These instructions are intended for professional garage door installers. All references are taken from inside looking out.
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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 require 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 Fastener Pack</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Solid brick (&gt;10 MPa)</strong></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</td>
<td>FK0011 FK0012</td>
</tr>
<tr>
<td><strong>Three hole brick (&gt;30 MPa)</strong></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 (50PK)</td>
</tr>
<tr>
<td><strong>Ten hole brick (&gt;15 MPa)</strong></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 (50PK)</td>
</tr>
<tr>
<td><strong>Concrete block (&gt;8 MPa)</strong></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 (50PK)</td>
</tr>
<tr>
<td><strong>Concrete (&gt;15 MPa)</strong></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><strong>Timber</strong></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><strong>Steel section (0.9-2mm thick)</strong></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 recommend 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

**1.3.1 pack contents**

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>DOOR PANELS PACKAGE</td>
<td>1</td>
</tr>
<tr>
<td>B</td>
<td>TORSION BAR</td>
<td>1</td>
</tr>
<tr>
<td>C</td>
<td>HORIZONTAL TRACKS</td>
<td>2</td>
</tr>
<tr>
<td>D</td>
<td>VERTICAL TRACKS</td>
<td>2</td>
</tr>
<tr>
<td>E</td>
<td>SHORT TOP TRACK ANGLE</td>
<td>2</td>
</tr>
<tr>
<td>F</td>
<td>HORIZONTAL BRACKETS</td>
<td>2</td>
</tr>
<tr>
<td>G</td>
<td>SMALL ANGLE JAMB BRACKETS</td>
<td>2+</td>
</tr>
<tr>
<td>H</td>
<td>WASHERS</td>
<td>6+</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>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>L</td>
<td>SIDE BEARING BRACKETS</td>
<td>2</td>
</tr>
<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>20+</td>
</tr>
<tr>
<td>P</td>
<td>HANGERS</td>
<td>9+</td>
</tr>
<tr>
<td>Q</td>
<td>HINGED HANGERS</td>
<td>8+</td>
</tr>
<tr>
<td>R</td>
<td>BOTTOM PANEL BRACKET</td>
<td>2</td>
</tr>
<tr>
<td>S</td>
<td>AXLE PLATE HANGER</td>
<td>2</td>
</tr>
<tr>
<td>T</td>
<td>BOTTOM HANGERS</td>
<td>2</td>
</tr>
<tr>
<td>U</td>
<td>SNAP PINS</td>
<td>2+</td>
</tr>
<tr>
<td>V</td>
<td>SHAFT COLLAR</td>
<td>1</td>
</tr>
</tbody>
</table>
1.4 requirements before installation

**mounting** - The door is designed to be mounted behind the opening, however for flush mount doors, refer to the Appendix for mounting instructions.

**obstructions** - Ensure that the surface where the door will be fitted is smooth, and the area behind 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 and/or sideroom requirements will be affected. The floor should be level or recessed across the opening to avoid gaps.

1.4.1 measurements
(refer to appendix for rear torsion allowances)

**opening width** - As the door overlaps each side by 30mm or more, the door should be 60mm wider than the opening. A wider door can be fitted as long as additional sideroom and fixing is available. See Fig 1.4.1.

**opening height** - The door will fit any opening height up to the marked door size.

**sideroom** - A minimum of 120mm of sideroom is required over and above door width and should extend above the head to allow for bracket fixing.

**headroom** - depending on the cable drums used a minimum of 340mm (390mm for larger doors) of headroom is required.

**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.

**vertical track height** - the track height should be the door height minus the short top track angle measurement.

1.4.2 initial calculations

a) Open the package of door panels and locate the label on the end of the door panel.

b) The label lists the Sales No: XXXXXX, then underneath DH: X,XXXmm (door height).

c) Calculate the vertical track length:

\[
\text{door height} - \text{short top track angle (standard 127mm, low headroom 275mm)} = \text{vertical track length}
\]

\[\text{tip} \quad \text{door height} - \text{short top track angle (standard 127mm, low headroom 275mm)} = \text{vertical track length}\]

d) Calculate the track width:

\[
\text{panel width} + 20\text{mm} = \text{track width (from the inside edge)}
\]

\[\text{tip} \quad \text{panel width} + 20\text{mm} = \text{track width (from the inside edge)}\]

e) Calculate the horizontal track brace position:

\[
\text{door height} \times \frac{3}{4} = \text{horizontal track brace position}
\]

\[\text{tip} \quad \text{door height} \times \frac{3}{4} = \text{horizontal track brace position}\]

1.5 tools

It is recommended that this door is installed by a professional door installer using a professional and specialised tool kit.
2.0 assembly

2.1 vertical tracks

a) Cut the Vertical Straight tracks D to the calculated length as listed in section 1.4.2.

b) Affix the small angle jamb brackets G and short top track angle E to the straight track D using 6 x 5/16 flat head bolts and wiz nuts, noting the distance required from the wall to the track as shown in Fig 2.1.1.

c) Connect the horizontal bracket F to the short top track angle E using a 1/4 domed head bolts and wiz nut in top corner of the “V”.

