

Mediox

***Posterior Pedicle screw system
-CTS 5.5 MIS***

Surgical Technique

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Indications and contraindications

Indications

- Degenerative disc diseases.
- Spondylolisthesis.
- Spinal fracture.

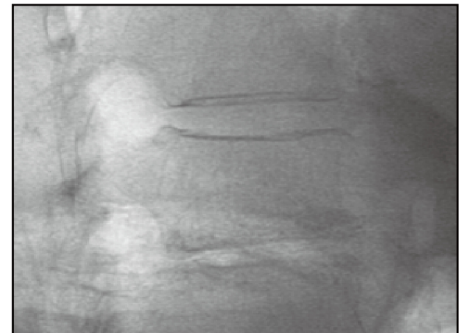
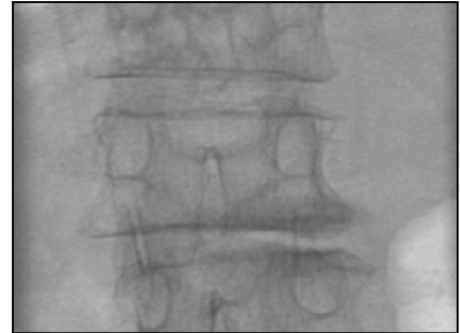
Contraindications

- Local spine or general infection.
- Cachexia.
- Metal allergy.
- Symptoms or signs were caused by myasthenia gravis or spinal cord diseases such as subacute combined degeneration of the spinal cord.
- Be cautious to use the systems in diffuse idiopathic skeletal hyperostosis of spine.
- Not withstand the operation for organ failure.

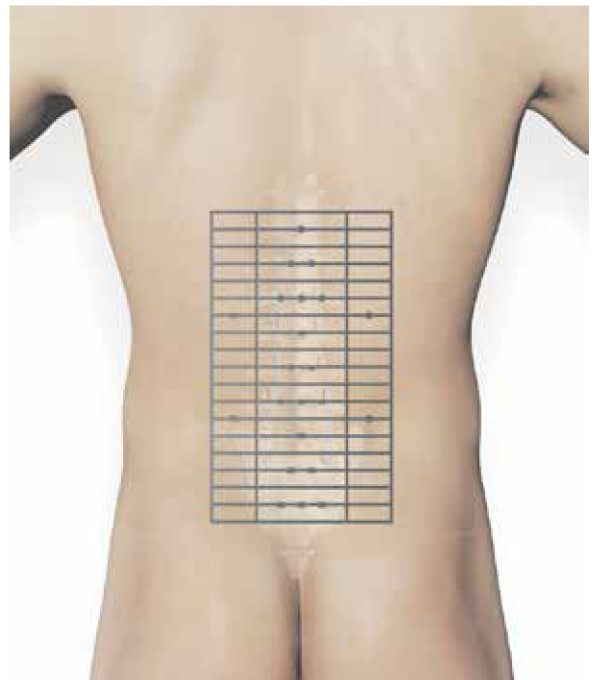
Surgical technique

1. Patient Position and Exposure

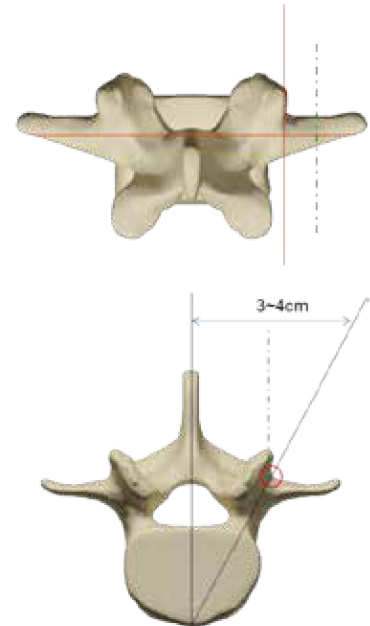
The patient keeps the prone position on the perspective operating table, please protect the parts which will be physically touched with the operating table. According to the patient's condition to decide the final body position.



Using the X-grid (12014180) to measure, discrimination and location the correct segment by anterior-posterior and lateral X-ray image.



