



ASSA ABLOY

# PowerLOA™

High performance hinges





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UNION Architectural Hardware introduces a new range of high performance door hinges - **UNION PowerLOAD™**.

Tested to BS EN 1935:2002 and CE marked, the new UNION hinges have also been assessed for use on timber fire doors to BS EN 1634-1. With the additional reassurance of a 25 year guarantee, the new **UNION PowerLOAD™** hinges are ideal for the specification market where durability and reliability are paramount.

Designed for long life and outstanding performance, the **UNION PowerLOAD™** hinge range requires little or no maintenance. Metal to metal wear is dramatically reduced by using carbon steel and phosphorous bronze flanged bearing bushes with a specially formulated lubricant. This material combination significantly lessens the wear and regular maintenance required by other types of hinge.

The new hinges also feature precision positioning for fixings in order to spread the load on timber door frames and stiles and achieve consistent performance over time.

**UNION PowerLOAD™** hinges are available either bulk packed with radius corners for OEM factory preparation, or tri-packed with square corners and complete with screws to suit on-site installation.

Dependent on the level of corrosion resistance required, all **UNION PowerLOAD™** hinges are available in a choice of satin stainless finish (grade 304) or bright zinc plate (mild steel).



# PowerLOA™ Technical Data

- CE marked - BS EN 1935:2002 performance tested to 200,000 cycles
- Tested to meet the following corrosion resistance levels
  - 4 = very high resistance (SSF finish)
  - 2 = moderate resistance (BZP finish)
- †Certifire approved
- 180° angle of opening
- Radius and square corner variants available. Radius corner offers speed of fixing with machine tools
- 304 stainless steel provides improved corrosion resistance
- Bright zinc plate finish in mild steel variant
- Self lubricating, phosphorus bronze bushes providing maintenance free bearings
- Congruent fixing pattern. Spreads the load of the door/hinge more effectively within the timber
- Radius corner hinges sold in packs of 20 for ease of factory / contract installation (Pozi Csk stainless steel screws sold separately)
- Square corner hinges sold in boxes of 3 for individual door installation (complete with screws)
- Available in a choice of finishes – Satin Stainless Steel (SSF) or Bright Zinc Plate (BZP)
- 25 year guarantee



1720



Certificate No:CF696



## 601 Butt Hinge

High performance bushed bearing butt hinge

### Application

High performance butt hinge suitable for severe duty applications and for use on doors which are subject to frequent violent usage e.g. where deliberate abuse is likely or where there is potential for persistent violent attack.

### Performance

- Fixed pin for improved cycling and durability
- EN1935:2002 performance tested to 200,000 cycles on 120kg door mass, also cycle tested on a 160kg door
- Suitable for 160kg door mass (door mass to include adjustment for door closers, furniture and environmental conditions)

### Testing and Standards

Third party tested to BS EN 1935:2002. Achieves grade 13.

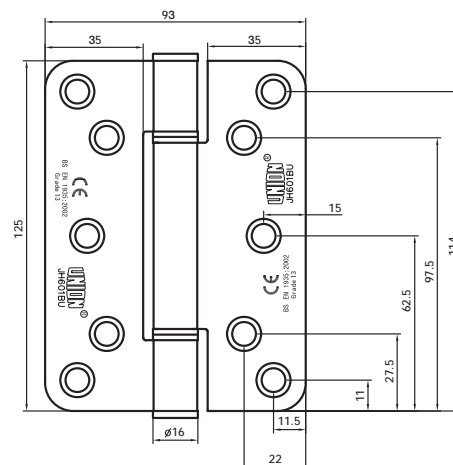
4	7	6	1*	1	4	0	13	SSF finish
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4	7	6	1*	1	2	0	13	BZP finish
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\* Included in fire test to BS EN 1634-1 with assessment for use on timber fire doors with intumescent protection up to FD30 and FD60.



Radius corner variant shown



# 602 Butt Hinge with 20mm projection

High performance bushed bearing butt hinge

## Application

High performance butt hinge suitable for severe duty applications and for use on doors which are subject to frequent violent usage e.g. where deliberate abuse is likely or where there is potential for persistent violent attack.

