

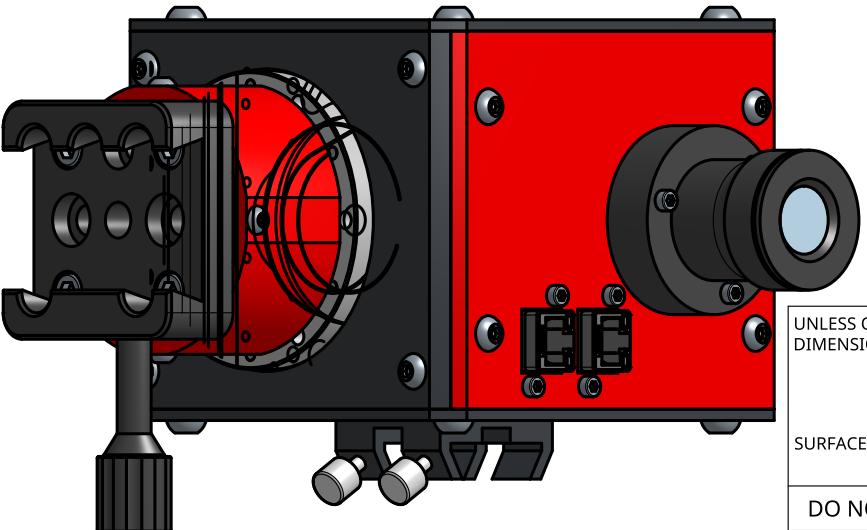
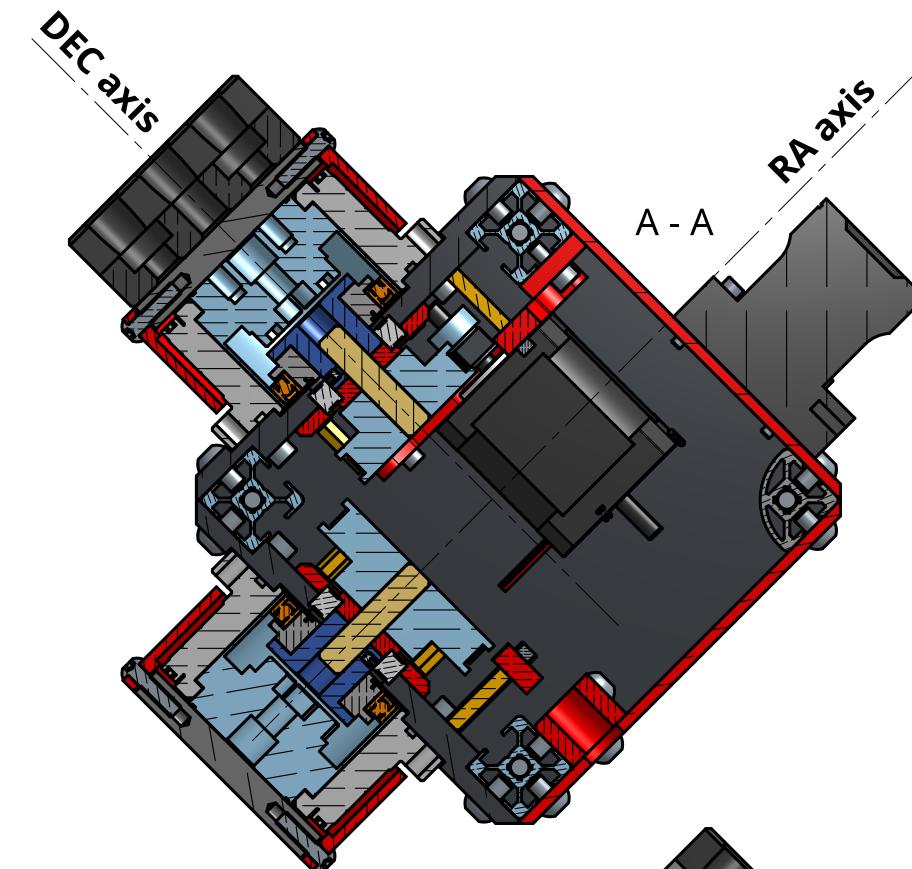
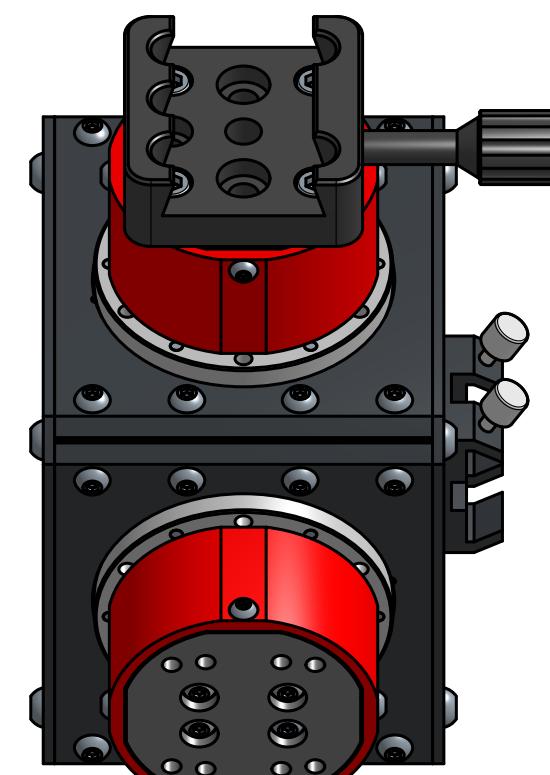
