

BETTER, *FASTER*, **STRONGER**



**MONKEY  
RINGS**



Exclusively foot & ankle **20 Paragon**

## MATERIAL

The Monkey Rings™ Circular External Fixation System features aluminum rings with stainless steel bolts and wires to create a secure locking fit.

The Half Pins are offered in a hydroxyapatite (HA) coated option designed to help prevent pin site loosening while the antimicrobial sponges are designed to help prevent pin site infections.

## SCIENCE

The Monkey Rings™ Circular External Fixator is a versatile external fixation system that allows for stability, soft tissue preservation, adjustability, and functionality. All these factors are vital for bone to realize its full osteogenic potential. The fixator is designed to allow for axial micromotion while remaining stable to angulation and rotation. The system also allows flexibility to build a stable construct in an efficient manner while avoiding neurovascular and soft tissue structures.

## DELIVERY AND PACKAGING

The Monkey Rings™ External Fixation System comes in four trays along with a box containing sterile packed HA Coated Half Pins, Foot Rocker Attachments, Antimicrobial Sponges, and Retaining Clips. A Bolt Cutter is provided with every set to cut half pins to the appropriate length.

## INSTRUMENTATION

The most common ring sizes and foot plates are provided for every case in tabbed and non-tabbed options for streamlined frame construction.

Surgeons have four different attachment options to affix a half pin to the fixator and three different half pin sizes (4, 5, 6 mm).

Quick Adjust Struts and Quick Adjust Locking Nuts are available for rapid adjustment.

The system uses Hex Wrench Attachments (10 mm) and AO Quick connection power attachments.



# BETTER

- ▶ Size Up and Down 4 Sizes from the Foot Plate
- ▶ Funnel Frame Using Tabbed Rings
- ▶ 4 Different Half Pin Attachment Options
- ▶ 1<sup>ST</sup> Principles Ilizarov Fixation
- ▶ Modularity and Flexibility in Constructs
- ▶ Easy to Line Up Rings



The size charts below depict the compatibility of the system's Ring Foot Plates and specifies which plates come standard in the caddy. All other plate sizes are available by request.

Key:

	= Available in caddy		= Sizes compatible
	= Available for order		= Sizes non-compatible

		 Foot Plate					
		120 mm	140 mm	160 mm	180 mm	200 mm	220 mm
 Tabbed Ring	80 mm						
	100 mm						
	120 mm						
	140 mm						
	160 mm						
	180 mm						
	200 mm						
	220 mm						

		 Tabbed Ring							
		80 mm	100 mm	120 mm	140 mm	160 mm	180 mm	200 mm	220 mm
 Tabbed Ring	80 mm								
	100 mm								
	120 mm								
	140 mm								
	160 mm								
	180 mm								
	200 mm								
	220 mm								

# FASTER

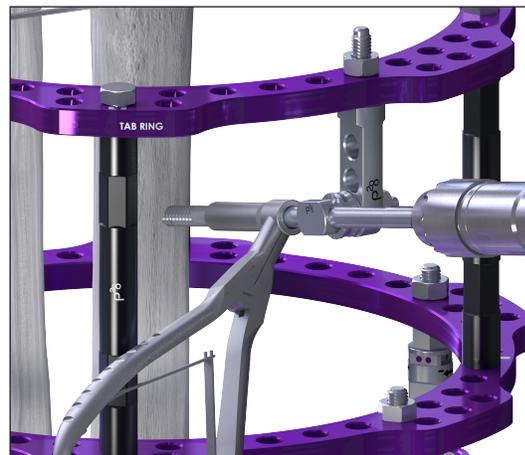
- ▶ Quick Adjust Struts
- ▶ Push Button Speed Nuts
- ▶ One Step Wire Tensioning
- ▶ AO Quick Connect Half Pin Insertion
- ▶ Threaded Pillars Bolt on Quickly with either a 16 or 20 mm Bolt