Skin incision located about 1 cm distance at marked red cross line , the incision will be 1.5cm. The incision accordingly by the patient's body shape.

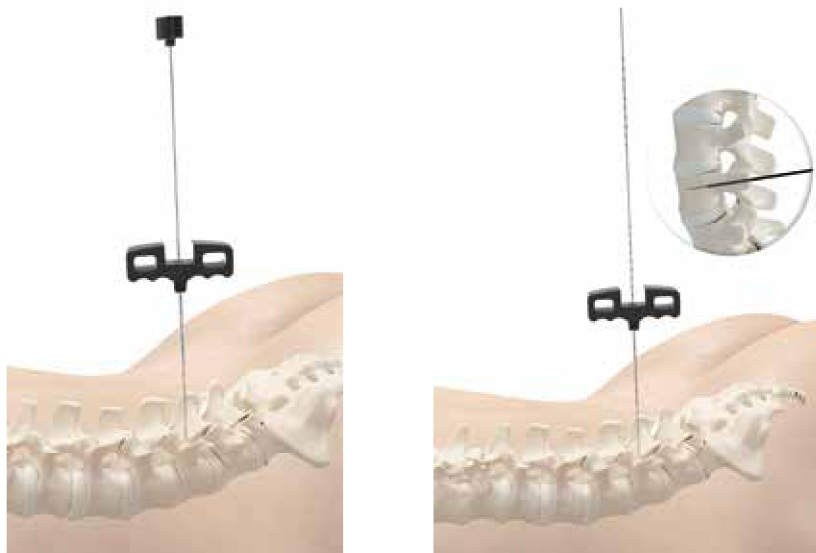


2. Guide Wire Insertion

Generally, the Guide Wire (12014010) insertion should reach a two-thirds depth of the vertebral body.



When the Guide Wire insertion is completed, remove the inner tube of Trocar (12014100).



3. Pedicle Preparation

Gradually insert the Expander Guide to protect the surrounding muscle tissue.

Pedicle Preparation should be operated in the $\Phi 14$ Expander Guide (12014030) in order to accurately determine the depth of entry.



Creating channel of pedicle screw by using the Awl (12014050) or $\Phi 4.25$ Cannulated Drill (12014060).(Optional)



Tap thread.

The screw length can be determined by Cannulated Tap (12014075/12014076/12014077) with the scale marked. Pay attention the scale changes where the Cannulated Tap when the $\Phi 14$ Expander Guide (12014030) insert.

Note: Please hold the Guide Wire (12014010) by hand or forceps to prevent the Guide Wire from advancing furtherinadvertently.



4. Pedicle Screw Insertion

Remove the $\Phi 14$ Expander Guide (12014030) after insert the $\Phi 15.5$ Expander Guide (12014040) instead of it. Keep the $\Phi 15$ Expander Guide as the final channel when insert pedicle screw.



Choose the correct specification pedicle screw and connect to the Multiaxial Screwdriver (12014090). Insert the screw over the Guide Wire (12014010) carefully. Remove the Guide Wire when the screw's tip through over the pedicle to prevent the Guide Wire move forward.



Repeat above steps for other pedicle screws insertion.

5. Bone Cement Filling (Optional)

After the Pedicle Screw placement, we can choose the perfusion bone cement to strengthen the vertebral body.

The capacity of each bone cement filler is 1.2ml, steadily inserting the casing into the screw, slowly and carefully to push the bone cement into the vertebral body. The whole process should be seen by fluoroscope in order to ensure the dispersion of Bone Cement distribution.



6. Rod Selection

Insert one arm of the Length Gauge (12015080) into each of the Screw Blade until each leg is fully seated in the Screw Head. Check that the mark line on the arm is flush with the top of the Screw Blade. Once correctly positioned, read the rod length measurement indicated at the top of the Length Gauge.



