Instructions for use
EXPERTtorque E679 - REF 1.006.9200
EXPERTtorque Mini E675 - REF 1.006.6400, 1.006.0800

KaVo. Dental Excellence.

Distributed by:
KaVo Dental Corporation
11729 Fruehauf Drive
Charlotte, NC 28273 USA
Tel. 847-550-6800
Fax 847-550-6825

Manufacturer:
Kaltenbach & Voigt GmbH
Bismarckring 39
D-88400 Biberach
www.kavo.com

Table of contents

1 User instructions

Dear User
Congratulations on purchasing this KaVo quality product. By following the instructions below you will be able to work smoothly, economically and safely.

Symbols

	Refer to the chapter on Safety/Warning symbol
	Important information for users and service technicians

▶	Action request
	Can be sterilized with steam at 134 °C -1 °C / +4 °C (273 °F -1.6 °F / +7.4 °F)
	Thermodisinfectable

Target group

This document is intended for dentists and their assistants. The section on starting up is also intended for service technicians.

2 Safety

2.1 Description of safety instructions

	Warning symbol

Structure

⚠ DANGER

The introduction describes the type and source of the hazard.
This section describes potential consequences of non-compliance.

- ▶ The optional step includes necessary measures for hazard prevention.

Description of hazard levels

The safety instructions listed here, together with the three levels of danger will help avert property damage and injury.

⚠ CAUTION

CAUTION
indicates a hazardous situation that can cause damage to property or mild to moderate injuries.

⚠ WARNING

WARNING
indicates a hazardous situation that can lead to death or fatal injury.

⚠ DANGER

DANGER
indicates a maximal hazard due to a situation that can directly cause death or fatal injury.

2.2 Safety instructions

⚠ WARNING

Hazards for the care provider and the patient.
In the case of damage, irregular running noise, excessive vibration, untypical warming or when the cutter or grinder cannot be held.

- ▶ Do not use further and notify Service.

⚠ WARNING

Hazard from contraindication.
If the soft tissue in the oral cavity is injured, the compressed air may enable septic substances to enter the tissue.

- Treatment must be discontinued with instruments operated by compressed air when soft tissue is damaged in the oral cavity.

⚠ CAUTION

Risk due to incorrectly stored instrument.
Injury and infection caused by chucked cutters or grinders.
Damage to clamping system from dropping the instrument.

- After treatment, place the instrument properly in the cradle, without the cutter or grinder.

⚠ CAUTION

Risk of burn injury from hot handpiece head or hot handpiece lid.
Burn injuries in the mouth may be caused if the handpiece overheats.

- Never touch soft tissue with the handpiece head or handpiece lid!

⚠ CAUTION

Hazard from use as a light probe.
Do not use the device as a light probe since the rotating cutters or grinders can cause injury.

- Use an appropriate light probe for additional illumination of the oral cavity or site of preparation.

⚠ CAUTION

Premature wear and malfunctioning from improper storage during long periods of nonuse.
Reduced product life.

- The medical device should be cleaned, serviced and stored in a dry location, according to instructions, before long periods of non-use.

Note

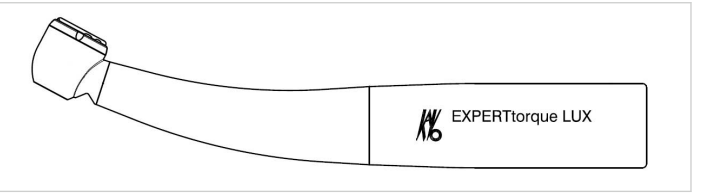
For safety reasons, we recommend that the tool holder system be checked annually after the warranty period expires.

The following individuals are authorized to repair and service KaVo products:

- Technicians at KaVo branches throughout the world
- Technicians specially trained by KaVo

To ensure proper function, the medical device must be set up according to the reprocessing methods described in the KaVo Instructions for Use, and the care products and care systems described therein must be used. KaVo recommends specifying a service interval at the dental office for a licensed shop to clean, service and check the functioning of the medical device. This service interval depends on the frequency of use and should be adjusted accordingly.
Service may only be carried out by KaVo-trained repair shops using original KaVo replacement parts.

