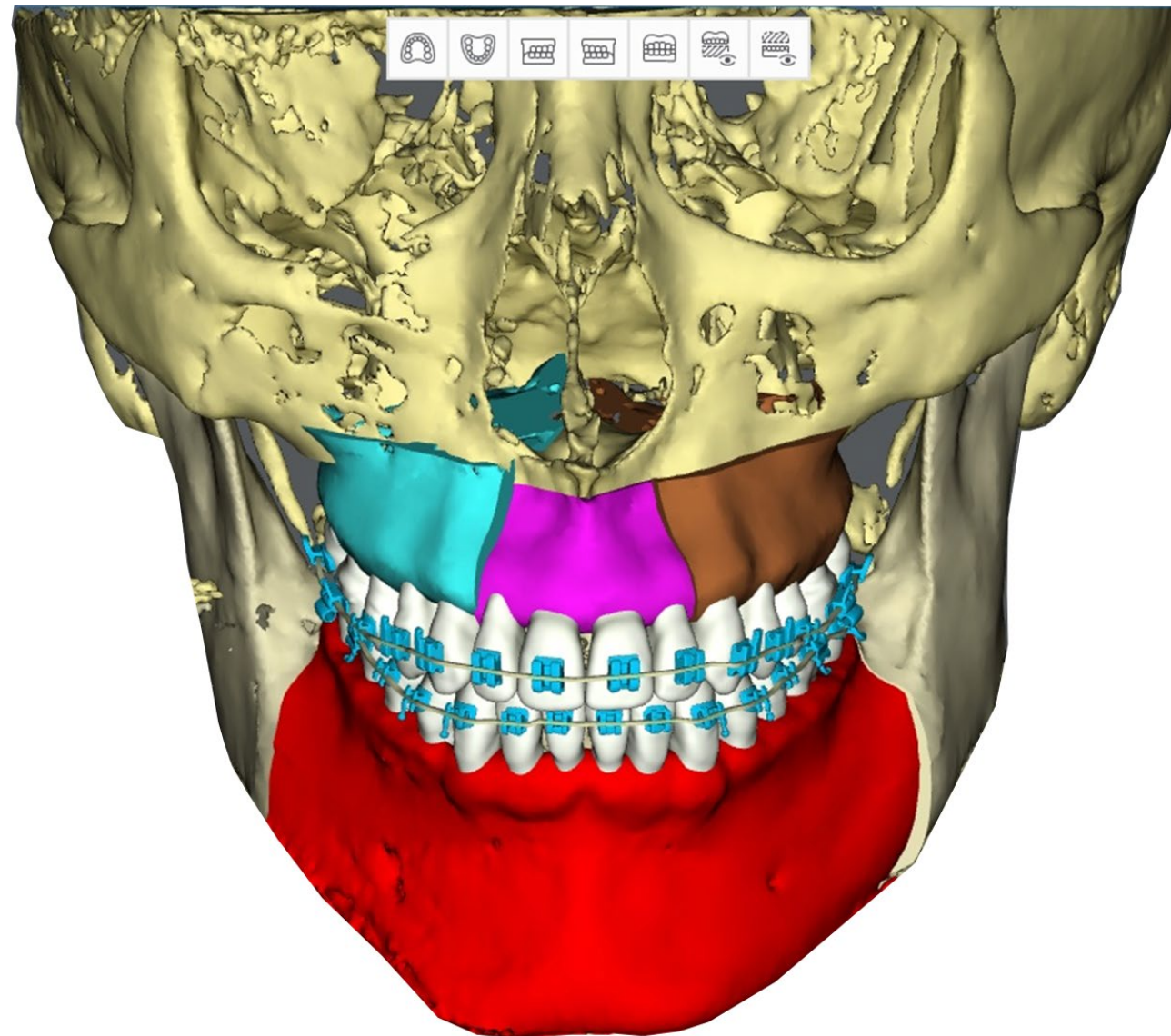


# SureSmile<sup>®</sup> Advanced Surgical Reference Guide

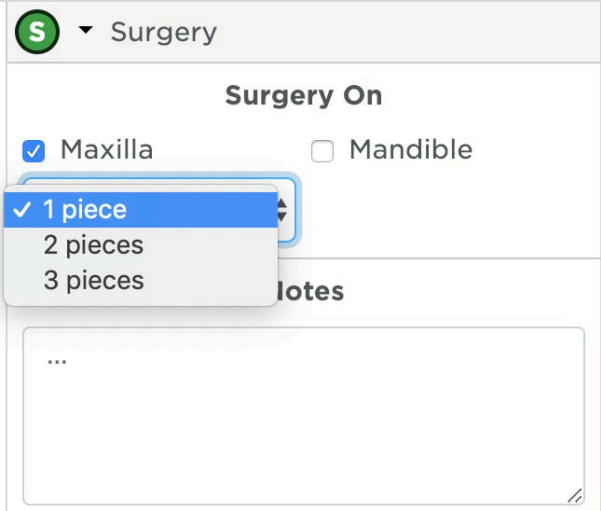


# Surgical Setup Recommendations

- For surgical cases, SureSmile® recommends the Extended case type for the following scenarios:
  - Patient will be rescanned
  - More than one plan needed
  - Treatment will be finished using SureSmile® Aligner design  
(Note: Patient must have a therapeutic model. Aligner design using a diagnostic model is not supported for SureSmile® surgical cases.)
- Extended case type is an additional fee on top of normal case fee  
(Please contact your SureSmile® Representative for pricing)
- Extended case type includes:
  - 5 therapeutic models
  - 5 setups
  - Unlimited wires

# Surgery Tab Activation

## Indicate Maxilla, Mandible, or Both Arches

<b>Maxillary Mandibular</b>	Advancement Setback Midline Correction Asym. Advancement Asym. Set-back	= move forward = move backward = rotation/translation = forward + rotation movement = backward + rotation movement	
<b>Maxillary Impaction</b>	1-Piece	Maxillary anterior impaction Maxillary posterior impaction Maxillary impaction (whole arch)	
	3-Piece	Differential impaction of maxillary anterior and posterior segments	
<b>Maxillary Mandibular Expansion</b>	2-Piece	Maxillary expansion Mandibular expansion	
	3-Piece	Maxillary expansion	
<b>Maxillary Mandibular Cant Correction</b>	2-Piece	Maxillary cant correction Mandibular cant correction	
	3-Piece	Maxillary cant correction	

# Surgery Tab

**Translation [mm]**      **Rotation [deg]**

--	--

L    l (+)    a (+)    o (+)    g (+)    cw (+)    l (+)    L  
r (-)    p (-)    g (-)    o (-)    ccw (-)    r (-)

Translation [mm]      Rotation [deg]

UR7-UR1    UL1-UL7    LR7-LL7

Use Common Rotation Axis    Sync U/L    **Reset**

Use Condyle Axis

Malocclusion Includes Max. / Mand. Alignment Adjustments

Horizontal incl. AP    6.7

Facial Axis Inclination    r. 0.4

Articulation       Show Pre-Surgical  
 Hold Teeth

Upper  
 Surgical Segments    2

Lower  
 Surgical Segments    1

Show Segment Cutters (for se...

Surgery    Wire    Build

**Surgical Segments default to one segment. For multi-piece surgery, indicate the number of surgical segments for the upper and/or lower.**

After you flag the case as surgical by checking Upper or Lower (or both) on the MACROS form, the surgery tab is enabled.

