

STAINLESS STEEL ELECTRIC MOTORS & GEAR MOTORS





▲ Lean manufacturing is applied in the assembly department.

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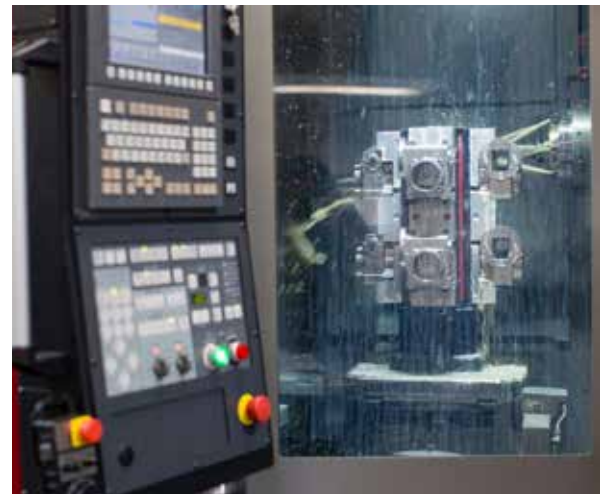
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▲ ABI's production facility is equipped with advanced CNC machinery.



Stainless steel electric motors

ABI b.v., located in Haarlem, Holland, has been developing and manufacturing electric motors and gear motors since 1955. Responding to market needs, ABI has developed a completely stainless steel aseptic electric motor, especially designed for markets dealing with high standards in hygiene and cleaning. In the past years these motors have been further developed into the current full range of stainless steel products.

The range is characterized by high quality and reliability. Years of experience, market feedback and optimization of the design ensure that our motors live up to your expectations, even in the toughest of environments.

IP69k certified

The motors are manufactured out of AISI 304, DIN 1.4301 and the shaft out of AISI 420, DIN 1.4021. All ABI stainless steel motors and gearboxes are IP69k certified by Dekra. The protection class is IP69k, which means that the motors are pressure washer proof according to DIN-40050. The maximum water pressure is 100bar, with a maximum temperature of 80°C. This assures effortless high pressure cleaning. Stainless steel motors often fail because of moisture (condensation) which builds up in the motor over time. This is caused by a combination of temperature changes, wash downs at different temperatures and a high humidity environment. Specially designed seals and pressure proof chambers in the ABI motors prevent this moisture build-up.

Fields of application for these motors are environments which have to conform to the HACCP regulations as well as situations with special requirements regarding hygiene and cleaning or extremely humid environments. For example: food and dairy production, meat and poultry processing, carwashes and the pharmaceutical industry.

IE3 / IE4 efficiency

The stainless steel motors produced by ABI meet the highest standard in efficiency, the IE3 standard (premium efficiency).

The future IE4 (super premium) standard is in preparation. Reducing energy consumption by the application of highly energy efficient motors is only one of the advantages of stainless steel motors. Due to the higher efficiency, heat production is reduced, offering large advantages in safety and applicability. The future IE4 (super premium) standard is in preparation.

TCO and machine downtime

By choosing an ABI stainless steel motor, you contribute to a lower energy consumption, and the motor can offer you a considerable reduction in costs over time.

In the long run, 'Total Cost of Ownership' is more important than the initial purchase price of a machine. In tough conditions, where corrosion or wear by moisture occurs, it has been proven that an IP69k motor (our ABI quality) has a much longer life span than a lesser quality motor. Next to the cost reductions by greatly reducing machine downtime, this also cuts down on replacement costs of the motors themselves.

Because of high efficiency and a longer life span, the ABI stainless steel motors add to a much lower TCO. The ABI sales engineers are happy to help you with your TCO calculations.



Product range

ABI produces the following **product range**

Stainless steel motors, 0.18-4kW, in 2, 4, 6 and 8 pole versions. Available in B14, B5 and B3 mounting positions, both in non-ventilated (TENV) and water cooled (TELC) designs.

Stainless steel worm gear motors in 2 sizes, up to a maximum torque of appr. 80Nm, in the most common ratios (from 3.6:1 to 75:1).

Stainless steel planetary gearboxes with IEC mounting position. Type PRS80 (up to 130Nm) and type PRS120 (up to 260Nm). These completely sealed (IP69k) stainless steel planetary gearboxes can be attached to IEC motors.

Stainless steel helical bevel gearboxes. The KRSH4 is a 3 stage gearbox available in ratios from 6,62:1 – 319:55:1. The maximum torque is 310 Nm.



Motors in different sizes

Stainless steel motors

The motors are characterized by a very smooth appearance, which leaves no areas where germs or dirt can collect. The mounting dimensions are according to the IEC72 standard construction forms B5 or B14. Different shaft and/or flange dimensions are available.



Terminal box version

Water cooled

ABI also produces water cooled stainless steel motors. An advantage of the application of water cooling is the increased manageability of motor temperature, thereby reducing the motor's outer temperature. A second reason for applying water cooling is the significant increase in power output at a S1-100% duty cycle. This option is available on the MRS14, MRS18 and MRS20 motors. The dimensions are similar to the standard motors, except for the outer diameter of the motor housing. Please contact one of our engineers for more information.

- Round smooth housing AISI 304
- Available in 2, 4, 6 and 8 poles
- 3-phase motor according to IEC34
- Mounting type B5, B14 or B3 according to IEC72
- Motor enclosure protection class IP69k
- Non-ventilated motors (TENV) or water cooled motors (TELC)
- Integrated thermal protector
- UL / CSA certified

Brake / Encoder

ABI is unique in the way it integrates holding brakes and/or encoders into the motors, without making concessions in protection class. Due to the modular setup of these options, we are able to adapt to our customers' wishes quickly and flexibly.

