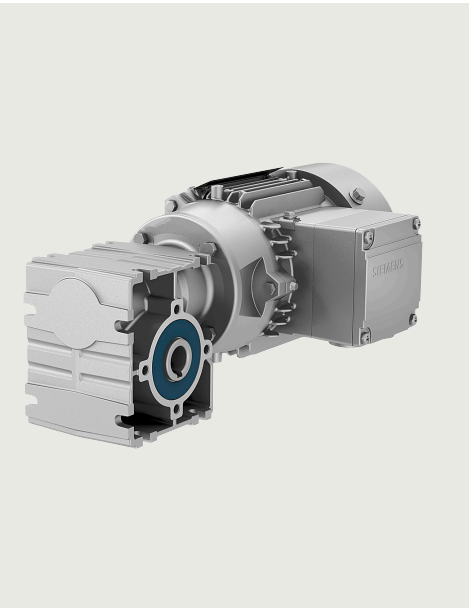
Worm geared motors



Orientation

Worm geared motors 1-stage Orientation

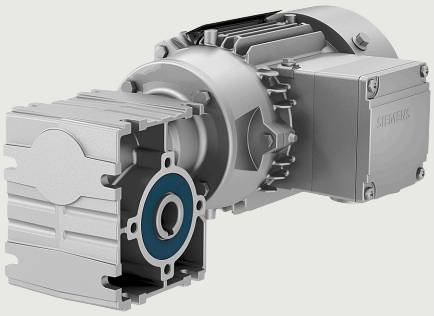


Fig. 7/1 Worm geared motor S

Designs	Mounting	Frame sizes	Maximum output torque T_{2N} Nm	Transmission ratio i –	Maximum motor power P_1 kW	Supported motors
• Foot-mounted design • Flange-mounted design • Design with integrated housing flange • Shaft-mounted design	• Hollow shaft design with feather key • Hollow shaft design with plug-in shaft SE • Solid shaft design with feather key (at one end or both ends)	S09 … S29	33 … 116	5.0 … 100	0.55	• Induction motors with B14 flange

Selection and ordering data

P_N	n_2	T_2	i	F_{R2}	f_B	m	Article No.	Additional identification code **-Z** with order code
kW	rpm	Nm	–	N	–	kg	(Article No. supplement, see below)	No. of poles
0.09	**S.29-LEI63MEB6**							
	8.9	44	100	3530	1.6	9	**2KJ3732- ■ BD21- ■ ■ A1 -Z**	**P01**
	11	39	80	3550	2.2	9	**2KJ3732- ■ BD21- ■ ■ B1 -Z**	**P01**
	S.19-LEI63MEB6							
	11	38	80	3550	0.94	6	**2KJ3731- ■ BD21- ■ ■ B1 -Z**	**P01**
	15	32	60	3580	1.5	6	**2KJ3731- ■ BD21- ■ ■ C1 -Z**	**P01**
	S.09-LEI63MEB6							
	15	29	60	1700	0.84	6	**2KJ3730- ■ BD21- ■ ■ C1 -Z**	**P01**
	18	26	50	1720	1.1	6	**2KJ3730- ■ BD21- ■ ■ D1 -Z**	**P01**
	22	22	40	1730	1.3	6	**2KJ3730- ■ BD21- ■ ■ E1 -Z**	**P01**
0.12	**S.29-LEI63ZMH4P**							
	14	39	100	3550	1.8	10	**2KJ3732- ■ BD23- ■ ■ A1 -Z**	–
	17	35	80	3560	2.3	10	**2KJ3732- ■ BD23- ■ ■ B1 -Z**	–
	23	29	60	3590	2.8	10	**2KJ3732- ■ BD23- ■ ■ C1 -Z**	–
	28	26	50	3600	3	10	**2KJ3732- ■ BD23- ■ ■ D1 -Z**	–
	35	22	40	3620	3.5	10	**2KJ3732- ■ BD23- ■ ■ E1 -Z**	–
	46	18	30	3640	4.2	10	**2KJ3732- ■ BD23- ■ ■ F1 -Z**	–
	56	16	25	3640	4.8	10	**2KJ3732- ■ BD23- ■ ■ G1 -Z**	–
	S.19-LEI63ZMH4P							
	17	34	80	3570	1	8	**2KJ3731- ■ BD23- ■ ■ B1 -Z**	–
	23	29	60	3590	1.5	8	**2KJ3731- ■ BD23- ■ ■ C1 -Z**	–
	28	26	50	3600	1.7	8	**2KJ3731- ■ BD23- ■ ■ D1 -Z**	–
	35	22	40	3620	2	8	**2KJ3731- ■ BD23- ■ ■ E1 -Z**	–
	46	18	30	3630	2.4	8	**2KJ3731- ■ BD23- ■ ■ F1 -Z**	–
	56	16	25	3640	2.5	8	**2KJ3731- ■ BD23- ■ ■ G1 -Z**	–
	70	13	20	3650	3.3	8	**2KJ3731- ■ BD23- ■ ■ H1 -Z**	–
	93	10	15	3670	4.2	8	**2KJ3731- ■ BD23- ■ ■ J1 -Z**	–
	S.09-LEI63ZMH4P							
	23	26	60	1720	0.91	7	**2KJ3730- ■ BD23- ■ ■ C1 -Z**	–
	28	23	50	1730	1.1	7	**2KJ3730- ■ BD23- ■ ■ D1 -Z**	–
	35	20	40	1740	1.4	7	**2KJ3730- ■ BD23- ■ ■ E1 -Z**	–
	46	16	30	1760	1.7	7	**2KJ3730- ■ BD23- ■ ■ F1 -Z**	–
	56	14	25	1760	1.9	7	**2KJ3730- ■ BD23- ■ ■ G1 -Z**	–
	70	12	20	1770	2.2	7	**2KJ3730- ■ BD23- ■ ■ H1 -Z**	–
	93	9.8	15	1780	2.7	7	**2KJ3730- ■ BD23- ■ ■ J1 -Z**	–
	139	7	10	1790	3.9	7	**2KJ3730- ■ BD23- ■ ■ K1 -Z**	–
0.18	**S.29-LEI71ZMK6P**							
	11	80	80	3380	1.1	10	**2KJ3732- ■ CC23- ■ ■ B1 -Z**	**P01**
	S.29-LEI63ZMK4P							
	14	59	100	3460	1.2	10	**2KJ3732- ■ BE23- ■ ■ A1 -Z**	–
	17	52	80	3490	1.5	10	**2KJ3732- ■ BE23- ■ ■ B1 -Z**	–
	23	44	60	3530	1.8	10	**2KJ3732- ■ BE23- ■ ■ C1 -Z**	–
	28	39	50	3550	2	10	**2KJ3732- ■ BE23- ■ ■ D1 -Z**	–
	35	33	40	3570	2.3	10	**2KJ3732- ■ BE23- ■ ■ E1 -Z**	–
	46	27	30	3600	2.8	10	**2KJ3732- ■ BE23- ■ ■ F1 -Z**	–
	55	23	25	3610	3.2	10	**2KJ3732- ■ BE23- ■ ■ G1 -Z**	–
	69	20	20	3630	3.8	10	**2KJ3732- ■ BE23- ■ ■ H1 -Z**	–
	92	16	15	3640	4.8	10	**2KJ3732- ■ BE23- ■ ■ J1 -Z**	–
	S.19-LEI63ZMK4P							
	23	43	60	3530	1	8	**2KJ3731- ■ BE23- ■ ■ C1 -Z**	–
	28	38	50	3550	1.2	8	**2KJ3731- ■ BE23- ■ ■ D1 -Z**	–
	35	33	40	3570	1.3	8	**2KJ3731- ■ BE23- ■ ■ E1 -Z**	–

Article No. supplement		
Shaft design	**1 or 9**	see page 10/51
Frequency and voltage	**2 or 9**	see page 11/2
Gearbox mounting type	**A, F, H or D**	see page 10/42

