

Movement by Perfection



Ventilation, control and **drive technology**



Customized drive solutions

Internal rotor motors and ring motors

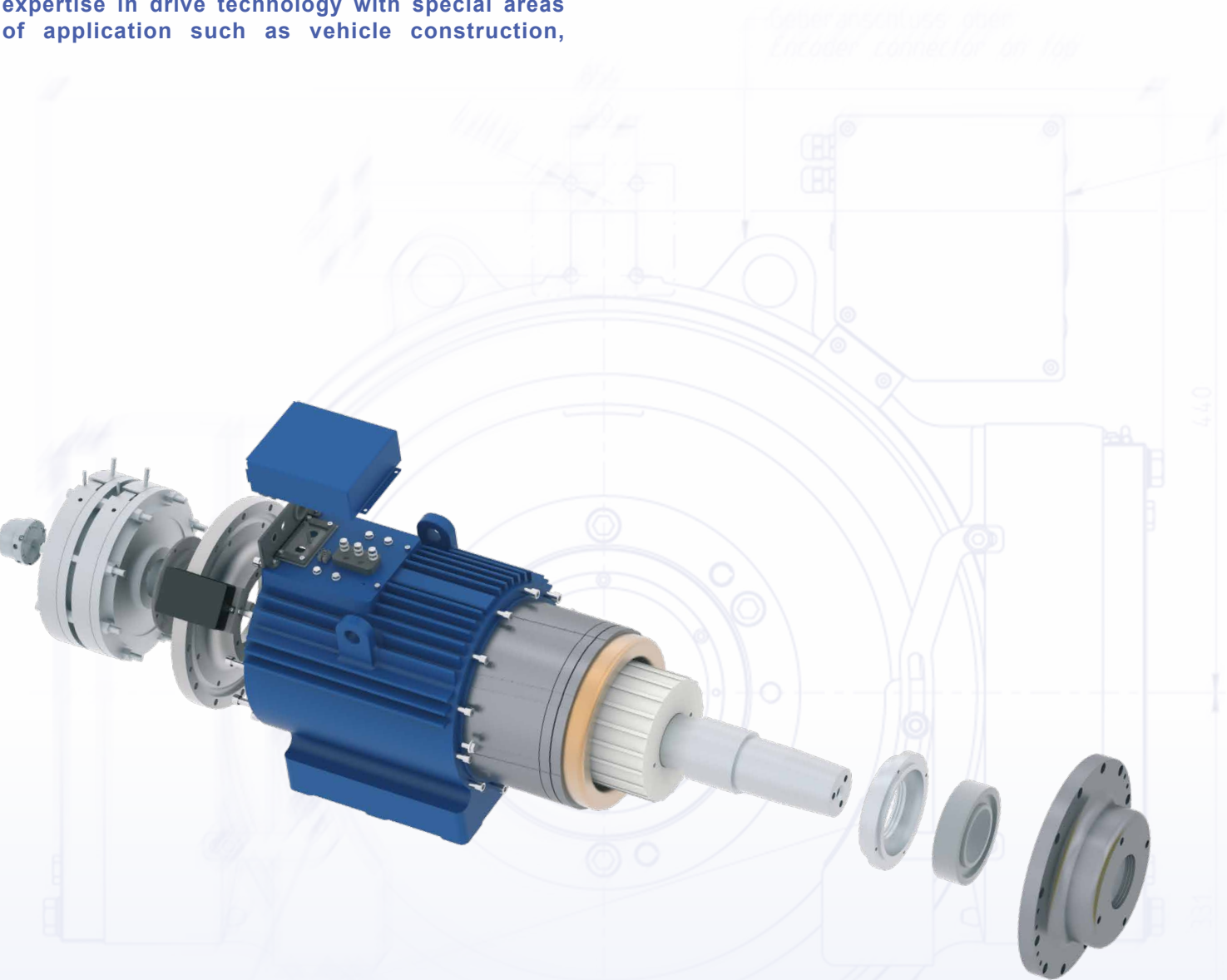
Customized drive solutions

As the world's leading system provider in the field of ventilation systems and drive technology with adapted control engineering, ZIEHL-ABEGG offers innovative solutions for many branches of business.

