

# Delrin 4D™

## Assembly and Use Guide



For demonstration purposes only. Does not contain needle or medication.

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# Delrin 4D™

## Device construction:

### 1 Needle shield spring

Delrin® SC631

- Metal replacement part
- Excellent spring-back recovery
- Repeatable performance

### 2 Drive spring

Metal

- High force to drive plunger

### 3 Plunger

Delrin® SC631

- Rigid to withstand spring loads
- Easy coloring

### 4 Locking collar

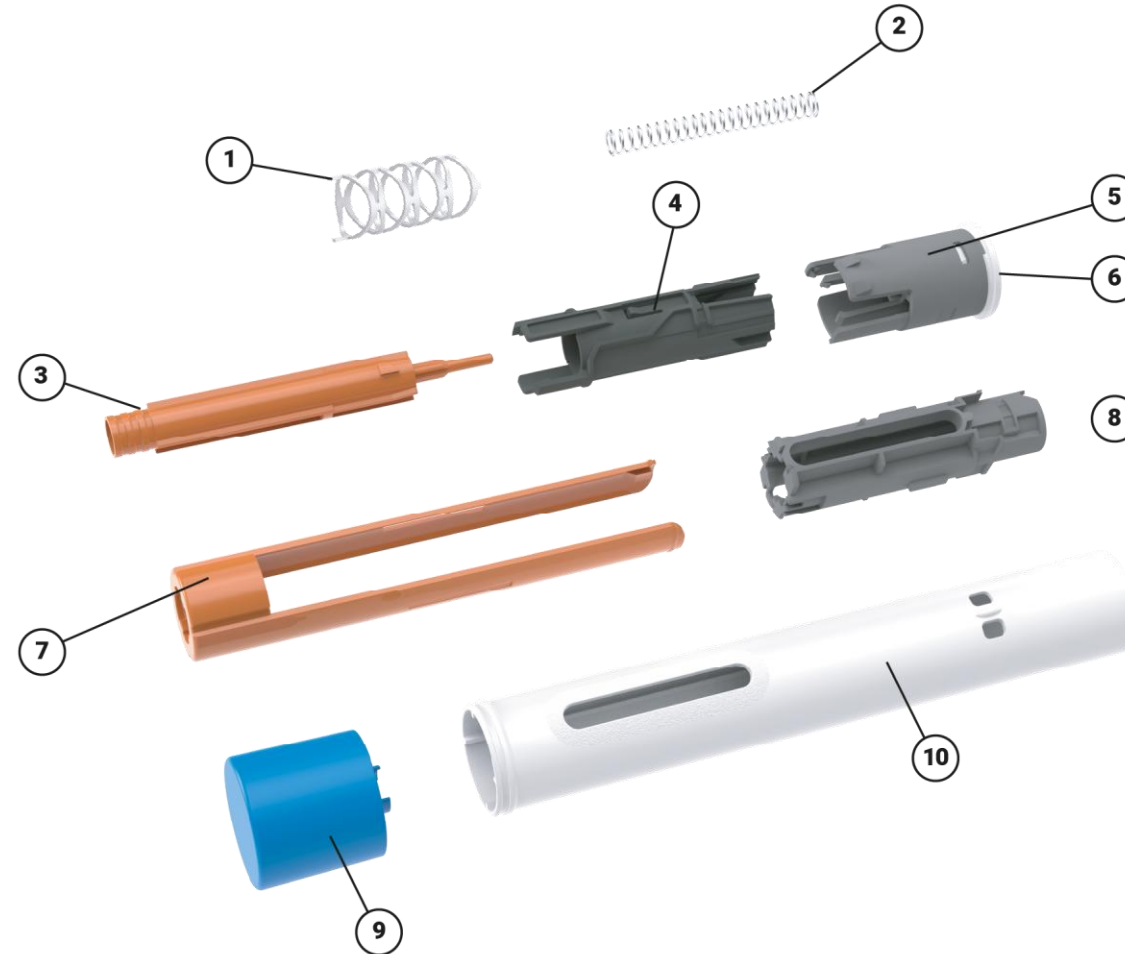
Delrin® SC637

- Easy sliding for smooth actuation
- Spring back for audible clicks
- Structural rigidity for lockout

### 5 Latches

Delrin® SC631

- High strength for secure assembly
- Minimal deformation under load



### 6 End cap

Delrin® SC698

- Stable dimensions for secure fit
- Laser markable

### 7 Needle shield

Delrin® SC698

- High strength for secure lockout
- Low friction interactions
- Tight dimensional control

