

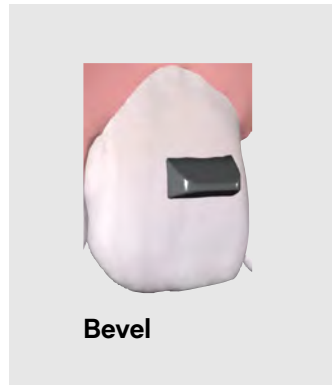
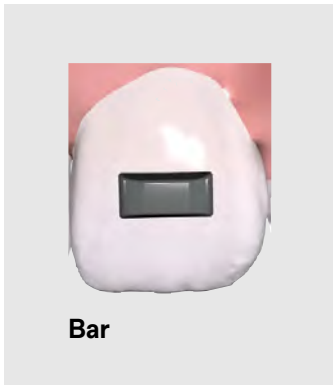


Attachment design strategy

CLARITY™ ALIGNERS

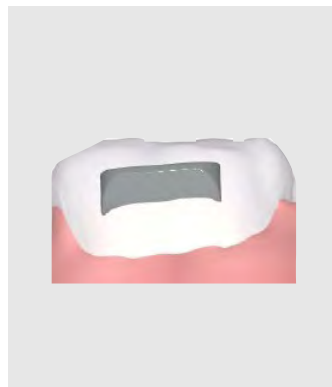
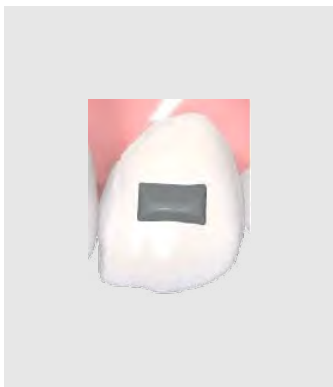


Attachments: Options and default location



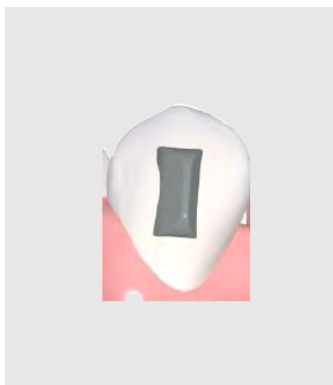
Attachment options

Two shapes, bar and bevel. They differ in that the bevel has a sloped surface which is designed to be used as a “pushing surface”. Both bar and bevel have rounded ends to aid aligner seating when slight misfit occurs. Both are customizable with a wide range of lengths, widths, and depths.



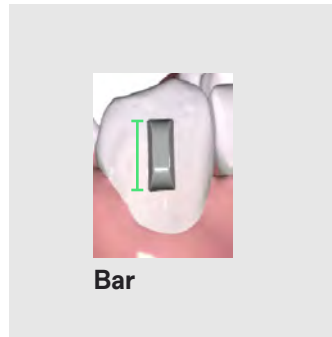
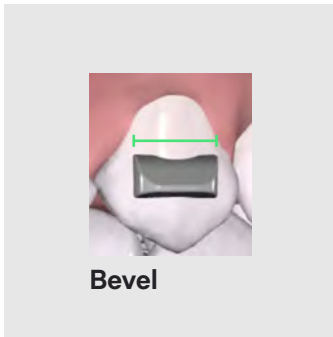
Default location

By default, attachments are centered on labial/buccal surface of the clinical crown in a horizontal or vertical manner.



Attachments:

Default attachment starting stage and sizing

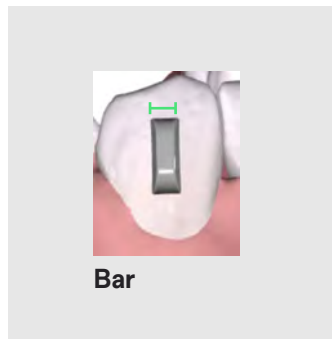
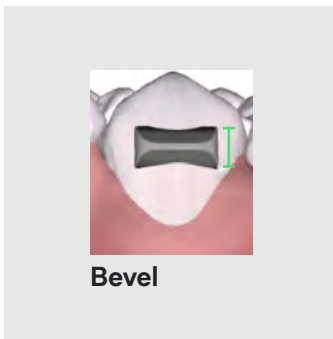


By default

- Attachments will be placed at stage 1
- Attachments will not be removed or changed mid-treatment unless requested
- Deviations from the Solventum defaults can be selected in the prescription

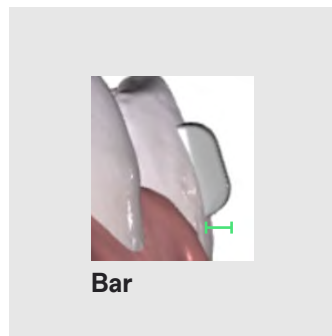
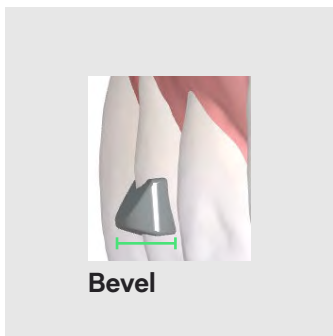
Length (bevel) = 4.0 mm

