



Homberg & Brusius 'SPIRATOR'
OPERATING AND HANDLING INSTRUCTIONS
(Translated from the German original)



A "Spirator" (=vibrating tumbler) will do the grinding- and polishing job in approx. 1/4 of the time a regular tumbler needs. However it depends on the operator to accomplish the best results with his machine. Please take the time to carefully study these instructions, however, they can only be a guideline for the working of stones, because only experience and accrued skill will enable you to make the best use of this machine.

(For the Spirator type 3,5 please also-pay attention to the end of these instructions)

I. CUTTING AND POLISHING OF STONES :

1. It is advisable to mix stones of different sizes (add a sufficient number of Small stones, because these move best among the larger stones, such also working hollow areas. Do not put stones in that are so big or shaped in such a way that they can/will build up a jam. For larger loads or bigger stone-sizes, better take the SPI-3,5 with its large/spacious container of 3,5 Litre capacity. Stones for one load should also be of approx. the same hardness.

2. Prior to loading into the Spirator-container, the stones should be cleaned/washed thoroughly, in order to keep dirt remnants etc. out. The container itself also must be clean. (Especially before polishing, great care should be taken of cleanliness or...better/easier...use a second container for polishing only).

3. When loading into the container, stones and inside of the container should be wet. The container can be filled up to a little below the top of the conical centre. Following instructions are for the Spirator-1,5 with a max. stone-load of about 2.0Kg. (As the Spirator-3,5 can take however up to about max. 4,5Kg = 10 lbs of stones add in the same way more, of the below mentioned water- or powder-quantities.

4. FIRST STEP

a) Sprinkle 10 ml (ccm) of SiC (Silicon-carbide) abrasive-powder, grit-size 80, evenly over the wet stones. Close container-cover and fasten same. Start the machine. Let it run for a period of 12 hours. (CHECK: After 2 to 3 hours of operation, the stones should be coated with a creamy film of

abrasive and the movement of the stones should be in order like this drawing.....



After the first (approx.) 12 hours, add 10 ml of water and let the machine run for another 12 hours.

b) Then stop the machine, dismount (unscrew) the container, remove stones and clean (rinse) both stones and container. Remount the (inside wet) container, fasten the nut well, re-load the (wet) stones, sprinkle another 10 ml of abrasive-powder (again grit-size 80 but fresh) close and fasten cover and re-start the machine. (Again after 2-3 running-hours, check if there is a correct creamy-abrasive-film covering all stones). About 12 hours, after filling in the fresh abrasive-powder, add another 10 ml of water.

This procedure (as under b) to be repeated that often until no further improvement of the stones' condition can be noticed and the shape of the stones (roundness) is satisfactory. (Check edges, surfaces and hollows).

REMEMBER: After 12 hours of operation: add water.
After 24 hours of operation: clean stones + container thoroughly
and fill wet stones into wet (inside) container and add fresh abrasive.
(No extra water).

Times of starting and changing; could for instance be put like this :

8.00 am - 8.00 pm (run as under 4a) and 8.00 pm - 8.00 am (run as under 4b). or

7.00 pm - 7.00 am (run as under 4a) and 7.00 am - 7.00 pm (run as under 4b).

NOTICE: After a period of 4 up to 7 days of operation, such stones, which are damaged (broken) or showing sharp edges, should be sorted out and kept separately, in order to prevent them from damaging the good stones. When starting a new work run, those stones can be worked again with 80-grit powder in a new batch of stones.

If, in your opinion, the time involved for the first step of cutting, seems to be relatively long, please consider that coarse, rough stones take up much more time to be rounded and smoothed (can be up to 7 or 14 days), than stones which have been (partly) cut already on an abrasive grinding-wheel or which have been rounded naturally by being rubbed against each other and through sand by the flowing water in a stream.

Now, if you are satisfied with the looks and condition of the stones, change to the next finer grit of abrasive. Before simply changing powders, the stones and the container (inside) have to be washed thoroughly in the next

5. IN-BETWEEN-STEP : = cleaning-step.

After intensive cleaning (rinsing, washing) of stones and container-inside, reinstall the container on the machine (tighten firmly again) and fill the pre-worked and cleanly washed wet stones into the container. Add a little water and some soft soap, put on the container-cover (+ tighten) and start the machine again. This operation serves the purpose of removing last abrasive-grain residue from the stones and container-inside. Stop this procedure after approx. 20 minutes. Remove container again and rinse stones and container-inside thoroughly. Remount the container on the machine (firmly).

6. SECOND STEP :

a) Fill in the wet (clean) stones and sprinkle 10 ml of finer abrasive. This time SiC 220, on the stones. Close cover and start the machine.

After 12 hours of operation; add 10 ml of water.

After another 12 hours of operation: wash stones and container (inside) and sprinkle 10 ml of fresh SiC 220 over the wet stones.

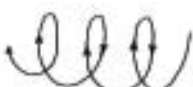
After another 12 hours of operation: add 10 ml of water only.

After another 12 hours of operation: add 10 ml. of water only.

After another 12 hours of operation: add 10 ml of water only in case the grinding-slurry is still too thick for an easy rotation of the vibrating stones, add some more water. Perhaps up to 20 ml.

After another 12 hours of operation: stop the machine, clean stones and container.

Of course, think of inspecting the running load after 2 or 3 hours when started with fresh abrasive. To see if a nice thin film of abrasive-slurry is around all stones

and the rotation is properly 

b) Then, as described under Sec.5, do the IN-BETWEEN-STEP again.

7. THIRD STEP :

- a) As described before (under Sec.6), fill in the clean and wet stones and add this time 10 ml of the still finer abrasive = grit 400.
After 12 hours of operation add 10ml of water.
After another 12 hours of operation, stop the machine, wash the stones and container (inside).

