

Revision History

Rev	Item	Description	Release date
A0	/	New Issue	2023-05-23
A1	3<Contraindications and prohibitions>	To add contraindications for special patient.	2025-11-25
	8	Add condition of transportation and storage	
A2	7.2	Delete the duplicate words “and Transportation” in step “Preparation at the Point of Use”.	2026-03-18
		Add detailed cleaning parameters and recommended cleaning agent to the processing instruction “Cleaning”.	

Instructions For Use Of Rotary Files

Doc. No.: DJYL-IFU-NR01
Version: A2

Effective: 2026-03-18



Before using the products, please see the instruction manual as indicated below.

CONTENT

1. Indications for Use	3
2. Content, Composition and Compatible Devices	3
3. Safety Notes	3
4. Re-Processing	4
5. Specifications and Method of Use	5
6. Precautions for use	23
7. Cleaning, Disinfection and Sterilization Method	23
8. Transportation and storage	26
9. Duration of use	26
10. Safe disposal of the device	26
11. Serious incident reporting	26
12. Explanation of related symbols	26
13. WARRANTY AND LIMITED REMEDY / LIMITATION OF LIABILITY	28

1. Indications for Use

- The DENCO Rotary Files are indicated for treatment of endodontic disease.
- Intended Use: The product engine-driven instrument intended for root canal preparation (shaping, debridement of root canal), it shall be used in combination with an endodontic motor (manually in severed curvatures).
- It is reusable and non-sterile instruments.
- For Dental Use Only.

2. Content, Composition and Compatible Devices

- The product is composed of operative part, shank, stoppers and counting sheet.
The main Materials:
 - 1) Operative part: Nickel Titanium Alloy
 - 2) Shank: Brass C3604
 - 3) Stoppers: Silicone Rubber
 - 4) Counting sheet: Silicone Rubber
- The ENDO Rotary Files shall be used in combination with an endodontic motor in a constant rotation at a speed 150 ~ 500rpm and 1.5 ~ 5.0 N.cm.
- The use of radiographs in combination with an apex locator and a tool for adjusting the silicon stopper to the correct working length is the appropriate method of working length determination.
- Choose a control angle compatible with ISO1797-1 metal CA shank to ensure that the rotary file shank can be installed properly and will not loosen or fall off during use.

3. Safety Notes

<Warnings>

- This device is only allowed to be used in a clinical or hospital environment, following good dental practice, by qualified dental professionals such as general practitioners as well as Endo specialists (Endodontist) and Dental Assistants.
- Be sure to sterilize this product for each use.
- Use it in accordance with the intended use.
- Strictly follow this Instruction for Use and the General Processing Instructions For Endodontic Products (see section 8) to minimize following risks to the device, the patient and/or the user:
 - ➔ Breakage of instrument.
 - ➔ Cross-contamination.
 - ➔ Heat generation due to insufficient lubrication and irrigation.
 - ➔ Swallowing of working part of the instrument.
 - ➔ Toxic or allergic reactions caused by processing residues.
- Similar to all machine-driven root canal instruments, the rotary files should not be used in a root canal with an abrupt apical curvature due to heightened risk of separation. In this case, pre-curved hand files should be used in the apical region

<Contraindications and prohibitions>

None Known

Pregnant or breastfeeding women should use this product under the guidance of a doctor, weighing the benefits against the risks and avoiding unnecessary procedures.

<Adverse Reactions>

In the present technical state, no adverse reaction has been reported so far

4. Re-Processing

4.1 The DENCO Rotary Files are reusable instruments, the maximum number of processing cycles of the DENCO Rotary Files is **8** (number of processing cycles validated without affecting the functionality and safety of the products).

Pls follow the processing instructions for the disinfection, cleaning and sterilization steps before each reuse as Item 7 of this IFU.

4.2 Do not re-use silicone stoppers. Remove and discard silicone stoppers after each use.

4.3 LIMITATION ON RE-USE

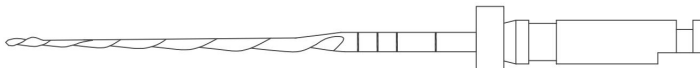
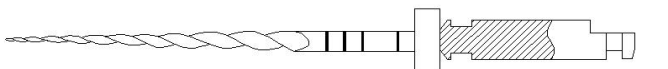
- The products shall not be processed more than the number of maximum cycles indicated in the table in Item 4.1 of this IFU. It is the responsibility of the user to monitor the number of processing cycles. Meanwhile re-use is permitted only when the product is defect free and following a visual inspection (see item below). Since certain applications may cause the instruments to prematurely reach the end of their useful life the “Max number of processing cycles” will not always be reached (e.g. when shaping an extremely curved root canal with a file).
- In any case inspect the products before re-use, and discard them in case of defects. These include but not limited to the following:
 - Plastic deformation (bent, unwound, distorsion, sign of twisting, elongation, uneven flutes);
 - Breakage;
 - Loss of colour coding or marking;
 - Bent instrument;
 - Untwisted threads;
 - Damaged cutting surfaces and edges;
 - Dull cutting blades;
 - Missing size marking;
 - Corrosion (e.g. dull spots);
 - Wear.
- For shaping extremely curved canals it is safer to use the file only to shape one canal in order to reduce the risk of breakage. Pay attention to the following good practices:
 - Use a new file and discard it after the canal was treated (single canal use).
 - Use manual instead of rotary files.
 - Use small size, flexible or/and NiTi files (this will help avoid canal transportation).
 - Visually inspect the active part for all the defects listed in the former paragraph during use (i.e after each wave).
 - Avoid the standard reaming continual rotational motion and instead use small angle motions (filing

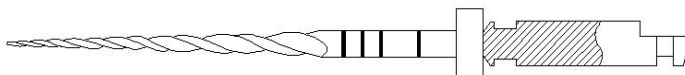
motion, watch winding oscillation motion, or balanced force technique) in order to limit the rotational bending fatigue on the instruments and improve their expected life.