# Surgery Tab

**Translation [mm]**      **Rotation [deg]**

U      U      U      U      U      U      U

l (+)	a (+)	o (+)	g (+)	cw (+)	l (+)
r (-)	p (-)	g (-)	o (-)	ccw (-)	r (-)
Translation [mm]			Rotation [deg]		

**UR7-UR3**   **UR2-UL2**   **UL3-UL7**   **LR7-LL7**

Use Common Rotation Axis   Sync U/L   **Reset**

Use Common Axis

Malocclusion Includes Max. / Mand. Alignment Adjustments

Horizontal incl. AP   **6.7**

Facial Axis Inclination   **r. 0.4**

Articulation    Show Pre-Surgical  
 Hold Teeth

Upper Surgical Segments   **3**

Lower Surgical Segments   **1**

Show Segment Cutters (for selected segment)   **Upper Horizontal Cutter**

**Surgery**   Wire   Bu

A new tab is displayed for each new segment you create.

Click and drag the surgical cut indicators on the diagram to mark the cuts.

# Post-Surgical Setup Prescriptions



SureSmile®

# 3-Piece Maxillary, 1-Piece Mandibular Surgery

Translation [mm]      Rotation [deg]

U			U	
-0.5	0.3	-3.9	-8.6	2.1

l (+) a (+) o (+) g (+) cw (+) l (+)  
r (-) p (-) g (-) o (-) ccw (-) r (-)

Translation [mm]      Rotation [deg]

**UR7-UR3**   **UR2-UL2**   **UL3-UL7**   **LR7-LL7**

Use Common Rotation Axis   Sync U/L   Reset

Use Condyle Axis

Malocclusion Includes Max. / Mand. Alignment Adjustments

Horizontal Incl. AP      Articulation       Show Pre-Surgical  
Facial Axis Inclination: 2.3       Hold Teeth

Upper Surgical Segments: 3

Lower Surgical Segments: 1

Show Segment Cutters (for selected segment)    Show Upper Horizontal Cutter

Tooth Movements   Global Registration   Occlusal Plane   **Surgery**   Wire   Buildup / IPR   IPR Tracking   Measurements   Order

# 1-Piece Surgery: Mandibular Setback

Camera (Object View) Navigation

Translation [mm]			Rotation [deg]		
4.0	-5.1		-1.2	-1.3	3.9

LR7-LL7

Use Common Rotation  Use Condyle Axis

Reset

Malocclusion Includes Max. / Mand. Alignment Adjustments

Horizontal incl. AP 10

Facial Axis Inclination r. 1.7

Articulation  Show Pre-Surgical  Hold Teeth

Upper Surgical Segments

Lower Surgical Segments

Buildup / IPR | IPR Tracking | Measurements | Order

The jaw piece movement values are displayed here.