Geared motors up to 0.37 kW

Selection and ordering data

P_N	n_2	T_2	i	F_{R2}	f_B	m	Article No.	Additional identification code **-Z** with order code
kW	rpm	Nm	–	N	–	kg	(Article No. supplement, see below)	No. of poles
0.18	**S.19-LEI63ZMK4P**							
	46	27	30	3600	1.6	8	**2KJ3731- ■ BE23- ■ ■ F1 -Z**	–
	55	23	25	3610	1.7	8	**2KJ3731- ■ BE23- ■ ■ G1 -Z**	–
	69	20	20	3630	2.2	8	**2KJ3731- ■ BE23- ■ ■ H1 -Z**	–
	92	16	15	3640	2.8	8	**2KJ3731- ■ BE23- ■ ■ J1 -Z**	–
	138	11	10	3660	3.9	8	**2KJ3731- ■ BE23- ■ ■ K1 -Z**	–
	S.09-LEI63ZMK4P							
	35	30	40	1700	0.93	7	**2KJ3730- ■ BE23- ■ ■ E1 -Z**	–
	46	25	30	1720	1.1	7	**2KJ3730- ■ BE23- ■ ■ F1 -Z**	–
	55	22	25	1730	1.3	7	**2KJ3730- ■ BE23- ■ ■ G1 -Z**	–
	69	19	20	1740	1.5	7	**2KJ3730- ■ BE23- ■ ■ H1 -Z**	–
	92	15	15	1760	1.8	7	**2KJ3730- ■ BE23- ■ ■ J1 -Z**	–
	138	10	10	1780	2.6	7	**2KJ3730- ■ BE23- ■ ■ K1 -Z**	–
	198	7.7	7	1790	3.6	7	**2KJ3730- ■ BE23- ■ ■ L1 -Z**	–
	277	5.6	5	1800	4.6	7	**2KJ3730- ■ BE23- ■ ■ M1 -Z**	–
0.25	**S.29-LEI71ZMK4P**							
	17	72	80	3410	1.1	10	**2KJ3732- ■ CC23- ■ ■ B1 -Z**	–
	23	60	60	3460	1.3	10	**2KJ3732- ■ CC23- ■ ■ C1 -Z**	–
	28	54	50	3480	1.5	10	**2KJ3732- ■ CC23- ■ ■ D1 -Z**	–
	35	46	40	3520	1.7	10	**2KJ3732- ■ CC23- ■ ■ E1 -Z**	–
	46	37	30	3560	2	10	**2KJ3732- ■ CC23- ■ ■ F1 -Z**	–
	56	32	25	3580	2.3	10	**2KJ3732- ■ CC23- ■ ■ G1 -Z**	–
	70	27	20	3600	2.7	10	**2KJ3732- ■ CC23- ■ ■ H1 -Z**	–
	93	22	15	3620	3.5	10	**2KJ3732- ■ CC23- ■ ■ J1 -Z**	–
	140	15	10	3650	5	10	**2KJ3732- ■ CC23- ■ ■ K1 -Z**	–
	S.19-LEI71ZMK4P							
	28	53	50	3490	0.84	8	**2KJ3731- ■ CC23- ■ ■ D1 -Z**	–
	35	46	40	3520	0.96	8	**2KJ3731- ■ CC23- ■ ■ E1 -Z**	–
	46	37	30	3550	1.2	8	**2KJ3731- ■ CC23- ■ ■ F1 -Z**	–
	56	32	25	3580	1.2	8	**2KJ3731- ■ CC23- ■ ■ G1 -Z**	–
	70	27	20	3600	1.6	8	**2KJ3731- ■ CC23- ■ ■ H1 -Z**	–
	93	21	15	3620	2	8	**2KJ3731- ■ CC23- ■ ■ J1 -Z**	–
	140	15	10	3650	2.8	8	**2KJ3731- ■ CC23- ■ ■ K1 -Z**	–
	199	11	7	3660	3.7	8	**2KJ3731- ■ CC23- ■ ■ L1 -Z**	–
	279	7.9	5	3680	4.9	8	**2KJ3731- ■ CC23- ■ ■ M1 -Z**	–
0.37	**S.29-LEI71YMS4P**							
	23	90	60	3330	0.89	12	**2KJ3732- ■ CE23- ■ ■ C1 -Z**	–
	28	80	50	3380	0.98	12	**2KJ3732- ■ CE23- ■ ■ D1 -Z**	–
	34	69	40	3420	1.1	12	**2KJ3732- ■ CE23- ■ ■ E1 -Z**	–
	46	56	30	3480	1.4	12	**2KJ3732- ■ CE23- ■ ■ F1 -Z**	–
	55	48	25	3510	1.5	12	**2KJ3732- ■ CE23- ■ ■ G1 -Z**	–
	69	41	20	3540	1.8	12	**2KJ3732- ■ CE23- ■ ■ H1 -Z**	–
	92	32	15	3580	2.3	12	**2KJ3732- ■ CE23- ■ ■ J1 -Z**	–
	138	22	10	3620	3.3	12	**2KJ3732- ■ CE23- ■ ■ K1 -Z**	–
	197	16	7	3640	4.5	12	**2KJ3732- ■ CE23- ■ ■ L1 -Z**	–
	S.19-LEI71YMS4P							
	55	48	25	3510	0.81	10	**2KJ3731- ■ CE23- ■ ■ G1 -Z**	–
	69	41	20	3540	1.1	10	**2KJ3731- ■ CE23- ■ ■ H1 -Z**	–
	92	32	15	3580	1.3	10	**2KJ3731- ■ CE23- ■ ■ J1 -Z**	–
	138	22	10	3620	1.9	10	**2KJ3731- ■ CE23- ■ ■ K1 -Z**	–
	197	16	7	3640	2.5	10	**2KJ3731- ■ CE23- ■ ■ L1 -Z**	–
	276	12	5	3660	3.3	10	**2KJ3731- ■ CE23- ■ ■ M1 -Z**	–

Article No. supplement		
Shaft design	**1 or 9**	see page 10/51
Frequency and voltage	**2 or 9**	see page 11/2
Gearbox mounting type	**A, F, H or D**	see page 10/42

Selection and ordering data

i	Lead angle of the worm	n_{mot} = 2 800 rpm				n_{mot} = 1 400 rpm				Motor frame size		Article No. (Article No. supplement, see below)
		n_2	T_{2N}	P_{mot}	η	n_2	T_{2N}	P_{mot}	η			
–	γ_m	rpm	Nm	kW	%	rpm	Nm	kW	%	63	71	
S.09												
80	2.1	35.0	18	0.14	48	17.5	19	0.07	47	✓		**2KJ3730 - ■■■■■ - ■■ B1**
60	2.7	46.7	22	0.20	55	23.3	24	0.11	52	✓		**2KJ3730 - ■■■■■ - ■■ C1**
50	3.2	56.0	21	0.21	58	28.0	27	0.14	56	✓		**2KJ3730 - ■■■■■ - ■■ D1**
40	3.8	70.0	21	0.24	63	35.0	28	0.17	61	✓		**2KJ3730 - ■■■■■ - ■■ E1**
30	4.6	93.3	20	0.29	68	46.7	28	0.20	67	✓		**2KJ3730 - ■■■■■ - ■■ F1**
25	5.2	112.0	20	0.33	72	56.0	27	0.23	70	✓		**2KJ3730 - ■■■■■ - ■■ G1**
20	7.4	140.0	21	0.40	77	70.0	27	0.26	75	✓		**2KJ3730 - ■■■■■ - ■■ H1**
15	9.2	186.7	20	0.48	81	93.3	27	0.33	80	✓		**2KJ3730 - ■■■■■ - ■■ J1**
10	14.0	280.0	20	0.68	86	140.0	27	0.47	85	✓		**2KJ3730 - ■■■■■ - ■■ K1**
7	19.0	400.0	19	0.89	89	200.0	26	0.62	88	✓		**2KJ3730 - ■■■■■ - ■■ L1**
5	25.0	560.0	19	1.22	91	280.0	25	0.81	91	✓		**2KJ3730 - ■■■■■ - ■■ M1**
S.19												
80	3.5	35.0	33	0.22	55	17.5	35	0.12	54	✓		**2KJ3731 - ■■■■■ - ■■ B1**
60	3.5	46.7	33	0.26	61	23.3	44	0.18	59	✓		**2KJ3731 - ■■■■■ - ■■ C1**
50	4.0	56.0	33	0.30	64	28.0	44	0.20	63	✓	✓	**2KJ3731 - ■■■■■ - ■■ D1**
40	4.5	70.0	31	0.33	68	35.0	43	0.24	67	✓	✓	**2KJ3731 - ■■■■■ - ■■ E1**
30	5.5	93.3	31	0.42	73	46.7	41	0.28	72	✓	✓	**2KJ3731 - ■■■■■ - ■■ F1**
25	6.5	112.0	31	0.48	76	56.0	41	0.32	75	✓	✓	**2KJ3731 - ■■■■■ - ■■ G1**
20	9.5	140.0	31	0.56	81	70.0	41	0.38	80	✓	✓	**2KJ3731 - ■■■■■ - ■■ H1**
15	11.0	186.7	30	0.70	84	93.3	41	0.48	84	✓	✓	**2KJ3731 - ■■■■■ - ■■ J1**
10	17.0	280.0	30	1.00	88	140.0	40	0.67	88	✓	✓	**2KJ3731 - ■■■■■ - ■■ K1**
7	17.0	400.0	29	1.33	91	200.0	39	0.91	90	✓	✓	**2KJ3731 - ■■■■■ - ■■ L1**
5	23.0	560.0	28	1.78	92	280.0	37	1.18	92	✓	✓	**2KJ3731 - ■■■■■ - ■■ M1**
S.29												
100	2.0	28.0	57	0.33	50	14.0	72	0.22	49	✓		**2KJ3732 - ■■■■■ - ■■ A1**
80	2.5	35.0	57	0.39	54	17.5	80	0.27	54	✓	✓	**2KJ3732 - ■■■■■ - ■■ B1**
60	3.0	46.7	57	0.46	60	23.3	78	0.32	59	✓	✓	**2KJ3732 - ■■■■■ - ■■ C1**
50	3.5	56.0	55	0.50	64	28.0	75	0.35	63	✓	✓	**2KJ3732 - ■■■■■ - ■■ D1**
40	4.5	70.0	55	0.59	68	35.0	74	0.40	68	✓	✓	**2KJ3732 - ■■■■■ - ■■ E1**
30	5.0	93.3	53	0.71	73	46.7	73	0.49	73	✓	✓	**2KJ3732 - ■■■■■ - ■■ F1**
25	6.0	112.0	53	0.82	76	56.0	73	0.56	76	✓	✓	**2KJ3732 - ■■■■■ - ■■ G1**
20	8.5	140.0	53	0.96	81	70.0	73	0.67	80	✓	✓	**2KJ3732 - ■■■■■ - ■■ H1**
15	10.0	186.7	53	1.23	84	93.3	72	0.84	84	✓	✓	**2KJ3732 - ■■■■■ - ■■ J1**
10	15.0	280.0	53	1.77	88	140.0	72	1.20	88	✓	✓	**2KJ3732 - ■■■■■ - ■■ K1**
7	15.0	400.0	53	2.44	91	200.0	71	1.63	91	✓	✓	**2KJ3732 - ■■■■■ - ■■ L1**
5	21.0	560.0	51	3.22	93	280.0	69	2.18	93	✓	✓	**2KJ3732 - ■■■■■ - ■■ M1**

Article No. supplement		
Shaft design	**1 or 9**	see page 10/51
Motor frame size, motor type, efficiency class		see chapter 9
Frequency and voltage	**2 or 9**	see page 11/2
Gearbox mounting type	**A, F, H or D**	see page 10/42

