Orbital Motors

Low Speed, High Torque Motors

BMV / BMVE

Series

ANFIELD

Strength in Products,
Strength in Service

BMV SERIES HYDRAULIC MOTOR

BMV series motor adapt the advanced Geroler gear set designed with disc distribution flow and high pressure.The unit can be supplied the individual variant in operating multifunction in accordance with requirement of applications.

Characteristic features:

* Advanced manufacturing devices for the Geroler gear set,which use low pressure of start-up, provide smooth and reliable operation and high efficiency.
* The output shaft adapts in tapered roller bearings that permit high axial and radial forces. The case can offer capacities of high pressure and high torque in the wide of applications.
* Advanced design in disc distrbution flow, which can automatically compensate in operating with high volume efficiency and long life, provide smooth and reliable operation.

Main Specification

Type		BMV 315	BMV 400	BMV 500	BMV 630	BMV 800	BMV 1000
Geometric displacement (cm^3/rev.)		333	419	518	666	801	990
Max. speed (rpm)	cont.	510	500	400	320	250	200
	int.	630	600	480	380	300	240
Max. torque (N•m)	cont.	920	1180	1460	1660	1880	2015
	int.	1110	1410	1760	1940	2110	2280
	peak	1290	1640	2050	2210	2470	2400
Max. output (kW)	cont.	38.0	47.0	47.0	40.0	33.0	28.6
	int.	46.0	56.0	56.0	56.0	44.0	40.0
Max. pressure drop (MPa)	cont.	20	20	20	18	16	14
	int.	24	24	24	21	18	16
	peak	28	28	28	24	21	18
Max. flow (L/min)	cont.	160	200	200	200	200	200
	int.	200	240	240	240	240	240
Weight (kg)		31.8	32.6	33.5	34.9	36.5	38.6

* Continuous pressure:Max. value of operating motor continuously.
* Intermittent pressure:Max. value of operating motor in 6 seconds per minute.
* Peak pressure:Max. value of operating motor in 0.6 second per minute.

Performance Data

BMV 315 [333cm³/rev.]

Pressure (MPa)

Flow (L/min)	3.5	7	10	14	18	Max.cont. 20	Max.int. 24
10	140	294	440	610	742	845	1000
	26	**24**	**23**	**22**	**20**	**17**	**14**
20	153	314	466	636	787	895	1070
	55	**54**	**53**	**52**	**51**	**48**	**44**
50	149	312	465	654	815	935	1112
	145	**144**	**142**	**140**	**137**	**133**	**127**
75	143	304	458	642	816	940	1119
	220	**218**	**215**	**211**	**207**	**202**	**195**
100	136	297	452	636	810	936	1108
	294	**292**	**290**	**287**	**283**	**278**	**270**
125	123	286	442	626	799	921	1093
	368	**366**	**364**	**361**	**357**	**352**	**345**
150	114	275	435	615	788	906	1078
	445	**443**	**441**	**437**	**430**	**422**	**410**
Max.cont. 160	107	268	430	608	780	895	1070
	475	**473**	**470**	**466**	**460**	**452**	**439**
Max.int. 200	82	249	412	593	758	871	1047
	596	**594**	**590**	**584**	**576**	**565**	**544**

BMV 400 [419cm³/rev.]

Pressure (MPa)

Flow (L/min)	3.5	7	10	14	18	Max.cont. 20	Max.int. 24
10	183	385	568	776	968	1101	1292
	20	**20**	**19**	**18**	**17**	**16**	**14**
20	196	398	590	815	1010	1152	1346
	44	**44**	**43**	**42**	**40**	**39**	**37**
50	200	402	603	842	1040	1186	1430
	114	**113**	**113**	**112**	**110**	**108**	**103**
75	195	394	596	838	1043	1188	1432
	175	**173**	**170**	**166**	**163**	**157**	**152**
100	172	385	593	827	1036	1184	1425
	236	**235**	**233**	**231**	**227**	**223**	**215**
125	167	374	583	816	1021	1177	1413
	296	**294**	**291**	**288**	**282**	**275**	**268**
150	158	361	559	801	1008	1165	1390
	355	**354**	**352**	**349**	**344**	**335**	**324**
175	143	346	553	784	989	1145	1377
	416	**414**	**411**	**407**	**403**	**396**	**388**
Max.cont. 200	118	331	536	770	969	1128	1356
	475	**473**	**469**	**463**	**455**	**448**	**439**
Max.int. 240	82	301	506	740	943	1104	1332
	571	**569**	**565**	**548**	**539**	**530**	**520**

BMV 500 [518cm³/rev.]

