

## Instructions for use

  
**PATTERSON**  
DENTAL



**PD-95 RM**  
**PD-20 RM, PD-43, PD-58**  
**PD-68**

## Symbols

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**WARNING!**  
(risk of injury)



**ATTENTION!**  
(to prevent  
damage occurring)



General  
explanations,  
without risk to  
persons or objects



Disposable  
article



Sterilizable  
up to the stated  
temperature

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## 1. Introduction

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Customer satisfaction is the main priority under the quality policy. This product has been developed, manufactured and subjected to final inspection according to legal regulations, quality norms and industry standards.

### **For your safety and the safety of your patients**

Prior to initial use please read the instructions for use completely; they explain how to use your product and ensure proper, efficient and safe operation.

**Intended use**

The high-speed handpiece is intended for the use in general dental applications: cutting a tooth for cavity preparation, crown preparation, crown finishing, inlay, filling and polishing.

The air motor is particularly suitable for the following applications: Drive for dental transmission instruments for dental restoration and prophylaxis. Supply of dental transmission instruments of drive air, cooling air and coolant.

The straight and contra angle handpiece is intended for the following applications: cutting a tooth for cavity preparation, crown preparation, crown finishing, inlay, filling and polishing.

The prophy straight and contra angle handpiece is particularly suitable for the following applications: Cleaning and polishing of the tooth surface and fillings.



### **Device labeling statement**

Federal law restricts this device be sold by, or on the order of, a licensed healthcare practitioner.

### **Skilled application**

These medical products are intended only for safe use in the dental field, according to their purpose of use in compliance with the valid health and safety work regulations, the valid accident prevention regulations, as well as in compliance with these instructions for use. They should be maintained according to the manufacturer's recommendations and in line with infection control procedures for the safety and well-being of patients. Improper use, e.g. missing cleaning maintenance, or non-compliance with our instructions or the use of accessories and spare parts that are not released by the manufacturer, invalidates all claims under warranty and any other claims.

### **Service**

In case of service or repair, contact your local Patterson Representative or call your local Patterson Branch at 800-873-7683. Service and maintenance work must only be carried out by authorized Patterson repair locations.

## 2. Before use – Safety notes

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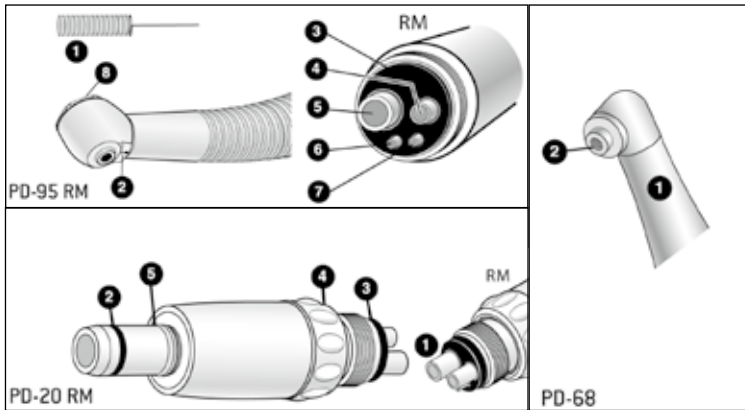


- > Always ensure the correct operating conditions and cooling (external spray) function.
- > Check the high-speed handpiece, air motor, straight/contra angle handpiece for damage and loose parts prior to use.
- > Use only non-contaminated, filtered, oil-free and dry compressed air to operate the the high-speed handpiece and air motor.

### **Cleaning and maintenance prior to initial use**

The high-speed handpiece, air motor, straight/contra angle handpiece is in a clean condition when delivered. Lubricate prior to initial use. Sterilize the turbine, air motor, straight/contra angle handpiece, cleaning wire and the dental bur.

