ROOTT
open implant system

ROOTFORM

DRILLING PROTOCOL FOR ROOTFORM 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: soft, medium and hard / very hard.

PREPARING A CAVITY FOR IMPLANT, ALWAYS ENSURE COOLING

ONLY USE SHARP INSTRUMENTS

DRILLING SPEED

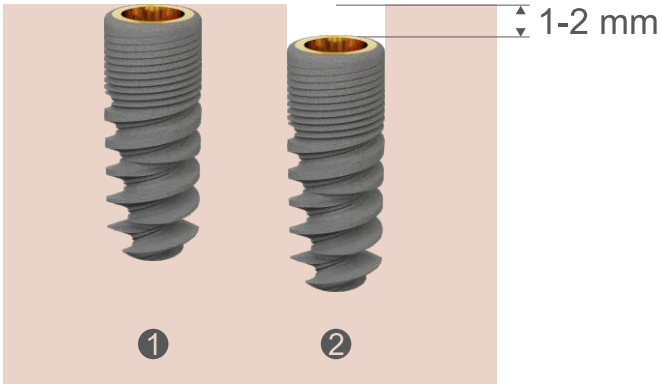
Recommended drilling speed:
- initiating drilling – 1200–1500 Rpm;
- pilot drilling – 900–1200 Rpm;
- form drilling – 200–800 Rpm.

The choice of the turning speed is the responsibility of the implantologist, regarding his own experiences, preferences and special necessities of the patient. (This protocol was prepared with a max speed of 700 Rpm).

Insertion torque for implants is 35-50 Ncm (using Torque wrench TW50).

IMPLANTS POSITION

There are two options for implants position:
1. crestal implant position;
2. subcrestal implant position – implant can be placed 1-2 mm deeper to help bone grow over implant. Drilling should go 1-2 mm deeper than implant length.



DRILLS TYPES

There are two options what types of drills can be used for cavity preparation of ROOTFORM type implants:
- using ROOTT universal drills;
- using ROOTT universal drills and form drills for ROOTFORM implants.

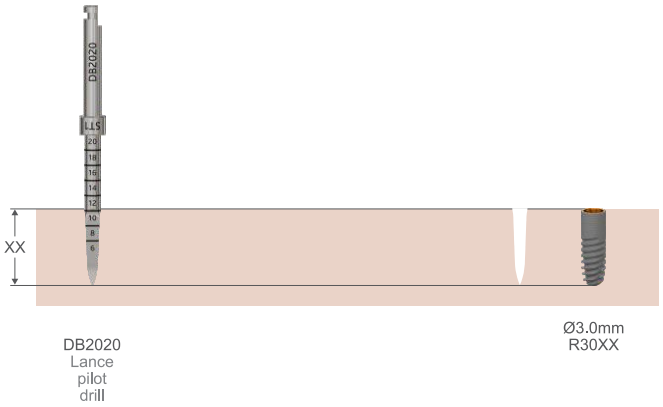
NOTE - We recommend to use drills in a row, without skipping any of them, to avoid incorrect size of hole.

ROOTFORM implants installation using ROOTT universal drills

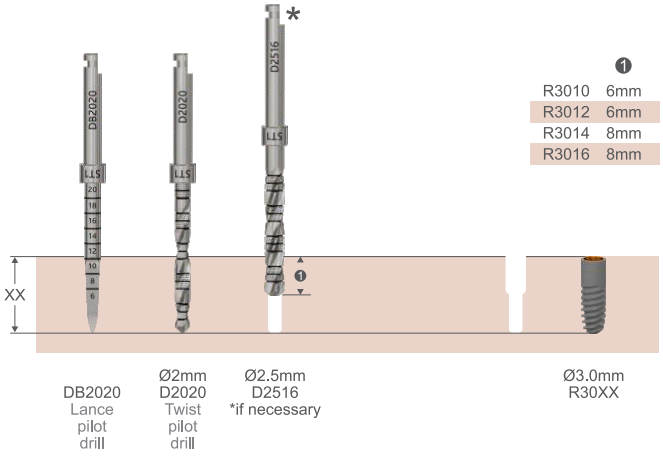
ROOTFORM implants sizes from R3010 to R4206 are “U” shape

