

# EXACTECH | HIP

Operative Technique



**Novation® Crown Cup® and InteGrip®  
Acetabular Systems**

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## PRE-OPERATIVE PLANNING

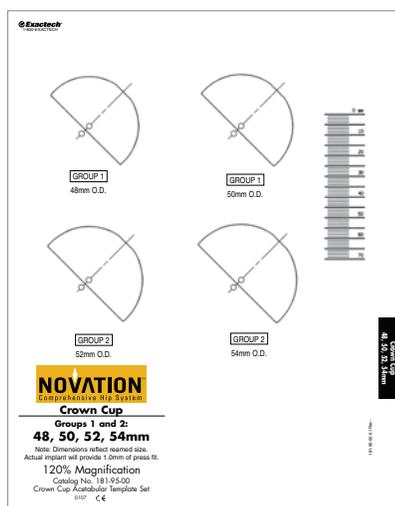
### TEMPLATING

Accurate pre-operative planning and acetabular templating are essential for obtaining a successful outcome. Estimate the acetabular size utilizing the Novation Crown Cup® hip templates along with the appropriate femoral templates in the A/P view. The desired magnification for all imaging should be 120 percent, which corresponds to the templates provided for the Novation Crown Cup system.

For the A/P view, the patient is placed supine with both extremities placed in 15 degrees of internal rotation to position the head and neck parallel to the coronal plane. The radiograph should be centered on the symphysis pubis and should clearly show the acetabular construct with the endosteal and periosteal contours of the femoral head, neck and proximal femur.

For traditional 'hard-copy' templating, estimate the acetabular component size by placing the overlay templates on the film selecting a size that matches the contour of the patient's acetabulum without the removal of excessive subchondral bone. To ensure a congruent fit, the medial position of the acetabular template should be lateral to the lateral aspect of the teardrop with the inferior part of the cup level with the obturator foramen and the superior position marked by the true superior edge of the acetabulum.

Templating should be done on the affected side, but the contralateral side may also be templated to confirm size. Mark the center of rotation and the expected acetabular component size on the radiograph of the femur.



Please note that the pre-operative template is to be used as a guide only – final size and position of the component should be determined intra-operatively.

**Note:** For digital templating, follow the software manufacturer's instructions for use while following the preceding instructions regarding placement and implant fit.

## INDICATIONS FOR USE

All Exactech Hip Systems are indicated for use in skeletally mature individuals undergoing primary surgery for hip replacement due to osteoarthritis, rheumatoid arthritis, osteonecrosis, post-traumatic degenerative problems of the hip and for treatment of proximal femoral fractures where prosthetic replacement is determined by the surgeon as the preferred treatment. Components of Exactech Hip Systems are also potentially indicated for ankylosing spondylitis, congenital hip dysplasia, revision of failed previous reconstructions where sufficient bone stock is present and to restore mobility resulting from previous fusion.

- Cemented femoral stems and cemented acetabular cups are intended for cemented fixation only.
- Press-fit femoral stems and acetabular cups are intended for press-fit fixation.
- Femoral heads and endoprostheses are intended for use in cemented and press-fit applications.

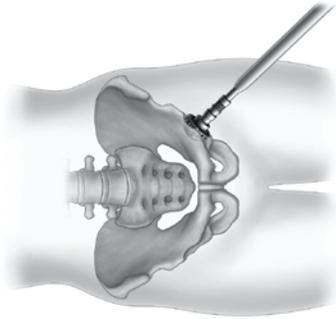
## CONTRAINDICATIONS FOR USE

Use of the Exactech Hip Systems is contraindicated in the following situations:

- Patients with suspected or confirmed systemic infection or a secondary remote infection.
- Patients with inadequate or malformed bone that precludes adequate insertion or fixation of the prosthesis.
- Patients with neuromuscular disorders that do not allow control of the joint.
- The unipolar and bipolar endoprostheses are also contraindicated for use in patients with evidence of degenerative changes in the acetabulum and/or pelvic fractures.
- Patient's age, weight or activity level would cause the surgeon to expect early failure of the system.

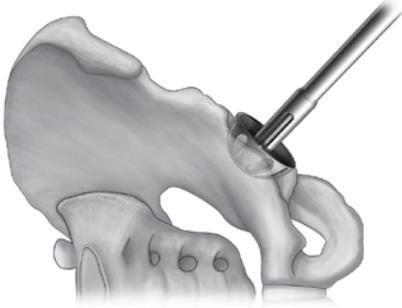
**Note:** For ceramic-on-ceramic articulation, please see additional package insert (700-096-070 Novation Ceramic AHS® System).