### 3. Product description



#### PD-95 RM

- ① Cleaning wire
- ② Spray ports
- ③ Seal
- ④ Drive air
- ⑤ Exhaust air
- ⑥ Spray air
- ⑦ Coolant
- ⑧ Push button PD-95

#### PD-20 RM

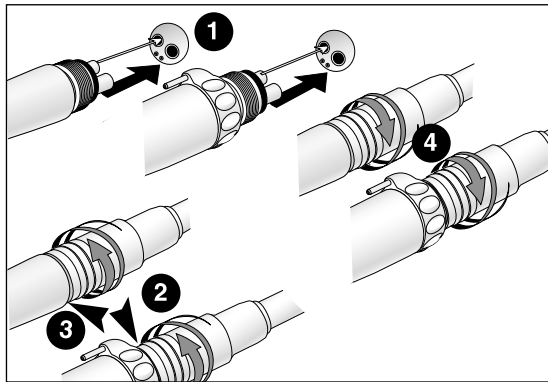
- ① Standard 4-hole
- ② O-ring
- ③ Seal
- ④ Union nut
- ⑤ ISO 3964 connection

#### PD-68:

- ① PD-68
- ② Thread of PD-68



## 4. Operation



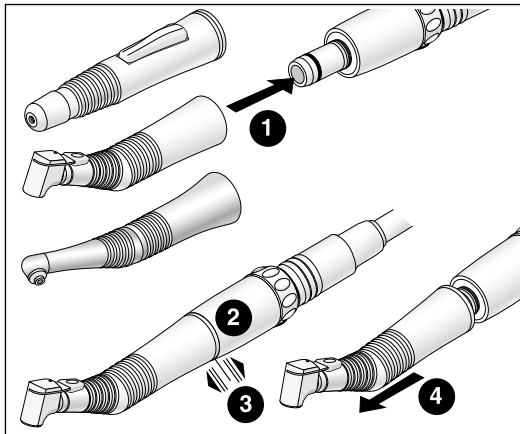
### Assembly/Removal



Do not assemble/remove  
during the operation!



- 1 Insert the high-speed handpiece with RM connection into the openings in the handpiece tubing.
- 1 Insert the air motor with RM connection into the apertures of the supply hose.
- 2 Firmly screw the union nut on in a clockwise direction.
- 3 Check for leakages.
- 4 Unscrew the union nut counterclockwise from the supply hose.



- 1** Push the straight/contra angle handpiece onto the motor until it engages audibly **2**.
- 3** Check the connection to the motor is secure.
- 4** Remove the straight/contra angle handpiece by pulling in an axial direction.



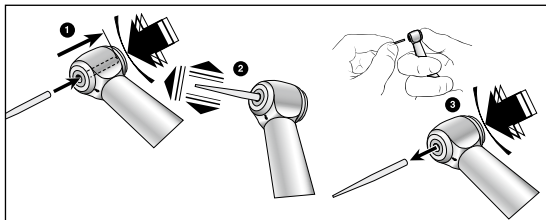
### **To change dental bur**

- > Use only dental burs that are in perfect condition. Follow the manufacturer´s operating instructions.
- > Insert dental burs, cups and brushes only when the high-speed handpiece, straight/contra angle handpiece is stationary.
- > Do not interfere with the running or slowing down of dental burs, cups and brushes.
- > Do not activate the high-speed handpiece without a dental bur in place.
- > Do not activate the chuck lever of the handpiece or the latch of the contra angle during operation or slowing down.  
This leads to detachment of the dental bur and damages the chuck lever/latch.



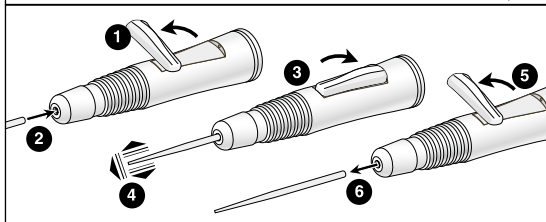
### **Changing cups and brushes**

The prophy handpieces may only be run in a clockwise direction! In a counterclockwise direction the cups or brushes can become detached – leading to a danger of swallowing!