Pressure (MPa)

Flow (L/min)	3.5	7	10	14	18	Max.cont. 20	Max.int. 24
10	242	468	696	959	1190	1353	1607
	17	**17**	**16**	**16**	**15**	**13**	**11**
20	245	501	738	1003	1232	1394	1658
	36	**35**	**35**	**34**	**33**	**32**	**29**
50	240	500	758	1025	1270	1449	1743
	93	**92**	**91**	**90**	**88**	**85**	**80**
75	233	498	752	1030	1288	1475	1766
	140	**139**	**137**	**135**	**132**	**127**	**120**
100	228	491	748	1026	1289	1472	1760
	189	**187**	**185**	**182**	**178**	**173**	**166**
125	220	483	742	1014	1280	1460	1745
	237	**236**	**234**	**231**	**227**	**223**	**216**
150	201	465	723	1008	1250	1429	1736
	287	**286**	**284**	**281**	**276**	**270**	**260**
175	182	446	711	997	1238	1406	1715
	335	**334**	**332**	**329**	**325**	**320**	**310**
Max.cont. 200	161	423	676	974	1218	1385	1697
	384	**383**	**381**	**378**	**374**	**366**	**354**
Max.int. 240	120	378	622	921	1172	1340	1650
	461	**459**	**457**	**454**	**450**	**444**	**432**

Torque (N•m) 1340
Speed (rpm) **444**

BMV 630 [666cm³/rev.]

Pressure (MPa)

Flow (L/min)	3.5	6	9	12	15	18	Max.int. 21
10	280	522	812	1100	1268	1549	1784
	14	**13**	**13**	**12**	**12**	**11**	**10**
20	288	552	839	1101	1315	1607	1864
	28	**28**	**27**	**27**	**26**	**24**	**22**
50	289	555	868	1137	1364	1682	1956
	72	**72**	**71**	**69**	**68**	**66**	**62**
75	270	548	863	1120	1352	1680	1964
	109	**108**	**106**	**104**	**102**	**99**	**94**
100	264	538	856	1093	1350	1674	1965
	146	**145**	**143**	**141**	**138**	**135**	**130**
125	251	516	837	1071	1336	1659	1950
	184	**183**	**181**	**179**	**177**	**173**	**168**
150	240	495	817	1063	1330	1650	1928
	221	**220**	**219**	**217**	**215**	**212**	**205**
175	210	485	796	1052	1300	1636	1908
	259	**258**	**257**	**254**	**250**	**246**	**241**
Max.cont. 200	182	469	751	1018	1280	1611	1883
	297	**297**	**295**	**293**	**290**	**284**	**273**
Max.int. 240	130	416	712	978	1237	1563	1835
	358	**357**	**355**	**351**	**346**	**340**	**332**

cont.
int.

Performance Data

BMV 800 [801cm³/rev.]

Flow (L/min)	Pressure (MPa) 2.5	5	8	10	13	16 (Max.cont.)	18 (Max.int.)
10	278 **11**	565 **10**	830 **10**	1095 **9**	1405 **8**	1712 **8**	1915 **7**
20	282 **23**	571 **22**	845 **22**	1150 **21**	1456 **20**	1783 **18**	1994 **16**
50	288 **60**	582 **59**	856 **57**	1162 **56**	1463 **54**	1790 **52**	2001 **48**
75	269 **91**	580 **90**	855 **89**	1165 **87**	1465 **84**	1786 **81**	1993 **77**
100	251 **122**	566 **121**	840 **120**	1140 **118**	1448 **115**	1767 **111**	1985 **105**
125	242 **153**	535 **152**	824 **150**	1118 **147**	1427 **143**	1739 **139**	1976 **133**
150	236 **185**	526 **183**	808 **181**	1102 **178**	1401 **174**	1714 **169**	1959 **163**
175	215 **216**	504 **214**	793 **212**	1079 **209**	1377 **206**	1698 **203**	1936 **196**
Max.cont. 200	197 **247**	468 **245**	765 **243**	1063 **240**	1362 **237**	1681 **232**	1913 **225**
Max.int. 240	118 **297**	388 **296**	713 **295**	1020 **293**	1318 **288**	1637 **283**	1838 **277**