## Performance

- 20mm projection to increase opening angle for use with architraves
- Fixed pin for improved cycling and durability
- EN1935:2002 performance tested to 200,000 cycles on 120kg door mass, also cycle tested on a 160kg door
- Suitable for 160kg door mass (door mass to include adjustment for door closers, furniture and environmental conditions)

## Testing and Standards

Third party tested to BS EN 1935:2002. Achieves grade 13.

4	7	6	1*	1	4	0	13
---	---	---	----	---	---	---	----

SSF finish

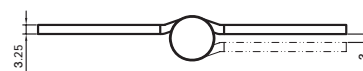
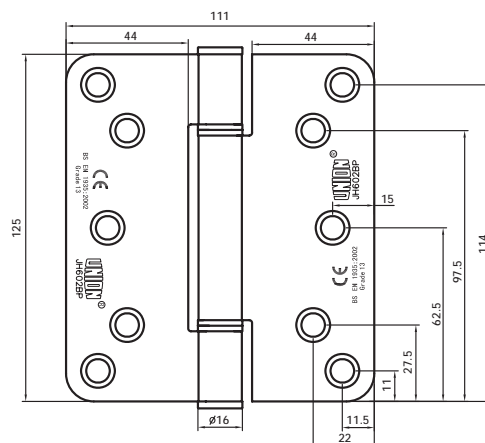
4	7	6	1*	1	2	0	13
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BZP finish

\* Included in fire test to BS EN 1634-1 with assessment for use on timber fire doors with intumescent protection up to FD30 and FD60.



Radius corner variant shown



# 603 Butt Hinge

High performance bushed bearing butt hinge

## Application

High performance butt hinge suitable for severe duty applications and for use on doors which are subject to frequent violent usage e.g. where deliberate abuse is likely or where there is potential for persistent violent attack.

## Performance

- Fixed pin for improved cycling and durability
- EN1935:2002 performance tested to 200,000 cycles on 120kg door mass, also tested to 500,000 cycles
- Suitable for 120kg door mass (door mass to include adjustment for door closers, furniture and environmental conditions)

## Testing and Standards

Third party tested to BS EN 1935:2002. Achieves grade 13.

4	7	6	1*	1	4	0	13
---	---	---	----	---	---	---	----

SSF finish

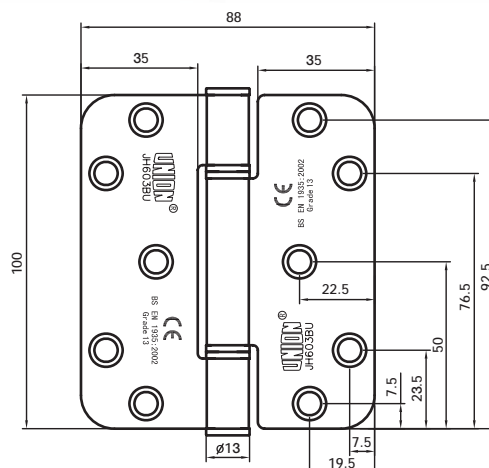
4	7	6	1*	1	2	0	13
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BZP finish

\* Included in fire test to BS EN 1634-1 with assessment for use on timber fire doors with intumescent protection up to FD30 and FD60.



Radius corner variant shown



NB - bright zinc finish variant has thickness of 3.1mm

# 604 Lift-Off Hinge\*\*

Lift-off hinge with shaped leaves

## Application

Lift-off hinge suitable for heavy duty applications and for use on doors which are subject to a high frequency of use by the public with little incentive to exercise care. Available in left or right hand.

## Performance

- Lift-off feature enables easy removal of door for maintenance
- EN1935:2002 performance tested to 200,000 cycles on 80kg door mass
- Suitable for 80kg door mass (door mass to include adjustment for door closers, furniture and environmental conditions)

\*\* 604 Lift-off hinge available in radius corner variant only.

## Testing and Standards

Third party tested to BS EN 1935:2002. Achieves grade 11.

