MX GLIDE / V5

Subassemblies in assembly order

Hardware included - core mechanism and removable hand rest

Use the numbered views from 01 to 19. Each view identifies the hardware and shows the assembled result.

Before the full print: test the fit coupon, one bearing socket, the actual nuts and one spring-return plunger.

The right-hand rest with a 4 mm spacer is illustrated. Other hand and height options are shown in step 18.

FRAME / RAILS

01 Join the side bases

02 Join the three tray sections

03 Raise the tray on six pedestals

04 Mount the fixed X rail posts

05 Dock the tray to the side bases

06 Prepare the moving X feet

07 Install the two low X rails

FIVE-KEY HEAD

08 Prepare the two Y carriages

09 Fit the four adjustable guides

10 Build the spring-return plungers

11 Assemble the inner joystick pivot

12 Fit the gimbal to the upper frame

13 Close the head stack

14 Fit the grip and center button

FINAL ASSEMBLY

15 Attach the head to the Y carriages

16 Install the head and the Y rods

17 Fit the three drag knobs

18 Attach the hand rest

19 Align contacts and check the fit

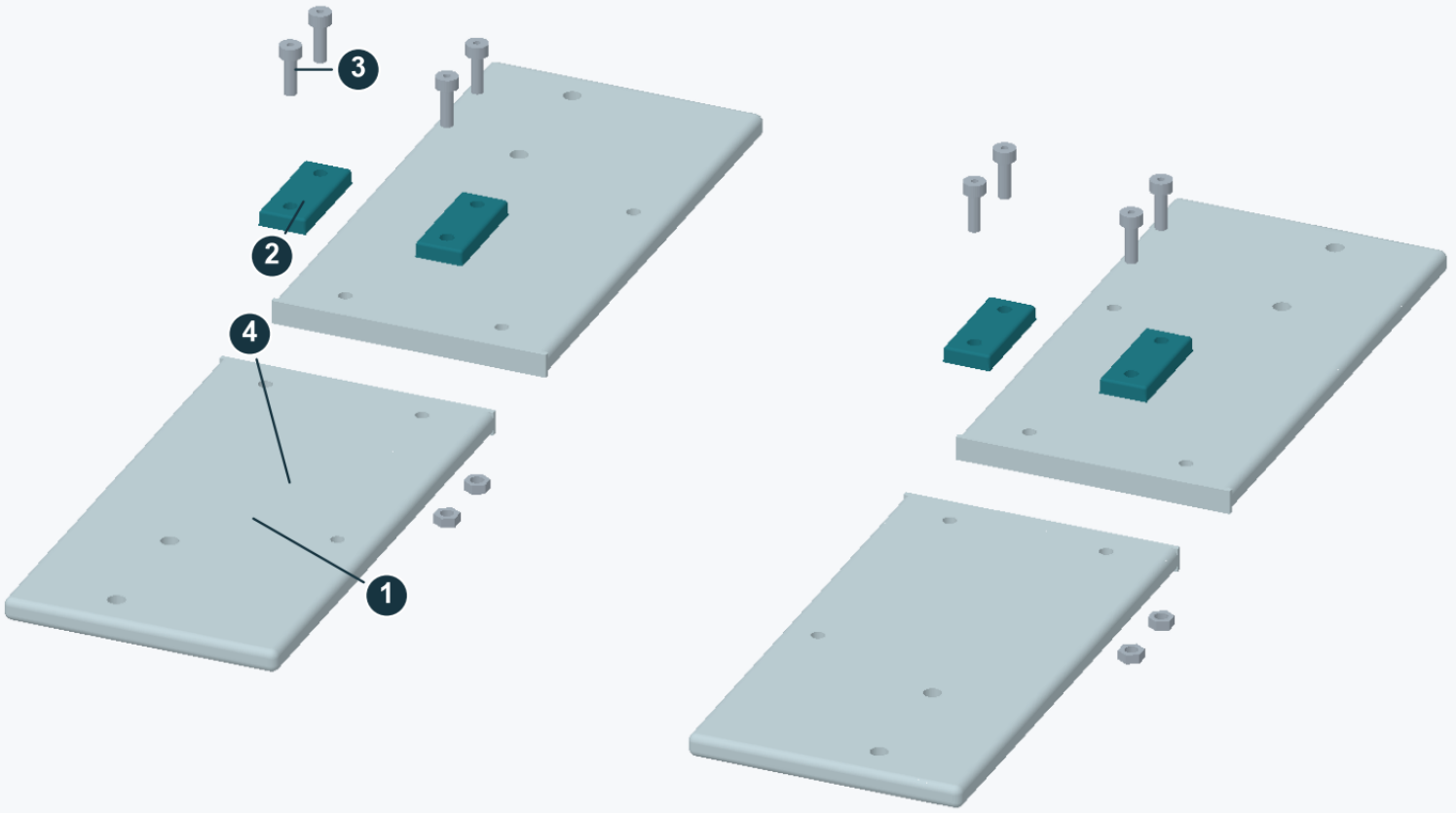
Load captive nuts before closing parts. Fit the cross gate before the grip and center button.

Fit the hand rest after the head attachments and drag knobs so the mounting screws remain accessible.

Printed prototype demonstrated. Revised grip fit, hand support and working-keyboard tests remain.

01 Join the side bases

Build both sides



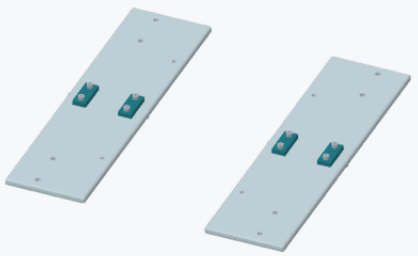
01 **4 base sections**
C03 left/right, front/rear

02 **4 splice bars**
R04_splice_bar

03 **8 M3 x 10 screws**
No washers

04 **8 M3 nuts**
Underside seam pockets

After this step

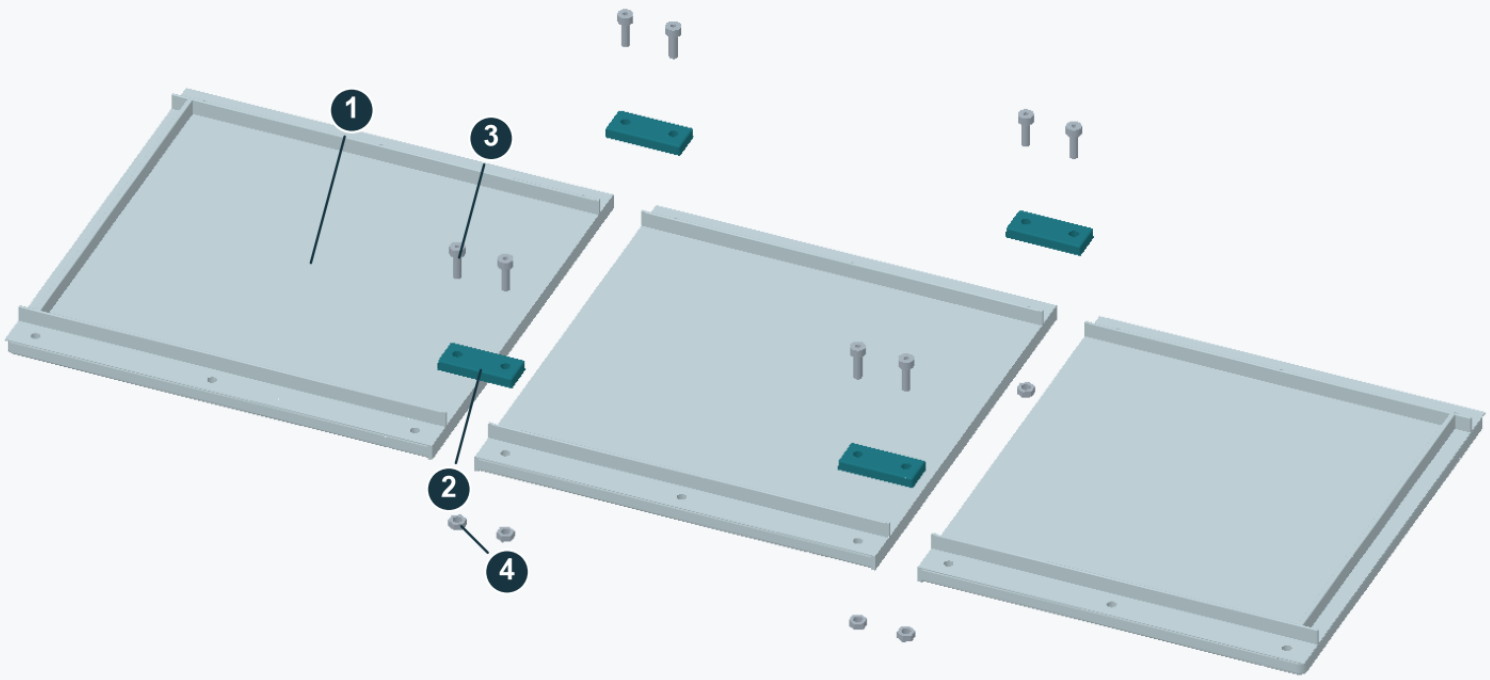


1. Load eight M3 nuts into the underside seam pockets before adding the splice bars.
2. Join each front/rear pair with two R04 bars and four M3 x 10 screws. Use no washers.
3. The left and right groups are drawn closer together here; keep them separate on the bench.

Exploded spacing is illustrative. Screws and springs are shown without manufacturing detail. Dimensions in mm.

