NOBLE TRUCK SHUTTERS

MANUFACTURE - INSTALLATION - REPAIRS

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HAND-OPERATED SHUTTER INFORMATION

Please see the "OUR PRODUCTS" page of this site for individual component measurements and shutter options.

Hand-operated type shutters are used on buildings. The larger rolling type are used on kiosks, canteens, entrances and windows. Smaller sliding type hand operated shutters can be used in cabinetry. The main differences between hand-op shutters and truck shutters, are that hand-op shutters are usually supplied with fixing angles on the brackets, fixing lugs on the tracks and are usually 'Fitted Behind'.

Information required for the manufacture of hand-op shutters includes:

1. Daylight width,
2. Daylight height,
3. Header height,
4. Any side room restrictions,
5. Fit Behind (recommended) or Fit Between,
6. Shutter finish,
7. Track type required,
8. Lock type required.

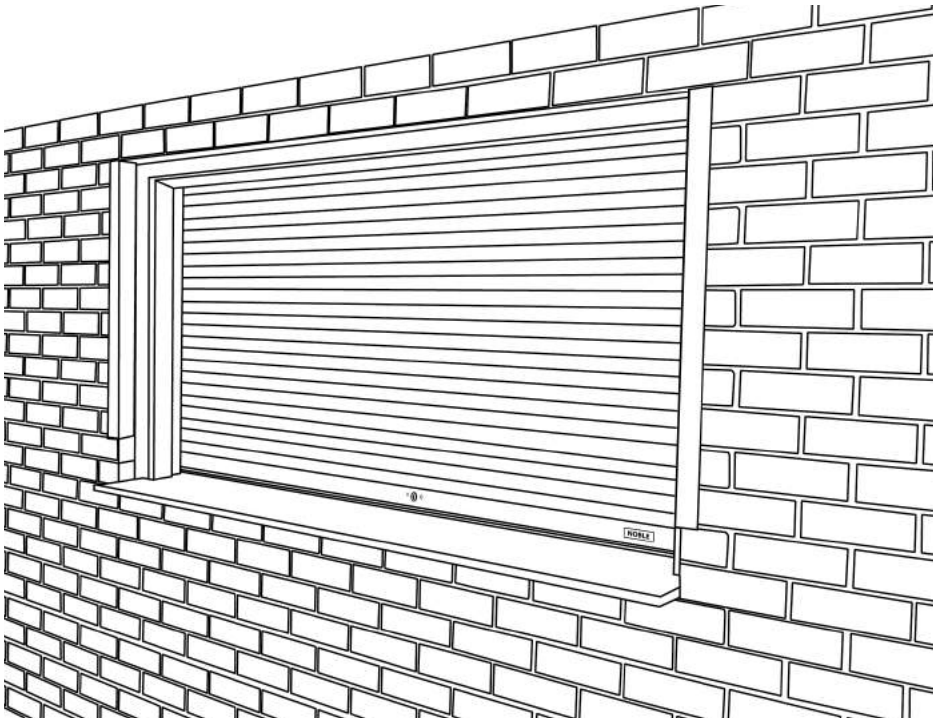

Figure 1.0

Please note that on higher shutters, it is imperative to measure the day light opening width at the bottom, the middle and the top in case the opening is out of square.

Sliding type hand-op shutters are exactly the same as sliding type truck shutters, please see the 'Sliding Shutter' PDF for installation information.

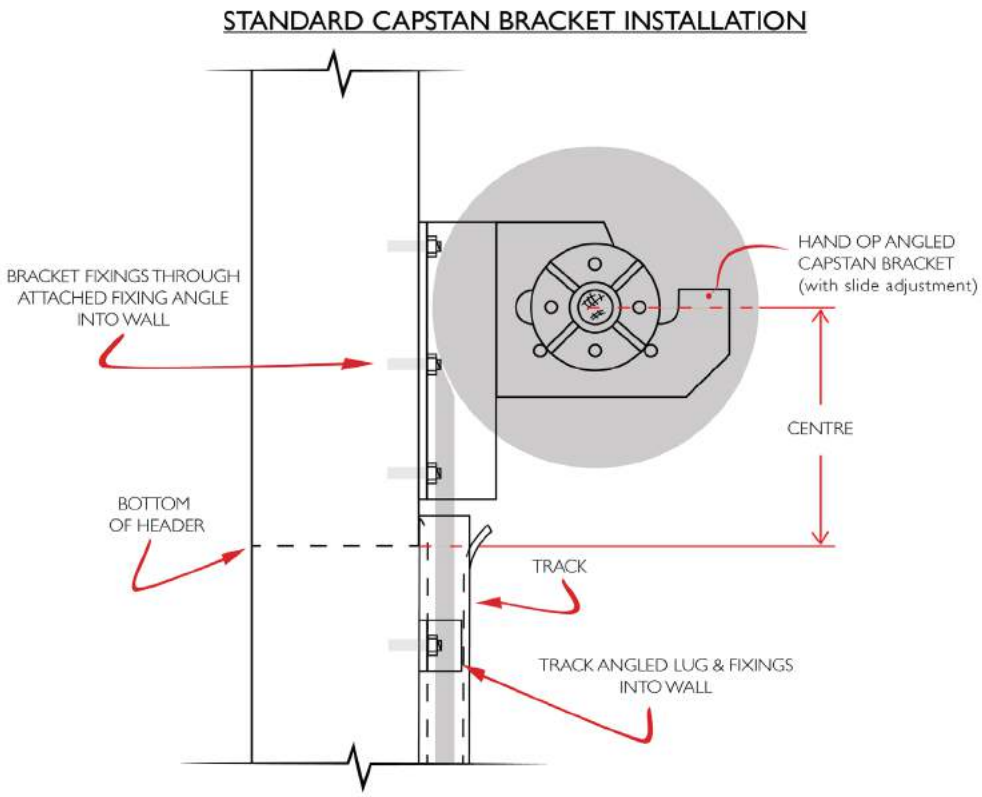

Figure 2.0

Most hand-op shutters are used on kiosks and canteens. This type of shutter has a central sprung roller to allow for easy operation and travels within vertically mounted tracks. The roller is mounted above the opening into a bracket system that is bolted directly to the rear of the building's wall. The wall above the opening forms a header to cover the roll of the shutter (See Figure 2.0).

