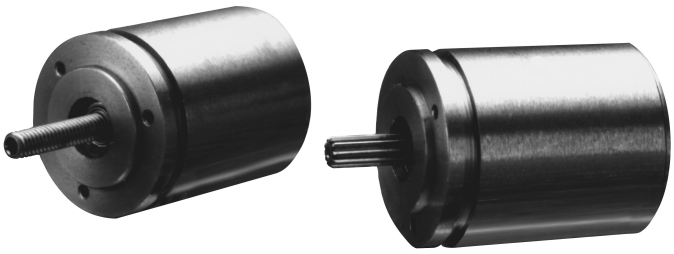
VR and PM Stepping Motors
7.5° 15° 45° 90°

SIZE

11	15	20
1.06"	1.44"	2.00"

DIA



EADmotors Variable Reluctance (VR) and Permanent Magnet (PM) DC stepping motors are precision bi-directional devices used in paper tape punches, plotters, printers, and tape readers. Standard motors also are available with heat sinks.

The motors are totally enclosed with permanently lubricated ball bearings.

EADmotors specializes in meeting the individual requirements of each application and offers engineering assistance for your design requirements.

Electrical Ratings

Size	Step Angle (degrees)	Type	Model Number	Phase Voltage (VDC)	Phase Resistance (ohms)	Holding Torque (oz-in)	Rotor Inertia (oz-in-sec^2)	Weight (ounces)
11	7.5	4Ø/VR	LD11EAY-1	28	95	2.3	.031 E-3	5.0
	15	4Ø/VR	LD11EAM-3	28	55	5.8	.014 E-3	4.7
	15	3Ø/VR	LD11EAL-1	28	80	2.7	.014 E-3	4.7
	45	4Ø/PM	LD11EAD-2	28	45	2.5	.017 E-3	4.5
	90	4Ø/PM	LD11EAE-4	28	60	2.5	.017 E-3	4.3
15	7.5	4Ø/VR	LD15EAY-4	28	55	8.0	.042 E-3	6.5
	15	4Ø/VR	LD15EAM-5	28	35	8.0	.010 E-3	6.5
	15	3Ø/VR	LD15EAL-4	28	16	5.8	.008 E-3	6.5
	45	4Ø/PM	LD15EAD-3	28	30	8.1	.071 E-3	10
	90	4Ø/PM	LD15EAE-1	28	20	11	.071 E-3	10
20	15	3Ø/VR	LD20ACL-10	28	10	45	.142 E-3	20
	15	3Ø/VR	LD20ACL-12	28	20	35	.142 E-3	20
	15	3Ø/VR	LD20DDL-10	12	2.1	65	.284 E-3	24
	15	4Ø/VR	LD20ACM-7	14	5	30	.142 E-3	20
	15	4Ø/VR	LD20ACM-8	28	10	42	.142 E-3	20
	15	4Ø/VR	LD20ACM-9	28	20	38	.142 E-3	20
	15	4Ø/VR	LD20ACM-10	28	30	30	.142 E-3	20
	15	4Ø/VR	LD20DDM-2	28	10	65	.284 E-3	24
	45	4Ø/PM	LD20ABD-2	28	12	15	.212 E-3	20
	90	4Ø/PM	LD20ABE-1	28	12	20	.212 E-3	20

Type	Shaft Description
b	PINION, 13T, 120DP, 20°, AGMA QUAL. No. 9
c	PINION, 10T, 96DP, 20°, AGMA QUAL. No. 9
d	PINION, 15T, 96DP, 20°, AGMA QUAL. No. 9

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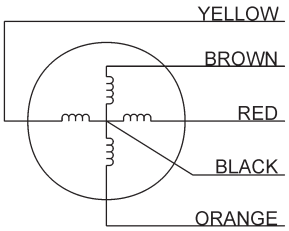
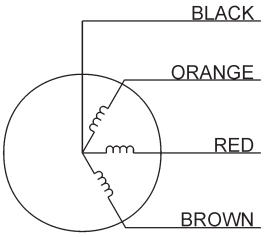
Connection Diagrams

