

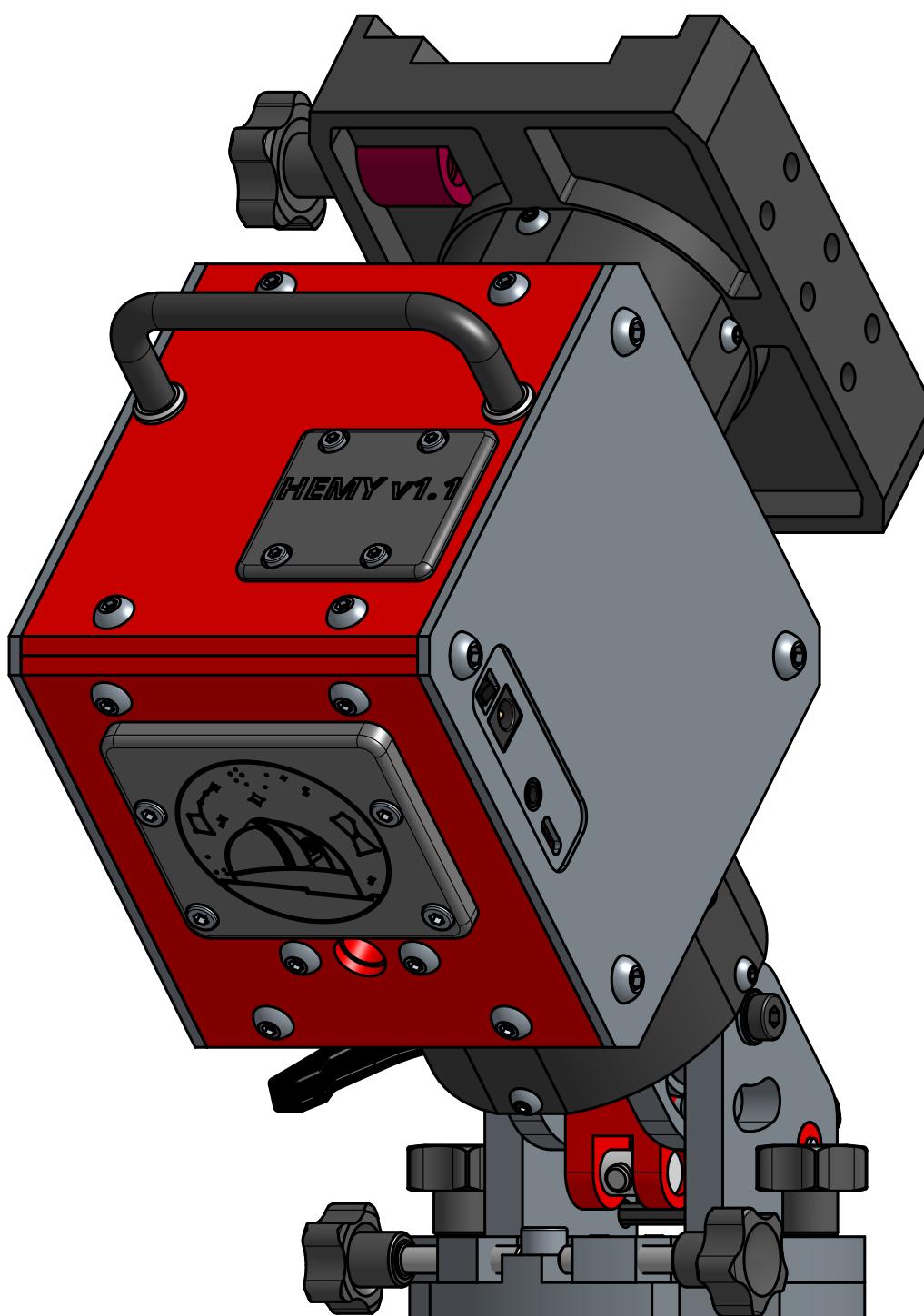
HEMY v1.1 - Harmonic Equatorial Mount Yourself

"Making your own Harmonic Equatorial Mount out of aluminium?

Only a moron would do that, even if it's opensource"

"Moron Yourself!"

