

High-speed motors for test benches

MGV series

Up to 45 000 rpm



Description

MGV series servomotors are innovative direct drive solutions especially designed for applications that require high speeds and low inertias.

They are successfully employed in Automotive or Aerospace Components Test-Benches (starters, pumps, alternators, gearboxes...).

Thanks to the possibility to generate fast response operation cycles, MGV series servomotors meet different simulation requirements : speed in urban or race cycles, speed acyclism of an IC engine, etc.

Advantages

- **High maximum speeds allowing to avoid the use of mechanical speed multipliers**
- **Low inertias allowing very fast accelerations / decelerations**
- **Constant power operation above nominal speed, allowing to avoid to oversize the drive**
- **Water cooling ensuring high compactness and low noise level**
- **Thermal protection and resolver feedback as standard**

General characteristics	
Power	Up to 200 kW
Speed	Up to 45 000 rpm
Field weakening	Up to 10 x nominal speed
Mounting	Flange (B5) or foot (B3)
Protection degree	IP40 as standard
Cooling method	Water jacket
Supply voltage	400 VAC
Connections	<ul style="list-style-type: none"> ■ 1.2 m flying cable for power and thermal probe ■ connector for feedback sensor signal
Stator winding isolation	Class F according to EN60034-1 standard (overmolding)
Thermal protection	1 PTC 150 probe as standard
Rotor balancing	G1 quality
Shaft end	Solid smooth shaft as standard
Bearings	Steel or ceramic depending on speed and load
Feedback sensor	2 poles resolver Sin/cos encoder

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Overview

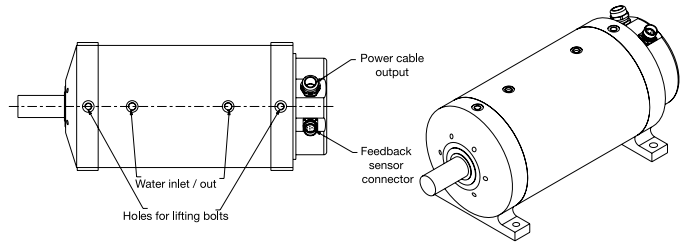
MGV series are permanent magnet brushless servomotors integrated into a compact water cooled frame.

MGV Series servomotors are especially suitable for Automotive and Aerospace components testing, where they offer a large number of advantages over traditional fan ventilated induction motors :

- 😊 Increased maximum speeds
- 😊 Suppression of mechanical speed multipliers
- 😊 Reduced inertia
- 😊 Increased compactness
- 😊 Reduced noise

In combination with Parker AC890 Series drives, MGV take benefit of field weakening technique, which allows to deliver high torque at low speed, and constant power from nominal up to maximum speed.

A large number of winding variants are available, meeting any desired torque / speed characteristics up to 100 kW.



