

# SHARPENING MACHINE



**KYKLON**  **N**®

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Congratulations!

You have purchased an Automatic Blade Sharpening Machine designed and built with state-of-the-art technology.

This manual was prepared to help you operate and maintain your Kyklon Automatic Blade sharpening machine and you should keep it handy to clear any doubts you may have.

Some procedures should be followed before, during and after using your Blade sharpening machine:

- a- Unpack the machine carefully.
- b- This machine should be operated by adults only.
- c- The machine should not be left switched on unattended. Whenever the operator is not using the machine, it should be switched off.
- d- Keep the disk always clean, not leaving any object on top of it that might cause damage.
- e- Do not use the machine if the electricity network has any type of defect.
- f- Do not make adaptations or use devices other than the ones supplied by the manufacturer.
- g- Do not operate the machine if you are wearing loose clothes, untied long hair or something that might get caught by the moving disk.
- h- Use only oil and the honing powder recommended by the manufacturer.

For your safety, the machine has been pre-assembled and adjusted in the factory and does not require any adjustment of the arms or magnetic holders.

Check if the disk is turning freely by gently pushing it with your hand.

## DISK ASSEMBLY

Before using a new or refaced disk for the first time, carry out the following operations:

a. Wash the disk with warm water and soap or dish washing detergent. For a more efficient cleaning, brush it with a soft brush (hand-washing brush). Do not use a sponge or steel brush or any other metal material.

Let the disk dry naturally. Do not use a cloth to dry it because the fabric threads will disrupt the sharpening operation.

b. Assemble the disk on the machine and correct any buckling (oscillations, as if the disk had one side higher than the other). Buckling may not occur, or be more or less pronounced, depending on the disk. To correct it, put a paper shim or adhesive tape between the flange and the disk on the lower side and make adjustments putting or removing the shims until the disk is turning in a perfectly parallel position.

Note: The disk is supplied previously balanced. When required, a counterweight is installed in the factory. When in place, the counterweight is located on the inner disk relief and should be kept in that place when you turn the disk to use the other side, without having to balance it again.

**HONING DISK PREPARATION**

This procedure should be carried out **only once**, before sharpening the first blade in new or refaced disks.

Switch the machine on and let the disk turn for, say, ½ minute.

Switch the machine off and stop the disk using the brake.

With the disk still, protect the inner surface of the cabinet walls close to the disk with cardboard strips in order to stop the oil, which will splash when it is applied on the disk, as described next.

With the disk moving, touch the bristles of a toothbrush on the inner edge of the disk and drop cutting oil or SAE 20 engine oil on the edge, slowly moving the brush towards the outer edge of the disk until the whole surface is oiled, without any excess.

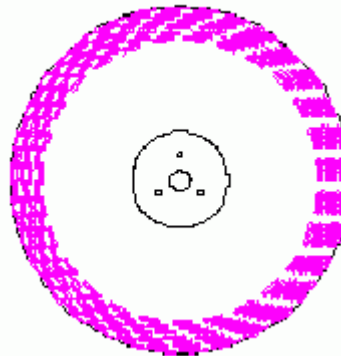
Spread around 1 flat teaspoon of compound (honing powder) and with the spreader, spread and level off by making successive circular movements, trying to fill all grooves in the disk. Check if the surface is uniformly and evenly covered.

Any excess compound will be removed by the disk rotation without any damage to the equipment.

Use a worn blade for the first contact. Put it on the comb support and let it grind for 30–40 seconds.

With the disk moving, apply spray oil and reapply the honing powder as described above. Any excess of compound will be eliminated by the disk rotation without any damage to the equipment.

Remember: waste means loss; for this reason, repeat the operation above several times using just a little amount of powder (half a tea spoon) at a time so that it sticks properly to the surface without major losses.



*The application of the honing powder should be done evenly on the whole disk surface.*

*In the figure on the left, the honing powder is concentrated on the edges.*

Fig. 1

After this procedure, your disk will be ready to sharpen the first blade.