Alternatively, if a steel frame is present around the opening, the brackets and tracks can be welded directly to the frame much the same as truck shutters.

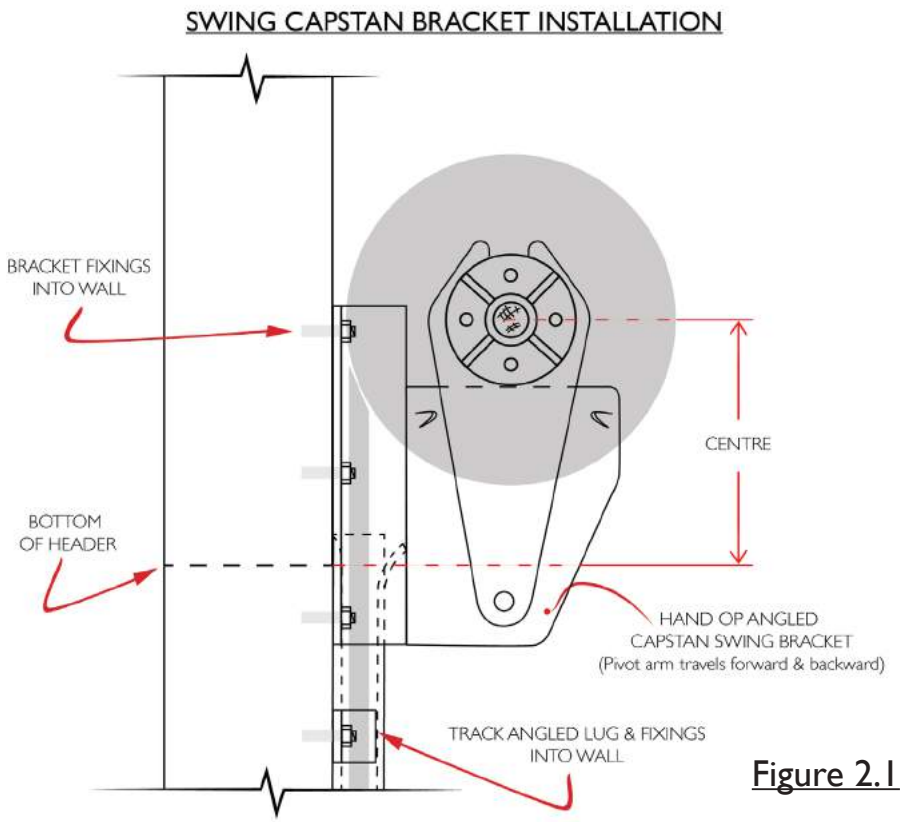

Figure 2.1

The header must be large enough to cover the diametre of the rolled up shutter. On larger shutters, it is recommended that the header be as large as possible to minimise deflection between the shutter curtain and the header when the shutter is in the fully closed position.

Usually, a large shutter of approximately 2000mm site height (under the header) will need a header of approximately 250-300mm, where as a smaller 1000mm high shutter will only need around 200-230mm (depending on opening width).

If there is no obstruction above the opening, then the shutter can be mounted higher, cancelling out any curtain deflection. In this case, more slats may need to be added.

If maximum clearence is necessary and a smaller header is present, then the use of swing brackets is recommended (See Figure 2.1). As the shutter travels downward, the pivot arm of the bracket will swing forward and decrease the gap between roller and header. This minimises any deflection that the shutter may have in the closed position.

Using the **'FIT BEHIND'** installation method with either type of capstan brackets, at least 75mm plus the track depth of side room is required for the set up (See Figures 3.0 & 3.1). The standard track size used on larger hand-op shutters is 38mm. Shallow 25mm style tracks are recommended for smaller type hand-op shutters.

If the side room is less than the added up measurement, then a square end set up is required.

The square end type of set up (See Figures 2.2) needs zero sideroom as the brackets and tracks can be fitted to side walls. However, this makes installation of the shutter more complicated as the roller and curtain must be mounted separately instead of as one unit. The curtain may need to be slid on in sections, which can be awkward due to side room restrictions.

So in this case, full-height 50-75mm angles can be affixed to the side walls and the tracks and square end brackets secured to the angles. This gives a slight amount of side room to be able to slip the whole shutter unit into the brackets at once (See Figure 3.2).