Transmission ratios and torques

Selection and ordering data

i	Lead angle of the worm	n_{mot} = 900 rpm				n_{mot} =500 rpm				Motor frame size		Article No. (Article No. supplement, see below)
		n_2	T_{2N}	P_{mot}	η	n_2	T_{2N}	P_{mot}	η			
–	γ_m	rpm	Nm	kW	%	rpm	Nm	kW	%	63	71	
S.09												
80	2.1	11.3	19	0.05	44	6.3	20	0.03	40	✓		**2KJ3730 - ■■■■■ - ■■ B1**
60	2.7	15.0	24	0.08	50	8.3	24	0.05	45	✓		**2KJ3730 - ■■■■■ - ■■ C1**
50	3.2	18.0	27	0.10	53	10.0	28	0.06	49	✓		**2KJ3730 - ■■■■■ - ■■ D1**
40	3.8	22.5	31	0.13	58	12.5	31	0.08	54	✓		**2KJ3730 - ■■■■■ - ■■ E1**
30	4.6	30.0	32	0.16	64	16.7	33	0.10	60	✓		**2KJ3730 - ■■■■■ - ■■ F1**
25	5.2	36.0	32	0.18	68	20.0	32	0.10	64	✓		**2KJ3730 - ■■■■■ - ■■ G1**
20	7.4	45.0	31	0.20	73	25.0	31	0.12	70	✓		**2KJ3730 - ■■■■■ - ■■ H1**
15	9.2	60.0	33	0.27	78	33.3	33	0.15	75	✓		**2KJ3730 - ■■■■■ - ■■ J1**
10	14.0	90.0	32	0.36	84	50.0	33	0.21	81	✓		**2KJ3730 - ■■■■■ - ■■ K1**
7	19.0	128.6	31	0.48	87	71.4	33	0.29	85	✓		**2KJ3730 - ■■■■■ - ■■ L1**
5	25.0	180.0	30	0.63	90	100.0	33	0.39	88	✓		**2KJ3730 - ■■■■■ - ■■ M1**
S.19												
80	3.5	11.3	35	0.08	51	6.3	36	0.05	47	✓		**2KJ3731 - ■■■■■ - ■■ B1**
60	3.5	15.0	49	0.14	57	8.3	51	0.09	52	✓		**2KJ3731 - ■■■■■ - ■■ C1**
50	4.0	18.0	51	0.16	61	10.0	59	0.11	56	✓	✓	**2KJ3731 - ■■■■■ - ■■ D1**
40	4.5	22.5	51	0.18	65	12.5	64	0.14	61	✓	✓	**2KJ3731 - ■■■■■ - ■■ E1**
30	5.5	30.0	50	0.22	70	16.7	63	0.17	66	✓	✓	**2KJ3731 - ■■■■■ - ■■ F1**
25	6.5	36.0	49	0.25	74	20.0	62	0.19	70	✓	✓	**2KJ3731 - ■■■■■ - ■■ G1**
20	9.5	45.0	50	0.30	78	25.0	62	0.22	75	✓	✓	**2KJ3731 - ■■■■■ - ■■ H1**
15	11.0	60.0	50	0.38	82	33.3	62	0.27	79	✓	✓	**2KJ3731 - ■■■■■ - ■■ J1**
10	17.0	90.0	49	0.53	87	50.0	61	0.38	85	✓	✓	**2KJ3731 - ■■■■■ - ■■ K1**
7	17.0	128.6	47	0.70	90	71.4	58	0.49	88	✓	✓	**2KJ3731 - ■■■■■ - ■■ L1**
5	23.0	180.0	44	0.91	91	100.0	56	0.65	90	✓	✓	**2KJ3731 - ■■■■■ - ■■ M1**
S.29												
100	2.0	9.0	72	0.14	47	5.0	72	0.09	43	✓		**2KJ3732 - ■■■■■ - ■■ A1**
80	2.5	11.3	92	0.21	52	6.3	93	0.13	48	✓	✓	**2KJ3732 - ■■■■■ - ■■ B1**
60	3.0	15.0	93	0.26	57	8.3	116	0.19	53	✓	✓	**2KJ3732 - ■■■■■ - ■■ C1**
50	3.5	18.0	90	0.28	61	10.0	115	0.21	57	✓	✓	**2KJ3732 - ■■■■■ - ■■ D1**
40	4.5	22.5	90	0.32	66	12.5	113	0.24	62	✓	✓	**2KJ3732 - ■■■■■ - ■■ E1**
30	5.0	30.0	86	0.38	72	16.7	110	0.28	68	✓	✓	**2KJ3732 - ■■■■■ - ■■ F1**
25	6.0	36.0	85	0.43	75	20.0	109	0.32	71	✓	✓	**2KJ3732 - ■■■■■ - ■■ G1**
20	8.5	45.0	85	0.51	79	25.0	109	0.38	76	✓	✓	**2KJ3732 - ■■■■■ - ■■ H1**
15	10.0	60.0	85	0.64	83	33.3	109	0.47	81	✓	✓	**2KJ3732 - ■■■■■ - ■■ J1**
10	15.0	90.0	85	0.92	87	50.0	109	0.66	86	✓	✓	**2KJ3732 - ■■■■■ - ■■ K1**
7	15.0	128.6	84	1.26	90	71.4	107	0.90	89	✓	✓	**2KJ3732 - ■■■■■ - ■■ L1**
5	21.0	180.0	82	1.68	92	100.0	105	1.21	91	✓	✓	**2KJ3732 - ■■■■■ - ■■ M1**

Article No. supplement		
Shaft design	**1 or 9**	see page 10/51
Motor frame size, motor type, efficiency class		see chapter 9
Frequency and voltage	**2 or 9**	see page 11/2
Gearbox mounting type	**A, F, H or D**	see page 10/42

Permissible radial force F_{Rperm}

Radial force conversion for out-of-center force application point

If the force is not applied at the center of the shaft extension, the permissible radial force must be calculated using the following formula.

The lower value of F_{xperm1} (bearing service life) and F_{xperm2} (strength) is the permissible radial force. The calculation is applicable without axial force.

Permissible radial force according to the bearing service life

$$F_{xperm1} = F_{R2} \cdot \frac{y}{(z + x)}$$

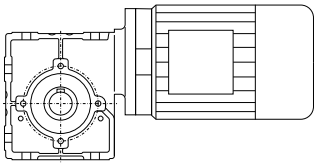
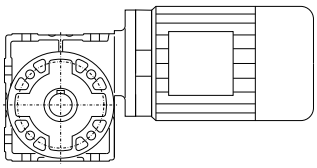
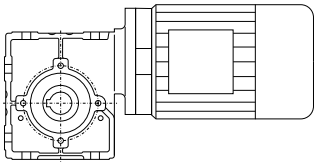
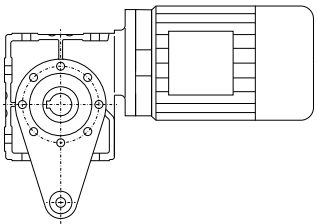
Permissible radial force according to the shaft strength

$$F_{xperm2} = \frac{a}{(b + x)}$$

Gearbox type	d mm	l mm	y mm	z mm	a kNmm	F_{Rperm} in N with x = l/2 for output speeds n_2 in rpm ≤ 16	≤ 25	≤ 40	≤ 63	≤ 100	≤ 160	≤ 250	≤ 400
S09	16	40	83.5	63.5	36	1800	1800	1800	1800	1800	1690	1400	1120
SF09			106.0	86.0		1800	1800	1800	1800	1620	1330	1100	880
S19	20	40	98.0	78.0	76	3800	3800	3800	3200	2650	2180	1780	1420
SF19			128.0	108.0		3200	3120	2920	2450	2030	1670	1360	1090
S29	20	40	120.5	100.5	72	3600	3600	3600	3600	3600	3290	2680	2120
SF29			153.5	133.5		3600	3600	3600	3600	3150	2580	2110	1660

Overview

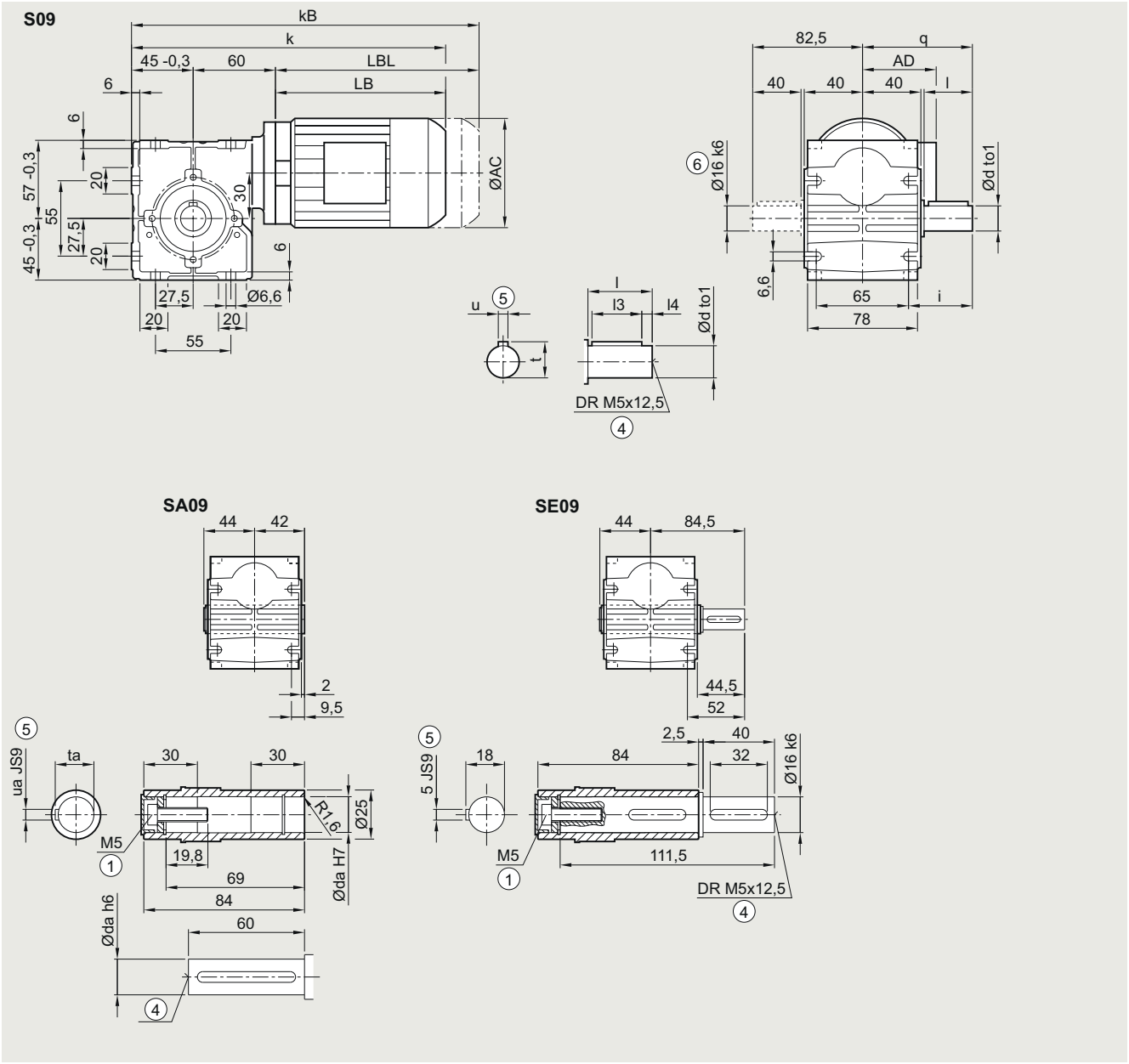
Notes on the dimensional drawings are provided in chapter Introduction on page 1/24.

