can studio light

assembly guide: 13 printed parts, 7 rods and pins to cut, 22 bought parts



TOOLS

- flush cutters or a small hacksaw and a fine file: cut the rods to length, square and chamfer the ends, file the flats
- thin CA glue (superglue) and a toothpick to place single drops
- soldering iron with a heat-set insert tip
- 2.5 mm hex key (M3 socket head screws)
- tweezers (small parts and springs)
- craft knife or deburring tool: the elephant's foot (the squashed first layer) off every printed part
- this booklet printed at 100 % (actual size)

HOW TO READ THE STEPS

- grey: already in
- colour, outlined: the new part
- green ring: where it goes
- dashed blue arrow: the way it goes in
- it can go in the wrong way up: read WAY UP
- glue here (never in a bore)
- CHECK: test it before going on
- turn the work over
- **1:1** PARTS tray: true size (1:1) when printed at 100 %

50 mm at 100 %

BEFORE STEP 1: do this first

☐ 1. Clean every printed part

- 13 printed parts: peel the brim, scrape the elephant's foot (the squashed first layer) off the bed-side edge, and trim stringing out of every hole.

☐ 2. Cut the rods (lay each on the sorting card to check its length)

- 28.4 mm: lock_pin_0 (pin, 2 mm)
- 28.4 mm: lock_pin_1 (pin, 2 mm)
- 28.4 mm: lock_pin_2 (pin, 2 mm)
- 26.8 mm: mast_pin (pin, 2 mm)
- 26.4 mm: hinge_pin_0 (pin, 5 mm)
- 26.4 mm: hinge_pin_1 (pin, 5 mm)
- 26.4 mm: hinge_pin_2 (pin, 5 mm)
- stock: 4 pieces of 2 mm rod, 112 mm in all; allow 116 mm (1 mm a cut). Cut each a hair long and file the ends square, then chamfer the edge lightly (a burr catches whatever slides onto the rod or into its hole).
- stock: 3 pieces of 5 mm rod, 79 mm in all; allow 82 mm (1 mm a cut). Cut each a hair long and file the ends square, then chamfer the edge lightly (a burr catches whatever slides onto the rod or into its hole).

☐ 3. Dry-fit the closing parts

- Put can and yoke and column together empty (no wheels, no glue): they must line up and close without force. Take them apart again.

☐ 4. Sort

- Lay every rod, pin and spacer on its outline on the sorting card, and every printed part on the parts sheet: a part left over or missing shows at once.

50 mm at 100 %

SORTING CARD (1:1): rods, pins, spacers, hardware

Print at 100 %: every outline is true size (check the 50 mm bar at the foot). Lay each rod, pin, spacer and screw on its outline before you start; label them with tape. Lengths that differ by less than 1 mm: 26.4/26.4, 26.4/26.8, 28.4/28.4; measure these.



28.4 mm

x 2

lock_pin_1
lock_pin_2
1:1



28.4 mm

lock_pin_0
1:1



26.8 mm

mast_pin
1:1



26.4 mm

x 2

hinge_pin_1
hinge_pin_2
1:1



26.4 mm

hinge_pin_0
1:1



x 8

fs1_screw
fs2_screw
fs3_screw
fs4_screw
fs5_screw
fs6_screw
fs7_screw
fs8_screw
1:1, side view



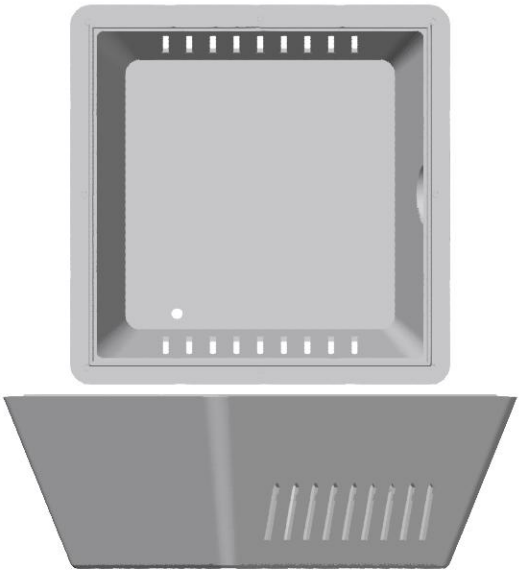
x 8

fs1_insert
fs2_insert
fs3_insert
fs6_insert
fs7_insert
fs8_insert
fs4_insert
fs5_insert
1:1, side view

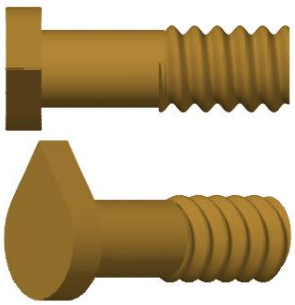
50 mm at 100 %

PARTS SHEET: the printed parts

Each part from above, its side profile under it, the way it is installed. True size unless marked 1:2.