02 Join the three tray sections

Build one tray



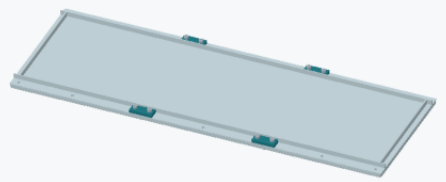
01 **3 tray sections**
C01_raised_tray_1 / 2 / 3

02 **4 splice bars**
R04_splice_bar

03 **8 M3 x 10 screws**
No washers

04 **8 M3 nuts**
Underside seam pockets

After this step



1. Load eight M3 nuts into the underside seam pockets. Align the sections in order 1, 2, 3.

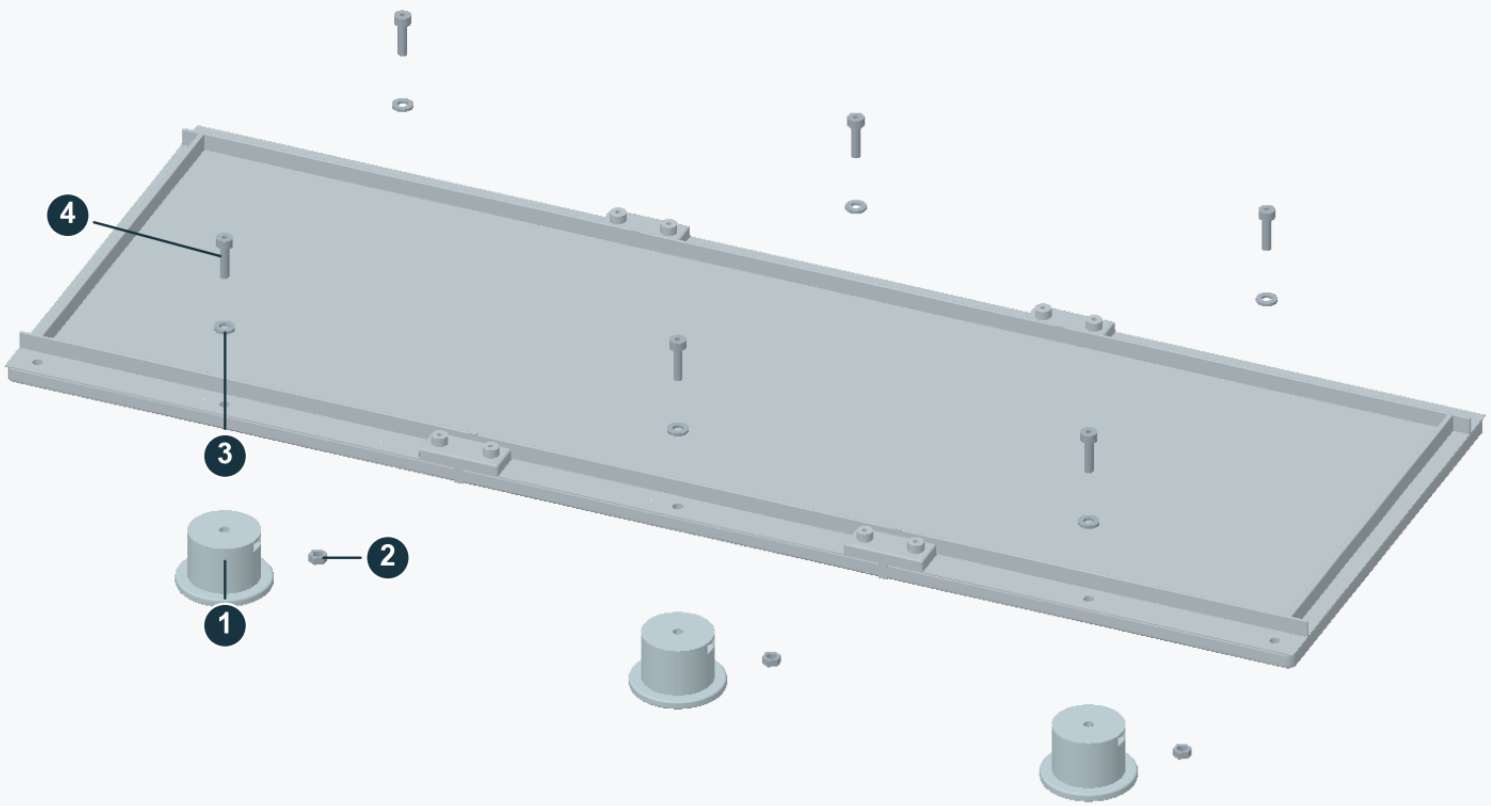
2. Bridge both seams at the front and rear flanges with four R04 bars.

3. Use eight M3 x 10 screws without washers. Keep the keyboard seating surface level.

Exploded spacing is illustrative. Screws and springs are shown without manufacturing detail. Dimensions in mm.

03 Raise the tray on six pedestals

Add six supports



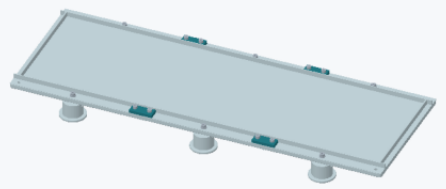
01 **6 pedestals**
R02_tray_pedestal_20mm

02 **6 M3 nuts**
Insert through pedestal side slots

03 **6 M3 washers**
OD 7 x 1 mm

04 **6 M3 x 12 screws**
Through the tray

After this step

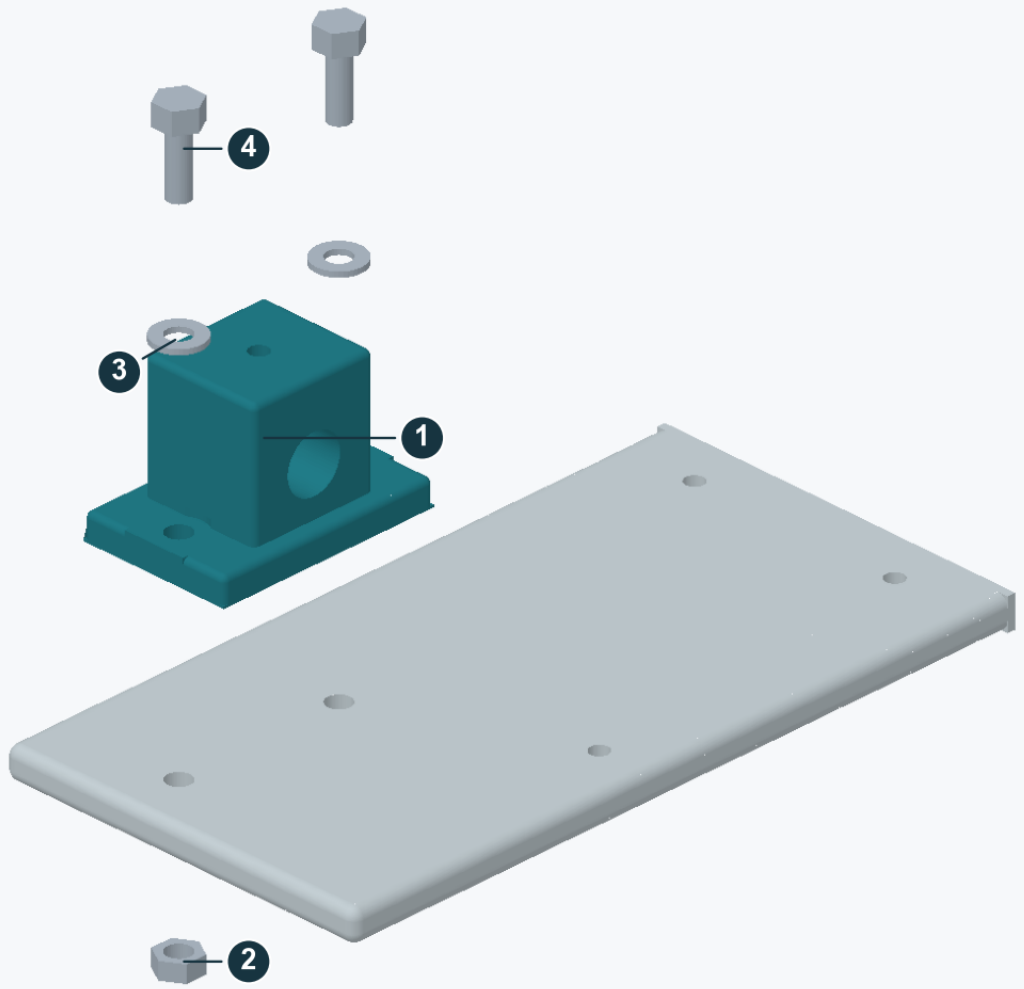


1. Slide one M3 nut through the side slot of each pedestal before placing the tray.
2. Fit six M3 x 12 screws with 1 mm washers through the tray into the pedestals.
3. The tray underside is 20 mm above the desk; tighten evenly so the tray sits flat.

Exploded spacing is illustrative. Screws and springs are shown without manufacturing detail. Dimensions in mm.

04 Mount the fixed X rail posts

One corner shown - repeat four times



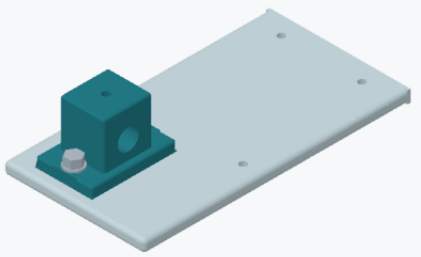
01 **1 rail post per corner**
R06_low_x_rail_post