Design	Frame size	Dimensional drawing, see page
Worm geared motor S		
Foot-mounted design		
	S.09	7/8
	S.19	7/12
	S.29	7/16
Flange-mounted design		
	S.F09	7/9
	S.F19	7/13
	S.F29	7/17
Housing flange design		
	S.Z09	7/10
	S.Z19	7/14
	S.Z29	7/18
Shaft-mounted design		
	SAD09	7/11
	SAD19	7/15
	SAD29	7/19
Additional versions and options		
	Protective cover for hollow shafts	7/20

Dimensional drawings

Gearbox S.09 in a foot-mounted design

S031, SA031, SE031



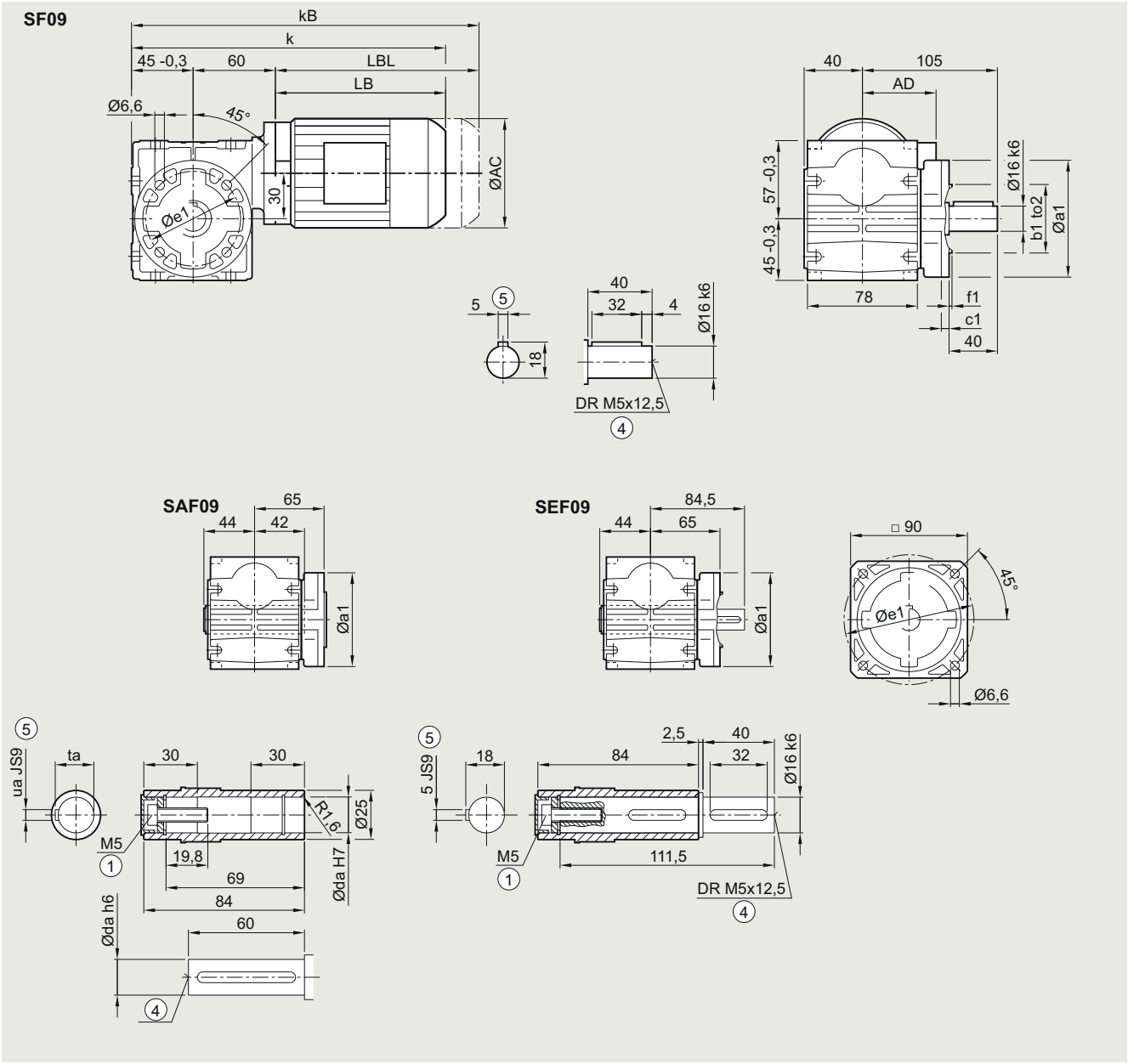
Solid shaft	d	to1	l	l3	l4	u	t	q	i	Hollow shaft	da	ua	ta
	14	k6	30	22	4	5	16	72.5	40		14	5	16.3
	16	k6	40	32	4	5	18	82.5	50		16	5	18.3

Motor	AC	AD [1]	k	kB	LB	LBL
LEI63	117.8	101	284.5	335.5	179.5	230.5
LEI63Z	117.8	101	310.5	361.5	205.5	256.5

① ISO 4014
④ DIN 332
⑤ Feather key/keyway DIN 6885-1
⑥ Solid shaft with 2nd shaft extension only d16
[1] AD depends on the motor options, for other dimensions, see page 9/53.

Gearbox S.F09 in a flange-mounted design

SF031, SAF031, SEF031



Hollow shaft	da	ua	ta
	14	5	16.3
	16	5	18.3

Flange	a1	e1	b1	to2	c1	f1
	80	65	50	j6	7	2.5
	120	100	80	j6	7	3.0

Motor	AC	AD [1]	k	kB	LB	LBL
LEI63	117.8	101	284.5	335.5	179.5	230.5
LEI63Z	117.8	101	310.5	361.5	205.5	256.5

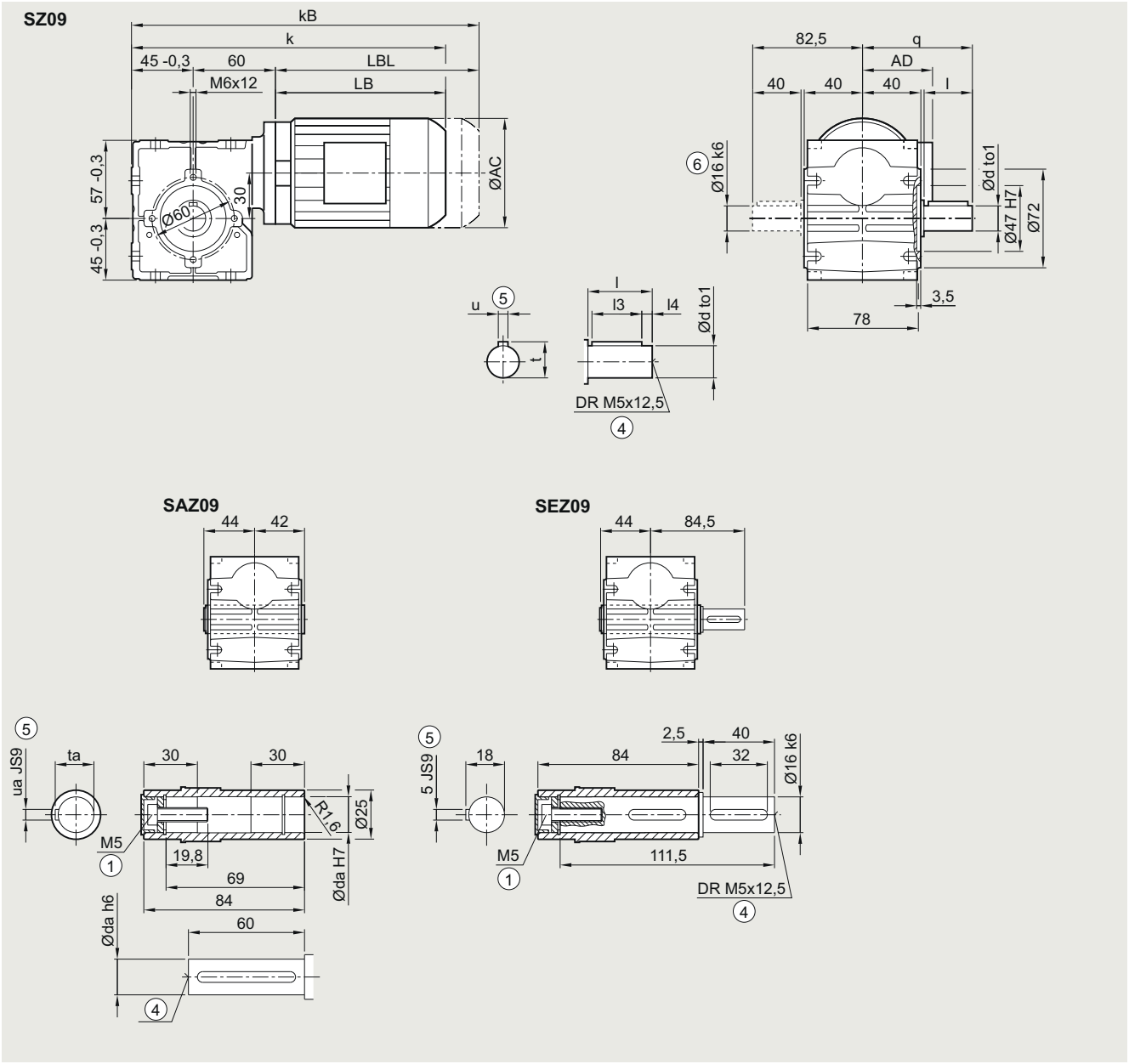
① ISO 4014 ④ DIN 332 ⑤ Feather key/keyway DIN 6885-1

[1] AD depends on the motor options, for other dimensions, see page 9/53.