7. Rod Insertion

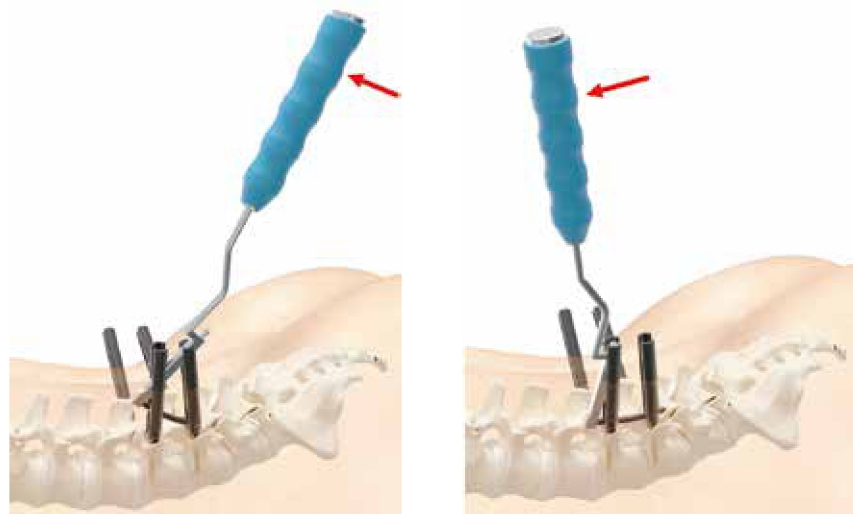
For more smoothly rod insertion, Probe (12014200) can be used to separate the muscular tissue before rod insertion.



Connect the Rod to the Rod-Inserter and tighten it, align the the Screw Blades. Slowly insert the rod through the Screw Blade until the Rod reaches the deepest position where the head or surrounding tissue of the screw allow it to reach to. The head of the Rod should be located below the fascia at least.



Rotate the Rod-Inserter handle upwards 90 degrees, then continue to guide the Rod to the other Screw “U” Blade penetration. To verify the Rod has passed through the Screw “U” Blade, twist the Blade about its axis. If the Blade does not rotate, then the Rod has been properly passed. Use Fluoroscope to verify that adequate Rod overhand at each end of the construct.



If the Rod position is too high, use the Rod Compressor to push to the bottom of the Screw groove.



8. Set Screw Pre-tightening

Insert the Set Screws by using the Pre-tightening Driver (12001038) sequentially.



Insert the Set Screw by using the Setscrew Driver (12014190), the Anti-torque Wrench (12014150) and the Ratchet Quick Handle (12001041) for final pre-tightening. (Note: It's not final tightening.)



9. Compression and Distraction

Locking one side of the Screw, use the Distractor (12014110) or the Compressor (12014220) for vertebral body restoration. Once approach to the desired effect, you can finally tighten the Set Screw.



10. Final Tightening

For final tighten, use the Anti-torque Wrench (12014150), Torque Limit Handle (12001007) and Setscrew Driver (12014190) to tighten all the Screws.



11. Tab Breaking

Insert the Anti-break Off Wrench (12014170) until the mark line is flush with the top of the Screw Blade, use the Tab-breaker (12014160) break off the blades.



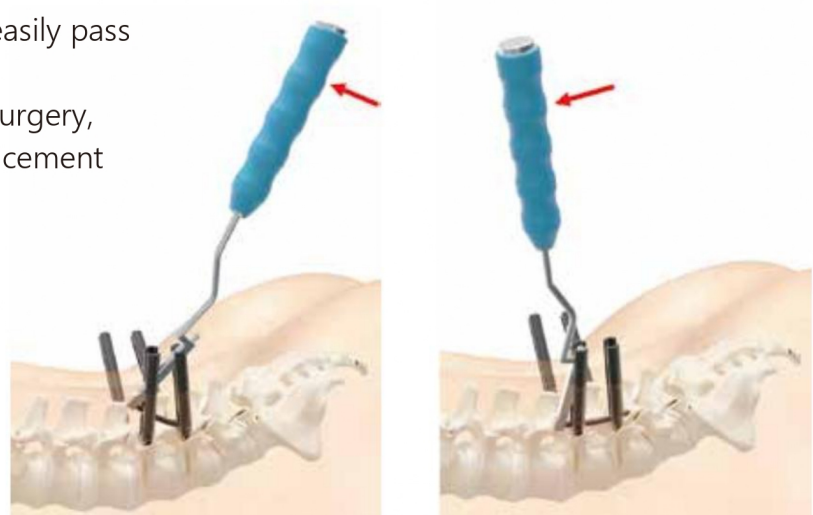
12. Bone Cement Cannula

- Materials: Medical alloy.
- Including:
 - + 01 hollow tube;
 - + 01 cement protrusion needle with graduated capacity of 1.2ml.
- The needle is fixed with a hollow screw and has a small hole to increase the pressure for pumping cement and the hollow screw body, length 175mm, can lengthen the pump barrel twice.
- Used to stuff cement into the cement pump screw, avoiding cement reflux.



