

Table of Dimensions: mm Models

Frame Sizes 19 to 57

Motor options		VSS 19	VSS 25	VSS 32 / 33	VSS 42/ 43	VSS 52	VSS 57 *
Motor Frame size	L1	19	25	32	42	52	57
Motor body length	L2	26.5	31	38.5 / 57.5	54 / 69	65	73.5
Mounting spigot length	L3	1	1	1	1	1.5	1.5
Output shaft length	L4	7.5	9.5	11	15	16	20.5
Rear shaft length option	L5	6.5	8.5	10	15	16	20.5
Mounting flange width	L6	2	2.5	3	3	3.5	4.5
key width	L7	N/A	N/A	N/A	N/A	N/A	N/A
key length	L8	N/A	N/A	N/A	N/A	N/A	N/A
Mounting hole centres	L9	16	21.5	27	36	44	47.15
Shaft diameter	D1 _{g5}	2.5	3	4	5	6	6.35
Mounting hole diameter	D2	M2.5	2.2	2.8	3.2	4.3	5.2
Mounting spigot diameter	D3 _{g6}	10	14	18	22	28	38.1

Note * VSS57 conforms to NEMA23 standard

Table of Dimensions: mm Models

Frame Sizes 65 to 125

Motor options		VSH 65	VSH 80	VSH 100	VSH 125
Motor Frame size	L1	65	80	100	125
Motor body length	L2	81	100	125.5	156
Mounting spigot length	L3	1.5	2	2	3
Output shaft length	L4	23.5	27	32	34
Rear shaft length option	L5	22	25	30	31
Mounting flange width	L6	5.5	7.5	8	9.5
key width	L7	2	3	4	5
key length	L8	14	20	22	22
Mounting hole centres	L9	55	68	86	108
Shaft diameter	D1 _{g5}	8	10	12	14
Rear shaft diameter		7	9	12	14
Mounting hole diameter	D2	5.2	6.4	6.4	8.4
Mounting spigot diameter	D3 _{g6}	40	50	60	60

Motor specification

VSS Series

Mechanical specification

Electrical specification

Motor Model	Holding Torque	Detent Torque	Rotor Inertia	Max Axial Load	Max Radial Load	Mass	Current per phase	Resistance per phase	Inductance per phase
	Ncm	Ncm	Kgcm ²	N	N		Amps	Ohms	mH
VSS19.200.03	0.34	0.09	0.0009	3	3	0.05	0.3	6	2.2
VSS19.200.06							0.6	2.1	0.55
VSS19.200.1.2							1.2	0.625	0.15
VSS25.200.03	1.2	0.2	0.002	5	5	0.08	0.3	12	6
VSS25.200.06							0.6	3.25	1.5
VSS25.200.1.2							1.2	0.95	0.4
VSS32.200.06	4.5	0.3	0.01	5	15	0.17	0.6	4.65	5.3
VSS32.200.1.2							1.2	1.3	1.2
VSS32.200.2.5							2.5	0.3	0.3
VSS33.200.06	6.8	0.33	0.018	5	15	0.39	0.6	7.5	9.3
VSS33.200.1.2							1.2	1.75	2.2
VSS33.200.2.5							2.5	0.47	0.6
VSS42.200.06	13	0.5	0.045	20	40	0.35	0.6	7.25	11
VSS42.200.1.2							1.2	1.6	3
VSS42.200.2.5							2.5	0.37	0.7
VSS43.200.06	23.5	0.7	0.077	20	40	0.52	0.6	9.5	22.9
VSS43.200.1.2							1.2	2.6	5.2
VSS43.200.2.5							2.5	0.5	1.2
VSS52.200.1.2	40.5	1.3	0.15	25	70	0.72	1.2	2.65	7
VSS52.200.2.5							2.5	0.6	1.6
VSS52.200.5.0							5.0	0.165	0.4
VSS57.200.1.2	63	5	0.24	40	80	0.99	1.2	4.9	9.5
VSS57.200.2.5							2.5	0.8	2.4
VSS57.200.5.0							5.0	0.25	0.8
VHS65.200.1.2	86	5	0.41	40	120	1.4	1.2	4.3	16.1
VHS65.200.2.5							2.5	1.05	4
VHS65.200.5.0							5.0	0.29	1.1
VHS80.200.5.0	200	12	1.24	50	180	2.8	5.0	0.4	2.3
VHS80.200.7.5							7.5	0.2	2.0
VHS100.200.7.5	430	14	4.4	70	300	4.5	7.5	0.3	6.5
VHS125.200.7.5	990	25	11.4	150	700	9.4	7.5	0.4	6

The above ratings are based on Bi-polar driven 4 lead motors with coils internally connected for Parallel operation

