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## Monoloc 1.5/2.0 Locking Plates System

Surgical Technique

CHANGZHOU KANGHUI MEDICAL INNOVATION CO., LTD

Add. No.11 North Changjiang Road, Xinbei Zone, Changzhou, Jiangsu, China 213022  
Tel: 86-519-85195556 Fax: 86-519-85195551  
www.kanghui-med.com

Kanghui MonoLoc 1.5/2.0 Locking Plates System Surgical Technique  
Version 20150301

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**Warning:**

This description is not sufficient for immediate application of the instrumentation. Instruction by a surgeon experienced in handling this instrumentation is highly recommended.



## Introduction

The Monoloc 1.5/2.0mm Locking Plate system is indicated for fixation of small bones and small bone fragments, including osteotomies, arthrodeses, replantations, reconstructions of small bones and small bone fragments, particularly in osteopenic bone.

All plates have a low profile to reduce soft-tissue irritation, locking hole design for use with cortex or locking screws, and a cut-to-length feature to minimize inventory.

All locking and cortex screws have a self-tapping tip to facilitate insertion and self-retaining StarDrive recess improving torque transmission and increasing resistance to stripping.

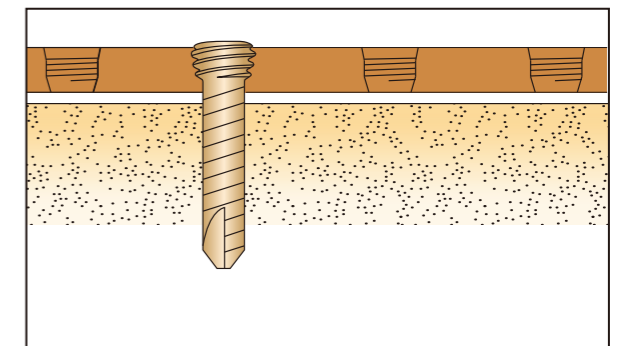
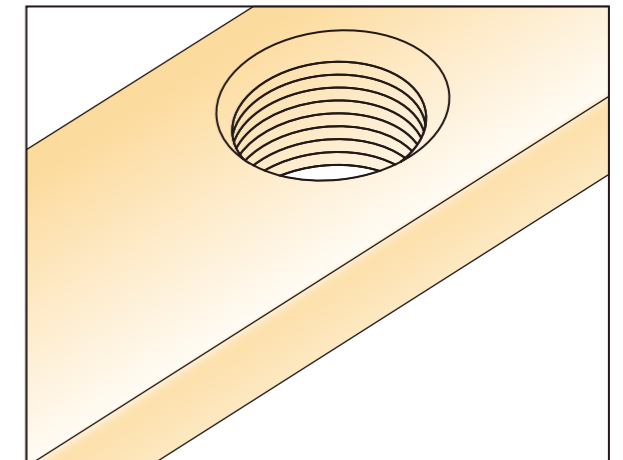
### Tapered, threaded hole for locking screws

The self-tapping locking screws can be locked in the tapered threaded hole to ensure angular stability. Plate and screw systems in which the screws are locked in the plate function according to the principle of an internal fixator and are used to resolve the following problem situations:

- Primary intraoperative loss of reduction
- Secondary postoperative loss of reduction, particularly in cases of osteoporosis or poor bone quality or of comminuted fractures without bony support
- Compression of the periosteum and the resulting impairment of cortical circulation

### Functional principle of the internal fixator

When LCP plates are used with angularly stable locking screws, the plate and screws together form a stable system; the stability of the fracture is mainly dependent on the strength of the resulting assembly. Since the plate does not need to be compressed against the bone, blood flow to the bone is not additionally impaired.



## Indications

### 1.5 Locking Plates

- Fractures, osteotomies and arthrodeses of the phalanges and metacarpals
- Replantations and reconstructions of the phalanges and metacarpals

### 2.0 Locking Plates

- Fractures of the phalanges, metacarpals, wrist bones
- Osteotomies and arthrodeses of the interphalangeal joints

This surgical technique describes the application of the LCP Hand system using a Locking Condylar Plate 1.5.