### 8 Chassis

Delrin® SC698

- Dimensional accuracy
- Low friction interactions

### 9 Cap

Delrin® SC655

- Visual appeal in range of colors
- Easy pull-off

### 10 Body

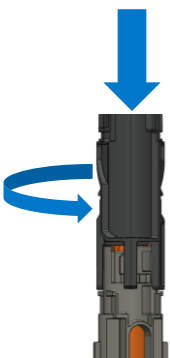
Delrin® SC698

- Appealing surface finish
- Laser markable
- Impact toughness

1 Place the Plunger into the Chassis with the point-end upwards.



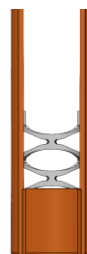
2 Twist the Locking Collar into place on the Chassis.



3 Seat the Drive Spring onto the point-end of the Plunger and slide the Latches onto the Locking Collar.

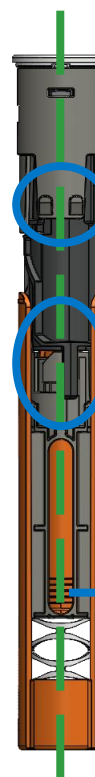


4 Place the Delrin spring into the Needle Shield.



5 Assemble the Needle Shield with the Internal Assembly.

Ensure the Latch assembly clips and Chassis window are aligned and centered between the Needle Shield arms.



Assembly clips on Latches

Narrow arm of Locking Collar positioned to the right of the centerline

Chassis window

6 Slide the Internal Assembly into the outer body until the Latches click into the Body. Push the Cap onto the end of the Body.

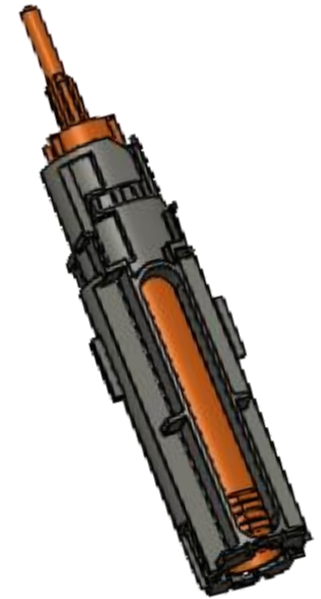


### Step 1: Place the plunger into the Chassis

- 1.1 Select the Plunger and Chassis from the box.
- 1.2 Orient the Plunger with the point-end of the Plunger upwards. Orient the Chassis with the Chassis window downwards.
- 1.3 Align the feature-less side of the Plunger with the Chassis window.
- 1.4 Slide the Plunger into the Chassis until it contacts the bottom of the Chassis.



