

  
**MICRO-MOTOR L50**



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 HENRY SCHEIN®

900-2963

# MICRO-MOTOR L50

• *Brushless micro motor* • *Knee or foot control* • *50.000rpm*  
**OPERATING MANUAL**

## MICROMOTOR SET L50

• *Micromotor escobillas* • *Control con rodilla o pié* • *50.000 rpm*

## INSTRUCCIONES DE USO

## MICRO-MOTEUR SET L50

• *Micro-moteur sans charbon*  
• *Contrôle au genou ou pied* • *50.000 tr/mn*

## MODE D'EMPLOI

## HS-MIKROMOTOR SET L50

• *Kollektorloser Mikromotor* • *Knie- oder Fußschalter*  
• *50.000 UpM*

## BENUTZERHANDBUCH

## MICROMOTORE L50

• *Micromotore da laboratorio*  
• *Controllo a pedale o del ginocchio* • *50.000 rpm*

## MANUALE D'USO



**MADE IN KOREA**  
**Fabricado en Corea**  
**Fabriqué en Corée**  
**Hergestellt in Korea**  
**Prodotto in Corea**



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# MICRO-MOTOR L50

Thank you for purchasing our product. Proper maintenance and repair extends the life of the product. Keep the instructions for use in a safe place for your reference. Accidents caused by not following the instructions for use will be deemed not our responsibility. Product appearance or specification may be changed without notice. The users are responsible for the operation and maintenance of the product. In the event of a problem please state model name and full details to enable us to provide prompt attention.

## WARRANTY

**Handpiece** - 1 year  
**Control box & Foot Pedal** - 1 year  
 Warranty does not include misuse or normal wear of bearings, carbon brush, collet chuck, spindle and armature.

**Other cases**

- Act of God (fire, sea wind or water, flood etc.).
- Replacing by the normal wear of the consumable parts (ball bearings, collet chuck, spindle, or armature etc.).

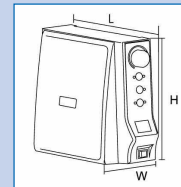
## SERVICE CHARGE

In cases of fault or malfunction due to misuse by the user, for example:

- Using with wrong Input Voltage (AC Voltage).
- Misuse or improper use.
- Dropping during setting or moving.
- Using parts or accessories not recommended by manufacturer.
- Malfunction if repaired by other than manufacturer recommended repairers.

*\*Design and specification of the product may be subject to be change.*

# PRODUCT SPECIFICATION

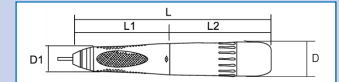


## MICRO-MOTOR L50 (KNEE TYPE)

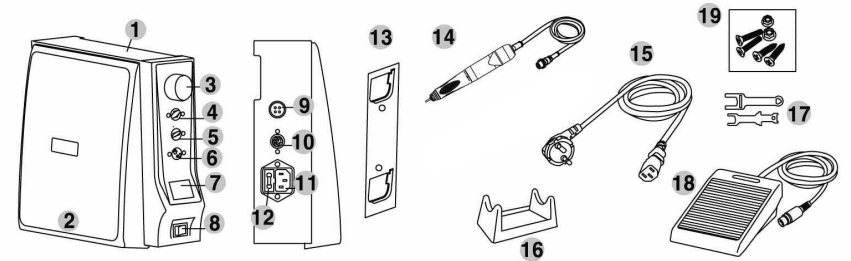
INPUT POWER SOURCE	AC220-230V 50/60HZ
MINIMUM LOAD CURRENT	2A
WEIGHT	3Kg
DIMENSIONS (mm)	W 95 - L 270 - H 230
FUSE	100 5A - 220/230 2A

## HANDPIECE

NON LOAD RPM	50.000 RPM
OUTPUT	230W
MAX. TORQUE	7.8 N.cm
WEIGHT	254g
DIMENSIONS (mm)	L 171 - L1 78 - L2 93 - D 27 - D1 18



## PART NAME



- |                           |   |
|---------------------------|---|
| 1. CONTROL BOX            | 11. POWER CONNECTION                      |
| 2. KNEE CONTROLLER        | 12. FUSE BOX                              |
| 3. VOLUME DIAL            | 13. DEVICE FOR ATTACHMENT (Wall mounting) |
| 4. FORWARD-REVERSE BUTTON | 14. HANDPIECE                             |
| 5. AUTO-CRUISE BUTTON     | 15. POWER CORD                            |
| 6. HAND(KNEE)-FOOT BUTTON | 16. HANDPIECE STAND                       |
| 7. RPM DISPLAY BOX        | 17. WRENCH                                |
| 8. POWER SWITCH           | 18. FOOT SPEED CONTROL PEDAL              |
| 9. MOTOR CONNECTION       | 19. BOLTS FOR DEVICE                      |
| 10. FOOT PEDAL CONNECTION |   |