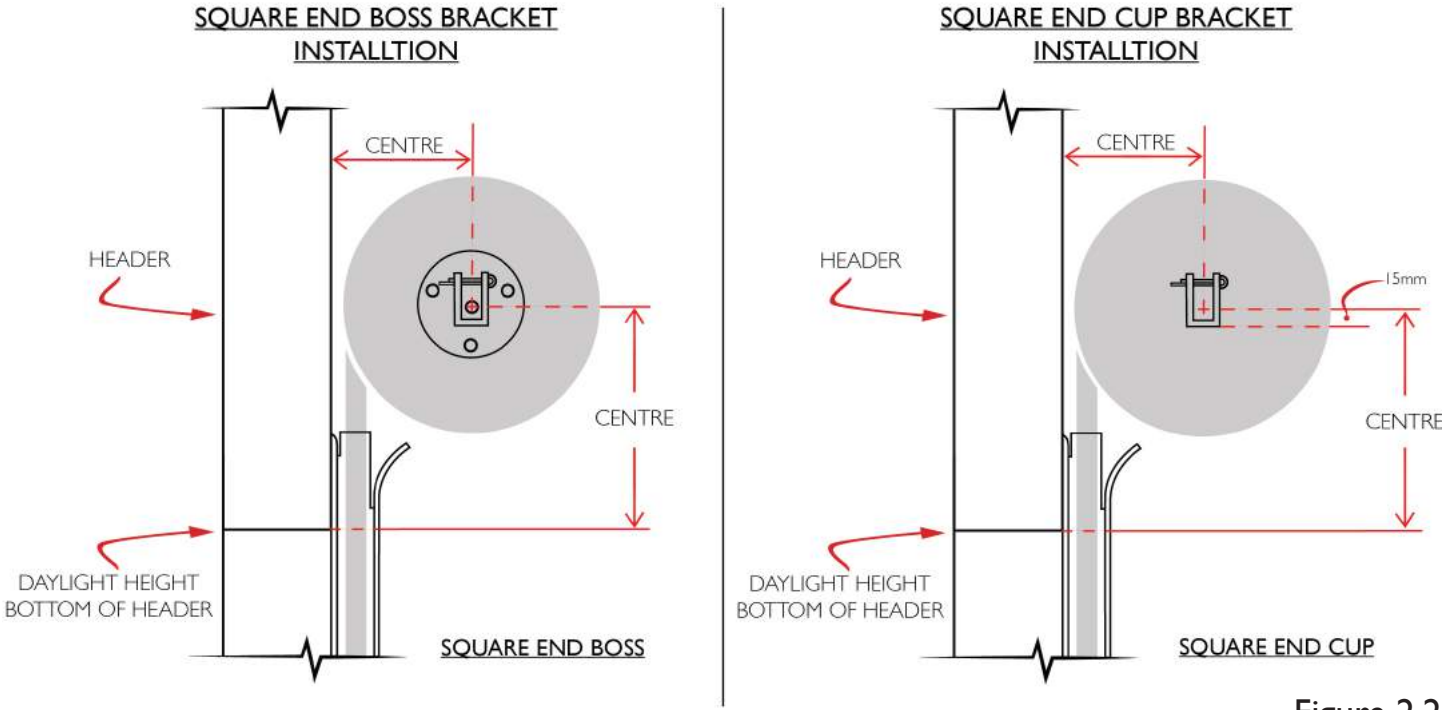

Figure 2.2

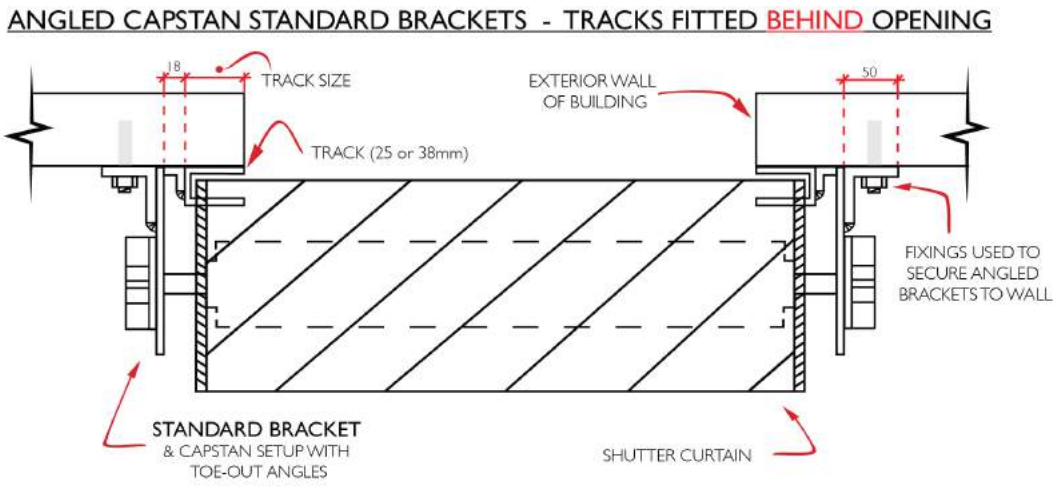

Figure 3.0

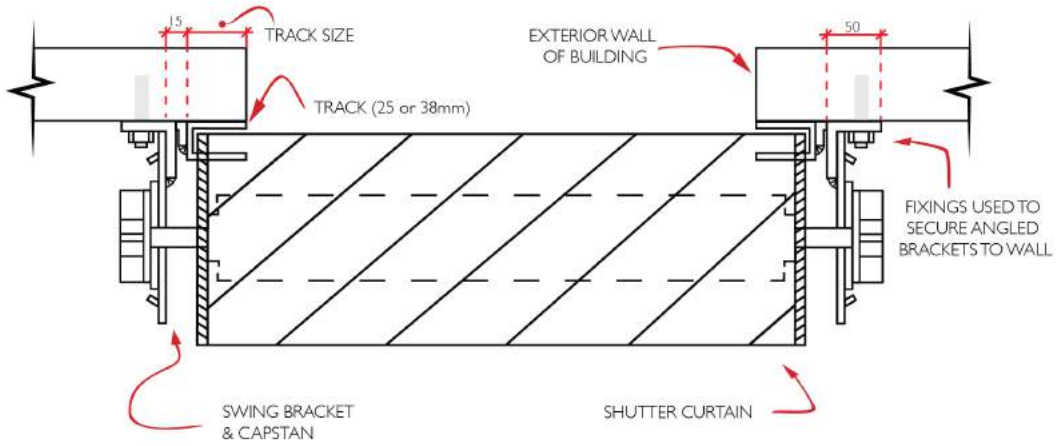

Figure 3.1

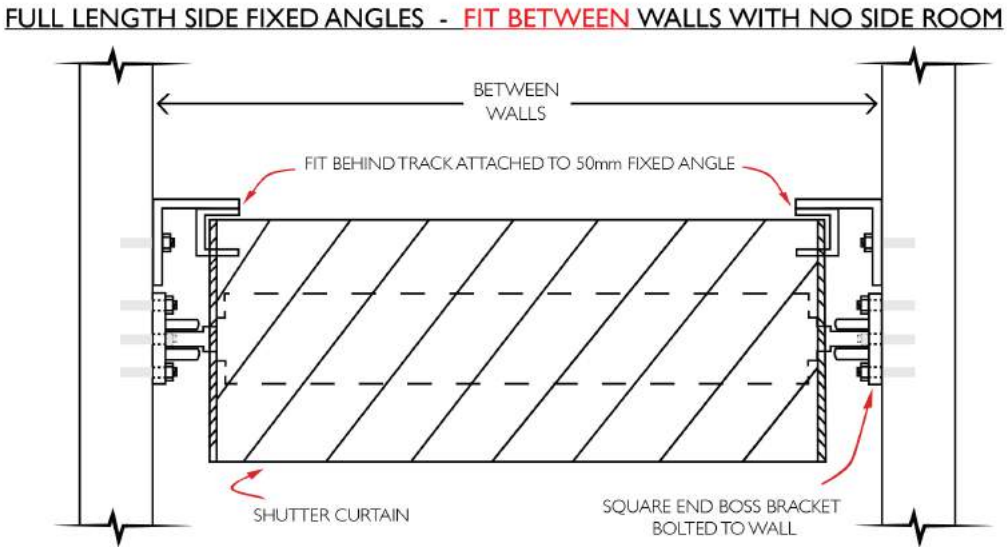

Figure 3.2

Hand-op shutters can be fitted with several different types of locking systems including: Shoot Bolts, Flush Lock or T-handle. All locks are fitted to the bottom rails. This means, with full height shutters, bending down to ground level is necessary to unlock and lock the shutter.

PLEASE NOTE: When the shutter is in the fully opened position, the bottom rail will sit under the header subtracting 70mm from the daylight opening height.

Unlike truck shutters, the tracks of hand-op shutters usually **'FIT BEHIND'** the daylight opening width. This is because the shutter is usually mounted above the opening hole in the brick or concrete wall of the building. So the wall of the building will also form the header to cover the mounting position of the shutter.