02 **2 M4 nuts per corner**
Total for four posts: 8

03 **2 M4 washers per corner**
OD 9 x 1 mm; total: 8

04 **2 M4 x 12 screws per corner**
Hex head; total: 8

After this step

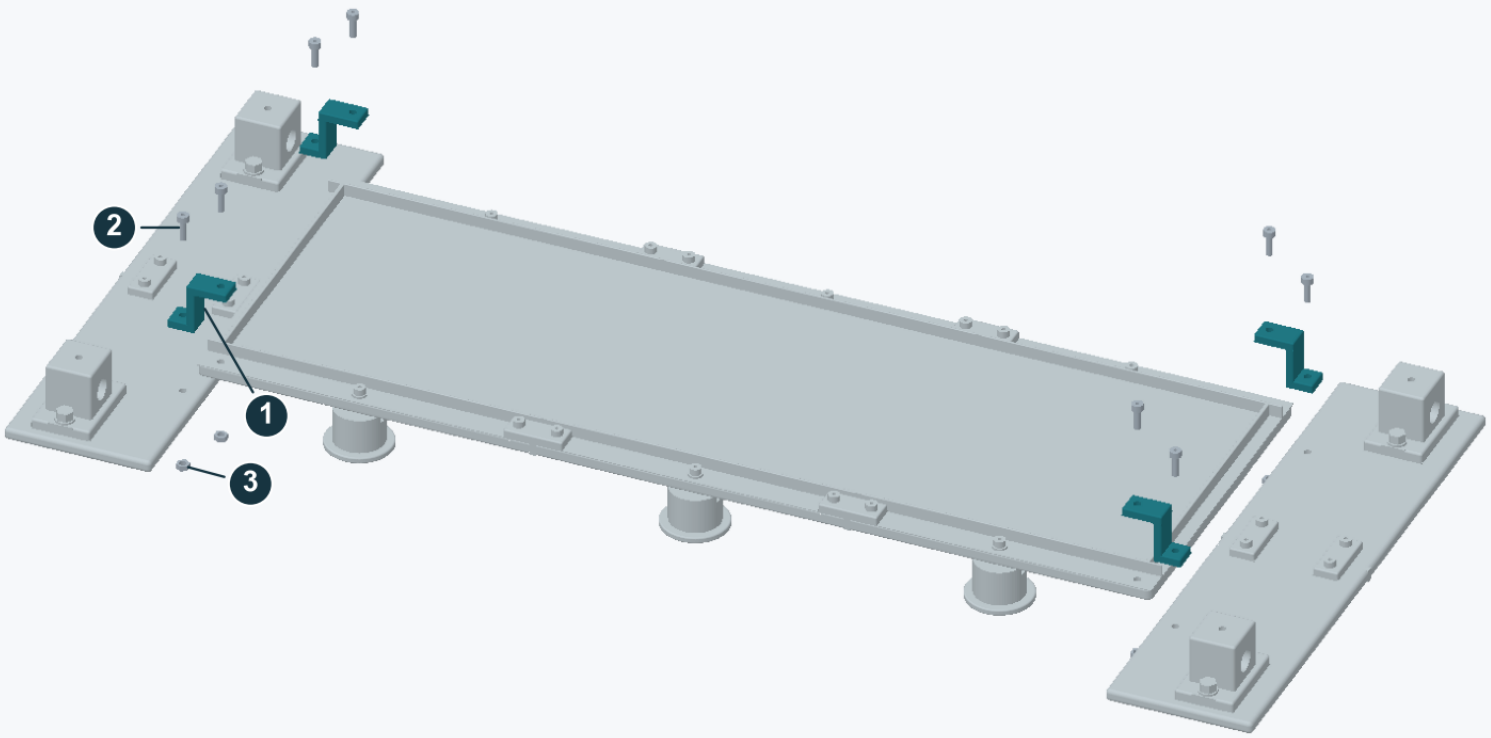


1. While the side bases are separate, load two M4 nuts into the underside pockets at each corner.
2. Fit one R06 post with two M4 x 12 hex-head screws and two 1 mm washers.
3. Point the bores left/right, with all four rod axes 20 mm above the desk. Keep the bases separate until step 5.

Exploded spacing is illustrative. Screws and springs are shown without manufacturing detail. Dimensions in mm.

05 Dock the tray to the side bases

Connect all four corners - rail posts already fitted

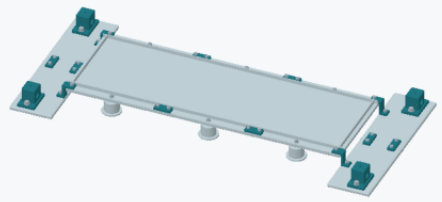


01 **4 step brackets**
R05_tray_to_stage_step_bracket

02 **8 M3 x 10 screws**
No washers

03 **8 M3 nuts**
Four base + four tray pockets

After this step



1. Load four M3 nuts under the bases and four under the tray docking holes before bringing the assemblies together.

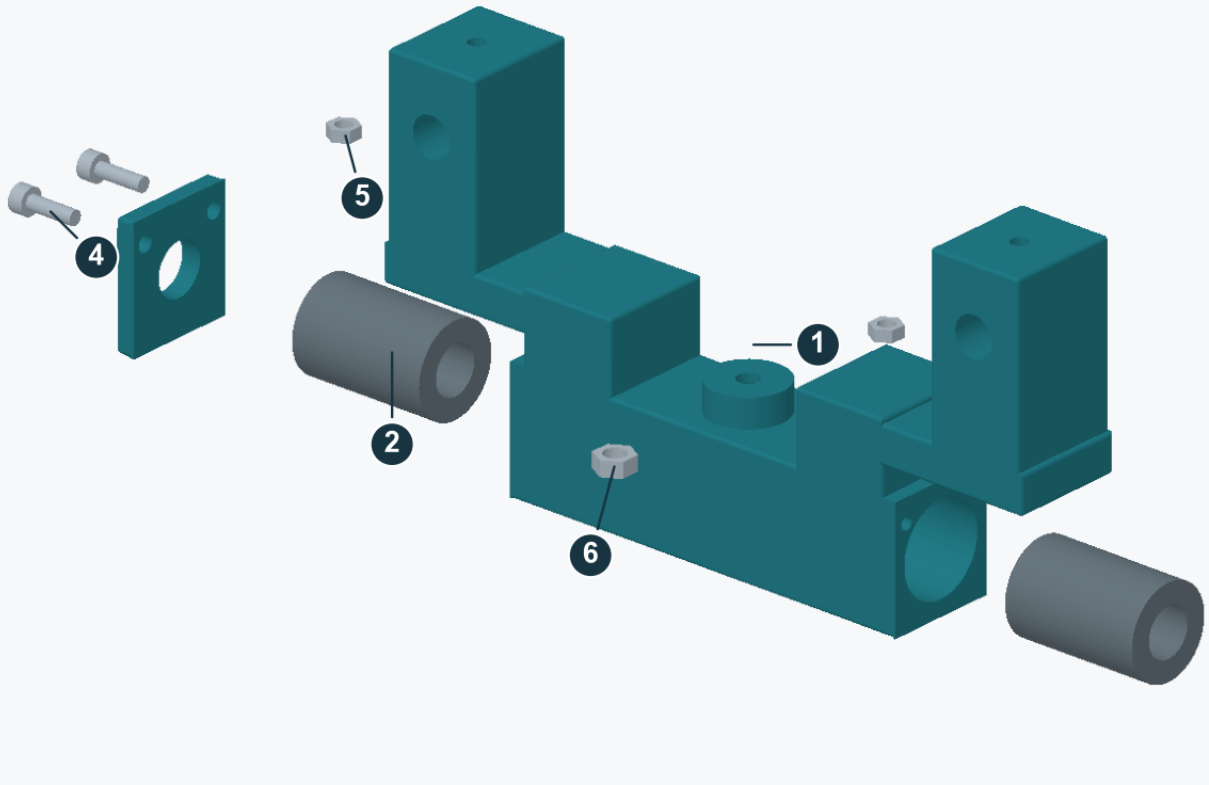
2. Use one R05 step bracket and two M3 x 10 screws at each corner, without washers.

3. Rotate the two right brackets 180 degrees around the vertical axis. Keep all feet on the desk.

Exploded spacing is illustrative. Screws and springs are shown without manufacturing detail. Dimensions in mm.

06 Prepare the moving X feet

One foot shown - build two



01 **1 bridge foot**
C07_bridge_x_foot; print 2

02 **2 LM10UU bearings per foot**
10 ID x 19 OD x 29 mm; total: 4

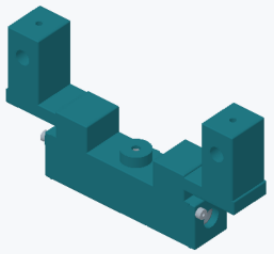
03 **2 bearing caps per foot**
R08; total: 4

04 **4 M3 x 10 screws per foot**
Total: 8; printed pilots

05 **2 M3 nuts per foot**
Y-rod retention; total: 4

06 **1 M4 nut per foot**
X drag; total: 2

After this step



1. Insert one LM10UU bearing from each end. Fit two R08 caps with four M3 x 10 screws per foot.

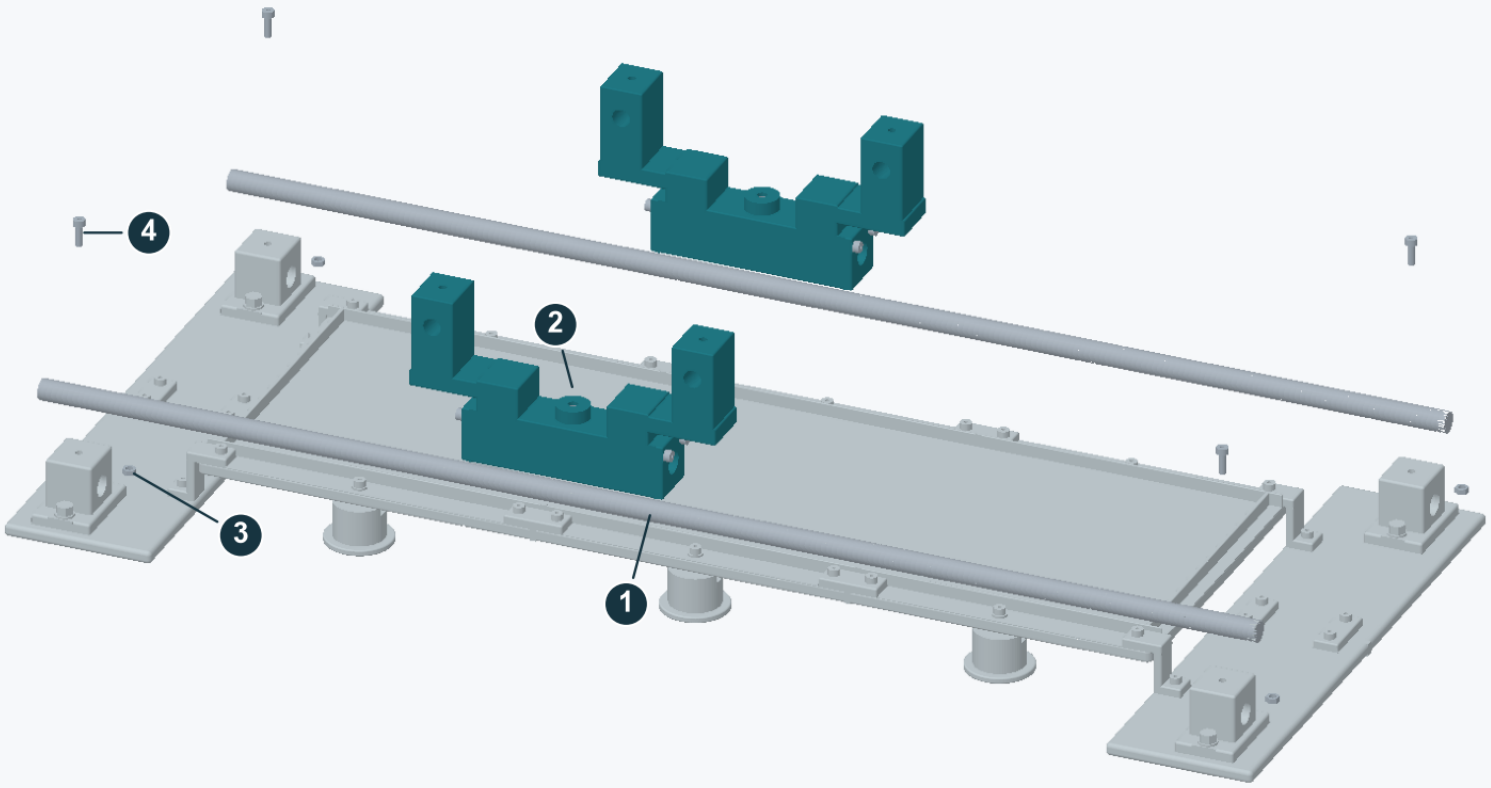
2. The cap screws form threads in printed pilot holes: use no nuts or washers at the caps.

