FLOWER™
ORTHOPEDICS
STANDARDS FOR ORTHOPEDICS

The Flower Small Bone Plates

PROCEDURE GUIDE

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The Flower Upper Extremity Application

SMALL BONE PLATES

FOUR CORNER FUSION PLATE

PROXIMAL HUMERUS PLATE

ANATOMIC DISTAL RADIUS PLATE

INDICATIONS FOR USE:
The Flower Small and Medium Implants set is intended for use for internal fixation of fractures and reconstruction of bones, including the scapula, olecranon, humerus, radius, ulna, pelvis, distal tibia, fibula, hand and foot in adults and for use in long bones in adolescents (12-21) in whom the growth plates have fused. Examples of these internal fixations and reconstructions include compression fractures, intra-articular and extra-articular fractures, displaced fractures, osteotomies, non-unions and mal-unions. This system can be used for palmar, ventral, dorsal and orthogonal application.

The Flower Small Bone Plates – Product Rationale

The Flower Small Bone Plating Construct consists of low profile stabilization plates designed to provide robust fixation while reducing implant prominence.

The wide variety of available plate configurations allow the Flower Small Bone Plates to treat numerous fracture patterns in the forearm, wrist, hand and foot.

Flower Small Bone Plates allow for the use of variable angle locking and non-locking screws, that sit flush in the screw holes of the plate.

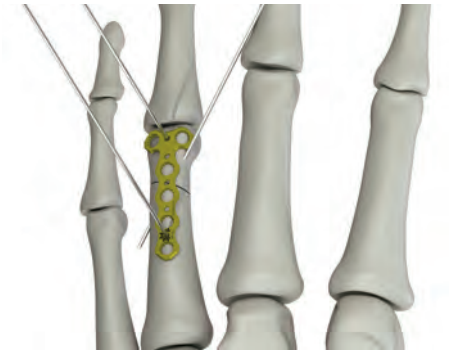
The Flower Small Bone Plates – Design Features

	PLATE RATIONALE	SURGICAL BENEFIT
	Broad range of plates to address various fracture patterns	Multiple surgical options to treat a variety of fractures
	Low profile (1.0mm and 1.5mm thickness)	Reduced soft tissue irritation and minimized bone contact
	Plates accept 1.5mm, 2.0mm and 2.4mm locking and non-locking screws	Provides multiple screw options for optimal fracture management
	The patented Flower Locking Mechanism and variable angle locking screw holes allow for +/- 10° of freedom	Allows surgeon to aim and lock the screw as needed without the need for special drill guides

The Flower Small Bone Plates – Surgical Strategy

Step 1 – Fracture Reduction using K-Wires

a. With the fracture properly reduced, Flower K-Wires (KWK 001) can be used to provide provisional stability.



Step 2 – Plate Placement using Flower K-Wires (KWK 001)

a. Plate Trials (FIS 300) are available to determine the appropriate plate length and configuration for the fracture. The plate trial may also be used as a bending template if bending is required.

b. The Flower plate is placed over the fracture site, generally with at least three locking holes positioned on either side of the fracture.

c. The plate can be temporarily fixed to the bone using the Flower K-Wires (KWK 001), placed through the k-wire holes in the plate.

Step 3 – Drill Holes and Screw Placement

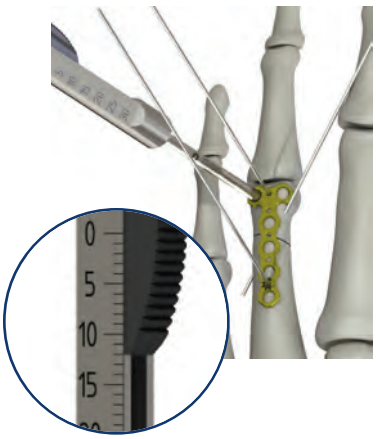
a. 2.0mm variable angle locking or non-locking screws are recommended for the Flower Small Bone Plate Construct, depending on the surgeon's preference.