NOTE: The small angle jamb brackets and the short top track angle, provide adjustable slots to move the track out from the wall. For larger doors one bracket is placed at the bottom and the second bracket placed approximately midway.

2.2 door panels

NOTE: Refer to appendix if installing a taper or rear torsion system as this requires a different hanger.

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 axles plate hanger S onto the bottom hanger T and secure onto the bottom panel as shown in Fig 2.2.1 using tek screws. Ensure to line up the holes with the bottom panel bracket R.

Apply general purpose grease to all axles before fitting them.

c) Secure the bottom panel bracket R with 2 tek screws, then slide in wheel axle M through the axle plate hanger to the bottom panel bracket.

d) Push the end of each lifting cable N onto the bottom hanger, followed by a washer H and secure with a snap pin U Fig 2.2.1.

Do not unwind lifting cable until specified to do so.

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

f) Insert the wheel axle M. NOTE: Once the panel is in place the hinged hangers Q 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.
3.0 installation

3.1 installing vertical tracks

a) Set the vertical tracks parallel on both sides of the door at the vertical track width calculated in Section 1.4.2.

b) 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. Fig 3.1.1

c) Ensure to follow the measurements as shown in Fig 3.1.2 to set out the placement of the track and brackets.

d) Once satisfied temporarily fix in position with at least two (2) 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.

WARNING! All fixings must be fitted after the door is fully adjusted and operating satisfactorily.

3.2 installing bottom panel

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 level in the door opening Fig 3.2.1.

b) Check that the wheels are sitting in the “V” groove of the vertical track on each side and there is sufficient clearance between the panel and the track as per Fig 3.1.2.

CAUTION: After installation is complete all plastic protective film must be removed from all panels.
3.3 adding panels

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

da) Before adding the next panel into the tracks fit a temporary spacer, 1-2mm thick, at each panel joint to give clearance between each panel in order to decrease paint rub.

b) Insert the next panel into the guides and lower to rest on top of the bottom panel. Fig 3.3.1 and 3.3.2.

c) Screw the hangers and hinged hangers to the lowered panel.

**NOTE:** The hinged hangers are adjustable to ensure the panels are parallel to the opening.

d) Repeat this procedure for all other panels with the exception of the top panel which is positioned after the horizontal track is installed Fig 3.3.3.

e) Once satisfied with the door placement, secure all fixing points on the vertical tracks.

⚠️ **CAUTION:** Ensure the warning label is placed on the door in a clearly visible position.
3.4 installing horizontal tracks

Assemble the track as shown in Figure 3.4.1. The curve must align and butt up against the vertical track snugly.

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

a) Measure from the top of the vertical track to the end of the horizontal track.

b) Check both sides.

c) Adjust if necessary.

The track support must be located along the horizontal track approximately at ¾ door height. For doors higher than 2280mm and/or wider than 4700mm two supports will be required.

d) Calculate the horizontal track brace position as per section 1.4.2.

e) Measure along the horizontal track to the desired position and find a structurally sound location to fix your support to the ceiling or side wall. Fig 3.4.2 or Fig 3.4.3.

f) Each installation must be assessed individually for ceiling fixing requirements.

WARNING! Failure to position supports approximately ¾ door height along the track can result in the tracks twisting out.

d) Measure from the top of the vertical track to the end of the horizontal track.

e) Check both sides.

The track support must be located along the horizontal track approximately at ¾ door height. For doors higher than 2280mm and/or wider than 4700mm two supports will be required.

d) Calculate the horizontal track brace position as per section 1.4.2.

e) Measure along the horizontal track to the desired position and find a structurally sound location to fix your support to the ceiling or side wall. Fig 3.4.2 or Fig 3.4.3.

f) Each installation must be assessed individually for ceiling fixing requirements.

WARNING! For all doors higher than 2280mm and wider than 4700mm two (2) ceiling supports must be fitted per horizontal track.