***IMPORTANT:*** The disk must be prepared with spray oil and honing powder for each blade to be sharpened. Please read below:

**BETWEEN SHARPENING OPERATIONS:** After sharpening the first blade, prepare the disk for the next sharpening operation. Apply spray oil with the disk turning, then switch the engine off and with the disk still, apply around half a teaspoon of honing powder, spreading it carefully all over the disk surface. When the disk gets too black or pasty, wipe its surface, starting from the center to the edge and the other way round, with a piece of rag to remove debris from previous sharpening operations. For blades for large animals, the disk has to be prepared for both the comb and for the cutter.

With 1kg honing powder you will be able to sharpen between 350 and 400 blades.

PREPARING THE BLADE FOR SHARPENING

a. Disassemble the blade to be sharpened, cleaning it thoroughly, especially between the comb teeth and the cutter (fig. 2).

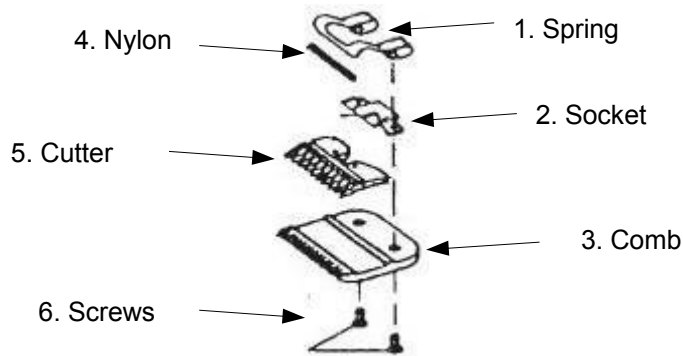


Fig. 2

b. Using the comparison gage, measure the comb by inserting the gage guiding pins into the comb holes and then push the comb against the support and you will see that the needle turns and stops at any given point. At this point, set the comparison gage dial to “zero”. (Fig. 3).

c. Put the **comb** and the **cutter** in their respective supports on the arms of the automatic device, leaving the arms lifted (Fig. 4).