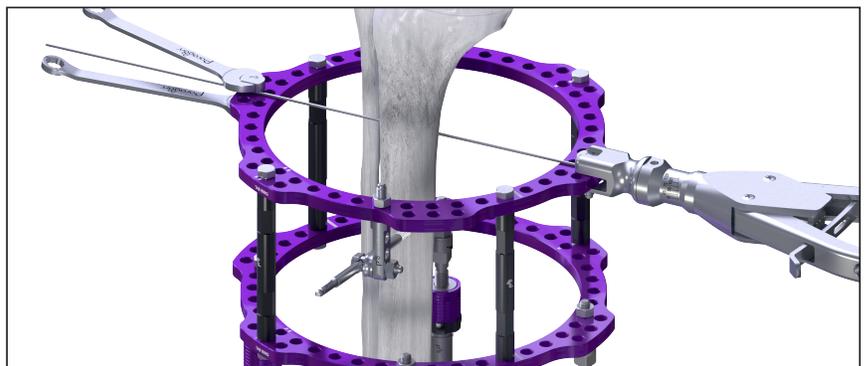
Rancho Cube and Post Assembly Options



Threaded Pillars are compatible with Monkey Bars™ Pin to Bar Combination Clamps



AO Quick Connect Half Pins



Quickly tension between 50-125 Kg

## QUICK ADJUST STRUT FEATURES



Length measurement on the strut with the indicator



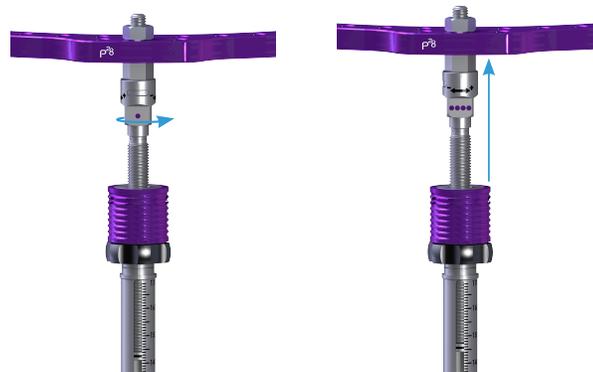
### Gross Adjustments

For gross adjustments, disengage the black locking nut, pull the purple knob and adjust the strut to the desired length. Confirm the length of the strut with the laser markings and then lock the strut.

Once desired length is achieved, pull the purple knob straight up and twist black locking nut clockwise to the top to lock in place. This will maintain the desired length of the strut.

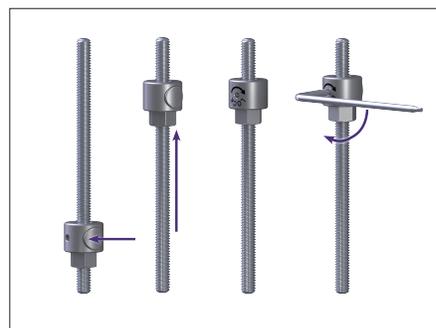
### Fine Adjustments

For micrometric adjustment of the strut use a 10mm wrench to turn the square nut in either the positive or negative direction. Each 1/4 turn of the nut results in 0.25 mm of lengthening or shortening.



## QUICK RELEASE LOCKING NUT

The Push Button Quick Release Nut allows for quick adjustments up and down the threaded rod that can be locked in place with the wrench.

