

DRILLING PROTOCOL FOR ROOTT **K** IMPLANTS

CAVITY PREPARATION

Every person has a unique bone structure and the clinician has to adapt the drilling protocol to the individual bone quality and anatomical situation. Our drilling protocol is an optimal scheme for different types of bones: D1-D2, D2-D3-D4.

**IMPORTANT!
WHEN PREPARING THE CAVITY FOR
THE IMPLANT, ALWAYS ENSURE COOLING.
USE ONLY SHARP INSTRUMENTS.**

DRILLING SPEED

Recommended drilling speed:

- initial drilling – 1200–1500 Rpm;
- pilot drilling – 900–1200 Rpm;
- form drilling – 200–800 Rpm.

Implantologist is responsible of drilling speed choice, taking into consideration his experience, preferences and special necessities of the patient.

Important notice: this protocol was prepared with a max speed of 700 rpm, with insertion torque for implants is from 35 to 50 Ncm.

IMPLANT POSITION

The length of the implant thread + implant's neck. Placing the implant to the bone till the end-point of the implant neck leaving only abutment over the bone.

Note, that drilling depth should go 3.0 mm deeper than \varnothing 3.0-4.5 implant thread length and 1.5 mm deeper than \varnothing 5.0-8.5 implant thread length.



ROOTT **K** implants installation using tapered drills

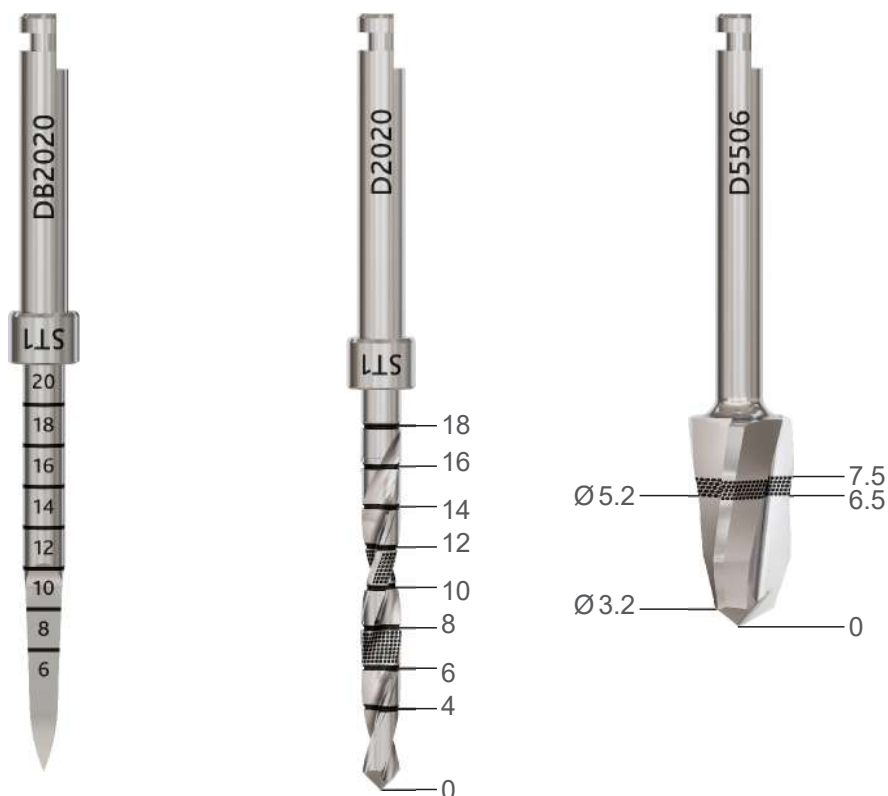
DRILLS

Lance drill DB2020 can be used for initial drilling by setting the drilling axis before using pilot drill D2020.

Drill with tapered drills to the appropriate depth, required for a specific case.

If after using the previous drill the torque is still more than 50 Ncm while inserting the implant, the cavity has to be widened. Just widen the osteotomy with drill D5506.

All drills have laser marking, which indicates drill's depth in the bone. Markings are lasered every 2 millimetres, pilot drill from 4 to 18 mm, tapered drills from 4 to 16 mm.



