



Dempsey Dyer Ltd

## **Section 6 - Method for Frame Preparation and Positioning**

### ***Residential & French Doors***

## 6. Residential & French Doors

Read Section 1, Industry Standard, Survey, Design & Installation and note the following points which are significant to the installation of Residential & French doors.

### 6.1 Open Out Doors - Head Drips

A non-tongued/grooved head drip is included. Door drips are sent loose so they can be correctly aligned on installation. This drip to be positioned on site as follow:

- Position to underside of fascia over doorcase with low modulus silicone and 2" galvanised nails (punched and filled) at 200mm centres and 50mm from each edge. This drip prevents water collecting on the head of the open out door and is essential to prevent the head of the door from retaining water which will result in swelling of the doors. NOTE: Ensure door drip lines up with sidelight drips (the sidelight drips are factory fitted).



Head Drip

### 6.2 Open Out / Open In - Fixing

Avoid

- Convex doorcase legs
- Concave doorcase legs

This will result in binding or over slack doors.

Positioning of door in opening:

- Offer the doorcase to the brickwork and hold in position with packers.
- Check that the tolerance gaps, stated below, are in place and if not adjust the doorcase within the opening until the tolerances are in place.
- When the tolerances are in place, then screw/fix the doorcase to the opening.

Fixings must be with non corrosive screws - through fixed not cleats.

Accoya, Idigbo or Oak products should always be fixed with brass or stainless steel screws.

The tannins or acetic acids in these timbers will attack ferrous metals.

- If fixing with none corrosive screws and plugs:
  - Fix through the rebate
  - Penetrate the brickwork at least 35mm (use a minimum 4" protected screw)
  - Countersink the screw head
  - The best finish is with a colour coded timber pellet. Alternatively fill with low modulus sealant or timber filler of suitable colour for appearance and to avoid water contacting screw head.
  - Fixing intervals are a maximum of 150mm from a joint and then not more than 600mm centres (These fixing intervals may have to be increased in severe weather sites).

**NOTE:**

To avoid the need to finish with a colour coded timber pellet, remove the 3D Adjustable Hinges, through fix, maintaining the 600 centres and then reposition the 3D Adjustable Hinges.

**6.3 Tolerance gaps:**

- There should be a gap of approx 4 - 6mm between the centre meeting stiles of double doors.
- There should be a gap of approx 4 - 6mm between the locking side and doorcase of single doors.
- There should be a hinge side gap of approx 3 - 4mm to all doors.
- There should be a head gap of approx 3 - 4mm to all doors.
- The leaves of double doors should be flush to each other.

## 6.4 Toe and Heeling - If Site Glazed

Ensure door glass is toe and heeled to prevent sag. When the door is toe and heeled, silicone additional side packers down the hinge and locking side to restrain timber movement in the door leaf stiles.

## 6.5 3D Adjustable Door Hinges

Subject to the door specification requirement your door will be supplied with either:

- Simonswerk 3D hinge - see below 6.5.1
- Maco 3D Hinge - See below 6.5.2

### 6.5.1 Simonswerk - Three Way Door Adjustable Hinge System

#### IMPORTANT SAFETY NOTE:

Ensure all adjustment screws are tightened up to the correct torque of 10 - 12 Nm using a torque screwdriver otherwise the door could move or slip off its hinges. (See Fig A below).

#### Hinge Data

- All Dempsey 44mm and 58mm timber doors are fitted with the 3D hinge, 3 per door leaf (4 on larger leaves).
- All hinges are supplied with a burglar security device which are required on outward opening doors.
- The hinge supplied is a KTL gold (**Fig A**) or SAA finish. Stainless Steel 3D hinges are available for Accoya doors.
- The hinge benefits:
  - Easy on site adjustments if required to adjust door leaf gap tolerances subject to tolerances remaining within our guidelines.
  - Doors can be lifted off hinges for ease of handling.

### 3 Way Height and Compression Adjustment (Fig B)

Use a 4mm Allen key for all actions!

The adjustment is to be carried out without taking the door off the hinges. Open the door by approx 90 degrees and fix it by placing a packer underneath the door. Loosen the two clamping screws of each hinge and adjust the height (+/- 3mm) and the gasket compression (+/- 4mm) of the door leaf by moving the sash carefully in the appropriate directions and fasten the clamping screws again.

**X** This operation must be carried out by two people, one of whom is holding the door at all times and the door must be sat on a packer in an open position to prevent the door from falling off as all adjustment screws to the 3 or 4 hinges must be turned at the same time.

