

# Surgical Technique



Acumed<sup>®</sup> is a global leader of innovative orthopaedic and medical solutions.

We are dedicated to developing products, service methods, and approaches that improve patient care.



#### Acumed<sup>®</sup> Pelvic Plating System

The Acumed Pelvic Plating System is a comprehensive set of plates, screws, and instrumentation for the treatment of pelvic ring and acetabular fractures.

Designed to treat a wide variety of challenging pelvic fractures, the plates of the Pelvic Plating System are strategically precontoured where it may save time for the surgeon, and left noncontoured in some sections to allow for buttressing of fractures. Indication-specific plates are offered, as well as reconstruction-style plates to address a variety of fracture patterns. Enhancements to traditional pelvic instrumentation are designed to simplify surgical techniques.

#### Indications for Use:

- Fractures, fusions, and osteotomies of the acetabulum
- Fractures, fusions, and osteotomies of the sacrum
- Fractures, fusions, and osteotomies of the ilium
- Fractures, fusions, and osteotomies of the pelvic ring
- Sacroiliac joint dislocations
- Pubic symphysis disruptions

	Definition
Warning	Indicates critical information about a potential serious outcome to the patient or the user.
Caution	Indicates instructions that must be followed in order to ensure the proper use of the device.
Note	Indicates information requiring special attention.





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# System Features

### Plate Overview

Quadrilateral Surface Plates L, 70-0435 R, 70-0436



### **Intrapelvic Plates**

5 Hole L, 70-0437 9 Hole L, 70-0439 5 Hole R, 70-0438 9 Hole R, 70-0440

Pubic Symphysis Plates

4 Hole, 70-0450

6 Hole, 70-0451

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Anterior Brim Plates

12 Hole L, 70-0431 12 Hole R, 70-0432 14 Hole L, 70-0433 14 Hole R, 70-0434

# System Features [continued]



**3.5 mm Interlocking Reconstruction Plate** 11 Hole, 70-0449

Posterior Wall Acetabular Plate

#### 3.5 mm Reconstruction Plates

 3 Hole, 70-0441
 4 Hole, 70-0442

 6 Hole, 70-0443
 8 Hole, 70-0444

 10 Hole, 70-0445
 12 Hole, 70-0446

 14 Hole, 70-0447
 16 Hole, 70-0448

# Pubic Symphysis Plate Surgical Technique





#### Exposure

Expose the pubic symphysis using a preferred surgical exposure. Reduce the pubis symphysis in preparation for plate installation.



### Fitting

Test fit the Pubic Symphysis Plate (70-0450 or 70-0451). Make any final adjustments to the plate contour using the Large Plate Bender (PL-2045). Provisionally attach the plate using Long Plate Tacks (80-1140).

**Caution:** If bending the plate, please observe the following:

- Place bends in plate sections which do not have holes
- Use several small bends to achieve a smooth overall bend
- Do not bend, unbend, and re-bend more than once

# Pubic Symphysis Plate Surgical Technique [continued]

Drilling

With reduction confirmed, drill using the 2.8 mm Quick Release Drill, Long (80-1130) and Offset Drill Guide (PL-2095) through one of the dynamic compression slots on the plate. Using the Depth Gauge 10–150 mm (80-1134), determine the proper screw length and insert the proper length 3.5 mm Nonlocking Hexalobe Screw (30-0XXX).

**Note:** If this plate is used in conjunction with the Anterior Brim Plate, drill through the dynamic compression slot contralateral to the application of the Anterior Brim Plate.



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#### Screw Insertion

Connect the T15 Stick Fit Hexalobe Driver, 6 inch (80-2087) to the Small Ratchet Handle with Quick Release Connection (80-0398) and insert a 3.5 mm Nonlocking Hexalobe Screw (30-0XXX). Tighten the screw partially to allow for additional compression later.

**Caution:** Driving the screws into the plate under power could cause the screw heads to go through the plate. To avoid this, tighten screws into the plate by hand.



# Pubic Symphysis Plate Surgical Technique [continued]

Figure 6



### Screw Insertion

Drill through the opposing dynamic compression slot using the 2.8 mm Quick Release Drill, Long (80-1130) and Offset Drill Guide (PL-2095). Using the Depth Gauge 10–150 mm (80-1134), determine the proper screw length and insert the proper length 3.5 mm Nonlocking Hexalobe Screw (30-0XXX). Fully seat this screw in the plate to begin compressing the pubic symphysis.

By hand, fully seat the screw you partially tightened in Step 4. This will apply additional compression across the pubic symphysis.

**Caution:** Driving the screws into the plate under power could cause the screw heads to go through the plate. To avoid this, tighten screws into the plate by hand.



Confirmation

Drill, measure, and install 3.5 mm nonlocking screws in the remaining holes of the plate, at the surgeon's discretion. Confirm all screws have been seated in the plate(s). Close the surgical site(s) using preferred techniques.

Optional: Removal Instructions

To extract a Pelvic Plating System plate, use the following parts to remove all screws from the plate:

#### 3.5 mm Nonlocking Hexalobe Screws:

Either the T15 Hexalobe Driver Tip, Long (80-1561), T15 Stick Fit Hexalobe Driver, 6 Inch (80-2087), or T15 Stick Fit Hexalobe Driver, 9 Inch (80-2088) and the Small Ratchet Handle with Quick Release Connection (80-0398).

Referencing the Screw Removal Brochure (SPF10-00) may aid in implant extraction if difficulty is experienced.

# Superior Sacroiliac Plate Surgical Technique

#### Exposure

Expose the superior portion of the sacroiliac joint using a preferred surgical exposure. Reduce the sacroiliac joint in preparation for plate installation.

Caution: This plate is not to act as the solitary means of fixation for a completely disrupted sacroiliac joint.





#### Fitting

Test fit the Superior Sacroiliac Plate, 4 Hole (70-0452). Make any final adjustments to the plate contour using the Large Plate Bender (PL-2045). Provisionally attach the plate using Long Plate Tacks (80-1140).

