Tilt-A-Dor®

T-Fitting
INSTALLATION INSTRUCTIONS

DISCLAIMER
THESE INSTRUCTIONS ARE INTENDED FOR PROFESSIONAL GARAGE DOOR INSTALLERS and only apply to the fittings

Note: All references are taken from inside looking out

Revision 5 April 2011
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1.0 BEFORE YOU START

1.1 SAFETY CHECKLIST

The following hazards and hazard controls have been identified for installers during the installation of these fittings.

<table>
<thead>
<tr>
<th>Hazard</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housekeeping - risk of slip trip or fall</td>
<td>Tidy up site prior to start work as a minimum area should be at least the area of the installation back into the garage and 2 metres in front</td>
</tr>
<tr>
<td>Housekeeping - risk of injury to other people</td>
<td>If the Site housekeeping is deemed to be unsafe do not install the door</td>
</tr>
<tr>
<td></td>
<td>Keep all people well clear of installers work area with appropriate signage and discussion with owner</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight &amp; awkwardness of lifting of springs and fittings</td>
<td>Utilise correct lifting techniques for springs and fittings.</td>
</tr>
<tr>
<td>Manual handling when moving the fittings from the Trailer or Ute to the installation area - risk of musculoskeletal injury</td>
<td>Use of 2 person lifts</td>
</tr>
<tr>
<td>Manual handling when installing Doors &amp; Openers particularly above head height - risk of musculoskeletal injury or twisting</td>
<td>Use of mechanical aids</td>
</tr>
<tr>
<td>Manual handling when installing springs, tracks and torsion bars - risk of musculoskeletal injury</td>
<td>Avoid twisting (Practice correct lifting techniques)</td>
</tr>
<tr>
<td></td>
<td>Correct use of ladders while installing tracks</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Working at heights and working with ladders - risk of fall from height</td>
<td>Ladder check</td>
</tr>
<tr>
<td></td>
<td>Ladder placement</td>
</tr>
<tr>
<td></td>
<td>Do not work off the top rung</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Sharp edges on tracks or related jewellery - risk of laceration</td>
<td>Wear appropriate PPE (Dynema cut off Gloves)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Pinch points - risk of cut, puncture or crush injury</td>
<td>Wear appropriate PPE and keep hands well clear of pinch points</td>
</tr>
<tr>
<td>Scissor action of fittings - risk of laceration</td>
<td>Ensure hands well clear of the panels</td>
</tr>
<tr>
<td></td>
<td>Follow instruction explicitly particularly for the installation as the scissor action of some fittings presents a very sharp edge</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Use of hand tools - risk of eye injury, laceration cut stab or puncture injuries (Tools checklist)</td>
<td>Wear appropriate PPE and utilise operators manual</td>
</tr>
<tr>
<td></td>
<td>Use appropriate noise/hearing protection in the form of ear plugs or ear muffs</td>
</tr>
<tr>
<td></td>
<td>Ensure appropriate fire protection available and housekeeping to ensure that flammable liquids or materials are removed from the area of work</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Spring release of energy - risk of release of stored energy (striking installer on the head or body)</td>
<td>As the spring is at it greatest tension during the time the door is being opened or closed, Correct fixings and correct fittings MUST be used during every installation. Including the number of bolts to be used, the equaliser plate, clover hooks, pigtailed bolt and spring anchor bracket. These have been specifically designed to ensure that the spring is held in place at all times</td>
</tr>
<tr>
<td></td>
<td>The correct sized door MUST be used for the recommended springs</td>
</tr>
<tr>
<td></td>
<td>The owner MUST be informed of maintenance requirements</td>
</tr>
</tbody>
</table>
### 1.2 FASTENER RECOMMENDATIONS FOR FITTING GARAGE DOORS