## Preparation

### 1

#### Select implant



Select the plates according to the fracture pattern and anatomy of the bone.



## Fracture Reduction and Plate Contouring

### 1

#### Reduce fracture

Reduce the fracture under image intensification and, if necessary, fix with Kirschner wires or reduction forceps. The reduction method is fracture-specific.



### 2

#### Trim plate

##### Instrument

161210	Cutter
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Trim the plate to the desired length using bending/cutting pliers. Remove the burrs.

### 3

#### Contour plate

##### Instruments

For 1.5 Locking Plates

98092	Bending Pin for LCP Plates 1.5, with thread
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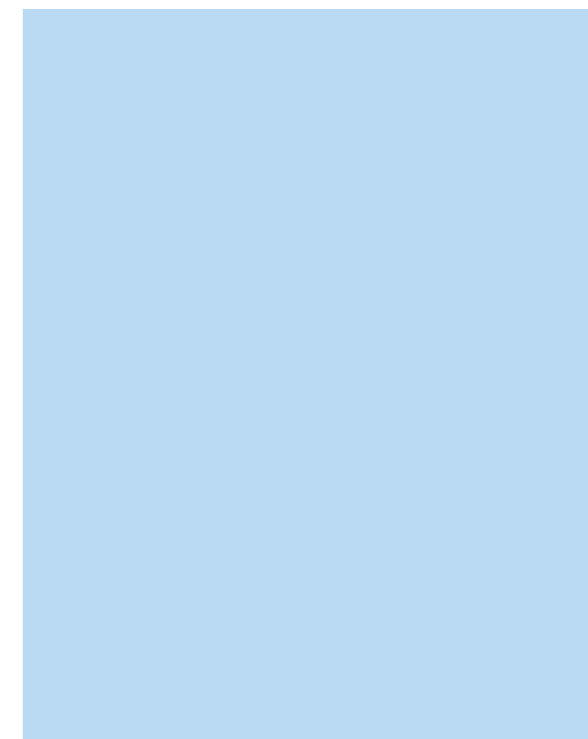
For 2.0 Locking Plates

98081	Bending Pin for LCP Plates 2.0, with thread
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If necessary, contour the plate to suit the anatomical conditions. Use bending pins for Locking Plates and thread the pins into the screw holes to contour the plate.

##### Note:

Do not deform the threaded part of the holes or overbend the plate as this may adversely affect insertion of locking screws. Avoid repetitive bending of the plate.



# 4

## Position plate

### Instrument

01123	Reduction Forceps with Points
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Position the plate over the reduced fracture and, if necessary fix provisionally with Kirschner wires or reduction forceps.



## Preparation

### Determine screw type

Depending on the individual case, cortex screws and/or locking screws may be inserted. Determine where locking screws will be used. The locking holes accept both, cortex and locking screws.

If a locking screw is inserted first, ensure that the plate is held securely to the bone to prevent the plate from spinning as the screw locks into the plate.

The final screw placement and the use of locking and cortex screws is determined by the fracture pattern.



## Screw Insertion Cortex Screws

### 1

#### Pre-drill screw hole for cortex screw

##### Instruments

For 1.5 Locking Plates

- 98083 Double Drill Guide 1.5/1.1
- 98091 Drill Bit  $\Phi$  1.1mm, with Quick Coupling
- 98085 Drill Bit  $\Phi$  1.5mm, with Quick Coupling

For 2.0 Locking Plates

- 98095 Double Drill Guide 2.0/1.5 for Drill Bits 2.0 and 1.5mm
- 98085 Drill Bit  $\Phi$ 1.5mm, with Quick Coupling
- 98082 Drill Bit  $\Phi$ 2.0mm, with Quick Coupling



Drill the screw hole using the drill bit and the corresponding drill guide / drill sleeve.

### 2

#### Determine screw length of cortex screw

##### Instruments

For 1.5 Locking Plates

- 98086 Depth Gauge for Screws 1.5mm, measuring range up to 24mm

For 2.0 Locking Plates

- 98087 Depth Gauge for Screw 2.0 and 2.4mm, measuring range up to 40mm



Determine the screw length with the corresponding depth gauge.