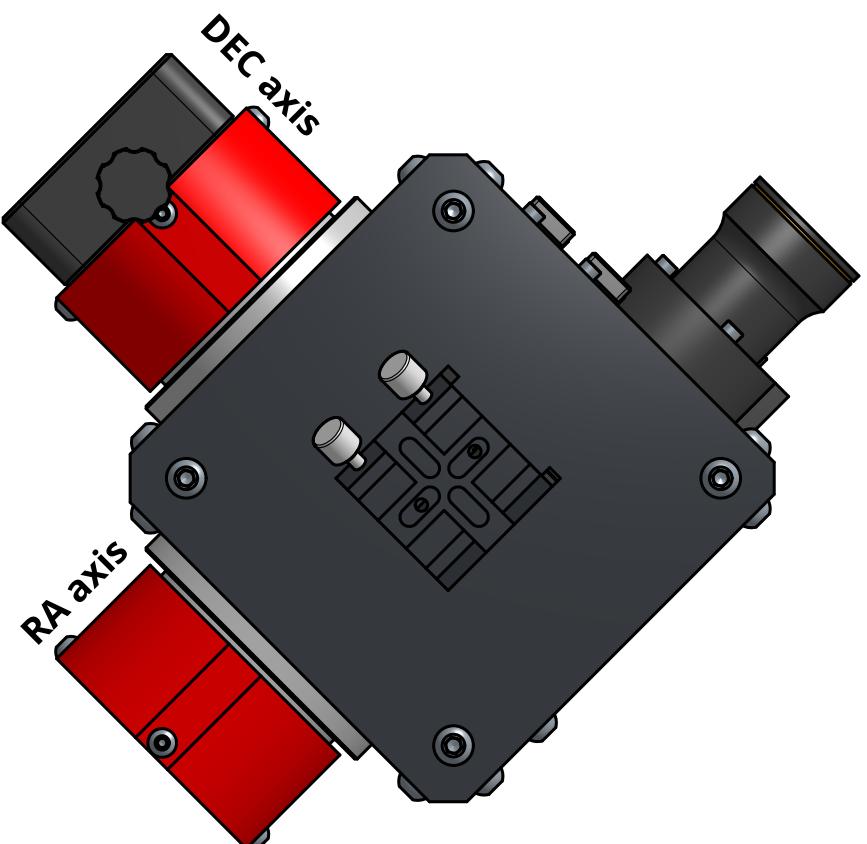
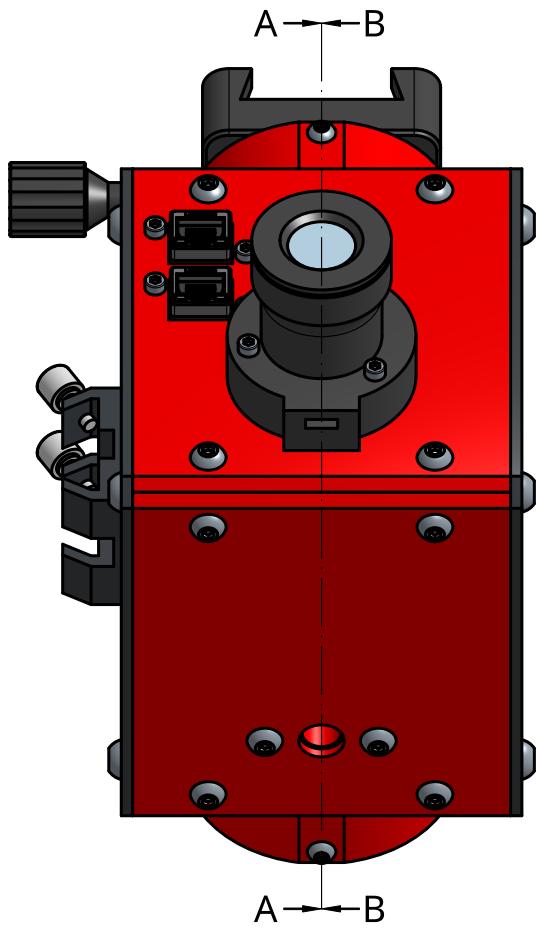
6 5 4 3 2 1

