# Making penetration holes in K-braces

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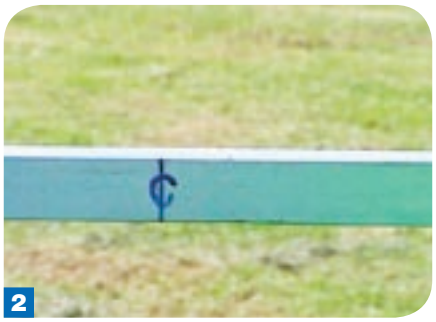
While most holes are already provided in pre-fabricated steel frames, sometimes larger penetration holes are needed for service pipes. This instruction sheet will show you how to pass service pipes through K-bracing in steel framing.


First, with your rule, measure the position of the centreline of the pipe on the flange of the noggin.




Mark it clearly (it's marked here with a 'c' to indicate 'centerline').


This image shows the centreline of the pipe.


Place a straight edge stud to the centreline on the noggin.


Then use a quick release 'C' clamp to hold the stud to the centreline.


Use a magnetic level to plumb the straight edge.


Then mark the centreline of the pipe onto the top plate and K-brace flanges.


This image shows the centreline being marked on the lower K-brace flange.


Now mark the centrelines across the web of the K-braces, noggin and top plate.

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**Work safely with steel**

BlueScope Steel recommends safety precautions are taken when working with steel – protect yourself with long sleeves, steel-capped boots, gloves and safety glasses and ensure you have the right tool for the job.





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# Making penetration holes in K-braces (continued)

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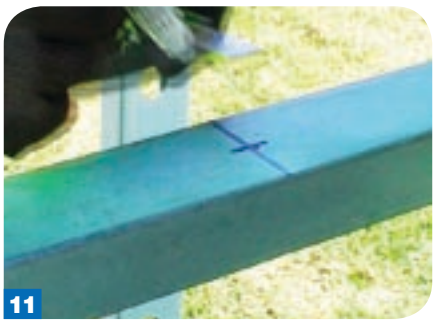
This image shows the centreline being marked across the noggin.




Using a rule or combination square mark a line at the centre of the noggin, K-braces and top plate.


This image shows a combination square marking a line on the K-brace.


Once the hole centre points for the top plate and noggin have been identified, you now need to mark the hole centre points on the K-braces. There are two methods BlueScope Steel recommends for marking the elongated holes to be placed in the K-braces.


**Method 1:** Two holes are needed to make the elongated hole. Simply measure the hole centres back from the centre line at a distance to provide the required hole size for the pipe.


Then mark the location of the holes.


**Method 2:** To save time, have a pre-prepared cardboard template in your tool kit. The templates are available on pages 4 & 5 of this instruction sheet.


The template is designed to position the hole centres at exactly the right distance each side of the centreline.


Slide the template over the centerline marked on the K-brace so that the centerline shows through the centre cut of your template.

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Then mark the holes.


Once the hole centres are marked, cut the holes out by drilling or punching.


Finish your elongated holes with snips or other cutting tools.


Now the holes are ready to receive the vent pipe.

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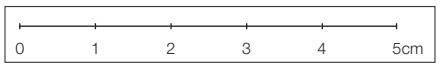
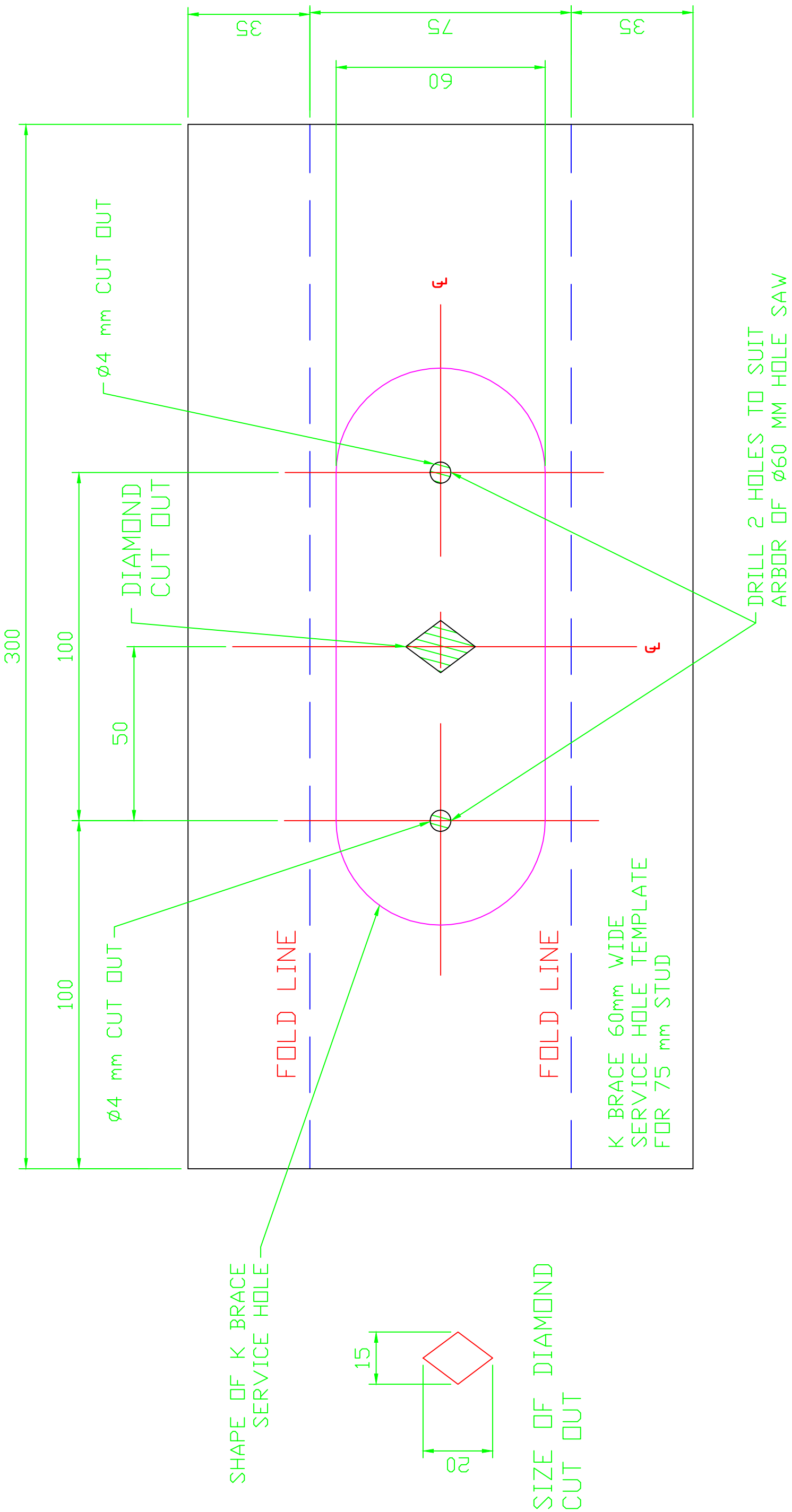
# 75mm stud K-brace service hole

**IMPORTANT:** Refer to scale (cm) drawing above to ensure template is viewed at actual size. Recommended print size A3.



# 90mm stud K-brace service hole

**IMPORTANT:** Refer to scale (cm) drawing above to ensure template is viewed at actual size. Recommended print size A3.