# OPERATIVE TECHNIQUE OVERVIEW



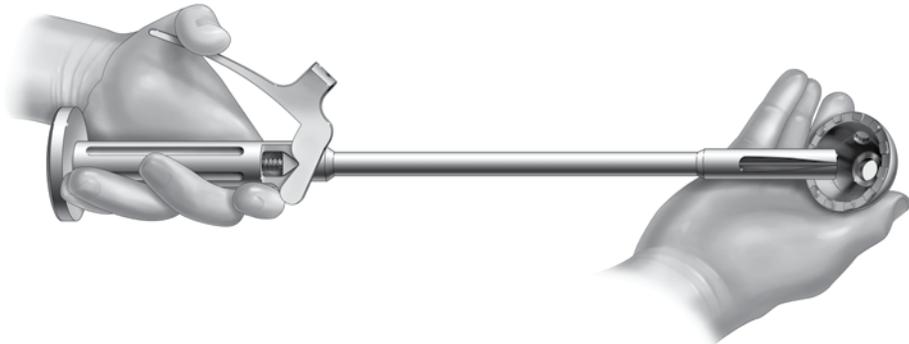
1

**Acetabular Reaming**



2

**Shell Trial Placement**



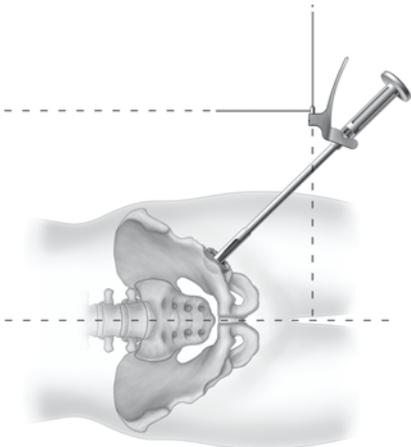
3

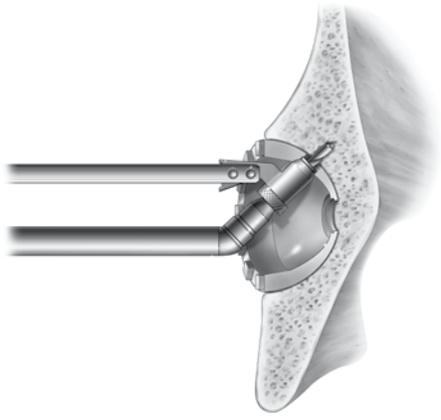
**Assembly of Acetabular Shell**



4

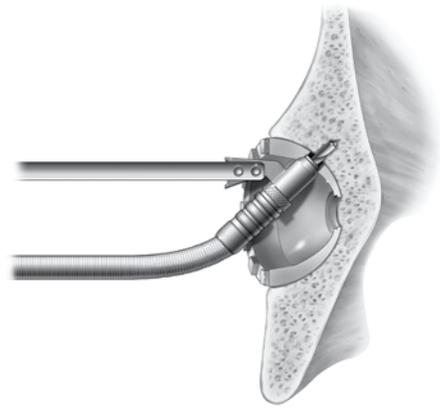
**Shell Impaction**





5

**Screw Preparation by 45-Degree Fixed Angle Drill Shaft (Optional)**



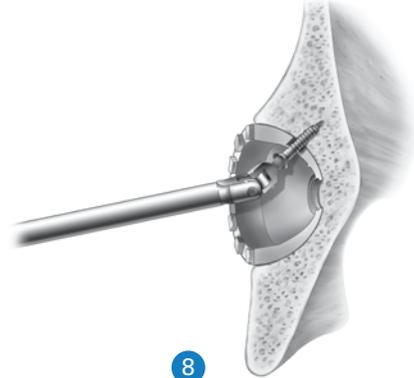
6

**Screw Preparation by Flexible Drill Shaft (Optional)**



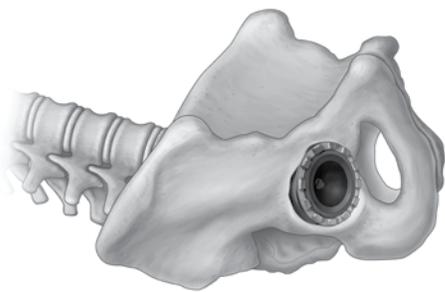
7

**Measurement of Pilot Hole for Screw Selection (Optional)**



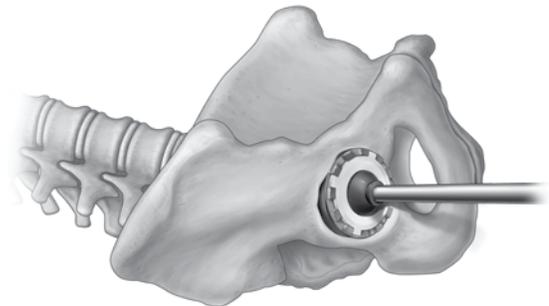
8

**Screw Placement (Optional)**



9

**Trial Reduction**



10

**Liner Insertion and Impaction**

## DETAILED OPERATIVE TECHNIQUE

The entire prosthesis size range should be available at the time of the surgery. Selecting the correct type of prosthesis with the correct size for each specific application is essential to the success of the procedure.

### APPROACH AND EXPOSURE

This operative technique assumes that the patient has been positioned in the lateral decubitus position. However, the Novation Crown Cup instrumentation is compatible with any standard approach necessary to gain exposure of the acetabulum.

### ACETABULAR REAMING

**Step 1:** Assemble the acetabular **Reamer Handle, Straight**, into the power source. Assemble a hemispherical **Acetabular Reamer** 4 to 6mm smaller than the size templated onto the Reamer Handle.

**Step 2:** Circumferential exposure of the acetabulum is essential prior to beginning reaming. Osteophytes and peripheral soft tissue should be removed to assess the acetabular rim.

**Step 3:** Initial reaming may be directed more medially, though subsequent reaming should be done in 45 degrees of abduction and 20 degrees of anteversion (*Figure 1*).

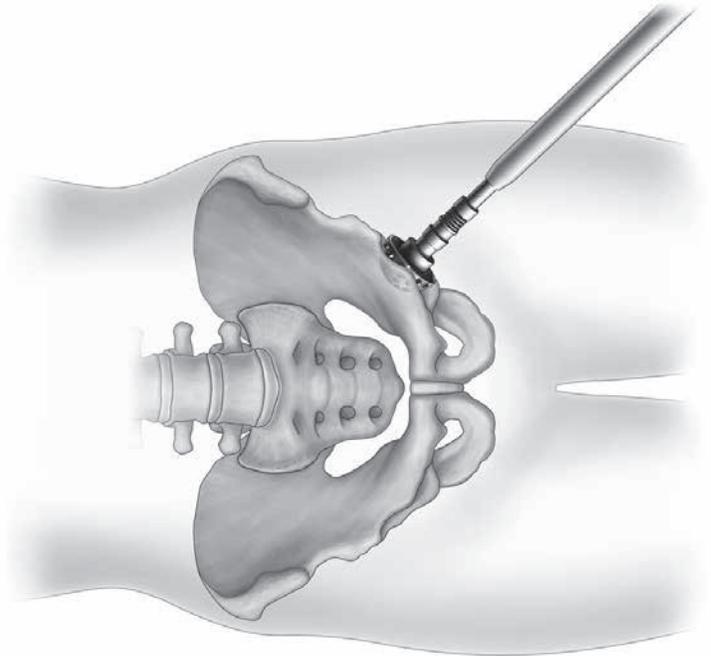
**Step 4:** Continue reaming incrementally until the articular cartilage has been removed and bleeding bone has been exposed along the superior dome anterior and posterior walls. Care should be taken to avoid excessive acetabular thinning and to maintain as much subchondral bone as possible.

**Note:** *Novation Crown Cup Acetabular Shells are available in even millimeter increments (see System Specifications on page 10 for complete offerings).*

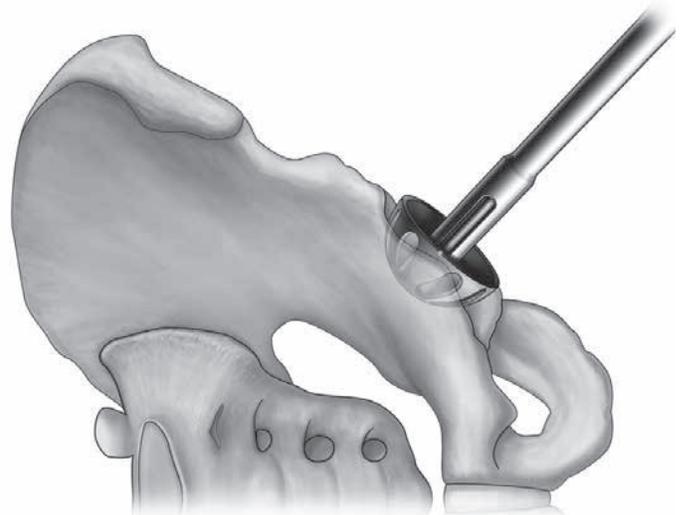
### ACETABULAR TRIALING

**Step 1:** Assemble the appropriate **Acetabular Shell Trial** onto the **Acetabular Shell Impactor, Straight**, and insert into the reamed acetabulum (*Figure 2*). Trialing of the shell will determine reaming accuracy as well as judge the final placement of the acetabular implant relative to the peripheral rim.