# 1-Piece Surgery: Mandibular Advancement

Select the *Use Condyle Axis* check box to simulate the natural movement of the lower jaw rotating around the condyle axis.

After the *Use Condyle Axis* option is checked, use the *g(+)/o(-)* rotation option to apply the correction.

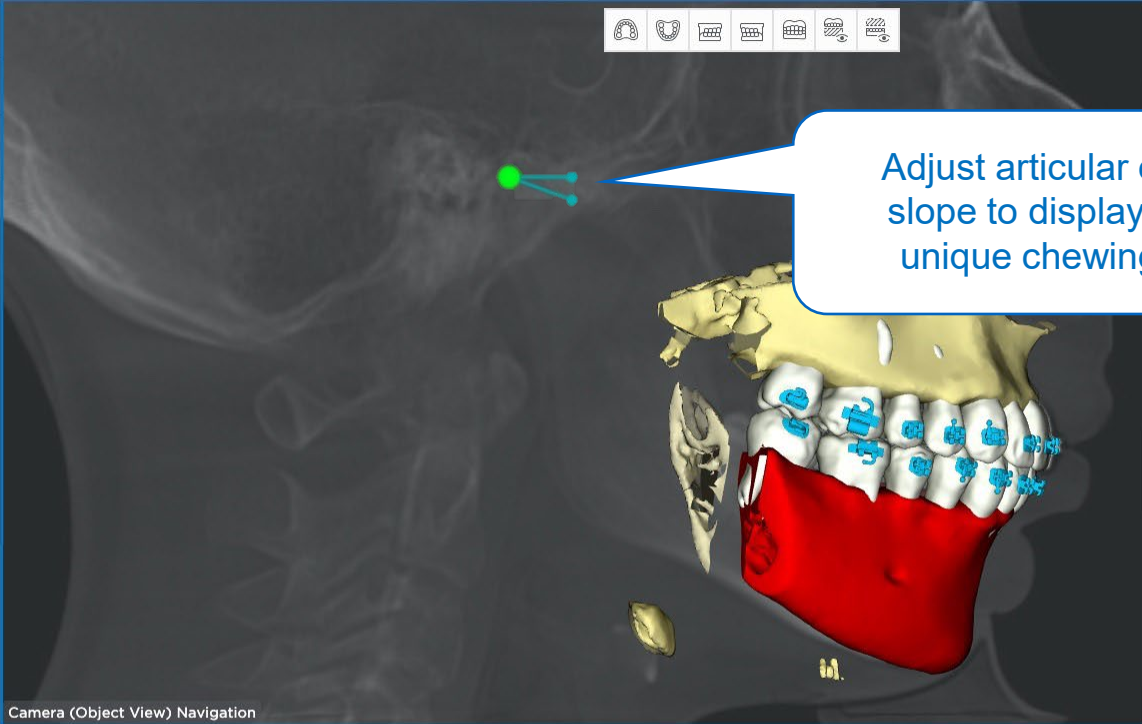
Translation [mm]	Rotation [deg]		
6.4	-1.6	1.4	
(+) o (+)	g (+)	ccw (+)	l (-)
(-) g (-)	o (-)	ccw (-)	r (-)

Use Common Rotation Axis Sync U/L  
 Use Condyle Axis

Horizontal incl. AP 9.8  
Articulation   
Show Pre-Surgical   
Hold Teeth



# Articular Eminence

☆ Guide Tools | Display | View | Compare | Brackets | Tools | Measure | Quality | Image
New : ⌵ ↗



Adjust articular eminence slope to display patient's unique chewing motion

Image Assets

Translation [mm]			Rotation [deg]			
	6.4	-1.6		1.4		
L	l (+)	a (+)	o (+)	g (+)	cw (+)	l (+)
L	r (-)	p (-)	g (-)	o (-)	ccw (-)	r (-)
	Translation [mm]		Rotation [deg]			

Malocclusion Includes Max. / Mand. Alignment Adjustments
 Horizontal incl. AP **9.8**
 Articulation
 Show Pre-Surgical

Facial Axis Inclination **1.0.2**
 Hold Teeth

Upper Surgical Segments	8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lower Surgical Segments	8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Show Segment Cutters (for selected segment)
  Show Upper Horizontal Cutter

**LR7-LL7**

Use Common Rotation Axis Sync U/L Reset

Use Condyle Axis

Tooth Movements | Global Registration | Occlusal Plane | **Surgery** | Wire | Buildup / IPR | IPR Tracking | Measurements | Order

# 1-Piece Le Fort I Anterior Impaction

Select the *Horizontal and Vertical Facial Axis* icon

Skeletal horizontal indicator is parallel to skeleton horizontal plane.