3. Before installing rods, load two M3 retention nuts and one M4 drag nut in each foot.

Exploded spacing is illustrative. Screws and springs are shown without manufacturing detail. Dimensions in mm.

07 Install the two low X rails

Join the fixed frame and moving feet



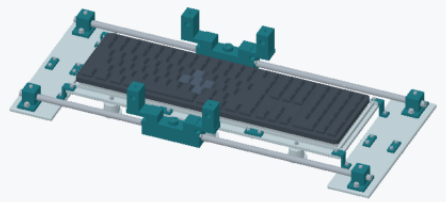
01 **2 smooth X rods**
Diameter 10 x 580 mm

02 **2 prepared moving feet**
From step 6

03 **4 M3 retention nuts**
Fixed rail-post side pockets

04 **4 M3 x 10 screws**
Rod retention; heads may stand proud

Then pad the tray and seat keyboard



1. Slide a prepared X foot onto each 10 x 580 mm rod, then insert the rods lengthwise through the fixed posts.

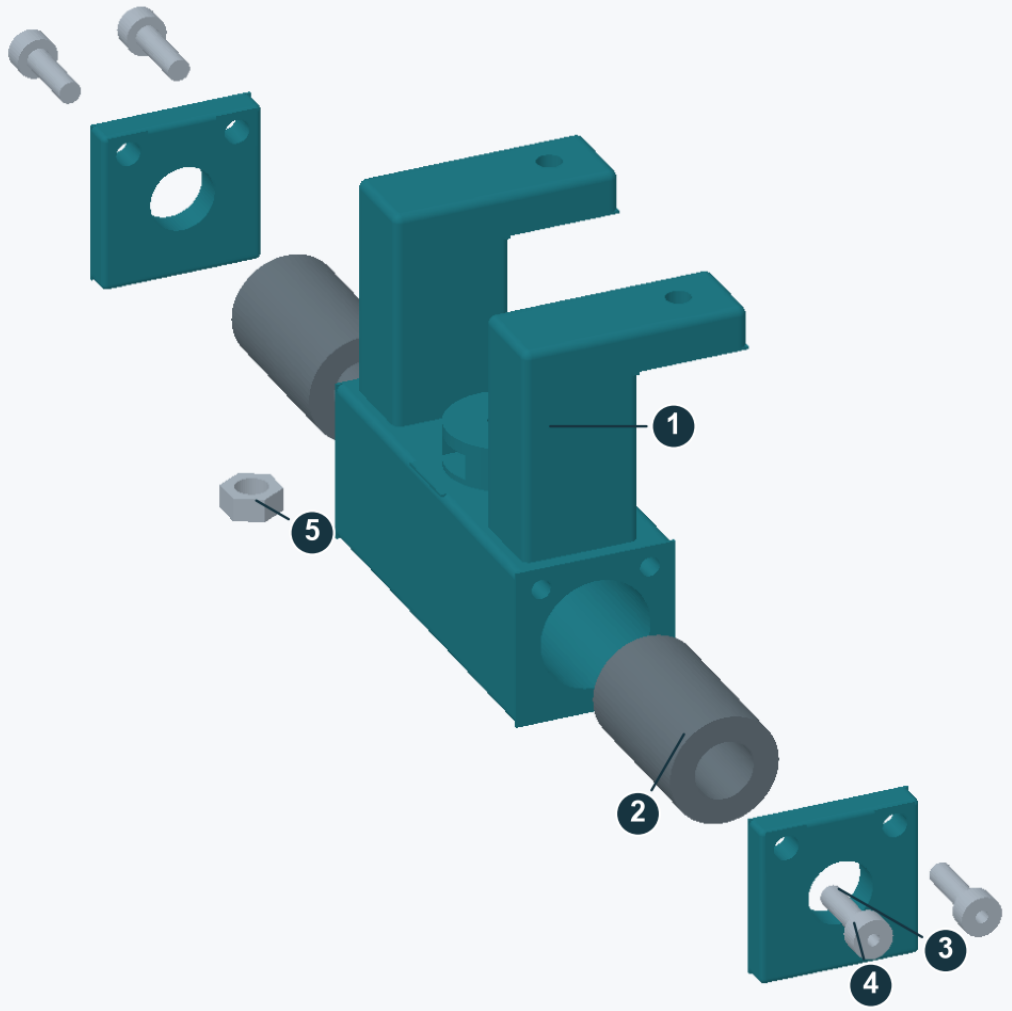
2. Load four M3 post nuts and fit four M3 x 10 retention screws. Square the rails, then tighten only to rod contact.

3. Add 1 mm non-slip tray padding. Fold the keyboard tilt feet and seat the keyboard now, while the head is off.

Exploded spacing is illustrative. Screws and springs are shown without manufacturing detail. Dimensions in mm.

08 Prepare the two Y carriages

Left carriage shown - build both



01 **1 Y carriage shown**
C09_y_carriage_with_head_legs; total: 2

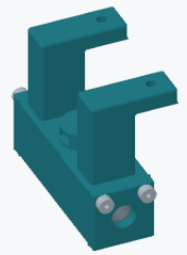
02 **2 LM8UU bearings per carriage**
8 ID x 15 OD x 24 mm; total: 4

03 **2 C10 end caps per carriage**
Total: 4

04 **4 M3 x 10 screws per carriage**
Total: 8; printed pilots

05 **1 M4 drag nut**
Left boss for a right-hand rest

After this step

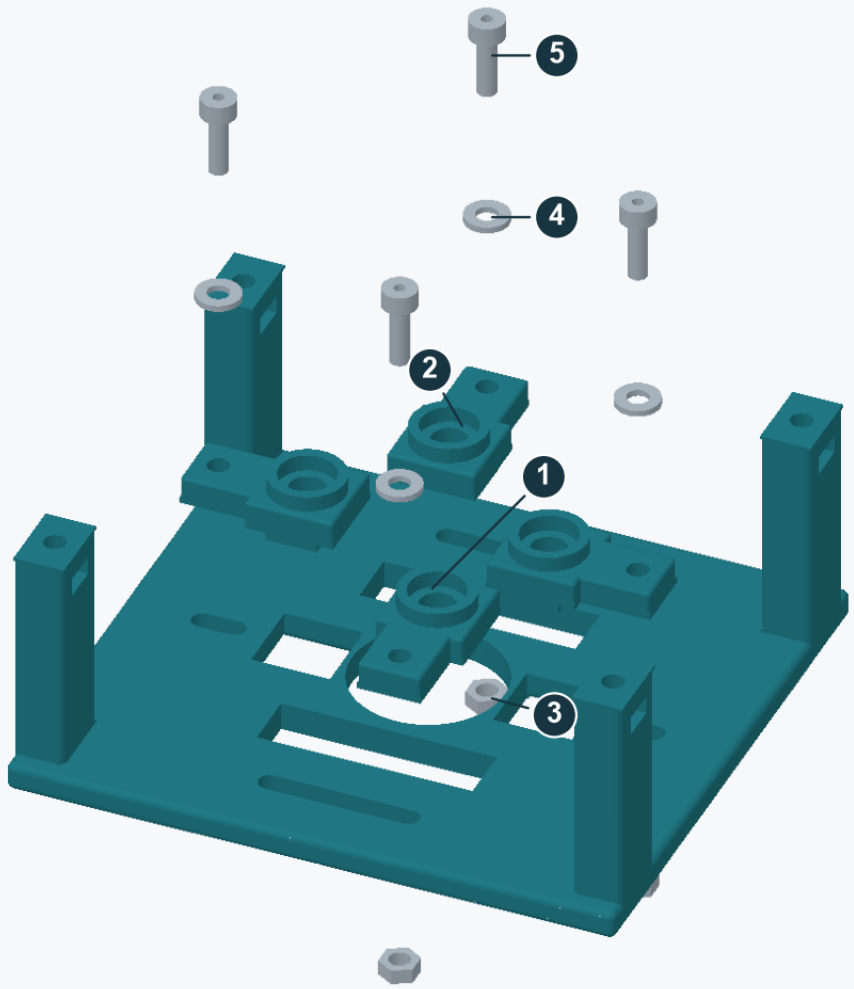


1. Insert two LM8UU bearings into each carriage and fit two C10 caps with four M3 x 10 screws.
2. Build the other side from the same printed part rotated 180 degrees; point both mounting arms inward.
3. For the right-hand rest shown later, load one M4 drag nut in the left carriage. Keep the Y rods out.

Exploded spacing is illustrative. Screws and springs are shown without manufacturing detail. Dimensions in mm.