IMPLANT **R30XX**

SOFT BONE

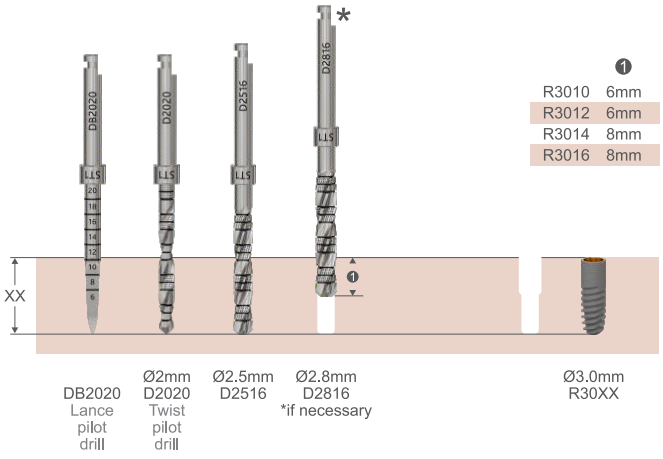


MEDIUM BONE



❶	
R3010	6mm
R3012	6mm
R3014	8mm
R3016	8mm

HARD BONE

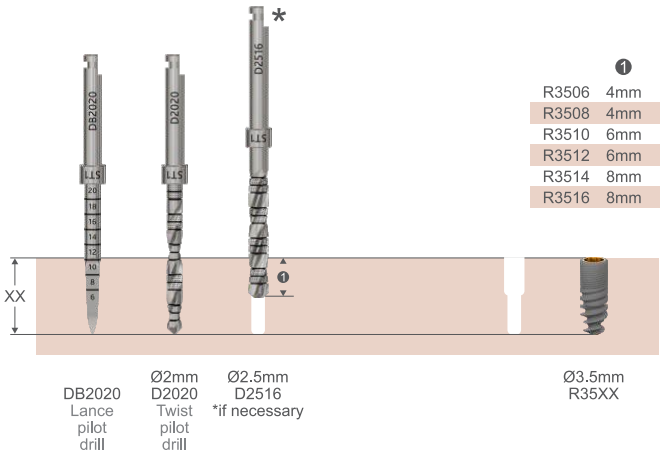


❶	
R3010	6mm
R3012	6mm
R3014	8mm
R3016	8mm

Here xx is the length of the implant, mm

IMPLANT **R35XX**

SOFT BONE



R3506	4mm
R3508	4mm
R3510	6mm
R3512	6mm
R3514	8mm
R3516	8mm

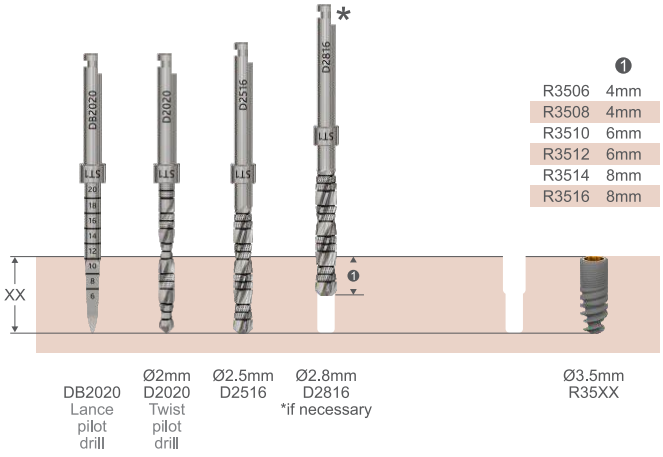
DB2020 Lance pilot drill

Ø2mm D2020 Twist pilot drill

Ø2.5mm D2516 *if necessary

Ø3.5mm R35XX

MEDIUM BONE



R3506	4mm
R3508	4mm
R3510	6mm
R3512	6mm
R3514	8mm
R3516	8mm

DB2020 Lance pilot drill

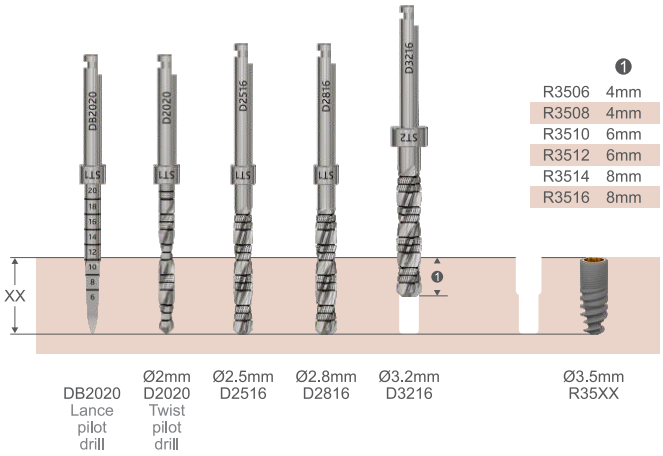
Ø2mm D2020 Twist pilot drill

Ø2.5mm D2516

Ø2.8mm D2816 *if necessary

Ø3.5mm R35XX

HARD BONE



R3506	4mm
R3508	4mm
R3510	6mm
R3512	6mm
R3514	8mm
R3516	8mm

DB2020 Lance pilot drill

Ø2mm D2020 Twist pilot drill

Ø2.5mm D2516

Ø2.8mm D2816

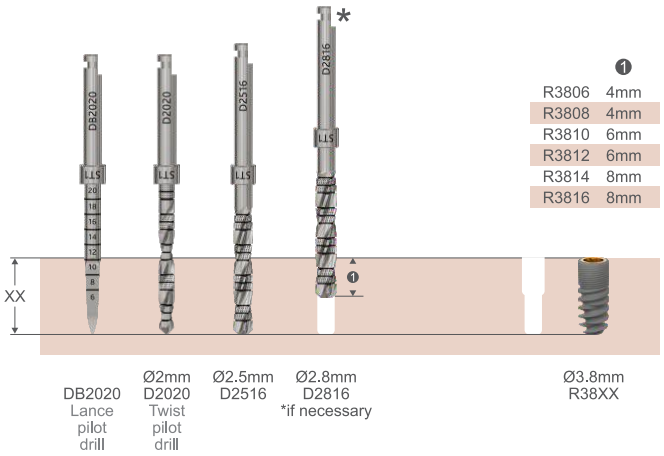
Ø3.2mm D3216

Ø3.5mm R35XX

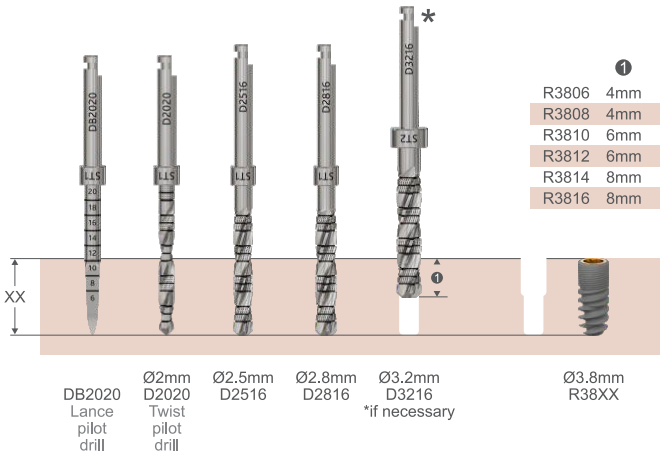
Here xx is the length of the implant, mm