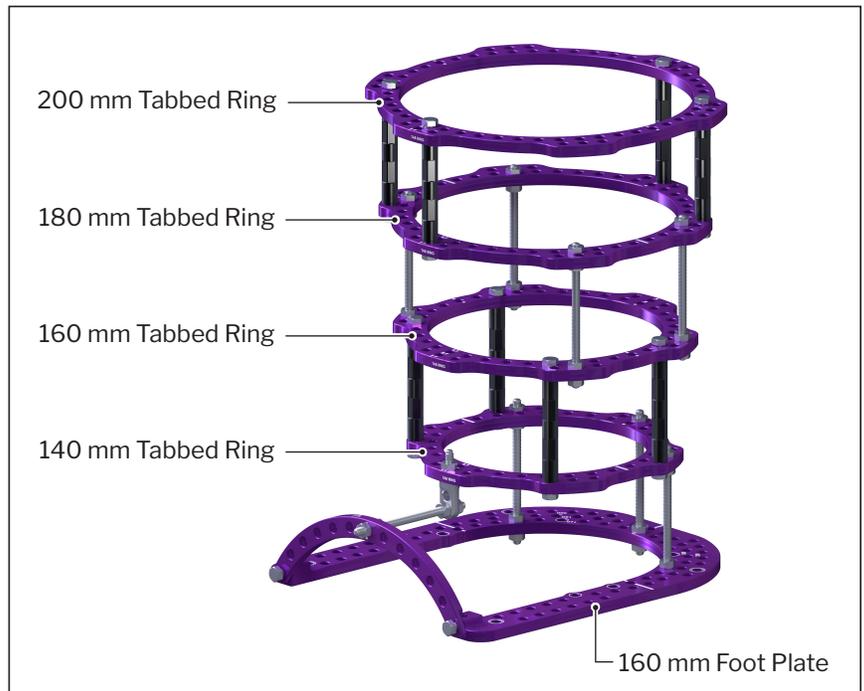


# STRONGER

- ▶ Tapered Minor and Constant Major Half Pins are Designed to Back Out Without Losing Fixation
- ▶ M6 Connecting Nuts
- ▶ Axially Stable Tapered Constructs
- ▶ M8 Quick Adjust Struts are 294% Stronger Than a Standard Threaded Rod
- ▶ Threaded Pillars are 545% Stronger Than a Standard Threaded Rod
- ▶ Robust Foot Rocker Supporting Patient Ambulation

