

# OPEN

## Compute Project

Rack-Busbar interface

01

Author: D.P.Winsor

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## **2. Scope**

This document defines the technical specifications for the Busbar assembly to Rack interface for the Open Compute Project Rack and Power Enclosure, to ensure the interface remains the same across all platforms for all variants of Busbars.

## Overview

The technical requirements for the Busbar are still contained within the Open Rack Standard. This specification defines the interface of the Busbar assembly to the Rack, in order to consistently achieve the requirements laid down in the Open Rack Standard across 12V/48V busbars. This enables Busbars to be retro fitted; upgraded for different power capability or swapped from 12V to 48V on a common rack interface, ensuring a robust supply chain where products are interchangeable across Vendors platforms and orderable as a recognized SKU throughout the community.

DRAFT

### 3. Busbar definition

To clarify busbar specification a generic part numbering system is applied and defined as follows:

## **BBOCP-48-AA-BB-PSCCDD**

Busbar part number format

Sections are broken down as follows:

**BBOCP** remains consistent and identifies part as 'Busbar for OCP product'.

**48:** identifies the required Voltage, i.e 48V.

**AA:** identifies the required power rating i.e 36 for 36kw

**BB:** identifies rack height in OU i.e. 42 for 42OU

**PSCCDD:** identifies the Powershell connection location i.e. PS0928 where:

**PS:** remains constant

**CC:** position where first Powershell connects to Busbar in OU i.e 09

**DD:** position where second Powershell connects to Busbar in OU i.e. 00 if none req.

So from above **BBOCP-48-36-42U-PS0900**

Defines a 48V Busbar for 36kW, 42OU rack with one Powershell connected at 9OU.

## **BBOCP-12-13-42U-PS0928**

Defines a 12V Busbar for 13kW, 42OU rack with two Power zones, one shelf fitted at 9OU; the other fitted at 28OU.

This part number must be displayed on the Busbar cage assembly.

## 4. Physical Specifications

### 4.1 Rack interface Bottom.

The lower interface feature in the rack should be as defined in Figure 1,2 & 3. Datum X should be controlled from the equipment latching surface, Datum A as defined in the ORS Figure 3/7.

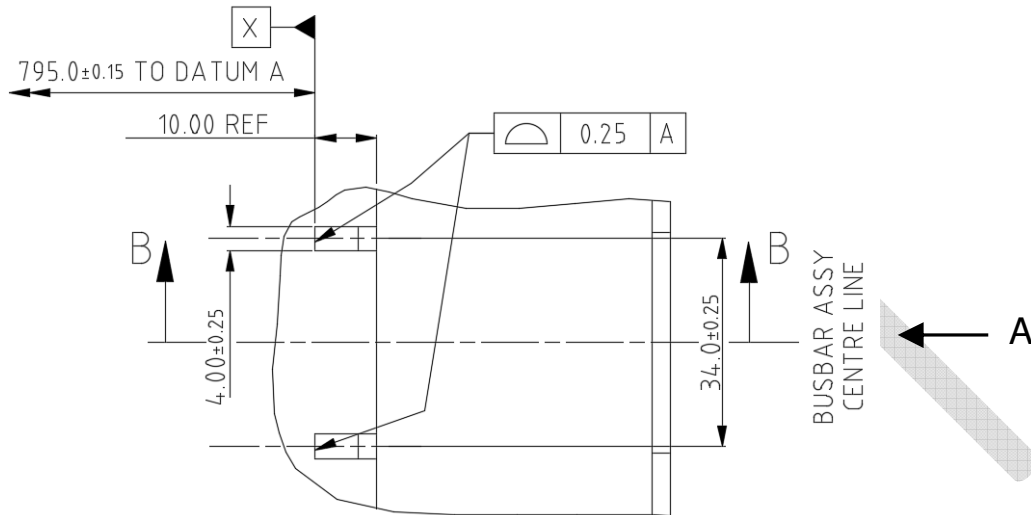


Figure 1: Partial Plan view on base tray rear of Busbar interface.