Caution: If bending the plate, please observe the following:

- Place bends in plate sections which do not have holes
- Use several small bends to achieve a smooth overall bend
- > Do not bend, unbend, and re-bend more than once



# Superior Sacroiliac Plate Surgical Technique [continued]



### Drilling

With reduction confirmed, drill using the 2.8 mm Quick Release Drill, Long (80-1130) and Offset Drill Guide (PL-2095) through one of the neutral slots on the plate. Utilizing the Depth Gauge 10–150 mm (80-1134), determine the proper screw length and insert the proper length 3.5 mm Nonlocking Hexalobe Screw (30-0XXX).

Screw Insertion

Connect the T15 Stick Fit Hexalobe Driver, 6 inch (80-2087) to the Small Ratchet Handle with Quick Release Connection (80-0398) and insert a 3.5 mm Nonlocking Hexalobe Screw (30-0XXX). Leave this screw partially tightened to allow for final plate alignment. If no further adjustments to the plate position are anticipated, fully seat the screw by hand in the neutral slot.

**Caution:** Driving the screws into the plate under power could cause the screw heads to go through the plate. To avoid this, tighten screws into the plate by hand.

# Superior Sacroiliac Plate Surgical Technique [continued]

Drilling

Drill through a hole or slot on the opposite side of the plate using the 2.8 mm Quick Release Drill, Long (80-1130) and the 2.8 mm Drill Guide, Long (80-1136). Using the Depth Gauge 10–150 mm (80-1134), determine the proper screw length and insert the proper length 3.5 mm Nonlocking Hexalobe Screw (30-0XXX).



**6** Screw Insertion Using the T15 Stick Fit Hexalobe Driver, 6 inch (80-2087) and Small Ratchet Handle with Quick Release Connection (80-0398) from Step 4, insert a 3.5 mm Nonlocking Hexalobe Screw (30-0XXX). Fully seat the screw, by hand, in the plate.

**Caution:** Driving the screws into the plate under power could cause the screw heads to go through the plate. To avoid this, tighten screws into the plate by hand.



# Superior Sacroiliac Plate Surgical Technique [continued]

Figure 16

### Screw Insertion

Drill, measure, and install 3.5 mm Nonlocking Hexalobe Screws (30-0XXX) in the remaining holes of the plate, at the surgeon's discretion. Confirm all screws have been seated in the plate(s). Close the surgical site(s) using preferred techniques.

#### **Optional: Removal Instructions**

To extract a Pelvic Plating System plate, use the following parts to remove all screws from the plate:

#### 3.5 mm Hexalobe Screws:

Either the T15 Hexalobe Driver Tip, Long (80-1561), T15 Stick Fit Hexalobe Driver, 6 Inch (80-2087), or T15 Stick Fit Hexalobe Driver, 9 Inch (80-2088) and the Small Ratchet Handle with Quick Release Connection (80-0398).

Referencing the Screw Removal Brochure (SPF10-00) may aid in implant extraction if difficulty is experienced.

## Anterior Brim and Quadrilateral Surface Plate Surgical Technique

### Exposure

Expose the pelvic brim using a preferred surgical exposure.

**Note:** Reduce the acetabulum in preparation for plate installation. The Anterior Brim Plate can be used in conjunction with the Quadrilateral Surface Plate (70-0435 or 70-0436) or the 6-hole Pubic Symphysis Plate (70-0451).

If the Anterior Brim Plate (70-04XX) is to be used in conjunction with the Pubic Symphysis Plate (70-0450 or 70-0451), follow Steps 1–4 in the Pubic Symphysis Surgical Technique (see pages 10-11) prior to installing the Anterior Brim Plate.





Test fit the Anterior Brim Plate (70-043X). Make any final adjustments to the plate contour using Pelvic Plate Bending Pliers (80-1141) or a Plate Bender, Large (PL-2045). Provisionally attach the plate using Long Plate Tacks (80-1140).

**Note:** Plates designed for use on the left of the sagittal plane are **blue** in color and marked "left." Plates designed for the right side of the sagittal plane are **green** in color and marked "right."

Caution: If bending the plate, please observe the following:

- Place bends in plate sections which do not have holes
- Use several small bends to achieve a smooth overall bend
- Do not bend, unbend, and re-bend more than once
- For in-plane bending, insert the plate parallel to the bending piston. Situate the plate such that the piston is between holes. Compress the handle to bend the plate



# Anterior Brim and Quadrilateral Surface Plate Surgical Technique [continued]



### Drilling

With provisional reduction confirmed, drill using the 2.8 mm Quick Release Drill, Long (80-1130) and the 2.8 mm Drill Guide, Long (80-1136) through a hole in the desired location on the plate. Utilizing the Depth Gauge 10–150 mm (80-1134), determine the proper screw length and insert the proper length 3.5 mm Nonlocking Hexalobe Screw (30-0XXX).

**Note:** If the plate is being used in conjunction with the 6-Hole Pubic Symphysis Plate (70-0451), align a slot in the anterior end of the plate with a hole or slot in the Pubic Symphysis Plate by overlapping the plates, and drill through both.



#### **Screw Insertion**

Connect the T15 Stick Fit Hexalobe Driver, 6 inch (80-2087) to the Small Ratchet Handle with Quick Release Connection (80-0398) and fully seat the 3.5 mm Nonlocking Hexalobe Screw (30-0XXX) by hand. Drill, measure, and install 3.5 mm nonlocking screws in the remaining holes of the plate at the surgeon's discretion.

If the 6-Hole Pubic Symphysis Plate (70-0451) is installed in conjunction with the Anterior Brim Plate (70-043X), complete Steps 5 through 6 in the Pubic Symphysis Surgical Technique.

**Caution:** Driving the screws into the plate under power could cause the screw heads to go through the plate. To avoid this, tighten screws into the plate by hand.

# Anterior Brim and Quadrilateral Surface Plate Surgical Technique [continued]

Screw Insertion

Ensure the quadrilateral surface is properly reduced in preparation for plate installation. If using the Quadrilateral Surface Plate (70-0435 or 70-0436), test fit the plate and make any final adjustments to the plate contour using Plate Benders (PL-2045).





Align the dynamic compression slot in the Quadrilateral Surface Plate (70-0435 or 70-0436) with a hole in the Anterior Brim Plate (70-043X). Drill, measure, and install a 3.5 mm Nonlocking Hexalobe Screw (30-0XXX).