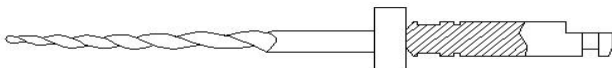
5. Specifications and Method of Use

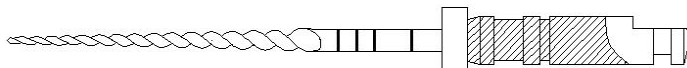
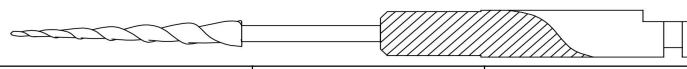
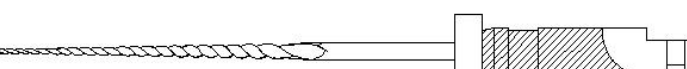
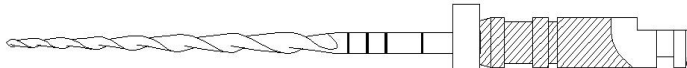
5.1 The ENDO Rotary Files are divided into different models based on different design in the shape of the cross-section, the pitch of thread, and the length of the working part as follows:

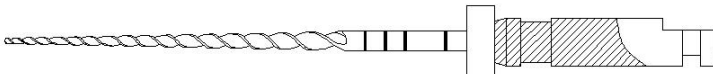
Model Name	Specification	Tip Diameter (mm)±0.02	Working Length (mm)±0.05	Taper (%)
Super files				
	SX	0.19	19mm	3.5-19
	S1	0.17	21/25/31mm	2-11
	S2	0.20		4-11.5
	F1	0.20		7
	F2	0.25		8
	F3	0.30		9
	F4	0.40		6
	F5	0.50		5
	SX-F3	/		/
Super files II				
	X1	0.17	21/25/31mm	4
	X2	0.25		6
	X3	0.30		7
	X4	0.40		6
	X5	0.50		6
	X1-X3	/		/
Super files III				
	SX	0.19	19mm	3.5-19
	S1	0.17	21/25/31mm	2-11
	S2	0.20		4-11.5
	F1	0.20		7
	F2	0.25		8
	F3	0.30		9
	F4	0.40		6
	F5	0.50		5
	SX-F3	/		/

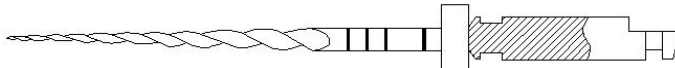
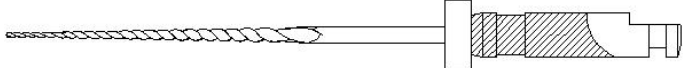
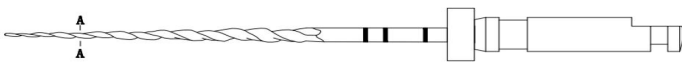
Model Name	Specification	Tip Diameter (mm) (0.001")	Working Length (mm) (0.075")	Taper (%)
D-Super files				
	SX	0.19	19mm	3.5-19
	S1	0.17	21/25/31mm	2-11
	S2	0.20		4-11.5
	F1	0.20		7
	F2	0.25		8
	F3	0.30		9
	F4	0.40		6
	F5	0.50		5
	SX-F3	/		/
Dual shaper				
	SX	0.19	19mm	3.5-19
	#016	0.15	21/25/31mm	2-6
	#15/03	0.15		3
	#15/04	0.15		4
	#20/04	0.20		4
	#25/04	0.25		4
	#30/04	0.30		4
	#35/04	0.35		4
	#40/04	0.40		4
	#15/06	0.15		6
	#20/06	0.20		6
	#25/06	0.25		6
	#30/06	0.30		6
	#35/06	0.35		6
	#40/06	0.40		6
	SX-#25/06	/		/
	D-Shaper			
R		0.20	17mm	10
#016		0.15	21/25/31mm	2-6
S1		0.20		4
S2		0.25		4
S3		0.30		4
S4		0.25		6
R-S4		/		/
#15/04		0.15		4