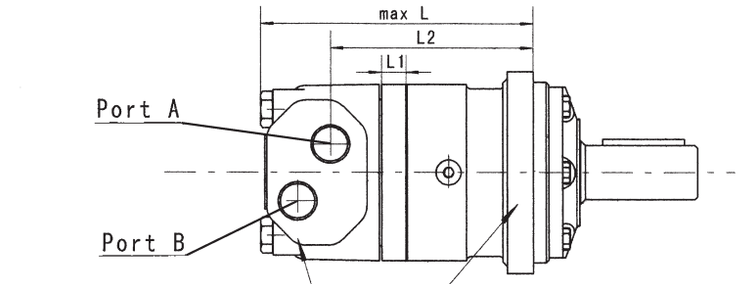
BMV 1000 [990cm³/rev.]

Flow (L/min)	Pressure (MPa) 2.5	5	7	10	14 (Max.cont.)	16 (Max.int.)
10	312 **9**	640 **9**	971 **9**	1400 **8**	1978 **7**	2259 **6**
30	320 **28**	648 **27**	978 **26**	1410 **25**	1980 **23**	2270 **21**
50	326 **47**	655 **46**	992 **45**	1422 **43**	2015 **41**	2280 **38**
75	318 **72**	642 **71**	987 **70**	1425 **68**	2003 **66**	2276 **63**
100	309 **98**	634 **97**	983 **95**	1418 **93**	1994 **90**	2243 **86**
125	303 **123**	624 **122**	975 **120**	1409 **117**	1988 **114**	2224 **110**
150	278 **149**	602 **148**	961 **146**	1368 **144**	1963 **140**	2208 **133**
175	264 **174**	580 **172**	946 **170**	1338 **166**	1925 **162**	2159 **155**
Max.cont. 200	230 **199**	556 **196**	912 **193**	1300 **190**	1891 **185**	2105 **178**
Max.int. 240	166 **240**	513 **237**	867 **233**	1267 **229**	1825 **225**	2034 **218**

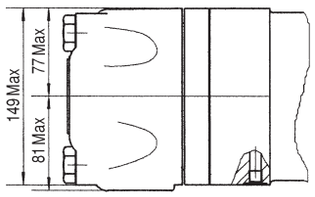
Torque (N•m) 1825
Speed (rpm) **225**

cont.
int.

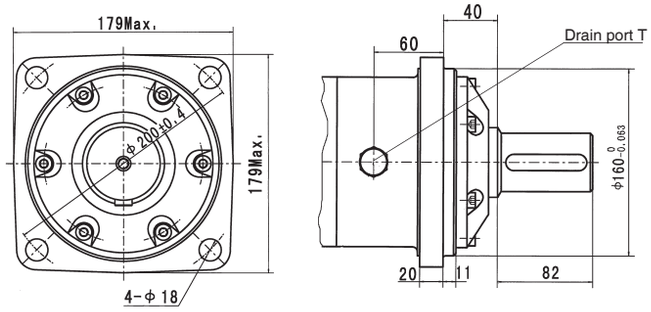
BMV DIMINSIONS AND MOUNTING DATA



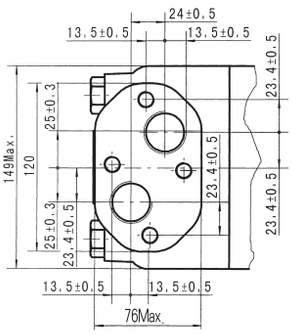
Model	L	L1	L2
BMV315	217	20	161.5
BMV400	224	27	168.5
BMV500	232	35	176.5
BMV630	244	47	188.5
BMV800	255	58	199.5
BMV1000	271	74	215.5