Camera (Patient View) Navigation

Facial Axis Occlusal Plane Slideline Group Navigation Distal Intersections Mesial Intersections Note/TAD Surgical Segments Buildup/Cuts Show Original

Image Assets

Teeth Movements Global Registration Occlusal Plane **Surgery** Wire Buildup / IPR IPR Tracking Measurements Order

# 1-Piece Le Fort I Posterior Impaction

☆ Guide Tools | Display | View | Compare | Brackets | Tools | Measure | Quality | Image

New | Image Assets

Camera (Object View) Navigation

Translation [mm]			Rotation [deg]		
U					U
	1.4	-2.0	-3.1		
l (+)	a (+)	o (+)	g (+)	cw (+)	l (+)
r (-)	p (-)	g (-)	o (-)	ccw (-)	r (-)
Translation [mm]			Rotation [deg]		

**UR7-UL7** **LR7-LL7**

Use Common Rotation Axis   Sync U/L  

Use Condyle Axis

Malocclusion Includes Max. / Mand. Alignment Adjustments

Horizontal incl. AP: 10  
Facial Axis Inclination: r. 1.6

Articulation    Show Pre-Surgical  
 Hold Teeth

Upper Surgical Segments: 1  
Lower Surgical Segments: 1

Show Segment Cutters (for selected segment)    Show Upper Horizontal Cutter

Tooth Movements | Global Registration | Occlusal Plane | **Surgery** | Wire | Buildup / IPR | IPR Tracking | Measurements | Order

# 2-Piece Le Fort I, Maxillary Expansion and Advancement

The screenshot displays a dental software interface for surgical planning. The central 3D model shows a maxillary arch with teeth and a cyan-colored surgical guide. The interface includes a top menu bar with options like 'Guide Tools', 'Display', 'View', 'Compare', 'Brackets', 'Tools', 'Measure', 'Quality', and 'Image'. On the right, there is an 'Image Assets' panel showing two clinical photographs of the patient's maxilla. At the bottom, a control panel for 'UR8-UL8' includes translation and rotation tools, checkboxes for 'Malocclusion Includes Max. / Mandibular', 'Use Common Rotation Axis', and 'Use Condyle Axis', and a 'Reset' button. A 'Surgical Segments' section shows a row of 16 segments, with the first segment highlighted in cyan and a dropdown menu set to '1'. A callout box points to this segment with the text: 'If you are planning the segmental Le Fort I surgery for expansion and advancement of the maxilla, move a single segment first to simulate advancement.'

Translation [mm]      Rotation [deg]

U U

7.0

l (+)   a (+)   o (+)   g (+)   cw (+)   l (+)  
r (-)   p (-)   g (-)   o (-)   ccw (-)   r (-)

Translation [mm]      Rotation [deg]

UR8-UL8

Use Common Rotation Axis   Sync U/L  

Use Condyle Axis

Malocclusion Includes Max. / Mandibular

Upper Surgical Segments: 1

Lower Surgical Segments:

Show Segment Cutters (for selected segment)    Show Upper Horizontal Cutter

Tooth Movements   Global Registration   Occlusal Plane   **Surgery**   Wire   Buildup / IPR   IPR Tracking   Measurements   Order

# 2-Piece Le Fort I, Maxillary Expansion and Advancement

Once the advancement has been applied, change the *Upper Surgical Segments* to '2' then simulate expansion. The new segments will retain the same advancement as the original segment.

Translation [mm]			Rotation [deg]		
U					U
	-0.9	7.0		2.1	
l (+)	a (+)	o (+)	g (+)	ccw (+)	l (+)
r (-)	p (-)	g (-)	o (-)	ccw (-)	r (-)
Translation [mm]			Rotation [deg]		

UR8-UR1 UL1-UL8  
Use Common Rotation Axis Sync U/L  
 Use Condyle Axis

Upper Surgical Segments: 2

Lower Surgical Segments: [ ]

Facial Axis Inclination: 1.19

Malocclusion Includes...  Hold Teeth

Show Segment Cutters (for selected segment)  Show Upper Horizontal Cutter

Bottom Bar: Tooth Movements | Global Registration | Occlusal Plane | **Surgery** | Wire | Buildup / IPR | IPR Tracking | Measurements | Order

# 3-Piece Le Fort I, Posterior Impaction

Guide Tools | Display | View | Compare | Brackets | Tools | Measure | Quality | Image | New