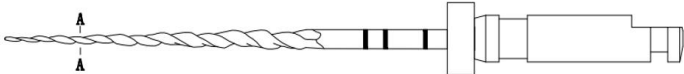
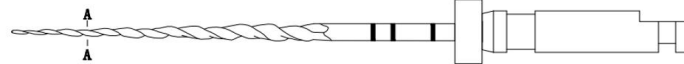
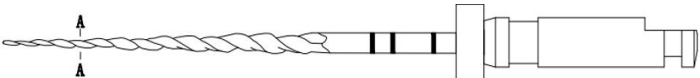
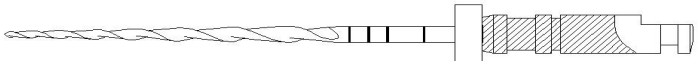
Model Name	Specification	Tip Diameter	Working Length (mm)±0.05	Taper	
	#20/04	0.20		4	
	#25/04	0.25		4	
	#30/04	0.30		4	
	#35/04	0.35		4	
	#40/04	0.40		4	
	#15/06	0.15		6	
	#20/06	0.20		6	
	#25/06	0.25		6	
	#30/06	0.30		6	
	#35/06	0.35		6	
	#40/06	0.40		6	
	Only one file				
		R20		0.20	21/25/31mm
R25		0.25	8		
R25		0.25	4		
R30		0.30	4		
R35		0.35	4		
R40		0.40	4		
R40		0.40	6		
R50		0.50	5		
R25-50		/	/		
Roll Wave					
	#15/03	0.15	21/25/31mm	3	
	#20/03	0.20		3	
	#25/03	0.25		3	
	#30/03	0.30		3	
	#35/03	0.35		3	
	#20/07	0.20		7	
	#25/07	0.25		7	
	#35/06	0.35		6	
	#45/05	0.45		5	
	#20/07-45/05	/		/	
Pro-flexi files					
	#01/09	0.25	19mm	9	
	#17/08	0.17	19mm	8	
	#18/09	0.18	19mm	9	
	#20/04	0.20	21/25/31mm	4	

Model Name	Specification	Tip Diameter	Working Length (mm)±0.05	Taper
	#25/04	0.25		4
	#30/04	0.30		4
	#35/04	0.35		4
	#25/06	0.25		6
	#10/04	0.10		4
	#15/04	0.15		4
	#40/04	0.40		4
	#45/04	0.45		4
	#20/06	0.20		6
	#25/06	0.25		6
	#30/06	0.30		6
	#35/06	0.35		6
	#40/06	0.40		6
	#45/06	0.45		6
	#20/02	0.20		2
	#15/02	0.15		2
	#01/09-#25/04	/		/
	Primary file			
#17/08		0.17	16mm 17mm	8
#20/04		0.20		4
#25/04		0.25		4
#25/06		0.25		6
#30/04		0.30		4
#40/04		0.40	19mm	4
Assorted		/	/	/
W Files				
	#021/06,	0.21	21/25/31mm	6
	#025/08	0.25		8
	#040/08	0.40		8
	#021/06-040/08	/		/
D Files				
	D1	0.30	16mm	9
	D2	0.25	18mm	8
	D3	0.20	22mm	7
	D1-D3	/	16/18/22mm	/

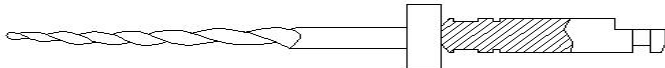
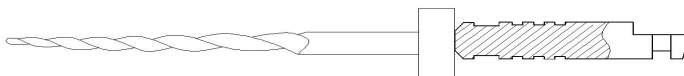
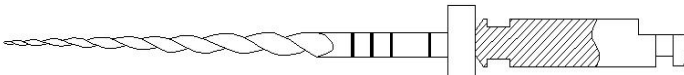
Model Name	Specification	Tip Diameter	Working Length	Taper
DK Files				
	#15/04	0.15	21/25/31mm	4
	#20/04	0.20		4
	#25/04	0.25		4
	#30/04	0.30		4
	#35/04	0.35		4
	#40/04	0.40		4
	#15-40/04	/		4
	#15/06	0.15		6
	#20/06	0.20		6
	#25/06	0.25		6
	#30/06	0.30		6
	#35/06	0.35		6
	#40/06	0.40		6
	#15-40/06	/		6
	Fire Files			
#25		0.25	15mm	9
HS Files				
	20/04	0.20	21/25/31mm	4
	25/04	0.25		4
	30/04	0.30		4
	20/06	0.20		6
	25/06	0.25		6
	30/06	0.30		6
M Files				
	10#/04	0.10	21/25/31mm	4
	15#/05	0.15		5
	20#/06	0.20		6
	25#/06	0.25		6
	30#/05	0.30		5
	35#/04	0.35		4

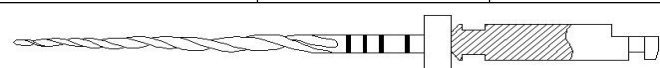
Model Name	Specification	Tip Diameter	Working Length (mm)±0.05	Taper
	40#/04	0.40		4
	45#/04	0.45		4
	50#/04	0.50		4
	60#/04	0.60		4
	25#/07	0.25		7
	30#/06	0.30		6
	35#/06	0.35		6
	40#/06	0.40		6
PA-Files				
	#013	0.13	21/25/31mm	2
	#016	0.16		2
	#019	0.19		2
	#013-019	/		/
Pro-Path				
	#016	0.15	21/25/31mm	2-6
PR Files				
	#15/04	0.15	21/25/31mm	4
	#20/04	0.20		4
	#25/04	0.25		4
	#30/04	0.30		4
	#35/04	0.35		4
	#40/04	0.40		4
	#15-40/04	/		4
	#45/04	0.45		4
	#50/04	0.50		4
	#15/06	0.15		6
	#20/06	0.20		6
	#25/06	0.25		6
	#30/06	0.30		6
	#35/06	0.35		6
	#40/06	0.40		6
	#15-40/06	/		6
	#45/06	0.45		6
	#50/06	0.50		6

