Draft dimensioned orthographic views of a plummer block (saddle bearing housing)

Software: AutoCAD

Task statement

Draft a plummer block (saddle bearing housing) in millimetres at full scale (1:1) as three orthographic views. Add no title or text notes. Use the supplied dimensioned diagrams diagram_01.png, diagram_01_detail01.png, diagram_01_detail02.png and diagram_01_detail03.png as the geometry reference.

Top view (upper left): the overall outline is 80 long by 40 deep, with R10 rounded corners on the front edge. There are two lugs, each 25 wide, one at each end. Draw two Ø8 holes, one in each lug, with centre lines. A 10-deep band along the rear edge is shown sectioned at the lugs, with hatching between the hidden-line projections of the holes.

Front view (lower left, aligned under the top view): 80 wide and 40 tall overall, on a 10-thick base. Cut a central half-round saddle of R20 into the top, with a 41.95 opening between the lug faces. Draw two side lugs with R8 rounded top corners, each pierced by a Ø8 hole. Show the holes' drill paths as hidden lines and the sectioned base portions under the lugs as hatched areas. Add a vertical centre line through the saddle.

Side view (lower right): 28.86 wide and 29 tall overall, with a 9-thick base step, and small fillets and internal edge lines as shown.

Dimensions: use native dimension objects on M-DIMS, 20 in total (11 linear, 5 radial, 4 diameter).

- Linear: 80, 25, 25, 40 and 10 in the top view; 41.95, 40 and 10 in the front view; 28.86, 29 and 9 in the side view.
- Radial: R10 ×2, R8 ×2 and R20.
- Diameter: Ø8 ×4.

CAD standards: use exactly these layers.

- M-OUTL: visible outlines, arcs and hole circles; ACI 7, Continuous, 0.5 mm.
- M-HIDN: hidden edges; ACI 4, HIDDEN, 0.25 mm.
- M-CNTR: centre lines and the four hole centre marks, which are placed as block references; ACI 1, CENTER, 0.18 mm.
- M-HATC: section hatching; ACI 8, Continuous, 0.18 mm.
- M-DIMS: dimensions; ACI 2, Continuous, 0.25 mm.

Fill the three sectioned regions with native ANSI31 hatch objects, not exploded lines. All objects must take colour, linetype and lineweight ByLayer. Leave nothing on layer 0.

Rubrics

- **R1:** The drawing shall contain three orthographic views of the plummer block: a top view, a front view aligned below it, and a side view to the right of the front view.
- **R2:** The top view shall show an 80 x 40 outline with R10 rounded corners and two Ø8 holes, one in each 25-wide end lug.
- **R3:** The front view shall show an 80-wide, 40-tall body with a 10-thick base and a central R20 half-round saddle cutout with a 41.95 opening.
- **R4:** The front view shall show two side lugs with R8 rounded corners, each with a Ø8 hole, and hidden lines representing the hole bores.