13. CTS - 5.5 MIS Minimally Invasive Rod 50-250mm

- Material: Titanium.
- Diameter 5.5mm.
- Length from 50 to 250mm, in 5mm increments.
- The two blunt ends have tabs to easily pass through the skin.
- Used in minimally invasive spine surgery, percutaneous screw technique and cement injection.



14. CTS-5.5 MIS Hollow Pedicle Screw Multi Axial

- Material: Titanium.
- Multi-directional spiral screw body, self-tapping. Double thread on the screw body, divided into 2 parts: large thread for the screw head to the spine; Small lace firmly adheres to the bow leg.
- Hollow, screw head has at least 4 holes for cementing into the vertebral body.
- Diameter: 5.0mm - 7.5mm, with each step increasing by 0.5mm.
- Length: 30mm - 60mm, with each step increasing by 5mm.
- Screw tail has a minimum tilt of 25°, rotation angle of 60°. Screw tail length 85mm. After fixing the brace with locking screws, break off the screw tail, the remaining length of the tail is 16mm.
- Compatible with 5.5mm diameter pre-bent vertical braces and internal locking screws.



15. CTS-5.5 MIS Hollow Pedicle Screw Multi Axial with CTS 5.5 MIS Set Screw

Material: Titanium

1. CTS-5.5 MIS Hollow Pedicle Screw Multi Axial

- Multi-directional spiral screw body, self-tapping. Double thread on the screw body, divided into 2 parts: large thread for the screw head to the spine; Small lace firmly adheres to the bow leg.
- Hollow, screw head has at least 4 holes for cementing into the vertebral body.
- Diameter: 5.0mm - 7.5mm, with each step increasing by 0.5mm.
- Length: 30mm - 60mm, with each step increasing by 5mm.
- Screw tail has a minimum tilt of 25°, rotation angle of 60°. Screw tail length 85mm. After fixing the brace with locking screws, break off the screw tail, the remaining length of the tail is 16mm.
- Compatible with 5.5mm diameter pre-bent vertical braces.

2. CTS 5.5 MIS Set Screw: Diameter 9mm, height 3.7mm.



16. CTS - 5.5 MIS Curved Rod

- Material: Titanium.
- Pre-bent. One end of the splint is pointed to pass through the skin and muscle. One end has a horizontal groove for permanent installation with an inlet adjustment tool.
- Diameter 5.5mm.
- Sizes and lengths: 50mm to 180mm, with each step increasing by 5mm.
- Compatible with multiaxial hollow screws and cement injection in minimally invasive surgery.



17. CTS 5.5 MIS Set Screw

- Material: Titanium.
- Size: Small, simple, small diameter 3.7mm x 9mm.
- Has a one-way screw thread design, the external thread matches the internal thread of the screw head, avoiding self-unscrewing and preventing it from coming out.
- Designed with a star-shaped lock head to avoid slipping and sliding when tightening.
- Self-breaks when twisted with enough force.
- Use with percutaneous multiaxial hollow barrel spinal screws, cement injection and 5.5mm diameter pre-bent vertical splints.



18. CTS-5.5 MIS Extended Tab Half Restrictive Multi Axial Hollow Pedicle Screw

- Dimensions: Diameter: diameter: 5.0mm x 30-55mm; diameter 5.5mm x 30-60mm; diameter 6.0mm x 30-60mm; diameter 6.5mm x 30-60mm; diameter 7.0mm x 30-60mm; diameter 7.5mm x 30-60mm.
 - Screw tail length 80mm→85mm. After fixing the brace with locking screws, break the screw tail, the remaining length of the tail is 16mm→18mm.
 - Rotation angle 60°.
 - Hollow structure, screw head has at least 4 holes for cementing into the vertebral body.
- Double threaded wing on screw body, divided into 2 parts:
- + Large thread for easy screw head access.
 - + Small lace helps firmly grip the bow leg.
- Compatible with 5.5mm diameter pre-bent vertical braces.