Model Name	Specification	Tip Diameter	Working Length	Taper
Pre-Shaper				
	R	0.20	17mm	10
	S1	0.20	21/25/31mm	4
	S2	0.25		6
	S3	0.35		4
	#16/02	0.16		2
	#19/02	0.19		2
	#25/04	0.25		4
	#30/04	0.30		4
	#40/04	0.40		4
	#45/04	0.45		4
	#30/06	0.30		6
	#35/06	0.35		6
	R-#35/06	/		/
	RS Files			
SC1		0.25	21/25/31mm	6
SC2		0.25		4
SU		0.25		6
SC1/SC2/SU		/		/
GC Files				
	#25	0.25	21/25mm	2
	#30	0.30		2
	#35	0.35		2
	#40	0.40		2
	#45	0.45		2
	#50	0.50		2
	#55	0.55		2
	#60	0.60		2
	#70	0.70		2
	#80	0.80		2
	#25-40	/		2
NC FILES				
	#25/09	0.25	21/25/31mm	9
	#14/03	0.14		3
	#15/03	0.15		3
	#15/04	0.15		4
	#20/04	0.20		4

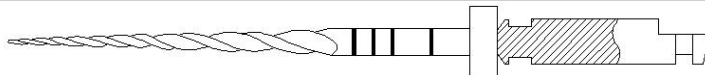
Model Name	Specification	Tip Diameter	Working Length (mm)±0.05	Taper
	#25/04	0.25		4
	#30/04	0.30		4
	#35/04	0.35		4
	#40/04	0.40		4
	#15/06	0.15		6
	#20/06	0.20		6
	#25/06	0.25		6
	#30/06	0.30		6
	#35/06	0.35		6
	#40/06	0.40		6
	NC OPENER			
#25/09		0.25	17mm	9
NC GLIDER				
	#14/03	0.14	21/25/31mm	3
	#15/03	0.15		3
NC SHAPER 2				
	#20/04	0.20	21/25/31mm	4
	#20/06	0.20		6
	#25/04	0.25		4
	#25/06	0.25		6
	#35/04	0.35		4
	#35/06	0.35		6
	#40/04	0.40		4
	#40/06	0.40		6
NC ROT MAX				
	#15/04	0.15	21/25/31mm	4
	#20/05	0.20		5
	#20/04	0.20		4
	#25/04	0.25		4
	#30/04	0.30		4
	#35/04	0.35		4
	#40/04	0.40		4
	#50/04	0.50		4
	#60/04	0.60		4
	#20/06	0.20		6

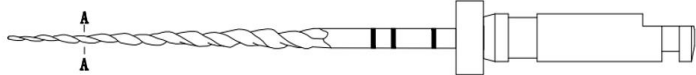
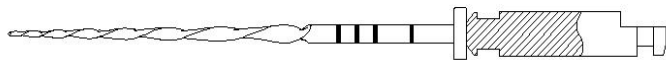
Model Name	Specification	Tip Diameter	Working Length (mm)±0.05	Taper
	#25/06	0.25		6
	#30/06	0.30		6
	#35/06	0.35		6
	#40/06	0.40		6
DR PRO FILES				
	#17/08	0.17	19mm	8
	#19/02	0.19	21/25/31mm	2
	#20/04	0.20		4
	#25/04	0.25		4
	#25/06	0.25		6
	#30/04	0.30		4
	#35/04	0.35		4
	#40/04	0.40		4
NC PRO				
	#18/04	0.18	21mm	4
	#20/04	0.20	21/25/31mm	4
	#35/04	0.35		4
	#25/06	0.25		6
DR Files				
	#17/08	0.17	19mm	8
	#15/03	0.15	21/25/31mm	3
	#20/04	0.20		4
	#25/04	0.25		4
	#25/06	0.25		6
	#30/04	0.30		4
	#35/04	0.35		4
	#40/04	0.40		4
R+File				
	R20	0.20	21/25/31mm	6
	R25	0.25		8
	R40	0.40		6
	R50	0.50		5
	R25-50	/		/

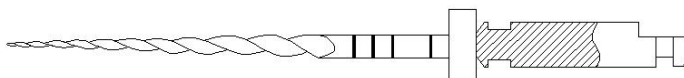
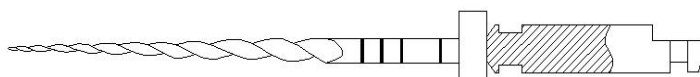
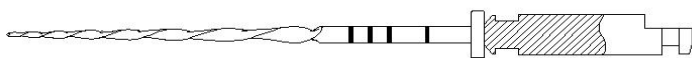
Model Name	Specification	Tip Diameter	Working Length	Taper
NC PRIMARY FILES				
	#17/08	0.17	16mm 17mm	8
	#20/04	0.20		4
	#25/04	0.25		4
	#25/06	0.25		6
	#30/04	0.30		4
	#40/04	0.40	19mm	4
	Assorted	/	/	/
NC RETX				
	D1	0.30	16mm	9
	D2	0.25	18mm	8
	D3	0.20	22mm	7
	D1-D3	/	16/18/22mm	/
NC SHAPER				
	R	0.20	17mm	10
	#016	0.15	21/25/31mm	2-6
	S1	0.20		4
	S2	0.25		4
	S3	0.30		4
	S4	0.25		6
	R-S4	/		/
	#15/04	0.15		4
	#20/04	0.20		4
	#25/04	0.25		4
	#30/04	0.30		4
	#35/04	0.35		4
	#40/04	0.40		4
	#15/06	0.15		6
	#20/06	0.20		6
	#25/06	0.25		6
	#30/06	0.30		6
	#35/06	0.35		6
	#40/06	0.40		6
	ELITE GC			
#25		0.25	21/25mm	2