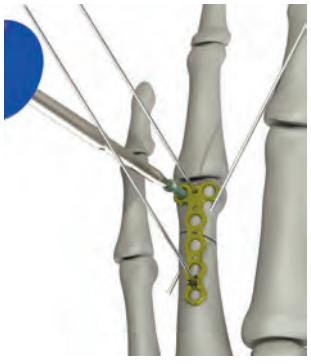
- 1.5mm and 2.4mm variable angle locking and non-locking screws are also available depending on the anatomy, pathology and surgeon's preference.

b. Starting with the distal locking holes and using a 1.5mm drill bit (DBK 020), pilot holes are drilled. Use the locking end of the drill guide for all holes in the plate.

c. All holes are drilled bicortically.

Step 4 – Drill Hole Measurement and Placement of Locking Screws





a. The Flower Depth Gauge is part of the K-Wire Kit (KWK 001).

b. The Flower Depth Gauge needs to be fully seated into the screw hole and then the hook probe is advanced into the pilot hole.

c. The hook of the depth gauge is engaged on the opposite cortex of the pilot hole and the pilot hole depth is read off the distal end of the slider.

d. Insert the locking screws into the distal screw holes using the Flower Torque Limiting Screwdriver that is part of the Flower K-Wire Kit (KWK 001). The torque limiting feature does not need to be engaged to guarantee sufficient locking.

e. If inserting non-locking screws, the screws should be inserted until flush with the top of the plate, and the torque limiting feature should not be engaged.

The Flower Small Bone Plates – Surgical Strategy

Step 5 – Eccentric Screw insertion with Compression

a. If axial compression through the plate is desired, a pilot hole may be eccentrically drilled and a non-locking screw placed.

b. When using the compression technique the following must be followed.

- Place a minimum of two locking screws on one side of the fracture.
- Remove any k-wires provisionally holding the plate on the opposite side of the fracture, prior to inserting the compression screw.

c. Use the compression end of the drill guide (DBK 020) in the locking hole closest to the fracture and ensure the arrow is pointing toward the fracture.

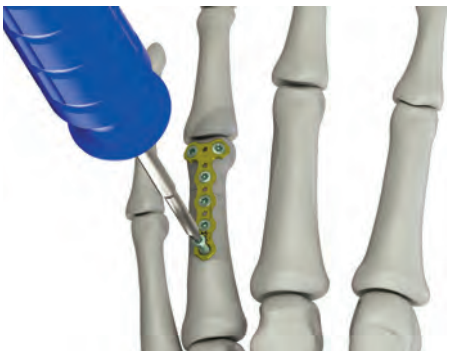
d. Drill the pilot hole bicortically.

e. Insert a 2.0mm variable angle non-locking screw until the top of the screw is flush with the plate.

Step 6 – Placement of Remaining Locking Screws

a. Repeat Step 4 to place additional locking or non-locking screws.

b. Do not place more than one eccentrically drilled compression screw through the plate.



Step 7 – The Final Construct

The Flower Small Bone plates address various fractures patterns in the hand and the foot. The anatomic plates offer both locking and non-locking options to meet the needs of the surgeons, and of difficult fracture patterns. Both locking and non-locking screws sit flush in the locking holes reducing implant prominence.

The Flower Small Bone Plates – Implant Selection

VARIABLE ANGLE LOCKING SCREWS

Screw Diameters	Product Description	Lengths
1.5mm	1.5mm Variable Angle Locking Screw	6mm-20mm
2.0mm	2.0mm Variable Angle Locking Screw	6mm-22mm
2.4mm	2.4mm Variable Angle Locking Screw	6mm-22mm

VARIABLE ANGLE NON-LOCKING SCREWS

Screw Diameters	Product Description	Lengths
1.5mm	1.5mm Variable Angle Non-Locking Screw	6mm-20mm
2.0mm	2.0mm Variable Angle Non-Locking Screw	6mm-22mm
2.4mm	2.4mm Variable Angle Non-Locking Screw	6mm-22mm

