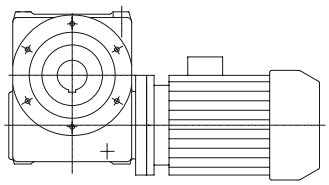
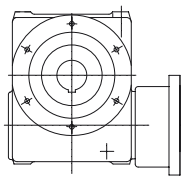
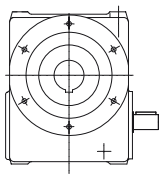
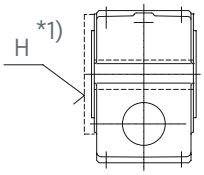
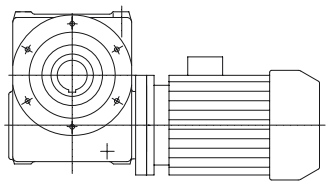
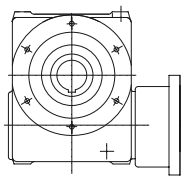
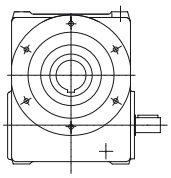
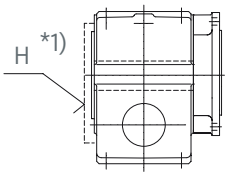
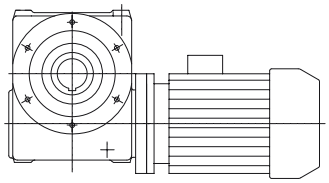
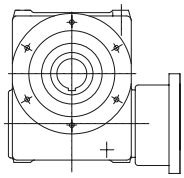
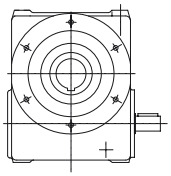
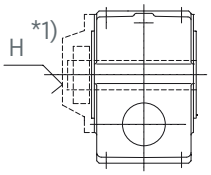
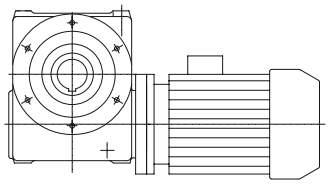
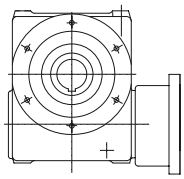
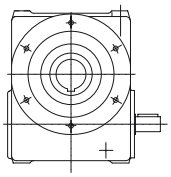
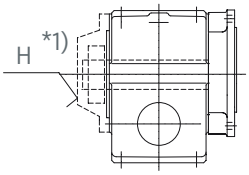
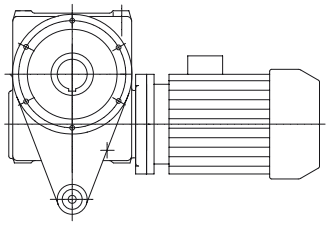
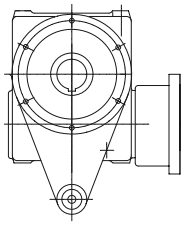
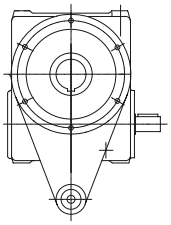
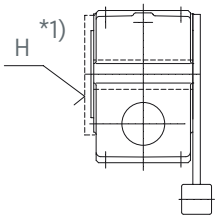
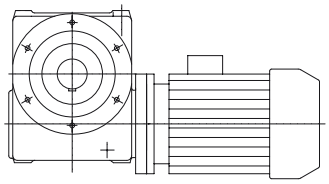
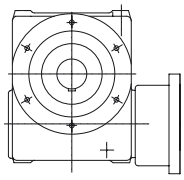
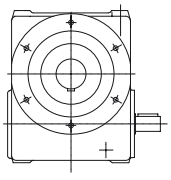
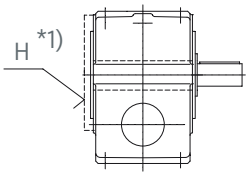
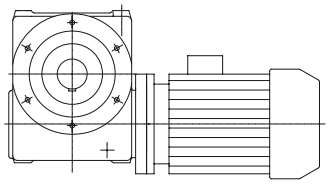
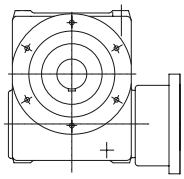
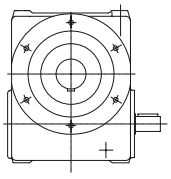
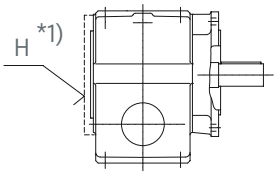
>> COST-EFFICIENT SOLUTIONS FOR HIGHEST DEMANDS

