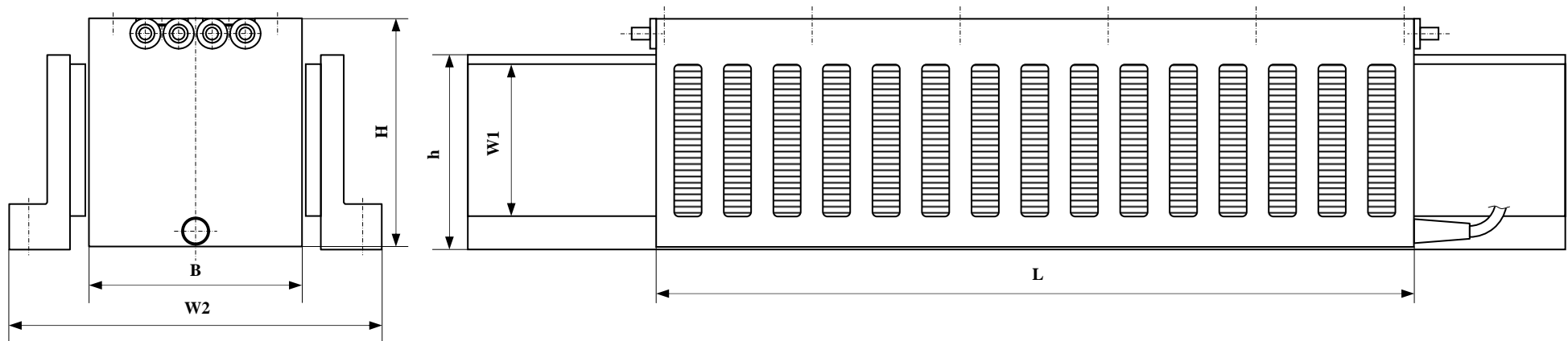


NEW

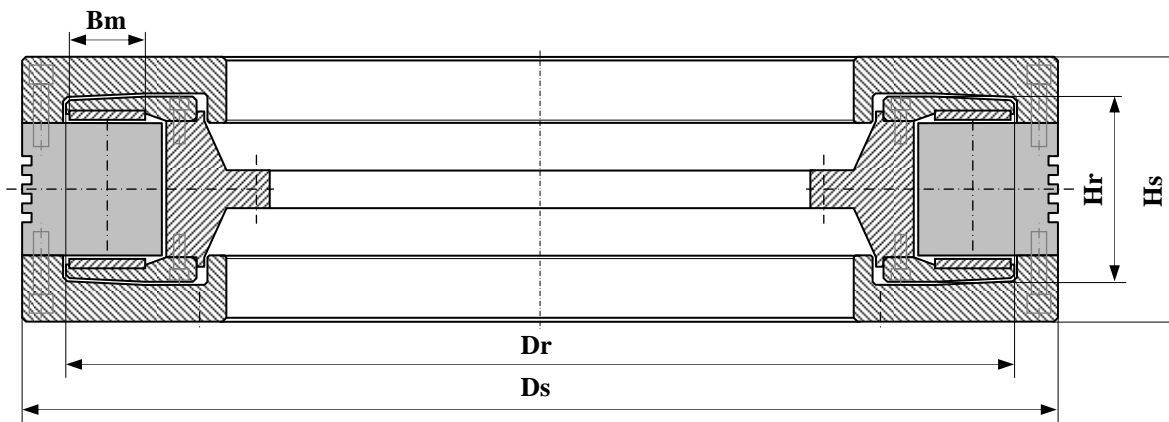
MOTORS "ORION-1"			LSM-01	LSM-02	LSM-03	LSM-04	LSM-05	LSM-06	LSM-07	LSM-08	LSM-09	LSM-10
Index	Parameters of motors	QEM										
Fu	Peak force (2...3 s)	N	458	916	687	1374	2060	1835	2753	3670	3433	4577
Fc	Continuous force											
-wc	-at water cooling	N	229	458	344	687	1030	918	1377	1835	1716	2288
-fc	-at convection cooling	N	115	229	172	344	515	459	688	917	858	1144
Forcer												
L	Length	mm	105	201	105	201	297	201	297	393	297	393
B	Width	mm	70	70	70	70	70	70	70	70	70	70
H	Height	mm	45	45	55	55	55	65	65	65	75	75
M	Forcer mass	kg	1,16	2,28	1,57	3,11	4,65	3,98	5,95	7,92	7,29	9,70
a₀	Peak acceleration	m/s ²	395	402	438	442	443	461	463	463	471	472
Magnet way (stator)												
W1	Width of magnet way	mm	20	20	30	30	30	40	40	40	50	50
W2	Width	mm	122,5	122,5	122,5	122,5	122,5	122,5	122,5	122,5	122,5	122,5
h	Height	mm	34	34	44	44	44	54	54	54	64	64
Electrical parameters (20⁰C)												
R_f	Phase resistance	Ω	0,40	0,80	0,56	1,12	1,68	1,44	2,16	2,88	2,64	3,52
L_f	Phase inductance	mH	2,28	4,56	3,54	7,08	10,62	9,6	14,4	19,2	18,18	24,24
Pu	Power dissipation (peak)	W	393	786	551	1101	1652	1416	2123	2832	2595	3460
Pwc	Power dissipation (-wc)	W	98,3	196,5	137,6	275,2	412,8	354	530,8	708	648,8	865
Pfc	Power dissipation (-fc)	W	24,6	49,1	34,4	68,8	103,2	88,5	132,7	177	162	216
Km	Motor constant	N/√W	23,1	32,7	29,3	41,4	50,7	48,8	59,7	69	67,4	77,8



