

TABLE OF CONTENTS

1	Description	2
1.1	Operations and functions	2
1.2	Technical Data	2
1.3	Symbols	2
2	Safety measures	3
3	Shipping contents	3
4	Set up	3
5	Operation	4
5.1	Control unit	4
5.2	Operation with „On / Off“-Footswitch	5
5.3	Operation with Vario-pedal	5
5.4	Automatic Limiter (AL)	5
5.5	Automatic Stopper (AS)	6
5.6	Memory	6
6	Disinfection, Cleaning and Sterilization	6
6.1	Control unit and foot control	7
6.2	Micromotor 31S	7
7	Troubleshooting	7
8	Disposal	7

1 Description

1.1 Operations and functions

The Micromotor system TCM3000 is used in:

- Implantology
- Maxillofacial Surgery
- Micro Surgery
- Prosthesis
- ENT Surgery
- Plastic Surgery
- Neurosurgery
- Hand Surgery
- Veterinary

A microprocessor controls and optimizes all the functions.

The TCM 3000 can be used in three different ways, it can be used without pedal, with foot switch or with a variable speed pedal. The Micromotor 31S has a standard E-Type adapter that accepts any E-type contra angle and handpiece (E-Fitting).

1.2 Technical Data

Voltage: 115V~/ 50-60Hz or 230V~/ 50-60Hz (see device label!)

Power: 130 VA

Type: B

Speed: 2,000 – 30,000 rpm

Dimension (WxHxD): 85 x 100 x 170 mm

Net weight: 1,9 kg

1.3 Symbols



: Consult manual before use



: Type B applied part



1275 : Conforms to EU standards



: Old electrical and electronic equipment must be disposed separately and may not be included in regular domestic waste.

2 Safety measures

Your safety, the safety of your team, and, it goes without saying, the safety of your patients is for Nouvag AG the first priority. It is therefore vital that the following measures be strictly observed:



- **The TCM 3000 should be operated by qualified personnel only!**
- **Check for correct operation voltage and verify mains voltage output!**
- **Responsibility for the use of sub-units, accessories, parts or assemblies from other manufacturers rests solely with the user!**
- **Repairs are to be carried out by authorized NOUVAG service technicians only!**
- **Nouvag AG cannot be held liable for any malfunction of the TCM 3000, or performance failure and/or its designed or desired utility, nor can Nouvag AG be held liable for any injuries to persons or animals, in any case when the TCM 3000 is miss-used or not operated, applied or maintained in strict accordance with the user/owner instructions set out in the operating manual. In the event of any doubt or question, the user is to contact Nouvag AG or its lawful representative for clarification or assistance!**

3 Shipping contents

1454.....	Control unit TCM 3000, 70:1	1 piece
1775nou.....	Micromotor 31S sterilizable	1 piece
1066.....	Handpiece support	1 piece
1488.....	Footswitch On / Off.....	1 piece
or		
1487.....	Footcontrol Vario	1 piece

4 Set up

1. Connect the footswitch On/Off or Vario-Footcontrol to "FOOT" socket
(→ if using device with pedal)
2. Connect motor to "MOTOR" socket.
3. Attach handpiece or contra angle with instrument to motor.
4. Plug in AC cord to electrical outlet.
5. Turn on green power switch "ON / OFF" (on rear of unit)
6. Select the desired reduction and speed.
7. Press the "Motor" or push the foot plate down to start the motor (if the pedal is connected)

5 Operation

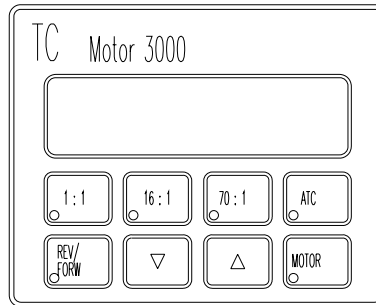
5.1 Control unit

Starting the unit

Turn green power switch "ON/OFF" to (ON) position (on rear of unit)

Display:

The display will show the current speed and torque of the instrument.



Keyboard panel:

- „Motor“: Switch motor ON/OFF (the light will illuminate when the motor is switched on)
- „▲“: Press to increase speed or torque
- „▼“: Press to decrease speed or torque
- „Rev/Forw“: To change the direction of rotation of the motor → on reverse mode the control unit gives an acoustical signal.
- „1:1“: For use with 1:1 contra angle
Speed: 2,000 to 30,000 rpm
Torque AL can be selected within the range: 1, 2, 3, 4, 5 Ncm
AS- Stop modus does not function
- „16:1“: For use with 16:1 contra angle
Speed: 125 to 1,875 rpm
Torque AL can be selected within the range: 10, 15, 20, 25, 30 Ncm
AS-Stop modus does not function
- „70:1“: For use with 70:1 contra angle
Speed: 15 to 440 rpm
Torque AL can be selected within the range: 10, 15, 20, 25, 30, 35, 40, 45, 50, 55 Ncm
Torque AS can be selected within range: 10, 15, 20, 25, 30, 35, 40, 45, 50, 55 Ncm (up to 60 rpm only)
- „ATC“: To select (Automatic Torque Control) AL- and AS function



The key „Motor“ functions only when the pedal is not connected.

