GS

GUIDED
SURGERY

C-GUIDE

C-TECH GUIDED SURGERY

IMPLANTOLOGY MEETS PRECISION

The C-Tech/C-Guide guided surgery concept is a comprehensive system which offers a complete guidance for the 4 different diameters of the EL family: 3.1mm, 3.5mm, 4.3mm and 5.1mm, as well as full guidance and depth control on all implant lengths. In combination with the well proven EL implant system, C-Guide delivers surgical precision with long term esthetic success and predictability.

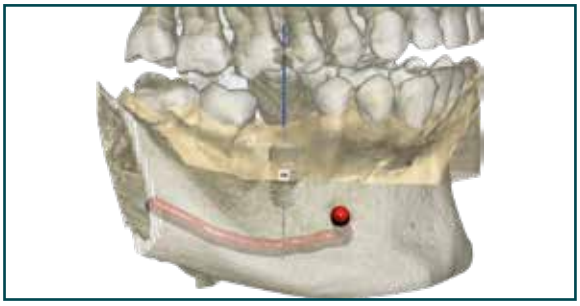
The ease of use of the C-Guide system is demonstrated by the possibility to choose between two different sleeve diameters: narrow and wide. Narrow sleeves are designed for implants with a diameter of 3.1mm and 3.5mm, while wide sleeves are for implants with diameters of 4.3mm and 5.1mm. The sleeves are flattened on one side so as to allow a closer placement of adjacent sleeves within the guide.

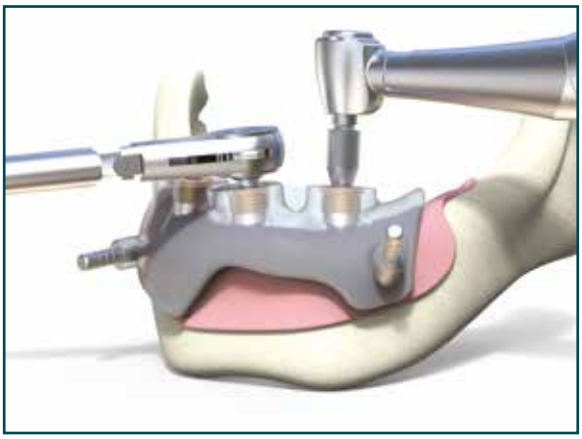
Implant diameters within the system can be driven with drivers and mounts.

To ensure stability and precision, the mounts are used to lock the first 3 implants into position, providing added stability for placement of the other implants in the guide.

Whereas most systems are based on a single offset of 9mm, the GS system offers three offset options. In many cases, such as a deep seating of the implant or a thick gingiva, this standard offset cannot accept these aspects, making the fully guided surgery difficult or even impossible.

The GS system offers the standard 9mm offset as well as 11mm and 13mm. This offset variability, in addition to full guidance with four different implant diameters, makes the GS system among the most flexible and complete as well as ensuring that the practitioner is not limited in his/her case selection.

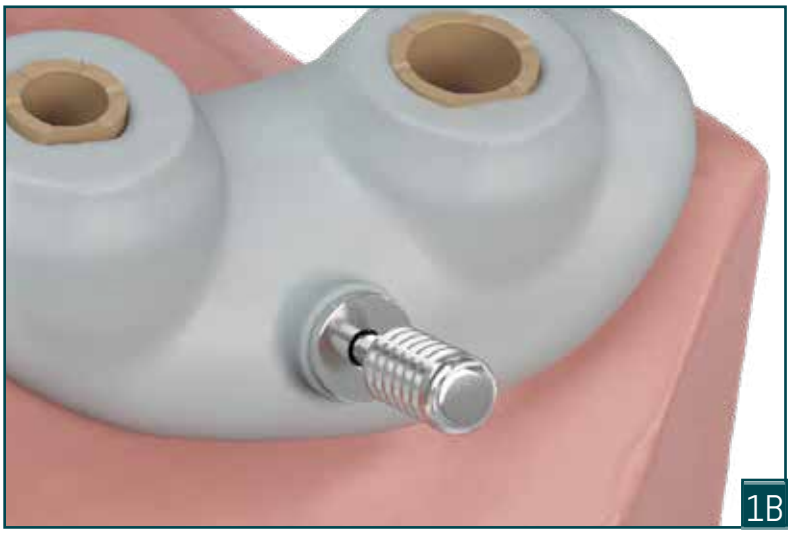




SURGICAL PROTOCOL

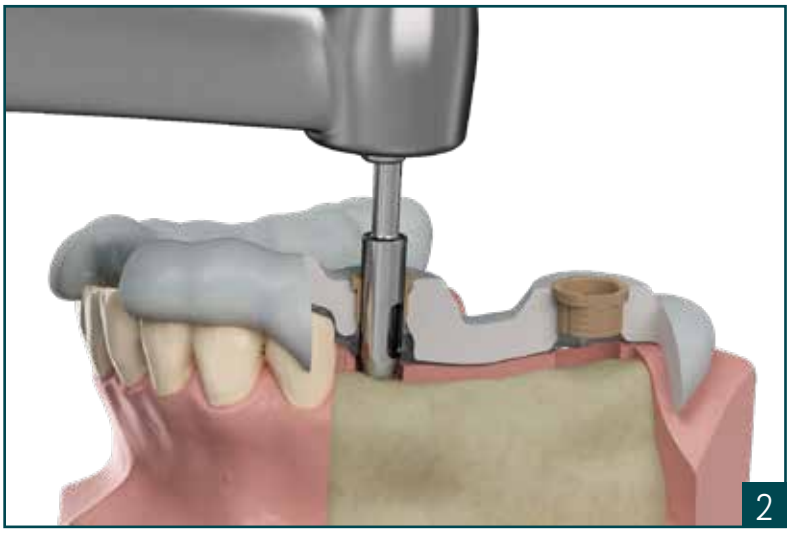
GUIDE POSITIONING

The guide is positioned on the jaw of the patient, using existing dentition as stabilizer.



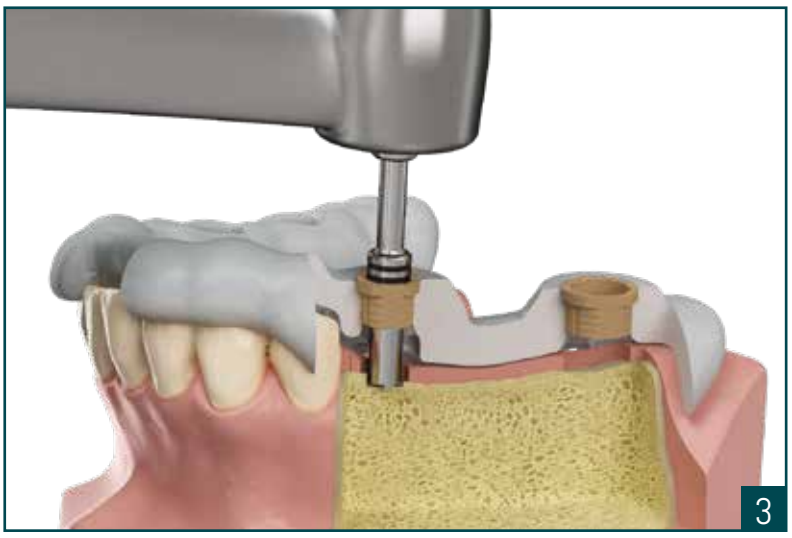
FIXATION PINS

In the case of an edentulous jaw, the guide is positioned and then fastened in place using lateral pins.



USE OF THE TISSUE PUNCH

The appropriate tissue punch is used in a handpiece in order to remove the gingival tissue above the osteotomy site.



RIDGE PROFILER/ FLATTENER (optional)

In the case that the ridge is sharp, one can use the ridge flattener to create a level surface and facilitate the use of the locator drill.

