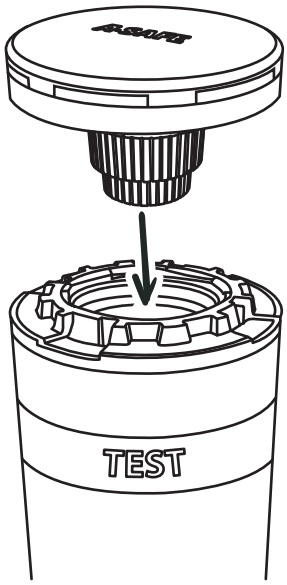
FATHOM 3

User Stories

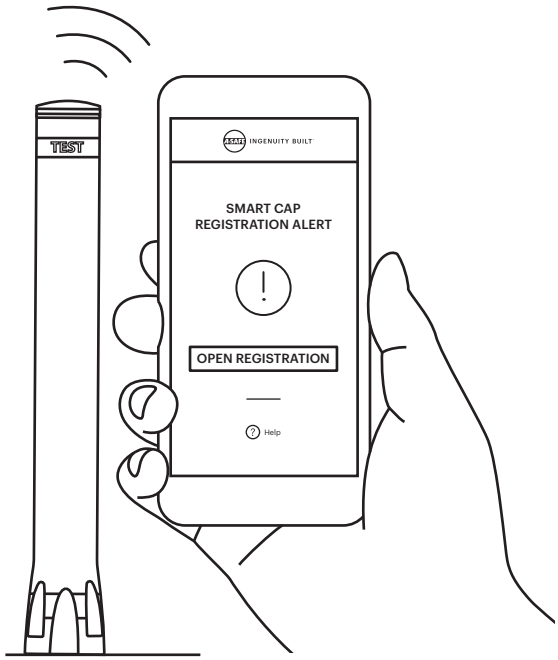
Smart Cap

1. Production

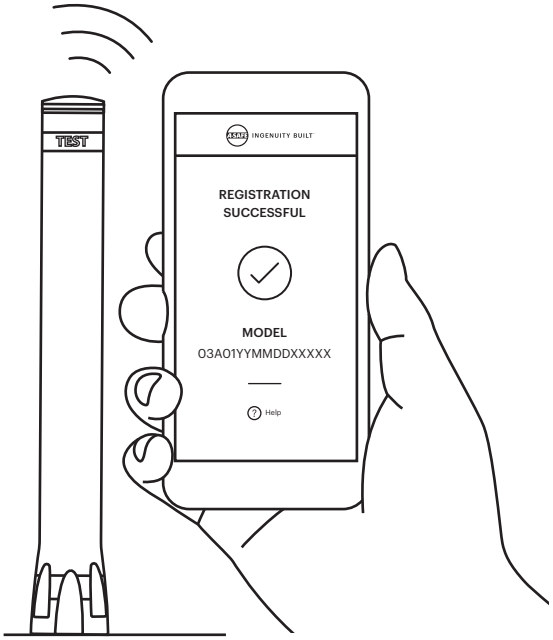
1.1 Pre-Registering Smart Cap (Alternative to Install new smart cap)



1. Fully assembled Smart Cap fitted into production jig.



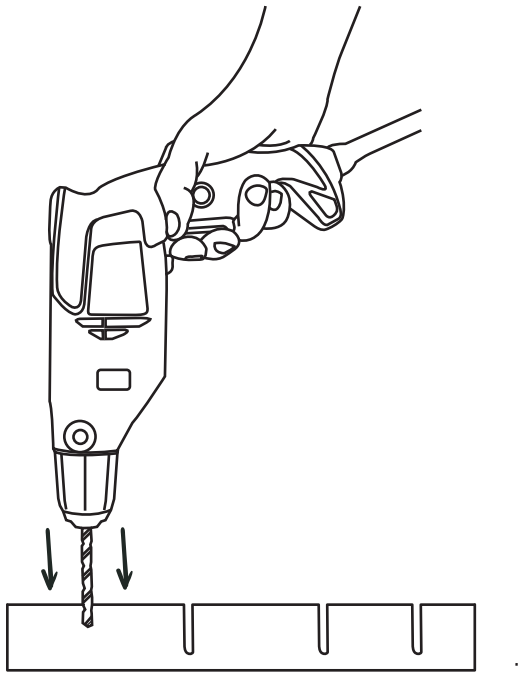
2. Command sent to open registration through production interface.



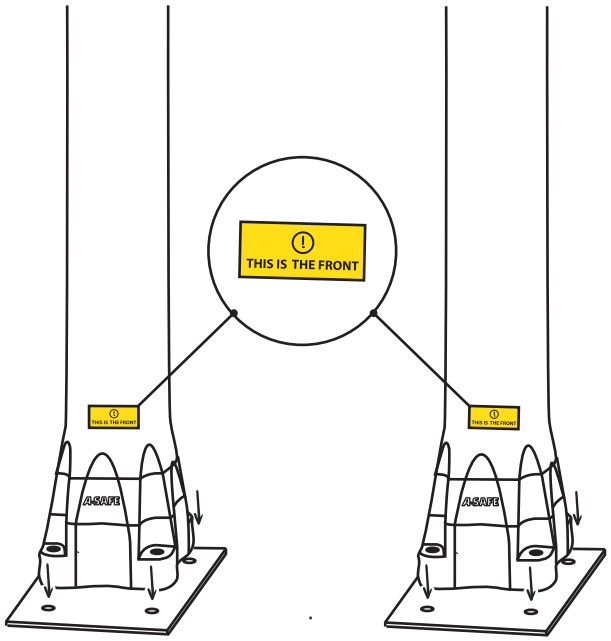
3. Registration successful indicated by Command response.