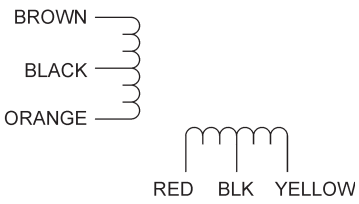
4 Phase VR



3 Phase VR



4 Phase PM



Switching Sequence for Clockwise Rotation Facing Mounting End

One Phase Excitation

Step	BRN	RED	ORN	YEL	BLK
1	–	0	0	0	+
2	0	–	0	0	+
3	0	0	–	0	+
4	0	0	0	–	+

One Phase Excitation

Step	BRN	RED	ORN	BLK
1	–	0	0	+
2	0	–	0	+
3	0	0	–	+

One Phase Excitation

Step	BRN	RED	ORN	YEL	BLK
1	–	0	0	0	+
2	0	–	0	0	+
3	0	0	–	0	+
4	0	0	0	–	+

Two Phase Excitation

Step	BRN	RED	ORN	YEL	BLK
1	–	–	0	0	+
2	0	–	–	0	+
3	0	0	–	–	+
4	–	0	0	–	+

Two Phase Excitation

Step	BRN	RED	ORN	BLK
1	–	–	0	+
2	0	–	–	+
3	–	0	–	+

Two Phase Excitation

Step	BRN	RED	ORN	YEL	BLK
1	–	–	0	0	+
2	0	–	–	0	+
3	0	0	–	–	+
4	–	0	0	–	+

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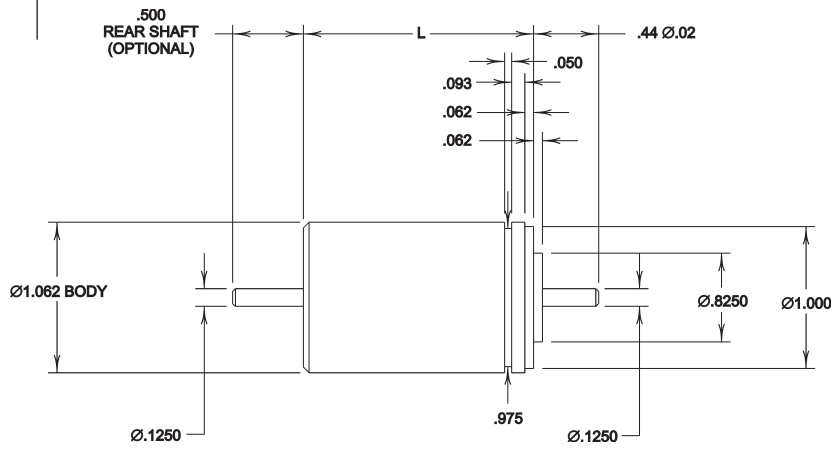
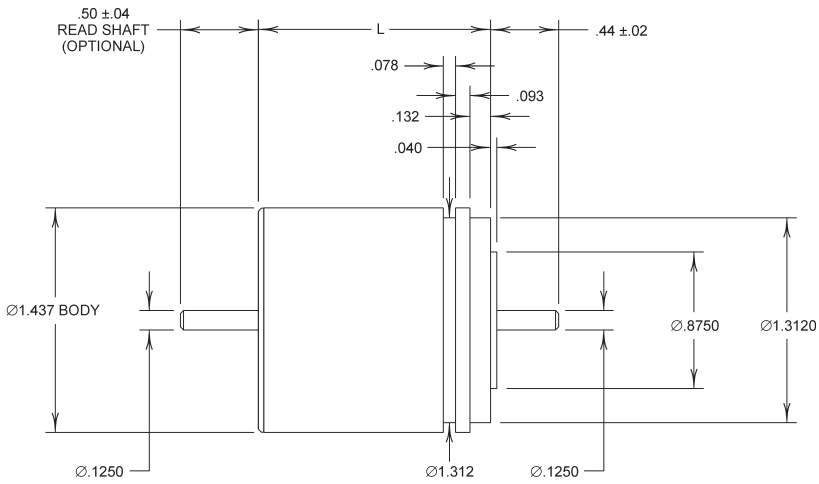


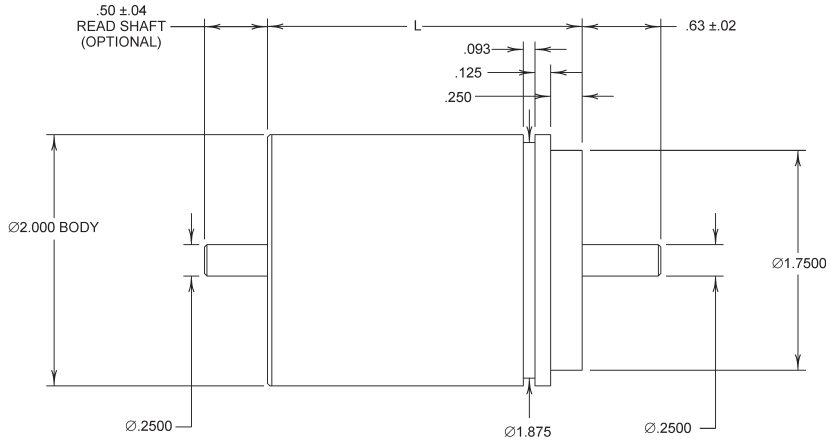
Size 11

Model Series	Dimension "L" (inches)	Mounting Holes
LD11EAY-1	1.400	4-40 UNC-2B on .812 B.C., 90° apart
LD11EAM-3	1.625	
LD11EAL-1	1.625	
LD11EAD-2	1.625	
LD11EAE-4	1.625	