We are a reliable innovation partner to many companies and benefit from decades of product expertise in drive technology with special areas of application such as vehicle construction,

medical technology or mechanical engineering. Thanks to our wide product range and our 300-strong development team, we have what it takes to flexibly implement customized solutions.

Thanks to our worldwide sales and manufacturing network we are able to support you on-site.



Sophistication down to the last detail

Every drive element can give the end product crucial advantages. That is why we are not content with achieving the required speed/torque curve, but work closely and meticulously together with our customers on every detail. Regardless of whether

the encoder system, the brake or 'just' the connection technique. Achieving excellent efficiency is just as important to us as offering an economical package. All of our motors are designed to operate both as motors and as generators.

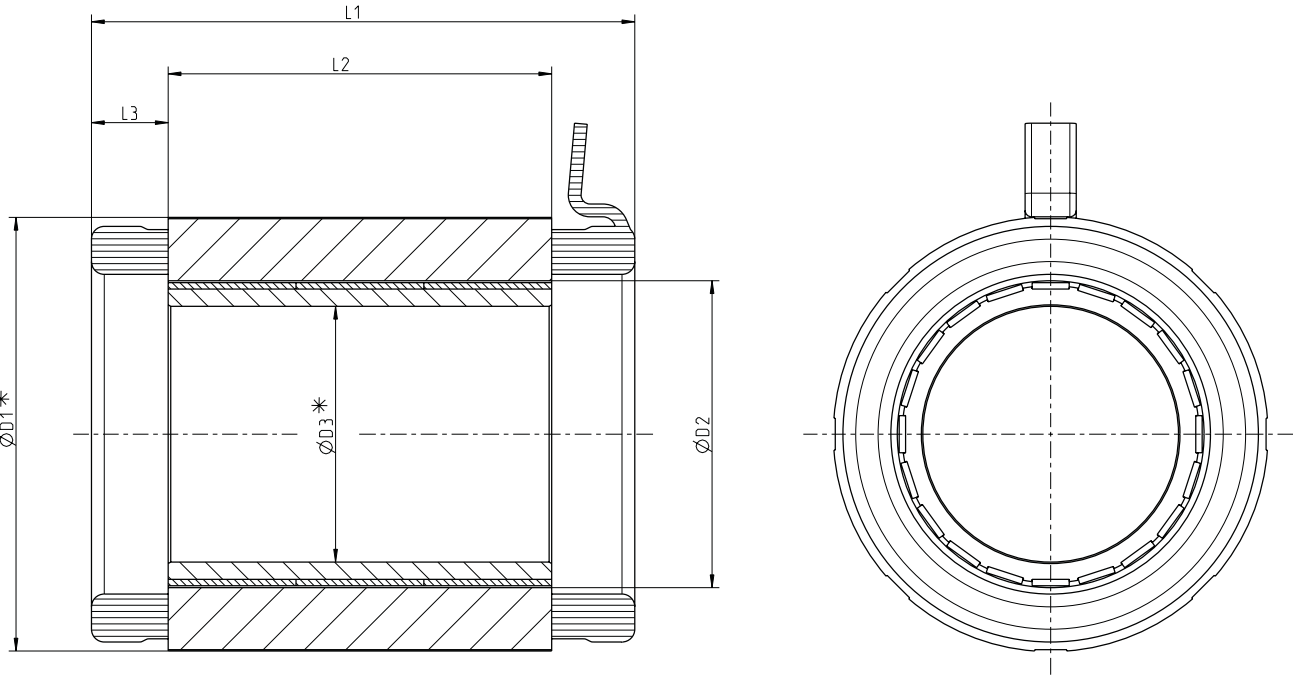
Internal rotor built-in motors

Compact gearless synchronous motor

ZIEHL-ABEGGs permanent magnet excited synchronous motors are conducted as compact internal rotors. These machines offer all the advantages of a modern drive system.

Mechanical coupling

The extensive know-how of ZIEHL-ABEGG makes it possible to develop flexible motor solutions. Our solutions always offer individual load couplings and we provide hollow, cylindrical or conical shaft ends for every machine.