# 3

## Insert cortex screw

### Instruments

For 1.5 Locking Plates

- 98100 Screwdriver Shaft Stardrive 1.5, T4, self-holding, with Quick Coupling
- 98098 Holding Sleeve 1.5

For 2.0 Locking Plates

- 98099 Screwdriver Shaft Stardrive 2.0, with Quick Coupling
- 98097 Holding Sleeve 2.0



Insert the self-tapping cortex screw using the corresponding Screwdriver.

# 1

## Pre-drill screw hole for locking screw

### Instruments

For 1.5 Locking Plates

- 98094 LCP Drill Sleeve 1.5, for Drill Bits  $\Phi$  1.1 mm
- 98091 Drill Bit  $\Phi$  1.1mm, with Quick Coupling

For 2.0 Locking Plates

- 98096 LCP Drill Sleeve 2.0, with Scale, for Drill Bits  $\Phi$  1.5 mm
- 98085 Drill Bit  $\Phi$  1.5 mm, with Quick Coupling



Drill screw hole through the LCP drill sleeve using the appropriately sized drill bit. Insertion of locking screws. Avoid repetitive bending of the plate.





## 2

### Determine screw length of locking screw

#### Instruments

For 1.5 Locking Plates

98086 Depth Gauge for Screws  $\Phi$  1.3 to 1.5 mm, measuring range up to 24 mm

For 2.0 Locking Plates

98096 LCP Drill Sleeve 2.0, with Scale, for Drill Bits  $\Phi$  1.5 mm  
98087 Depth Gauge for Screw 2.0 and 2.4 mm, measuring range up to 40 mm



Determine the screw length either with the corresponding depth gauge or with the LCP drill sleeve

When using the LCP drill sleeve check the length directly on the scale of the drill sleeve. Then remove the drill sleeve.

## 3

### Insert locking screw

#### Instruments

For 1.5 Locking Plates

98100 Screwdriver Shaft Stardrive 1.5, T4, self-holding, with Quick Coupling  
98098 Holding Sleeve 1.5  
899121 Handle, with Mini Quick Coupling

For 2.0 Locking Plates

98099 Screwdriver Shaft Stardrive 2.0, with Quick Coupling  
98097 Holding Sleeve 2.0  
899121 Handle, with Mini Quick Coupling



Insert the self-tapping locking screw using the corresponding screwdriver shaft and the appropriate handle.

## Implant Removal

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To remove the plate, first unlock all screws then definitely remove them in a second step. If the screws are not unlocked before removal the plate may rotate while the last screw is being removed and cause soft tissue damage.



## Tips

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### **Pick-up screws with Stardrive recess without holding sleeve**

Select the screw and position the corresponding screwdriver perpendicular to the screw. Pick-up the screw by applying slight axial pressure.

Make sure that the screwdriver remains perpendicular during screw extraction.

### **Pick-up screws with holding sleeve**

All screws can also be picked-up with help of the corresponding holding sleeves.

Slide the holding sleeve onto the screwdriver, until it clicks into place. With the holding sleeve jaws open, mount the appropriate screw onto the screwdriver, then push the holding sleeve until it secures the screw.

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### **Note:**

The holding sleeve covers the head of the screw.

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## Implants

### Locking Plate 1.5, straight

Product No.	Size	Material	Model No.
29476504	4H	PT	SDXZ40
29476506	6H	PT	SDXZ40



### Locking Reconstruction Plate 1.5

Product No.	Size	Material	Model No.
29476006	6H	PT	SDXZ75
29476012	12H	PT	SDXZ75



### Locking T-Plate 1.5

Product No.	Size	Material	Model No.
29476608	3+8H	PT	SDXZ73
29476408	4+8H	PT	SDXZ74