# Anterior Brim and Quadrilateral Surface Plate Surgical Technique [continued]



### Confirmation

Drill, measure, and install 3.5 mm Nonlocking Hexalobe Screws (30-0XXX) in the remaining holes of the plate, at the surgeon's discretion. Tighten the screws by hand. Confirm all screws have been seated in the plate(s). Close the surgical site(s) using preferred techniques.

**Caution:** Driving the screws into the plate under power could cause the screw heads to go through the plate. To avoid this, tighten screws into the plate by hand.

Optional: Removal Instructions To extract a Pelvic Plating System plate, use the following parts to remove all screws from the plate:

#### 3.5 mm Hexalobe Screws:

Either the T15 Hexalobe Driver Tip, Long (80-1561), T15 Stick Fit Hexalobe Driver, 6 Inch (80-2087), or T15 Stick Fit Hexalobe Driver, 9 Inch (80-2088) and the Small Ratchet Handle with Quick Release Connection (80-0398).

Referencing the Screw Removal Brochure (SPF10-00) may aid in implant extraction if difficulty is experienced.

# Quadrilateral Surface Plate Surgical Technique

#### Exposure

Expose the medial wall of the acetabulum using a preferred surgical exposure. Reduce the acetabulum in preparation for plate installation.



### Fitting

Ensure the quadrilateral surface is properly reduced in preparation for plate installation.

Test fit the Quadrilateral Surface Plate (70-0435 or 70-0436) and make any final adjustments to the plate contour using a Large Plate Bender (PL-2045).

**Note:** Plates designed for use on the left of the sagittal plane are **blue** in color and marked "left." Plates designed for the right side of the sagittal plane are **green** in color and marked "right."

Caution: If bending the plate, please observe the following:

- Place bends in plate sections that do not have holes
- Use several small bends to achieve a smooth overall bend
- > Do not bend, unbend, and re-bend more than once



# Quadrilateral Surface Plate Surgical Technique [continued]





With reduction confirmed, drill using the 2.8 mm Quick Release Drill, Long (80-1130) and the 2.8 mm Drill Guide, Long (80-1136) through the hole between the fingers of the plate. Using the Depth Gauge 10–150 mm (80-1134), determine the proper screw length and insert the proper length 3.5 mm Nonlocking Hexalobe Screw (30-0XXX). If a lateral window is created as part of the surgical procedure, the Quadrilateral Surface Plate (70-0435 or 70-0436) can be installed per the instructions listed in the Anterior Brim Plate surgical technique (see page 17).



### Screw Insertion

Connect the T15 Stick Fit Hexalobe Driver, 6 inch (80-2087) to the Small Ratchet Handle with Quick Release Connection (80-0398) and fully seat the 3.5 mm nonlocking screw by hand.

**Caution:** Driving the screws into the plate under power could cause the screw heads to go through the plate. To avoid this, tighten screws into the plate by hand.



#### **Optional: Removal Instructions**

To extract a Pelvic Plating System plate, use the following parts to remove all screws from the plate:

#### 3.5 mm Hexalobe Screws:

Either the T15 Hexalobe Driver Tip, Long (80-1561), T15 Stick Fit Hexalobe Driver, 6 Inch (80-2087), or T15 Stick Fit Hexalobe Driver, 9 Inch (80-2088) and the Small Ratchet Handle with Quick Release Connection (80-0398).

Referencing the Screw Removal Brochure (SPF10-00) may aid in implant extraction if difficulty is experienced.

# Intrapelvic Plate Surgical Technique

### Fitting

Test fit the Intrapelvic Plate (70-04XX). Make any final adjustments to the plate contour using Pelvic Plate Bending Pliers (80-1141) or the Large Plate Bender (PL-2045).

**Note:** If bending the plate using the Pelvic Plate Bending Pliers (80-1141), observe the following:

 For in-plane bending, insert the plate parallel to the bending piston. Situate the plate such that the piston is between holes. Compress the handle to bend the plate

Caution: If bending the plate, please observe the following:

- Place bends in plate sections that do not have holes
- Use several small bends to achieve a smooth overall bend
- Do not bend, unbend, and re-bend more than once

Figure 30



### Drilling

With provisional reduction confirmed, drill using the 2.8 mm Quick Release Drill, Long (80-1130) and 2.8 mm Drill Guide, Long (80-1136) through a hole in the posterior end of the plate. Using the Depth Gauge 10–150 mm (80-1134), determine the proper screw length and insert the proper length 3.5 mm Nonlocking Hexalobe Screw (30-0XXX).



Figure 31

### Screw Insertion

Connect the T15 Stick Fit Hexalobe Driver, 6 inch (80-2087) to the Small Ratchet Handle with Quick Release Connection (80-0398) and fully seat the 3.5 mm Nonlocking Hexalobe Screw (30-0XXX) by hand.

**Caution:** Driving the screws into the plate under power could cause the screw heads to go through the plate. To avoid this, tighten screws into the plate by hand.



Figure 32

# Intrapelvic Plate Surgical Technique [continued]



### Reduction and Placement

Use the Intrapelvic Plate Reduction Clamp (80-1152) to help reduce the plate to the bone and move plate to appropriate area.

Figure 34





#### **Screw Insertion**

Drill, measure, and install 3.5 mm Nonlocking Hexalobe Screws (30-0XXX) in the remaining holes of the plate, at the surgeon's discretion. Tighten the screws by hand. Confirm all screws have been seated in the plate(s). Close the surgical site(s) using preferred techniques.

**Caution:** Driving the screws into the plate under power could cause the screw heads to go through the plate. To avoid this, tighten screws into the plate by hand.



#### **Optional: Removal Instructions**

To extract a Pelvic Plating System plate, use the following parts to remove all screws from the plate:

#### 3.5 mm Hexalobe Screws:

Either the T15 Hexalobe Driver Tip, Long (80-1561), T15 Stick Fit Hexalobe Driver, 6 Inch (80-2087), or T15 Stick Fit Hexalobe Driver, 9 Inch (80-2088) and the Small Ratchet Handle with Quick Release Connection (80-0398).