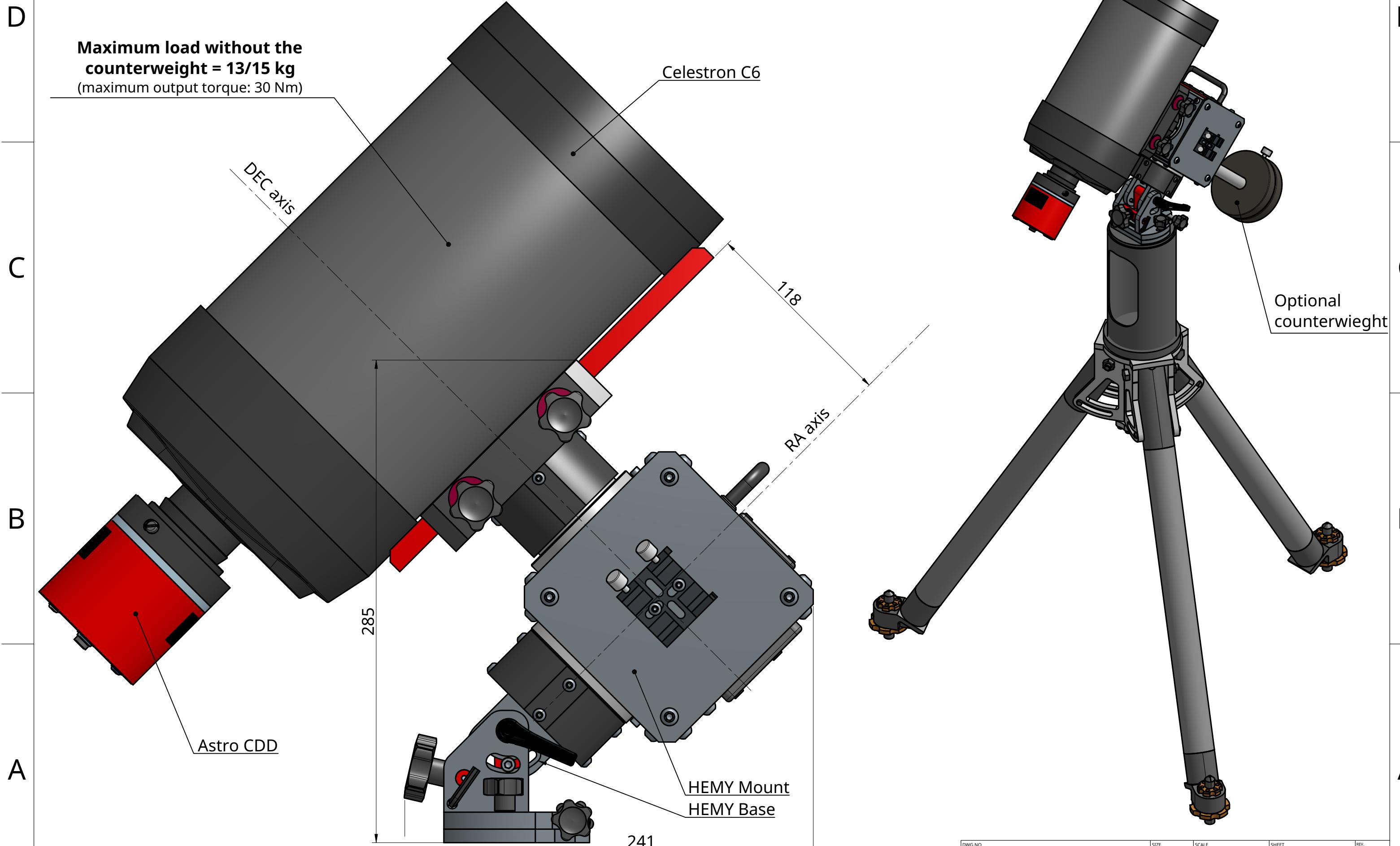
Specifications	
Mount Type	Dual Alt-Az/Equatorial
Mount Series	HEMY
License	GPL-3.0 license
Weight Capacity	15 kg (20 kg with counterweight)
Electronics	TeenAstro included
Mount Slew Speed	5°/s
Motor Type	Harmonic Drive and Synchronous belt
Reduction Ratio RA	500:1
Reduction Ratio DEC	300:1
Resolution RA	0.10"
Resolution DEC	0.17"
Mount Latitude Range (°)	0° - 90°
Azimuth Angle Range	±5°
Periodic Error Duration	440s
Polar Scope Included?	No (optional viewfinder / laser)
Mount Weight	5 kg
Total price	~ 800\$
Sources	https://github.com/polvinc/HEMY



UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN MILLIMETERS ANGULAR = ± °	DRAWN	NAME	SIGNATURE	DATE	TITLE
	CHECKED	POLVINC		2024-11-21	
SURFACE FINISH ✓	APPROVED	POLVINC		2024-12-03	HEMY mount Harmonic Equatorial Mount Yourself
DO NOT SCALE DRAWING					SIZE
BREAK ALL SHARP EDGES AND REMOVE BURRS					DWG NO.
FIRST ANGLE PROJECTION	MATERIAL	FINISH			REV.
	ALU 6061	Bead blasting Anodizing			1.1
SCALE	1:2	WEIGHT	5 kg	SHEET	1 of 11

