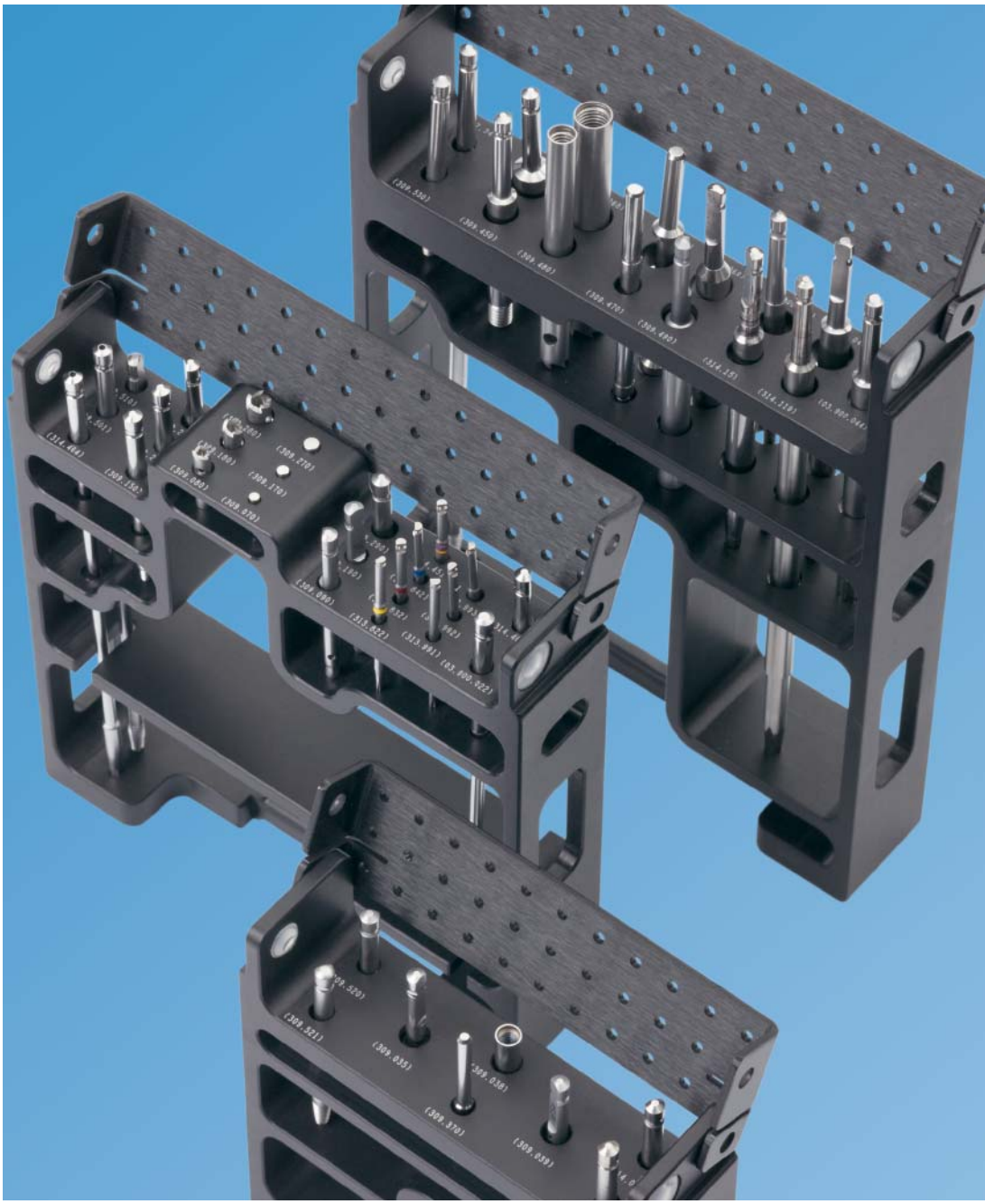
Screw Removal Set.

Instruments for removing Synthes screws.

Technique Guide



SYNTHES®

Instruments and implants approved by the AO Foundation

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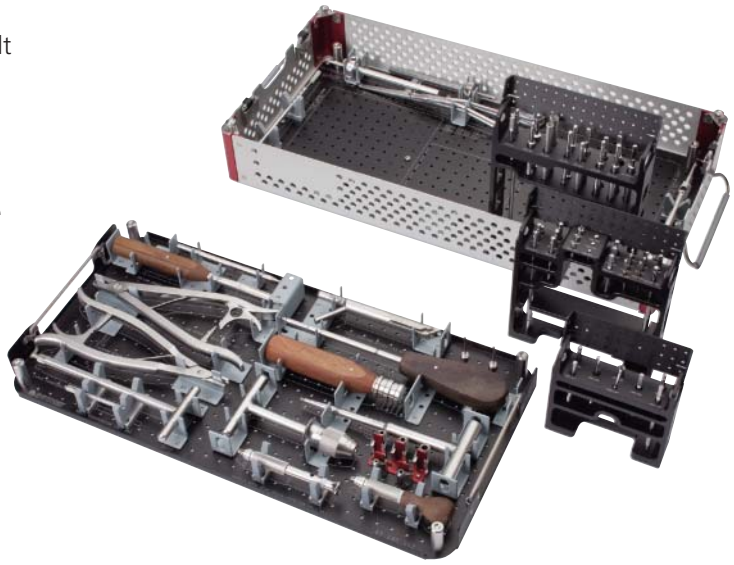
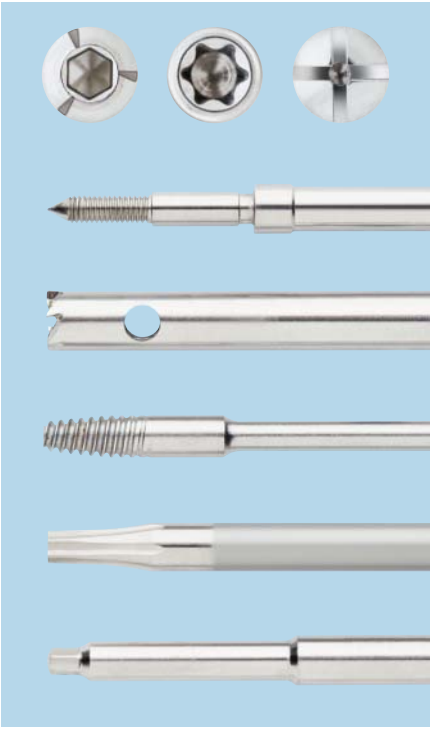
Screw Removal Set. Instruments for removing Synthes screws.

The Screw Removal Set contains instruments required for removing intact screws or damaged screws that are difficult to remove.



Modular design
The modular design ensures that the assembly is ideally suited to requirements and the set is always complete. The clear layout makes the instruments easy to locate, thereby reducing the danger of selecting the wrong instrument.

Comprehensive system
All existing Synthes screws can be removed with the instruments supplied in the Screw Removal Set. This prevents delays caused by missing or incorrect instruments.



The screw removal set contains screwdriver shafts for all Synthes screw sizes and drives, as well as extraction instruments for removing broken and damaged screws.

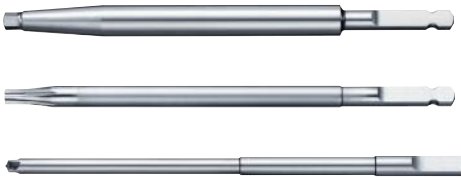
The set contains instruments to remove all screws with the following drive recesses:

– Hex: 1.5 mm, 2.5 mm, 3.5 mm and 4.0 mm
– StarDrive: T4, T5, T6, T8, T15, T25 and T40
– Cruciform: 1.0 mm, 1.3 mm, 1.5 mm, 2.0 mm and 2.4 mm

The set contains instruments for removing the following screws:

– Cortex screws
– Cancellous bone screws
– Shaft screws
– Cannulated screws
– Locking screws
– Locking bolts

To remove intact screws
- Hex screwdriver shafts
- StarDrive screwdriver shafts
- Cruciform screwdriver shafts



To remove broken screws
- Hollow reamer: use counterclockwise to expose deeply seated broken screw shafts
- Extraction bolts: use counterclockwise to remove exposed broken screw shafts

The following table shows which extraction instruments can be used to remove the various screw sizes. If several instruments can be used, select the one with the smallest external diameter.