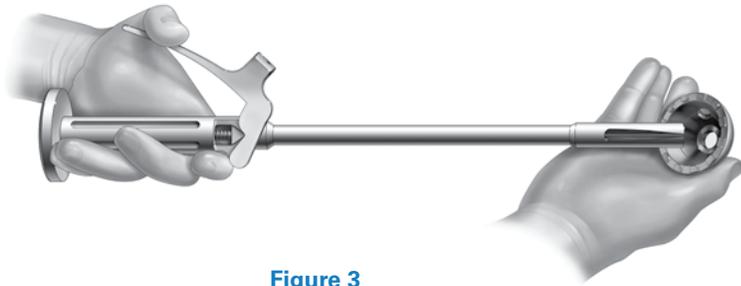
**Step 2:** Check quality of fit and bone apposition and remove the Shell Trial. Actual implant provides 1mm of press fit over the normally sized shell trial.



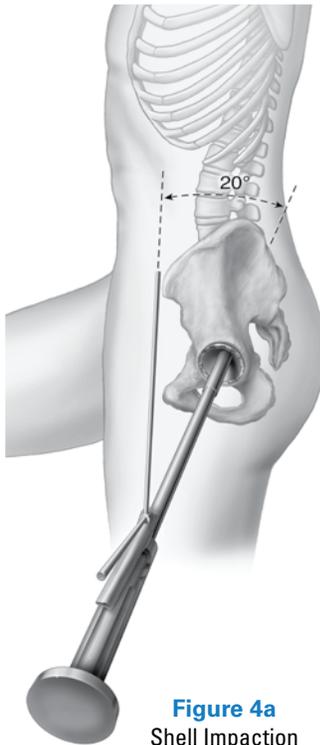
**Figure 1**  
Acetabular Reaming



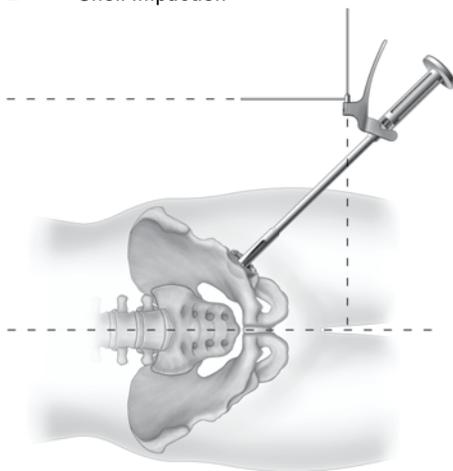
**Figure 2**  
Shell Trial Placement



**Figure 3**  
Assembly of Acetabular Shell



**Figure 4a**  
Shell Impaction



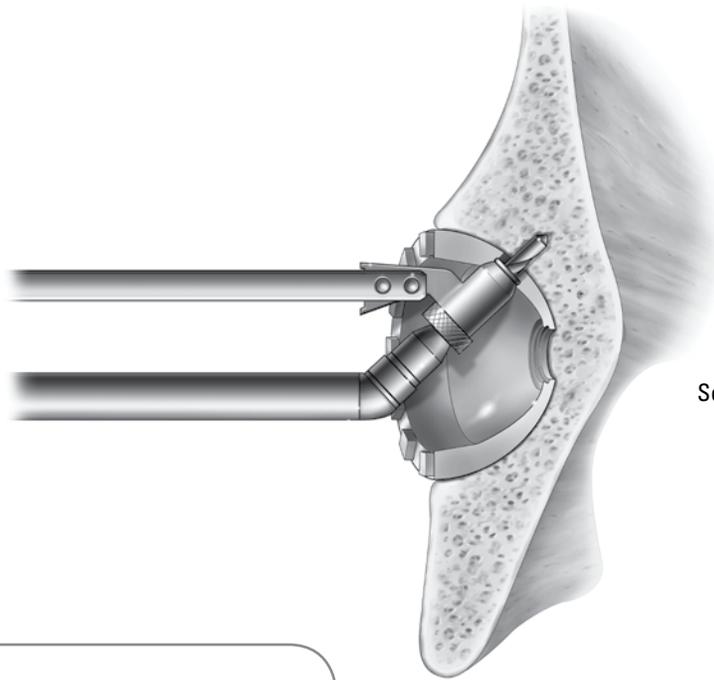
**Figure 4b**  
Shell Impaction

### ACETABULAR SHELL IMPLANTATION

**Step 1:** Select the desired Shell Configuration (Cluster-Hole, No-Hole or Multi-Hole). Choose the appropriately sized Acetabular Shell based on reaming and bone quality. The Novation Crown Cup acetabular shell is oversized a total of 1mm as compared to the Acetabular Reamer and Shell Trial in order to provide an appropriately secure interference fit. Under-reaming is usually not necessary where adequate bone stock is present. For example, if the last Acetabular Reamer used was size 50mm, then a size 50mm Acetabular Shell is typically implanted, providing 1mm of press fit.

**Step 2:** Assemble the appropriately sized shell onto the Shell Impactor by squeezing the handle of the Shell Impactor and inserting the tip into the recessed area at the apex of the shell. Release the handle to engage the Shell Impactor (*Figure 3*). Note the position of the screw holes relative to the lever of the Shell Impactor.

**Step 3:** Assemble the **Shell Impactor Alignment Guide** to the Shell Impactor. Once assembled, rotate the Alignment Guide to the appropriate L/R marking on the Shell Impactor. Introduce the shell into the reamed acetabulum and impact it into place. Once impacted, the horizontal rod of the Alignment Guide should be positioned parallel to the long axis of the body (*Figure 4a*) for a 20-degree anteverted shell position (if patient is in the lateral decubitus position) while the vertical rod should be pointed towards the ceiling, perpendicular to the ground for 45 degrees of shell inclination (*Figure 4b*). Correct alignment for typical anatomy is approximately 45 degrees of inclination and 20 degrees of anteversion as indicated by the Alignment Guide. Seating of the Acetabular Shell at this position is recommended to ensure proper positioning and to decrease the potential for dislocation and impingement. Stability of the bone-implant interface should be checked by applying moderate force to several areas on the rim of the prosthesis. The acetabular implant should be firmly fixed within the acetabulum, with no gaps between the shell and the acetabulum. If the shell rotates within the acetabulum, a larger shell must be selected and the bone preparation process should be repeated by reaming to a larger size.



