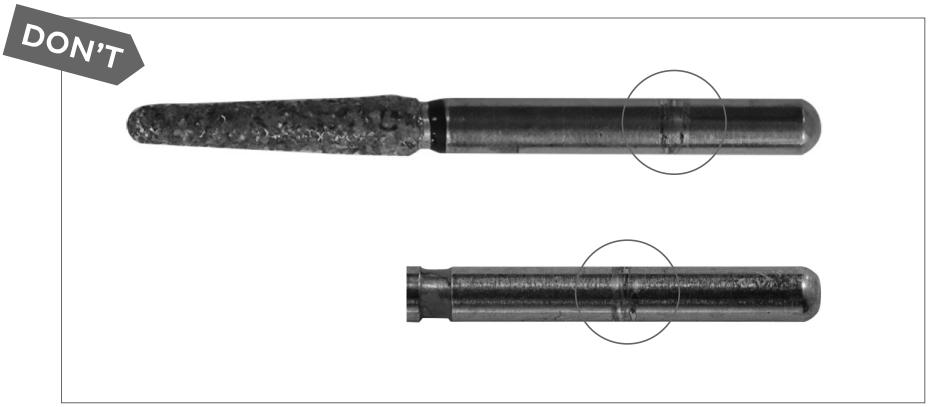
# Protect the chuck system

## Use dental burs with good shafts

Always check the quality of dental burs before inserting them into the handpiece. Burs should be free of any dents or scoring.

If a bur with poor quality shafts are used, the handpiece may suffer substantial damage. Damage to the handpiece chuck system could lead to stuck burs or the bur slipping inside the chuck mechanism.

**Worn-out or damaged shafts/grooves**
**(you can feel grooves when you run a fingernail along the shafts)**




## Comply with dental bur dimensions

For manufacturer information concerning the length, diameter, shaft shape and maximum speed, please refer to the corresponding instructions for use.

### Note

Only use carbides or diamonds that comply with EN ISO 1797-1 type 3, are made of steel or hard metal and meet the following criteria:

- Shaft diameter: 1.59 to 1.60 mm
- Overall length: max. 21 mm
- Shaft clamping length: at least 9 mm
- Blade diameter: max. 2 mm

Excerpt from KaVo handpiece Instructions for use. Non-compliance with information provided by the manufacturer voids any warranty claims against KaVo.

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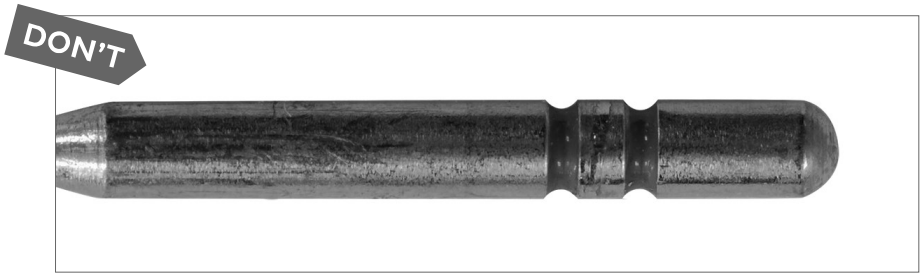
**Note on shaft clamping length:**
The dental bur shaft must be smooth along the minimal shaft clamping length and must not show any recesses/grooves (see Instructions for use).

- The min. shaft clamping length of KaVo miniature turbines is 9 mm
- The min. shaft clamping length of KaVo standard turbines is 11 mm

If the bur is not fully inserted and seated into the chuck (clamping length) the front and rear bearings on the turbine will have uneven loading and fail prematurely.

**Non-approved dental bur (shaft has recesses/grooves in the clamping area)**




**Consequences of non-compliance with manufacturer specifications:**

- The dental bur retention force may be too low due to a worn-out shaft and the dental bur may be released during the treatment.
- The shaft can spin freely in the chuck and destroy the chuck.
- There is a risk that the dental bur will drop out.
- The ball bearings, gear wheels and chuck can be overloaded, e.g. by the dental bur being too long.

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## Separating crowns with cross-toothed burs

Dental bur manufacturers recommend dental burs that are specifically matched to different materials. Please comply with the specified maximum speeds since higher speeds have a detrimental effect on the cutting performance and the reliability of the chuck system.

It is suggested that cross-toothed tools are used for crown separation. If you use straight-toothed tools, please make sure that these do not hook into a tooth.

Stop the handpiece immediately if the tool hooks into the tooth!

Straight-toothed tools can abruptly become hooked into the tooth. This puts stress on the chucking system and could lead to chuck damage.

**Straight-toothed tool**

DON'T

## Never leave the dental bur in the chuck after a treatment

The chuck should bear no load during storage in order to prolong its service life. Storage of handpieces together with the dental bur is associated with a risk of injury or infection.

**Handpiece without dental bur**

DO

**Handpiece with dental bur**

DON'T

# Protect the chuck system

## Close the tensioning ring of the handpiece

Never start operating the straight handpiece while the chuck is open. The handpiece and chuck will malfunction or jam.

## Never press the push-button during operation of the device

Never press or wipe the push-button on the turbine, straight or contra-angle handpiece while the handpiece is rotating, because of:

- Excessive wear and tear on drive/rotor
- Damage to the push-button/chuck

**Push-button is pressed during ongoing operation**

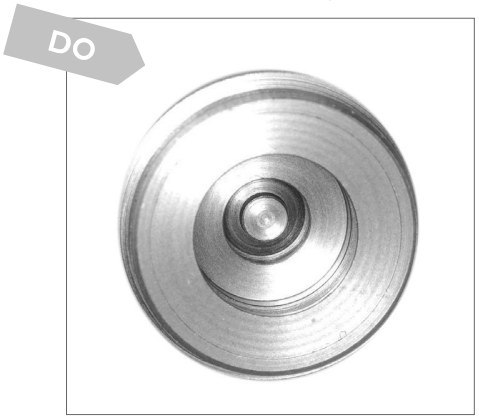

**Possible consequences of push-button actuation during operation include:**

- Push-button can heat up excessively
- Malfunction of the push-button
- Chuck does not release or does do with difficulty
- Metallic abrasion particals of the lid might get into the ball bearings

# Protect the chuck system

Never use the handpiece as a cheek retractor. The friction between the push-button and the chucking system generates heat that may cause burn injuries to the mucosal membranes.

**Push-button used correctly**




**Push-button was abraded due to incorrect use**

# Protect the chuck system

**Lubrication of ball bearing:**
Insufficient lubrication of the ball bearings causes signs of excessive wear and tear possibly leading to defects. To prevent any secondary damage, have defective ball bearings replaced quickly.

**Signs indicative of defective ball bearings include:**
- Loud running noise
- Uneven operation
- Handpiece jams completely
- Overheating

**New ball bearing**

DO

**Defective ball bearing**

DON'T

Even missing lubrication once, in particular after internal cleaning, can lead to early damage to the ball bearings.