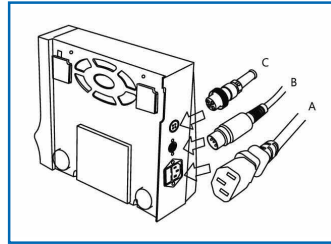
*\*Please check all items are included before use.*

# SETTING & OPERATION

Please attach the knee controller as per the image below. Avoid any excess protrusion of the bolts.  
Ensure that all the bolts are tightened.

## POWER ON ( I )

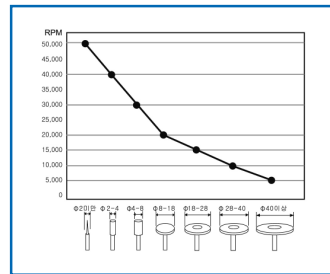
Turn on the power switch.  
The unit will beep, the switch will illuminate green and the readout will show on the RPM display box.



## POWER OFF ( O )

Unit will shut down.

- Check the power is **OFF**.
  - Connect the power cord.
  - Connect the foot control pedal to the foot pedal connector.
  - Connect the handpiece to the handpiece connector.
- Set the speed control dial on the control box to '0'.
- Check the collet chuck is locked by checking the fitting or try to pull out the bur.
- Turn on the power switch.
- Select Hand(Knee)/Foot control by pressing the button . Each press will change the selection.
- Select direction by pressing the forward/reverse button. Each press will change the selection.



RPM Chart

## In case of overload

Rpm display box shows 00 and control box stops after 5 seconds displaying Error 1 with beeping sound. To release, push motor button when working by hand or lift off foot pedal.

# MAINTENANCE

- Clean the handpiece surroundings.
- Wipe handpiece with disinfection wipes of isopropyl alcohol, avoid moisture inside the handpiece. Do not apply the oil to the unit. This contaminates the grease inside of the bearing. Do not clean with water.
- Air cleaning is acceptable, but care should be taken as too much air pressure may affect to the handpiece.
- Bur insertion and removal:** Turn the chuck until its clicks either in the open direction and the bur can be removed or in the locking direction and the bur is fixed.  
Do not overturn or this will result in the handpiece becoming disassembled.

## TROUBLESHOOTING

PROBLEM	CHECK	CAUSE	SOLUTION
The motor does not run	The power lamp remains off, when the power switch is on.	Control box may have a problem.	Check the fuse. Check the power switch.
	The handpiece does not run, when the hand/foot switch is on and power lamp is on.	Check the power cord connection.	Connect the power cord properly.
	The handpiece does not run, when the power lamp is on.	Check if the chuck is open. (E1 error)	Lock the chuck.
		Check the connection between the CB jack and HP cord.	Connect the Handpiece properly.
	Check if the cord is broken down or disconnected.	Consult the supplier.	
The RPM does not increase.	The control box may have a problem.	Consult the supplier.	

If the product does not work after trying the above, please contact to the supplier or manufacturer.

# MAINTENANCE

## 1. Memory:

Saves the previous selection of direction or hand/foot operation. Exercise care on next use of the unit.

2. Do not use the control box in humid or damp environment.

## 3. Transport and storage conditions:

Temperature: 10 ~ 40°C

Humidity: 30 ~ 75% RH

Atmospheric Pressure: 700 hPa to 1060 hPa

4. Use the handpiece and pedal only with the control box provided.

5. Check for any problems, including vibration of bur, at low speed before selecting high speed.

6. Operate the speed control dial control box gently.

7. Turn off the power or set the RPM is to zero and then change the bur.

8. Do not turn on the power while the collet chuck of handpiece open.(E1 error).

## 9. Maximum operating temperature of component parts:

Head of the Handpiece - maximum temperature 39°C at ambient 25°C or 54°C at ambient 40°C  
Therefore use carefully!!

Recommended RPM according to the bur diameter

Please keep the RPM according to below diagram to avoid accidents.

(The allowable RPM could be different for the bur material and type.)