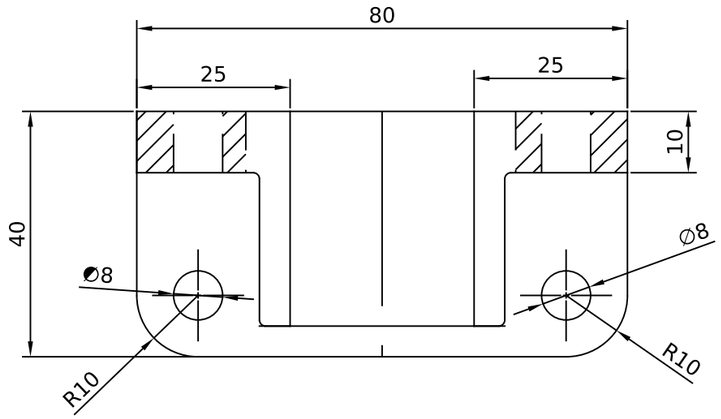
- **R5:** The side view shall measure 28.86 wide and 29 tall with a 9-thick base step.
- **R6:** The drawing shall contain exactly four Ø8 hole circles.
- **R7:** The drawing shall contain four block references serving as hole centre marks.
- **R8:** The drawing shall contain 20 native dimension objects: 11 linear, 5 radial and 4 diameter.
- **R9:** The dimensions shall include the linear values 80, 25 (twice), 40 (twice), 10 (twice), 41.95, 28.86, 29 and 9, the radial values R10 (twice), R8 (twice) and R20, and Ø8 four times.
- **R10:** The drawing shall contain no text or title notes.
- **R11:** The drawing shall define layers M-OUTL (ACI 7, Continuous, 0.5 mm), M-HIDN (ACI 4, HIDDEN, 0.25 mm), M-CNTR (ACI 1, CENTER, 0.18 mm), M-HATC (ACI 8, Continuous, 0.18 mm) and M-DIMS (ACI 2, Continuous, 0.25 mm).
- **R12:** All dimensions shall be on layer M-DIMS.
- **R13:** The sectioned regions shall be filled with three native ANSI31 hatch objects on layer M-HATC, not exploded lines.
- **R14:** No drawing geometry shall be placed on layer 0.

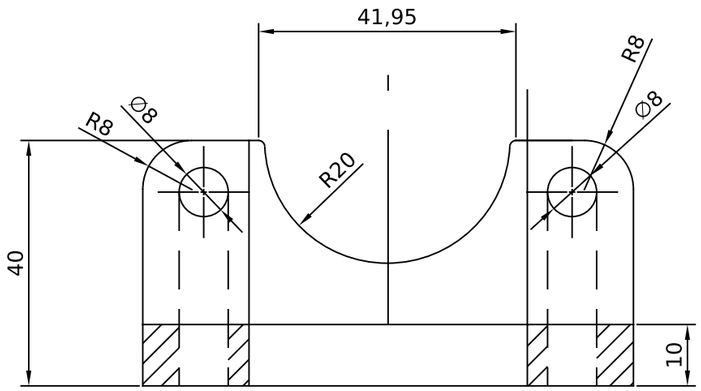
Input files

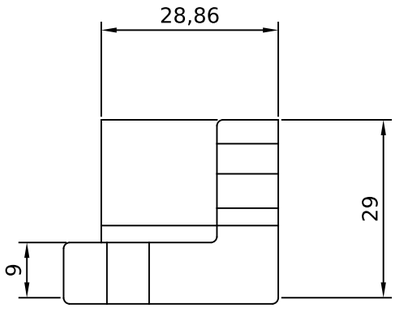
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- task_files/diagrams/diagram_01.png
- task_files/diagrams/diagram_01_detail01.png
- task_files/diagrams/diagram_01_detail02.png
- task_files/diagrams/diagram_01_detail03.png

Deliverables

- **.dwg:** output_files/project_files/Plummer_Block.dwg: An AutoCAD drawing in millimetres with top, front and side orthographic views of the plummer block, fully dimensioned, with three ANSI31 section hatches, on layers M-OUTL, M-HIDN, M-CNTR, M-HATC and M-DIMS.
- **.dxf:** output_files/project_files/Plummer_Block.dxf: DXF export of the model in the same units.