IMPLANT **R38XX**

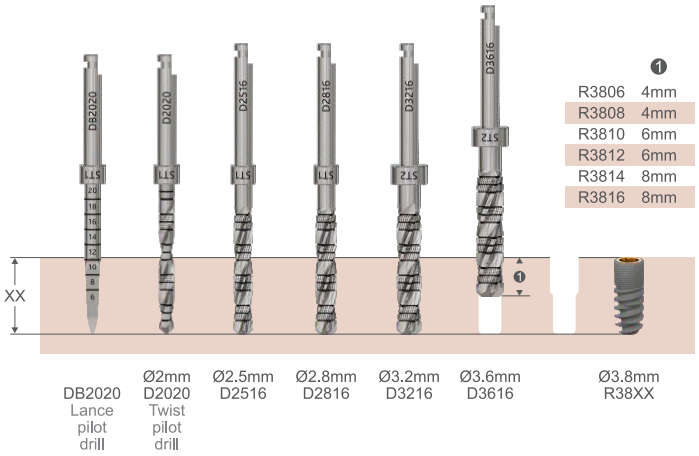
SOFT BONE



MEDIUM BONE



HARD BONE

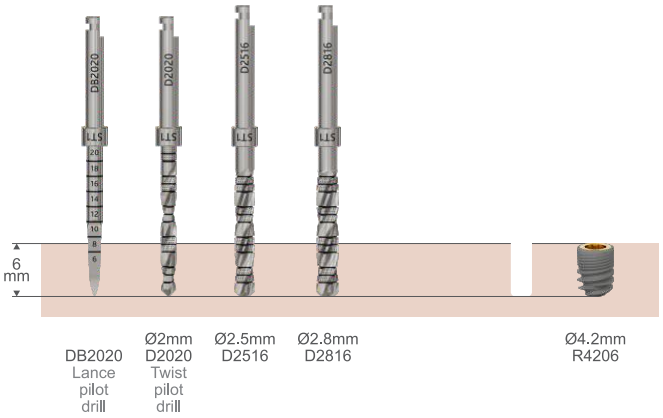


Here xx is the length of the implant, mm

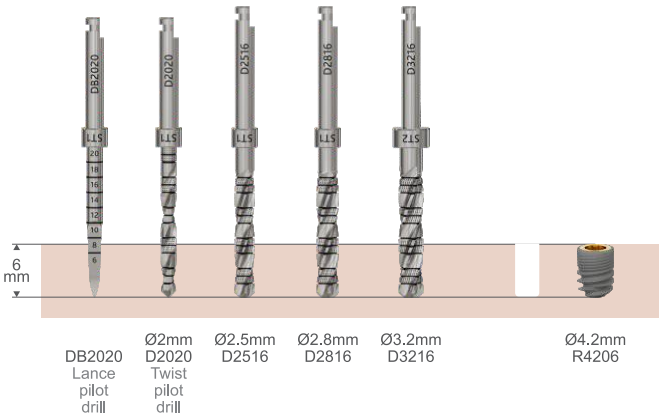
IMPLANT **R4206**

Be careful with R4206:
different protocol from ∅4.2

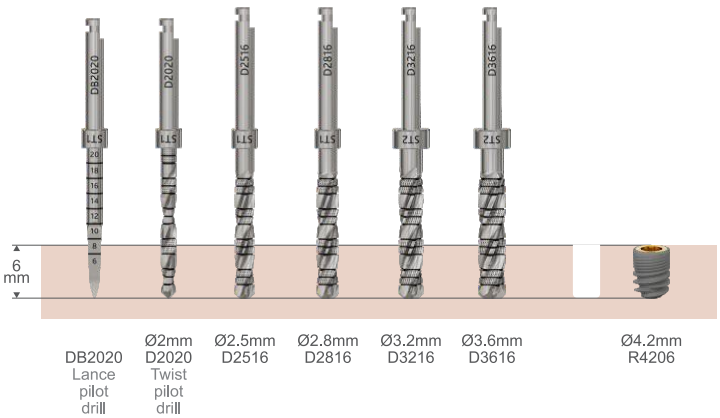
SOFT BONE



MEDIUM BONE



HARD BONE

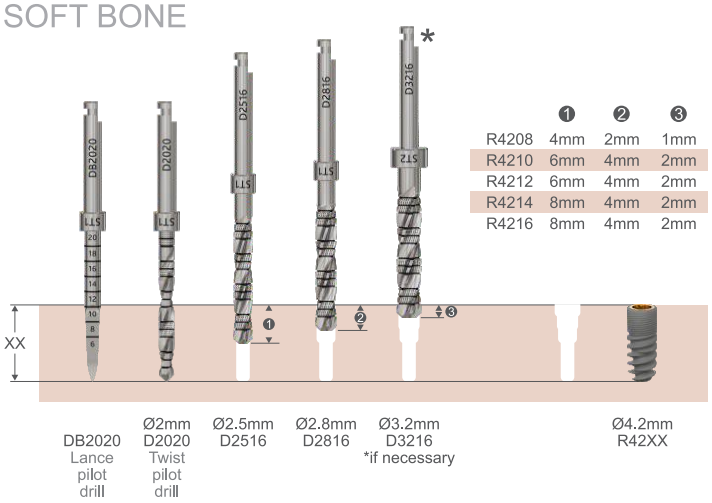


Here xx is the length of the implant, mm

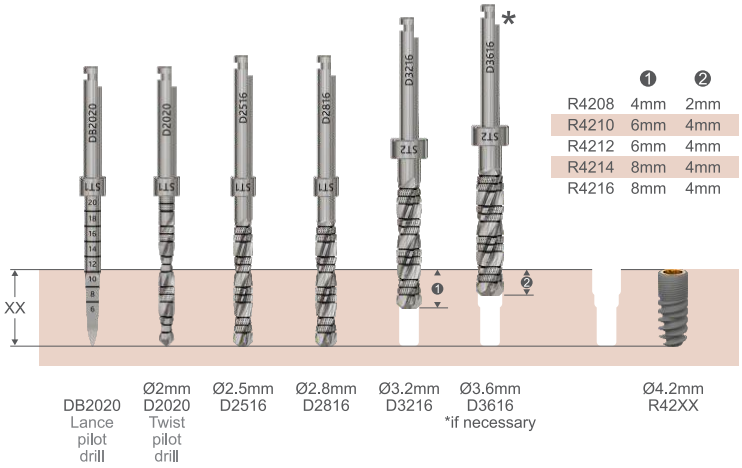
ROOTFORM implants sizes from R4208 to R5516 are “V” shape