HEMY 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!"



UNLESS OTHERWISE SPECIFIED,
DIMENSIONS ARE IN MILLIMETERS

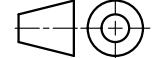
ANGULAR $\pm \text{ }^\circ$

SURFACE FINISH $\sqrt{\text{Ra}} 3.2$

DO NOT SCALE DRAWING

BREAK ALL SHARP EDGES AND
REMOVE BURRS

FIRST ANGLE PROJECTION



DRAWN

CHECKED

APPROVED

NAME

SIGNATURE

DATE

TITLE

HEMY
Harmonic Equatorial Mount
Yourself

SIZE

A3

DWG NO.

REV.

MATERIAL

Al 6061

FINISH

Bead blasting
Anodizing

SCALE

1:2

WEIGHT

4.2 kg

SHEET

1 of 8

6

5

4

3

2

1

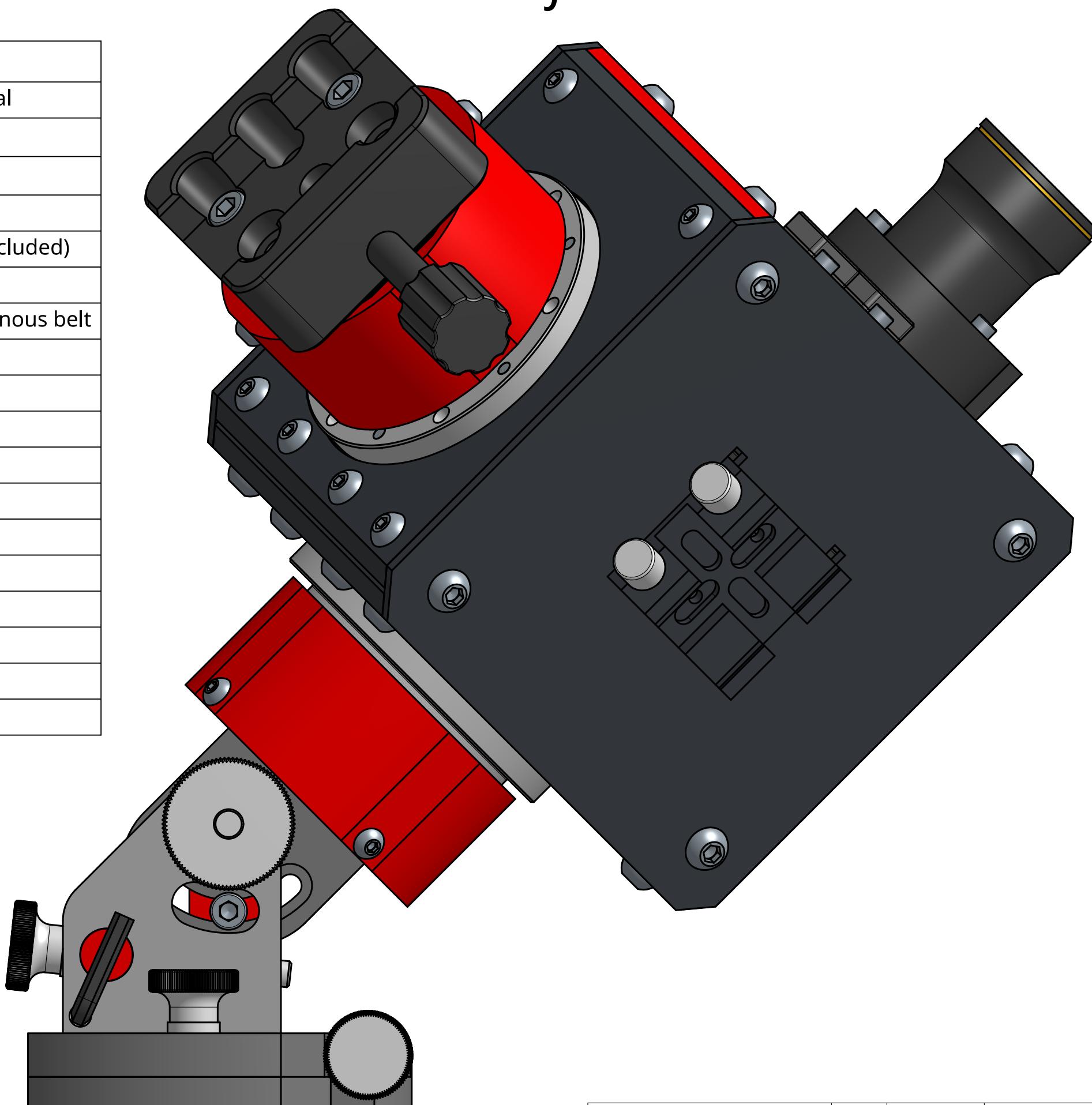
6 5 4 3 2 1

HEMY Harmonic Equatorial Mount Yourself

D

Specifications

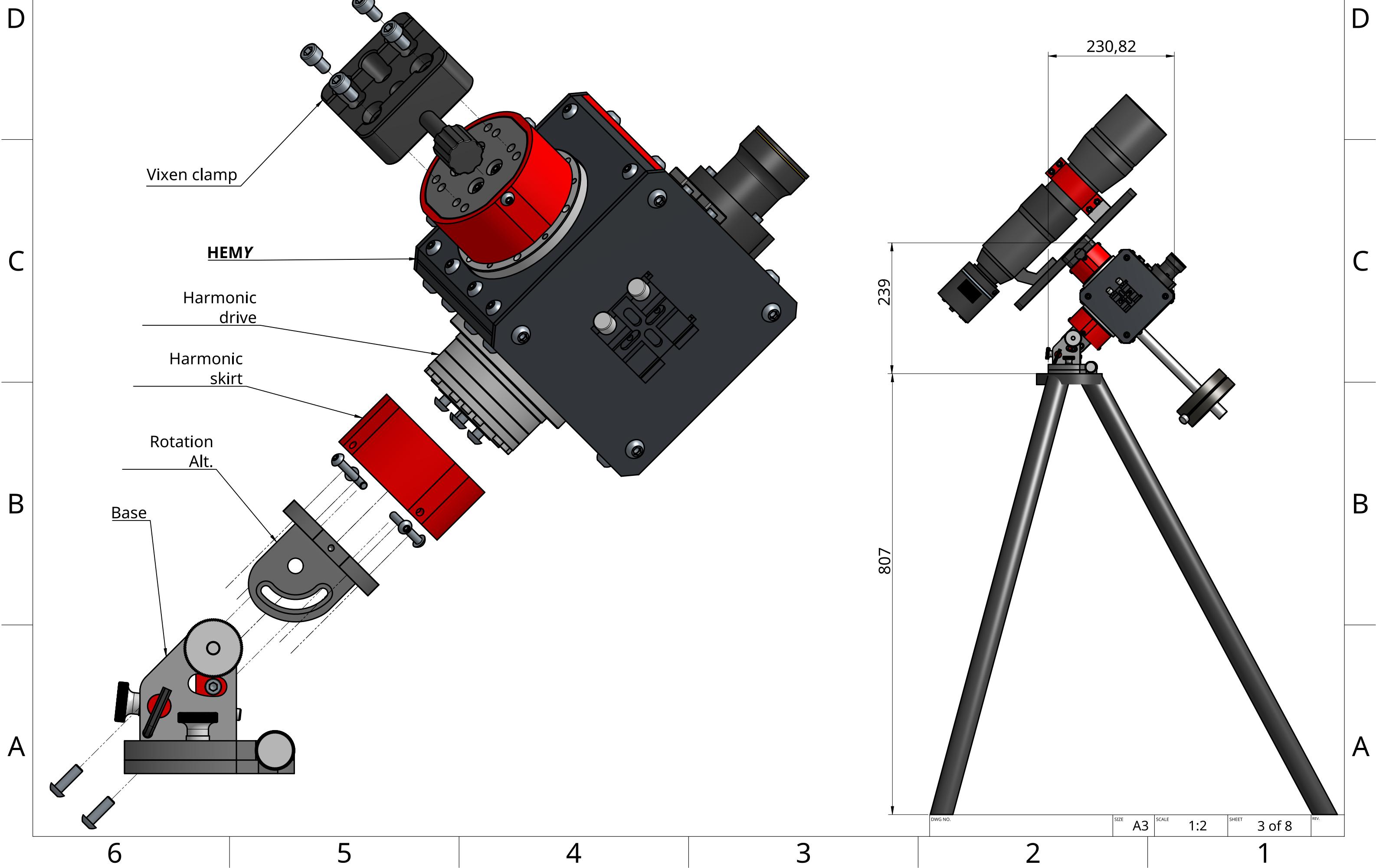
Mount Type	Dual Alt-Az/Equatorial
Mount Series	HEMY
License	GPL-3.0 license
Weight Capacity	13 kg / 20 kg
Type of Mount Electronics	AstrAlim / OnStepX (not included)
Mount Slew Speeds	5°/s
Motor Type	Harmonic Drive and Synchronous belt
Reduction Ratio RA	500:1
Reduction Ratio DEC	300:1
Resolution RA	0.10"
Resolution DEC	0.17"
Mount Latitude Range (°)	0° - 90°
Azimuth Angle Range	±5°
Periodic Error Duration	220s
Polar Scope Included?	No
Mount Weight	5 kg
Price for CNC building	< 300\$
Total price	< 700\$



