Motor Specifications

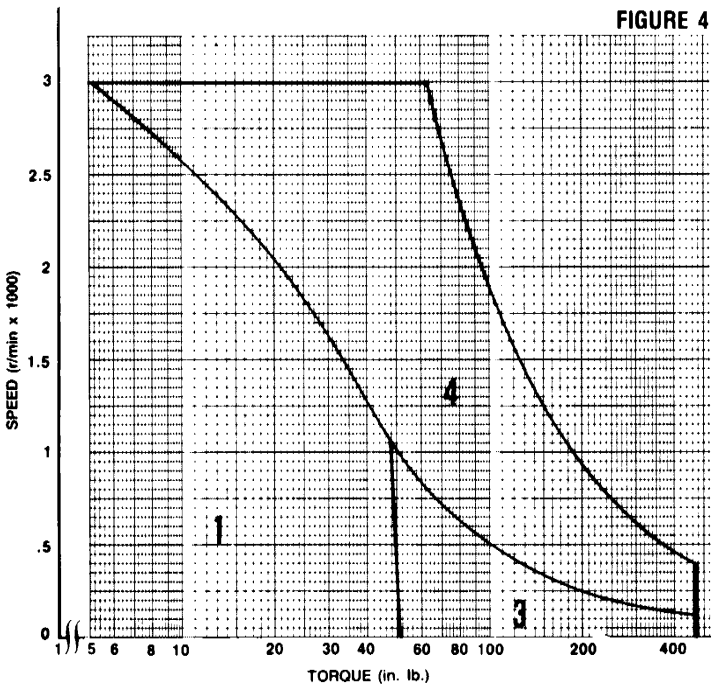
Typical at 25°C	Symbol	Unit	4" Diameter Motors			5 1/2" Diameter Motors					
			M111	M112	M113	M121	M122	M123	M124	M125	M126
Operating Parameters											
Continuous Rated Torque at stall (TENV)	T_S	lb-in	16	25	36	51	53	83	87	104	110
Continuous Rated RMS Current at Stall (TENV)	I_c	ampere	5.6	8.6	12.5	12	21	12	21	12	21
Maximum Winding Temperature by Resistance	Θ_a	°C	155	155	155	195	195	195	195	195	195
Absolute Maximum Peak Current before Demagnetization	I_m	ampere	40	48	70	120	210	120	210	120	210
Mechanical Parameters											
Rotor Inertia	J_m	lb-in-sec^2	.010	.013	.020	.045	.045	.060	.060	.080	.080
Maximum Theoretical Acceleration at Stall	$\ddot{\Theta}_{max}$	rad/sec^2	10375	9773	9103	10152	10668	12474	13045	11759	12380
Mechanical Time Constant	t_m	second	.014	.013	.014	.011	.011	.009	.01	.009	.01
Thermal Time Constant	t	minute	50	50	55	60	60	90	90	95	95
Static Friction	Tf	lb-in	1	1.25	1.5	2	2	2	2	2	2
Weight		lb	12.3	14.0	18.9	42	42	55	55	70	70
Electrical Parameters											
Back EMF Constant ±10%	K_e K_v	v/1000 r/min v-sec/rad	34.1 .325	34.8 .332	34.2 .326	50 .48	30 .29	82 .78	49 .47	103 .98	62 .59
Torque Constant ±10%	K_t	lb-in/amp	2.88	2.94	2.89	4.23	2.54	6.93	4.14	8.71	5.24
Armature DC Resistance: (less brushes) ±10% (including brushes)	R_a R_m	Ohm	1.045 1.313	.840 1.010	.548 .668	.48 .61	.18 .25	.69 .82	.26 .33	.90 1.03	.34 .41
Armature Inductance	L_a	mH	3.5	3.0	2.2	1.9	.70	3.1	1.1	4.7	1.7
Electrical Time Constant	t_e	ms	2.7	.29	3.2	3.1	2.9	3.8	3.3	4.6	4.1
Viscous Damping Coefficient (Zero Z Source)	F_o	lb-in-sec/rad	.715	.966	1.410	3.33	2.95	6.59	5.85	8.29	7.54

* This data is intended to aid you in making motor application decisions. Should you desire assistance in interpretation of data, please consult a Gettys application specialist.

