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地址：江苏省张家港市杨舍镇包基双羊大厦　邮编 Postcode：215600

ADD：Shuangyang Building, Baoji, Yangshe Town, Zhangjiagang City, Jiangsu Province, China

电话 Telephone：0512-58268332　　传真 FAX：0512-58268337　　邮箱 E-Mail: shuangyang@jsshuangyang.com

微信号：shuangyang8

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MODULAR EXTERNAL FIXATOR

三维稳定的外固定系统

three-dimensional stable external fixation system

组合式外固定支架

江苏双羊医疗器械有限公司

Jiangsu Shuangyang
Medical Instrument Co., Ltd.

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越求 新断 上信 本人

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Catalogue For Modular External Fixator

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设计理念
Design concept

根据应力刺激组织再生与重建理论，在微创原则下，应用体外固定调节装置经皮骨穿针与骨构成复合系统，以治疗骨折、矫治骨与关节畸形和肢体组织延长。

The external fixation device is used to percutaneously penetrate the needle and bone to form a composite system to treat fractures, correct bone and joint deformities and limb tissue extension according to the theory of stress-stimulated tissue regeneration and reconstruction under the principle of minimally invasive surgery.

适用范围
Scope of application

与骨针配合，可用于四肢和骨盆创伤或骨病的治疗。例如伴有严重软组织创伤和治疗较晚的开放性骨折、骨折伴有严重的烧伤、骨折感染或不愈合、需要牵伸固定维持肢体长度的骨折、关节固定术等。

It can be used in the treatment of limb and pelvic trauma or bone disease if cooperated with Bone screw. For example, with severe soft tissue trauma and late treatment of open fractures, fractures with severe burns, fracture infections or non-healing, fractures requiring extension of limb length, arthrodesis, etc.

产品特点
Production features

●操作方便，组合方式灵活，可搭建三维稳定的外固定系统
●根据适应症状，在术中可自由装配支架，并可随时向框架添加部件
●铝合金或 PEEK 固定夹块，减轻整体框架重量
● PEEK 固定夹块组成的框架显影度低，便于手术操作
●铝合金、碳纤维材质的连接杆，组件弹性框架，减少应力集中

• Easy to operate, flexible combination, can build a three-dimensional stable external fixation system
• According to the adaptation symptoms, the stent can be freely assembled during the operation, and the components can be added to the frame at any time.
• Aluminum alloy or PEEK fix clamp help reduce the overall frame weight
• PEEK fix clamp has low developing degree, easy operation.
• Aluminum alloy and carbon fiber connecting rod build elastic frame, to reduce stress concentration.

禁忌症
Contraindications

●一般手术禁忌症
●严重凝血功能障碍，如血友病患者
●精神患者和严重骨质疏松的患者
●伤肢有广泛的皮肤病患者
●不能配合术后管理的患者

• General surgical contraindications
• Severe coagulopathy, such as hemophilia patients
• Psychiatric patients and patients with severe osteoporosis
• A wide range of skin diseases patients with injured limbs
• Patients who cannot cooperate with postoperative management

组合式外固定支架（Φ5）
Modular external fixator (Φ5)

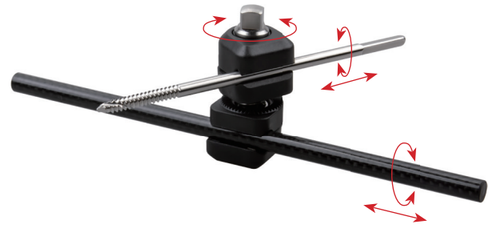
组件 Component

●针杆夹 II
Pin and rod coupling II

主要部件由 PEEK 制成，重量轻，显影度低，能夹紧 Φ5 杆与 Φ3 骨针。可三维多角度调节，操作灵活方便，有利于快速组装稳定的框架。

The main components are made of PEEK, light weight, low developing degree, can clamp Φ5 and Φ3 Bone screws. 3D multi-angle adjustment, flexible and convenient to operate, quickly assemble a stable frame.

订货编码 Ocder code	规格 Specification	材质 Material
20.20.0205201.400	2 Holes(孔) Φ5/Φ3	PEEK & Stainless steel(不锈钢)



●杆杆夹 VII
Rod and rod couplingVII

主要部件由 PEEK 制成，重量轻，显影度低，能夹紧两根 Φ5 杆。可三维多角度调节，操作灵活方便，有利于快速组装稳定的框架。

The main components are made of PEEK, light weight, low developing degree, can clamp two units Φ5 bone screws. 3D multi-angle adjustment, flexible and convenient to operate, quickly assemble a stable frame.

订货编码 Ocder code	规格 Specification	材质 Material
20.20.0705201.400	2Holes(孔) Φ5/Φ3	PEEK & Stainless steel(不锈钢)

●夹针块 X
Coupling X

主要部件由 PEEK 制成，重量轻，显影度低，能夹紧 Φ3 骨针。提供平行针布局，和支柱联合使用，给杆杆夹 VII 和连接杆提供附属装置。

The main components are made of PEEK, light weight, low development, and can clamp the Φ3 Bone screw. A parallel pin layout is provided for use in conjunction with the struts to provide attachment to the rod to rod coupling VII and connecting rod.

订货编码 Ocder code	规格 Specification	材质 Material
20.20.0705201.400	4Holes(孔) Φ3	PEEK & Stainless steel(不锈钢)

●夹针块 XIX
Coupling XIX

主要部件由铝合金制成，重量轻，能夹紧 Φ3 骨针。单螺钉抗旋设计，使用方便可靠。提供平行针布局，和杆杆夹联合使用 , 适用于近关节部位。

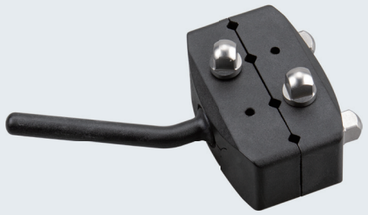
The main components are made of Aluminum alloy, light weight, can clamp Φ3 bone screws. Single screw anti-rotation design, easy to use and reliable. Providing a parallel needle layout for use with a rod clamp for the proximal joint parts.

订货编码 Ocder code	规格 Specification	材质 Material
20.20.1105401.200	4Holes(孔) Φ3	铝合金 & 不锈钢 Stainless steel&Aluminum alloy

● 30° 支柱
30° Post

主要部件由 PEEK 制成，重量轻，显影度低。抗旋转星形设计，和夹针块 X 联合使用，可 12 种角度调节插入。

The main components are made of PEEK, light weight, low developing degree. The anti-rotation star design, combined with the coupling X, the insertion can be adjusted in 12 different angles.



订货编码 Ocder code	规格 Specification	材质 Material
20.30.0305101.400	Φ5	PEEK & Stainless steel(不锈钢)

●直支柱
Straight post

主要部件由 PEEK 制成，重量轻，显影度低。抗旋转星形设计，和夹针块 X 联合使用。

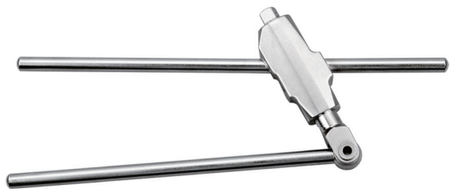
The main components are made of PEEK, light weight, low developing degree. The anti-rotation star design, combined with the coupling X.

订货编码 Ocder code	规格 Specification	材质 Material
20.30.1505101.400	Φ5	PEEK & Stainless steel(不锈钢)

●肘关节连接夹
Elbow joint connection coupling

所有部件均由不锈钢制成，假体设计，强度高，既能达到骨针的稳定固定要求，又可实现肘关节早期功能恢复的目的。和针杆夹 II 联合使用，适用于儿童肘关节部位。

All parts are made of stainless steel, prosthesis design, high strength, not only achieve the stable fixation requirements of the Bone screw, but also achieve the purpose of early functional recovery of the elbow joint. Combined with the pin and rod coupling II for Children's elbow joints.



订货编码 Ocder code	规格 Specification	材质 Material
20.20.3205101.100	S	不锈钢 /Stainless steel

●连接杆（直型）
Connecting rod(straight)

由碳纤维制成，重量轻，强度高，可透视。

Made of carbon fiber, light weight, high strength, and perspective.