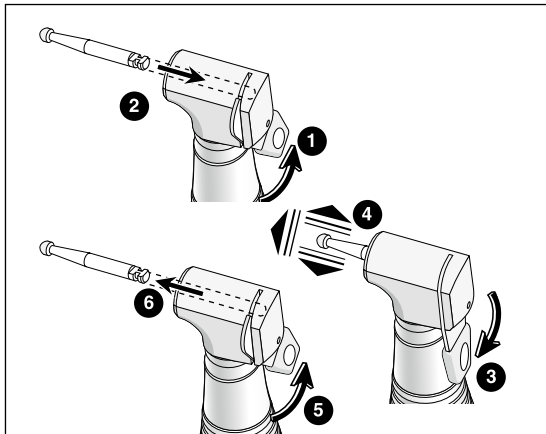
### PD-95 RM

- ① Push the push button while simultaneously pushing in the dental bur as far as it will go.
- ② Check secure retention by applying slight axial tension.
- ③ Remove the dental bur by pushing the push button.



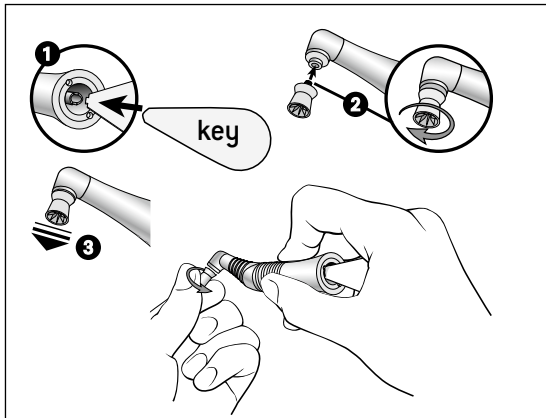
### PD-43

- ① Open the chuck lever.
- ② Insert the dental bur up to the limit stop.
- ③ Close the chuck lever.
- ④ Check that the dental bur is held securely by pulling on it in an axial direction.
- ⑤ Open the chuck lever and remove the dental bur ⑥.



## PD-58

- 1 Open the latch.
- 2 Insert the dental bur up to the limit stop and turn until it engages.
- 3 Close the latch.
- 4 Check that the dental bur is held securely by pulling on it in an axial direction.
- 5 Open the latch and remove the dental bur 6.



## Attaching screw-type disposable cups and brushes



Only use once!

- 1** Block the handpiece drive by inserting the key in the driver.
- 2** Screw the cup or brush clockwise as far as possible into the thread of the handpiece head until it is firmly seated.
- 3** Check it is held securely.

## **Test run**

- > Insert the dental bur and start the high-speed handpiece, straight/contra angle handpiece.
- > Start the air motor.

If you observe problems (e.g. vibrations, unusual noise, overheating, coolant supply failure or leakage), recheck operating instructions. If the problem persists, stop the high-speed handpiece, motor, handpiece/contra angle immediately and contact your local Patterson Representative or call your local Patterson Branch at 800-873-7683.

## 5. Cleaning and maintenance

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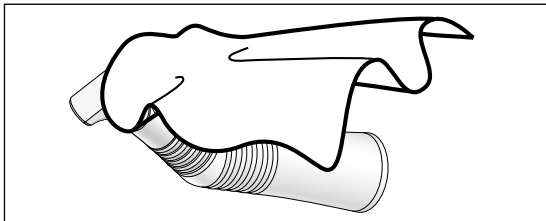


Follow your country-specific directives, standards and guidelines for cleaning, disinfection and sterilization.



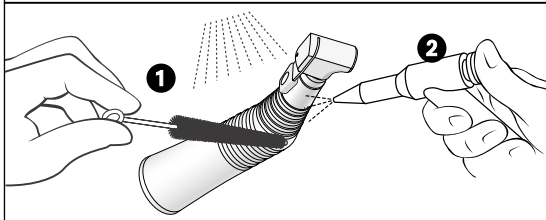
- > Wear protective clothing.
- > Remove the dental bur.
- > Remove the high-speed handpiece from the hose.
- > Remove the transmission instrument from the air motor.
- > Remove the air motor from the supply hose.
- > Remove the straight/contra angle handpiece from the air motor.
  
- > Clean and disinfect high-speed handpiece, straight/contra angle handpiece immediately **after every application** to flush out any liquid (e.g. blood, saliva, etc.), which may have seeped in and to prevent settling on the internal parts. Disinfect and clean the air motor **immediately after every treatment**.
- > You can process the high-speed handpiece, straight/contra angle handpiece manually or automatically.
  
