



Low Speed E-Type Attachments

LS | SERIES

**Please read this Operation Manual carefully
before use and file for future reference.**

Caution

- When operating the handpiece always consider the safety of the patient.
- The handpiece is designed only for dental clinical use.
- Do not attempt to disassemble the handpiece or tamper with the mechanism.
- Check for vibration, noise and overheating outside the patient's mouth before use. If any abnormalities are found, stop using immediately and contact Brasseler USA.
- Should the handpiece function abnormally, cease operation immediately and return the handpiece to Brasseler USA for repair.
- Depressing the push-button while handpiece bur is in rotation will result in **OVERHEATING** of the handpiece head. Special caution must be exercised during use to keep cheek tissue **AWAY** from the push-button of the handpiece. Contact with cheek tissue may cause the push-button to depress and injury to the patient may occur.
- Do not allow any impact on the sheath. Do not drop the handpiece.
- Do not use bent, damaged, or sub-standard burs. The shank could be bent or broken even within the recommended speed.
- Always keep bur shanks clean. Dirt or debris in a chuck could cause poor bur concentricity or low chuck retention force.
- Device not intended for high torque procedures such as implant applications.
- In situations where blood or contaminants enter the head, immediately remove the head and transmission gear. Clean and lubricate the head and sheath. Assemble back carefully.

 **Caution**

- Do not exceed the speed recommended by the bur manufacturers.
- Always mount the bur or the bur blank even when the handpiece is not in use.
- Do not connect or disconnect the bur and/or handpiece until the drive motor has completely stopped.
- Do not wipe with, or clean or immerse in, high acid water or sterilizing solutions.

1. Specifications

Sheath

Motor Speed (min ⁻¹) \ Sheath Type	Bur Speed (min ⁻¹)	
	LS1	LS4
40,000	40,000	10,000
30,000	30,000	7,500
20,000	20,000	5,000
10,000	10,000	2,500

Head

Model	LSL
Gear Ration	1:1
Allowable Max. Speed (Motor)	40,000 min ⁻¹
Bur Size	ISO 1797-1 Type 1 (2.35mm latch)

Model	LSF
Gear Ration	1:1
Allowable Max. Speed (Motor)	40,000 min ⁻¹
Bur Size	ISO 1797-1 Type 3 (1.6mm friction grip)

Note: The bur speed might be slightly lower than the theoretical speed as given above, due to a loss at the gear train.

2. Attaching Contra Angle Heads

Set the contra angle head as shown in Fig.1 for alignment, and securely fasten the head nut.

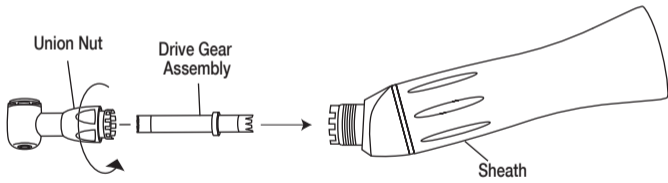


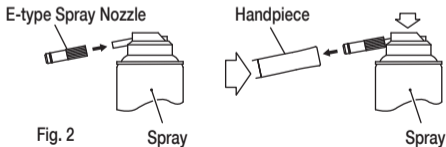
Fig.1

3. Lubrication

Supply spray after each use and/or before autoclaving.

■ Spray (Fig. 2)

- 1) Mount the E-type spray nozzle into the spray port of the can.
- 2) Shake the can 3-4 times to mix lubricant and propellant.
- 3) Insert the E-type spray nozzle in the rear of the handpiece and spray for approximately 2-3 seconds until the oil comes out of the handpiece head.



 **Caution**

- Hold the spray can upright.
- Be sure to hold the handpiece firmly to prevent the handpiece from slipping out of hand by the spray pressure when lubricating.
- Supply lubricant until it comes out of the handpiece head (for approx. 2 seconds).