09 Fit the four adjustable guides

Start the lower head assembly



01 **1 lower head frame**
07_head_stator

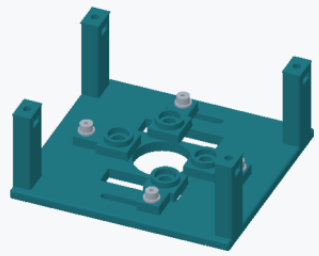
02 **4 adjustable guides**
08_plunger_guide

03 **4 M3 nuts**
Underside adjustment slots

04 **4 M3 washers**
OD 7 x 1 mm

05 **4 M3 x 10 screws**
Leave adjustable

After this step

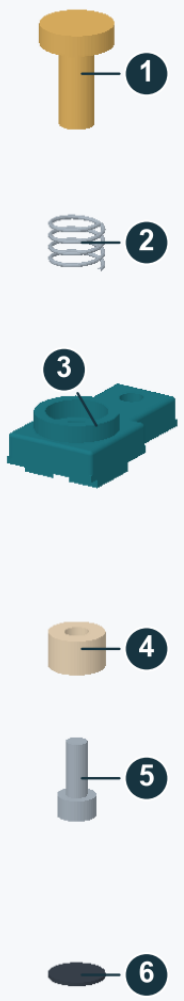


1. Load four M3 nuts into the stator underside slots. Put each guide boss into its opening, with its ear outward.
2. Fit four M3 x 10 screws and four 1 mm washers. Leave the guides loose enough to adjust.
3. The illustrated stagger is a starting position; align the actual keys during calibration.

Exploded spacing is illustrative. Screws and springs are shown without manufacturing detail. Dimensions in mm.

10 Build the spring-return plungers

One shown - build four



01 **1 direction plunger**
09_direction_plunger; total: 4

02 **1 direction return spring**
Total: 4; stiffness chosen by trial

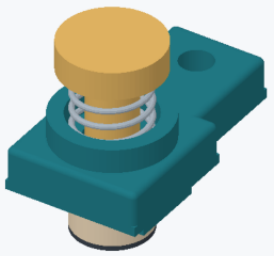
03 **Fitted guide from step 9**
08_plunger_guide

04 **1 contact foot**
10_contact_foot; four directional feet

05 **1 M3 x 8 screw**
From below; total directional screws: 4

06 **1 soft contact pad**
Diameter 8 x 0.5 mm; total: 4

After this step



1. Place a direction spring around the shaft and insert the plunger downward through its fitted guide.

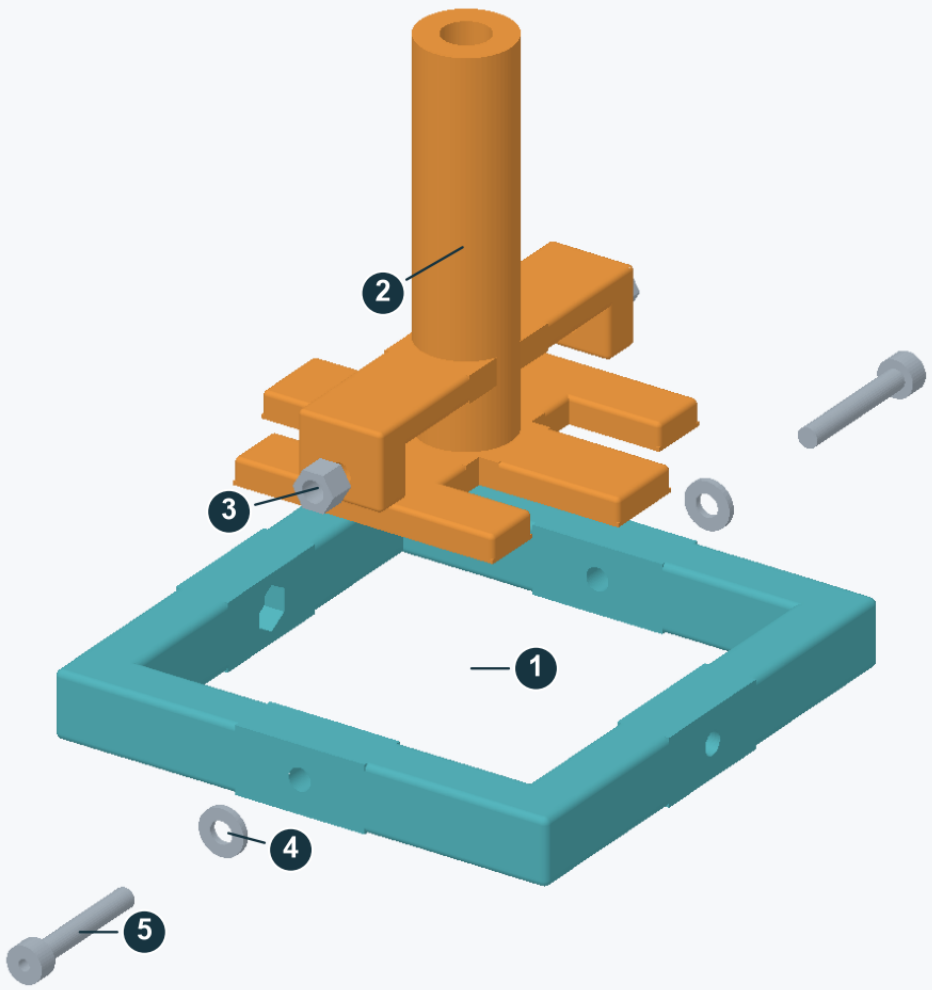
2. Attach the contact foot from below with M3 x 8. Cover the recessed screw head with an 8 x 0.5 mm soft pad.

3. Check free return and 5 mm downward travel. Spring OD <= 8.2, ID >= 5.5, free length about 10 mm; no coil bind.

Exploded spacing is illustrative. Screws and springs are shown without manufacturing detail. Dimensions in mm.

11 Assemble the inner joystick pivot

Two pivots through the Y faces



01 **1 outer gimbal**
11_outer_gimbal

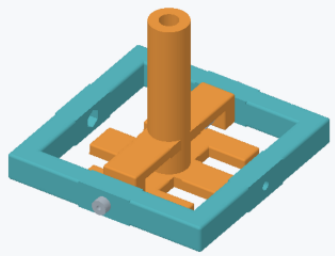
02 **1 cam and hollow stem**
12_joystick_cam_stem

03 **2 M3 nyloc nuts**
Inside the stem lugs

04 **2 M3 washers**
OD 7 x 1 mm; in the gaps

05 **2 M3 x 20 screws**
Inner pivots

After this step

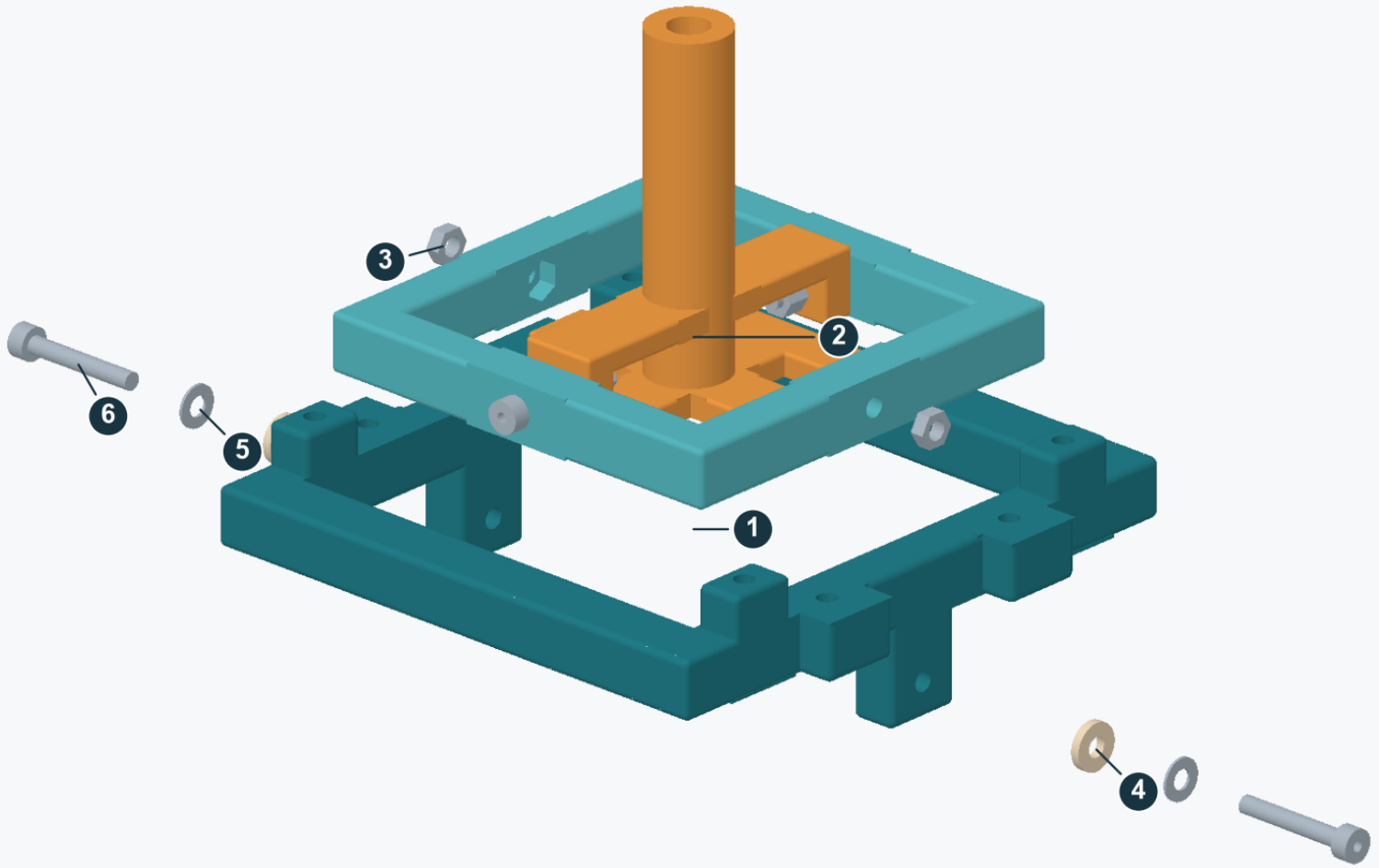


1. Place the cam/stem inside the outer gimbal and align its two lugs with the Y-face holes.
2. Use two M3 x 20 screws, two 1 mm washers in the gaps and two M3 nyloc nuts inside the lugs.
3. Adjust for little play and free rotation. These are two of the eight M3 x 20 screws needed for the whole build.

