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## Super-coarse/sc

	<b>E 368</b> SC 314 021 300 [-]
	<b>E 379</b> SC 314 023 450 [-]
	<b>E 801</b> SC 314 016 450 [-]
	<b>E 801</b> SC 314 018 450 [-]
	<b>E 801</b> SC 314 021 450 [-]
	<b>E 801L</b> SC 314 016 300 [-]
	<b>E 801L</b> SC 314 018 300 [-]
	<b>E 801L</b> SC 314 021 300 [-]
	<b>E 836</b> SC 314 014 450 [SF-21C]
	<b>E 837</b> SC 314 012 450 [SF-11C]
	<b>E 837</b> SC 314 014 450 [SF-12SC]
	<b>E 837</b> SC 314 016 450 [SF-13SC]
	<b>E KS2</b> SC 314 014 450 [-]
	<b>E 862</b> SC 314 012 450 [-]
	<b>E 862</b> SC 314 014 450 [FO-22SC]
	<b>E 863</b> SC 314 014 300 [-]

## Coarse/FG

	<b>E 368</b> C 314 023 300 [-]
	<b>E 379</b> C 314 023 450 [-]
	<b>E 801</b> C 314 010 450 [BR-45C]
	<b>E 801</b> C 314 012 450 [BR-46C]
	<b>E 801</b> C 314 014 450 [-]
	<b>E 801L</b> C 314 018 300 [-]
	<b>E 801L</b> C 314 021 300 [-]
	<b>E 805</b> C 314 012 450 [SI-46C]
	<b>E 805</b> C 314 014 450 [SI-47C]
	<b>E 805</b> C 314 016 450 [SI-48C]
	<b>E 835</b> C 314 016 450 [-]

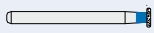
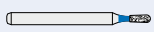
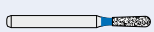
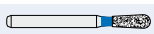
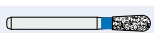










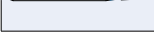

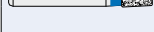
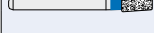

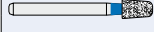


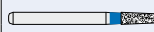
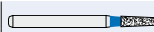
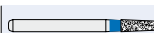


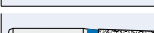
## Coarse/FG





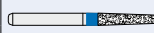
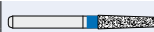


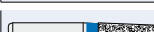










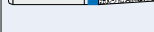
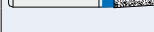
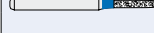
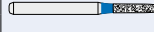

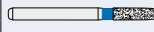


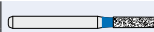

	<b>E 836</b> C 314 014 450 [-]
	<b>E 836</b> C 314 018 450 [SF-21C]
	<b>E 837</b> C 314 012 450 [SF-11C]
	<b>E 837</b> C 314 014 450 [SF-12C]
	<b>E 837</b> C 314 018 300 [-]
	<b>E 847</b> C 314 014 450 [-]
	<b>E 847</b> C 314 016 450 [-]
	<b>E 847KR</b> C 314 014 450 [-]
	<b>E 847KR</b> C 314 016 450 [-]
	<b>E 847KR</b> C 314 018 450 [-]
	<b>E 848</b> C 314 018 300 [TF-13C]
	<b>E 850</b> C 314 014 300 [-]
	<b>E 850</b> C 314 016 300 [TR-25C]
	<b>E 850</b> C 314 018 300 [TR-26C]
	<b>E 855</b> C 314 018 300 [TR-62C]
	<b>E 856</b> C 314 012 300 [-]
	<b>E 856</b> C 314 014 450 [-]
	<b>E 856</b> C 314 016 450 [-]
	<b>E 856</b> C 314 018 300 [-]
	<b>E 856</b> C 314 025 160 [-]
	<b>E 856L</b> C 314 016 300 [-]
	<b>E 856L</b> C 314 018 450 [TR-13C]
	<b>E 858</b> C 314 014 300 [TC-21C]
	<b>E 859</b> C 314 014 300 [-]
	<b>E 859</b> C 314 016 300 [TC-11C]
	<b>E 862</b> C 314 016 450 [FO-22C]
	<b>E 878</b> C 314 012 300 [-]
	<b>E 881</b> C 314 014 450 [SR-12C]
	<b>E 881</b> C 314 018 300 [-]


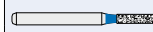
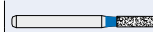
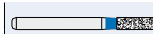