订货编码 Ocder code	规格 Specification	材质 Material
20.10.0105120.300	Φ5 L120	碳纤维 Carbon fiber
20.10.0105150.300	Φ5 L150	
20.10.0105180.300	Φ5 L180	
20.10.0105200.300	Φ5 L200	

●连接杆（三边型）
Connecting rod(trigon)

由铝合金制成，重量轻，强度高。
Made of aluminum alloy, light weight and high strength.

订货编码 Ocder code	规格 Specification	材质 Material
20.10.0205101.200	Φ5 S	铝合金 Aluminum alloy
20.10.0205301.200	Φ5 L	

骨针 Bone screw

●骨针
Bone screw

由医用不锈钢制成，强度高。自攻自钻刃口设计，使用快捷方便，缩短手术时间。

Made of medical stainless steel, it has high strength. Self-tapping & self-drilling cutting edge design, easy to use, shorten operation time.

订货编码 Ocder code	规格 Specification	材质 Material
19.32.513.0300801	Φ3.0×80	不锈钢 /Stainless steel

配套器械 Matching instruments

● 50.22.040 | 稳定复位扳手 5mm
Stabilization reduction wrench 5mm

用于对抗扭力和骨折复位
Used against torsional and fracture restoration forces

● 50.22.111 | 骨科钻头 Φ1.9
Φ1.9 Orthopedic drill bit

用于钻孔
For drilling

● 50.22.030 | 指轮扳手 5/7mm
Thumb wheel wrench 5/7mm

用于预紧螺钉
For preloading screws

● 50.22.021 | 导钻 Φ3.0
Φ3.0 Drill Guide

用于定位及保护软组织
Used to locate and protect soft tissue

● 50.22.011 | 螺纹针扳手 Φ3.0
Φ3.0 Threaded needle wrench

用于装卸骨针
For loading and unloading bone screw.

● 50.22.060 | 直型扳手 5mm
Straight wrench 5mm

用于锁紧螺钉
For locking screws

● 50.22.080 | 钻夹头 Φ3.0
Φ3.0 Drill chuck

配合弓形钻架用于上骨针
Combined with bone drill to put bone screw

● 50.22.090 | 弓形钻架 Φ8
Bow drill Φ8

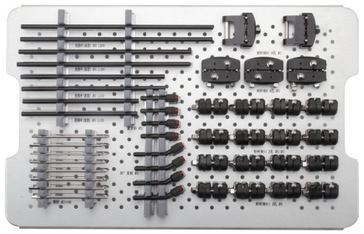
配合钻夹头用于上骨针
Combined with drill chunk to put bone screw

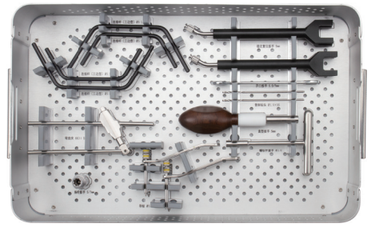
● 50.22.120 | 开口扳手 5/7mm
Open wrench 5/7mm

用于锁紧螺钉
For locking screws

标准配置 Standard configuration

订货编码 Ocder code	产品名称 Name	规格 Specification	数量 Quantity
20.20.1105401.200	夹针块 XIX Coupling XIX	4 孔 /holes Φ3	2
20.20.1005401.400	夹针块 X Coupling X	4/holes 孔 Φ3	3
20.20.0205201.400	针杆夹 II Pin To Rod Coupling II	2 孔 /holes Φ5/Φ3	8
20.20.0705201.400	杆杆夹 VII Rod To Rod Coupling VII	2 孔 /holes Φ5	8
20.30.0305101.400	30°支 30° Post	Φ5	4
20.30.1505101.400	直支柱 Straight Post	Φ5	4
19.32.513.0300801	骨针 Bone screw	Φ3.0×80	8
20.10.0105120.300	连接杆（直型） Connecting rod(straight)	Φ5 L120	2
20.10.0105150.300	连接杆（直型） Connecting rod(straight)	Φ5 L150	2
20.10.0105180.300	连接杆（直型） Connecting rod(straight)	Φ5 L180	2
20.10.0105200.300	连接杆（直型） Connecting rod(straight)	Φ5 L200	2
20.10.0205101.200	连接杆（三边型） Connecting rod(trigon)	Φ5 S	2
20.10.0205301.200	连接杆（三边型） Connecting rod(trigon)	Φ5 L	2
20.20.3205101.100	肘关节连接夹 Elbow joint connection coupling	S	1
50.22.021	导钻 Drill guide	Φ3.0	2
50.22.030	指轮扳手 Thumb wheel wrench	5/7mm	1
50.22.011	螺纹针扳手 Threaded needle wrench	Φ3.0	1
50.22.060	直型扳手 Straight wrench	5mm	1
50.22.111	骨科钻头 Orthopedic drill bit	Φ1.9×95	2
50.22.120	开口扳手 Open wrench	5/7mm	1
50.22.040	稳定复位扳手 Stabilization Reduction Wrench	5mm	2
50.22.150	组合式外固定支架器械箱 Modular external fixator instrument box	Φ5	1





框架应用示例 Framework application example

●桡骨远端框架
Distal radius frame

（此框架仅供参考，实际手术视骨折情况而定）
(This frame is for reference only, the actual surgery depends on the fracture)

以平行针布局方式，在近端将两根 3mm 骨针置入到桡骨骨干，远端背侧结节处置入两根 3mm 骨针。近端安装夹针块 X，并用一个直支柱与它相连接。远端安装一个夹针块 XIX。再用两个杆杆夹 VII 和一根 Φ5 L180mm 连接杆（直型）与所有组件连接成框架，最后锁紧。（在术中针块 X 和夹针块 XIX 应作为骨针平行布局的导向器）

In the parallel layout, put two 3mm bone screws in the radius shaft at the proximal end, and put two 3mm bone screws in the distal dorsal nodules. Mount the coupling X proximally and connect it with a straight post. Install a coupling XIX at the far end. Then use two rod to rod couplings VII and one Φ5 L180mm connecting rod (straight type) to connect all the components into a frame and finally lock. (In the operation, the needle block X and the needle block XIX should be used as guide for the parallel layout of the Bone screws)

建议配置
Recommended configurations

订货编码 Ocder code	产品名称 Name	规格 Specification	数量 Quantity
20.10.0105200.300	连接杆（直型） Connecting rod(straight)	Φ5 L180	1
20.20.0705201.400	杆杆夹 VII Rod to rod coupling VII	2 holes（孔） Φ5	2
20.20.1005401.400	夹针块 X Coupling X	4 holes（孔） Φ3	1
20.30.0305101.400	30°支柱 30° Post	Φ5	1
20.20.1105401.200	夹针块 XIX Coupling XIX	4 holes（孔） Φ3	1
19.32.513.0300801	骨针 Bone screw	Φ3.0×80	4

●桡骨骨干框架
Radius backbone frame

（此框架仅供参考，实际手术视骨折情况而定）
(This frame is for reference only, the actual surgery depends on the fracture)

以平行针布局方式，分别各将两根 3mm 骨针置入到桡骨远端和近端。安装夹针块 X，并各用 2 个 30°支柱与它相连接。再用 4 个杆杆夹 VII 和两根 Φ5 L200mm 连接杆（直型）与所有组件连接成框架，最后锁紧。（在术中夹针块 X 应作为骨针平行布局的导向器）

Put two 3mm bone screws in the distal and proximal ends of radius in a parallel layout. Mount the coupling X is and connect it by two 30 ° struts each. Then use four rod to rod couplings VII and two Φ5 L200mm connecting rods (straight type) to connect all the components into a frame and finally lock. (In the operation, the needle block X should be used as a guide for the parallel layout of the bone screw)

建议配置
Recommended configurations

订货编码 Ocder code	产品名称 Name	规格 Specification	数量 Quantity
20.10.0105200.300	连接杆（直型） Connecting rod(straight)	Φ5 L200	2
20.20.0705201.400	杆杆夹 VII Rod to rod coupling VII	2 holes（孔） Φ5	4
20.30.0305101.400	30°支柱 30° Post	Φ5	4
20.20.1005401.400	夹针块 X Coupling X	4 holes（孔） Φ3	2
19.32.513.0300801	骨针 Bone screw	Φ3.0×80	4

●桡骨跨关节框架
Radius cross-articular frame

（此框架仅供参考，实际手术视骨折情况而定）
(This frame is for reference only, the actual surgery depends on the fracture)

以平行针布局方式，在近端将两根 3mm 骨针置入到桡骨骨干，在远端将两根 3mm 骨针置入到第二掌骨。两端都安装夹针块 X，并各用 2 个 30°支柱与它相连接。再用 4 个杆杆夹 VII 和两根 Φ5 L200mm 连接杆（直型）与所有组件连接成框架，最后锁紧。（在术中夹针块 X 应作为骨针平行布局的导向器）。

In the parallel layout,put two 3mm bone screws in radius shaft at the proximal end, and put two 3mm Bone screws in the second metacarpal at the distal end. Mount the coupling X at both ends and connect by two 30 ° struts each. Then use four rod to rod couplings VII and two Φ5 L200mm connecting rods (straight type) to connect all the components into a frame and finally lock. (In the operation, the needle block X should be used as a guide for the parallel layout of the bone screws.