LOCATOR DRILL

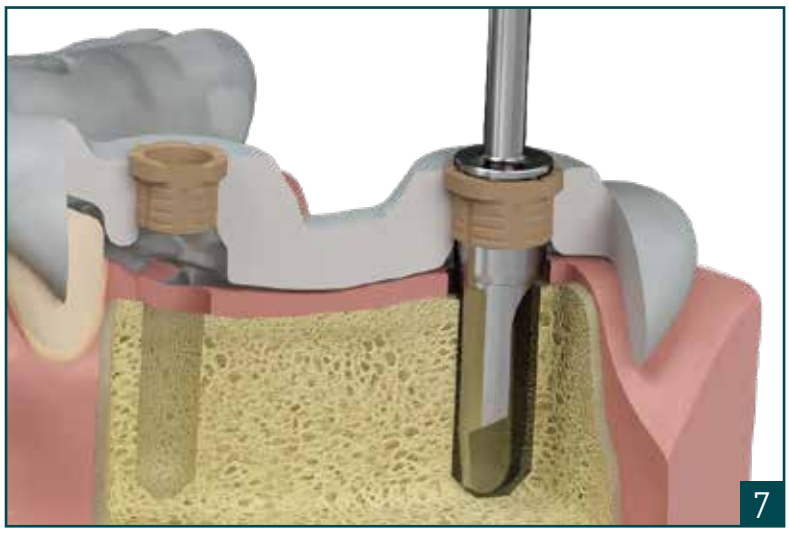
The locator drills are used as a starting point to prevent the possibility of drill slipping on the crest.

PILOT DRILL

The 2.1mm pilot drill is used to perform the osteotomy to its final depth. To ensure a continuous engagement with the sleeve during the initial drilling, the first 2.1mm pilot drill to be used must be the shortest one, regardless of the final length to be achieved. For example, in a narrow sleeve case, the first is the drill
GS-N2007 , while in wide sleeve cases the first one is the drill GS-W2007.

SOFT BONE

The 3.5 mm drill will follow the pilot drill and stop at the same depth.

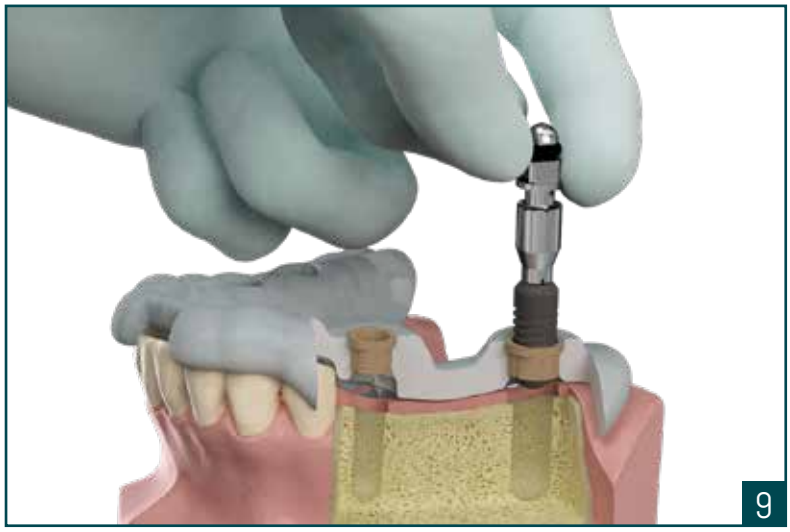


HARD BONE

In case of a 3.5mm implant to be placed in soft bones, the 3.5mm drill will be the final drill. Instead, in case of hard bone, the 3.5mm drill will be followed by the 3.5mm hard bone drill.

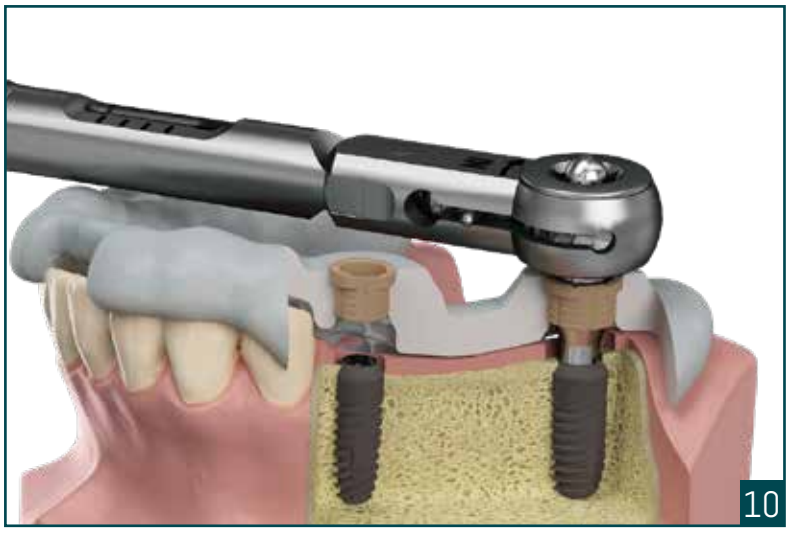
IMPLANT

The implant is removed from the vial using the implant driver or implant driver/mount.



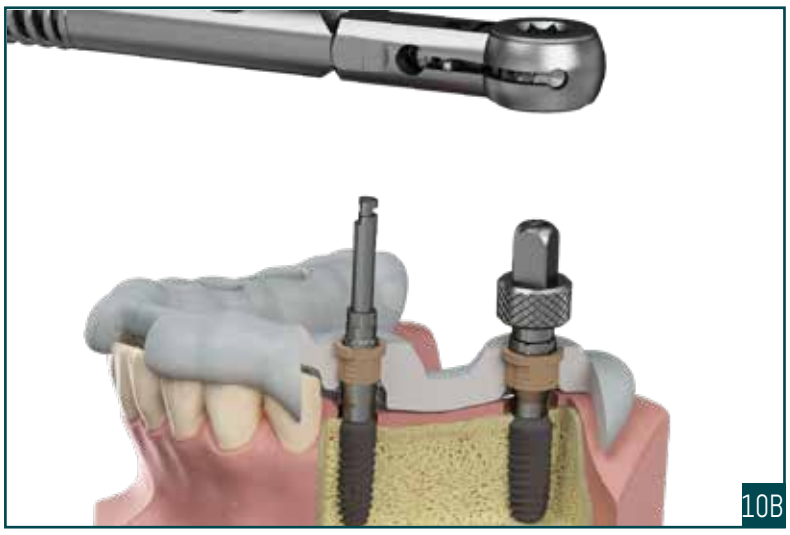
IMPLANT INSERTION

The implant is carried to the site using the driver or mount/driver.



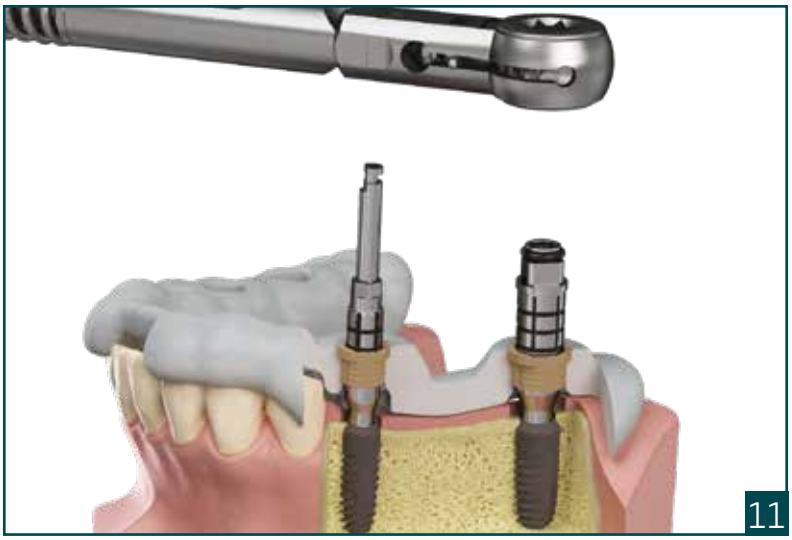
MANUAL DRIVER

Once the implant has been placed in its site, it can be manually driven using the finger adapter.
It may also be driven by the hand-piece using the latch drivers or by the ratchet through the adapters or mount/drivers.