2. Installation

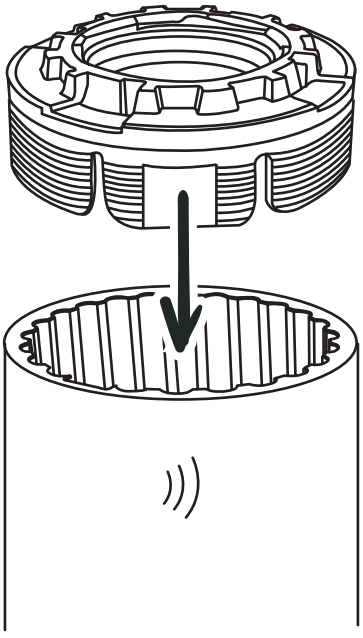
2.1 Install New Smart Cap



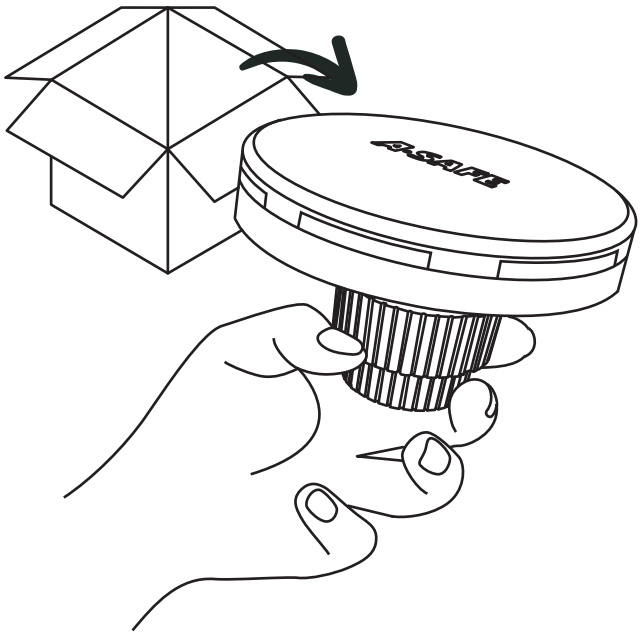
1. Holes drilled in floor for post and anchors to be fitted.



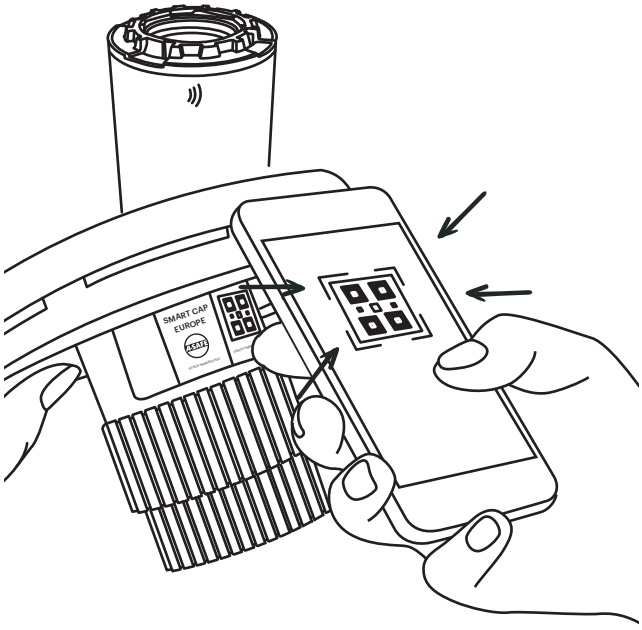
2. Post bolted to anchors. All posts must be fitted with Stripe Label facing same direction.



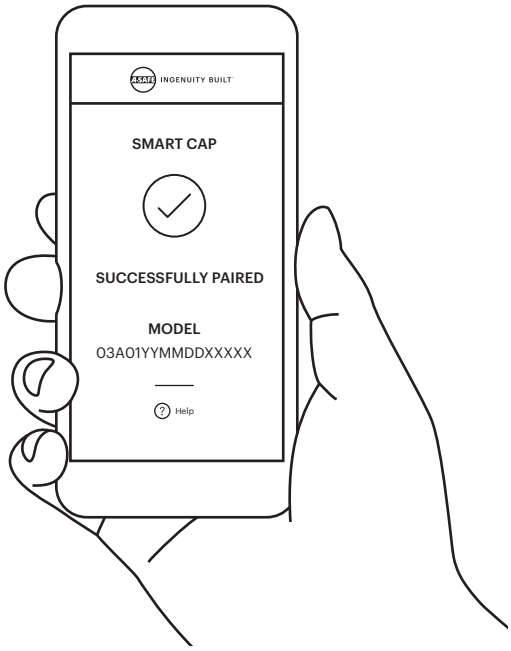
3. Universal Frame fitted to post.



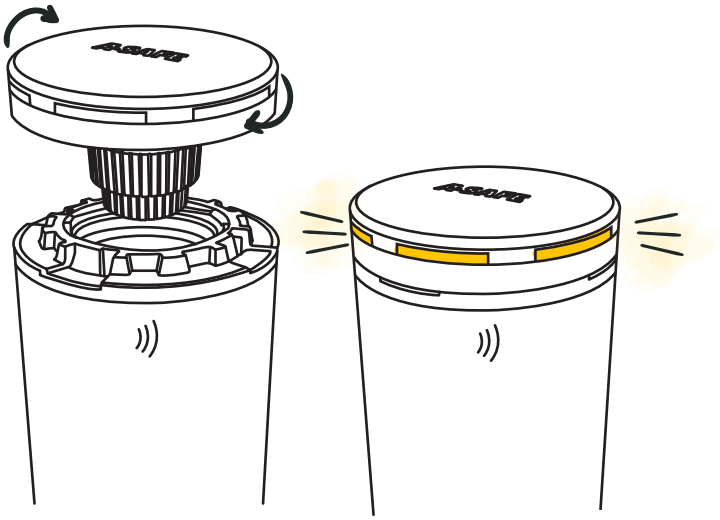
4. Unpack Smart cap from packaging.