On each side, the tracks do not project into the opening. When measuring the opening, take note of where the tracks must sit. A brick or steel frame opening will tend to have a square or slightly rounded edge and the tracks will fit close to the edge of the opening. However, on some concrete openings, a bevel is formed onto the edge of the opening which means that the tracks must be fitted beyond this bevel. In this instance, the edge of the bevel is considered the daylight opening (See Figure 4.0).

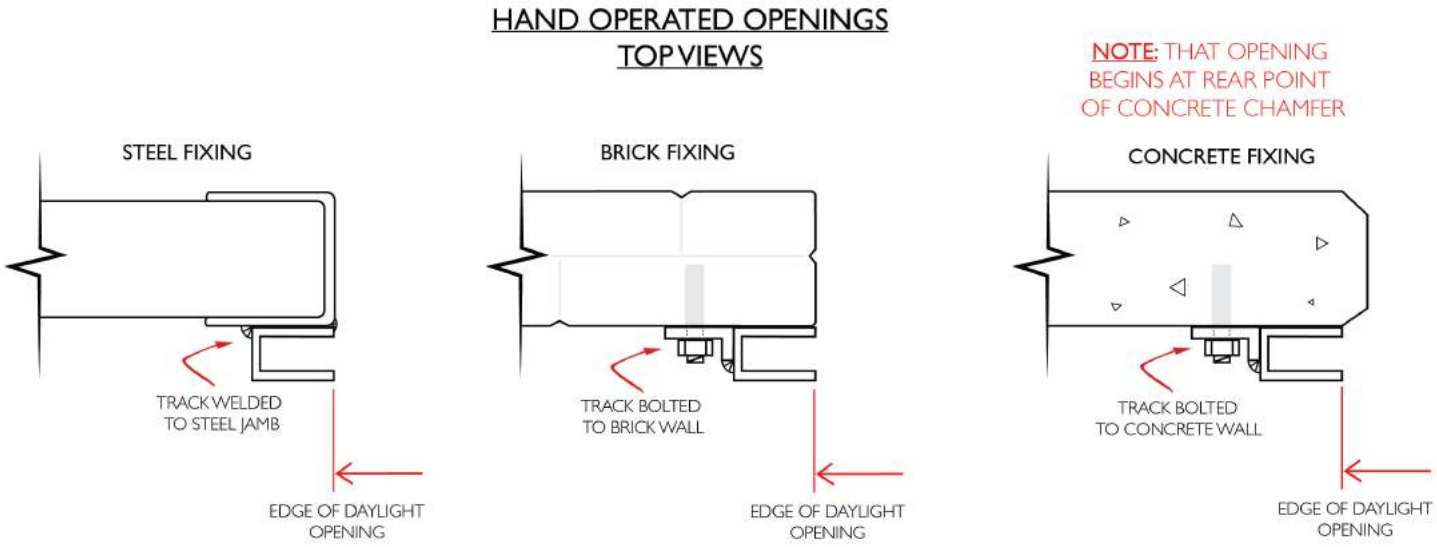

Figure 4.0

All shutters at Noble Truck Shutters are available in mill and anodised finished aluminium, which is kept in stock at all times. Alternatively, all aluminium and steel parts of a hand-op shutter can be powdercoated to suit the colour of your building or architraves.

