4.0mm Self-Tapping Cannulated Screw

Surgical Technique

OrthoPediatrics™

Short Thread

Medium Thread

Fully Threaded

THE SMALLEST COMPANY IN ORTHOPEDICS™

4.0mm Cannulated Screws

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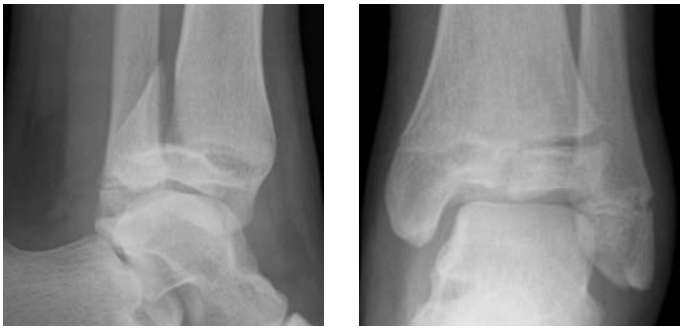
Cannulated screws can have a variety of applications for fractures in the pediatric population. Whether it is percutaneous or open treatment of these fractures, the use of cannulated screws has been described for the treatment of physeal fractures in the proximal humerus down to the transitional ankle fracture in the adolescent patient.

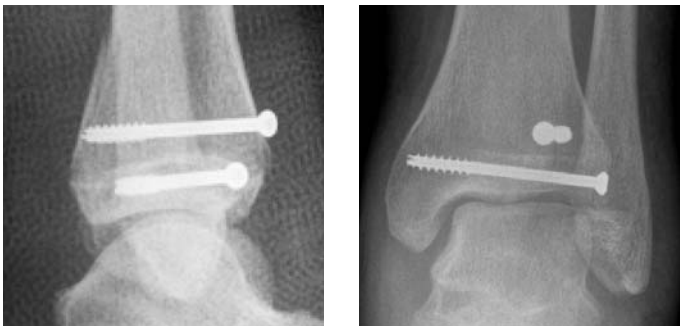
More specifically, 4.0mm cannulated screws are indicated in the treatment of almost all pediatric ankle fractures. This includes Salter Harris II,III, and IV fractures of the distal tibial physis. This also includes the treatment of Tillaux and triplane ankle fractures in older children. 4.0mm cannulated screws can also be used for tibial spine fractures, tibial tubercle fractures, and distal humerus fractures with intraarticular extension.

As mentioned above, there are many uses for 4.0mm cannulated screws. The x-rays shown in this particular technique are that of a triplane ankle fracture.

X-rays shown below are those of a triplane ankle fracture. They were provided curtesy of Dr. Dan Hoernschemeyer, M.D.