3	7	4	1*	1	4	0	11
---	---	---	----	---	---	---	----

SSF finish

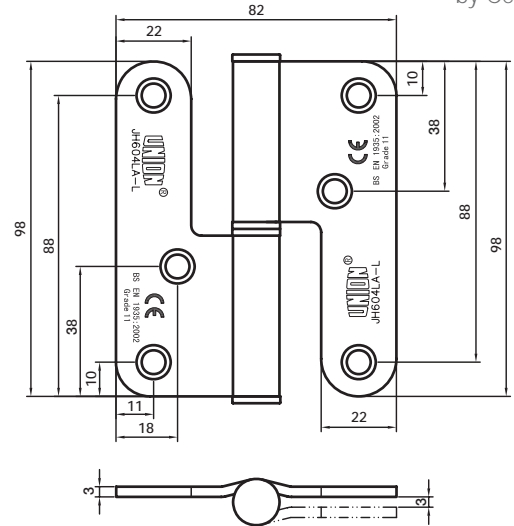
3	7	4	1*	1	2	0	11
---	---	---	----	---	---	---	----

BZP finish

\* Included in fire test to BS EN 1634-1 with assessment for use on timber fire doors with intumescent protection up to FD30 and FD60.



†Please Note:  
The 604 Hinge is not currently covered by Certifire



Above diagram shows left handed product

# 605 Lift-Off Hinge

Lift-off hinge with straight leaves

## Application

Lift-off hinge suitable for heavy duty applications and for use on doors which are subject to a high frequency of use by the public with little incentive to exercise care. Available in left or right hand.

## Performance

- Lift-off feature enables easy removal of door for maintenance
- EN1935:2002 performance tested to 200,000 cycles on 80kg door mass
- Suitable for 80kg door mass (door mass to include adjustment for door closers, furniture and environmental conditions)

## Testing and Standards

Third party tested to BS EN 1935:2002. Achieves grade 11.

3	7	4	1*	1	4	0	11
---	---	---	----	---	---	---	----

SSF finish

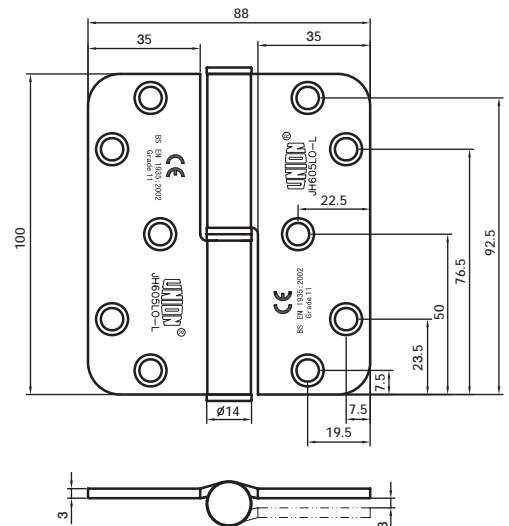
3	7	4	1*	1	2	0	11
---	---	---	----	---	---	---	----

BZP finish

\* Included in fire test to BS EN 1634-1 with assessment for use on timber fire doors with intumescent protection up to FD30 and FD60.



Radius corner variant shown



Above diagram shows left handed product

# Guidance on positioning of hinges

## 3 hinges – 2 at the top and one at the bottom for improved load bearing (Fig. B)

For some fire doors (heavier construction or with a hold open door closing device) it is best practice to fit two hinges at the top of the door with the third hinge at the bottom of the door.

Hinges should be positioned as follows:

- centre line of the top hinge 250mm from the top edge of the door
- centre line of the third hinge is 200mm from the centre line of the top hinge
- centre line of the bottom hinge 250mm from the bottom edge of the door

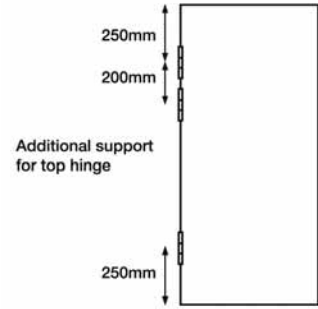


Fig. B

## Over size doors

Please note that for doors over and above the recommended door weights (Table 1 and Table 2) it may be possible to use 4 hinges per leaf to increase the load bearing capacity, for example:

- For doors heavier than the recommended door mass and exceeding 2100mm in height, it may be possible to install 2 hinges high and 2 hinges low for improved load bearing capacity (Fig. C)
- For doors over 2100mm high it may be possible to use 4 hinges equally spaced to give maximum resistance to warping (Fig. D)

Please consult with the door manufacturer directly or UNION to discuss any applications outside of the door mass recommendations shown in Table 2 opposite.