Camera (Object View) Navigation

Translation [mm]			Rotation [deg]		
l (+)	a (+)	o (+)	g (+)	cw (+)	l (+)
r (-)	p (-)	g (-)	o (-)	ccw (-)	r (-)
Translation [mm]			Rotation [deg]		

UR7-UL7

Use Common Rotation Axis Sync U/L  Use Condyle Axis

Malocclusion Includes Max. / Mand. Alignment Adjustments

Upper Surgical Segments: 1

Lower Surgical Segments: [ ]

Show Segment Cutters (for selected segment)  Show Upper Horizontal Cutter

Horizontal in  
Facial Axis l

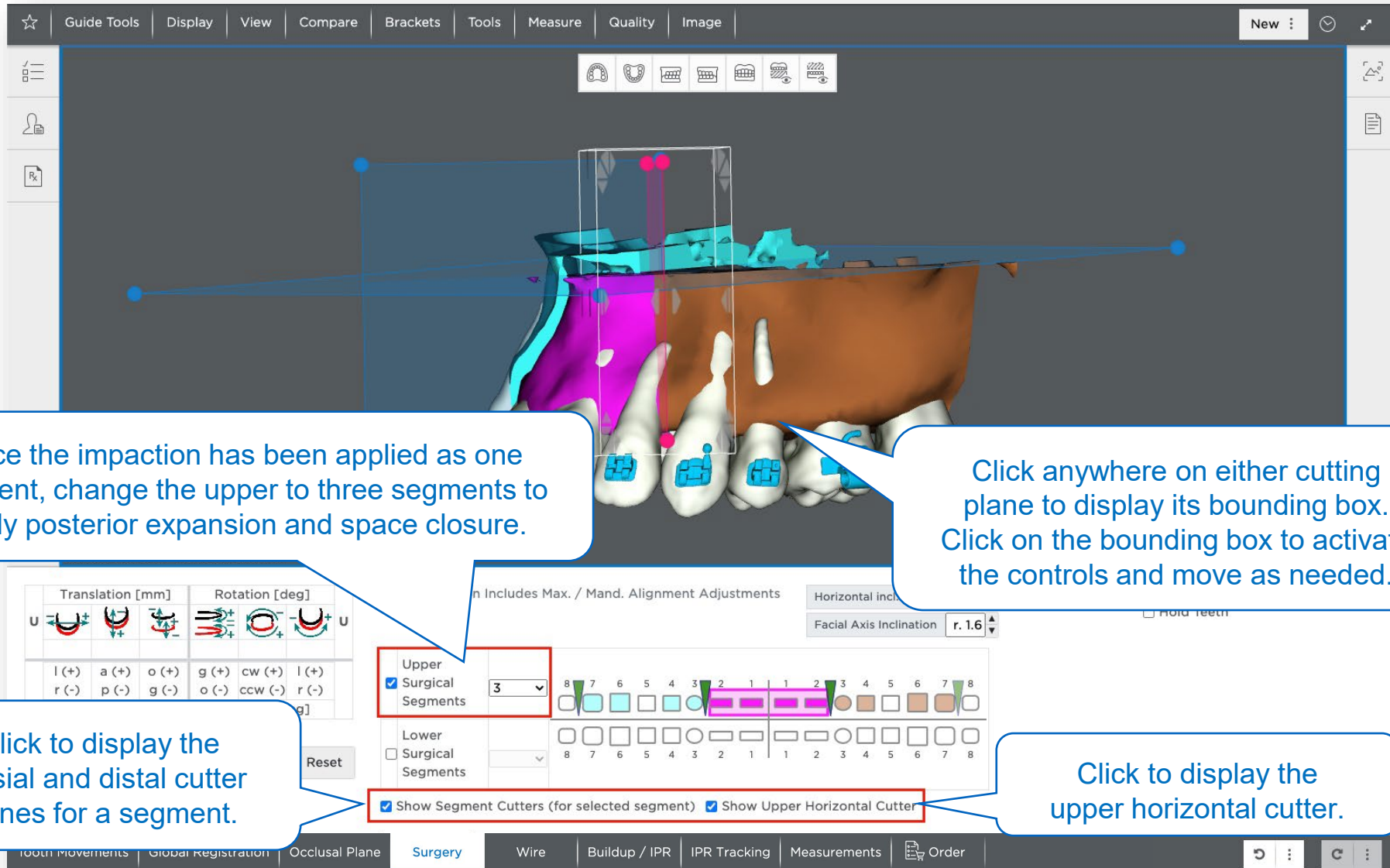
8 7 6 5 4 3 2 1 | 1 2 3 4 5 6 7 8

8 7 6 5 4 3 2 1 | 1 2 3 4 5 6 7 8

Tooth Movements | Global Registration | Occlusal Plane | **Surgery** | Wire | Buildup / IPR | IPR Tracking | Measurements | Order

First apply the posterior maxillary impaction as one segment to auto-rotate the mandible and close the anterior open bite.