Hollow reamer and extraction bolt for screw diameter (and drive recess)

		Screw diameter (and drive recess)																							
Recess																									
		1.0 mm/1.3 mm/1.5 mm (Cruciform)	1.5 mm (1.5 mm Hex)	2.0 mm (Cruciform)	2.0 mm (1.5 mm Hex)	2.0 mm (T6 StarDrive)	2.4 mm (Cruciform)	2.4 mm (T8 StarDrive)	2.7 mm (2.5 mm Hex)	2.7 mm (T8 StarDrive)	2.7 mm (T15 StarDrive)	3.5 mm (2.5 mm Hex)	3.5 mm (T15 StarDrive)	3.9 mm (2.5 mm Hex)	3.9 mm (3.5 mm Hex)	4.0 mm (2.5 mm Hex)	4.0 mm (3.5 mm Hex)	4.0 mm (T25 StarDrive)	4.5 mm (3.5 mm Hex)	4.9 mm (3.5 mm Hex)	5.0 mm (3.5 mm Hex)	5.0 mm (T25 StarDrive)	6.0 mm (T25 StarDrive)	6.5 mm (3.5 mm Hex)
 **Hollow reamers**	309.150	•	•	•	•	•																			
	309.200			•	•	•																			
	309.250						•	•	•	•	•														
	309.035											•	•	•	•	•	•	•							
	309.450															•	•	•	•	•	•	•			
	309.065																						•	•	
 **Extraction bolts**	309.090	•	•																						
	309.190			•	•	•																			
	309.290						•	•	•	•	•														
	309.039											•	•	•	•	•	•	•							
	309.490															•	•	•	•	•	•	•			
	309.069																						•	•	

To remove screws with a damaged screw recess
Conical extraction screws: use counterclockwise to remove screws with a damaged screw recess

Note: The conical tip of the extraction screw grasps the screw recess and the screw can be removed by turning counterclockwise.

The table below shows screw diameter and geometry/recess size. It is not always possible to clearly allocate the extraction screw.

Note: Always use the extraction screw with the largest possible diameter.

Conical extraction screw for screw diameter (and drive recess)

		Screw diameter (and drive recess)																						
Recess		⬢	⬢	✱	✱	⬢	✱	✱	⬢	✱	⬢	⬢	⬢	⬢	⬢	✱	⬢	⬢	⬢	✱	✱	⬢	⬢	✱
Conical extraction screws		1.5 mm (1.5 mm Hex)	2.0 mm (1.5 mm Hex)	2.0 mm (T6 StarDrive)	2.4 mm (T8 StarDrive)	2.7 mm (2.5 mm Hex)	2.7 mm (T8 StarDrive)	2.7 mm (T15 StarDrive)	3.5 mm (2.5 mm Hex)	3.5 mm (T15 StarDrive)	3.9 mm (2.5 mm Hex)	3.9 mm (3.5 mm Hex)	4.0 mm (2.5 mm Hex)	4.0 mm (3.5 mm Hex)	4.0 mm (T25 StarDrive)	4.5 mm (3.5 mm Hex)	4.9 mm (3.5 mm Hex)	5.0 mm (3.5 mm Hex)	5.0 mm (T25 StarDrive)	6.0 mm (T25 StarDrive)	6.5 mm (3.5 mm Hex)	4.0 mm Hex	T40 StarDrive*
	309.510	•	•	•	•		•	•		•		•		•		•	•	•			•		•
	309.520					•		•	•	•	•	•	•	•	•	•	•	•	•	•	•		•
	309.530											•		•	•	•	•	•	•	•	•	•	•
	309.521					•		•	•	•	•		•										•

* Expert nail end caps

To remove cannulated screws

The following table shows instruments that are required for the removal of broken cannulated screws. The instruments shown in parentheses are suitable if the break is in the shaft.

Extraction instruments for cannulated screws

		Screw diameter (and drive recess)									
Recess											
Extraction instruments		2.4 mm (T8 StarDrive)	3.0 mm (Cruciform)	3.0 mm HCS (T8 StarDrive)	3.5 mm (2.5 mm Hex)	4.0 mm (2.5 mm Hex)	4.5 mm (3.5 mm Hex)	5.0 mm locking (4.0 mm Hex)	6.5 mm (4.0 mm Hex)	7.0 mm (3.5 mm Hex)	7.3 mm (4.0 mm Hex)
	309.510	•		•			•			•	
	309.520				•	•	•	•		•	
	309.530						•		•	•	•
	309.521				•	•		•			
	309.521**								•		•
	309.510**						•		•	•	•
	387.34										•
	309.150	(•)	(•)								
	309.200			(•)	(•)						
	309.250	•	•	•		(•)		(•)			
	309.035		•	•	•	•	(•)	•			
	309.450					•	•	•	(•)	(•)	(•)
	309.065								•	•	
	309.090										
	309.190	(•)	(•)	(•)							
	309.290	•	•	•	(•)	(•)		(•)			
	309.039		•	•	•	•	(•)	•			
	309.490						•		(•)	(•)	(•)
	309.069								•	•	•

** Grips in the cannulation of the cannulated screw.

Preoperative planning

To ensure that the appropriate screw removal instruments are obtained, the surgeon should have the following information before implant removal:

- Implant manufacturer
- Implant type
- Time of implantation
- Material (steel, titanium)
- Recess geometry and dimension of the screws (hex, StarDrive or cruciform)
- Screw diameter
- Any visible damage to the implant (e.g. broken screw shaft)

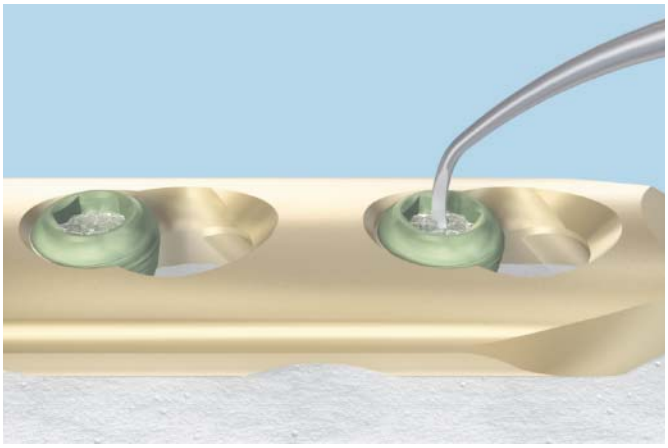
1
Clean screw recess

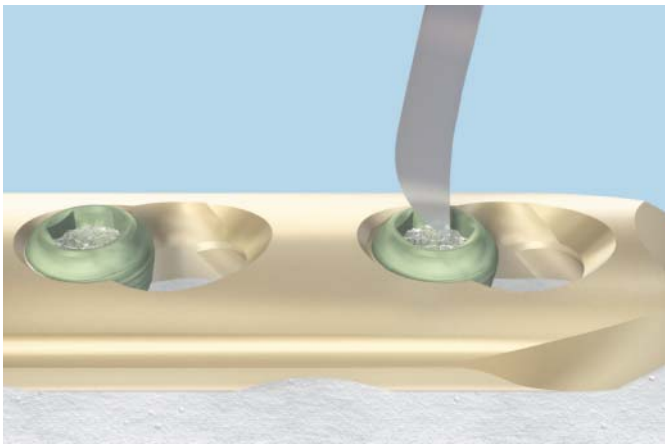
Instrument	
319.39	Sharp Hook

Optional instrument	
03.900.001	Straight Sharp Hook

Before removing screws, clean the screw recess. Free the screw recess from ingrown scars and bone tissue using the sharp hook to ensure that the screwdriver can be fully inserted. Check the condition and the geometry of the recess of the exposed screwhead.

Note: Use the sharp hook to clean the recess if the soft tissue is not deep. If the screw is deep, use the straight sharp hook.





Removal of Intact Screws

1
Remove screw

Instruments	
310.95	Handle, with mini quick coupling
or	
311.01	Handle, with mini quick coupling
311.431	Handle with quick coupling
393.105	Small Universal Chuck with T-Handle

Optional instruments	
03.900.002	AO Coupling Extension Shaft
03.900.011	Small Screw Removal Forceps
03.900.013	Large Screw Removal Forceps

Connect the appropriate screwdriver shaft to a handle with quick coupling.