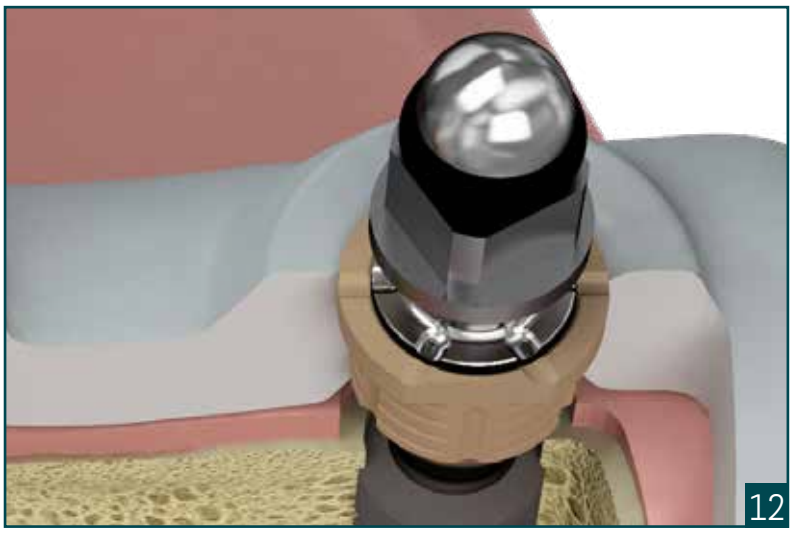
RATCHET ADAPTERS

The implant latch drivers can be converted into finger drivers and into ratchet adapters using the CT-E7003 finger adapter which fits onto the top of the latch.



OFFSET VARIABILITY OPTIONS

The GS kit offers 3 different offset positions on its implant insertion tools.
In the case that the user needs a greater distance from the top of the sleeve to the bone level than the default 9mm, the GS insertion tools offer 2 more options; that of 11mm and 13mm.

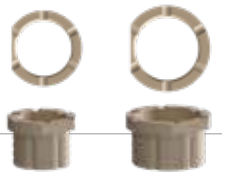


CORRECT POSITION

The implant is seated in its final position once the mount shoulder is flush with the top of the sleeve and the lines on the top of the shoulder are aligned with the lines on the top of the sleeve. These lines represent the center of the flat sides on the implant's internal hex.

GUIDED SURGERY COMPONENTS

Sleeves



GS-NS x10
Sleeve for 3.1/3.8

GS-WS x10
Sleeve for 4.3/5.1

Drill for lateral pins

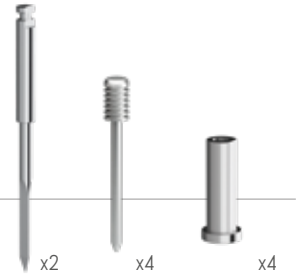
GS-FIXDRILL

Lateral sleeves

x4

GS-LS

Lateral Fixation Set



x2 x4 x4

GS-FIX

Driver extender

GS-2000

Drivers/Mounters

GS-N7007/31
for implants 3.1

GS-N7007/38
for implants 3.8

GS-W7007
for implants 4.3/5.1

Wide Ratchet Driver

Fits Implants 4.3/5.1

GS-E7001

Ratchet Driver Long - variable offset

For narrow sleeves

GS-N7031
for implants Ø 3.1

GS-N7035
for implants Ø 3.8

Ratchet Driver Long - variable offset

For wide sleeves

GS-W7001L
for implants Ø 4.3/5.1

Latch Driver

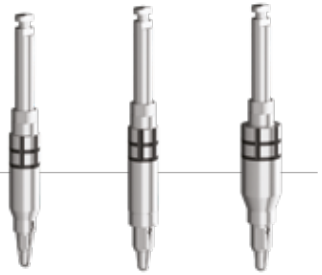
CT-E7003
Finger adapter

GS-N9031
Fits Implants 3.1

GS-N9035
Fits Implants 3.8

GS-W904351
Fits Implants 4.3/5.1

Latch Drivers Long/Variable offsets



GS-N9031L
Fits Implants 3.1

GS-N9035L
Fits Implants 3.8

GS-W904351L
Fits Implants 4.3/5.1

Contre Angle Extractor for Mounter

GS-6061

GUIDED SURGERY DRILLS

Initial Narrow Sleeve Punch + Locator Drill + Profiler

GS-NPUNCH

GS-NLOCATOR

GS-NPRO

Initial Wide Sleeve Punch + Locator Drill + Profiler

GS-WPUNCH

GS-WLOCATOR

GS-WPRO

Narrow Drills

Narrow Sleeve Drills 2.1

GS-N2007 GS-N2009 GS-N2011 GS-N2013 GS-N2015

Narrow Sleeve Drills 3.1

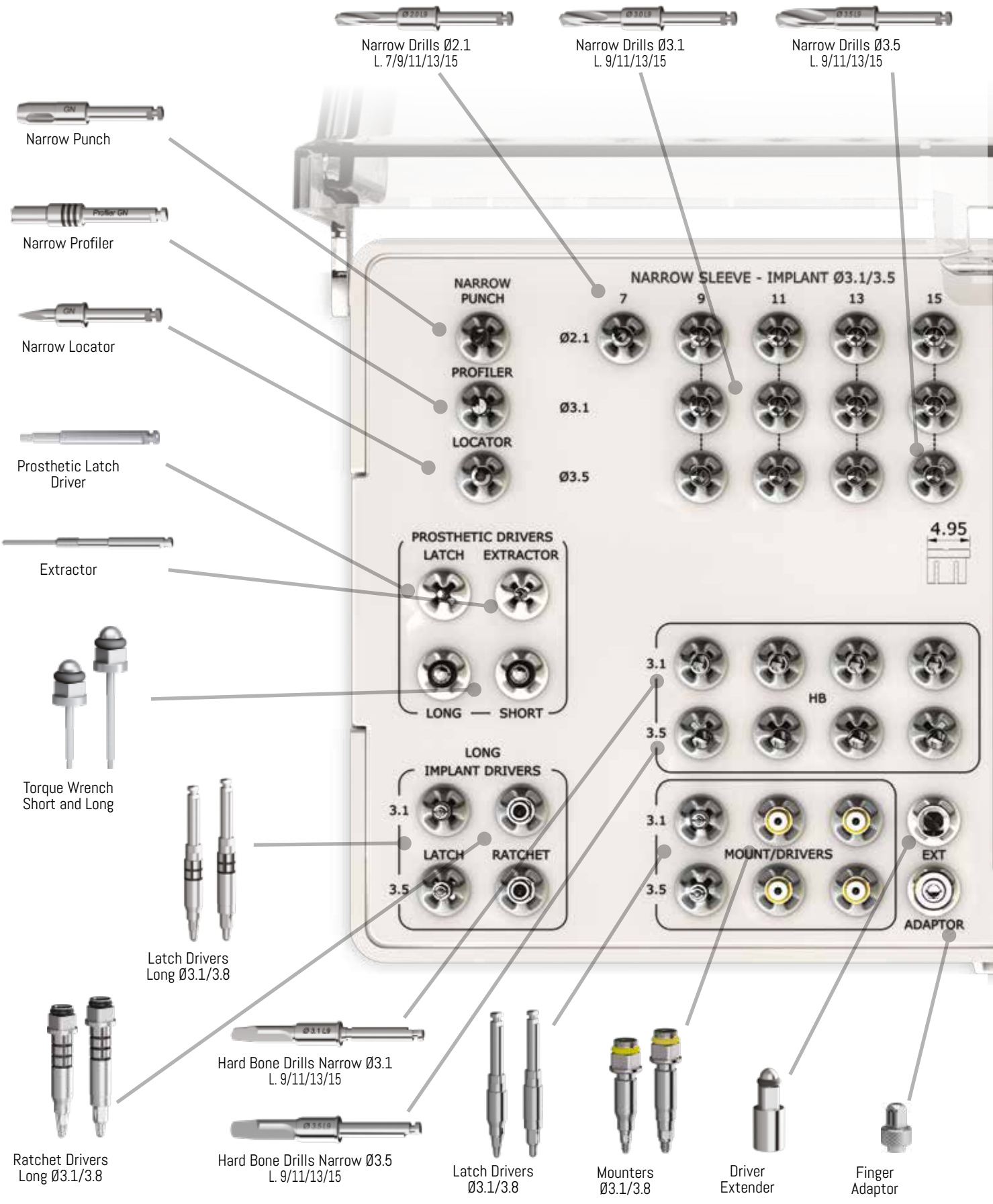
(real Ø2.6 mm)