19. CTS-5.5 MIS Extended Tab Half Restrictive Multi Axial Hollow Pedicle Screw with CTS 5.5 MIS Set Screw

Material: Titanium

1. CTS-5.5 MIS Extended Tab Half Restrictive Multi Axial Hollow Pedicle Screw

- Dimensions: Diameter: diameter: 5.0mm x 30-55mm; diameter 5.5mm x 30-60mm; diameter 6.0mm x 30-60mm; diameter 6.5mm x 30-60mm; diameter 7.0mm x 30-60mm; diameter 7.5mm x 30-60mm.

- Screw tail length 80mm→85mm. After fixing the brace with locking screws, break the screw tail, the remaining length of the tail is 16mm→18mm.

- Rotation angle 60°.

- Hollow structure, screw head has at least 4 holes for cementing into the vertebral body.

Double threaded wing on screw body, divided into 2 parts:

- + Large thread for easy screw head access.

- + Small lace helps firmly grip the bow leg.

- Compatible with 5.5mm diameter pre-bent vertical braces.

2. CTS 5.5 MIS Set Screw

- Screw threads are designed on the outside, reversed to prevent coming out. Star-shaped locking screw head.



Implants Posterior Pedicle screw system-CTS 5.5 MIS

CTS-5.5 MIS Hollow Pedicle Screw Multi Axial



D	L	Product Code
Φ4.0	25	950074025
Φ4.0	30	950074030
Φ4.0	35	950074035
Φ4.0	40	950074040
Φ4.0	45	950074045
Φ4.5	25	950074525
Φ4.5	30	950074530
Φ4.5	35	950074535
Φ4.5	40	950074540
Φ4.5	45	950074545
Φ4.5	50	950074550
Φ5.0	30	950075030
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Φ5.0	40	950075040
Φ5.0	45	950075045
Φ5.0	50	950075050
Φ5.0	55	950075055
Φ5.5	30	950075530
Φ5.5	35	950075535
Φ5.5	40	950075540
Φ5.5	45	950075545
Φ5.5	50	950075550
Φ5.5	55	950075555
Φ5.5	60	950075560
Φ6.0	30	950076030
Φ6.0	35	950076035
Φ6.0	40	950076040
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Φ6.0	60	950076060

D	L	Product Code
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Φ6.5	55	950076555
Φ6.5	60	950076560
Φ7.0	30	950077030
Φ7.0	35	950077035
Φ7.0	40	950077040
Φ7.0	45	950077045
Φ7.0	50	950077050
Φ7.0	55	950077055
Φ7.0	60	950077060
Φ7.5	30	950077530
Φ7.5	35	950077535
Φ7.5	40	950077540
Φ7.5	45	950077545
Φ7.5	50	950077550
Φ7.5	55	950077555
Φ7.5	60	950077560
Φ7.5	90	950077590

Implants Posterior Pedicle screw system-CTS 5.5 MIS

CTS-5.5 MIS Hollow Pedicle Screw Multi Axial with Set screw



D	L	Product Code
Φ4.0	25	S950074025
Φ4.0	30	S950074030
Φ4.0	35	S950074035
Φ4.0	40	S950074040
Φ4.0	45	S950074045
Φ4.5	25	S950074525
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Φ4.5	35	S950074535
Φ4.5	40	S950074540
Φ4.5	45	S950074545
Φ4.5	50	S950074550
Φ5.0	30	S950075030
Φ5.0	35	S950075035
Φ5.0	40	S950075040
Φ5.0	45	S950075045
Φ5.0	50	S950075050
Φ5.0	55	S950075055
Φ5.5	30	S950075530
Φ5.5	35	S950075535
Φ5.5	40	S950075540
Φ5.5	45	S950075545
Φ5.5	50	S950075550
Φ5.5	55	S950075555
Φ5.5	60	S950075560
Φ6.0	30	S950076030
Φ6.0	35	S950076035
Φ6.0	40	S950076040
Φ6.0	45	S950076045
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Φ6.0	55	S950076055
Φ6.0	60	S950076060