GFC worm gear units have excellent characteristics such as low-noise and shock-absorbing torque transmission. The hardened and ground tooth flanks of the worm shaft as well as the high-quality bronze of the worm wheel ensure low wear and a long lifetime due to the high production quality. The simple but nevertheless efficient design offers substantial advantages in terms of space compared to other gear types.

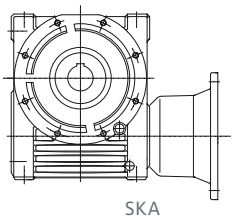
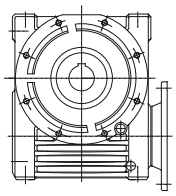
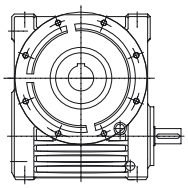
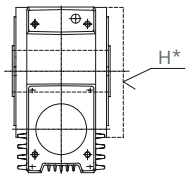
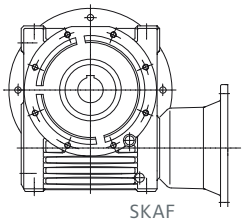
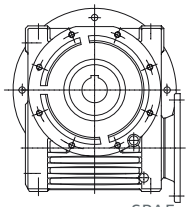
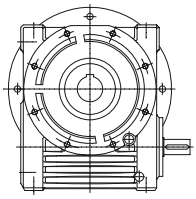
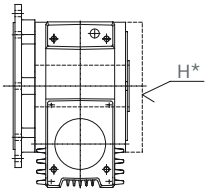
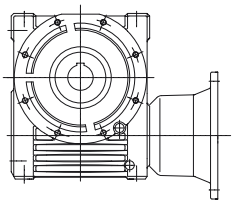
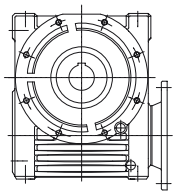
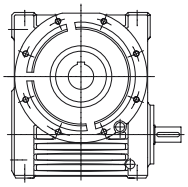
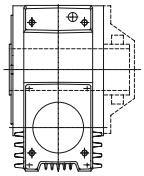
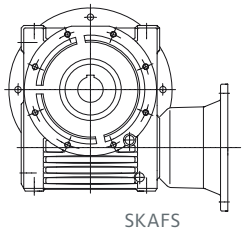
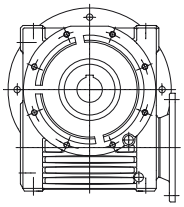
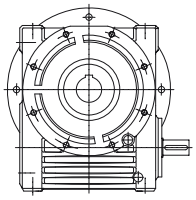
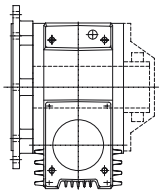
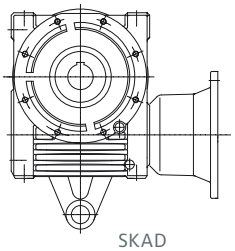
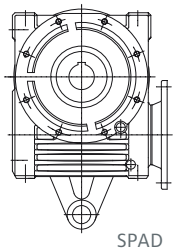
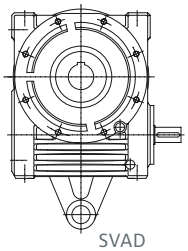
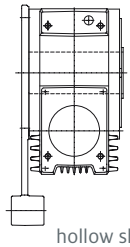
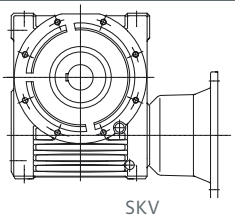
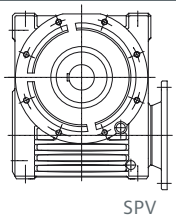
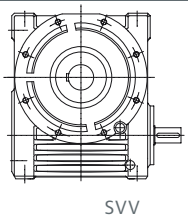
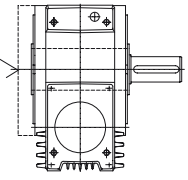
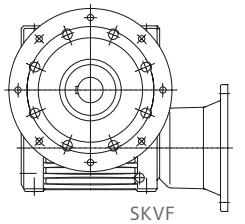
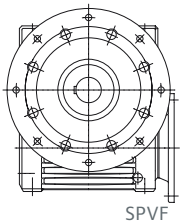
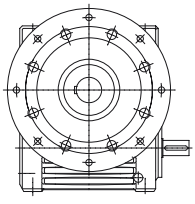
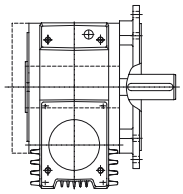
GFC special worm gear units with overload protection under extreme loads in construction machinery worldwide.