**Figure 5**  
Screw Preparation by 45-Degree  
Fixed Angle Drill Shaft

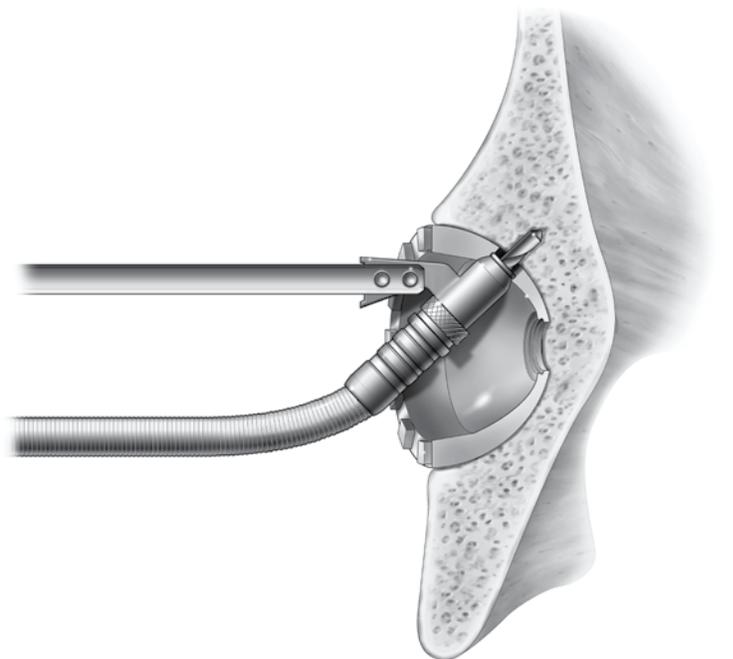
#### ADJUNCTIVE FIXATION (OPTIONAL)

**Step 1:** If adjunctive fixation is required, the Cluster Hole and Multi-Hole Shell configurations offer dome holes that accept **6.5mm Bone Screws**. Also, Multi-Hole Shells, size 56mm and greater, offer peripheral rim holes that accept **4.5mm Peripheral Rim Screws**. The No-Hole Shell is intended as press-fit only, offering no opportunity for adjunctive fixation.

If 6.5mm Bone Screws are to be used, select either a 3.2mm or 4.5mm **Drill Bit** and insert it into the **45-Degree Fixed Angle Drill Shaft** or the **Flexible Drill Shaft, Bayonet Connection** (Figures 5 and 6). If 4.5mm Peripheral Rim Screws are to be used, select the 3.2mm Drill Bit.

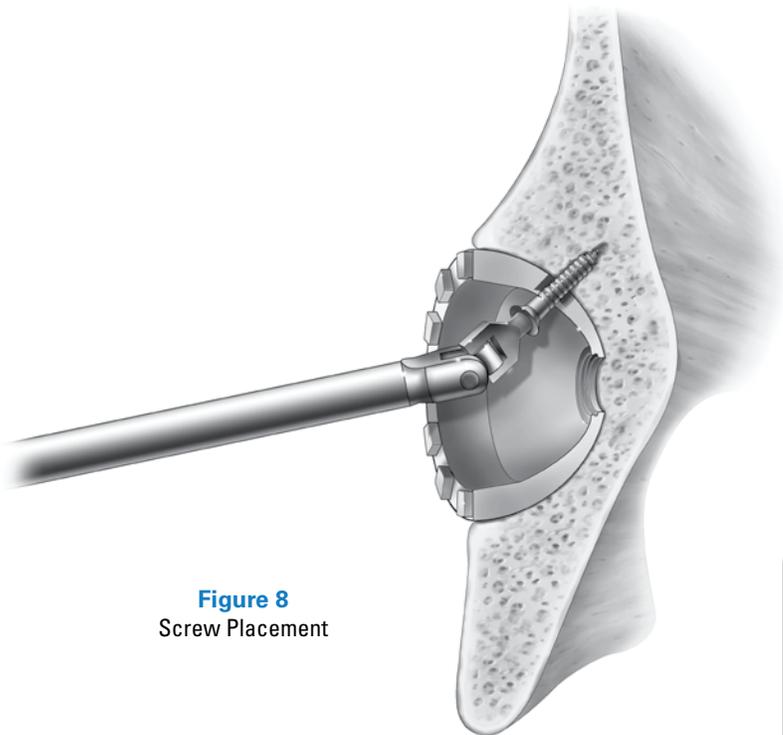
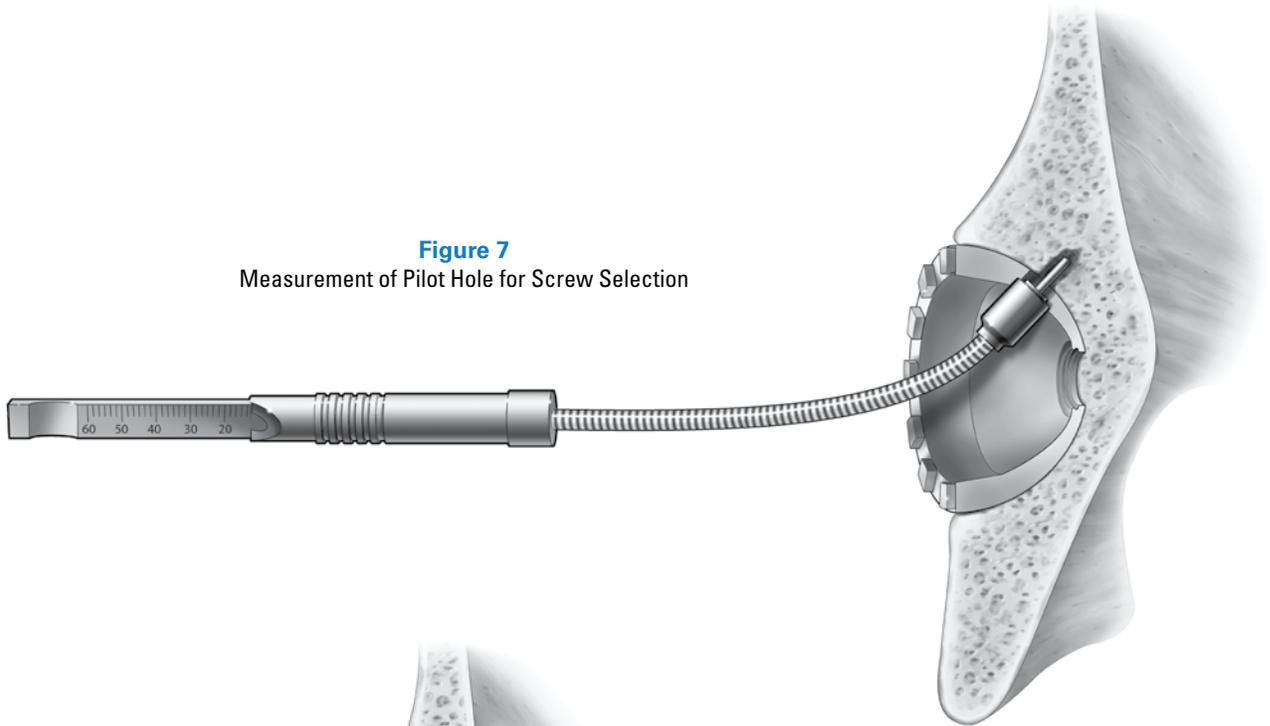
**Note:** When positioning the Acetabular Shell and screw fixation holes, keep in mind that the best quality bone for fixation screw holes is the superior, medial (weight bearing) region of the acetabulum. Due to intrapelvic vascularity, screw placement in the medial aspect of the acetabulum must be carefully considered.

