

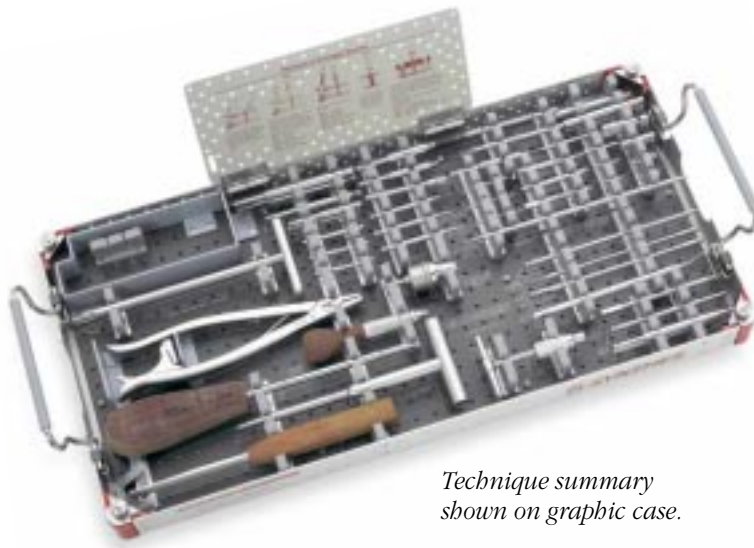
Screw Removal Set [105.971]

The Screw Removal Set is for use:

- When removal is impossible without creating extensive bone damage (the heat generated by reaming out the fragment may result in damage to the bone.)
- If a free medullary canal is needed for intra-medullary nailing or insertion of a prosthesis.

Indications

- Removal of Synthes trauma screws
- Removal of a deeply or firmly seated screw fragment
- Broken screw head
- Damaged screw socket



*Technique summary
shown on graphic case.*

The set includes instruments to remove:

- 1.0 mm – 4.5 mm Cortex Screws
- 4.0 mm and 6.5 mm Cancellous Bone Screws
- 3.0 mm – 7.3 mm Cannulated Screws
- 3.9 mm and 4.9 mm Locking Bolts
- 3.5 mm – 7.3 mm Locking Screws



Screwdrivers and Screwdriver Shafts

For first attempt to remove a screw that is not stripped or broken.



Forceps for Screw Removal

Removes a screw fragment when the upper end is near the bone surface.



Conical Extraction Screws, used with T-Handle

Engages the recess of the screw and removes it from the bone with counterclockwise turns.



Hollow Reamers

Centering pin guides the Hollow Reamer through the screw tract. Hollow Reamer cuts counterclockwise to expose deep or firmly seated screw fragments. Used with the Small Battery Drive, Power Drive or T-Handle.

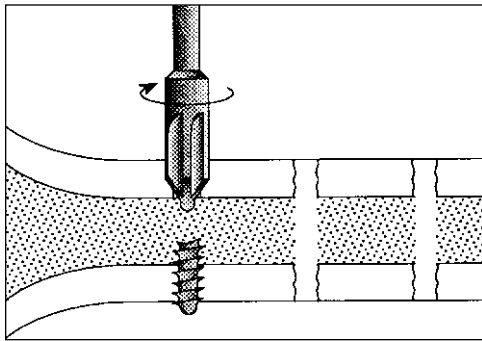


Extraction Bolts, used with T-Handle

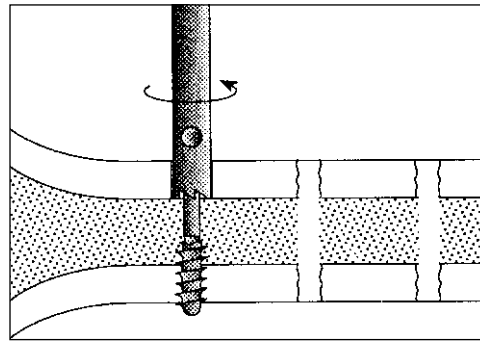
Connects directly to the screw fragment. Removes the screw with a few quick, counterclockwise turns.

Screw Removal – Technique

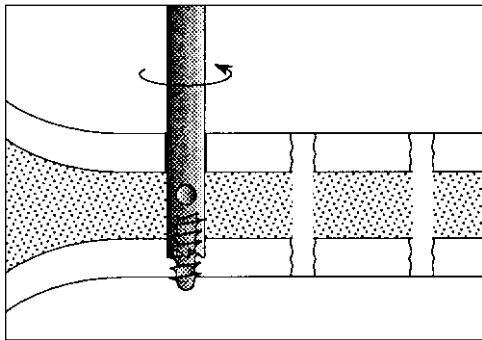
If the screw fragment is deep or firmly seated:



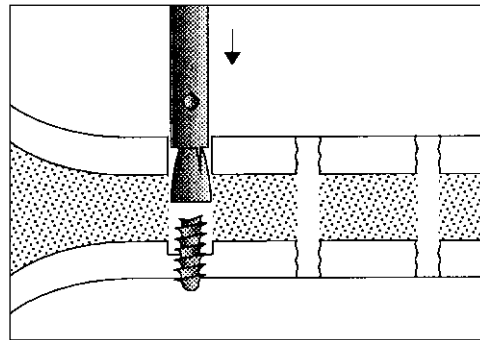
1 Create an opening with the Small Countersink [310.89] or Large Countersink [310.99].