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Drive associations

Motor	PARKER DRIVE DIGIVEX	Base speed	DIGIVEX Speed limit due to the B.E.M.F or the frequency	Low speed torque	Low speed torque S6	S1 Power	S6 power	Bearings	Inertia
Name	Name	Nb (rpm)	NmaxDIGIVEX (rpm)	Mo (Nm)	MoS6 (Nm)	PS1 (kW)	PS6 (kW)		kg.m ²
MGV420BAU	DIGIVEX 32/64	4480	45000	4,9	7,3	2,3	2,3	XLIFE	0,00058
MGV420BAP	DIGIVEX 32/64	10400	45000	4,5	6,1	4,9	4,9	XLIFE	0,00058
MGV420BAK	DIGIVEX 50/80	23200	45000	4,2	4,8	10,2	10,2	XLIFE	0,00058
MGV430BAQ	DIGIVEX 32/64	6070	45000	7,4	9,9	4,7	4,7	XLIFE	0,00078
MGV430BAL	DIGIVEX 32/64	13100	45000	6,7	6,7	10,0	10,0	XLIFE	0,00078
MGV430BAI	DIGIVEX 50/80	21900	45000	6,8	6,8	15,6	15,6	XLIFE	0,00078
MGV620CAN	DIGIVEX 32/64	4680	30000	10,0	15,0	4,9	4,9	XLIFE	0,00201
MGV620CAI	DIGIVEX 50/80	9930	30000	10,0	15,0	10,4	10,4	XLIFE	0,00201
MGV620CAF	DIGIVEX 50/80	15300	30000	10,0	10,9	16,0	16,0	XLIFE	0,00201
MGV635CAI	DIGIVEX 50/80	4870	30000	20,0	28,4	10,2	10,2	XLIFE	0,00336
MGV635CAF	DIGIVEX 50/80	7450	30000	19,3	19,3	15,6	15,6	XLIFE	0,00336
MGV635CAD	DIGIVEX 100/120	11900	30000	20,0	25,2	25,0	25,0	XLIFE	0,00336
MGV820CRR	DIGIVEX 32/64	3820	24000	22,0	27,1	8,8	8,8	XLIFE	0,00772
MGV820CRP	DIGIVEX 50/80	6080	24000	22,0	27,1	14,0	14,0	XLIFE	0,00772
MGV820CAR	DIGIVEX 50/80	3510	24000	28,0	42,0	10,3	10,3	XLIFE	0,00772
MGV820CAP	DIGIVEX 100/120	5500	24000	28,0	42,0	16,0	16,0	XLIFE	0,00772
MGV840CAR	DIGIVEX 50/80	1410	24000	68,0	97,4	10,0	10,0	XLIFE	0,01455
MGV840CAP	DIGIVEX 100/120	2250	24000	68,0	100,0	16,0	16,0	XLIFE	0,01455
MGV840CAH	DIGIVEX 150	4500	24000	68,0	93,9	32,0	32,0	XLIFE	0,01455
MGV840CAF	DIGIVEX 300	6370	24000	66,0	100,0	44,0	44,0	XLIFE	0,01455
MGV840CAD	DIGIVEX 300	10300	24000	58,0	93,5	63,0	63,0	XLIFE	0,01455
MGV930CAT	DIGIVEX 50/80	795	15900	120,0	134,9	10,0	10,0	XLIFE	0,03654
MGV930CAP	DIGIVEX 100/120	1280	20000	120,0	167,5	16,0	16,0	XLIFE	0,03654
MGV930CAM	DIGIVEX 100/120	1830	20000	120,0	121,2	23,0	23,0	XLIFE	0,03654
MGV930CAJ	DIGIVEX 100/120	2470	20000	112,1	112,1	31,0	31,0	XLIFE	0,03654
MGV930CAF	DIGIVEX 300	4140	20000	120,0	167,5	52,0	52,0	XLIFE	0,03654
MGV950CAM	DIGIVEX 100/120	1100	20000	200,0	202,1	23,0	23,0	XLIFE	0,05803
MGV950CAJ	DIGIVEX 100/120	1440	20000	186,8	186,8	30,0	30,0	XLIFE	0,05803
MGV950CAF	DIGIVEX 300	2490	20000	200,0	279,2	52,0	52,0	XLIFE	0,05803
MGV950CAE	DIGIVEX 300	3010	20000	200,0	232,3	63,0	63,0	XLIFE	0,05803
MGVA30DAN	DIGIVEX 100/120	510	10200	280,0	360,0	15,0	15,0	HYBRIDS	0,15229
MGVA30DAF	DIGIVEX 150	1130	12000	280,0	360,0	33,0	33,0	HYBRIDS	0,15229
MGVA30DAD	DIGIVEX 300	1710	12000	280,0	360,0	50,0	50,0	HYBRIDS	0,15229
MGVA30DAC	DIGIVEX 300	2330	12000	275,0	360,0	67,0	67,0	HYBRIDS	0,15229
MGVA50DAF	DIGIVEX 150	620	12000	480,0	600,0	31,0	31,0	HYBRIDS	0,24734
MGVA50DAD	DIGIVEX 300	975	12000	480,0	600,0	49,0	49,0	HYBRIDS	0,24734
MGVA50DAC	DIGIVEX 300	1330	12000	480,0	600,0	67,0	67,0	HYBRIDS	0,24734

