



Articulated Arm



Jack

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Summary

lockable ball joints which string together and allow up to 90° angle

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Universal joint chain that can be adjusted in stiffness and also locked.

The tapered ends (2°) allow the modules to attach firmly and also attach to tools or other grips stands or platforms - or remix a multiple snake stand.

Can be used to keep your model in a certain position, or to hold a mirror or light, a magnet - you know “endless possibilities” ...

Examples are 8mmØ ball and 29mm long (stringed modules 25mm per link ball⇌ball).

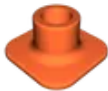
Add a little **grease** to ball and thread for smooth operation

Printing

- Supports are not needed. The Balls overhang angle should be steep enough
- Infill is not needed (a center hole adds walls where needed)
- 8mm Version uses a fine thread so print with ≤ 0.1 layer - There is also a coarse Version which might be easier to print
- Can be scaled up (a little) if needed stronger better use the bigger versions as scaling also increase the clearances. For the Base taper, you find a version without clearance in downloads so a scaled version is still tight. Or just use glue or a piece of paper to jam the connection.

Ø12 balls can be used with the dual core:

Model files

	12mm Ball	10 files
	22-112balljointd12.3mf ☐ separated objects - nut prints upside without overhang (may need brim)	
	22-112balljointd12knurlnewthroughhole.3mf ☐ with through hole for cable, air, liquids	
	22-112balljointd12newmaleplate.3mf ☐ 20mm Base Male	
	22-112balljointd12newfemaleplatemagnetd8-h5.3mf ☐ 20mm Base Female with magnet	
	22-112balljointd12newextension50.3mf ☐ brings joints 50mm apart	



23-030zangencliptaper675.3mf

☐ forceps clip with male taper



22-112balljointd12newgenderchangerf.3mf

☐ connects males



22-112balljointd12newgenderchangerm.3mf

☐ connects females



23-087clamptaperlock.3mf

☐ dual $\varnothing 6.75$ taper up to 30mm clamping v2.2



22-112balljointd12knurlnew.3mf

☐ single object



20mm Ball

14 files



22-112balljoint20mmcoarsep15.3mf

☐ coarse thread P1.5



22-112balljoint20mm.3mf

☐ fine thread P1



22-112balljoint20mmfemalesocketheadm5.3mf

☐ screw on aluminum profile 20mm M4 or M5



22-112balljoint20mmfemaleplate.3mf

☐ 50mm base female



22-112balljoint20mmmaleplate.3mf

☐ 50mm base male



22-112balljoint20mmextension100.3mf



22-112balljoint20mmextension75.3mf



22-112balljoint20mmextension50.3mf



22-112balljoint20mmmalem4.3mf



22-112balljoint20mmfemalem4.3mf



22-112balljoint20mmgenderchangerf.3mf

☐ connects males



22-112balljoint20mmgenderchangerm.3mf

☐ connects females



23-030zangenclip taper105.3mf



23-087clampbigtaper105.3mf



8mm

9 files



21-297balljoint8mm.3mf



21-305balljoint8mmcoarsethread.3mf

☐ Coarse thread (>double sized thread) Adapter tapers are compatible with other set



21-297balljointstandfemale.3mf

☐ for the Tool/Model attaches to the ball



21-297balljointstand.3mf

☐ for the desk attaches to the base



21-297balljointbase8mm-noclearancetaper.3mf

☐ for scaling this Base has no clearance within the taper hole



21-305balljointm4female.3mf

☐ M4 Thread connector



21-305balljointm4male.3mf

☐ M4 Thread connector



21-297balljoint8mmungrouped.3mf

☐ 3 sperate Objects



21-305balljoint8mmnutthickwalled.3mf

☐ 1.2mm Wall



16mm

10 files



21-305balljointd16coarse.3mf

☐ Big Version 16mmØ with coarse thread



21-305balljointd16coarsethroughhole.3mf

☐ with axial hole for power / air / liquid supply 30mm joint distance



21-305balljointd16.3mf

☐ Big Version 16mmØ fine thread (weaker and little bit smaller outer diameter)



21-305balljointstandmalesnowflake120mm.3mf

☐ BIG Base



21-305balljointstandd16.3mf



21-305balljoint16dextension50mm.3mf

☐ with this 2 pivots are 50mm apart



21-305balljoint16dextension80mm.3mf

☐ with this 2 pivots are 80mm apart



21-305balljointd16maleconnect49mm.3mf

☐ male taper for remix



21-305balljointd16female.3mf

☐ 50mm plate with female connector



23-030zangencliptaper115.3mf



21-305balljoint.scad

☐ Version 3.1



22-112balljoint.scad

☐ v2.2

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