Built-in motors offer:

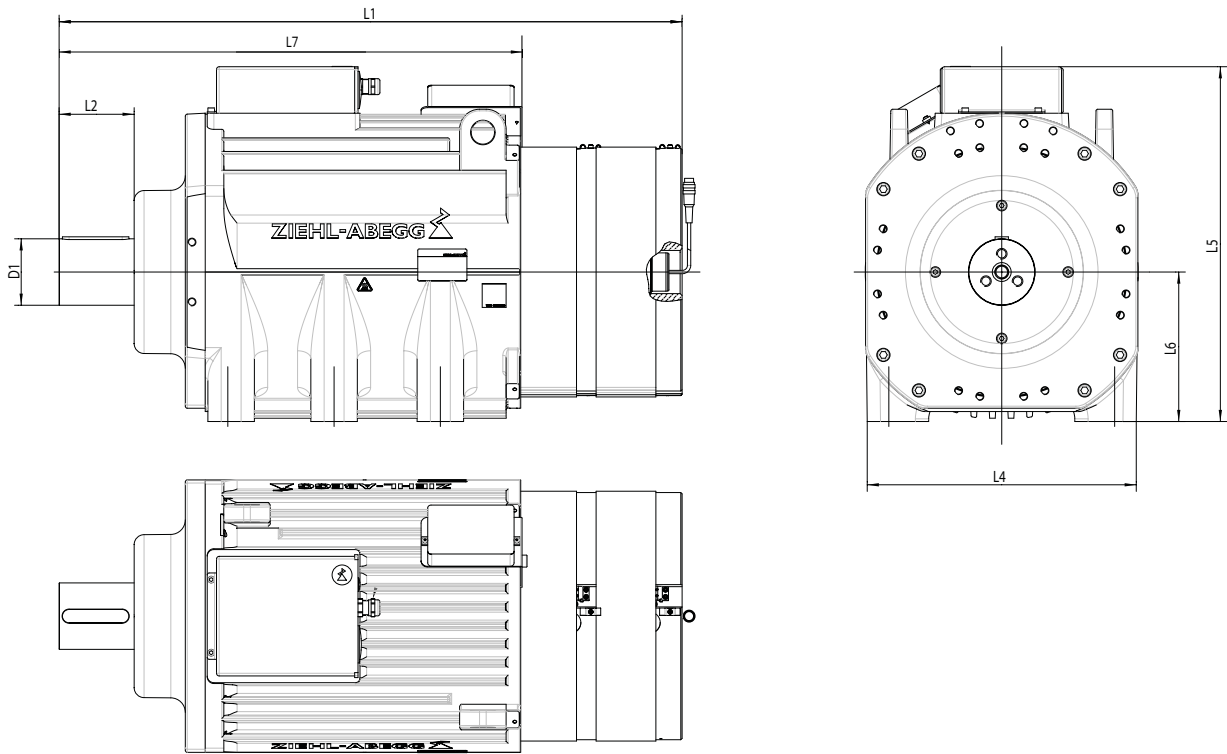
- Customized diameter
- Low-noise operation
- Precise rotation
- No gear back lash
- No maintenance required
- Low heat generation

Motor type	D1 [mm]	D2 [mm]	D3 [mm]	L1 [mm]	L2 [mm]	L3 [mm]
SM132.21	205	135	85	159	105	35
SM132.35	205	135	85	229	175	22
SM180.24	248	169	85	174	120	22
SM180.35	248	169	85	229	175	22
SM180.45	148	169	85	279	225	22
SM190.11	300	213	80	111	55	28
SM200.15	300	215	175	190	75	55
SM200.23	300	215	175	215	100	55
SM200.30	300	215	175	265	150	55
SM200.40	300	215	175	315	200	55
SM200.45	300	215	175	340	225	55
SM210.60	300	213	105	385	300	40
SM210.70	300	213	105	435	350	40
SM250.45	375	270	230	360	225	60
SM250.60	375	270	230	435	300	60
SM250.80	375	270	230	535	400	60
SM250.100	375	270	230	635	500	60
SM315.100	500	384	200	640	500	60