can
1:4, top + side



bolt
1:1, top + side



face_frame
1:2, top + side

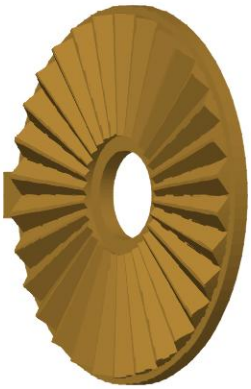
50 mm at 100 %



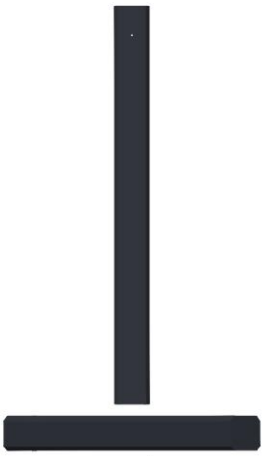
tilt_knob
1:1, side view



yoke
1:4, top + side



tilt_rosette
1:1, side view



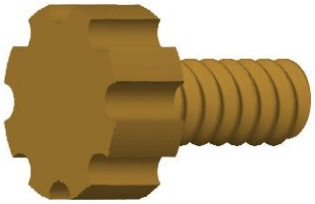
mast
1:4, top + side



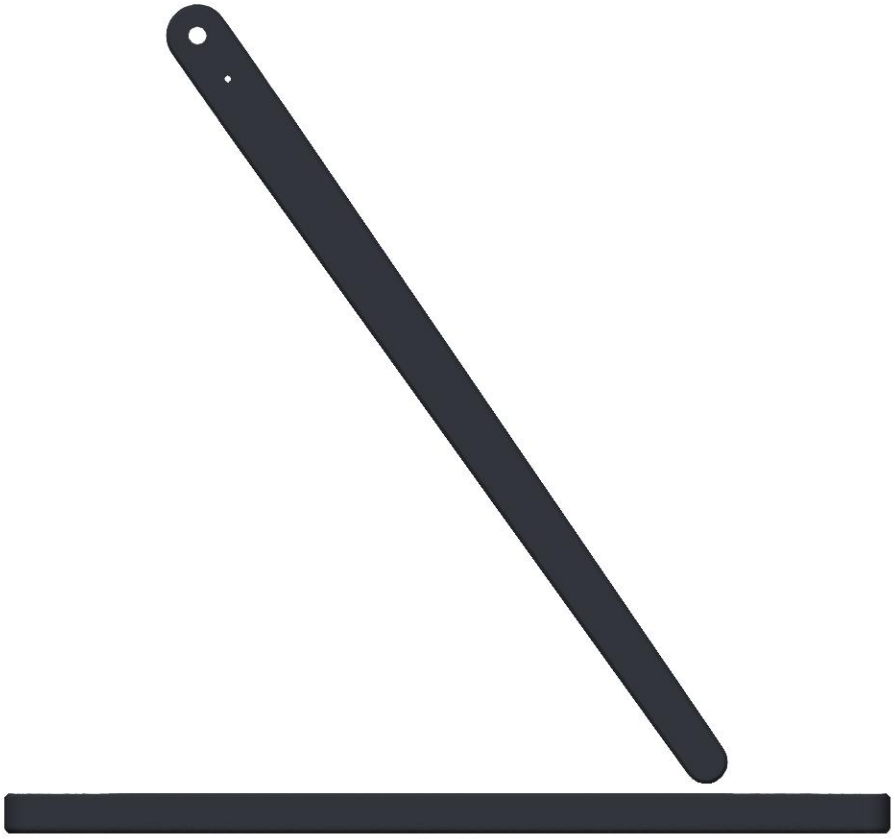
column
1:4, top + side



clamp_nut
1:1, side view



thumbscrew
1:1, side view



leg_0
1:2, top + side

50 mm at 100 %



x 2

leg_1

leg_2

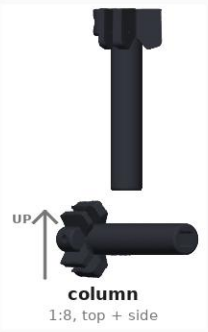
1:2, side view

50 mm at 100 %

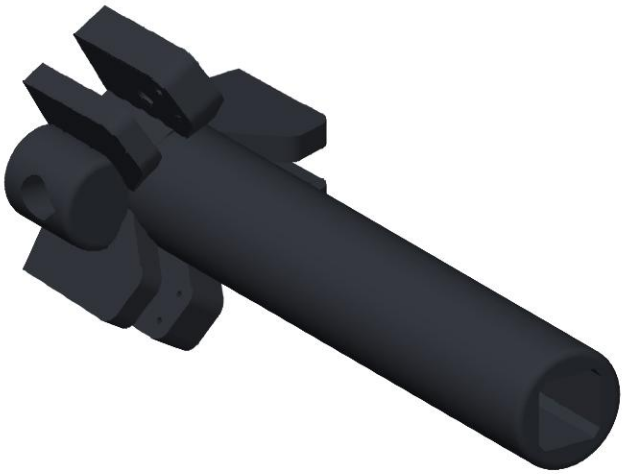
1 column

frame

PARTS



column
1:8, top + side



Lay column (frame) flat on the bench as drawn: everything else is fitted onto it.

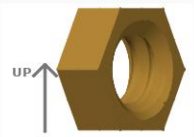
- Print it standing on its crown (top end down): ears and collar on the bed, no supports.

CHECK: the mast slides through it; the nut drops into its slot; the leg ears are clean

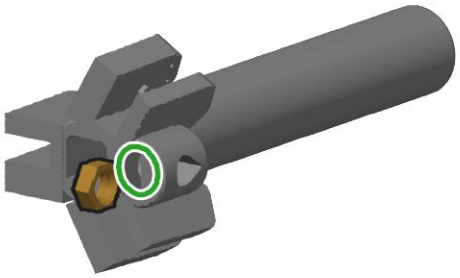
2 clamp_nut

other

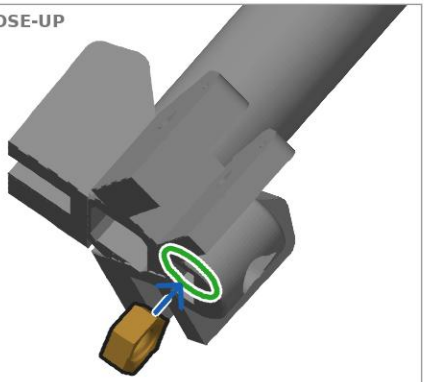
PARTS



clamp_nut
1:1, side view



CLOSE-UP



Fit clamp_nut (other) onto column (the way the arrow points).

