

# TITAN The Be-All and End-All Of Bi-Fold Systems



## Installation Instructions HD System TCS6 - Aluminium Systems



# TITAN HD BI-FOLD HARDWARE

## Installation Instructions

P.O. Box 5060, Hallam  
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www.ciilock.com - info@ciilock.com

Applies to:

TCS6 | 31.5mm offset, 22mm polymer and bearing bottom guide wheel

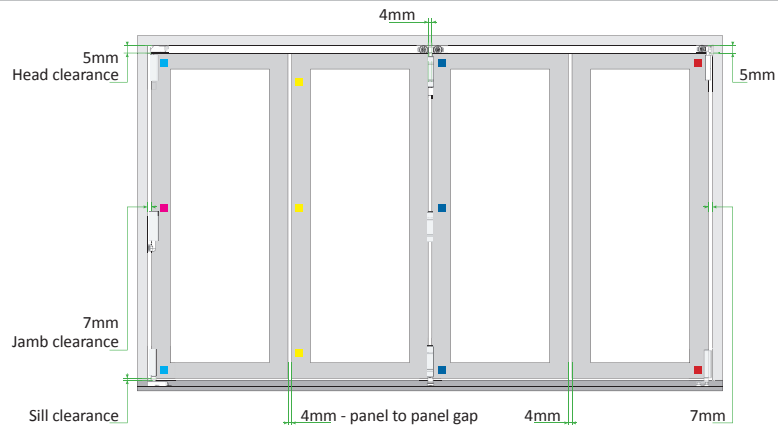
### Step 1:

Fabricate frame taking into account the following recommended information on panel gap clearance

- . Top pivot
- . Quick Fix Pin
- . Hinge
- . Bottom pivot carrier
- . Hinge

- . Wall pivot set
- . Pivot hinge leaf

- . Hinge x2
- . Hinge handle



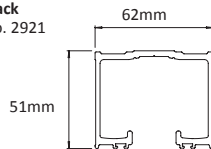
- . Top end carrier
- . Quick Fix Pin
- . Hinge
- . Bottom end carrier
- . Hinge

- . Top intermediate carrier
- . Quick Fix Pin
- . Hinge
- . Hinge
- . Bottom intermediate carrier
- . Hinge

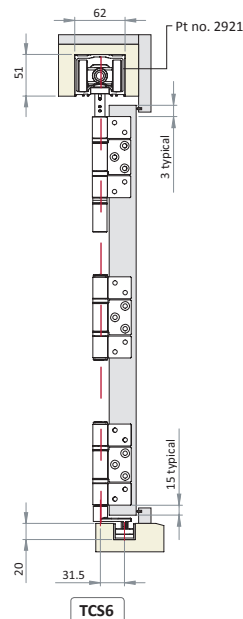
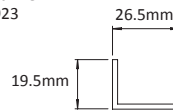
### Step 2:

Cavity, track and channel guide.  
(Recommended guide)

**Top Track**  
Part no. 2921



**Bottom Channel**  
Part no. 2923



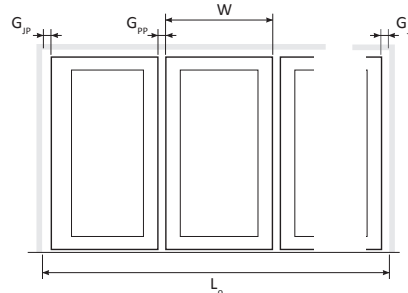
### Step 3:

Door size calculation and hinge guide.  
(Recommended guide)

| Index    | Meaning                          |
|----------|----------------------------------|
| $G_{JP}$ | Jamb to panel gap (door closed)  |
| $G_{PP}$ | Panel to panel gap (door closed) |
| $L_o$    | Opening width                    |
| $N$      | Total number of panels           |
| $W$      | Panel Width                      |
| $G_H$    | Head clearance                   |
| $G_S$    | Sill clearance                   |
| $H_o$    | Opening height                   |
| $H$      | Panel height                     |

Recommended panel gaps are in step 1.

