

LABORATORY TURBINE
WITH SPRAYING SYSTEM
ZIRKO-SURFIN 300k

 **USER AND MAINTENANCE MANUAL**



1. DESCRIPTION

ZIRKO-SURFIN 300k is a powerful, noiseless and reliable air turbine expressly studied for modelling and finishing purposes on hard materials used in the Dental Laboratory.

The 2,5-3 BAR powered rotor can attain a speed of 300.000 revolutions per minute.

A steady flow of air assures cooling of both the tool and the machined surface.

This action can be increased utilising the spraying system originated by the atomized water contained in the internal tank.

The control unit incorporates the air treatment unit (filter, pressure reducer and pressure gauge), the water cooling tank, the pneumatic connections (feeding pipe-fitting and connections to the foot control) the flow adjusting valves, the connector for the handpiece piping and the support for the handpiece in idle mode.

The handpiece design is particularly handy, ergonomics in use and lightweight. The chuck pliers accommodate tools with \varnothing 1.6mm shank which can be easily inserted and locked in place by means of the special tool supplied.

2. TECHNICAL REFERENCE REGULATIONS AND TEST PROCEDURES

Each unit is mass-manufactured by Dentalfarm in compliance with technical and safety rules in force, as provided for by the 2006/42EEC Community Directive on Machinery.

This unit is not classified as AEE (electric and electronic device, whose correct operation depends on electric currents and electromagnetic fields), so the Directive 2002/96 EEC does not apply.

3. TECHNICAL SPECIFICATIONS

Description	
Power supply unit size	mm 260x110x190H
Net and gross weight	2,7 kg – 3,8 kg
Handpiece size	\varnothing 17 mm – length 130 mm
Handpiece weight	85 g
Chuck pliers	\varnothing 1.60 mm
Rotation speed	300.000 rpm
Supply	pneumatic – 2,5/3 BAR
Air consumption	50/60 liters per minute
Operation	foot-control
Lubrication	manual
Cooling liquid	distilled water
Tank capacity	170 ml

4. GENERAL PRECAUTIONS

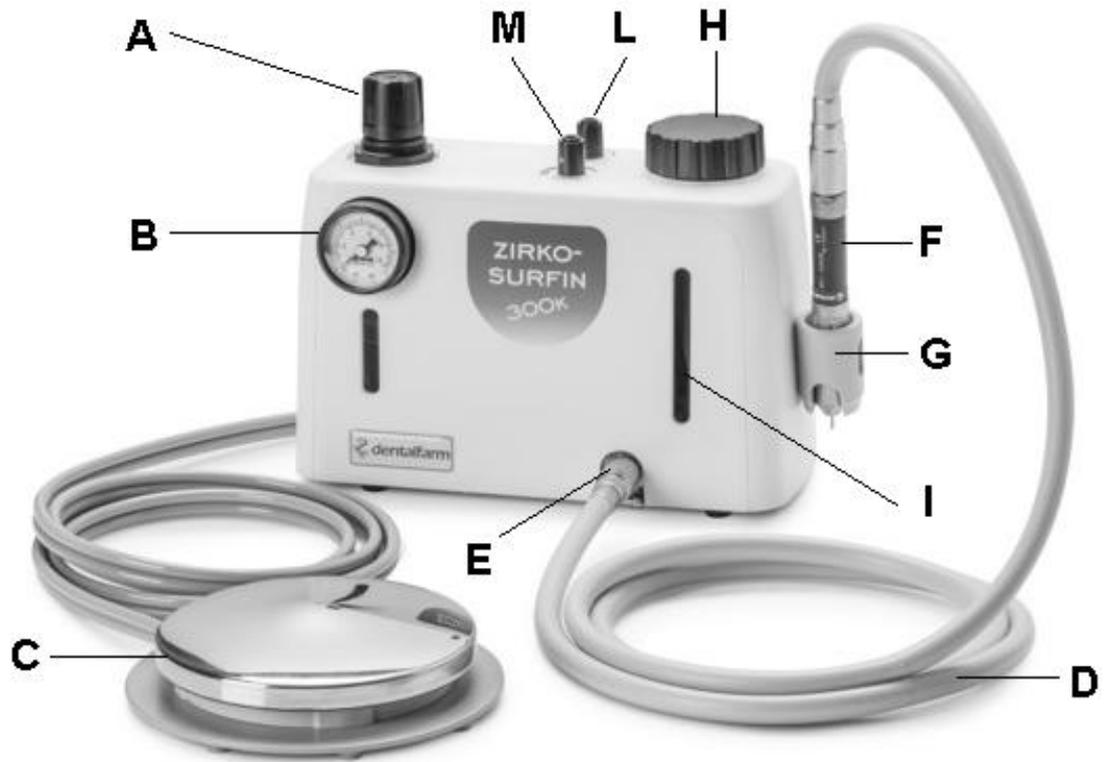
- Read carefully the present manual before carrying out any starting, operating or maintenance operation on the machine
- Safety of the User depends on the skill ability, on the good sense and on the caution when using the machine; for this reason, it is of utmost importance to know in detail the allocation and the function of all the controls
- The final User of the machine is a skilled and well trained professional and not merely an occasional worker