- b) Repeat the IN-BETWEEN-STEP described under Sec.5

8. FOURTH STEP = Polishing-step:

For polishing, fill in 10 ml of Cerium Oxide on the wet stones + 10 ml of water. Start the machine and let it run till the stones are polished well. This can be very quick, depending on how fine and nicely the pre-work is done. It is advisable to have a second spare bowl, just for the polishing run only.

PLEASE NOTE

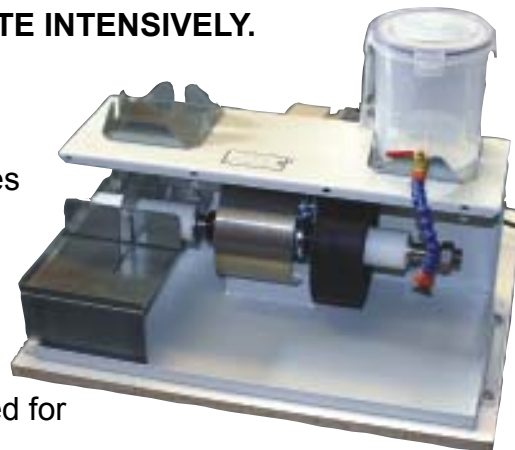
Before the first operation and between every change of abrasive: Always wash (rinse) the stones and the container (inside), using a little soap and water. (See under Sec.5) The amount of abrasive polishing powder used, can be varied a little, depending on the kind of stones to be worked, i.e. experience and "feeling" will lead to achieving the best results. To "keep book" is advisable. Stones that are already rounded or pre-worked, don't have to be worked with the coarsest abrasive. One can start the operations with step 2, using grit 220 as abrasive. When slabs (or stones with large flat surfaces) have to be worked, enough round/rounded stones should be included in the load to surround the slab; to be in place between the flat surfaces. This prevents the slabs from sticking to each other or to the wall of the container. Or...sufficient water must be added, which results in diluting the sludge, such having the same effect. In this case, it is advisable too, to inspect the grinding every 6 hours (instead of 12) and to add water then already if necessary.

If the grinding-slurry, surrounding the stones, is thick and the rotation/vibration of the stones too slow or just almost zero, immediately some water should be added. Inspect after about an hour again to check that it is working OK. If the stones, after 2 or 3 hours of running-time, are not yet covered with a thin film of grinding-slurry, too much water is in the container. (It continuously rinses off the grinding-slurry from the stones and that abrasive is uselessly stored at the bottom of the container. In such a case, try to get some water out of the container. Thereafter test the grinding-film after about an hour running-time. The grinding-slurry should not be thick and tough because that will slow-down the vibrational rubbing/moving of the stones.

Excessive grinding-slurry does not harm, however it will, as described above, slow-down the vibration/rubbing of the stones as it works like a cushion. The thick slurry can perhaps partly be taken out or...thin the slurry with a little water.

ALWAYS TAKE CARE THAT THE STONES VIBRATE AND ROTATE INTENSIVELY.

Never cover the complete machine with something like a hood. The motor needs cooling. In order to speed up the cutting process, it is suggested to pre-cut (trim into smaller pieces, cut or grind the edges off) the stones before loading them into the container. For this work, we recommend the use of a grinder/polisher such as the type SLB-4/15 (11-019) with the sawing-machine SNB-25 (13-033) or small/compact machines, such as the Ameritool 6 inch Universal (11-105) and 4/5 inch saw (13-010), which can trim/saw/grind/polish..This preliminary treatment reduces the length of time required for step 1 considerably.



MACHINE-INSPECTION / SERVICE:

Once every month, when the container is dismantled, at the same time check the nut on top of the machine (under the container), which holds the wired stick. This nut should be strongly tighten. Test it with a key. Keep the machine clean. No powder or slurry should enter the machine. If the machine is moving (when turned on) or...the container turning slowly on the machine, tighten firmly (with a key) the nut that is on top of the container, just under the cover. If the machine is louder than normal: tighten the nut of the container (as mentioned above) firmly with a key or/and tighten the nut of the cover a little more (by hand). If the cover vibrates against the container-fastening-nut, tighten the nut on top of the cover again a little bit. If this does not help, then tighten the nut that is under the cover, on top of the container a little more with a key. If you still hear an unusual sound then, ask your supplier and mention also the number that is on the machine, the acquiring-date, exact type, etc. You have a guarantee of half a year on the Spirator.

SPIRATOR - TYPE 3.5 :

For the Spirator-3,5 the mentioned quantity of abrasive is to be enlarged in comparison to the more of stones that is loaded. Same with the quantity of water. (Also due to the larger inner container surface). The instructions on page 1 and 2 were for a Nr.1,5 container-type, filled with the max. load of about 2 Kg (= 4,4 lbs). (Container-name Spira-container-1,5) As mentioned, the larger container of the SPI-3,5 (container-name = Spira-container-3,5), takes up to a max. of about 4,5 Kg of stones (= 10 lbs). Accordingly add the quantity of abrasive respectively water.

The SPIRATORS are useful for a wide variety of finishing operations.
Here are a few examples:

- Derusting rusted metal parts.
- Deburring metal stampings and machined parts.
- Descaling metal castings.
- Cutting radii on sharp edges of metal parts.
- Polishing metal parts, prior to plating.
- Polishing brass (bullet-) shells before re-use..
- etc.

II. JEWELLERY - PARTS

Jewellery parts can be worked in the Spirator too. With a special soap and small special polishing-steel-parts (all available from us), jewellery parts and -mountings, like stampings or castings can be deburred/smoothed/polished: Even thin neckchains can be worked well (also refreshing of lost-polish) without getting them entangled into each other.

Have a lot of fun and success, working with your Spirator.



176-page catalogue
available in printed or
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