Dimensional drawings

Gearbox S.Z09 in a housing flange design

SZ031, SAZ031, SEZ031



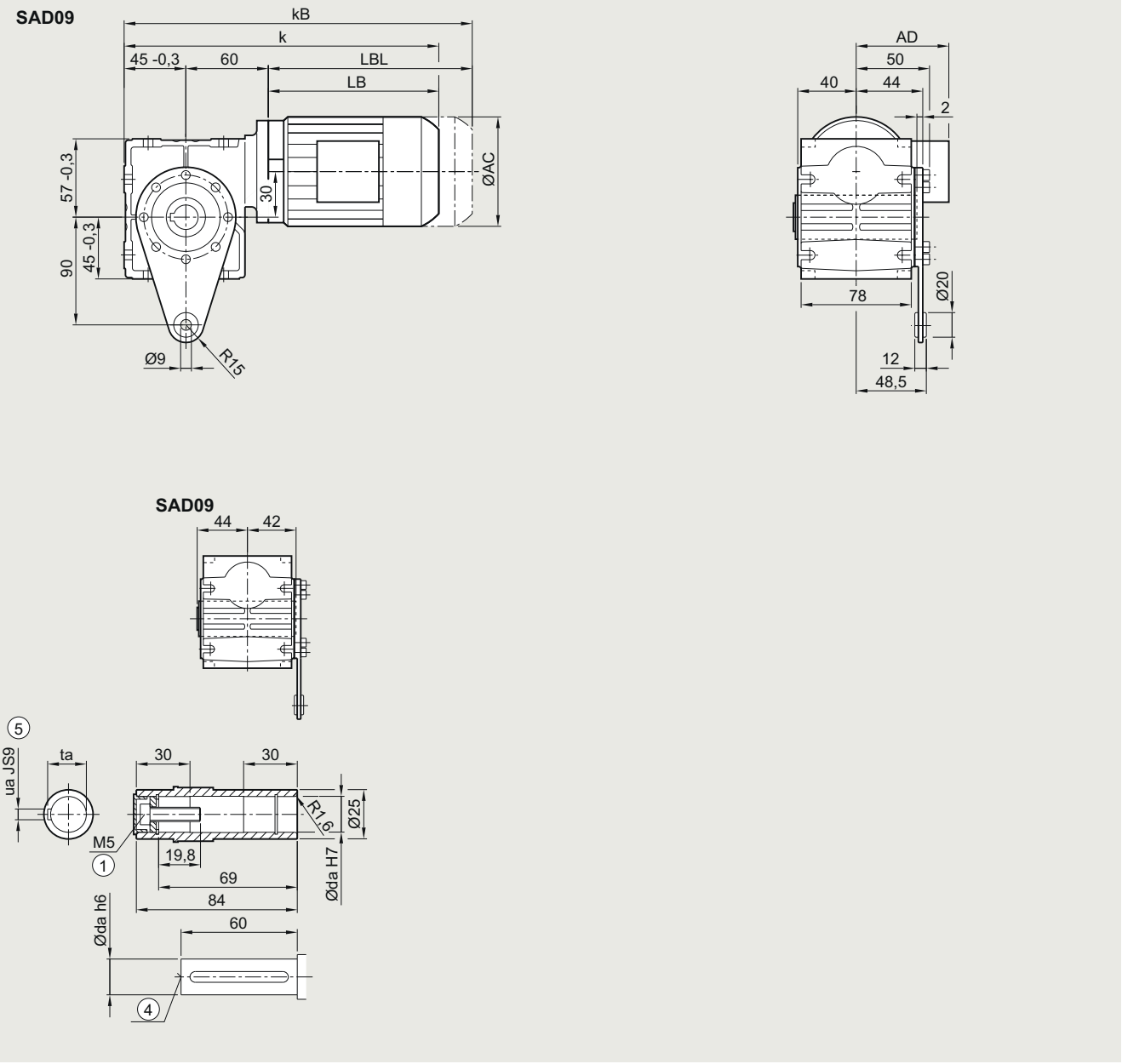
Solid shaft	d	to1	l	l3	l4	u	t	q	Hollow shaft	da	ua	ta
	14	k6	30	22	4	5	16	72.5		14	5	16.3
	16	k6	40	32	4	5	18	82.5		16	5	18.3

Motor	AC	AD [1]	k	kB	LB	LBL
LEI63	117.8	101	284.5	335.5	179.5	230.5
LEI63Z	117.8	101	310.5	361.5	205.5	256.5

① ISO 4014
④ DIN 332
⑤ Feather key/keyway DIN 6885-1
⑥ Solid shaft with 2nd shaft extension only d16
[1] AD depends on the motor options, for other dimensions, see page 9/53.

Gearbox SAD09 in a shaft-mounted design

SAD031



Hollow shaft	da		ua		ta	
	14		5		16.3	
	16		5		18.3	
Motor	**AC**	**AD** [1]	**k**	**kB**	**LB**	**LBL**
LEI63	117.8	101	284.5	335.5	179.5	230.5
LEI63Z	117.8	101	310.5	361.5	205.5	256.5

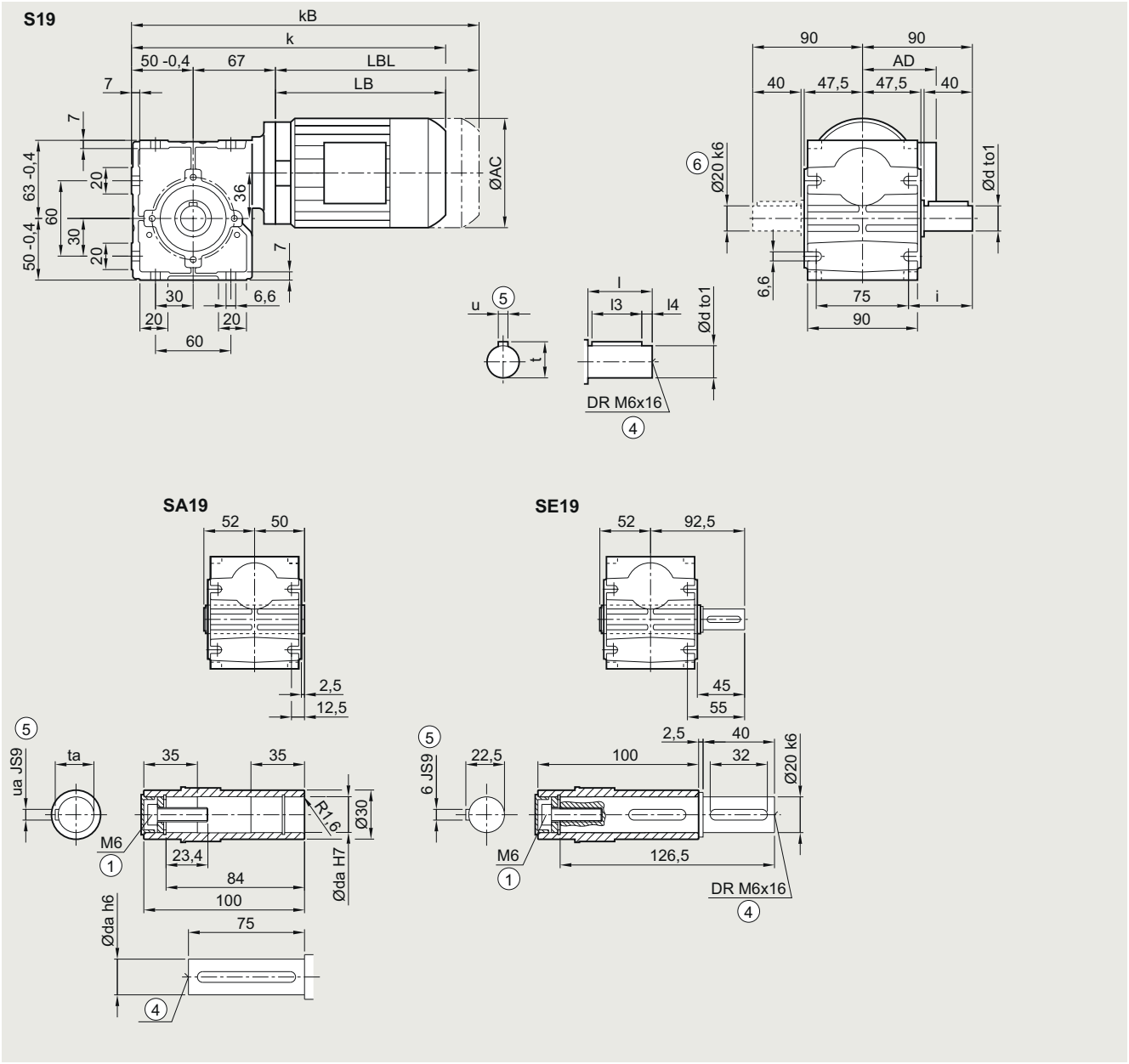
① ISO 4014 ④ DIN 332 ⑤ Feather key/keyway DIN 6885-1

[1] AD depends on the motor options, for other dimensions, see page 9/53.

Dimensional drawings

Gearbox S.19 in a foot-mounted design

S031, SA031, SE031



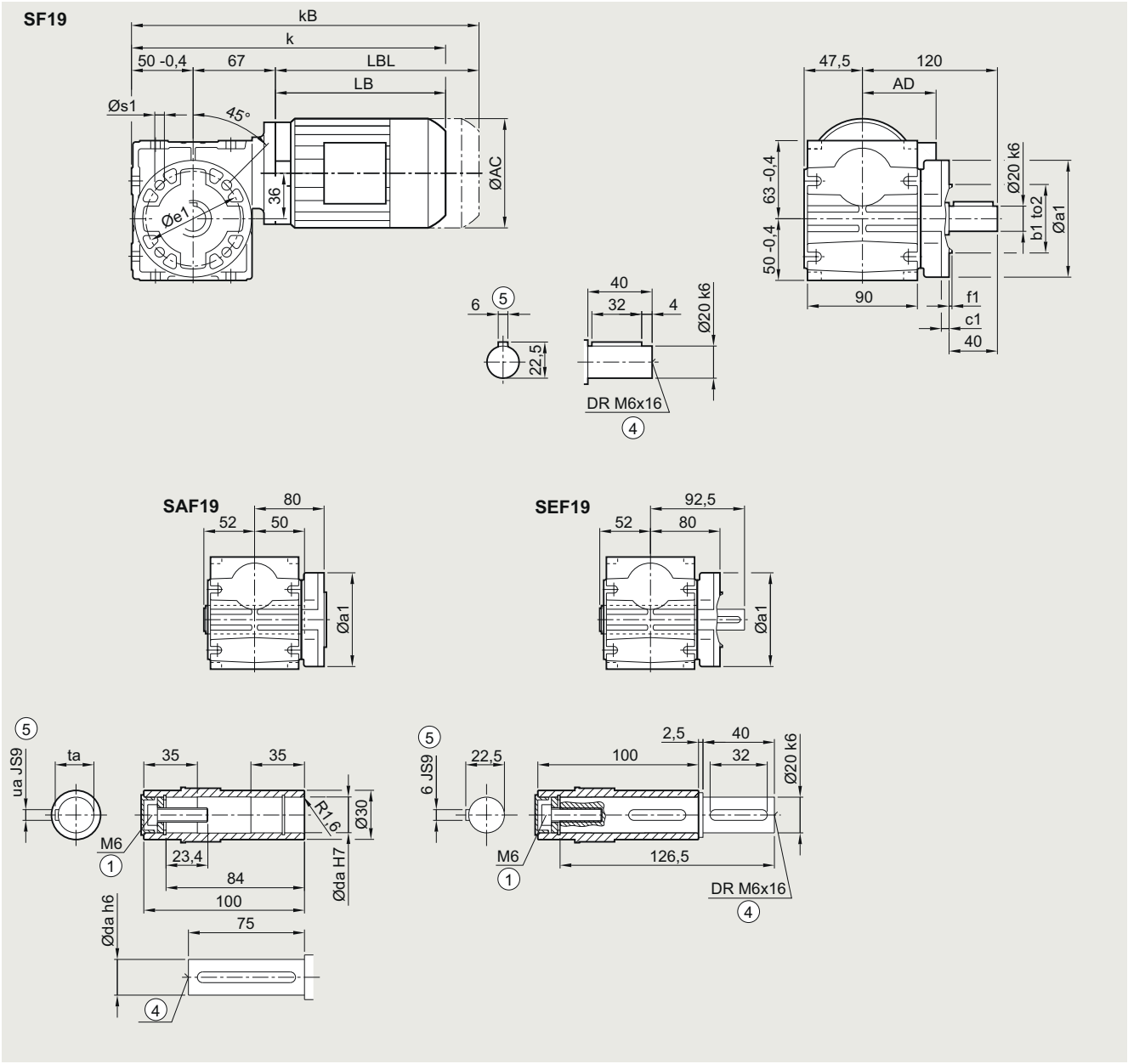
Solid shaft	d	to1	l	l3	l4	i	u	t	Hollow shaft	da	ua	ta
	18	k6	40	32	4	52.5	6	20.5		18	6	20.8
	20	k6	40	32	4	52.5	6	22.5		20	6	22.8