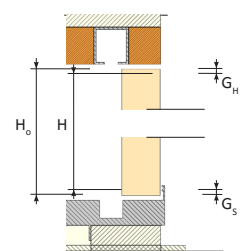
**Width Calculation (all panels equal width)**



**Formula**  

$$W(\text{mm}) = \frac{L_o - (2 \times G_{JP}) - (N - 1) \times G_{PP}}{N} \text{ (mm)}$$

**Height Calculation**



**Formula**  

$$H = H_o - G_H - G_S \text{ (mm)}$$

#### General Recommendation

| Height/<br>mm | No. of hinges               |
|---------------|-----------------------------|
| 2000          | Recommended<br>3 hinges min |
| 2400          | Recommended<br>4 hinges min |

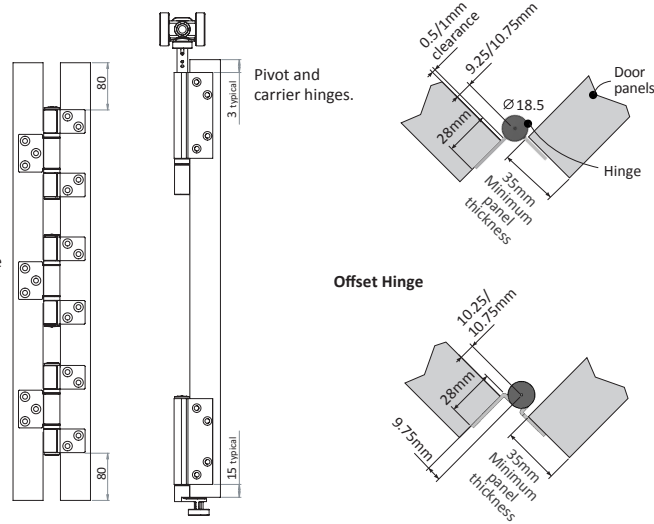
#### Step 4: Hinge selection.

##### Centerline | Offset Hinge Outline:

The hinge configurations are entirely dependent on the number of panels used on any one stack of panels. This is so when stacked, the panels can sit perpendicular to the track centerline and stack efficiently. The hinge set configurations will change depending on a number of factors and is determined by the number of panels. Consequently the number of panels will determine the number of intermediate carrier sets and if an end carrier set is required.

**Note** - an access panel (if required) is only possible for odd numbered stack configurations, unless used as a single door at one end. We will refer to the hinge on the opposite side of the panel to the carrier or pivot set as the outer hinge.

Centerline and offset hinges.



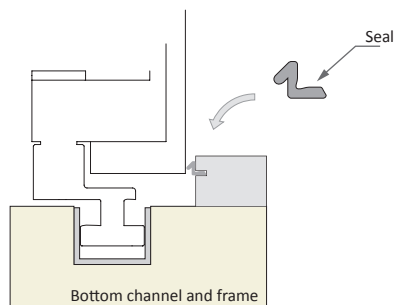
**Guide for selecting outer hinges:**  
**2 panels** only will require a Centerline hinge set:

**3 or more odd numbered panels** will require the first outer hinge set to be offset. Subsequent hinge sets will be centerline.

**4 panels** will require two offset hinge sets.

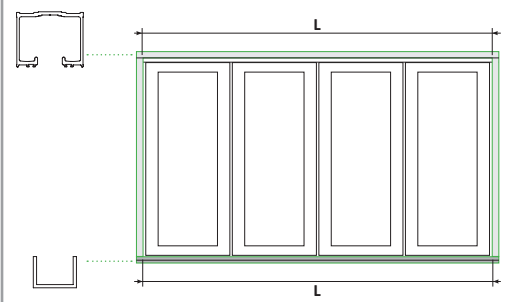
**6 or more even panels** will require the first and last outer hinge sets to be offset, however any hinge sets in between will need to be centerline.

#### Step 5: Install seals in doors as per manufacturers specifications. (Example shown)



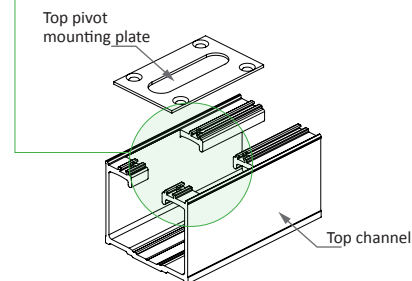
#### Step 6: 6. Cut top and bottom track to desired length to match frame. (Example shown)

##### Titan HD Top Track

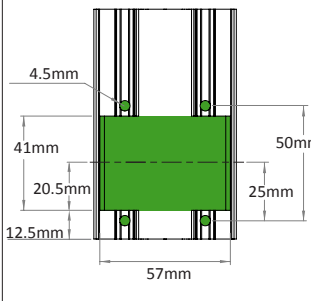


#### Step 7: Create cutout for top pivot mount.

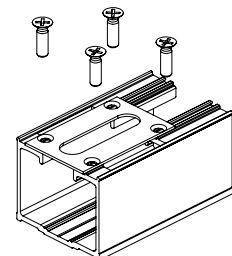
a. Mark, punch and drill for cutout.