Motor Performance Information*

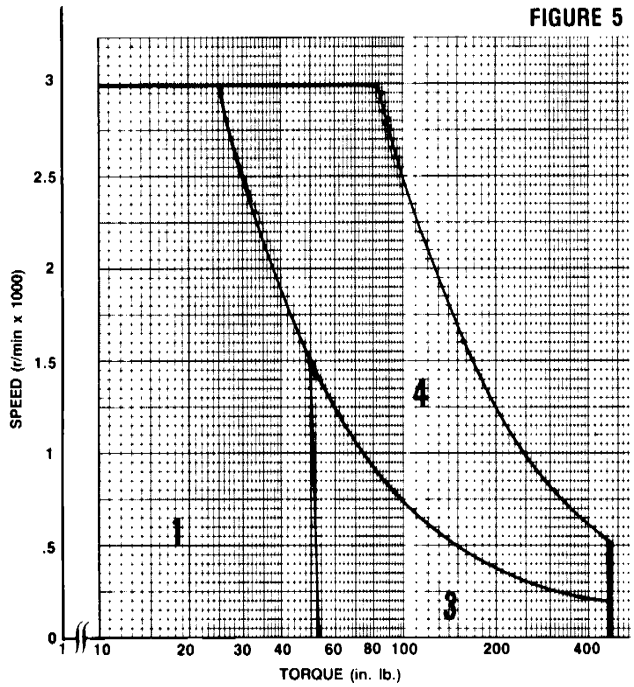
D.C. OPERATION FOR M121 MOTOR

FIGURE 4



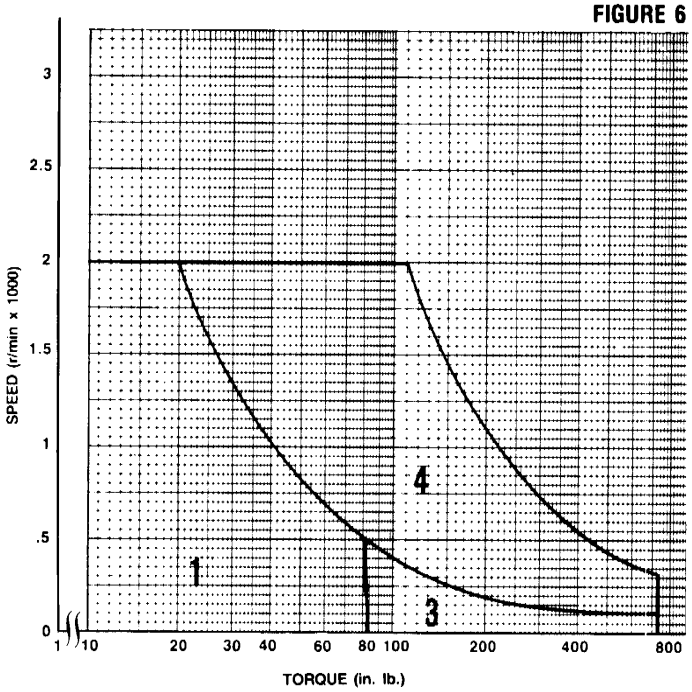
D.C. OPERATION FOR M122 MOTOR

FIGURE 5



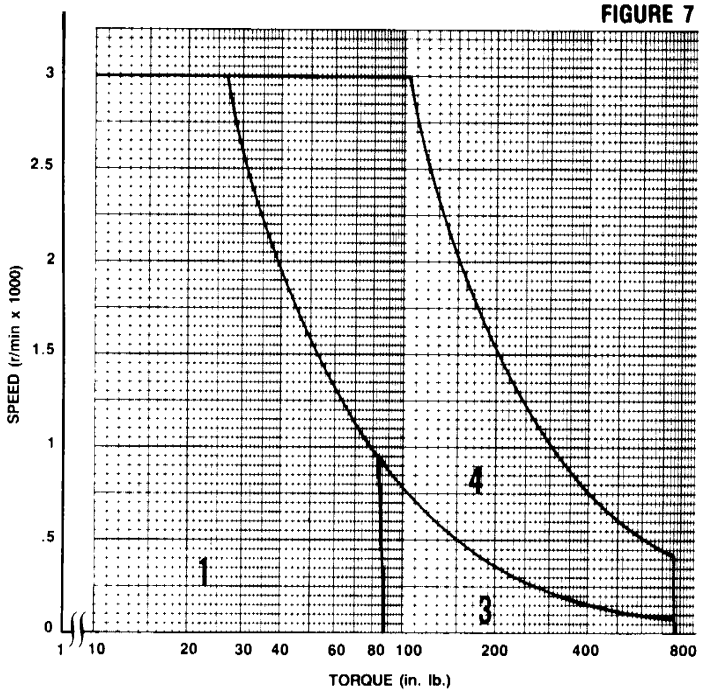
D.C. OPERATION FOR M123 MOTOR

FIGURE 6



D.C. OPERATION FOR M124 MOTOR

FIGURE 7

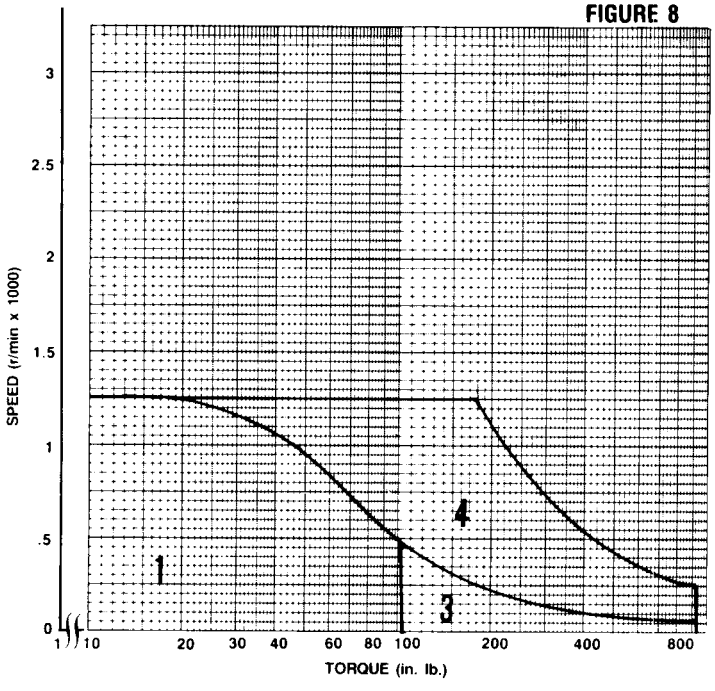


* Information provided is for DC operation at 25°C. (Motors M111-M113 have a 130°C rise; all other motors have a 155°C rise.) Motor performance information is based