- > Sterilize the high-speed handpiece, handpiece/contra angle following manual or mechanical disinfection, cleaning and lubrication. Sterilize the air motor following manual disinfection, cleaning and lubrication.





## Pre-cleaning

- > If heavily soiled: Clean first with disinfectant cloths.

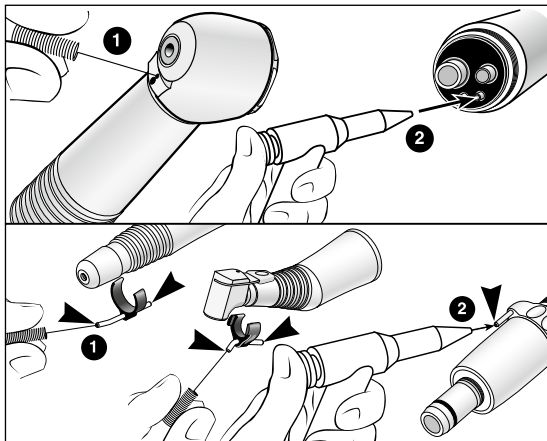


## Manual cleaning internal and external

- 1 Rinse under water (< 38 °C/<100 °F) with the aid of a brush (demineralized water is recommended).
- 2 Then remove any liquid residues (absorbent cloth, blow dry with compressed air).



Do not place the high-speed handpiece, straight/contra angle handpiece, air motor in liquid disinfectant or in an ultrasonic bath.



## Clean spray ports

- 1 Clean spray ports with the cleaning wire.
- 2 Blow through the coolant channel with the air syringe.

## Clean PD-E kit

- 1 Clean the spray tubes with the cleaning wire and blow through using air syringe 2.

## Automated cleaning and disinfection, internal and external



Processing with thermal washer disinfectant is recommended.

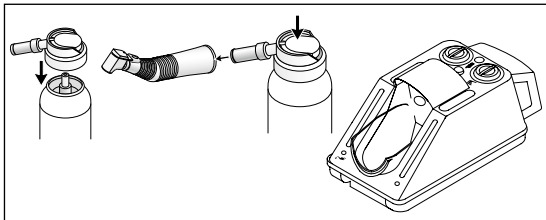
Note the manufacturer's specifications on thermal washer equipment, cleaning agents and detergents.



Lubricate high-speed handpiece, straight/contra angle handpiece immediately after thermal washer disinfection.



Do not place the high-speed handpiece, straight/contra angle handpiece, air motor in liquid disinfectant or in an ultrasonic bath.

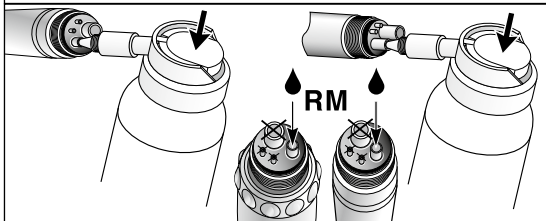


**Daily oil service with a high quality handpiece lubricant 103-0782**

- > Follow the instructions for use of the oil spray can.

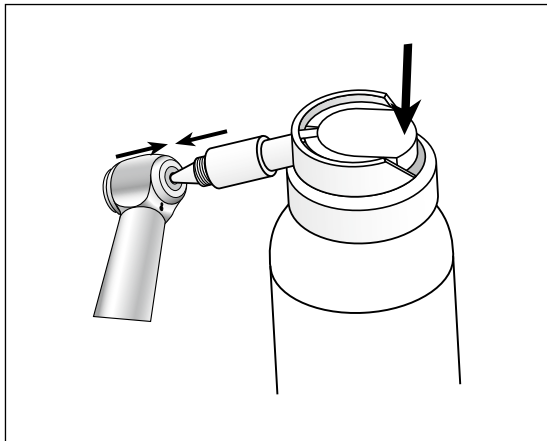
**Daily oil service with a general handpiece maintenance unit 035-4035**

- > See instructions for use of Assistina.