建议配置
Recommended configurations

订货编码 Ocder code	产品名称 Name	规格 Specification	数量 Quantity
20.10.0105200.300	连接杆（直型） Connecting rod(straight)	Φ5 L200	2
20.20.0705201.400	杆杆夹 VII Rod to rod coupling VII	2 holes（孔） Φ5	4
20.30.0305101.400	30°支柱 30° Post	Φ5	4
20.20.1005401.400	夹针块 X Coupling X	4 holes（孔） Φ3	2
19.32.513.0300801	骨针 Bone screw	Φ3.0×80	4

●儿童肘关节框架
Children's elbow joint frame

（此框架仅供参考，实际手术视骨折情况而定）
(This frame is for reference only, the actual surgery depends on the fracture)

分别各将两根 3mm 骨针置入到桡骨近端和肱骨远端，在两端各安装两个针杆夹 II，再用一个肘关节连接夹与所有组件连接成框架，最后锁紧。

Place two 3mm Bone screws into the proximal end of radius and the distal end of humerus respectively. Install two pin to rod couplings II at each end, and then use one Elbow joint connection coupling to connect all the components into a frame Lock.

建议配置
Recommended configurations

订货编码 Ocder code	产品名称 Name	规格 Specification	数量 Quantity
20.20.0205201.400	针杆夹 II Pin to rod coupling II	2 holes(孔) Φ5/Φ3	4
20.20.3205101.100	肘关节连接夹 Elbow joint connection coupling	S	1
19.32.513.0300801	骨针 Bone screw	Φ3.0×80	4

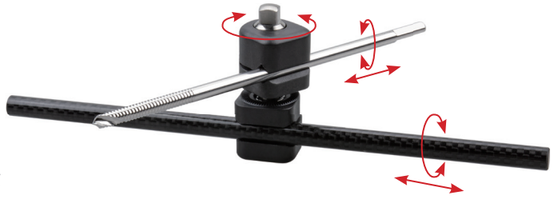
组合式外固定支架（Φ8）
Modular external fixator (Φ8)

组件 Component

●针杆夹 II
Pin to rod coupling II

主要部件由 PEEK 制成，重量轻，显影度低，能夹紧 Φ8 杆与 Φ4 ~ Φ5 骨针。可三维多角度调节，操作灵活方便，有利于快速组装稳定的框架。

The main components are made of PEEK, light weight, low developing degree, can clamp Φ8 and Φ4~Φ5 Bone screws. 3D multi-angle adjustment, flexible and convenient to operate, quickly assemble a stable frame.



订货编码 Ocder code	规格 Specification	材质 Material
20.20.0208201.400	2 Holes(孔) Φ8/Φ5	PEEK & Stainless steel(不锈钢)

●杆杆夹 VII
Rod to rod coupling VII

主要部件由 PEEK 制成，重量轻，显影度低，能夹紧两根 Φ8 杆。可三维多角度调节，操作灵活方便，有利于快速组装稳定的框架。

The main components are made of PEEK, light weight, low developing degree, can clamp two Φ8 Bone screws. 3D multi-angle adjustment, flexible and convenient to operate, quickly assemble a stable frame.

订货编码 Ocder code	规格 Specification	材质 Material
20.20.0708201.400	2 Holes(孔) Φ8	PEEK & Stainless steel(不锈钢)

●夹针块 X
Coupling X

主要部件由 PEEK 制成，重量轻，显影度低，能夹紧 Φ4 ~ Φ5 骨针。提供平行针布局，和支柱联合使用，给杆杆夹 VII 和连接杆提供附属装置。

The main components are made of PEEK, light weight, low developing degree, can clamp Φ4~Φ5 Bone screws. 3D multi-angle adjustment, flexible and convenient to operate, quickly assemble a stable frame. A parallel pin layout is provided for use in conjunction with the struts to provide attachment to the rod to rod coupling VII and connecting rod.

订货编码 Ocder code	规格 Specification	材质 Material
20.20.1008501.400	2 Holes(孔) Φ5	PEEK & Stainless steel(不锈钢)

● 30° 支柱
30° Post

主要部件由 PEEK 制成，重量轻，显影度低。抗旋转星形设计，和夹针块 X 联合使用，可 12 种角度调节插入。

The main components are made of PEEK, light weight, low developing degree. The anti-rotation star design, combined with the coupling X, the insertion can be adjusted in 12 different angles.

订货编码 Ocder code	规格 Specification	材质 Material
20.30.0308101.400	Φ8	PEEK & Stainless steel(不锈钢)

●直支柱
Straight post

主要部件由 PEEK 制成，重量轻，显影度低。抗旋转星形设计，和夹针块 X 联合使用。

The main components are made of PEEK, light weight, low developing degree. The anti-rotation star design, combined with the coupling X.

订货编码 Ocder code	规格 Specification	材质 Material
20.30.1508101.400	Φ8	PEEK & Stainless steel(不锈钢)

●连接杆（直型）
Connecting rod(straight)

由碳纤维制成，重量轻，强度高，可透视。

Made of carbon fiber,light, good strength and perspective.

订货编码 Ocder code	规格 Specification	材质 Material
20.10.0108150.300	Φ8 L150	碳纤维 Carbon fiber
20.10.0108200.300	Φ8 L200	
20.10.0108250.300	Φ8 L250	
20.10.0108280.300	Φ8 L280	
20.10.0108300.300	Φ8 L300	

●连接杆（U 型）
Connecting rod (U shape)

由碳纤维制成，重量轻，强度高，可透视。

Made of carbon fiber,light, good strength and perspective.

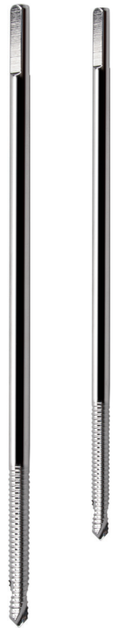
订货编码 Ocder code	规格 Specification	材质 Material
20.10.0408101.300	Φ8 S	碳纤维 Carbon fiber
20.10.0408201.300	Φ8 M	
20.10.0408301.300	Φ8 L	

骨针 Bone screw

●骨针
Bone screw

由医用不锈钢制成，强度高。自攻自钻刃口设计，使用快捷方便，缩短手术时间。

Made of medical stainless steel, it has high strength and good biocompatibility. Self-tapping &self-drilling cutting edge design, easy to use, shorten operation time.



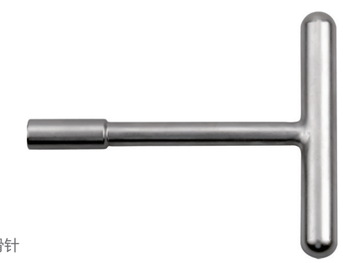
订货编码 Ocder code	规格 Specification	材质 Material
19.32.513.0401001	Φ4.0×100	不锈钢 Medical stainless steel
19.32.513.0401201	Φ4.0×120	
19.32.513.0501201	Φ5.0×120	
19.32.513.0501501	Φ5.0×150	
19.32.513.0501801	Φ5.0×180	

配套器械 Matching instruments

● 50.22.013 | 螺纹针扳手 Φ4.0
Φ4.0 Threaded needle wrench

用于装卸骨针
For loading and unloading bone screw.