<table>
<thead>
<tr>
<th>MATERIAL</th>
<th>FASTENER TYPE(S)</th>
<th>DIAMETER OR TYPE</th>
<th>LENGTH OF FASTENER (See Note)</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Solid Brick</td>
<td>Coach Bolts (Hex Lag Screw)</td>
<td>5/16&quot; X 1½&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- combined with wall plugs</td>
<td>3/8&quot; X 2&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Macplugs (wall plugs) to suit above</td>
<td>5/16&quot; X 50mm</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3/8&quot; X 60mm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>HLC Sleeve Anchors (Dyna Bolts)</td>
<td>12mm X 55mm</td>
<td></td>
</tr>
<tr>
<td>New Hollow Brick</td>
<td>HRD-VGK or HGK-VGS (Hex Head) Frame Anchors</td>
<td>10mm X 60mm</td>
<td></td>
</tr>
<tr>
<td>New Solid Concrete</td>
<td>Coach Bolts (Hex Lag Screw)</td>
<td>5/16&quot; X 1½&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- combined with wall plugs</td>
<td>3/8&quot; X 2&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Macplugs (wall plugs) to suit above</td>
<td>5/16&quot; X 50mm</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3/8&quot; X 60mm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>HLC Sleeve Anchors (Dyna Bolts)</td>
<td>12mm X 55mm</td>
<td></td>
</tr>
<tr>
<td>Aerated Concrete</td>
<td>Fischer Nylon Twist Lock Anchor Type GB 14</td>
<td>14mm X 85mm</td>
<td></td>
</tr>
<tr>
<td>e.g. (HEBEL)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steel Framing</td>
<td>Hex Head Bolt Zinc Plated,</td>
<td>5/16&quot; X 1&quot;</td>
<td></td>
</tr>
<tr>
<td>e.g. BHP Framing (with rear access)</td>
<td>Hexagon Nuts Zinc Plated,</td>
<td>3/8&quot; X 1&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Washers Zinc Plated</td>
<td>10mm X 25mm</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>12mm X 25mm</td>
<td></td>
</tr>
<tr>
<td>Heavy Gauge Steel</td>
<td>Hex Head Tek</td>
<td>14-20 X 22mm</td>
<td></td>
</tr>
<tr>
<td>Light Steel Framing</td>
<td>Heavy Duty Kap Toggle</td>
<td>10mm X 100mm</td>
<td></td>
</tr>
<tr>
<td>e.g. BHP House Framing</td>
<td></td>
<td>12mm X 100mm</td>
<td></td>
</tr>
<tr>
<td>(no rear access)</td>
<td>Hex Head Tek</td>
<td>6-10 X 20mm</td>
<td></td>
</tr>
<tr>
<td>New Timber</td>
<td>Coach Bolts (Hex Lag Screw)</td>
<td>5/16&quot; X 1½&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3/8&quot; X 2&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hex Head Tek</td>
<td>14-10 X 50mm</td>
<td></td>
</tr>
</tbody>
</table>

**IMPORTANT NOTES:**

1. For installation to materials not covered in the above chart, the installer should seek expert advice from a qualified builder.
2. Minimum length of fastener does not exclude use of longer lengths. Decision must be made by fitter to ensure adequate strength.
3. Recommendations for old materials or materials not in good condition are not included. If in doubt about the strength of the material seek specialist advice.
4. Fasteners for sectional door spring brackets and top track brackets in masonry should be at least 5/16" x 2.5" long or metric equivalent.
5. HEBEL Fischer type fastener should be installed 150mm from edge of blocks. Minimum overlap of door should be approximately 115mm (S1), 110mm (S3) and 90mm (Panelift). Add 50mm more if mounted on panels instead of blocks.

**IMPORTANT INFORMATION ON FASTENERS**

Coach bolts/screws supplied with this product are suitable for fastening to timber jambs. Correct and safe fastening to other materials may require different fasteners. The installer must select and use fasteners appropriate to the material into which they are being fixed.
1.3 TOOLS CHECKLIST

The following tools are needed to install Tilt-A-Dor® T-Fitting.

- Spirit level 1200mm
- Measuring tape
- Extension lead
- Step ladder
- Speed drill and drill bits
- Hack saw
- Open end adjustable spanner
- Socket set
- Set square
- Wood chisel
- Steel chisel
- Screw driver set
- Pliers
- Tin snips
- 2 vice grips
- Felt tip pen & pencil

1.4 CHECKING MEASUREMENTS

Before proceeding please check the opening measurements against the panel and ensure that the correct fitting has been obtained in regards to door weight.