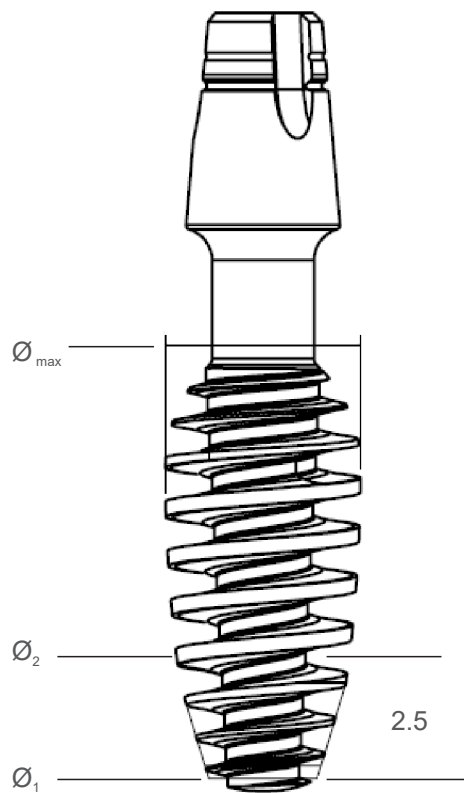
Tapered drills have V-shaped tips, for better correlation with the implant, 3 cutting edges offer good stability. The tapered shape reduces frictional heating. Variable helix for enhanced drilling control and twisted flute for bone extraction. Angled back cutting edge allows compressing of bone when drilling in counter-clock wise (reverse).



NOTE
For the best result it is recommended to use a smaller diameter drill and try inserting the implant.

IMPLANTS



















ROOTT K implants have different step compressive threads. From implant's maximal diameter, diameter of wider body threads and diameter of the second thread depends drilling protocols.



\varnothing_1 - diameter of the second thread, mm
 \varnothing_2 - diameter of the wider body thread, mm
 \varnothing_{max} - maximal diameter, mm

| \varnothing / L | 6 mm | 8 mm | 10 mm | 12 mm | 14 mm | 16 mm | 18 mm | 20 mm |
|-------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| $\varnothing 3.0$ | C3006k 3.0 2.1 2.9 | C3008k 3.0 2.1 2.8 | C3010k 3.0 2.1 2.7 | C3012k 3.0 2.1 2.7 | C3014k 3.0 2.1 2.7 | C3016k 3.0 2.1 2.6 | C3018k 3.0 2.1 2.6 | C3020k 3.0 2.1 2.6 |
| $\varnothing 3.5$ | C3506k 3.5 2.1 3.4 | C3508k 3.5 2.1 3.1 | C3510k 3.5 2.1 3.0 | C3512k 3.5 2.1 2.9 | C3514k 3.5 2.1 2.8 | C3516k 3.5 2.1 2.8 | C3518k 3.5 2.1 2.7 | C3520k 3.5 2.1 2.7 |
| $\varnothing 4.0$ | C4006k 4.0 2.7 3.9 | C4008k 4.0 2.7 3.7 | C4010k 4.0 2.7 3.6 | C4012k 4.0 2.7 3.5 | C4014k 4.0 2.7 3.4 | C4016k 4.0 2.7 3.4 | C4018k 4.0 2.7 3.4 | C4020k 4.0 2.7 3.4 |
| $\varnothing 4.5$ | C4506k 4.5 2.7 4.4 | C4508k 4.5 2.7 4.0 | C4510k 4.5 2.7 3.8 | C4512k 4.5 2.7 3.7 | C4514k 4.5 2.7 3.6 | C4516k 4.5 2.7 3.5 | C4518k 4.5 2.7 3.5 | C4520k 4.5 2.7 3.5 |



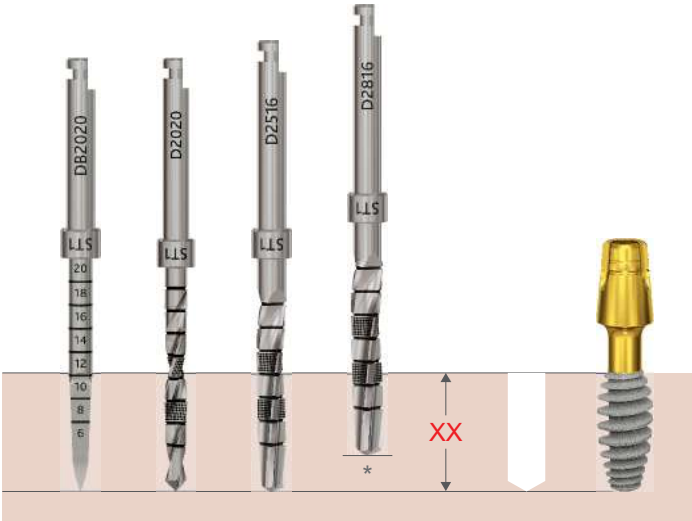
| \varnothing / L | 4 mm | 6 mm | 8 mm | 10 mm | 12 mm | 14 mm |
|-------------------|--|--|--|--|--|--|
| $\varnothing 5.0$ | C5004k 5.0 3.0 4.7  | C5006k 5.0 3.0 4.8  | C5008k 5.0 3.0 4.5  | C5010k 5.0 3.0 4.3  | C5012k 5.0 3.0 4.1  | C5014k 5.0 3.0 4.0  |
| $\varnothing 5.5$ | C5504k 5.5 3.0 5.1  | C5506k 5.5 3.0 5.3  | C5508k 5.5 3.0 4.8  | C5510k 5.5 3.0 4.5  | C5512k 5.5 3.0 4.3  | C5514k 5.5 3.0 4.0  |
| $\varnothing 6.5$ | C6504k 6.5 3.6 6.1  | C6506k 6.5 3.6 6.3  | C6508k 6.5 3.6 5.9  | C6510k 6.5 3.6 5.6  | C6512k 6.5 3.6 5.5  | C6514k 6.5 3.6 5.4  |
| $\varnothing 7.5$ | C7504k 7.5 3.7 7.0  | C7506k 7.5 3.7 7.2  | C7508k 7.5 6.6  | C7510k 7.5 6.1  | C7512k 7.5 3.7 5.9  | C7514k 7.5 3.7 5.7  |
| $\varnothing 8.5$ | C8504k 8.5 3.8 7.8  | C8506k 8.5 3.8 8.2  | C8508k 8.5 3.8 7.3  | C8510k 8.5 3.8 6.7  | C8512k 8.5 3.8 6.3  | C8514k 8.5 3.8 6.1  |



