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FEATURES:

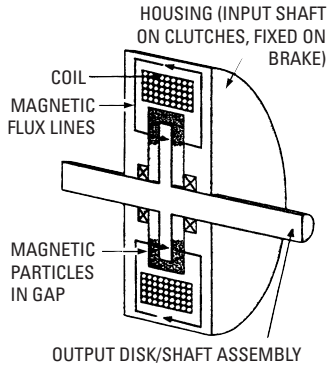
Magnetic engagement without movement of mechanical parts.
Smooth and silent.
No backlash.
Nearly linear torque vs. current.
No friction surface to wear out.
Ultrafast response.
Low output inertia.
High torque-to-size ratio.
Infinitely adjustable torque.

APPLICATIONS:

Tensioning
Stepping and Indexing
Overload Protection
Motor Testing
Controlled Start / Stop

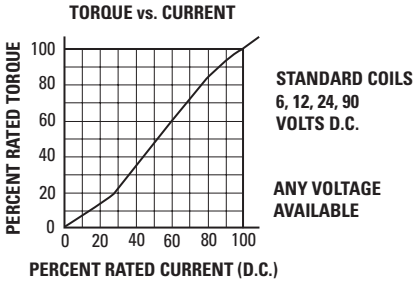
HOW THE UNITS WORK:

The output disk/shaft assembly does not touch the housing. The gap in between is filled with a fine, dry stainless steel powder. The powder is free flowing, until a magnetic field is applied from the stationary coil. The powder particles form chains along the magnetic field lines, linking the disk to the housing. The torque is proportional to the magnetic field and, therefore, to the applied D.C. input current. Output torque is controlled by varying the D.C. input current. The torque vs. current curve is essentially linear, with a slight "S" shape.



While the input torque is less than the output torque, the brake or clutch won't slip. For brakes, the output shaft won't rotate. For clutches, the input shaft will be coupled to the output shaft, with no slip.

When the input torque is increased, the brake or clutch will slip smoothly at the torque level set by the coil input current. Output torque is independent of slip rpm.



NOTE: See Accessories and Power Supplies on page **13**-50 thru **13**-53.

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ULTRAFAST RESPONSES
SOFT OR FAST START

Inch
0 1

› COIL DATA:

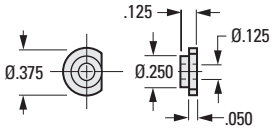
Voltage: 24V DC

Voltages other than 24 Volts DC available on special order.

› APPLICATIONS:

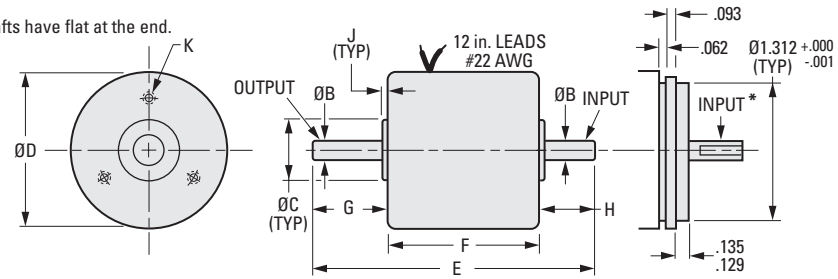
Tensioning
Overload Protection
Torque Limiting Drives
Controlled Starts (and stops with a separate brake)

The shaft becomes coupled to the output shaft with electrical excitation.



Clamp *

All shafts have flat at the end.



View A

INCH COMPONENT

Catalog Number	B Shaft O.D. ± .0002	D Dia. ± .015	E Nom.	F ± .03	G ± .02	H ± .02	C Dia. +.000 -.001	J ± .01	K
* S90MPA-C14D19A	.1872	1.437 1.434	2.88	1.66	.59	.63	*.750	*.60	3 #3-48 1.140 B.C.
S90MPA-C23D31	.3122	2.250	4.40	2.50	1.07	.83	1.125	.08	2x3 #6-32 2.031 B.C.
S90MPA-C28D37	.3745	2.850	5.07	2.80	1.27	1.00	1.125	.09	2x3 #8-32 2.000 B.C.
S90MPA-C34D50	.4995	3.380	5.53	3.38	1.08	1.08	1.375	.08	2x4 #10-32 3.000 B.C.

