

Minimum Incremental Motion¹

Microstepping options						TSDM & SGSP-ACT	SGSP-20 & TAMM	SGSP-26 mm per revolution	SGSP-33	SGSP-46	SGSP-65	SGSP-YAW steps per degree			SGSP-20	SGSP-26	SGSP-33	SGSP-46	SGSP-65	SGSP-20	SGSP-26	SGSP-33	SGSP-46	SGSP-65				
PAT-001	SHOT-102	SHOT-602	SHOT-202/204MS SHOT-302GS/304GS SHOT-702 HIT	pulses per step	0.5	1	2	6	10	25	200			25	30	80	120	120	Maximum rated speed (mm/sec)									
														Max speed at 20k pps ³ (PAT-001 ² , SHOT-102, SHOT-602)					Max speed at 500k pps (SHOT-202/204MS) ³									
											degrees per pulse	μradians per pulse	arc-sec per pulse															
					microns per pulse									mm/sec					mm/sec									
•	•		•	1	1	2	4	12	20	50	5.00E-03	87.27	18	40	80	240	400	1000	1000	2000	6000	10000	25000					
•	•	•	•	2	0.5	1	2	6	10	25	2.50E-03	43.63	9	20	40	120	200	500	500	1000	3000	5000	12500					
			•	4	0.25	0.5	1	3	5	12.5	1.25E-03	21.82	4.5											250	500	1500	2500	6250
			•	5	0.2	0.4	0.8	2.4	4	10	1.00E-03	17.45	3.6											200	400	1200	2000	5000
			•	8	0.125	0.25	0.5	1.5	2.5	6.25	6.25E-04	10.91	2.25											125	250	750	1250	3125
			•	10	0.1	0.2	0.4	1.2	2	5	5.00E-04	8.73	1.8											100	200	600	1000	2500
			•	20	0.05	0.1	0.2	0.6	1	2.5	2.50E-04	4.36	0.9											50	100	300	500	1250
			•	25	0.04	0.08	0.16	0.48	0.8	2	2.00E-04	3.49	0.72											40	80	240	400	1000
			•	40	0.025	0.05	0.1	0.3	0.5	1.25	1.25E-04	2.18	0.45											25	50	150	250	625
			•	50	0.02	0.04	0.08	0.24	0.4	1	1.00E-04	1.75	0.36											20	40	120	200	500
			•	80	0.0125	0.025	0.05	0.15	0.25	0.625	6.25E-05	1.09	0.225											12.5	25	75	125	312.5
			•	100	0.01	0.02	0.04	0.12	0.2	0.5	5.00E-05	0.87	0.18											10	20	60	100	250
			•	125	0.008	0.016	0.032	0.096	0.16	0.4	4.00E-05	0.70	0.144											8	16	48	80	200
			•	200	0.005	0.01	0.02	0.06	0.1	0.25	2.50E-05	0.44	0.09											5	10	30	50	125
			•	250	0.004	0.008	0.016	0.048	0.08	0.2	2.00E-05	0.35	0.072											4	8	24	40	100

¹ Theoretical value based on nominal value of thread pitch. See example below for typical errors during small motions.

² PAT-001 minimum speed is 100 pps and speed resolution is in increments of 100pps. All other controllers have 1pps minimum speed and resolution.

³ Theoretical maximum speed. Stages should not be run faster than maximum rated speeds.