Referencing the Screw Removal Brochure (SPF10-00) may aid in implant extraction if difficulty is experienced.

# Acetabular Plate Surgical Technique for Posterior Wall Fractures

#### Exposure

Expose the posterior wall of the acetabulum using a preferred surgical exposure. Reduce the acetabulum in preparation for plate installation.



Figure 35



#### Fitting

Drilling

Test fit the selected Posterior Wall Acetabular Fragment Plate (70-0427, 70-0428, 70-0458, or 70-0459). Make any final adjustments to the plate contour using the Large Plate Bender (PL-2045) or Pelvic Plate Bending Pliers (80-1141).

Note: Plates designed for the left of the sagittal plane are blue in color and marked "left." Plates designed for the right side of the sagittal plane are green in color and marked "right."

Use provisional K-wires between the prongs of the plate.

If bending the plate using the Pelvic Plate Bending Pliers (80-1141), observe the following:

• For in-plane bending, insert the plate parallel to the bending piston. Situate the plate so that the piston is between holes. Compress the handle to bend the plate

Caution: If bending the plate, please observe the following:

- Place bends in plate sections that do not have holes
- Use several small bends to achieve a smooth overall bend

Drill using the 2.8 mm Quick Release Drill, Long (80-1130)

and 2.8 mm Drill Guide, Long (80-1136) through a hole in the distal end of the plate. Using the Depth Gauge 10–150 mm (80-1134), determine the proper screw length and insert the proper length 3.5 mm Nonlocking Hexalobe Screw (30-0XXX).

Do not bend, unbend, and re-bend more than once



Figure 38



Figure 36

# Acetabular Plate Surgical Technique for Posterior Wall Fractures [continued]



# Screw Insertion

Connect the T15 Stick Fit Hexalobe Driver, 6 inch (80-2087) to the Small Ratchet Handle with Quick Release Connection (80-0398) and fully seat the 3.5 mm Nonlocking Hexalobe Screw (30-0XXX) by hand.

**Caution:** Driving the screws into the plate under power could cause the screw heads to go through the plate. To avoid this, tighten screws into the plate by hand.



## Drilling

Drill a hole through the proximal end of the plate using the 2.8 mm Quick Release Drill, Long (80-1130) and the 2.8 mm Drill Guide, Long (80-1136). Utilizing the Depth Gauge 10–150 mm (80-1134), determine the proper screw length and insert the proper length 3.5 mm Nonlocking Hexalobe Screw (30-0XXX).

Figure 42



### Screw Insertion

Insert a 3.5 mm Nonlocking Hexalobe Screw (30-0XXX). Fully seat the screw in the plate by hand. Ensure the prongs on the plate do not encroach into the joint space.

**Caution:** Driving the screws into the plate under power could cause the screw heads to go through the plate. To avoid this, tighten screws into the plate by hand.

# Acetabular Plate Surgical Technique for Posterior Wall Fractures [continued]

## Screw Insertion

Drill, measure, and install 3.5 mm Nonlocking Hexalobe Screws (30-0XXX) in the remaining holes of the plate, at the surgeon's discretion. Tighten the screws by hand. Confirm all screws have been seated in the plate. Close the surgical site(s) using preferred techniques.

**Caution:** Driving the screws into the plate under power could cause the screw heads to go through the plate. To avoid this, tighten screws into the plate by hand.



### **Optional: Removal Instructions** To extract a Pelvic Plating System plate, use the following parts to remove all screws from the plate:

#### 3.5 mm Hexalobe Screws:

Either the T15 Hexalobe Driver Tip, Long (80-1561), T15 Stick Fit Hexalobe Driver, 6 Inch (80-2087), or T15 Stick Fit Hexalobe Driver, 9 Inch (80-2088) and the Small Ratchet Handle with Quick Release Connection (80-0398).

Referencing the Screw Removal Brochure (SPF10-00) may aid in implant extraction if difficulty is experienced.

# Acetabular Spring Plate Surgical Technique for Posterior Wall Fractures

#### Figure 44



#### Exposure

Expose the posterior wall of the acetabulum using a preferred surgical exposure. Reduce the acetabulum in preparation for plate installation. If spring plates will be used in conjunction with the Posterior Wall Plates, continue on to the next step. If not, skip to Step 5.



#### Fitting

Test fit the Acetabular Spring Plate (70-0429 or 70-0430). Make any final adjustments to the plate contour using the Large Plate Bender (PL-2045).

Caution: If bending the plate, please observe the following:

- Place bends in plate sections that do not have holes
- Use several small bends to achieve a smooth overall bend
- Do not bend, unbend, and re-bend more than once

## Acetabular Spring Plate Surgical Technique for Posterior Wall Fractures [continued]

Drilling

With reduction confirmed, drill using the 2.8 mm Quick Release Drill, Long (80-1130) and 2.8 mm Drill Guide, Long (80-1136) through the neutral slot in the plate. Using the Depth Gauge 10–150 mm (80-1134), determine the proper screw length and insert the proper length 3.5 mm Nonlocking Hexalobe Screw (30-0XXX).



Connect the T15 Stick Fit Hexalobe Driver, 6 inch (80-2087) to the Small Ratchet Handle with Quick Release Connection (80-0398) and insert a 3.5 mm Nonlocking Hexalobe Screw (30-0XXX). Leave this screw partially tightened to allow for final plate alignment. If the surgeon anticipates no further adjustments, fully seat the screw by hand in the neutral slot.

Drill, measure, and install 3.5 mm nonlocking screws in the remaining holes of the plate, at the surgeon's discretion. Ensure the prongs of the Acetabular Spring Plate (70-0429 or 70-0430) do not encroach into the hip joint.

**Caution:** Driving the screws into the plate under power could cause the screw heads to go through the plate. To avoid this, tighten screws into the plate by hand.



## Acetabular Spring Plate Surgical Technique for Posterior Wall Fractures [continued]





Test fit the selected Posterior Wall Acetabular Plate (70-04XX). Make any final adjustments to the plate contour using the Large Plate Bender (PL-2045) or Pelvic Plate Bending Pliers (80-1141).