D	L	Product Code
Φ6.5	30	S950076530
Φ6.5	35	S950076535
Φ6.5	40	S950076540
Φ6.5	45	S950076545
Φ6.5	50	S950076550
Φ6.5	55	S950076555
Φ6.5	60	S950076560
Φ7.0	30	S950077030
Φ7.0	35	S950077035
Φ7.0	40	S950077040
Φ7.0	45	S950077045
Φ7.0	50	S950077050
Φ7.0	55	S950077055
Φ7.0	60	S950077060
Φ7.5	30	S950077530
Φ7.5	35	S950077535
Φ7.5	40	S950077540
Φ7.5	45	S950077545
Φ7.5	50	S950077550
Φ7.5	55	S950077555
Φ7.5	60	S950077560
Φ7.5	90	S950077590

CTS-5.5 MIS Hollow Pedicle Screw - Extended Tab Half Restrictive Multi Axial



D	L	Product Code
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Φ4.0	40	959044040
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Φ4.5	50	959044550
Φ5.0	30	959045030
Φ5.0	35	959045035
Φ5.0	40	959045040
Φ5.0	50	959045050
Φ5.0	55	959045055
Φ5.5	30	959045530
Φ5.5	35	959045535
Φ5.5	40	959045540
Φ5.5	45	959045545
Φ5.5	50	959045550
Φ5.5	55	959045555
Φ5.5	60	959045560
Φ6.0	30	959046030
Φ6.0	35	959046035
Φ6.0	40	959046040
Φ6.0	45	959046045
Φ6.0	50	959046050
Φ6.0	55	959046055
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Φ6.5	35	959046535
Φ6.5	40	959046540
Φ6.5	45	959046545
Φ6.5	50	959046550
Φ6.5	55	959046555
Φ6.5	60	959046560

D	L	Product Code
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Φ7.0	40	959047040
Φ7.0	45	959047045
Φ7.0	50	959047050
Φ7.0	55	959047055
Φ7.0	60	959047060
Φ7.5	30	959047530
Φ7.5	35	959047535
Φ7.5	40	959047540
Φ7.5	45	959047545
Φ7.5	50	959047550
Φ7.5	55	959047555
Φ7.5	60	959047560

CTS-5.5 MIS Hollow Pedicle Screw - Extended Tab Half Restrictive Multi Axial with Set screw



D	L	Product Code
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Φ4.0	30	S959044030
Φ4.0	35	S959044035
Φ4.0	40	S959044040
Φ4.0	45	S959044045
Φ4.5	25	S959044525
Φ4.5	30	S959044530
Φ4.5	35	S959044535
Φ4.5	40	S959044540
Φ4.5	45	S959044545
Φ4.5	50	S959044550
Φ5.0	30	S959045030
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Φ6.5	35	S959046535
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Φ6.5	50	S959046550
Φ6.5	55	S959046555
Φ6.5	60	S959046560

D	L	Product Code
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Φ7.0	50	S959047050
Φ7.0	55	S959047055
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Φ7.5	30	S959047530
Φ7.5	35	S959047535
Φ7.5	40	S959047540
Φ7.5	45	S959047545
Φ7.5	50	S959047550
Φ7.5	55	S959047555
Φ7.5	60	S959047560

Minimally Invasive Rod



D	L	Product Code
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Φ5.5	65	950291065
Φ5.5	70	950291070
Φ5.5	75	950291075
Φ5.5	80	950291080
Φ5.5	85	950291085
Φ5.5	90	950291090
Φ5.5	95	950291095
Φ5.5	100	950291100
Φ5.5	105	950291105
Φ5.5	110	950291110
Φ5.5	115	950291115
Φ5.5	120	950291120
Φ5.5	220	950291220
Φ5.5	240	950291240
Φ5.5	250	950291250