- Check regularly the parts which tend to wear out due to the specific working conditions
- The built-in safety mechanisms shall in no way be removed or modified
- Do not allow unauthorised persons to try to repair the machine
- Do not utilise petrol, solvents or any other inflammable fluids to clean some parts of the machine – use exclusively non-toxic and non-inflammable products available on the market for this specific purposes
- Always use new, high-quality, well balanced burs and mounted stones
- Never use tools exceeding the recommended maximum size for such high speed (\emptyset lower cutting edge >2mm) in order to prevent any vibrations or potential damages
- Carefully handle the handpiece, protecting it from shocks and accidental drops. When not in use or during idle mode, place the handpiece on its support supplied with the unit
- When not in use, always leave a bur inserted and locked in the pliers
- Every time the tool is replaced, clean carefully the pliers.

5. INSTALLATION INSTRUCTIONS

1. First of all, find a good location to position the control unit.
2. Connect the foot-control pipes (C) to the fittings in the rear of the control unit (one of the 2 tubes has a blue label, connect it to the marked fitting "BLUE LABEL")
3. Connect the air feeding pipe (rilsan or nylon diameter 6x4) to the pipe-fitting located on the left side of the filter-reducer (A)
4. Adjust the pressure (2,5/3 BAR) by means of the reducer knob (A) – turn clockwise to increase or counterclockwise to decrease values
5. Connect one end of the cord (D) to the pipe-fitting (E), pay attention to the correct position of the clutch and tighten the ring nut
6. Connect the opposite end to the handpiece (F) and tighten the second ring nut
7. Introduce the handpiece on its support (G) screwed aside the housing
8. Unscrew the water tank (H) and pour in distilled water (check the internal level from the I slot).



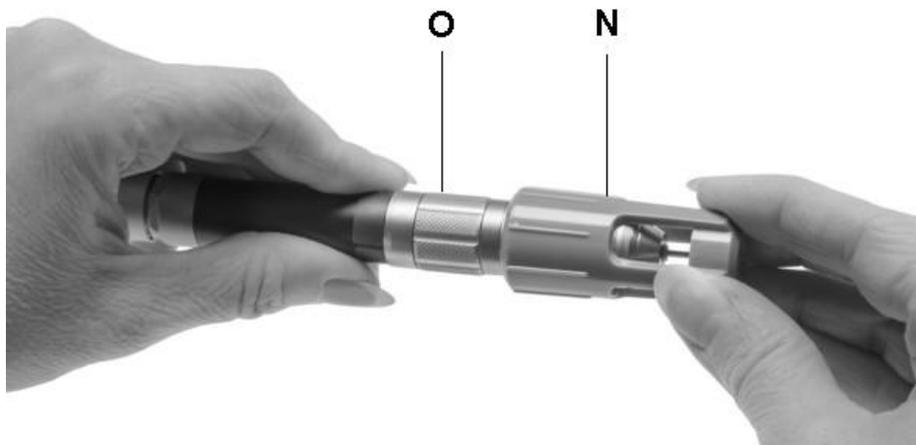


6. INSTRUCTIONS FOR USE

Verify that the pneumatic connection system is available.

Fit in a suitable bur inside the pliers:

- Insert the tool shank up to allowed extent
- Press with the tool (N) supplied with until the click is detected



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WARNING

Ensure that the tools you work with are carefully and deeply inserted in the pliers. The shank should be well inside the pliers, and should not come out of the handpiece too much which could cause the tool to be unbalanced, tend to excessive vibrations and susceptible to become dangerous.

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WARNING

Do not touch rotating tips.
Use goggles and other protective devices to prevent small dust or slag particles from getting into your eyes or from being inhaled.

Adjust the air flow for cooling and cleaning operations – turn the cock L knob leftwards to increase or rightwards to decrease.

Adjust the water flow to be atomised in order to obtain the spraying effect - turn the cock M knob leftwards to increase or rightwards to decrease.

To unlock the bur turn the knurled ring nut (O) placed on the handpiece body.

7. MAINTENANCE

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ATTENTION

Before carrying out any maintenance operation inside the machine or any technical service to the pneumatic or hydraulic connections, disconnect the compressed air.
If you still have any doubts, difficulties or any possibility of mistake, contact our Technical Service to avoid any risks or damages.