- Fully integrated
- Brake in 24Vdc or 230Vac
- Encoder TTL, HTL in 2 – 1024 pulses/rev.

Stainless steel worm gear motors

The worm gearboxes are completely constructed from casted AISI 304, and they are available in two sizes. WRS2 has output torques up to 20Nm and WRS3 has a maximum output torque of 80Nm. The gearbox design ensures a smooth surface and easy cleaning to avoid areas where contamination can build up over time.

Reduction ratios are available from 3.6:1 to 75:1. The worm gear motors are manufactured with a hollow output shaft. Single or double solid output shafts are available on request. The construction is adapted for the use of a torque arm or foot mounting (B3) with tapped holes. Food Grade Oil is used for all types of gear motors.



Custom-made design



Worm gear motor

Planetary gearbox



Stainless steel planetary gearboxes

ABI has a full range of planetary gearboxes, type PRS. These fully enclosed (IP69k) stainless steel planetary gearboxes are prepared for connection to IEC motors. The planetary gearboxes are available in 2 sizes; PRS80 has a maximum output torque of 130Nm and PRS120 has output torques up to 260Nm. Reduction ratios are available from 3:1 to 512:1.

Stainless steel helical bevel gearboxes

The KRSH series helical bevel gearbox is completely constructed out of casted and electrolytic polished AISI 304. The protection class is IP69k. Due to the helical gears with pre-stage we can achieve ratios from 6,6 : 1 up to 319 : 1, which results in output speeds from 4,4 up to 211rpm, with 4 pole motors at 50hz.

The maximum output torque is different per ratio, up to 310Nm. The design allows mounting of standard IEC motors, from IEC71 to IEC112. The shaft coupling mounting system ensures easy mounting and perfect alignment.

Special stainless steel motors and gearboxes

If you have a special application or specific question, we will be happy to help you. Minor adjustments to shaft and flange or complete special projects (high pressure, aberrant speeds or voltages) are all possible. Motors in 24V in both permanent magnet and brushless DC are among the possibilities as well.

Stainless steel servomotors

In addition to the AC motors, ABI also has a series of stainless steel servomotors. Upon request, we will send you the separate catalog of our RVS servomotors.

Certifications



Helical bevel gearbox



NON-VENTILATED MOTOR (TENV)

Type	IEC Size	Power [kW]	Duty Cycle	n nom [RPM]	T nom [Nm]	Efficiency	Power-factor cos ϕ	I nom 400V [A]	Starting Torque Ts/Tn	Starting Current Is/In	Max Torque Tm/Tn
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MRS Series, 2-poles, 3-phase

MRS14a-2	71	0,18	S1-100%	2935	0,6	57,6%	0,64	0,7	9,6	8,1	9,7
MRS14b-2	71	0,25	S1-100%	2910	0,8	65,9%	0,73	0,8	6,8	6,9	6,9
MRS14d-2	71	0,37	S3-60%	2880	1,2	70,6%	0,79	1,0	4,6	5,8	4,6
MRS18a-2	80	0,37	S1-100%	2965	1,2	70,7%	0,65	1,2	7,9	11,7	10,3
MRS18b-2	80	0,55	S1-100%	2950	1,8	76,8%	0,75	1,4	5,3	9,9	6,9
MRS18c-2	80	0,75	S1-100%	2935	2,4	80,7%	0,82	1,7	3,8	8,2	5,0
MRS20a-2	90	0,9	S1-100%	2965	2,9	82,7%	0,75	2,1	6,8	13,6	9,3
MRS20b-2	90	1,1	S1-100%	2955	3,6	83,0%	0,8	2,4	5,5	11,9	7,6
MRS20c-2	90	1,5	S1-100%	2940	4,9	85,8%	0,85	3,0	4,0	9,5	5,5

MRS Series, 4-poles, 3-phase

MRS14a-4	71	0,18	S1-100%	1460	1,2	65,9%	0,55	0,7	5,9	6,4	6,5
MRS14b-4	71	0,25	S1-100%	1445	1,7	71,7%	0,64	0,8	4,2	5,9	4,7
MRS14d-4	71	0,37	S3-60%	1420	2,5	73,5%	0,75	1,0	2,8	4,9	3,1
MRS18a-4	80	0,37	S1-100%	1470	2,4	72,6%	0,49	1,5	7,1	7,7	7,8
MRS18b-4	80	0,55	S1-100%	1460	3,6	78,1%	0,61	1,7	4,7	6,8	5,2
MRS18c-4	80	0,75	S1-100%	1445	5,0	82,5%	0,7	1,9	3,4	5,9	3,8
MRS18d-4	80	0,9	S3-25%	1430	6,0	83,0%	0,75	2,2	2,8	5,2	3,1
MRS20a-4	90	0,9	S1-100%	1475	5,8	83,0%	0,6	2,7	5,3	8,8	7,7
MRS20b-4	90	1,1	S1-100%	1470	7,1	84,1%	0,66	2,9	4,3	8,2	6,3
MRS20c-4	90	1,5	S1-100%	1460	9,8	85,3%	0,75	3,4	3,1	7,0	4,6

MRS Series, 6-poles, 3-phase

MRS14a-6	71	0,09	S1-100%	960	0,9	48,0%	0,48	0,6	4,7	3,6	4,9
MRS14d-6	71	0,12	S3-25%	950	1,2	54,0%	0,54	0,6	3,5	3,4	3,6
MRS18a-6	80	0,18	S1-100%	980	1,8	61,5%	0,41	1,1	6,6	5,8	8,6
MRS18b-6	80	0,25	S1-100%	975	2,5	67,6%	0,5	1,1	4,7	5,6	6,1
MRS18d-6	80	0,37	S3-60%	965	3,7	72,4%	0,61	1,2	3,1	5,0	4,1
MRS20a-6	90	0,55	S1-100%	970	5,4	80,0%	0,68	1,5	3,1	6,3	3,8
MRS20b-6	90	0,75	S1-100%	955	7,5	80,3%	0,76	1,8	2,2	5,1	2,7

For MRS14: size IEC63 on request.