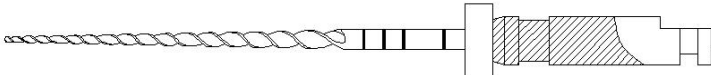
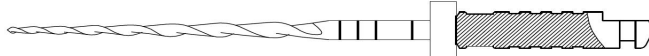
Model Name	Specification	Tip Diameter	Working Length (mm)±0.05	Taper
	#30	0.30		2
	#35	0.35		2
	#40	0.40		2
	#45	0.45		2
	#50	0.50		2
	#55	0.55		2
	#60	0.60		2
	#70	0.70		2
	#80	0.80		2
	#25-40	/		2
	NC W+			
#20/07		0.20	21/25/31mm	7
#25/07		0.25		7
#35/06		0.35		6
#45/05		0.45		5
#20/07-45/05		/		/
NC PT+				
	X1	0.17	21/25/31mm	4
	X2	0.25		6
	X3	0.30		7
	X4	0.40		6
	X5	0.50		6
	X1-X3	/		/
NC PT				
	SX	0.19	19mm	3.5-19
	S1	0.17	21/25/31mm	2-11
	S2	0.20		4-11.5
	F1	0.20		7
	F2	0.25		8
	F3	0.30		9
	F4	0.40		6
	F5	0.50		5
	SX-F3	/		/
NC PATH				
	#016	0.15	21/25/31mm	2-6

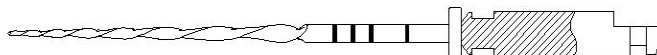
Model Name	Specification	Tip Diameter	Working Length	Taper
NC FLEXI				
	#01/09	0.25	19mm	9
	#20/04	0.20	21/25/31mm	4
	#25/04	0.25		4
	#30/04	0.30		4
	#35/04	0.35		4
	#25/06	0.25		6
	#01/09-#25/04	/		/
Vet Endo Rotary Files				
	#20	0.20	31/60mm	2
	#25	0.25		2
	#30	0.30		2
	#35	0.35		2
	#40	0.40		2
	#45	0.45		2
	#50	0.50		2
	#55	0.55		2
	#60	0.60		2
	#70	0.70		2
	#80	0.80		2
	#90	0.90		2
	#100	1.00		2
	#110	1.10		2
	#120	1.20		2
	#130	1.30		2
	#140	1.40		2
	U Files			
#15		0.15	33mm	2
#20		0.20		2
#25		0.25		2
#30		0.30		2
#35		0.35		2
#40		0.40		2
#45		0.45		2
#50		0.50		2
#15-40		/		2
Access Files				

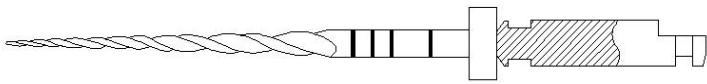
Model Name	Specification	Tip Diameter	Working Length	Taper	
	AF-60	0.60	19mm	4	
	AF-70	0.70	19mm	2	
	AF-80	0.80	19mm	2	
	AF-90	0.90	19mm	3	
	AF-110	1.10	19mm	3	
D-PRO					
	#18/04	0.18	21mm	4	
	#18/09	0.18	19mm 21mm	9	
	#17/08	0.17	19mm	8	
	#20/04	0.20	21/25/31mm	4	
	#35/06	0.35		6	
	#25/06	0.25		6	
	#25/04	0.25		4	
	#30/04	0.30		4	
	#35/04	0.35		4	
	#10/04	0.10		4	
	#15/04	0.15		4	
	#40/04	0.40		4	
	#45/04	0.45		4	
	#20/06	0.20		6	
	#30/06	0.30		6	
	#40/06	0.40		6	
	#45/06	0.45		6	
	#20/02	0.20		2	
	#15/02	0.15		2	
	D-FLEXI				
		#18/04	0.18	21mm	4
#18/09		0.18	19mm 21mm	9	
#17/08		0.17	19mm	8	
#20/04		0.20	21/25/31mm	4	
#35/06		0.35		6	
#25/06		0.25		6	
#25/04		0.25		4	
#30/04		0.30		4	
#35/04		0.35		4	
#10/04		0.10		4	
#15/04		0.15		4	
#40/04		0.40		4	

