Model a brass hose barb fitting with hex and male thread

Software: PTC Creo

Task statement

Model a brass hose barb fitting as a single part and produce a fully dimensioned drawing of it. Work in millimetres. Follow the supplied dimensioned diagrams diagram_01.png and diagram_01_detail01.png.

The part is a turned, axisymmetric body with a hexagonal wrenching flange. It has three zones along a common axis.

Barbed hose spigot

- A series of tapered barbs.
- Outer barb diameter 12.95 and root diameter 12.02.
- Barb crest bands 2 wide.
- A 1 x 1 lead-in chamfer at the open end.
- A 1.5 step and a plain 3 wide relief or neck section next to the hex.
- A 5 long portion between the last barb and the hex face.
- An R1 fillet where the spigot meets the hex.

Hex flange

- 24 across flats.
- Chamfered corners as shown.
- The hex face to the thread start is 5.92.
- An R1 undercut fillet at the thread side.

Male threaded end

- 10 long.
- Thread major diameter 20.96 (1/2" pipe size).
- Modelled with visible helical thread form.
- A 1 x 1 chamfer on the thread lead.

Overall length is 45.

A through bore runs the full length. At the threaded end it opens into a counterbore of diameter 14.5 and depth 8. Apply the 1 chamfers indicated at the bore mouths.

Create a drawing of the part on an A3 sheet. It shall contain:

- A front elevation.
- An end view looking along the axis that shows the hex.
- A full longitudinal section view.
- A shaded isometric view.

Dimension the drawing as shown:

- In the front elevation: 45, 10, 5, 5.92, 1.5, 3, 2, 12.95, 12.02 and 20.96.
- On the hex in the end view: 24.
- In the section view: 14.5, 8, the 1 chamfers and the two R1 radii.

Deliver a Creo part file and a Creo drawing file that references it.

Rubrics

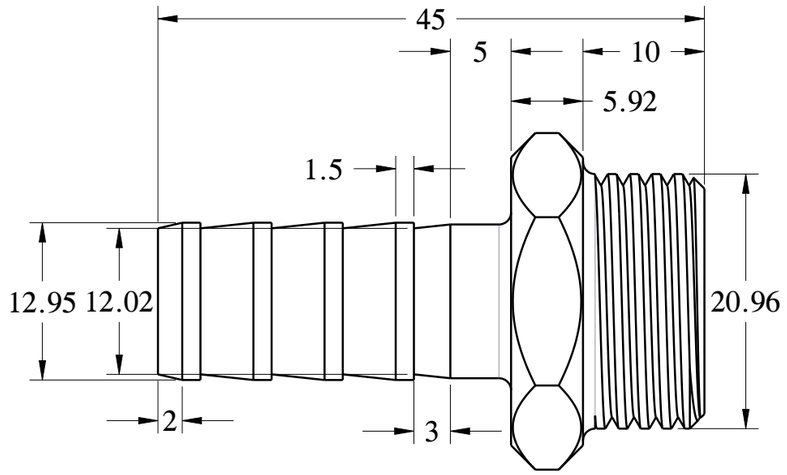
- **R1:** The model shall be a single solid body with the barbed spigot, hex flange and threaded end sharing one common axis.
- **R2:** The model shall have an overall length of 45 mm.
- **R3:** The model shall have a hexagonal flange measuring 24 mm across flats.
- **R4:** The model shall have a male threaded end 10 mm long with a major diameter of 20.96 mm, modelled with a helical thread form.
- **R5:** The model shall have barbs with an outer diameter of 12.95 mm and a root diameter of 12.02 mm.
- **R6:** The model shall have a through bore along the full length.
- **R7:** The model shall have a counterbore of 14.5 mm diameter and 8 mm depth at the threaded end.
- **R8:** The model shall include R1 fillets at the spigot-to-hex junction and at the hex-to-thread junction.
- **R9:** The model shall include 1 mm chamfers at the spigot lead-in and the thread lead.
- **R10:** The drawing shall contain a front elevation, an axial end view showing the hex, a longitudinal section view, and a shaded isometric view.
- **R11:** The drawing shall dimension the overall length 45, the thread length 10, and the diameters 12.95, 12.02 and 20.96.
- **R12:** The drawing shall dimension the hex as 24 across flats in the end view.
- **R13:** The drawing shall dimension the counterbore as 14.5 diameter and 8 depth in the section view, together with the two R1 radii.
- **R14:** The drawing shall be on an A3 sheet.
- **R15:** The deliverable shall consist of a Creo part file and a Creo drawing file whose views are generated from that part.