● 50.22.014 | 螺纹针扳手 Φ5.0
Φ5.0 Threaded needle wrench



用于装卸骨针
For loading and unloading bone screw.

● 50.22.023 | 导钻 Φ4.0
Φ4.0 Drill Guide

用于定位及保护软组织
Used to locate and protect soft tissue

● 50.22.024 | 导钻 Φ5.0
Φ5.0 Drill Guide

用于定位及保护软组织
Used to locate and protect soft tissue

● 50.22.030 | 指轮扳手 5/7mm
Thumb wheel wrench 5/7mm

用于预紧螺钉
For preloading screws

● 50.22.070 | T 型扳手 7mm
T wrench 7mm

用于锁紧螺钉
For locking screws

● 50.22.050 | 加力扳手 7mm
Compression wrench 7mm

用于锁紧螺钉
For locking screws

● 50.22.081 | 钻夹头 Φ4.0
Φ4.0 Drill chuck

配合弓形钻架用于上骨针
With bow drill for upper Bone screw

● 50.22.082 | 钻夹头 Φ5.0
Φ5.0 Drill chuck

配合弓形钻架用于上骨针
With bow drill for upper Bone screw

● 50.22.041 | 稳定复位扳手 8mm
Stabilization Reduction Wrench 8mm

用于对抗扭力和骨折复位
Used against torsional and fracture restoration forces

● 50.22.113 | 骨科钻头 Φ3.5
Φ3.5 Orthopedic drill bit

用于钻孔
For drilling

● 50.22.112 | 骨科钻头 Φ3.0
Φ3.0 Orthopedic drill bit

用于钻孔
For drilling

● 50.22.120 | 开口扳手 5/7mm
Open wrench 5/7mm

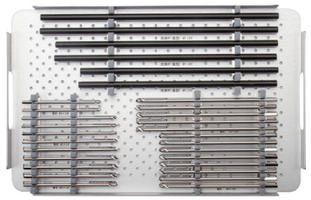
用于锁紧螺钉
For locking screws

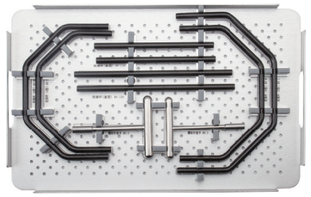
● 50.22.090 | 弓形钻架 Φ8
Bow drill Φ8

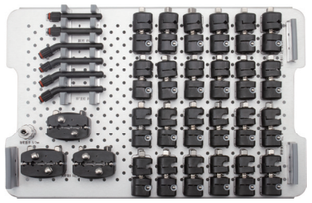
配合钻夹头用于上骨针
Combined with drill chunk to put bone screw

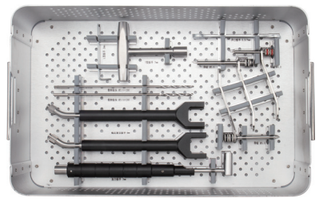
标准配置 Standard configuration

订货编码 Ocder code	产品名称 Name	规格 Specification	数量 Quantity
19.32.513.0401001	骨针 Bone screw	Φ4.0×100	2
19.32.513.0401201	骨针 Bone screw	Φ4.0×120	4
19.32.513.0501201	骨针 Bone screw	Φ5.0×120	5
19.32.513.0501501	骨针 Bone screw	Φ5.0×150	8
19.32.513.0501801	骨针 Bone screw	Φ5.0×180	5
20.10.0108250.300	连接杆（直型）Connecting rod(straight)	Φ8 L250	2
20.10.0108280.300	连接杆（直型）Connecting rod(straight)	Φ8 L280	2
20.10.0108300.300	连接杆（直型）Connecting rod(straight)	Φ8 L300	2
20.10.0108150.300	连接杆（直型）Connecting rod(straight)	Φ8 L150	2
20.10.0108200.300	连接杆（直型）Connecting rod(straight)	Φ8 L200	2
20.10.0408101.300	连接杆（U 型）Connecting rod(U shape)	Φ8 S	1
20.10.0408201.300	连接杆（U 型）Connecting rod(U shape)	Φ8 M	2
20.10.0408301.300	连接杆（U 型）Connecting rod(U shape)	Φ8 L	1
20.20.0208201.400	针杆夹 II Pin to rod coupling II	2 holes(孔) Φ8/Φ5	12
20.20.0708201.400	杆杆夹 VII Rod to rod coupling VII	2 holes(孔) Φ8	12
20.20.1008501.400	夹针块 X Coupling X	5 holes(孔) Φ5	3
20.30.0308101.400	30°支柱 30° Post	Φ8	4
20.30.1508101.400	直支柱 Straight post	Φ8	2
50.22.030	指轮扳手 Thumb wheel wrench	5/7mm	1
50.22.013	螺纹针扳手 Threaded needle wrench	Φ4.0	1
50.22.014	螺纹针扳手 Threaded needle wrench	Φ5.0	1
50.22.070	T 型扳手 T wrench	7mm	1
50.22.130	L 型扳手 L wrench	SW2	1
50.22.112	骨科钻头 Orthopedic drill bit	Φ3.0×200	1
50.22.113	骨科钻头 Orthopedic drill bit	Φ3.5×200	1
50.22.041	稳定复位扳手 Stabilization Reduction Wrench	8mm	2
50.22.050	加力扳手 Compression wrench	7mm	1
50.22.024	导钻 Drill guide	Φ5.0	2
50.22.023	导钻 Drill guide	Φ4.0	1
50.22.120	开口扳手 Open wrench	5/7mm	1
50.22.151	组合式外固定支架器械箱 Modular external fixator instrument box	Φ8	1









框架应用示例 Framework application example

●肱骨骨干框架
Humerus backbone frame

以平行针布局方式将 4mm 骨针置于肱骨骨干，近端骨针应置于肱骨侧面，远端骨针置于侧面或背面。安装两个夹针块 X，两个 30°支柱以倒“V”字型分别插入夹针块 X 中。再用两个杆杆夹 VII 和一根 Φ8 L250mm 连接杆（直型）与所有组件连接成框架，最后锁紧。（在术中针块 X 应作为骨针平行布局的导向器）

Put 4 mm Bone screw in the humeral shaft in a parallel needle layout, put the proximal Bone screw on the side of humerus, and the distal Bone screw on the side or back. Two pin couplings X are mounted, and insert two 30° struts into the coupling X in an inverted "V" shape. Then use two rod to rod couplings VII and one Φ8 L250mm connecting rod (straight type) to connect all the components into a frame and finally lock. (In the operation, the coupling X should be used as a guide for the parallel layout of Bone screw).

建议配置
Recommended configurations

订货编码 Ocder code	产品名称 Name	规格 Specification	数量 Quantity
20.20.1008501.400	夹针块 X Coupling X	5 holes(孔) Φ5	2
20.20.0708201.400	杆杆夹 VII Rod to rod coupling VII	2 holes(孔) Φ5	2
20.30.0308101.400	30°支柱 30° Post	Φ8	2
20.10.0108250.300	连接杆（直型）Connecting rod(straight)	Φ8 L250	1
19.32.513.0401201	骨针 Bone screw	Φ4.0×120	4

（此框架仅供参考，实际手术视骨折情况而定）
(This frame is for reference only, the actual surgery depends on the fracture)

●骨盆框架
Pelvic frame

（此框架仅供参考，实际手术视骨折情况而定）
(This frame is for reference only, the actual surgery depends on the fracture)

建议配置
Recommended configurations

订货编码 Ocder code	产品名称 Name	规格 Specification	数量 Quantity
20.20.1008501.400	夹针块 X Coupling X	5Holes(孔) Φ5	2
20.30.0308101.400	30°支柱 30° Post	Φ8	2
20.20.0708201.400	杆杆夹 VII Rod to rod coupling VII	2Holes(孔) Φ8	6
20.10.0108250.300	连接杆（直型） Connecting rod(straight)	Φ8 L250	2
20.10.0108280.300	连接杆（直型） Connecting rod(straight)	Φ8 L280	2
19.32.513.0501501	骨针 Bone screw	Φ5.0×150	4

将 5mm 骨针以 45°角，分别置入髂骨翼或髋臼后方（骨针指向大粗隆），以获得更好的骨质供骨针固定。在置入骨针时必须注意不得穿透骨盆的内侧和外侧壁。针的布局应该通过 X 射线照相来确认。
安装夹针块 X，再把 30°支柱插入夹针块 X 中，再用杆杆夹 VII 与两根 Φ8 L280mm 及两根 Φ8 L250mm 的连接杆（直型）连接成框架，最后锁紧。（在术中夹针块 X 应作为骨针平行布局的导向器）

Place the 5mm bone screw at a 45 ° angle and place it behind the humeral wing or the acetabulum (the bone screw points to the large trochanter) for better bone fixation. Care must be taken when placing the bone screw to penetrate inside and outside of the pelvis. The layout of the needle should be confirmed by radiography.
Install the coupling X, insert the 30° post into the coupling X, connect the frame clamp VII with two Φ8 L280mm connecting rods (straight type) and two Φ8 L250mm connecting rods (straight type) as a frame, and final lock. (In the operation, the coupling X should be used as a guide for the parallel layout of the bone screw) .