NEW

MOTORS "ORION-2"			RSM-01	RSM-02	RSM-03	RSM-04	RSM-05	RSM-06	RSM-07	RSM-08	RSM-09
Index	Parameters of motors	QEM									
Mu	Peak torque (2...3 s)	N×m	303	433	978	2254	2926	4338	6505	9754	11283
Mc	Continuous torque										
-wc	-at water (<i>air</i>) cooling	N×m	152	216	489	1127	1463	2169	3253	4877	5642
-fc	-at convection cooling	N×m	76	108	245	564	732	1085	1627	2439	2821
Stator											
Ds	Diameter	mm	274	304	376	487	548	589	711	833	895
Hs	Height	mm	130	130	130	140	140	140	140	140	140
Rotor (magnet way)											
Bm	Width of magnet way	mm	20	20	30	40	40	50	50	50	50
Dr	Diameter	mm	238	268	340	441	502	543	665	787	849
Hr	Height	mm	96	96	96	98	98	98	98	98	98
Electrical parameters (20°C)											
Pu	Power dissipation (peak)	W	2359	2949	4955	8493	9555	12976	15571	19464	20275
Pwc	Power dissipation (-wc)	W	590	737	1239	2123	2388	3244	3893	4991	5069
Pfc	Power dissipation (-fc)	W	147	184	310	531	597	811	973	1248	1267
Km	Motor constant	N×m/√W	6,2	7,3	13,9	24,4	29,9	38,1	52,0	69,7	79,5

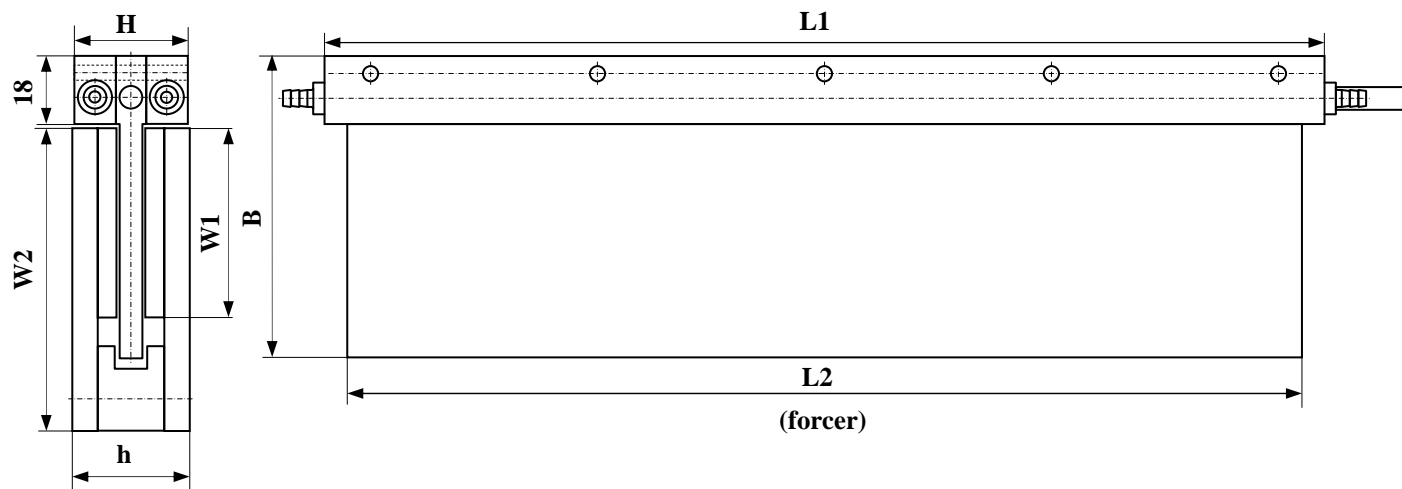
Applications: machine tool; high torque rotary axis.