WAY UP: print it flat.

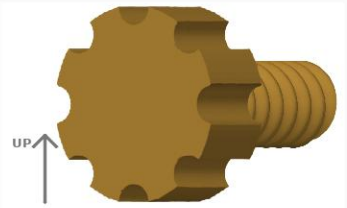
CHECK: the thumbscrew turns through it by hand

50 mm at 100 %

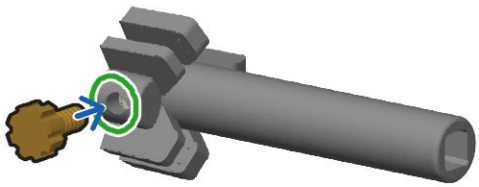
3 thumbscrew

knob

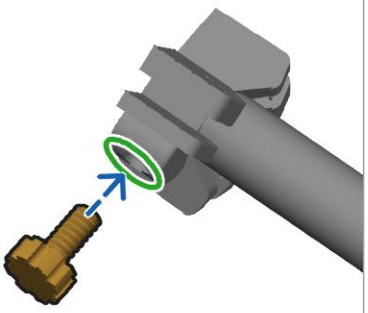
PARTS



thumbscrew
1:1, side view



CLOSE-UP



Fit thumbscrew (knob) onto clamp_nut (the way the arrow points).

- Print it knob down.

CHECK: turns in by hand; its tip presses the mast's flat side

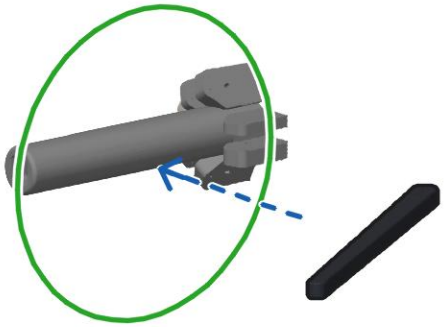
4 leg_0

arm

PARTS



leg_0
1:8, top + side



Fit leg_0 (arm) onto column (the way the arrow points).

WAY UP: print it lying flat (chamfered side down).

CHECK: swings freely on its pin between the ears

50 mm at 100 %

5 hinge_pin_0

pin

PARTS

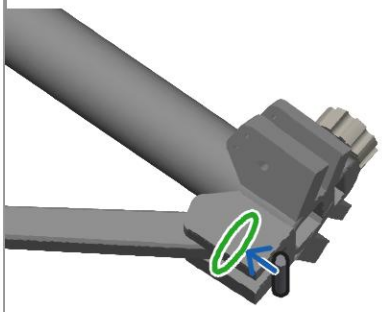


26.4 mm

hinge_pin_0

1:1





Push hinge_pin_0 (5 x 26.4 mm pin) into its hole in leg_0 (the way the arrow points).

6 lock_pin_0

pin

PARTS

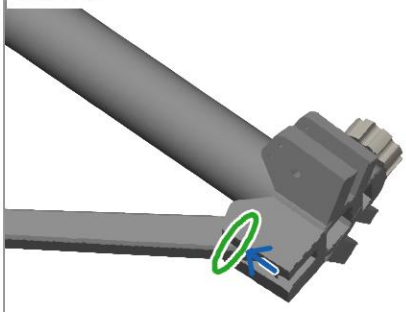


28.4 mm

lock_pin_0

1:1





Push lock_pin_0 (2 x 28.4 mm pin) into its hole in column (the way the arrow points).

50 mm at 100 %

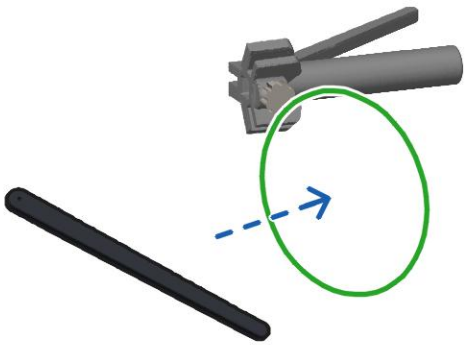
7 leg_1

arm

PARTS



leg_1
1:8, side view



Fit leg_1 (arm) onto column (the way the arrow points).

WAY UP: print it lying flat (chamfered side down).

CHECK: swings freely on its pin between the ears

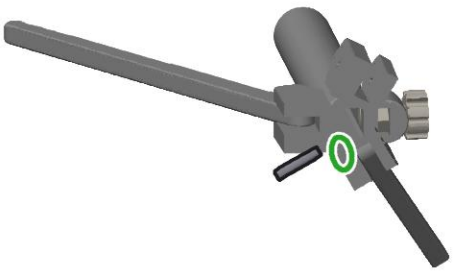
8 hinge_pin_1

pin

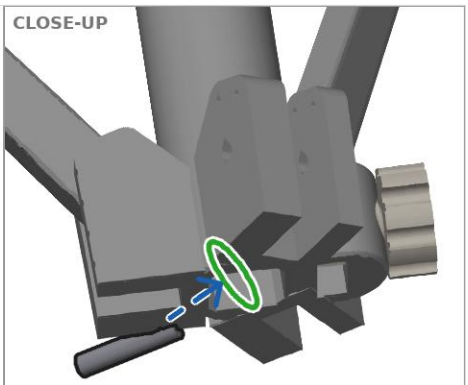
PARTS



26.4 mm
hinge_pin_1
1:1



CLOSE-UP



Push hinge_pin_1 (5 x 26.4 mm pin) into its hole in leg_1 (the way the arrow points).