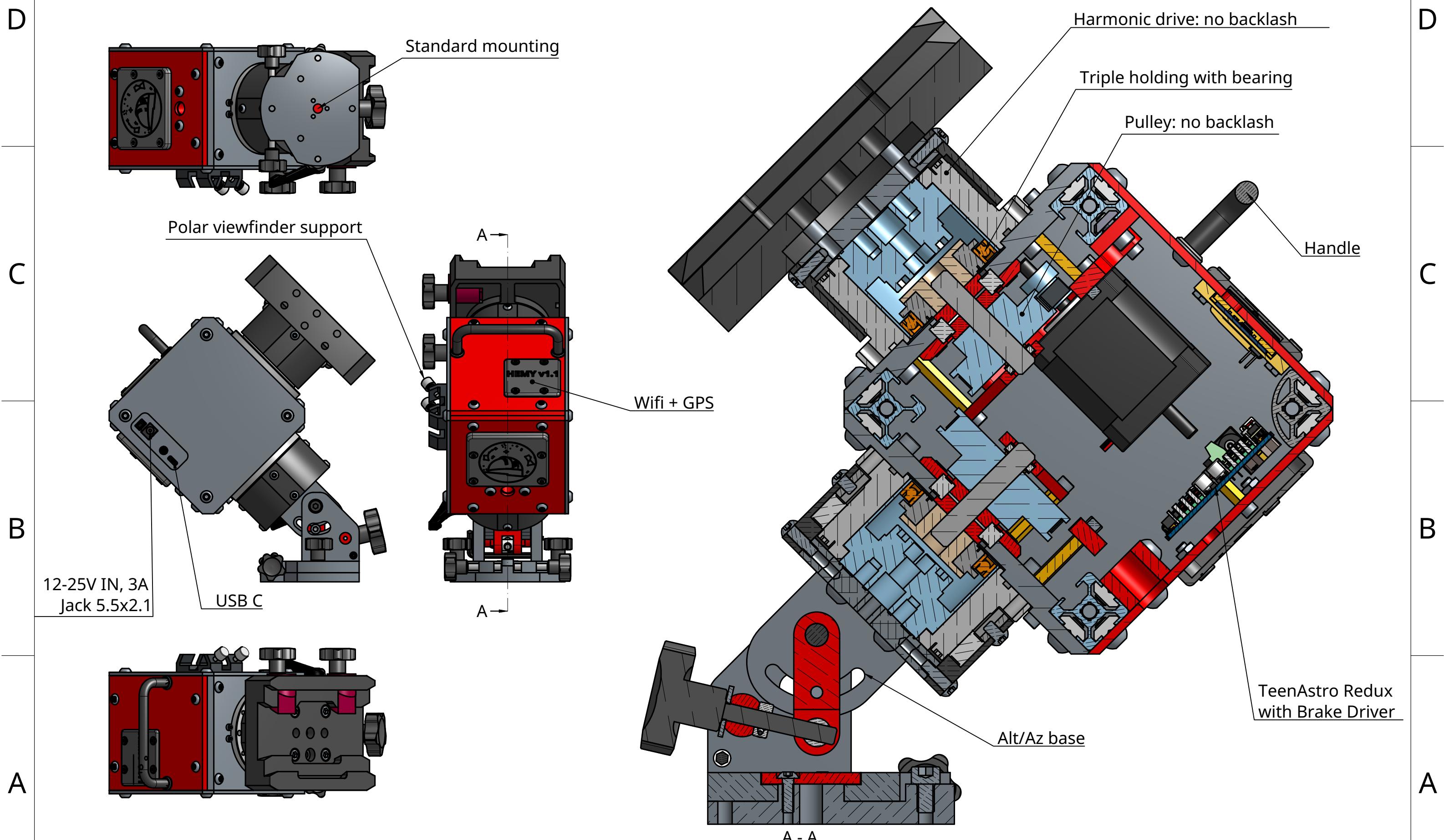
6 5 4 3 2 1

HEMY v1.1 - Harmonic Equatorial Mount Yourself



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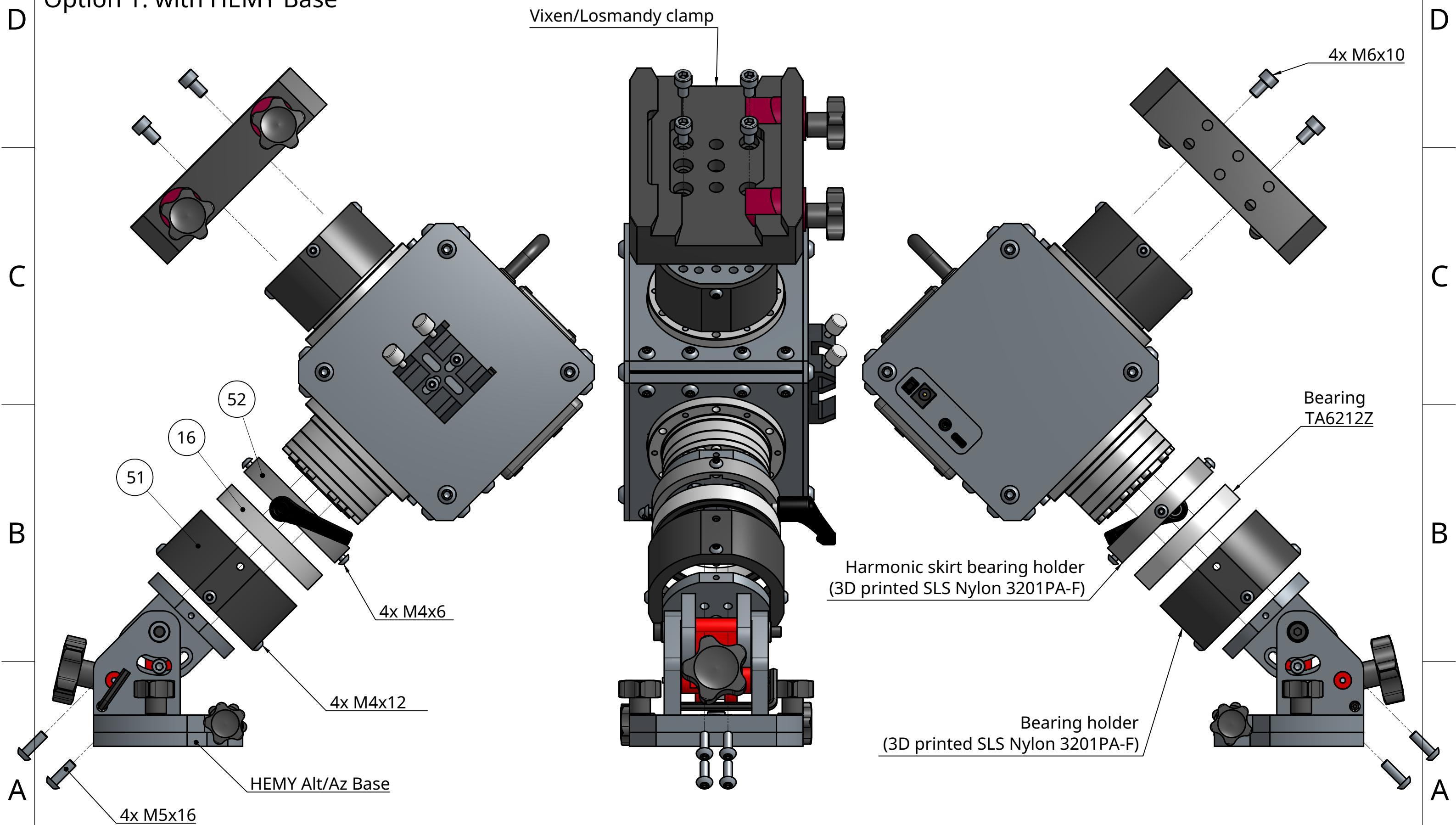