NEW

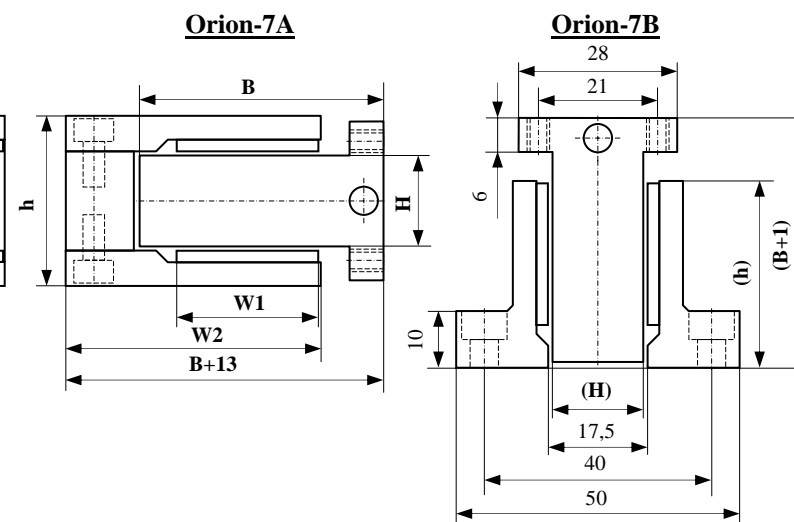
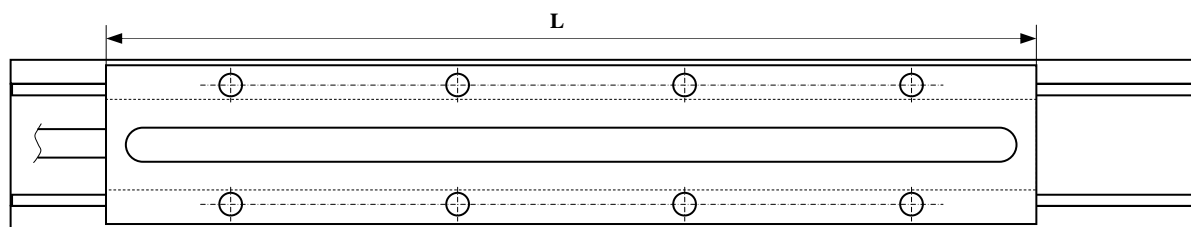
MOTORS "ORION-5"			LSM-01	LSM-02	LSM-03	LSM-04	LSM-05	LSM-06	LSM-07	LSM-08
Index	Parameters of motors	QEM								
Fu	Peak force (2...3 s)	N	87,7	175,5	262,2	350,9	350,9	526,4	705,1	877,3
Fc	Continuous force									
-wc	-at water (air) cooling	N	36,5	73,1	109,3	146,2	146,2	219,3	293,8	365,5
-fc	-at convection cooling	N	11,0	21,9	33,0	43,9	43,9	65,8	87,7	109,7
Forcer										
L1	Length (on frame)	mm	105	185	265	345	185	265	345	425
B	Width	mm	55	55	55	55	80	80	80	80
L2	Length (on coils case)	mm	92,5	172,5	252,5	332,5	172,5	252,5	332,5	412,5
H	Height (on frame)	mm	29	29	29	29	30	30	30	30
M	Forcer mass	kg	0,17	0,33	0,50	0,67	0,53	0,80	1,07	1,33
Magnet way (stator)										
W1	Weight of magnet way	mm	25	25	25	25	50	50	50	50
W2	Width of stators	mm	55	55	55	55	80	80	80	80
h	Height of stators	mm	30	30	30	30	31	31	31	31
Electrical parameters (20°C)										
R	Phase resistance	Ω	1,7	3,4	5,0	6,7	5,3	8	10,7	13,3
L	Phase inductance	mH	0,43	0,85	1,3	1,8	1,4	2,1	2,8	3,5
Pu	Power dissipation (peak, $I_{ph}= 12,0A$)	W	245	490	720	965	763	1152	1541	1915
Pwc	Power dissipation (-wc, $I_{ph}= 5,0A$)	W	40,4	83,5	124,4	167,4	130,5	200,2	269,4	330,7
Pfc	Power dissipation (-fc, $I_{ph}= 1,5A$)	W	3,8	7,7	11,3	15,1	11,9	18,0	24,1	29,9
Km	Motor constant	N/√W	5,6	8,0	9,8	11,3	12,8	15,5	17,9	20,1

- Fu** – the peak force ($I_{eff} = 12,0 A$, time – 2...3 seconds).
- Fc** – the continuous force is measured in a continuous duty for two cases:
 - at water (air) cooling ($I_{eff}= 5,0 A$);
 - at dissipation of heat by a natural convection and radiation ($I_{eff}= 1,5 A$).
- Maximum operation temperature of a wind is up to 130...150°C. Maximum temperature of stator should not exceed 100°C.
- The forcer has 2 phase and 2 thermal sensor (at temperature exceed 150°C).
- A working split between forcer and stator ~ 0,5 mm. An asymmetry on splits – no more $\pm 0,2$ mm.
- Maximum speed – up to 5 m/s.



NEW

MOTORS "ORION-7"			LSM-01	LSM-02	LSM-03	LSM-04	LSM-05	LSM-06	LSM-07	LSM-08	LSM-09	LSM-10	LSM-11	LSM-12
Index	Parameters of motors	QEM												
Fu	Peak force (1...2 s)	N	31,6	63,2	94,8	94,8	142,2	189,5	189,5	252,7	315,9	315,9	394,9	473,9
Fc	Continuous force													
-wc	-at water cooling	N	12,6	25,3	37,9	37,9	56,9	75,8	75,8	101,1	126,4	126,4	158	189,5
-fc	-at convection cooling	N	6,3	12,6	19	19	28,4	37,9	37,9	50,5	63,2	63,2	79	94,8
Forcer														
L	Length	mm	44	84	124	84	124	164	124	164	204	164	204	244
B	Width	mm	28	28	28	33	33	33	38	38	38	43	43	43
H	Height	mm	16	16	16	16	16	16	16	16	16	16	16	16
M	Forcer mass	kg	0,083	0,161	0,239	0,193	0,287	0,380	0,337	0,447	0,558	0,513	0,640	0,766
a ₀	Peak acceleration	m/s ²	381	392	397	491	495	499	562	565	566	616	617	619
Magnet way (stator)														
W1	Width of magnet way	mm	10	10	10	15	15	15	20	20	20	25	25	25
W2	Width A	mm	30	30	30	35	35	35	40	40	40	45	45	45
h	Height A (B)	mm	30 (18)	30 (18)	30 (18)	30 (23)	30 (23)	30 (28)	30 (28)	30 (28)	30 (28)	30 (33)	30 (33)	30 (33)
Electrical parameters (20°C)														
R _f	Phase resistance	Ω	0,264	0,528	0,792	0,646	0,969	1,292	1,143	1,524	1,905	1,760	2,200	2,640
L _f	Phase inductance	mH	0,29	0,58	0,87	0,88	1,32	1,76	1,80	2,40	3,00	3,04	3,80	4,56
Pu	Power dissipation (peak)	W	39,6	79,2	118,8	96,9	145,4	193,8	171,5	228,6	285,8	264,0	330,0	396,0
Pwc	Power dissipation (-wc)	W	6,34	12,70	19,01	15,50	23,26	31,01	27,43	36,58	45,72	42,24	52,80	63,36
Pfc	Power dissipation (-fc)	W	1,56	3,17	4,75	3,88	5,81	7,75	6,86	9,14	11,4	10,6	13,2	15,8
Km	Motor constant	N/√W	5,0	7,1	8,7	9,6	11,8	13,6	14,5	16,7	18,7	19,4	21,6	23,8

