These instructions are intended for professional garage door installers. All references are taken from inside looking out.
The Designer Series Flushmount Door installation instructions

contents

1.0 before you begin 3
  1.1 installation safety warnings 3
  1.2 fastener recommendations for fitting garage doors 4
  1.3 parts checklist 5
  1.4 requirements before installation 6
    1.4.1 measurements & requirements 6
    1.4.2 initial calculations 6
  1.5 tools 6

2.0 assembly 7
  2.1 assemble the frame 7
  2.2 assemble the vertical tracks 7
  2.3 assemble door panels 8

3.0 installation 9
  3.1 install the tracks 9
  3.2 install the temporary boards 9
  3.3 installing the panels 10
  3.4 assemble horizontal track 10
  3.5 installing top panel 11
  3.6 spring counterbalance system 11
  3.7 adding tension to spring 12
  3.8 final checks 13

4.0 troubleshooting 14

5.0 appendix 16
  5.1 biowood castellated facade 16
  5.2 after installation care 17
1.0 before you begin

1.1 installation safety warnings

This B&D Door is designed and tested to provide security, attractive appearance and smooth, low effort operation provided it is installed and operated in strict accordance with the following safety warnings. Failure to comply with the following instructions may result in death, serious personal injury or property damage.

**NOTE:** No guarantee will be given or responsibility accepted by the manufacturers if the door is not installed as instructed.

**WARNING!**

- Crush injury from unsecured door
  - Place a 2 metre exclusion zone around area under the garage opening while installing door. If sufficient area is not available DO NOT install door.
  - Follow the installation instructions.

- Tension Springs
  - Ensure correctly fitting winding bar is used.
  - Ensure the correct length winding bar is utilised.
  - Ensure winding bar is placed appropriately in the torsion socket plug.
  - Ensure correct bolts are tightened or loosened (or clamp pliers) to ensure there is no release or controlled release of energy from the spring either through the torsion bar or the winding bar.
  - Keep hands clear of the torsion plug at all times.
  - Keep head clear of the tensioning bar at all times.

**ELECTROCUTION!**

- Check risk assessment for any highlighted electrical power concerns.
- Ensure power source is isolated prior to commencement of job.
- Turn off electricity to site when necessary.
- Ensure you check the substrate for electrical wiring prior to penetration.
- Wear rubber soled footwear.

**LACERATION:**

- Wear appropriate PPE (Dyneema cut off gloves) and keep hands well clear of pinch points.
- Follow instructions explicitly, particularly for the installation of some parts of the panel doors, as the unrolled cut out edges presents a very sharp edge.

**CAUTION:**

- Muscular strain
  - Practice correct lifting techniques when required.
  - Use mechanical aids such as lifting devices, forklift and cranes where possible.
  - Avoid twisting.

- Fall from ladder
  - Ensure ladder is the correct type for job.
  - Ensure ladder is on flat firm ground that will take the weight without the legs sinking.
  - Ensure user has 3 points of contact while on ladder.

- Hand Tools
  - Wear appropriate PPE and utilise operators manual of all tools.
  - Use appropriate noise/hearing protection in the form of ear plugs or ear muffs.
  - Ensure appropriate fire protection available and housekeeping to ensure that flammable liquids or materials are removed from the area of work.

- Entanglement
  - Keep hands and loose clothing clear of moving door and guides at all times.

**TWO PERSON LIFT:**

- Depending on the size of the door, this product may requires a two person lift. Use proper techniques and equipment to lift the door from the trailer and into position.
## 1.2 fastener recommendations for fitting garage doors

