surplus air has been expelled from the barrel, by lifting one side of the lid with your fingers as you press the centre of the cap with your thumbs - you will hear the air hiss out.

Make absolutely sure that the caps are on properly and as far as they will go - THIS IS MOST IMPORTANT.

If your machine is designed to carry the large capacity (2.25Kgs) rubber barrels, the following notes apply: When fitting the rubber lid, ensure that the grooves are clean and that the tongue engages the groove all the way round. When opening, the pressure ring may be rolled down the barrel, instead of being removed completely. Squeezing one side of the barrel assists with opening; - DO NOT use a sharp instrument. On the smaller rubber barrels, the seal is improved if a small amount of Vaseline is smeared on the ring.



## Specific Instructions.

### STEP 1.)

#### COARSE GRIND- 80 Grit

Fill the barrel 2/3 - 3/4 full with stones and shake to settle; DO NOT USE LESS - it will not work as there will be no rolling over tumbling action and the stones would just slide in the barrel.

Add water to just over the top of the stones and one HEAPED TABLESPOON of coarse silicon carbide grit (80 Grit) per 700gm barrel (slightly more for a 900gm barrel and two tablespoons for a 1400gm barrel, three + for a 2.25Kgs barrel).

Run the machine for a few days and nights, while occasionally examining the stones. Fairly smooth stones might need only about three days to become nicely rounded but jagged or freshly broken stones will require ten or more days and it may be necessary to 'top-up' the grit to get the same effect: 7-days is an average.

When satisfied go to :

### STEP 2.) (Optional)

#### MEDIUM GRIND- 220 Grit

Thoroughly clean the stones and barrel by removing both ends. Proceed as before, using the same proportions of grit and water but this time use 220 grit Silicon Carbide.

It should only be necessary to run this grade for about 5 or 6 days. If the stones are soft (hardness 5 or less) or step 1 has been run longer, it is possible to omit this stage and go to 'Step 3', running that stage for a longer period.

### STEP 3.)

#### FINE GRIND - 400 Grit.

Thoroughly clean the stones and barrel and re-load with 400 grit Silicon Carbide in the proportions shown in 'Step 1'.

This stage is the most significant and determines the final polish - it is VITAL that it is not cut short. Allow at least seven days and DO NOT top-up with fresh grit as this will scratch the stones. Each day at this stage imparts a smoother finish as the grit breaks down, preparing you for the final stage:-

### STEP 4.)

#### POLISH - Cerium Oxide.

Very, very thoroughly clean the stones and the barrel. Examine the stones very carefully and make sure they are very smooth. Discard any stones that are badly cracked or have jagged edges (they can be used with the next load).

Repeat steps as before, using a similar amount of water but with one LEVEL TABLESPOON of PINK Cerium Oxide (or LEVEL DESERT-SPOON of BEIGE Cerium Oxide) instead of grit. (Use double for a 1400gm barrel) If the barrel has been cleaned properly and the previous stages carried out as per these instructions, then seven days with the Cerium should produce gleaming gems or pebbles with a long-lasting deep shine.



The previous steps cover the important basic stages of the tumbling process but the following notes, based on years of experience - will help you get the best results.

## Initial operating Tips

When you first use the machine you will probably feel that the drive belt is far too loose; this is not so and it is in fact essential that it runs as loose as possible without slipping - each machine is carefully adjusted and subjected to a test run.

If the belt is tightened the motor can be damaged and power loss results - it MUST BE RUN LOOSE.

You may also suspect that the machine is running too hot to the touch; this is a design feature and, providing you can comfortably hold your hand on it, there is nothing amiss. Do NOT place the machine inside a box, however, as it is essential that air can flow around it. We would advise it be placed on an old tray as this makes cleaning easier.

The barrel will almost certainly move along the rollers until it touches one end of the machine - this is nothing to worry about and a 'stop' is positioned for the barrel to gently rub against. It is not necessary to tilt the machine to counter the movement.

**All machines will give excellent results; if used correctly and following these instructions: please read carefully and retain for future reference.**

**DO NOT ALLOW THE SLURRY TO GET INTO THE WASTE PIPES OF YOUR HOUSE.**



## Tumbling Tips

Hard stones will achieve a higher polish than soft ones. If you find that the size of your stones reduces drastically during the first couple of stages there will be two problems: Firstly it is likely the stones will not polish at all as they are too soft and secondly the volume of stones will be reduced to a level such that there may be no tumbling action. Transferring the stones to a smaller barrel could help with the level problem. When a machine is tumbling correctly it makes a sound similar to stones being rolled from hand to hand. If the sound is harsh and banging - particularly at the polish stage - then there is either insufficient content or the mixture requires thickening.

We have found that the best thickener is a small amount of 'Polycell' wallpaper paste; add to the water and wait to see how it thickens up - after about 30 minutes add a little more if necessary and then repeat until the liquid in the barrel is the consistency of thin cream. It is most important that the machine is not run with the stones banging against each other.

In any tumbling process it is remotely possible that there may be a build up of gas in the barrel and it is advisable to lift the side of the end cap every day or so in order to relieve the pressure.

Please note that the main ingredient for successful lapidary work is the careful selection of the stones. Try to use stones worth polishing i.e. those with a good shape and colour. Mixed packs of selected Agates or of Quartz give virtually guaranteed results owing to attractive popular stones which have similar hardness.

Some tumbling machine users have achieved exceptional results by using a post-polish washing stage; tumble the stones in a strong mixture of water and washing powder - such as two heaped tablespoons of 'Daz' or 'Ariel' per 700gms barrel. Be careful, however, opening the barrel frequently and making sure that the stones are not banging against each other.

...It sets like concrete, even underwater. Do your washing up in a bucket and dispose of the slurry on the garden (it's quite harmless), or allow the water to settle and siphon off the clear water. Let the remaining sludge dry out and throw it in the bin.