5. Smart Cap paired to post by scanning RFID tag on post and QR code on smart cap with App (smart cap in hand).



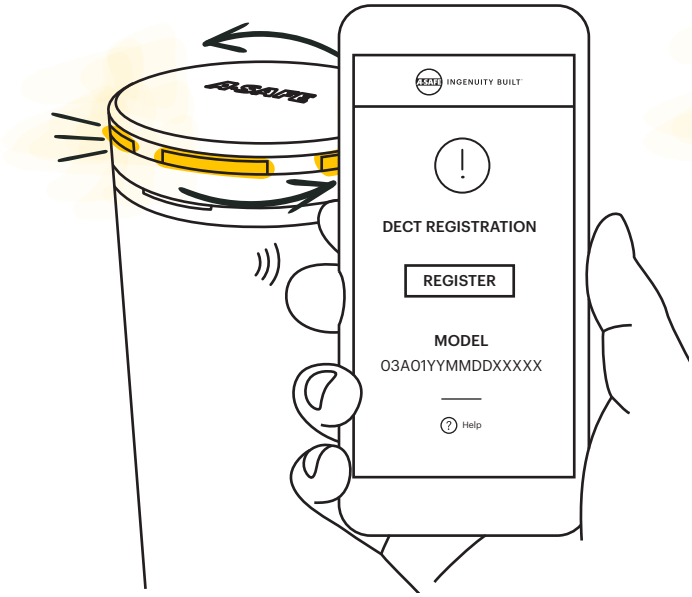
6. App indicates successful Pairing.



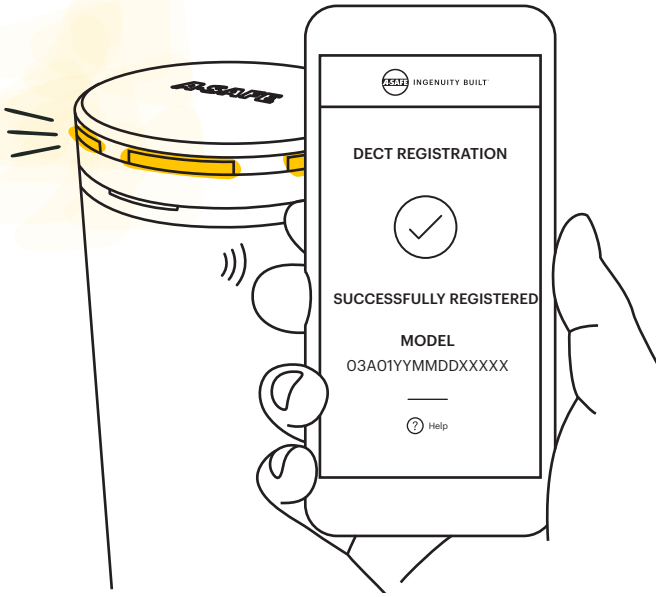
7. Smart Cap installed into frame with quarter turn feature. This automatically powers on the smart cap which will indicate power on using the LED Halo.

8. Smart Cap opens for DECT registration automatically if not already registered. This is indicated on the Halo.

Skip to step 10 if already registered.



9. Gateway opens for registration based on app navigation.

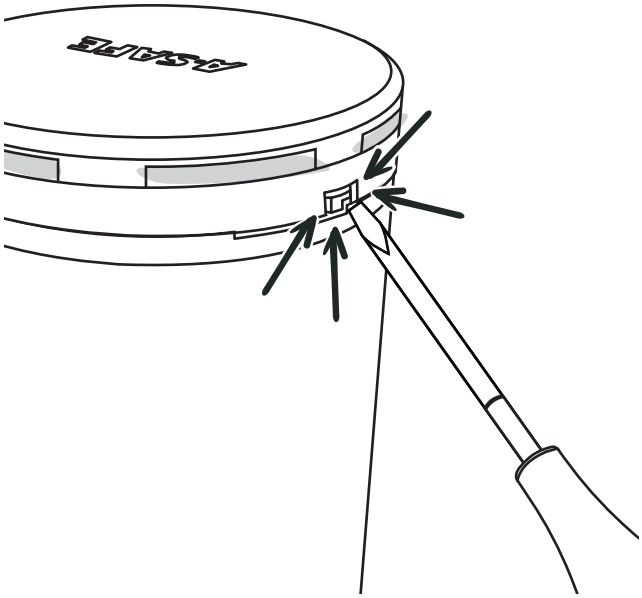


10. Successful registration indicated on Halo and app.

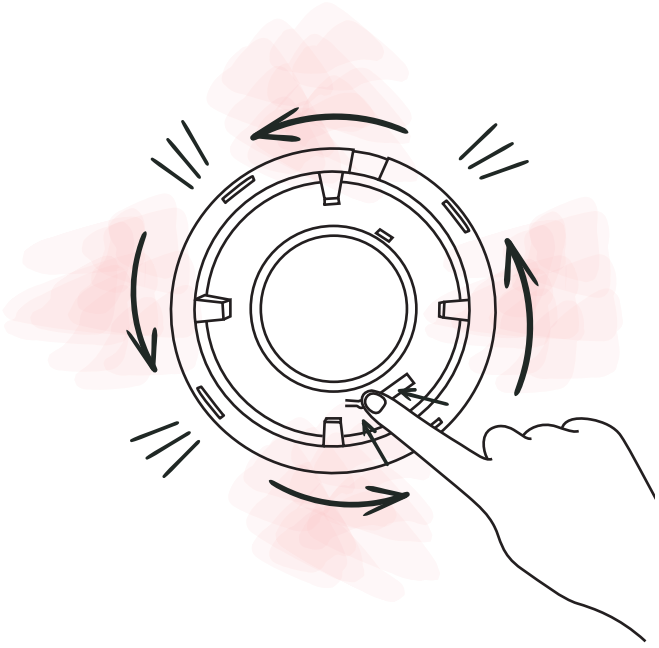
11. Successful boot up indicated on Halo.