Fig. 3

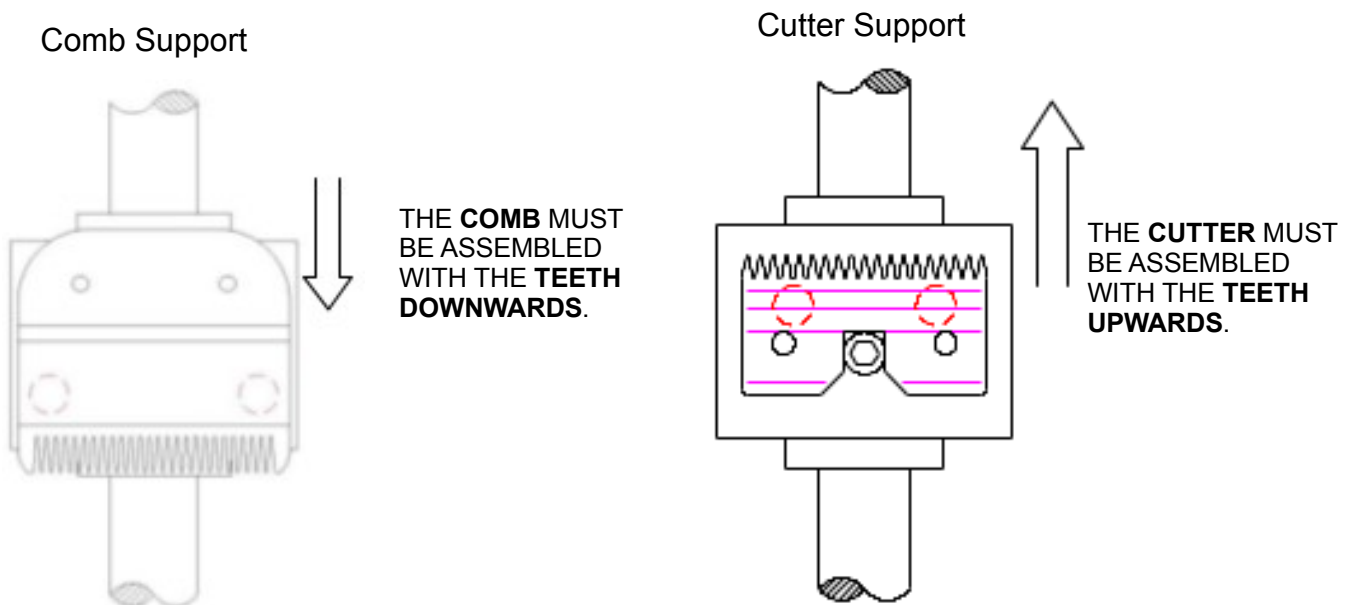


Fig. 4

d. Switch the disk on (the switch is located on the right-side of the operator) and wait until it reaches full rotation, then switch the automatic motor on (switch located on the left).

e. Lower the comb arm and then the cutter arm and let them grind for around 20 seconds.

f. Lift the arms. Remove the comb, clean it and check the measure on the gage. To do that, insert once again the support pins into the comb holes pressing it against the support and do the reading by checking the position of the gage pointer. Note that the cut (or wear) done should result a reading between 2.5/100 to 3/100 of a millimeter (2.5 to 3 tracks on the Comparison Gage dial).

If the cut or grinding is greater than 3/100 of a millimeter, reduce the sharpening time in order not to damage the blade and cause premature disk wear.

g. The greater the blade wear is, the shorter the disk life will be.

**IMPORTANT:** The disk life depends totally on the operator's skills.

**NOTE:**

- In manual sharpening or when sharpening blades with fits different from models A5, the blade should be held by hand, with continuous movement on the disk from the center to the outer edges and the other way round, mimicking the work done by the automatic arm. The blade should be placed close to the disk in such a way that the rear portion of the blade (the heel) is in a tilt not greater than 3 to 4 degrees from the teeth.
- After the operation, the blade should be lifted without any inclination. That is, it should be lifted exactly in the same parallel position it is in relation to the disk. Any tilt may spoil the job.
- During the sharpening process, the direction of sparkles should be 100% parallel to the blade or cutter teeth.
- Manual sharpening requires a lot of skill that can only be achieved through extensive training, dedication and patience.

**SHARPENING OSTER A5, ANDIS BLADES AND OTHERS**

Use the honing powder supplied by the manufacturer for blades for small animals.

- Install and prepare the disk in the machine.
- Check if the cutter heel is too thin, almost sharp. If so, blind it with an oilstone or by means of a grinding wheel, if you have one.
- Install the cutter with the teeth turned upwards, taking care to adjust the wedges of the magnetic holders, side '2', at the cutter slot where the nylon guide slides (fig. 5).