<table>
<thead>
<tr>
<th>substrate type</th>
<th>fastener required</th>
<th>washer required</th>
<th>plug required</th>
<th>drilled hole ø (mm)</th>
<th>min hole depth (mm)</th>
<th>B&amp;D fastner pack</th>
</tr>
</thead>
<tbody>
<tr>
<td>solid brick (&gt;10 MPa)</td>
<td>screw coach 5/16 - 9tpi x 50</td>
<td>washer flat M8</td>
<td>plug nylon 5/16 x 50</td>
<td>10</td>
<td>60 90</td>
<td>FK0011 FK0012</td>
</tr>
<tr>
<td>three hole brick (&gt;30 MPa)</td>
<td>screw anka M8 x 75 flange hex head</td>
<td>washer 3/8&quot;</td>
<td>n/a</td>
<td>8</td>
<td>75 75</td>
<td>FK0024 FK0023</td>
</tr>
<tr>
<td>ten hole brick (&gt;15 MPa)</td>
<td>screw anka M8 x 75 flange hex head</td>
<td>washer 3/8&quot;</td>
<td>n/a</td>
<td>8</td>
<td>75 75</td>
<td>FK0024 FK0023</td>
</tr>
<tr>
<td>concrete block (&gt;8 MPa)</td>
<td>screw anka M8 x 75 flange hex head</td>
<td>washer 3/8&quot;</td>
<td>n/a</td>
<td>8</td>
<td>75 75</td>
<td>FK0024 FK0023</td>
</tr>
<tr>
<td>concrete (&gt;15 MPa)</td>
<td>screw coach 5/16 - 9tpi x 80</td>
<td>washer flat M8</td>
<td>plug nylon 5/16 x 80</td>
<td>10</td>
<td>60 90</td>
<td>FK0013 FK0014</td>
</tr>
<tr>
<td>timber</td>
<td>screw coach 5/16 - 9tpi x 50</td>
<td>washer flat M8</td>
<td>n/a</td>
<td>5</td>
<td>60 90</td>
<td>FK0011 FK0012</td>
</tr>
<tr>
<td>steel section (0.9-2mm thick)</td>
<td>screw tek 14g - 20tpi x 25 flange hex head ZP</td>
<td>washer flat M8</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a n/a</td>
<td>FK0019 FK0020</td>
</tr>
</tbody>
</table>

### important notes
1. For installation to substrate materials not covered in the above chart, the installer should seek expert advice.
2. Substitute fasteners are not recommended unless approved.
3. The above chart specifies the fasteners for new substrate materials only. Seek specialist advice regarding pre-existing substrate materials.
4. It is important that correct washer and plug is used and the correct pilot hole drilled where specified.

**WARNING!**
The installer must select and use fasteners appropriate to the material into which they are being fixed.
1.3 parts checklist

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>PACK OF DOOR PANELS</td>
<td>1</td>
</tr>
<tr>
<td>B</td>
<td>ALUMINIUM FRAME LENGTHS</td>
<td>3</td>
</tr>
<tr>
<td>C</td>
<td>TORSION BAR</td>
<td>1</td>
</tr>
<tr>
<td>D</td>
<td>POLYPROPYLENE CURVE</td>
<td>2</td>
</tr>
<tr>
<td>E</td>
<td>VERTICAL TRACKS</td>
<td>2</td>
</tr>
<tr>
<td>F</td>
<td>HORIZONTAL TRACKS</td>
<td>2</td>
</tr>
<tr>
<td>G</td>
<td>FLAG BRACKET</td>
<td>2</td>
</tr>
<tr>
<td>H</td>
<td>SMALL ANGLE JAMB BRACKETS (2 SIZES)</td>
<td>2+</td>
</tr>
<tr>
<td>I</td>
<td>TENSION SPRING</td>
<td>1-4</td>
</tr>
<tr>
<td>J</td>
<td>CABLE DRUMS</td>
<td>2</td>
</tr>
<tr>
<td>K</td>
<td>SPRING ANCHOR BRACKET</td>
<td>1</td>
</tr>
<tr>
<td>L</td>
<td>SIDE BEARING COMBO BRACKETS</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>WHEEL AXLES</td>
<td>8+</td>
</tr>
<tr>
<td>N</td>
<td>LIFTING CABLE</td>
<td>2</td>
</tr>
<tr>
<td>O</td>
<td>TEK SCREWS</td>
<td>2</td>
</tr>
<tr>
<td>P</td>
<td>HINGES</td>
<td>9+</td>
</tr>
<tr>
<td>Q</td>
<td>HINGED HANGERS</td>
<td>16</td>
</tr>
<tr>
<td>R</td>
<td>TOP HANGER</td>
<td>2+</td>
</tr>
<tr>
<td>S</td>
<td>WASHERS</td>
<td>10</td>
</tr>
<tr>
<td>T</td>
<td>BOTTOM HANGERS</td>
<td>2</td>
</tr>
<tr>
<td>U</td>
<td>STOPPER PLATE</td>
<td>2</td>
</tr>
<tr>
<td>V</td>
<td>CLEVIS PINS</td>
<td>2</td>
</tr>
<tr>
<td>W</td>
<td>SHAFT COLLAR</td>
<td>2</td>
</tr>
<tr>
<td>X</td>
<td>COTTER PINS</td>
<td>2</td>
</tr>
<tr>
<td>Y</td>
<td>AXLE SPACER</td>
<td>4</td>
</tr>
</tbody>
</table>