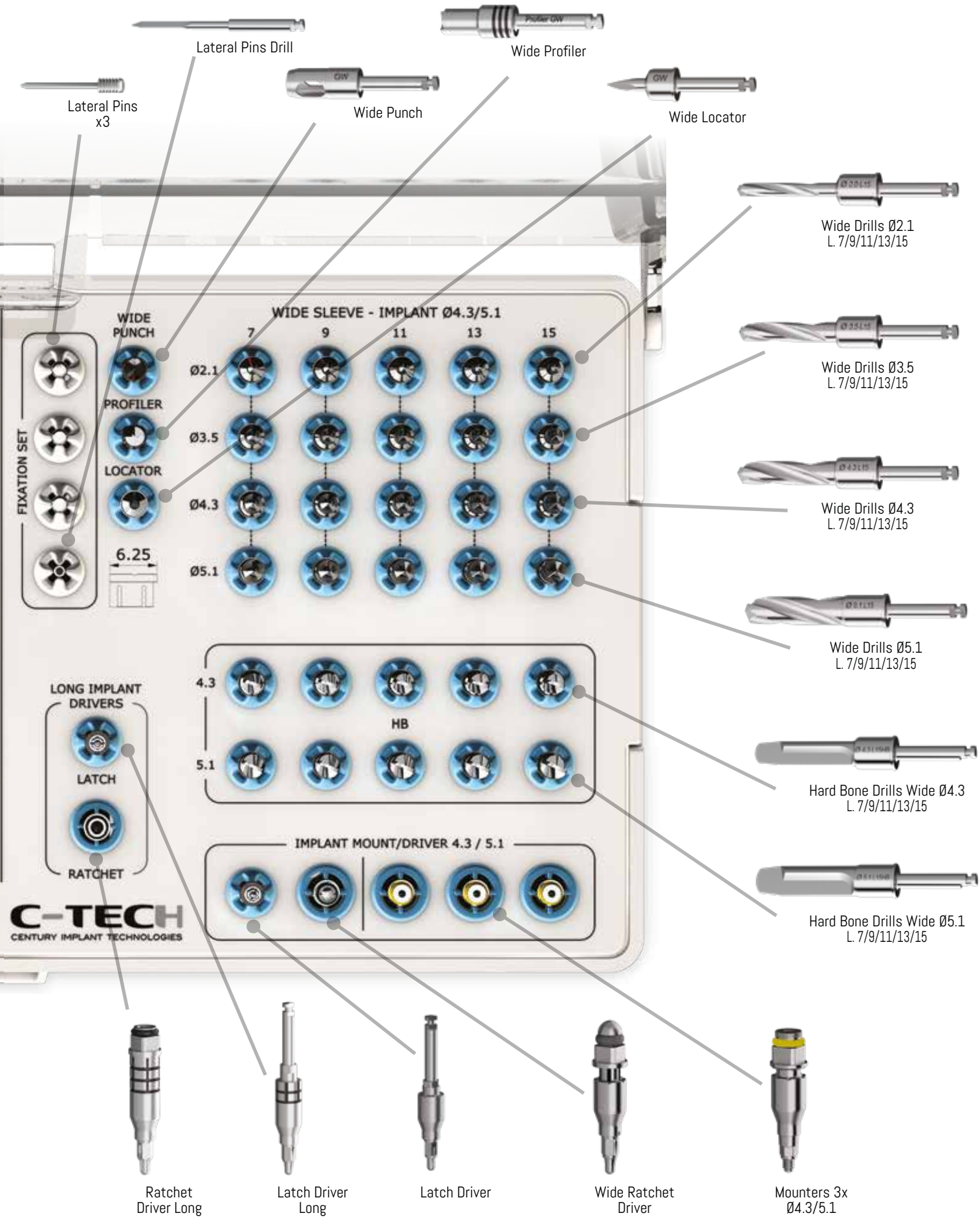
GS-N3009 GS-N3009HB GS-N3011 GS-N3011HB GS-N3013 GS-N3013HB GS-N3015 GS-N3015HB

Narrow Sleeve Drills 3.5

(real Ø3.3 mm)

GS-N3509 GS-N3509HB GS-N3511 GS-N3511HB GS-N3513 GS-N3513HB GS-N3515 GS-N3515HB


Narrow Drills Ø2.1
L. 7/9/11/13/15
Narrow Drills Ø3.1
L. 9/11/13/15
Narrow Drills Ø3.5
L. 9/11/13/15
Narrow Punch
Narrow Profiler
Narrow Locator
Prosthetic Latch Driver
Extractor
Torque Wrench Short and Long
Latch Drivers Long Ø3.1/3.8
Ratchet Drivers Long Ø3.1/3.8
Hard Bone Drills Narrow Ø3.1
L. 9/11/13/15
Hard Bone Drills Narrow Ø3.5
L. 9/11/13/15
Latch Drivers Ø3.1/3.8
Mounters Ø3.1/3.8
Driver Extender
Finger Adaptor
NARROW PUNCH
PROFILER
LOCATOR
NARROW SLEEVE - IMPLANT Ø3.1/3.5
7
9
11
13
15
Ø2.1
Ø3.1
Ø3.5
4.95
PROSTHETIC DRIVERS
LATCH
EXTRACTOR
LONG — SHORT
LONG IMPLANT DRIVERS
3.1
3.5
LATCH
RATCHET
HB
MOUNT/DRIVERS
EXT
ADAPTOR


Lateral Pins Drill
Wide Profiler
Lateral Pins
x3
Wide Punch
Wide Locator
WIDE SLEEVE - IMPLANT Ø4.3/5.1
WIDE PUNCH
PROFILER
LOCATOR
6.25
FIXATION SET
7
9
11
13
15
Ø2.1
Ø3.5
Ø4.3
Ø5.1
LONG IMPLANT DRIVERS
LATCH
RATCHET
4.3
5.1
HB
IMPLANT MOUNT/DRIVER 4.3 / 5.1
C-TECH
CENTURY IMPLANT TECHNOLOGIES
Wide Drills Ø2.1
L. 7/9/11/13/15
Wide Drills Ø3.5
L. 7/9/11/13/15
Wide Drills Ø4.3
L. 7/9/11/13/15
Wide Drills Ø5.1
L. 7/9/11/13/15
Hard Bone Drills Wide Ø4.3
L. 7/9/11/13/15
Hard Bone Drills Wide Ø5.1
L. 7/9/11/13/15
Ratchet
Driver Long
Latch Driver
Long
Latch Driver
Wide Ratchet
Driver
Mounters 3x
Ø4.3/5.1