* For input side see View A, threaded mount holes "K" are at output end only. This assembly is supplied with housing solder terminals with leads attached and with 3 mounting clamps for #4-40 screws on Ø1.72 B.C.

Catalog Number (Ref.)	Torque Range lbf in.	Elect. Power watts	Shaft Inertia lbf in. sec^2	Max. Speed rpm	Mech. Heat Dissipation watts	Max. Overhung Load lbf	Unforced Response msec.	Weight lb.
S90MPA-C14D19A	.06 – 2	3	26 x 10^{-7}	2000	6	4	9	.7
S90MPA-C23D31	.12 – 5	5	13 x 10^{-6}	2000	10	20	18	3.0
S90MPA-C28D37	.4 – 15	6	33 x 10^{-6}	1400	20	35	25	5.0
S90MPA-C34D50	.6 – 35	10	15 x 10^{-5}	1000	30	50	70	9.0

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ZERO BACKLASH
LOW INERTIA
NO FRICTION SURFACE

› COIL DATA:

Voltage: 24V DC

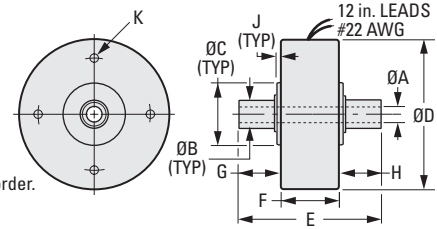
Voltages other than 24 Volts DC available on special order.

› APPLICATIONS:

Tensioning
Controlled Stops
Positioning
Locking
Motor Testing

The shaft becomes coupled to the housing with electrical excitation. The torque is proportional to the DC input current.

All models are available with the shaft on one end, on special order.



INCH COMPONENT

Catalog Number	A Dia. +.001 -.000	B Dia. ± .0002	C Dia. +.000 -.001	D Dia. ± .015	E ± .01	F ± .03	G ± .02	H ± .02	J ± .01	K
S90MPA-B28D37H38	.375	.4980	1.125	2.87	2.10	1.37	.47	.27	.08	3 ea. #6-32 on 2.000 B.C.
S90MPA-B34D50S	Solid	.4995	1.125	3.37	3.72	1.47	1.12	1.12	.09	4 ea. #10-32 on 3.000 B.C.
S90MPA-B34D50H38	.375	.4980			2.20		.47	.25		
** **S90MPA-B45D75S**	Solid	.7495	1.875	4.50	3.53	1.77	1.42	.33	.11	4 ea. #10-32 on 4.228 B.C.
S90MPA-B45D75H50	.501	.7480			2.63		.52			
S90MPA-B47D75S	Solid	.7495	1.875	4.71	3.53	1.77	1.41	.33	.11	4 ea. #10-32 on 4.228 B.C.
S90MPA-B47D75H50	.501	.7480			2.63		.52			

** 3/16 keyway & flat, 90° oriented in respect to the keyway on the end of the shaft.

Catalog Number (Ref.)	Torque Range lbf in.	Elect. Power watts	Shaft Inertia lbf in. sec^2	Max. Speed rpm	Mech. Heat Dissipation watts	Max. Overhung Load lbf	Unforced Response msec.	Weight lb.
S90MPA-B28D37H38	.3 – 15	6	34 x 10^{-6}	2000	20	25.0	25	2.5
S90MPA-B34D50S	.6 – 35	9	12 x 10^{-5}	1800	30	50.0	35	4.0
S90MPA-B34D50H38								
S90MPA-B45D75S	1 – 60	8	45 x 10^{-5}	1800	50	100.0	85	7.0
S90MPA-B45D75H50								
S90MPA-B47D75S	2.5 – 115	13	61 x 10^{-5}	1800	55	120.0	90	8.0
S90MPA-B47D75H50								