An extended impact drive 152mm & \( \frac{3}{8} \) socket is required for installation.
1.4 requirements before installation

**mounting** - The door is designed to be mounted in the opening to a frame that is protruding forwards.

**obstructions** - Ensure that the surface where the door will be fitted is smooth, and the area behind and in front of the opening is free from any protrusions.

**structural suitability** - Ensure the opening is strong enough to support the door. If unsure, consult a builder.

**level and plumb** - The door must be installed in an absolutely level position, if opening is not level and square, appearance will be affected. The floor should be level or recessed across the opening to avoid gaps.

1.4.1 measurements & requirements

**opening width** - as the flush mount frame will sit within the jamb, the frame needs to be narrower than the opening (recommended 10-20mm but will be dependent on the squareness of the opening). The door will sit within the flush mount frame and will be 240mm narrower. See Fig 1.4.1.

**opening height** - the flush mount frame will sit within the jamb, therefore the frame needs to be shorter than the opening height (recommended 10mm but will be dependent on squareness of the opening). The door will sit flush within the flush mount frame and will be 90mm lower than frame.

**headroom** - standard headroom with a residential opener will be 150mm or 185mm for an industrial opener.

**sideroom** - the flush mount frame will require no sideroom for 4 panel doors under 250kg. For 5 panel doors and heavy doors allow 50mm.

**backroom** - as the door extends into the garage when opening a minimum of the door height + 300mm for tracks is required (+ 1000mm if opener fitted).

**level datum** - use a water or lazer level to mark a datum line on both sides approx. 1.5m from the floor. Use this line to compare the distance on each side to the opening height to determine if the opening is level.

**position of frame** - measure the distance of the battons to the wall on the exterior of the building. If the battons are not in place obtain this information from the builder before proceeding.

**cladding** - obtain a sample piece of the cladding or measure the cladding on the door panel and use a substitute that is of the same depth. Refer to appendix for details on how to install biowood panels.

1.4.2 initial calculations

a) Open the package of door panels and measure the depth of the cladding on the panel ①.

b) measure the distance of the battons from the wall ②. If battons not in place, obtain this information from the builder in order to proceed. See Fig 1.4.2.

1.5 tools

It is recommended that this door is installed by a professional door installer using a professional and specialised tool kit, including:

- Impact driver
- Drill & drill bits
- Extension 152mm & 3/8 socket
- Range of window packers
- Long spirit level
- 2 x (35 x 90mm) boards
2.0 assembly

2.1 assemble the frame

a) Refer to the Fastener table in section 1.2 to determine the size of the drill holes and fasteners required to fit the frame to the door jamb.

b) Start by drilling holes in the vertical frame, 200mm from the top and bottom and then at intervals no greater than 600mm, ensuring the fixing holes are aligned with the jamb substrate. Fig 2.1.1.

c) Use a long level to check that the frame is vertical in both planes and then using the appropriate window packers at each fastening point, fix the frame vertically.

d) Once the vertical frame is set, work along the top horizontal frame.

e) Holes in the horizontal frame can be placed 200mm from each end, one in the centre and then evenly spaced at no more than 1200mm intervals. Fig 2.1.1

f) Use a long level and starting from one end, work across the horizontal frame and fix in place, using window packers at each fastening point.

g) Continue to work down the remaining vertical frame with the same method as steps b) & c).

h) Place and tighten the 4 frame assembly bolts at the top corners of the frame.