IMPLANT **R42XX**

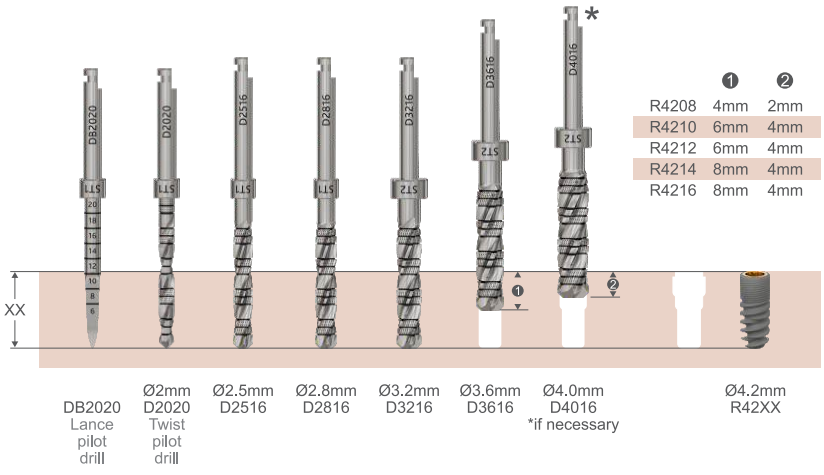
SOFT BONE



MEDIUM BONE



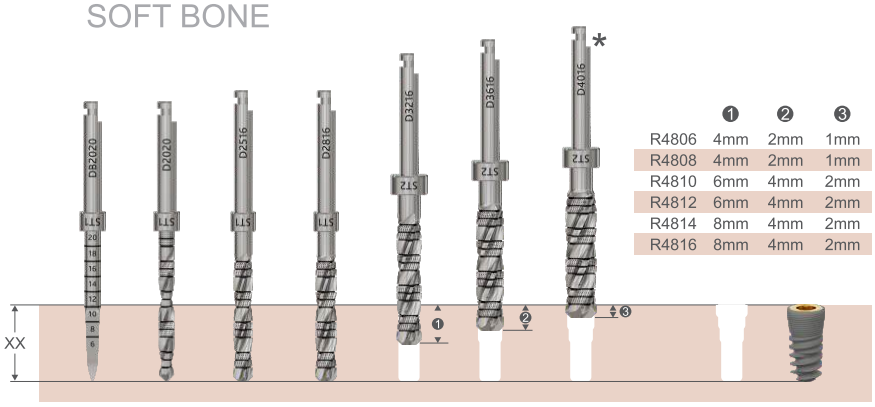
HARD BONE



Here xx is the length of the implant, mm

IMPLANT **R48XX**

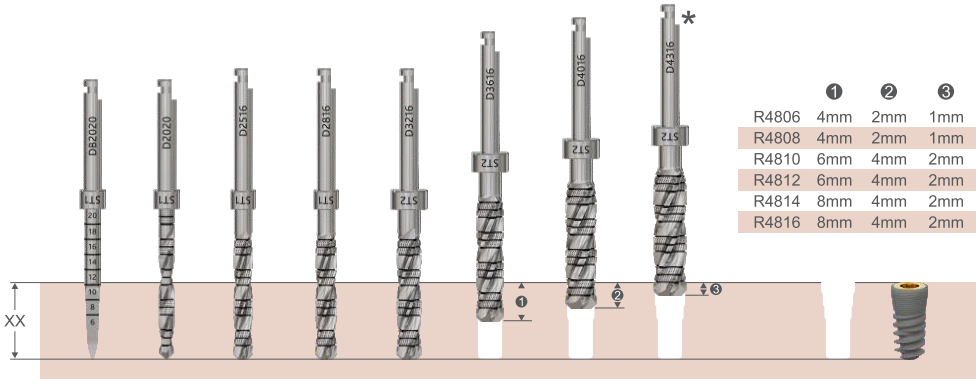
SOFT BONE



	❶	❷	❸
R4806	4mm	2mm	1mm
R4808	4mm	2mm	1mm
R4810	6mm	4mm	2mm
R4812	6mm	4mm	2mm
R4814	8mm	4mm	2mm
R4816	8mm	4mm	2mm

DB2020 Lance pilot drill | Ø2mm D2020 Twist pilot drill | Ø2.5mm D2516 | Ø2.8mm D2816 | Ø3.2mm D3216 | Ø3.6mm D3616 | Ø4.0mm D4016 *if necessary | Ø4.8mm R48XX