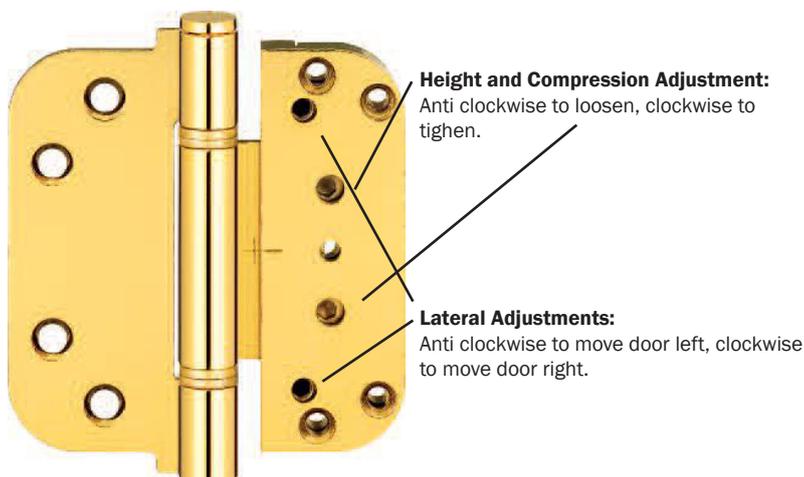


Fig A

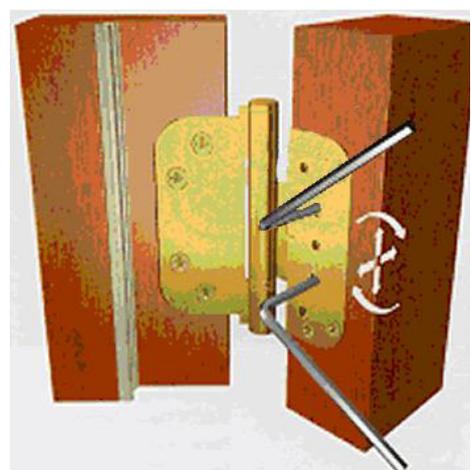


Fig B

### 3 Way Lateral Adjustment (Fig C)

Use a 4mm Allen key for all actions!

Open the Door by approx 90 degrees and stabilise it with a wedge. Adjust the lateral (sideways) position (+/- 2mm) by turning the upper and lower screw of each hinge.



### 6.5.2 3D Maco Adjustable Hinge

The vertical adjustment movement can be made on one hinge only.

However, once the vertical adjustment has been made on that one hinge, the remaining 2 or 3 hinges must be adjusted also so that they also carry the weight of the door.

Otherwise the door weight will be carried on the 1 hinge only which will lead to premature failure of that hinge.

#### Revolutionary 3D adjustment

All adjustments are done directly with a T20 key, there is no need to release fixings and the door leaf remains securely fastened to the frame throughout.

The revolutionary part, is that the hinges are equipped with a patented mechanism that

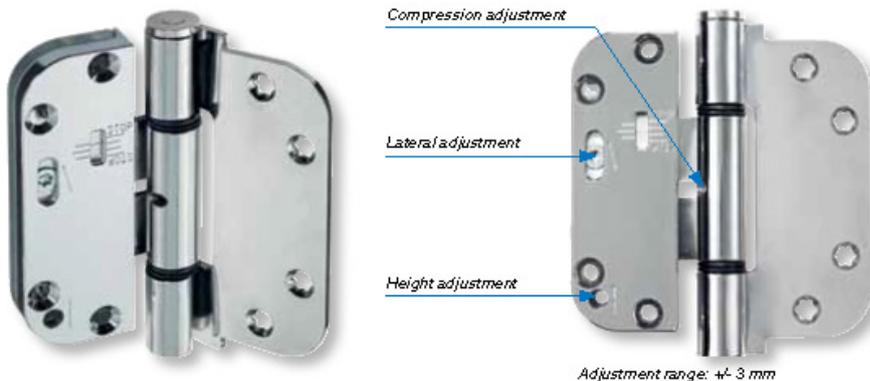
provides freedom of upward motion. The height adjustment only needs to be carried out on a single hinge, the other hinges adjust automatically.

The compression adjustment is set with the door closed. This means that the sash sits in the frame and the fitter

can see the contact pressure increase or decrease whilst adjusting the door.

#### Adjustment range

The T80 C composite door hinge adjusts directly and continuously +/- 3 mm in all dimensions.



#### Further benefits

- The sash and frame linkage arm is fixed together, which ensures that the two components remain connected even under extreme conditions.
- For sash weights up to 80 kg acc. to DIN EN 1935 construction class 11.
- The hinge bushes are made from a special material that is extremely resistant to wear.
- A security locking screw for the hinge spindle is available for outward open doors.

### 6.5.3 Door Movement in excess of 3D Hinge Adjustment

If the door leaf(s) swells and sticks due to damp conditions outside the moisture content design limits of the door we recommend letting the hinge into the door case leg - as opposed to planing because the hinge can subsequently be packed out if doors shrink back thus avoiding wide tolerance gaps.