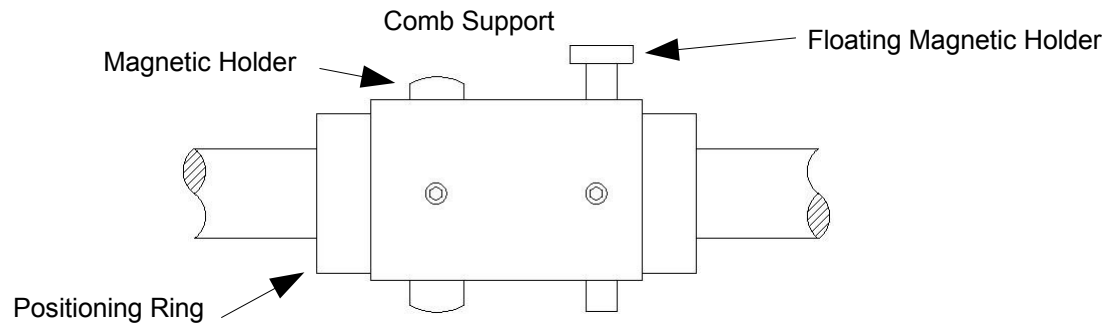


Fig. 05

- Be care to prepare the disc prior to every sharpening.
- Switch the disk on, let it reach full speed and then switch it off.
- With the disk still in full motion, spray oil again as described above.
- With the disk still, apply around ½ teaspoon of honing powder on the disk.
- Evenly spread the honing powder on the disk.
- Turn the disk motor on and let it reach full speed; then switch the automatic motor on.
- Gently lower the arms on the disk and let it grind for 20 to 25 seconds. Omega model let it grind for 40 to 45 seconds.
- With the machine on, lift the arms at the time they are passing the middle movement point (1/4 of the disk), in this manner, both arms will be in the same position in relation to the disk. Switch the automatic motor off and then switch the disk motor off.
- Always lift the cutter arm first and then lift the comb arm, switching off the automatic motor before the arm reaches the resting position.
- The automatic should not be switched on with the arms on the resting position.

**Important:** *Take extreme care not to drop the arms on the disk because this will inevitably damage the equipment.*

- Carefully check the sharpened surfaces; the whole surface should be evenly sharpened.
- Remove the comb and check the material that got stuck to it during the sharpening process. The material should be slightly wet, almost dry. If it is greasy or oily, decrease the amount of oil applied to the disk. If there is no material left on the disk, you might be using too little oil and thus the sharpening will not be good enough and early premature disk wear will take place.



- Clean the debris on the comb and put it back on the comparison gage to read the cutting (material that has been removed). Each line in the comparison gage dial corresponds to 1/100 of millimeter of cut. We remind you that the debris left on the comb or on the cutter should be loose, enabling its removal with the touch of a pencil tip or other pointy instrument. If the material is oily or pasty, the sharpening will definitely not be proper due to excess oil. In this case, decrease the amount of oil applied on the disk.
- Proper blade sharpening requires the removal of material by 2.5 to 3 tracks on the comparison gage dial.
- To do the measuring on the comparison gage, first clean the combs. Hair, dirt or honing powder will interfere with the measurement.
- The best blade cleaning can be achieved after sharpening by washing the blades with kerosene using three bowls.
- Use first bowl to remove thick dirt.
- First rinsing in second bowl.
- Second rinsing to make sure pieces are thoroughly clean.

### **BLADE ASSEMBLY, LUBRICATION AND ADJUSTMENT**

Keep place clean it is your blades “assembly” line

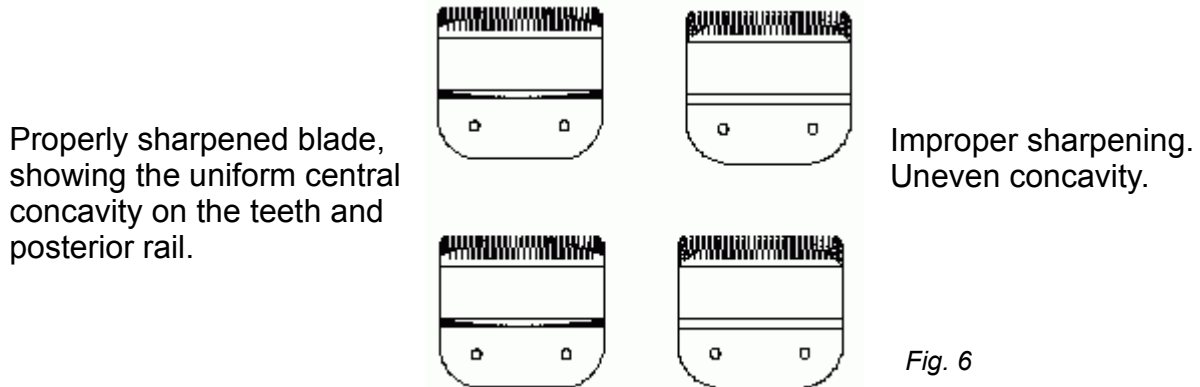
- a) Lubricate with some drop of SAE 10 oil after assembly.
- b) Likewise, lubricate the cutter slot or the nylon guide.
- c) Place the spring with the socket mounted on the cutter.
- d) Hold and turn the set, fitting the two screws and letting them slightly loose.
- e) Align the cutter tip with the comb, keeping a recess of about 0.5 mm in relation to the sharp side of the comb for low blades and of 0.8 mm for high blades, and tighten the screws properly.
- f) Check and, if necessary, correct the spring pressure.
- g) Usually, up to three sharpening, blades do not require spring adjustment. With greater wear, however, the pressure should be slightly adjusted. A readjustment should be made when the cutter slides too freely on the comb. To test this, hold the blade on your left hand, with the right hand fingers placed on the blade and the right hand thumb should be able to move the cutter “relatively” easily. It should not feel too heavy. If it is too tight, it will not cut.
- h) Assemble the blade on a clipper, check the socket clearance and let it operate for around one minute.
- i) Remove the blade from the clipper and check the grinding trace left by the operation. If grinding is uniform in all teeth, the sharpening is correct. Other wise, the whole sharpening operation has to be repeated.