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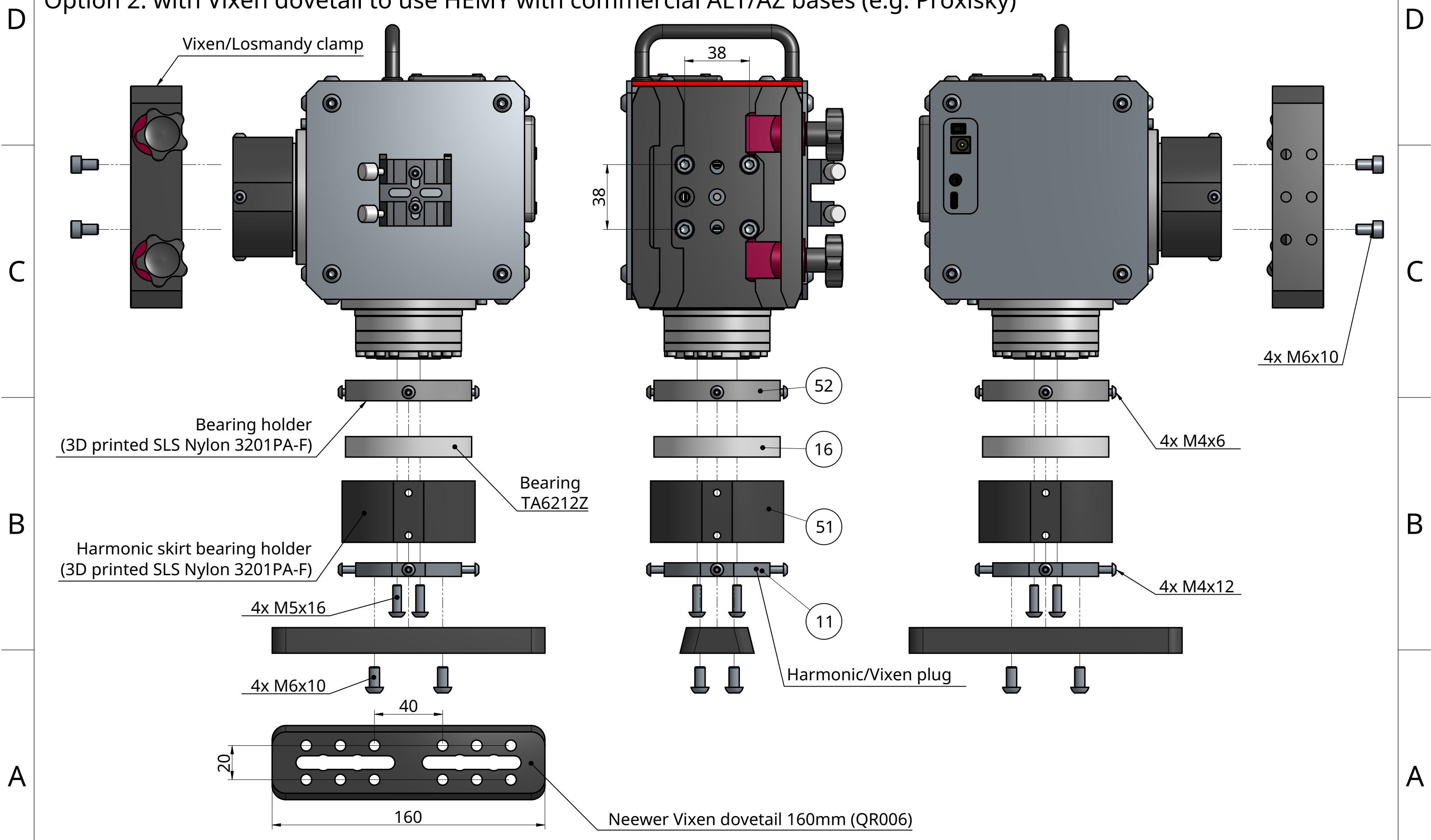
Option 1: with HEMY Base



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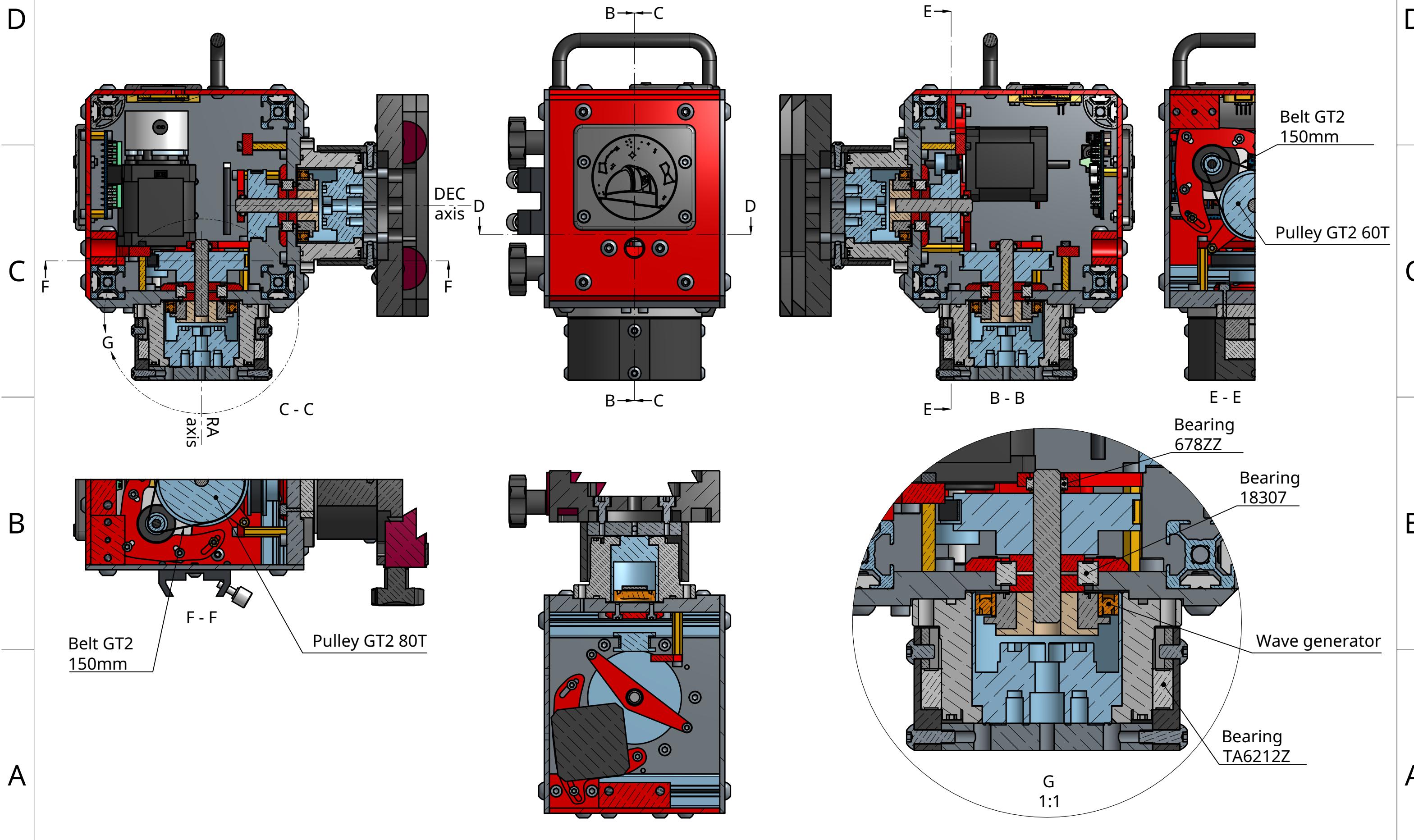
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Option 2: with Vixen dovetail to use HEMY with commercial ALT/AZ bases (e.g. Proxisky)