For MRS18 and MRS20: size IEC100 on request.

Specifications 8-pole motor on request.

Ts = Starting torque

Tn = Nominal torque

Tm = Maximum torque

Is = Starting current

In = Nominal current



Water cooled motor

WATER COOLED MOTOR (TELC)

Type	IEC Size	Power [kW]	Duty Cycle	n nom [RPM]	T nom [Nm]
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MRSL Series, 2-poles, 3-phase

MRSL14a-2	71	0.37	S1-100%	2880	1,2
MRSL14b-2	71	0.55	S1-100%	2840	1,8
MRSL14c-2	71	0.75	S1-100%	2760	2,6
MRSL18a-2	80	1.5	S1-100%	2865	5,0
MRSL18b-2	80	1.85	S1-100%	2825	6,3
MRSL18c-2	80	2.2	S1-100%	2775	7,6
MRSL20b-2	90	3	S1-100%	2880	10,0
MRSL20c-2	90	4	S1-100%	2820	13,5

MRSL Series, 4-poles, 3-phase

MRSL14a-4	71	0,37	S1-100%	1420	2,5
MRSL14b-4	71	0,55	S1-100%	1370	3,8
MRSL14c-4	71	0,75	S1-100%	1280	5,6
MRSL18a-4	80	1,1	S1-100%	1415	7,4
MRSL18b-4	80	1,5	S1-100%	1370	10,5
MRSL18c-4	80	1,85	S1-100%	1300	13,6
MRSL20a-4	90	2,2	S1-100%	1440	14,6
MRSL20b-4	90	3	S1-100%	1415	20,3
MRSL20c-4	90	4	S1-100%	1365	28,0

MRSL Series, 6-poles, 3-phase

MRSL14a-6	71	0,18	S1-100%	925	1,9
MRSL14b-6	71	0,25	S1-100%	875	2,7
MRSL18a-6	80	0,75	S1-100%	920	7,8
MRSL18b-6	80	1,1	S1-100%	830	12,7
MRSL20b-6	90	1,5	S1-100%	870	16,5

For MRSL14: size IEC63 on request.

For MRSL18 and MRSL20: size IEC100 on request.

Specifications 8-pole motor on request.

WORM GEAR MOTOR (WRSH2 AND WRSH3)

WRSH2	T_n⁽¹⁾ [Nm]	20	20	20	20	20	20	20	20	20
	i	3,6	8,4	10,3	12,7	15	18,5	37	40	

MOTOR		n1 [RPM]	P [W]	n2 [RPM]	389	167	136	110	93	76	38	35
1400 1400 1400	180	[Nm] ⁽³⁾	3,8	8,3	9,5	12	13	16	24	27		
	250		5,3	11	13	17	18	22	34	38		

MOTOR		n1 [RPM]	P [W]	n2 [RPM]	778	333	272	220	187	151	76	70
2800 2800 2800	180	[Nm] ⁽³⁾	1,9	4,1	4,7	6,0	6,3	7,8	12	14		
	250		2,6	5,7	6,6	8,3	8,8	11	17	19		

WRSH3	T_n⁽¹⁾ [Nm]	55	80	80	80	80	80	80	80	80	80	80	75	70	60
	T_n⁽²⁾ [Nm]	35	50	60	60	60	70	65	65	60	55	45	45	40	
	i	4,75	6,67	9,67	13,5	15	21	25	28	30	38	50	60	75	

MOTOR		n1 [RPM]	P [W]	n2 [RPM]	295	210	145	104	93	67	56	50	47	37	28	23	19
1400 1400 1400 1400 1400 1400 1400 1400	180	[Nm] ⁽³⁾	5,0	6,7	9,3	12	13	16	18	18	21	24	26	29	31		
	250		6,9	9,3	13	17	18	23	26	25	29	33	37	40	43		
	370		10	14	19	25	27	33	38	37	42	49	54	59	64		
	550		15	21	28	37	41	50	56	56	63	73	81	88	96		
	750		21	28	39	50	55	68	77	76	86	99	110	120	130		
	900		25	34	46	61	66	81	92	91							
	1100		30	41	57	74	81	99									
	1500		41	56	77	101	111										

MOTOR		n1 [RPM]	P [W]	n2 [RPM]	589	420	290	207	187	133	112	100	93	74	56	47	37
2800 2800 2800 2800 2800 2800 2800 2800	180	[Nm] ⁽³⁾	2,5	3,4	4,7	6,3	6,8	8,5	9,8	9,6	11	13	14	15	16		
	250		3,5	4,8	6,6	8,7	9	12	14	13	15	18	20	21	22		
	370		5,2	7,1	9,8	13	14	17	20	20	22	26	30	32	32		
	550		7,8	11	15	19	21	26	30	29	33	39	44	47	48		
	750		11	14	20	26	28	35	41	40	45	53	60	64	65		
	900		13	17	24	31	34	43	49	48	54	64	72	77	78		
	1100		16	21	29	38	42	52	60	59	66	78	88	95			
	1500		21	29	40	52	57	71	82	80	91	107					

(1) T_n is the nominal output torque for 5000h. (2) T_n is the nominal output torque for 15000h. T_n allows a short incidental overload of 100%.
 (3) If the given torque > T_n⁽³⁾ then Sf < 1.