●股骨单边加强框架
Femoral unilateral reinforcement frame

建议该框架在临床中不确定可使用内固定时，用于具有多处创伤或 III 级开放性骨折的临时固定。在股骨的侧面进行平行针布局置入 2 根 5mm 骨针，安装夹针块 X，以倒“V”字型的方式插入 4 个 30 度支柱到两个夹针块 X 中。
用 4 个杆杆夹 VII 和两根 Φ8 L250mm 连接杆（直型）把夹针块 X 连接起来，再用两个杆杆夹 VII 和一根 Φ8 L280mm 连接杆（直型）与所有组件连接成框架，最后锁紧。（在术中夹针块 X 应作为骨针平行布局的导向器）

It is recommended that the framework can be used in clinical for temporary fixation with multiple trauma or grade III open fractures when internal fixation is not available. Place two parallel 5mm bone pins on the side of the femur, and the coupling X was mounted, then insert four 30-degree struts into the two couplings X in a "V" shape. Connect the coupling X with four pin to rod couplings VII and two Φ8 L250mm connecting rods (straight type), and connect the frame with all the components by two pin to rod couplings VII and one Φ8 L280mm connecting rod (straight type). Then finally lock. (In the operation, the needle block X should be used as a guide for the parallel layout of the bone screw) .

建议配置
Recommended configurations

订货编码 Ocder code	产品名称 Name	规格 Specification	数量 Quantity
20.20.1008501.400	夹针块 X Coupling X	5 holes(孔) Φ5	2
20.20.0708201.400	杆杆夹 VII Rod to rod coupling VII	2 holes(孔) Φ8	6
20.30.0308101.400	30°支柱 30° Post	Φ8	4
20.10.0108250.300	连接杆（直型） Connecting rod(straight)	Φ8 L250	2
20.10.0108280.300	连接杆（直型） Connecting rod(straight)	Φ8 L280	1
19.32.513.0501801	骨针 Bone screw	Φ5.0×180	4

（此框架仅供参考，实际手术视骨折情况而定）
(This frame is for reference only, the actual surgery depends on the fracture)

●胫骨近端半圆形框架
Femoral unilateral reinforcement frame

在近端的骨折区用连接杆(U型)作为导向器 ,置入3根5mm骨针，用三个针杆夹Ⅱ把连接杆（U型）和骨针连接起来。在胫骨骨干以平行针布局置入2根5mm骨针，安装针块X，以倒“V”字型的方式插入2个30度支柱到夹针块X中。
用4个杆杆夹VII和两根Φ8 L250mm连接杆（直型）把所有组件连接成框架，最后锁紧。（在术中夹针块X应作为骨针平行布局的导向器）

Use one connecting rod (U-shaped) in the proximal fracture area as a guide, put three 5 mm bone screws, and connect the connecting rod (U-shaped) and the bone screw by three needle pin to rod couplings II. Put two 5mm bone screws in the parallel shaft layout of the humeral shaft, and mount the coupling X, insert two 30-degree pillars into the coupling X in a "V" shape. Connect all the components into a frame with four rod to rod couplings VII and two Φ8 L250mm connecting rods (straight) and finally lock. (In the operation, the coupling X should be used as a guide for the parallel arrangement of the bone screw)

建议配置
Recommended configurations

订货编码 Ocder code	产品名称 Name	规格 Specification	数量 Quantity
20.10.0408201.300	连接杆（U型） Connecting rod(U shape)	Φ8M	1
20.20.0208201.400	针杆夹Ⅱ Pin to rod coupling Ⅱ	2holes（孔） Φ8/Φ5	3
20.20.1008501.400	夹针块X Coupling X	5 holes(孔) Φ5	1
20.20.0708201.400	杆杆夹VII Rod to rod coupling VII	2 holes(孔) Φ8	4
20.30.0308101.400	30°支柱 30° post	Φ8	2
20.10.0108250.300	连接杆（直型） Connecting rod(straight)	Φ8 L250	2
19.32.513.0501501	骨针 Bone screw	Φ5.0×150	5

（此框架仅供参考，实际手术视骨折情况而定）
(This frame is for reference only, the actual surgery depends on the fracture)

●胫骨框架
Tibia frame

在近端和远端骨干区，分别在正面和侧面各置入5mm骨针，用四个针杆夹Ⅱ和两根Φ8 L250mm连接杆(直型)和骨针连接起来。再用2个杆杆夹VII和一根Φ8 L200mm连接杆把所有组件连接成框架，最后锁紧。

Put 5 mm bone screws on the front and side of both proximal and distal areas respectively, Connect four pin to rod couplings II and two Φ8 L250 mm connecting rods (straight type) and connect bone screws. Then use two rod to rod couplings VII and one Φ8 L200mm connecting rod to connect all the components into a frame and finally lock them.

建议配置
Recommended configurations

订货编码 Ocder code	产品名称 Name	规格 Specification	数量 Quantity
20.20.0208201.400	针杆夹Ⅱ Pin to rod coupling Ⅱ	2 holes(孔) Φ8/Φ5	4
20.10.0108150.300	连接杆（直型） Connecting rod(straight)	Φ8 L150	1
20.10.0108250.300	连接杆（直型） Connecting rod(straight)	Φ8 L250	2
20.20.0708201.400	杆杆夹VII Rod to rod coupling VII	2 holes(孔) Φ8	2
19.32.513.0501501	骨针 Bone screw	Φ5.0×150	4

（此框架仅供参考，实际手术视骨折情况而定）
(This frame is for reference only, the actual surgery depends on the fracture)

●胫骨轴单边框架
Tibiaaxis unilateral frame

以平行针布局方式，分别各将两根 5mm 骨针置入到胫骨远端和近端。安装夹针块 X，并各用 2 个 30°支柱与它相连接。再用 4 个杆杆夹 VII 和两根 Φ8 L250mm 连接杆（直型）与所有组件连接成框架，最后锁紧。（在术中夹针块 X 应作为骨针平行布局的导向器）
（如需获得更高稳定性的框架，可再在两个连接杆中间，用两个杆杆夹 VII 和一根 Φ8 L200mm 连接杆（直型）进行横向连接。）

Put two 5mm bone screws into the distal and proximal ends of humerus in a parallel needle layout. Mount the coupling X and connect each two 30° struts to it. Then use four rod to rod couplings VII and two Φ8 L250mm connecting rods (straight type) to connect all the components into a frame and finally lock. (In the operation, the needle block X should be used as a guide for the parallel layout of the bone screw) (For a more stable frame, use one two-bar clamp VII and one Φ8 L200mm connecting rod (straight) for lateral connection between the two connecting rods.)