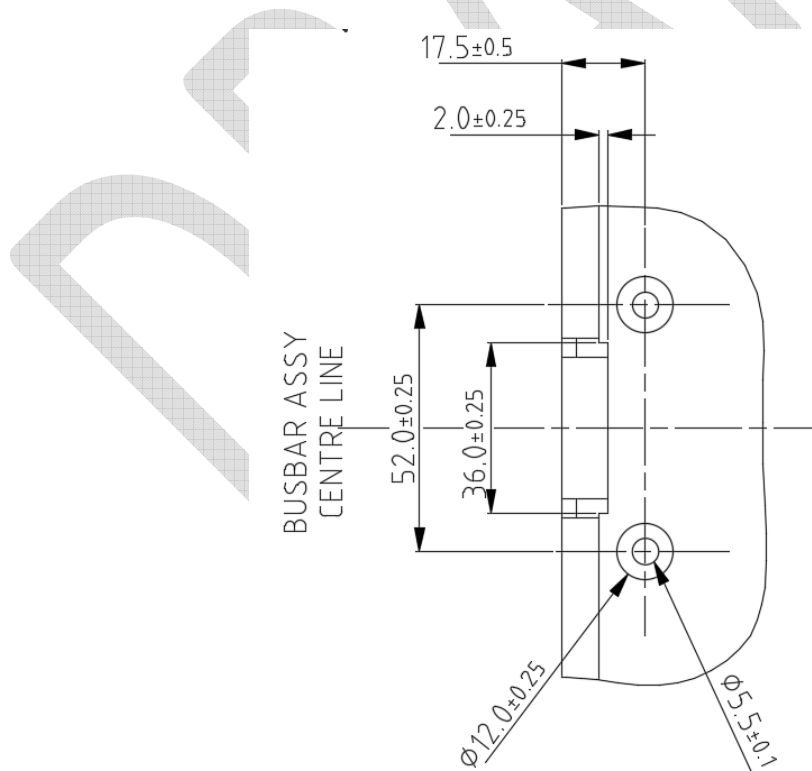


Figure 2: Rear view on Basetray 'Arrow A'