HELICAL BEVEL GEARBOXES (KRSH4)

KRSH4	T_n [Nm]	200	220	225	245	230	275	230	305	250	310	270
	i	6,62	8,47	8,97	10,43	11,48	13,03	14,13	16,68	17,80	20,55	21,91

MOTOR													
n1 [RPM]	P [W]	n2 [RPM]	211	165	156	134	122	107	99	84	79	68	64
1400 1400 1400 1400 1400 1400 1400 1400	180	[Nm]⁽¹⁾	5	7	7	8	9	10	11	13	14	16	17
	250		8	10	11	13	14	16	17	20	21	25	26
	370		13	16	17	20	22	25	27	32	34	39	42
	550		20	25	27	31	34	39	42	50	53	62	66
	750		28	36	38	44	48	55	59	70	75	86	92
	900		34	43	46	53	59	66	72	85	91	105	112
	1100		42	53	57	66	72	82	89	105	112	130	138
	1500		58	74	78	91	100	113	123	145	155	179	191

KRSH4	T_n [Nm]	310	310	260	310	310	310	310	310	310	285	310
	i	26,07	27,39	32,97	35,06	41,21	43,18	52,75	54,78	64,97	73,98	82,42

MOTOR													
n1 [RPM]	P [W]	n2 [RPM]	54	51	42	40	34	32	27	26	22	19	17
1400 1400 1400 1400 1400 1400 1400 1400	180	[Nm]⁽¹⁾	20	21	26	27	32	34	41	43	51	58	64
	250		31	33	40	42	49	52	63	66	78	89	99
	370		50	53	63	67	79	83	101	105	125	142	158
	550		78	82	99	105	124	130	158	164	195	222	247
	750		110	115	139	147	173	181	222	230	273	311	346
	900		133	140	168	179	210	220	269	280	332	377	421
	1100		164	173	208	221	260	272	332	345	410		
	1500		227	238	287	305	359	376	459	477			

KRSH4	T_n [Nm]	310	270	310	260	270	260	260	260	260	260	260
	i	91,12	106,60	115,60	123,47	149,51	156,64	170,11	202,59	238,58	261,07	319,55

MOTOR													
n1 [RPM]	P [W]	n2 [RPM]	15	13	12	11	9,4	8,9	8,2	6,9	5,9	5,4	4,4
1400 1400 1400 1400 1400	180	[Nm]⁽¹⁾	71	83	90	96	117	122	133	158	186	204	249
	250		109	128	139	148	179	188	204	243	286	313	384
	370		175	205	222	237	287	301	327	389	458	501	614
	550		273	320	347	371	449	470	511				
	750		383	448	486								

If the given torque > T_n (2) then Sf < 1.

PLANETARY GEARBOX (PRS80)

PRS80	$T_n^{(1)}$ [Nm]	1 Stage				2 Stages								
		60	75	75	35	85	80	75	80	80	75	80	75	35
	i	3	4	5	8	9	12	15	16	20	25	32	40	64

MOTOR		n2 [RPM]													
n1 [RPM]	P [W]		467	350	280	175	156	117	93	88	70	56	44	35	22
1400	180	[Nm] ⁽²⁾	3,5	4,7	5,9	9,4	10	14	17	18	23	29	37	46	74
	250		4,9	6,5	8,2	13	14	19	24	26	32	40	51	64	103
370	7,3		9,7	12	19	21	28	36	38	47	59	76	95		
550	11		14	18	29	32	42	53	56	71	88	113	141		
750	15		20	25	39	43	58	72	77	96	120	154			
900	18		24	29	47	52	69	87	92	115					

PRS80	$T_n^{(1)}$ [Nm]	3 Stages								
		75	80	80	75	80	75	80	75	35
	i	60	80	100	120	160	200	256	320	512

MOTOR		n2 [RPM]									
n1 [RPM]	P [W]		23	18	14	12	9	7	5	4	3
1400	180	[Nm] ⁽²⁾	66	88	111	133	177	221	283	354	566
	250		92	123	153						
	370		136								

(1) T_n is nominal output torque. T_n allows a short incidental overload of 50%. Other motor speeds on request.

(2) If the given torque > T_n (2) then $S_f < 1$.



PLANETARY GEARBOX (PRS120)

PRS120	$T_n^{(1)}$ [Nm]	1 Stage				2 Stages								
		75	105	130	80	140	170	150	170	170	150	170	150	80
	i	3	4	5	8	9	12	15	16	20	25	32	40	64

MOTOR		n2 [RPM]	1 Stage				2 Stages								
n1 [RPM]	P [W]		467	350	280	175	156	117	93	88	70	56	44	35	22
1400 1400 1400 1400 1400 1400	370	[Nm] ⁽²⁾	7,3	9,7	12	19	21	28	36	38	47	59	76	95	152
	550		11	14	18	29	32	42	53	56	71	88	113	141	226
	750		15	20	25	39	43	58	72	77	96	120	154	192	
	900		18	24	29	47	52	69	87	92	115	144	185	231	
	1100		22	29	36	58	63	85	106	113	141	176	226		
	1500		29	39	49	79	87	115	144	154	192	240	308		

