For 7.3 mm Cannulated Shaft Screws

Slipped Capital Femoral Epiphysis (SCFE) Screw System

Surgical Technique
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**MR Information**
The Slipped Capital Femoral Epiphysis (SCFE) Screw System has not been evaluated for safety and compatibility in the MR environment. It has not been tested for heating, migration or image artifact in the MR environment. The safety of the SCFE Screw System in the MR environment is unknown. Scanning a patient who has this device may result in patient injury.

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Image intensifier control
Slipped Capital Femoral Epiphysis (SCFE) Screw System. 7.3 mm cannulated shaft screws.

Features
- Choice of thread lengths offers options of crossing physis or gaining compression
- Shaft screw design facilitates screw removal
- Cannulated shaft accepts 2.8 mm diameter guide wires
- Implant-quality 316L stainless steel
9.8 mm diameter screwhead accommodates T40 cannulated screwdriver

Hemispherical head ensures optimal contact with DePuy Synthes washers when screws are angled.

Coupling screw engages SCFE screw to the screwdriver for implant removal.

Cancellous thread profile uses deep cutting threads with a large pitch to increase resistance to pullout. The large pitch also accelerates screw insertion and removal.

Self-tapping screw tip facilitates screw insertion by eliminating the need for pretapping.

10 mm thread

20 mm thread

10 mm thread

20 mm thread
Slipped Capital Femoral Epiphysis (SCFE) Screw Principles

The treatment of slipped capital femoral epiphysis (SCFE) has recently become more uncertain, and potentially more complicated, as the relationship between SCFE and hip impingement has been demonstrated. For many years the consensus was for stabilizing the slipped epiphysis in situ, and there was general agreement that this was best achieved with a single screw in the center of the femoral head, placed with a percutaneous technique over a guide wire to minimize trauma. Removal of the implant was a lesser priority and many of the screws used were difficult to remove, leading surgeons to leave them in place.

This new SCFE Screw System addresses many of the previous and current surgical concerns, and follows AO principles:
1. The SCFE Screw System provides stable fixation, with or without compression
2. The system specific instruments allow percutaneous screw placement and removal, preserving soft tissues and blood supply
3. The screw is designed as a shaft screw:
   – for strength, allowing early, active mobilization
   – facilitating implant insertion removal
4. The system can be used in conjunction with more complex procedures
5. Easy removal allows secondary hip procedures to be performed when necessary
Indications

The Slipped Capital Femoral Epiphysis (SCFE) Screws are indicated for fracture fixation of large bones and large bone fragments.

These screws are also indicated for:

- Slipped capital femoral epiphyses
- Pediatric femoral neck fractures
- Intercondylar femur fractures
- Sacroiliac joint disruptions

This device is not approved for screw attachment or fixation to the posterior elements (pedicles) of the cervical, thoracic, or lumbar spine.

Please see the product insert for a full list of contraindications, warnings and precautions.
Clinical Case

- 13-year-old male, 161 lbs. (73 kg), with moderate bilateral Slipped Capital Femoral Epiphysis (SCFE).
- One 7.3 mm Cannulated SCFE screw placed in each femoral head, with 10 mm of thread on each side of the physis.
Cleaning cannulations

Instruments

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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>319.24</td>
<td>2.9 mm Cleaning Brush</td>
</tr>
<tr>
<td>319.46</td>
<td>2.8 mm Cleaning Stylet</td>
</tr>
</tbody>
</table>

**Precaution:** Cleaning the cannulation in each instrument is imperative for proper function.

Instruments should be cleared intraoperatively with the 2.8 mm cleaning stylet to prevent accumulation of debris in the cannulation and potential binding of the instruments about the guide wire. Postoperatively, they should be cleaned with both the cleaning stylet and cleaning brush.