**MECHANICAL BLOCK – Optional, not supplied with the equipment.**

The test block allows one to check with absolute accuracy if the blade has been properly sharpened.

This is the only efficient test that allows one to check if the sharpening was right or “dead”.

Place the comb in the center of the block. Hold the blade with the tips of your forefinger, middle and ring fingers and draw an 8 twenty to thirty times on the block. Try to get the best light reflection and see if the shadowed surface reaches all teeth on the part located further to the front, drawing a short arch, with its tangential point in the center of the blade. At the central area of the teeth, the shadow should be smaller and on the ends, it should be slightly larger (fig. 6).



On the rear rail, the shadow should be more evident, mainly on the posterior part and from the edges towards the center.

The same procedure applies to the cutter.

The pressure of your fingers should be only enough to guide the pieces.

Remember that the disk should always be kept free from debris from previous sharpening operations.

The disk life, as a general rule, allows for the sharpening of one thousand to 1,400 blades, and can be slightly longer or shorter, depending on the operator’s skill, degree of wear of the sharpened blades and the proper application of honing powder and oil.

If the disk is worn, send it to Clippertec to remake it. To do that, follow the steps below:

1. Remove the disk from the blade sharpening machine;
2. Wash it thoroughly with water and soap or detergent on both sides, as well as the central part.
3. If disks are sent dirty, cleaning services will be charged.
4. Pack up disk appropriately to avoid damages (denting or warping) during transportation.
5. Clippertec has the right to deny the replacement of disks that are not original, have had holes drilled in other positions, have low relief inscriptions engraved on them or which have been somehow tampered with.

If by accident a blade falls on the moving disk or if a cutter gets loose from the support during a sharpening operation and the damage caused is small, it can be repaired with coarse sandpaper and a small piece of flat wood. Sand the damaged part, taking care not to grind more than the necessary, to remove the damage caused (This instruction should be followed only to eliminate 'bumps').

The automatic system of your machine comes adjusted from the factory, since it has been pre-tested before packaging in order to assure proper operation. However, see that when the arms are in working position, they should be leveled in relation to the disk. If for any reason they are in the wrong position, loosen the screws that fasten them and correct as necessary.

The overlapping of the comb or the cutter over the disk is correct when it exceeds same number of teeth, both in inner and outer side.

The main magnetic holders (the two largest ones) of the supports should be aligned in relation to the center of the disk shaft.

**Procedure to align the support:**

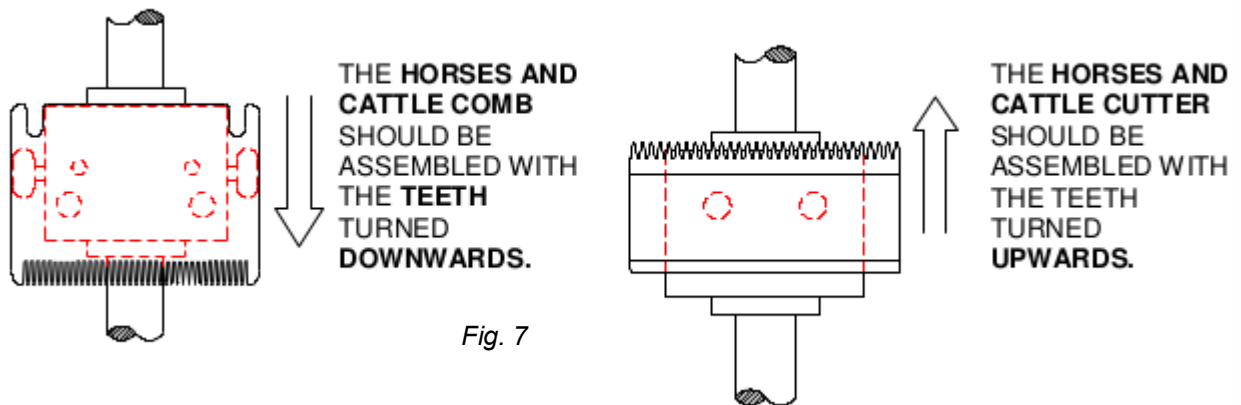
Leave the arms in rest position, stretch a thread over the main magnetic holders (the two largest ones) passing by the center of the disk axel and then on the two largest cutter magnetic holders. The four largest magnetic holders and the disk center should be perfectly in line.