Curved Rod



D	L	Product Code	D	L	Product Code
Φ5.5	50	950299050	Φ5.5	115	950299115
Φ5.5	55	950299055	Φ5.5	120	950299120
Φ5.5	60	950299060	Φ5.5	125	950299125
Φ5.5	65	950299065	Φ5.5	130	950299130
Φ5.5	70	950299070	Φ5.5	135	950299135
Φ5.5	75	950299075	Φ5.5	140	950299140
Φ5.5	80	950299080	Φ5.5	145	950299145
Φ5.5	85	950299085	Φ5.5	150	950299150
Φ5.5	90	950299090	Φ5.5	155	950299155
Φ5.5	95	950299095	Φ5.5	160	950299160
Φ5.5	100	950299100	Φ5.5	165	950299165
Φ5.5	105	950299105	Φ5.5	170	950299170
Φ5.5	110	950299110	Φ5.5	180	950099180

Set Screw



D	Product Code
Φ9	950095000











Beark - off Set Screw















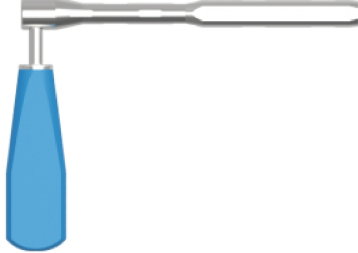


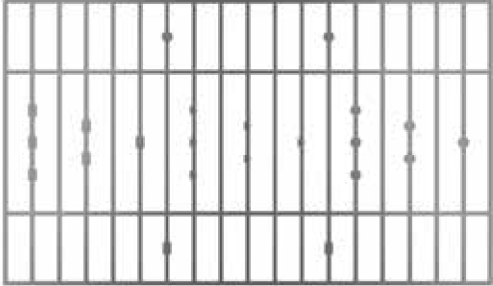

D	Product Code
Φ9	950095001







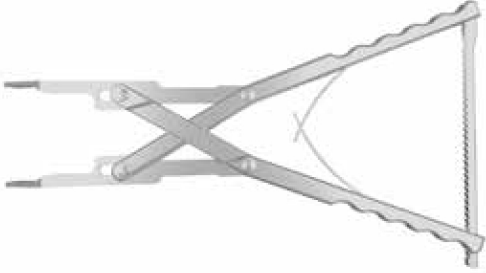


Instruments

Mediox Posterior Pedicle screw system-CTS 5.5 MIS Instrument Set

Product Code	Parts Description	Pieces	Picture
12014010	Guide Wire	8	
12008005	Hammer	1	
12014020	Φ7 Expander Guide	1	
12014030	Φ14 Expander Guide	1	
12014040	Φ15.5 Expander Guide	1	
12001041	Ratchet Quick Handle	1	
12014050	Awl	1	
12014060	Cannulated DrillΦ4.25 (Optional)	0	
12014075	Cannulated Tap Φ5	1	
12014076	Cannulated Tap Φ6	1	

Product Code	Parts Description	Pieces	Picture
12014077	Cannulated Tap $\Phi 7$	1	
12014080	Ball Prob(Optional)	0	
12014090	Multiaxial Screwdriver	2	
12014100	Trocar	4	
12014110	Distractor	1	
12014141	Blade(S)	2	
12014142	Blade(M)	2	
12014143	Blade(L)	2	
12001030	Rod Bender	1	

Product Code	Parts Description	Pieces	Picture
12014120	Rod Inserter	1	
12014130	Rod Compressor	1	
12001038	Pre-tightening Driver	1	
12014150	Anti-torque Wrench	1	
12014160	Tab-breaker	1	
12014170	Anti-break off Wrench	1	
12014180	X-grid	1	
12014180	Setscrew Driver	1	

Product Code	Parts Description	Pieces	Picture
12014180	Probe	1	
12001007	Torque Limit Handle	1	
12001011	Quick T-handle	1	
12015080	length gauge	1	
12001050	Bone Cement Cannula (Optional)	0	
12014210	Sleeve(Optional)	0	
12014220	Compressor(Optional)	0	
12002001	Anti-torque Wrench	1	
12014991	Instrument Case	1	



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