● Chassis window



## Step 2: Place the Locking Collar onto the Chassis

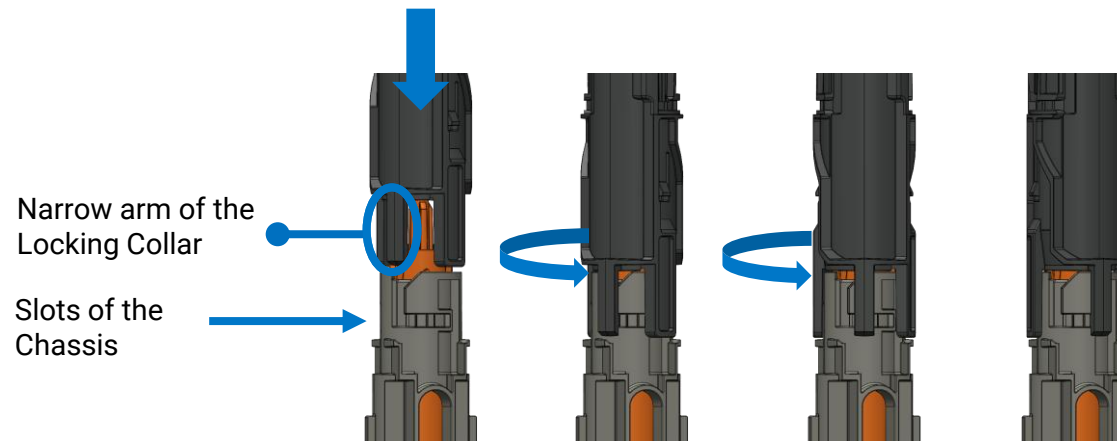
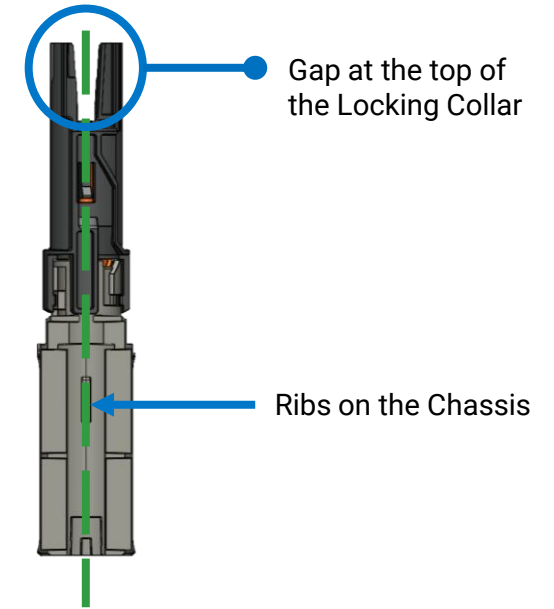
- 2.1 Remove the Locking Collar from the box and orient it such that the four arms are pointed downwards, towards the Chassis.
- 2.2 Align the narrow arms of the Locking Collar with the slots on the top of the Chassis.
- 2.3 Push the Locking Collar down until it is fully seated with the Chassis.
- 2.4 Twist until the Locking Collar stops after two “clicks”.

### Alignment check:

Confirm the gap on the top of the Locking Collar and the ribs on the side of the Chassis are aligned.

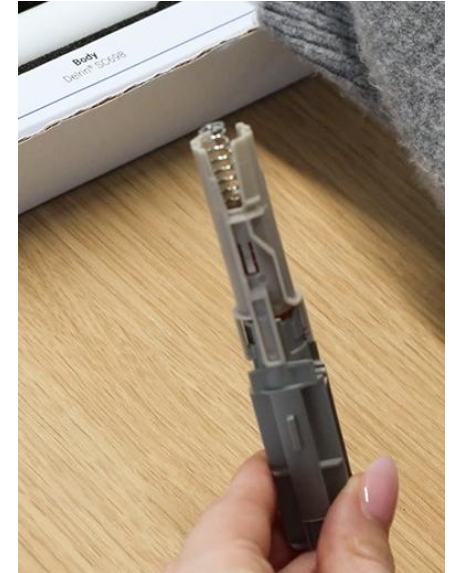


### Alignment check:



### Step 3: Assemble the Drive Spring

- 3.1 Remove the metal Drive Spring from the box.
- 3.2 Place the Drive Spring into the Locking Collar and seat it over the point-end of the Plunger.