HAND-OP SHUTTER INSTALLATION.

PLEASE READ CAREFULLY BEFORE ATTEMPTING INSTALLATION

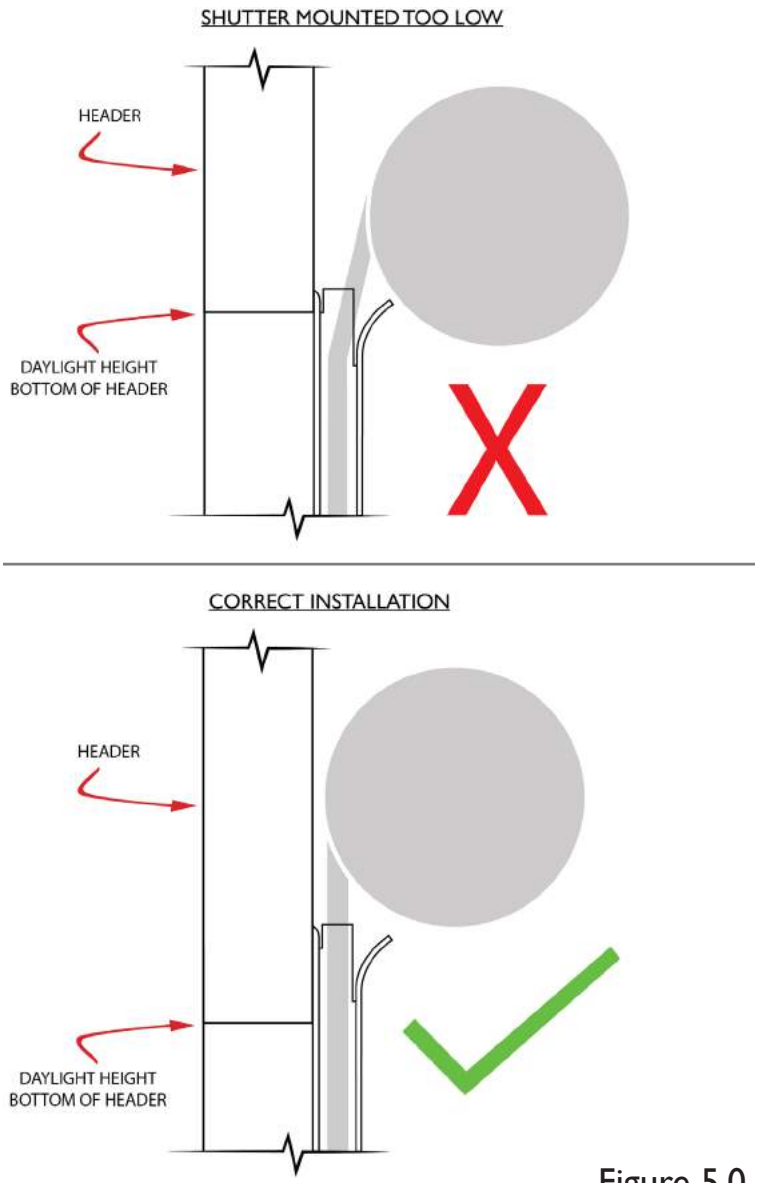

Figure 5.0

If a shutter is installed incorrectly, it will suffer wear and tear quicker than a well installed shutter.

A common mistake is to mount the shutter too low rendering the header too small to cover the roll of the shutter adequately.

This will force the track curls to be too high and in turn, the shutter mounted too far away from the header.

When the shutter is in the open position, the curtain should be as close to the header as possible. The bottom of the header should be lower than the bottom of the rolled up shutter.

To this point, tracks should be fitted last once the shutter is positioned correctly.

A shutter must be installed correctly to minimise deflection across the shutter at the header and to also minimise pressure on the ends of the top slats which are positioned at the track lead in curls when the shutter is in the closed position. Most wear and tear on a shutter will start at this point and quickly get worse if not corrected.

HAND-OP SHUTTER INSTALLATION.

PLEASE READ CAREFULLY BEFORE ATTEMPTING INSTALLATION

1. CENTRE

The installation height of the shutter is determined by the amount of room located above the opening. Usually, 150mm up from the site daylight opening height (or bottom of header) to the centre of the roller axle is a good mounting height.

If there is an unrestricted area above the opening, then the shutters axle can be mounted 200mm or more above the opening. This mounting height will help prevent any deflection at the top of the curtain as the track lead-ins can carry past the bottom of the header. In short, the higher the shutter is mounted, the better. But there must be enough curtain to accomodate this. So we need to know how high the shutter can be mounted when it is in the manufacture stage.

If the area above the opening is limited, then measure the centre of the shutter from the middle of the axle to the outside of the bottom rail. You will need to add another 10-15mm to this measurement for ceiling clearance. Mark the measurement down from the ceiling on each side of the opening and determine that these marks are level. The shutter must hang level in the supplied brackets to ensure it runs true.

When using square end brackets , your centre mark will need to be transferred to the side wall. Mark down from the ceiling or up from the bottom of the header, as well as in from the rear surface of the header.

If the brackets and tracks are prewelded to angles that traverse the height of the opening, then you must make sure that the bracket height on either side of the opening will be level with each other. One side may need to be trimmed at the bottom if the ground slopes.

2. BRACKET INSTALLATION

USING STANDARD TYPE CAPSTAN BRACKETS:

A standard hand operated shutter has tracks that fit behind the opening. The legs of the tracks should be level with the edge of the opening.