The safety stop must always be fitted to prevent the panels from accidently exiting the track.

g) Install the safety stop at the end of the horizontal track as shown in Fig 3.4.4.

WARNING! The safety stop must be installed. Failure to do so may cause serious personal injury or damage to property.

Check that the clearance in the vertical tracks as per Fig 3.1.2 is also in the horizontal tracks.
3.5 install top panel

**NOTE:** Refer to appendix if installing a rear torsion systems as installation of top panel may be different.

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

a) Rest the top panel into position on top of the last panel.

b) Thread the wheel axle down the horizontal track and slide the hinged hangers onto the wheel axle.

c) Secure hinged hangers with tek screws as shown in both top corners of the panel and adjust hinge to wheel height if necessary.

d) Attach top panel to panel below via the hangers and hinges on previous panel.
3.5 standard spring counterbalance system

NOTE: Refer to appendix for large doors containing two piece shafts.

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. 3.5.1.

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, spring/s, shaft collar and washers and assemble them as shown in Fig. 3.5.2.

NOTE: Shaft Collar not required in double spring mountings.

c) Ensure the shaft collar is butted up against the anchor bracket as shown in Fig. 3.5.2 and fixed to axle on spring side of anchor bracket.

CAUTION: DO NOT tighten bolts in cable drums yet
3.6 install torsion bar

NOTE: Refer to appendix if installing a rear torsion systems.

⚠️ CAUTION: For larger doors refer to 5.3 appendix as a stronger system may be required.

Before lifting the torsion bar into position, check there is a solid foundation of either brickwork, timber studs, head or ceiling that will support the lifting system correctly.

a) Lift the torsion bar assembly into position, resting both ends over the top of the horizontal tracks. Fig. 3.6.1.

⚠️ tip For wide doors, place a temporary support in the center of the torsion assembly to prevent sag and possible collapse.

b) Ensure that the side bearing brackets and cable drums are situated on the inside 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).

⚠️ tip It may be necessary to offset the anchor bracket in order to clear room for the opener C-rail.

e) Secure the spring anchor bracket to the wall/ceiling and the side bearing brackets to the tracks as shown in Fig 3.6.1.

⚠️ tip 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) Fig 3.6.2.

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.

⚠️ CAUTION: Be careful not to over tighten the set-screws.
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.

---

**Fig: 3.7.1**

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.

**Fig: 3.7.2**

**Fig: 3.7.3**

**Fig: 3.7.4**
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

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

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

h) pass the cord through the white hinge pin on the bottom panel. Fig 3.8.3.

i) Adjust the length and tie in a knot at each end.

j) Alternatively fit a “D” handle.
## 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 3.5.</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 3.5.</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 3.1.2 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 3.1.2 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 3.5.</td>
</tr>
</tbody>
</table>
##-common spring problems

<table>
<thead>
<tr>
<th>symptom</th>
<th>possible cause</th>
<th>remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>door raises from the floor and hangs down in opening</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</td>
</tr>
<tr>
<td></td>
<td></td>
<td>lubricate springs</td>
</tr>
<tr>
<td></td>
<td>door not level</td>
<td>cable lengths are equal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>equal turns on both springs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>level door during installation</td>
</tr>
</tbody>
</table>
5.0 appendix

5.1 rear torsion systems

For all rear torsion installations ensure you have the following measurements:

**sideroom** - A minimum of 155mm of sideroom (295mm for doors over 15m²) is required extending into the garage.

**headroom** - depending on the cable drums used a minimum of 190mm (200mm for larger doors) of headroom is required.

**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).

The rear torsion system involves different bottom hangers, axle assembly and double horizontal tracks.

a) Secure the bottom hanger and bottom panel bracket to the bottom panel with tek screws as shown in Fig 5.1.1.

b) Attach the lift cable to the bottom hanger using a clevis pin, washer and snap pin. Fig 5.1.2

c) Insert the wheel axle through the bottom hanger and bottom panel bracket. Fig 5.1.2.

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. 5.1.3.

d) Place the torsion bar on the floor and slide the spring anchor bracket onto the torsion bar, positioning it approximately half way along.

e) Locate the spring/s and shaft collar and assemble them as shown in Fig. 5.1.3.

**NOTE:** Shaft Collar not required in double spring mountings.

f) Ensure the shaft collar is butted up against the spring.

Fig: 5.1.1

Fig: 5.1.2

Fig: 5.1.3
Assemble the track, with cable pulley as shown in Figure 5.1.4. The curve must align and butt up against the vertical track snugly.

