



The BMV is a disc valve, high pressure motor, with radial ball-bearings design and efficient performance that can bear greater load than BMT. Its volume is bigger than BMT.

CHARACTERISTIC FEATURES

- The motor can be used in high pressure and high torque.
- Advanced design in disc distribution flow, which can provide improved performance at lower speeds.
- The valve can automatically compensate for wear, so the volumetric efficiency is high.
- Double taper roller bearings permit high radial loads. The motors can be used on heavier vehicles in traction drive applications.

Main Specification

Displacement (cc)		315	400	500	630	800	1000
cu.in/rev		19.2	24.3	30.4	38.4	48.7	60.9
Flow (GPM)	Cont.	42	53	53	53	53	53
	Int.	53	63	63	63	63	63
Speed (RPM)	Cont.	510	500	400	320	250	200
	Int.	630	600	480	380	300	240
Pressure (PSI)	Cont.	3045	3045	3045	3045	3045	3045
	Int.	3625	3625	3625	3625	3625	3625
Torque (in-lbs)	Cont.	7213	10502	13039	14869	15824	17813
	Int.	9892	12659	15611	17371	17689	20155

- Notes**
1. Continuous data: The Max. Value of operating motor continuously.
 2. Intermittent Data: The Max. Value of operating motor is 10 % per minute.
 3. A simultaneous max. RPM and max. pressure is not recommended.
 4. The Conversion Factors is on page 4. Please consult it.
 5. Optimum operating situation should be at the 1/3~2/3 of the continuous operation.



BMV-315 315cc

ΔP (PSI)

	508	1015	1450	2030	2610	2900	3480
3	1238	2599	3890	5392	6559	7470	8840
	30	27	26	25	23	19	16
5	1353	2776	4119	5622	6957	7912	9459
	52	51	50	49	48	45	42
13	1317	2758	4111	5781	7205	8265	9830
	143	142	140	138	135	131	125
20	1264	2687	4049	5675	7213	8310	9892
	222	220	217	213	219	204	197
26	1202	2625	3996	5622	7160	8274	9795
	289	287	285	282	279	274	266
33	1087	2528	3907	5534	7063	8142	9662
	368	366	364	361	357	352	345
40	1008	2431	3845	5437	6966	8009	9530
	449	447	445	441	434	426	414
42	946	2369	3801	5375	6895	7912	9459
	472	470	467	463	457	449	436
53	725	2201	3642	5242	6701	7700	9255
	598	596	592	586	578	567	546

Torque 7700 in-lbs
Speed 567 rpm

BMV-400 400cc

CONT. INT.

ΔP (PSI)

	508	1015	1450	2030	2610	2900	3480
3	1618	3403	5021	6860	8557	9733	11421
	23	23	22	20	19	18	16
5	1733	3518	5216	7205	8928	10184	11899
	42	42	41	40	38	37	35
13	1768	3554	5331	7443	9194	10484	12641
	112	111	111	110	108	106	101
20	1724	3483	5269	7408	9220	10502	12659
	177	175	172	168	165	1594	153
26	1520	3403	5242	7311	9158	10467	12597
	232	231	229	227	223	219	212
33	1476	3306	5154	7213	9026	10405	12491
	296	294	291	288	282	275	268
40	1397	3191	4942	7081	8911	10299	12288
	358	357	355	352	347	338	327
46	1264	3059	4889	6931	8743	10122	12173
	414	412	409	405	401	394	386
53	1043	2926	4738	6807	8566	9972	11987
	476	474	470	464	456	449	440
63	725	2661	4473	6542	8336	9759	11775
	567	565	561	544	536	527	517

BMV-500 500cc

ΔP (PSI)

	508	1015	1450	2030	2610	2900	3480
3	2139	4137	6153	8478	10520	11961	14206
	19	19	18	18	17	15	12
5	2166	4429	6524	8867	10891	12323	14657
	34	33	33	32	31	30	27
13	2122	4420	6701	9061	11227	12809	15408
	92	91	90	89	87	84	79
20	2060	4402	6648	9105	11386	13039	15611
	141	140	138	136	133	128	121
26	2016	4340	6612	9070	11395	13012	15558
	186	184	182	179	175	170	163
33	1945	4270	6559	8964	11315	12906	15426
	237	236	234	231	227	223	216
40	1777	4111	6391	8911	11050	12632	15346
	290	289	287	284	279	273	262
46	1609	3943	6285	8813	10944	12429	15161
	333	332	330	327	323	318	308
53	1423	3739	5976	8610	10767	12243	15001
	385	384	382	379	375	367	355
63	1061	3342	5498	8142	10360	11846	14586
	458	456	454	451	447	441	429