The inside face of the bracket will be located 18mm past the back of the track (See Figure 3.0). So if you were using 38mm tracks, the inside face of the bracket would be 56mm from the edge of the opening (38 + 18 = 56mm). Weld or bolt the brackets directly to the wall (fixing angles outward) with the middle of the axle slot in line with your centre measurement from the bottom of the header (See Figure 2.0).

USING SWING TYPE CAPSTAN BRACKETS:

The inside face of the bracket will be located 15mm past the back of the track (See Figure 3.1). The reduced measurement takes into account the thickness of the additional plate. So if you were using 38mm tracks, the inside face of the bracket (which does not swing) would be 53mm from the edge of the opening (38 + 15 = 53mm). Weld or bolt the brackets directly to the wall with the bottom of the axle slot 10mm lower (half the thickness of the 20mm axle) than your centre measurement from the ceiling (See Figure 2.1) .

The swinging arm of the bracket and the pushed out tabs are installed away from the opening. It is paramount that this type of bracket is installed straight and in the correct position so as not to hinder the rocking motion of the shutter when being operated.

USING SQUARE END BRACKETS:

If using square bosses, line you centre mark up with the hole located in the centre of the bracket and bolt directly to the wall. When fitting square cups, position the bottom of the cup 15mm under the horizontal centre mark with the cup central to the vertical centre mark and weld to wall or fixing plate (See Figure 2.2 & 3.2).

3. LIFTING SHUTTER INTO POSITION

WARNING: DO NOT ATTEMPT LIFTING AND POSITIONING A SHUTTER BY YOURSELF! THIS COULD RESULT IN SERIOUS HARM TO THE INSTALLER OR DAMAGE TO THE PRODUCT.

USING STANDARD CAPSTAN BRACKETS:

Knock out the packers between the shutter curtain and capstans which keep the curtain central to the roller during transport. While the shutter is still in its packaging, making sure that it is situated the correct way around, lift it carefully into position. Two workers are requried to ensure that the shutter is kept level whilst lifting, and that the curtain remains rolled up straight. Install the provided bolts loosely into the rear bracket holes furthest from the header, passing through the bracket and the nylon capstan on the end of the axle. Do this for both sides. At the end of the installation process, the shutter will need to be pushed toward the header creating a tighter centre in order to minimize deflection. But for now, it is better to have a little room to work.

USING SWING TYPE BRACKETS:

Remove the swing arm from each bracket by un-doing the 10mm pivot bolts. Knock out the packers between the shutter curtain and capstans which keep the curtain central to the roller during transport. Fit the swing arms to the shutter capstans using the capstan bolts/nuts provided which can be tightened. While the shutter is still in its packaging, making sure that it is situated the correct way around, lift it carefully with the swing

arms pointing toward the opening. Set it into position, by letting the swing arms rotate downward to slot in between the pushed out tabs of each stationary fixed bracket. Two workers are requried to ensure that the shutter is kept level whilst lifting, the curtain remains rolled up straight and that the swing arms slot into the correct position.

Re-install the 10mm pivot bolts. Tighten them, then loosen them off just enough so that there is slight friction on the swing motion of the shutter in the bracket system. The shutter should still be able to rock back and forth easily. A spray of WD40 between the plates is not necessary, but is always a good idea.

USING SQUARE END BRACKETS:

While the shutter is still in its packaging, making sure that it is situated the correct way around, lift it carefully with the squared off axle ends in a vertical position and lower it into the square end brackets. Two workers are requried to ensure that the shutter is kept level whilst lifting, the curtain remains rolled up straight and that the squared off axle slots into the correct position. Install the supplied split pins above the axle for safety.

4. TRACKS

With the shutter now mounted into the brackets and still in its protective wrapping, the track length can now be determined.

Trim the tracks (if necessary) to the desired length so that they travel higher than the opening but will not interfere with the roll of the shutter (See Figure 7.0). As the curls are at the top of the tracks, any trimming will be cut off the bottom.

Tack weld or bolt the top of the tracks into position leaving approximately 3 - 5mm of play. Without this small amount of sideways play, the shutter may bind or jamb due to friction.

Apply tension and fit hardware before fixing the remainder of the tracks.