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

a) Measure from the top of the vertical track to the end of the horizontal track.

b) Check both sides.

c) Adjust if necessary.

The track support must be located along the horizontal track approximately at 3/4 door height. For doors higher than 2280mm and/or wider than 4700mm two supports will be required.

d) Calculate the horizontal track brace position as per section 1.4.2.

e) Measure along the horizontal track to the desired position and find a structurally sound location to fix your support to the ceiling or side wall.

f) Each installation must be assessed individually for ceiling fixing requirements.

g) Lift the torsion bar assembly into position, resting on top of the tracks.

h) Connect the side bearing brackets to the end of the horizontal tracks using 3/8" and 1 1/2" hexagonal head bolts and 3/8" washers and nuts. Fig 5.1.4.

j) Place the cable drums into position after a washer, noting that red cable drum with red spring and black cable drum with black spring. DO NOT tighten screws yet.

k) Secure the spring anchor bracket firmly into a solid foundation directly or through the use of a steel angle to timber beams onto the ceiling, ensuring the ‘cut corner’ is pointing in the direction of the opened door.

Unwind the lifting cable from the bottom panel.

l) Thread the lifting cable around the sheave pulley wheel and over to the rear cable drums. Fig 5.1.5.

m) 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).

n) Wind the cable by hand by turning the cable drum away from the door.

Once the cable is taut, slide the cable drum against the side bearing bracket and tighten the screws to the torsion bar. Fig 5.1.6. Refer to section 3.7 for spring tension.

WARNING! Failure to position supports approximately 3/4 door height along the track can result in the tracks twisting out.

WARNING! For all doors higher than 2280mm and wider than 4700mm two (2) ceiling supports must be fitted per horizontal track.

CAUTION: Be careful not to over tighten the set-screws
5.2 hinged tapers

Tapers are accomplished using a small customised panel, which results in a slight variation in the installation process.

a) Assemble the bottom panel taking note that there are no wheels or weather strip on the bottom panel, these are both on the taper panel. Fig 5.2.1.

b) Connect the tapered panel to the bottom panel using hinges provided.

Tracks are assembled as standard with the only difference being that one vertical track needs to be cut down to accommodate the uneven floor.

c) Start with both of the verticals tracks from the ground and measure up to the level datum.

d) Cut the tracks as necessary from the ground end.

e) Follow the directions in section 3.1 to install tracks, before proceeding to adding panels in section 3.2.

Fig: 5.2.1
5.3 two piece shafts for large doors

**TWO PERSON LIFT:** For large doors, this process may require two persons to lift into place and a ladder or scissor lift to support while fixing into place.

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. 5.3.1.

a) Place the 2 x torsion bars (3) on the floor and slide the 2 x spring anchor bracket (8) onto the torsion bar, positioning them towards the middle.

b) Slide on the shaft collar (9) and springs (1), ensuring the shaft collar is butted up against the spring anchor bracket (8) and spring (1).

c) Connect each assembly together using 2 x 3/8" washers and bolts.

d) Place the cable drums on each end.

**CAUTION:** DO NOT tighten bolts in cable drums yet.

e) Mount the remaining 2 x spring anchor brackets to the wall above the horizontal track.

**TWO PERSON LIFT:** Next step may require two persons to lift into place and a ladder or scissor lift to support while fixing into place.

f) Lift and thread the right hand side of the assembly through the mounted spring anchor bracket and fix the loose spring anchor bracket securely to the wall.

g) Assemble the torsion shaft couple, without tightening the bolts and slide onto the end of the torsion bar, ready to connect to the other torsion bar.

h) Repeat step f) for the left hand side assembly.

i) Position the torsion shaft couple in the middle as shown in Fig 5.3.1, the axles should be flush with each couple allowing free rotation to occur.

j) Cut torsion shaft key in half and insert into torsion bar at the torsion shaft couple, and fix into place by tightening the grub screws on the shaft couple.

**tip** **Unwind the lifting cable from the bottom panel.**

a) 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).

b) Wind the cable by hand by turning the cable drum away from the door.

c) Once the cable is taut, slide the cable drum against the side bearing bracket and tighten the screws to the torsion bar. Fig 5.3.3.

d) Proceed to section 3.7 to tension the springs.

**CAUTION:** Be careful not to over tighten the set-screws.
6.0 after installation care

general care of your Designer Series

cleaning
Your B&D Designer Series/P7 Industrial™ 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/P7 Industrial™ 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