5.2 Operation with „On / Off“-Footswitch

The Bedienungsanleitung can be operated with the „On / Off“-Footswitch. The pedal can be used to start or to stop the motor::

<i>Foot plate not pressed.....motor off</i> <i>Foot plate fully pressed:motor on</i>

The speed of the instrument will be as the speed selected on the control unit.



The delivery of the „On / Off“-Footswitch is optional.

5.3 Operation with Vario-pedal

The speed on the Bedienungsanleitung can be regulated with the Vario-Footcontrol. Use the foot plate to operate the motor and to vary the speed:

<i>Foot plate not pressed...:.....motor off</i> <i>Foot plate lightly pressed.....motor runs slowly</i> <i>Foot plate fully pressed:motor runs with speed as speed selected on the control unit</i>



The shipment of the “Vario” pedal is optional.

5.4 Automatic Limiter (AL)

The Automatic Limiter (AL) limits the torque in the instrument. When the preset torque is met, the speed drops up to zero revolutions, but the power in the instrument continues.

The values are always shown in Ncm (for example [AL 20] → the instrument can be loaded with 20 Ncm maximum).

Adjusting the AL:

- 1) Press key “ATC SET”. In the display appears the torque torque set mode (for example [AL 20]).
- 2) To increase the torque level press key “▲” and to decrease the torque level press key “▼”.
- 3) Press key “ATC SET” or wait for 3 seconds, the speed will appear again in the digital display.



**If the digital display says [AS.....]:
press “▼” until [AL.....] appears in the display.**

When the AL-Modus is activated, the green light on the “ATC SET” key does not illuminate.

5.5 Automatic Stopper (AS)

The automatic Stopper (AS) is a special function for tightening screws with a precise torque. When the preset torque level is met, the motor will switch off immediately and the display will show the achieved torque, for example: [AS 30]. To restart the motor press the key motor or release the pedal. The digital display will show again the selected speed.

The values are always shown in Ncm (for example, [AS 20] → the instrument can be loaded with 20 Ncm maximum).



The function AS is activated in the reduction 70:1 only, and up to 60 rpm. For other reduction, multiplication or speed, the devices switches automatically to the AL-Modus .

Adjusting AS:

- 1) Press reduction key "70:1".
- 2) Adjust the speed between 15 and 60 rpm.
- 3) Press key "ATC SET" . In the display appears the torque selection (for example [AS 20]).
- 4) Press keys "UP" and "DOWN" to select the desired torque values.
- 5) Press the key "ATC SET" or wait for 5 seconds until the revolutions appear automatically in the display.



If the display says [AL.....] :

Press key "DOWN" until [AS.....] appears in the display.

When the AL-Modus is activated, the green light on the "ATC SET" illuminates.

5.6 Memory

The display will show the speed and torque selection that were last used. All settings are saved in memory even when the unit is unplugged.

6 Disinfection, Cleaning and Sterilization

Please pay attention to the following important points for the maintenance of the material:



- **Clean, disinfect and sterilize the device and components after each use!!**
- **Do not use dissolving agents for cleaning**
- **Autoclave material in transparent packaging!**
- **Do not fill the sterilization bag more than 80%.**
- **Autoclave material at maximum 134°C.**
- **Sterilized material should be stored and tagged with sterilization date!**

6.1 Control unit and foot control

The control unit and the foot control do not come in contact with patients. Clean the surface of the unit only, do not use harsh cleaners or solvents for cleaning. Use 80% ethyl alcohol or microbiologically effective disinfectants. The control unit face is sealed and washable.



The control unit should be wiped with a clean, damp cloth only. No spray cleaners or disinfecting agents should be employed, as the control unit face is not watertight!

6.2 Micromotor 31S

- 1) The micromotor, cable and plug should be cleaned after each use to prevent the build up of deposits and debris that can destroy it, if not removed. Wipe it with a clean cloth dampened with disinfectant solution.
- 2) Pack micromotor in transparent bag.
- 3) After packing motor and cable, autoclave it **at maximum 134°C**.
- 4) After autoclaving, allow electronicmotor to dry for one hour at room temperature.



- **Do not clean micromotor with compressed air!**
- **After autoclaving allow micromotor to dry for one hour at room temperature.**
- **Do not bend the micromotor cable!**

7 Troubleshooting

<i>Problem</i>	<i>Cause:</i>	<i>Solution:</i>
Motor does not run	Plug is not inserted properly	Insert plug and check fitting
	Wrong operating voltage	Check mains voltage output → see device label
Foot control fails to function	Foot control not connected	Plug foot control into control unit
	Control unit not turned on	Turn main switch "ON/OFF" ON
Micromotor does not run	Motor not turned on	Turn "motor" with button or with pedal on
	Motor is not connected	Connect motor cable to control unit
	Motor is not connected properly	Press micromotor firm on handpiece until handpiece snaps in

In the event a problem cannot be solved, contact dealer or authorized service technicians, as listed on the last page of your Operating Instruction Manual.

8 Disposal

Disposal of device, components and accessories must strictly conform to local laws and regulations as set out by the relevant authorities.

With regard to the preservation of the environment old equipment may be returned to the distributor or manufacturer.