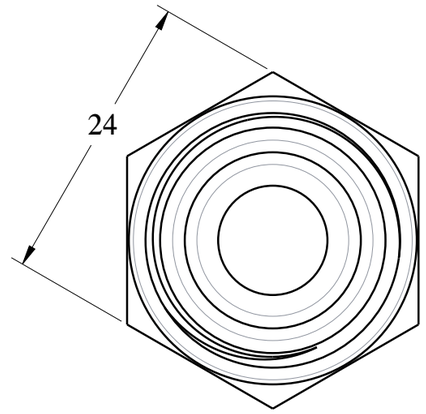
Input files

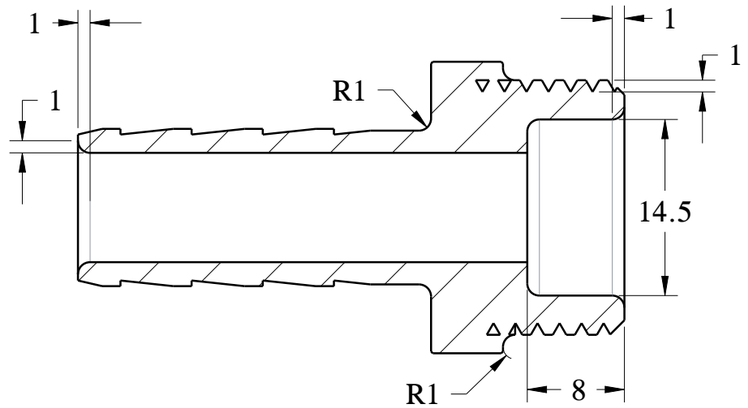
- task_files/diagrams/diagram_01.pdf
- task_files/diagrams/diagram_01.png
- task_files/diagrams/diagram_01_detail01.png

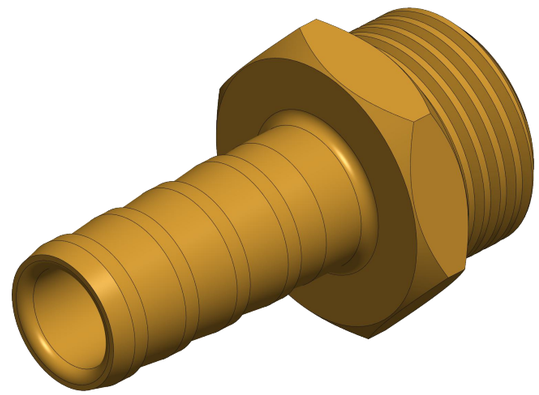
Deliverables

- **.drw:** output_files/project_files/creo-ex-09.drw.1: The deliverable is a Creo part file (creo-ex-09.prt) of the brass hose barb fitting and a Creo drawing file (creo-ex-09.drw) with dimensioned front, end, section and isometric views on an A3 sheet.
- **.prt:** output_files/project_files/creo-ex-09.prt.1: The deliverable is a Creo part file (creo-ex-09.prt) of the brass hose barb fitting and a Creo drawing file (creo-ex-09.drw) with dimensioned front, end, section and isometric views on an A3 sheet.