## Standard/FG

	<b>E 368</b> M 314 018 450 [FO-32]
	<b>E 368</b> M 314 028 160 [FO-25]
	<b>E 368</b> M 314 032 160 [FO-27]
	<b>E 379</b> M 314 023 450 [-]
	<b>E 801</b> M 314 008 450 [BR-49]
	<b>E 801</b> M 314 010 450 [BR-45]
	<b>E 801</b> M 314 012 450 [BR-46]
	<b>E 801</b> M 314 014 450 [BR-41]
	<b>E 801</b> M 314 018 450 [BR-31]
	<b>E 801</b> M 314 023 450 [-]
	<b>E 801L</b> M 314 016 300 [-]
	<b>E 801L</b> M 314 018 300 [-]
	<b>E 801L</b> M 314 021 300 [-]
	<b>E 802</b> M 314 012 450 [BC-43]
	<b>E 802</b> M 314 014 450 [BC-42]
	<b>E 802</b> M 314 018 450 [BC-31]
	<b>E 802L</b> M 314 016 450 [BC-32]
	<b>E 805</b> M 314 012 450 [SI-46]
	<b>E 805</b> M 314 014 450 [SI-47]
	<b>E 805</b> M 314 016 450 [SI-48]
	<b>E 806</b> M 314 010 450 [DI-41]
	<b>E 806</b> M 314 014 450 [DI-42]
	<b>E 811</b> M 314 032 160 [EX-11]
	<b>E 811</b> M 314 035 160 [EX-12]


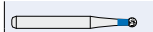



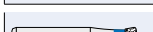
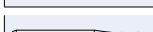








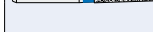
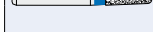



# Standard/FG

	<b>E 818</b> M 314 025 300 [WF-30]
	<b>E 830R</b> M 314 010 450 [EX-41]
	<b>E 830RL</b> M 314 014 450 [EX-31]
	<b>E 830RL</b> M 314 018 450 [EX-20]
	<b>E 830RL</b> M 314 021 300 [EX-21]
	<b>E 830RLA</b> M 314 032 160 [EX-26]
	<b>E 835</b> M 314 010 450 [SF-41]
	<b>E 835</b> M 314 013 450 [SF-31]
	<b>E 836</b> M 314 014 450 [SF-21]
	<b>E 837</b> M 314 012 450 [SF-11]
	<b>E 837</b> M 314 014 450 [SF-12]
	<b>E 837</b> M 314 016 450 [SF-13]
	<b>E 845</b> M 314 010 450 [TF-41]
	<b>E 845</b> M 314 012 450 [TF-42]
	<b>E 845</b> M 314 014 450 [TF-43]
	<b>E 845</b> M 314 016 450 [TF-31]
	<b>E 845</b> M 314 018 450 [TF-23]
	<b>E 845</b> M 314 021 300 [TF-22]
	<b>E 845KR</b> M 314 018 450 [EX-38]
	<b>E 845KR</b> M 314 025 450 [EX-38]
	<b>E 846</b> M 314 010 450 [-]
	<b>E 846</b> M 314 014 450 [TF-20]
	<b>E 846</b> M 314 016 450 [TF-21]
	<b>E 846A</b> M 314 014 450 [-]
	<b>E 846A</b> M 314 016 450 [-]
	<b>E 847</b> M 314 018 450 [EX-29]
	<b>E 848</b> M 314 012 300 [-]
	<b>E 848</b> M 314 014 300 [TF-11]
	<b>E 848</b> M 314 016 300 [TF-12]





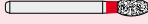
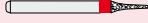


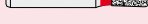




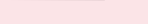



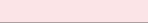









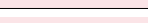

	<b>E 848</b> M 314 018 300 [TF-13]
	<b>E 848</b> M 314 023 300 [TF-14]
	<b>E 850</b> M 314 012 300 [-]
	<b>E 850</b> M 314 014 300 [-]
	<b>E 850</b> M 314 016 300 [TR-25]
	<b>E 850</b> M 314 018 300 [TR-26]
	<b>E 850</b> M 314 021 300 [TR-15]
	<b>E 850</b> M 314 023 300 [TR-19]
	<b>E 850A</b> M 314 016 160 [TR-12]
	<b>E 850S</b> M 314 016 300 [TR-11]
	<b>E 852</b> M 314 012 450 [TC-26]
	<b>E 855</b> M 314 014 450 [TR-20]
	<b>E 855</b> M 314 016 450 [TR-21]
	<b>E 855</b> M 314 018 450 [TR-24]
	<b>E 856</b> M 314 018 450 [-]
	<b>E 856</b> M 314 021 300 [TR-14]
	<b>E 856L</b> M 314 018 160 [TR-13]
	<b>E 858</b> M 314 014 300 [TC-21]
	<b>E 859</b> M 314 016 300 [TC-11]
	<b>E 859</b> M 314 018 300 [TC-16]
	<b>E 862</b> M 314 010 450 [-]
	<b>E 862</b> M 314 012 450 [-]
	<b>E 862</b> M 314 014 450 [FO-21]
	<b>E 862</b> M 314 016 450 [FO-22]
	<b>E 863</b> M 314 012 300 [FO-11]
	<b>E 877</b> M 314 012 450 [SO-20]
	<b>E 878</b> M 314 014 450 [SO-21]
	<b>E 878K</b> M 314 014 450 [-]
	<b>E 878K</b> M 314 016 450 [-]