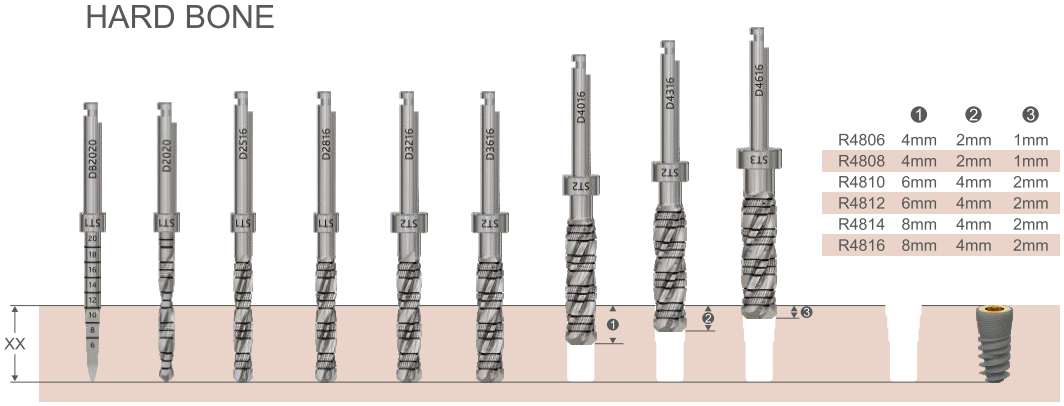
MEDIUM BONE



	❶	❷	❸
R4806	4mm	2mm	1mm
R4808	4mm	2mm	1mm
R4810	6mm	4mm	2mm
R4812	6mm	4mm	2mm
R4814	8mm	4mm	2mm
R4816	8mm	4mm	2mm

DB2020 Lance pilot drill | Ø2mm D2020 Twist pilot drill | Ø2.5mm D2516 | Ø2.8mm D2816 | Ø3.2mm D3216 | Ø3.6mm D3616 | Ø4.0mm D4016 | Ø4.3mm D4316 *if necessary | Ø4.8mm R48XX

HARD BONE



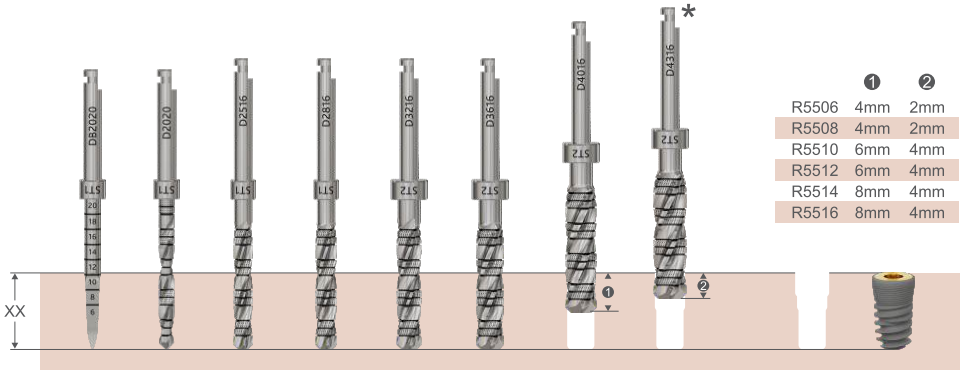
	❶	❷	❸
R4806	4mm	2mm	1mm
R4808	4mm	2mm	1mm
R4810	6mm	4mm	2mm
R4812	6mm	4mm	2mm
R4814	8mm	4mm	2mm
R4816	8mm	4mm	2mm

DB2020 Lance pilot drill | Ø2mm D2020 Twist pilot drill | Ø2.5mm D2516 | Ø2.8mm D2816 | Ø3.2mm D3216 | Ø3.6mm D3616 | Ø4.0mm D4016 | Ø4.3mm D4316 | Ø4.6mm D4616 | Ø4.8mm R48XX

Here xx is the length of the implant, mm

IMPLANT **R55XX**

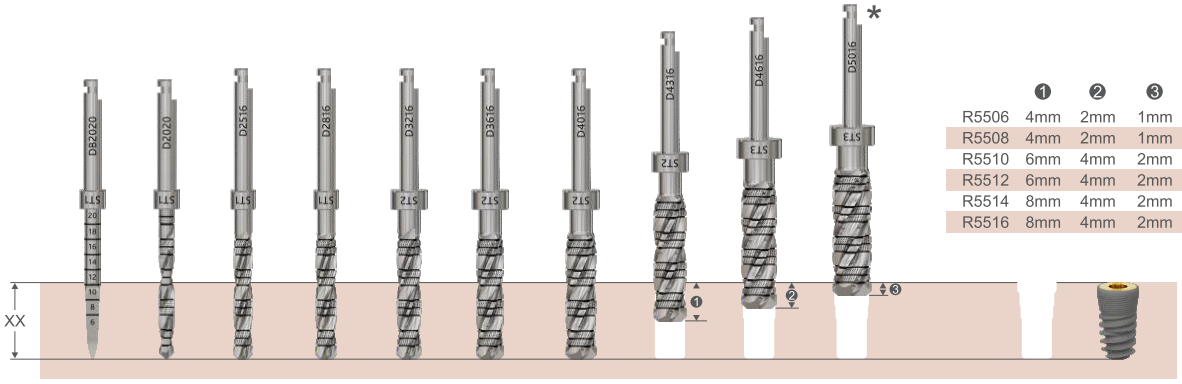
SOFT BONE



	❶	❷
R5506	4mm	2mm
R5508	4mm	2mm
R5510	6mm	4mm
R5512	6mm	4mm
R5514	8mm	4mm
R5516	8mm	4mm

DB2020 Lance pilot drill | Ø2mm D2020 Twist pilot drill | Ø2.5mm D2516 | Ø2.8mm D2816 | Ø3.2mm D3616 | Ø3.6mm D3616 | Ø4.0mm D4016 | Ø4.3mm D4316 *if necessary | Ø5.5mm R55XX