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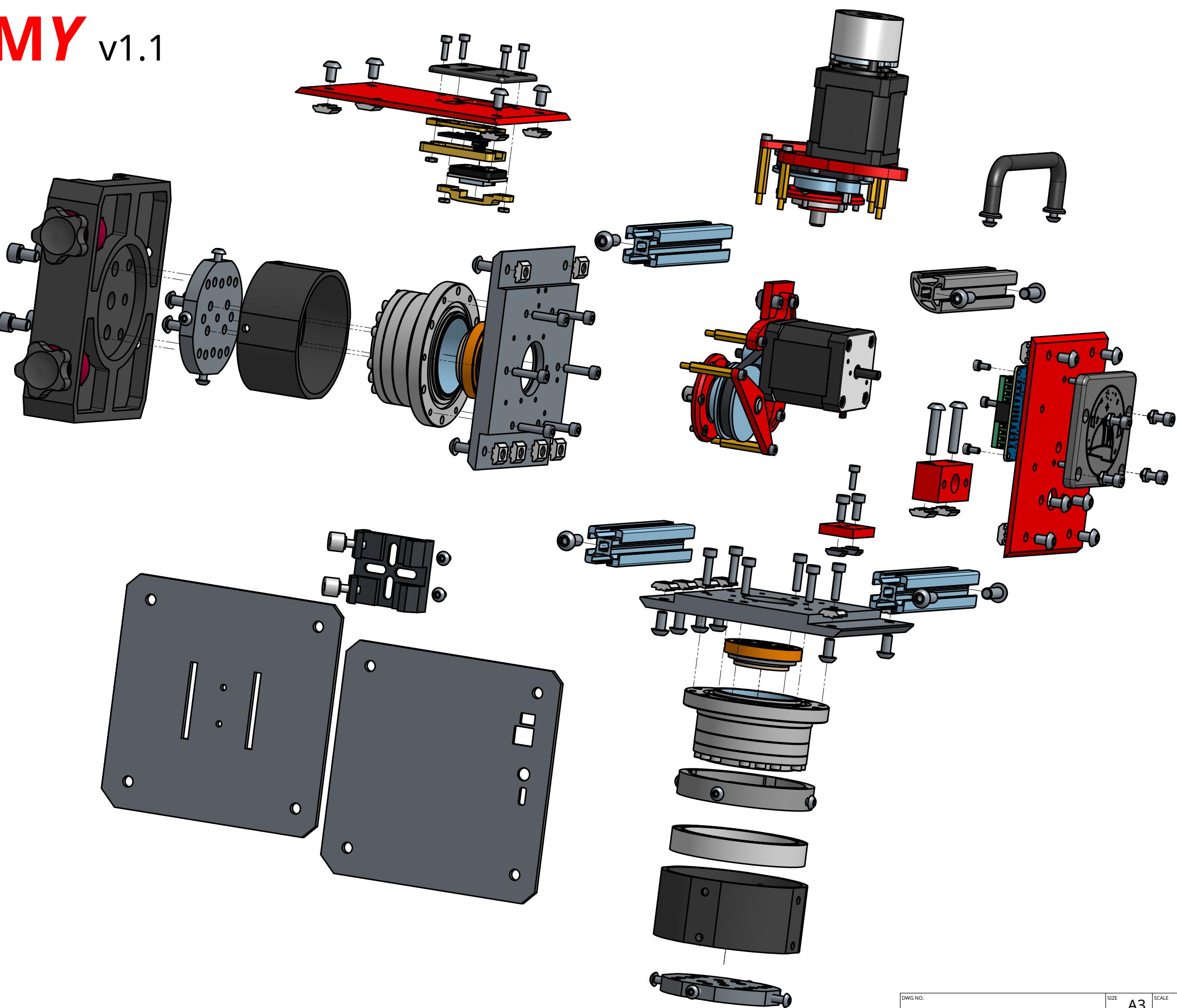