Motor	AC	AD [1]	k	kB	LB	LBL
LEI63	117.8	101	296.5	347.5	179.5	230.5
LEI63Z	117.8	101	322.5	373.5	205.5	256.5
LEI71	138.8	111	327.0	378.5	210.0	261.5
LEI71Z	138.8	111	343.5	398.5	226.5	281.5
LEI71Y	138.8	111	383.5	438.5	266.5	321.5

① ISO 4014
④ DIN 332
⑤ Feather key/keyway DIN 6885-1
⑥ Solid shaft with 2nd shaft extension only d20
[1] AD depends on the motor options, for other dimensions, see page 9/53.

Gearbox S.F19 in a flange-mounted design

SF031, SAF031, SEF031



Hollow shaft	da	ua	ta
	18	6	20.8
	20	6	22.8

Flange	a1	e1	b1	to2	c1	f1	s1
	110	87	60	H8	8	4.0	9
	120	100	80	j6	8	3.0	6.6

Motor	AC	AD [1]	k	kB	LB	LBL
LEI63	117.8	101	296.5	347.5	179.5	230.5
LEI63Z	117.8	101	322.5	373.5	205.5	256.5
LEI71	138.8	111	327.0	378.5	210	261.5
LEI71Z	138.8	111	343.5	398.5	226.5	281.5
LEI71Y	138.8	111	383.5	438.5	266.5	321.5

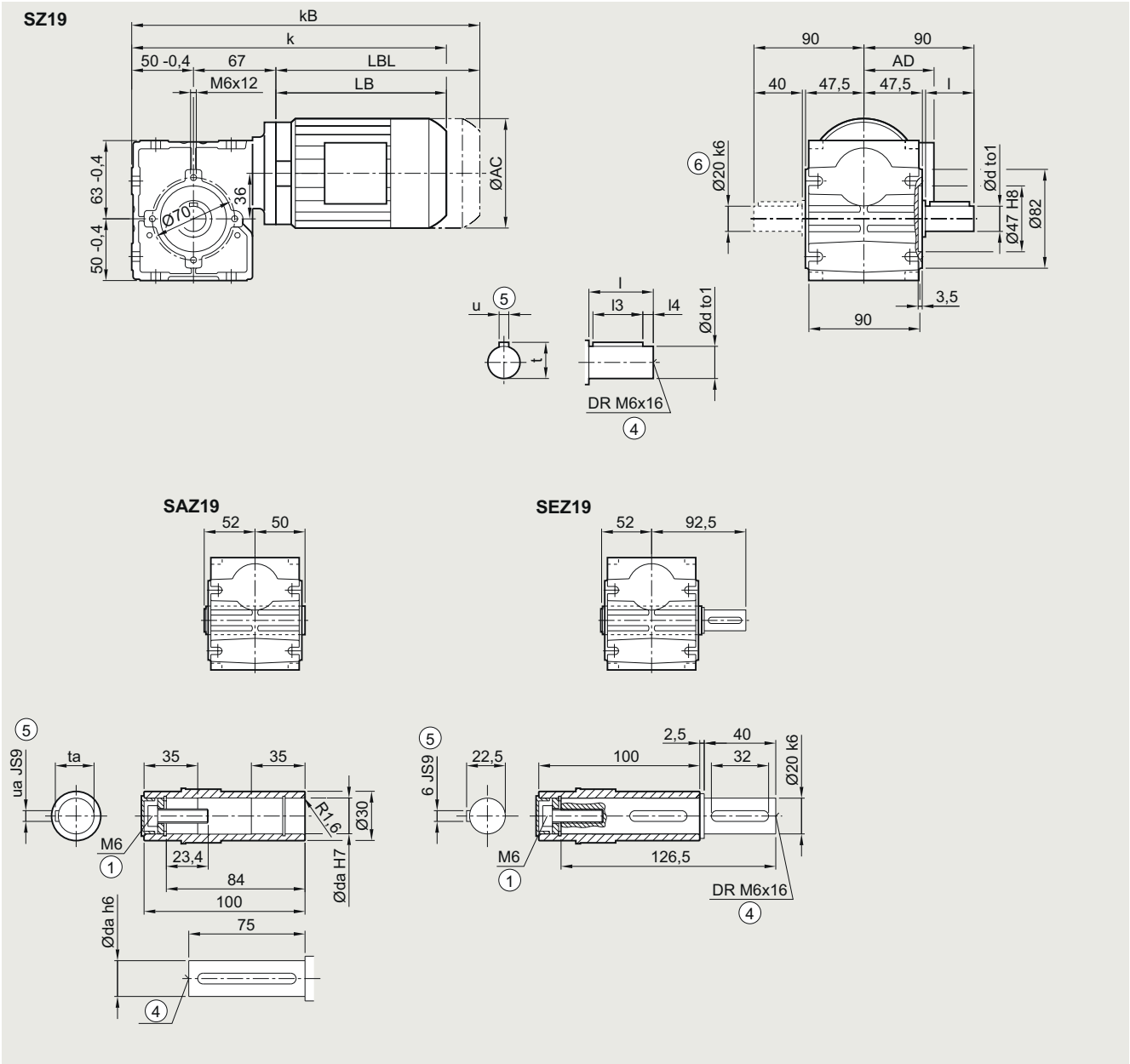
① ISO 4014 ④ DIN 332 ⑤ Feather key/keyway DIN 6885-1

[1] AD depends on the motor options, for other dimensions, see page 9/53.

Dimensional drawings

Gearbox S.Z19 in a housing flange design

SZ031, SAZ031, SEZ031



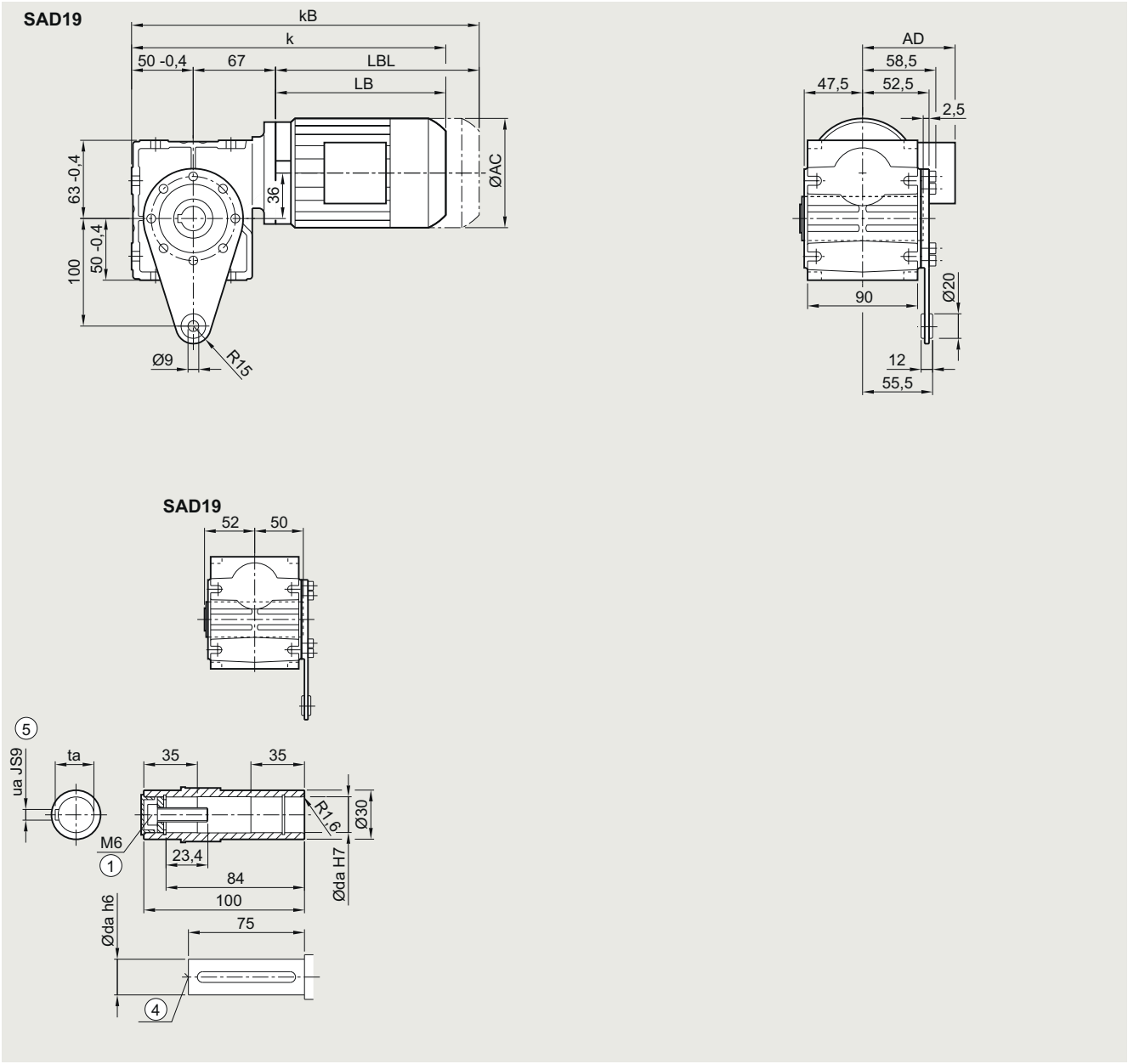
Solid shaft	d	to1	l	l3	l4	u	t	Hollow shaft	da	ua	ta
	18	k6	40	31	4	6	20.5		18	6	20.8
	20	k6	40	32	4	6	22.5		20	6	22.8

Motor	AC	AD [1]	k	kB	LB	LBL
LEI63	117.8	101	296.5	347.5	179.5	230.5
LEI63Z	117.8	101	322.5	373.5	205.5	256.5
LEI71	138.8	111	327.0	378.5	210	261.5
LEI71Z	138.8	111	343.5	398.5	226.5	281.5
LEI71Y	138.8	111	383.5	438.5	266.5	321.5

① ISO 4014
④ DIN 332
⑤ Feather key/keyway DIN 6885-1
⑥ Solid shaft with 2nd shaft extension only d20
[1] AD depends on the motor options, for other dimensions, see page 9/53.