Length (bar) = 4.0 mm



Width (bevel) = 2.0 mm

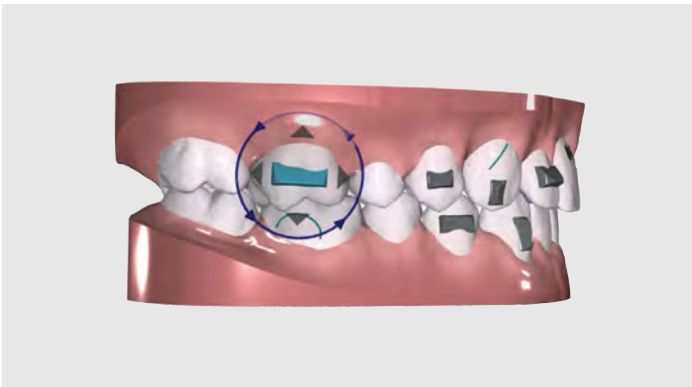
Width (bar) = 1.5 mm



Depth (bevel) = 1.0 mm (rise from the tooth)

Depth (bar) = 1.0 mm (rise from the tooth)

Attachments: Maximum attachment sizes



Max length up to 6.0 mm (bar and bevel)
(limited by tooth size)



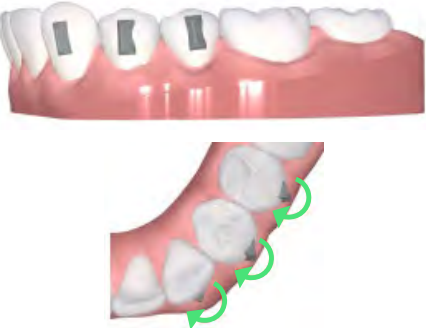




Max width (bevel) = 2.5 mm




Max width (bar) = 2.0 mm

Max depth (bar and bevel) = 1.0 mm
(rise from the tooth)

Customizable in length, width, depth, and position

Attach	
	—● “Shape” bevel or bar
Length — 6 +	} Dimensions
Width — 2.5 +	
Depth — 1 +	
	—● Rotate and translate
	—● Intrude and extrude
	—● Adjust bevel angle

Movement	Location	Type	Threshold	Strategy	Design
Extrusion	<ul style="list-style-type: none"> Incisors Canines Premolars Molars 	Horizontal bevel towards the gingiva	Extrusion greater than 0.2 mm for incisors; greater than 0.5 mm for canines, premolars, and molars	Designed to provide a “pushing surface” for extrusion.	
Intrusion	<ul style="list-style-type: none"> Teeth adjacent to the intruding tooth or segment of teeth 	Horizontal bevel towards the gingiva	Intrusion greater than 0.5 mm	Designed to provide retention on adjacent teeth to support intrusion.	
Rotation	<ul style="list-style-type: none"> Canines Premolars Molars 	Vertical bevel facing toward the rotational force (see image)	Rotation greater than 10°	Designed to provide a “pushing surface” to derotate teeth.	
Tipping (mesial-distal)	<ul style="list-style-type: none"> Incisors Canines Premolars Molars 	Vertical bar	Tipping movement greater than 7°	Designed to provide tray anchorage for controlled tipping.	
Root torque (buccal)	<ul style="list-style-type: none"> Incisors Canines Premolars Molars 	Horizontal bevel towards the gingiva	Root movements resulting in greater than 25° change in inclination	Designed to support root movement and provide tray retention.	
Root torque (lingual)	<ul style="list-style-type: none"> Incisors Canines Premolar Molars 	Horizontal bevel towards incisal edge	Inclination change greater than 25°	Designed to support crown movement and provide tray retention.	
Crown torque (buccal-lingual)	<ul style="list-style-type: none"> Incisors Canines Premolars Molars 	Horizontal bevel towards the gingiva	Inclination change greater than 25°	Designed to support crown movement.	



Movement	Location	Type	Threshold	Strategy	Design
Translation (mesial-distal)	<ul style="list-style-type: none"> Incisors Canines Premolars Molars 	Vertical bar	Translation greater than 1 mm	Designed to keep roots upright while translating crowns.	
Space closure (mesial-distal)	<ul style="list-style-type: none"> Incisors Canines Premolars Molars 	Vertical bar	Space closure (mesial-distal) greater than 1 mm	Designed to resist tipping during space closure.	
Maxillary expansion	<ul style="list-style-type: none"> Canines Premolars Molars 	Horizontal bevel towards the gingiva	Expansion requiring translation greater than 1 mm	Designed to maintain buccal root torque.	

Default hierarchy of attachments based on tooth movements

Priority Movement

①	Extrusion
②	Rotation
③	Root torque
④	Tipping (mesial-distal)
⑤	Translation (mesial-distal)
⑥	Intrusion
⑦	Crown torque (buccal-lingual)
⑧	Expansion

Additional options

Movement	Location	Type	Threshold	Strategy	Design
Retention	<ul style="list-style-type: none"> Requested teeth 	Bevel towards the gingiva	Per request	Designed to provide tray retention, especially for cases with short clinical crowns.	
Extrusion/rotation	<ul style="list-style-type: none"> Lateral Incisors 	Bevel "sash" – diagonally-orientated beveled attachment	Per request	Designed for compound movements, such as simultaneous extrusion and rotations. This orientation is available upon doctor request.	
Tipping	<ul style="list-style-type: none"> Tipping teeth 	Two bevels "yin-yang"	Per request	Designed to aid in tipping movement by providing a coupling force. This orientation is available upon doctor request.	