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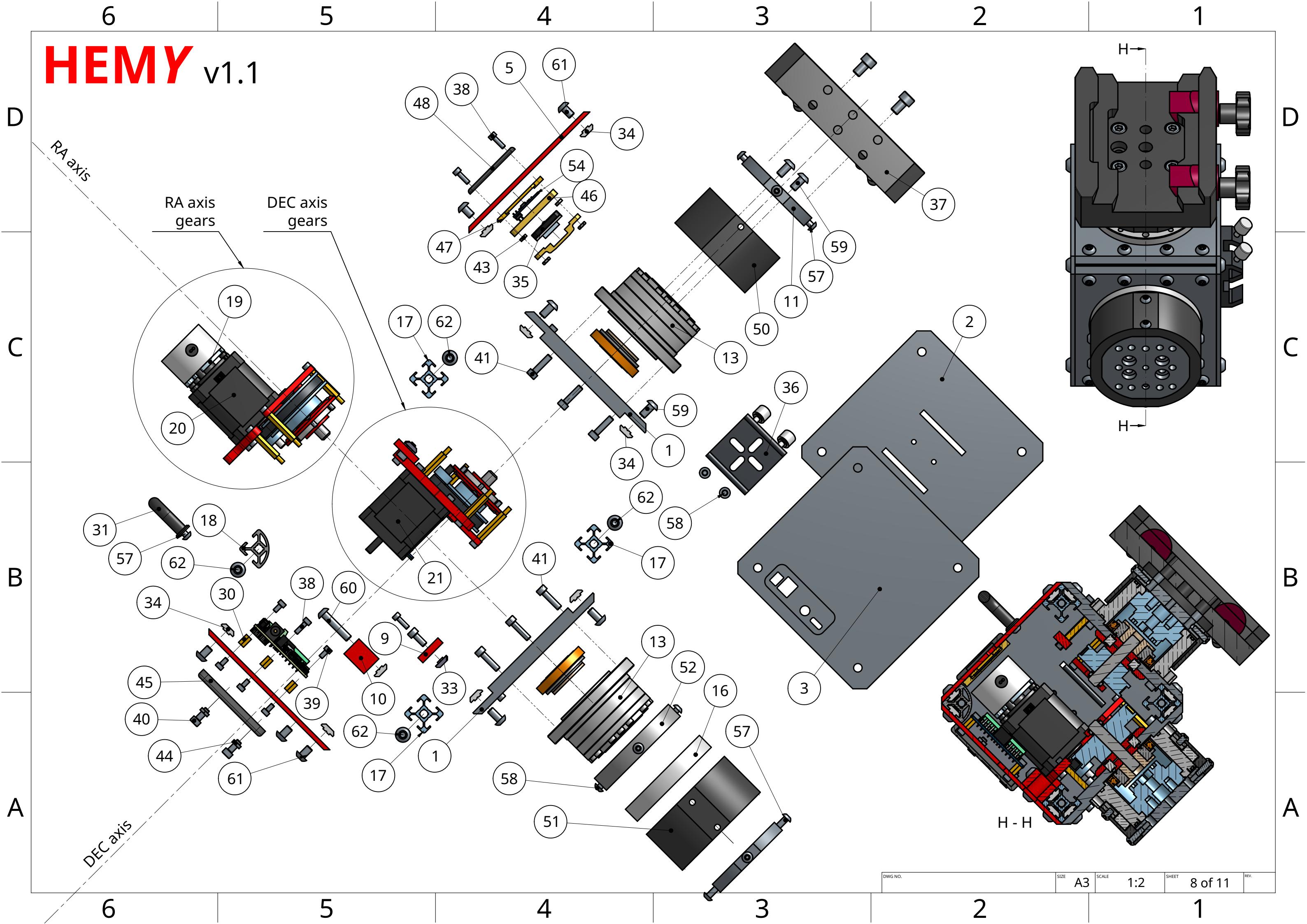
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HEMY v1.1