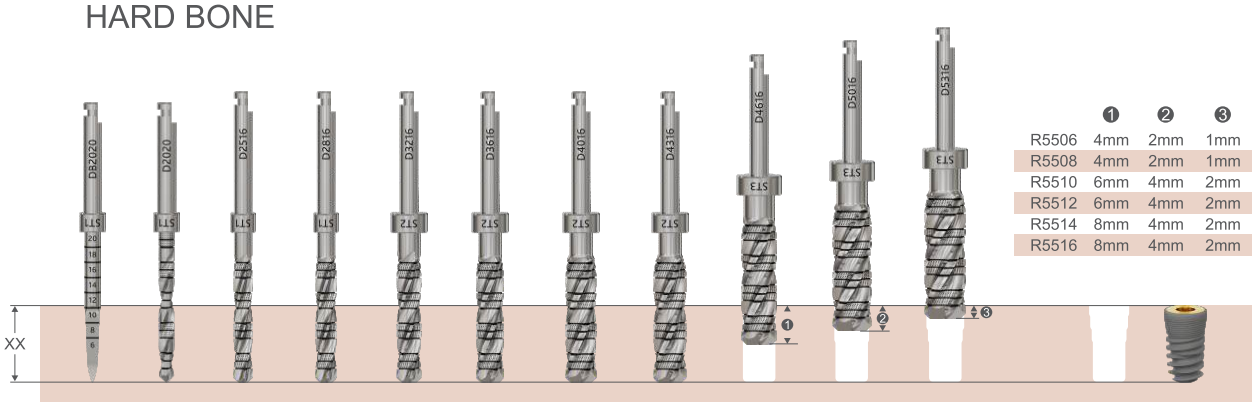
MEDIUM BONE



	❶	❷	❸
R5506	4mm	2mm	1mm
R5508	4mm	2mm	1mm
R5510	6mm	4mm	2mm
R5512	6mm	4mm	2mm
R5514	8mm	4mm	2mm
R5516	8mm	4mm	2mm

DB2020 Lance pilot drill | Ø2mm D2020 Twist pilot drill | Ø2.5mm D2516 | Ø2.8mm D2816 | Ø3.2mm D3616 | Ø3.6mm D3616 | Ø4.0mm D4016 | Ø4.3mm D4316 | Ø4.6mm D4616 | Ø5.0mm D5016 *if necessary | Ø5.5mm R55XX

HARD BONE



	❶	❷	❸
R5506	4mm	2mm	1mm
R5508	4mm	2mm	1mm
R5510	6mm	4mm	2mm
R5512	6mm	4mm	2mm
R5514	8mm	4mm	2mm
R5516	8mm	4mm	2mm

DB2020 Lance pilot drill | Ø2mm D2020 Twist pilot drill | Ø2.5mm D2516 | Ø2.8mm D2816 | Ø3.2mm D3616 | Ø3.6mm D3616 | Ø4.0mm D4016 | Ø4.3mm D4316 | Ø4.6mm D4616 | Ø5.0mm D5016 | Ø5.3mm D5316 | Ø5.5mm R55XX

Here xx is the length of the implant, mm

For a very hard bone can be used the same protocol as for hard bone and finished with ROOTFORM tapers (pictures below, same as with form drills).

ROOTFORM tapers are used to form a thread to ensure proper integration of the implant to the bone. The thread design of the tapers exactly imitate the threads of implant.

ROOTFORM implants installation using ROOTT universal drills and form drills for ROOTFORM implants

DRILLING WITH FORM DRILLS

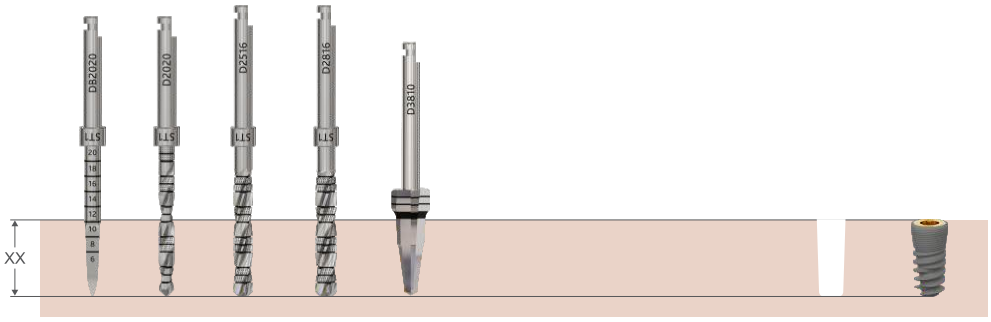
Start osteotomy with universal drills, substitute the cortical drilling with the form drills. They can replace 2 or 3 last universal drills if needed.

For soft bones it is better to use a form drill that is two sizes smaller. For medium to soft bone it is better to use a form drill that is a size smaller (by diameter).

Form drills are the same shape as ROOTFORM implants.