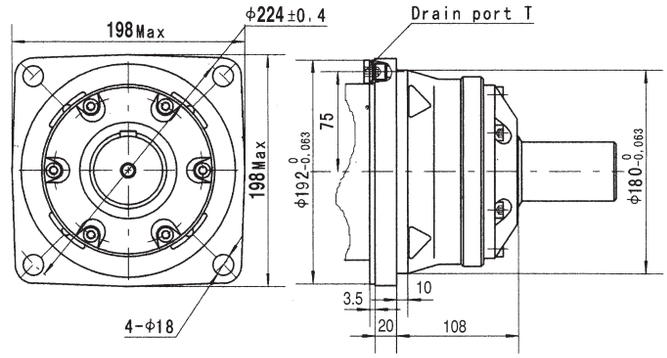
Flange 4



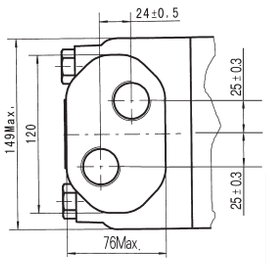
Porting
D、M



Flange W



S、G、M5、S1

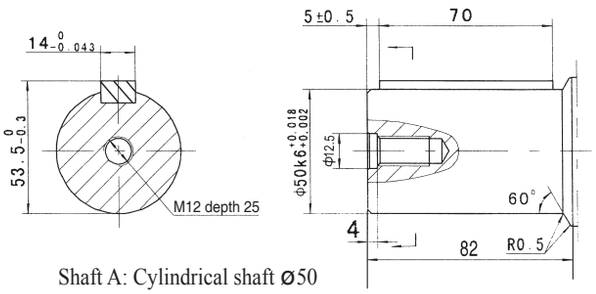


Model	L	L1	L2
BMV-315-W	148.5	20	93.5
BMV-400-W	155.5	27	100.5
BMV-500-W	163.5	35	108.5
BMV-630-W	175.5	47	120.5
BMV-800-W	186.5	58	131.5
BMV-1000-W	202.5	74	147.5

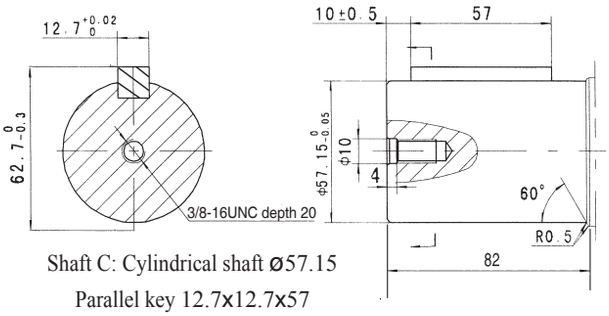
Note:The thickness of the stator and rotor is the dimension of L1adding on 7mm.

Content / Mounting	Code					
	D (depth)	M (depth)	S (depth)	G (depth)	M5 (depth)	S1 (depth)
P(A,B)	G1 (18)	M33 x 2 (18)	1-5/16-12UN(18)	G1 (18)	M33 x 2 (18)	1-5/16-12UN(18)
T	G1/4 (12)	M14 x 1.5 (12)	9/16-18UNF(12)	G1/4 (12)	M14 x 1.5 (12)	7/16-20UNF(12)
C	4-M12 (10)	4-M12 (10)	--	--	--	--