**Step 2:** If a **3.2mm Drill, Bayonet Connection**, is used, the **Drill Guide Sleeve, 3.2mm ID**, must first be screwed into the Adjustable Drill Guide thereby changing the Adjustable Drill Guide from the standard 4.5mm to a smaller 3.2mm. Conversely, when a **4.5mm Drill, Bayonet Connection, or 40mm**, is used, it should be used without the Drill Guide Sleeve, 3.2mm ID. Drill to the appropriate depth pilot hole using the Adjustable Drill Guide for each screw placed. Be certain that the Adjustable Drill Guide is fully seated in the screw hole before drilling.



**Figure 6**  
Screw Preparation by Flexible Drill Shaft

**Figure 7**  
Measurement of Pilot Hole for Screw Selection



**Figure 8**  
Screw Placement

**Step 3:** Determine screw length by inserting the **Flexible Depth Gauge** and sliding the barrel down into the screw hole (*Figure 7*).

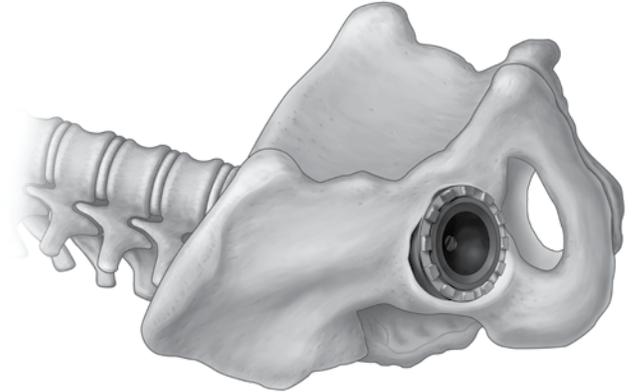
**Step 4:** Determine the screw length by reviewing the depth indicator on the shaft of the Flexible Depth Gauge. Assemble the **Ratcheting Driver Handle** to either the **3.5mm Universal Screwdriver** (for 6.5mm Bone Screws) or the **2.5mm Screwdriver Bayonet Connection** (for 4.5mm Peripheral Rim Screws). Using the **Screw Holding Forceps** to hold the screw, insert the appropriate Bone Screw taking care to fully seat the screw (*Figure 8*). The acetabular shell holes allow +/- 11 degrees of screw angulation for proper seating of the screw. Failure to seat the screw could result in impingement with the locking mechanism of the mating acetabular liner. If extremely hard bone is encountered, a **6.5mm Bone Tap, Bayonet Connection**, may be used after drilling to prepare for a 6.5mm Bone Screw.

### LINER TRIALING

**Step 1:** Use of an acetabular **Liner Trial** is recommended prior to insertion of the definitive liner into the Acetabular Shell. Select the appropriately sized Liner Trial in the desired liner configuration according to the acetabular shell inserted (*Table 1*).

**Step 2:** Ensure that the inner diameter of the acetabular shell and all mating surfaces are clear from soft tissue and debris before placing the Liner Trial.

**Step 3:** Place the Liner Trial into the Acetabular Shell. The Liner Trial should remain in place until after trial reductions have been performed (*Figure 9*).

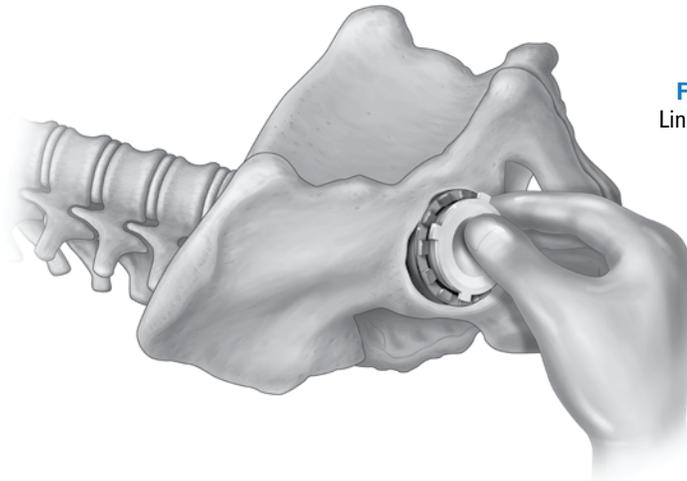


**Figure 9**  
Trial Reduction

TABLE 1 SHELL/LINER GROUPINGS

Acetabular Shell Groups				Standard Liner <b>LARGEST</b> ID Options (mm)				
Size	No-Hole	Cluster-Hole	Multi-Hole	Liner Grouping	Neutral	Lipped	+5mm Lateralized	10-Degree Face Changing, +5mm Lateralized
40mm 42mm	N/A	Group 00 (Orange)	N/A	Group 00 (Orange)	22	22	N/A	N/A
44mm 46mm	N/A	Group 0 (Yellow)	N/A	Group 0 (Yellow)	28	28	N/A	N/A
48mm 50mm	Group 1 (Brown)	Group 1 (Brown)	Group 1 (Brown)	Group 1 (Brown)	32	32	32	32
52mm 54mm	Group 2 (Blue)	Group 2 (Blue)	Group 2 (Blue)	Group 2 (Blue)	36	36	36	36
56mm 58mm	Group 3 (Gray)	Group 3 (Gray)	Group 2 (Blue)	Group 3 (Gray)	40	40	40	40
60mm 62mm	Group 4 (Purple)	Group 4 (Purple)	Group 3 (Gray)	Group 4 (Purple)	40	40	40	40
64mm 66mm 68mm	Group 5 (Green)	Group 5 (Green)	Group 4 (Purple)	Group 5 (Green)	40	40	40	40

**Note:** Rim fixation is offered in sizes 56-68mm Multi-Hole shell only. No other shells offer Peripheral Rim Screw options.