	<b>E 878K</b> M 314 018 450 [-]
	<b>E 881</b> M 314 012 450 [SR-11]
	<b>E 881</b> M 314 014 450 [SR-12]
	<b>E 881</b> M 314 016 450 [SR-13]
	<b>E 909</b> M 314 042 160 [WR-13]

# Standard/FGSS - short



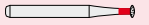
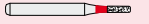



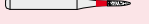

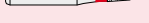
	<b>E 801</b> M 313 010 450 [BR-S45]
	<b>E 801</b> M 313 012 450 [BR-S46]
	<b>E 802</b> M 313 012 450 [BC-S43]
	<b>E 802</b> M 313 014 450 [BC-S42]
	<b>E 805</b> M 313 012 450 [SI-S46]
	<b>E 805</b> M 313 016 450 [SI-S48]
	<b>E 806</b> M 313 010 450 [DI-S41]
	<b>E 835</b> M 313 010 450 [SF-S41]
	<b>E 845</b> M 313 010 450 [TF-S41]
	<b>E 845</b> M 313 016 450 [TF-S31]
	<b>E 845</b> M 313 018 450 [TF-S23]
	<b>E 845</b> M 313 021 300 [TF-S22]
	<b>E 846</b> M 313 014 450 [TF-S20]
	<b>E 846</b> M 313 016 450 [TF-S21]
	<b>E 848</b> M 313 016 300 [TF-S12]
	<b>E 855</b> M 313 016 450 [TR-S21]
	<b>E 856</b> M 313 018 450 [TR-S13]
	<b>E 858</b> M 313 014 300 [TC-S21]
	<b>E 862</b> M 313 014 450 [FO-S21]
	<b>E 877</b> M 313 012 450 [SO-S20]

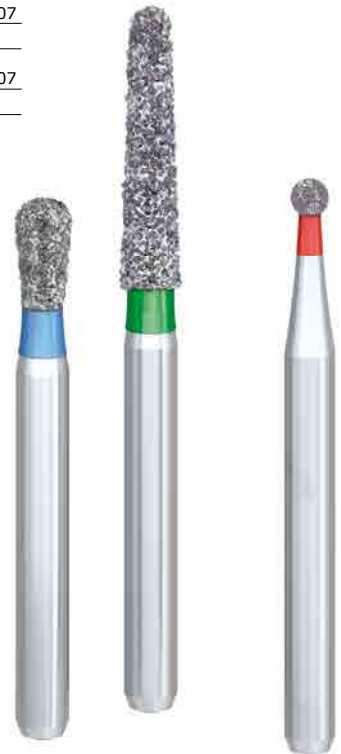
# Fine/FG

	<b>E 368</b> F 314 016 450 [FO-30F]
	<b>E 368</b> F 314 018 450 [FO-32F]
	<b>E 379</b> F 314 014 450 [-]
	<b>E 379</b> F 314 018 450 [-]
	<b>E 379</b> F 314 023 450 [-]
	<b>E 392</b> F 314 016 450 [-]
	<b>E 801</b> F 314 006 450 [BR-48F]
	<b>E 825</b> F 314 016 450 [WR-31F]
	<b>E 830RL</b> F 314 014 450 [EX-31F]
	<b>E 830RL</b> F 314 021 300 [EX-21F]
	<b>E 835KR</b> F 314 008 450 [CD-62F]
	<b>E 837</b> F 314 014 450 [CE-11F]
	<b>E 838</b> F 314 007 450 [CD-60F]
	<b>E 838L</b> F 314 007 450 [CD-61F]
	<b>E 839</b> F 314 012 300 [EX-18F]
	<b>E 846</b> F 314 016 450 [TF-21F]
	<b>E 848</b> F 314 016 300 [TF-12F]
	<b>E 848</b> F 314 023 300 [CE-10F]
	<b>E 849</b> F 314 015 450 [CR-12F]
	<b>E 849</b> F 314 020 300 [CR-11F]
	<b>E 850</b> F 314 016 300 [TR-25F]
	<b>E 850</b> F 314 018 300 [TR-26F]
	<b>E 850S</b> F 314 016 300 [TR-11F]
	<b>E 855</b> F 314 012 450 [CR-21F]
	<b>E 855</b> F 314 016 450 [TR-21F]
	<b>E 856</b> F 314 018 450 [TR-13F]
	<b>E 856</b> F 314 021 300 [PRO-1F]
	<b>E 856L</b> F 314 014 450 [-]
	<b>E 858</b> F 314 014 300 [TC-21F]