50 mm at 100 %

9 lock_pin_1

pin

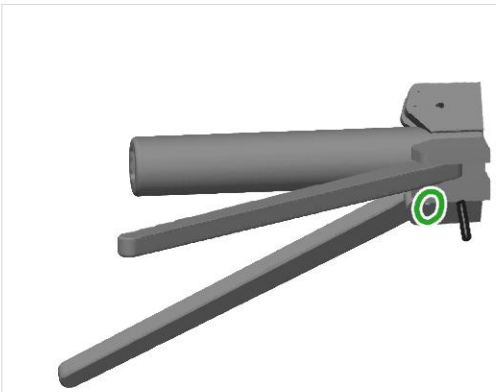
PARTS



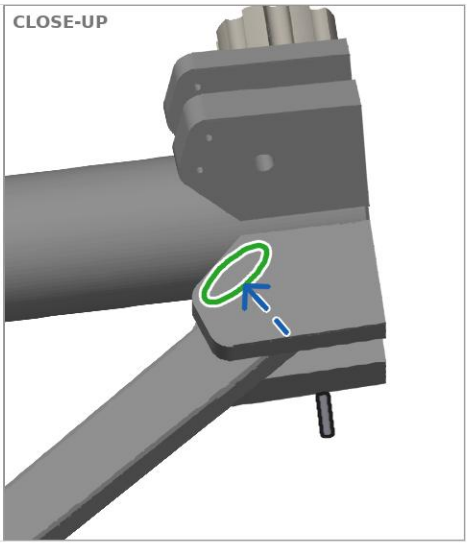
28.4 mm

lock_pin_1

1:1



CLOSE-UP



Push lock_pin_1 (2 x 28.4 mm pin) into its hole in column (the way the arrow points).

10 leg_2

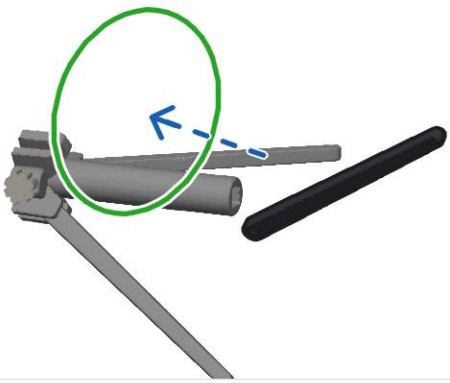
arm

PARTS



leg_2

1:8, side view



Fit leg_2 (arm) onto column (the way the arrow points).

WAY UP: print it lying flat (chamfered side down).

CHECK: swings freely on its pin between the ears

50 mm at 100 %

11 hinge_pin_2

pin

PARTS



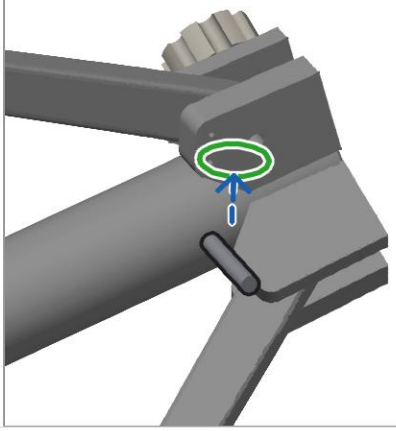
26.4 mm

hinge_pin_2

1:1



CLOSE-UP



Push hinge_pin_2 (5 x 26.4 mm pin) into its hole in leg_2 (the way the arrow points).

12 lock_pin_2

pin

PARTS



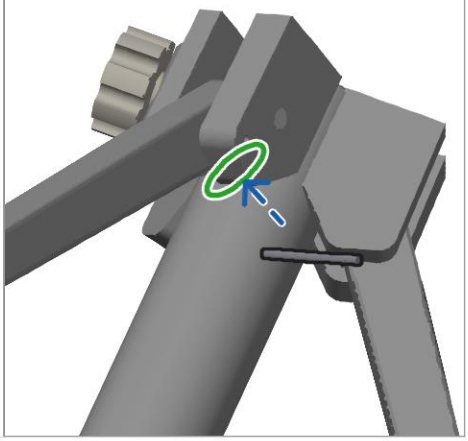
28.4 mm

lock_pin_2

1:1



CLOSE-UP



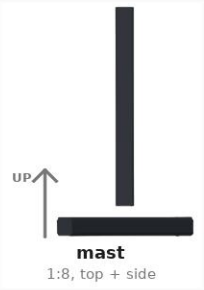
Push lock_pin_2 (2 x 28.4 mm pin) into its hole in column (the way the arrow points).

50 mm at 100 %

13 mast

shaft

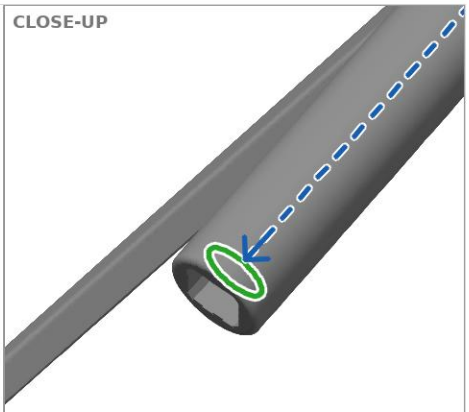
PARTS



mast
1:8, top + side



CLOSE-UP



Fit mast (shaft) onto column (the way the arrow points).

WAY UP: print it lying on a flat side.