Wide Drills

Wide Sleeve Drills 2.1

GS-W2007 GS-W2009 GS-W2011 GS-W2013 GS-W2015

Wide Sleeve Drills 3.5

(real Ø3.3 mm)

GS-W3507 GS-W3509 GS-W3511 GS-W3513 GS-W3515

Wide Sleeve Drills 4.3

(real Ø4 mm)

GS-W4307 GS-W4307HB GS-W4309 GS-W4309HB GS-W4311 GS-W4311HB GS-W4313 GS-W4313HB GS-W4315 GS-W4315HB

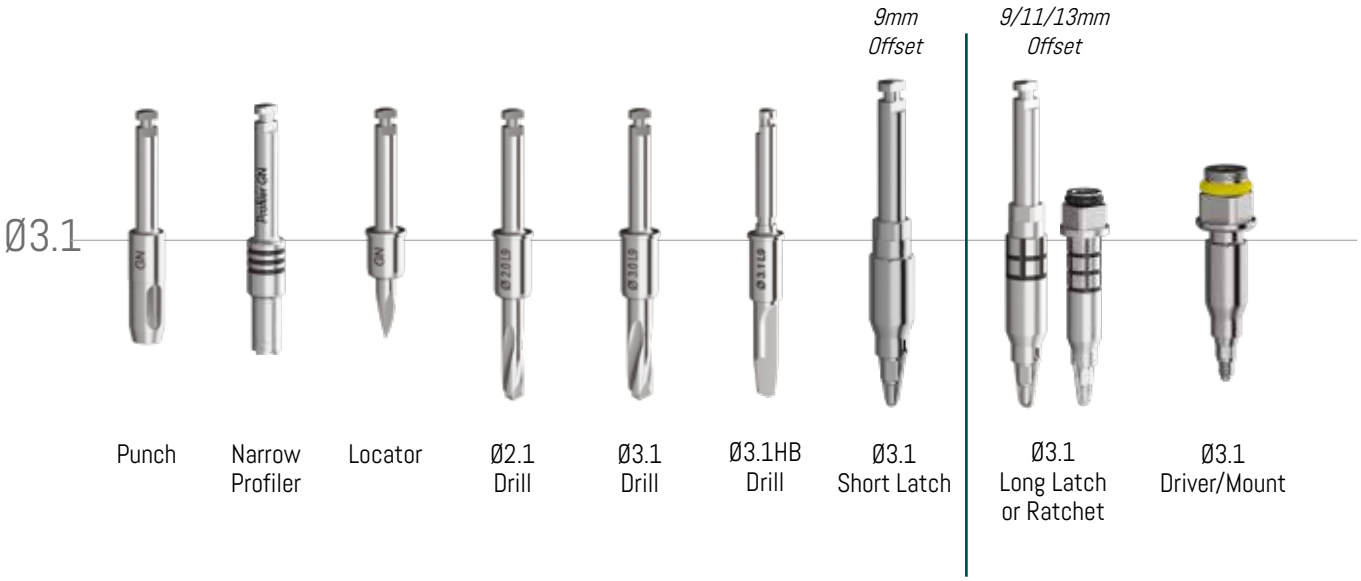
Wide Sleeve Drills 5.1

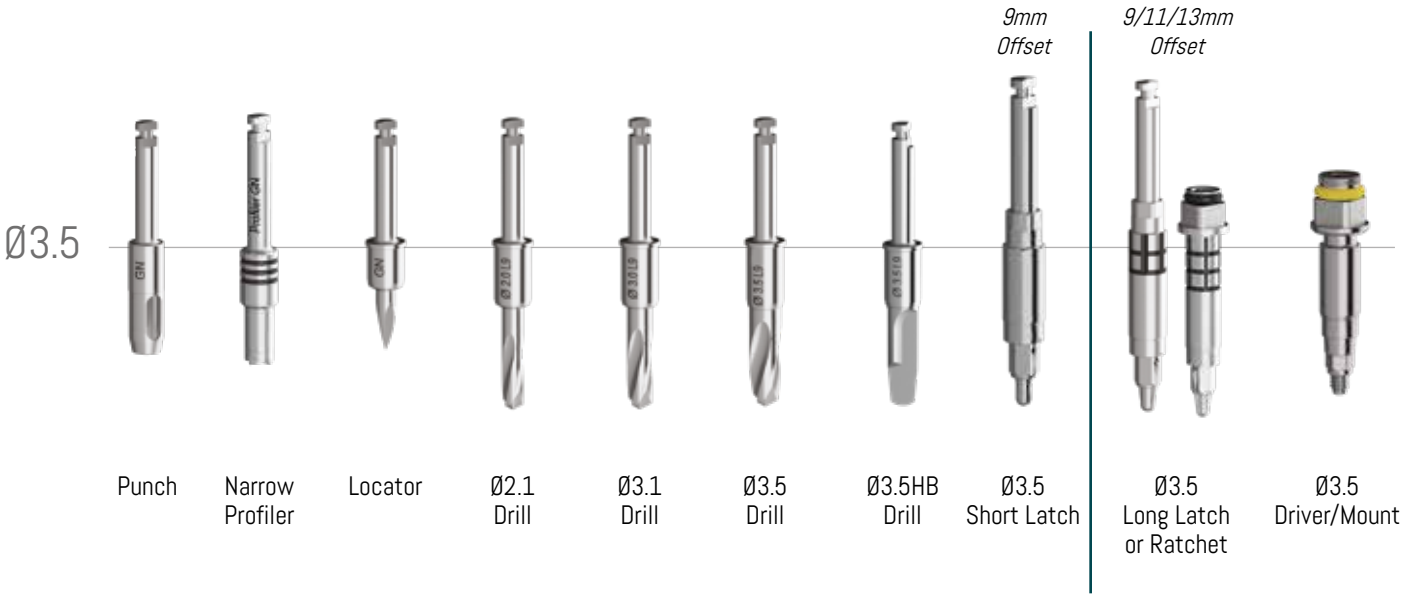
(real Ø4.8 mm)