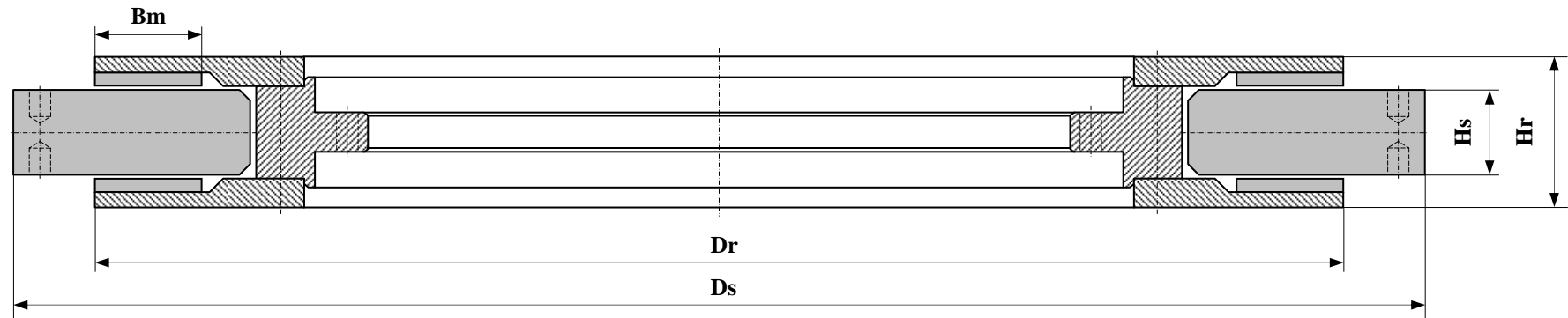


1. Fu – the peak force ($I_f = 10,0$ A, time – 1-2 seconds).
2. Fc – the continuous force is measured in a continuous duty for two cases:
 - at water (air) cooling ($I_f = 4,0$ A);
 - at dissipation of heat by a natural convection and radiation ($I_f = 2,0$ A).
3. Maximum operation temperature of a wind is up to 130...150°C.
4. Maximum temperature of stator should not exceed 100°C.
5. The forcer has 3 phase and 3 thermal sensor (at temperature exceed 150°C).
6. A working split between forcer and stator ~ 0,75 mm. An asymmetry on splits – no more $\pm 0,2$ mm.
7. Maximum speed – up to 5-10 m/s.

NEW

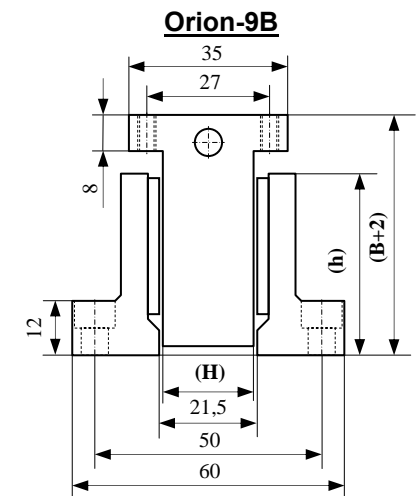
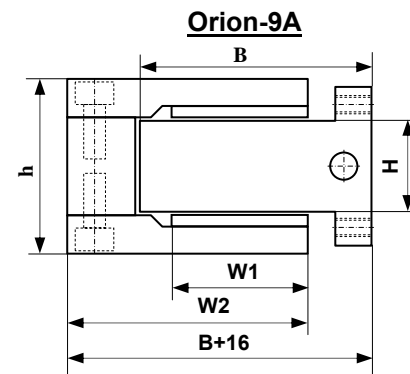
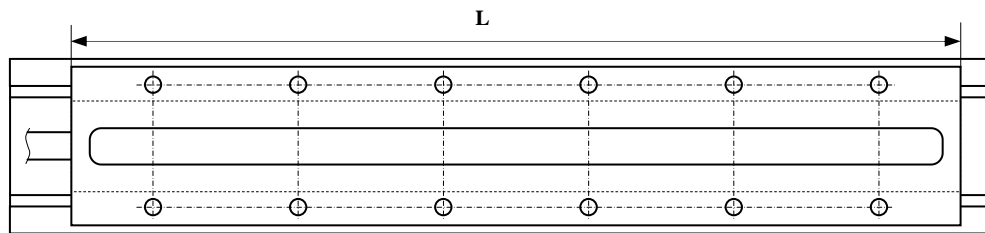
MOTORS "ORION-8"			RSM-01	RSM-02	RSM-03	RSM-04	RSM-05	RSM-06	RSM-07	RSM-08	RSM-09	RSM-10	RSM-11	RSM-12
Index	Parameters of motors	QEM												
Mu	Peak torque (2...3 s)	Nxm	8,6	10,9	20	29,2	52,5	68	108,9	134,1	194,4	231,3	270,2	314,9
Mc	Continuous torque													
-wc	-at water (<i>air</i>) cooling	Nxm	4,3	5,4	10	14,6	26,2	34	54,4	67,1	97,2	115,7	135,1	157,5
-fc	-at convection cooling	Nxm	2,1	2,7	5	7,3	13,1	17	27,2	33,5	48,6	57,8	67,6	78,7
Stator														
Ds	Diameter	mm	163	178	198	229	264	294	330	361	396	427	457	488
Hs	Height	mm	16	16	16	16	16	16	16	16	16	16	16	16
Rotor (magnet way)														
Bm	Width of magnet way	mm	10	10	15	15	20	20	25	25	30	30	30	30
Dr	Diameter	mm	133	148	168	199	234	264	300	331	366	397	427	458
Hr	Height	mm	28	28	28	28	28	28	28	28	28	28	28	28

Applications: machine tool; torque rotary axis.