Typical motor-drive combinations

Motor	Bi-polar Drive	Current setting per phase	Power Supply	Rail Voltage	Number of axes /PSU	Motion Controller
VSS19.200.06	MSE422 ** MSE542	0.6 Amps 0.5Amps	MSE 171 MSE 172	24 Vdc	4 8	PM600
VSS 32.200.1.2	MSE542	1.2 Amps	MSE 171 * MSE172 MSE173	24Vdc	2 4 8	PM600
VSS 42.200.2.5	MSE570	2.5 Amps	MSE172 MSE173	24 Vdc	2 4	PM600
VSS 52.200.2.5	MSE570	2.5 Amps	MSE173	24Vd	4	PM600
VSS 52.200.5.0	PM 546	5.0 Amps	MSE175	75 Vdc	2	
VSS 57.200.2.5	MSE570	2.5 Amps	MSE173	24Vdc	4	PM600
VSS 57.200.5.0	PM 546	5.0 Amps	MSE175	75 Vdc	2	
VHS 65.200.5.0	PM 546	5.0 Amps	MSE175	75 Vdc	2	PM600
VHS 80.200.5.0	PM546	5.0 Amps	MSE175	75 Vdc	2	PM600
VHS100.200.7.5	PM546	6.0 Amps	MSE175	75 Vdc	1	PM600
VHS125.200.7.5	PM546	6.0 Amps	MSE175	75 Vdc	1	PM600

Note: 500 series drives incorporate a current reduction circuit for operating the motor @ standstill which may be used in conjunction with the optional thermocouple in the motor to reduce motor temperature.

Precision planetary gearheads for extreme environments

The range of precision planetary gearheads are designed for use with the VSS motors and are suitable for use in environmental conditions covering the following limiting values:

- Vacuum to $10^{-11}\tau$
- Temperature: - 270 °C to +300°C
- Radiation hardened to 10^{-6} J/kg
- Space

Dimensions:

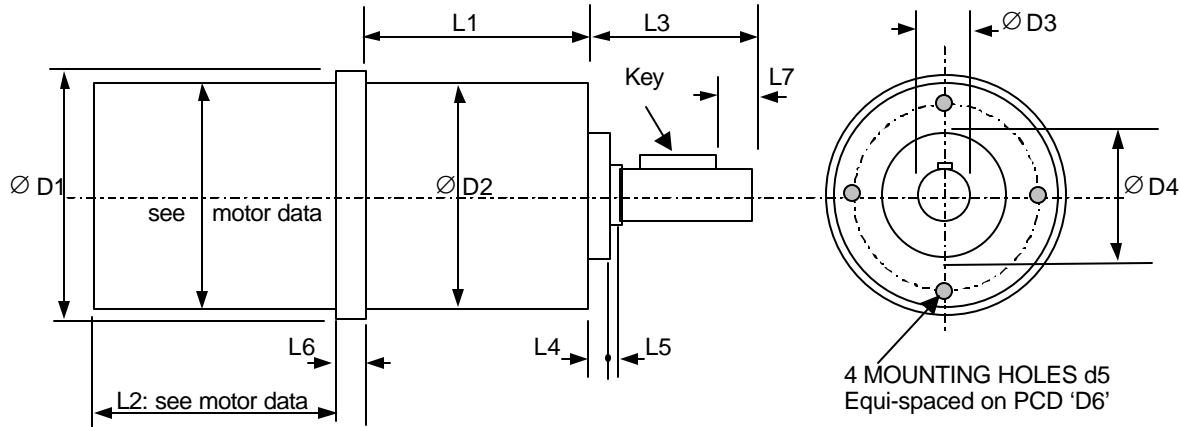


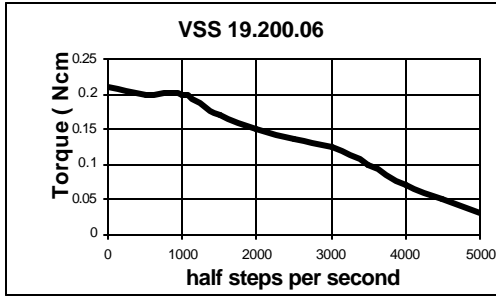
Table of dimensions: mm

Dimension		GPL 22	GPL32	GPL42	GPL52
Gearhead Length single stage		21	29	35	41
two stages	L1	28	38	47.5	55.5
three stages		35	47	60	70
Motor body length	L2	See motor data			
Gearhead output shaft length	L3	15	20	22.5	24
Mounting spigot length	L4	2	3	3	3
Shaft shoulder length	L5	1	1	1	1
Motor mounting plate Length	L6	5 max.	5	7	7 max.
key distance to shaft end	L7	not applicable		2	2
Key		not available		3x3x14	4x4x16
Diametric measurements					
Motor mounting plate diameter	Ø D1	22 for VSS19 25.5 for VSS25.	33	43	53 for VSS52 57 for VSS57.
Gearhead Diameter	Ø D2	22	32	42	52
Output shaft diameter	Ø D3	4 h6	6 h6	8 h6	12 h6
Mounting spigot diameter	Ø D4	12 h8	20 h8	25 h8	32 h8
Mounting holes	d5	M2 x 4 deep	M3 x 5 deep	M4 x 8 deep	M5 x 8 deep
Mounting hole PCD	Ø D6	16	26	32	40