BMV-630 630cc

ΔP (PSI)

	508	870	1305	1740	2175	2610	3045
3	2475	4614	7178	9724	11209	13693	15771
	16	15	15	14	14	12	11
5	2546	4880	7417	9733	11625	14206	16478
	26	26	26	26	25	23	21
13	2555	4906	7673	10051	12058	14869	17291
	71	71	70	68	67	65	61
20	2387	4844	7629	9901	11952	14851	17362
	110	109	107	105	103	100	95
26	2334	4756	7567	9662	11934	14798	17371
	144	143	141	139	136	133	128
33	2219	4561	7399	9468	11810	14666	17238
	184	183	181	179	177	173	168
40	2122	4376	7222	9397	11757	14586	17044
	223	222	221	219	217	214	207
46	1856	4287	7037	9300	11492	14462	16867
	258	257	256	253	249	245	240
53	1609	4146	6639	8999	11315	14241	16646
	298	298	296	294	291	285	274
63	1149	3677	6294	8646	10935	13817	16221
	356	355	353	349	344	338	330

BMV-800

800cc

ΔP (PSI)

	363	725	1160	1450	1885	2320	2610
3	2458	4995	7337	9680	12420	15134	16929
	11	10	10	9	8	8	7
5	2493	5048	7470	10166	12871	15762	17627
	23	22	22	21	20	18	16
13	2546	5145	7567	10272	12933	15824	17689
	60	59	57	56	54	52	48
20	2378	5127	7558	10299	12951	15788	17618
	91	90	89	87	84	81	77
26	2219	5003	7426	10078	12800	15620	17547
	122	121	120	118	115	111	105
33	2139	4729	7284	9883	12615	15373	17468
	153	152	150	147	143	139	133
40	2086	4650	7143	9742	12385	15152	17318
	185	183	181	178	174	169	163
46	1901	4455	7010	9538	12173	15010	17114
	216	214	212	209	206	203	196
53	1741	4137	6763	9397	12040	14860	16911
	247	245	243	240	237	232	225
63	1043	3430	6303	9017	11651	14471	16248
	297	296	295	293	288	283	277

Flow (GPM)

BMV-1000

1000cc

ΔP (PSI)

	363	725	1015	1450	2030	2320
3	2758	5658	8584	12376	17486	19970
	9	9	9	8	7	6
5	2829	5728	8646	12464	17503	20067
	28	27	26	25	23	21
13	2882	5790	8769	12570	17813	20155
	47	46	45	43	41	38
20	2811	5675	8725	12597	17707	20120
	72	71	70	68	66	63
26	2732	5605	8690	12535	17627	19828
	98	97	95	93	90	86
33	2679	5516	8619	12456	17574	19660
	123	122	120	117	114	110
40	2458	5322	8495	12093	17353	19519
	149	148	146	144	140	133
46	2334	5127	8363	11828	17017	19086
	174	172	170	166	162	155
53	2033	4915	8062	11492	16716	18608
	199	196	193	190	185	178
63	1467	4535	7664	11200	16133	17981
	240	237	233	229	225	218

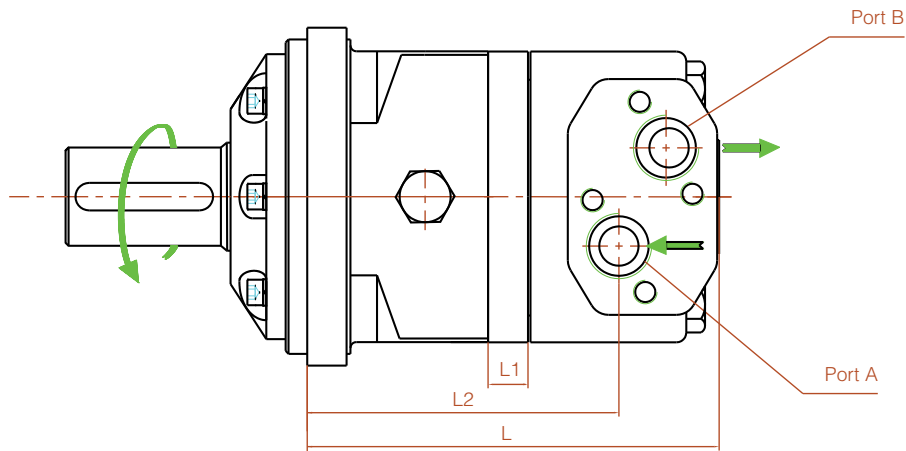
Flow (GPM)

Torque 14471 in-lbs
Speed 283 rpm

CONT.	INT.
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All the datas were tested at 50°C with anti-wear hydraulic oil.
Actual data may vary slightly from different units in production.