**Figure 10**  
Liner Insertion

#### LINER INSERTION

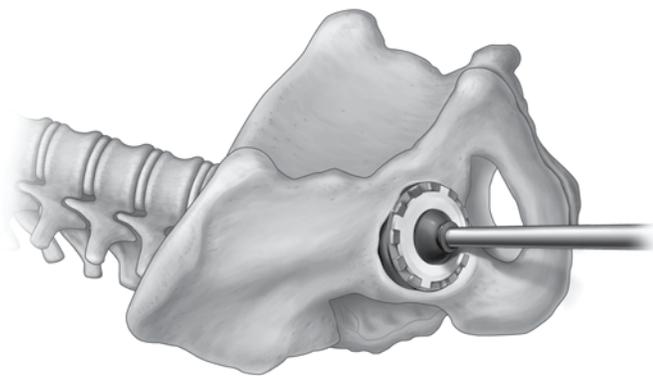
**Step 1:** Remove the Liner Trial using the **Novation Liner Trial Removal T-Handle**. Place the T-Handle into the central slot of the Liner Trial, rotate approximately 90 degrees and then pull on the T-Handle to remove the Liner Trial. Ensure that the internal taper of the Acetabular Shell is clear from soft tissue and debris.

**Step 2:** Select the appropriately sized liner in the desired configuration and gently insert by hand, taking care to ensure that the tabs of the liner enter the slots between the crowns on the rim of the Acetabular Shell (*Figure 10*).

**Step 3:** Assemble the appropriate diameter **Novation Liner Driver Head** on the end of the **Liner Driver Handle**. With a mallet, strike the driving platform of the Liner Driver with one sharp blow (*Figure 11*). Once seated, the top surface of the liner will rest slightly above the level of the Acetabular Shell crowns and be a uniform height around the circumference of the implant construct.

#### POST-OPERATIVE CARE

Regular, long-term post-operative follow-up should be undertaken to detect early signs of component wear and loosening, and to consider the course of action to be taken if such events occur. Extreme care in patient handling (e.g., moving patient, placing on bedpans, changing clothes, etc.) immediately after surgery is necessary. A continuing periodic follow-up is recommended. Periodic X-rays should be taken to detect evidence of positional changes, loosening, bone loss and/or device fracture. All patients should be instructed on the limitations of the prosthesis and the possibility of subsequent surgery. The patient should be warned against unassisted activity, particularly use of toilet facilities and other activities requiring excessive motion of the hip. Patients should be informed that their weight and activity level might affect the longevity of the implant. Patients should be advised to report any pain, decrease in range of motion, swelling, fever or unusual sounds (e.g. clicking or squeaking) as this may indicate positional changes in the implant that could lead to premature failure.



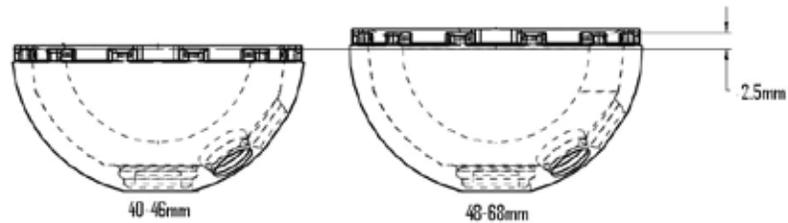
**Figure 11**  
Liner Impaction

## SYSTEM SPECIFICATIONS

The Novation Crown Cup Acetabular Shells incorporate a 1mm press fit into the sizing of the implants. An example of the amount of press fit is shown in the following illustration.



One design feature to note is that the Crown Cup geometry for sizes 40-46mm differs from the standard Crown Cup sizes 48-68mm as depicted below.



## INTEGRIP ACETABULAR SHELL CONFIGURATIONS

Size	Group	Cluster Hole Crown Cup w/ InteGrip	Multi-Hole InteGrip
48mm	1 (Brown)	186-01-48	186-03-48
50mm		186-01-50	186-03-50
52mm	2 (Blue)	186-01-52	186-03-52
54mm		186-01-54	186-03-54
56mm	3 (Gray)	186-01-56	186-03-56
58mm		186-01-58	186-03-58
60mm	4 (Purple)	186-01-60	186-03-60
62mm		186-01-62	186-03-62
64mm	5 (Green)	186-01-64	186-03-64
66mm		186-01-66	186-03-66
68mm		186-01-68	186-03-68

## EXACTECH BONE SCREWS

Length (mm)	4.5mm Peripheral Rim Screws	6.5mm Bone Screws (Full Radius Tip)	Alteon® 6.5mm Bone Screws
15	N/A	120-65-15	180-65-15
20	N/A	120-65-20	180-65-20
25	SC45-25	120-65-25	180-65-25
30	SC45-30	120-65-30	180-65-30
35	SC45-35	120-65-35	180-65-35
40	SC45-40	120-65-40	180-65-40
45	SC45-45	120-65-45	180-65-45
50	SC45-50	120-65-50	180-65-50
55	SC45-55	120-65-55	180-65-55
60	SC45-60	120-65-60	180-65-60
65	SC45-65	N/A	N/A
70	SC45-70	120-65-70	180-65-70
80	N/A	N/A	180-65-80

Note: Crown Cup with InteGrip and Multi-Hole InteGrip have the same system specifications as the Crown Cup with Plasma Spray.

## NOVATION ACETABULAR SHELL CONFIGURATIONS

Item Number				Item Number	
Group	No-Hole	Cluster-Hole	Size	Group	Multi-Hole
00 (Orange)	N/A	180-01-40	40mm	00 (Orange)	N/A
	N/A	180-01-42	42mm		N/A
0 (Yellow)	N/A	180-01-44	44mm	0 (Yellow)	N/A
	N/A	180-01-46	46mm		N/A
1 (Brown)	180-00-48	180-01-48	48mm	1 (Brown)	180-02-48
	180-00-50	180-01-50	50mm		180-02-50
2 (Blue)	180-00-52	180-01-52	52mm	2 (Blue)	180-02-52
	180-00-54	180-01-54	54mm		180-02-54
3 (Gray)	180-00-56	180-01-56	56mm		180-03-56*
	180-00-58	180-01-58	58mm		180-03-58*
4 (Purple)	180-00-60	180-01-60	60mm	3 (Gray)	180-03-60*
	180-00-62	180-01-62	62mm		180-03-62*
5 (Green)	180-00-64	180-01-64	64mm	4 (Purple)	180-03-64*
	180-00-66	180-01-66	66mm		180-03-66*
	180-00-68	180-01-68	68mm		180-03-68*

\*Multi-Hole Shells, sizes 56-68mm, have Peripheral Rim Screw holes for additional fixation.