on 1.0 form factor; speed and torque figures must be derated by actual form factor of the amplifier used.

Motor Performance Information*

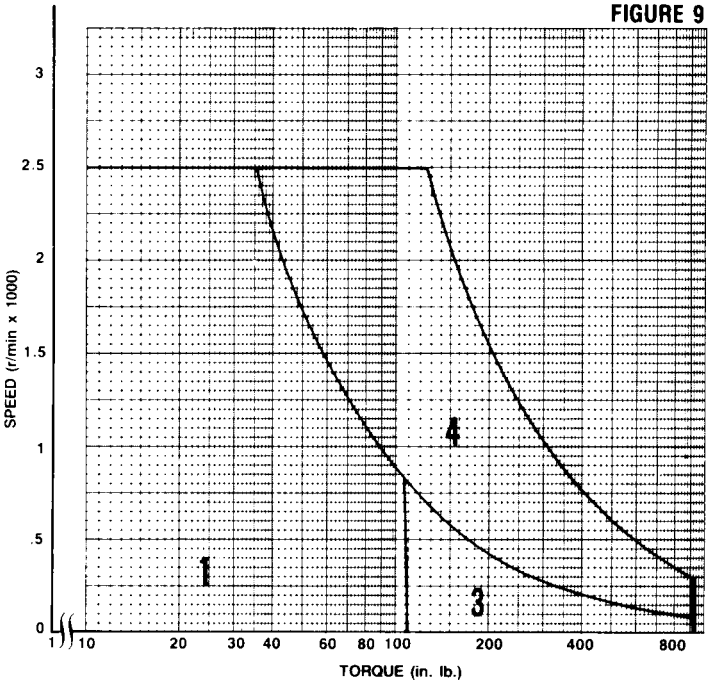
D.C. OPERATION FOR M125 MOTOR

FIGURE 8



D.C. OPERATION FOR M126 MOTOR

FIGURE 9



* Information provided is for DC operation at 25°C. (Motors M111-M113 have a 130°C rise, all other motors have a 155°C rise.) Motor performance information is based on 1.0 form factor; speed and torque figures must be derated by actual form factor of the amplifier used.