##### Cutout and hole dimensions



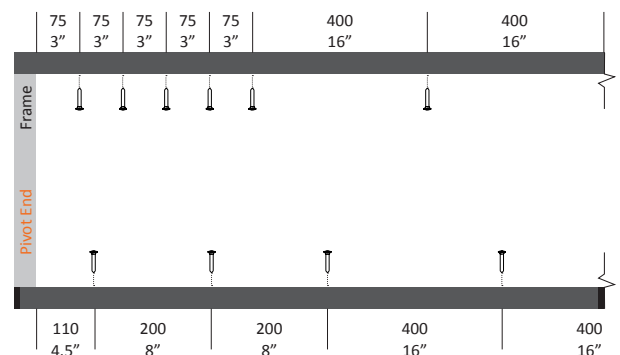
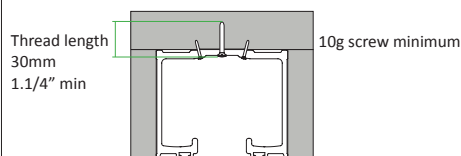
b. Check that mounting plate fits onto extrusion. Do not install top pivot yet.



#### Step 8: Install top and bottom tracks into the frame, fixing at the specified points (minimum) using the specified fasteners (minimum).

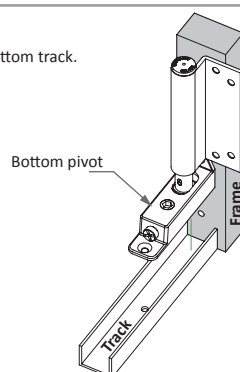
##### Track Fixing Points

Fix track with minimum 10g screws (timber frame).

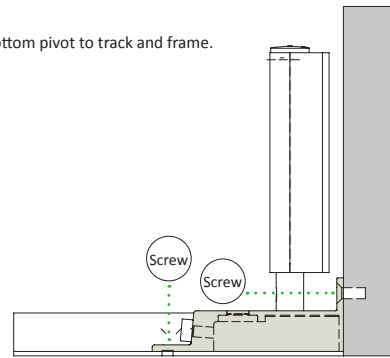


#### Step 9: Install bottom pivot set mount.

a. Insert into bottom track.

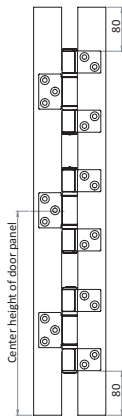


b. Fix bottom pivot to track and frame.

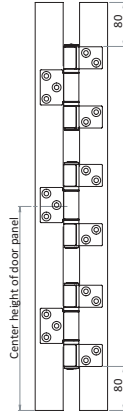


**Step 10:**  
Install hinges onto doors  
prior to mounting panels  
onto frame.

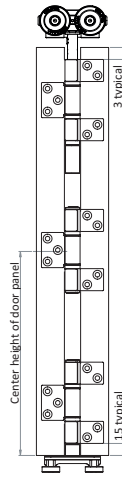
Hinge Set (centerline)



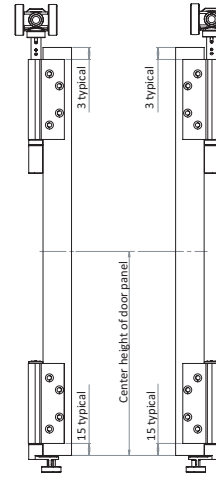
Hinge Set (offset)



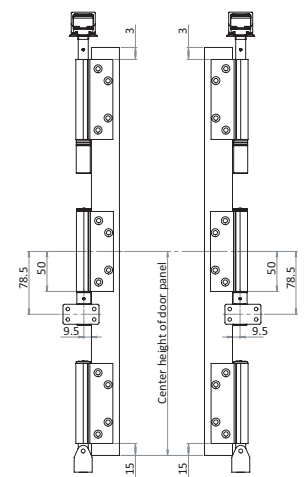
Intermediate Carrier Set (ICS)