D



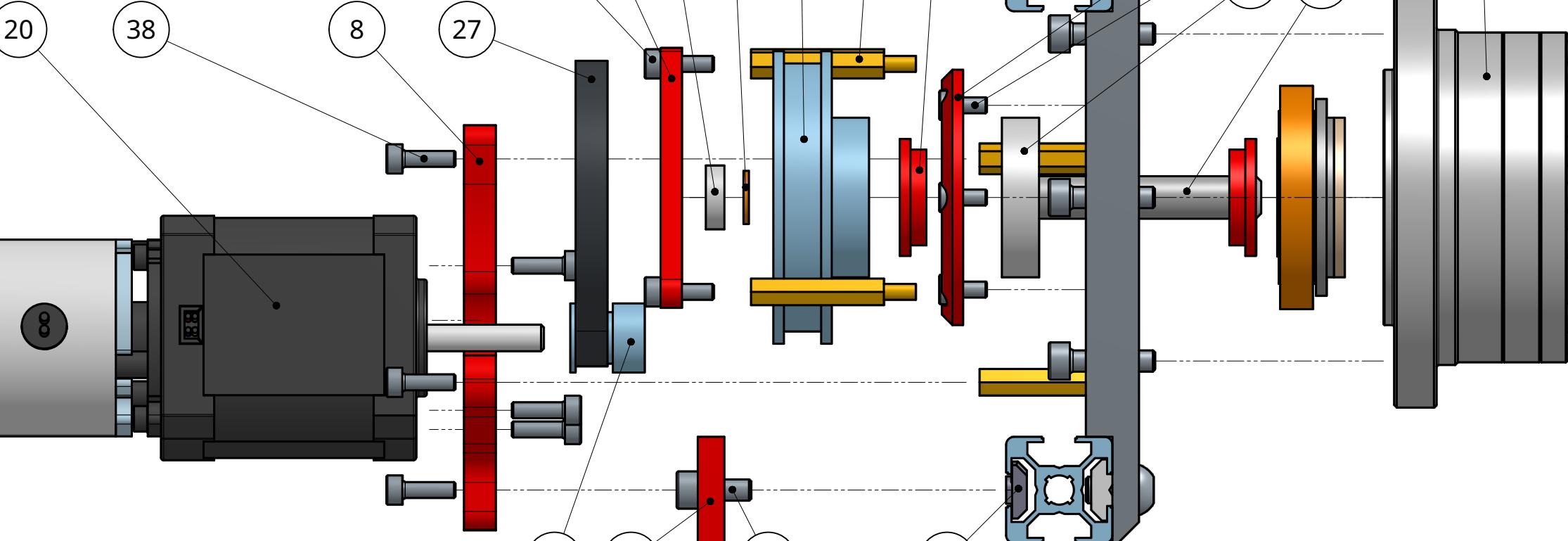
HEMY v1.1



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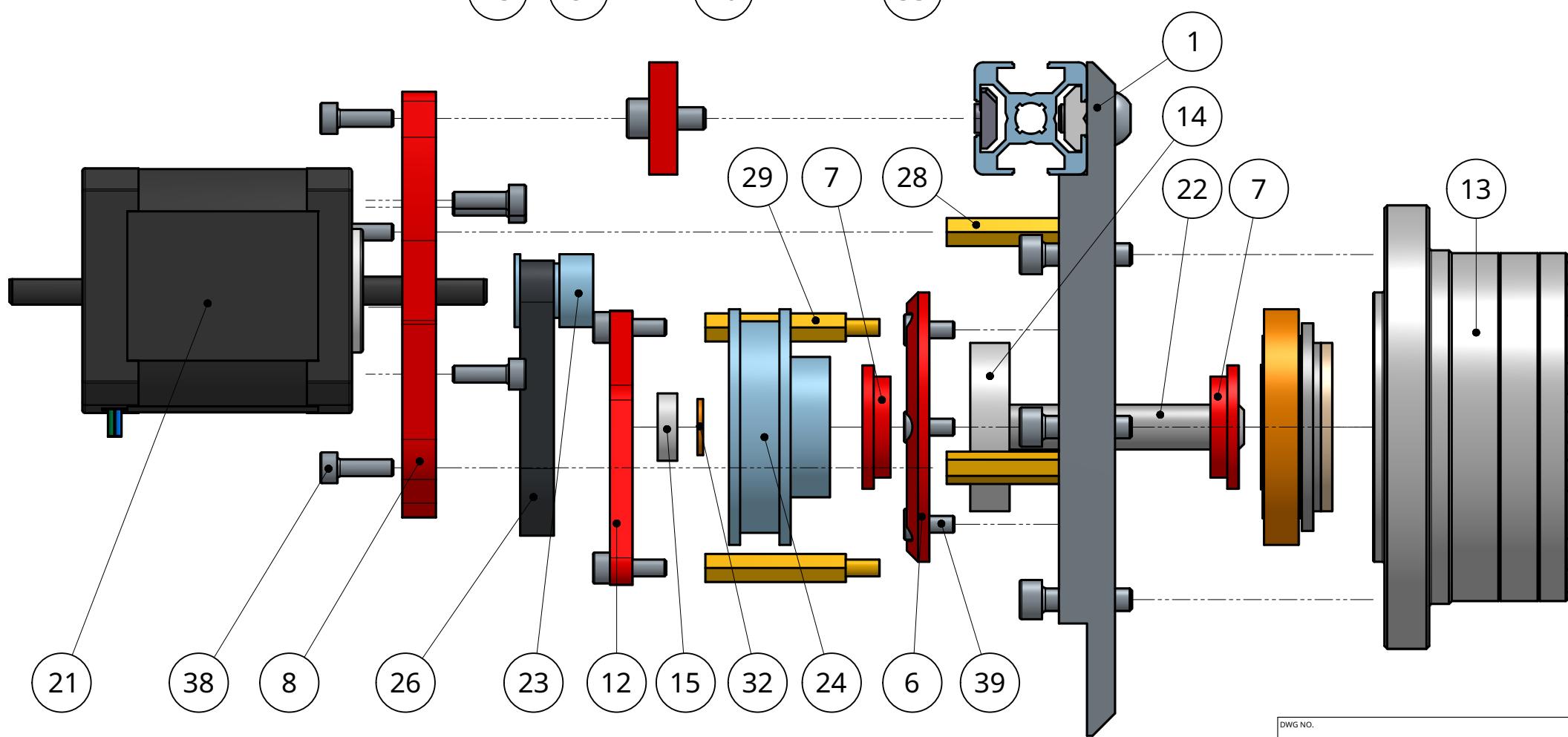
HEMY v1.1

