Forsyth station: assembly record

Fill this in as you build. Step numbers match the assembly guide. Generated 2026-11-19 15:55 from `params.py`.

Station / build name _____ Builder _____

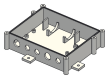
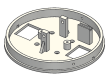
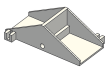
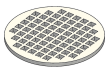
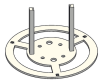
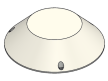
Started _____ Finished _____

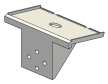
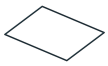
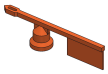
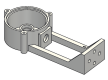
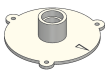
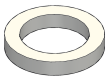
Before you start: blocking problems in the model

STEP	PROBLEM	FIXED	HOW
None			

Printed parts

Tick one box per copy printed, then one when its fit has been checked.

	PART	PRINT IN	QTY	PRINTED	FIT	NOTES
	`cup_arm`	accent ASA	3	☐☐☐	☐	
	`cup_hub`	accent ASA	1	☐	☐	
	`cup_hub_cap`	accent ASA	1	☐	☐	
	`enclosure_body`	white ASA	1	☐	☐	
	`enclosure_lid`	white ASA	1	☐	☐	
	`rain_base`	white ASA	1	☐	☐	
	`rain_bucket`	white ASA	1	☐	☐	
	`rain_funnel`	white ASA	1	☐	☐	
	`rain_mesh`	white ASA	1	☐	☐	
	`screen_base`	white ASA	1	☐	☐	
	`screen_cap`	white ASA	1	☐	☐	
	`screen_plate`	white ASA	5	☐☐☐☐☐	☐	
	`sky_head`	white ASA	1	☐	☐	
	`sky_mount`	white ASA	1	☐	☐	

	PART	PRINT IN	QTY	PRINTED	FIT	NOTES
	solar_bracket	white ASA	1	☐	☐	
	tpu_box_lid_gasket	TPU	1	☐	☐	
	tpu_sky_can_seal	TPU	1	☐	☐	
	tpu_washer_gland	TPU	1	☐	☐	
	tpu_washer_gx12	TPU	3	☐☐☐	☐	
	tpu_washer_gx16	TPU	2	☐☐	☐	
	tpu_wind_lid_gasket	TPU	1	☐	☐	
	vane_rotor	accent ASA	1	☐	☐	
	wind_body	white ASA	1	☐	☐	
	wind_lid	white ASA	1	☐	☐	
	wind_pcb_ring	white ASA	1	☐	☐	
	wind_shim	white ASA	2	☐☐	☐	
	wind_spacer	white ASA	2	☐☐	☐	

Hardware on hand

ITEM	QTY	HAVE	NOTES
2020 right-angle connector	2	☐	
3 mm closed-cell foam, 40 x 12 mm	1	☐	
Ball bearing 5 x 16 x 5, shielded (625ZZ)	4	☐	
Disc magnet 4 x 2	2	☐	
Disc magnet 6 x 2	2	☐	
GX12 2-pin socket + plug (SOLAR)	1	☐	
GX12 3-pin socket + plug (RAIN)	1	☐	
GX12 4-pin socket + plug (SKY)	1	☐	
GX16 5-pin socket + plug (WIND)	1	☐	
GX16 8-pin socket + plug (ENV)	1	☐	
M3 nyloc nut	1	☐	
M3 x 10 socket head	3	☐	
M3 x 16 socket head (bucket stops)	2	☐	
M3 x 50 socket head (bucket axle)	1	☐	
M3 x 6 brass heat-set insert, OD 4.2	14	☐	
M3 x 6 socket head	5	☐	
M3 x 8 socket head	14	☐	
M4 hex nut	3	☐	
M4 x 80 socket head (screen clamp)	3	☐	
M5 hex nut	6	☐	
M5 profile nut for 2020	16	☐	
M5 washer	12	☐	
M5 x 10 button head	6	☐	
M5 x 12 button head	6	☐	
M5 x 25 socket head (vane ballast)	1	☐	
M5 x 40 socket head (rotor shaft)	2	☐	
M5 x 8 button head	4	☐	
Neutral-cure silicone	1	☐	
PG7 cable gland	1	☐	
Silica gel sachet	1	☐	
Two-part epoxy (for the magnets)	1	☐	
UV-stable black cable ties	20	☐	
32700 cell	1	☐	already owned