* dimensions can be customized



Internal rotor motors



Motor type	D1 [mm]	L1 [mm]	L2 [mm]	L4 [mm]	L5 [mm]	L6 [mm]	L7 [mm]
SM132.21	75	400	56	205/210	337	140	307
SM132.35	75	495	76	205/210	337	140	397
SM180.24	80	435	70	255	392	160	345
SM180.35	79,5	495	76	255	392	160	406
SM180.45	79,5	570	101	255	392	160	481
SM190.11	79,5	348	68	322	385	195	278
SM200.15	80	524	130	265	438	195	345
SM200.23	80	526	130	265	438	195	367
SM200.30	80	569	130	265	438	195	412
SM200.40	80	600	80	295	451	180	471
SM200.45	80	600	80	295	451	180	471
SM210.60	100	729	122	329	489	195	598
SM210.70	100	779	122	329	489	195	648
SM250.45	100	876	165	405	535	225	699
SM250.60	100	990	165	405	535	225	699
SM250.80	120	1125	165	440	537	267	811
SM250.100	140	1347	200	544	729	300	987
SM315.100	200	1229	173	860	854	400	1053

* dimensions can be customized

Motor type	Torque S1			Torque S3		Torque		Speed		Maximal DC link voltage [VDC]	Rotor mass inertia [kgm²]
	Free con-vection [Nm]	Forced ventilation [Nm]	Water-cooled [Nm]	40% ED, free convection [Nm]	60% ED, free convection [Nm]	Peak [Nm]	Ripple [Nm]	Nominal [rpm]	Lowest* [rpm]		
SM132.21	44	66	88	70	56	210	<0,4	20-300	<1	700	0,003
SM132.35	75	112	150	120	96	350	<0,6	20-300	<1	700	0,005
SM180.24	84	126	168	132	108	360	<0,8	20-300	<1	700	0,073
SM180.35	122	183	244	192	157	525	<1	20-300	<1	700	0,106
SM180.45	158	193	223	250	203	675	<1,4	20-300	<1	700	0,137
SM190.11	73	110	146	115	93	293	<0,5	20-300	<1	700	0,09
SM200.15	100	150	200	158	128	400	<1	20-300	<1	700	0,12
SM200.23	140	200	280	221	181	560	<1,4	20-300	<1	700	0,16
SM200.30	200	300	400	316	258	800	<2	20-300	<1	700	0,24
SM200.40	280	400	560	443	361	1120	<3	20-300	<1	700	0,31
SM200.45	315	450	630	498	407	1260	<3	20-300	<1	700	0,35
SM210.60	420	600	820	664	542	1450	<4	20-300	<1	700	0,5
SM210.70	490	700	980	774	632	1700	<4	20-300	<1	700	0,55
SM250.45	500	750	1125	791	645	2250	<5	20-300	<1	700	0,9
SM250.60	650	1000	1500	1028	839	3000	<7,5	20-300	<1	700	1,2
SM250.80	850	1333	2000	1344	1097	4000	<9	20-300	<1	700	1,66
SM250.100	1040	1666	2500	1660	1356	5000	<10	20-300	<1	700	2
SM315.100	2000	3400	4000	3162	2581	9000	<11	20-300	<1	700	5

* Standstill torques: 70% of specified torques
Complete motors for high radial loads possible

Options

Encoder System

The encoder system can be adapted to our motors according to your specification. Our standard range includes a high-quality encoder system, e.g. an absolute encoder with additional sinusoidal incremental signals.

Brake System

On request, the drive can be equipped with a mechanical brake system. Single-circuit or dual-circuit systems are optionally available. We will always find you the optimal solution in accordance with your requirements.