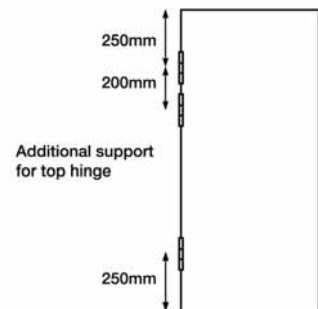


Fig. C

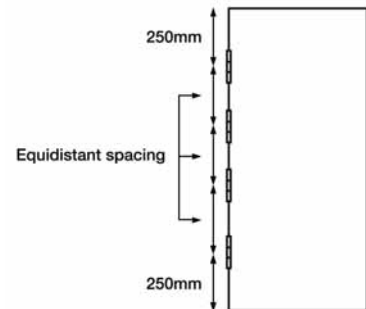


Fig. D

## Fire doors

When UNION PowerLOAD Hinges are fitted to a fire door assembly they must be protected by intumescent material as follows:

Table 3

Model	FD30		FD60	
	Frame side	Door side	Frame side	Door side
601	2mm interdens fitted behind the hinge blade	2mm interdens fitted behind the hinge blade	2mm interdens fitted behind the hinge blade	2mm interdens fitted behind the hinge blade
602	2mm interdens fitted behind the hinge blade	2mm interdens fitted behind the hinge blade	2mm interdens fitted behind the hinge blade	2mm interdens fitted behind the hinge blade
603	2mm interdens fitted behind the hinge blade	2mm interdens fitted behind the hinge blade	2mm interdens fitted behind the hinge blade	2mm interdens fitted behind the hinge blade
604	1mm GRS sheet intumescent	2mm GRS sheet intumescent	2mm Therm-A-Flex with 10x2mm Therm-A-Seal past each blade extending 25mm beyond each blade at either end	
605	2mm interdens fitted behind the hinge blade	2mm interdens fitted behind the hinge blade	2mm interdens fitted behind the hinge blade	2mm interdens fitted behind the hinge blade

Alternatively, use the material as shown in the fire door installation instructions.

# Guidance on selection of hinges

Please follow the guidance below to help you select the correct type of hinge for your project.

Table 1

Model	Description	Hinge size (h x w)	Min. door thickness	Max. door weight (adjusted) 3 hinges
601	Butt hinge	125mm x 93mm	44mm	160kg
602	Butt projection hinge	125mm x 111mm	44mm	160kg
603	Butt hinge	125mm x 111mm	44mm	120kg
604	Lift off hinge (radius only)	98mm x 82mm	44mm	80kg
605	Lift off hinge	100mm x 88mm	44mm	80kg



Table 2

How to calculate door mass		
Door weight (actual)		
For door widths over 950mm	951mm to 1050mm	+ 10%
	1051mm to 1150mm	+ 20%
	1151mm to 1250mm	+ 30%
Door closer		+ 20%
Doors closer with backcheck		+ 75%
Extra heavy use		+ 10%
Light use		- 10%
Adjusted door weight		

# Guidance on positioning of hinges

In accordance with BS4787 it is recommended that at least 3 hinges per leaf should be used on fire and escape route doors.

BS 4787 details the position of door hinges as follows:-

## 3 hinges - about the centre line (Fig. A)

- On doors weighing over 20kg
- One hinge shall be positioned on the centre line of the door height
- The other two hinges being at 770mm either side of the centre hinge.
- This hinge layout gives stability to the door.

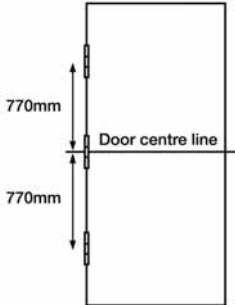


Fig. A