All drilling protocols have the same steps, the difference is how many drills are needed. Full drilling protocols can be found in ANNEX 1

IMPLANTS C35XXk

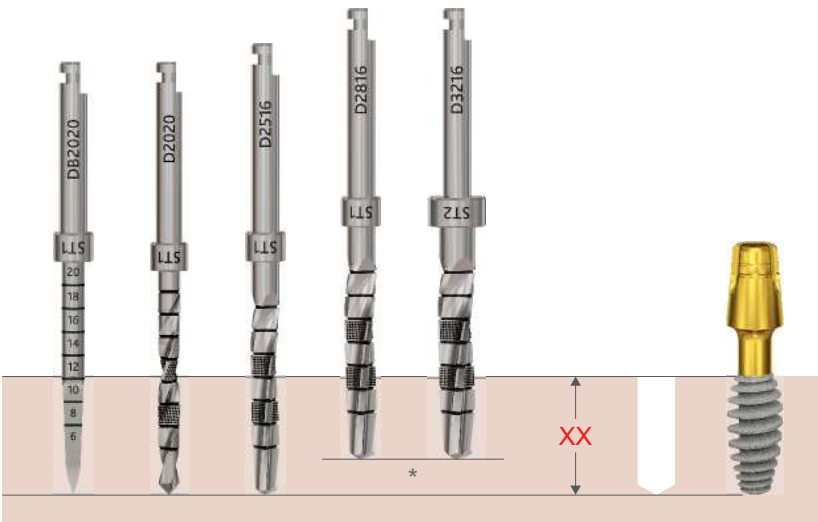
D2-D3-D4 BONE



DB2020 D2020 D2516 D2816 C35XXk

*C3506k-C3516k - xx-2 mm, C3518k, C3520k - xx mm

D1-D2 BONE



DB2020 D2020 D2516 D2816 D3216 C35XXk

*C3506k-C3516k - xx-2 mm, C3518k, C3520k - xx mm

Here xx is the length of the implant, mm

All drilling protocols have the same steps, the difference is how many drills are needed. Full drilling protocols can be found in ANNEX 1