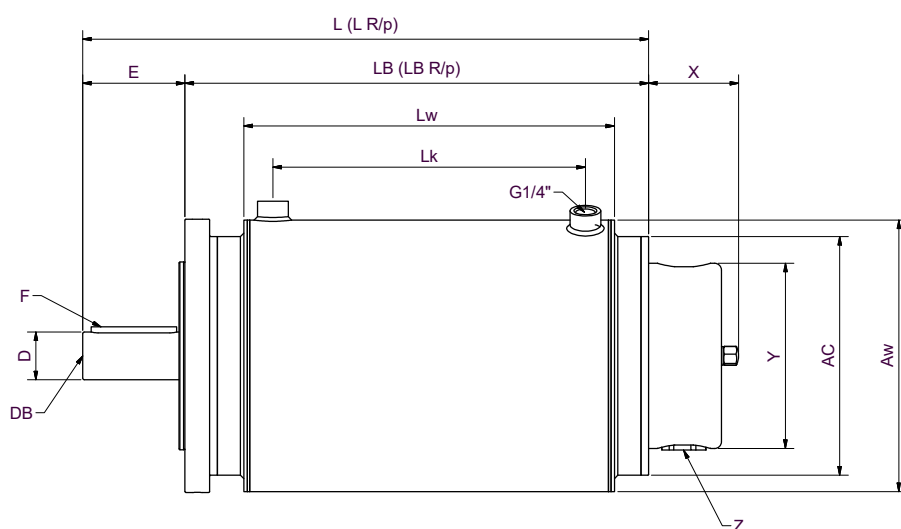
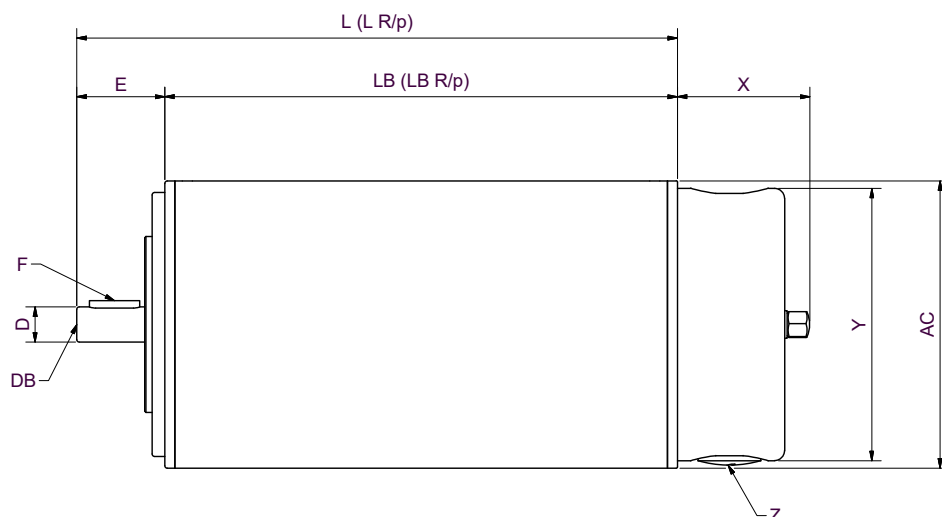
PRS120	$T_n^{(1)}$ [Nm]	3 Stages								
		170	170	170	150	170	150	170	150	80
	i	60	80	100	120	160	200	256	320	512

MOTOR		n2 [RPM]	3 Stages								
n1 [RPM]	P [W]		23	18	14	12	9	7	5	4	3
1400 1400 1400	370	[Nm] ⁽²⁾	136	182	227	273	363	454	582	727	1163
	550		203	270							
	750		276								

(1) T_n is nominal output torque. T_n allows a short incidental overload of 50%. Other motor speeds on request.

(2) If the given torque > $T_n^{(2)}$ then $S_f < 1$.





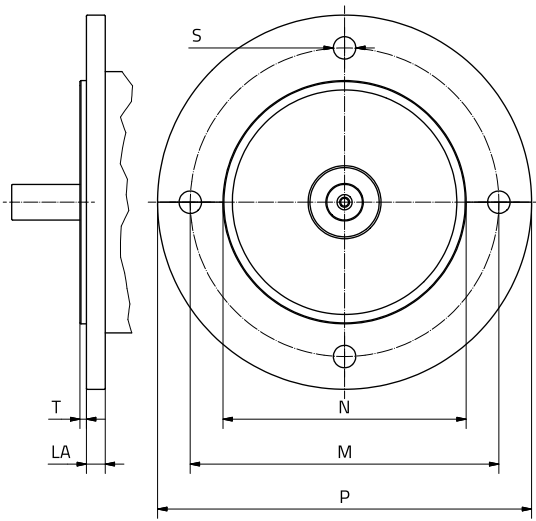
MOTOR

Type	IEC Size	L (L R/p*)	LB (LB R/p*)	AC Ø	D Ø	E	F	X	Y	Z Ø	DB DIN332-D	Flange	Weight [kg]	Water cooled		
														Lw	Lk	Aw Ø
MRS14	IEC 71	239 (327,5)	209 (297,5)	114,3	14j6	30	5x20	53	108	20	M5	B5 B14a B14b	12	169	135	139,7
													11			
													11,5			
MRS18	IEC 80	302,5 (391)	262,5 (351)	139,7	19j6	40	6x30	53	108	20	M6	B5 B14a B14b	21,5	217	183	159
													20,5			
													21			
MRS20	IEC 90	370,5 (465,5)	320,5 (415,5)	158	24j6	50	8x40	53	108	20	M8	B5 B14a B14b	32,5	252	218	193,7
													30			
													31			

All dimensions are in mm. Keyway according to DIN 6885.

* Only with brake or encoder.