GS-W5107 GS-W5107HB GS-W5109 GS-W5109HB GS-W5111 GS-W5111HB GS-W5113 GS-W5113HB GS-W5115 GS-W5115HB

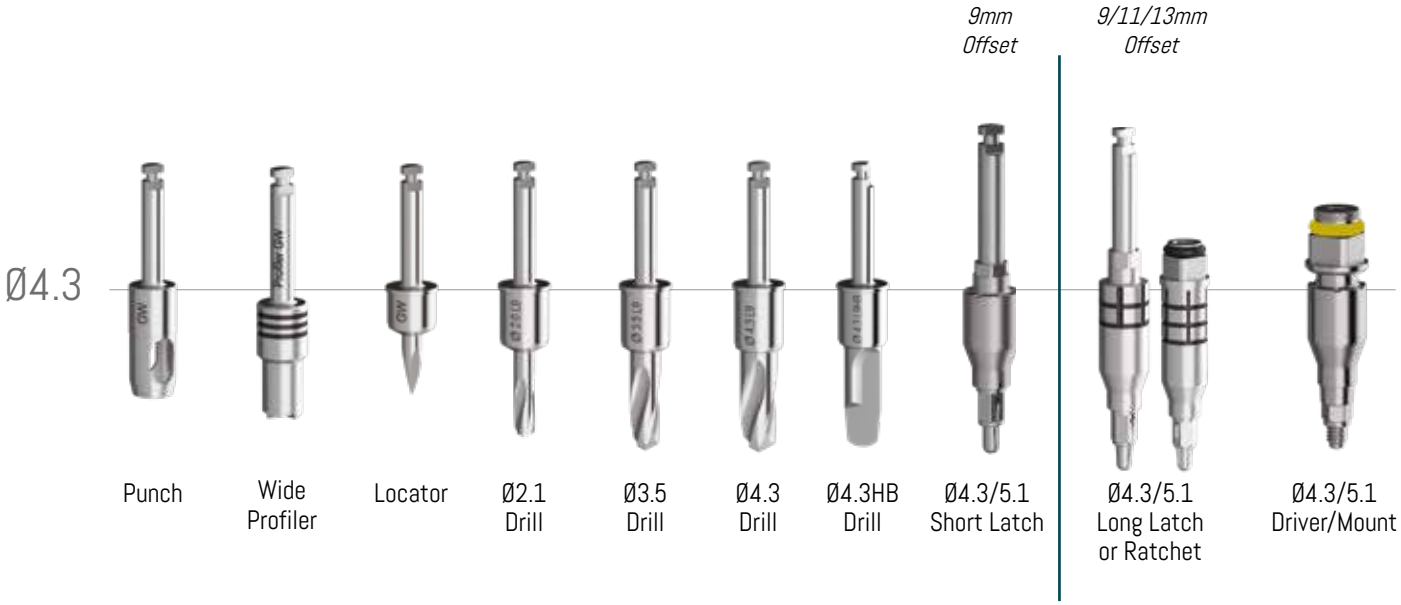
GUIDED SURGERY DRILLS AND SEQUENCE

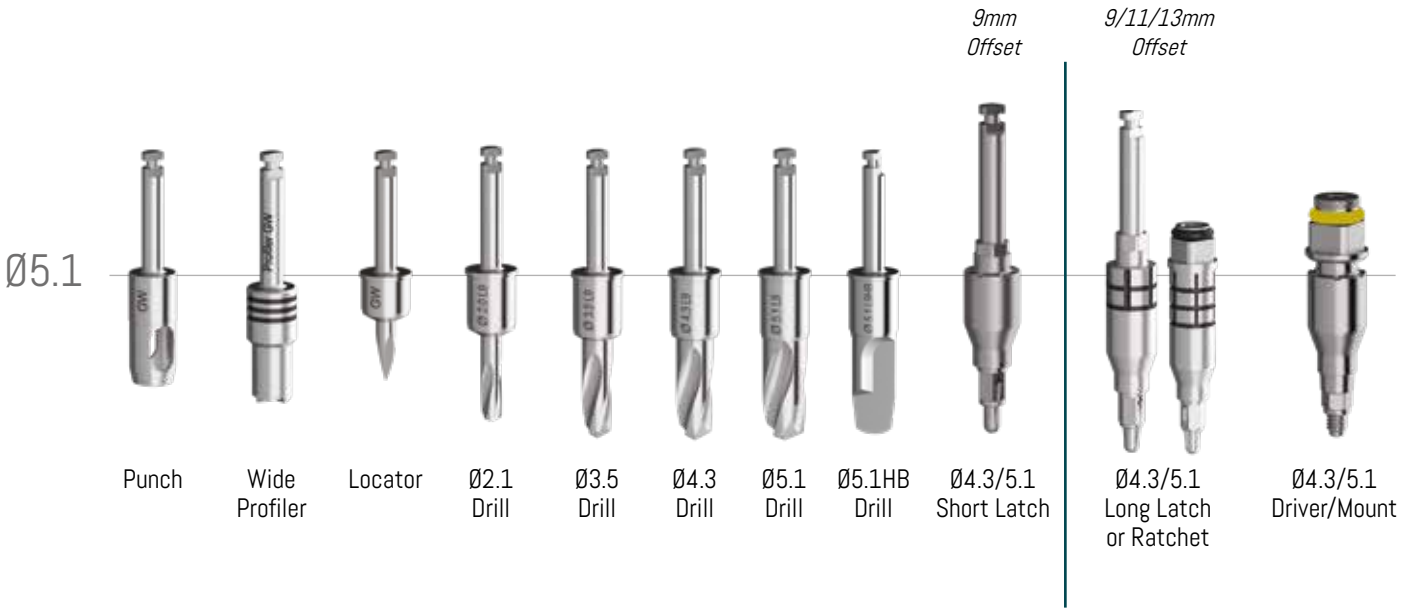
Narrow





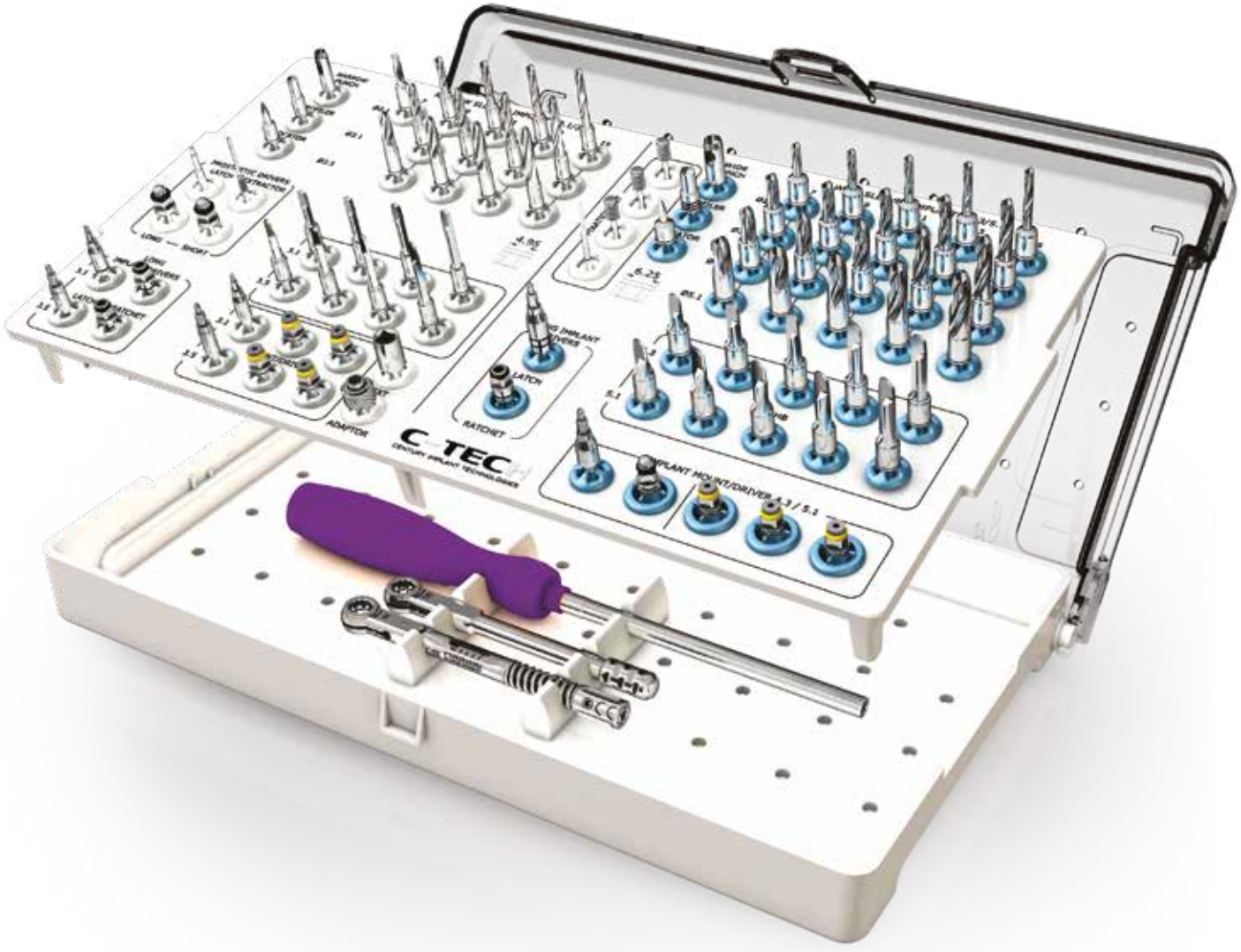
Wide


9mm Offset
9/11/13mm Offset
Ø4.3
Punch
Wide Profiler
Locator
Ø2.1 Drill
Ø3.5 Drill
Ø4.3 Drill
Ø4.3HB Drill
Ø4.3/5.1 Short Latch
Ø4.3/5.1 Long Latch or Ratchet
Ø4.3/5.1 Driver/Mount