CHECK: slides the length of the column by hand

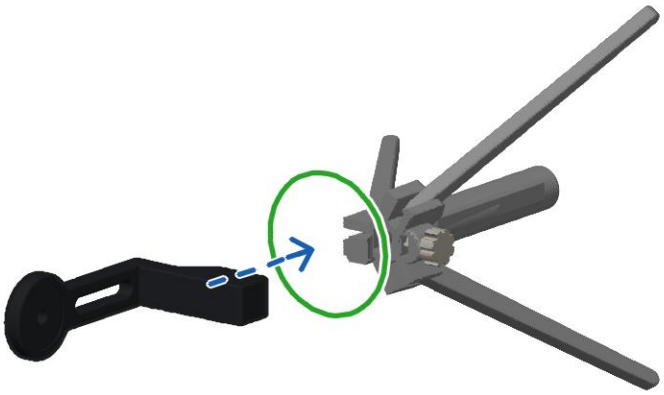
14 yoke

frame

PARTS



yoke
1:8, top + side



Fit yoke (frame) onto column (the way the arrow points).

GLUE: glue it to mast with a drop of thin CA. Keep glue out of every bore and off anything that turns.

- Print it lying on its outer (knob) face: the foot stands up, no supports.

CHECK: the rosette pocket and the mast socket are clean; the bolt hole is round

50 mm at 100 %

15 mast_pin

pin

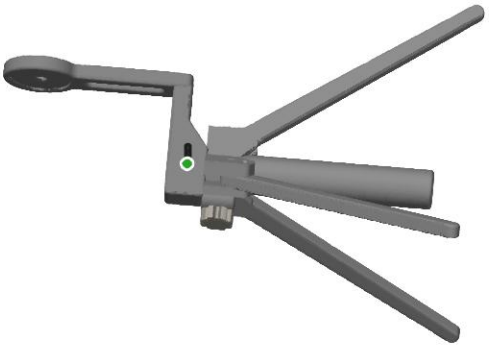
PARTS



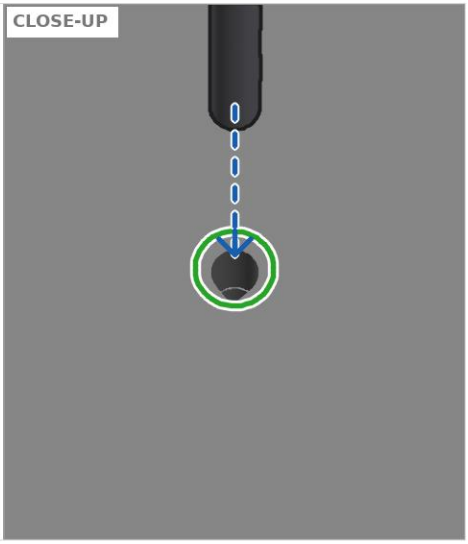
26.8 mm

mast_pin

1:1



CLOSE-UP

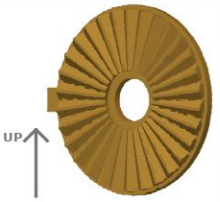


Push mast_pin (2 x 26.8 mm pin) into its hole in mast.

16 tilt_rosette

other

PARTS



tilt_rosette

1:2, side view



CLOSE-UP



Fit tilt_rosette (other) onto yoke (the way the arrow points).

GLUE: glue it to yoke with a drop of thin CA. Keep glue out of every bore and off anything that turns.

- Print it teeth up.

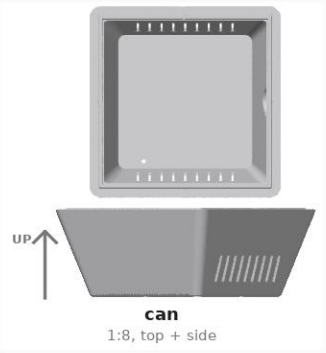
CHECK: its 30 teeth are crisp; it drops into the yoke's pocket with the tab in the slot

50 mm at 100 %

17 can

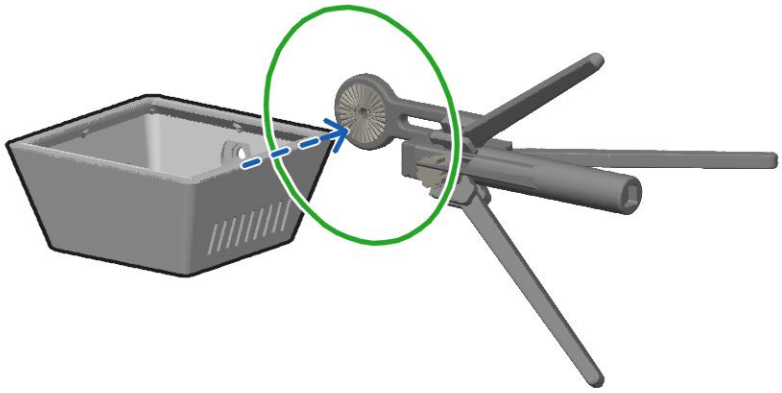
frame

PARTS



can

1:8, top + side



Fit can (frame) onto column (the way the arrow points).

WAY UP: print it standing on its back (the open face up): no supports.