**Caution:** If bending the plate using the Pelvic Plate Bending Pliers (80-1141), observe the following:

 For in-plane bending, insert the plate parallel to the bending piston. Situate the plate so the piston is between holes. Compress the handle to bend the plate.





Drill using the 2.8 mm Quick Release Drill, Long (80-1130) and 2.8 mm Drill Guide, Long (80-1136) through a hole in the distal end of the plate. Utilizing the Depth Gauge 10–150 mm (80-1134), determine the proper screw length and insert the proper length 3.5 mm Nonlocking Hexalobe Screw (30-0XXX).

# Acetabular Spring Plate Surgical Technique for Posterior Wall Fractures [continued]

### **Screw Insertion**

Connect the T15 Stick Fit Hexalobe Driver, 6 inch (80-2087) to the Small Ratchet Handle with Quick Release Connection (80-0398) and fully seat the 3.5 mm Nonlocking Hexalobe Screw (30-0XXX) by hand.

Caution: Driving the screws into the Posterior Wall Acetabular Plate (70-04XX) under power could cause the screw heads to go through the plate. To avoid this, tighten screws into the plate by hand.





#### Drilling

Drill a hole through the proximal end of the plate using the 2.8 mm Quick Release Drill, Long (80-1130) and the 2.8 mm Drill Guide, Long (80-1136). Using the Depth Gauge 10–150 mm (80-1134), determine the proper screw length and insert the proper length 3.5 mm Nonlocking Hexalobe Screw (30-0XXX).



# Acetabular Spring Plate Surgical Technique for Posterior Wall Fractures [continued]





Insert a 3.5 mm Nonlocking Hexalobe Screw (30-0XXX). Fully seat the screw in the Posterior Wall Acetabular Plate (70-04XX) by hand. Ensure the prongs on the plate do not encroach into the joint space.

**Caution:** Driving the screws into the plate under power could cause the screw heads to go through the plate. To avoid this, tighten screws into the plate by hand.



**10** Screw Insertion Drill, measure, and install 3.5 mm Nonlocking Hexalobe Screws (30-0XXX) in the remaining holes of the plate, at the surgeon's discretion. Tighten the screws by hand. Confirm all screws have been seated in the plate(s). Close the surgical site(s) using preferred techniques.

**Caution:** Driving the screws into the plate under power could cause the screw heads to go through the plate. To avoid this, tighten screws into the plate by hand.

# Optional: Removal Instructions

following parts to remove all screws from the plate:

#### 3.5 mm Hexalobe Screws:

Either the T15 Hexalobe Driver Tip, Long (80-1561), T15 Stick Fit Hexalobe Driver, 6 Inch (80-2087), or T15 Stick Fit Hexalobe Driver, 9 Inch (80-2088) and the Small Ratchet Handle with Quick Release Connection (80-0398).

Referencing the Screw Removal Brochure (SPF10-00) may aid in implant extraction if difficulty is experienced.

# **Reconstruction Plate Surgical Technique**

#### Exposure

Expose the area of the pelvis to be repaired using a preferred surgical exposure. Reduce the fracture in preparation for plate installation.



# **2** Fitting

Select the proper length Reconstruction Plate (70-0441 through 70-0448) for the application. Test fit the plate. Make any final adjustments to the plate contour using the Large Plate Bender (PL-2045) and/or Pelvic Plate Bending Pliers (80-1141). The plate can also be trimmed to length using the Plate Cutters (80-1143). Provisionally attach the plate using Long Plate Tacks (80-1140).

Caution: If bending the plate, please observe the following:

- Place bends in plate sections that do not have holes
- Use several small bends to achieve a smooth overall bend
- Do not bend, unbend, and re-bend more than once

**Note:** If bending the plate using the Pelvic Plate Bending Pliers, observe the following:

 For in-plane bending, insert the plate parallel to the bending piston. Situate the plate such that the piston is between holes. Compress the handle to bend the plate



Figure 58

# Reconstruction Plate Surgical Technique [continued]



### Drilling

With reduction confirmed, drill using the 2.8 mm Quick Release Drill, Long (80-1130) and 2.8 mm Drill Guide, Long (80-1136) through a desired hole in the plate. Using the Depth Gauge 10–150 mm (80-1134), determine the proper screw length and insert the proper length 3.5 mm Nonlocking Hexalobe Screw (30-0XXX).

Figure 61

### **Screw Insertion**

Connect the T15 Stick Fit Hexalobe Driver, 6 inch (80-2087) to the Small Ratchet Handle with Quick Release Connection (80-0398) and insert a 3.5 mm Nonlocking Hexalobe Screw (30-0XXX).

**Caution:** Driving the screws into the plate under power could cause the screw heads to go through the plate. To avoid this possible consequence, screws should be tightened into the plate by hand.

# Reconstruction Plate Surgical Technique [continued]

Screw Insertion
Drill, measure, and install 3.5 mm Nonlocking

Hexalobe Screws (30-0XXX) in the remaining holes of the plate, at the surgeon's discretion. Tighten the screws by hand. Confirm all screws have been seated in the plate(s). Close the surgical site(s) using preferred techniques.

**Caution:** Driving the screws into the plate under power could cause the screw heads to go through the plate. To avoid this, tighten screws into the plate by hand.



Figure 62



To extract a Pelvic Plating System plate, use the following parts to remove all screws from the plate:

#### 3.5 mm Hexalobe Screws:

Either the T15 Hexalobe Driver Tip, Long (80-1561), T15 Stick Fit Hexalobe Driver, 6 Inch (80-2087), or T15 Stick Fit Hexalobe Driver, 9 Inch (80-2088) and the Small Ratchet Handle with Quick Release Connection (80-0398).

Referencing the Screw Removal Brochure (SPF10-00) may aid in implant extraction if difficulty is experienced.

# Interlocking Reconstruction Plate Surgical Technique







#### Exposure

Expose the area of the pelvis to be repaired using a preferred surgical exposure. Reduce the fracture in preparation for plate installation. The Interlocking Reconstruction Plate (70-0449) can be used with other plates in the system. Install a first plate as indicated in the corresponding surgical technique.