COMBS, CUTTERS AND BLADES FOR LARGE ANIMALS

**Never use different honing powder grain sizes on one same disk. This procedure will irretrievably damage your disk for blades that use fine honing powder.**

The disk cannot have a pasty surface. Only enough oil to hold the honing powder should be used. After every sharpening operation, spray let say, one second of oil over the disc surface. The medium grain size honing powder # 100 can be used both with blades and cutter for horses and cattle, and with combs and cutters for sheep. But remember that you will only be able to use a coarser honing powder on an appropriate disk that will not be used for small animals.

Assemble the comb on the magnetic holder side that is labeled "horses and cattle comb" or "stewart comb" and the cutter on the side labeled "horses and cattle cutter" or "stewart cutter". (Fig. 7).



The sharpening time of combs and cutters for large animals depends on the degree of wear due to previous sharpening operations. Sharpening of any part should be started and completed. When you see that the sharpening was not completed, the whole procedure should be repeated. Combs, blades and cutters will be properly sharpened when the sharpening pattern covers the whole surface of the piece, as one single pattern, with the removal of any grinding left by the cutter operation on the comb. When you see signs of grinding, particularly on the teeth located on the outer portion of the comb, the sharpening operation should be repeated.

**IMPORTANT NOTE:**

Using a clean, dry cloth, evenly clean the automatic system drive axis. After cleaning, apply graphite powder on the axis. **NEVER** lubricate the axis or any part of the machine with oil or grease.

If there is anything you have not clearly understood in these instructions, please contact us, we will be pleased to help you with whatever is needed for you to properly use your machine and take the most profit out of it.

## TROUBLESHOOTING

In order to further facilitate the use of your blade sharpening machine, next are some of the most commonly found problems and their solution:

PROBLEM	SOLUTION	MANUAL PAGE
The disk seems to bounce or with one side higher than the other.	Identify and correct the lowest lying part of the disk.	Page 4, b
The honing powder does not stick on the disk.	The disk is too dry: review the disk conditioning process; check if you are applying the right amount of spray oil and repeat this operation if necessary.	Page 5
The disk has worn out too fast, I have sharpened only 100/300 blades.	The disk is too dry: review the disk conditioning process; check if you are applying the right amount of spray oil and repeat this operation if necessary.	Page 5
“I have properly prepared the disk, I did the sharpening operation, but the blade does not cut!”	Check the blade spring pressure. Check for dirt between the comb and cutter teeth, threads or hair. Check for wear on the parts that move the blade on the customer’s shearing machine.	Page 9
A blade fell on the disk and opened a hole on it.	Holes on the disk do not cause any problem to sharpening. In such cases, the problem is the bump that is raised on the edges of the hole. In order to level the disc, use 60 / 80 sand paper and with a flat piece of wood.	Page 11

**Find enclosed with your machine:**

- ✓ 01 tube of cutting oil;
- ✓ 01 can for SAE 30 oil;
- ✓ 01 can for special blade oil;
- ✓ 02 pots of fine honing powder;
- ✓ 01 powder spreader;
- ✓ 01 set of Allen wrenches (3 pieces);
- ✓ 01 Assembly and operation manual;