Size 15

Model Series	Dimension "L" (inches)	Mounting Holes
LD15EAY-4	1.500	4-40 UNC-2B on 1.100 B.C., 90° apart
LD15EAM-5	1.500	
LD15EAL-4	1.500	
LD15EAD-3	2.100	
LD15EAE-1	2.100	



Size 20

Model Series	Dimension "L" (inches)	Mounting Holes
LD20ACK-10	2.500	None
LD20ACL-12	2.500	
LD20DDL-10	3.500	
LD20ACM-7	2.500	
LD20ACM-8	2.500	
LD20ACM-9	2.500	
LD20ACM-10	2.500	
LD20DDM-2	3.500	
LD20ABD-2	2.500	
LD20ABE-1	2.500	

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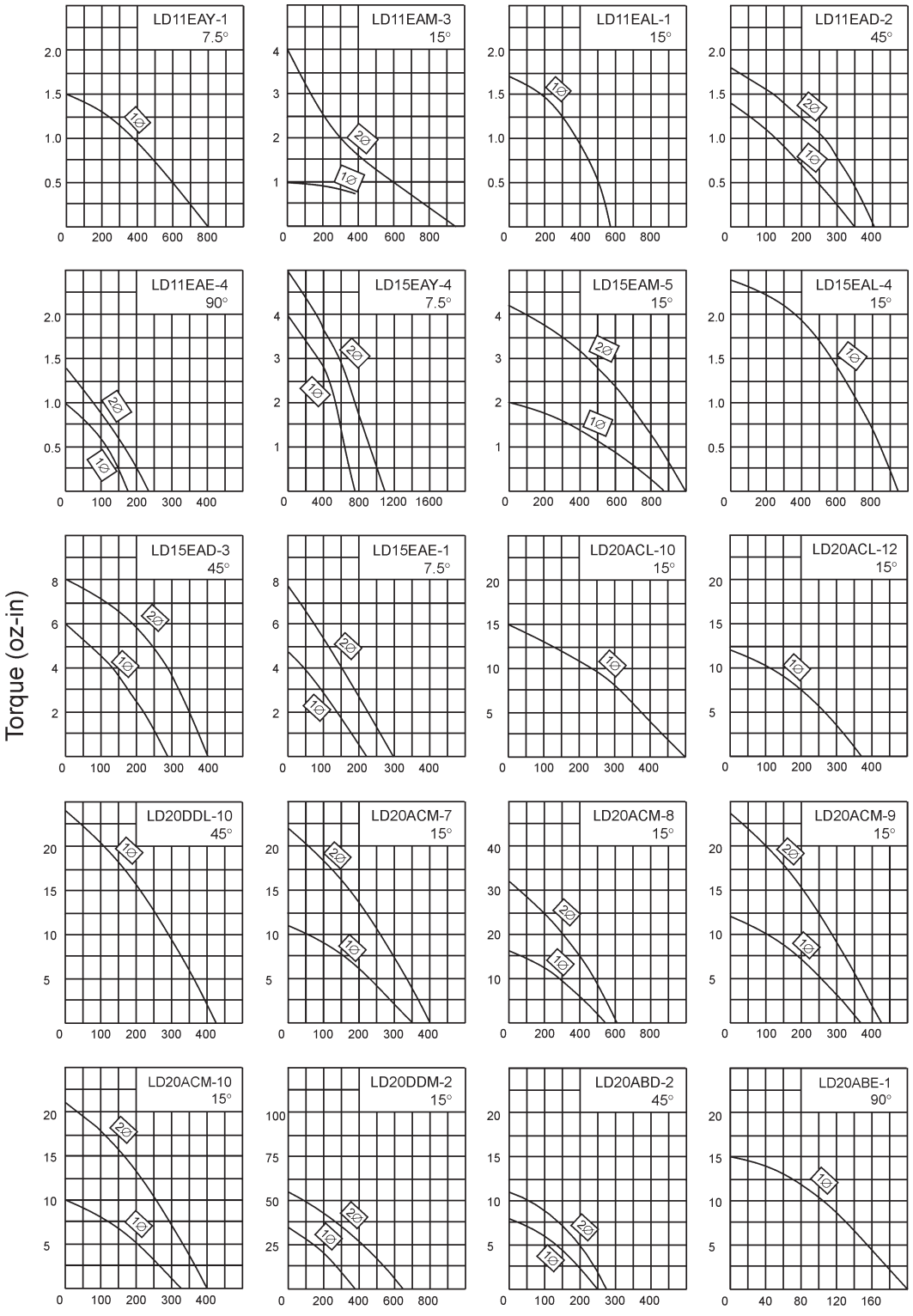

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