Note: If the screw is deep in the tissue, attach the AO coupling extension shaft.

Option
Instead of using the handle with quick coupling, a small universal chuck with T-handle can be used.

Connect the mini fragment screwdriver shafts to the handle with mini quick coupling.

1. Remove screw continued

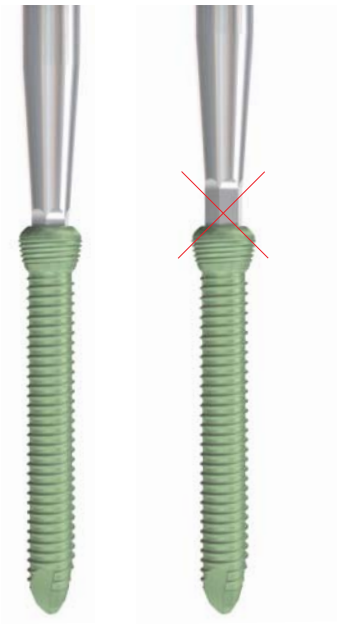
Insert the screwdriver fully into the screw recess. If necessary, lightly tap the screwdriver with a hammer.

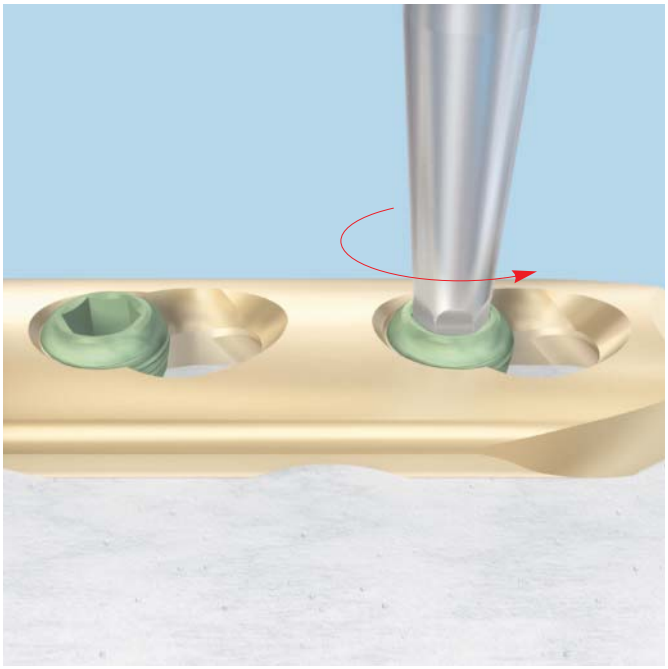
Important: It is essential to ensure that the screwdriver shafts are not damaged and are inserted on the same axis as the screw to be removed. The screw recess can be damaged if the screwdriver is not inserted straight or if it is blunt.

Unscrew the screw.

Note: To ensure that the loosened screw is not lost in the soft tissues, nor strips its thread in the bone, the screw can be held in position by the screw removal forceps. Guide the forceps along the screwdriver to the screwhead and grasp the screw directly below the head.

When all screws have been removed, the plate/internal fixator can be removed.





Option 1: Screw shaft is exposed

1
Expose the screw shaft

Instrument

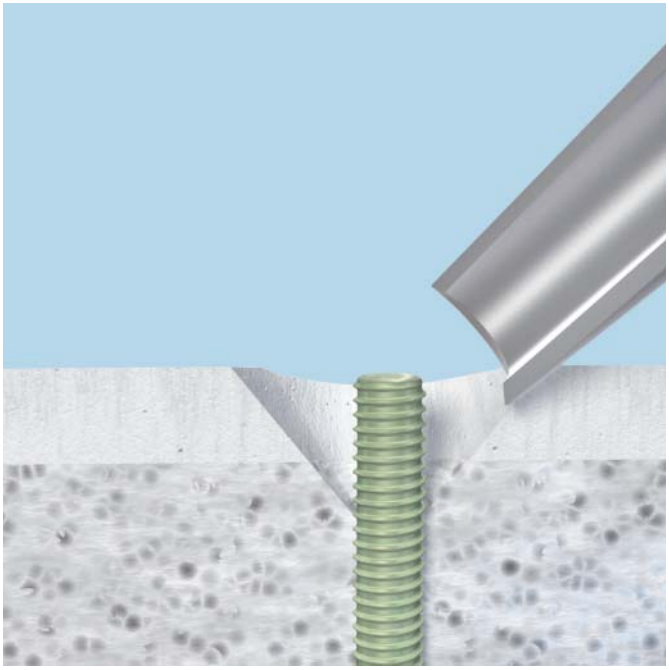
399.68	Gouge

Optional instrument

398.651	Narrow Screw Removal Pliers

If the screwhead is broken and the shaft is visible on the surface or slightly below the surface, use the gouge to remove the bone surrounding the screw shaft to approximately 5 mm in depth.

Note: The narrow screw removal pliers can be used to expose the screw shaft, by using the slightly opened pliers as an awl (sharp edges on the outside of the clamps).



2
Remove screw

Instrument

398.65	Forceps for Screw Removal

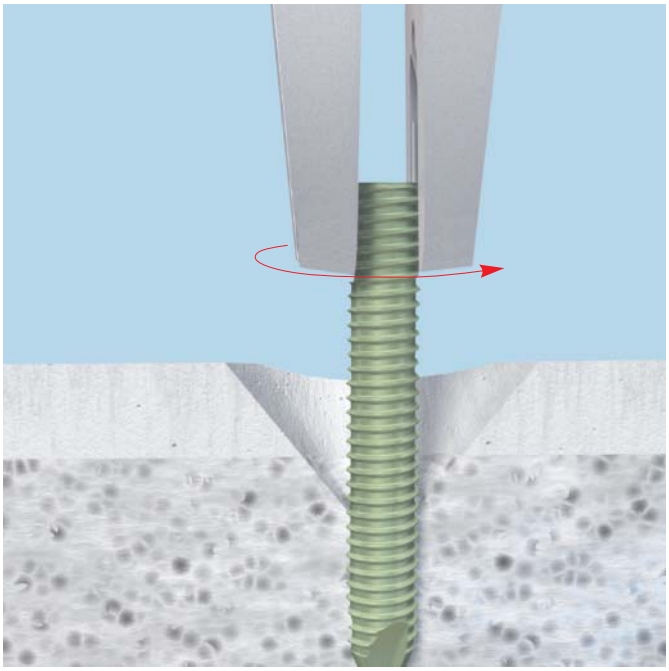
Optional instrument

398.651	Narrow Screw Removal Pliers

Remove the screw with the forceps for screw removal.

Important: Remove the screw stump by rotating it counterclockwise–do not pull or bend.

Note: The narrow screw removal pliers can be used to remove the screw and require less space to grasp the screw shaft than the forceps for screw removal.



Option 2: Screw shaft is not exposed

1
Expose the screw shaft

Instruments	
309.150– 309.450	Hollow Reamers
310.89	Small Countersink
310.99	Large Countersink
311.431	Handle with quick coupling

Optional instrument	
03.900.002	AO Coupling Extension Shaft

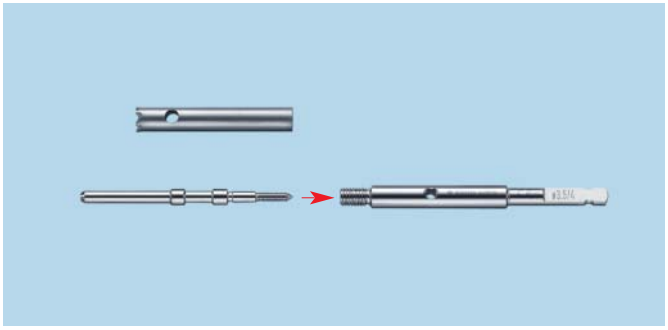
If the screwhead is broken and the shaft is not visible, or the screw fragment is deeply seated, create an opening with the small or large countersink, then use the hollow reamer.