DIMENSIONS

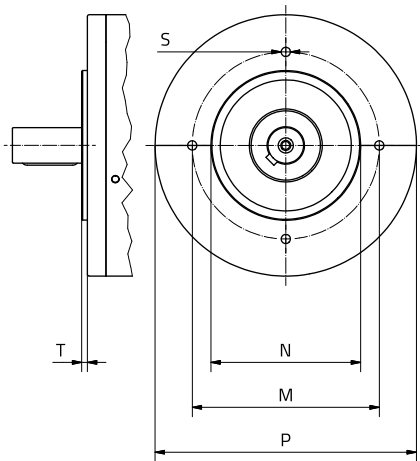


IEC FLANGE

B5

IEC size	P Ø	M Ø	N Ø	S Ø	T	LA
IEC 63	140	115	95h6	9	3	9
IEC 71	160	130	110h6	9	3,5	9
IEC 80	200	165	130h6	12	3,5	10
IEC 90	200	165	130h6	12	3,5	10
IEC 100	250	215	180h6	15	4	14,5

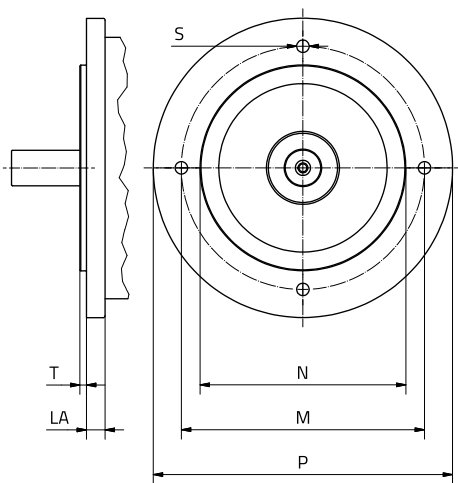
All dimensions are in mm.



B14a

IEC size	P Ø	M Ø	N Ø	S Ø	T	LA
IEC 63	90	75	60h6	M5	2,5	X
IEC 71	105	85	70h6	M6	2,5	X
IEC 80	120	100	80h6	M6	3	X
IEC 90	140	115	95h6	M8	3	X
IEC 100	160	130	110h6	M8	3,5	X

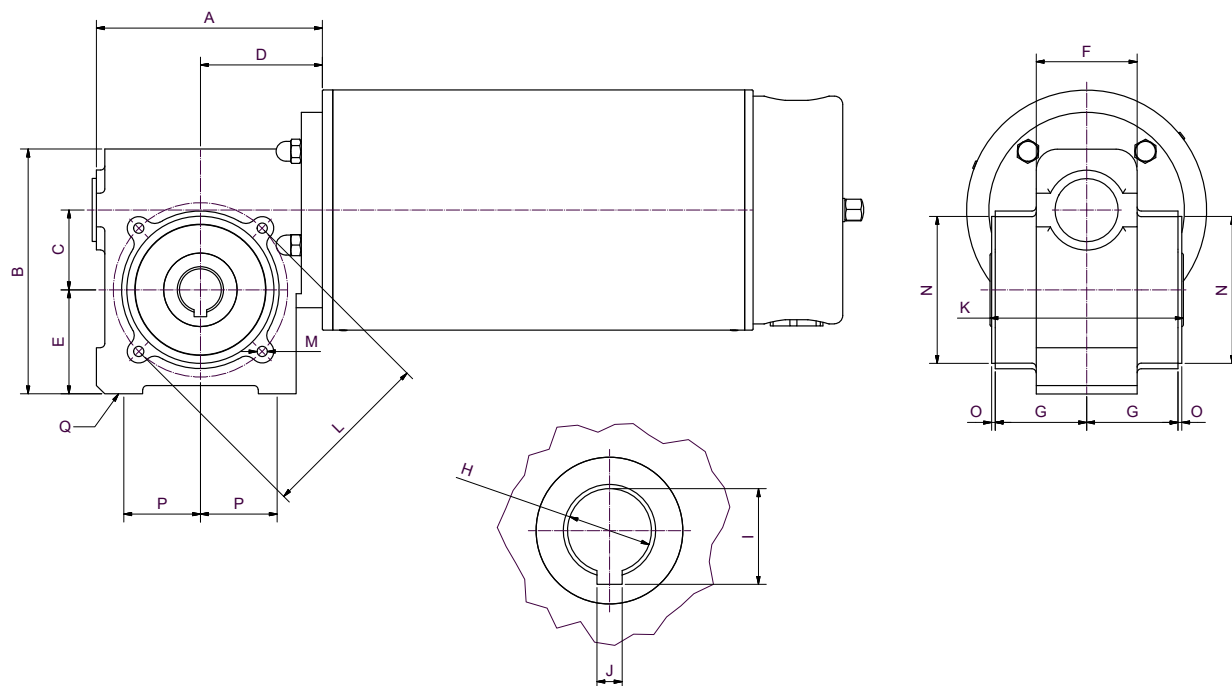
All dimensions are in mm.



B14b

IEC size	P Ø	M Ø	N Ø	S Ø	T	LA
IEC 63	120	100	80h6	M6	3	8
IEC 71	140	115	95h6	M8	3	8
IEC 80	160	130	110h6	M8	3,5	8
IEC 90	160	130	110h6	M8	3,5	10
IEC 100	200	165	130h6	M10	3,5	12

All dimensions are in mm.