Model Name	Specification	Tip Diameter	Working Length (mm)±0.05	Taper
	#45/04	0.45		4
	#20/06	0.20		6
	#30/06	0.30		6
	#40/06	0.40		6
	#45/06	0.45		6
	#20/02	0.20		2
	#15/02	0.15		2
PT Gold				
	SX	0.19	19mm	3.5-19
	S1	0.17	21/25/31mm	2-11
	S2	0.20		4-11.5
	F1	0.20		7
	F2	0.25		8
	F3	0.30		9
	F4	0.40		6
	F5	0.50		5
	SX-F3	/		/
ZGlider EVO				
	#15/03	0.15	21/25/31mm	3
Excalibur Glider				
	012	0.12	21/25/31mm	4
BlueShaper PRO				
	ZX	0.19	19mm	3.5-19
	Z1-Z4	/	21/25/31mm	/
	ZX-Z5	/		/
	Z1	0.17		2-11
	Z2	0.20		4-11.5
	Z3	0.20		7
	Z4	0.25		8
	Z5	0.30		9
	Z6	0.40		6
	Z7	0.50		5
BlueShaper				
	ZX	0.19	19mm	3.5-19

Model Name	Specification	Tip Diameter	Working Length	Taper
	Z1-Z4	/		/
	ZX-Z5	/		/
	Z1	0.17		2-11
	Z2	0.20		4-11.5
	Z3	0.20		7
	Z4	0.25		8
	Z5	0.30		9
	Z6	0.40		6
	Z7	0.50		5
	SlimShaper			
ZS1		0.15	21/25/31mm	2-6
ZS2		0.20		4
ZS3		0.25		4
ZS1-ZS3		/		/
SlimShaper PRO				
	ZS1	0.15	21/25/31mm	2-6
	ZS2	0.20		4
	ZS3	0.25		4
	ZS1-ZS3	/		/
Excalibur				
	E20	0.20	21/25/31mm	5
	E25	0.25		5
	E35	0.35		5
	E45	0.45		5
	E20-45	/		/
Excalibur PRO				
	E20	0.20	21/25/31mm	5
	E25	0.25		5
	E35	0.35		5
	E45	0.45		5
	E20-45	/		/
ApicalShaper				
	030	0.30	21/25/31mm	3
	035	0.35		3
	040	0.40		3

Model Name	Specification	Tip Diameter	Working Length (mm)±0.05	Taper
	050	0.50		3
	030-050	/		/
Z-Glider				
	015	0.15	21/25/31mm	2-6
Z-Condensor				
	025	0.25	21/25/31mm	2
	030	0.30		2
	0.35	0.35		2
	040	0.40		2
	045	0.45		2
	030	0.30		6
	035	0.35		4
RetreatAll				
	25	0.25	21/25/31mm	6
	30	0.30		6
MTWO				
	#10/03	0.1	L21/L25/L31	3
	#10/035	0.1		3.5
	#10/04	0.12		4
	#15/05	0.15		5
	#17.5/045	0.175		4.5
	#20/02	0.20		2
	#20/055	0.20		5.5
	#20/06	0.20		6
	#25/02	0.25		2
	#25/05	0.25		5
	#25/06	0.25		6
	#25/07	0.25		7
	#30/05	0.30		5
MTWO	#30/06	0.30		L21/L25/L31
	#35/04	0.35	4	
	#35/06	0.35	6	
	#40/03	0.40	3	
	#40/04	0.40	4	

Model Name	Specification	Tip Diameter	Working Length (mm)±0.05	Taper
	#40/06	0.40		6
	#45/03	0.45		3
	#45/04	0.45		4
	#50/03	0.50		3
	#50/04	0.50		4
	#55/06	0.55		6
	#60/02	0.60		2
	#60/04	0.60		4
B-4U				
	STARTER	0.16	21/25/31mm	2-5.5
	STARTER LARGE	0.19		3-4
	FINISHER	0.23		4-2
	FINISHER MEDIUM	0.30		4-2
	FINISHER LARGE	0.37		4-2
SMARTONE				
	R20	0.20	21/25/31mm	6
	R25	0.25		8
	R25	0.25		4
	R30	0.30		4
	R35	0.35		4
	R40	0.40		4
	R40	0.40		6
	R50	0.50		5
	R25-50	/		/
ACURATE FILES				
	SX	0.19	19mm	3.5-19
	S1	0.17	21/25/31mm	2-11
	S2	0.20		4-11.5
	F1	0.20		7
	F2	0.25		8
	F3	0.30		9
	F4	0.40		6
	F5	0.50		5
	SX-F3	/		/

Model Name	Specification	Tip Diameter	Working Length	Taper
FLEXI FILES BLUE				
	#01/09	0.25	19mm	9
	#17/08	0.17	19mm	8
	#18/09	0.18	19mm	9
	#20/04	0.20	21/25/31mm	4
	#25/04	0.25		4
	#30/04	0.30		4
	#35/04	0.35		4
	#25/06	0.25		6
	#10/04	0.10		4
	#15/04	0.15		4
	#40/04	0.40		4
	#45/04	0.45		4
	#20/06	0.20		6
	#25/06	0.25		6
	#30/06	0.30		6
	#35/06	0.35		6
	#40/06	0.40		6
	#45/06	0.45		6
	#20/02	0.20		2
	#15/02	0.15		2
	#01/09-#25/04	/		/