Figuration A: Standard Type



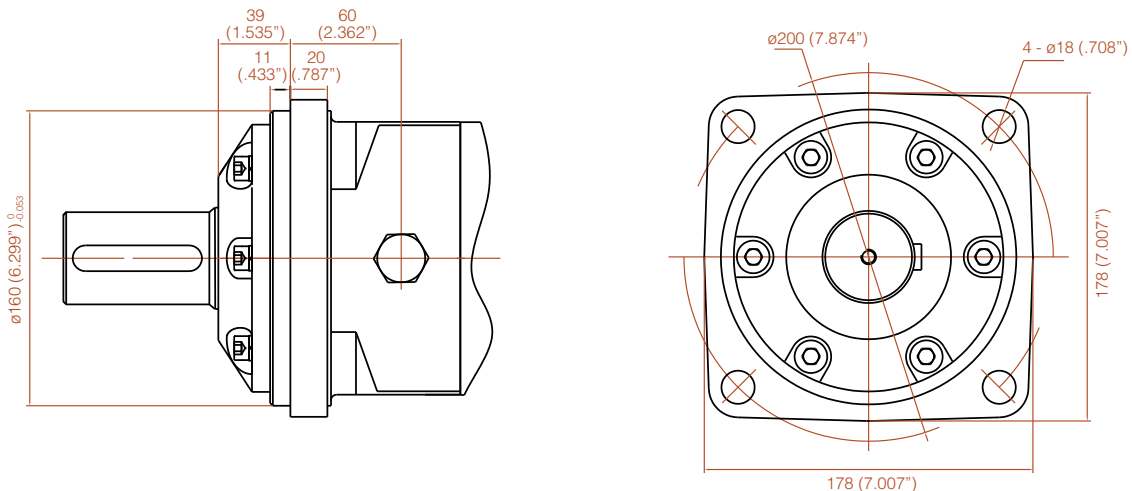
Standard rotation viewed from shaft end

Port A pressurized --- CW
Port B pressurized --- CCW

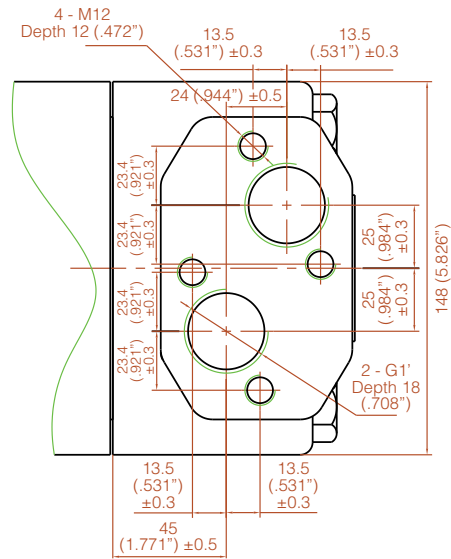
Type	L1	L2	L
BMV315	23.8 (0.937")	161.8 (6.370")	212.8 (8.378")
BMV400	31 (1.220")	169 (6.654")	220 (8.661")
BMV500	39 (1.535")	177 (6.969")	228 (8.976")
BMV630	50.9 (2.003")	188.9 (7.437")	239.9 (9.445")
BMV800	65.5 (2.579")	203.5 (8.012")	254.5 (10.020")
BMV1000	81.5 (3.209")	219.5 (8.642")	270.5 (10.650")

Diplacement	315		400		500		630		800		1000	
L1	23.8	0.937	31	1.220	39	1.535	50.9	2.004	65.5	2.579	81.5	3.209
L2	161.8	6.370	169	6.654	177	6.969	188.9	7.437	203.5	8.012	219.5	8.642
L	212.8	8.378	220	8.661	228	8.976	239.9	9.445	254.5	10.020	270.5	10.650