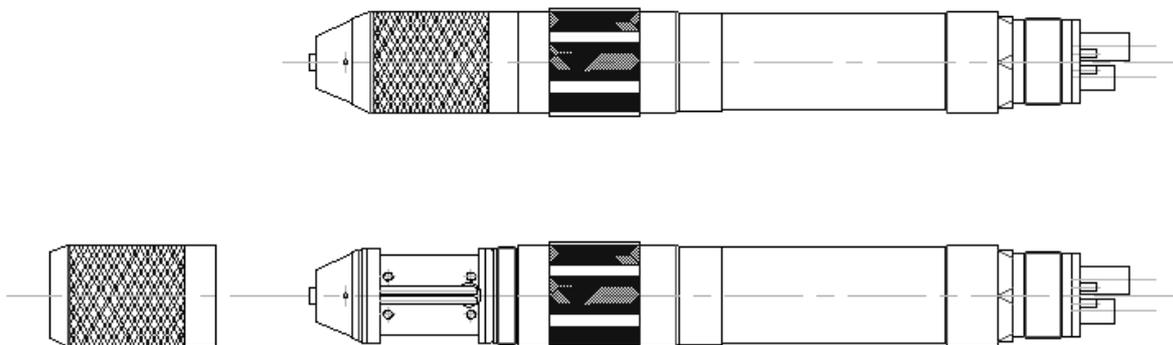
Cleaning the pliers and the front part of the handpiece

We recommend to keep the front part of the handpiece clean from dust particles. Unlock the pliers opening nut and blow with compressed air. If necessary, unscrew the inside cap to have access to the internal components.

Regular rotor lubrication

To be assured of the full efficiency and performance of the handpiece, we recommend to keep both the rotor and the bearings well lubricated.

- Hold the handpiece in horizontal position
- Let one or two drops of lubricating agent fall inside the hole
- Remove the grease in excess
- It is recommended to clean accurately the internal part, too before lubrication
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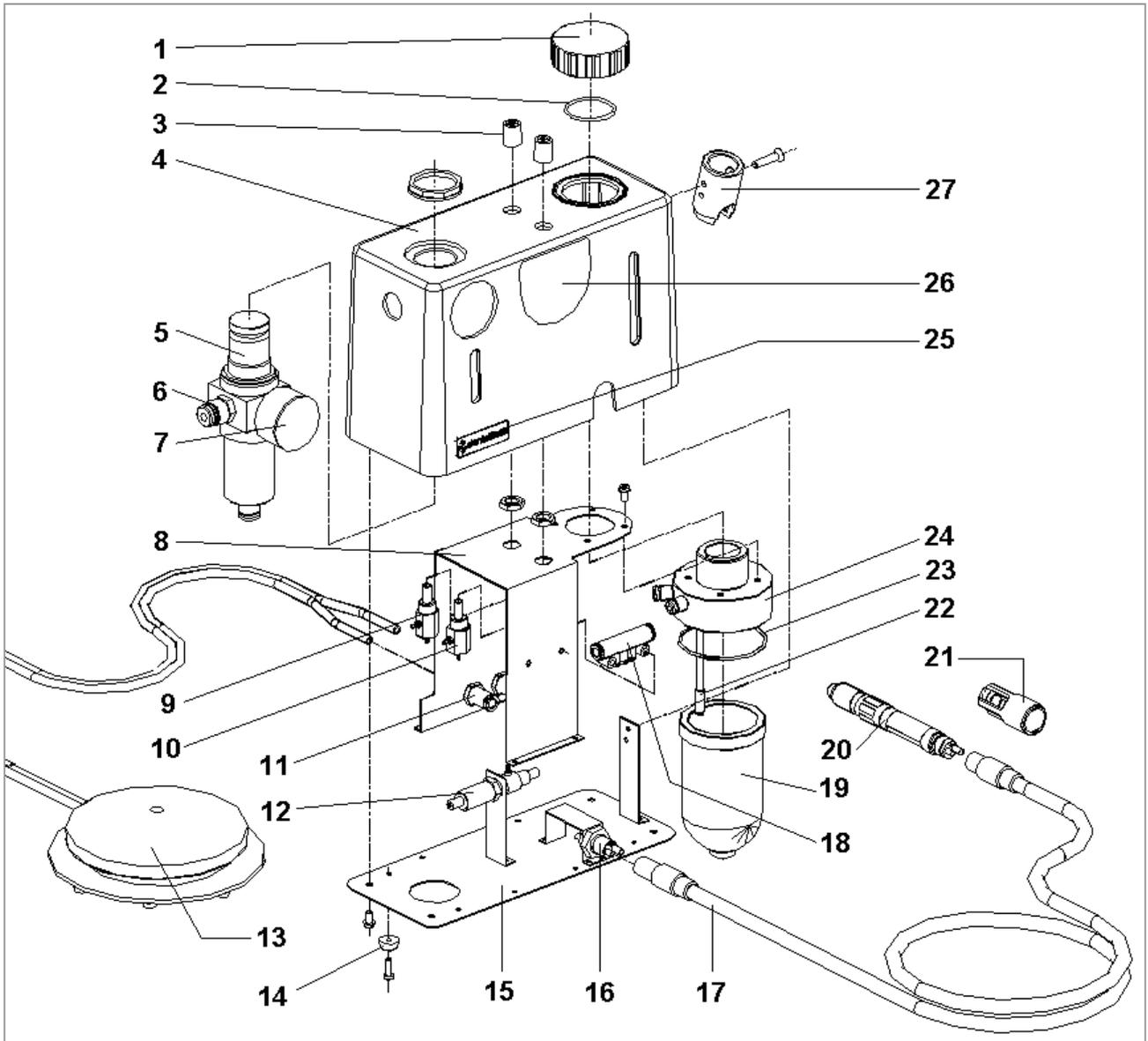