3 Product description



- EXPERTtorque LUX E679 L **Mat. no. 1.006.9200**

- EXPERTtorque Mini LUX E675 L **Mat. no. 1.006.6400**
- EXPERTtorque Mini LUX E675 LMW **Mat. no. 1.006.0800**

3.1 Purpose – Intended use

Purpose:

This medical device is

- Only intended for dental treatment. Any other type of use or alteration to the product is impermissible and can be hazardous. The medical device is intended for the following uses: Removal of carious material, cavities and crown preparations, removal of fillings, processing of tooth and restoration surfaces.
- A medical device according to relevant national statutory regulations.

Proper use:

According to these regulations, this medical device may only be used for the described application by a knowledgeable user. The following must be observed:

- the applicable health and safety regulations
- the applicable accident prevention regulations
- these instructions for use

According to these regulations, it is the responsibility of the user to:

- only use equipment that is operating correctly,
- use the equipment for the proper purpose,
- protect him or herself, the patient and third parties from danger, and
- avoid contamination from the product.

3.2 Technical Specifications

	KaVo MULTIflex	Midwest Stylus Coupler XGT
Drive pressure (psi)	30 - 61	39
Drive pressure recommended (psi)	> 41	39
Return air pressure (psi)	< 7	< 7
Spray water pressure (psi)	12 - 29	12
Spray air pressure (psi)	15 - 36	25

	KaVo MULTIflex	Midwest Stylus Coupler XGT
Air consumption (Nl/min)	39 - 51	
Idling speed (rpm) EXPERTtorque / EXPERTtorque Mini	340,000 - 420,000 / 400,000- 480,000	
Recommended application force (N)	2 - 3	

Note

KaVo MULTIflex is a registered trademark of Kaltenbach & Voigt GmbH, Biberach.

3.3 Transportation and storage conditions

⚠ CAUTION

It is hazardous to start up the medical device after it has been stored strongly refrigerated.
This can cause the medical device to malfunction.

- Prior to start-up, very cold products must be heated to a temperature of 20°C to 25°C (68°F to 77°F).

	Temperature: -20°C to +70°C (-4°F to +158°F)
	Relative humidity: 5% RH to 95% RH absence of condensation

	Air pressure: 700 hPa to 1060 hPa (10 psi to 15 psi)
	Protect from moisture

4 Start up and shut down

⚠ WARNING

Hazard from nonsterile products.
Infection danger to the care provider and patient.

- ▶ Before first use and after each use, prepare and sterilise the medical device if needed.

⚠ WARNING

Disposal of the product in the appropriate manner.
Prior to disposal, the product must be appropriately prepared or sterilised if this is necessary.

⚠ CAUTION

Damage from soiled and moist cooling air.
Contaminated and moist cooling air can cause malfunctions and lead to premature bearing wear.

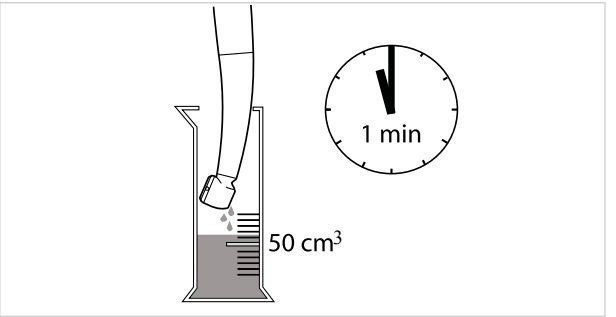
- Make sure that the supply of cooling air is dry, clean and uncontaminated according to ISO 7494-2.

4.1 Checking the amount of water

⚠ CAUTION

Overheating of the tooth due to lack of cooling water.
Insufficient spray water can cause the medical device to overheat and damage the pulp and tooth.

- ▶ Adjust the water amount for the spray head to a min. of 50 cm^3/min!
- ▶ Check the spray water channels and clean the spray nozzles with the nozzle needle **Mat. no. 0.410.0921** if necessary.

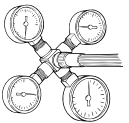

1 min
50 cm3

4.2 Checking the pressures

⚠ CAUTION

Compressed air connection on devices.
Contaminated and humid compressed air leads to premature wear and tear.

- ▸ Supply dry, clean and uncontaminated compressed air according to ISO 7494-2 only.