9mm Offset
9/11/13mm Offset
Ø5.1
Punch
Wide Profiler
Locator
Ø2.1 Drill
Ø3.5 Drill
Ø4.3 Drill
Ø5.1 Drill
Ø5.1HB Drill
Ø4.3/5.1 Short Latch
Ø4.3/5.1 Long Latch or Ratchet
Ø4.3/5.1 Driver/Mount

C-GUIDE KIT

GS-SURKIT



* The kit has the space to accomodate the screw driver EL-3016 and the fixed ratchet MC-00376. These two items are not included in the kit but can be purchased separately.
The torque ratchet CT-8010 is already included in the kit. The latch extractor (GS-6061), the drill for fixing lateral pins (GS-FIXDRILL) and the 3 lateral pins (GS-PIN) are included in the kit.

INSTRUMENTS INCLUDED IN THE C-GUIDE KIT

Narrow punch	GS-NPUNCH
Narrow Profiler	GS-NPRO
Locator Drill	GS-NLOCATOR
Drill D2.1 L7	GS-N2007
Drill D2.1 L9	GS-N2009
Drill D2.1 L11	GS-N2011
Drill D2.1 L13	GS-N2013
Drill D2.1 L15	GS-N2015
Drill D3.1 L9	GS-N3009
Drill D3.1 L11	GS-N3011
Drill D3.1 L13	GS-N3013
Drill D3.1 L15	GS-N3015
Drill D3.1 L9 HB	GS-N3009HB
Drill D3.1 L11 HB	GS-N3011HB
Drill D3.1 L13 HB	GS-N3013HB
Drill D3.1 L15 HB	GS-N3015HB
Drill D3.5 L9	GS-N3509
Drill D3.5 L11	GS-N3511
Drill D3.5 L13	GS-N3513
Drill D3.5 L15	GS-N3515
Drill D3.5 L9 HB	GS-N3509HB
Drill D3.5 L11 HB	GS-N3511HB
Drill D3.5 L13 HB	GS-N3513HB
Drill D3.5 L15 HB	GS-N3515HB
Mount D3.1	GS-N7007/31
Mount D3.8	GS-N7007/38
Latch Driver D3.1	GS-N9031
Latch Driver D3.5	GS-N9035
Latch Driver Long D3.1	GS-N9031L
Latch Driver Long D3.5	GS-N9035L

Driver Ratchet Long D3.1	GS-N7031
Driver Ratchet Long D3.1	GS-N7035
Wide punch	GS-WPUNCH
Wide Profiler	GS-WPRO
Locator Drill	GS-WLOCATOR
Drill D2.1 L7	GS-W2007
Drill D2.1 L9	GS-W2009
Drill D2.1 L11	GS-W2011
Drill D2.1 L13	GS-W2013
Drill D2.1 L15	GS-W2015
Drill D3.5 L7	GS-W3507
Drill D3.5 L9	GS-W3509
Drill D3.5 L11	GS-W3511
Drill D3.5 L13	GS-W3513
Drill D3.5 L15	GS-W3515
Drill D4.3 L7	GS-W4307
Drill D4.3 L9	GS-W4309
Drill D4.3 L11	GS-W4311
Drill D4.3 L13	GS-W4313
Drill D4.3 L15	GS-W4315
Drill D4.3 L7 HB	GS-W4307HB
Drill D4.3 L9 HB	GS-W4309HB
Drill D4.3 L11 HB	GS-W4311HB
Drill D4.3 L13 HB	GS-W4313HB
Drill D4.3 L15 HB	GS-W4315HB
Drill D5.1 L7	GS-W5107
Drill D5.1 L9	GS-W5109
Drill D5.1 L11	GS-W5111
Drill D5.1 L13	GS-W5113
Drill D5.1 L15	GS-W5115
Drill D5.1 L7 HB	GS-W5107HB

Drill D5.1 L9 HB	GS-W5109HB
Drill D5.1 L11 HB	GS-W5111HB
Drill D5.1 L13 HB	GS-W5113HB
Drill D5.1 L15 HB	GS-W5115HB
Mount D4.3/D5.1	GS-W7007
Latch Driver D4.3/5.1	GS-W904351
Latch Driver Long D4.3/5.1	GS-W904351L
Ratchet Driver D4.3/5.1	GS-E7001
Ratchet Driver Long D4.3/5.1	GS-W7001L
Driver Extender	GS-2000
Lateral Pins	GS-PIN
Ratchet driver	GS-E7001
Torque wrench	CT-8010
Drill for later pins	GS-FIXDRILL
Finger adapter	CT-E7003
Ratchet short screwdriver	CT-8051
Ratchet long screwdriver	CT-8052
Latch screwdriver	BL-9019
Latch Extractor	GS-6061

C-GUIDE REDUCED KIT

GS-SURKIT02

INSTRUMENTS INCLUDED IN THE C-GUIDE KIT

Narrow punch	GS-NPUNCH
Locator Drill	GS-NLOCATOR
Drill D2.1 L9	GS-N2009
Drill D2.1 L11	GS-N2011
Drill D2.1 L13	GS-N2013
Drill D2.1 L15	GS-N2015

Wide punch	GS-WPUNCH
Locator Drill	GS-WLOCATOR
Drill D2.1 L7	GS-W2007
Drill D2.1 L9	GS-W2009
Drill D2.1 L11	GS-W2011
Drill D2.1 L13	GS-W2013
Drill D2.1 L15	GS-W2015