12. Smart cap activated (armed) ready for impact (halo lights off).

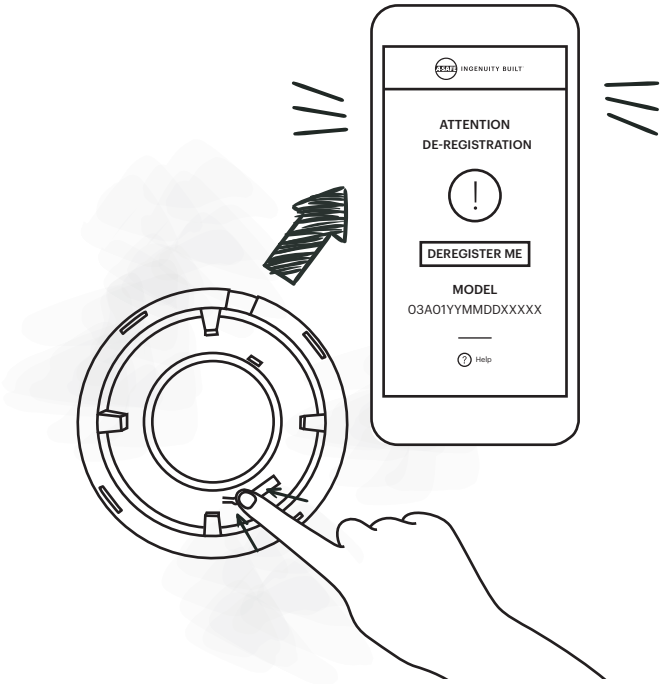
2.2 Remove Smart Cap



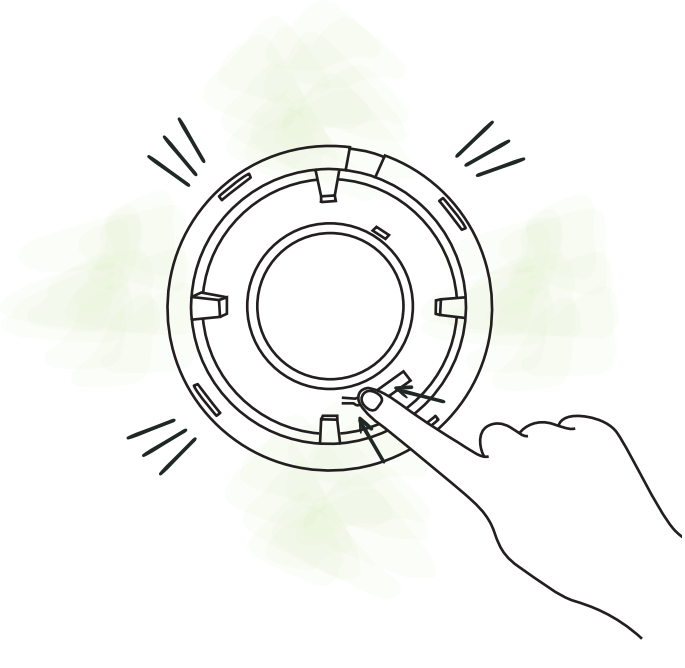
1. Smart Cap removed from post using tool to overcome anti tamper latch.



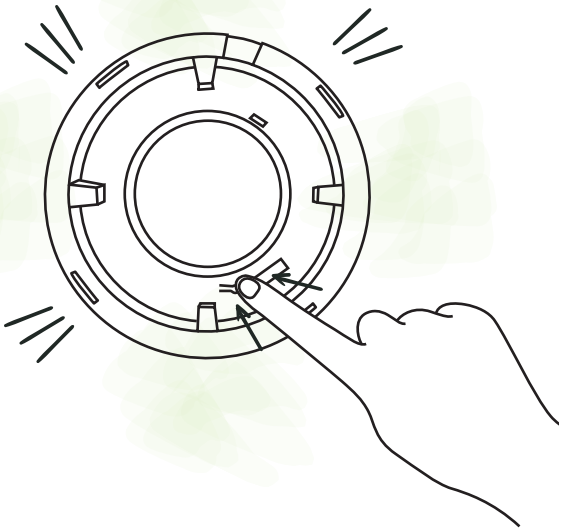
2. Press and hold de-register button until indicated in step 6.



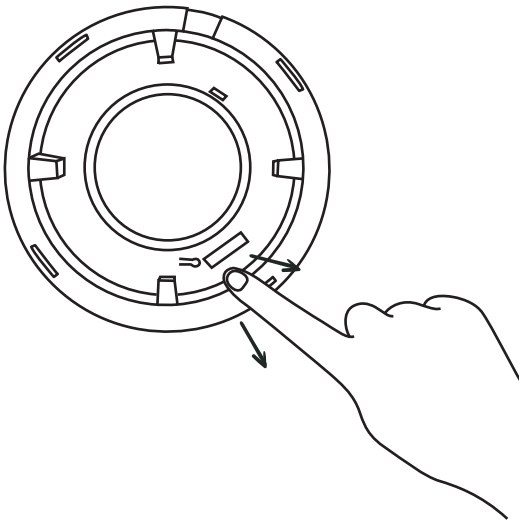
3. Smart cap powers on while de-register button is being pressed and sends a "De-register me" message to the cloud to initiate the cloud life cycle routines.



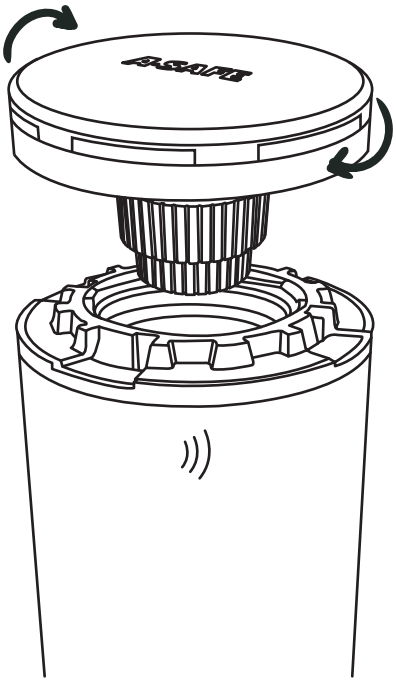
4. If there is no gateway connection then the smart cap completes a local de-registration.