## 10. Bur

- Bur dimension : 2.35mm (ISO7785-2 TYPE2)
  - Minimum fitting length of bur: 10mm
  - After insertion into the handpiece and locked in position, the maximum projection length of bur should be at least 35mm.
- Use ISO standard burs and avoid using rusty and bent burs which will cause excessive wear of bearings.  
Operate at speed recommended by bur manufacturer.

11. Do not to drop the handpiece as this may result in damage or breakage. If dropped, check the bur is not bent or that there is no excessive heat is generated while operating.

12. If any problems occur in handpiece, have handpiece checked by a designated repairer before use.

13. ENSURE POWER SWITCH OF THE UNIT IS OFF BEFORE CONNECTING TO THE MAINS.

14. A circuit breaker is provided to protect the motor. It activates when there is an overload.

15. Do not open the chuck while operating.

16. Keep the handpiece with a bur within the collet chuck after operation.

17. Do not put the handpiece down before it has completely stopped.

18. Remove the power cord from the supply before removing the handpiece.

19. Use the specified voltage.

20. Only use accessories suitable for this product.

21. For recommended speeds in various applications, follow the manufacturer's instructions.

## CHANGING the FUSE

The fuse is placed in the small box next to the power connector at the back of the unit.

Remove the fuse box and change the fuse.

# ERROR CODE

In case of any overload, breakage, and motor coil burning, the motor stops and control box displays an error code on the rpm display box. Diagnosis and corrective action can be checked from this:

CODE	CAUSE	RELEASING	ACTION
E1	Setting error: Caused by abnormal of motor initial operation.	Push the motor button, knee or foot controller.	Check the power cord and motor connector are correctly connected. Check the chuck is not open. Turn the power on again. If operating correctly the error code will not display. If error persists contact the supplier/manufacturer.
E2	Over current error: Occurs in case of excessive use of handpiece on overload. Incorrect assembly. Bearings and motor wear.		Switch off the control box and restart after 10 minutes. If error persists contact the supplier/manufacturer.
E3	Control box error.		Contact the supplier/manufacturer.

## CHANGE COLLET CHUCK

1. Set and fix the wrench turning the bur.

2. Turn in open direction.

3. - 4. Turn the chuck to the counter-clock wise by hand or if difficult use wrench.

5. Change the chuck.

\* Fix the bur and chuck turning to clock wise. And then turn again to counter clock wise a bit and set the tension to remove the bur.

Clean and assemble the chuck very carefully.

If you are not a skilled engineer, do not disassemble the handle and motor. It may cause a breakage.

If disassembled, the joint of handle part and the shaft of the motor part have to be connected properly.

If it does not fit, it may cause vibration, noise, heat and bearing damage.

\* If the chuck is not open, please turn it with the wrench.

For your safety, please note the following:

Do not use with damaged or faulty power cord, plug, and outlet, this may cause the danger of fire/ electric shock.

When unplugging the power cord, hold the plug and do not touch with wet hand – this may result in an electric shock

Do not bend the power cord excessively or crush with heavy objects as this may cause fire/electric shock.

Do not place near heat, candles or cigarettes.

Close supervision is needed if this product is used by or near the very young, the elderly or invalids.

Do not leave children unattended in any room where this product has been installed.

• **Type of protection against electric shock:** Class I equipment

• **Degree of protection against electric shock:** Type B applied parts

• **Classification according to the degree of protection against ingress of water as detailed in the current edition of IEC 60529:**

Equipment: IPX0, ordinary equipment

Foot Switch: IPX1

• This equipment is not suitable for use in the presence of flammable anesthetics or oxygen.

• Mode of operation: continuous operation.

This equipment has been tested and found to comply with the limits for medical devices in IEC 60601-1-2:1994. These limits are designed to provide reasonable protection against harmful interference in a typical medical installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to other devices in the vicinity. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to other devices, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

• Reorient or relocate the receiving device.

• Increase the separation between the equipment.

• Connect the equipment into an outlet on a different circuit to where the other device(s) are connected.

• Consult the manufacturer or field service technician for help.

Use the grounding conductor/clip. Breakage or electric leak may cause the danger of electric shock. For grounding, inquiry to electrician or to main office.

Do not use the product in a humid or damp location – this may cause danger of electric shock and fire.

Do not drop or damage the handpiece. In case of malfunction, dropping or immersing in water (this may cause vibration of the bur, over-heating, or damage of the bearings.) Do not use - contact the manufacturer,

\* Only use the product as specified in the instructions of the manufacturer.

\* Injury or property damage may result if these instructions are not correctly followed.

The manufacturer is not responsible for any accidents resulting from the instructions not being followed.