Exploded spacing is illustrative. Screws and springs are shown without manufacturing detail. Dimensions in mm.

12 Fit the gimbal to the upper frame

Two outer X pivots



01 **1 upper head frame**
06_x_carriage_upper

02 **Inner mechanism from step 11**
Gimbal + cam/stem + two pivots

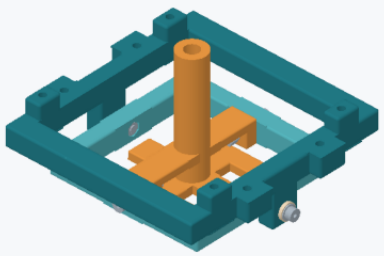
03 **2 plain M3 nuts**
Inner X-face hex sockets

04 **2 printed head spacers**
18_outer_pivot_head_spacer; 1.5 mm

05 **2 thin M3 washers**
OD 7 x 0.5 mm

06 **2 M3 x 20 screws**
Outer pivots; use this exact length

After this step

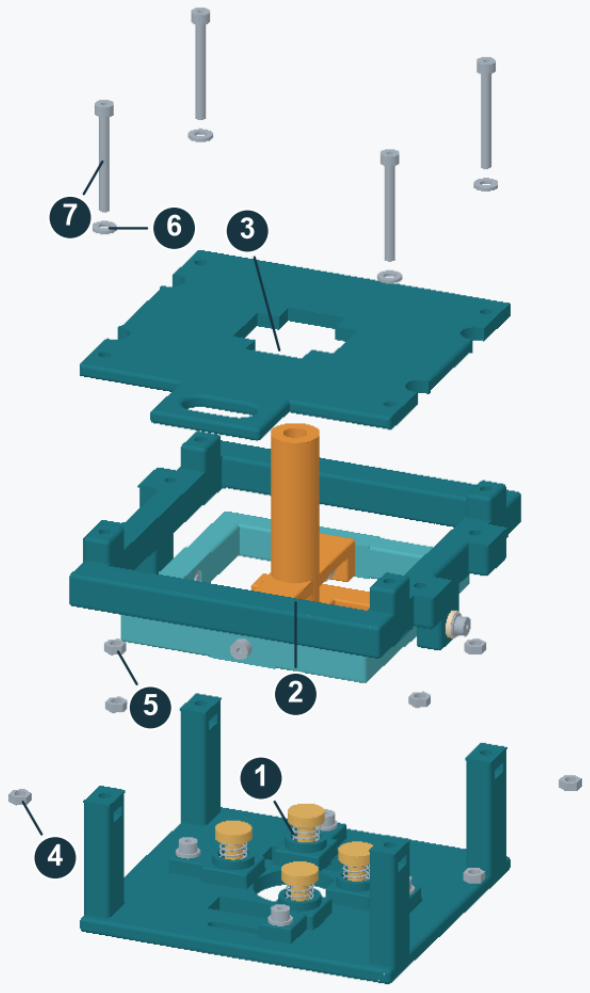


1. Load two plain M3 nuts in the gimbal inner X-face hex sockets before fitting the mechanism into the frame.
2. Each M3 x 20 pivot needs a printed 1.5 mm spacer and a 0.5 mm outer washer, making a 2 mm head stack.
3. Set free pivoting and check the screw tips finish flush with the gimbal inner face. Use removable threadlocker.

Exploded spacing is illustrative. Screws and springs are shown without manufacturing detail. Dimensions in mm.

13 Close the head stack

Fit the gate before the grip; preload eight nuts



01 **Completed lower assembly**
From steps 9-10

02 **Completed upper mechanism**
From steps 11-12; grip still off

03 **1 cross gate / transport loop**
13_cross_gate_transport_loop

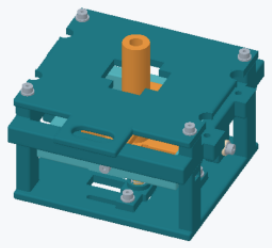
04 **4 M3 post nuts**
Side pockets near stator post tops

05 **4 M3 side-attachment nuts**
Upper frame underside ear pockets

06 **4 M3 washers**
OD 7 x 1 mm

07 **4 M3 x 30 screws**
Two will be replaced in step 18

After this step



1. Load four M3 nuts into the stator post tops and four more into the underside pockets of the upper-frame side ears.

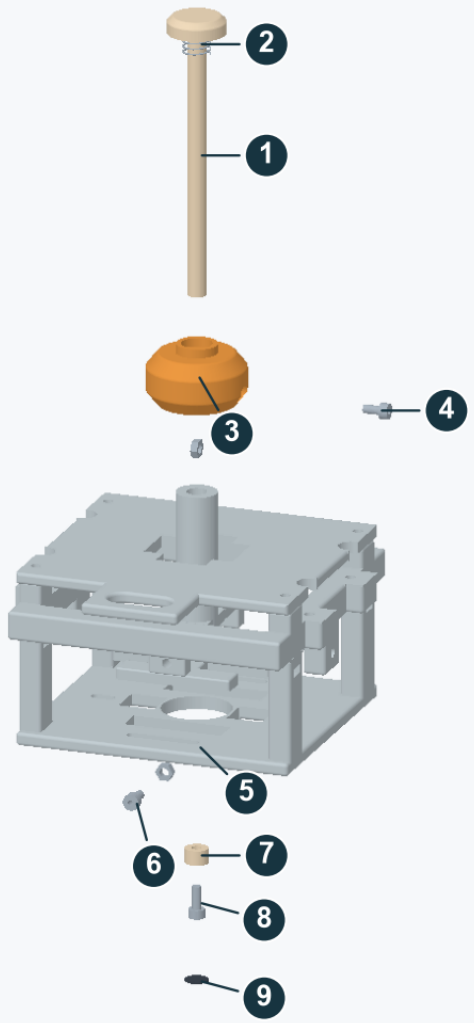
2. Lower the upper mechanism onto the posts and add the cross gate, with its transport loop toward the user.

3. Join with four M3 x 30 screws and 1 mm washers. Check gimbal tilt and plunger travel. Fit the wider grip after the gate.

Exploded spacing is illustrative. Screws and springs are shown without manufacturing detail. Dimensions in mm.

14 Fit the grip and center button

Fit after the cross gate - keep collar access clear



01 **1 center pushrod/button**
15_center_pushrod_button

02 **1 center return spring**
OD <= 10; ID >= 6.8; free length 10-12 mm

03 **1 hollow grip**
14_hollow_grip

04 **Grip: M3 x 6 + M3 nut**
Nut enters underside; screw head sits in side recess

05 **1 return-stop collar**
17_center_return_stop_collar

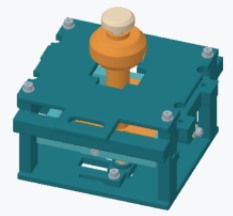
06 **Collar: M3 x 6 + M3 nut**
Face clamp toward the transport loop

07 **1 center contact foot**
10_contact_foot; fifth foot

08 **1 M3 x 8 foot screw**
Install from below

09 **1 soft center contact pad**
Diameter 8 x 0.5 mm

After this step



1. Insert M3 nut through underside socket into inside pocket. Fit grip after gate; retain with M3 x 6 in the head recess. Add center spring.

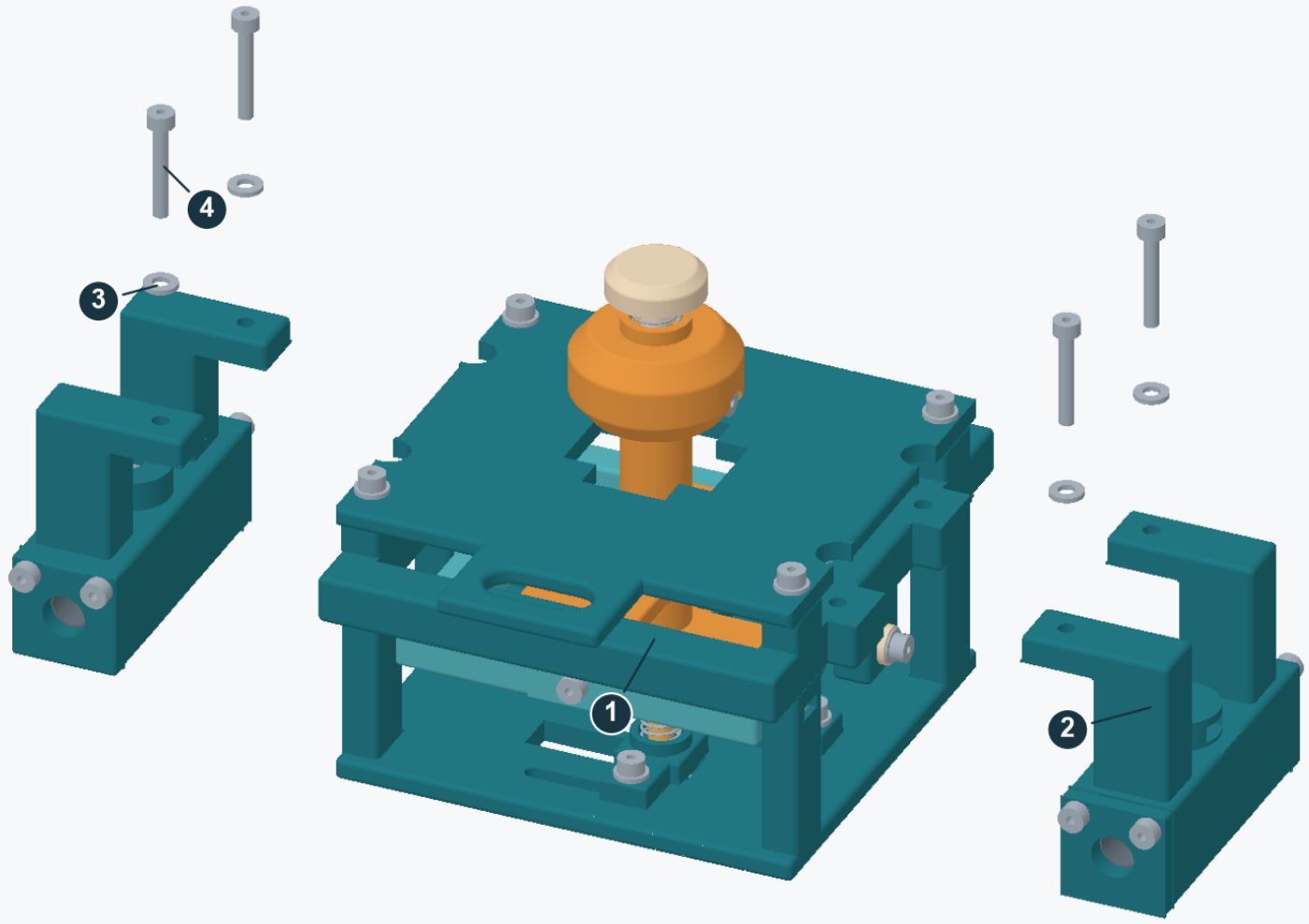
2. Insert the center rod and fit its collar below the cam, with the clamp facing forward toward the transport loop. Attach the padded foot with M3 x 8.