### 6.5.4 Operation of Doors Multi-Point Locks

The doors are designed with compression seals and the deadbolts should therefore always be in the locked position to maintain the stability of the door and gasket compression. If the multi-point is not fully engaged on a regular basis, there will be a tendency for the doors to bow at the top and bottom due to deflection from the compression gasket. In cases where French doors are supplied with top and bottom mortise bolts (e.g. Era bolts or flush bolts) to the slave doors, the bolts should always be engaged when the doors are closed for the same reason.

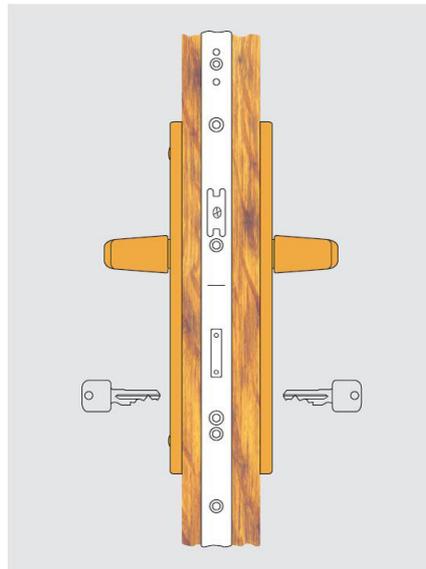
#### Lever/Lever with Split Spindle Option

##### Inside/Outside Locking

By simply lifting the lever upwards the central deadbolt and the remaining dead bolts are engaged. By turning the key in the cylinder the mechanism is then deadlocked.

##### Inside/Outside Unlocking

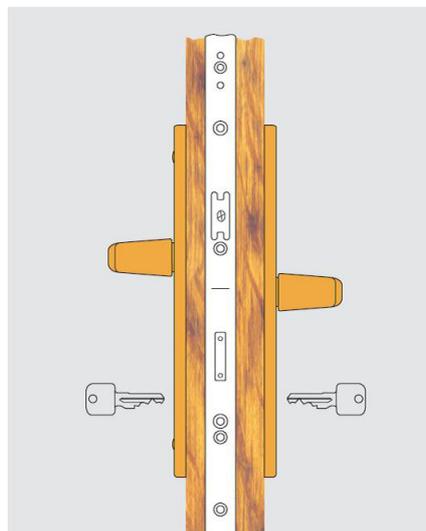
Turn the key in the cylinder, this operation releases the mechanism. Then simply depress the handle to disengage the deadbolts.



#### Lever/Lever with Split Spindle Easy2Escape

This lock has an automatic deadlocking function and quick escape. By simply lifting the lever upwards the central deadbolt and remaining dead bolts are thrown and deadlocked.

To unlock and open from the inside, simply depress the handle. The deadbolts and latch are retracted. To unlock and open from the outside the key must be turned in the cylinder and the handle depressed, retracting the deadbolts and latch.



### **6.5.5 Door Movement in a High Moisture Content Environment**

Our external door sets, with an ex-factory moisture content of 12% to 16% are designed to operate in a heated building. Therefore our door sets should not be installed in damp or wet building environments. If they are they will swell across the grain and may “stick” because they have moved outside the tolerance of the adjustable hinges and/or the leaf may bow

### **Excess Moisture Intake From “WET” Building Fabric and Unheated Buildings**

- New build prior to drying out and heating applied
- Refurbishment prior to drying out and heating applied
- Conservatories prior to drying out and heating applied.

The timber components of the door leaf will take up excess moisture when newly installed into surrounding “wet” building fabric e.g. new brickwork, plaster work and cement. (The problem is more severe when installing in winter months.) Consequently, doors will take up moisture with the possibility of sticking doors and the bowing of door stiles.

It is important that the Multi-Point locks are fully “locked” when the doors are not in use - to restrain any movement by the way of bowing.

Door leafs will take up excessive moisture in these damp unheated conditions as the timber components are kiln dried for external joinery in dry heated buildings. The excessive moisture take up may result in sticking doors. See section 6.5.1 & 6.5.2 for lateral (sideways) hinge adjustments to create additional lateral tolerance. In severe cases of excessive moisture build up, the adjustment required may be outside the lateral adjustment range of the 3D hinges and it may be necessary to wait for the door timber components to “dry out” which can take a few months in winter conditions as the conservatory building (concrete base and brick/stone walls) dries out and heating is concurrently applied. The correct procedure is to avoid fitting the door leafs until the heating is applied and the building fabric has dried out, the door leafs are then installed into an environment at a moisture level for which they were designed.

An alternative is to “let” the hinge into the door case leg by deepening the hinge slots. (Rather than remove the doors, planing the hinge side, re-staining the hinge side and re-hanging the doors).

Door manufactured in Accoya are less subject to dimensional changes because Accoya does not change dimensionally when subject to a moisture laden environment. Consideration therefore should be given to specifying Accoya on your order when doors are to be installed in building subject to excessive moisture take up.