2

Worm gear units

Type SM	Type SK	Type SV	
Gear motor unit	Drive-flange-coupling	Input-solid shaft	Output
 SMA	 SKA	 SVA	 hollow shaft
 SMAF	 SKAF	 SVAF	 hollow shaft and flange
 SMAS	 SKAS	 SVAS	 hollow shaft with shrink-on shaft
 SMAFS	 SKAFS	 SVAFS	 hollow shaft, flange, shrink-on shaft
 SMAD	 SKAD	 SVAD	 hollow shaft and torque converter bearing
 SMV	 SKV	 SVV	 solid shaft
 SMVF	 SKVF	 SVVF	 solid shaft and flange

*1) H If cover required, please add code letter, e. g. SMAH

Type SK	Type SP	Type SV	
Input flange and coupling	Input flange and borrow	Input-solid shaft	Output
 SKA	 SPA	 SVA	S...A  hollow shaft
 SKAF	 SPAF	 SVAF	S...AF  hollow shaft and flange
 SKAS	 SPAS	 SVAS	S...AS  hollow shaft with shrink-on disk
 SKAFS	 SPAFS	 SVAFS	S...AFS  hollow shaft. flange. shrink-on disk
 SKAD	 SPAD	 SVAD	S...AD  hollow shaft and torque converter bearing
 SKV	 SPV	 SVV	H* S...V  solid shaft
 SKVF	 SPVF	 SVVF	S...VF  solid shaft and flange

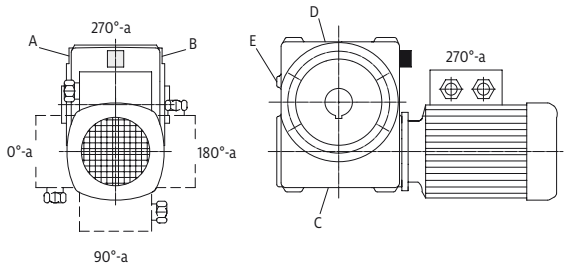
*1) H If cover required, please add code letter, e. g. SMAH