IMPLANTS C50XXk

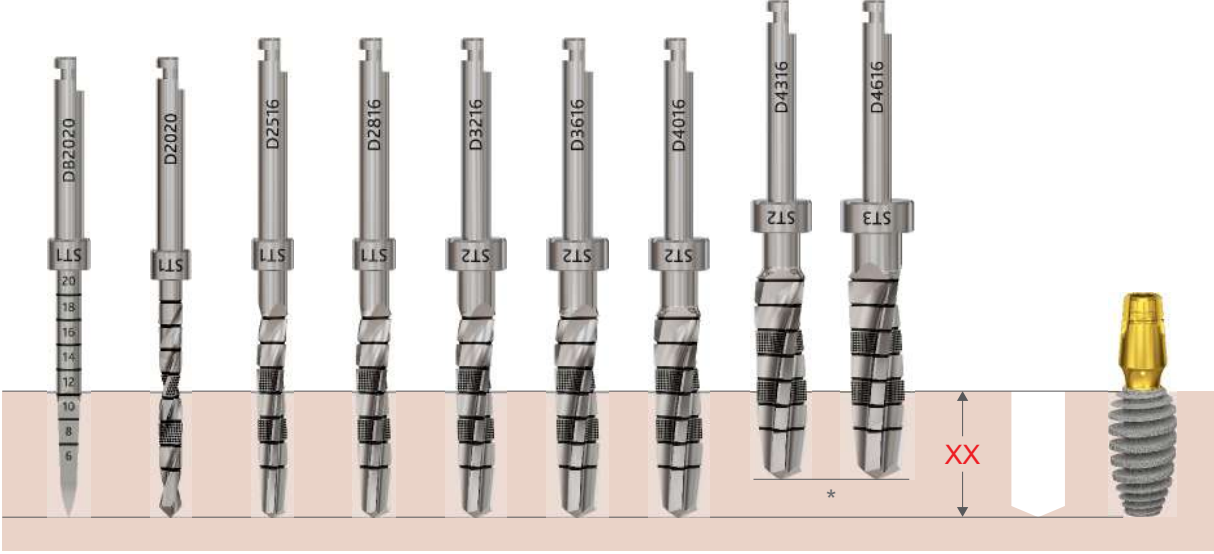
D2-D3-D4 BONE



DB2020 D2020 D2516 D2816 D3216 D3616 D4016 D4316 C50XXk

*C5004k - xx mm, C5006k - C5014k - xx-2 mm

D1-D2 BONE



DB2020 D2020 D2516 D2816 D3216 D3616 D4016 D4316 D4616 C50XXk

*C5004k - xx mm, C5006k - C5014k - xx-2 mm

Here xx is the length of the implant, mm

ROOTT **K** implants installation using tapered drills

| Implant | D1-D2 BONE | D2-D3-D4 BONE | * meaning |
|---------------|--|--|---|
| C30XXk | DB2020 D2020 D2516 D2816* | DB2020 D2020 D2516 | For C3006k-C3016k - * means xx-2 mm, For C3018k, C3020k - * means xx |
| C35XXk | DB2020 D2020 D2516 D2816* D3216* | DB2020 D2020 D2516 D2816* | For C3506k-C3516k - * means xx-2 mm, For C3518k, C3520k - * means xx |
| C40XXk | DB2020 D2020 D2516 D2816 D3216 D3616* | DB2020 D2020 D2516 D2816 D3216* | For C4006k-C4016k - * means xx-2 mm, For C4018k, C4020k - * means xx |
| C45XXk | DB2020 D2020 D2516 D2816 D3216 D3616* D4016* D4316* | DB2020 D2020 D2516 D2816 D3216 D3616* D4016* | For C4506k-C4516k - * means xx-2 mm, For C4518k, C4520k - * means xx |
| C50XXk | DB2020 D2020 D2516 D2816 D3216 D3616 D4016 D4316* D4616* | DB2020 D2020 D2516 D2816 D3216 D3616 D4016 D4316* | For C5004k - * means xx, For C5006k-C5014k - * means xx-2 mm |

ROOTT **K** implants installation using tapered drills

| Implant | D1-D2 BONE | D2-D3-D4 BONE | * meaning |
|---------------|------------|---------------|---|
| C55XXk | DB2020 | DB2020 | For C5504k - * means xx, For C5506k-C5514k - * means xx-2 mm |
| | D2020 | D2020 | |
| | D2516 | D2516 | |
| | D2816 | D2816 | |
| | D3216 | D3216 | |
| | D3616 | D3616 | |
| | D4016 | D4016 | |
| | D4316* | D4316* | |
| | D4616* | D4616* | |
| | D5016* | D5016* | |
| D5316* | D5316* | | |
| C65XXk | | DB2020 | For C6504k - * means xx, For C6506k-C6514k - * means xx-2 mm |
| | | D2020 | |
| | | D2516 | |
| | | D2816 | |
| | | D3216 | |
| | | D3616 | |
| | | D4016 | |
| | | D4316 | |
| | | D4616* | |
| | | D5016* | |
| D5316* | | | |
| C75XXk | | DB2020 | For C7504k - * means xx, For C7506k-C7514k - * means xx-2 mm |
| | | D2020 | |
| | | D2516 | |
| | | D2816 | |
| | | D3216 | |
| | | D3616 | |
| | | D4016 | |
| | | D4316 | |
| | | D4616* | |
| | | D5016* | |
| D5316* | | | |
| C85XXk | | DB2020 | For C8504k - * means xx, For C8506k-C8514k - * means xx-2 mm |
| | | D2020 | |
| | | D2516 | |
| | | D2816 | |
| | | D3216 | |
| | | D3616 | |
| | | D4016 | |
| | | D4316 | |
| | | D4616* | |
| | | D5016* | |
| D5316* | | | |