**Door Width**  
Opening Width - 20mm

**Door Height**  
Opening Height - 27mm

**Min. Headroom**  
50mm for a manually operated door

100mm with an automatic opener

**Min. Sideroom**  
70mm (Model 50-T, 70-T, 100-T, 120-T)

90mm (Model 175-T)

If making jamb out of timber, we suggest using oregan timber.
1.5 CHECK T-FITTING MODEL

Check the T-Fitting against the door measurements and the panel weight on the table below to ensure that the correct fitting has been ordered.

### Single Spring/Side

<table>
<thead>
<tr>
<th>Door Height (mm)</th>
<th>2450 max</th>
<th>2451 min</th>
<th>2250 max</th>
<th>2251 min</th>
<th>2050 max</th>
<th>2051 min</th>
<th>1950 max</th>
<th>1951 min</th>
</tr>
</thead>
<tbody>
<tr>
<td>Door Weight (kg)</td>
<td>30</td>
<td>70</td>
<td>71</td>
<td>100</td>
<td>30</td>
<td>70</td>
<td>71</td>
<td>100</td>
</tr>
</tbody>
</table>

### Double Spring/Side

<table>
<thead>
<tr>
<th>Door Height (mm)</th>
<th>3050 max</th>
<th>3051 min</th>
<th>2700 max</th>
<th>2701 min</th>
<th>2400 max</th>
<th>2401 min</th>
<th>2100 max</th>
<th>2101 min</th>
</tr>
</thead>
<tbody>
<tr>
<td>Door Weight (kg)</td>
<td>101</td>
<td>120</td>
<td>121</td>
<td>175</td>
<td>101</td>
<td>120</td>
<td>121</td>
<td>175</td>
</tr>
</tbody>
</table>

2.0 INSTALLATION

2.1 INSTALLING TOP WEATHERSTRIP AND WHEEL

Assemble the top strip onto the panel as shown in Figure 2.1.1. Note that only in the 175-T model fitting is the wheel a separate assembly to the weatherstrip, all other fittings are already assembled. Please note that dimension Y is variable depending on panel thickness, with a minimum of 15mm.

**FIGURE 2.1.1**

- 70-T, 100-T, 120-T
  - Hanger flush with strip edge top & side
  - Weather seal to jamb overlap 12mm
  - Maximum panel to jamb clearance 10mm
  - Top of panel to top of weather seal = panel thickness – 35mm minimum 15mm
  - Strip Width
  - ½ Strip Width

- 175-T
  - 175-T wheel hangar overlap on panel 44mm
  - MIN 15mm
  - Top Weather Seal
2.2 PLACING PANEL INTO POSITION

Place some 12mm spacers at the opening. Lift panel into position as shown. Ensure that the top weatherstrip is flush against the jamb and that the proper clearances are observed as shown in Figure 2.2.1.

**FIGURE 2.2.1**

![Diagram showing panel placement with clearances and spacers.]

2.3 INSTALLING TRACKS

**FIGURE 2.3.1**

- Secure panel into place, either temporarily fastening to the door jamb, or having a helper hold it in place for the duration of this stage, as shown in Figure 2.3.1.A.

- Assemble track bracket onto track, but still allowing the track to pivot. Slip over wheel and fix onto wall using appropriate fasteners, as shown in Figure 2.3.1.B.

- Assemble the stop at back of the track, this is a critical safety measure for both installer and customer, as shown in Figure 2.3.1.C.
Fix to Ceiling

Perforated angle

Horizontal Track

Heavier doors require additional bracing to offset the greater weight

Additionally heavier angle may be required in place of the perforated variety

FIGURE 2.3.2

Measure diagonally with common reference points, both these measurements must be equal

FIGURE 2.3.3

Must be mounted to a structural beam

33mm (50-T, 70-T, 100-T, 120-T)
50mm (175-T)

Use some angle to prop up the back track temporarily to the ceiling. Measure from common reference points across the diagonals of the tracks as shown in Figure 2.3.2. These must be equal and the tracks slope down by 33mm for all but the 175-T which should be 50mm, before securing the track bracing Figure 2.3.3.
2.4 INSTALLING WEATHER STRIP AND POWER ARM

Measure the distance from the bottom of the top weatherstrip down to the floor, then cut down the bottom weatherstrip accordingly giving a 3mm clearance between the strip Figure 2.4.1.A. Ensure bottom weather strip is vertical by using a spirit level (Note: Door jambs are not always true).