（此框架仅供参考，实际手术视骨折情况而定）
(This frame is for reference only, the actual surgery depends on the fracture)

建议配置
Recommended configurations

订货编码 Ocder code	产品名称 Name	规格 Specification	数量 Quantity
20.20.1008501.400	夹针块 X Coupling X	5 holes(孔) Φ5	2
20.20.0708201.400	杆杆夹 VII Rod to rod coupling VII	2 holes(孔) Φ8	4
20.30.0308101.400	30°支柱 30° post	Φ8	4
20.10.0108250.300	连接杆（直型） Connecting rod (straight)	Φ8 L250	2
19.32.513.0501501	骨针 Bone screw	Φ5.0×150	4

●胫骨远端半圆形框架
Radial distal semicircular frame

在远端的骨折区用连接杆（U 型）作为导向器，置入 3 根 5mm 骨针，用三个针杆夹 II 把连接杆（U 型）和骨针连接起来。在胫骨骨干以平行针布局置入 2 根 5mm 骨针，安装针块 X，以倒“V”字型的方式插入 2 个 30 度支柱到夹针块 X 中。
用 4 个杆杆夹 VII 和两根 Φ8 L250mm 连接杆（直型）把所有组件连接成框架，最后锁紧。（在术中夹针块 X 应作为骨针平行布局的导向器）

Use one connecting rod (U-shaped) in the distal fracture area as a guide, put three 5 mm bone screws, connect the connecting rod (U-shaped) and the bone screw by three pin to rod couplings II. Put two 5mm bone screws in the parallel shaft layout of humeral shaft, and mount the needle block X. Insert two 30-degree pillars into the needle block X in a "V" shape. Connect all the components into a frame with four rod to rod couplings VII and two Φ8 L250mm connecting rods (straight) and finally lock them. (In the operation, the needle block X should be used as a guide for the parallel layout of bone screw)

（此框架仅供参考，实际手术视骨折情况而定）
(This frame is for reference only, the actual surgery depends on the fracture)

建议配置
Recommended configurations

订货编码 Ocder code	产品名称 Name	规格 Specification	数量 Quantity
20.10.0408201.300	连接杆（U 型） Connecting rod(U shape)	Φ8 M	1
20.20.0208201.400	针杆夹 II Pin to rod couplingII	2 holes(孔) Φ8/Φ5	3
20.20.1008501.400	夹针块 X Coupling X	5 holes(孔) Φ5	1
20.20.0708201.400	杆杆夹 VII Rod to rod coupling VII	2 holes(孔) Φ8	4
20.30.0308101.400	30°支柱 30° Post	Φ8	2
20.10.0108250.300	连接杆（直型） Connecting rod(straight)	Φ8 L250	2
19.32.513.0501501	骨针 Bone screw	Φ5.0×150	5

●踝关节稳定框架
Ankle stabilization frame

踝部关节内骨折的稳定固定需要最小限度的外固定，可能的情况下结合内固定来实现。
将 3 根 5mm 骨针独立置入胫骨骨干和跟骨处，在第一跖骨处置入一根 4mm 骨针。用 4 个针杆夹 II、一个杆杆夹 VII 和 Φ8 L300mm、L250mm 连接杆（直型）将所有骨针连接起来。
再用两个杆杆夹 VII 和一根 Φ8 L200mm 的连接杆（直型）把之前组件连接成三角形框架，最后锁紧。

Stable fixation of the ankle joint fracture requires minimal external fixation, possibly in combination with internal fixation.
Put three 5mm bone screws independently into the humeral shaft and calcaneus, and put one 4mm bone screw in the first metatarsal. Connect all the bone screws with four pin to rod, then connect the front components into a triangular frame with two lever clamps VII and a Φ8 L200mm connecting rod (straight type), finally lock.

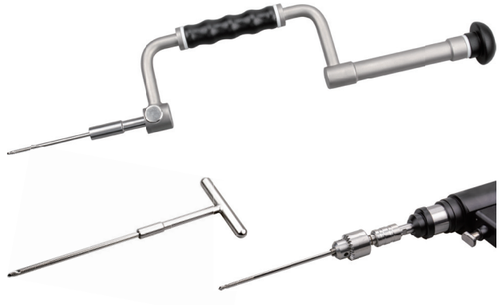
（此框架仅供参考，实际手术视骨折情况而定）
(This frame is for reference only, the actual surgery depends on the fracture)

建议配置
Recommended configurations

订货编码 Ocder code	产品名称 Name	规格 Specification	数量 Quantity
20.20.0208201.400	针杆夹 II Pin to rod coupling II	2 holes(孔) Φ8/Φ5	4
20.20.0708201.400	杆杆夹 VII Rod to rod coupling VII	2 holes(孔) Φ8	3
20.10.0108200.300	连接杆（直型） Connecting rod(straight)	Φ8 L200	1
20.10.0108250.300	连接杆（直型） Connecting rod(straight)	Φ8 L250	1
20.10.0108300.300	连接杆（直型） Connecting rod(straight)	Φ8 L300	1
19.32.513.0401001	骨针 Bone screw	Φ4.0×100	1
19.32.513.0501201	骨针 Bone screw	Φ5.0×120	3

组合式外固定支架 Φ5/Φ8 操作说明
Instructions of Modular external fixator Φ5/Φ8

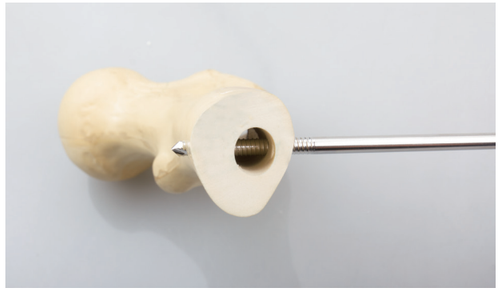
●置入骨针
Inserting a bone needle



自攻自钻刃口设计，可以通过电动工具直接置入，也可用弓形架或螺纹针扳手手动置入，在置入过程需以导钻作为导向器。

The self-tapping & self-drilling cutting edge design, can be directly inserted by a power tool, or can be manually placed by a bow frame or a threaded needle wrench. One drill guide is required as guide during the insertion process.

●骨针固定
Bone screw fixation



骨针须双侧固定，以提供足够的把持力，避免出现“退针”现象。

The bone screws must be fixed on both sides to provide sufficient grip to avoid "retraction".

●锁紧操作
Locking operation

在锁定固定夹之前，需使用稳定 / 复位扳手对抗扭力。
Use one stabilization reduction wrench to against torque before locking the clip.

●操作注意事项

Operational precautions

01 术前应彻底松开杆杆夹 VII 或针杆夹 II 的调节螺钉（见图 1），以确保术中接杆或骨针能够卡入凹槽内。

The adjustment screw of the rod to rod couplings VII or the pin to rod couplings II should be completely loosened before operation (see Figure 1) to ensure that the intraoperative post or bone screw can be inserted into the groove.

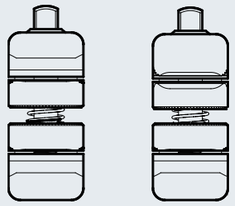


图 1 Figure1

02 所有螺钉的方头均应朝向外固定架的外侧放置（见图 2），以便于锁紧固定夹。

The square heads of all screws should be placed toward the external fixator (see Figure 2), to facilitate locking the retaining clips.

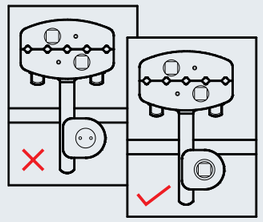


图 2 Figure2

03 禁止歪曲连接杆或骨针。
It is forbidden to bend the connecting rod or the bone screw.

04 组合式外固定支架的所有组件与骨针均为一次性使用，不得重复使用。

All components and bone screws of Modular External Fixator are disposable and should not be reused.

05 使用组合式外固定支架必须选用 SY 骨针。

Must us SY bone screws for our Modular External Fixator.

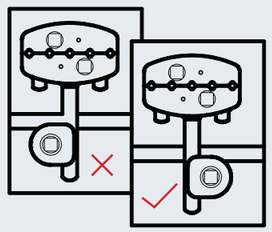


图 3 Figure3

06 可能的情况下，确保使用杆杆夹 VII 朝向骨折方向（见图 3），以增加框架的稳定性。

Please make rod to rod couplings VII toward the fracture direction if possible (see Figure 3) to increase the stability of frame.

07 连接杆和骨针尽可能的选择短的，以获得最大的稳定性。
Choose the rod and bone screw as short as possible for maximum stability.

08 使用的外固定架必须和患者的骨折类型相适应。
The used external fixator must be compatible with the patient's fracture type.