CHECK: the land is flat, the 8 inserts sit flush, the teeth on the side pad are crisp

18 8 x insert

insert

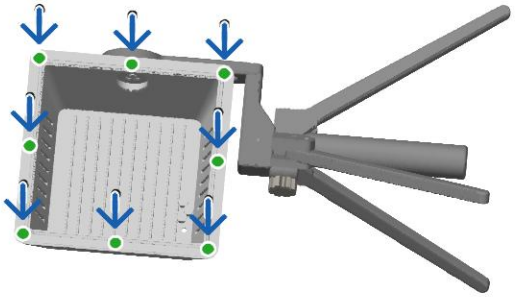
PARTS

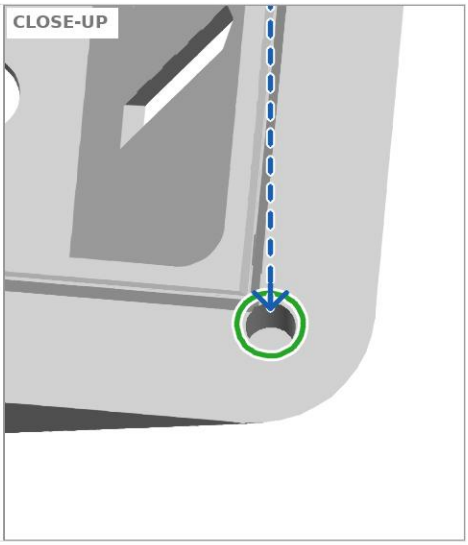


x 8

fs1_insert
fs2_insert
fs3_insert
fs4_insert
fs5_insert
fs6_insert
fs7_insert
fs8_insert

1:1, side view





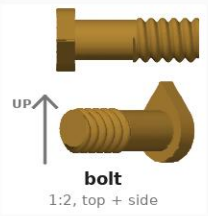
Heat-set 8 x insert (fs1_insert, fs2_insert, fs3_insert, fs4_insert, fs5_insert, fs6_insert, fs7_insert, fs8_insert) into their holes in can.

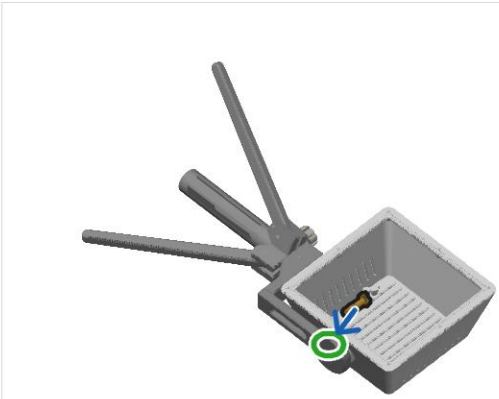
50 mm at 100 %

19 bolt

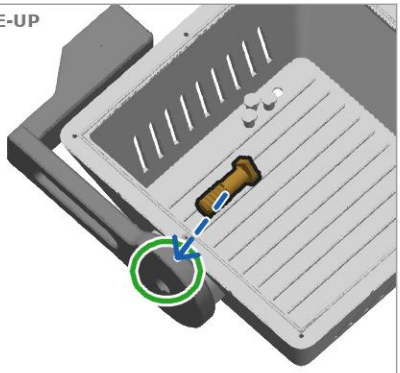
other

PARTS





CLOSE-UP



Fit bolt (other) down onto can.

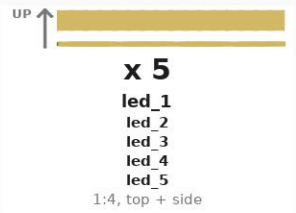
- Print it head down.

CHECK: its teardrop head drops into the pad's recess and cannot turn

20 5 x held item

held item

PARTS





CLOSE-UP



Fit 5 x held item (led_1, led_2, led_3, led_4, led_5) down onto can.

GLUE: glue it to can with a drop of thin CA. Keep glue out of every bore and off anything that turns.

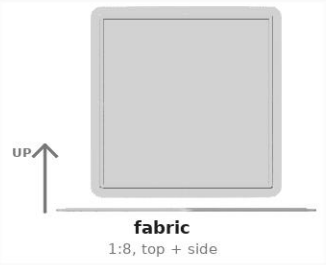
CHECK: pressed flat between its ribs

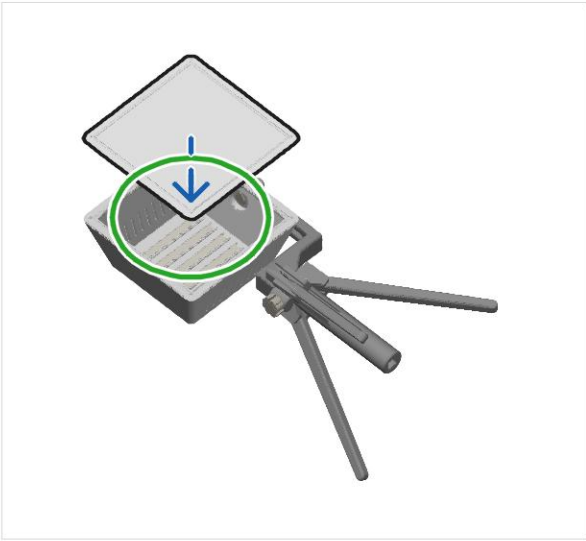
50 mm at 100 %

21 fabric

held item

PARTS





CLOSE-UP



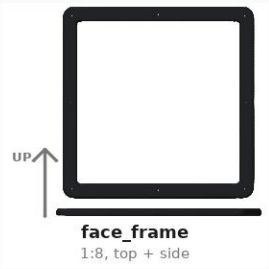
Fit fabric (held item) down onto can.

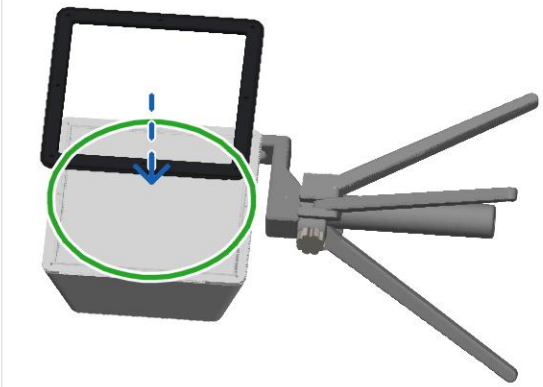
CHECK: pulled smooth and square before the frame screws are tightened

22 face_frame

other

PARTS





CLOSE-UP



Fit face_frame (other) down onto column.