The Interlocking Reconstruction Plate can be oriented to allow the user to pass a 3.5 mm Nonlocking Hexalobe Screw (30-0XXX) through this plate and the previously installed plate using the plate's overlapping feature. This is done by first trimming the unused portion of the plate using the Plate Cutters (80-1143).

# Fitting

Once the plate is trimmed for the application, it can be contoured to fit the desired location on the pelvis using the Large Plate Bender (PL-2045) and/or the Pelvic Plate Bending Pliers (80-1141).

The plate can then be provisionally attached to bone using Long Plate Tacks (80-1140).

Caution: If bending the plate, please observe the following:

- Place bends in plate sections that do not have holes
- Use several small bends to achieve a smooth overall bend
- Do not bend, unbend, and re-bend more than once

**Note:** If bending the plate using the Pelvic Plate Bending Pliers (80-1141), observe the following:

 For in-plane bending, insert the plate parallel to the bending piston. Situate the plate so the piston is between holes. Compress the handle to bend the plate



With reduction confirmed, drill using the 2.8 mm Quick Release Drill, Long (80-1130) and 2.8 mm Drill Guide, Long (80-1136) through the location in the plate construct that passes through a hole in both plates. Using the Depth Gauge 10–150 mm (80-1134), determine the proper screw length and insert the proper length 3.5 mm Nonlocking Hexalobe Screw (30-0XXX).

# Interlocking Reconstruction Plate Surgical Technique [continued]

#### Screw Insertion

Connect the T15 Stick Fit Hexalobe Driver, 6 inch (80-2087) to the Small Ratchet Handle with Quick Release Connection (80-0398) and insert a 3.5 mm Nonlocking Hexalobe Screw (30-0XXX). Leave this screw partially tightened to allow for final plate alignment. If the surgeon anticipates no further adjustments, fully seat the screw by hand.

**Caution:** Driving the screws into the plate under power could cause the screw heads to go through the plate. To avoid this, tighten screws into the plate by hand.



### Screw Insertion

Drill, measure, and install 3.5 mm Nonlocking Hexalobe Screws (30-0XXX) in the remaining holes of the plate, at the surgeon's discretion. Tighten the screws by hand. Confirm all screws have been seated in the plate(s). Close the surgical site(s) using preferred techniques.

**Caution:** Driving the screws into the plate under power could cause the screw heads to go through the plate. To avoid this, tighten screws into the plate by hand.



### 6 Optional: Removal Instructions To extract a Pelvic Plating System plate, use the following parts to remove all screws from the plate:

#### 3.5 mm Hexalobe Screws:

Either the T15 Hexalobe Driver Tip, Long (80-1561), T15 Stick Fit Hexalobe Driver, 6 Inch (80-2087), or T15 Stick Fit Hexalobe Driver, 9 Inch (80-2088) and the Small Ratchet Handle with Quick Release Connection (80-0398).

Referencing the Screw Removal Brochure (SPF10-00) may aid in implant extraction if difficulty is experienced.

# 2.7 mm Nonlocking Hexalobe Screw Surgical Technique

#### Figure 69



#### Exposure

Expose the area of the pelvis to be repaired using a preferred surgical exposure. Reduce the fracture in preparation for screw installation.

Note: The 2.7 mm Nonlocking Hexalobe Screws (30-03XX) are only to be used for supplemental interfragmentary fixation.

Caution: The 2.7 mm Nonlocking Hexalobe Screws are not intended to be used for plate fixation. The plates in this system are not designed to interface with these screws.





Drilling

With reduction confirmed, drill using the 2.0 mm Quick Release Drill (80-0318) and 2.0/2.8 mm Thin Drill Guide (PL-2118) in the desired location. Using the Depth Gauge 10–150 mm (80-1134), determine the proper screw length and insert the proper length 2.7 mm Nonlocking Hexalobe Screw (30-03XX).

# 2.7 mm Nonlocking Hexalobe Screw Surgical Technique [continued]

Screw Insertion Connect the T8 Stick Fit Hexalobe Driver (80-0759) to the Small Ratchet Handle with Quick Release Connection (80-0398) and insert a 2.7 mm Nonlocking Hexalobe Screw





(30-03XX). Fully seat the screw.

Repeat Steps 1–3 as necessary. Continue the definitive fixation of the fracture using the appropriate surgical technique previously described.





# 4.3 mm Hexalobe Column Screw Surgical Technique

Figure 74



#### Exposure

Expose the area of the pelvis to be repaired using a preferred surgical exposure. Reduce the fracture in preparation for screw installation.

**Note:** The 4.3 mm Hexalobe Column Screws (30-0XXX) are only to be used for interfragmentary fixation.

**Caution:** The 4.3 mm Hexalobe Column Screws are not intended to be used for plate fixation. The plates in this system are not designed to interface with these screws.



### Drilling

With reduction confirmed, drill using the 3.5 mm Quick Release Flexible Drill, Long (80-1132) and 3.5 mm Flexible Drill Guide, Long (80-1139) in the desired location. Using the Depth Gauge 10–150 mm (80-1134), determine the proper screw length and insert the proper length 4.3 mm Hexalobe Column Screw (30-0XXX).

**Note:** The 3.5 mm Quick Release Flexible Drill, Long (80-1132) assists the user in drilling long distances (>80 mm) by allowing non-linear drill paths to be created.
## 4.3 mm Hexalobe Column Screw Surgical Technique [continued]

Screw Insertion Connect the T15 Stick Fit Hexalobe Driver, 6 inch (80-2087) to the Small Ratchet Handle with Quick Release Connection (80-0398) and insert a 4.3 mm Hexalobe Column Screw (30-0XXX). Fully seat the screw.

Note: In cases of dense bone, it may be necessary to open the near cortex using the 4.3 mm Quick Release Drill, Long (80-1133).





## **Screw Insertion**

Repeat Steps 1–3 at the surgeon's discretion. Continue the definitive fixation of the fracture using the appropriate surgical technique previously described. Confirm all screws have been seated. Close the surgical site(s) using preferred techniques.

Note: Optional Cannulated Screw Washers (7003-10046) are included in the Acumed Cannulated Screw System, and may be used with the 4.3 mm Hexalobe Column Screws (30-0XXX) at the surgeon's discretion.