## NOVATION ACETABULAR SHELL CONFIGURATIONS



No-Hole Shell



Cluster-Hole Shell

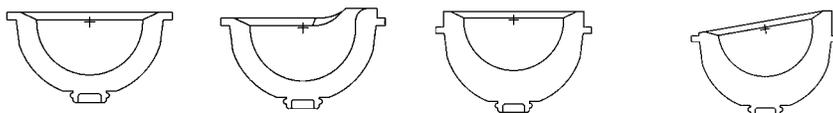


Multi-Hole Shell (without Rim Fixation options, sizes 48-54mm)



Multi-Hole Shell (with Rim Fixation options, sizes 56-68mm)

## NOVATION LINER CONFIGURATIONS

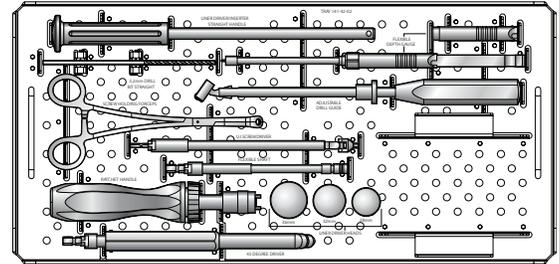


Liner Grouping	Liner Options			
	Neutral	Lipped	+5mm Lateralized	10-Degree Face Changing, +5mm Lateralized
00 (Orange)	130-22-70	132-22-70	N/A	N/A
0 (Yellow)	130-28-50	132-28-50	N/A	N/A
Group 1 (Brown)	130-28-51	132-28-51	136-28-51	138-32-51
	130-32-51	132-32-51	136-32-51	
Group 2 (Blue)	130-28-52	132-28-52	136-32-52 136-36-52	138-36-52
	130-32-52	132-32-52		
	130-36-52	132-36-52		
Group 3 (Gray)	130-32-53	132-32-53	136-32-53 136-36-53 136-40-53	138-36-53 138-40-53
	130-36-53	132-36-53		
	130-40-53	132-40-53		
Group 4 (Purple)	130-32-54	132-32-54	136-32-54 136-36-54 136-40-54	138-36-54 138-40-54
	130-36-54	132-36-54		
	130-40-54	132-40-54		
Group 5 (Green)	130-32-55	132-32-55	136-32-55 136-36-55 136-40-55	138-36-55 138-40-55
	130-36-55	132-36-55		
	130-40-55	132-40-55		

# INSTRUMENT LISTING

**Catalog Number**    **Part Description**  
**141-42-00**            **Novation General Acetabular Instrument Case**

141-42-02            Novation General Acetabular Instrument Case - Top Level



101-05-21            Drill Bit, 3.2 x 32mm



105-02-01            Screw Holding Forceps



131-01-01            Liner Driver Handle



181-03-00            Keyed Liner Driver Handle



141-01-22            Novation Liner Driver Head, 22mm  
 141-01-28            Novation Liner Driver Head, 28mm  
 141-01-32            Novation Liner Driver Head, 32mm  
 141-01-36            Novation Liner Driver Head, 36mm  
 141-01-40            Novation Liner Driver Head, 40mm



T6158                Flexible Depth Gauge  
 181-00-27            Depth Gauge  
 181-00-07            Flexible Depth Gauge



T6160                Flexible Drill Shaft, Bayonet Connection  
 181-00-01            Flexible Drill Shaft, Bayonet Connection  
 181-00-02            Flexible Drill Shaft, Bayonet Connection



T6161                Universal Screwdriver, 3.5mm HEX  
 181-65-02            Universal Screwdriver, 3.5mm HEX



T6162                Ratcheting Driver Handle  
 181-00-08            Ratcheting Driver Handle



T6163                Adjustable Drill Guide  
 181-00-05            Drill Guide



**Catalog Number**    **Part Description**

T6164                    45-Degree Fixed Angle Drill Shaft, Bayonet Connection  
 181-00-00                45-Degree Fixed Angle Drill Shaft, Bayonet Connection



181-00-04                Articulated Driver



181-16-00                Novation Crown Cup Liner Extractor



181-45-01                Straight Screwdriver, 4.5mm



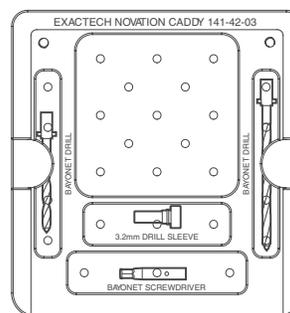
181-65-01                Straight Screwdriver, 6.5mm



181-65-02                Articulating Screwdriver, 6.5mm



**141-42-03                Novation General Acetabular Instrument Case - Caddy**



T20                        Drill, Bayonet Connection, 4.5 x 20mm  
 T22                        Drill, Bayonet Connection, 4.5 x 40mm  
 101-45-20                Sterile Drill, Bayonet Connection, 4.5 x 20mm  
 101-45-30                Sterile Drill, Bayonet Connection, 4.5 x 30mm  
 101-45-40                Sterile Drill, Bayonet Connection, 4.5 x 40mm



T6117                    Screwdriver, Bayonet Connection, 2.5mm  
 T6118                    Screwdriver, Bayonet Connection, 3.5mm



T6119                    Bone Tap, Bayonet Connection, 6.5mm



T6159                    Drill, Bayonet Connection, 3.2 x 20mm  
 101-05-20                Sterile Drill, Bayonet Connection, 3.2 x 20mm  
 101-05-30                Sterile Drill, Bayonet Connection, 3.2 x 30mm  
 101-05-40                Sterile Drill, Bayonet Connection, 3.2 x 40mm



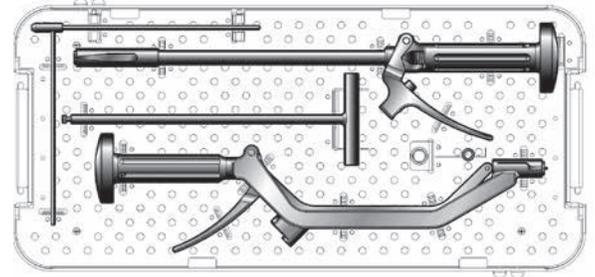
T6200                    Drill Guide Sleeve, 3.2mm ID  
 181-00-06                Drill Guide Sleeve, 3.2mm ID