Gearbox SAD19 in a shaft-mounted design

SAD031



Hollow shaft	da	ua	ta
	18	6	20.8
	20	6	22.8

Motor	AC	AD [1]	k	kB	LB	LBL
LEI63	117.8	101	296.5	347.5	179.5	230.5
LEI63Z	117.8	101	322.5	373.5	205.5	256.5
LEI71	138.8	111	327.0	378.5	210.0	261.5
LEI71Z	138.8	111	343.5	398.5	226.5	281.5
LEI71Y	138.8	111	383.5	438.5	266.5	321.5

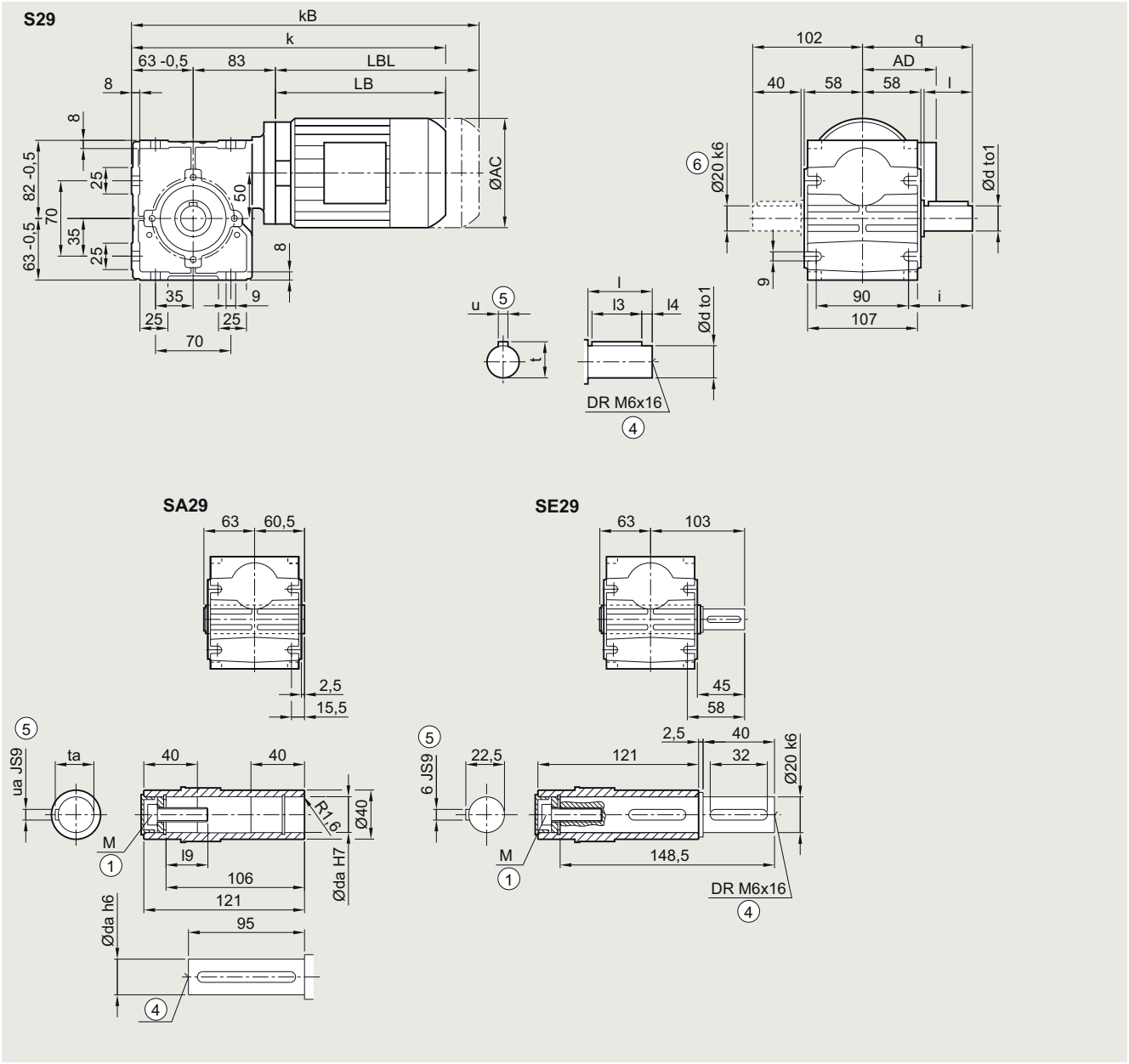
① ISO 4014 ④ DIN 332 ⑤ Feather key/keyway DIN 6885-1

[1] AD depends on the motor options, for other dimensions, see page 9/53.

Dimensional drawings

Gearbox S.29 in a foot-mounted design

S031, SA031, SE031



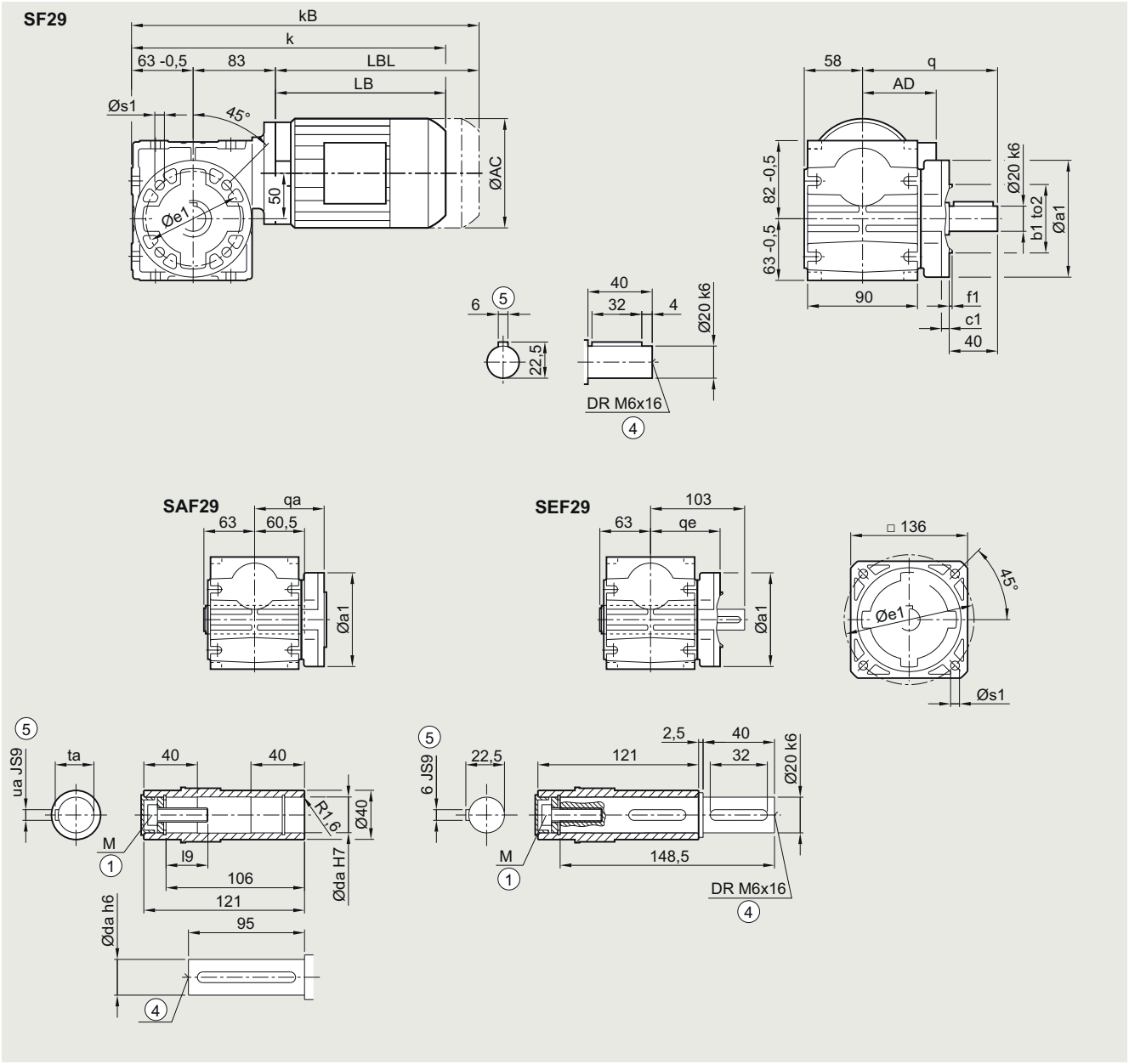
Solid shaft	d	to1	l	l3	l4	u	t	q	i	Hollow shaft	da	ua	ta	l9	M
	20	k6	40	32	4	6	22.5	102	57		20	6	22.8	23.4	M6
	25	k6	50	40	5	8	28.0	112	67		25	8	28.3	32.6	M10

Motor	AC	AD [1]	k	kB	LB	LBL
LEI63	117.8	101	325.5	376.5	179.5	230.5
LEI63Z	117.8	101	351.5	402.5	205.5	256.5
LEI71	138.8	111	356.5	407.5	210.5	261.5
LEI71Z	138.8	111	372.5	427.5	226.5	281.5
LEI71Y	138.8	111	412.5	467.5	266.5	321.5

① ISO 4014
④ DIN 332
⑤ Feather key/keyway DIN 6885-1
⑥ Solid shaft with 2nd shaft extension only d20
[1] AD depends on the motor options, for other dimensions, see page 9/53.