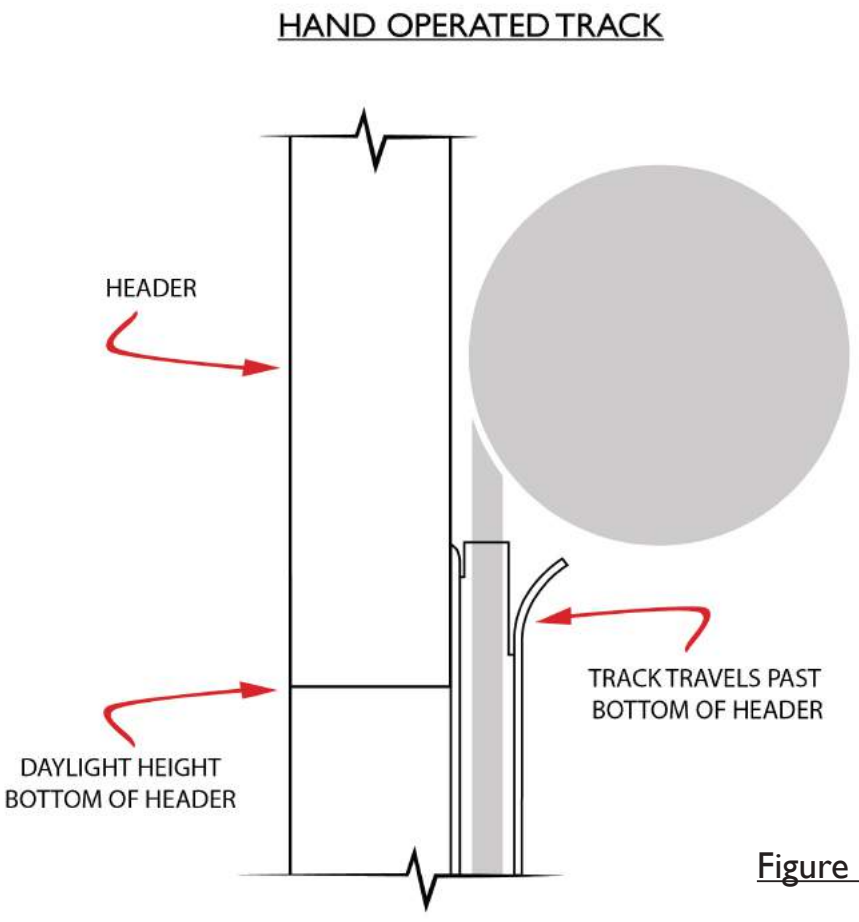

Figure 7.0

5. TENSIONING SHUTTER

WARNING: DO NOT LET GO OF THE TENSIONED SHUTTER AS IT WILL TAKE OFF AND UNWIND UNCONTROLLABLY CAUSING DAMAGE TO ITSELF, THE VEHICLE AND POSSIBLY HARMING THE INSTALLERS.

Two workers are required when applying tension. If one looses grip on the tensioned shutter, the other will still have hold of it. Ensure the supplied bottom rail angle stops or shoot bolt locks are within reach so that when the curtain and bottom rail are pulled into the track after tensioning, the stops can be fitted immediately. This will prevent any chance of an accidental slip and losing the tension, causing damage to the shutter, the truck or the installers.

Cut off the shutter's outer cardboard packaging, leaving the inner plastic taped up. Turn the shutter in a downward direction to apply tension (See Figure 8.0). Between 3-6 turns are required depending on the size of shutter (the bigger the shutter, the more turns of tension required). Cut the tape holding the shutter tight and pull the bottom rail into the tracks. Immediately fit the supplied angle stops or shoot bolt locks.

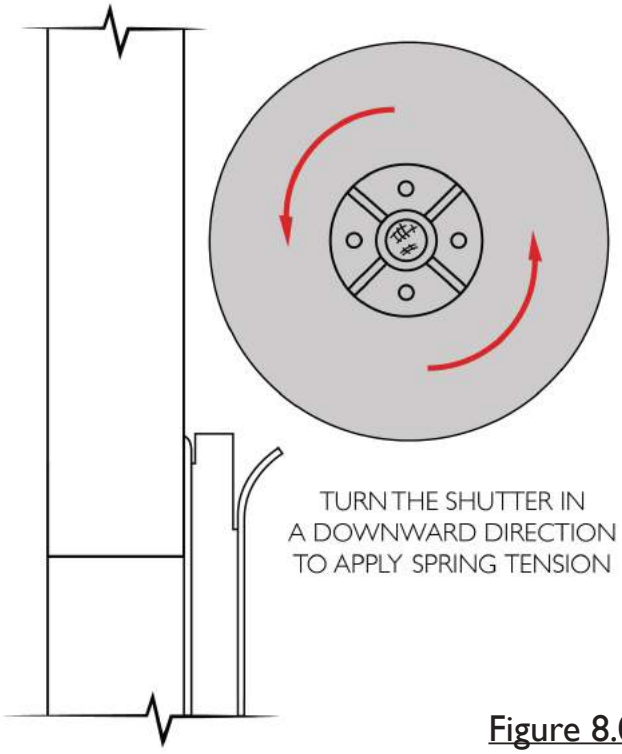

Figure 8.0

The packers supplied between the shutter capstans and curtain are there to keep the curtain rolled up straight and central to the roller during transport. You must check that the shutter curtain is still centred in the opening and has not been knocked one way when being lifted into the brackets.

The very top slat of the curtain that joins to the roller needs to be central to the opening. If it is not, you must pull the shutter curtain back out of the top of the tracks and bring it down behind the tracks. Pull the curtain all the way down until the very top slat is exposed. Take care not to damage the lower part of the shutter curtain by dragging it on the ground.

Using a pinch bar, lever the top slat back to centre and start to raise the shutter slowly. Lever the rest of the curtain back to centre whilst slowly raising the shutter. You may need to nudge the curtain on either side every few hundred millimetres to keep it aligned. All the end clips should be in line with each other and central to the opening when you pull the bottom rail back into the tracks (See Figure 9.0).

Straightening the curtain can be avoided by carefully lifting the shutter into position without knocking it sideways.