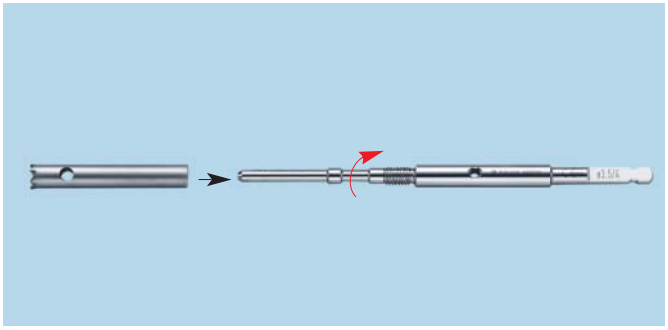
The hollow reamer (complete) consists of three individual parts: reamer tube, centering pin and shaft.
To assemble the hollow reamer:

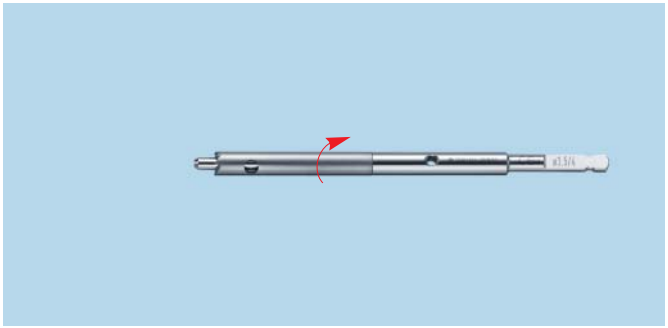
1 Connect the centering pin and the shaft (left-hand thread)

2 Screw the reamer tube over the centering pin (left-hand thread)

Important: There is no thread connection between the centering pin and the shaft for hollow reamers 309.150, 309.200 and 309.250. The reamer tube and the shaft are screwed together (left-hand thread).







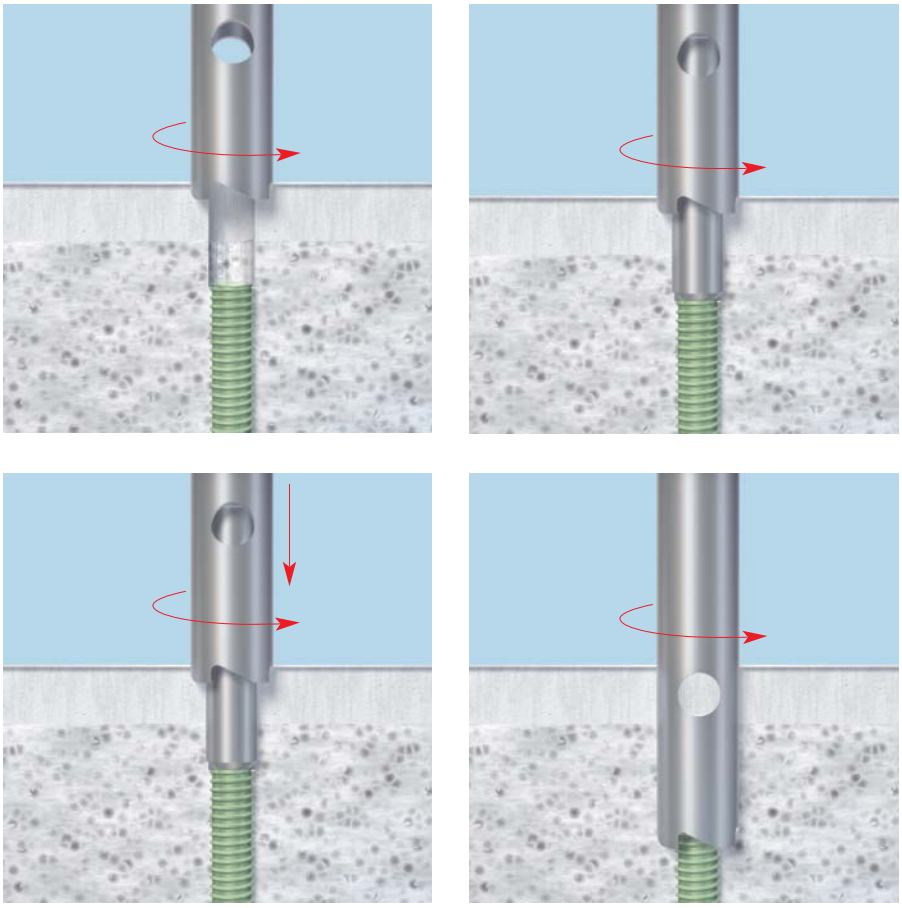
If the screw shaft has broken off less than approximately 5 mm below the bone surface, the hollow reamer can also be used without the centering pin. In this case, only connect the reamer tube and the shaft (left-hand thread).

Note: Only use instruments with sharp edges. It is possible to use the hollow reamer with power tools, but this should be done very carefully.

Connect the instruments with the handle with quick coupling.

Guide the centering pin into the canal of the broken screw and turn the hollow reamer counterclockwise. Remove the centering pin when it reaches the screw fragment. Then continue to turn the reamer without the centering pin, approximately 5 mm below the screw.

Note: If the screw is deep in the tissue, attach the AO coupling extension shaft.



Option 2: Screw shaft is not exposed continued

2
Remove screw

Instruments

309.039–309.290	Extraction Bolts
311.431	Handle with quick coupling

Optional instrument

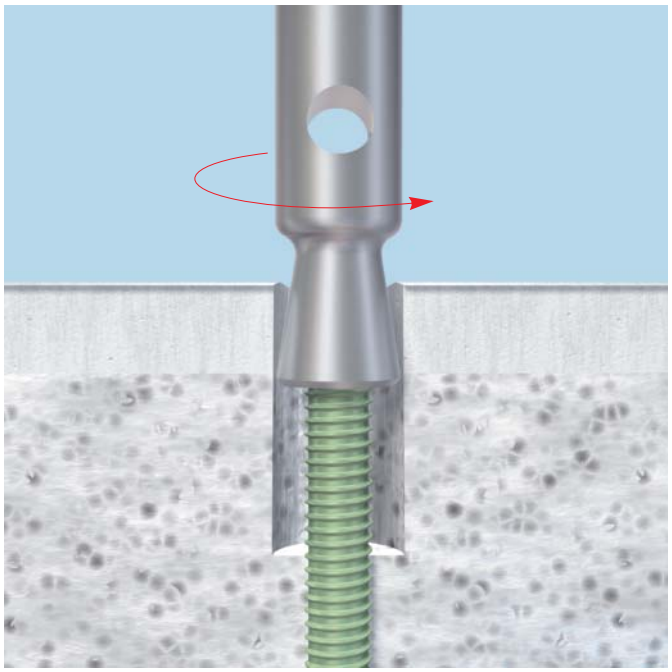
03.900.002	AO Coupling Extension Shaft

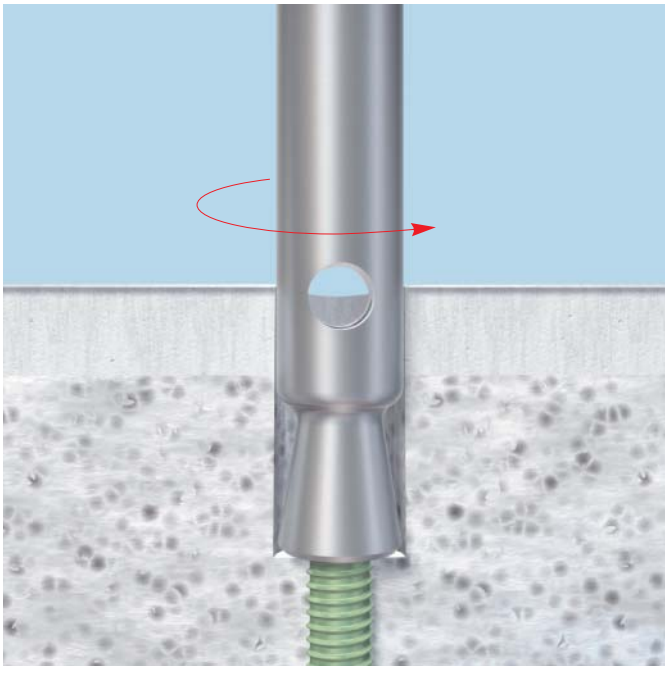
Connect the extraction bolt to the handle with quick coupling.