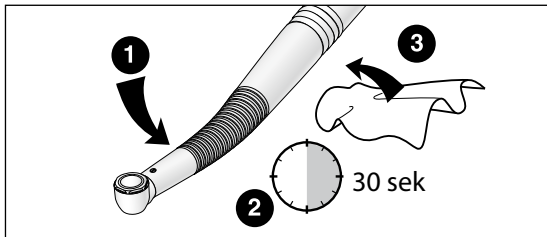
**Recommended lubrication cycles**

- > Before each sterilization
  - > Essential after internal cleaning
- or
- > After 30 minutes of use or
  - > At least once daily



### **Weekly oil service of the chuck system with a high quality handpiece lubricant**

- > Fit the spray nozzle 089-3123 on the spray can.
- > Grip the high-speed handpiece firmly.
- > Press the tip of the spray nozzle firmly into the chuck system.
- > Spray for approx. 1 second.



### Test run following oil service

- 1** Place the high-speed handpiece, air motor, straight/contra angle handpiece with the instrument tip/head/ISO connection downwards.
- 2** Start the high-speed handpiece, air motor, straight/contra angle handpiece for 30 seconds to remove excessive oil.
  - > Repeat the complete cleaning and maintenance process at any sign of dirt re-emerging.
- 3** Wipe with gauze or soft cloth the high-speed handpiece, air motor, straight/contra angle handpiece.
  - > Sterilize the high-speed handpiece, air motor, straight/contra angle handpiece.

## **Sterilization and storage**

- > Follow the operating instructions of the manufacturer.
- > Clean, disinfect and lubricate prior to sterilization.
- > Place the high-speed handpiece, straight/contra angle handpiece in a standard handpiece sterilization pouch.
- > Make sure that you only remove dry sterile goods.
- > Store sterile goods dust-free and dry.

## **Approved sterilization procedures**



Follow your country-specific directives, standards and guidelines.

- > Steam vacuum sterilization, 4 minutes at  $134 \pm 2 \text{ }^{\circ}\text{C}$  [ $273 \pm 4 \text{ }^{\circ}\text{F}$ ] or
- > Gravity displacement sterilization, 6 minutes at  $134 \pm 2 \text{ }^{\circ}\text{C}$  [ $273 \pm 4 \text{ }^{\circ}\text{F}$ ]
  
- > All other sterilization methods are not approved and must not be used.

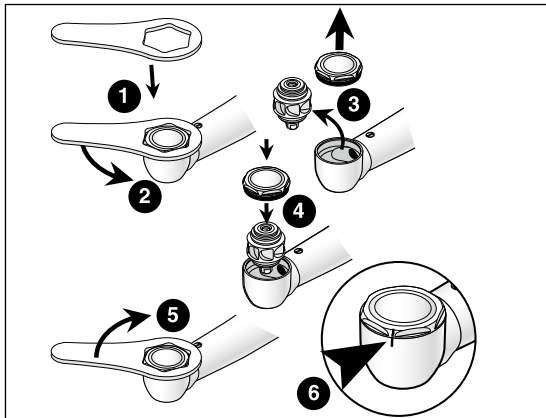
## 6. Accessories

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Use only original accessories and spare parts!

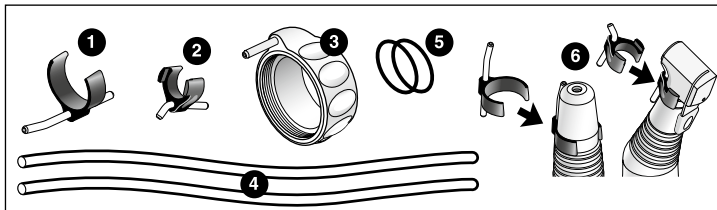
089-3123	Spray nozzle	040-4046	PD-95 RM spare high-speed handpiece
089-3131	Spray cap ISO	089-3180	PD-E spray kit
040-4004	PD-20 RM airmotor	089-3172	PD-95 RM Spare turbine kit
040-4020	PD-43 straight handpiece	089-3149	Seal RM
040-4012	PD-58 contra angle		
040-4061	PD-68 prophylaxis angle		
089-3156	Plastic key for prophylaxis angle		