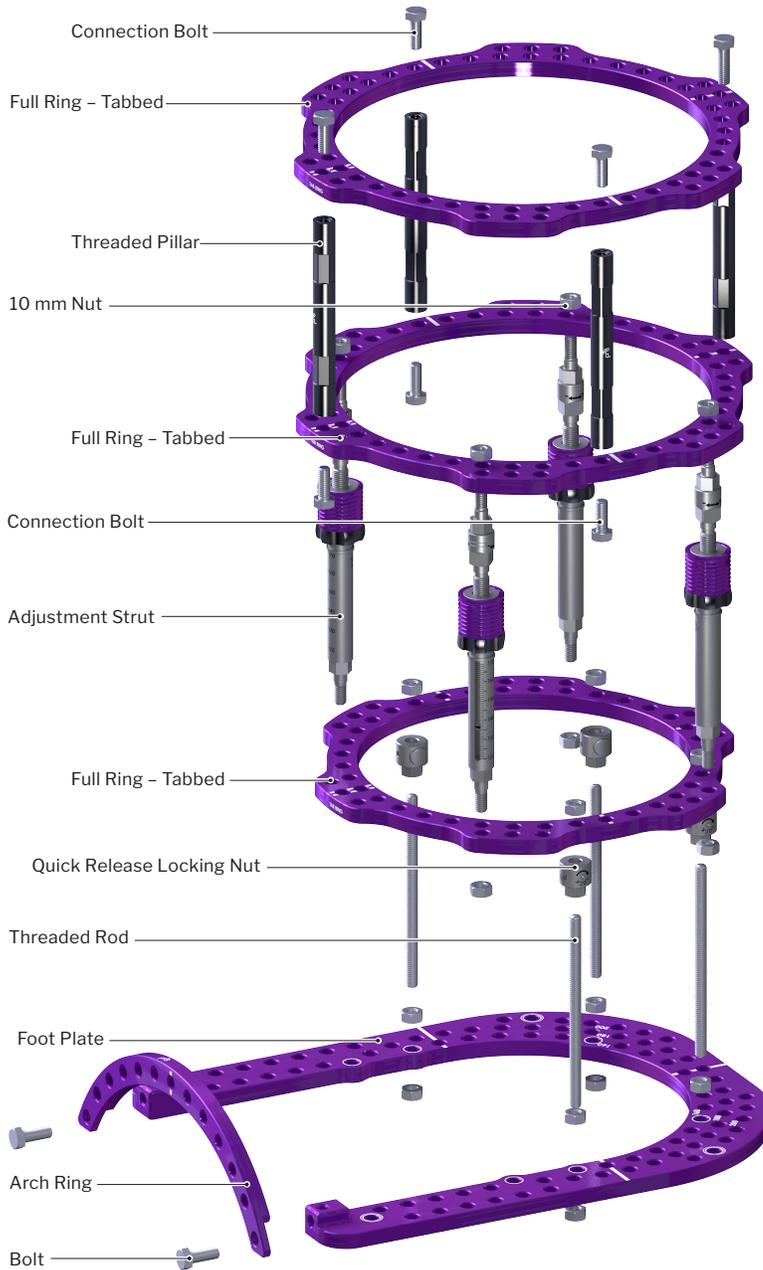


Rings easily line up between sizes

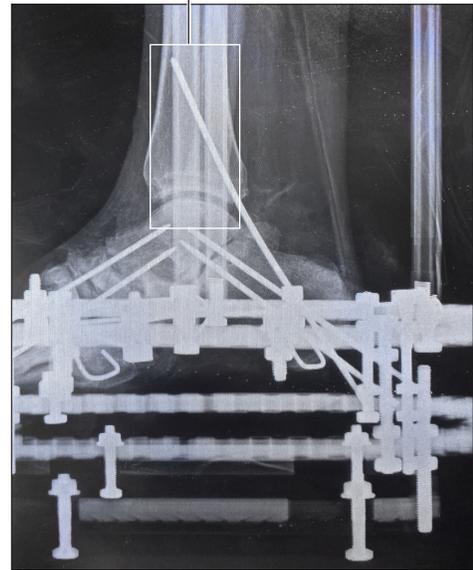


Axially loaded tapered construct

## CONSTRUCT BUILD



Radiolucent threaded pillars



Threaded Pillar (P45-330-XXXX)



Pillar Lengths Available			
30 mm	50 mm	75 mm	100 mm
150 mm	200 mm	250 mm	300 mm

Threaded Rod (P45-310-XXXX)



Rod Lengths Available				
30 mm	60 mm	80 mm	100 mm	120 mm
150 mm	200 mm	250 mm	300 mm	

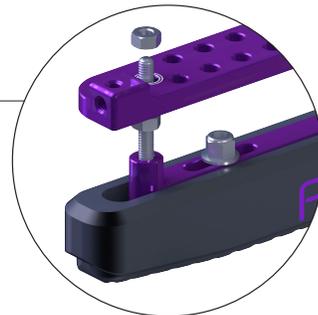


Calculated Least Moment of Inertia				
Component	Least Moment of Inertia (mm <sup>4</sup> )	Modulus of Elasticity (GPa)	Buckling Strength Increase compared to M6 Threaded Rod (%)	Buckling Strength Increase compared to M6 Threaded Rod (multiplier)
P45-310-XXXX Rev B (M6 x 1 Threaded Rod)	28.09	190	0%	1
P45-224-XXX Rev D (M8 x 1 Quick Adjust Strut)	110.69	190	294%	3.94X
P45-330-XXXX Rev B Threaded Pillar	500.01	68.9	545%	6.45X

## Foot Rocker Support



- ▶ Foot Plate Allows Attachment of Foot Rocker for Streamlined Patient Weight Bearing and Patient Weight Transfer
- ▶ End of the Foot Plate Allows Multiple Different Close Off Attachment Styles



## SYSTEM COMPONENTS AND INSTRUMENTATION

Adjustment Strut (P45-224-XXXX)



Strut Lengths Available		
Small 100 mm-129 mm	Medium 120 mm-170 mm	Large 160 mm-250 mm

Threaded Rod (P45-310-XXXX)

Allow for the adjustments in the length between the Ring or Foot Plates.



Rod Lengths Available				
30 mm	60 mm	80 mm	100 mm	120 mm
150 mm	200 mm	250 mm	300 mm	

Threaded Pillar (P45-330-XXXX)

Threaded Pillars are available in static lengths.