Note: If the screw is deep in the tissue, attach the AO coupling extension shaft.

Position the extraction bolt above the broken screw. Rotate counterclockwise while maintaining pressure and holding the extraction bolt as vertical as possible. This ensures a secure connection between the conical shape of the thread of the extraction bolt and the shaft of the screw. Turn counterclockwise until the screw shaft is completely removed.

Note: The hollow reamer and the extraction bolt are left-turning (to be turned counterclockwise). During insertion, ensure that enough axial pressure is exerted and maintain alignment with the axis of the screw.





Option 1: Screwdriver turns freely in the recess

1
Remove screw

Instruments	
309.510–309.530	Conical Extraction Screws
311.431	Handle with quick coupling

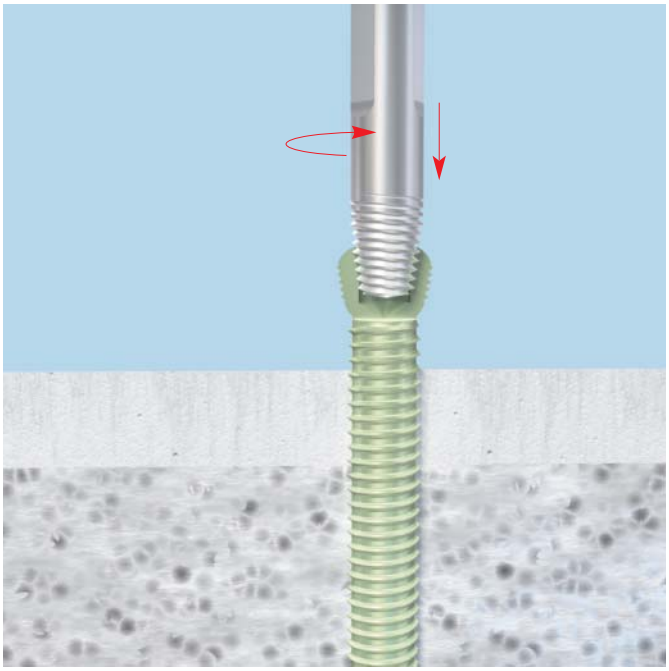
Optional instrument	
03.900.002	AO Coupling Extension Shaft

Connect the conical extraction screw to the handle with quick coupling.

Note: If the screw is deep in the tissue, attach the AO coupling extension shaft.

Insert the tip of the conical extraction screw into the screw recess and hold it as vertical as possible. Turn counterclockwise, exerting pressure, until the extraction screw grasps into the screw recess. Continue to turn counterclockwise to remove the screw.

Important: During insertion, ensure that enough axial pressure is exerted and maintain alignment with the axis of the screw. Only use sharp-edged extraction screws (recommendation: one extraction). Do not use extraction screws with power tools.

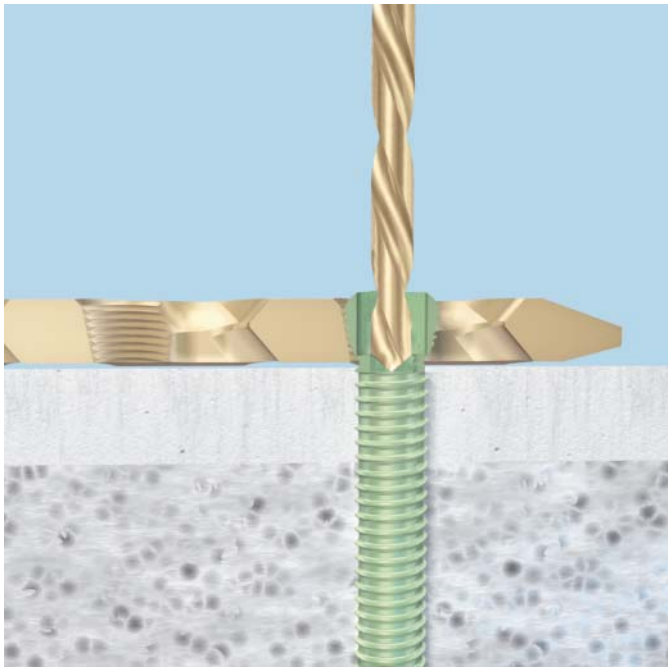


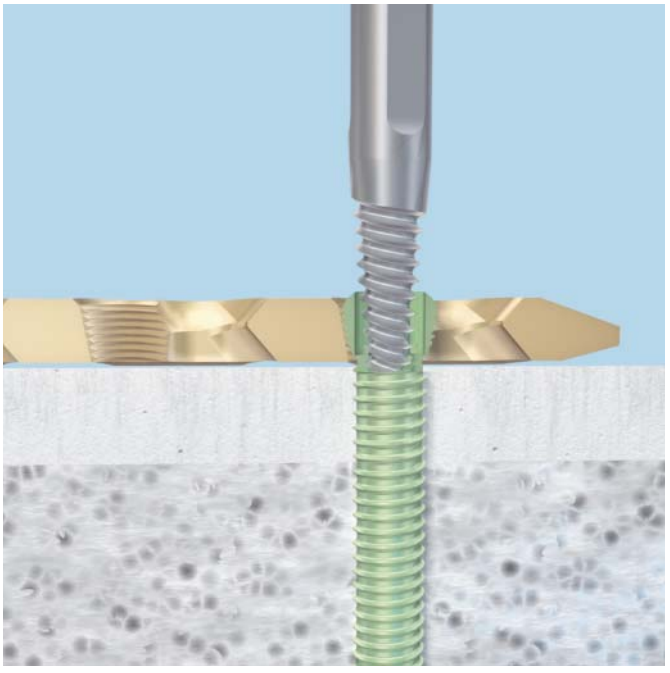
Option 2: Screwdriver and conical extraction screw turn freely in the recess

1

Remove screw

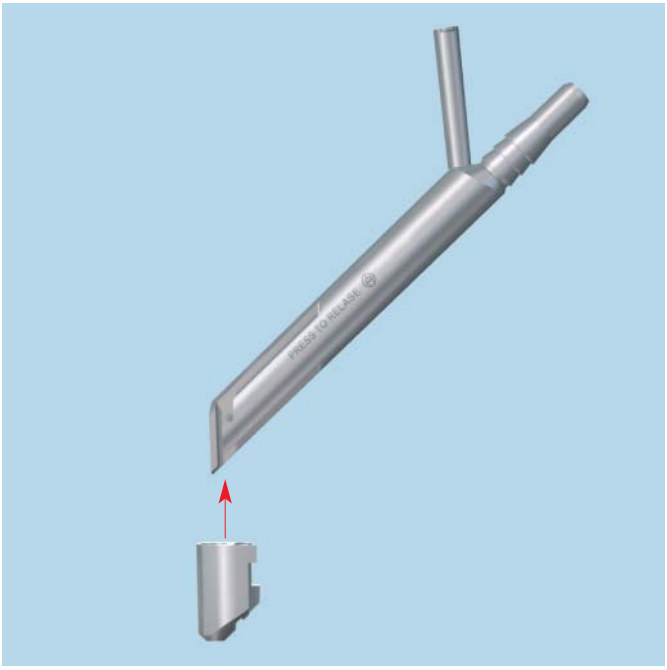
If the screwdriver and the conical extraction screw wear down the recess of the screw and turn freely in the recess, it may be possible to lightly predrill the screw recess to anchor the conical extraction screw deeper.





2
Prepare for drilling

Optional instruments	
03.607.025	2.5 mm Drill Sleeve Clip-on, for 03.607.110
03.607.035	3.5 mm Drill Sleeve Clip-on, for 03.607.110
03.607.040	4.0 mm Drill Sleeve Clip-on, for 03.607.110
03.607.048	4.8 mm Drill Sleeve Clip-on, for 03.607.110
03.607.060	6.0 mm Drill Sleeve Clip-on, for 03.607.110
03.607.110	Drill Suction Device
309.004S	4.0 mm Carbide Drill Bit, sterile
309.006S	6.0 mm Carbide Drill Bit, sterile
309.503S	2.5 mm High Speed Drill Bit, sterile
309.504S	3.5 mm High Speed Drill Bit, sterile
309.506S	4.8 mm High Speed Drill Bit, sterile



Drilling screws can cause drill chips that should be suctioned away. It is also important to cool the drill bit during the drilling process. The drill suction device allows efficient aspiration of the drill chips, while simultaneously cooling the drill bit.