WAY UP: print it front face up (the groove on the bed).

CHECK: lies flat; the V groove runs all round

50 mm at 100 %

23 8 x screw

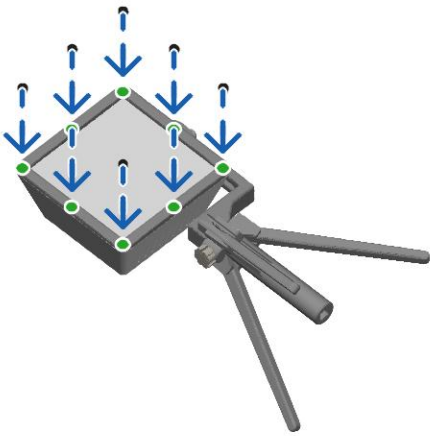
screw

PARTS

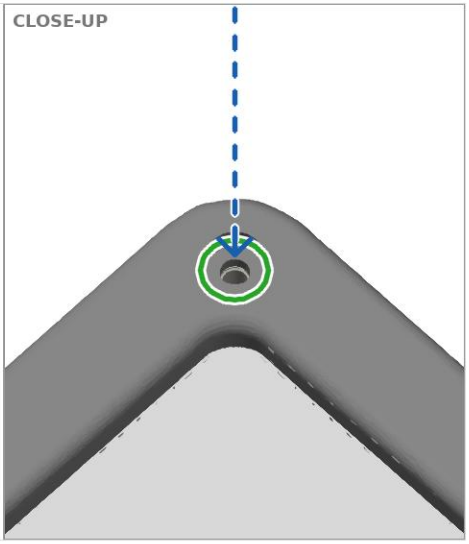


x 8

fs8_screw
fs7_screw
fs6_screw
fs5_screw
fs4_screw
fs3_screw
fs2_screw
fs1_screw
1:1, side view



CLOSE-UP

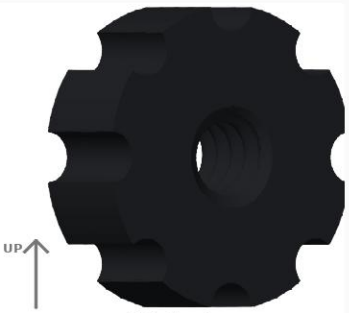


Screw 8 x screw (fs8_screw, fs7_screw, fs6_screw, fs5_screw, fs4_screw, fs3_screw, fs2_screw, fs1_screw) into fs8_insert.

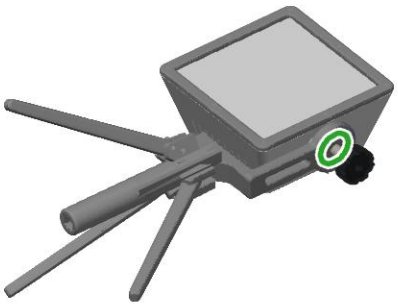
24 tilt_knob

knob

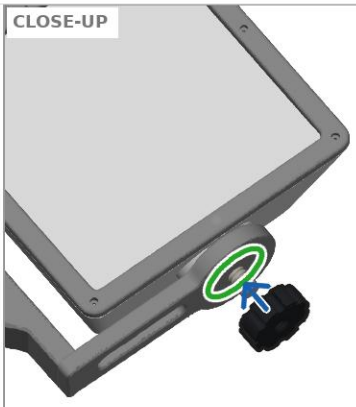
PARTS



tilt_knob
1:1, side view



CLOSE-UP



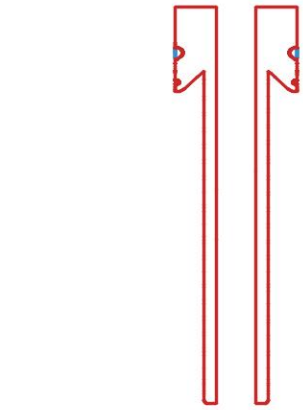
Fit tilt_knob (knob) onto bolt (the way the arrow points).

WAY UP: print it flat, outer face down.

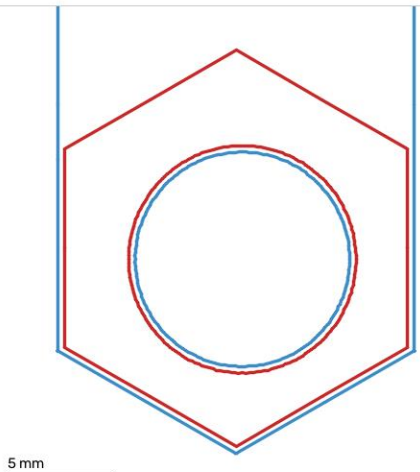
CHECK: turns onto the bolt by hand

50 mm at 100 %

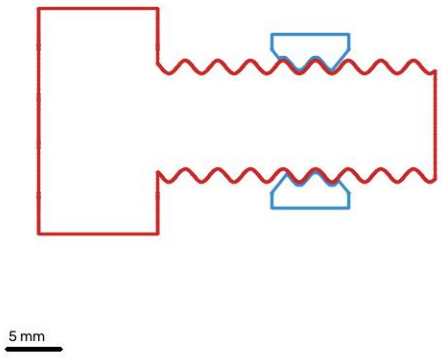
Details: cut straight through. Red = the part, blue = what holds it, grey = rod



step 1: column. print it standing on its crown (top end down): ears and collar on the bed, no supports