Drilling and tapping

The self-tapping flutes of the SCFE screws make tapping unnecessary.
1

Insert guide wire

Instruments

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>02.207.001</td>
<td>2.8 mm Guide Wire with flutes, 450 mm</td>
</tr>
<tr>
<td>03.207.002</td>
<td>10 mm/2.8 mm Wire Sleeve, for SCFE Screw</td>
</tr>
<tr>
<td>03.207.003</td>
<td>10 mm Drill Sleeve, for SCFE Screw</td>
</tr>
</tbody>
</table>

Under image intensification, use power to insert the 2.8 mm guide wire through a stab incision. The wire should stop 5 mm short of the subchondral bone.

Place the percutaneous sleeve assembly over the wire and through the soft tissue to the bone.

Alternative technique

Insert the percutaneous sleeve assembly through a stab incision to the bone.

Using power, insert the 2.8 mm guide wire through the wire sleeve into the bone. The wire should stop 5 mm short of the subchondral bone.
Measure for Screw Length

2
Measure for screw length

Instrument

| 03.207.004 | Direct Measuring Device, for SCFE Screw |

Remove the wire sleeve and slide the tapered end of the measuring device over the guide wire and through the drill sleeve to the bone.

Ensure that the sharp points of the drill sleeve have not penetrated the cortex.

Read the scale at the end of the wire to determine screw length.

This measurement will be set on the drill, using the fixation sleeve (drill stop).
### 3

**Determine screw length**

**Option A**

**SCFE screw without washer**

The wire measurement is the measurement used to set the fixation sleeve (drill stop) on the drill.

For example, if the measurement is 75 mm, set the fixation sleeve (drill stop) to 75 mm. Choose an 75 mm screw.

The tip of the wire corresponds to the tip of the screw.

If direct measurement is between the 5 mm increments, the fixation sleeve (drill stop) should be set to stop one slot short of the actual measurement, to prevent overdrilling and loss of screw purchase.

For example, if the measurement is 78 mm, set the drill stop to 75 mm. Select an 75 mm screw.

The tip of the screw will stop a few millimeters short of the tip of the guide wire. If more precise screw placement is desired, a washer can be used (see **Option B**).
Option B
SCFE screw with washers
If direct measurement is between the 5 mm increments, and washers will be used to adjust screw depth, the fixation sleeve (drill stop) should be set to stop one slot short of the actual measurement.

For example, if the measurement is 93 mm, set fixation sleeve (drill stop) on the drill to 90 mm.

\[
\begin{align*}
93 \text{ mm wire measurement} + 2 \text{ mm washer} & \quad \text{95 mm length screw inserted}
\end{align*}
\]

When using a screw with a length of 95 mm, with a 2 mm washer, the screw will be inserted to the wire measurement of 93 mm.

The drill stop set to 90 mm will stop short of the measurement in this case, to prevent over-drilling and loss of screw purchase.

**Note:** Washers may be used in patients with poor bone quality, to prevent countersinking of the screwhead.
4

Drill

Instruments

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<tr>
<td>03.207.001</td>
<td>5.0 mm/7.3 mm Stepped Drill Bit, 10 mm step, for SCFE Screw</td>
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<tr>
<td>or</td>
<td></td>
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<tr>
<td>03.207.008</td>
<td>5.0 mm/7.3 mm Stepped Drill Bit, 20 mm step, for SCFE Screw</td>
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<tr>
<td>357.046</td>
<td>Fixation Sleeve</td>
</tr>
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</table>

Attach the fixation sleeve (drill stop) to the stepped drill bit and set it to the measured length. The desired length should be the last visible number before the fixation sleeve.

Guide the stepped drill bit through the drill sleeve to the bone. Drill to the stop.

Monitor under image intensification to ensure that the guide wire does not advance when drilling.

Remove the drill bit from the drill sleeve. If the wire is removed with the drill bit, reinset the wire.

Note: When using the cannulated instrument shafts over the extra long 450 mm guide wire, a cannulated coupling device or cannulated Jacobs chuck is required.
5
Insert screw

Instrument

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<td>03.207.005</td>
<td>T40 StarDrive Screwdriver, cannulated for SCFE Screw</td>
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Using the cannulated StarDrive™ Screwdriver, place the selected screw over the guide wire, through the drill sleeve, and into the bone. Remove and discard the guide wire.