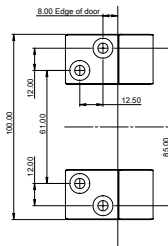
Carrier Set (LCS | RCS)



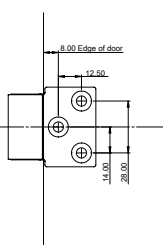
Pivot Set (PS)



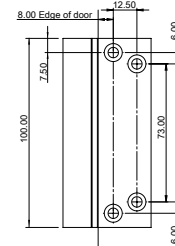
Outer Leaves



Inner Leaf

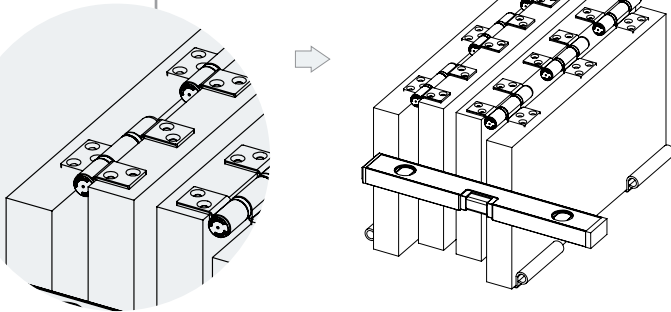


Single leaf



**Step 11:**  
Install hinges.

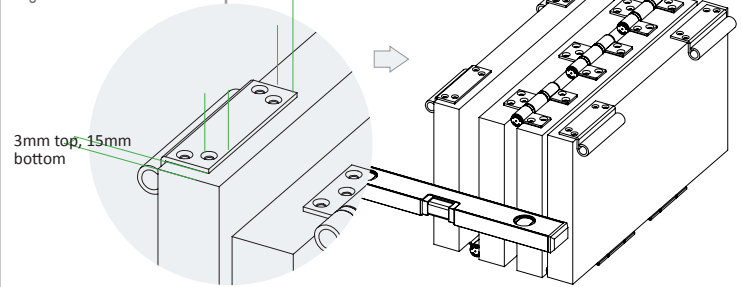
Mark and drill for hinges using  
hinge or template.



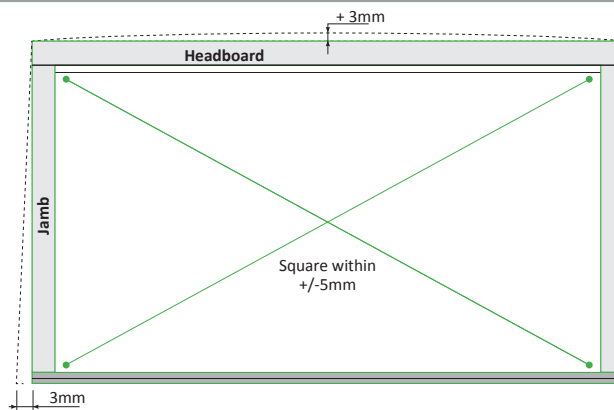
**Step 12:**

12. Install carrier and  
guides.

Mark and drill for hinges using  
hinge or template.



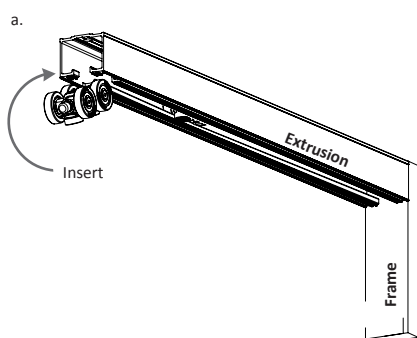
**Step 13:**  
Install frame.