- ▸ Insert the test manometer (**Mat. no. 0.411.8731**) between the coupling and the medical device and check the following pressures:

Drive pressure, drive pressure recommended, return air pressure, spray water pressure, and spray air pressure.

See also: 3.2 Technical Specifications, Page 18

A higher drive pressure will be reduced automatically by the medical device.

5 Operation

Note

At the beginning of each workday, the water-conducting systems should be rinsed for at least 2 min. without the instrument being attached; if there is a risk of contamination from reflux or back suction, the system must be rinsed for 20-30 seconds.

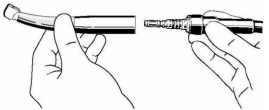
5.1 Attaching the medical device

⚠ WARNING

Detachment of the medical device during treatment.
A medical device that is not properly locked can detach from the coupling during treatment.

- ▶ Before each use, check if the medical device is securely locked onto the coupling.

	⚠ CAUTION
	Damage from inaccurate coupling. Inaccurate coupling (especially during the afterglow period) can destroy the high-pressure lamp or the LED of the coupling or reduce its service life. ▸ Check the seat of the turbine on the coupling by pulling on it.



- ▸ Accurately attach the medical device to the coupling and push is to the rear until the coupling audibly locks in the medical device.
- ▸ Pull on it to make sure that the medical device is securely affixed to the coupling.

5.2 Removing the medical device

- Hold the coupling tight, and pull the medical device off while twisting slightly.

5.3 Inserting the milling cutter or diamond grinder

Note

Only use carbide cutters or diamond grinders that comply with 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: EXPERTtorque: max. 25 mm
- Overall length of EXPERTtorque Mini: max. 19 mm
- Shaft clamping length: EXPERTtorque: min. 11 mm
- Shaft clamping length: EXPERTtorque Mini: min. 9 mm
- Blade diameter: max. 2 mm

⚠ WARNING

Use of unauthorised cutters or grinders.
Injury to the patient or damage to the medical device.

- Observe the instructions for use and use the cutter or grinder properly.
- Only use cutters or grinders that do not deviate from the specified data.

⚠ CAUTION

Injury from using worn drill bits or burs.
Drill bits or burs could fall out during treatment and injure the patient.

- Never use drill bits or burs with worn shafts.

⚠ CAUTION

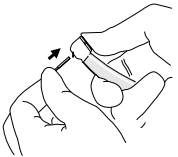
Danger of injury from cutters or grinders.
Infections or cuts.

- Wear gloves or fingerstalls.

⚠ CAUTION

Hazard from defective chucking system.
The cutter or grinder could fall out and cause injury.

- Pull on the cutter or grinder to check that the chucking system is okay and the cutter or grinder is securely held. When checking, inserting and removing, use gloves or a fingerstall to prevent an injury or infection.



- Forcefully press the push button with your thumb and simultaneously insert the cutter or grinder all the way.

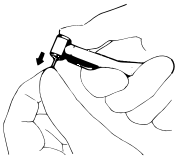
- Check that the cutter or grinder is seated by pulling on it.

5.4 Removing the milling tool or diamond grinder

⚠ WARNING

Hazard from rotating cutter or grinder.
Lacerations and damage to the chucking system.

- Do not touch rotating cutter or grinder.!
- Never press the press-button while the cutter or grinder is rotating!
- Remove the cutter or grinder from the contra-angle handpiece after treatment to avoid injury or infection while storing it.



- After the cutter or grinder has stopped rotating, press the press-button with your thumb and simultaneously pull out the drill bit or bur.

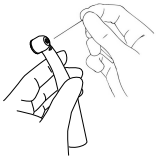
6 Troubleshooting

6.1 Cleaning the spray nozzle

⚠ CAUTION

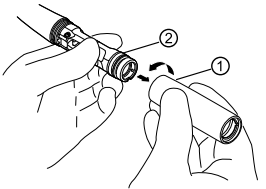
Hazard from insufficient spray water.
Overheating of the medical device and damage to the tooth.

- Check the spray water channels and clean the spray nozzles with the nozzle needle **Mat. no. 0.410.0921** if necessary.

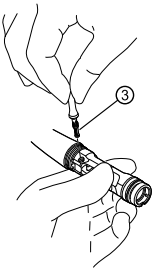


- Use the nozzle needle (**Mat. no. 0.410.0921**) to free the water passage in the spray nozzles.