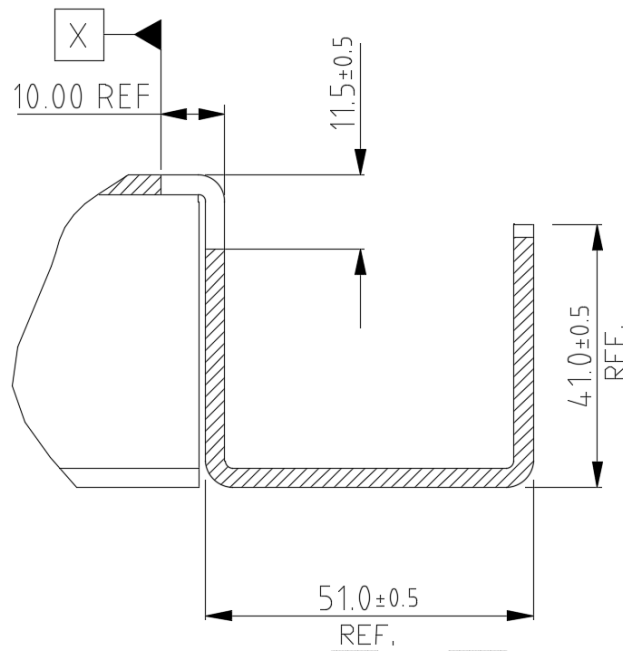


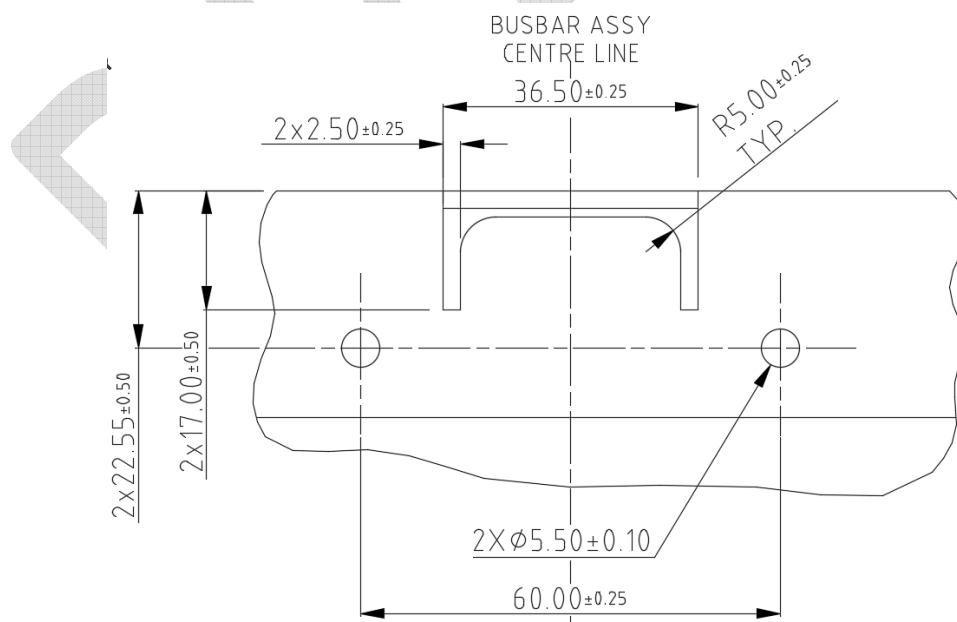
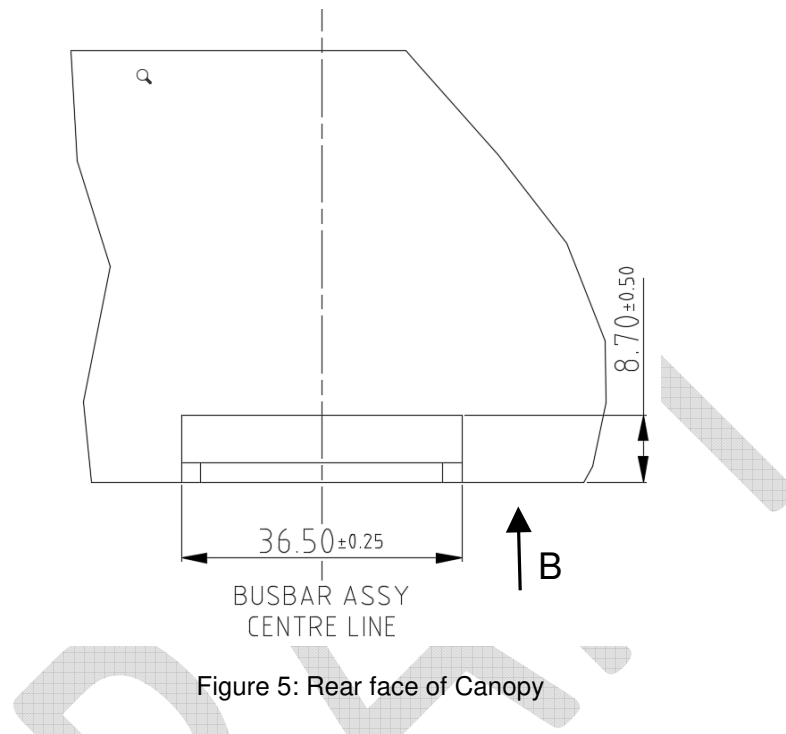
Figure 3: Section thro B-B on Figure 1.



Figure 4: Image of Rack lower interface for clarity.

#### 4.2 Rack interface Top.

The upper interface feature in the rack should be defined as follows in Figures 5&6. This interface allows float in the depth direction so the distance from Datum A (as defined in the ORS Figure 7) can be achieved.



Feature to be present in Top canopy to ensure Busbar can be fitted within tolerance as specified in ORS Figure 7 (793.4/652.6  $\pm 0.5$  from Datum A) when being retro fitted without jig/fixture available from factory. See Figure 7.