### Locking Y-Plate 1.5

Product No.	Size	Material	Model No.
29478308	3+8H	PT	SDXZ06



### Locking Condylar Plate 1.5

Product No.	Size	Material	Model No.
29475906	2+6H	PT	SDXZ45



### Locking Strut Plate 1.5

Product No.	Material	Model No.
24241000	PT	SDXZ68





**Locking Plate 2.0, straight**

Product No.	Size	Material	Model No.
29475404	4H	PT	SDXZ40
29475405	5H	PT	SDXZ40
29475406	6H	PT	SDXZ40
29475407	7H	PT	SDXZ40
29475408	8H	PT	SDXZ40



**Locking T-Plate 2.0**

Product No.	Size	Material	Model No.
29476107	3+7H	PT	SDXZ73



**Locking Condylar Plate 2.0**

Product No.	Size	Material	Model No.
29475307	2+7H	PT	SDXZ45



**Locking Y-adaption Plate 2.0**

Product No.	Size	Material	Model No.
29476307	3+7H	PT	SDXZ06



**Locking T-adaption Plate 2.0**

Product No.	Size	Material	Model No.
29476207	2+7H	PT	SDXZ72



**Rotation Correction Locking Plate 2.0**

Product No.	Material	Model No.
24242000	PT	SDXZ78



**Mini Condylar Locking Plate 2.0**

Product No.	Direction	Material	Model No.
24243200	Left	PT	SDXZ46
24243100	Right	PT	SDXZ47



**Mini H Locking Plate 2.0**

Product No.	Material	Model No.
24244000	PT	SDXZ70





**1.5mm Locking Screw Stardrive, self-tapping**

Product No.	Size	Material	Model No.
39475806	1.5x6mm	TA	SDLD01
39475808	1.5x8mm	TA	SDLD01
39475810	1.5x10mm	TA	SDLD01
39475812	1.5x12mm	TA	SDLD01
39475814	1.5x14mm	TA	SDLD01
39475816	1.5x16mm	TA	SDLD01
39475818	1.5x18mm	TA	SDLD01
39475820	1.5x20mm	TA	SDLD01
39475822	1.5x22mm	TA	SDLD01
39475824	1.5x24mm	TA	SDLD01



**1.5mm Cortex Screw Stardrive, self-tapping**

Product No.	Size	Material	Model No.
39475706	1.5x6mm	TA	SSQ01
39475708	1.5x8mm	TA	SSQ01
39475710	1.5x10mm	TA	SSQ01
39475712	1.5x12mm	TA	SSQ01
39475714	1.5x14mm	TA	SSQ01
39475716	1.5x16mm	TA	SSQ01
39475718	1.5x18mm	TA	SSQ01
39475720	1.5x20mm	TA	SSQ01
39475722	1.5x22mm	TA	SSQ01
39475724	1.5x24mm	TA	SSQ01



**2.0mm Locking Screw Stardrive, self-tapping**

Product No.	Size	Material	Model No.
39475606	2x6mm	TA	SDLD01
39475608	2x8mm	TA	SDLD01
39475610	2x10mm	TA	SDLD01
39475612	2x12mm	TA	SDLD01
39475614	2x14mm	TA	SDLD01
39475616	2x16mm	TA	SDLD01
39475618	2x18mm	TA	SDLD01
39475620	2x20mm	TA	SDLD01
39475622	2x22mm	TA	SDLD01
39475624	2x24mm	TA	SDLD01
39475626	2x26mm	TA	SDLD01
39475628	2x28mm	TA	SDLD01
39475630	2x30mm	TA	SDLD01



**2.0mm Cortex Screw Stardrive, self-tapping**

Product No.	Size	Material	Model No.
39475506	2x6mm	TA	SSQ01
39475508	2x8mm	TA	SSQ01
39475510	2x10mm	TA	SSQ01
39475512	2x12mm	TA	SSQ01
39475514	2x14mm	TA	SSQ01
39475516	2x16mm	TA	SSQ01
39475518	2x18mm	TA	SSQ01





## MonoLoc Locking Plates 1.5/2.0mm System Instruments Set

Product No.	Size	Material	Model No.
39475520	2x20mm	TA	SSQ01
39475522	2x22mm	TA	SSQ01
39475524	2x24mm	TA	SSQ01
39475526	2x26mm	TA	SSQ01
39475528	2x28mm	TA	SSQ01
39475530	2x30mm	TA	SSQ01
39475532	2x32mm	TA	SSQ01
39475534	2x34mm	TA	SSQ01
39475538	2x38mm	TA	SSQ01