5. Halo indicates completion.

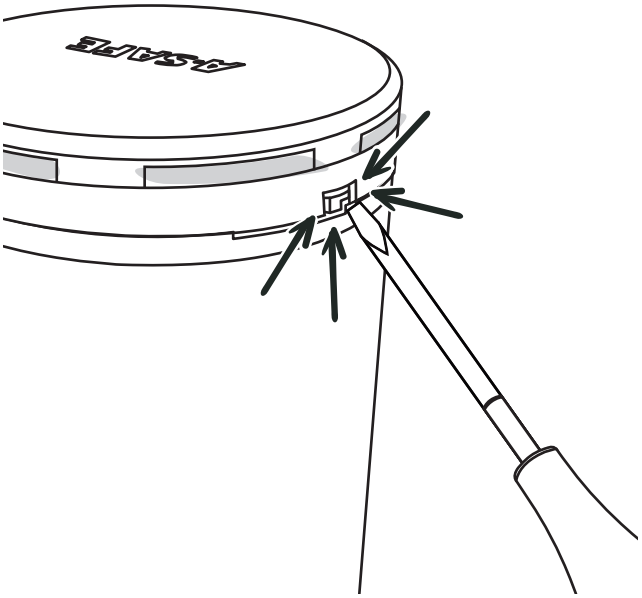


6. Release De-Registration button to power down smart cap.

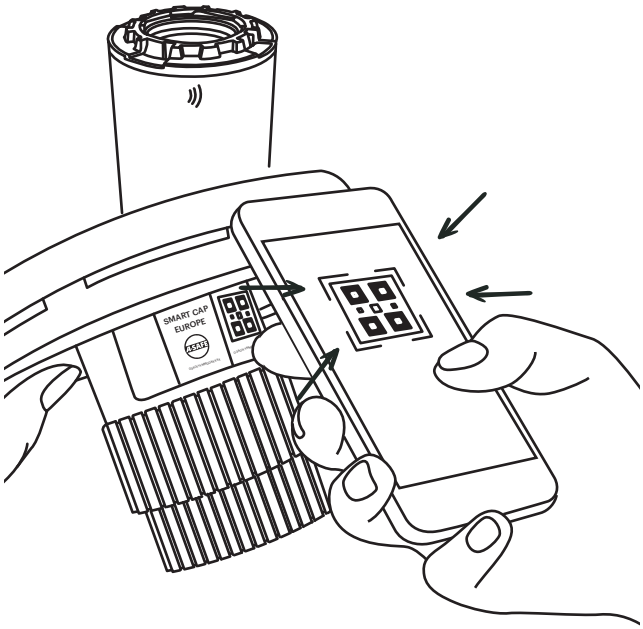


7. Replace with new Smart cap as per Install process.

2.3 Replace Smart Cap

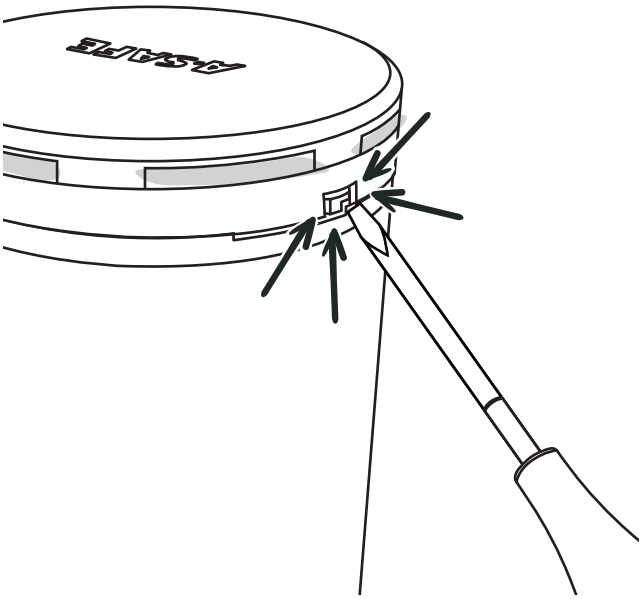


1. Follow Remove Smart Cap Process.

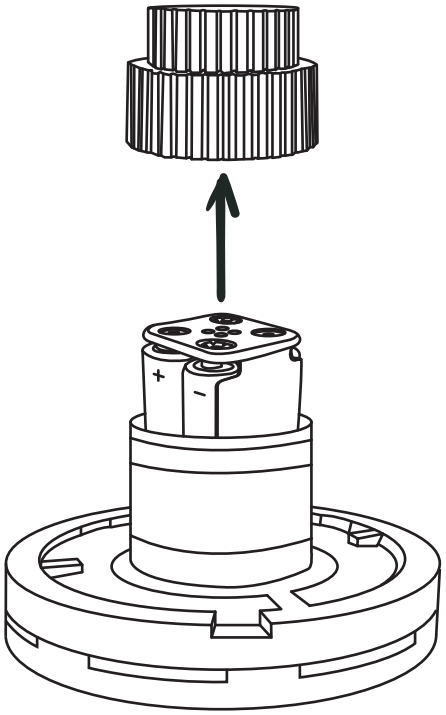


2. Follow Install Smart Cap Process

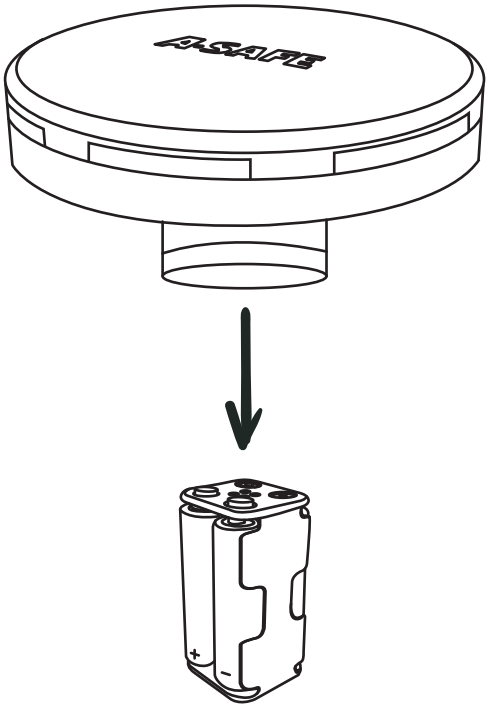
2.4 Change Batteries



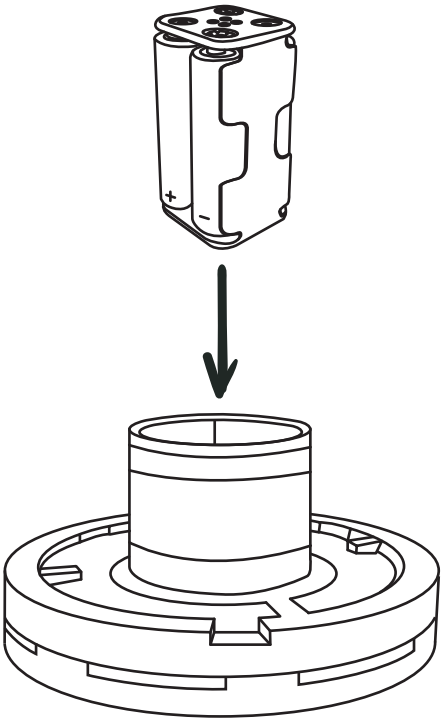