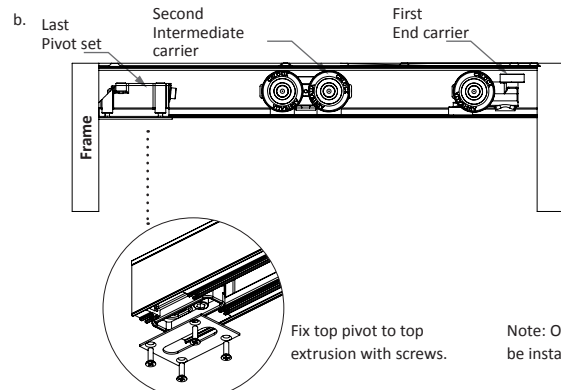
**Step 14:**  
Install top carrier sets in top  
extrusion.  
(Example shown)

Order of installation should  
be as follows (left and right  
opening) - end carrier,  
intermediate carrier and  
pivot set last.

Note: pivot set and hinge  
pins will not be installed  
until later.



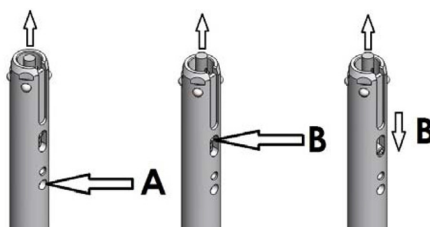
**IMPORTANT**  
Thoroughly clean inside  
track before installation  
of carrier sets.



Fix top pivot to top  
extrusion with screws.

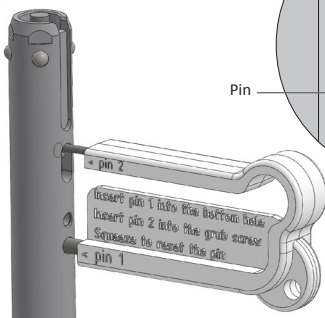
Note: Only carriers to  
be installed not pins.

**Step 15:**  
Install door panels onto frame.

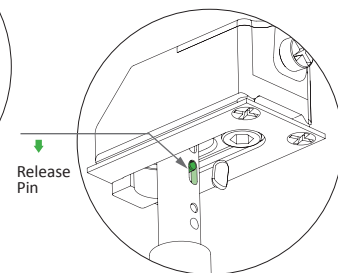
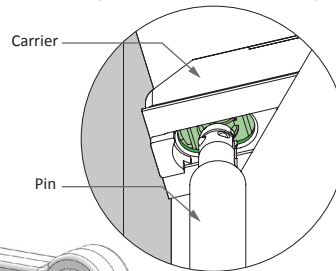


a. Insert a 3mm diameter steel pin (or similar) into hole 'A' to push and hold up the internal plastic pin. When inserted, ensure the 3mm steel pin is under the end of the plastic pin. Insert a 2mm diameter steel pin (or similar) into the grub screw 'B' and pull down the grub screw. You will feel a click and the pin is reset.

Alternatively you can use the Titan Pin Reset Tool as shown on the right.



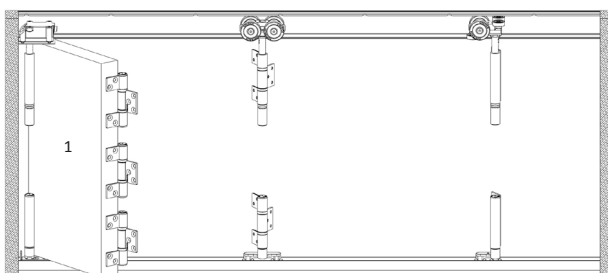
b. Position and align with the carrier slot. Insert pin into carrier. Pin will hold in place.



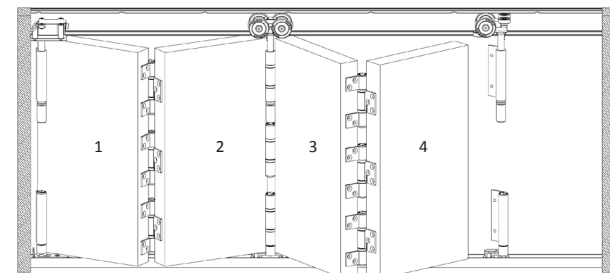
c. To release pin - remove plastic cover cap and pull the release pin down. Pin will disengage.