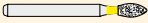



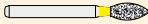

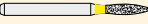





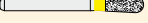

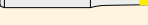

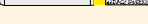

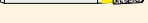





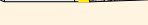



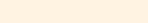

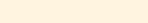

	<b>E 859</b> F 314 016 300 [TC-11F]
	<b>E 862</b> F 314 012 450 [-]
	<b>E 862</b> F 314 014 450 [FO-21F]
	<b>E 862</b> F 314 016 450 [FO-22F]
	<b>E 878</b> F 314 012 300 [CR-22F]









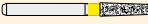



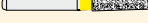

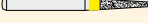

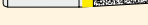

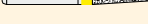





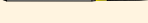

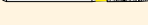



# Fine/FGSS - short

	<b>E 379</b> F 313 009 450 [CD-55F]
	<b>E 801</b> F 313 006 450 [CD-50F]
	<b>E 825</b> F 313 016 450 [WR-531F]
	<b>E 835KR</b> F 313 008 450 [CD-58F]
	<b>E 838</b> F 313 007 450 [CD-51F]
	<b>E 838L</b> F 313 007 450 [CD-52F]
	<b>E 860</b> F 313 006 450 [CD-54F]
	<b>E 860</b> F 313 007 450 [CD-56F]
	<b>E 860L</b> F 313 007 450 [CD-57F]
	<b>E 955</b> F 313 007 450 [CD-53F]





## Extra Fine/FG




	 <b>E 368</b> EF 314 016 450 [FO-30EF]
	 <b>E 368</b> EF 314 018 450 [-]
	 <b>E 368</b> EF 314 021 300 [-]
	 <b>E 368</b> EF 314 023 300 [-]
	 <b>E 368LS</b> EF 314 014 450 [FO-20EF]
	 <b>E 379</b> EF 314 014 450 [-]
	 <b>E 801</b> EF 314 014 450 [BR-40EF]
	 <b>E 830RL</b> EF 314 021 300 [EX-21EF]
	 <b>E 832</b> EF 314 010 300 [FO-40EF]
	 <b>E 837</b> EF 314 014 450 [CE-11EF]
	 <b>E 845KR</b> EF 314 018 450 [EX-38EF]
	 <b>E 846</b> EF 314 016 450 [TF-21EF]
	 <b>E 847</b> EF 314 018 450 [EX-29EF]
	 <b>E 848</b> EF 314 016 300 [TF-12EF]
	 <b>E 848</b> EF 314 023 300 [CE-10EF]
	 <b>E 849</b> EF 314 015 450 [CR-12EF]
	 <b>E 849</b> EF 314 020 300 [CR-11EF]

	 <b>E 850</b> EF 314 016 300 [TR-25EF]
	 <b>E 850</b> EF 314 018 300 [TR-26EF]
	 <b>E 850S</b> EF 314 016 300 [TR-11EF]
	 <b>E 855</b> EF 314 016 450 [TR-21EF]
	 <b>E 856</b> EF 314 018 450 [-]
	 <b>E 856</b> EF 314 021 300 [PRO-1EF]
	 <b>E 856L</b> EF 314 018 160 [TR-13EF]
	 <b>E 858</b> EF 314 014 300 [TC-21EF]
	 <b>E 859</b> EF 314 014 300 [-]
	 <b>E 859</b> EF 314 016 300 [TC-11EF]
	 <b>E 862</b> EF 314 010 450 [-]
	 <b>E 862</b> EF 314 012 300 [FO-42EF]
	 <b>E 862</b> EF 314 014 450 [FO-21EF]
	 <b>E 862</b> EF 314 016 450 [FO-22EF]
	 <b>E 863</b> EF 314 012 300 [FO-11EF]

## Extra Fine/FGSS - short

	 <b>E 862</b> EF 313 012 450 [FO-41EF]
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Maximum speed:  = 450.000 rpm |  = 300.000 rpm |  = 160.000 rpm

**eco**   
ecoline

## General instructions for use and safety recommendations for the application of rotary dental instruments.

Rotary instruments for use in the dental sector are to be used only by doctors or other experts who are experienced in the safe handling of these instruments. **Area of application:** These general instructions for use and safety recommendations apply to all products and are to be generally observed.