1. Smart cap removed from universal frame using tool to overcome anti tamper latch. Smart cap automatically powers down and should not send any impact waveforms.



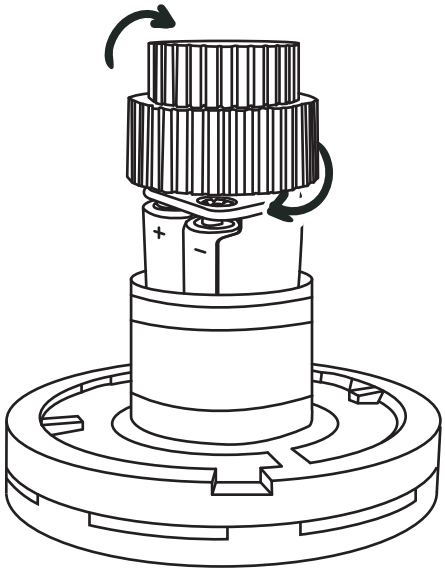
2. Battery cap removed from bottom of smart cap.



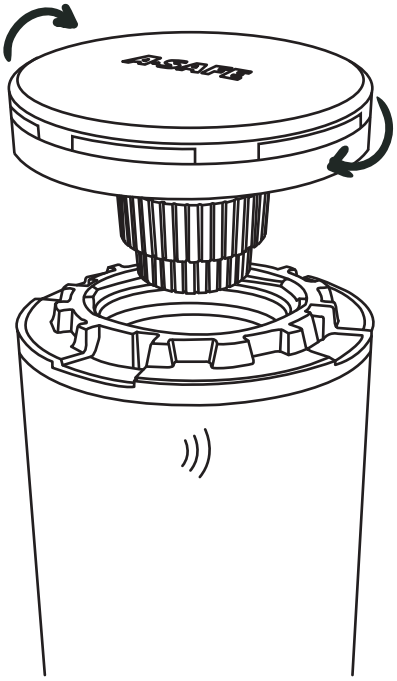
3. Drop whole battery cartridge out of smart cap into used battery container.



4. Insert new battery cartridge, pre-loaded with new batteries.



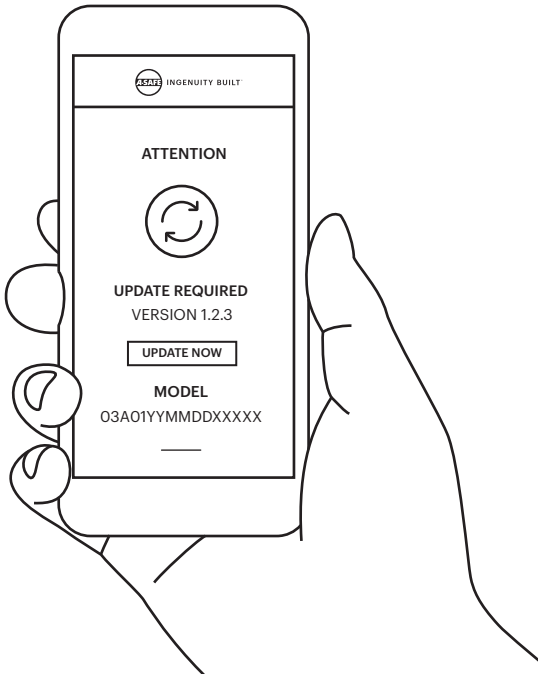
5. Replace battery cap.



6. Reinsert cap into post.

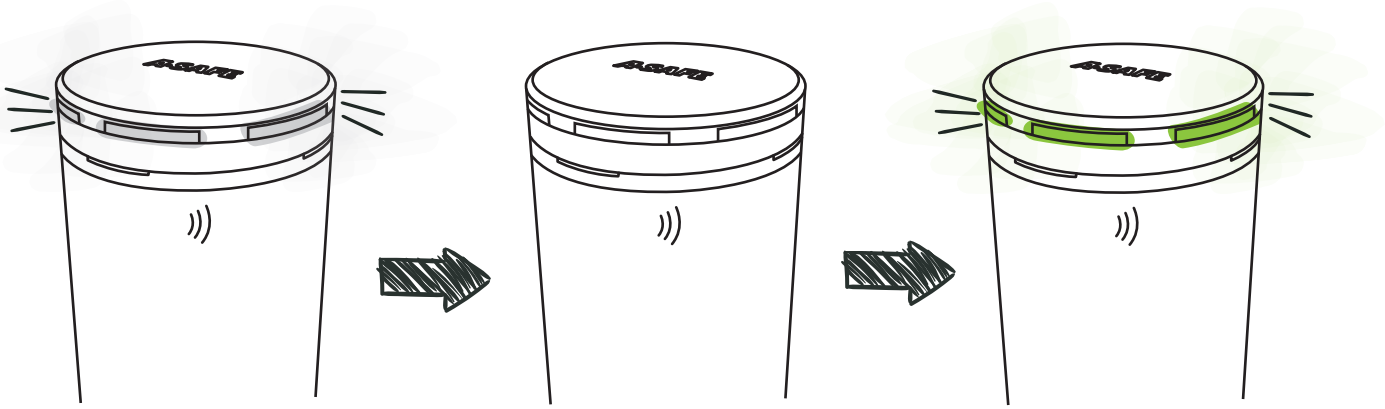
7. Halo indicates normal boot up. Device activated (armed).