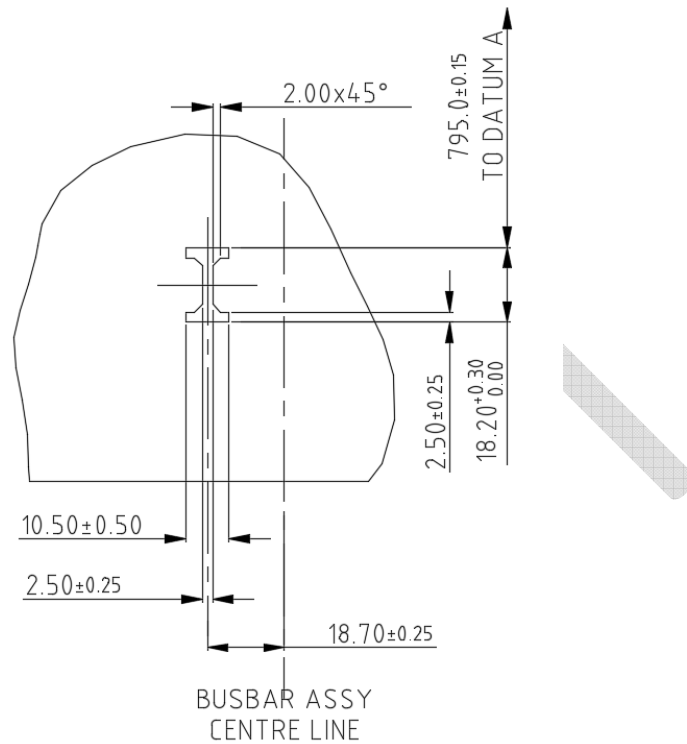


Figure 7: Scrap view on top face of Canopy detailing Busbar locating feature.



Figure 8: Image of Rack upper interface for clarity.

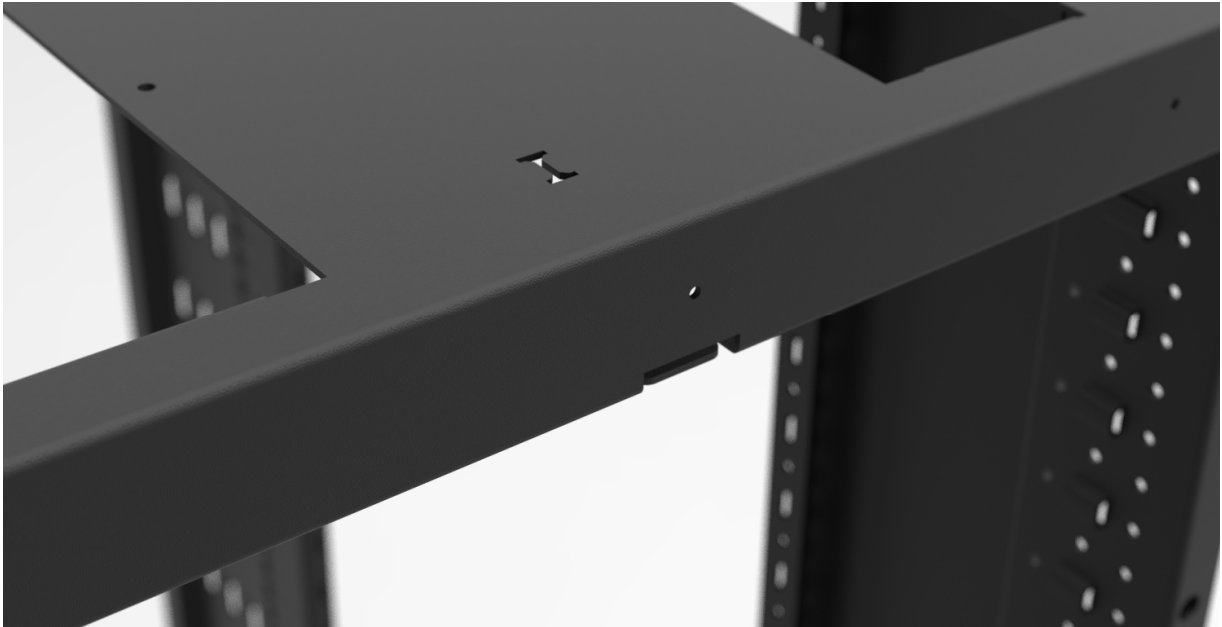


Figure 9: Image of Rack Upper location feature for clarity.

#### 4.3 Busbar interface Bottom

The features in the Busbar cage assembly that interface with the Rack lower interface are defined as follows in Figure 10.