# 3-Piece Le Fort I, Posterior Expansion and Space Closure



Once the impaction has been applied as one segment, change the upper to three segments to apply posterior expansion and space closure.

Click anywhere on either cutting plane to display its bounding box. Click on the bounding box to activate the controls and move as needed.

Click to display the mesial and distal cutter planes for a segment.

Click to display the upper horizontal cutter.



# 3-Piece Le Fort I, Posterior Expansion and Space Closure

Expansion of the maxillary posterior region to correct the crossbite.

Retraction of the maxillary anterior region to close the extraction space and reduce the overjet.

Camera (Object View) Navigation

Translation [mm]			Rotation [deg]		
U			U		
	2.0				
l (+)	a (+)	o (+)	g (+)	cw (+)	l (+)
r (-)	p (-)	g (-)	o (-)	ccw (-)	r (-)
Translation [mm]			Rotation [deg]		

UR7-UR3 UR2-UL2 UL3-UL7

Use Common Rotation Axis Sync U/L  Use Condyle Axis  Reset

Malocclusion Includes Max. / Mand. Alignment Adjustments

Horizontal incl. AP 10  
Facial Axis Inclination r. 1.6

Articulation  Show Pre-Surgical  
 Hold Teeth

Upper Surgical Segments 3

Lower Surgical Segments

Show Segment Cutters (for selected segment)  Show Upper Horizontal Cutter

Tooth Movements Global Registration Occlusal Plane **Surgery** Wire Buildup / IPR IPR Tracking Measurements Order

# Pre-Surgical Setup Prescriptions

# Review/Approve the Post-Surgical Setup

Choose one of the following options:

## Begin Pre-Surgical Setup Prescription Next

- ☐ Recommended if you are new to surgical treatment planning in SureSmile®. This option allows you to order a pre-surgery plan so that the Digital Lab technician can make needed adjustments for root divergence and add space for the surgical cuts.

## Begin Pre-Surgical Setup Simulation Next

- ☐ Recommended if you are experienced with surgical treatment planning in SureSmile® and do not need Digital Lab assistance. If you are able to make needed adjustments for root divergence and to add space where the surgical cuts are to be placed, you can order pre-surgery wires directly from the pre-surgery simulation.

## Begin Post-Surgical Wire Order Next

- ☐ NOT recommended for multi-piece surgeries. However, in single-piece surgical cases, when a pre-surgery plan is not needed, you can order wires.

After choosing an option, click **Approve** to complete the review and proceed to the next step.

Approve Setup

Before approving please review your order specifications to the right.

If the results are satisfactory, you may press the Approve button located at the bottom of the page. By approving this order, the product will be marked as finished and any modifications that were made will be applied w/o being reviewed by the Digital Lab.