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Drive associations

Motor	PARKER DRIVE AC890SD	Base speed	AC890 Speed limit due to the B.E.M.F or the frequency	Low speed torque	Low speed torque S6	S1 Power	S6 power	Bearings	Inertia
Name	Name	Nb (rpm)	NmaxAC890 (rpm)	Mo (Nm)	MoS6 (Nm)	PS1 (kW)	PS6 (kW)		kg.m ²
MGV420BAU	890SD-532100B	4480	11283	4,3	4,3	2,3	2,3	STEEL	0,00058
MGV420BAP	890SD-53216SB	10400	22566	4,5	4,5	4,9	4,9	STEEL	0,00058
MGV420BAK	890SD-532300C	23200	30000	4,1	4,1	10,2	10,2	HYBRIDS	0,00058
MGV430BAQ	890SD-53216SB	6070	13973	7,4	7,4	4,7	4,7	STEEL	0,00078
MGV430BAL	890SD-532300C	13100	27869	6,5	6,5	10	10	HYBRIDS	0,00078
MGV430BAI	890SD-532450D	21900	30000	6,6	6,6	15,6	15,6	HYBRIDS	0,00078
MGV620CAN	890SD-53216SB	4680	9239	10,0	13,0	4,9	4,9	STEEL	0,00201
MGV620CAI	890SD-532300C	9930	18478	10,0	10,2	10,4	10,4	STEEL	0,00201
MGV620CAF	890SD-532450D	15300	20000	10,0	10,5	16	16	HYBRIDS	0,00201
MGV635CAI	890SD-532300C	4870	10537	18,0	18,0	10,2	10,2	STEEL	0,00336
MGV635CAF	890SD-532450D	7450	15839	18,6	18,6	15,6	15,6	STEEL	0,00336
MGV820CRR	890SD-532240C	3820	7064	22,0	23,9	8,8	8,8	STEEL	0,00772
MGV820CRP	890SD-53230SC	6080	11039	21,6	21,6	14	14	STEEL	0,00772
MGV820CAR	890SD-532300C	3510	5769	28,0	31,4	10,3	10,3	STEEL	0,00772
MGV820CAP	890SD-532450D	5500	9011	28,0	31,0	16	16	STEEL	0,00772
MGV840CAR	890SD-532300C	1410	2881	64,5	64,5	10	10	STEEL	0,01455
MGV840CAP	890SD-532450D	2250	4513	63,7	63,7	16	16	STEEL	0,01455
MGV840CAH	890SD-432730E	4500	9011	68,0	68,0	32	32	STEEL	0,01455
MGV840CAF	890SD-432870E	6370	10000	63,3	63,3	44	44	STEEL	0,01455
MGV930CAT	890SD-532300C	795	1753	101,1	101,1	10	10	STEEL	0,03654
MGV930CAP	890SD-532590D	1280	2833	120,0	120,0	16	16	STEEL	0,03654
MGV930CAM	890SD-432730E	1830	3923	120,0	130,3	23	23	STEEL	0,03654
MGV930CAJ	890SD-432730E	2470	5100	120,0	120,0	31	31	STEEL	0,03654
MGV930CAF	890SD-433105F	4140	8486	102,9	102,9	52	52	STEEL	0,03654
MGV930CAC	890SD-433216G	8770	10000	101,8	101,8	101	101	STEEL	0,03654
MGV950CAM	890SD-432730E	1100	2350	200,0	217,1	23	23	STEEL	0,05803
MGV950CAJ	890SD-432730E	1440	3054	200,0	200,0	30	30	STEEL	0,05803
MGV950CAF	890SD-433105F	2490	5100	171,4	171,4	52	52	STEEL	0,05803
MGV950CAE	890SD-433145F	3010	6108	178,8	178,8	63	63	STEEL	0,05803
MGV950CAC	890SD-433216G	5010	10000	166,7	166,7	105	105	STEEL	0,05803
MGV950CAX	890SD-433420H	8350	10000	168,7	168,7	175	175	STEEL	0,05803
MGVA30DAN	890SD-532450D	510	1043	255,9	255,9	15	15	STEEL	0,15229
MGVA30DAF	890SD-432730E	1130	2090	280,0	280,0	33	33	STEEL	0,15229
MGVA30DAD	890SD-433105F	1710	3129	270,0	270,0	50	50	STEEL	0,15229
MGVA30DAC	890SD-433145F	2330	4180	254,3	254,3	67	67	STEEL	0,15229
MGVA30DAB	890SD-433216G	3710	6258	260,0	260,0	101	101	STEEL	0,15229
MGVA50DAF	890SD-432730E	620	1253	475,0	475,0	31	31	STEEL	0,24734
MGVA50DAD	890SD-433105F	975	1875	450,8	450,8	49	49	STEEL	0,24734
MGVA50DAC	890SD-433145F	1330	2500	420,8	420,8	67	67	STEEL	0,24734
MGVA50DAB	890SD-433216G	2010	3750	438,3	438,3	101	101	STEEL	0,24734
MGVA50DAA	890SD-433480H	4150	7500	448,5	448,5	200	200	STEEL	0,24734