2.5 Software Update



1. Smart Caps software update is initiated from the cloud service by an authorized user.

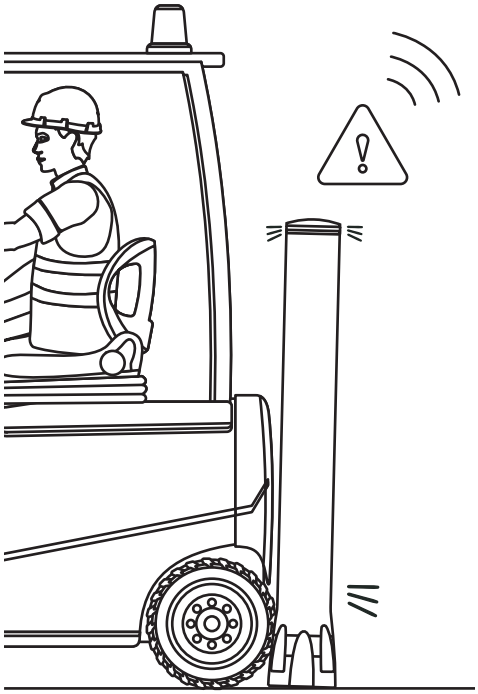
2. Smart Caps do not indicate the software update process on the LED halo.



3. Smart cap reboots on completion and will run through the normal boot up indication.

3. Inspection

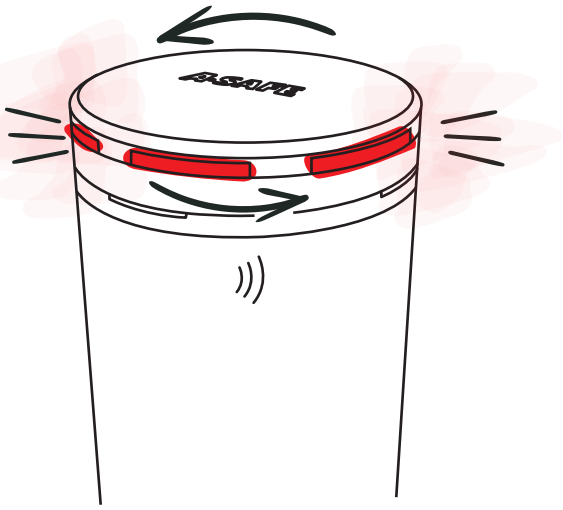
3.1 Barrier Impact



1. Vehicle impacts the barrier triggering the smart cap to record an acceleration waveform.

2. Waveform is sent up to the cloud for analysis.

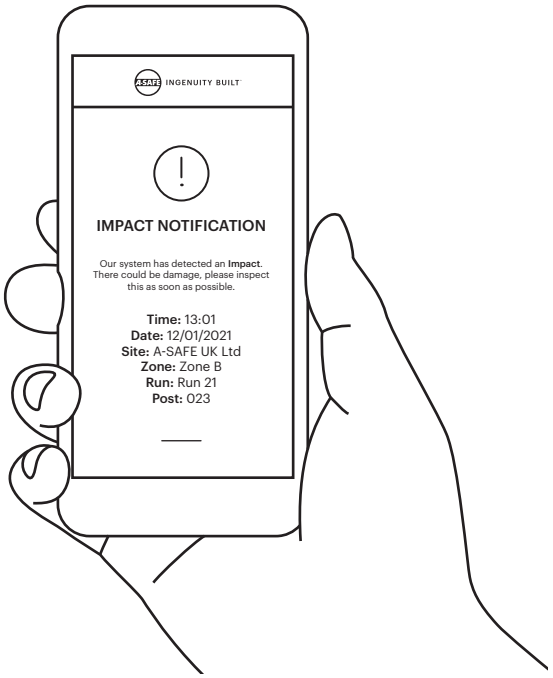
Warning
(Spinning Orange Light)



Alert
(Spinning Red Light)

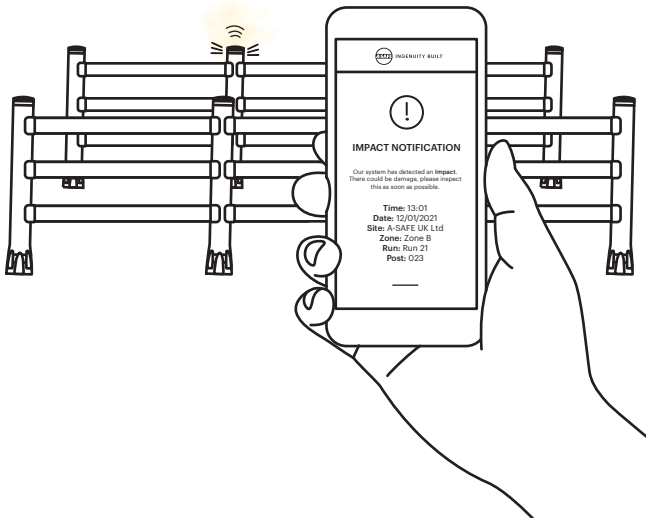
3. Event Response is returned with event classification. Either Alert, Warning, or Null. If the event was not null then the smart cap will indicate with the halo indefinitely.

The standard usage model indicates this will be on average 8 hours but this is dependent on regular attention by the customer. If not inspected with 8 hours this could be detrimental to the expected battery life.



4A. Notifications will have been sent to the relevant personnel stating that this barrier requires inspection.