6 5 4 3 2 1

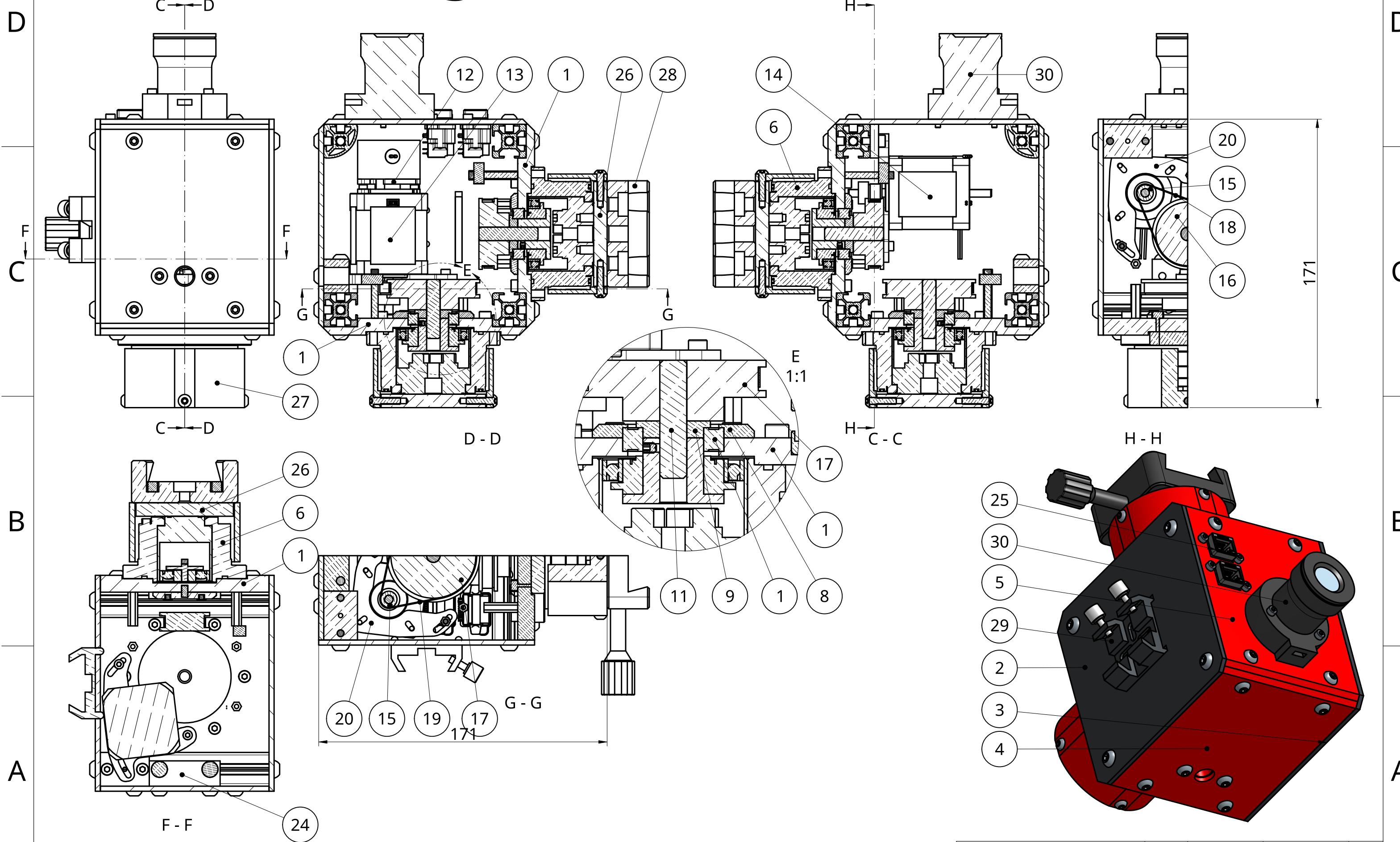
6 5 4 3 2 1

HEMY Harmonic Equatorial Mount Yourself

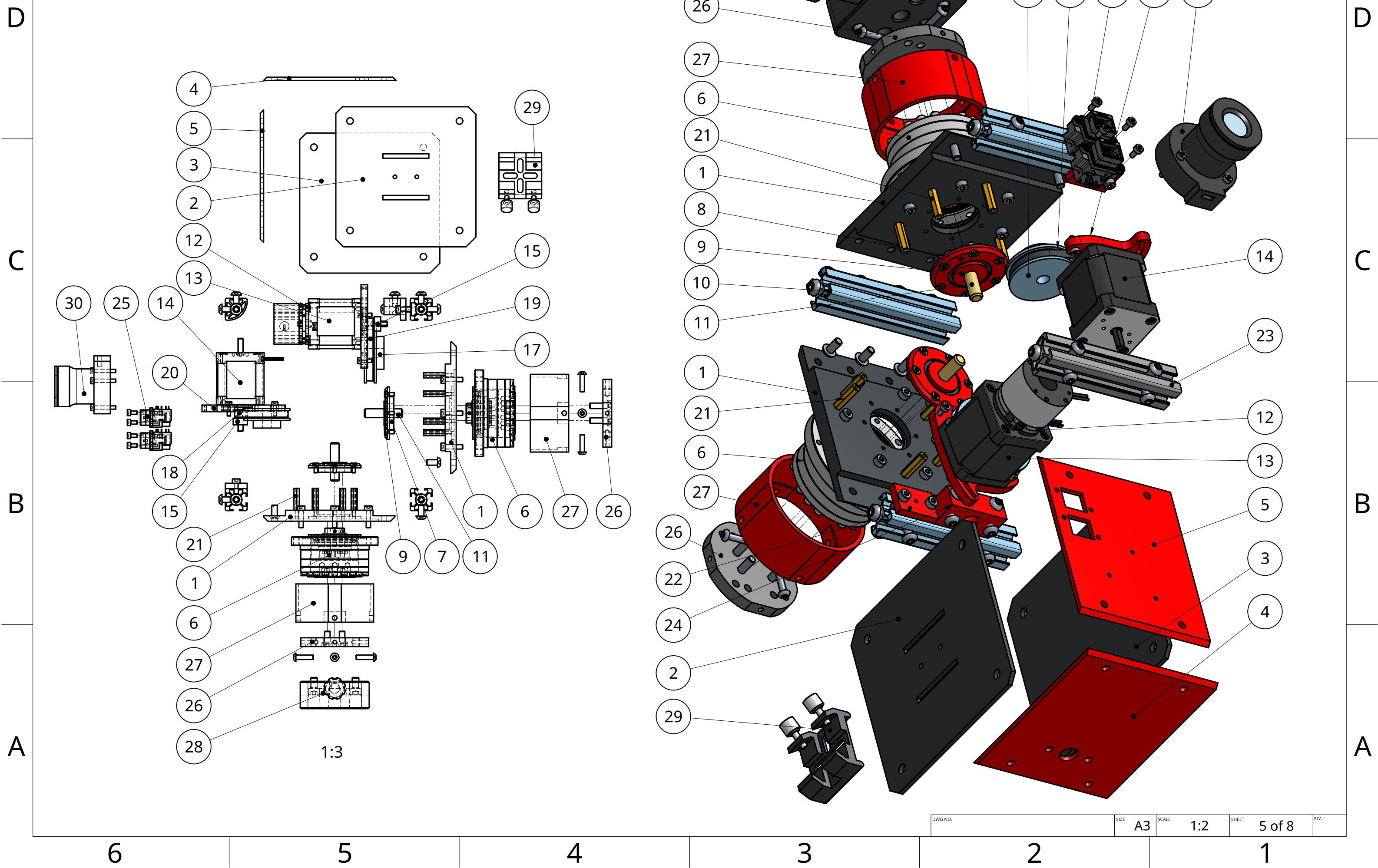


6 5 4 3 2 1

Global drawing - HEMY

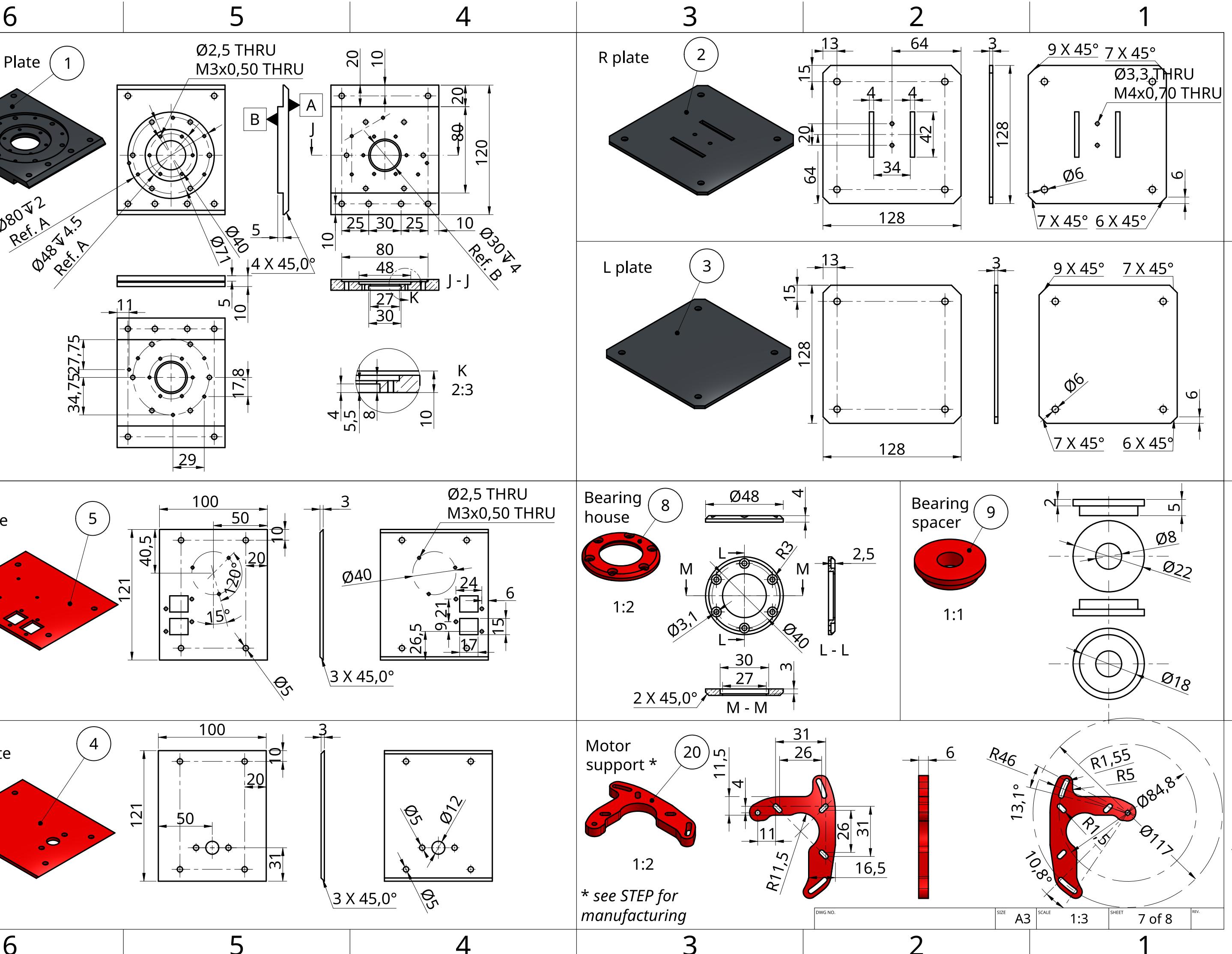


Explode view - HEMY

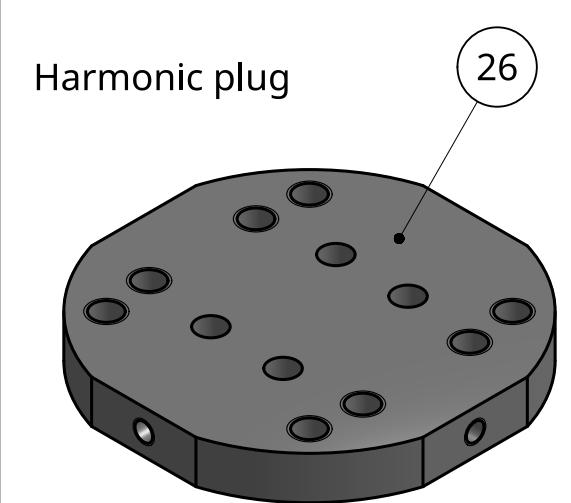


Bill of Materials - HEMY

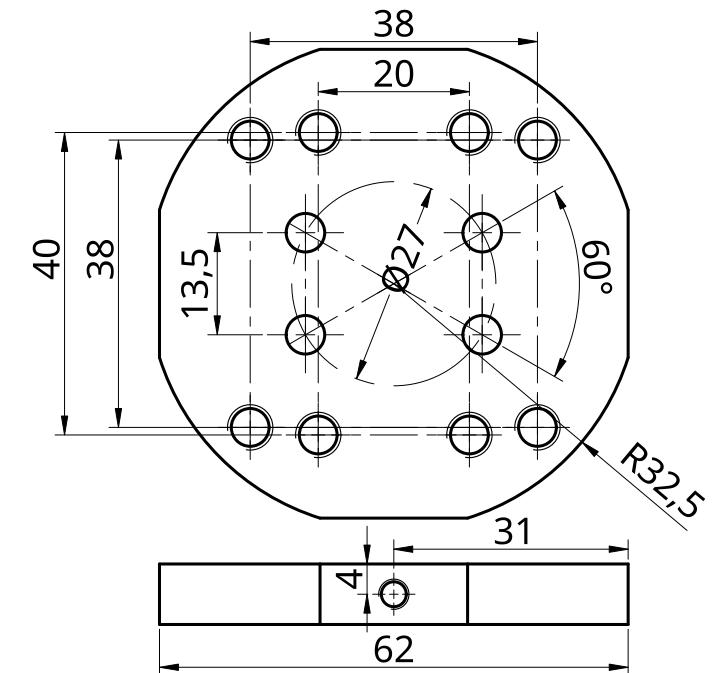
D	Item	Quantity	Description	Mass		Item	Quantity	Description	Mass	D
D	1	2	01 - Main plate	0.214 kg		28	1	27 - Vixen clamp (Neewer QR011)	0.177 kg	
	2	1	02 - R plate	0.129 kg		29	1	28 - (Optional) Polar viewfinder support (Neewer LS-15)	0.031 kg	
	3	1	03 - L plate	0.132 kg		30	1	30 - (Optional) QHY Polemaster	0.065 kg	
	4	1	04 - B plate	0.094 kg		31	4	Hex socket head cap screw M3x0.50 x 10 Stainless Steel	0.001 kg	
	5	1	05 - T plate	0.091 kg		32	3	Hex socket head cap screw M3x0.50 x 20 Stainless Steel	0.002 kg	