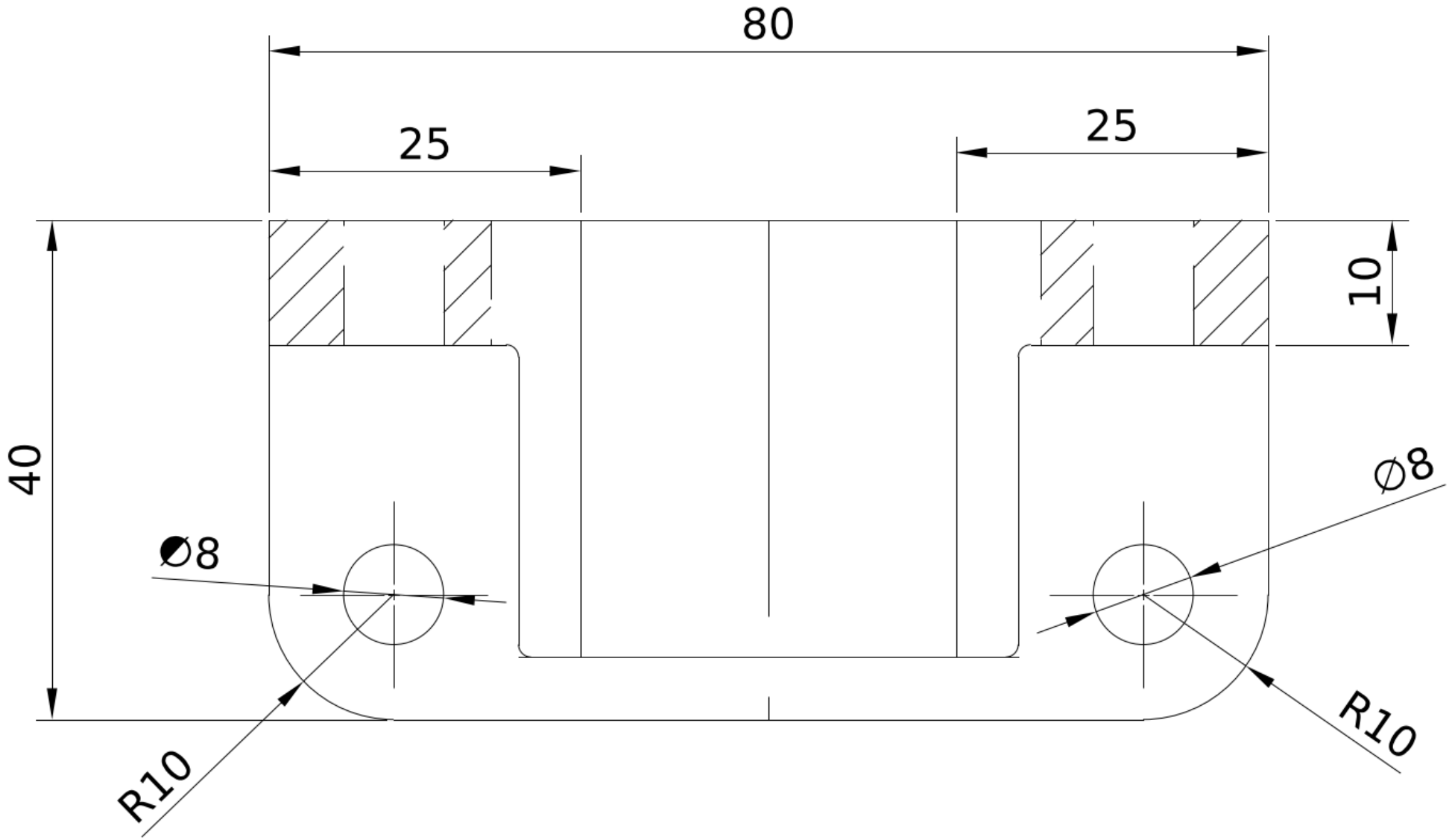


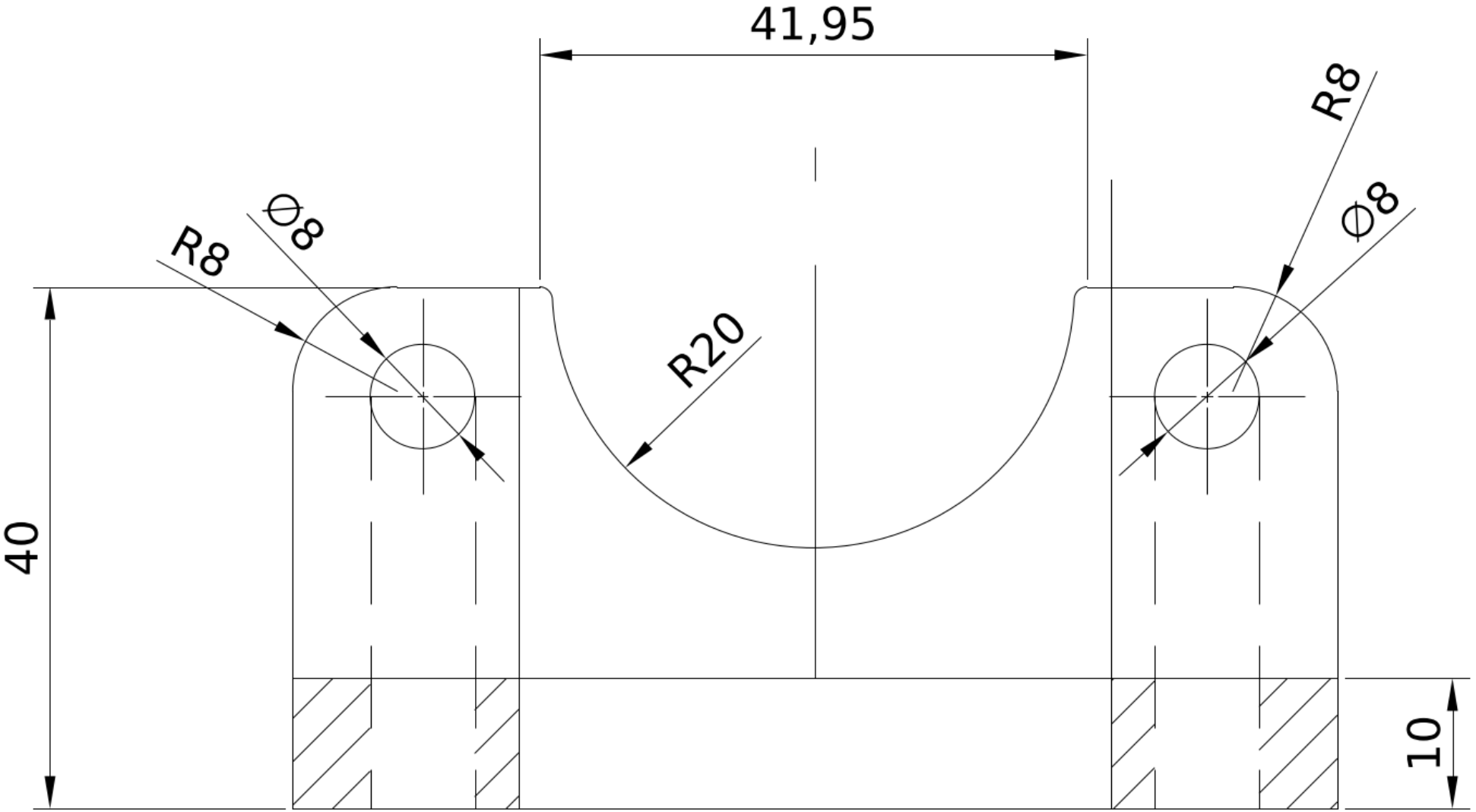
NOTES
1. ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED.
2. DO NOT SCALE THE DRAWING; USE THE FIGURED DIMENSIONS.