2.2 assemble the vertical tracks

a) Affix the polypropylene curve and flag bracket to the vertical straight track using 5/16 flat head bolts and wiz nuts, noting the distance required from the front of the frame to the track as shown in Fig 2.2.1.

b) Align the small angle jamb brackets with the predrilled holes in the frame and affix to the vertical track using 5/16 flat head bolts and wiz nuts.

NOTE: The small angle jamb brackets and the flag bracket, provide adjustable slots to move the track out from the frame. Use the smaller of the small angle jamb brackets at the bottom of the track.
2.3 assemble door panels

!tip The axle carrier on the hinged hanger in Fig 5.1.6 may need to be rotated depending on how far the frame protrudes the door jamb.

a) Open up the pack of door panels, making sure the bottom panel (weather strip seal on the bottom of the panel and bottom hinge hole) is on top of the pack. Start with the bottom panel.

b) Place the bottom hanger onto the bottom panel as shown in Fig 2.3.1 using tek screws. Secure the hinged hangers using tek screws.

Apply general purpose grease to all axles before fitting them.

c) Fit the axle spacer to the wheel axle then slide in wheel axle through the axle plate hanger to the bottom panel bracket.

d) Push the end of each lifting cable onto the bottom hanger, followed by a washer and secure with a clevis pin & cotter pin Fig 2.3.1.

Do not unwind lifting cable until specified to do so.

e) Attach the hinges to the top of the panel at every door stile, using 2 tek screws, then place 2 hinged hangers at either end of the panel and secure with tek screws.

CAUTION: Ensure all axles are aligned to achieve accurate placement and limit the stress on the door.

f) Insert the wheel axle. NOTE: Once the panel is in place the hinged hangers can be adjusted if needed to ensure the panels are parallel to the opening.

g) Repeat steps e) and f) to assemble other middle panels. Top panel assembled later.
3.0 installation

3.1 install the tracks

a) Insert 5/16 x 1 1/4 flat head square neck bolts into the 5 vertical holes on the frame from the front of the opening. Place the adjustable jamb brackets over bolts and loosely fasten using 5/16 flange nuts.

b) Vertically align the inside of the track with the inside of the flushmount frame using a straight edge.

c) The tracks should be panel width + 20mm apart. Use the level/datum marks to ensure the tracks are level with each other and the same distance to the top of the track or the door will not function correctly.

d) Ensure to set the bottom adjustable jamb bracket to 70mm from the back of the frame to the centre of the bolt, Fig 3.1.1. Set the vertical track flag bracket F connection to 95mm for a 4 panel door.

e) Once satisfied temporarily fix in position with at least three (3) fixings to the top bracket and one to each of the lower track brackets. These will hold the tracks in position and allow for minor adjustments.

3.2 install the temporary boards

a) Place a sample piece of cladding 3 or substitute that is same depth as measurement 1 on top of frame. See Fig 2.1.2.

b) Take one of the boards from your required tool kit and secure both it 4 and the sample cladding 3 to the frame as in Fig 3.2.1.

c) Repeat steps a) and b) for other side of door.

tip Refer to the appendix for information on how to install biowood wall panels.
### 3.3 Installing the Panels

**TWO PERSON LIFT:** depending on the size of the door, this process may require two persons to lift into place.

- a) Carefully lower the wheels of the bottom panel into the tracks and lower so the panel is sitting flush with the temporary board. Fig 3.3.1.
- b) Check that the wheels are sitting in the “V” groove of the vertical track on each side and ensure the panel is horizontal.