### 1. Proper use

- Make sure that only technically and hygienically perfect and cleaned turbines are used.
- Chuck the instruments as deeply as possible.
- The instrument must be rotating before contact is made with the tooth.
- Avoid jamming and using the instrument as a lever as this leads to an increased risk of breakage.
- Wear safety glasses as required.
- Avoid unprotected contact with the instruments (use protective gloves).
- Thermal damage caused by rotary instruments has to be avoided in any case (work at recommended speed and use sufficient water cooling).
- Coarse and super coarse grit diamond instruments may lead to increased thermal stress. Therefore, when using such products, use sufficient water cooling (at least 50 ml/min) and work at minimal contact pressure. To achieve an optimum surface quality, subsequent finishing is necessary.
- Preferably use instruments with rounded edges as the preparation of sharp-edged undercuts may lead to an increased risk of a damaging notch effect. Improper use leads to increased risk and inferior results. Therefore, stick to the application and speed recommendations indicated on the labels and in our instructions for use.

### 2. Recommended speeds

**The general rule is:** – The larger the working part, the lower the speed – Maximum speed 450 000 rpm means: Suited for micromotor handpieces and turbines with stableball bearings. Not recommended for old turbines with air bearing. Not observing the maximum permissible speed leads to an increased safety risk.

### 3. Contact pressure

Excessive contact pressure (> 2N) has to be avoided. Increased contact pressure may lead to stripping of the grit on abrasive instruments or to clogging of the instruments and increased heat generation. **Increased contact pressure may also lead to thermal damage to the pulp. In extreme cases, instrument breakage may even occur.**

### 4. Elimination of worn instruments

Blank spots on the surface of diamond instruments are an indication of abrasive grit wear and reduced cutting efficiency. These deficiencies lead to excessive temperature and finally pulp damage. Therefore, bent or "out of true" instruments must be eliminated immediately.

**Very important: Blunt and damaged instruments lead to applying higher contact pressure which may result in an increased operating temperature. This may lead to thermal pulp damage. Damaged instruments therefore have to be discarded immediately.**

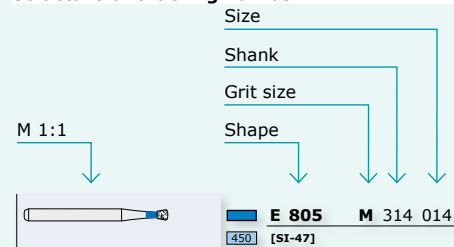
### 5. Sterilization procedure

- Prior to the first use on the patient and immediately after each use, all rotary instruments have to be (re)processed.
- Wear puncture resistant utility gloves when handling contaminated instruments.
- Pre-soak instruments immediately after use to loosen debris.
- For cleaning we recommend to use automated cleaning equipment (e.g. ultrasonic cleaner or washerdisinfector).
- Burs should be separated from each other in a bur block to prevent damage during immersion.
- Brush away remaining debris with a metal cleaning brush and rinse instruments under running water.
- Dry burs (e.g. by airblasting) to avoid corrosion.
- Sterilization of the instruments is carried out using the known methods with autoclave. Minimum hold times: for 90 minutes at 121°C or for 4 minutes at 134°C. Times are hold times, running times are longer and may vary from unit to unit. The instructions provided by the device manufacturer have to be observed.
- After sterilization, check instruments for defects on the surface (corrosion). Corroded instruments must not be used any longer.
- The operator of medical products is responsible for seeing that proper treatment is carried out by qualified staff using the appropriate materials and suited equipment.

### 6. Specific instructions for individual instrument types Diamond

- Coarse and super coarse grit diamond instruments may lead to increased thermal stress. Therefore, when using such products, use sufficient water cooling (at least 50 ml/min) and work at minimal contact pressure. To achieve an optimum surface roughness, subsequent finishing is necessary.

## Structure of ordering number:



## Maximum speed:

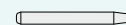
[450] = 450.000 rpm  
[300] = 300.000 rpm  
[160] = 160.000 rpm

## Shank types:

**Shank 313** = FG short



**Shank 314** = FG normal



## Diamond grit sizes:

	<b>extra-fine</b>	<b>EF</b>	25 µm
	<b>fine</b>	<b>F</b>	46 µm
	<b>medium</b>	<b>M</b>	107 µm
	<b>coarse</b>	<b>C</b>	151 µm
	<b>super-coarse</b>	<b>SC</b>	181 µm

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