09 在清洗和消毒杆杆夹 VII 或针杆夹 II 前，应彻底松开顶端螺丝。
Loosen the top screw completely before cleaning and disinfecting the rod to rod couplings VII or the pin to rod couplings II.

10 在清洗和消毒夹针块 XIX 前，应彻底松开螺钉，将夹针块 XIX 拆卸后再清洗和消毒。

Loosen screws completely before cleaning and disinfecting the coupling XIX. Clean the coupling XIX after remove it.

11 在清洗和消毒夹针块 X 前，应彻底松开螺钉并去除支柱，将夹针块 X 拆卸后再清洗和消毒。

Loosen the screw and remove the post before cleaning and disinfecting the coupling X, Remove the coupling X before cleaning and disinfecting.

12 不得将杆杆夹 VII 或针杆夹 II 放到连接杆（U 型）或 30°支柱的弯曲部分（见图 4）。

Do not put rod to rod coupling VII or pin to rod coupling II on the curbed part of connecting rod (U-shaped) or 30° pillar (see Figure 4).

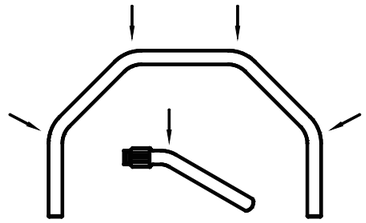


图 4 Figure4

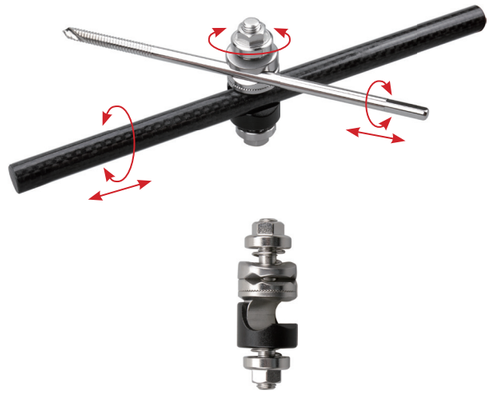
组合式外固定支架（Φ11）
Modular external fixator (Φ11)

组件 Component

●针杆夹 XV
pin to rod coupling XV

主要部件由铝合金和不锈钢制成，强度高，能夹紧 Φ11 杆与 Φ4 ~ Φ6 骨针。可三维多角度调节，操作灵活方便，有利于快速组装稳定的框架。

The main components are made of aluminum alloy and stainless steel, high strength, can clamp Φ11 and Φ4 ~ Φ6 bone screws. 3D multi-angle adjustment, flexible and convenient to operate, quickly assemble a stable frame.

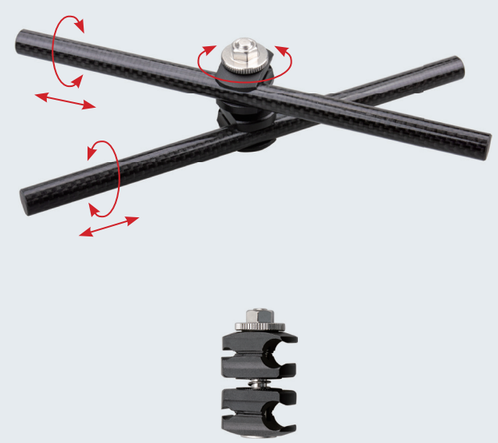


订货编码 Ocder code	规格 Specification	材质 Material
20.20.1511201.200	2 holes(孔) Φ11/Φ6	铝合金 & 不锈钢 Aluminum alloy &stainless steel

●杆杆夹 XVII
rod to rod couplingXVII

主要部件由铝合金和不锈钢制成，强度高，能夹紧两根 Φ11 杆，也可同时夹紧 Φ5 杆。可三维多角度调节，操作灵活方便，有利于快速组装稳定的框架。

The main components are made of aluminum alloy and stainless steel, high strength, can clamp two Φ11 bone screws. 3D multi-angle adjustment, flexible and convenient to operate, quickly assemble a stable frame.



订货编码 Ocder code	规格 Specification	材质 Material
20.20.1711201.200	2 holes(孔) Φ11	铝合金 & 不锈钢 Aluminum alloy & stainless steel

●横夹钳 XIV
T clamp XIV

主要部件由铝合金和不锈钢制成，强度高，能夹紧 Φ11 杆与 Φ5 ~ Φ6 骨针。适用于搭建胫骨平台框架。

The main components are made of aluminum alloy and stainless steel, high strength, can clamp Φ11 and Φ5~Φ6 bone screws. Suitable for tibia plateau.

订货编码 Ocder code	规格 Specification	材质 Material
20.20.1411201.200	2 hoes(孔) Φ11/Φ6	铝合金 & 不锈钢 Aluminum alloy &stainless steel

●连接杆（直型）
Connecting rod(straight)

由碳纤维制成，重量轻，强度高，可透视。

Made of carbon fiber,light, good strength and perspective.

订货编码 Ocder code	规格 Specification	材质 Material
20.10.0111150.300	Φ11 L150	碳纤维 Carbon fiber
20.10.0111200.300	Φ11 L200	
20.10.0111250.300	Φ11 L250	
20.10.0111280.300	Φ11 L280	
20.10.0111300.300	Φ11 L300	

骨针 Bone screw

●骨针
Bone screw

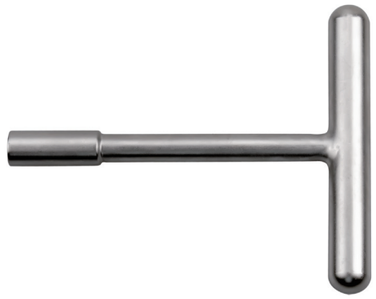
由医用不锈钢制成，强度高。自攻自钻刃口设计，使用快捷方便，缩短手术时间。

Made of medical stainless steel, high strength. Self-tapping & self-drilling cutting edge design, easy to use, shorten operation time.

订货编码 Ocder code	规格 Specification	材质 Material
19.32.515.4251001	Φ4.0×100	医用不锈钢 Medical stainless steel
19.32.513.0501001	Φ5.0×100	
19.32.513.0501201	Φ5.0×120	
19.32.513.0601301	Φ6.0×130	
19.32.513.0601501	Φ6.0×150	
19.32.513.0601801	Φ6.0×180	

配套器械 Matching instruments

● 50.22.014 | 螺纹针扳手 Φ5.0
Φ5.0 Threaded needle wrench



用于装卸骨针
For loading and unloading bone screw

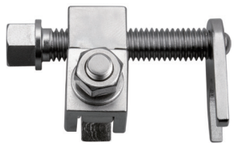
● 50.22.024 | 导钻 Φ5.0
Φ5.0 Drill guide

用于定位及保护软组织
Used to locate and protect soft tissue

● 50.22.025 | 导钻 Φ6.0
Φ6.0 Drill guide

用于定位及保护软组织
Used to locate and protect soft tissue

● 50.22.100 | 加压器 11mm
11mm Pressurizer



用于加压骨针
For compression bone needle

● 50.22.113 | 骨科钻头 Φ3.5
Φ3.5 Orthopedic drill bit

用于钻孔
For drilling

● 50.22.114 | 骨科钻头 Φ4.5
Φ4.5 Orthopedic drill bit

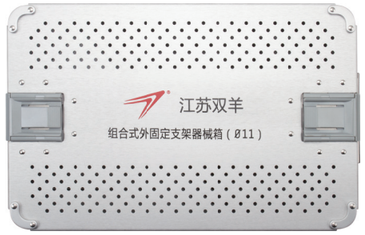
用于钻孔
For drilling

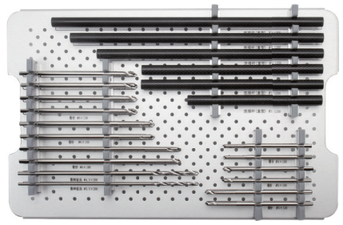
● 50.22.121 | 开口扳手 10mm
10mm Open wrench