NEW

MOTORS "ORION-9"			LSM-01	LSM-02	LSM-03	LSM-04	LSM-05	LSM-06	LSM-07	LSM-08
Index	Parameters of motors	QEM								
Fu	Peak force (1...2 s)	N	208	417	313	625	940	834	1251	1669
Fc	Continuous force									
-wc	-at water cooling	N	75	149	112	224	335	298	447	596
-fc	-at convection cooling	N	37	75	56	112	168	149	224	298
Forcer										
L	Length	mm	100	196	100	196	292	196	292	388
B	Width	mm	41	41	51	51	51	61	61	61
H	Height	mm	20	20	20	20	20	20	20	20
M	Forcer mass	kq	0,306	0,602	0,411	0,810	1,210	1,019	1,521	2,024
a₀	Peak acceleration	m/s²	680	693	761	772	778	819	823	825
Magnet way (stator)										
W1	Width of magnet way	mm	20	20	30	30	30	40	40	40
W2	Width	mm	43	43	53	53	53	63	63	63
h	Height	mm	38,5 (30)	38,5 (30)	38,5 (40)	38,5 (40)	38,5 (40)	38,5 (50)	38,5 (50)	38,5 (50)
Electrical parameters (20⁰C)										
R_f	Phase resistance	Ω	0,67	1,33	0,85	1,70	2,55	2,07	3,10	4,14
L_f	Phase inductance	mH	3,5	7,0	5,4	10,8	16,2	14,6	21,9	29,2
Pu	Power dissipation (peak)	W	197	391	250	500	750	609	911	1217
Pwc	Power dissipation (-wc)	W	25,1	49,9	31,9	63,8	95,6	77,6	116,3	155,3
Pfc	Power dissipation (-fc)	W	6,3	12,5	8,0	15,9	23,9	19,4	29,1	38,8
Km	Motor constant	N/√W	14,9	21,1	19,8	28	34,3	33,9	41,5	47,9

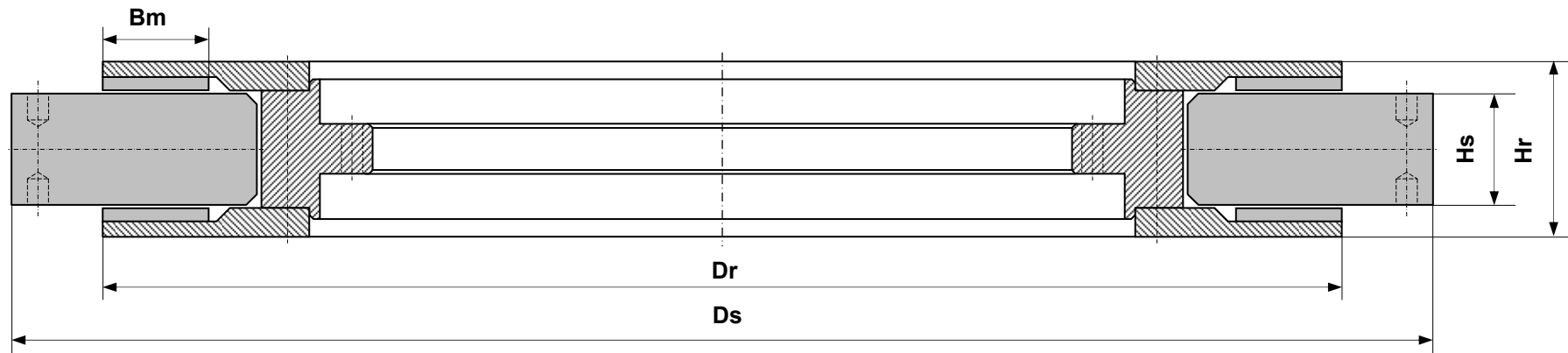


- Fu** – the peak force ($I_f = 14,0$ A, time – 1-2 seconds).
- Fc** – the continuous force is measured in a continuous duty for two cases:
 - at water (air) cooling ($I_f = 5,0$ A);
 - at dissipation of heat by a natural convection and radiation ($I_f = 2,5$ A).
- Maximum operation temperature of a wind is up to 130...150°C.
- Maximum temperature of stator should not exceed 100°C.
- The forcer has 3 phase and 3 thermal sensor (at temperature exceed 150°C).
- A working split between forcer and stator ~ 0,75 mm. An asymmetry on splits – no more $\pm 0,2$ mm.
- Maximum speed – up to 5-10 m/s.