ITEM	QTY	HAVE	NOTES
868 MHz right-angle stubby antenna, SMA	1	☐	already owned
Board A	1	☐	already owned
Board B (sensor carrier, 58 x 70)	1	☐	already owned
DFRobot SEN0290 lightning module	1	☐	already owned
MLX90614 breakout (GY-906)	1	☐	already owned
PMS7003 particle sensor	1	☐	already owned
Reed switch, 14 mm glass	2	☐	already owned
Solar panel, up to 100 x 70 mm	1	☐	already owned
Wind-vane PCB, 60.71 mm disc	1	☐	already owned

Assembly steps

Write down what each step asks you to measure; the app keeps the same fields.

STEP	WHAT	DONE	DATE	INITIALS	NOTES
1. Wind housing					
1.1	Heat-set inserts in the housing ears	☐			
1.2	Bearings and spacer in the floor tower Bearing fit in the housing (snug / loose / tight) _____	☐			
1.3	Anemometer reed switch	☐			
1.4	Cable gland	☐			
2. Anemometer					
2.1	Magnet and nut into the hub	☐			
2.2	Arms and cap (seen from below)	☐			
2.3	Hang the rotor from the housing Cups coast after a flick _____ s	☐			
3. Wind vane					
3.1	Bearings and spacer in the lid Bearing fit in the lid (snug / loose / tight) _____	☐			
3.2	Prepare the vane rotor (seen from below)	☐			
3.3	Vane onto the lid	☐			
3.4	Balance the vane Ballast nuts used _____ pcs Ballast mass _____ g	☐			
4. Closing the wind kit					
4.1	Vane PCB and its ring PCB reed marked as north _____	☐			
4.2	Gasket and lid Anemometer closures per turn _____ Vane reeds that close _____ of 8	☐			
5. Rain gauge					
5.1	Stop screws and reed	☐			
5.2	Bolt the base to the crossarm	☐			
5.3	Bucket, magnets and axle	☐			
5.4	Funnel	☐			
5.5	Set and calibrate the tip Water poured _____ ml Tips counted _____	☐			
6. Stevenson screen					
6.1	M4 nuts into the base (seen from below)	☐			
6.2	Bolt the base to the crossarm	☐			
6.3	Board B on its rails	☐			

STEP	WHAT	DONE	DATE	INITIALS	NOTES
6.4	Louvres	☐			
6.5	Lightning module under the cap (seen from below)	☐			
6.6	Cap and clamp screws	☐			
7. Core box					
7.1	Heat-set inserts	☐			
7.2	Connector sockets in the bottom wall	☐			
7.3	Board A and the antenna Antenna measured: elbow / diameter / length _____ mm	☐			
7.4	The cell	☐			
7.5	Gasket and lid	☐			
8. Solar bracket					
8.1	Panel into the tray	☐			
9. Sky pod					
9.1	Sensor, seal and head Letters on the sensor can _____	☐			
9.2	Check the fit (section)	☐			
10. Onto the mast					
10.1	Crossarm onto the mast	☐			
10.2	Box and solar bracket on the south face	☐			
10.3	Wind kit at the top	☐			
10.4	Sky pod on the north face	☐			
10.5	Which way round, and the cables	☐			

Bench results

CHECK	RESULT
Rain: water poured (ml) and tips counted	
Rain: ml per tip = poured / tips mm per tip = ml per tip / 9.5	
Anemometer: drill test, closures per second against wind speed (for `ANEMO_MS_PER_HZ_X1000`)	
Vane: magnet closes one reed (or two between sectors), never three	
Box lid: bows between screws? (lower `gasket_squeeze` if so)	
Antenna: RSSI with the lid on and off, same distance	
Sky sensor: reading against the screen's air temperature	
Mast: which face points north; box antenna end toward the coordinator	