**CAUTION:** Bottom panel must be horizontal. Use packers if required before installing middle panels.

- c) Insert the next panel into the guides and lower to rest on top of the bottom panel.
- d) Ensure front face of panel is aligned with bottom panel before screwing the hinges and hinged hangers to the next panel.

**NOTE:** The hinged hangers are adjustable to ensure the panels are flush to the temporary board. Ensure they are aligned with middle hinge as per Fig: 3.3.2.

- e) Repeat this procedure for all other panels with the exception of the top panel which is positioned after the horizontal track is installed.
- f) Once satisfied with the door placement, secure all fixing points on the vertical tracks.

**CAUTION:** DO NOT remove plastic protective film from panels until the temporary board is removed.

### 3.4 Assemble Horizontal Track

- a) Lift the horizontal track into position and secure to the flag bracket using 6 x \(\frac{3}{16}\) flat head bolts and wiz nuts.

**WARNING!** The plate stopper must be installed. Failure to do so may cause serious personal injury or damage to property.

- b) Install the plate stopper from the outside of the top of the flag bracket and through both the top track and the flag bracket using \(\frac{5}{16}\) flat head bolts as shown in Fig 3.4.1.

Before bracing the horizontal tracks, ensure that they are square to the opening and level. To check whether your diagonals are equal:

- c) Measure from the top of the vertical track to the end of the horizontal track.
- d) Check both sides.
- e) Adjust if necessary.

The track support must be located along the horizontal track at 2000mm into ceiling beams.

- f) Measure along the horizontal track to 2000mm and find a structurally sound beam to fix your support to the ceiling. Fig 3.4.2

**WARNING!** For all doors higher than 2450mm and wider than 4700mm two (2) ceiling supports must be fitted per horizontal track at 1300mm & 2600mm.

**WARNING!** For doors over 150kg (8m²) we recommend using heavy duty ceiling supports.
3.5 installing top panel
a) Place the top panel into position and clamp to hold in place.
b) Insert the wheel axle into the top hanger and slide down the top horizontal track to the stopper plate.
c) Align wheel axle with the position of the below wheel axle (adjusting hanger if needed) and secure top hanger to panel with nuts and bolts. Fig 3.5.1.

tip
Use an extended impact drive 152mm & 3/8 socket to secure the hanger in place.
d) Repeat for the other side of top panel.

3.6 spring counterbalance system
The springs and drums for the counterbalance system are now colour coded to easily identify which side of the centre bracket the spring is placed. Fig. 3.6.1.
a) Place the torsion bar on the floor and slide the spring anchor bracket onto the torsion bar, positioning it approximately half way along.
b) Locate the cable drum/s, washers, side bearing brackets, spring/s and shaft collar and assemble them as shown in Fig. 3.6.1.

c) Ensure the shaft collar is butted up against the anchor bracket as shown in Fig. 3.6.1 and fixed to axle on spring side of anchor bracket.

CAUTION: DO NOT tighten bolts in cable drums yet
a) Lift the torsion bar assembly into position, resting both ends over the top of the horizontal tracks. Fig. 3.6.2.
b) Ensure that the side bearing brackets and cable drums are situated on the outside of the horizontal tracks.
c) Line up the spring anchor bracket with the middle of the door, so that the cut corner is facing down.
d) Slide the torsion bar assembly towards the wall so the spring anchor bracket can touch the wall (the axle must be parallel with the opening).
e) Secure the spring anchor bracket to the wall and the side bearing brackets to the tracks as shown in Fig 3.6.2.