Service position

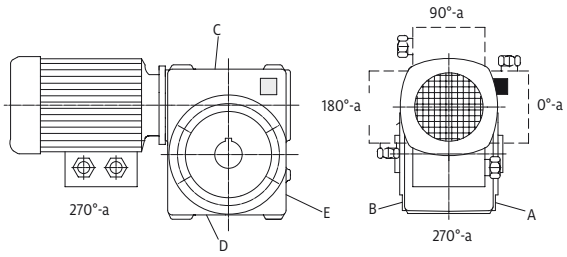
Position of ventilation and oil filling, terminal box and cable inlets

Ventilation and oil filling

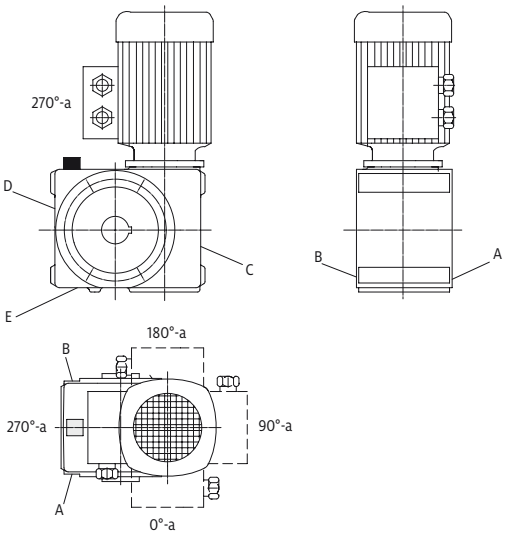
B3



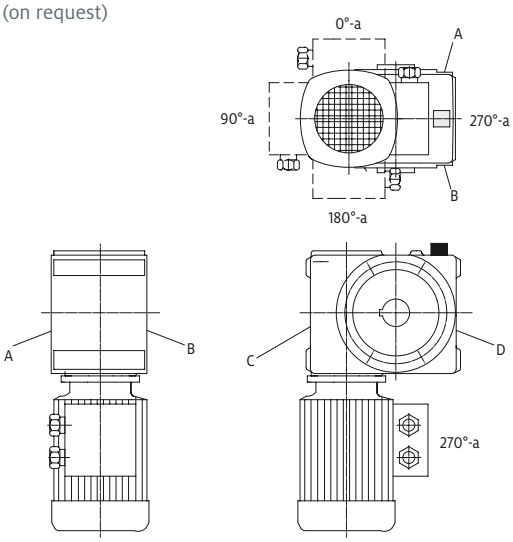
B8



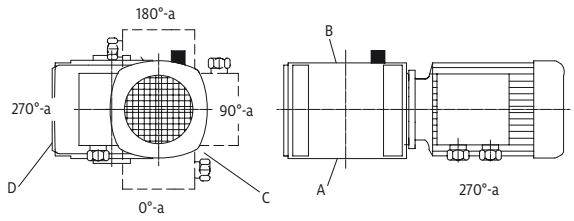
B3I



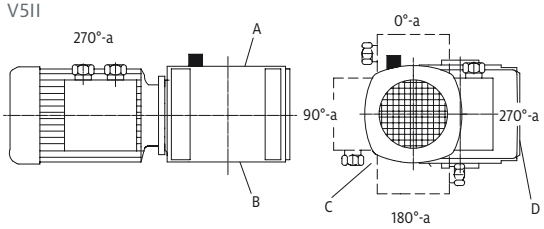
B6 (on request)



V5



V5II

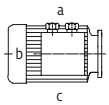


Side A; B = Mounting side for the:
- >> Shaft end on the output drive
- >> Flange on the output drive
- >> Torque support on the output drive
- >> Cover hood on the output drive
- >> Shrink disc on the output drive

Side A; B; C; D; E = Mounting side for the gearbox

Position of terminal box:
- >> 0°; 90°; 180°; 270°

Cable insertion at



- >> a
- >> b ... towards the ventilation hood on the motor
- >> c ... across from a