4. Cleaning and Sterilization



The LSL and LSF heads can be washed with Thermo Disinfectant.
(LS1 and LS4 should not be used with a Thermo Disinfectant)

Steam autoclave is recommended. Sterilization is required the first time you use and after each patient as noted below.

■ Autoclave Procedure:

- 1) Scrub dirt and debris from the handpiece, and wipe clean with alcohol-immersed cotton swab or cloth. Do not use a wire brush.
- 2) Lubricate with spray. Refer to 3. Lubrication.
- 3) Insert into an autoclave pouch. Seal the pouch.
- 4) Autoclavable up to max. 135°C (275°F). ex.) Autoclave for 20 min. at 121°C (250°F), or 15 min. at 132°C (270°F).
- 5) Keep the handpiece in the autoclave pouch to keep it clean until you use it.

* Sterilization at 121°C (250°F) for more than 15 minutes is recommended by EN13060 or EN ISO17665-1.

Caution

Do not wipe with, or clean or immerse in, high acid water or sterilizing solutions.

5. Mounting and Removing Bur

Caution

Do not connect or disconnect the handpiece until the drive motor has completely stopped.

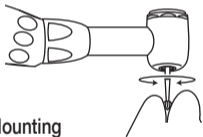


Fig. 3

1) Mounting

A) LSL (Latch Bur)

Mount the handpiece to the Motor.

Insert the latch bur into the head. Lightly turn the bur until it engages with the latch mechanism. Push it inward to click. (Fig. 3)

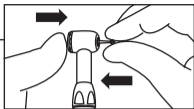


Fig. 4

B) LSF (FG-Bur)

Mount the handpiece to the Motor. Insert the bur into the head. Push the button and insert the bur all the way into the head. (Fig. 4)

! Caution

After the bur is locked in place, lightly pull out the bur to make sure the bur is locked. (Fig. 5)

2) Removal

Push the push button with a thumb, and pull straight to remove the bur. (Fig. 6)

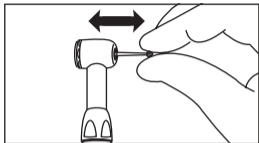


Fig. 5

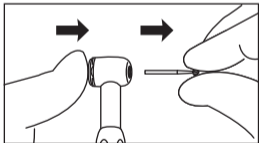


Fig. 6

6. Cartridge Replacement (LSL)

- 1) Loosen the union nut and remove the head from the sheath.
- 2) Pull out the drive gear assembly from the head. (Fig. 7)
- 3) Place cap wrench on the head cap and turn counterclockwise.
Unscrew and separate the cap. (Fig. 8)

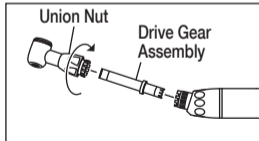


Fig. 7



Fig. 8

4) Insert a $\text{\O}2.35\text{mm}$ round rod from the front of end. Push up the round rod, and cartridge and washer are removed from the top end of the head. (Fig. 9, 10)

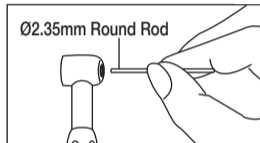


Fig. 9

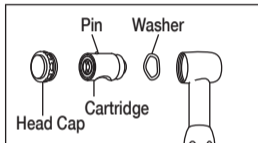


Fig. 10

5) Before inserting a new cartridge, clean the head interior with spray.

6) Insert a washer and the new cartridge with its pin aligned in the head. Hand tighten the cap until finger tight and secure with wrench.

Optional Cartridge :
Order No. 5010837U0

! Caution

Do not use the head cap wrench on the first turn. The head cap threads are very fine and if not aligned correctly could strip the threads.

7. Warranty

Brasseler USA warrants the handpiece against defects in manufacturing, workmanship and materials. Brasseler USA reserves the right to analyze and determine the cause of any problem. Warranty is voided should the handpiece not be used in accordance with this manual.

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