NEW

MOTORS "ORION-10"			RSM-01	RSM-02	RSM-03	RSM-04	RSM-05	RSM-06	RSM-07	RSM-08	RSM-09	RSM-10	RSM-11	RSM-12
Index	Parameters of motors	QEM												
Mu	Peak torque (2...3 s)	Nxm	14,3	18,1	33,4	48,6	87,5	113,4	181,4	223,6	324	385,6	450,4	524,9
Mc	Continuous torque													
-wc	-at water (<i>air</i>) cooling	Nxm	7,1	9,1	16,7	24,3	43,7	56,7	90,7	111,8	162	192,8	225,2	262,4
-fc	-at convection cooling	Nxm	3,6	4,5	8,3	12,2	21,9	28,4	45,4	55,9	81	96,4	112,6	131,2
Stator														
Ds	Diameter	mm	167	182	202	233	268	298	334	365	400	431	461	492
Hs	Height	mm	21	21	21	21	21	21	21	21	21	21	21	21
Rotor (magnet way)														
Bm	Width of magnet way	mm	10	10	15	15	20	20	25	25	30	30	30	30
Dr	Diameter	mm	133	148	168	199	234	264	300	331	366	397	427	458
Hr	Height	mm	33	33	33	33	33	33	33	33	33	33	33	33

Applications: machine tool; torque rotary axis.



SYNCHRONOUS MOTORS «ORION-18-1»

NEW

1. The motors represent 8-poles magnetic-inductor synchronous electric motor with permanent magnets.
2. The motors are applied in a gate mode with frequent invertors and as synchronous generators.
3. A range of a dimension-type line of motors on a useful power - **from 7,5 kW to 225 kW** in mode S1.
4. An area of application - the process equipment, electrotransport, machine-tool construction, power engineering etc.

Features of a construction and operating modes.

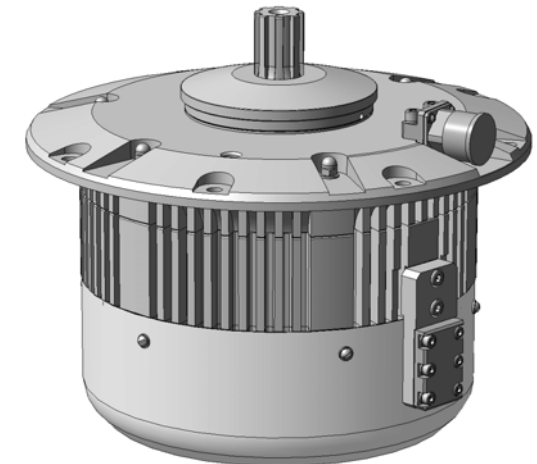
- In motors is used a water cooling (variants - forced or own air-cool).
- Further is planned manufacture of variants of packageless (cassette) execution of motors.
- Motor ORION-18-1-04 (drawing see) is tested and is in a beta test as a part of the process equipment.
- Key parametres of synchronous motors "ОРИОН-18-1" are presented in the table.

Parameters of motor «ORION-18-1-...»	QEM	- 01	- 02	- 03	- 04	- 05	- 06	- 07	- 08	- 09	- 10	- 11	- 12	- 13	- 14
M_U, Peak torque (2...3 s)	N×m	100	200	300	400	500	600	800	1000	1200	1500	1800	2100	2500	3000
M_C, Continuous torque (water, air cooling)	N×m	25	50	75	100	125	150	200	250	300	375	450	525	625	750
P_C, Continuous power (water, air cooling) *	kW	7,5	15	22,5	30	37,5	45	60	75	90	112,5	135	157,5	187,5	225
Eff, Efficiency (for continuous power)	%	95,1	96,6	97,0	97,3	97,5	97,6	97,8	97,9	98,0	98,0	98,1	98,1	98,1	98,1
Electromagnetic system															
Dr, Rotor diameter	mm	160	160	160	160	160	160	160	160	160	160	160	160	160	160
Ds, Stator diameter **	mm	268	268	268	268	268	268	268	268	268	268	268	268	268	268
Bm, Length of an active steel	mm	20	40	60	80	100	120	160	200	240	300	360	420	500	600
Ls, Length of the stator with a winding ***	mm	90	110	140	160	180	200	240	280	320	380	440	500	590	690
Electrical parameters															
P_{Ut}, Power dissipation (peak, 2...3 s)	kW	4,8	5,9	7,2	8,4	9,2	10,1	11,8	13,5	15,0	17,5	19,9	22,4	27,2	31,7
P_{Ct}, Power dissipation continuous, water cooling)	W	298	368	447	526	578	631	736	841	937	1095	1244	1402	1708	1962
K_T, Torque constant (20°C)	N×m/A	1,45	1,45	1,45	1,45	1,45	1,45	1,45	1,45	1,45	1,45	1,45	1,45	1,45	1,45
K_m, Motor constant (20°C)	N×m/√W	1,45	2,61	3,55	4,36	5,20	5,97	7,37	8,62	9,80	11,33	12,76	14,02	15,0	15,7
Mass of component and the motor															
m_{em}, Mass of electromagnetic system	kg	9,2	15,8	22,5	29,2	35,6	42,0	54,8	67,6	80,3	99,5	118,6	137,9	167,6	199,8
m, Mass of motor (with water cooling)	kg	15	26	37	50	59	70	91	112	133	165	197	229	300	350

- * Design value of a continuous output power at number of revolutions of 3000 rpm (mode S1).
- ** Diameter on a stator magnetic core, without the stator case (with the case - + 12 ... 15 mm on the side, a flange - □ 300x300 mm).
- *** Length by front parts of a winding, (length of the case of the drive - + 20 ... 25 mm on the side).