Pillar Lengths Available			
30 mm	50 mm	75 mm	100 mm
150 mm	200 mm	250 mm	300 mm

Universal Pin Clamp  
(P45-970-2000)



Wire Fixation Bolt  
(P45-913-2001)



Connection Bolt (P45-914-XXXX)



Connection Bolt Lengths Available		
8 mm	16 mm	20 mm

Quick Release  
Locking Nut  
(P45-941-0002)



Quick Release  
Locking Nut Wrench  
(P45-517-0001)



M6 Connecting Nut,  
10 mm Hex  
(P45-940-0001)



M6 Long Extension Nut,  
Compression/Distraction,  
10mm Hex  
(P45-941-0001)



Convex  
Spherical Washer  
(P45-944-0001)



Concave  
Spherical Washer  
(P45-944-0002)



Washer (P45-943-XXXX)



Washer Sizes Available		
1 mm	2 mm	4 mm

Female Extension Posts without  
threaded attachment (Female)  
(P45-920-XXXX)



Male Extension Posts with  
Threaded Attachment (Male)  
(P45-921-XXXX)



Male/Female Extension Post Holes Available		
2 Hole	3 Hole	4 Hole

Rancho Cubes (P45-925-XXXX)



Rancho Cube Holes Available			
2 Hole	3 Hole	4 Hole	5 Hole

Rancho Cube  
Centering Collars  
(P45-925-XXXX)



Centering Collar Diameters Available		
4.0 mm	5.0 mm	6.0 mm

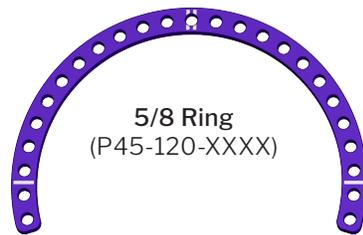
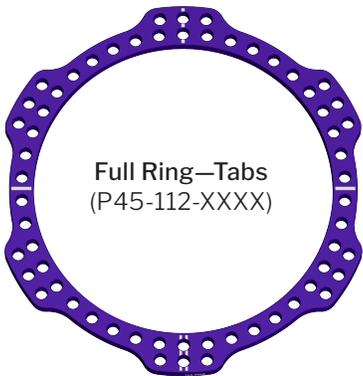
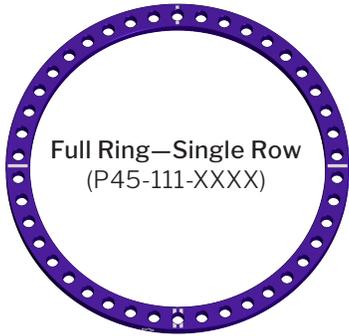
Offset Slotted Ring  
Adapter (Short)  
(P45-935-XXXX)



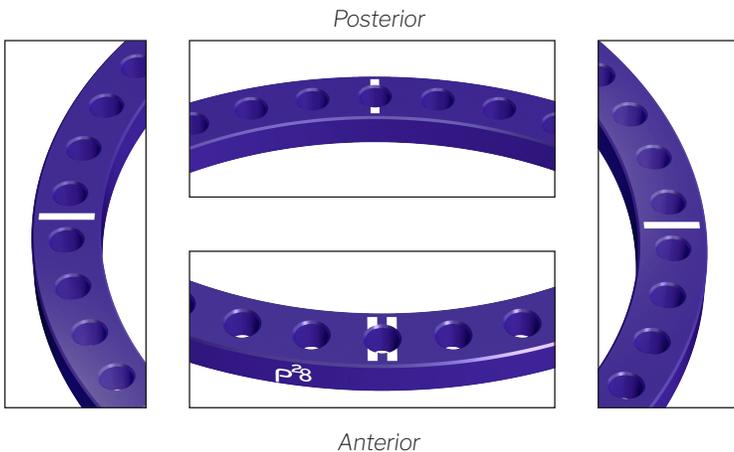
Offset Slotted Ring  
Adapter (Long)  
(P45-935-XXXX)



SYSTEM COMPONENTS AND INSTRUMENTATION



Ring Sizers  
(P45-999-1000)



Double marking is to denote the anterior orientation of the Ring, while the other three single markings denote the medial, lateral, and posterior orientation.