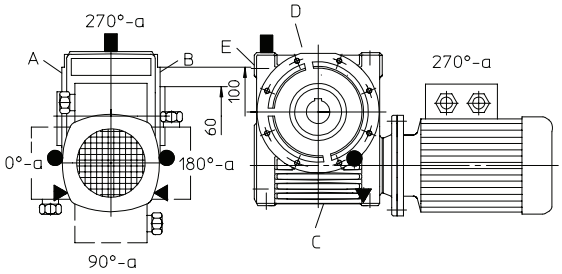
Standard:
- >> 270°-a (shaft end, flange etc. at B)
- >> 270°-c (shaft end, flange etc. at A)

Service position

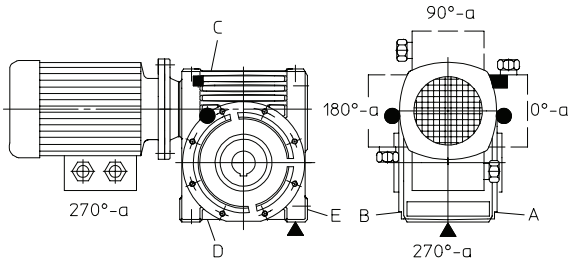
Position of ventilation and oil filling. terminal box and cable inlets

▮ Ventilation and oil filling ♦ Ventilation and oil filling with level indicator ● Checking oil level ▲ Oil draining

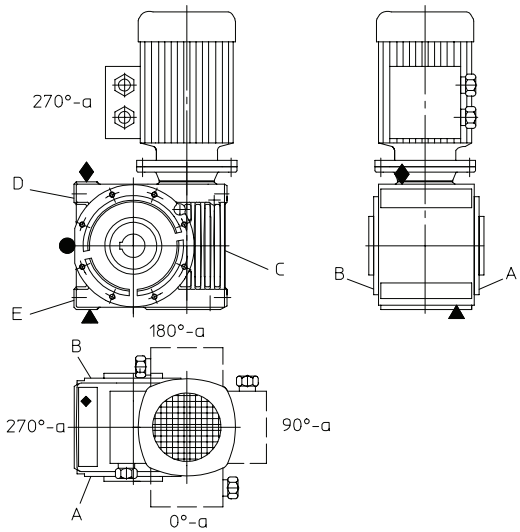
B3



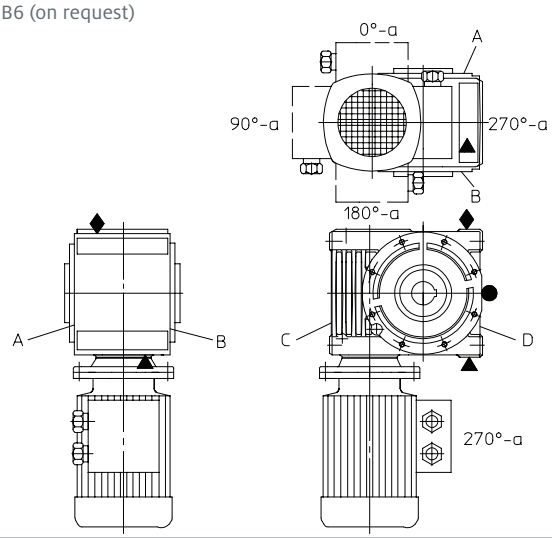
B8



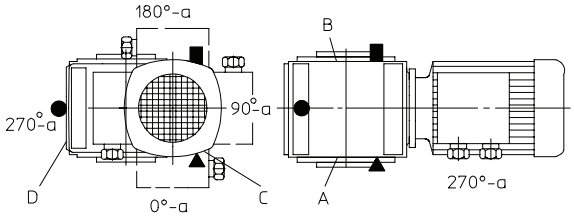
B3I



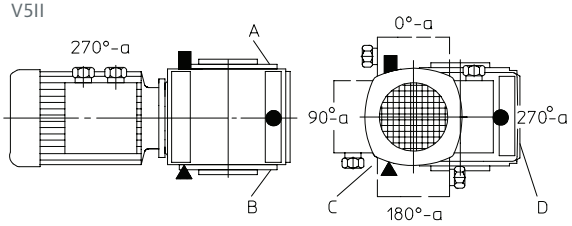
B6 (on request)