### **Optional: Removal Instructions**

4.3 mm Hexalobe Column Screws may be removed using either the T15 Hexalobe Driver Tip, Long (80-1561), T15 Stick Fit Hexalobe Driver, 6 Inch (80-2087), or T15 Stick Fit Hexalobe Driver, 9 Inch (80-2088) and the Small Ratchet Handle with Quick Release Connection (80-0398).

# Ordering Information



### Tray Components

#### **Posterior Pelvic Plates**

3.5 mm Interlocking Reconstruction Plate, 11 Hole*	70-0449
<b>2</b> 3.5 mm Reconstruction Plate, 16 Hole*	70-0448
3 3.5 mm Reconstruction Plate, 14 Hole*	70-0447
4 3.5 mm Reconstruction Plate, 12 Hole*	70-0446
5 3.5 mm Reconstruction Plate, 10 Hole*	70-0445
6 3.5 mm Reconstruction Plate, 8 Hole*	70-0444
<b>7</b> 3.5 mm Reconstruction Plate, 6 Hole*	70-0443
<sup>8</sup> 3.5 mm Reconstruction Plate, 4 Hole*	70-0442
9 3.5 mm Reconstruction Plate, 3 Hole*	70-0441

10	Curved Posterior Wall Acetabular Frag Plate, Right*	70-0459
11	Posterior Wall Acetabular Frag Plate, Right*	70-0428
12	Posterior Wall Acetabular Plate*	70-0426
13	Posterior Wall Acetabular Frag Plate, Left*	70-0427
14	Curved Posterior Wall Acetabular Frag Plate, Left*	70-0458
15	Acetabular Spring Plate, 3 Hole*	70-0430
16	Acetabular Spring Plate, 2 Hole*	70-0429

**Note:** To learn more about the full line of Acumed innovative surgical solutions, please contact your authorized Acumed distributor, call 888.627.9957, or visit www.acumed.net.



Tray Components			
Anterior Pelvic Plates			
1 Pubic Symphysis Plate, 6 Hole*	70-0451	5 Quadrilateral Surface Plate, Right*	70-0436
2 Pubic Symphysis Plate, 4 Hole*	70-0450	6 Quadrilateral Surface Plate, Left*	70-0435
3 Anterior Brim Plate, 14 Hole, Right*	70-0434	7 Anterior Brim Plate, 12 Hole, Left*	70-0431
4 Anterior Brim Plate, 12 Hole, Right*	70-0432	8 Anterior Brim Plate, 14 Hole, Left*	70-0433
		9 Superior Sacroiliac Plate, 4 Hole	70-0452



### Tray Components

Instrumentation		Intrapelvic Plates	
1 Intrapelvic Reduction Clamp	80-1126	3 Intrapelvic Plate 9-Hole, Right*	70-0440
2 Intrapelvic Plate Reduction Clamp	80-1152	4 Intrapelvic Plate 5-Hole, Right*	70-0438
		5 Intrapelvic Plate 5-Hole, Left*	70-0437
		6 Intrapelvic Plate 9-Hole, Left*	70-0439



#### Tray Components

### Instrumentation

1 2.0 mm/2.8 mm Thin Drill Guide	PL-2118	14 T15 Stick Fit Toggling Hexalobe Driver	80-1129
2 4.3 mm Drill Guide, Long	80-1138	15 T15 Hexalobe Driver Tip, Long	80-1561
3 3.5 mm Drill Guide, Long	80-1137	16 T15 Stick Fit Hexalobe Driver, 6 Inch	80-2087
4 2.8 mm Drill Guide, Long	80-1136	17 T15 Stick Fit Hexalobe Driver, 9 Inch	80-2088
5 Small Ratchet Handle with Quick Release Connection	80-0398	18 T8 Stick Fit Hexalobe Driver	80-0759
6 Soft Tissue Protector, Long	80-1135	19 Plate Tack, Long	80-1140
7 mm Bone Graft Drill Assembly*	PL-BG07	20 .045" x 6" ST Guide Wire**	WS-1106ST
8 3.5 mm Flexible Drill Guide, Long	80-1139	21 .062" x 8" Single Trocar Guide Wire <sup>+</sup>	80-0413
9 2.0 mm Quick Release Drill*	80-0318	22 .094" x 8" Single Trocar Guide Wire**	WS-2408ST
0 2.8 mm Quick Release Drill, Long	80-1130	23 Depth Gauge 10–150 mm	80-1134
1) 3.5 mm Quick Release Drill, Long	80-1131	24 Depth Gauge 6–65 mm	80-0623
3.5 mm Quick Release Flexible Drill, Long	80-1132	25 Plate Bender, Large	PL-2045
(13) 4.3 mm Quick Release Drill, Long	80-1133	26 Offset Drill Guide	PL-2095

<sup>+</sup>Also used as a K-wire



### Tray Components

## Instrumentation

1 Reduction Forceps, 3.5 mm Screws	80-1127	4 Ball Spike Crown	80-2011
2 Plate Cutters	80-1143	5 Schanz Pin 6 mm x 190 mm	80-2012
3 Straight Ball Spike With Impact Cap	80-1124	6 Pelvic Plate Bending Pliers	80-1141



### Tray Components

Instrumentation
mstrumentation

1 Adjustable Handle Clamp	80-1145	4 Offset Adjustable Handle Clamp	80-1146
2 Small Farabeuf Pelvic Forceps	80-1122	5 Large Bone Reduction Forceps	80-1147
3 Large Farabeuf Pelvic Forceps	80-1123		



### Tray Components

### Instrumentation

1 Bone Hook, Large	80-1121	6 Small Malleable Retractor	80-1148
2 Sciatic Nerve Retractor, Long	80-1154	7 Medium Malleable Retractor	80-1149
3 Blunt Pelvic Retractor	80-1125	8 Large Malleable Retractor	80-1150
4 Sciatic Nerve Retractor	80-1153	9 Large Pointed Malleable Retractor	80-1151
Periosteal Elevator 14 mm Width, Curved	80-1144		