Before drilling, attach the appropriate drill sleeve to the drill suction device. Then connect the drill suction device to the irrigation system and the vacuum pump. To release the drill sleeve, press the side flange.

Option 2: Screwdriver and conical extraction screw turn freely in the recess continued

3
Drill screw recess

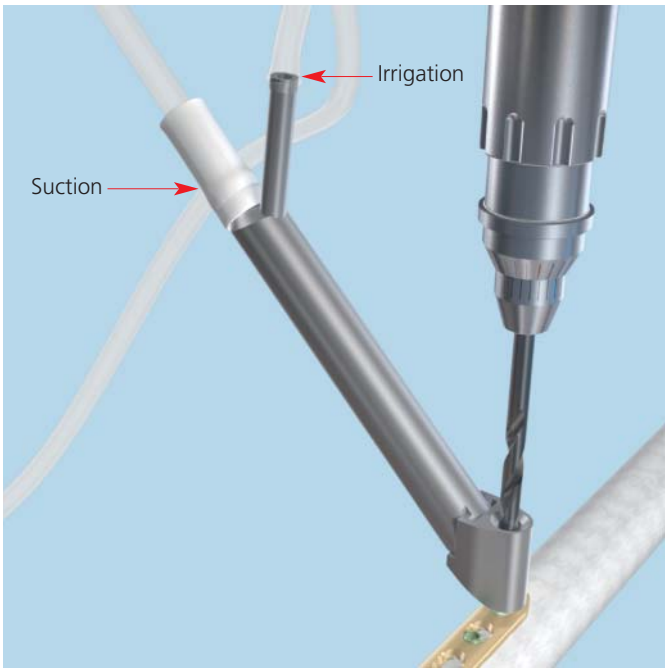
Optional instruments	
03.607.040	4.0 mm Drill Sleeve Clip-on, for 03.607.110
03.607.060	6.0 mm Drill Sleeve Clip-on, for 03.607.110
03.607.110	Drill Suction Device
309.004S	4.0 mm Carbide Drill Bit, sterile
309.006S	6.0 mm Carbide Drill Bit, sterile

Switch on the rinsing equipment and the vacuum pump. Position the drill suction device on the relevant screw.

Insert the drill bit into the drill sleeve, start the drill, then begin drilling. Carefully predrill the screw recess.

Note: Do not interrupt the water supply. Ensure that the supply and waste hoses are not bent.

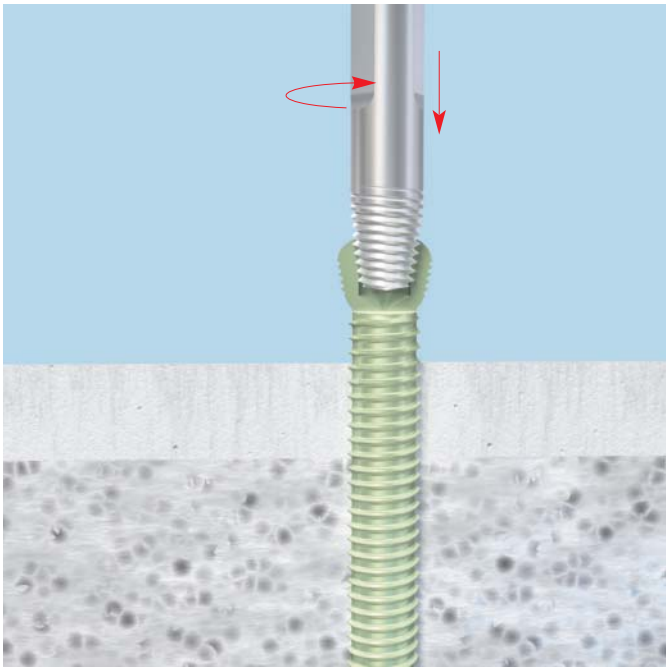
Important information on drilling with metal drill bits:
- Drill bits may not be reprocessed or resterilized. They are designed for single use only.
- Metal drill bits are hard and brittle. To prevent breakage, start drilling with the drill bit already revolving and maintain the chosen drill axis throughout the entire drilling process.
- When drilling, cool with the drill suction device and aspirate the drill chips.
- Refer to page 21 for selection of appropriate drill bit.



4
Remove screw

Instruments	
309.510 – 309.530	Conical Extraction Screws
393.105	Small Universal Chuck, with T-Handle

Remove the screw with the conical extraction screw, as described on page 13.



Removal of Jammed Screws

1

Remove broken instrument and screw

Instruments	
319.39	Sharp Hook
398.65	Forceps for Screw Removal

If a broken instrument is in the recess, first attempt to remove the broken part of the instrument with a sharp hook and/or forceps for screw removal. If this attempt fails, proceed with the next step.

2
Prepare for drilling

Optional instruments

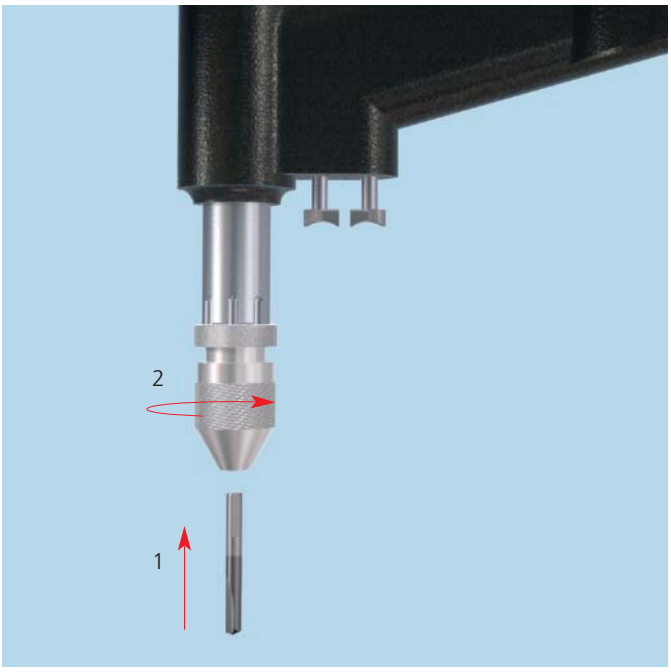
03.607.025	2.5 mm Drill Sleeve Clip-on, for 03.607.110
03.607.035	3.5 mm Drill Sleeve Clip-on, for 03.607.110
03.607.040	4.0 mm Drill Sleeve Clip-on, for 03.607.110
03.607.048	4.8 mm Drill Sleeve Clip-on, for 03.607.110
03.607.060	6.0 mm Drill Sleeve Clip-on, for 03.607.110
03.607.110	Drill Suction Device
309.004S	4.0 mm Carbide Drill Bit, sterile
309.006S	6.0 mm Carbide Drill Bit, sterile
309.503S	2.5 mm High Speed Drill Bit, sterile
309.504S	3.5 mm High Speed Drill Bit, sterile
309.506S	4.8 mm High Speed Drill Bit, sterile

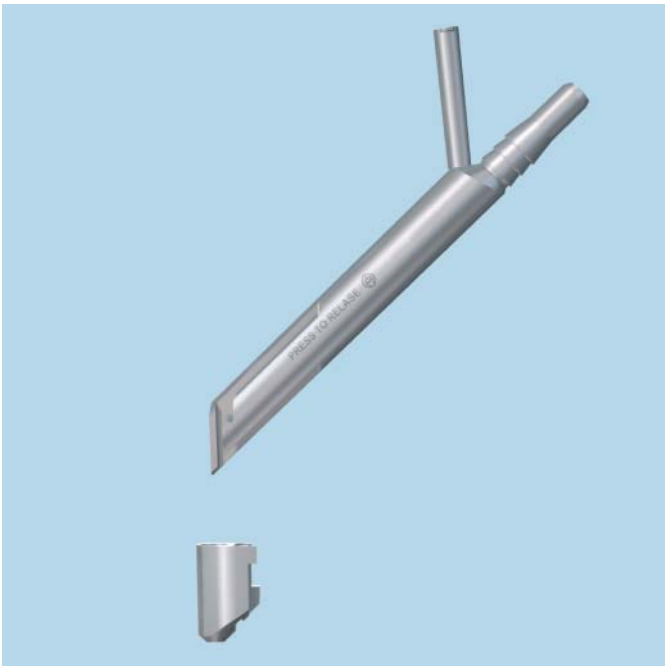
Select the appropriate drill bit and attach it to the universal chuck of the power tool and tighten (see page 21).