6.2 Changing the water filter



- Unscrew the sleeve ① in counterclockwise direction from the insert ② and pull it off.



- Unscrew the water filter ③ with the wrench (Mat. no. 1.002.0321) and take it out

- Insert the new filter (Mat. no. 1.002.0271) and screw it in with the wrench
- Place the sleeve ① on the insert ②, and screw it tight in clockwise direction.

7 Reprocessing methods according to ISO 17664

7.1 Preparations at the site of use

⚠ WARNING

Hazard from nonsterile products.
There is a risk of infection from contaminated medical devices.

- ▸ Take suitable personal protective measures.

- ▸ Remove all residual cement, composite or blood without delay.
- ▸ Recondition the medical device as soon as possible after treatment.
- ▸ Remove the cutter or grinder from the medical device.
- ▸ The medical device must be dry when transported for reconditioning.
- ▸ Do not place it in a solution or similar.

7.2 Cleaning

⚠ CAUTION

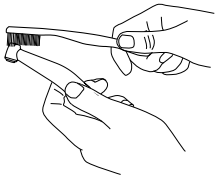
Malfunctions from cleaning in the ultrasonic unit.
Defects in the product.

- ▶ Only clean manually or in a thermodisinfector.

7.2.1 Cleaning: Manual external cleaning

Accessories required:

- Tap water 30 °C ± 5 °C (86 °F ± 10 °F)
- Brush, e.g. medium-hard toothbrush



- Brush off under flowing tap water.

7.2.2 Cleaning: Automated external cleaning

KaVo recommends thermodisinfectors in accordance with ISO 15883-1, which are operated with alkaline cleaning agents with a pH value of max. 10 (e.g. Miele G 7781/G 7881 – Validation was carried out with programme "VARIO-TD", cleaning agent "neodisher® mediclean", neutralisation agent "neodisher® Z" and rinsing agent "neodisher® mielclear" and only applies to the material compatibility with KaVo products.).

- For program settings as well as cleansers and disinfectants to be used, please refer to the Instructions for Use of the thermodisinfector.
- In order to prevent negative effects on the medical device, make sure that the interior and the exterior of the medical device are dry, and then lubricate immediately with care agents from the KaVo care system.

7.2.3 Cleaning: Manual internal cleaning

Not applicable.
This product is suitable for automated cleaning only.

7.2.4 Cleaning: Automated internal cleaning

KaVo recommends thermodisinfectors in accordance with ISO 15883-1, which are operated with alkaline cleaning agents with a pH value of max. 10 (e.g. Miele G 7781/G 7881 – Validation was carried out with programme "VARIO-TD", cleaning agent "neodisher® mediclean", neutralisation agent "neodisher® Z" and rinsing agent "neodisher® mielclear" and only applies to the material compatibility with KaVo products.).

- For program settings as well as cleansers and disinfectants to be used, please refer to the Instructions for Use of the thermodisinfector (complying with max. pH value of 10).

- In order to prevent negative effects on the medical device, make sure that the interior and the exterior of the medical device are dry, and then lubricate immediately with care agents from the KaVo care system.

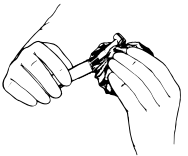
7.3 Disinfection

⚠ CAUTION

Malfunctioning from using a disinfectant bath or disinfectant containing chlorine.
Defects in the product.

- Only disinfect in a thermodisinfector or manually.

7.3.1 Disinfection: Manual external disinfection



KaVo recommends the following products based on material compatibility. The microbiological efficacy must be ensured by the disinfectant manufacturer.

- CaviCide made by Metrex

Consumables required:

- Cloths for wiping off the medical device.

- Spray the disinfectant on a cloth, then thoroughly wipe down the medical device and leave the disinfectant to soak in according to the instructions from the disinfectant manufacturer.
- Follow the instructions for use of the disinfectant.

7.3.2 Disinfection: Manual internal disinfection

Not applicable.
This product is suitable for automated disinfection only.