SMALL BONE PORTFOLIO (HAND AND FOOT)

Low Profile (1.0mm)	Standard (1.5mm)	Product Description	
FHF 305	FHF 405	Straight Plate, 4 Holes	
FHF 306	FHF 406	Straight Plate, 6 Holes	
FHF 308	FHF 408	Straight Plate, 8 Holes	
FHF 310	FHF 410	Straight Plate, 4 Holes with Bar	
FHF 315	FHF 415	Straight Plate, 16 Holes	
FHF 320	FHF 420	L-Plate (R), 6 Holes	
FHF 325	FHF 425	L-Plate (L), 6 Holes	
FHF 330	FHF 430	Oblique T-Plate (R), 6 Holes	
FHF 335	FHF 435	Oblique T-Plate (L), 6 Holes	
FHF 340	FHF 440	T-Plate, 6 Holes	
FHF 345	FHF 445	T-Plate, 7 Holes	
FHF 350	FHF 450	H-Plate, 2x2 Holes	
FHF 355	FHF 455	H-Plate, 3x2 Holes	
FHF 360	FHF 460	H-Plate, 4x2 Holes	
FHF 365	FHF 465	H-Plate, 6x2 Holes	

The Flower Small Bone Plates – Single-Use Instrument Overview

SMALL BONE TRIALS

Part #	Contents of Kit
FIS 300	H&F Trials, 1.0mm and 1.5mm

K-WIRE KIT (KWK 001)

Kit Size	Contents of Kit
K-Wire Kit, Small	Torque Wrench (Small), Depth Gauge (Small) K-Wire, D: 0.8mm (2 pieces)

LAG SCREW KITS

Part #	Contents of Kit
LSK 015	Lag Screw Drill Guide, 1.5mm Drill Bit
LSK 020	Lag Screw Drill Guide, 2.0mm Drill Bit

DRILL BIT KITS

Part #	Contents of Kit
DBK 015	Drill Bit D: 1.1 mm, Drill Guide
DBK 020	Drill Bit, D: 1.5mm, Drill Guide
DBK 024	Drill Bit, D: 1.8mm, Drill Guide

PLATE BENDERS

Part #	Contents of Kit
FIS 231	Plate Benders (S) (2 Pieces)

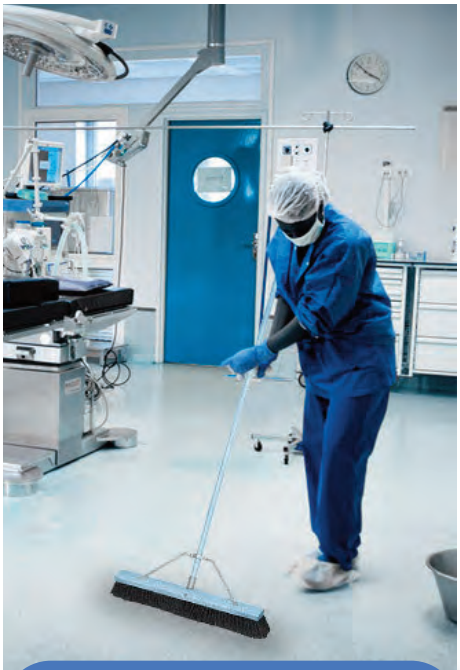
FlowerCube™: Schedule. Treat. Turn.

Schedule Case Sooner.
(Ready-for-Surgery™)

- No cleaning and sterilization
- FlowerCube is always ready to complete the case
- No time consuming set drop off

Treat Confidently.
(Sterile & Disposable)

- Instrument kits are always complete
- Drill bits are always sharp
- Guaranteed sterility



Turn OR Faster.
(FlowerCube)

- FlowerCube is always ready for the next surgery
- No delay with back to back cases
- Enough sterile inventory for multiple cases

Flower Orthopedics Corporation
100 Witmer Road • Suite 280 • Horsham, PA 19044 • T: 877-778-8587 • F: 215-394-8904

www.flowerortho.com

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