**Panel installation**

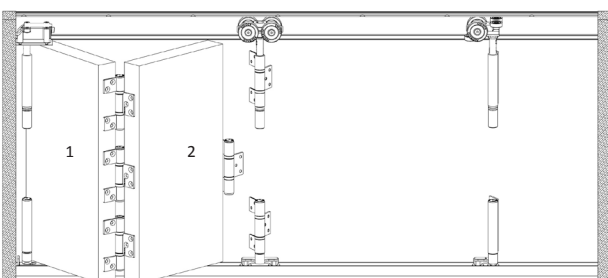
a. Bring pivot panel (panel 1) to top and bottom pivot set and attach. Hinge set attached to panel.



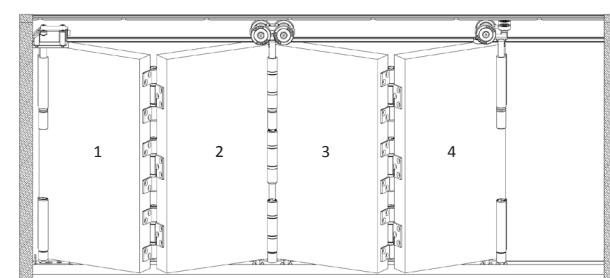
d. Bring second intermediate panel (panel 3) to the intermediate carrier/ guides with hinge set attached. Bring end panel (panel 4) to hinge set.



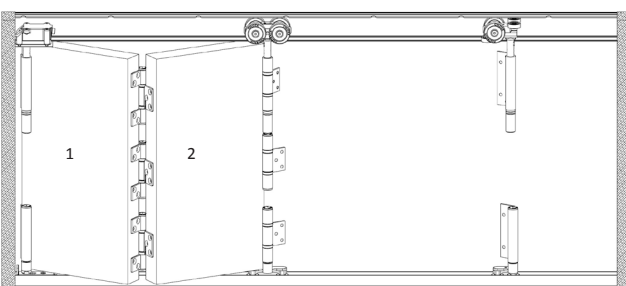
b. Bring first intermediate panel (panel 2) to pivot panel. Middle hinge of intermediate set attached.



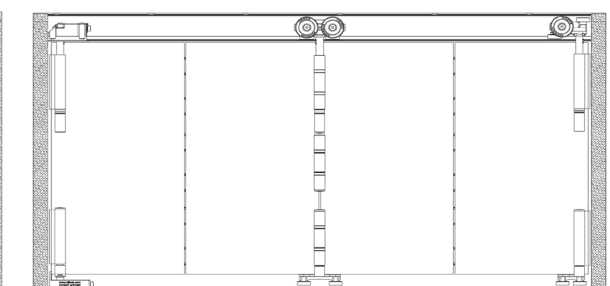
e. Fix end panel to end carriers/ guides.



c. Fix intermediate hangers to intermediate panel (panel 2). Attach intermediate carrier/ guide to intermediate panel (panel 2).



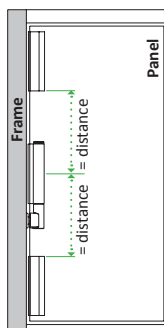
f. Close all panels and ensure proper operation.



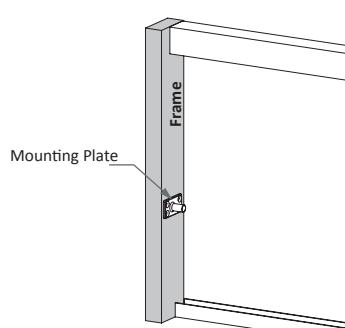
**Step 16:**  
Wall pivot installation (optional).

Wall pivot sets are to be installed at the center of the door panel.

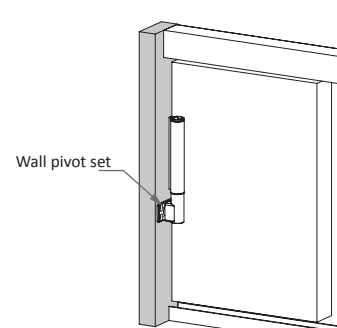
a. Install hinge onto door panel. Hinge leaf to be center of top and bottom pivot hinge leaf.



b. Mark out location of mounting plate on frame. Open panel and fix mounting plate to frame.

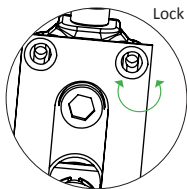


c. Close panel ensuring mounting plate pin inserts into wall pivot correctly.