7.3.3 Disinfection: Automated external and internal disinfection

KaVo recommends thermodisinfectors in accordance with ISO 15883-1, which are operated with alkaline cleaning agents with a pH value of max. 10 (e.g. Miele G 7781/G 7881 – Validation was carried out with programme "VARIO-TD", cleaning agent "neodisher® mediclean", neutralisa-

tion agent "neodisher® Z" and rinsing agent "neodisher® mielclear" and only applies to the material compatibility with KaVo products.).

- For program settings as well as cleansers and disinfectants to be used, please refer to the Instructions for Use of the thermodisinfector (complying with max. pH value of 10).
- In order to prevent negative effects on the medical device, make sure that the interior and the exterior of the medical device are dry, and then lubricate immediately with care agents from the KaVo care system.

7.4 Drying

Manual Drying

- Blow off the outside and inside with compressed air until water drops are no longer visible.

Automatic Drying

The drying procedure is normally part of the cleaning program of the thermodisinfector.

Note

Please follow the instructions for use of the thermodisinfector (compressed air quality - see the Warning under "Start-up").

7.5 Care products and systems - Servicing

⚠ WARNING

Sharp cutters or grinders in the medical device.
Risk of injury from sharp or pointed cutters or grinders.

- ▶ Remove cutter or grinder.

⚠ CAUTION

Premature wear and malfunctions from improper servicing and care.
Reduced product life.

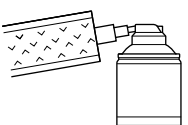
- ▶ Perform regular proper care and maintenance!

Note

KaVo only guarantees that its products will function properly when the care products used are those listed as accessories, as they were tested for proper use on our products.

7.5.1 Care products and systems - Servicing: Servicing with KaVo Spray

KaVo recommends servicing the product after each time it is used, i.e. after each automatic cleaning and before each sterilisation.

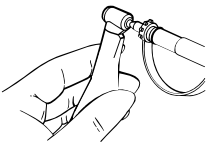


- ▸ Remove cutter or grinder.

- Cover the product with the CLEANpac bag.
- Place the product on the cannula and press the spray button for one second.

Chuck care

KaVo recommends cleaning and servicing the chuck system once a week.

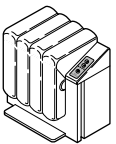


- Remove the cutter or grinder, place the spray nipple tip in the opening and spray.

- Carry out the servicing according to the instructions in the section, "Care with KaVo Spray".

7.5.2 Care products and systems - Servicing: Servicing with KaVo QUATTROcare 2104 / 2104A

Cleaning and care unit with expansion pressure for effective cleaning and care.



KaVo recommends servicing the product after each time it is used, i.e. after each automatic cleaning and before each sterilisation.

- Remove the cutter or grinder.

- Servicing the product.

Chuck care

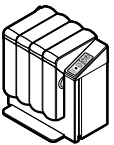
KaVo recommends cleaning and servicing the chuck system once a week.

See also: Instructions for use **KaVo QUATTROcare 2104 / 2104A**

- Remove the cutter or grinder, place the spray nipple tip in the opening and spray.

- Subsequently treat with the care products and care systems specified.

7.5.3 Care products and systems - Servicing: Servicing with KaVo QUATTROcare PLUS



KaVo recommends servicing the product after each time it is used, i.e. after each automatic cleaning and before each sterilisation.

- Remove the cutter or grinder.
- Servicing the product in QUATTROcare PLUS.

See also: Instructions for use **KaVo QUATTROcare PLUS**

Servicing the clamping chuck

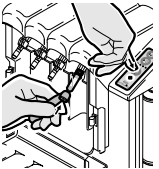
KaVo recommends cleaning and servicing the chuck system once a week.

See also: Instructions for use **KaVo QUATTROcare PLUS**

Note

Handpieces must be taken off the service couplings before the chuck service can be started and performed.

- Remove the service coupling chuck from the side hatch of the QUATTROcare PLUS and attach it to coupling service point four, on the far right. A MULTIflex adapter must be mounted there.



- Press the handpiece together with the guide bush of the chuck to be serviced against the tip of the service coupling chuck.

- Press the button showing the chuck service symbol.

Note

Close the chuck service mode.
Option 1: Place the dental handpieces in the QUATTROcare PLUS 2124 A, close the front door and start theservice procedure.
Option 2: After three minutes with no service procedure running, the device automatically switches back to normal service mode.