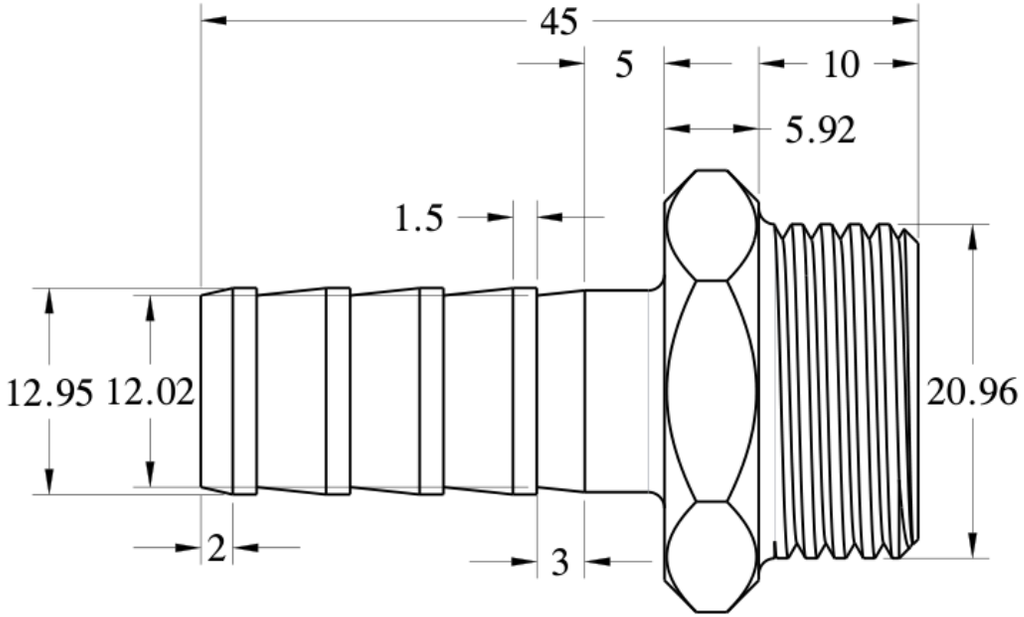


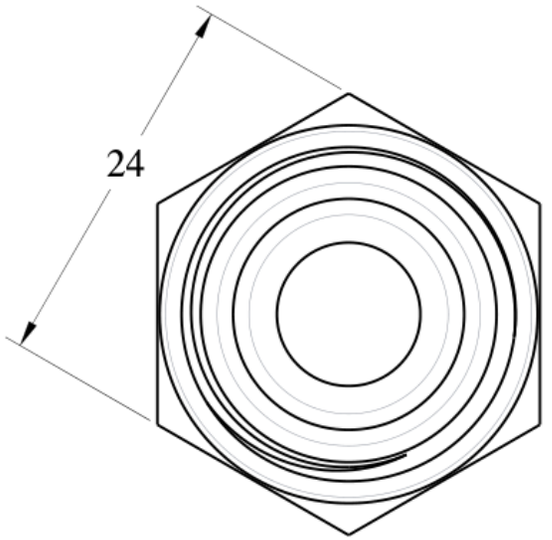
NOTES
1. DO NOT SCALE THE DRAWING; USE THE FIGURED DIMENSIONS.

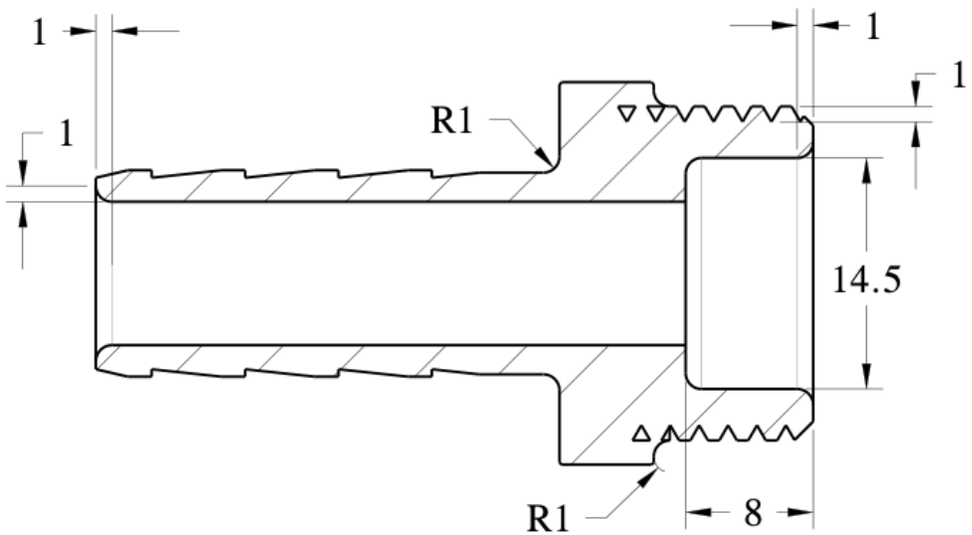
UNITS	SCALE	PROJECTION
AS SHOWN	**AS SHOWN**	

TITLE	SIZE
BRASS HOSE BARB FITTING WITH HEX AND MALE THREAD	**A3**

DRAWING NO.	REV	SHEET
MKV-5248FF98-01	**0**	**1 OF 1**


45
5
10
5.92
1.5
12.95
12.02
20.96
2
3


24


1
1
1
1
R1
14.5
R1
8