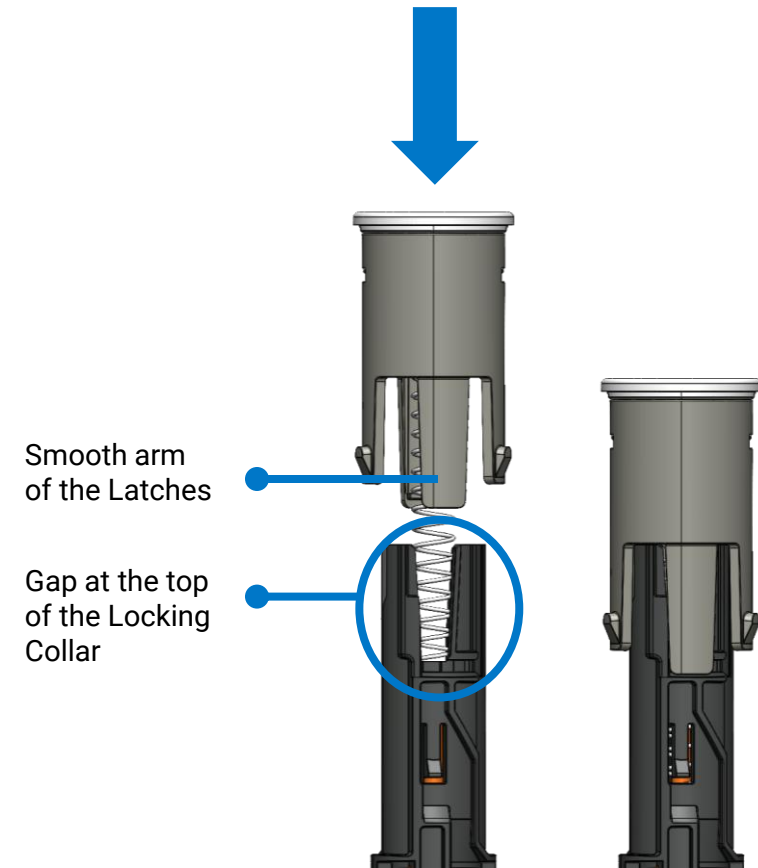


## Step 4: Slide on the Latches

- 4.1 Remove the Latches component from the box and orient it with the laser-marked End-cap points upwards.
- 4.2 Identify the smooth arms on the Latches.
- 4.2 Align these arms with the gap at the top of the Locking Collar.
- 4.3 Carefully slide the Latches straight down ensuring the Drive spring does not catch onto the internal features of the Latches.
- 4.4 Slide the Latches downwards, until the component is fully seated against the Locking Collar

### Checking the Drive Spring alignment:

Hold the Locking Collar and rotate the Latches. If the Latches rotate freely in one direction, the Drive Spring is properly aligned. If there is resistance during rotation, the Drive Spring may be improperly seated.