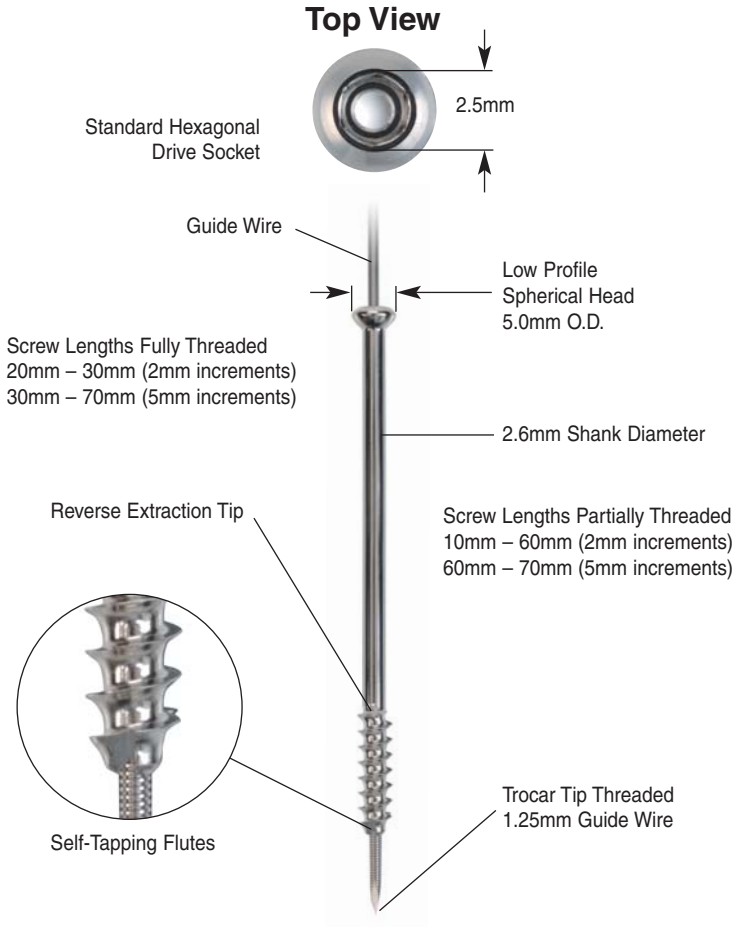
Preoperative x-ray



Post-operative x-ray

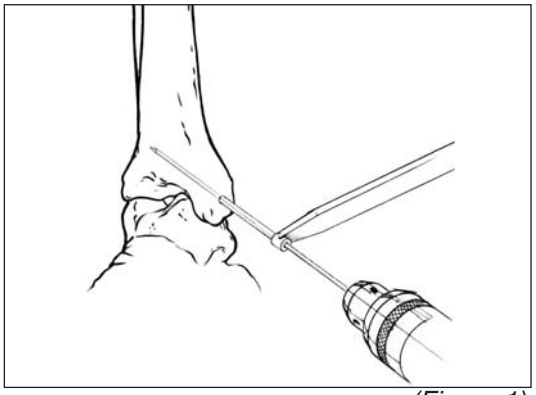
Design Features

- Standard 2.5 mm hexagonal drive is compatible with screwdrivers in other commonly used sets.
- Low-profile head reduces possibility of soft tissue irritation.
- Cannulated shaft accepts 1.25 mm diameter guide wire.
- Reverse-cutting flutes assist in screw removal.
- Hemispherical head ensures optimal annular contact with washers and plates when screws are angled.
- Self-tapping screw tip facilitates screw insertion by reducing the need for predrilling and tapping.
- 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.



Surgical Technique

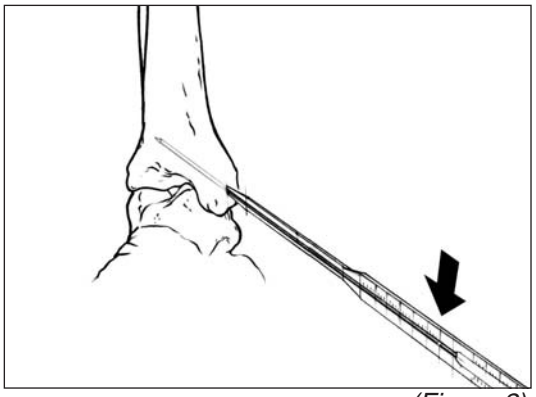
Place Guide Wire
Utilizing a power drill, insert the guide wire (01-1030-006) through the appropriate drill guide (01-1030-013) stopping at the desired depth or location. After checking the placement of the guide wire with image remove the drill and prepare for the next step. *(Figure 1)*



(Figure 1)

Countersink *(optional)*
If countersinking the screw is desired, use the provided cannulated countersink (01-1030-004) over the top of the wire to create the necessary space needed to countersink the screw head. After countersinking, choose the appropriate length screw.

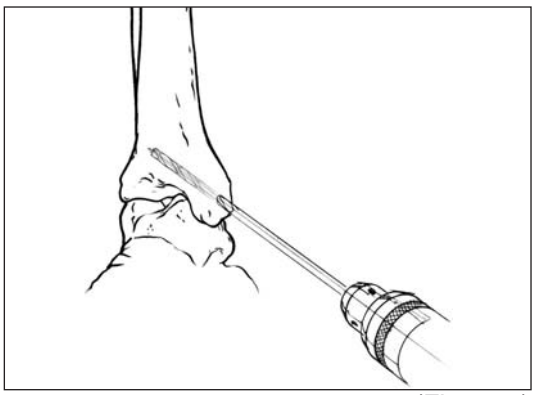
Measure Length
Guide the provided measuring device (01-1030-009) over the guide wire until the tapered end contacts the near cortex. *(Figure 2)*



(Figure 2)

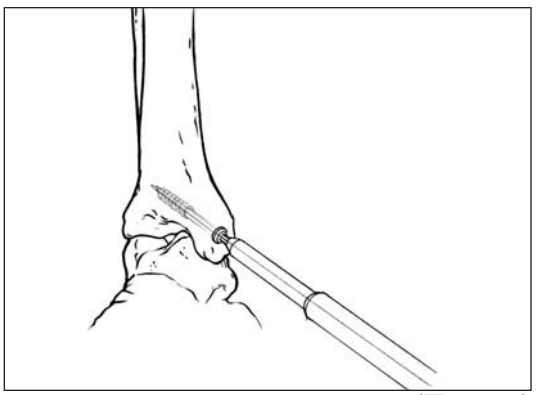
Drill
Using the 2.7mm cannulated drill (01-1030-003), drill over the guide wire to the desired depth. In soft bone, it may not be necessary to drill for the entire length of the screw. *(Figure 3)*