Align the vertical slot with jamb edge as shown in Figure 2.4.1.B. Use appropriate fasteners to fix to jamb.

FIGURE 2.4.1
Assemble the power arm onto the bottom weather strip as shown in Figure 2.4.2, aligning holes as shown and power arm as shown.

**FIGURE 2.4.2**

These holes must be aligned
Align power arm bracket edge with weather strip edge.
Bottom weather strip
Power arm must be parallel with bottom weather strip with an even gap

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**2.5 LIFTING AND SECURING DOOR**

For additional safety, use multi-grips or G-clamps (for heavier doors) to secure both wheels in tracks before proceeding.

**FIGURE 2.5.1**

Prop up the door with a wooden beam of suitable strength

Prop up the door as shown in Figure 2.5.1.
2.6 SPRING ASSEMBLY

Assemble spring unto the kicker bolt, then mount assembly to the No. 2 hole (there are hole numbers on the power arm for reference). Figure 2.6.1.B shows the assembly of a double spring system. Note the clover hook needs to be assembled onto the kicker bolt assembly. Figure 2.6.1.B shows the assembly of a single spring system. Note the spring is assembled onto the kicker bolt.

Locate and secure anchor bracket in a position so that the nut can just be screwed on. In this way when the screw is tightened the spring should be stretched to about 50mm.

**Note:** In some installations the Pigtail bolt might need to be cut down.
2.7 FINAL ADJUSTMENTS

Check that the clearance gaps are all even on the open door and that the power arms are square in both the open and closed position using a spirit level, adjust with wedge packers as necessary and perform any final adjustments to the track bracing.

Bend the inside of the tab on the bottom weatherstrip as shown in Figure 2.7.1.A.

If door comes down too easily

- Increase tension of spring by tightening up the nut on the pigtail bolt or
- Swing door overhead and secure in place (see STEP 2.5 LIFTING AND SECURING DOOR), loosen nut on pigtail bolt to relieve tension on the spring, then move kicker bolt down one hole. **WARNING**, doors must be secured and tension relieved before shifting the kicker bolt.

If door is hard too pull down

- Reduce tension by loosening the nut on the pigtail bolt or
- Swing door overhead and secure in place (see STEP 2.5 LIFTING AND SECURING DOOR), loosen nut on pigtail bolt to relieve tension on the spring, then move kicker bolt one hole up. **WARNING**, doors must be secured and tension relieved before shifting the kicker bolt.

If the door rubs against the jamb

- Loosen the fasteners on the power arm bracket (just enough that the bracket can shift only), open door then pivot power arm away from jamb concerned and then retighten fasteners.
- Lift and prop up door as in STEP 2.5 LIFTING AND SECURING DOOR. Recheck that the tracks are square to the opening by measuring diagonal and adjust bracing accordingly as in STEP 2.3 INSTALLING TRACKS.

**FIGURE 2.7.1**
3.0 AFTER INSTALLATION CARE

GENERAL CARE OF YOUR TILT-A-DOR® T-FITTING

CLEANING
It is recommended that your fittings be serviced, by an experienced door technician, every 12 months (more regularly in extreme environments or frequent use), or earlier if required.

LUBRICATION
To ensure smoother operation the following areas are to be periodically lubricated to minimise wear and noise.

A. The kicker bolt where the clover hook is attached
B. The pig tail hook and anchor bracket
C. Pivot of the anti-sway arm bracket

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.

WARNING!

The spring is under tension at all times and may cause serious injury if interfered with by an inexperienced person. Adjustments and repairs should be carried out by approved B&D dealers using proper tools. Nobody should ever stand directly in the path of the door in its downward travel or walk through doorway while door is moving. Always use the door handle or pull rope to manually operate the door. If the door is automated, the pull down rope on the door must be removed.

DO NOT PLACE FINGERS, HEAD OR LIMBS NEAR ANY MOVING PARTS OF MECHANISM ON EACH SIDE OF THE DOORWAY WHEN THE DOOR IS OPERATING EITHER AUTOMATICALLY OR MANUALLY.