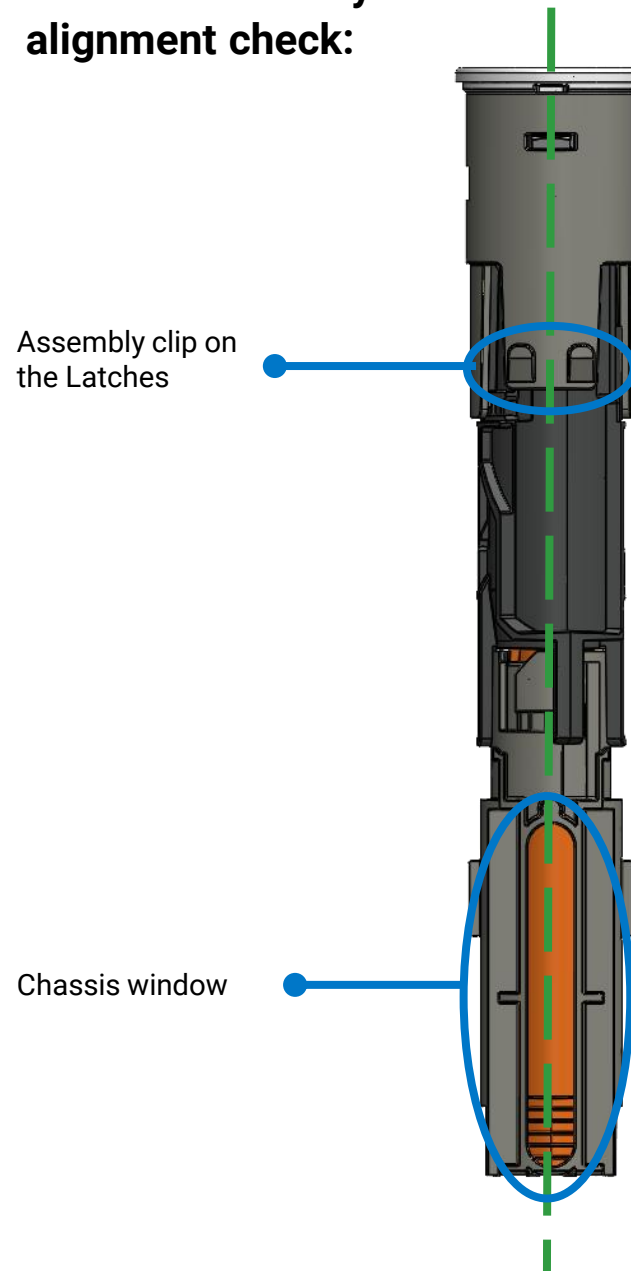


## Assembly

### Step 5: Alignment check

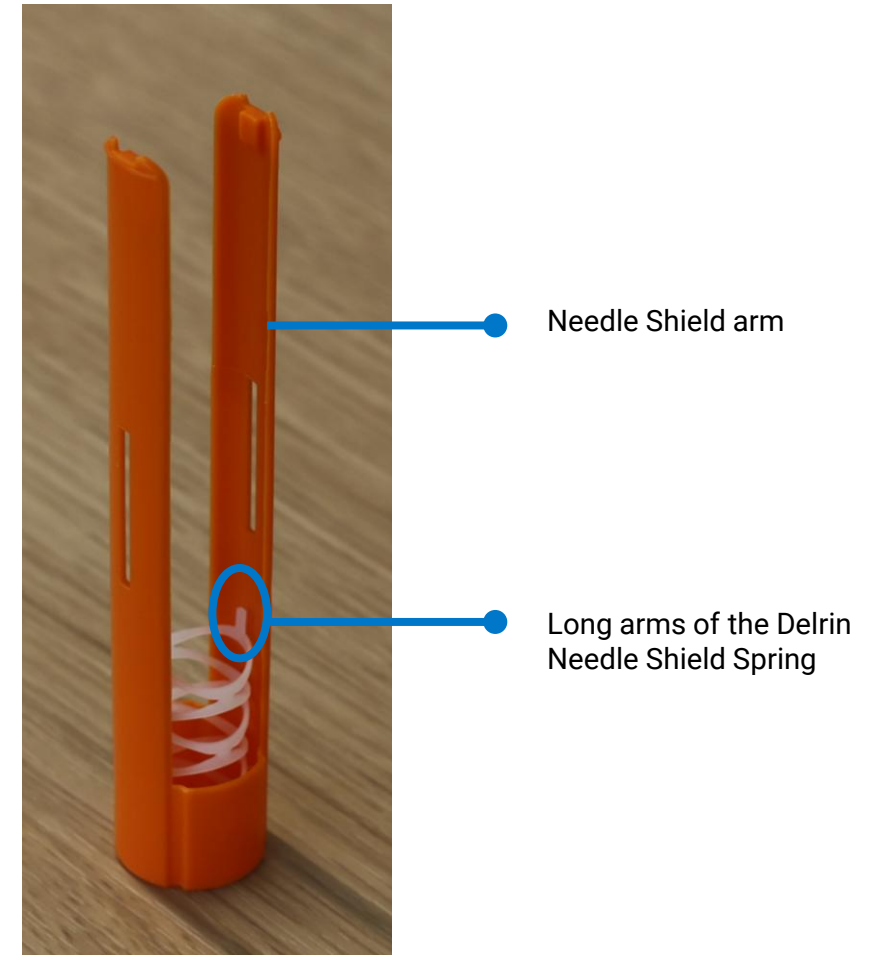
- 5.1 Ensure the window of the Chassis and assembly clips on the Latches are aligned.
- 5.2 Place the Internal Assembly to the side.