**Catalog Number**

**Part Description**

**Novation General Acetabular Instrument Case - Bottom Level**



101-31-06

Ratcheting T-Handle



121-01-00

Acetabular Shell Impactor, Straight



121-01-01

Shell Impactor Alignment Guide



121-01-02

Acetabular Shell Impactor, Offset



121-01-04

Liner Driver Head Impactor Adapter



121-02-00

Straight Locking Cup Inserter



131-01-02

Novation Liner Trial Removal T-Handle

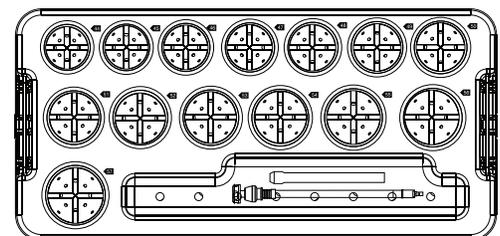


**141-41-00**

**Novation Acetabular Reamer Instrument Case**

141-41-02

**Novation Acetabular Reamer Instrument Case - Top Level**



**Catalog Number    Part Description**

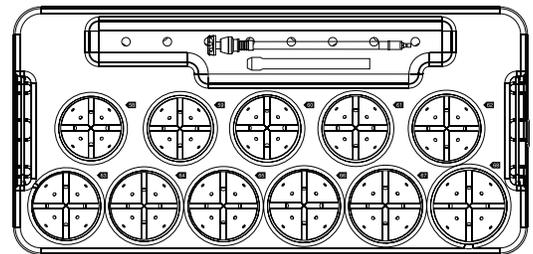
123-00-00            Reamer Handle, Straight



123-00-38  
thru 123-00-68        Acetabular Reamer (1mm increments)



143-41-03            **Novation Acetabular Reamer  
Instrument Case - Middle Level**



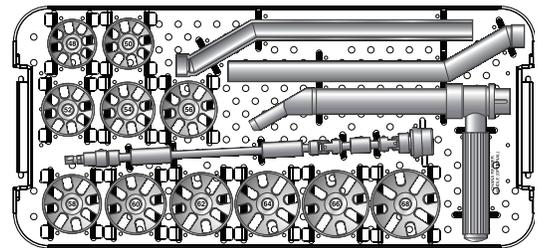
183-00-00            Acetabular Reamer Handle



183-00-38  
thru 183-00-68        Acetabular Reamer (1mm increments)



141-41-01            **Novation Acetabular Reamer  
Instrument Case - Bottom Level**



181-00-40  
thru 181-00-68        Acetabular Shell Trial (2mm increments)



**Catalog Number    Part Description**

121-00-48  
thru 121-00-68      Acetabular Shell Trial (2mm increments)



T6149                      Chana® Reamer Handle, Offset  
183-00-02              Reamer Handle, Offset  
183-00-04              Anti-Torque Handle

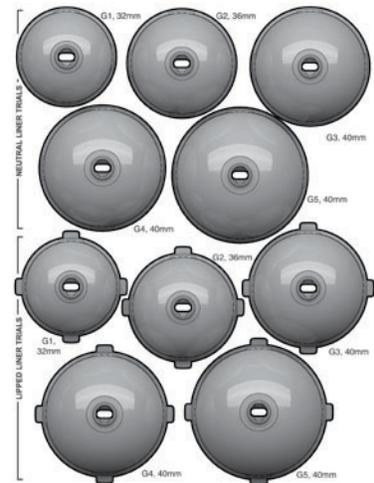


075021-EXA              Reamer Handle, Offset



**143-44-00              Novation Crown Cup Liner Trial Instrument Case**

131-32-11              Novation Crown Cup GXL Neutral Liner Trial, Group 1 32mm ID  
131-36-12              Novation Crown Cup GXL Neutral Liner Trial, Group 2 36mm ID  
131-40-13              Novation Crown Cup GXL Neutral Liner Trial, Group 3 40mm ID  
131-40-14              Novation Crown Cup GXL Neutral Liner Trial, Group 4 40mm ID  
131-40-15              Novation Crown Cup GXL Neutral Liner Trial, Group 5 40mm ID  
133-32-11              Novation Crown Cup GXL Lipped Liner Trial, Group 1 32mm ID  
133-36-12              Novation Crown Cup GXL Lipped Liner Trial, Group 2 36mm ID  
133-40-13              Novation Crown Cup GXL Lipped Liner Trial, Group 3 40mm ID  
133-40-14              Novation Crown Cup GXL Lipped Liner Trial, Group 4 40mm ID  
133-40-15              Novation Crown Cup GXL Lipped Liner Trial, Group 5 40mm ID



**Catalog Number      Part Description**

131-22-00      Liner Trial, Neutral, Group 00 (Orange), 22mm  
 131-28-01      Liner Trial, Neutral, Group 00 (Yellow), 28mm  
 131-28-11      Liner Trial, Neutral, Group 1 (Brown), 28mm  
 131-32-12      Liner Trial, Neutral, Group 2 (Blue), 32mm  
 131-36-13      Liner Trial, Neutral, Group 3 (Gray), 36mm  
 131-36-14      Liner Trial, Neutral, Group 4 (Purple), 36mm  
 131-36-15      Liner Trial, Neutral, Group 5 (Green), 36mm



133-22-00      Liner Trial, Lipped, Group 00 (Orange), 22mm  
 133-28-01      Liner Trial, Lipped, Group 0 (Yellow), 28mm  
 133-28-11      Liner Trial, Lipped, Group 1 (Brown), 28mm  
 133-32-12      Liner Trial, Lipped, Group 2 (Blue), 32mm  
 133-36-13      Liner Trial, Lipped, Group 3 (Gray), 36mm  
 133-36-14      Liner Trial, Lipped, Group 4 (Purple), 36mm  
 133-36-15      Liner Trial, Lipped, Group 5 (Green), 36mm



137-32-11      Liner Trial, +5 Lateralized, Group 1 (Brown), 32mm  
 137-36-12      Liner Trial, +5 Lateralized, Group 2 (Blue), 36mm  
 137-40-13      Liner Trial, +5 Lateralized, Group 3 (Gray), 40mm  
 137-40-14      Liner Trial, +5 Lateralized, Group 4 (Purple), 40mm  
 137-40-15      Liner Trial, +5 Lateralized, Group 5 (Green), 40mm



139-32-11      Liner Trial, 10-Degree Face Changing, +5 Lateralized, Group 1 (Brown), 32mm  
 139-36-12      Liner Trial, 10-Degree Face Changing, +5 Lateralized, Group 2 (Blue), 36mm  
 139-40-13      Liner Trial, 10-Degree Face Changing, +5 Lateralized, Group 3 (Gray), 40mm  
 139-40-14      Liner Trial, 10-Degree Face Changing, +5 Lateralized, Group 4 (Purple), 40mm  
 139-40-15      Liner Trial, 10-Degree Face Changing, +5 Lateralized, Group 5 (Green), 40mm



181-00-11      Novation Crown Cup Impactor Guide, Group 1  
 181-00-12      Novation Crown Cup Impactor Guide, Group 2  
 181-00-13      Novation Crown Cup Impactor Guide, Group 3  
 181-00-14      Novation Crown Cup Impactor Guide, Group 4  
 181-00-15      Novation Crown Cup Impactor Guide, Group 5





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