WORM GEAR MOTOR

Type	A	B	C	D	E	F	G	H Ø	I
WRSH2	109,5	116,5	38	58	49,5	48	43,5	20H7 (15H7)	22,8
WRSH3	139	153	53	72,5	65	55	48,5	25H7 (20H7)	28,3

Type	J	K	L Ø	M	N Ø	O	P	Q	Weight [kg]
WRSH2	6	92	83	M6	70h6	1,75	36,5	M8*	4**
WRSH3	8	102	95	M8	80h6	2,5	40	M10*	7**

All dimensions are in mm. Keyway according to DIN 6885.

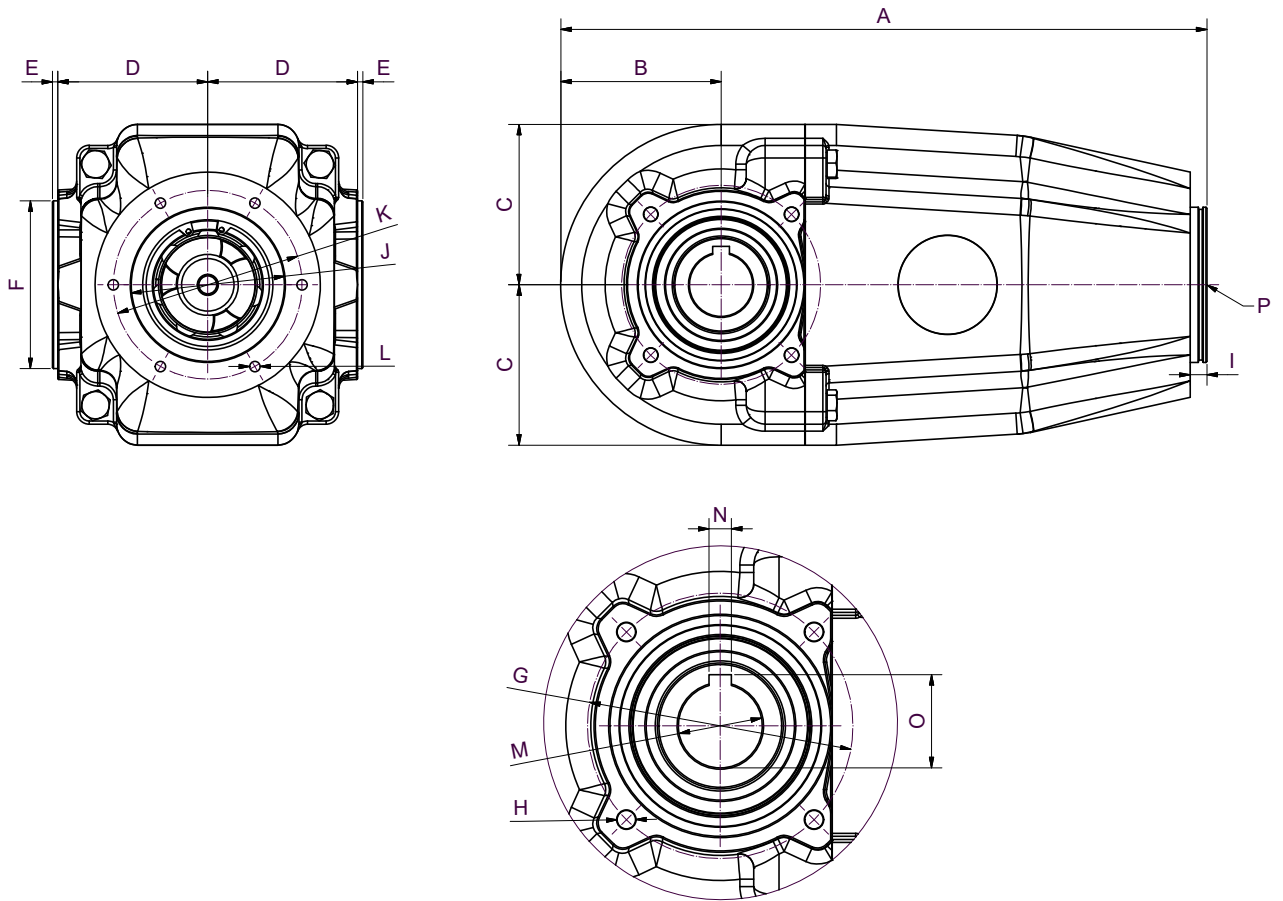
H (..) optional hollow shaft diameter.

* Optional, only in U50 design.