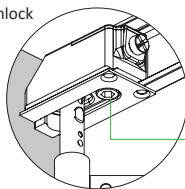


**Step 17:**

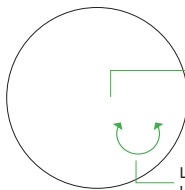
Panel adjustment.  
Adjust top and bottom pivot until all door panels are level and correct clearance at both ends of door assembly.

**Horizontal Adjustment**

Lock and unlock

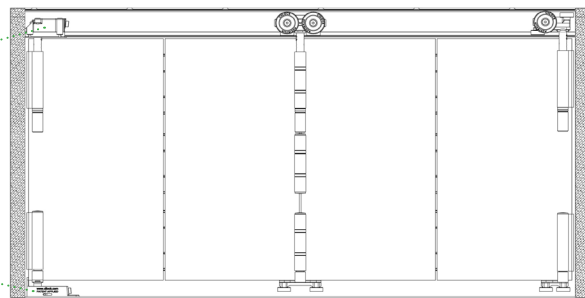


Rotate to adjust



Rotate to adjust

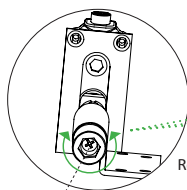
Lock and unlock

**Step 18:**

18a. Panel adjustment.  
Adjust top pins using hex key until correct height is achieved.

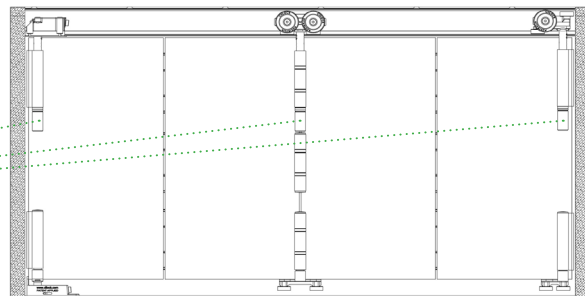
18b. Lock off pin by tightening left hand screws with a phillips screwdriver.

18c. Open all doors and check for correct operation. Check top and bottom tracks are clean.

**Vertical Adjustment**

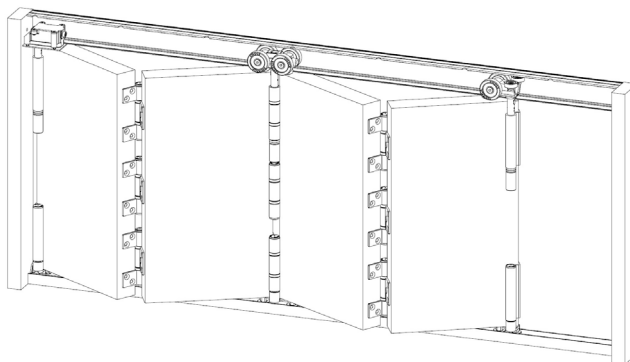
Rotate to adjust

Left hand screw

**Step 19:**

System overview.

Titan SD hardware system installation overview.

**System Overview****CARE AND MAINTENANCE**

In order for the Titan hardware components to continuously perform correctly and meet the requirements of the product warranty, the following care and maintenance must be undertaken:

**INSPECTION AND ADJUSTMENT:** The structure supporting the door may change over time so periodic inspection and necessary adjustment of all hardware fasteners and adjustment components must be made. We recommend a periodic inspection of at least every 6 months.

**CLEANING:** Regularly clean/wash (with soap or mild detergent) all exposed components especially stainless steel components that will still show signs of surface corrosion in coastal and highly corrosive environments despite being stainless steel. Avoid using products that may contain solvents, acidic or abrasive substances i.e. cleaning products, as it can impair and blemish the finish of the product. After cleaning/washing, lubricate all hinges with a high performance silicon based lubricant. We recommend using an aerosol can version with spraying tube attached to the nozzle so that deep penetration is achieved. Coat all exposed surfaces with a surface protectant to reduce the possibility of corrosion in the future.

**Stainless Steel Hinges** - These can be cleaned with a product specifically designed to clean and protect stainless steel. Ensure only the stainless steel components are exposed to this type of cleaning product.

Regularly clear all debris and clean both top and bottom tracks so that all guide wheels are running on a smooth and clear surface.

**LUBRICATION:** Regularly lubricate all hinges using a high performance silicon based lubricant. We recommend using an aerosol can version with spraying tube attached to the nozzle so that deep penetration is achieved.