**Note:** If using a washer, the screw cannot be inserted through the drill sleeve. Remove the drill sleeve and insert the screw and washer over the wire.
1

Insert wire

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Insert the guide wire through the original incision and into the screw cannulation.

**Note:** Screw removal technique can be performed through the percutaneous sleeve assembly that was used for insertion.

2

Ream bony overgrowth (if necessary)

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Place reamer over the guide wire and down to the bone. Set drill to “oscillate” and hold reamer in place, over screw until bony overgrowth is removed and the StarDrive Recess of the screwhead is cleared. Remove reamer, ensuring guide wire remains inserted in screw cannulation. If guide wire is removed with reamer, re-insert the guide wire into screw cannulation prior to inserting screwdriver.
3
Insert screwdriver

Instrument

| 03.207.005 | T40 StarDrive Screwdriver, cannulated for SCFE Screw |

Insert the screwdriver over the guide wire and into the screwhead.

4
Insert coupling screw

Instrument

| 03.207.006 | Coupling Screw for T40 StarDrive Screwdriver |

Holding the screwdriver in the screwhead, remove the guide wire.

Insert the coupling screw through the screwdriver and thread it into the cannulated screw.
When the coupling screw is fully engaged in the SCFE screw, turn the screwdriver handle and remove SCFE screw.

**Note:** If washers were used, retrieve them after screw removal.
## Slipped Capital Femoral Epiphysis (SCFE) Screws
- 7.3 mm
- Cannulated
- 10 mm and 20 mm thread length
- 4.5 mm core diameter
- Self-tapping
- T40 StarDrive Recess
- 45–130 mm lengths in 5 mm increments
- 316L stainless steel

## Washers
- Oval
- 316L stainless steel
- 1 mm and 2 mm width
## Instruments

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<td>Coupling Screw for T40 StarDrive Screwdriver</td>
</tr>
<tr>
<td>03.207.007</td>
<td>Reamer for SCFE Screw</td>
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Slipped Capital Femoral Epiphysis (SCFE) Screw System Instrument Set (01.207.001)

**Graphic Case**
60.207.001 Graphic Case for SCFE Screw Instruments

**Instruments**
02.207.001 2.8 mm Guide Wire with flutes, 450 mm, 6 ea.
03.207.001 5.0 mm/7.3 mm Stepped Drill Bit, 10 mm step for SCFE Screw
03.207.002 10 mm/2.8 mm Wire Sleeve for SCFE Screw
03.207.003 10 mm Drill Sleeve, for SCFE Screw
03.207.004 Direct Measuring Device, for SCFE Screw
03.207.005 T40 StarDrive Screwdriver, cannulated for SCFE Screw
03.207.006 Coupling Screw for T40 StarDrive Screwdriver
03.207.007 Reamer for SCFE Screw
03.207.008 5.0 mm/7.3 mm Stepped Drill Bit, 20 mm step for SCFE Screw
319.24 2.9 mm Cleaning Brush
319.46 2.8 mm Cleaning Stylet
357.046 Fixation Sleeve

Note: For additional information, please refer to package insert.

For detailed cleaning and sterilization instructions, please refer to [www.depuysynthes.com/hcp/cleaning-sterilization](http://www.depuysynthes.com/hcp/cleaning-sterilization) or sterilization instructions, if provided.
**Slipped Capital Femoral Epiphysis (SCFE) Screw System Implant Set (01.207.002)**

**Graphic Case**

60.207.002  SCFE Screw Rack

7.3 mm Cannulated SCFE Screws, 10 mm thread, 2 ea.

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7.3 mm Cannulated SCFE Screws, 20 mm thread, 2 ea.

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Oval Washers for SCFE Screws, 4 ea.

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<tr>
<td>02.207.636</td>
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<tr>
<td>1 mm</td>
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<td>2 mm</td>
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