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MGV codification

High speed motors MGV	Product code																	
	M	G	V	8	4	0	C	A	E	A	B	3	L	R	1	0	0	0
Product series																		
MGV : Water cooling high speed motors	M	G	V															
Size																		
(see motors data tables)				▪	▪	▪												
Torque/Speed characteristics																		
(see motors data tables)							▪	▪	▪									
Feedback sensor																		
Resolver										A								
Sin/cos encoder										K								
Mounting																		
Horizontal, Foot mounting (standard)											B	3						
Horizontal, Flange mounting (option)											B	5						
Design																		
Low speed design (steel bearings)																		L
High speed design (ceramic bearings)																		H
Very high speed design (X-life bearings)																		X
Electrical connections																		
Power out cables 1.2m, PTC and connector for encoder signals (standard)																		1
Terminal box (option)																		6
Interface																		
Standard motor																		0 0 0
Other code : customer specificity																		

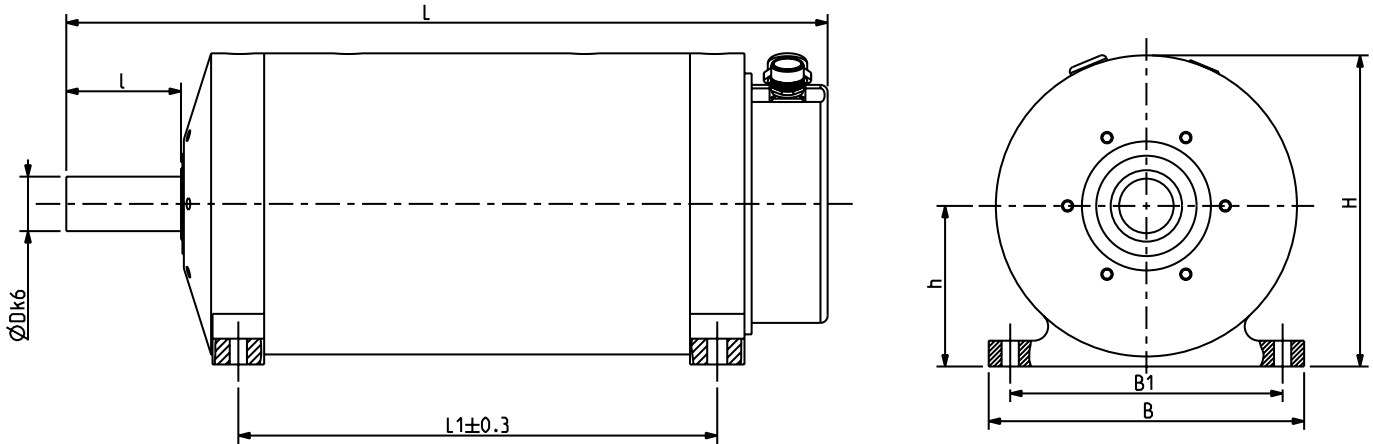
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Dimensions



Motor	Dimensions (mm)								Weight Kg
	L	L1	B	B1	H	h	l	Dk6	
M G V 4 2 0 U	343	192	150	125	150	80	50	24	30
M G V 4 2 0 P	343	192	150	125	150	80	50	24	30
M G V 4 2 0 K	343	192	150	125	150	80	50	24	30
M G V 4 3 0 Q	376	225	150	125	150	80	50	24	33
M G V 4 3 0 L	376	225	150	125	150	80	50	24	33
M G V 4 3 0 I	376	225	150	125	150	80	50	24	33
M G V 6 2 0 N	384	215	160	140	170	90	58	32	41
M G V 6 2 0 I	384	215	160	140	170	90	58	32	41
M G V 6 3 5 I	444	275	160	140	170	90	58	32	50
M G V 6 3 5 F	444	275	160	140	170	90	58	32	50
M G V 8 2 0 P	451	254	220	190	217	112	80	38	80
M G V 8 4 0 H	531	334	220	190	217	112	80	38	100
M G V 8 4 0 F	531	334	220	190	217	112	80	38	100
M G V 9 3 0 F	626	376	290	254	295	160	110	48	195
M G V 9 3 0 E	626	376	290	254	295	160	110	48	195
M G V 9 5 0 C	746	496	290	254	295	160	110	48	250