MINI IMPLANT GUIDED SURGERY

Surgical sleeve

x 10

MGS-SLEEVE

Lateral sleeves

x4

GS-LS

Drill for lateral pins

GS-FIXDRILL

Lateral pins

x4

GS-PIN

Short drills

MGS-11S
Fits Implants 1.1

MGS-13S
Fits Implants 1.3

MGS-20S
Fits Implants 2.0

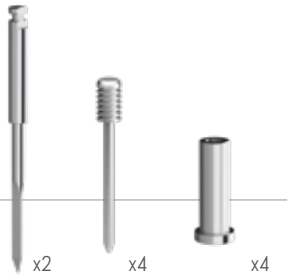
Long drills

MGS-11L
Fits Implants 1.1

MGS-13L
Fits Implants 1.3

MGS-20L
Fits Implants 2.0

Lateral Fixation Set



GS-FIX

SD/MB Latch implant driver

D	L
3.2	22

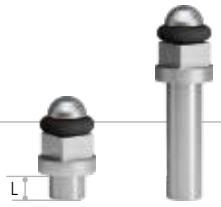
Material: Stainless steel

MC-3020

SD/MB Adapters

L	item#
4	MC-3003S
12	MC-3003L

Material: Stainless steel



MC-3003S
Short

MC-3003L
Long

SB/MB Butterfly driver

D	L
8.5	7

Material: Stainless steel

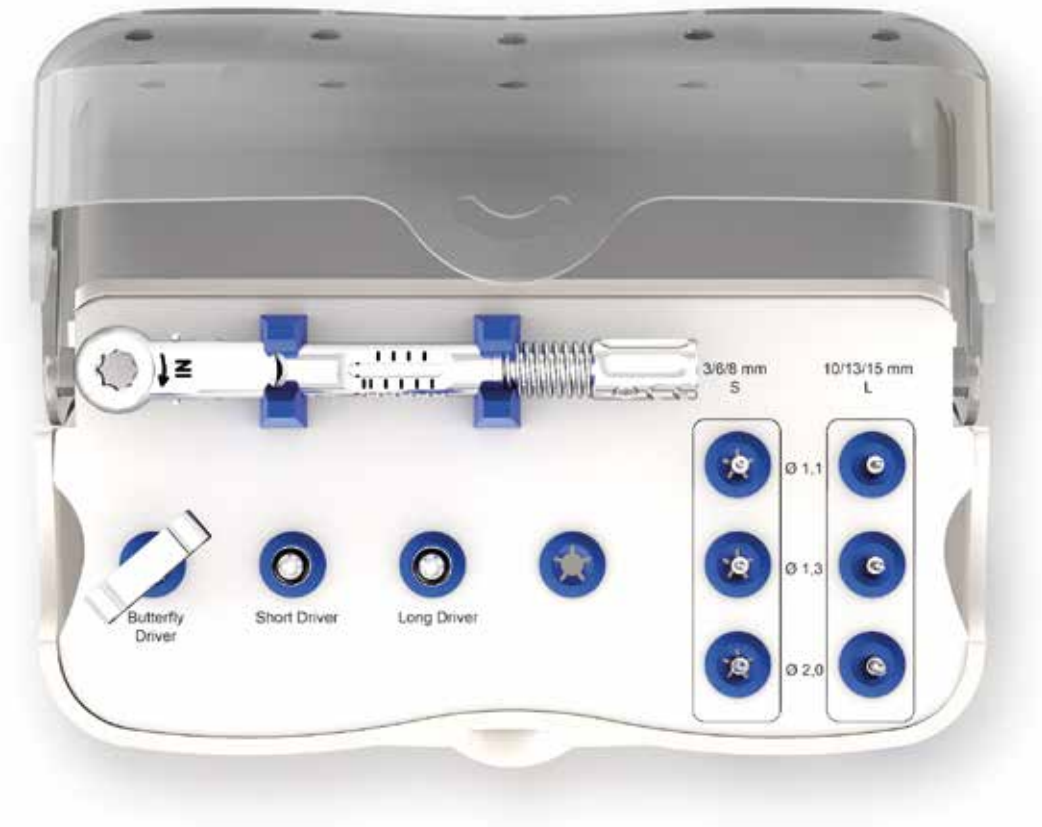
MC-3002

SD/MB Torque wrench up to 50Ncm

CT-8010

COMPLETE GUIDED SURGERY SD KIT (DRILLS + INSERTION INSTRUMENTS)

MGS-KIT



INSTRUMENTS INCLUDED IN THE KIT

Short drill Ø1,1	MGS-11S
Short drill Ø1,3	MGS-13S
Short drill Ø2,0	MGS-20S
Long drill Ø1,1	MGS-11L
Long drill Ø1,3	MGS-13L
Long drill Ø2,0	MGS-20L

SB/MB Butterfly driver	MC-3002
SD/MB Torque wrench up to 50Ncm	CT-8010
SD/MB Adapter Short	MC-3003S
SD/MB Adapter Long	MC-3003L

REDUCED GUIDED SURGERY SD KIT (ONLY DRILLS)

MGS-KIT02

INSTRUMENTS INCLUDED IN THE KIT

Short drill Ø1,1	MGS-11S
Short drill Ø1,3	MGS-13S
Short drill Ø2,0	MGS-20S
Long drill Ø1,1	MGS-11L
Long drill Ø1,3	MGS-13L
Long drill Ø2,0	MGS-20L

Surgical Protocol

Case planning

Following evaluation of the patient and the corresponding panoramic radiographs, the type and number of implants and planned placement sites are established. There should be a minimum of 4 implants for mandibular cases and a minimum of 6 for maxilla cases. The implant planning transparency is used to establish the implant length. A minimum of 5mm between each implant needs to be maintained to allow space for the housings. In mandibular cases the implants should be placed starting with a minimum of 5mm anterior of the mental foramen.

Pilot drill and surgical guide insertion

The advantage of guided surgery is the possibility to plan the mini implants in a perfectly parallel position inside the software, in order to make the most out of the position caps in the removable prosthesis. Also, there will be less wear on the o-rings.

Place the template created and fix it with the fixation pins. Each cutter has 3 laser markings which are used to determine the length of the drilling. Once the planned length is reached, remove the guide and continue freehand with the butterfly driver.

Continuing the insertion with the butterfly driver

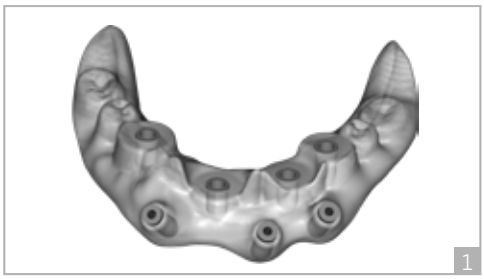
Following the initial insertion one will use the butterfly driver, which allows for applying more torque. It should be possible to seat the implant completely with this instrument but should the implant not be completely seated and further advancement is not possible due to resistance, one will then require the ratchet or torque ratchet for final seating.

Final implant seating

Final seating is accomplished through use of the torque ratchet.
The torque ratchet should be set to 35 Ncm. The ratchet adapter is inserted into the opening at the end of the ratchet with the female aspect of the adapter protruding. The adapter is then fitted over the top of the implant, engaging the square part beneath the O-ball.

A finger should be placed over the end of the ratchet in order to stabilize the insertion and prevent lever action on the end of the implant. The ratchet is moved in quarter turn increments, pausing in between each turn, thus allowing the bone to expand.

The implant is considered primarily stable once 35 Ncm has been achieved. The implant is completely seated once the O-ball and the square part beneath are the only parts protruding from the gingiva. If primary stability has been achieved prior to achieving final seating, then the torque setting should be raised to 50 Ncm, the point at which a fracture can occur. Should the resistance be too much to achieve final seating, then the implant should be slowly backed out and the pilot drill should be used to deepen the osteotome site.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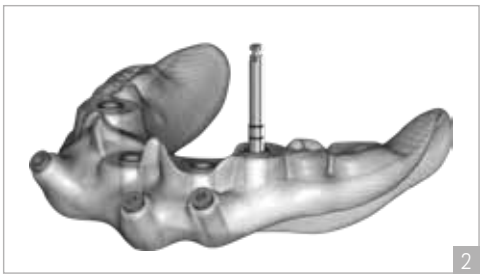
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Prosthetic Protocol

Following proper prosthetic protocol is essential to case success

The base of the denture is relieved in order to freely accommodate the heads of the implants and the housings seated on the o-balls.
The denture should be relieved until the housings no longer come into contact with the ceiling of the denture base.
The denture should be cleaned thoroughly of all acrylic powder residue.

Take the PVC tubing and, using a scalpel or scissors, cut off 1.5mm lengths corresponding to the quantity of set implants.
Slip the cut lengths of tubing around the necks of the implant heads and into the gingiva but below the implant O-ball.
Fit the housings over all O-ball heads, the tubing should not obstruct the full seating of the housings over the O-balls.
Using cold curing acrylic, apply small amounts to the tops of the housings and fill the hollowed trough of the denture base with the acrylic.

Set the denture over the housings in the patient's mouth.
Have the patient bite down on the denture in a normal occlusion with normal pressure.

The acrylic will require approx 8 minutes to set, after which the denture is removed and excess acrylic is trimmed and polished away.


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English version

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