If the screw is deep, the carbide drill bit extensions can be used.

Before drilling, attach the appropriate drill sleeve to the drill suction device. Then connect the drill suction device to the irrigation system and the vacuum pump. To release the drill sleeve, press the side flange.

Note: The use of the drill suction device allows efficient aspiration of the drill chips, while simultaneously cooling the drill bit.





3
Drill off screwhead

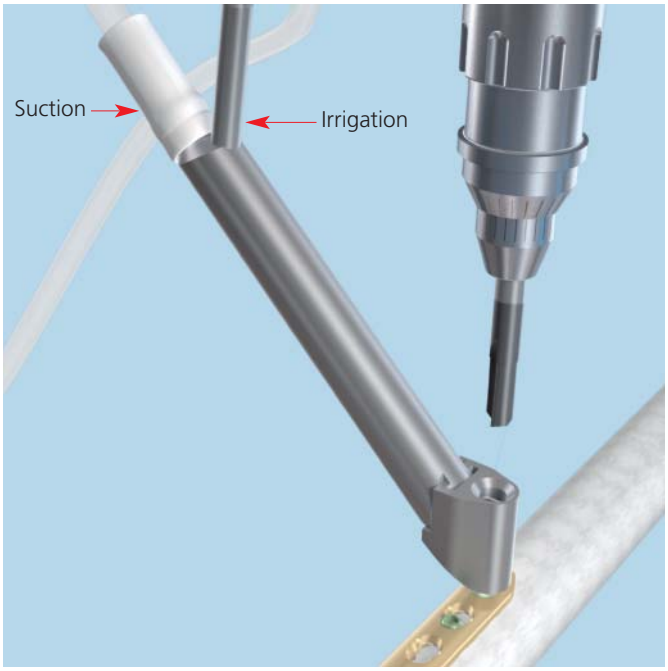
Switch on the rinsing equipment and the vacuum pump. Position the drill suction device on the relevant screw.

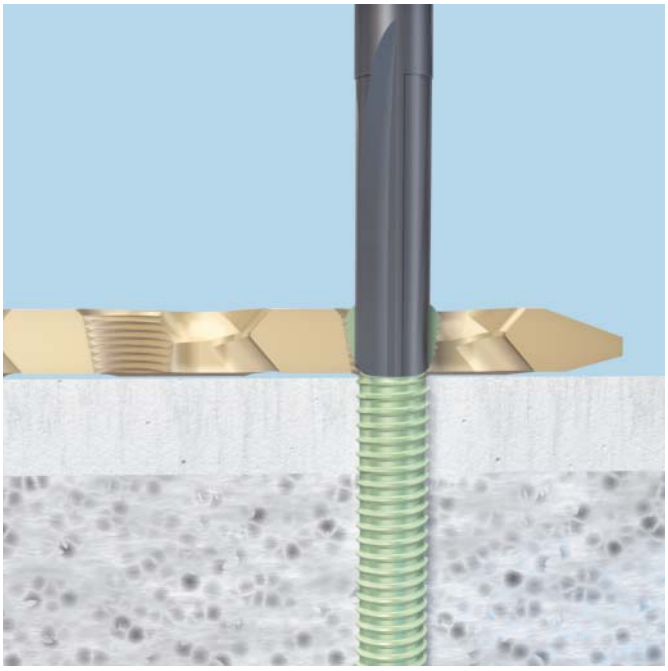
Insert the drill bit into the drill sleeve, start the drill then begin drilling. Carefully drill off the screwhead.

Align the axis of the drill with axis of the screw and maintain this alignment throughout the drilling process. Drill until the screwhead is detached or removed from the screw shaft.

Note: Do not interrupt the water supply. Ensure that the supply and waste hoses are not bent.

Remove the plate when it is no longer held in place by any screws.



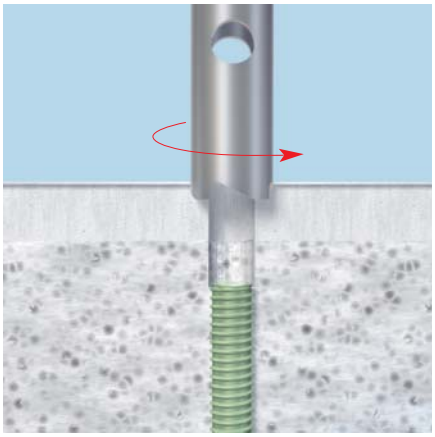


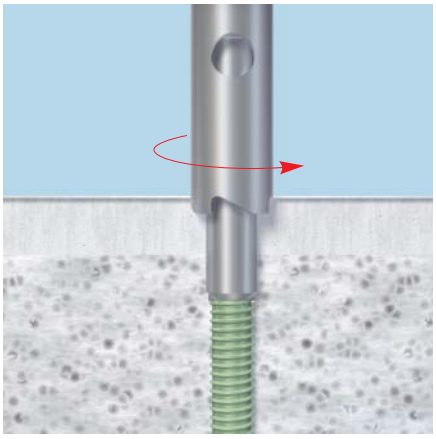
4

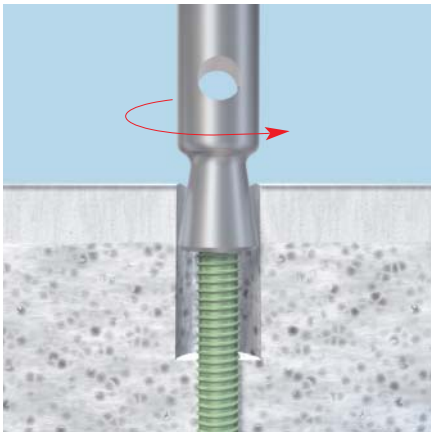
Remove remaining screw shaft

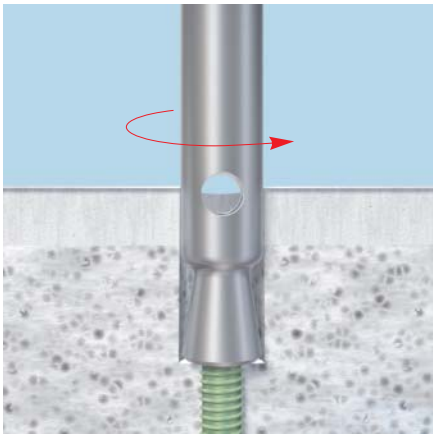
Proceed as for a broken screw.

Note: Select the carbide drill bit to drill out screws from titanium implants. To remove broken instruments from the screw recess (e.g. tips of screwdrivers, extraction screws), only use the carbide drill bits.









Screw sizes	Drill bits			Drill bits suitable for		
		Drill diameter	Drill type	Titanium*	Implant steel	Instrument steel
3.5 mm, 4.0 mm	309.503S	2.5 mm	High speed	++	++	–
3.5 mm, 4.0 mm, 4.5 mm, 5.0 mm	309.504S	3.5 mm	High speed	++	++	–
3.5 mm, 4.0 mm, 4.5 mm, 5.0 mm	309.004S	4.0 mm	Carbide	++	+	+
5.0 mm, 6.5 mm, 7.0 mm, 7.3 mm	309.506S	4.8 mm	High speed	++	++	–
5.0 mm, 6.5 mm, 7.0 mm, 7.3 mm	309.006S	6.0 mm	Carbide	++	+	+

++ good drilling properties
\+ adequate drilling properties
– not recommended

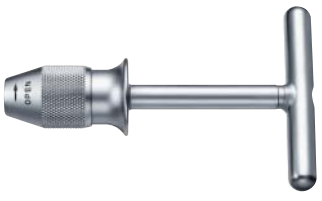
*Commercially pure (CP) titanium and titanium alloys (Ti-6Al-7Nb and Ti-6Al-4V)