Gearbox S.F29 in a flange-mounted design

SF031, SAF031, SEF031



Hollow shaft	da	ua	ta	l9	M
	20	6	22.8	23.4	M6
	25	8	28.3	32.6	M10

Flange	a1	e1	b1	to2	c1	f1	s1	q	qa / qe
	120	100	80	j6	8	3.0	6.6	120	80
	160	130	110	j6	8	3.5	9.0	135	85

Motor	AC	AD [1]	k	kB	LB	LBL
LEI63	117.8	101	325.5	376.5	179.5	230.5
LEI63Z	117.8	101	351.5	402.5	205.5	256.5
LEI71	138.8	111	356.5	407.5	210.5	261.5
LEI71Z	138.8	111	372.5	427.5	226.5	281.5
LEI71Y	138.8	111	412.5	467.5	266.5	321.5

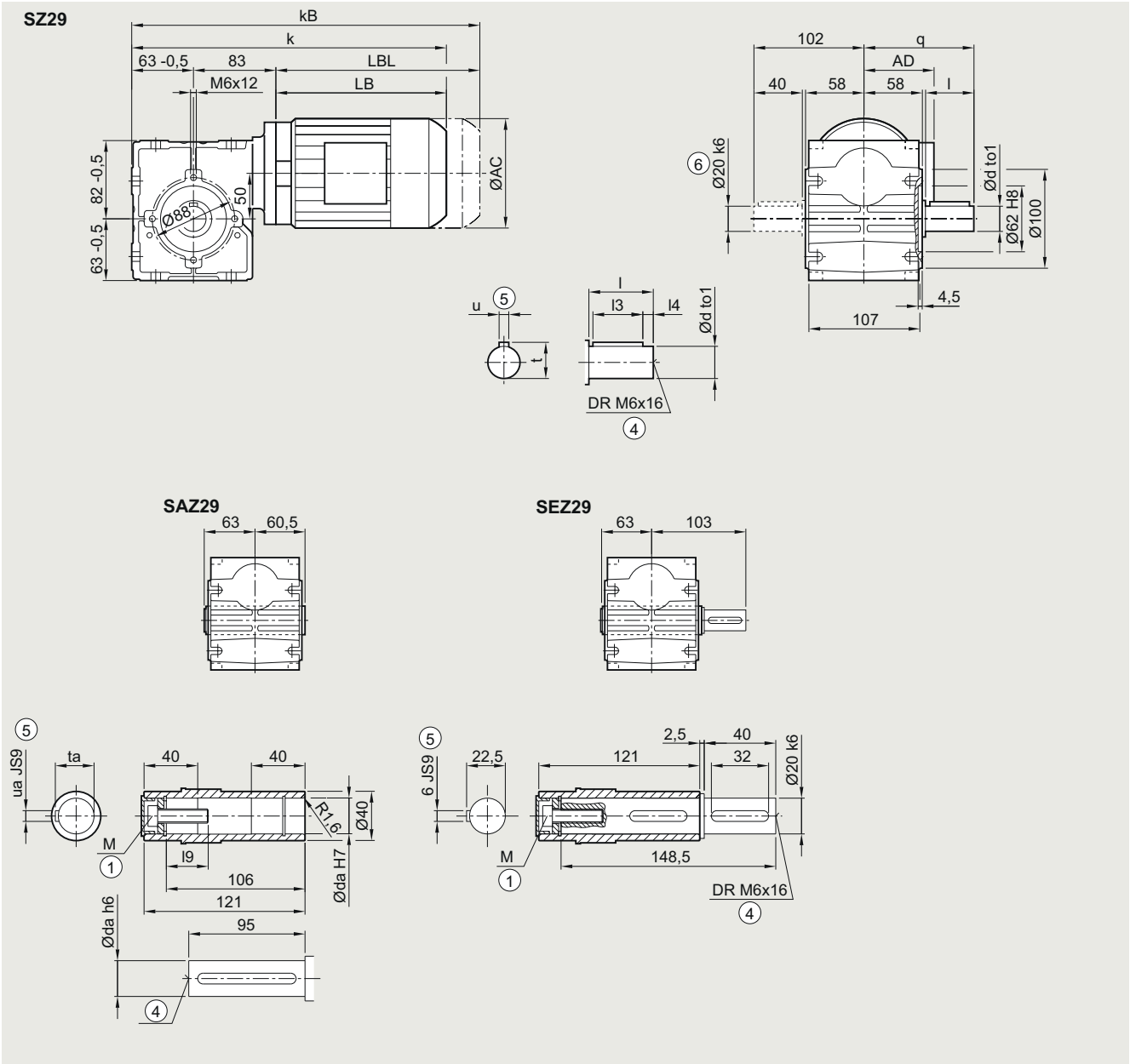
① ISO 4014 ④ DIN 332 ⑤ Feather key/keyway DIN 6885-1

[1] AD depends on the motor options, for other dimensions, see page 9/53.

Dimensional drawings

Gearbox S.Z29 in a housing flange design

SZ031, SAZ031, SEZ031



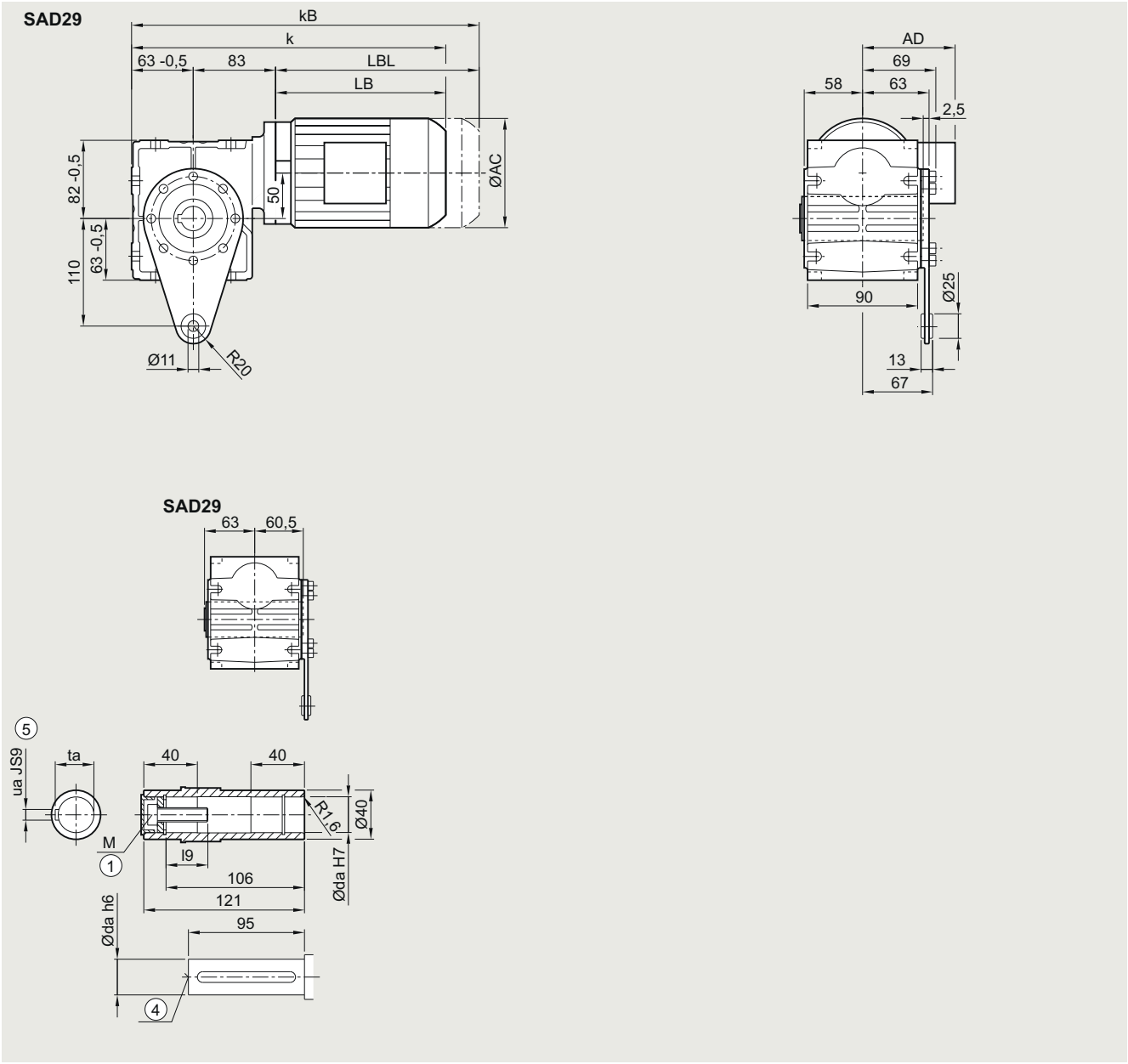
Solid shaft	d	to1	l	l3	l4	u	t	q	Hollow shaft	da	ua	ta	l9	M
	20	k6	40	32	4	6	22.5	102		20	6	22.8	23.4	M6
	25	k6	50	40	5	8	28.0	112		25	8	28.3	32.6	M10

Motor	AC	AD [1]	k	kB	LB	LBL
LEI63	117.8	101	325.5	376.5	179.5	230.5
LEI63Z	117.8	101	351.5	402.5	205.5	256.5
LEI71	138.8	111	356.5	407.5	210.5	261.5
LEI71Z	138.8	111	372.5	427.5	226.5	281.5
LEI71Y	138.8	111	412.5	467.5	266.5	321.5

① ISO 4014
④ DIN 332
⑤ Feather key/keyway DIN 6885-1
⑥ Solid shaft with 2nd shaft extension only d20
[1] AD depends on the motor options, for other dimensions, see page 9/53.

Gearbox SAD29 in a shaft-mounted design

SAD031



Hollow shaft	da	ua	ta	l9	M
	20	6	22.8	23.4	M6
	25	8	28.3	32.6	M10

Motor	AC	AD [1]	k	kB	LB	LBL
LEI63	117.8	101	325.5	376.5	179.5	230.5
LEI63Z	117.8	101	351.5	402.5	205.5	256.5
LEI71	138.8	111	356.5	407.5	210.5	261.5
LEI71Z	138.8	111	372.5	427.5	226.5	281.5
LEI71Y	138.8	111	412.5	467.5	266.5	321.5

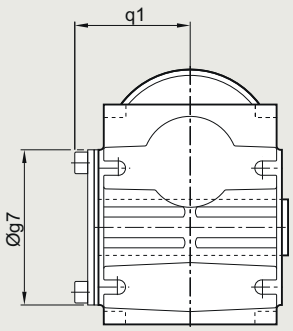
① ISO 4014 ④ DIN 332 ⑤ Feather key/keyway DIN 6885-1

[1] AD depends on the motor options, for other dimensions, see page 9/53.

Dimensional drawings

Protective cover for hollow shaft

SA, SAZ, SAF, SE, SEZ



Gearbox type	S.09	S.19	S.29
Protective cover			
g7	72	82	100
q1	51	59.5	70