- Parameters of motors are specified for 20°C, drift for the moment, power and electric parametres - ± 5 ... 7 %.
- Heat rate is specified for a static condition at the continuous torque.
- Operating temperature of windings of the motor - to 120°C, maximum - to 150°C, rotor temperature - to 100°C.
- Are applied built temperature sensors to thermal winding protection of the motor (linear or threshold).
- Working (not magnetic) clearance a rotor-stator - 1,1 mm on the side.
- Maximum number of revolutions - to 7500 rpm (frequency - 500 Hz, with weakening of magnet field of a rotor).
- Rated power supply voltage - 3 phases, to 380 B, frequency to 500 Hz.
- The Additional information is on a sites www.orionmotor.narod.ru

- **Address:** 220125, Belarus, Minsk, street Uruchskaya, 23a, "Orion-motor" Ltd
- **Ph.:** +375-17-265-67-09, **Fax:** +375-17-266-82-09, **E-mail:** orion_mai@inbox.ru



SYNCHRONOUS TRACTION ELECTRIC MOTORS «ORION-20»

NEW

- The motors represent 8-poles and 12-poles magnetic-inductor synchronous electric motor with permanent magnets.
- The motors are applied in a gate mode with frequent invertors and as synchronous generators.
- A range of motors on a useful power - **from 427 kW to 2300 kW** in mode S1 (packageless execution of the stator).
- Motors have an independent external air cooling (the basic variant, the variant with own ventilation is possible).
- Design value of parametres of a model (dimensional) line of synchronous traction motors "ORION-20" are presented in the table.

Parameters of motor «ORION- 20 - ... »	QEM	- 01	- 02	- 03	- 04	- 05	- 06	- 07	- 08	- 09	- 10	- 11	- 12
M_U , Starting torque (1...3 min)	N×m	3052	3815	4578	5341	6359	7630	8583	10300	12020	14307	17170	20600
M_C , Continuous torque (S1)	N×m	1357	1696	2035	2375	2827	3392	3816	4579	5344	6360	7633	9158
P_C , Continuous power (air cooling, S1)*	kW	427	533	640	747	889	1067	958	1150	1342	1597	1917	2300
P_h , One-hour rating (start from a cold condition)	kW	521	650	781	911	1085	1302	1169	1403	1637	1948	2339	2806
Eff , Efficiency (for continuous power)	%	≥98	≥98	≥98	≥98	≥98	≥98	≥98	≥98	≥98	≥98	≥98	≥98
N , Maximum number of revolutions	rpm	5200	5200	5200	5200	5200	5200	4000	4000	4000	4000	4000	4000
n , Rated number of revolutions	rpm	3000	3000	3000	3000	3000	3000	2400	2400	2400	2400	2400	2400
P_m , Rated power (S1)	kW/kg	0,87	0,94	1,00	1,03	1,08	1,12	1,11	1,15	1,19	1,24	1,29	1,34
Electromagnetic system													
D_r , Rotor diameter	mm	300	300	300	300	300	300	450	450	450	450	450	450
D_s , Stator diameter (on active steel) **	mm	455	455	455	455	455	455	605	605	605	605	605	605
B_m , Length of an active steel	mm	240	300	360	420	500	600	300	360	420	500	600	720
ps , Number of pair of poles	-	4	4	4	4	4	4	6	6	6	6	6	6
Electrical parameters													
P_{Ut} , Power dissipation (starting)	kW	14,78	16,86	18,90	20,95	23,73	27,15	25,27	28,36	31,44	35,60	40,72	46,93
P_{Ct} , Power dissipation (rated)	kW	2,921	3,332	3,736	4,140	4,690	5,365	4,994	5,604	6,213	7,035	8,048	9,274
K_m , Motor constant (20°C)	N×m/√W	25,1	29,4	33,3	36,9	41,3	46,3	54,0	61,2	67,8	75,8	85,1	95,1
Dimensions and mass of motor													
L , Length of the motor (without length of the shaft)	mm	520	580	640	700	780	880	600	660	720	800	900	1020
B , Width of the drive (without fixing componets)	mm	460	460	460	460	460	460	620	620	620	620	620	620
H , Motor height (without lifting componets)	mm	460	460	460	460	460	460	620	620	620	620	620	620
m_{em} , Mass of electromagnetic system (rotor & stator)	kg	233,6	287,1	340,6	394,1	465,5	554,7	417,6	495,3	573,1	676,6	806,0	961,4
m , Mass of motor (without fixing componets)	kg	490	565	640	725	825	955	863	1000	1128	1288	1486	1716

- * Design value of a continuous output power at number of revolutions of 3000 rpm and 2400 rpm (mode S1).
- ** Diameter on a stator magnetic core, without the stator case.
- Parameters of motors are specified for 20°C, drift for the moment, power and electric parametres - ± 5 ... 7 %.
- Heat rate is specified for a static condition at the continuous torque.
- Rated temperature of windings of the motor - to 155°C, maximum - to 180°C.
- Range of external temperature – from -40°C to +40°C.
- Are applied built temperature sensors to thermal winding protection of the motor (linear or threshold)
- Working (not magnetic) clearance a rotor-stator - 1,5...2,0 mm on the side.
- Maximum number of revolutions – to 5200 rpm (350 Hz, 4 pair of poles) and to 4000 rpm (400 Hz, 6 pair of poles).
- Rated power supply voltage - 3 phases, to 1500...3000 B (phase-phase, amplitude), frequency – to 400 Hz.
- Connection of phases of a winding - Y. Motors have no terminal box (see photo of prototype on electromagnetic system).

•The similar model (dimensional) line of traction asynchronous motors can have a specific power to 1 kW/kg.