### Internal Assembly alignment check:



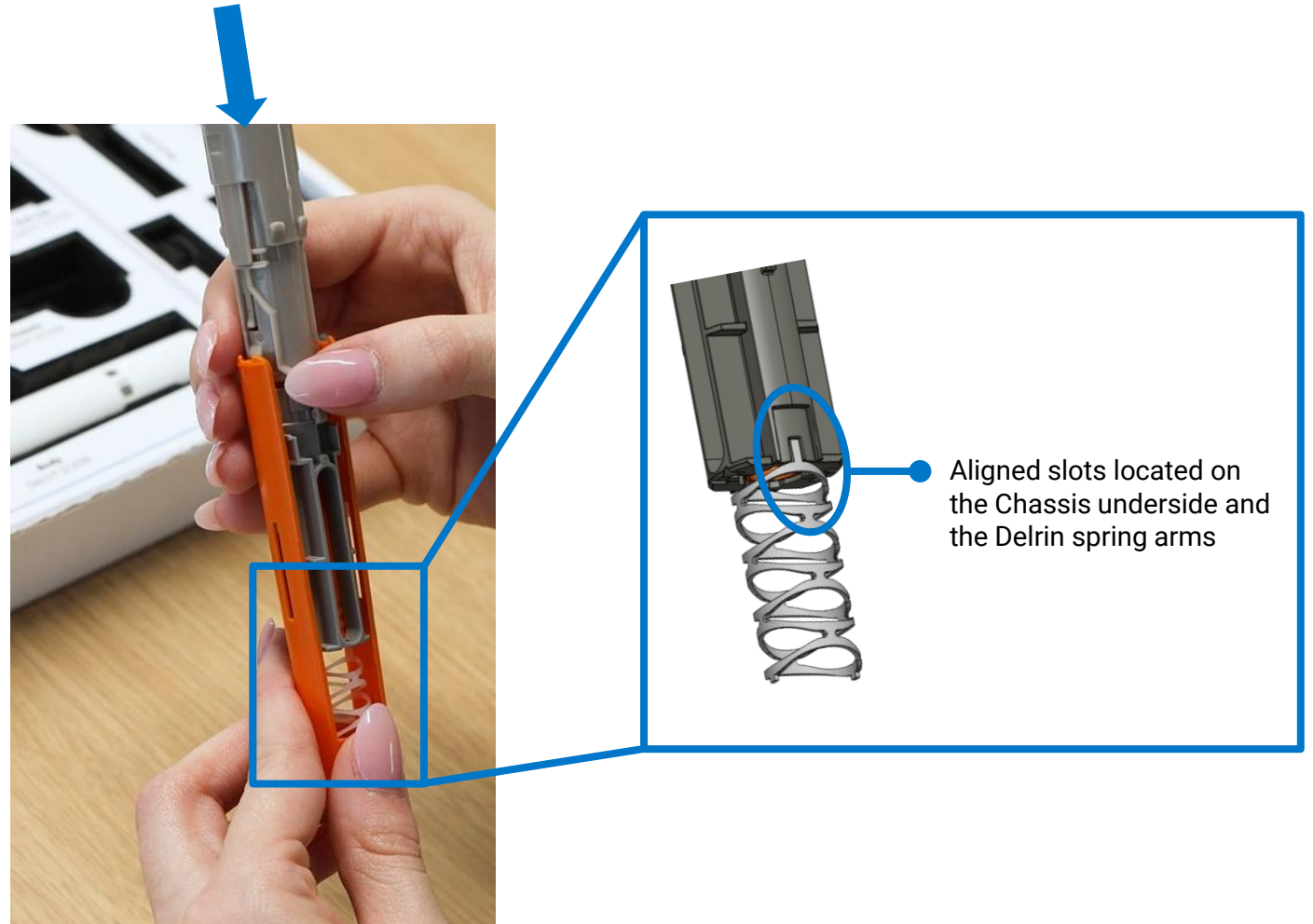
### Step 6: Place the Delrin spring into the Needle shield

- 6.1 Remove the Needle Shield and one Delrin Needle Shield Spring from the box.
- 6.2 Orient the Needle Shield with the Needle Shield arms facing upwards.
- 6.3 Insert the Delrin Spring into the Needle Shield with the long arms facing upwards.
- 6.4 Align the upwards facing arms of the Delrin Spring with the arms of the Needle Shield.
- 6.5 Ensure the Delrin Spring is gently seated in the grooves at the base of the Needle Shield.



### Step 7: Assemble the Needle Shield with the Chassis

- 7.1 Pick up the Internal Assembly prepared in Step 5 and position it with the Chassis facing downwards.
- 7.2 Position the Internal Assembly such that the assembly clips on the Latches and Chassis window align between the Needle Shield arms.
- 7.3 Gently spread the Needle Shield arms and carefully lower the Internal Assembly into the Needle Shield.
- 7.4 Align the Delrin Spring arms with the slots located on the underside of the Chassis.
- 7.5 Slide the Internal Assembly downwards until the ribs on the side of the Chassis lock into the openings on each Needle Shield arm.