Unwind the lifting cable from the bottom panel.

f) Attach the lifting cable to the cable drum by slipping the cable into the slot on the outside groove. (the ferrule will prevent the cable from coming out).
g) Wind the cable by hand by turning the cable drum away from the door.
h) Once the cable is taut, slide the cable drum against the side bearing bracket and tighten the screws to the torsion bar. Fig 3.6.3.
3.7 adding tension to spring

**WARNING!** Torsion springs can cause serious injury. DO NOT underestimate the tension in the spring.

**WARNING!** Keep hands clear of the spring and the spring winding plug at all times.

The number of turns required for each spring is shown on a paper tag attached to the springs. Fig 3.7.1

a) Secure the torsion bar using 2 pipe wrenches, tensioning bar or mechanical spring winder as shown in Fig 3.7.2.

b) Turn the spring by inserting winding bars into the plug holes of the spring and wind up in the direction towards the opening. Fig 3.7.3.

c) Once you have completed the turns required, remove one winding bar. If spring snaking occurs, tap the remaining bar back towards the spring anchor bracket.

d) Maintain firm tension on the winding bar, while using a spanner to tighten the two (2) grub screws. Fig 3.7.4.

e) Repeat this procedure if there is more than one spring, remembering to always wind the spring, whether left or right hand, in an up direction towards the opening.

f) Check that all screws are properly tightened before removing the wrenches on the torsion bar.

The label lists how many full turns. Alternatively, a line is painted along every spring. If the spring is turned 8 times, 8 lines can be seen along the spring.
3.8 final checks

For optimal performance the door needs to operate efficiently.

a) Manually move the door up and down, the door should move freely without binding or sticking.

b) The maximum force required to move the door should not exceed 20kg.

c) Lift the door to about halfway. When released, the door should stay in place. Fig 3.8.1.

d) Check that the clearances in the vertical tracks as per Fig 3.1.2 is also in the horizontal tracks.

e) If you find that the door is binding, open out the horizontal tracks slightly to create the correct tolerance.

f) Once satisfied that the operation of the door is as near perfect as possible, check that all nuts and bolts are tight.

g) Oil the springs full length to prevent noise and reduce friction. TAL 5 or similar oil rich lubricant in a pressure spray can is acceptable. Fig 3.8.2

To ensure the panels are aligned to the front:

h) Start with the bottom wheel axle and adjust the hinged hanger so the wheel is positioned towards the back of the track as per Fig 3.8.3.

i) Then proceed upwards to next wheel and adjust hinged hanger so wheel is positioned to front.

j) Repeat process up track to ensure panels are aligned at front.

Finally, the safety handle must always be fitted to the door.

k) Fit a “D” handle using screws to the middle of the bottom panel.

l) Remove the temporary cladding & boards from front of door. Fig 3.2.1.

**WARNING! The safety handle must always be fitted to the door**

For bottom hanger, mark the position of the adjustment on the hinge. Lift door up and adjust to mark and check. Repeat if necessary.
## 4.0 troubleshooting