5.2 Method of Use

- Review different horizontally angulated radiographs to diagnostically determine the width, length, and curvature of any given root canal.
- Create straight-line access to the canal orifice(s) with emphasis on flaring, flattening, and finishing the internal axial walls.
- Irrigate abundantly and frequently after each instrument used (according to good dental practices).
- Passively scout the coronal 2/3 with hand files ISO 010 and ISO 015, in the presence of a viscous chelator.
- Gently work these instruments until a smooth, reproducible glide path is confirmed. Alternatively, mechanized glide path files (such as DENCO PA Files or DENCO pro-glide Files) may be used after an ISO 010 hand file.
- Choose the most appropriative model of rotary files according to situation of each case and follow the general method.
- Use dedicated absorbent paper points to dry and dedicated gutta-percha points to obturate the root canals.

6. Precautions for use

- Safety and effectiveness of use have not been established in pregnant or breastfeeding women or in children.
- Use a rubber dam system during the endodontic procedure.
- For your own safety, wear personal protective equipment (gloves, glasses, mask).
- Inspect the packaging before use and do not use the instruments if the packaging is damaged.
- Do not use the instruments after expiration date.
- Check the instrument before each use for signs of defects such as deformations (bent, unwound), breakage, corrosion, damaged cutting edges, loss of color coding or marking. With these indications the devices are not able to fulfil the intended use with the required safety level, instruments should be discarded.
- Before using any instrument, make sure it is well connected to the contra-angle head.
- Check instrument and clean working part frequently during instrumentation, inspecting for signs of distortion, elongation or wear, such as uneven flutes, dull spots. With these indications that the devices are not able to fulfil the intended use with the required safety level, instruments should be discarded.
- Instruments should not be fully immersed in a sodium hypochlorite solution (NaOCl). Only the working part of the NiTi instrument, which is in contact with the patient should be immersed in a NaOCl solution concentrate at NOT more than 5%.
- Exercise caution in the apical area and in canals that divide, and/or exhibit abrupt curvatures or recurvatures.
- Irrigate abundantly and frequently the canal throughout the procedure and after each instrument used (according to good dental practices).
- Always use minimal apical pressure. Never force the files down the canal.
- When instrument does not easily progress, clean and inspect the cutting flutes, then irrigate, recapitulate with a manual file and reirrigate.
- For shaping extremely curved canals it is safer to use the file only to shape one canal in order to reduce the risk of breakage. Pay attention to the following good practices:
 - ➔ Use a new file and discard it after the canal was treated (single canal use).
 - ➔ Use manual instead of rotary files.
 - ➔ Use small size, flexible or/and NiTi files (this will help avoid canal transportation).
 - ➔ Visually inspect the working part for all the defects listed in the former paragraph during use (i.e after each wave).
 - ➔ Avoid the standard reaming continual rotational motion and instead use small angle motions (filing motion, watch winding oscillation motion, or balanced force technique) in order to limit the rotational bending fatigue on the instruments and improve their expected life.

7. Cleaning, Disinfection and Sterilization Method

7.1 General Recommendation

- 7.1.1 Please use cleaning agents suitable for cleaning surgical instruments, rubber, medical plastics, instruments and other medical instruments, such as multi-enzyme cleaning agents.

When using, please strictly abide by the manufacturer's regulations on the concentration, temperature, action time and shelf life of the solution used. Do not use hydrogen peroxide (H₂O₂) solution.

- 7.1.2 For your own safety, please wear personal protective equipment (gloves, glasses, masks).
- 7.1.3 The user should be responsible for the sterilization or disinfection of the product in the first cycle and each subsequent use, as well as the use of damaged or dirty equipment after sterilization.
- 7.1.4 In the final rinsing step, deionized water must be used regardless of whether an automatic washer sterilizer or manual cleaning method is used. Tap water can also be used for other rinsing steps.
- 7.1.5 Only immerse the operative part of the instrument in contact with the patient into the NaOCl solution concentrate with a concentration not exceeding 5%.
- 7.1.6 Before or during disinfection or cleaning, avoid equipment drying out. Dry biological materials may be difficult to remove.
- 7.1.7 Only use the appropriate support of the device for post-processing.
- 7.1.8 Do not use labeling systems or identification marks directly on the device.
- 7.1.9 Only use washer-disinfectors approved in accordance with EN ISO 15883 and regularly maintained and verified.

7.2 Operation Steps of Cleaning, Disinfection and Sterilization

Step-by-Step instructions for processing prior to use/reuse as below table:

Step	Processing instructions
Preparation at the Point of Use	Remove gross soiling of the instrument with cold water (<40°C) immediately after use. Don't use a fixating detergent or hot water (>40°C) as this can cause the fixation of residuals which may influence the result of the reprocessing process.
Transportation	Safely store the device in a humid surrounding and transport it to the reprocessing area to avoid any damage and contamination to the environment.
Preparation for Decontamination and Cleaning	The devices must be reprocessed in a disassembled state, as far as possible. Before cleaning, disassemble each instrument to the smallest removable unit according to the instructions. For lumen instrument, ensure that the lumen of device is not clogged. The patency of the lumen can be tested by injecting water into the lumen.
Pre-Cleaning	Do a manual pre-cleaning, until the instruments are visually clean. Submerge the instruments in a cleaning solution. Clean the surfaces with a soft bristle brush.
Cleaning	Regarding cleaning/disinfection, rinsing and drying, it is to distinguish between manual and automated reprocessing methods. Preference is to be given to automated reprocessing methods, especially due to the better reproducibility and standardization, and in personnel protection. Automated Cleaning Use a washer-disinfector meeting the requirements of the ISO 15883 series. The instruments are placed on the cleaning rack of the WD. A cleaning tray

	may be used to avoid that the small device is washed away and lost during cleaning. The lumen of device is connected to the flushing port of the WD. The devices in the washer-disinfector are arranged in such a way that there is no rinsing shadow and the water drains off quickly. Note: Demineralised water should be used for the automated cleaning process. Water quality refer to EN 285. Start the program: • 4 min pre-washing with cold water (<40°C); • emptying • 5 min washing with a mild alkaline cleaner at 55°C • emptying • 3 min rinsing with warm water (>40°C); • emptying • 5 min intermediate rinsing with warm water (>40°C) • Emptying The automated cleaning processes have been validated by using 0.5% neodisher MediClean forte (Dr. Weigert) in the washer/disinfector of BeliMed WD425. Note Demineralised water should be used for the automated cleaning process. Water quality refer to EN 285. Note Acc. to ISO 17664 no manual reprocessing methods are required for these devices. If a manual reprocessing method has to be used, please validate it prior to use.
Disinfection	Automated thermal disinfection in washer/disinfector under consideration of national requirements in regards to A0 value (see ISO 15883). A disinfection cycle of 5 min disinfection at 90°C has been validated for the device to achieve an A0 value of > 3000. Here we suggest a disinfection cycle of 5 min disinfection time at ≥ 93 °C due to the normally tolerable temperature fluctuations in WD.
Drying	Drying the instrument through drying cycle of washer/disinfector. If needed, (additional) manual drying can be performed through lint free towel. Insufflate cavities of products by using sterile compressed air.
Functional Testing, Maintenance	Visual inspection for cleanliness of the products and reassembling, if required. All instruments should be checked again for dryness. After cleaning and disinfection, a thorough inspection and maintenance ensures that the products are fit for use. - Check that the product has no dents, cracks, deformations, scratches, etc.; - Check all markings on the product for clear visibility. Discard and replace any non-conform devices as necessary. Do not use the device with following defects: material deformation, cracks on the product, rust, brittle or other change in the material, etc. Before packaging and sterilization, make sure that these devices have been

	tested and maintained acc. to manufacturer's instruction.
Packaging	Pack the products in an appropriate packaging material for sterilization. The packaging material and system refer to ISO 11607. Make sure that the packaging material is suitable for steam sterilization.
Sterilization	Sterilization of products by applying a fractionated pre-vacuum steam sterilization process (according to EN 285/EN ISO 17665) under consideration of the respective country requirements. Following sterilization parameters are commonly used: 132°C, 4 min or 134°C, 5 min (standard program in EU). Drying time: For steam sterilization, we recommend a drying time of 20 to 40 minutes. Choose a suitable drying time, depending on the autoclave and load. Refer to the autoclave's instructions for use. After Sterilization a. Remove the product from the autoclave. b. Let the product cool down at room temperature for at least 30 minutes. Do not use additional cooling. c. Check that the sterilization wraps or pouches are not damaged.
Storage	Storage of sterilized instruments in a dry, clean and dust free environment at modest temperatures, refer to label and instructions for use.

8. Transportation and storage

- 8.1 The product shall be stored and transported in an environment with temperature ranging from 0°C to 40°C and relative humidity 10 ~ 85 %RH, away from high temperature, high humidity, direct sunlight and extreme temperatures, with intact packaging.
- 8.2 When the package was broken, then it is non-sterilize, must be cleaned, disinfected and sterilized before using.

9. Duration of use

- 9.1 Do not use after the expiration date indicated on the label.

10. Safe disposal of the device

Products shall be disposed according to local regulations for the safe disposal of sharp and contaminated devices.

11. Serious incident reporting

Any serious incident in relation to the product should be reported to the manufacturer and the competent authority according to local regulations.

12. Explanation of related symbols

Symbols	Explanation
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	Medical device
	For Dental Use Only
	Material of the operative part: Nickel Titanium
	Recommended rotation speed
	Recommended torque for use
	Rotary Use
	Batch code
	Non-Sterile
	Single patient multiple use
	Maximum reprocessing cycles times
	Catalogue Number
	Unique device identifier
	Expired Date
	Consult electronic instructions for use
	NB 0197 certified
	Authorized representative in the European Country
	Manufacturer
	Can be sterilized at the specified temperature
6pcs/pack	6pcs per one minimum package

13. WARRANTY AND LIMITED REMEDY / LIMITATION OF LIABILITY

Disclaimer: The instructions for use have been validated by DENCO. Users are solely responsible for any deviation from these instructions, and/or the use of alternative methods for endodontic treatment and/or processing when applicable. Denco accepts no liability for damage, injury, or any legal responsibility incurred directly or indirectly by the user due to a deviation from the instructions for use set forth above. The user shall observe safe and lawful practices including, but not limited to, those set forth in this document.

<Legal manufacturer>



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