Replacing the rotor with the bearings

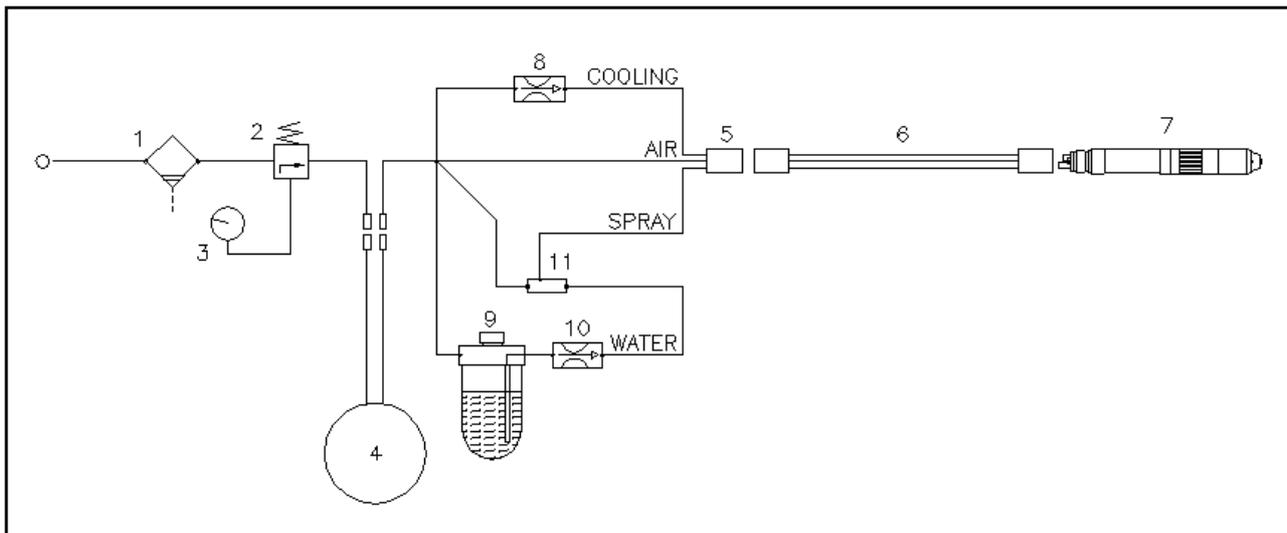
If replacement of the rotor is necessary due to extensive wear-out please contact the Technical After-sale Service.

8. EXPLODED DRAWING AND SPARE-PART LIST

No.	ITEM	DESCRIPTION
1	5090027	Water tank cap
2	5090028	Cap seal
3	5090031	Adjustment valve knob
4	5090020	Plastic housing
5	5090034	Air filter and reducer
6	5090035	Pressure gauge
7	5090036	Air inlet connection fitting
8	5090021	Metal support
9	5090029	Air adjustment valve
10	5090030	Water adjustment valve
11	5090038	Foot control pipe-fitting
12	5090032	Fluid mixing valve
13	5090037	Pneumatic foot control
14	5090044	Rubber feet
15	5090022	Lower panel
16	5090039	Handpiece pipe connection fitting
17	5090040	Handpiece pipe
18	5090033	Air distribution pipe-fitting
19	5090024	Water tank glass
20	5090041	Air turbine handpiece
21	5090043	Bur insertion tool
22	5090025	Water filter
23	5090026	Water tank gasket
24	5090023	Water tank lid
25	4701006	Label with logo
26	5090002	Brand label
27	5090042	Handpiece support



9. PNEUMATIC CIRCUIT



REF.	DESCRIPTION
1-2	Air filter and reducer
3	Pressure gauge
4	Foot control
5	Handpiece connection fitting
6	Handpiece pipe
7	Handpiece
8	Cooling air flow regulator
9	Distilled water tank
10	Water flow regulator
11	Fluid mixing valve (SPRAY)

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