D



**RA axis
gears**

C



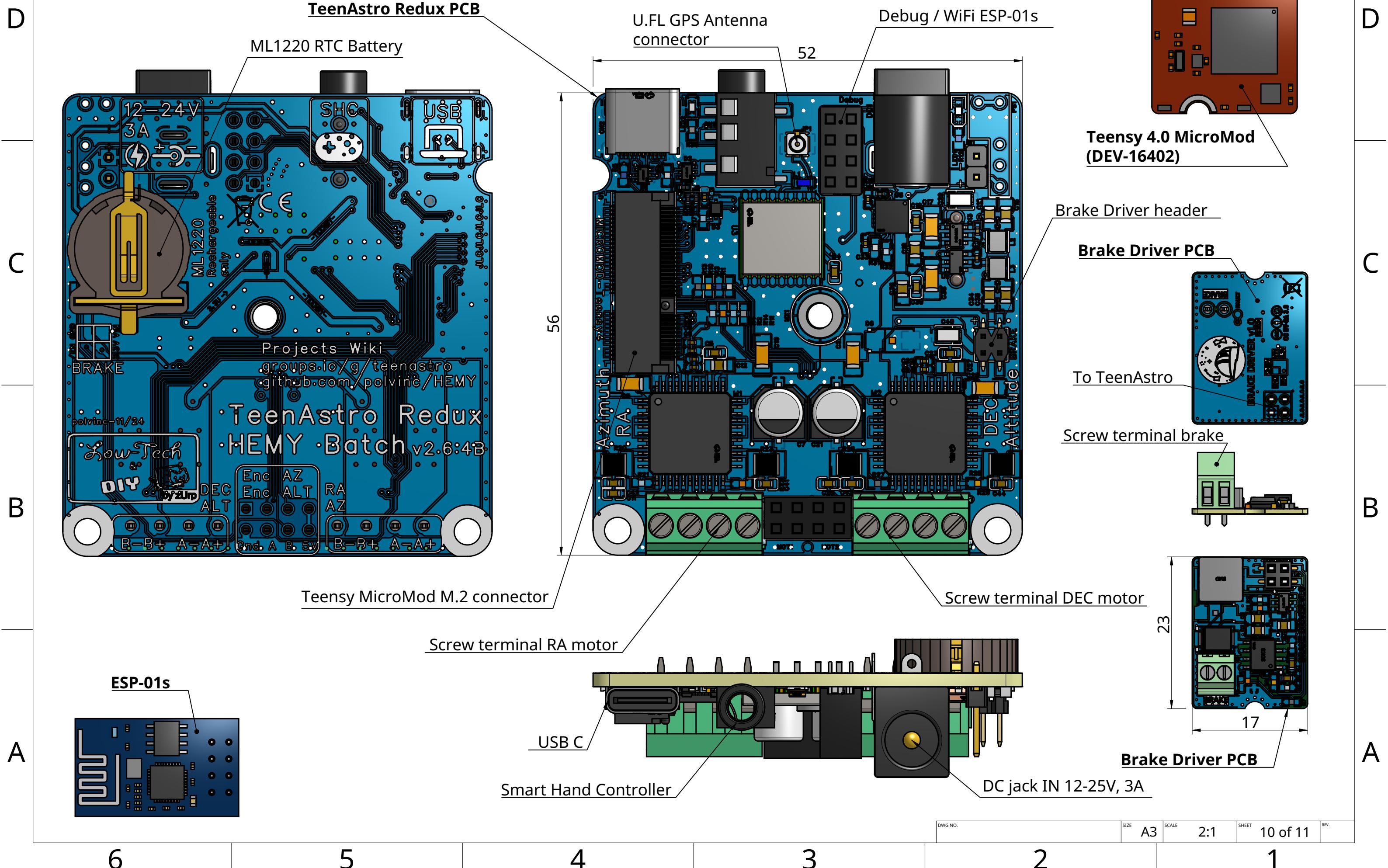
**DEC axis
gears**

B

A

6 5 4 3 2 1

HEMY v1.1 - Harmonic Equatorial Mount Yourself



Item	Quantity	Description	Mass
1	2	C01 - Main plate	0.213 kg
2	1	C02 - R plate	0.129 kg
3	1	C03 - L plate	0.127 kg
4	1	C04 - B plate	0.094 kg
5	1	C05 - T plate	0.089 kg
6	2	C06 - Bearing housing	0.01 kg
7	4	C07 - Pulley spacer	0.003 kg
8	2	C08 - Motor support	0.02 kg
9	2	C09 - Spacer pivot motor	0.007 kg
10	1	C10 - Counterweight Support	0.028 kg
11	2	C11 - Harmonic/Vixen plug	0.06 kg
12	2	C12 - External shaft bearing retaining plate	0.008 kg
13	2	D01 - Harmonic drive (HBS/HBG-17-100)	0.539 kg
14	2	D02 - Bearing 18307-RS	0.008 kg
15	2	D03 - Bearing 678ZZ	0.001 kg
16	1	D04 - Bearing TA6212Z-IKO	0.04 kg
17	3	D05 - Rexroth 20x20x100mm	0.041 kg
18	1	D06 - Round Rexroth 20x20x100mm	0.044 kg
19	1	D07 - Nema 17 brake (SWB-01)	0.018 kg
20	1	D08 - Nema 17 double shaft 0.9° (17HM19-1684D)	0.412 kg
21	1	D09 - Nema 17 0.9° (17HM19-1684D)	0.319 kg
22	2	D10 - Diameter 8 shaft	0.018 kg
23	2	D11 - Pulley GT2 - 5mm hole - 16T	0.003 kg
24	1	D12 - Pulley GT2 - 8mm hole - 60T	0.043 kg
25	1	D13 - Pulley GT2 - 8mm hole - 80T	0.075 kg
26	1	D14 - Belt GT2 - 150mm	0.001 kg
27	1	D15 - Belt GT2 - 200mm	0.001 kg
28	4	D16 - Spacer M3x20mm FM	0.003 kg
29	4	D17 - Spacer M3x25mm FM	0.004 kg
30	3	D18 - Spacer M3x8mm FF	0.001 kg
31	1	D19 - Handle Mentor 3270.0883	0.017 kg

Item	Quantity	Description	Mass
32	2	D20 - Washer M8x10x1	0 kg
33	4	D21 - Rexroth T-Nut M4 4667281	0.001 kg
34	22	D22 - Rexroth T-Nut M5 4667297	0.003 kg
35	1	D23 - U.FL GPS Antenna 25x25 - 10cm length	
36	1	D24 - Viewfinder support (Neewer LS-15)	0.031 kg
37	1	D25 - Vixen / Losmandy dovetail clamp	0.471 kg
38	25	Hex socket head cap screw M3x0.50 x 10 Stainless Steel	0.001 kg
39	17	Hex socket head cap screw M3x0.50 x 6 Stainless Steel	0.001 kg
40	8	Hex socket head cap screw M4x0.70 x 10 Stainless Steel	0.002 kg
41	12	Hex socket head cap screw M4x0.70 x 16 Stainless Steel	0.003 kg
42	4	Hex socket head cap screw M6x1.00 x 10 Stainless Steel	0.005 kg
43	4	Hex thin nut grade A & B M3 Stainless Steel	0 kg
44	4	Hex thin nut grade A & B M4 Stainless Steel	0.001 kg
45	1	I3D01 - printed Club cover	0.016 kg
46	1	I3D02 - printed ESP-01s holder	0.002 kg
47	1	I3D03 - printed ESP-01s spacer	0.001 kg
48	1	I3D04 - printed GPS and Wifi cover	0.004 kg
49	1	I3D05 - printed GPS antenna support	0.001 kg
50	1	I3D06 - printed Harmonic skirt	0.027 kg
51	1	I3D07 - printed Harmonic skirt bearing housing	0.038 kg
52	1	I3D08 - printed Harmonic skirt lock bearing	0.013 kg
53	1	PCB01 - Brake Driver HEMY	
54	1	PCB02 - EPS-01s	
55	1	PCB03 - TeenAstro Redux	
56	1	PCB04 - Teensy 4 MicroMod M2	
57	10	Socket button head screw M4x0.7 x 12 Stainless Steel	0.002 kg
58	6	Socket button head screw M4x0.7 x 6 Stainless Steel	0.001 kg
59	16	Socket button head screw M5x0.8 x 10 Stainless Steel	0.002 kg
60	2	Socket button head screw M5x0.8 x 25 Stainless Steel	0.005 kg
61	10	Socket button head screw M5x0.8 x 8 Stainless Steel	0.002 kg
62	8	Socket button head screw M6x1 x 16 Stainless Steel	0.005 kg