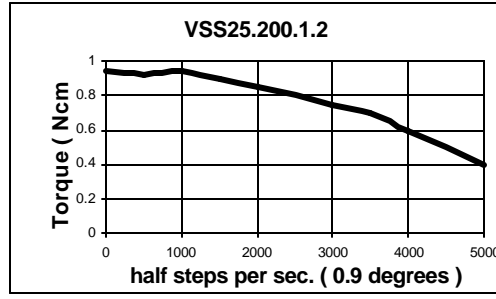
Specification

Characteristics		GPL 22	GPL32	GPL42	GPL52
Suitable motors		VSS 19 VSS 25	VSS 32 VSS 33	VSS 42 VSS 43	VSS 52 VSSN 57
Gear ratio options (n:1)	single stage	4 5 6	4 8	4 6	4 8
	two stage	16 25 46	16 25 50	14 20	16 25 50
	Three stage	70 100 279	72 100 200	56 100 184	72 100 200
Backlash	arc minutes	single stage: 6'		two stage: 12'	three stage: 18'
Maximum torque	single stage	0.1 Nm	0.4 Nm	0.7 Nm	1.5 Nm
	two stage	0.5 Nm	2 Nm	4 Nm	10 Nm
	Three stage	1.5 Nm	6 Nm	12 Nm	30 Nm
Max radial load @ shaft centre	N	30	80	150	250
Maximum axial load	N	24	65	120	200

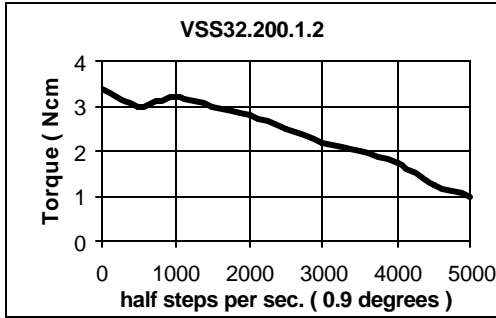
Typical VSS motor performance



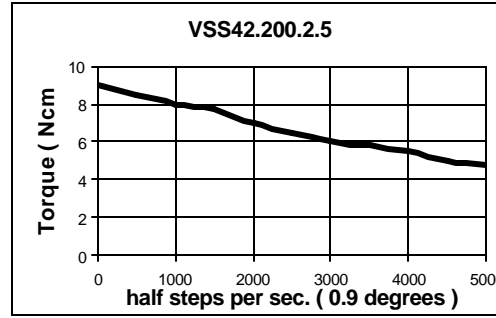
0.5 Amps per phase using MSE542 drive



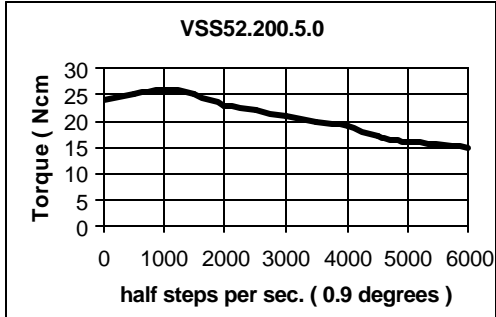
1.2 Amps per phase using MSE542 drive



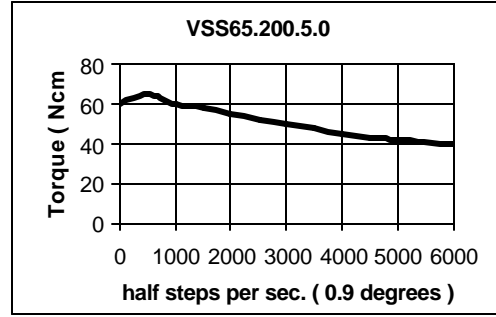
1.2 Amps per phase using MSE542 drive



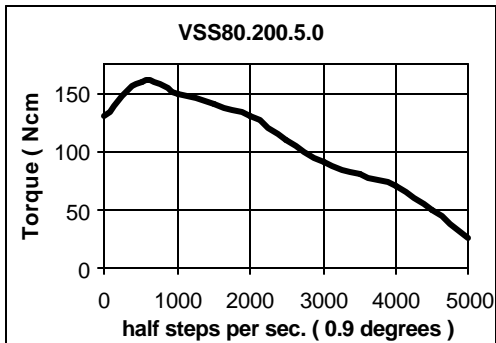
2.5 Amps per phase using MSE570 drive



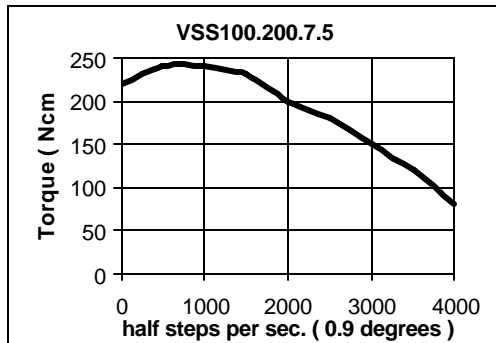
4.5 Amps per phase using PM564C drive



5.0 Amps per phase using PM546 drive



5.0 Amps per phase using PM546 drive



6.0 Amps per phase using PM546 drive