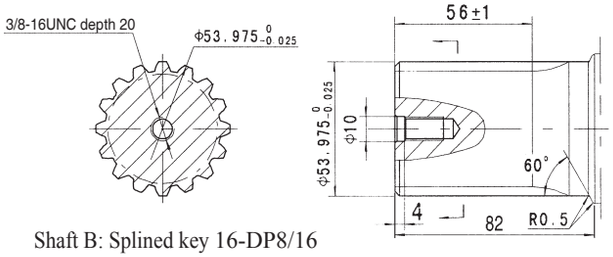
BMV SHAFT EXTENSIONS DIMENSIONS DATA



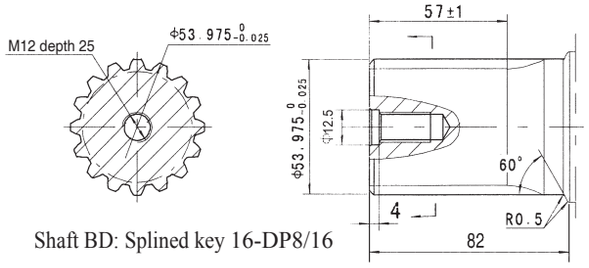
Shaft A: Cylindrical shaft Ø50
Parallel key 14x9x70



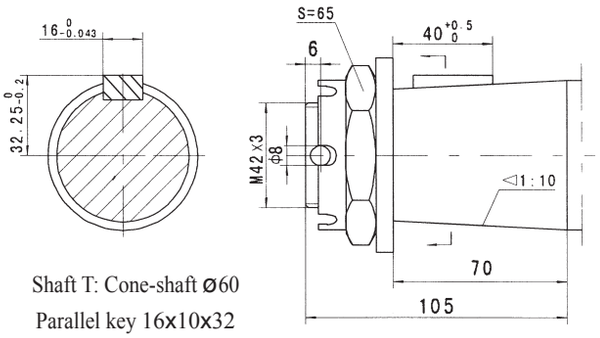
Shaft C: Cylindrical shaft Ø57.15
Parallel key 12.7x12.7x57



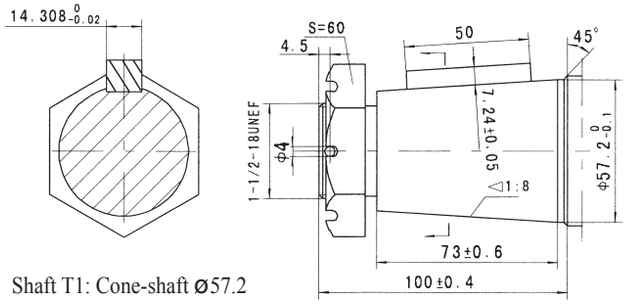
Shaft B: Splined key 16-DP8/16



Shaft BD: Splined key 16-DP8/16



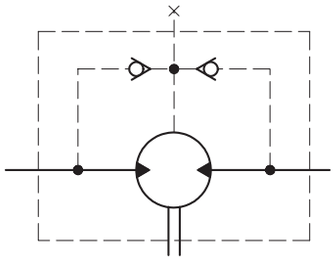
Shaft T: Cone-shaft Ø60
Parallel key 16x10x32
Tightening torque: 750±50Nm

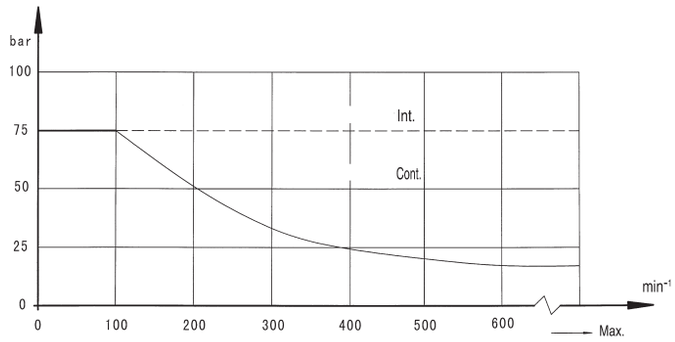


Shaft T1: Cone-shaft Ø57.2
Parallel key 14.308x14.308x50
Tightening torque: 750±50Nm

BMV Series Hydraulic Motor

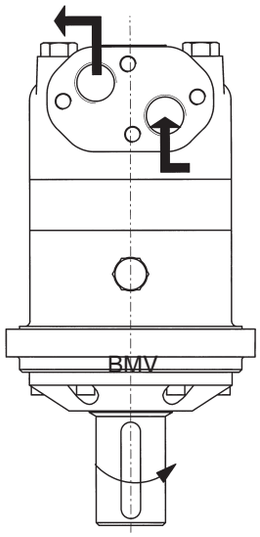
Permissible shaft seal pressure





Standard direction of shaft rotation: Standard

When facing shaft end of motor,shaft to rotate:
Clockwise when port "A" is pressurized.
Counter-clockwise port "B" is pressurized.