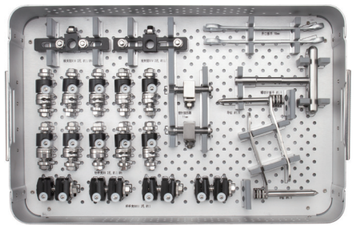
用于锁紧螺钉
For locking screws

标准配置 Standard configuration

订货编码 Ocder code	产品名称 Name	规格 Specification	数量 Quantity
20.20.1411201.200	横夹钳 XIV T clamp XIV	2 孔 Φ11/Φ6	2
20.20.1511201.200	针杆夹 XV Pin to rod coupling XV	2 孔 Φ11/Φ6	10
20.20.1711201.200	杆杆夹 XVII Rod to rod coupling XVII	2 孔 Φ11	4
20.10.0111150.300	连接杆（直型） Connecting rod(straight)	Φ11 L150	1
20.10.0111200.300	连接杆（直型） Connecting rod(straight)	Φ11 L200	2
20.10.0111250.300	连接杆（直型） Connecting rod(straight)	Φ11 L250	1
20.10.0111280.300	连接杆（直型） Connecting rod(straight)	Φ11 L280	1
20.10.0111300.300	连接杆（直型） Connecting rod(straight)	Φ11 L300	1
19.32.515.4251001	骨针 Bone screw	Φ4.0×100	2
19.32.513.0501001	骨针 Bone screw	Φ5.0×100	2
19.32.513.0501201	骨针 Bone screw	Φ5.0×120	2
19.32.513.0601301	骨针 Bone screw	Φ6.0×130	4
19.32.513.0601501	骨针 Bone screw	Φ6.0×150	2
19.32.513.0601801	骨针 Bone screw	Φ6.0×180	2
50.22.114	骨科钻头 Orthopedic drill bit	Φ4.5×200	1
50.22.113	骨科钻头 Orthopedic drill bit	Φ3.5×200	1
50.22.121	开口扳手 Open wrench	10mm	2
50.22.014	螺纹针扳手 Threaded needle wrench	Φ5	1
50.22.100	加压器 Pressurizer	11mm	2
50.22.024	导钻 Drill guide	Φ5.0	1
50.22.025	导钻 Drill guide	Φ6.0	1
50.22.152	组合式外固定支架器械箱 Modular external fixator instrument box	Φ11	1







框架应用示例 Framework application example

●肱骨框架
Humerus backbone frame

将两根 4mm 骨针置入肱骨远端背面，两根 5mm 骨针置入肱骨近端侧面。用 4 个针杆夹 XV 和两根 Φ11 L200mm 连接杆（直型）把骨针连接起来，再用两个杆杆夹 XVII 和一根 Φ11 L150mm 连接杆（直型）与所有组件连接成框架，最后锁紧。

Put two 4mm bone screws on posterior distal radius, and put two 5mm bone screws on proximal humerus. Use four pin to rod couplings XV and two Φ11 L200mm connecting rod (straight type) to connect the bone pins, and then use two rod to rod couplings XVII and one Φ11 L150mm connecting rod (straight type) to connect all the components into a frame and finally lock .

建议配置
Recommended configurations

订货编码 Ocder code	产品名称 Name	规格 Specification	数量 Quantity
20.20.1511201.200	针杆夹 XV Pin to rod coupling XV	2 holes（孔） Φ11/Φ6	4
20.20.1711201.200	杆杆夹 XVII Rod to rod coupling XVII	2 holes（孔） Φ11	2
20.10.0111150.300	连接杆（直型） Connecting rod(straight)	Φ11 L150	1
20.10.0111200.300	连接杆（直型） Connecting rod(straight)	Φ11 L200	2
19.32.515.4251001	骨针 Bone screw	Φ4.0×100	2
19.32.513.0501001	骨针 Bone screw	Φ5.0×100	2

（此框架仅供参考，实际手术视骨折情况而定）
(This frame is for reference only, the actual surgery depends on the fracture)

●胫骨框架
Humerus backbone frame

在胫骨远端和近端区侧面，以独立针布局，夹角约 90°，各置入 2 根 6mm 骨针。用 4 个针杆夹 XV 和两根 Φ11 L250mm、两根 Φ11 L280mm 连接杆（直型）把骨针连接起来，再用 4 个杆杆夹和两根 Φ11 L250mm 连接杆（直型）与所有组件连接成框架，最后锁紧。

Single needle layout on distal lateral tibia and proximal tibia at an angle of about 90°, put two 6 mm bone screws in each. Use four pin to rod coupling XV, two Φ11 L250mm and two Φ11 L280mm connecting rods (straight type) to connect the bone screws, and then use four rod to rod couplings and two Φ11 L250mm connecting rods (straight type) to connect all the components into a frame, and finally Lock.

建议配置
Recommended configurations

订货编码 Ocder code	产品名称 Name	规格 Specification	数量 Quantity
20.20.1511201.200	针杆夹 XV Pin to rod coupling XV	2holes(孔) Φ11/Φ6	4
20.20.1711201.200	杆杆夹 XVII Rod to rod coupling XVII	2holes(孔) Φ11	4
20.10.0111200.300	连接杆（直型） Connecting rod(straight)	Φ11 L200	2
20.10.0111250.300	连接杆（直型） Connecting rod(straight)	Φ11 L250	1
20.10.0111280.300	连接杆（直型） Connecting rod(straight)	Φ11 L280	1
19.32.513.0601301	骨针 Bone screw	Φ6.0×130	4

（此框架仅供参考，实际手术视骨折情况而定）
(This frame is for reference only, the actual surgery depends on the fracture)

●胫骨平台框架
Tibia plateau frame

将两根 6mm 骨针以平行置入胫骨平台内，在偏远端骨干区置入两根 6mm 骨针，把横夹钳 XIV 与胫骨平台的骨针连接，再用两个针杆夹 XV 和一根 Φ11 L300mm 连接杆（直型）与所有组件连接成框架，最后锁紧。

Put two 6mm bone screws in parallel into tibia plateau, put two 6mm bone screws in distal tibia shaft, connect the transverse clamp XIV with bone needle on tibia plateau, and use two pin to rod couplings XV and one Φ11 L300mm connecting rod (straight type)to connect all components into a frame, and finally lock.

建议配置
Recommended configurations

订货编码 Ocder code	产品名称 Name	规格 Specification	数量 Quantity
20.20.1411201.200	横夹钳 XIV T clamp XIV	2 holes(孔) Φ11/Φ6	1
20.20.1511201.200	针杆夹 XV Pin to rod Coupling XV	2 holes(孔) Φ11/Φ6	2
20.10.0111300.300	连接杆（直型） Connecting rod(straight)	Φ11 L300	1
19.32.513.0601301	骨针 Bone screw	Φ6.0×130	4

（此框架仅供参考，实际手术视骨折情况而定）
(This frame is for reference only, the actual surgery depends on the fracture)

●踝关节桥接框架
Ankle bridge frame

将两根 5mm 骨针置入跟骨 ,在偏远端骨干区置入两根 6mm 骨针。用 4 个针杆夹 XV 和两根 Φ11 L200mm 连接杆（直型）把骨针连接起来 ,再用两个杆杆夹 XVII 和一根 Φ11 L250mm 连接杆 (直型) 与所有组件连接成框架，最后锁紧。

Put two 5mm bone screws into calcaneus, and put two 6mm bone screws in distal tibia shaft. Connect the bone pins with four pin to rod couplings XV and two Φ11 L200mm connecting rods (straight type), then connect all components into a frame by two Rod to rod coupling XVII and one Φ11 L250mm connecting rod (straight), finally lock.

（此框架仅供参考，实际手术视骨折情况而定）
(This frame is for reference only, the actual surgery depends on the fracture)

建议配置
Recommended configurations

订货编码 Ocder code	产品名称 Name	规格 Specification	数量 Quantity
20.20.1511201.200	针杆夹 XV Pin to rod coupling XV	2 holes(孔) Φ11/Φ6	4
20.20.1711201.200	杆杆夹 XVII Rod to rod coupling XVII	2 holes(孔) Φ11	2
20.10.0111150.300	连接杆 (直型) Connecting rod(straight)	Φ11 L150	1
20.10.0111200.300	连接杆 (直型) Connecting rod(straight)	Φ11 L200	2
19.32.513.0501201	骨针 Bone screw	Φ5.0×120	2
19.32.513.0601301	骨针 Bone screw	Φ6.0×130	2