#### Screws

### 2.7 mm Nonlocking Hexalobe Screws

2.7 mm x 10 mm Nonlocking Hexalobe Screw $^{*}$	30-0344	2.7 mm x 22 mm Nonlocking Hexalobe Screw $^{*}$	30-0350
2.7 mm x 12 mm Nonlocking Hexalobe Screw*	30-0345	2.7 mm x 24 mm Nonlocking Hexalobe Screw*	30-0351
2.7 mm x 14 mm Nonlocking Hexalobe Screw*	30-0346	2.7 mm x 26 mm Nonlocking Hexalobe Screw*	30-0352
2.7 mm x 16 mm Nonlocking Hexalobe Screw*	30-0347	2.7 mm x 28 mm Nonlocking Hexalobe Screw*	30-0353
2.7 mm x 18 mm Nonlocking Hexalobe Screw*	30-0348	2.7 mm x 30 mm Nonlocking Hexalobe Screw*	30-0354
2.7 mm x 20 mm Nonlocking Hexalobe Screw*	30-0349	2.7 mm x 32 mm Nonlocking Hexalobe Screw*	30-0355
3.5 mm Nonlocking Hexalobe Screws			
3.5 mm x 10 mm Nonlocking Hexalobe Screw*	30-0256	3.5 mm x 60 mm Nonlocking Hexalobe Screw*	30-0275
3.5 mm x 12 mm Nonlocking Hexalobe Screw*	30-0257	3.5 mm x 65 mm Nonlocking Hexalobe Screw*	30-0276
3.5 mm x 14 mm Nonlocking Hexalobe Screw*	30-0258	3.5 mm x 70 mm Nonlocking Hexalobe Screw*	30-0877
3.5 mm x 16 mm Nonlocking Hexalobe Screw*	30-0259	3.5 mm x 75 mm Nonlocking Hexalobe Screw*	30-0878
3.5 mm x 18 mm Nonlocking Hexalobe Screw*	30-0260	3.5 mm x 80 mm Nonlocking Hexalobe Screw*	30-0879
3.5 mm x 20 mm Nonlocking Hexalobe Screw*	30-0261	3.5 mm x 85 mm Nonlocking Hexalobe Screw*	30-0880
3.5 mm x 22 mm Nonlocking Hexalobe Screw*	30-0262	3.5 mm x 90 mm Nonlocking Hexalobe Screw*	30-0881
3.5 mm x 24 mm Nonlocking Hexalobe Screw*	30-0263	3.5 mm x 95 mm Nonlocking Hexalobe Screw*	30-0882
3.5 mm x 26 mm Nonlocking Hexalobe Screw*	30-0264	3.5 mm x 100 mm Nonlocking Hexalobe Screw*	30-0883
3.5 mm x 28 mm Nonlocking Hexalobe Screw*	30-0265	3.5 mm x 105 mm Nonlocking Hexalobe Screw*	30-0884
3.5 mm x 30 mm Nonlocking Hexalobe Screw*	30-0266	3.5 mm x 110 mm Nonlocking Hexalobe Screw*	30-0885
3.5 mm x 32 mm Nonlocking Hexalobe Screw*	30-0267	3.5 mm x 115 mm Nonlocking Hexalobe Screw*	30-0886
3.5 mm x 34 mm Nonlocking Hexalobe Screw*	30-0268	3.5 mm x 120 mm Nonlocking Hexalobe Screw*	30-0887
3.5 mm x 36 mm Nonlocking Hexalobe Screw*	30-0269	3.5 mm x 125 mm Nonlocking Hexalobe Screw*	30-0888
3.5 mm x 38 mm Nonlocking Hexalobe Screw*	30-0270	3.5 mm x 130 mm Nonlocking Hexalobe Screw*	30-0889
3.5 mm x 40 mm Nonlocking Hexalobe Screw*	30-0271	3.5 mm x 135 mm Nonlocking Hexalobe Screw*	30-0890
3.5 mm x 45 mm Nonlocking Hexalobe Screw*	30-0272	3.5 mm x 140 mm Nonlocking Hexalobe Screw*	30-0891
3.5 mm x 50 mm Nonlocking Hexalobe Screw*	30-0273	3.5 mm x 145 mm Nonlocking Hexalobe Screw*	30-0892
3.5 mm x 55 mm Nonlocking Hexalobe Screw*	30-0274	3.5 mm x 150 mm Nonlocking Hexalobe Screw*	30-0893

Screws	
4.3 mm Hexalobe Column Screws	
4.3 mm x 50 mm Hexalobe Column Screw*	30-0894
4.3 mm x 55 mm Hexalobe Column Screw*	30-0895
4.3 mm x 60 mm Hexalobe Column Screw*	30-0896
4.3 mm x 65 mm Hexalobe Column Screw*	30-0897
4.3 mm x 70 mm Hexalobe Column Screw*	30-0898
4.3 mm x 75 mm Hexalobe Column Screw*	30-0899
4.3 mm x 80 mm Hexalobe Column Screw*	30-0900
4.3 mm x 85 mm Hexalobe Column Screw*	30-0901
4.3 mm x 90 mm Hexalobe Column Screw*	30-0902
4.3 mm x 95 mm Hexalobe Column Screw*	30-0903
4.3 mm x 100 mm Hexalobe Column Screw*	30-0904
4.3 mm x 105 mm Hexalobe Column Screw*	30-0905
4.3 mm x 110 mm Hexalobe Column Screw*	30-0906
4.3 mm x 115 mm Hexalobe Column Screw*	30-0907
4.3 mm x 120 mm Hexalobe Column Screw*	30-0908
4.3 mm x 125 mm Hexalobe Column Screw*	30-0909
4.3 mm x 130 mm Hexalobe Column Screw*	30-0910
4.3 mm x 135 mm Hexalobe Column Screw*	30-0911
4.3 mm x 140 mm Hexalobe Column Screw*	30-0912
4.3 mm x 145 mm Hexalobe Column Screw*	30-0913
4.3 mm x 150 mm Hexalobe Column Screw*	30-0914
*Implants and scrows are also available storile pa	ckod Add an

Cannulated Screw Washers 10.0 mm OD x 4.6 mm ID\*

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