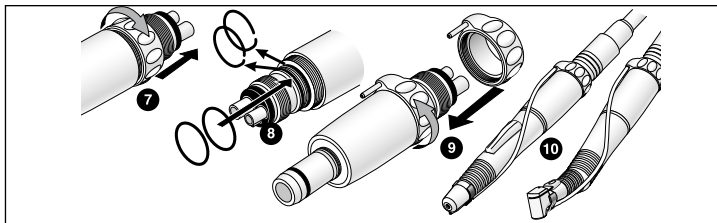
## To change the turbine PD-95 RM

- 1 Place the cap wrench on the cap.
- 2 Open the cap counterclockwise.
- 3 Change the turbine and screw the cap on again tightly 4.
- 5 Close the cap with the cap wrench, turning it clockwise at least up to the mark 6!



### PD-E-Spray kit

- ① Spray clip PD-43
- ② Spray clip PD-58
- ③ Spray connection ring
- ④ 2 x coolant hose
- ⑤ 2 x O-ring
- ⑥ Assemble spray clip onto PD-43/PD-58



- ⑦ Screw off union nut
- ⑧ Replace O-rings
- ⑨ Screw on spray connection ring
- ⑩ Assemble coolant hose

## Technical data

High-speed handpiece		PD-95 RM
EN 29168 connection on the hose side		Ritter Midwest
Dental burs	EN ISO 1797-1 (ø mm)	1.6
Approved length in mm	(mm)	25*
Min. chuck length	(mm)	until back stop
Max. speed	(rpm)	330,000 ± 20,000
Coolant supply volume ISO 7785-1	(gal/min)	> 0.013
Recommended setting range	(psi)	7.25 – 29
Recommended chip air pressure	(psi)	7.25 – 29
Exhaust air pressure	(psi)	< 7.25
Operating pressure	(psi)	31.9-36.25
Air consumption	(NI/min)	42

\* When using longer dental burs (or if the dental bur is not inserted up to the limit stop), the user must ensure by correct selection of the operating conditions, that there is no danger to the user, patient or third parties.

## Technical data

		PD-20 RM	PD-58	PD-43	PD-68
Coupling	Hose-side acc. to standard	ISO 9168			
Motor coupling		ISO 3964			
Speed range at 32 psi – 43.5 psi	(rpm)	20,000			
Maximum rated speed	(rpm)		20,000		
Stationary torque	(Ncm)	4			
Max. power	(W)	20			
Air consumption at 32 psi – 43.5 psi	(NI/min)	42 – 50			
Operating pressure	(psi)	31.9-43.5			
Transmission ratio			1:1		8:1
Dental bur EN ISO 1797-1:1995	(ø mm)		2.35		
Approved length	(mm)		34 *	50 **	
Min. chuck length	(mm)		engaging	12 **	
Coolant supply volume E	(gal/min)	> 0.026 (ÖNORM EN ISO 13294)	> 0.013 (ISO 7785-2)		
Recommended setting range E	(psi)	7.25-29			

\* When using longer dental burs (or if the dental bur is not inserted up to the limit stop), the user must ensure by correct selection of the operating conditions, that there is no danger to the user, patient or third parties.

\*\* If the dental bur is not inserted up to the limit stop, the minimum chucking length must be maintained. In this case, or when using dental burs longer than 50 mm, the user must ensure by correct selection of the operating conditions that there is no danger to the user, patients or third parties.

# Warranty

Patterson warrants all products in this document against defects in material or workmanship for one year from time of delivery. Patterson's sole obligation under the warranty is to provide parts for the repair, or at its option, to provide the replacement product (excluding labor). The buyer shall have no other remedy. All special, incidental and coincidental damages are excluded.

Written notice of breach of warranty must be given to Patterson within the warranty period. The warranty does not cover damage resulting from improper installation or maintenance, accident or misuse. The warranty does not cover damage resulting from the use of cleaning, disinfecting or sterilization chemicals and processes. Failure to follow instructions provided in the Patterson owner's guide (operation and maintenance instructions) may void the warranty.

No other warranties as to merchantability or otherwise are made.

**Distributed by**

**Patterson Dental Supply Inc.**

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800-873-7683

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