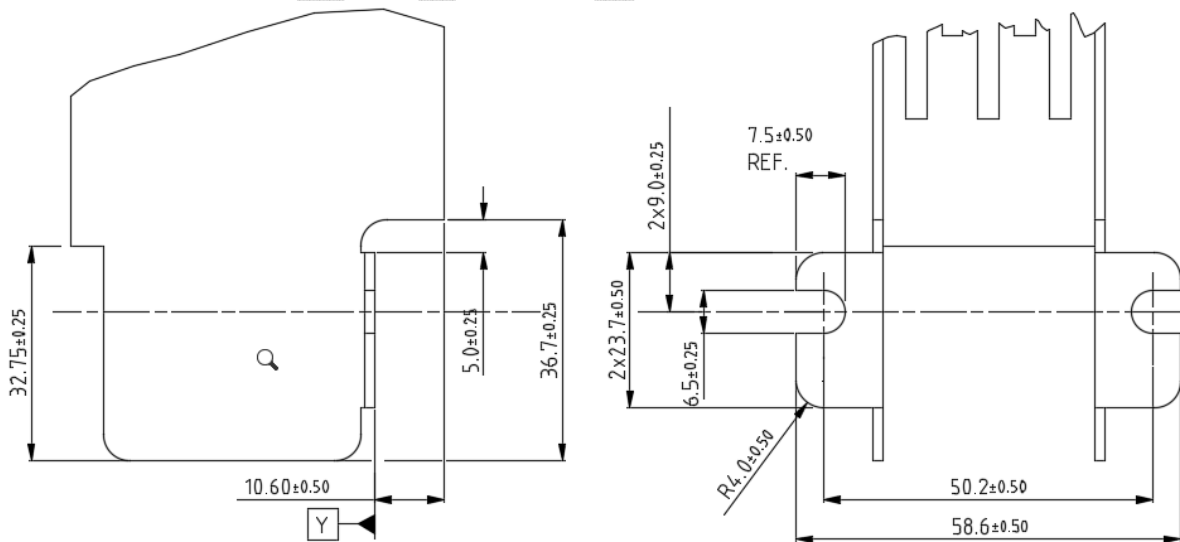


Figure 10: Busbar lower interface

#### 4.4 Busbar interface Top.

The features in the Busbar cage assembly that interface with the Rack upper interface are defined as follows in Figure 11.

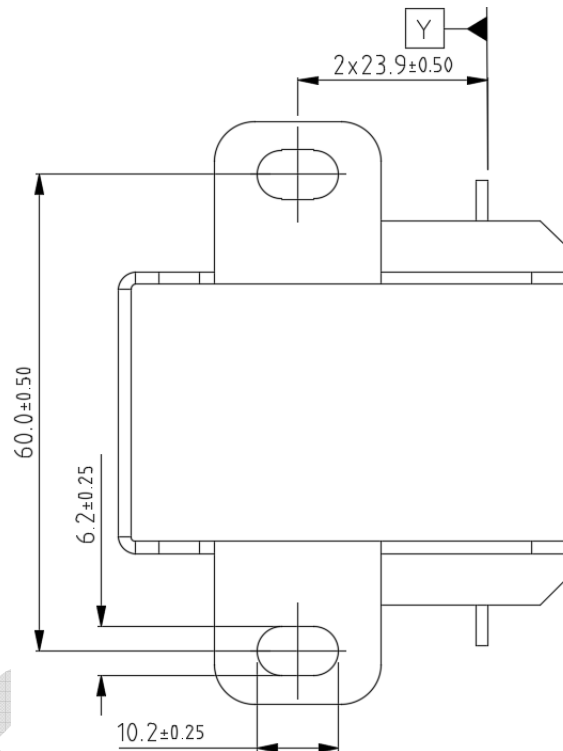


Figure 11: Busbar upper interface fixing points.

#### 4.5 Busbar Upper location feature.

Feature to be present in upper part of Busbar, to ensure Busbar can be fitted within tolerance as specified in ORS Figure 7 ( $793.4/652.6 \pm 0.5$  from Datum A) when being retro fitted without jig/fixture available from factory. See Figure 12.