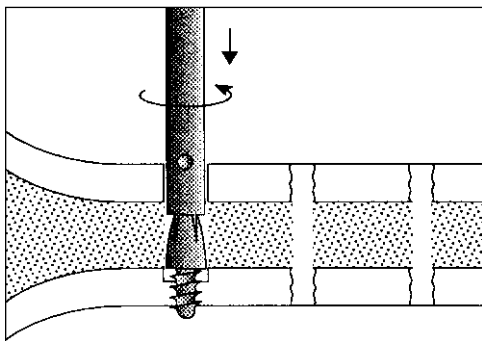
2 Select the appropriate size Hollow Reamer and attach it to the T-Handle, Small Battery Drive, or Power Drive. Set the drive to reverse. Ream counterclockwise until the centering pin reaches the screw fragment.



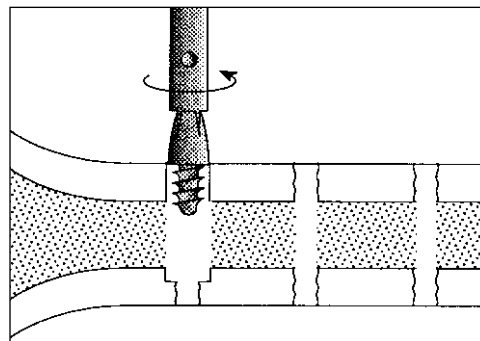
3 To remove the centering pin, the reamer tube must be removed first. Turn the reamer tube counterclockwise to remove. Remove the centering pin by turning it counterclockwise. Put the centering pin aside. Replace the reamer tube and turn clockwise to secure the instrument. Continue reaming until 1 cm of the top of the screw is exposed.



4 Couple the Extraction Bolt to the T-Handle and place it into the reamed channel.

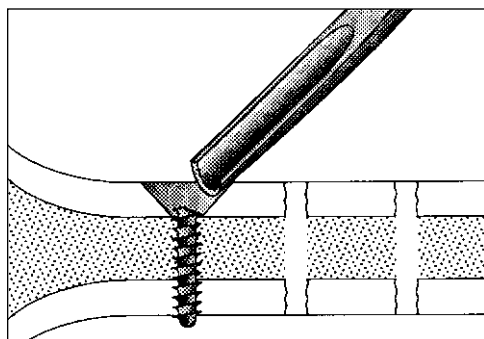


5 Apply pressure and turn counterclockwise to engage the screw with the internal threading of the bolt.

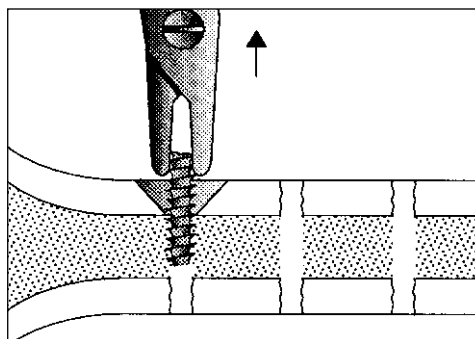


6 Remove the screw from the bone.

If the screw head is broken:*

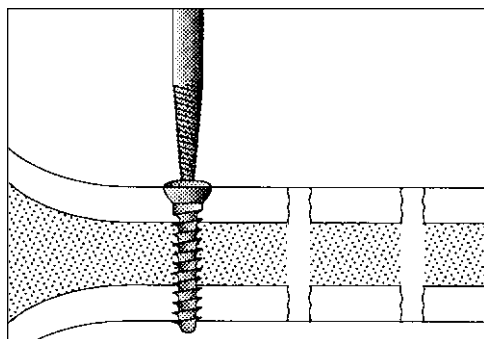


- 1** Expose the area with the Hollow Gouge [399.68].

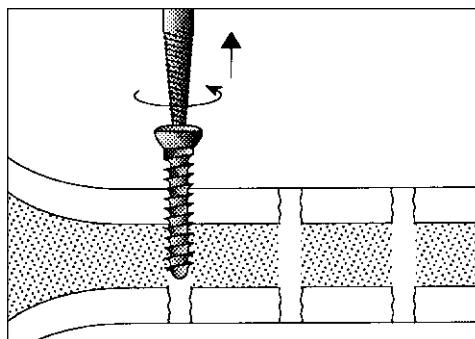


- 2** Remove the screw with the Forceps for Screw Removal [398.65].