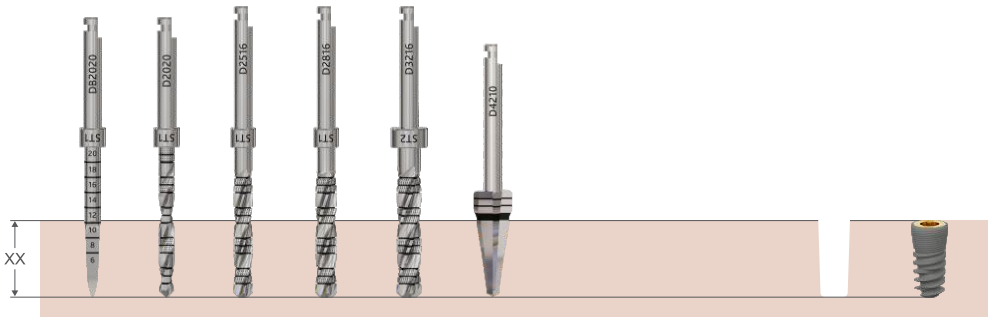
IMPLANT **R48XX**

SOFT BONE



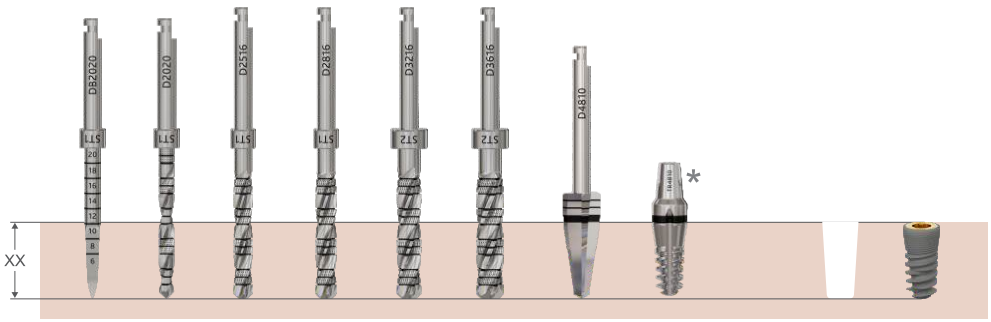
DB2020 Lance pilot drill | Ø2mm D2020 Twist pilot drill | Ø2.5mm D2516 | Ø2.8mm D2816 | Ø3.8mm D38XX | Ø4.8mm R48XX

MEDIUM BONE



DB2020 Lance pilot drill | Ø2mm D2020 Twist pilot drill | Ø2.5mm D2516 | Ø2.8mm D2816 | Ø3.2mm D3216 | Ø4.2mm D42XX | Ø4.8mm R48XX

HARD OR VERY HARD BONE

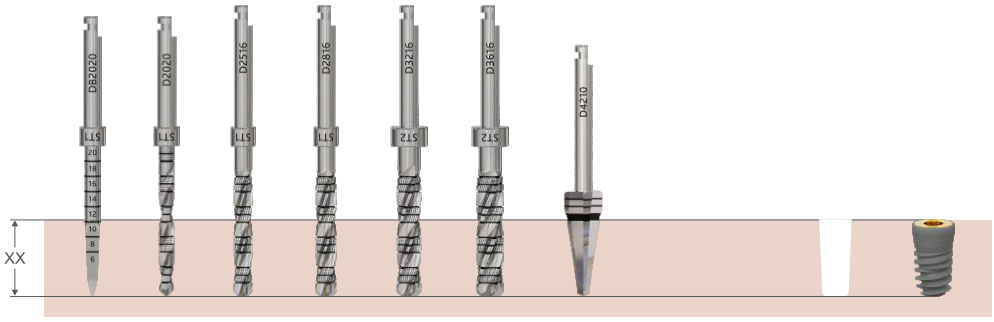


DB2020 Lance pilot drill | Ø2mm D2020 Twist pilot drill | Ø2.5mm D2516 | Ø2.8mm D2816 | Ø3.2mm D3216 | Ø3.6mm D3616 | Ø4.8mm D48XX | Ø4.8mm TR48XX *used for hard and very hard bone to form threads for implant | Ø4.8mm R48XX

Here xx is the length of the implant, mm

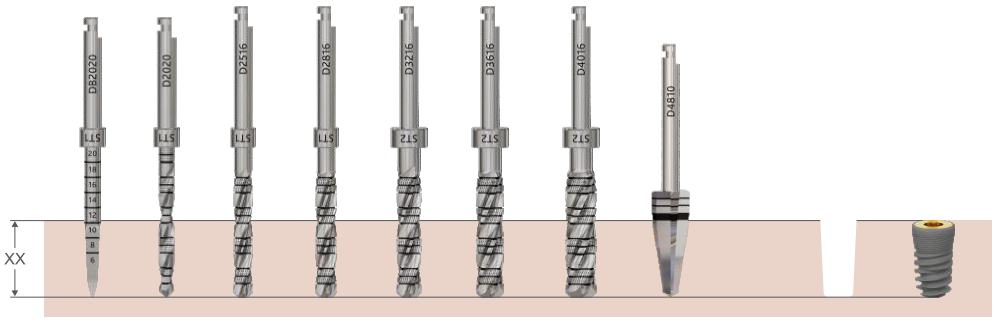
IMPLANT **R55XX**

SOFT BONE



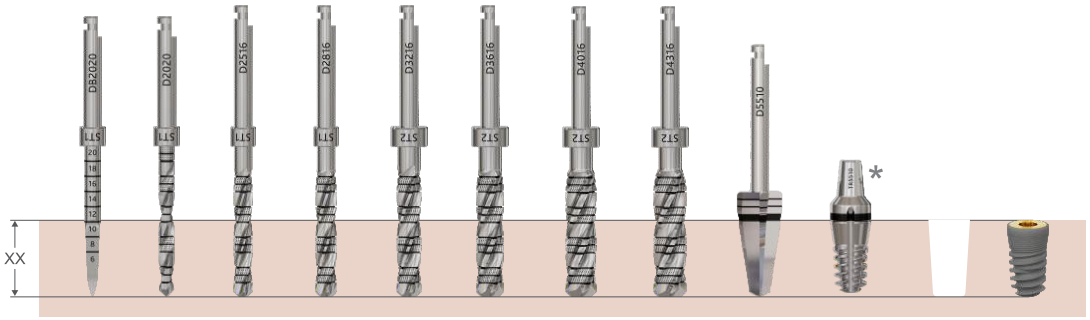
DB2020 Lance pilot drill	Ø2mm D2020 Twist pilot drill	Ø2.5mm D2516	Ø2.8mm D2816	Ø3.2mm D3216	Ø3.6mm D3616	Ø4.2mm D42XX	Ø5.5mm R55XX