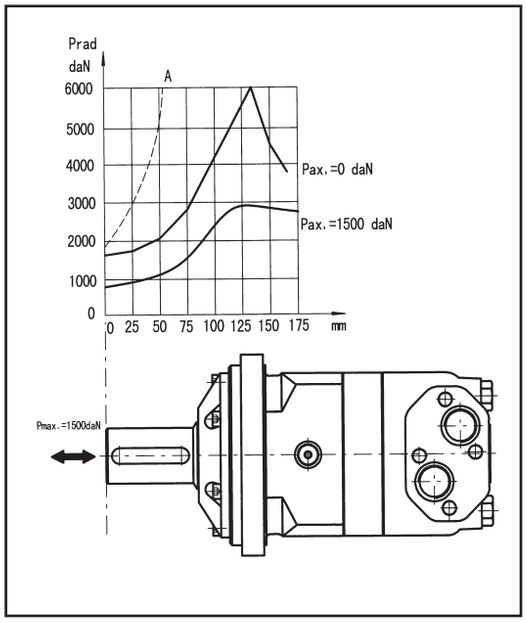
Oil flow in drain line

The table shows the Max. oil flow in the drain line at a return pressure less than 0.5-1MPa.

Pressure drop （MPa）	Viscosity (mm^2/s)	Oil flow in the drain line (L/min.)
14	20	3
	35	2
21	20	6
	35	4

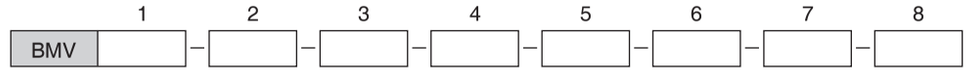
In applications without drain line, output shaft seal exceeds a bit of the pressure in the return line. When applications use the drain line, the pressure of output shaft seal equals the pressure in drain line.

Axial and Radial forces



The output shaft runs in tapered bearings that permit high axial and radial forces, Curve "A" shows max radial shaft load, Any shaft loads exceeding the values quoted in the curve will involve a risk of breakage, The two other curves apply to a B10 bearing life of 3000 hours at 200 RPM.

Order Information



Pos.1	2	3		4		5		6		7		8	
Code	Displacement	Flange		Output shaft		Ports and drain port		Rotation direction		Paint		Unusually function	
Omit	315 400 500 630 800 1000	4 W	4-Ø18 Square-flangeØ200, pilot Ø160×11 4-Ø18 Wheel-flange Ø224, pilot Ø180×10	A BD B C T T1	Shaft Ø50 , parallel key 14×9×70 Shaft Ø53.975, splined key 16-DP8/16 Shaft Ø53.975, splined key 16-DP8/16 Shaft Ø57.15, parallel key 12.7×12.7×57.15 Cone shaft Ø60, parallel key 16×10×32 Cone shaft Ø57.2, parallel key 14.308×14.308×50.8	D M S G M5 S1	G1 Manifold 4×M12, G1/4 M33×2 Manifold 4×M12, M14×1.5 1-5/16-12UN, 9/16-18UNF G1,G1/4 M33×2, M14×1.5 1-5/16-12UN 7/16-20UNF	Omit R	Standard Opposite	00 Omit B S	No paint Blue Black Silver grey	Omit	Standard

Note:When the table is used, please fill the code of left rows in dash area and give us, which the code information is consists of construction, displacement, mounting flange, output shaft and ports. If the specification is not in the table or you have specific requirements, please contact us.