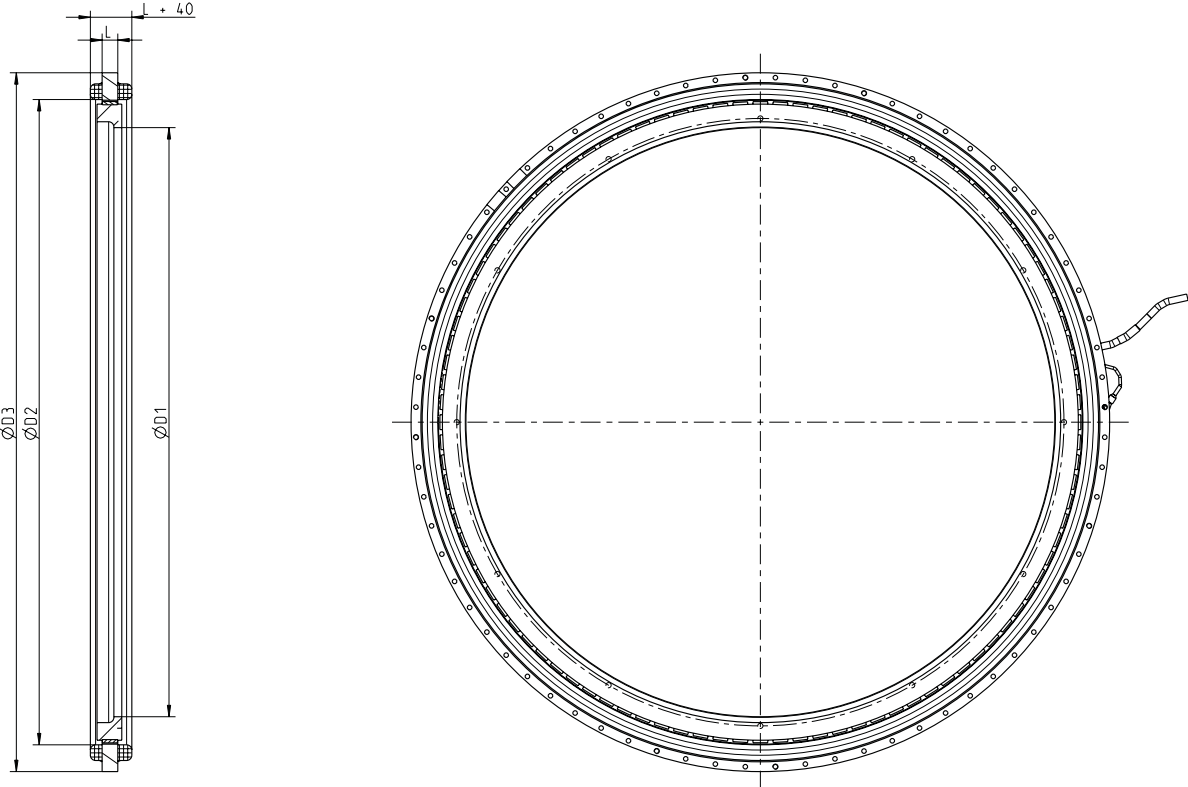


Integrable ring-shaped drives

Rotative direct drives are increasingly replacing conventional transmission solutions in a lot of applications. By omitting transmission, belts and spindles we create a system free from backlash. Increased system rigidity enables high dynamic acceleration and very precise positioning leading to a reduction in cycle times.

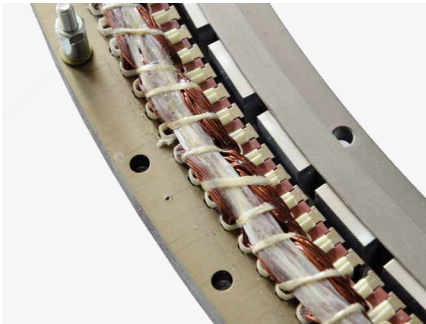
The speed of the driven machine corresponds to that of the drive. Specifically in the case of very low or high speeds, annoying transmission losses are dispensed with.

Direct drives operate quietly, wear- and maintenance-free making oil changes for drives a thing of the past - yet another benefit especially for clean-room applications.



Ring motors offer:

- Exact positioning
- Low-noise operation
- Precise rotation
- No gear back lash
- No maintenance required
- Compact, flat construction
- Low heat generation
- Free and individual internal diameter
- Integration of the drive into the system



D1 [mm]	D2 [mm]	D3 [mm]	L [mm]	Mn (S1) [Nm]	Mp [Nm]	n [rpm]
460	500	565	30	100	250	20...300
460	500	565	50	200	540	20...300
945	986	1070	20	400	1000	20...300
945	986	1070	40	800	2000	20...300
1050	1095	1190	25	500	1300	20...300
1050	1095	1190	40	1000	2600	20...300
1050	1095	1190	60	1500	3900	20...300

* The sizes listed are exemplary; other geometries are available upon request.