** Plus the weight of the selected motor (see page 12).



DIMENSIONS



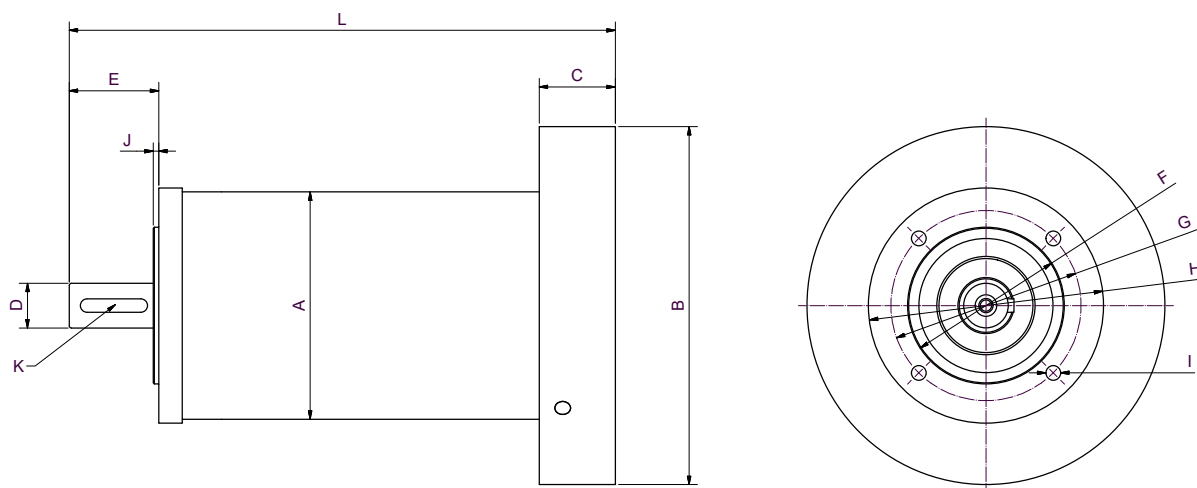
HELICAL BEVEL GEARBOXES

Type	A	B	C	D	E	F Ø	G Ø	H
KRSH4	308,25	76,5	76,5	71,5	2,5	80h6	95	M8

Type	I	J Ø	K Ø	L	M Ø	N	O	P	Weight [kg]
KRSH4	8	74h6	90	M6	30H7	8 JS9	33,3	G6 coupling	23

IEC motor input sizes

Input	B14a	B14b	B5
IEC 71			X
IEC 80		X	X
IEC 90		X	X
IEC 100	X	X	X
IEC 112	X	X	X

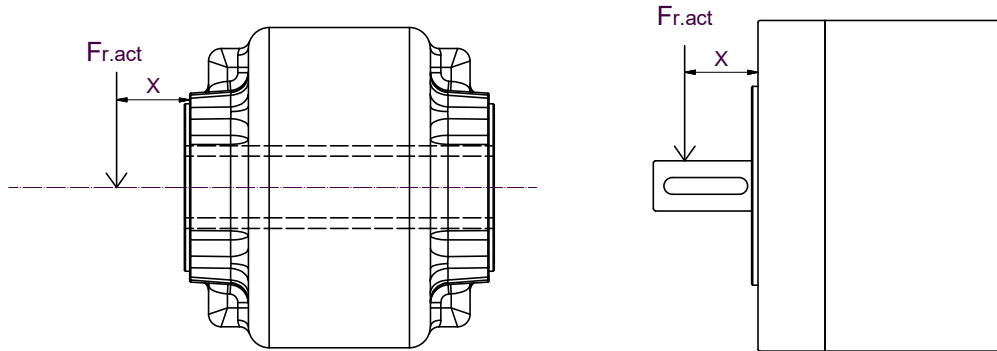


PLANETARY GEARBOX

Type	i	L	A ∅	B ∅	C	D ∅	E	F ∅	G ∅	H ∅	I	J	K	Weight [kg]	Input Flange
PRS80	3..8	216,5	101,5	160	24	20j6	40	70h6	85	105	M8	2,5	6x30	8	IEC 71 B14b
	9..64	234												9	IEC 80 B14b
	60..512	251,5												10	IEC 80 B14b
PRS120	3..8	286,5	159	200	31	35j6	70	110h6	130	160	M8	3,5	10x50	20	IEC 80 B5
	9..64	314												23	IEC 90 B5
	60..512	341,5												26	IEC 90 B5

All dimensions are in mm. Keyway according to DIN 6885.

DIMENSIONS



MAXIMUM RADIAL FORCE

RPM	5	10	25	40	55	70	85	100	200	300	400	500	600	700	800
WRSH2	3,59	2,84	2,02	1,69	1,5	1,36	1,26	1,18	0,89	0,74	0,65	0,59	0,54	0,5	0,47
WRSH3	6,74	5,34	3,85	3,25	2,89	2,65	2,46	2,32	1,78	1,51	1,35	1,23	1,14	1,07	1,01
PRS80	9,46	7,50	5,52	4,72	4,25	3,92	3,67	3,48	2,76	2,41	2,19	2,04	1,91	1,82	1,74
PRS120	17,39	13,78	10,15	8,68	7,81	7,20	6,75	6,39	5,08	4,43	4,03	3,74	3,52	3,34	3,20
KRSH4	5,82	4,62	3,40	2,91	2,62	2,41	2,26	2,14	1,70	1,49	1,35	1,25	1,18	1,12	1,07

Values are in kN, at 20mm distance.

Fa = 0.25 * Fr with combined Fa/Fr OR 0.5 * Fr without Fr.

RPM	750	900	1000	1200	1500	1800	3000	3600
MRS14	0,90	0,85	0,82	0,77	0,71	0,67	0,57	0,53
MRS18	1,40	1,31	1,27	1,19	1,11	1,04	0,88	0,83
MRS20	1,97	1,85	1,79	1,68	1,56	1,47	1,24	1,17

Values are in kN, at 20mm distance.

Radial and Axial forces

The values listed in the table are calculated for speeds between 10 and 800 r / min. The maximum load allowed is for a lifecycle of 15000 hours and should not be exceeded.

Radial Load (Fr)

When calculating the radial load, the point of application for the radial force Fr is taken at the point 20 mm from the unit (see figure). When the radial force applies on the shaft from a different distance, the actual radial force has to be calculated with the highlighted formula.

Axial load (Fa)

The allowed value for the axial load Fa is 0.25 * Fr when the force is in combination with a radial load Fr and the allowed value is 0.5 * without radial load.

Calculating Fr.act

$$Fr.act = Fr * \frac{a}{b + x}$$

	a	b
WRSH2	76	56
WRSH3	98,5	78,5
PRS80	45	25
PRS120	47,5	27,5
KRSH4	136,5	116,5
MRS14	215,5	195,5
MRS18	267,5	247,5
MRS20	322	302



Worm gear motor WRSH3

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