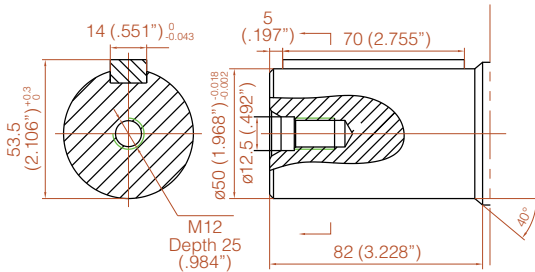
Mounting Flange A



Back Housing A

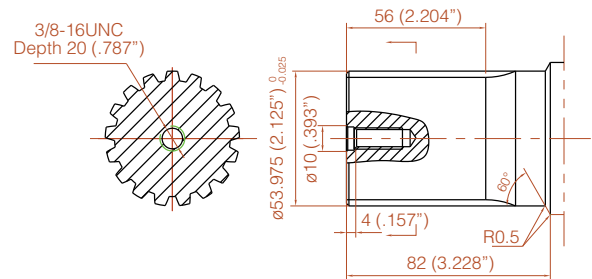


Shaft A



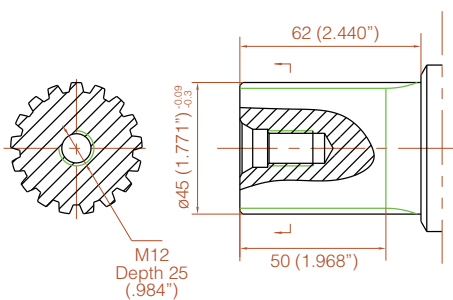
Cylinder shaft: $\phi 50$ (1.968")
 Parallel key: 14x9x70 (.551"x.354"x2.755")
 Link thread: M12

Shaft B



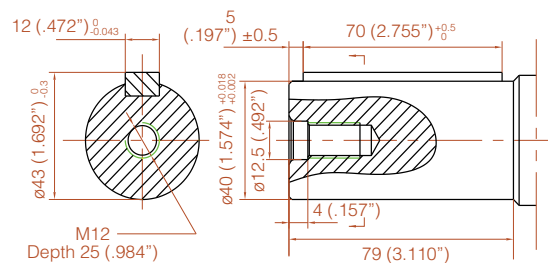
Involute spline shaft: $\phi 53.975$ (2.125"),
 16 teeth, DP8/16, Effective length 56 (2.204")
 Link thread: 3/8-16UNC Depth 20 (.787")

Shaft D



Involute spline shaft: $\phi 45 \times 62$ (1.771"x2.440"),
 17 teeth, m2.5, Effective length 50 (1.968")
 Link thread: M12 Depth 25 (.984")

Shaft E



Cylinder shaft: $\phi 40 \times 79$ (1.574"x3.110")
 Parallel key: 12x8x70 (.472"x.123"x2.755")
 Link thread: M12 Depth 25 (.984")



Choose an option for each category

BMV

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Figuration

A - Standard

Displacement (cc)

A - 315 B - 400 C - 500
 D - 630 E - 800 F - 1000

Flange & Pilot (mm)

A - Square flange 178x178 (7.007"x7.007"), 4- ϕ 18 (.708") distributing circle ϕ 200 (7.874"), Pilot ϕ 160x11 (6.299"x.433")

Shaft & Key (mm)

A - Cylinder shaft: ϕ 50x79 (1.968"x3.110"), Parallel key: 14x9x70 (.551"x.354"x2.755"), Link thread: M12
 B - Involute spline shaft: ϕ 53.975x81 (2.125"x3.228"), 16 teeth, DP8/16, Link thread: 3/8-16UNC, Depth 20 (.787")
 D - Involute spline shaft: ϕ 45x62 (1.771"x2.440"), 17 teeth, m2.5, Effective length 50 (1.968"), Link thread: M12, Depth 25 (.984")
 E - Cylinder shaft: ϕ 40x79 (1.574"x3.110"), Parallel key: 12x8x70 (.472"x.123"x2.755"), Link thread: M12, Depth 25 (.984")

Back Housing

A - Refer to Drawing Page

Oil Port

D - 2-1-1/16-12UN F - 2-1-5/16-12UN

Link Thread on Port Surface

A - 4-M12

Drain Port

D - 7/16-20UNF

Order example: BMVAAABADAD

Other configuration and/or mounting types are available upon request.