Instruments

03.607.104	4.0 mm Carbide Drill Bit Extension	
03.607.106	6.0 mm Carbide Drill Bit Extension	
03.607.110	Drill Suction Device	
	Drill Sleeve Clip-ons, for 03.607.110	
03.607.025	2.5 mm	
03.607.035	3.5 mm	
03.607.040	4.0 mm	
03.607.048	4.8 mm	
03.607.060	6.0 mm	
03.900.001	Straight Sharp Hook	
03.900.002	AO Coupling Extension Shaft	

03.900.011	Small Screw Removal Forceps	
03.900.013	Large Screw Removal Forceps	
	Hollow Reamers, complete	
309.035	for 3.5 mm and 4.0 mm screws	
309.065	for 6.5 mm and 7.0 mm screws	
309.150	for 1.5 mm screws	
309.200	for 2.0 mm screws	
309.250	for 2.7 mm screws	
309.450	for 4.5 mm screws	
	Extraction Bolts	
309.039	for 3.5 mm and 4.0 mm screws	
309.069	for 6.5 mm and 7.0 mm screws	
309.090	for 1.5 mm screws	
309.190	for 2.0 mm screws	
309.290	for 2.7 mm screws	
309.490	for 4.5 mm and 5.0 mm screws	
	Conical Extraction Screws	
309.501	for threaded washers	
309.510	for 1.5 mm and 2.0 mm screws	
309.520	for 2.7 mm, 3.5 mm and 4.0 mm screws	
309.521	for 3.5 mm screws	
309.530	for 4.5 mm and 6.5 mm screws	
387.34	for 7.3 mm cannulated screws	
310.89	Countersink, for 3.5 mm Cortex and 4.0 mm Cancellous Bone Screw	

310.95	Handle, with mini quick coupling, stainless steel	
310.99	Countersink, for 4.5 mm Cortex and 6.5 mm Cancellous Bone Screws	
311.01	Handle, with mini quick coupling	
311.431	Large Handle with quick coupling	
	StarDrive Screwdriver Shafts	
03.900.042	T25	
03.900.044	T40	
313.822	1.3 mm, self-retaining	
313.832	1.5 mm, self-retaining	
313.842	2.0 mm, self-retaining	
314.116	T15, self-retaining	
314.119	T25, self-retaining	
314.451	2.4 mm	
313.93	Solid Hexgonal Screwdriver, 4.0 mm width across flats	

	Cruciform Screwdriver Shafts	
03.900.022	2.4 mm	
313.991	1.0 mm, self-retaining	
313.992	1.3 mm, self-retaining	
313.993	1.5 mm, 2.0 mm, self-retaining	
314.465	for 3.0 mm cannulated screws	
	Hexagonal Screwdriver Shafts	
03.900.032	4.0 mm width across flats	
314.03	small, 2.5 mm width across flats	
314.15	large, 3.5 mm width across flats	
314.13	Large Hexgonal Screwdriver with T-Handle	
314.464	Cannulated Driver, for Threaded Washers, for 3.0 mm cannulated screws	
319.39	Sharp Hook	
393.105	Small Universal Chuck with T-Handle	

398.651 Narrow Screw Removal Pliers

398.65 Forceps, for broken screw removal

399.68 Hollow Gouge, for screw exposure

Also Available

	Carbide Drill Bits, sterile
309.004S	4.0 mm
309.006S	6.0 mm

	Spare Reamer Tubes
309.038	for Hollow Reamer (309.035)
309.068	for Hollow Reamer (309.065)
309.080	for Hollow Reamer (309.150)
309.180	for Hollow Reamer (309.200)
309.280	for Hollow Reamer (309.250)
309.480	for Hollow Reamer (309.450)

	Spare Centering Pin
309.070	for Hollow Reamer (309.150)
309.170	for Hollow Reamer (309.200)
309.270	for Hollow Reamer (309.250)

309.370	for Hollow Reamer (309.035)
309.470	for Hollow Reamer (309.450)
309.670	for Hollow Reamer (309.065)

	High Speed Drill Bits, sterile
309.503S	2.5 mm
309.504S	3.5 mm
309.506S	4.8 mm

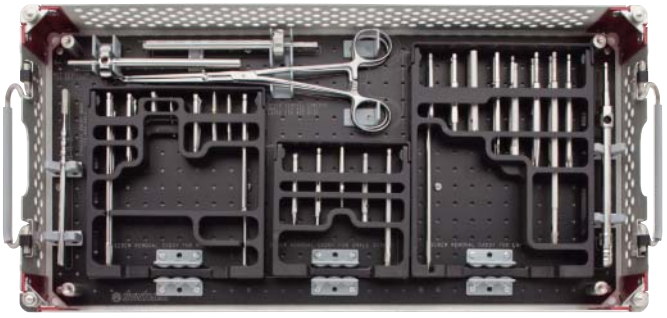
Screw Removal Set (01.240.001)

Graphic Case

60.240.001	Graphic Case for Screw Removal Set

Instruments

	Drill Sleeve Clip-ons, for 03.607.110
03.607.025	2.5 mm
03.607.035	3.5 mm
03.607.040	4.0 mm
03.607.048	4.8 mm
03.607.060	6.0 mm
	Carbide Drill Bit Extensions
03.607.104	4.0 mm
03.607.106	6.0 mm
03.607.110	Drill Suction Device
03.900.001	Straight Sharp Hook
03.900.002	AO Coupling Extension Shaft
03.900.011	Screw Removal Forceps, small
03.900.013	Screw Removal Forceps, large
03.900.022	2.4 mm Cruciform Screwdriver Shaft, 100 mm
03.900.032	4.0 mm Hexagonal Screwdriver Shaft, 100 mm
03.900.042	T25 StarDrive Screwdriver Shaft, 100 mm
03.900.044	T40 StarDrive Screwdriver Shaft, 100 mm
	Extraction Bolts
309.039	for 3.5 mm and 4.0 mm screws
309.069	for 6.5 mm and 7.0 mm screws
309.090	for 1.5 mm screws
309.190	for 2.0 mm screws
309.290	for 2.7 mm screws
309.490	for 4.5 mm screws
	Hollow Reamers, complete
309.035	for 3.5 mm and 4.0 mm screws
309.065	for 6.5 mm and 7.0 mm screws
309.150	for 1.5 mm screws
309.200	for 2.0 mm screws
309.250	for 2.7 mm screws
309.450	for 4.5 mm screws



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- Processing Synthes Reusable Medical Devices—Instruments, Instrument Trays and Graphic Cases—DJ1305
- Processing Non-sterile Synthes Implants—DJ1304

Instruments continued

309.501	Conical Extraction Device, for threaded washers
	Conical Extraction Screws
309.510	for 1.5 mm and 2.0 mm cortex screws
309.520	for 2.7 mm and 3.5 mm cortex screws
309.521	for 3.5 mm screws
309.530	for large screws and 4.9 mm bolts
310.89	Countersink, for 3.5 mm cortex and 4.0 mm cancellous bone screws
310.95	Handle, with mini quick coupling, stainless steel
310.99	Countersink, for 4.5 mm cortex screws
311.01	Handle, with mini quick coupling
311.431	Large Handle, with quick coupling
	Screwdriver Blades, self-retaining, StarDrive, short
313.822	1.3 mm
313.832	1.5 mm
313.842	2.0 mm
313.93	4.0 mm Hexagonal Screwdriver
	Cruciform Screwdriver Shafts, self-retaining
313.991	1.0 mm
313.992	1.3 mm
313.993	1.5 mm/2.0 mm
314.03	Small Hexagonal Screwdriver Shaft
314.116	StarDrive Screwdriver Shaft, quick coupling, T15
314.119	StarDrive Screwdriver Shaft, T25, self-retaining, 165 mm
314.13	Large Hexagonal Screwdriver, with T-handle
314.15	Large Hexagonal Screwdriver Shaft
314.451	2.4 mm StarDrive Screwdriver Shaft
314.464	Cannulated Driver for Threaded Washers, for 3.0 mm cannulated screws
314.465	Cruciform Screwdriver Shaft
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387.34	Conical Extraction Screw
393.105	Small Universal Chuck, with T-handle
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399.68	Hollow Gouge, for broken screw exposure

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309.006S	6.0 mm Carbide Drill Bit, sterile
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309.038	for Hollow Reamer (309.035)
309.068	for Hollow Reamer (309.065)
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