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Possible cause</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>lifting cables loose when door is opened</td>
<td>cable drums have slipped</td>
<td>check the screws on the cable drums</td>
</tr>
<tr>
<td></td>
<td>diagonals out of square</td>
<td>check the horizontal tracks are square</td>
</tr>
<tr>
<td></td>
<td>lifting cables not wound till taut</td>
<td>loosen screws on cable drums and wind cables till taut, then tighten screws.</td>
</tr>
<tr>
<td>torsion bar moving</td>
<td>cable drums not adjusted correctly</td>
<td>check and adjust</td>
</tr>
<tr>
<td></td>
<td>springs not adjusted correctly</td>
<td>check spring tension</td>
</tr>
<tr>
<td></td>
<td>shaft collar not fitted (single spring)</td>
<td>fit shaft collar, see section 3.6.</td>
</tr>
<tr>
<td></td>
<td>end bearing brackets are not straight</td>
<td>check end bearing brackets are square and vertical</td>
</tr>
<tr>
<td>door will not hold up in open position</td>
<td>spring tension not tight enough</td>
<td>check the correct number of turns has been made to spring/s, refer to section 3.7.</td>
</tr>
<tr>
<td></td>
<td>incorrect placement of springs</td>
<td>check the springs are on the correct side/s, refer to section 3.6.</td>
</tr>
<tr>
<td>door not level</td>
<td>water level marks incorrect</td>
<td>check the water level marks are correct</td>
</tr>
<tr>
<td></td>
<td>lifting cable not equally taut</td>
<td>loosen screws on cable drums and wind cables till taut, then tighten screws.</td>
</tr>
<tr>
<td>door moving to one side</td>
<td>clearances incorrect</td>
<td>check the clearance/overlap of the door is equal on each side.</td>
</tr>
<tr>
<td></td>
<td>cable drums not close to end bearing brackets</td>
<td>loosen screws on cable drums and ensure they are hard up against the end bearing bracket and tighten screws.</td>
</tr>
<tr>
<td>door panels jamming / rubbing on tracks</td>
<td>incorrect clearance between wheel and vertical track</td>
<td>Check that the clearances per Fig 3.1.1 are the same in both vertical and horizontal tracks.</td>
</tr>
<tr>
<td></td>
<td>door not level</td>
<td>check water level marks are correct</td>
</tr>
<tr>
<td></td>
<td>cable drum not lined up correctly</td>
<td>loosen screws on cable drums and ensure they are hard up against the end bearing bracket and tighten screws.</td>
</tr>
<tr>
<td></td>
<td>vertical tracks not parallel</td>
<td>Check that the clearances per Fig 3.1.1 are the same on both vertical tracks.</td>
</tr>
<tr>
<td></td>
<td>lifting cables slipping</td>
<td>loosen screws on cable drums and wind cables till taut, then tighten screws.</td>
</tr>
<tr>
<td>door hard to lift</td>
<td>spring tension</td>
<td>check the correct number of turns has been made to spring/s, refer to section 3.7. Ensure springs have been lubricated.</td>
</tr>
<tr>
<td></td>
<td>spring may have slipped on set screws</td>
<td>check spring plug grub screws are tight, refer to section 3.7.</td>
</tr>
<tr>
<td></td>
<td>wrong spring</td>
<td>check the springs are on the correct side/s, refer to section 3.6.</td>
</tr>
</tbody>
</table>
## common spring problems

<table>
<thead>
<tr>
<th>symptom</th>
<th>possible cause</th>
<th>remedy</th>
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<tbody>
<tr>
<td>door raises from the floor and hangs down in opening more than 100mm.</td>
<td>cable length too long with cable not on high portion of drum</td>
<td>shorten cable length until the cable rolls onto the flat portion of the drum when the door starts into the horizontal position</td>
</tr>
<tr>
<td></td>
<td>springs may be too strong (too short)</td>
<td>replace spring</td>
</tr>
<tr>
<td></td>
<td>wrong cable drums for springs (too small)</td>
<td>replace cable drums</td>
</tr>
<tr>
<td>door lifts from the floor and runs away at the top</td>
<td>door is over tensioned, too many turns on spring or wrong spring</td>
<td>ensure that the correct spring is supplied (if not replace) and that it has the correct number of turns applied</td>
</tr>
<tr>
<td></td>
<td>wrong cable drums for spring, (too small)</td>
<td>replace cable drums</td>
</tr>
<tr>
<td>door falls to the floor and hangs down in the opening</td>
<td>door is under tensioned too few turns on spring or wrong springs</td>
<td>ensure that the correct spring is supplied (if not replace) and that it has the correct number of turns have been applied</td>
</tr>
<tr>
<td></td>
<td>wrong cable drums for springs (too large)</td>
<td>replace cable drums</td>
</tr>
<tr>
<td>door falls to the floor and runs away at the top</td>
<td>lifting cable may be too short for high lift cable drum or vertical lift drum and is sitting too high on the spiral portion of the drum</td>
<td>increase the cable length to bring the cable down lower on the spiral</td>
</tr>
<tr>
<td></td>
<td>torsion springs too long</td>
<td>shorten springs</td>
</tr>
<tr>
<td>door balances at the floor but runs up or down in between</td>
<td>cables in wrong position on spiral of the drums</td>
<td>adjust cable length</td>
</tr>
<tr>
<td>poor balance throughout</td>
<td>winding spring in wrong direction</td>
<td>wind in correct direction</td>
</tr>
<tr>
<td></td>
<td>door weight incorrect</td>
<td>supply correct springs</td>
</tr>
<tr>
<td></td>
<td>springs binding</td>
<td>fit torsion bar collar lubricate springs</td>
</tr>
<tr>
<td></td>
<td>door not level</td>
<td>cable lengths are equal equal turns on both springs level door during installation</td>
</tr>
</tbody>
</table>
5.0 appendix