3. Set cap underside 8 mm above the main grip shoulder (5 mm above its raised stop). Set collar top against cam underside; clamp with M3 x 6 and nut.

Exploded spacing is illustrative. Screws and springs are shown without manufacturing detail. Dimensions in mm.

15 Attach the head to the Y carriages

Keep both Y rods out for access



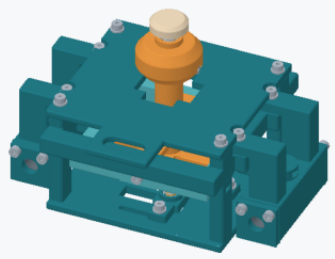
01 **Complete five-key head**
From step 14

02 **2 prepared Y carriages**
From step 8; arms point inward

03 **4 M3 washers**
OD 7 x 1 mm

04 **4 M3 x 20 screws**
Use the existing captive ear nuts

After this step



1. Slide the prepared carriages inward from the two sides, with their mounting arms over the upper-frame ears.

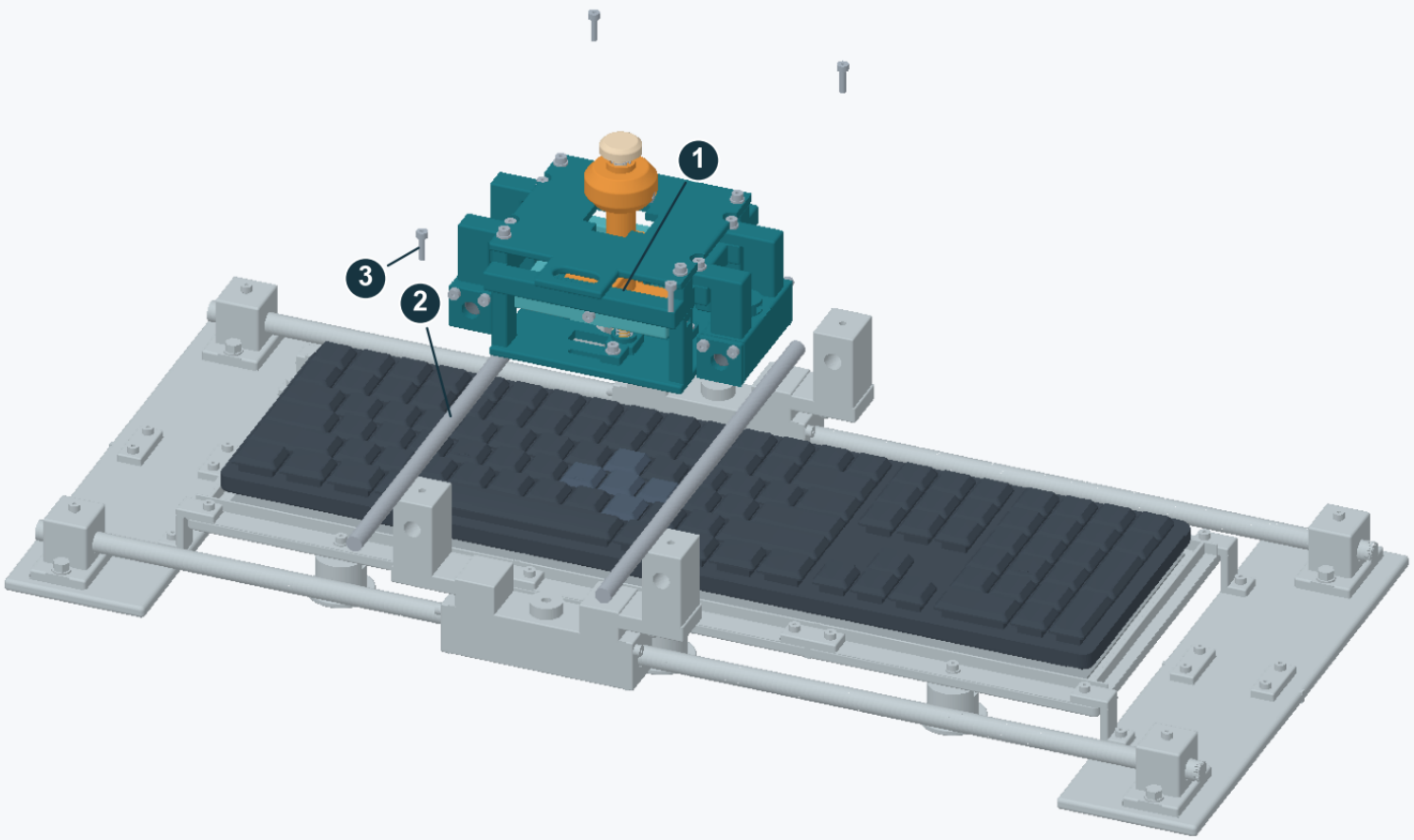
2. Fit four M3 x 20 screws and four 1 mm washers into the captive ear nuts loaded in step 13. Tighten evenly.

3. The attachment holes are 47 mm to either side and 20 mm front/rear of the stick. Leave the hand rest off for tool access.

Exploded spacing is illustrative. Screws and springs are shown without manufacturing detail. Dimensions in mm.

16 Install the head and the Y rods

Square the bridge before tightening

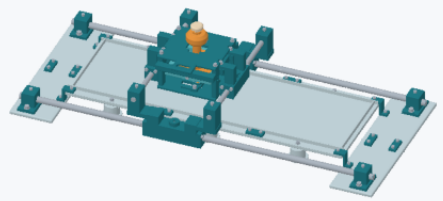


01 **Head/carriage unit**
From step 15

02 **2 smooth Y rods**
Diameter 8 x 240 mm

03 **4 M3 x 12 screws**
Use the preloaded foot nuts

After this step



1. Support the head/carriage unit between the X feet. Insert each 8 x 240 mm rod through a front post, carriage and rear post.

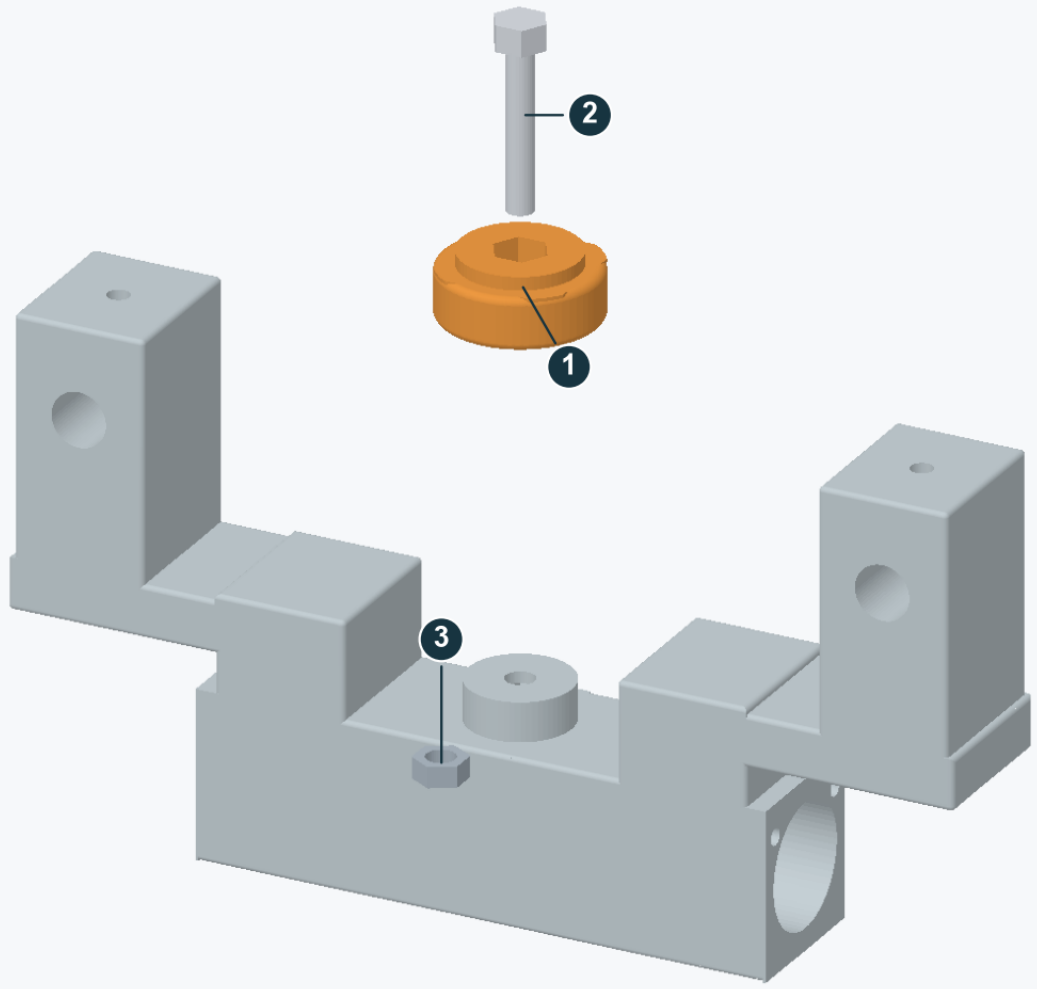
2. Keep 124 mm between rod axes, at 70 mm above the desk. Center the rods; ends project about 2 mm beyond the posts.

3. Use four M3 x 12 retention screws in the nuts loaded in step 6. At contact the heads stand about 2 mm above the posts.