	6	2	06 - Harmonic drive (CSF-17-100-2UH or HBS/HBG-17-100)	0.539 kg		33	16	Hex socket head cap screw M3x0.50 x 6 Stainless Steel	0.001 kg	
	7	2	07 - Bearing 18307-RS	0.008 kg		34	4	Hex socket head cap screw M4x0.70 x 10 Stainless Steel	0.002 kg	
	8	2	08 - Bearing housing	0.01 kg		35	12	Hex socket head cap screw M4x0.70 x 16 Stainless Steel	0.003 kg	
	9	2	09 - Pulley spacer	0.003 kg		36	4	Hex socket head cap screw M6x1.00 x 10 Stainless Steel	0.005 kg	
	10	3	10 - Rexroth 20x20x100mm	0.041 kg		37	8	Socket button head screw M4x0.7 x 16 Stainless Steel	0.002 kg	
	11	2	11 - Diameter 8 shaft	0.014 kg		38	16	Socket button head screw M5x0.8 x 10 Stainless Steel	0.002 kg	
	12	1	12 - Nema 17 brake (SWB-01)	0.018 kg		39	4	Socket button head screw M5x0.8 x 16 Stainless Steel	0.003 kg	
	13	1	13 - Nema 17 double shaft 0.9° (17HM19-1684D)	0.412 kg		40	2	Socket button head screw M5x0.8 x 25 Stainless Steel	0.005 kg	
	14	1	14 - Nema 17 simple or double shaft 0.9° (17HM19-1684D)	0.32 kg		41	10	Socket button head screw M5x0.8 x 8 Stainless Steel	0.002 kg	
	15	2	15 - Pulley 16T	0.003 kg		42	8	Socket button head screw M6x1 x 16 Stainless Steel	0.005 kg	
	16	1	16 - Pulley 60T	0.043 kg						B
	17	1	17 - Pulley 80T	0.075 kg						
	18	1	18 - Belt 150mm	0.001 kg						
	19	1	19 - Belt 200mm	0.001 kg						
	20	2	20 - Motor support	0.02 kg						
	21	10	21 - Spacer M3x20mm	0.003 kg						
	22	2	22 - Spacer pivot motor	0.007 kg						
	23	1	23 - Round Rexroth 20x20x100mm	0.044 kg						
	24	1	24 - Counterweight Support	0.028 kg						
	25	2	25 - Ethernet connectors (MRJ538401)	0.008 kg						
	26	2	26 - Harmonic/Vixen plug	0.061 kg						
	27	2	27 - Harmonic skirt (3D printed)	0.024 kg						