•The Additional information is on a sites www.orionmotor.narod.ru

- Address: 220125, Belarus, Minsk, street Uruchskaya, 23a, "Orion-motor" Ltd.
- Ph.: +375-17-265-67-09, Fax: +375-17-266-82-09, E-mail: orion_mai@inbox.ru



The motor «Orion-18-1-06» (45 kW) on international electrotechnical exhibition (Minsk, October, 2009).

Linear-motors
(Forcer mass \approx 10 kg)

Motors (firms)			"ORION-1" (LSM-10)	Siemens	ETEL	Anorad	Kollmorgen	Ruchservo- motor	Yaskawa	Bosh- Rexroth	Hiwin	Baumuller
Index	Parameters	QEM										
F_u	Peak force (2-3 s)	N	4577	2200	2500	2480	2500	2289	2000	2300	1900	2813
M_1	Forcer mass	kg	9,7	8,5	11,8	10,9	12,5	12,0	10,8	12	12	12
a_0	Peak acceleration	m/s^2	472	259	212	228	200	191	185	192	158	234
f_u	Peak force in split	N/sm^2	12	5,2	8	6,2	6,7	6,8	6,3	6,8	6,5	5,2
K_m	Motor constant	N/\sqrt{W}	77,8	27,3	68,8	47,3	58,8	58,7	64	42,6	53,7	?
L	Length (forcer)	mm	393	420	365	434	376	451	400	390	300	542

- 3-phase AC-synchronous motors
- Forcer mass \approx 8,5...12,5 kg
- Speed up to 5...10 m/s
- Maximum theoretical acceleration (a_0) up to 260 m/s^2
- Maximum theoretical acceleration **up to 472 m/s^2 for "ORION-1"**
- Maximum theoretical acceleration is based on the motors peak force and the motor mass alone.

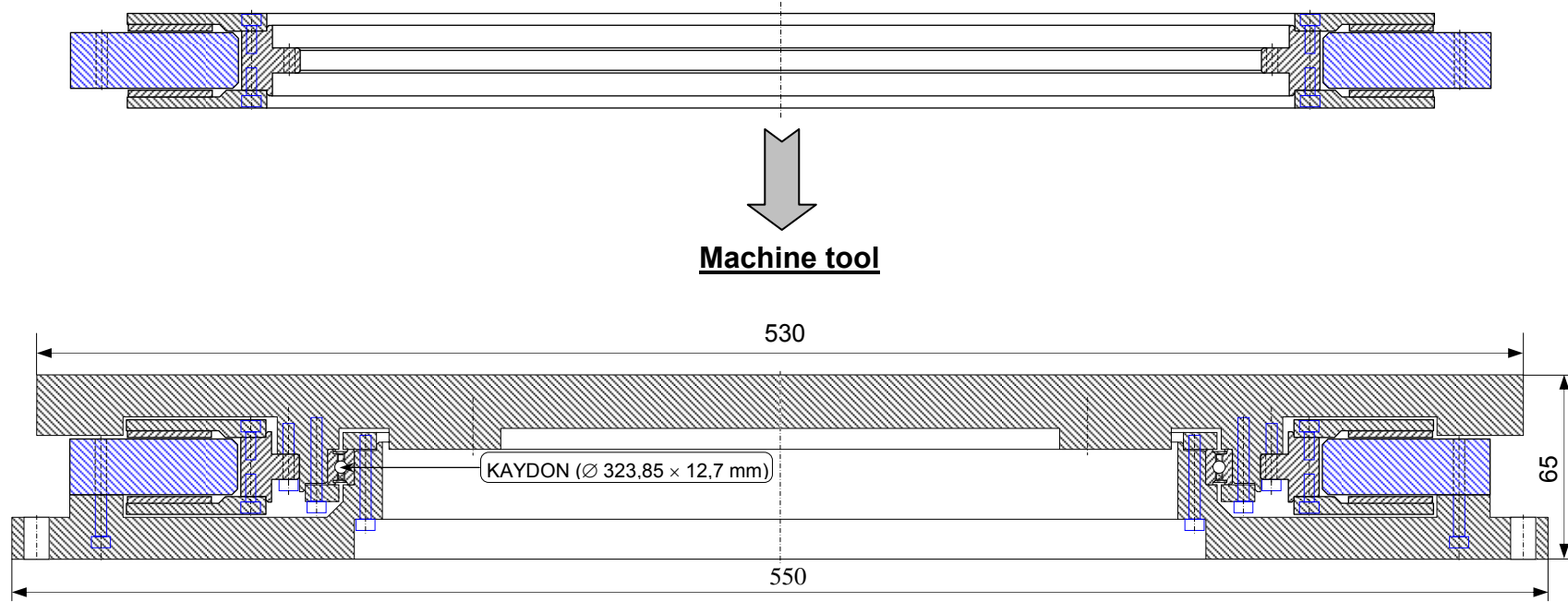


Linear-motors
(Forcer mass \approx 8 kg)

Motors	F_u , N	M_1 , kg	a_0 , m/s^2	L, mm	f_u , N/sm^2	K_m , N/\sqrt{W}	P_{wc} , W	F_{wc} , N
1FN3 - 100 - 4WC00 (Siemens)	2200	8,5	259	420	5,2	27,3	1100	900
LSM - 08 ("ORION-1")	3670	7,9	463	393	11,9	69	708	1835

NEW

"ORION-10"



Index	Parameters (for "ORION-10")	QEM	Model RSM-12
Mfc	Continuous torque at convection cooling	Nxm	131
Mwc	Continuous torque at water cooling	Nxm	262
Mu	Peak torque (2...3 s)	Nxm	525

Applications: machine tool; high torque rotary axis.