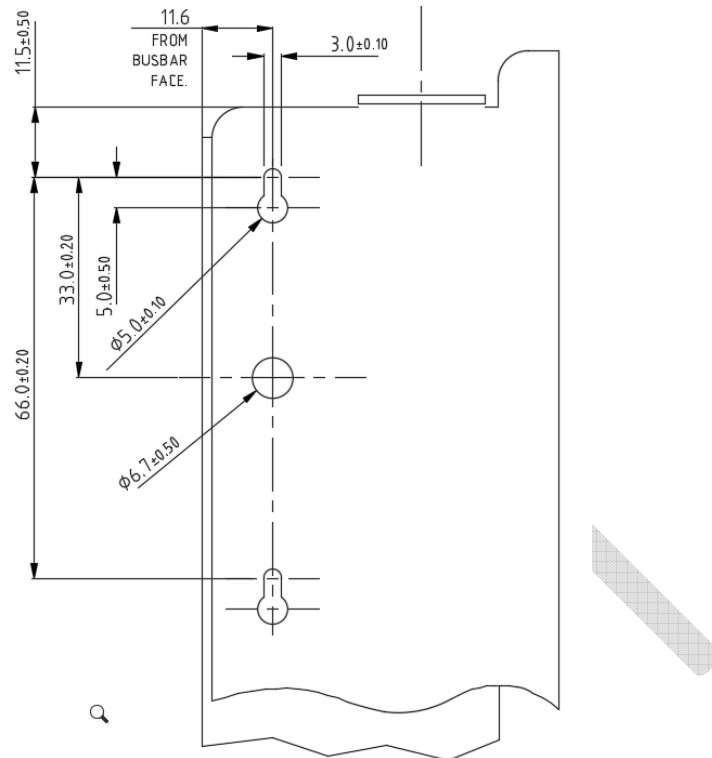


Figure 12: Side view on negative side of Busbar Assembly

#### 4.6 Busbar upper location jig.

The following part is only required to be supplied with Busbars, which are sold separately to the rack. This is an aid for retro fitting the Busbar assembly and ensuring OCS dimensions are met.

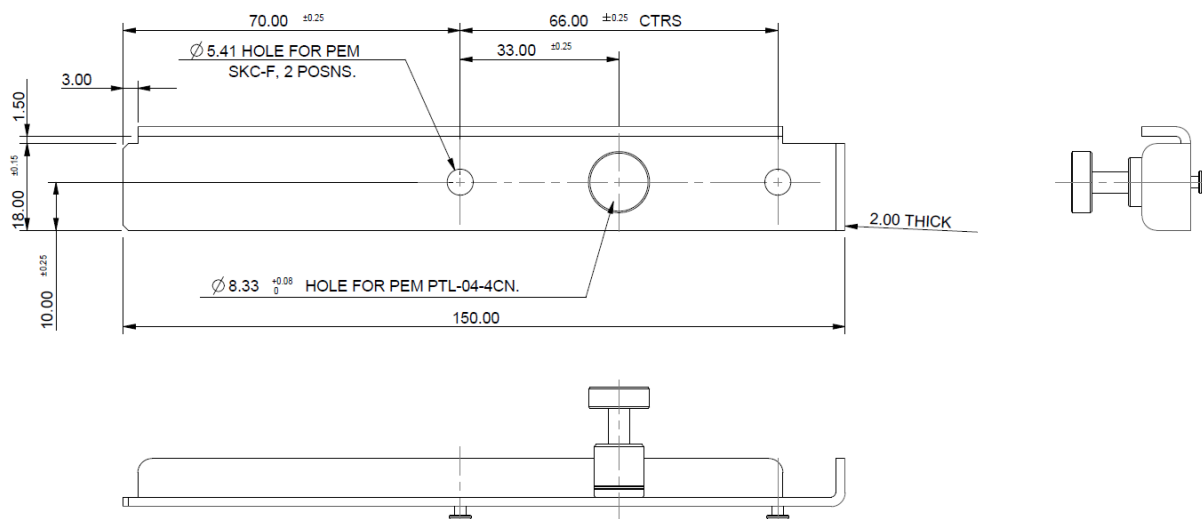


Figure 13: Busbar Jig plate.