See also: Care with KaVo QUATTROcare PLUS

7.6 Packaging

Note

The sterilisation bag must be large enough for the handpiece so that the bag is not stretched.
The quality and use of the sterilisation packaging must satisfy applicable standards and be suitable for the sterilisation procedure!

- ▸ Individually seal the medical device in the sterilised item packaging.

7.7 Sterilisation

Sterilisation in a steam steriliser (autoclave) in accordance with ISO 17665-1

⚠ CAUTION

Premature wear and malfunctions from improper servicing and care.
Reduced product life.

- ▶ Before each sterilisation cycle, service the medical device with KaVo care products.

⚠ CAUTION

Contact corrosion due to moisture.
Damage to product.

- Immediately remove the product from the steam steriliser after the sterilisation cycle!

The medical device has a maximum temperature resistance up to 138 °C (280.4 °F).

Select a suitable procedure (depending on the available autoclave) from the following sterilisation processes:

- Autoclave with pre-vacuum:
  - at least 3 minutes at 134 °C -1 °C / +4 °C (273 °F -1.6 °F / +7.4 °F)
    Drying time: 20 min.
- Autoclave using the gravity method:
  - at least 10 minutes at 134 °C -1 °C / +4 °C (273 °F -1.6 °F / +7.4 °F) or alternatively
    Drying time: 30 min.
  - at least 60 minutes at 121 °C -1 °C / +4 °C (250 °F -1.6 °F / +7.4 °F)
    Drying time: 30 min.

▸ Use according to the manufacturer's Instructions for Use.

7.8 Storage

- Reprocessed products should be stored protected from dust with minimum exposure to germs in a dry, dark and cool space.
- Comply with the expiry date of the sterilised items.

8 Tools and consumables

Available from dental suppliers.

Material summary	Mat. No.
Replacement turbine EXPERTtorque	1.007.9313
Replacement turbine EXPERTtorque Mini	1.007.9457
Wrench for lid of EXPERTtorque	0.411.3053
Wrench for lid of EXPERTtorque Mini (new)	1.008.6133
Wrench for lid of EXPERTtorque Mini (old)	1.006.3384
Replacement filter	1.002.0271
Key	1.002.0321

Material summary	Mat. No.
Instrument stand 2151	0.411.9501
Insert for turbines	0.411.9902
Nozzle pin	0.410.0921
Cleanpac 10 units	0.411.9691
KaVo MULTIflex spray head for KaVo Spray	0.411.9921
Spray head Midwest for KaVo Spray	1.008.2053
KaVo MULTIflex service coupling for KaVo QUATTROcare	0.411.7991
Service coupling Midwest for KaVo QUATTROcare	1.008.2083

Only for the USA

Material summary	Mat. no.
KaVo Spray America 2113 A	0.411.9660
QUATTROcare plus Spray America 2141 P	1.005.4524

Only for Canada

Material summary	Mat. no,
KaVo Spray Canada 2114 A	0.411.9680
QUATTROcare plus Spray Canada 2149 P	1.005.4523

9 Terms and conditions of warranty

The following warranty conditions apply to this KaVo medical device:

KaVo provides the end customer with a warranty of proper function and guarantees zero defects in respect of material and processing for a period of 24 months from data of invoice, subject to the following conditions: In case of justified complaints, KaVo will honour its warranty with a free replacement or repair. Other claims of any nature whatsoever, in particular with respect to compensation, are excluded. In the event of default, gross negligence or intent, this shall only apply in the absence of mandatory legal regulations to the contrary.
KaVo cannot be held liable for defects and their consequences that have arisen or may arise from to natural wear, improper handling, cleaning or maintenance, non-compliance with operating, maintenance or connection instructions, calcination or corrosion, contaminated air or water supplies or chemical or electrical factors deemed abnormal or impermissible in ac-

cordance with KaVo's instructions for use or other manufacturer's instructions. The warranty does not usually cover lamps, light conductors made of glass and glass fibres, glassware, rubber parts and the colourfastness of plastic parts.
No liability is assumed when defects or their consequences are derived from manipulations or changes to the product by the customer or a third party.
Service warranty claims will only be accepted if the product is submitted along with proof of purchase in the form of a copy of the invoice/delivery note. The dealer, purchase date, device number or type and factory number or serial number must be clearly visible on this document.

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