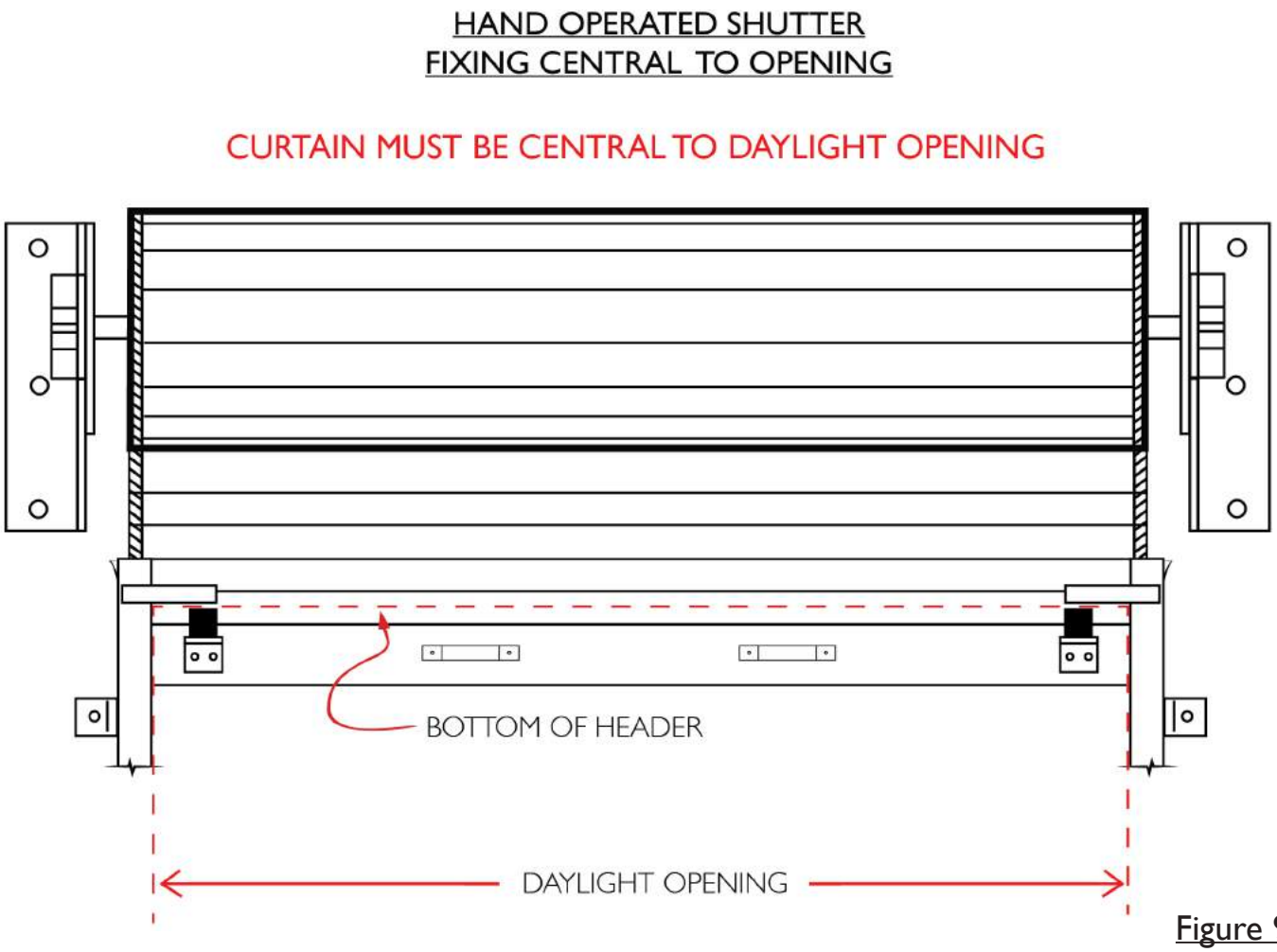

Figure 9.0

6. **TESTING THE TENSION**

Once in the tracks and the supplied angle stops or shoot bolt locks are fitted, the shutter will stop at the header and can no longer pull out of the tracks. Pulling the shutter downward, it should feel as if it wants to go back to the header. When nearing the middle of the opening height, it should want to stay stationary. When pulled all the way to the bottom, the shutter should want to lift slightly by itself.

The shutter should never want to fall. This would mean that the shutter has been under-tensioned. Add another turn of tension by removing the bottom rail hardware, raise the bottom rail out of the tracks being sure not to accidentally loose grip. Rotate the whole shutter in the downwards direction (See Figure 8.0) and pull the bottom rail back into the tracks. Refit the bottom rail hardware immediately, including handles.

The shutter tension should also not be too strong, wanting to take off toward the ceiling extremely fast. This would be over-tensioned and a turn may need to be taken off. It is the same process as explained above, however, the bottom rail should continue in the upward motion passing between the shutter curtain and the header. Carefully bring the bottom rail down the rear of the roll and insert back into tracks, fitting hardware immediately.

7. **TRACK FIXING**

Now that the tension is correct and the harware has been secured, bolt or weld the remainder of the track into position. Bring the shutter to half height. Move the bottom rail slightly from side to side making sure that there is a little play and that the operation of the shutter will be smooth. Bolt or weld at the halfway position. Repeat this step for the bottom also. With the shutter working smoothly up and down, bolt or stitch weld the remainder of track.

8. **LOCK MOVEMENT**

For spring loaded shoot bolts, T-handles or Flush locks, you will need to open holes through the tracks in order for these to move into the locked position. Cut the holes as low as possible so that the shutter does not jump up and down when locked. Excessive wear is the result of locking holes that are cut too high.

Ensure that the locks perform correctly. If a lock hole is to low, open up the hole using a carbide burr tool.

For these and all other locking system installations, please see the "Locking Systems" *downloadable PDF.*

9. **DECREASING THE CENTRE** (STANDARD TYPE CAPSTAN BRACKETS ONLY)

The shutter should be as close to the header as possible. At the start, we inserted the capstan bolts into the rear holes of the capstan brackets so that we had some room to work. We must now decrease the centre. Take out the capstan bolt on one side only. With the shutter in the fully opened position, push the roll toward the header. Install the capstan bolt and nut into the adjustment hole that is closest to where the capstan is now sitting. You may need to use a pair of vice grips on one of the capstan fins to rock the axle back and forth until the bolt pushes through. Once the bolt and nut are loosely fitted, repeat for the other side. Tighten both capstan bolts and nuts. The shutter should not be so close to the header that it prevents smooth operation.

Note that lubricants are not required for the shutter operation. However, WD40 spray or equivalent is recommended for smoothness. It will not attract unwanted dirt and grime and will help ease unwanted friction.