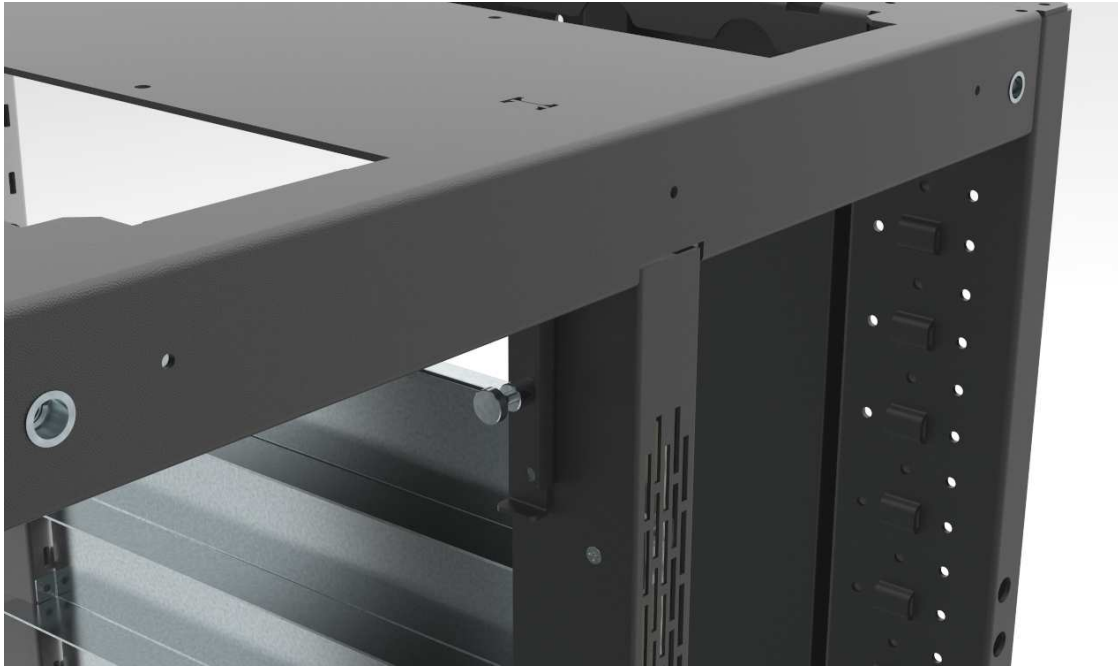


Figure 14: Image showing rear top of rack, busbar fitted with jig plate.



Figure 15: Image showing jig plate from inside of rack.

#### 4.7 Busbar overall height

A full height Busbar will fit between the upper canopy and the lower basetray of the rack, with the distance between the upper and lower interfaces as defined in Figure 16.

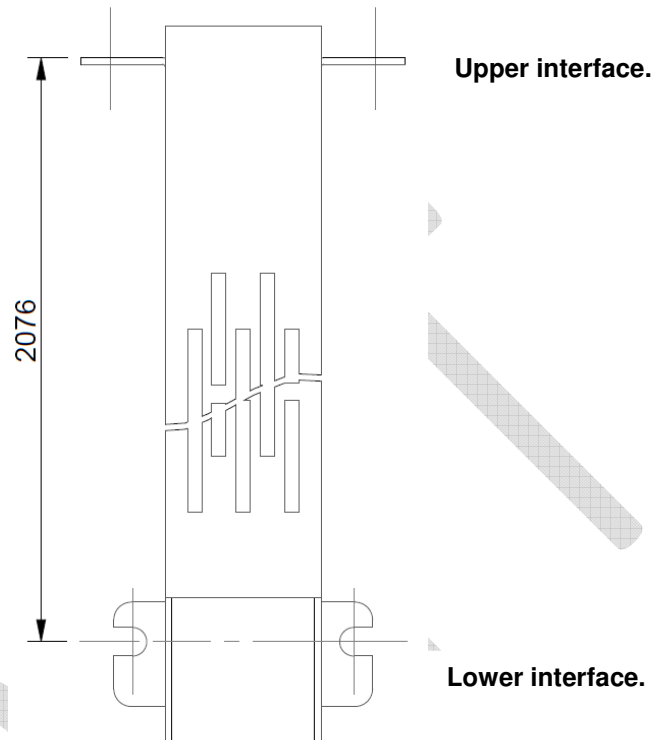


Figure 16: Rear broken view of Busbar fabricated cage detailing overall height between interfaces.

#### 5. Mechanical fixing

The busbar assembly is fixed to the rack framework with two M6 thread forming screws, in both the upper and lower position. All fixings are to be secured with a torque of 5Nm.