Begin Pre-Surgical Setup Prescription Next

Begin Pre-Surgical Setup Simulation Next

Begin Post-Surgical Wire Order Next

Remind me later

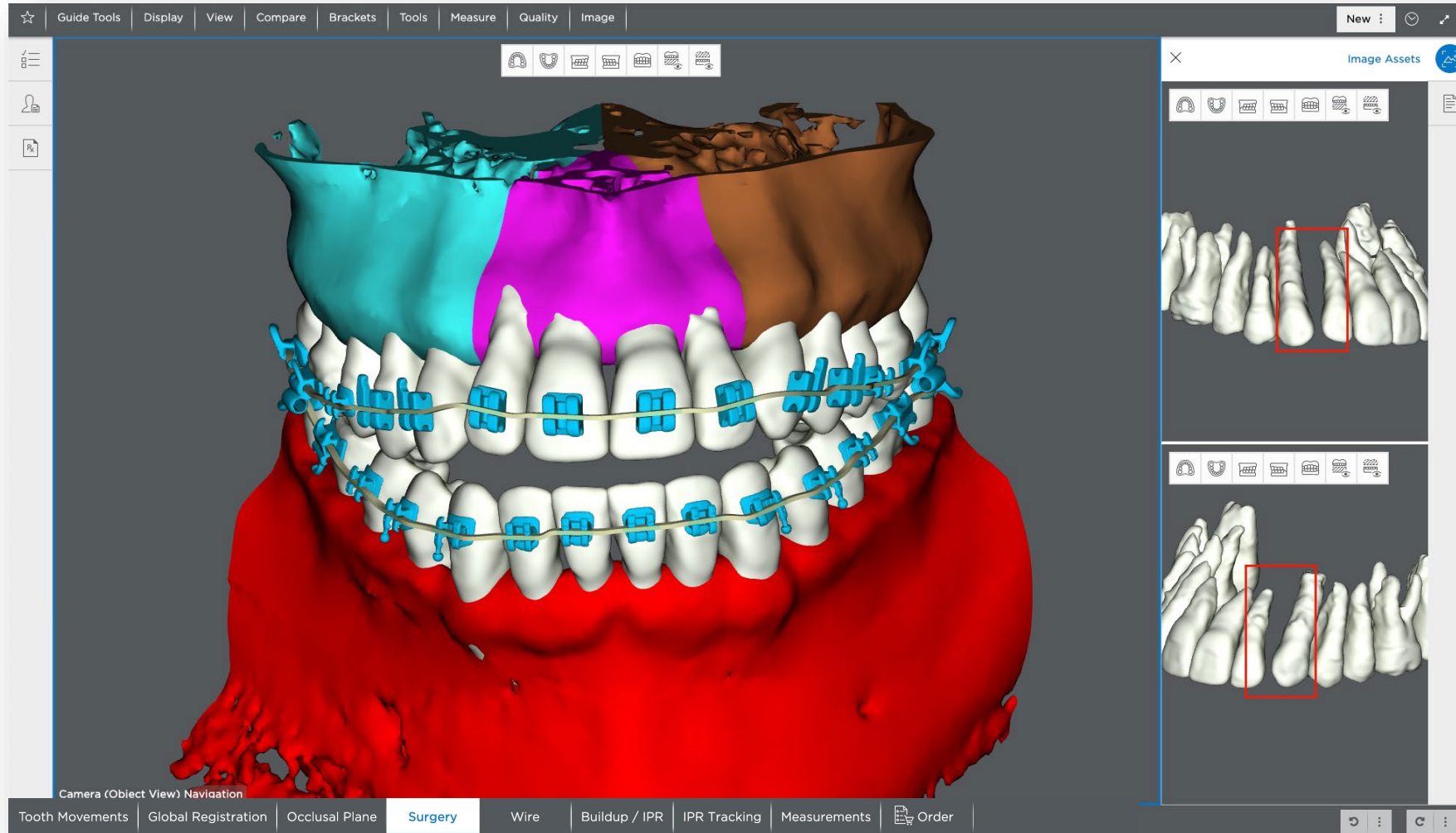
Standard Notes

- Thank you for your 3D simulation (if applicable) and MACROS.
- M-Surgical sim for midline correction
- A-Coordinated arches per sim
- C-Class I ; surgical advancement
- R-Please review angulation changes
- O-Upper. refined EOP per sim

Approve Cancel

# Pre-Surgical Setup Simulation

- Pre-surgical simulation includes changes needed to occur before surgery: space for osteotomy cuts, additional angulation, or rotation to the teeth adjacent to the cut.



# Pre-Surgical Simulation

The screenshot displays a dental simulation software interface. The main view shows a 3D model of a maxilla with brackets and a wire. The model is color-coded: the maxilla is red, the brackets are green, and the wire is yellow. The background is a light blue gradient. The interface includes a top menu bar with options like Guide Tools, Display, View, Compare, Brackets, Tools, Measure, Quality, and Image. A right-hand panel titled 'Image Assets' shows a list of dental models. A callout box points to a 'Show Post-Surgical' checkbox in the bottom right corner of the main view.

Check the *Show Post-Surgical* check box to compare the planned pre-surgical dental movements to the post-surgical setup.

Camera (Object View) Navigation

Translation [mm]			Rotation [deg]		
U					U
	-0.5	0.3	-3.9	-8.6	2.1
l (+)	a (+)	o (+)	g (+)	cw (+)	l (+)
r (-)	p (-)	g (-)	o (-)	ccw (-)	r (-)
Translation [mm]			Rotation [deg]		

UR7-UR3 UR2-UL2 UL3-UL7 LR7-LL7

Use Common Rotation Axis  Sync U/L  Use Condyle Axis

Reset

Malocclusion Includes Max. / Mand. Alignment Adjustments

Horizontal incl. AP 11.9

Facial Axis Inclination r. 2.3

Articulation  Show Post-Surgical

Reset Pre-Surgical

Upper Surgical Segments

Lower Surgical Segments

Show Segment Cutters (for selected segment)  Show Upper Horizontal Cutter

Tooth Movements Global Registration Occlusal Plane **Surgery** Wire Buildup / IPR IPR Tracking Measurements Order

# Pre-Surgical Wire Order

The screenshot displays a dental software interface with a 3D model of a patient's teeth and jaws. The upper jaw is yellow, the lower jaw is red, and the teeth are white with blue brackets. A purple and cyan wire is visible on the upper teeth. The interface includes a top menu bar with options like 'Guide Tools', 'Display', 'View', 'Compare', 'Brackets', 'Tools', 'Measure', 'Quality', and 'Image'. A right-hand panel shows 'Image Assets' with two X-ray images. At the bottom, there are control panels for 'Order Name', 'State Changes', 'Start Reference Model', and 'Simulation'. The 'Simulation' dropdown menu is open, and 'New Pre-Surgical Wire' is highlighted. A callout box with a blue border and white background contains the text: 'From the Order tab, select New Pre-Surgical Wire.' The 'Order' tab is selected in the bottom navigation bar.