## Step 8: Alignment check

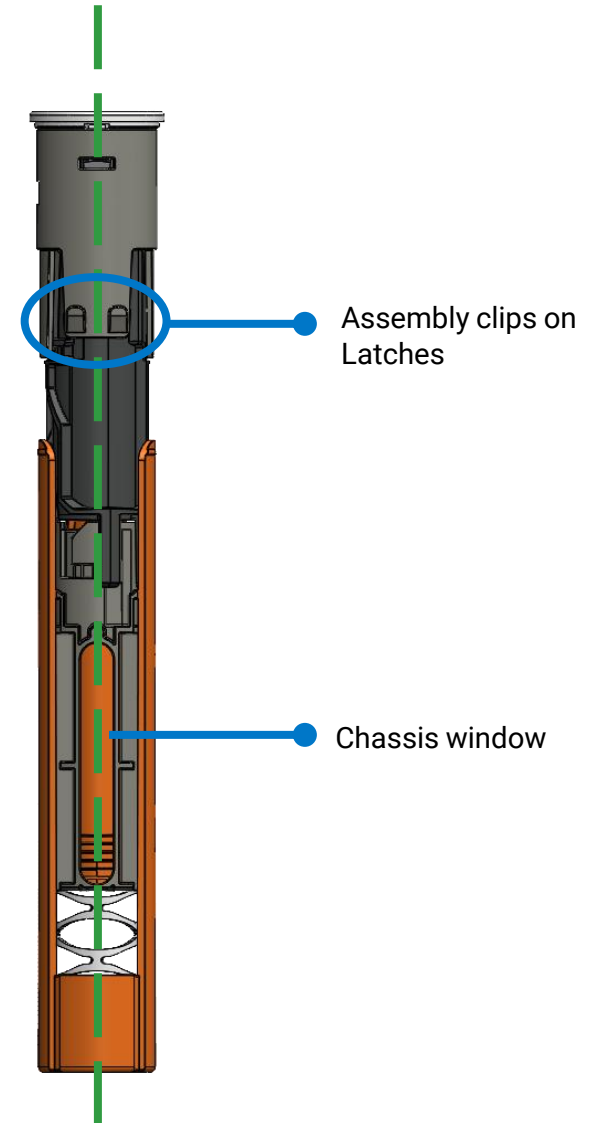
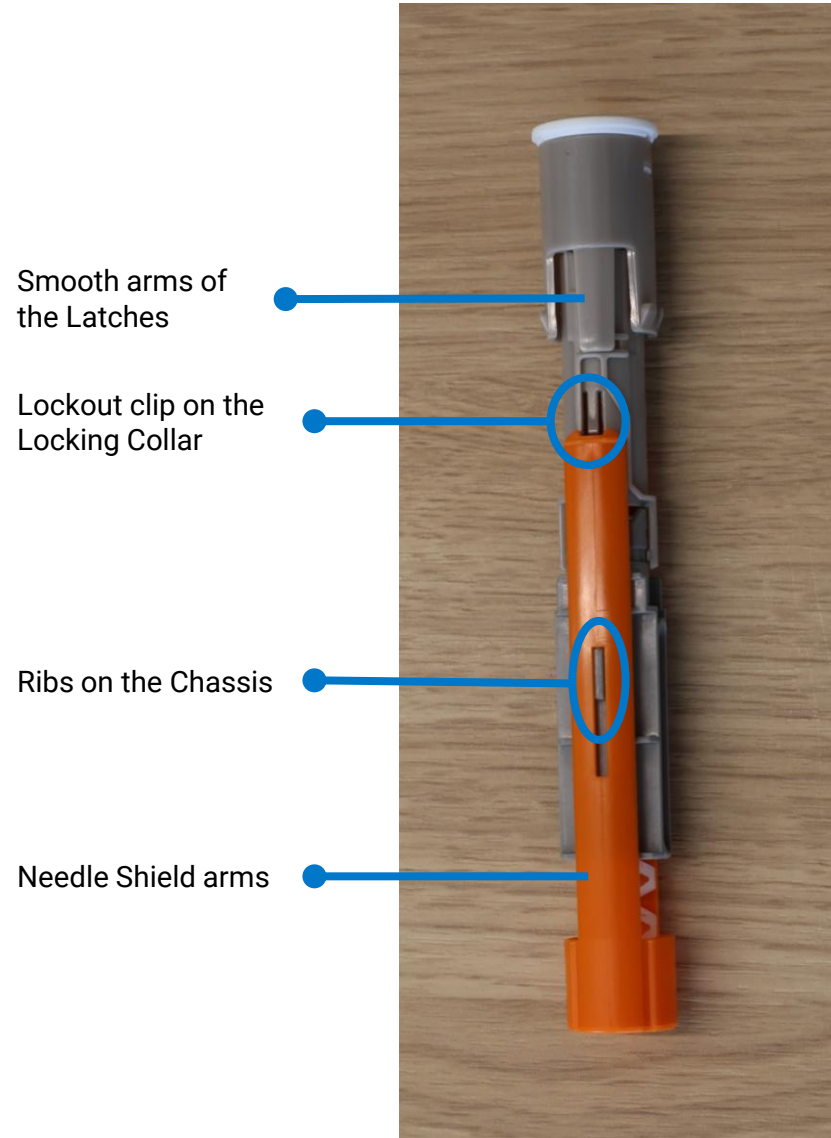
8.1 Ensure the following are aligned vertically:

- Smooth arms of the Latches
- Lockout clip on the Locking Collar
- Ribs on the side of the Chassis
- Arms of the Needle Shield

8.2 Rotate the device 90° and ensure following are centered between the Needle Shield arms:

- Assembly clips on the Latches
- Chassis window
- Center of Delrin Spring

### Alignment check:



## Step 9: Slide the Internal Assembly into the Body

- 9.1 Locate the Body component.
- 9.2 Align the assembly clips on the Latches and their corresponding features on the Body.
- 9.3 Lower the Internal Assembly into the Body until the assembly clips on the Latches engage.
- 9.4 Remove the Cap from the box and push the Cap to the end of the device with the Needle Shield.