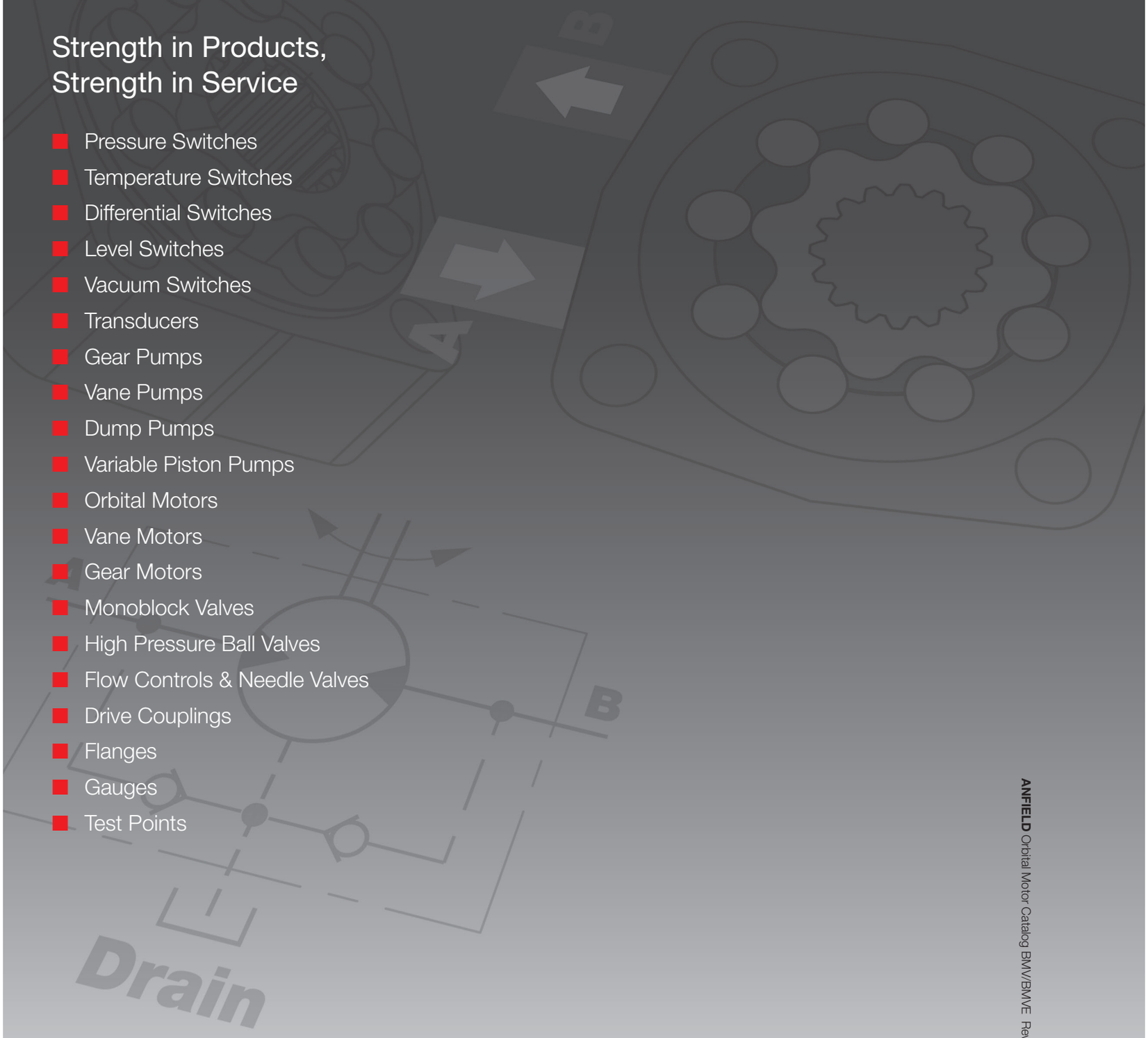
NOTES

NOTES

NOTES

Strength in Products, Strength in Service

- Pressure Switches
- Temperature Switches
- Differential Switches
- Level Switches
- Vacuum Switches
- Transducers
- Gear Pumps
- Vane Pumps
- Dump Pumps
- Variable Piston Pumps
- Orbital Motors
- Vane Motors
- Gear Motors
- Monoblock Valves
- High Pressure Ball Valves
- Flow Controls & Needle Valves
- Drive Couplings
- Flanges
- Gauges
- Test Points



ANFIELD Orbital Motor Catalog BMV/BMVE Rev.-

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