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 intramedullary 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

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

Technique summary shown on graphic case.

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.
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:

<table>
<thead>
<tr>
<th>Hollow Reamer</th>
<th>For Removal of Screw (size)</th>
<th>Reamer Tube</th>
<th>Centering Pin</th>
<th>Connecting End</th>
</tr>
</thead>
<tbody>
<tr>
<td>309.150</td>
<td>1.5 mm</td>
<td>309.080</td>
<td>309.070</td>
<td></td>
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<tr>
<td>309.200</td>
<td>2.0 mm</td>
<td>309.180</td>
<td>309.170</td>
<td></td>
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<tr>
<td>309.250</td>
<td>2.7 mm/3.0 mm</td>
<td>309.280</td>
<td>309.270</td>
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</tr>
<tr>
<td>309.035</td>
<td>3.5 mm/4.0 mm</td>
<td>309.038</td>
<td>309.370</td>
<td></td>
</tr>
<tr>
<td>309.450</td>
<td>4.5 mm</td>
<td>309.480</td>
<td>309.470</td>
<td></td>
</tr>
<tr>
<td>309.065</td>
<td>6.5 mm/7.0 mm</td>
<td>309.068</td>
<td>309.670</td>
<td></td>
</tr>
</tbody>
</table>

* This technique may also be applied when removing a screw with a damaged screw socket.
* Connecting End not available separately.
Screw Removal

Screw Removal Set [105.971]

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

Instruments

**Hollow Reamers, complete**
- 309.150 For 1.5 mm Screws
- 309.200 For 2.0 mm Screws
- 309.250 For 2.7 mm and 3.0 mm Screws
- 309.035 For 3.5 mm and 4.0 mm Screws
- 309.450 For 4.5 mm Screws
- 309.065 For 6.5 mm and 7.0 mm 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 Screws
- 309.190 For 2.0 mm Screws
- 309.290 For 2.7 mm Screws
- 309.039 For 3.5 mm and 4.0 mm Screws
- 309.490 For 4.5 mm Screws
- 309.069 For 6.5 mm and 7.0 mm Screws

**Conical Extraction Screws**
- 309.501 For Threaded Washers
- 309.510 For 1.5 mm and 2.0 mm Cortex Screws
- 309.520 For Screws with 2.5 mm Hex recess
- 309.530 For Screws with 3.5 mm Hex recess
- 387.34 For Screws with 4.0 mm Hex recess

310.89 Countersink, for 3.5 mm Cortex and 4.0 mm Cancellous Bone Screws
310.99 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, 4.0 mm Hex
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 Small Hexagonal Screwdriver Shaft, 2.5 mm Hex
314.116 StarDrive Screwdriver Shaft, T15, self-retaining, quick coupling
314.119 StarDrive Screwdriver Shaft, T25, self-retaining, quick coupling
314.13 Large Hexagonal Screwdriver with T-Handle, 3.5 mm Hex
314.15 Large Hexagonal Screwdriver Shaft, 3.5 mm Hex
314.464 Cannulated Driver, for Threaded Washers
314.465 Cruciform Screwdriver Shaft, for 3.0 mm Cannulated Screws
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
105.955 Small Battery Drive Set
105.957 Power Drive Set
150.16 ComPact Air Drive II Set
309.070– Spare Centering Pins for Hollow Reamers
309.670
310.94J Quick Coupling Chuck for Jacobs chuck drills
359.204 Locking Pliers
399.42 Hammer, 500 grams
690.372.50 Broken Screw Removal Flip Up Instruction Panel

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