Exploded spacing is illustrative. Screws and springs are shown without manufacturing detail. Dimensions in mm.

17 Fit the three drag knobs

Two X knobs and one Y knob



01 **1 knob shown; fit 3**

16_m4_drag_knob

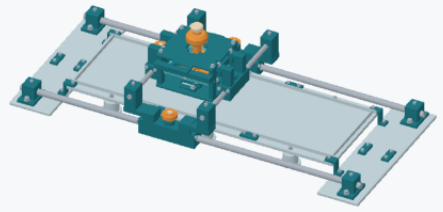
02 **1 M4 x 25 nylon screw shown**

Fit 3; hex head 7 mm across flats

03 **Preloaded M4 nut**

One per knob

All three installed

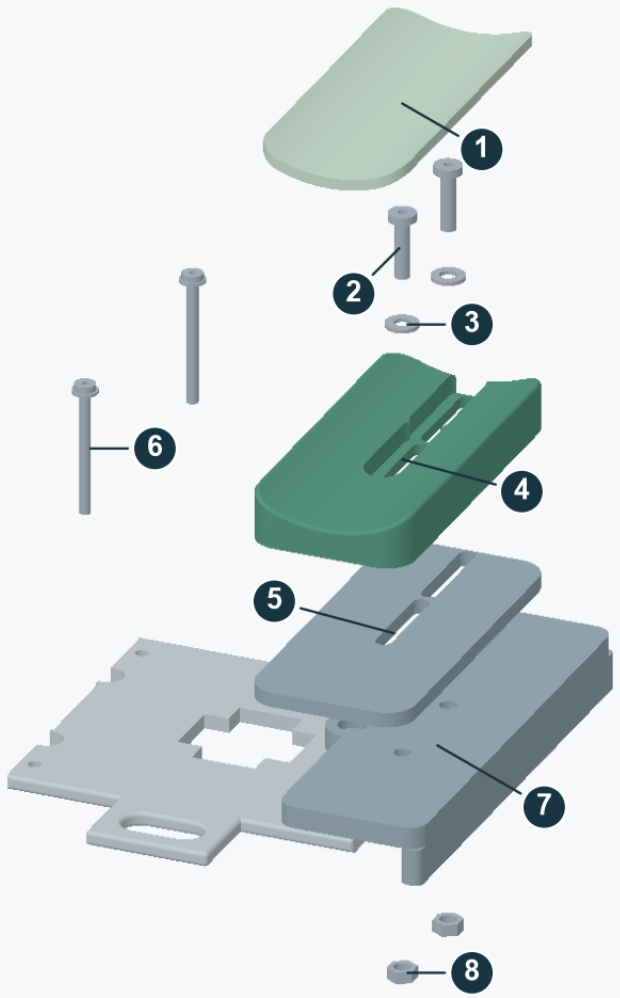


1. Seat each M4 x 25 nylon hex head inside a printed knob, then thread the screw into its preloaded M4 nut.
2. Fit two knobs on the X feet and one on the left Y carriage for the right-hand-rest configuration.
3. Start with the tips barely touching the rods. Set enough drag to hold position while operating the joystick.

Exploded spacing is illustrative. Screws and springs are shown without manufacturing detail. Dimensions in mm.

18 Attach the hand rest

Right side shown - 4 mm spacer



01 **1 removable soft pad**
About 3 mm foam or silicone

02 **2 M4 x 16 button-head screws**
For the 4 mm spacer

03 **2 M4 washers**
OD 9 x 1 mm

04 **1 universal cradle**
H03_universal_edge_cradle

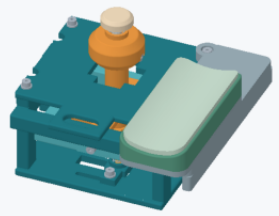
05 **Optional 4 mm spacer**
H04; use one spacer or none

06 **2 M3 x 35 + 0.8 mm washers**
Replace two stack screws and washers

07 **1 right bracket**
H01; H02 is the left alternative

08 **2 M4 nuts**
Bracket underside pockets

After this step



1. Load two M4 nuts into the bracket first. Replace only the two right-side M3 x 30 stack screws and washers with M3 x 35 and 0.8 mm washers.

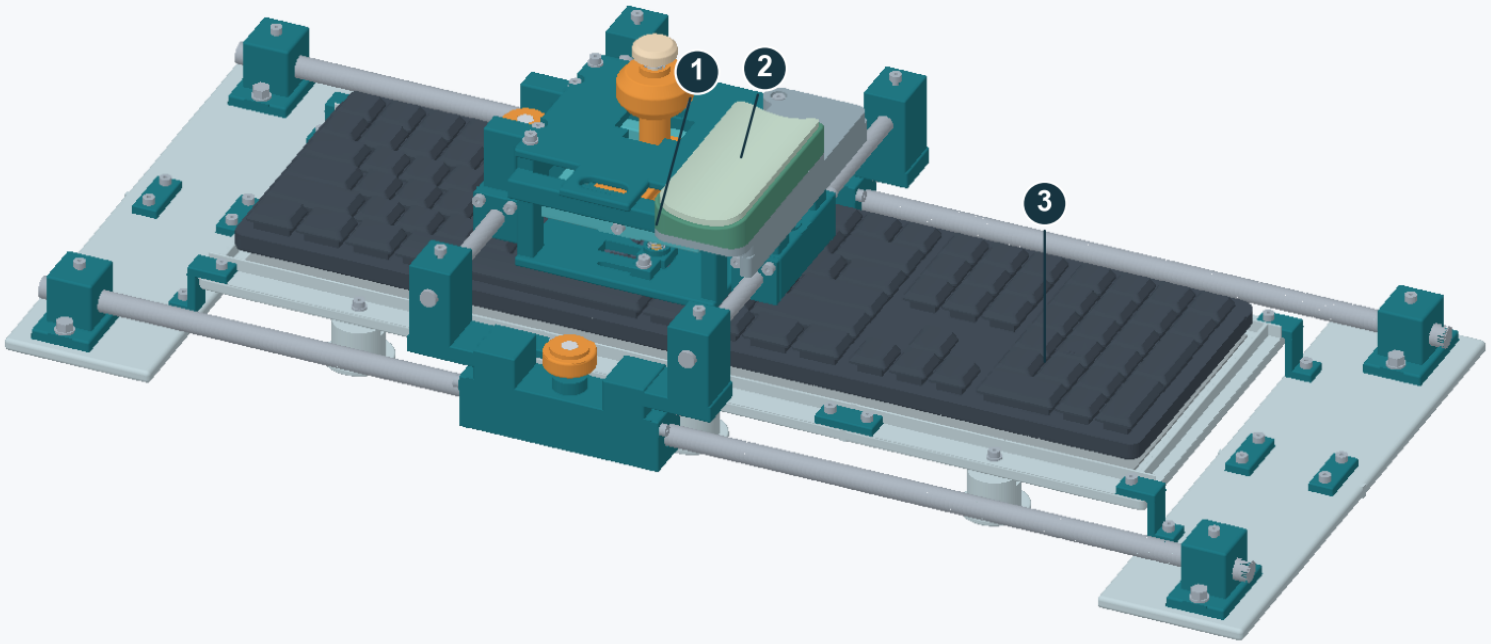
2. Fit bracket, optional 4 mm spacer and cradle. Use two M4 x 16 button-head screws with 1 mm washers. Adjust the fore/aft slots.

3. Add the removable pad. Left hand: use H02 and keep Y drag on the right. No spacer: M4 x 10; 8 mm spacer: M4 x 20.

Exploded spacing is illustrative. Screws and springs are shown without manufacturing detail. Dimensions in mm.

19 Align contacts and check the fit

Final calibration - assembled view



01 **Five adjustable contact positions**

Four tilt directions + independent center

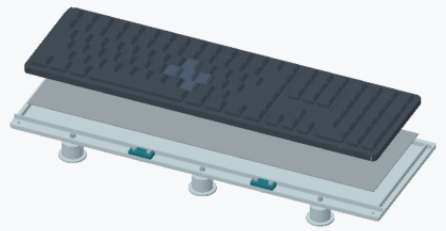
02 **Hand rest and movable head**

Set cradle position and comfortable drag

03 **Padded keyboard tray**

Keyboard seated in step 7 on 1 mm padding

Keyboard / padding / tray



1. Center one contact over a key, then slide the four guides over actual neighboring keys and tighten their screws.

2. Check that all padded feet clear the keys at rest and during X/Y movement. Trial the hand support and finger reach.

3. Test direction and center action in a text editor. Check return, unwanted keystrokes and comfortable effort.

Exploded spacing is illustrative. Screws and springs are shown without manufacturing detail. Dimensions in mm.

Installed hardware - right-hand rest, 4 mm spacer

Screw lengths are measured under the head. These are installed quantities; keep spares separately.

HARDWARE	QTY	HARDWARE	QTY
Center return spring	**1**	M3 x 30 socket-head screw	**2**
Direction return spring	**4**	M3 x 35 button-head screw	**2**
M3 nyloc nut	**2**	M3 x 6 socket-head screw	**2**
M3 plain nut	**54**	M3 x 8 socket-head screw	**5**
M3 washer, OD 7 x 0.5 mm	**2**	M4 plain nut	**13**
M3 washer, OD 7 x 0.8 mm	**2**	M4 washer, OD 9 x 1 mm	**10**
M3 washer, OD 7 x 1 mm	**18**	M4 x 12 hex-head screw	**8**
M3 x 10 socket-head screw	**48**	M4 x 16 button-head screw	**2**
M3 x 12 socket-head screw	**10**	M4 x 25 nylon hex-head screw	**3**
M3 x 20 socket-head screw	**8**		

Rods and bearings

2 x diameter 10 x 580 mm rods; 2 x diameter 8 x 240 mm rods; 4 LM10UU; 4 LM8UU.

Soft parts: five diameter 8 x 0.5 mm key pads, 1 mm tray padding, one removable hand cushion.

Hand-rest heights: no spacer / M4 x 10; 4 mm spacer / M4 x 16; 8 mm spacer / M4 x 20.

Use one spacer or none. The two M3 x 35 screws replace two M3 x 30 screws.

M3 x 20: eight required across the build - four pivots and four head attachments.