If the screw socket is damaged:

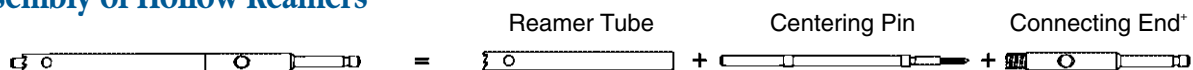


- 1** Couple the Conical Extraction Screw to the T-Handle. Insert the tip of the Conical Extraction Screw into the recess of the screw.



- 2** Turn the T-Handle counterclockwise until the screw is removed.

Assembly of Hollow Reamers



Components of Reamer Assembly:

| Hollow Reamer | For Removal of Screw (size) | Reamer Tube | Centering Pin |
|---------------|-----------------------------|-------------|---------------|
| 309.150 | 1.5 mm | 309.080 | 309.070 |
| 309.200 | 2.0 mm | 309.180 | 309.170 |
| 309.250 | 2.7 mm/3.0 mm | 309.280 | 309.270 |
| 309.035 | 3.5 mm/4.0 mm | 309.038 | 309.370 |
| 309.450 | 4.5 mm | 309.480 | 309.470 |
| 309.065 | 6.5 mm/7.0 mm | 309.068 | 309.670 |

*This technique may also be applied when removing a screw with a damaged screw socket.

* Connecting End not available separately.

Screw Removal Set [105.971]

690.372 Graphic Case for Screw Removal Set
(Includes 690.372.50, Instruction Panel
for Broken Screw Removal)

Instruments

Hollow Reamers, complete

309.150 For 1.5 mm Cortex Screws
309.200 For 2.0 mm Cortex Screws
309.250 For 2.7 mm Cortex Screws and
3.0 mm Cannulated Screws
309.035 For 3.5 mm Cortex, 4.0 mm Cancellous
Bone Screws, and 3.5 mm and
4.0 mm Cannulated Screws
309.450 For 4.5 mm Cortex Screws and
4.5 mm Cannulated Screws
309.065 For 6.5 mm Cancellous Bone Screws
and 7.0 mm Cannulated Screws

Spare Reamer Tubes

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

Extraction Bolts

309.090 For 1.5 mm Cortex Screws
309.190 For 2.0 mm Cortex Screws
309.290 For 2.7 mm Cortex Screws
309.039 For 3.5 mm Cortex, 4.0 mm Cancellous
Bone Screws, and 3.5 mm Cannulated Screws
309.490 For 4.5 mm Cortex and
4.5 mm Cannulated Screws
309.069 For 6.5 mm Cancellous Bone Screws
and 7.0 mm Cannulated Screws

Conical Extraction Screws

309.501 For Threaded Washers
309.510 For 1.5 mm and 2.0 mm Cortex Screws
309.520 For 2.7 mm and 3.5 mm Cortex,
3.5 mm Cannulated, 4.0 mm Cancellous
Bone Screws and 3.9 mm Locking Bolts
309.530 For 4.5 mm Cortex, 6.5 mm Cancellous
Bone Screws, 4.5 mm and 7.0 mm Cannulated
Screws and 4.9 mm Locking Bolts
387.34 For 7.3 mm Cannulated Screws

Instruments (continued)

310.89 Small Countersink, for 3.5 mm Cortex and
4.0 mm Cancellous Bone Screws
310.99 Large Countersink, for 4.5 mm Cortex and
6.5 mm Cancellous Bone Screws
311.01 Handle, with mini quick coupling
311.44 T-Handle, with quick coupling
313.93 Solid Hexagonal Screwdriver
313.991 1.0 mm Cruciform Screwdriver Shaft
313.992 1.3 mm Cruciform Screwdriver Shaft
313.993 1.5 mm/2.0 mm Cruciform Screwdriver Shaft
314.03 Solid Hexagonal Screwdriver Shaft
2.5 mm width across flats
314.116 StarDrive™ Screwdriver Shaft, T15
314.13 Large Hexagonal Screwdriver with T-Handle
314.15 Large Hexagonal Screwdriver Shaft
314.464 Cannulated Driver, for Threaded Washers
314.465 Solid Cruciform Screwdriver Shaft, for use
with 3.0 mm Cannulated Screw
319.39 Sharp Hook
398.65 Forceps, for broken screw removal
399.68 Hollow Gouge, for broken screw exposure

Also Available

105.971J Screw Removal Set, Jacobs chuck drill bits
105.972 Broken Screw Removal Set (does not include
screwdrivers and screwdriver shafts)
105.972J Broken Screw Removal Set, Jacobs chuck
drill bits
105.955 Small Battery Drive Set
105.957 Power Drive Set
150.16 ComPact Air Drive II Set
309.070–309.670 Spare Centering Pins for Hollow Reamers
310.94J Quick Coupling Chuck for Jacobs chuck drills
359.204 Locking Pliers for Titanium Femoral Nail
399.42 Hammer, 500 gm
690.372.50 Instruction Panel for Broken Screw Removal

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