MEDIUM BONE



DB2020 Lance pilot drill	Ø2mm D2020 Twist pilot drill	Ø2.5mm D2516	Ø2.8mm D2816	Ø3.2mm D3216	Ø3.6mm D3616	Ø4.0mm D4016	Ø4.8mm D48XX	Ø5.5mm R55XX

HARD OR VERY HARD BONE



DB2020 Lance pilot drill	Ø2mm D2020 Twist pilot drill	Ø2.5mm D2516	Ø2.8mm D2816	Ø3.2mm D3216	Ø3.6mm D3616	Ø4.0mm D4016	Ø4.3mm D4316	Ø5.5mm D55XX	Ø5.5mm TR55XX *used for hard and very hard bone to form threads for implant	Ø5.5mm R55XX

Here xx is the length of the implant, mm

ROOTFORM tapers (TRXXxx) are used for hard or very hard bone to form thread for implant (see pictures).

It is always recommended firstly to use a smaller diameter drill and try implant insertion.

What is "if necessary"?

In case after using the previous drill the torque is still too high (more than 50 Ncm) while inserting the implant, the cavity has to be widened. To widen the cavity, a drill of wider diameter is used, but submerged less deep than implant length.

ROOTFORM implants installation using ROOTT universal drills

Soft bone	Medium bone	Hard bone	
∅ 3.0 MM IMPLANT			
DB2020	DB2020 D2020 ❶ D2516	DB2020 D2020 D2516 ❶ (if necessary) D2816	❶ R3010 R3012 - 6 mm R3014, R3016 - 8 mm
∅ 3.5 MM IMPLANT			
DB2020 D2020 ❶ (if necessary) D2516	DB2020 D2020 D2516 ❶ (if necessary) D2816	DB2020 D2020 D2516 D2816 ❶ D3216	❶ R3506, R3508 - 4 mm R3510, R3512 - 6 mm R3514, R3516 - 8 mm
∅ 3.8 MM IMPLANT			
DB2020 D2020 D2516 ❶ (if necessary) D2816	DB2020 D2020 D2516 D2816 ❶ (if necessary) D3216	DB2020 D2020 D2516 D2816 D3216 ❶ D3616	❶ R3806, R3808 - 4 mm R3810, R3812 - 6 mm R3814, R3816 - 8 mm
∅ 4.2 MM IMPLANT			
DB2020 D2020 ❶ D2516 ❷ D2816 ❸ (if necessary) D3216	DB2020 D2020 D2516 D2816 ❶ D3216 ❷ (if necessary) D3616	DB2020 D2020 D2516 D2816 D3216 ❶ D3616 ❷ (if necessary) D4016	❶ R4208 - 4 mm R4210, R4212 - 6 mm R4214, R4216 - 8 mm ❷ R4208 - 2 mm R4210, R4212 - 4 mm R4214, R4216 - 4 mm ❸ R4208 - 1 mm R4210, R4212 - 2 mm R4214, R4216 - 2 mm For R4206 - without cortical drilling (see pictures above)

Here xx is the length of the implant, mm.

ROOTFORM implants installation using ROOTT universal drills

Soft bone	Medium bone	Hard bone	
∅ 4.8 MM IMPLANT			
DB2020 D2020 D2516 D2816 ❶ D3216 ❷ D3616 ❸ (if necessary) D4016	DB2020 D2020 D2516 D2816 D3216 ❶ D3616 ❷ D4016 ❸ (if necessary) D4316	DB2020 D2020 D2516 D2816 D3216 D3616 ❶ D4016 ❷ D4316 ❸ (if necessary) D4616	❶ R4806, R4808 - 4 mm R4810, R4812 - 6 mm R4814, R4816 - 8 mm ❷ R4806, R4808 - 2 mm R4810, R4812 - 4 mm R4814, R4816 - 4 mm ❸ R4806, R4808 - 1 mm R4810, R4812 - 2 mm R4814, R4816 - 2 mm
∅ 5.5 MM IMPLANT			
DB2020 D2020 D2516 D2816 D3216 D3616 ❶ D4016 ❷ (if necessary) D4316	DB2020 D2020 D2516 D2816 D3216 D3616 D4016 ❶ D4316 ❷ D4616 ❸ (if necessary) D5016	DB2020 D2020 D2516 D2816 D3216 D3616 D4016 D4316 ❶ D4616 ❷ D5016 ❸ D5316	❶ R5506, R5508 - 4 mm R5510, R5512 - 6 mm R5514, R5516 - 8 mm ❷ R5506, R5508 - 2 mm R5510, R5512 - 4 mm R5514, R5516 - 4 mm ❸ R5506, R5508 - 1 mm R5510, R5512 - 2 mm R5514, R5516 - 2 mm

Here xx is the length of the implant, mm.

ROOTFORM implants installation using ROOTT universal drills and form drills for ROOTFORM implants

Soft bone	Medium bone	Hard bone
∅ 4.2 MM IMPLANT		
DB2020 D2020 D35xx	DB2020 D2020 D2516 D2816 D38xx	DB2020 D2020 D2516 D2816 D3216 D42xx TR42xx
∅ 4.8 MM IMPLANT		
DB2020 D2020 D2516 D2816 D38xx	DB2020 D2020 D2516 D2816 D3216 D42xx	DB2020 D2020 D2516 D2816 D3216 D3616 D48xx TR48xx
∅ 5.5 MM IMPLANT		
DB2020 D2020 D2516 D2816 D3216 D3616 D42xx	DB2020 D2020 D2516 D2816 D3216 D3616 D4016 D48xx	DB2020 D2020 D2516 D2816 D3216 D3616 D4016 D4316 D55xx TR55xx

Here xx is the length of the implant, mm.