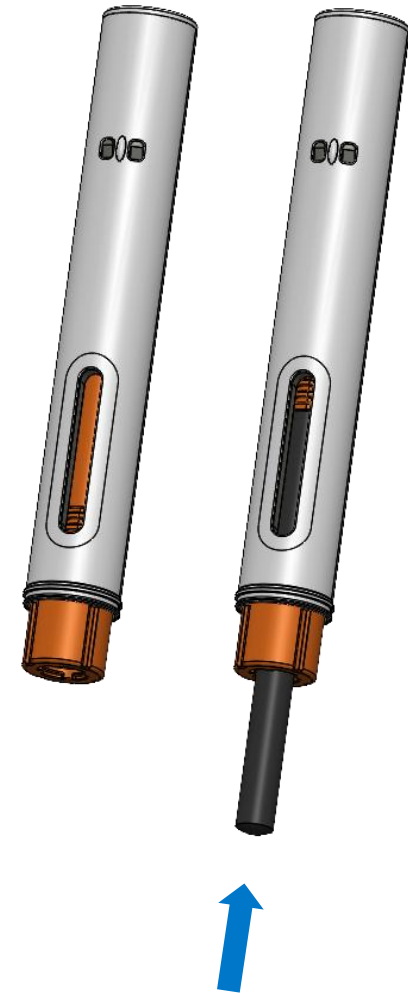
Assembly clips on the Latches

Corresponding features on the Body



## Step 10: Reset the device

- 10.1 Remove the Cap from the end of the device.
- 10.2 Remove the Reset Tool from the box and gently insert the reset tool into the end of the Needle Shield. Be careful not to catch on the Delrin Spring.
- 10.3 Using the Reset Tool, apply an upwards force to the Plunger until it engages into the device. The bottom of the Plunger is visible at the top of the window.
- 10.4 Remove the Reset Tool from the device. The device is primed and ready to activate.



### Step 11: Activate and lockout

11.1 With the Cap removed and the Needle Shield end touching a surface, press the device onto a surface.

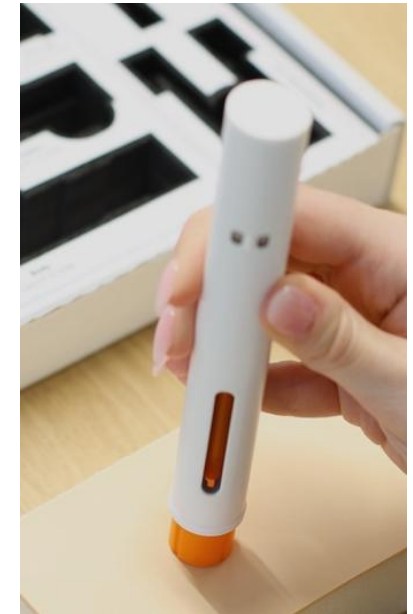
*Note:* This demonstrator device is for demonstration purposes only. There is no needle or medication contained in the demonstrator device. Thus, activation can be done safely on any surface.

11.2 Remove the device from the surface and allow the Needle Shield to click into place.

11.3 The device is now locked out and cannot be activated without resetting.



Activation



Lockout

## Disassembly

### Step 12: Disassembly

- 12.1 Ensure the device is activated – The Plunger fills the entire viewing window.
- 12.2 Align the Disassembly Tool grips with the device end with the laser-marked End-cap.
- 12.3 Slide the Disassembly Tool onto the device and align the disassembly grips with the small windows in the Body.
- 12.4 Pinch the grips on the Disassembly Tool and pull the Body away from the Disassembly Tool until the End-cap separates from the Body.
- 12.5 Remove the Disassembly Tool and push the Internal Assembly from the Needle Shield end through the Body.
- 12.6 Reverse the assembly steps to fully disassemble each component.





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