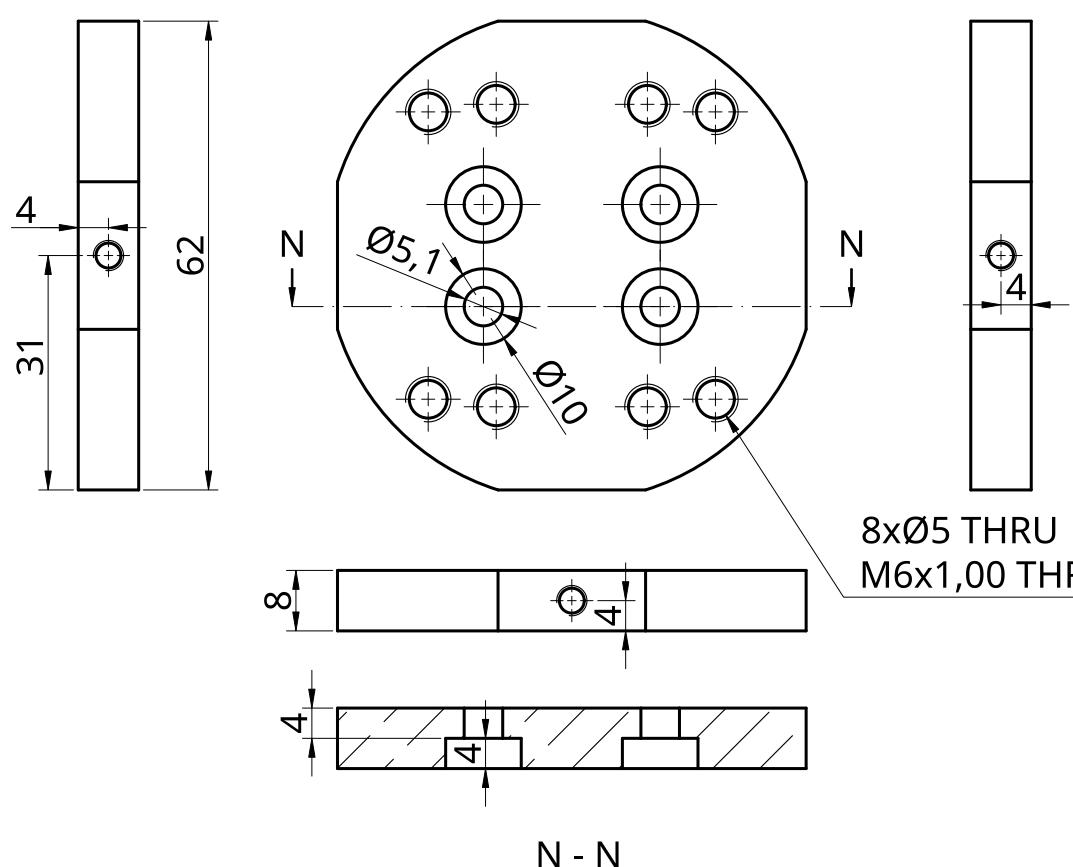
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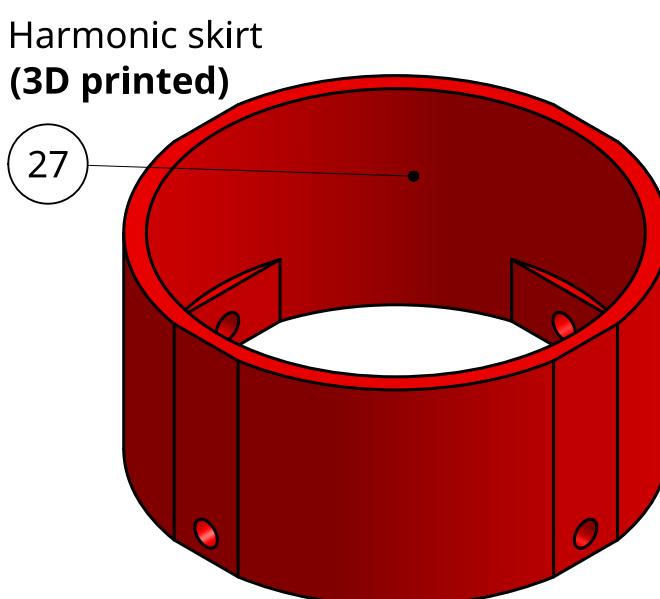