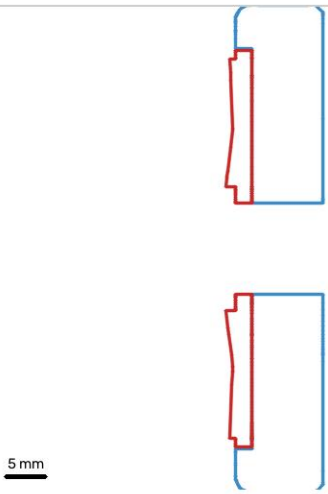
step 2: clamp_nut. print it flat



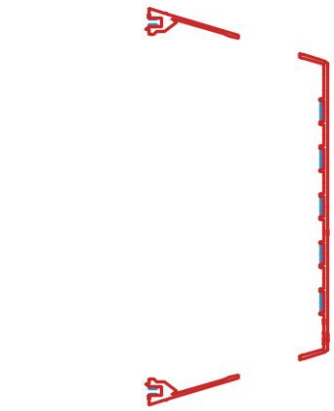
step 3: thumbscrew. print it knob down



step 14: yoke. print it lying on its outer (knob) face: the foot stands up, no supports

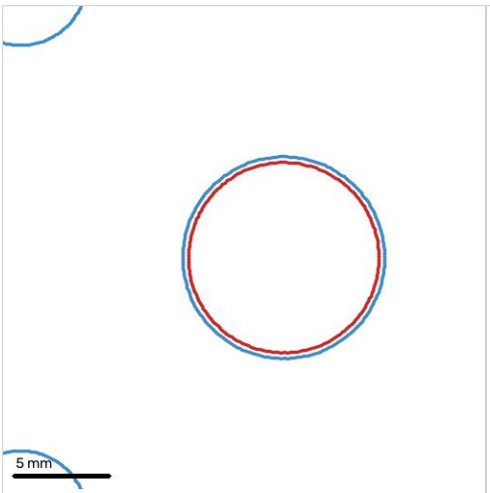


step 16: tilt_rosette. print it teeth up

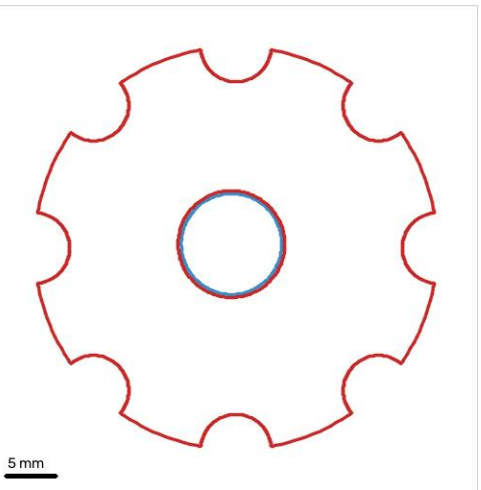


step 17: can. print it standing on its back (the open face up): no supports

Details: cut straight through. Red = the part, blue = what holds it, grey = rod



step 26: bolt. print it head down



step 38: tilt_knob. print it flat, outer face down

50 mm at 100 %

TROUBLESHOOTING

THE CHECK THAT FAILED	STEP	WHAT TO DO
column: the mast slides through it; the nut drops into its slot; the leg ears are clean	**1**	take it off and re-seat it the right way up (the step's WAY UP note), pressed flat
clamp_nut: the thumbscrew turns through it by hand	**2**	take it off and re-seat it the right way up (the step's WAY UP note), pressed flat
thumbscrew: turns in by hand; its tip presses the mast's flat side	**3**	undo the step; check it is the right way up and fully seated
leg_0: swings freely on its pin between the ears	**4**	take it off and re-seat it the right way up (the step's WAY UP note), pressed flat
leg_1: swings freely on its pin between the ears	**7**	take it off and re-seat it the right way up (the step's WAY UP note), pressed flat
leg_2: swings freely on its pin between the ears	**10**	take it off and re-seat it the right way up (the step's WAY UP note), pressed flat
mast: slides the length of the column by hand	**13**	take it off and re-seat it the right way up (the step's WAY UP note), pressed flat
yoke: the rosette pocket and the mast socket are clean; the bolt hole is round	**14**	undo the step; check it is the right way up and fully seated
tilt_rosette: its 30 teeth are crisp; it drops into the yoke's pocket with the tab in the slot	**16**	re-seat the lever and the banking pins; check nothing rubs; teeth that slip past: stop and report it
can: the land is flat, the 8 inserts sit flush, the teeth on the side pad are crisp	**17**	re-seat the lever and the banking pins; check nothing rubs; teeth that slip past: stop and report it
bolt: its teardrop head drops into the pad's recess and cannot turn	**19**	undo the step; check it is the right way up and fully seated
led_1: pressed flat between its ribs	**20**	undo the step; check it is the right way up and fully seated
led_2: pressed flat between its ribs	**20**	undo the step; check it is the right way up and fully seated
led_3: pressed flat between its ribs	**20**	undo the step; check it is the right way up and fully seated
led_4: pressed flat between its ribs	**20**	undo the step; check it is the right way up and fully seated
led_5: pressed flat between its ribs	**20**	undo the step; check it is the right way up and fully seated
fabric: pulled smooth and square before the frame screws are tightened	**21**	undo the step; check it is the right way up and fully seated
face_frame: lies flat; the V groove runs all round	**22**	take it off and re-seat it the right way up (the step's WAY UP note), pressed flat
tilt_knob: turns onto the bolt by hand	**24**	take it off and re-seat it the right way up (the step's WAY UP note), pressed flat

50 mm at 100 %