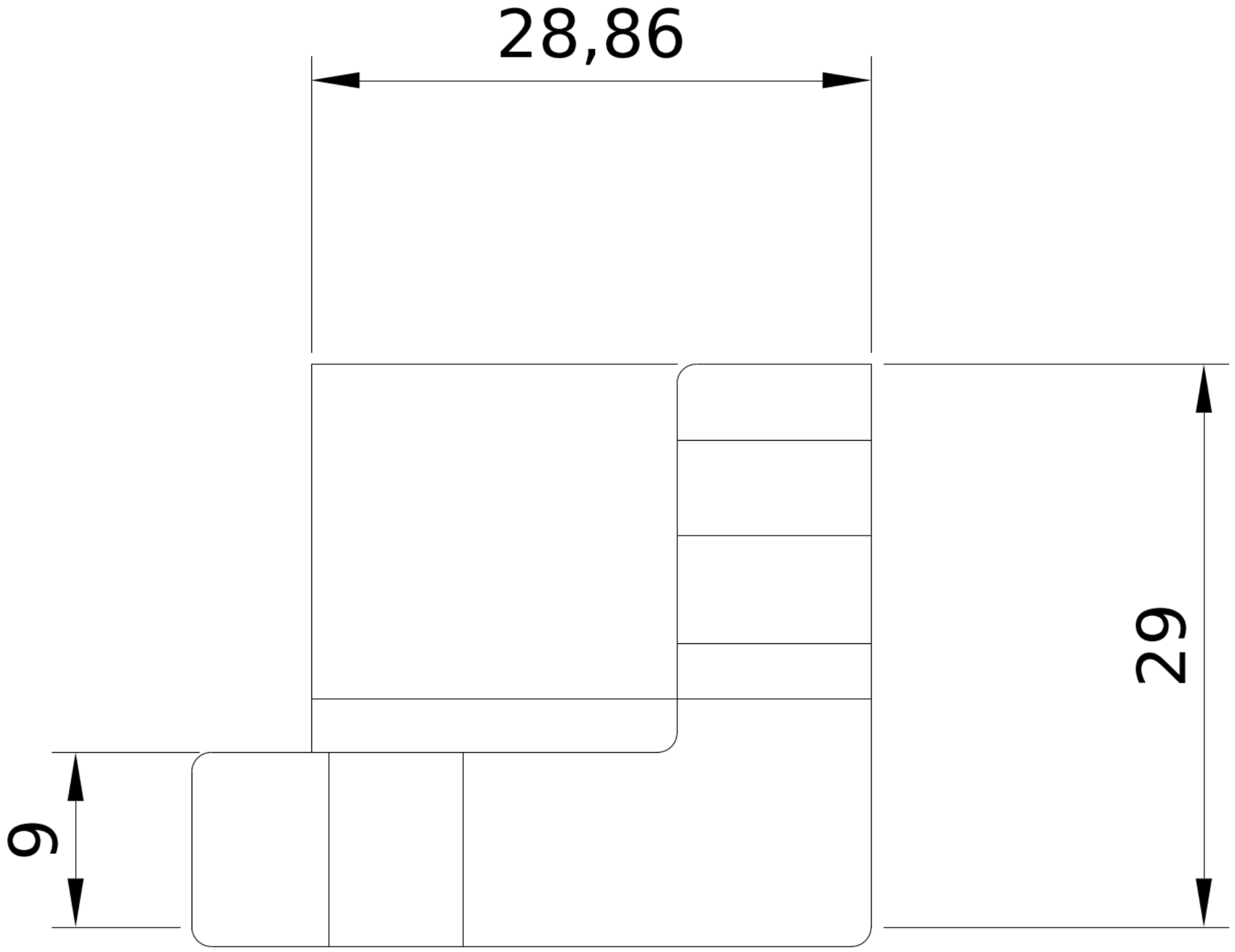
UNITS	SCALE	PROJECTION
MILLIMETRES	**1:1**	

TITLE	SIZE
DIMENSIONED ORTHOGRAPHIC VIEWS OF A PLUMMER BLOCK (SADDLE BEARING HOUSING)	**A3**

DRAWING NO.	REV	SHEET
MKV-2287E790-01	**0**	**1 OF 1**


80
25
25
10
40
∅8
∅8
R10
R10


41,95
R8
Ø8
R8
Ø8
R20
40
10


28,86
29
6