Insert screw
After determining the correct screw length, select the screw type (full or partially threaded). Insert the screw over the top of the guide wire using the provided cannulated screwdriver shaft (01-1030-002) in conjunction with either power or the ratcheted screw driver handle. *(Figure 4)*



(Figure 3)

Cleaning Tips
It is imperative to clean the cannulation in each instrument for the instrument to function properly. To prevent accumulation of debris in the cannulation and potential binding of the instruments about the guide wire the instruments should be cleared intraoperatively with the 1.25 mm Cleaning Stylet (01-1030-010). Postoperatively, instruments should be cleaned with both the 1.35 mm Cleaning Brush (01-1030-011) and the stylet.



(Figure 4)

NOTE: This technique has been provided by one of our medical advisors only as guidance and it is not intended to limit the methods used by trained and experienced surgeons.

Catalog

4.0 mm Cannulated Screws
Stainless Steel Short Thread

Catalog Number	Screw Length	Thread Length
00-1030-210	10mm	5mm
00-1030-212	12mm	6mm
00-1030-214	14mm	6mm
00-1030-216	16mm	6mm
00-1030-218	18mm	7mm
00-1030-220	20mm	8mm
00-1030-222	22mm	9mm
00-1030-224	24mm	10mm
00-1030-226	26mm	12mm
00-1030-228	28mm	14mm
00-1030-230	30mm	14mm
00-1030-232	32mm	14mm
00-1030-234	34mm	14mm
00-1030-236	36mm	14mm
00-1030-238	38mm	14mm
00-1030-240	40mm	14mm
00-1030-242	42mm	14mm
00-1030-244	44mm	15mm
00-1030-246	46mm	15mm
00-1030-248	48mm	15mm
00-1030-250	50mm	15mm
00-1030-252	52mm	15mm
00-1030-254	54mm	15mm
00-1030-256	56mm	15mm
00-1030-258	58mm	15mm
00-1030-260	60mm	15mm
00-1030-265	65mm	15mm
00-1030-270	70mm	15mm

4.0 mm Cannulated Screws
Stainless Steel Fully Threaded

Catalog Number	Screw Length
00-1030-120	20mm
00-1030-122	22mm
00-1030-124	24mm
00-1030-126	26mm
00-1030-128	28mm
00-1030-130	30mm
00-1030-135	35mm
00-1030-140	40mm
00-1030-145	45mm
00-1030-150	50mm
00-1030-155	55mm
00-1030-160	60mm
00-1030-165	65mm
00-1030-170	70mm

4.0 mm Stainless Steel Washer

Catalog Number
00-1030-000

4.0 mm Cannulated Screws
Stainless Steel Medium Thread

Catalog Number	Screw Length	Thread Length
00-1030-030	30mm	15mm
00-1030-032	32mm	16mm
00-1030-034	34mm	17mm
00-1030-036	36mm	18mm
00-1030-038	38mm	19mm
00-1030-040	40mm	20mm
00-1030-042	42mm	21mm
00-1030-044	44mm	22mm
00-1030-046	46mm	23mm
00-1030-048	48mm	24mm
00-1030-050	50mm	25mm
00-1030-052	52mm	26mm
00-1030-054	54mm	27mm
00-1030-056	56mm	28mm
00-1030-058	58mm	29mm
00-1030-060	60mm	30mm
00-1030-065	65mm	32.5mm
00-1030-070	70mm	35mm

4.0 mm Cannulated Screw Instrument Set
Stainless Steel

Instruments	Catalog Number
Mini IN-line ratchet w/small AO push/pull coupling	01-1030-001
AO 4.0mm Screwdriver Shaft (cannulated)	01-1030-002
AO 4.0mm Screwdriver Shaft	01-1030-016
AO Cannulated Drill 2.7 DIA	01-1030-003
AO Cannulated Countersink	01-1030-004
AO Cannulated Tap for 4.0mm screws	01-1030-005
Guide Wire with Threaded Tip w/trocar	01-1030-006
Self holding screw forceps	01-1030-007
Holding Clip for Washers	01-1030-008
Measuring Device	01-1030-009
Cleaning Stylet 1.25mm DIA	01-1030-010
Cleaning Brush 1.35mm DIA	01-1030-011
Holding Sleeve	01-1030-012
Double Drill Guide 2.7mm DIA / 1.25mm DIA	01-1030-013
Screw Extractor	01-1030-015
Case Lid	01-1030-019
Case Screw Caddy	01-1030-018
Case Bottom	01-1030-014
Case Complete (Includes implants and instruments)	01-1030-020