From the Order tab, select *New Pre-Surgical Wire*.

Order Name: Simulation 1 (Pre-Surgical)    State Changes: Remove Treatment Simulation    Start Reference Model: Therapeutic Model 2    Simulation: **New Pre-Surgical Wire**    Copy Treatment Simulation    Export Visible Shells     Show Planned Brackets Page    Show DE

Tooth Movements | Global Registration | Occlusal Plane | Surgery | Wire | Buildup / IPR | IPR Tracking | Measurements | **Order**

# Surgical Wire Orders



SureSmile®

# Pre-Surgical Wire Order

The screenshot displays a dental software interface with two side-by-side 3D models of a dental arch. The left model shows a green wire, while the right model shows a yellow wire. Both models have blue brackets attached to the teeth. The interface includes a top menu bar with options like 'Guide Tools', 'Display', 'View', 'Compare', 'Brackets', 'Tools', 'Measure', 'Quality', and 'Image'. A toolbar with various icons is located below the menu. On the left side, there are icons for a list, a person, and a prescription symbol. On the right side, there is a 'New' button and a list icon. At the bottom, there is a control panel with the following sections:

- Order Name:** Wire 1 (Pre-Surgical Sim)
- State Changes:** A red box highlights the 'Submit' button. There is also a 'Remove Wire' button.
- Reference Model:** Therapeutic Model 2
- Wire Order:** Create Copy
- Edit Notes:** A text input field.
- Material Selection:** U: CuNiTi / NiTi .019x.025, L: CuNiTi / NiTi .019x.025
- Export Options:** Export Visible Shells, Show Planned Brackets Page, Show DE

A callout box with a blue border and white background contains the text: "Click Submit to order the Pre-Surgical wire." A blue arrow points from this callout to the 'Submit' button in the control panel.

At the bottom of the interface, there is a navigation bar with the following tabs: Tooth Movements, Global Registration, Wire, IPR Tracking, and Order. The 'Order' tab is highlighted with a shopping cart icon. On the far right, there are navigation icons for back, forward, and search.



# Post-Surgical Wire Order

**Create New Wire**  
Select base model and overrides for new wire

Base Model: Plan 1 (Post-Surgery)

Copy Overrides:  
Upper: - no overrides -  
Lower: - no overrides -

Buttons: Apply Wire Sequence..., Preferences..., Continue..., Cancel

**New** menu items:  
Diagnostic Model \$  
Therapeutic Model \$  
Update Model  
Setup \$  
Treatment Simulation  
**Wire**  
Final Model \$  
Progress Model

Order Name: Wire 1 (Pre-Surgical Sim)  
Start Reference Model: Therapeutic Model 2  
Wire Order: Create Copy  
Cancel Wire Production

U: CuNiTi / NiTi .019x.025  
L: CuNiTi / NiTi .019x.025

Export Visible Shells  
 Show Planned Brackets Page  
Show DE

Bottom navigation: Tooth Movements | Global Registration | Wire | IPR Tracking | Order

Camera (Patient View) Navigation

**To order a Post-Surgery wire, select *Wire* from the *New* menu.**

**For the Copy Overrides options, select *-no overrides-*, as you do not want to copy a Pre-Surgery wire for a Post-Surgery wire.**

**Click *Apply Wire Sequence* to begin a sequence or click *Continue...* for a single wire order.**

# Post-Surgical Wire Order

The screenshot displays a dental software interface with two 3D models of teeth. The left model shows a green wire, and the right model shows a yellow wire. A callout box with a blue border and white background contains the text: "Click Submit to order the Post-Surgical wire." The bottom control panel includes the following sections:

- Order Name:** Wire 2 (Post-Surgical)
- State Changes:** Submit (highlighted with a red box), Remove Wire
- Start Reference Model:** Plan 2 (Pre-Surgery)
- Referenced Scan:** Therapeutic Model 1
- Edit Notes:** [Empty text box]
- Wire Order:** Create Copy
- Base Model:** Plan 1 (Post-Surgery)
- Wire Sequence...**

Additional controls on the right include "Export Visible Shells", "Show Planned Brackets Page", and "Show DE". The bottom navigation bar contains "Tooth Movements", "Global Registration", "Wire", "IPR Tracking", and "Order".

# Learning Resources

- Search the Help Center in SureSmile® for:
  - Online help topics with step-by-step instructions
  - Downloads including forms and reference documents
  - Video demonstrations of software features

To open the Help Center, click the question mark  button and select Help Center.