Code	Product Description	Qty
98370	Monoloc Locking Plates 1.5/2.0mm Instruments Set	
98371	Monoloc Locking Plates 1.5/2.0mm Instruments Set (empty)-PPSU	1
899121	Handle, with Mini Quick Coupling	2
899122	Bending-Cutting Pliers	1
899123	Universal Pliers, pointed for Plate 1.0 to 2.0 (left/right)	1pair
01123	Reduction Forceps, pointed	1
01215	Retractor, width 6mm	1
01216	Retractor, width 8mm	1
01217	Retractor, width 15mm	1
01218	Sharp Hook	1
01219	Periosteal Elevator, width 5mm	1
01232	Periosteal Elevator, width 3mm	1
899126	Screw Holding Forceps for 1.0 to 2.0 Cortex Screws	1
899129	Plate Holding Instruments, 4.0	1
899130	Plate Holding Instruments, 5.0	1
98567	Holding Forceps for Finger Plates, ratchet lock	1
98086	Depth Gauge for Screws $\Phi$ 1.5 mm, measuring range up to 24 mm	1
98087	Depth Gauge for Screw $\Phi$ 2.0 mm, measuring range up to 40 mm	1
161210	Cutter	1

### 1.5mm implants tray

Code	Product Description	Qty
98372	1.5mm implants tray (Empty)	1
98091	Drill Bit $\Phi$ 1.1mm, with Quick Coupling	2
98085	Drill Bit $\Phi$ 1.5mm, with Quick Coupling	2
98080	Countersink for Screws $\Phi$ 1.3 and 1.5mm	1
98083	Double Drill Guide 1.5/1.1	1
98094	LCP Drill Sleeve 1.5, for Drill Bits $\Phi$ 1.1 mm	2
98100	Screwdriver Shaft Stardrive 1.5,T4,self-holding, with Quick Coupling	2
98098	Holding Sleeve 1.5	1
98092	Bending Pin for LCP Plates 1.5, with thread	2



## Instruments Set

### 1.5mm implants tray

Code	Product Description	Qty
98372	1.5mm implants tray (Empty)	1
98091	Drill Bit $\Phi$ 1.1mm, with Quick Coupling	2
98085	Drill Bit $\Phi$ 1.5mm, with Quick Coupling	2
98080	Countersink for Screws $\Phi$ 1.3 and 1.5mm	1
98083	Double Drill Guide 1.5/1.1	1
98094	LCP Drill Sleeve 1.5, for Drill Bits $\Phi$ 1.1 mm	2
98100	Screwdriver Shaft Stardrive 1.5,T4,self-holding, with Quick Coupling	2
98098	Holding Sleeve 1.5	1
98092	Bending Pin for LCP Plates 1.5, with thread	2

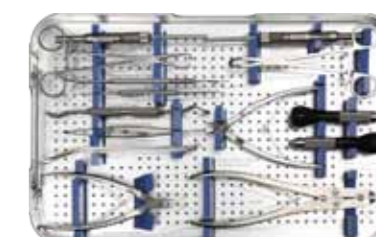
### 2.0mm implants tray

Code	Product Description
98373	2.0mm implants tray (Empty)
98085	Drill Bit $\Phi$ 1.5mm, with Quick Coupling
98082	Drill Bit $\Phi$ 2.0mm, with Quick Coupling
98093	Countersink 1.5 to 2.4, with Quick Coupling
98095	Double Drill Guide 2.0/1.5 for Drill Bits 2.0 and 1.5mm
98096	LCP Drill Sleeve 2.0, with Scale, for Drill Bits $\Phi$ 1.5 mm
98099	Screwdriver Shaft Stardrive 2.0, with Quick Coupling
98097	Holding Sleeve 2.0
98081	Bending Pin for LCP Plates 2.0

Please contact your sales representative for final product list.



98370



98372



98373







## Instruments