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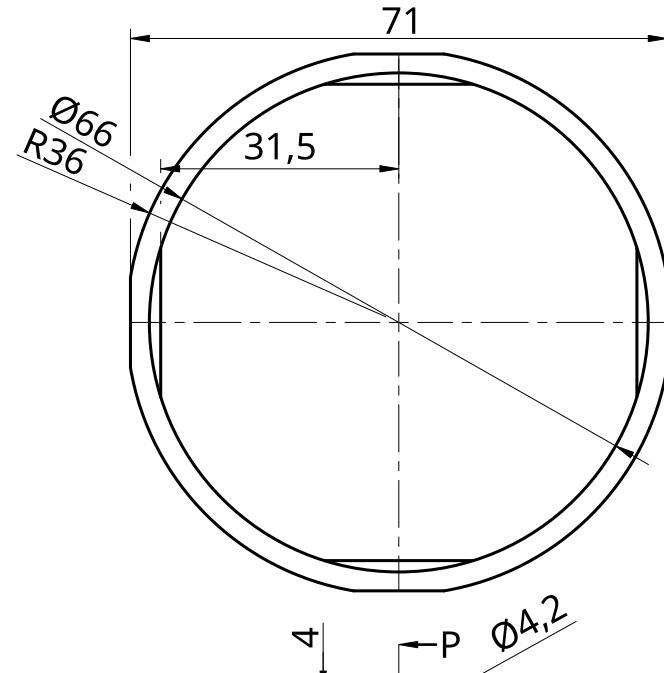


D

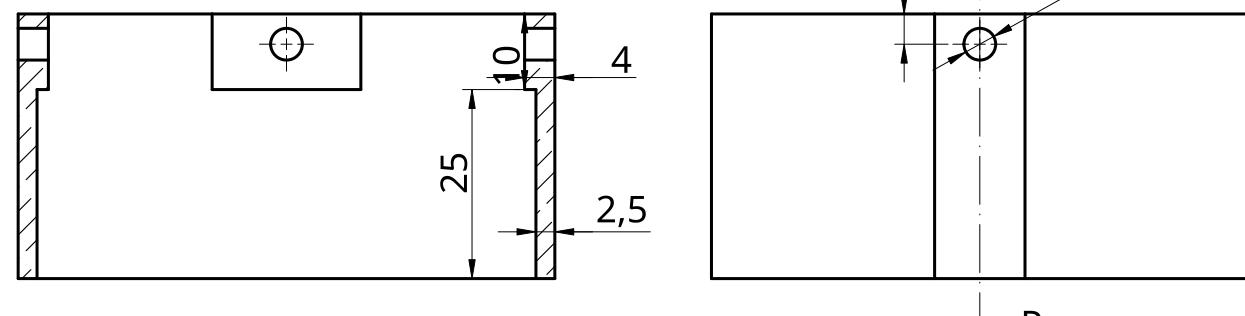
3



2



1



D

C

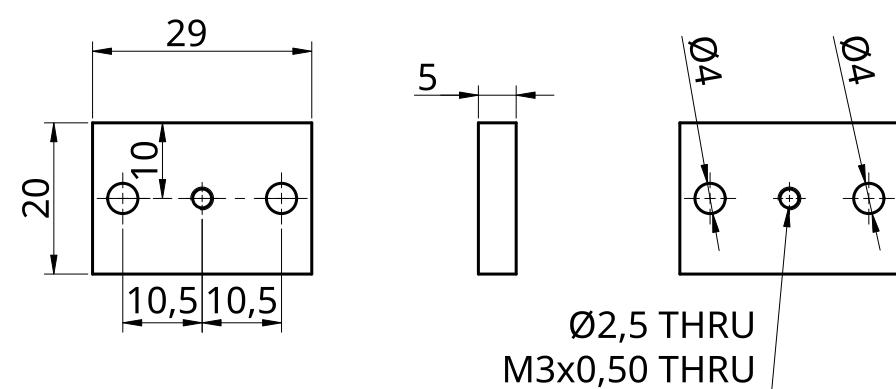
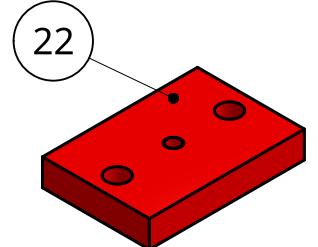
B

A

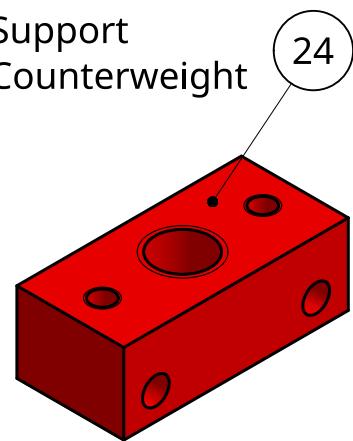
B

A

Spacer support



Support Counterweight



Ø4,2 THRU
M5x0,80 THRU