5.1 biowood castellated facade

a) Start by laying boards from the base of the wall.
b) Install a 6mm PVC cap mould as starter strips at the base of wall to support and lock the first board in place.
c) Position the base of the starter strip 11mm above the bottom of the first board. (see Fig 5.1)
d) Cut the first board and then remainder of the boards to be fixed to this wall to desired length.

**CAUTION!** Biowood outdoor wall panels when installed in areas exposed to UV light, must be coated with Intergrain Ultradeck Biowood coating to prevent colour fading.

**CAUTION!** All boards are to be screwed and glued to the structural elements so as to achieve a bonded fixing method at spacings of not more than 450mm.

**CAUTION!** If installed onto battens, ensure that the battens are securely fastened and true to line to within a plus or minus tolerance of 3mm in 2m for both horizontal and vertical places. All timbers are to be seasoned.

e) Apply 3 beads of Selley’s Liquid Nails to the face of every stud for the full length of the board.
f) Lay the first board with groove facing down and insert the inner leg into the starter strip.
g) Fix the tongue in the countersunk groove with 2 x 32mm x 8g stainless steel screws through a 3mm pilot hole. Position the screws 10mm in from the stud edge.

**WARNING!** All boards need to be cut to length and installed at the same temperature. If this is not observed, the boards may expand and contract at different rates resulting in uneven board lengths.

**WARNING!** Do not over tighten screws.

h) Repeat this process for the remainder of the wall.

Refer to grmaustralia.com.au for more information on biowood options.
5.2 after installation care

cleaning
Your B&D Designer Series panels are made from aluminium extrusions and are hence resistant to corrosion, however in our atmosphere there are harmful deposits that gather on the door surface and if not removed regularly, will seriously affect the appearance. Touch up paint is available for blemishes in the paintwork where damage has been done in powder coated doors.

hinges
If the hinges and hangers squeak and squeal during operation then the hinges haven’t been greased or the grease has dried up. Please apply some grease into the holes in the hangers and hinges as pointed out in the diagram below.

inserts
Should any insert suffer damage, replacements are available from B&D.

regular maintenance required
B&D recommends that you check the operation of your Designer Series at least every six months (more regularly in extreme environments or frequent use). The effort required to manually open and to manually close the door should be about the same (if door has an automatic opener, put into manual mode before testing door). If the door is difficult to operate in either direction (up or down) then check that the inside surfaces of the guides are clean and free of obstructions.

If the door is still difficult to operate, then your door will need a service to adjust the spring tension and possibly other operational parts of the door. This service should only be carried out by an experienced door technician, using the correct tools.

If you have an automatic opener fitted to your door, it is particularly important that you ensure the optimum operation of the door, otherwise you may reduce the effective life of the opener.

To keep your door running well, it is recommended that your door be serviced, by an experienced door technician, every 12 months (more regularly in extreme environments or frequent use), or earlier if required.

spring tension
It is natural for springs to lose tension over time. When spring tension is adjusted or when your door is first installed it is usual to apply a little more tension than is required for balanced operation, to allow for the normal “settling in” of the springs. Lightly lubricate to prevent friction between the coils.

warranty
Warranty conditional on proper care as recommended above. Full details of the warranty are available in your owners handbook, from your nearest B&D office or visit the B&D website www.bnd.com.au