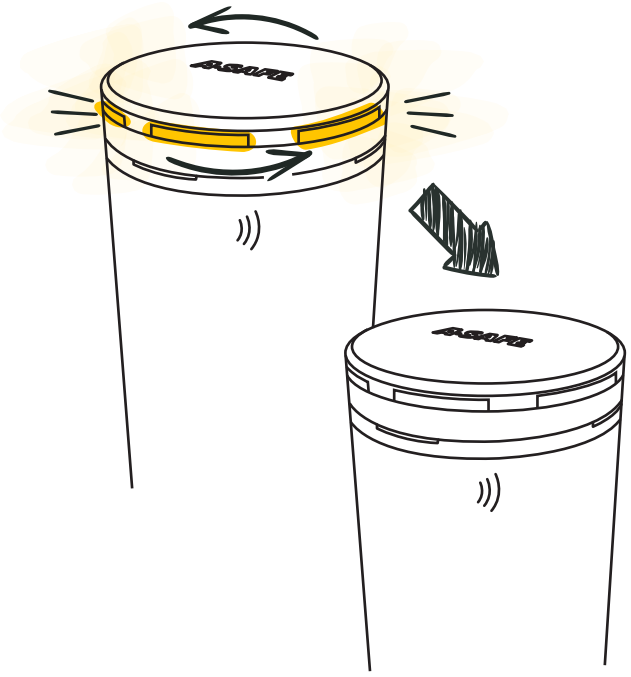
4B. The Ping timing when the Halo is flashing should be increased.



5. Warehouse inspector arrives at impact site guided by the flashing halo, and location information received via cloud service/app.

6. The inspector scans the RFID tag of the post to verify location.

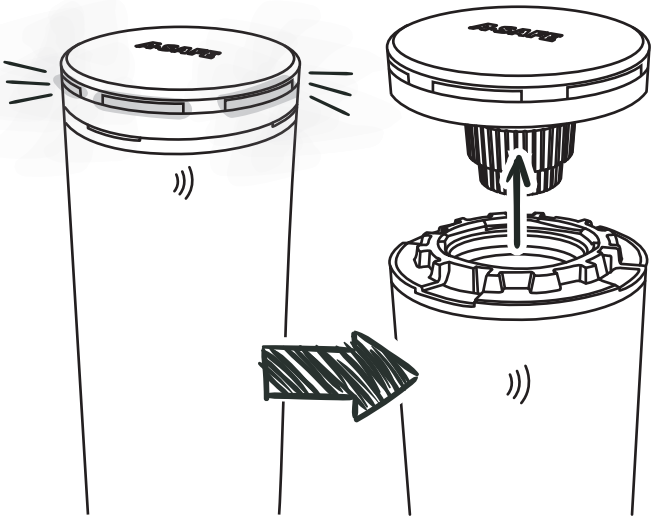
7. An inspection is completed and the impact event is marked with a resolution status.



8. The Halo indicator turns off. Irrespective of the resolution status.

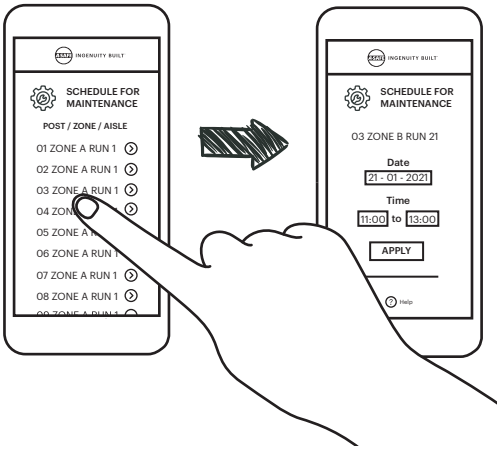
3.2 Barrier Impact Resolution

1. If the resolution of an impact event requires removal or replacement of the barrier then this will be indicated and tracked on the cloud service/app.



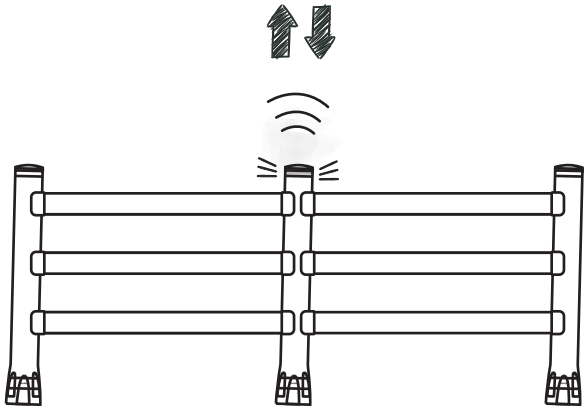
2. When the maintenance is taking place the smart caps should be removed from the posts thus deactivating them, or a scheduled maintenance should have been created. (See next section).

3.3 Scheduled Maintenance



1. User selects in the cloud service or app which devices to schedule for maintenance and a time period for which the devices will be in maintenance mode.

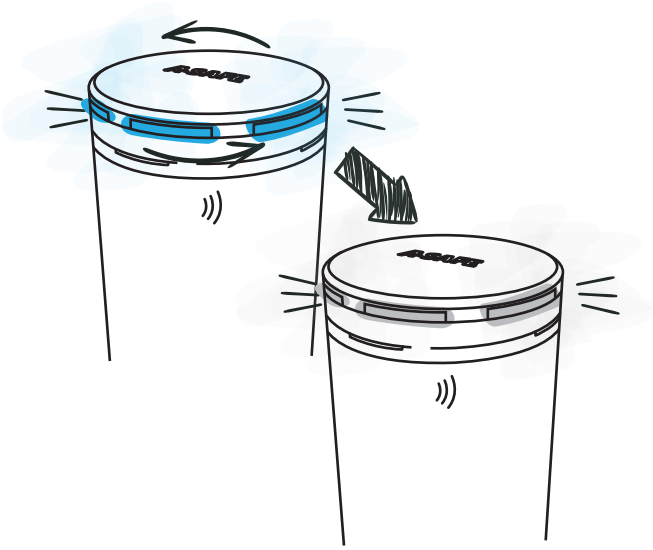
This must be done at least 1 ping period before maintenance is due to start to ensure all devices receive the message.



2. The Smart Cap will receive the schedule on its next ping exchange and will schedule itself to enter maintenance mode at the given time.

3. When the maintenance time is reached the Smart Cap will disable its accelerometer and begin to indicate maintenance mode on its LED halo.

If the smart cap is restarted during maintenance mode it should restart back into its maintenance mode.



4. When the scheduled time is over, the accelerometer will be enabled and the halo indication will stop.

Or if a message is received to cancel maintenance mode.