## SYSTEM COMPONENTS AND INSTRUMENTATION

Smooth Wire (P45-194-1840) – 1.8 x 400 mm



Reduction Wire (P45-195-0007) – 1.8 x 400 mm



10 mm Wrench  
(P47-950-0001)



T-Handle Driver  
(P47-940-0001)

Fits AO and 10 mm hex components

10 mm Angled Socket Wrench  
(P45-513-0001)



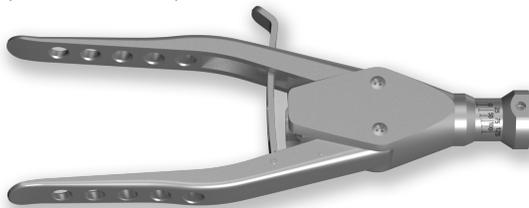
10 mm Slotted Angled Socket Wrench  
(P45-513-0002)



10 mm Tang Angled Socket Wrench  
(P45-513-0003)



Wire Tensioner  
(P45-540-0000)



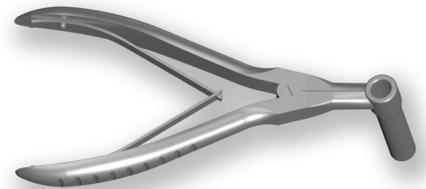
Snub Nose Attachment  
(P45-540-0001)



Long Nose Attachment  
(P45-540-0002)



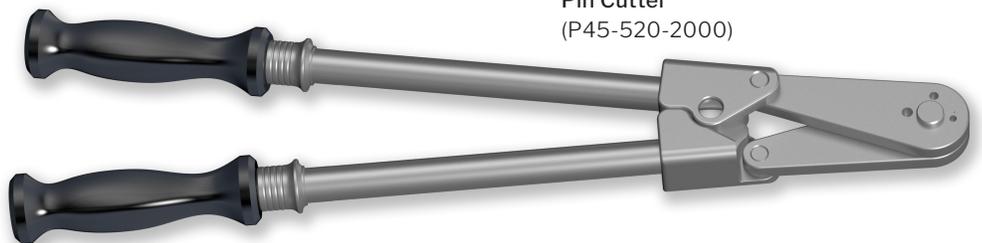
Ø6.0 Split Tissue Protector Sleeve  
(P45-580-1000)



Wire Cutter  
(P99-150-0121)



Pin Cutter  
(P45-520-2000)



Pin and Wire Site Protective  
Sponge Fasteners  
(pack of 12)  
(P45-610-1000)



Infection Shielding Pin and  
Wire Site Protective Sponges,  
Sterile Packed (pouch of 30)  
(P45-600-1000-S)



Foot Rocker  
(P45-170-1000)



Strut Locking Clip  
(pouch of 10)  
(P44-PKG-4001)



Wire Clamp Caps  
(pouch of 16)  
(P45-198-1000)



Protective Cap (pouch of 10)  
(P45-198-XXXX)

	Diameters Available		
	4.0 mm	5.0 mm	6.0 mm

EXCIR-01 Rev. A  
2022-10-13

™Trademarks and ®Registered Marks of Paragon 28®, Inc.  
© Copyright 2022 Paragon 28®, Inc. All rights reserved.  
Patents: [www.paragon28.com/patents](http://www.paragon28.com/patents)

Paragon 28, Inc.   
14445 Grasslands Dr.  
Englewood, CO 80112 USA  
(855) 786-2828

Paragon 28 Medical Devices Trading Limited  
First Floor Block 7 Beckett Way  
Park West Business Park  
Dublin 12, D12 X884, Ireland  
+353 (0) 1588 0350

For the contraindications, potential complications and adverse reactions, warnings and precautions associated with this device, please refer to the device specific instructions for use at <http://www.paragon28.com/ifus>

Exclusively foot & ankle <sup>28</sup>  
**Paragon**®

[www.Paragon28.com](http://www.Paragon28.com)