V5



V5II

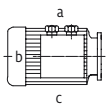


Side A; B = Mounting side for the:
- >> Shaft end on the output drive
- >> Flange on the output drive
- >> Torque support on the output drive
- >> Cover hood on the output drive
- >> Shrink disc on the output drive

Side A; B; C; D; E = Mounting side for the gearbox

Position of terminal box: >> 0°; 90°; 180°; 270°

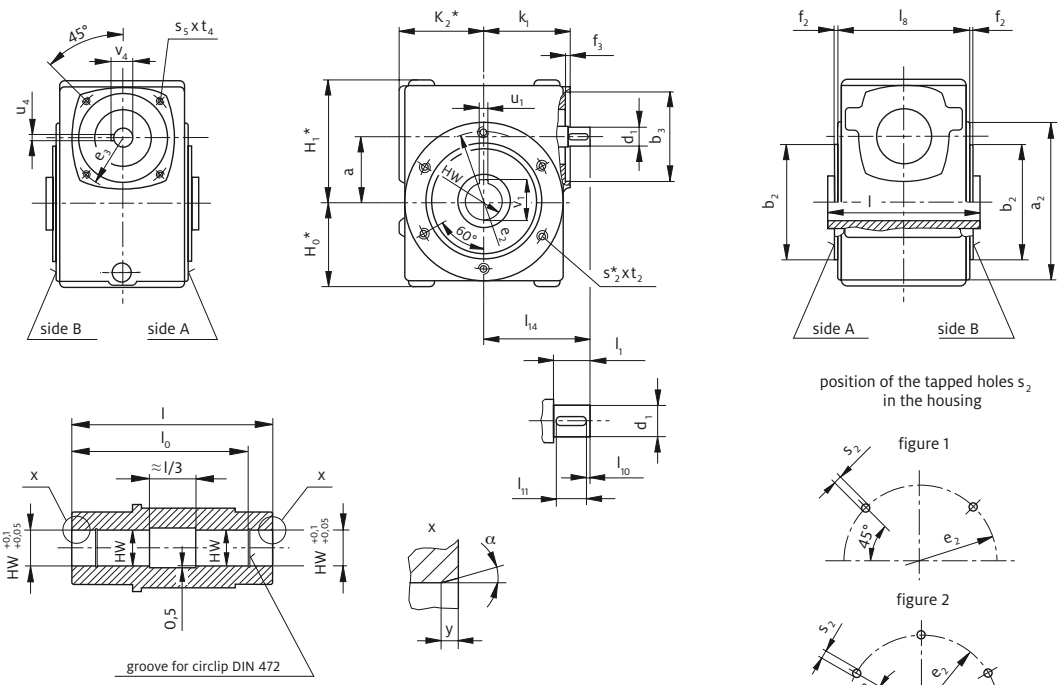
Cable insertion at



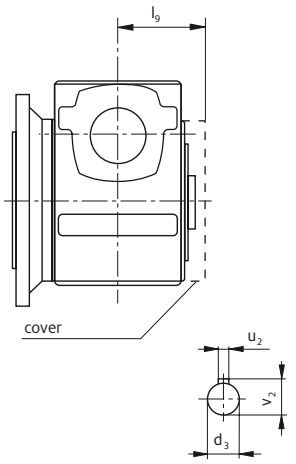
- >> a
- >> b ... towards the ventilation hood on the motor
- >> c ... across from a

Standard:
- >> 270°-a (shaft end, flange etc. at B)
- >> 270°-c (shaft end, flange etc. at A)

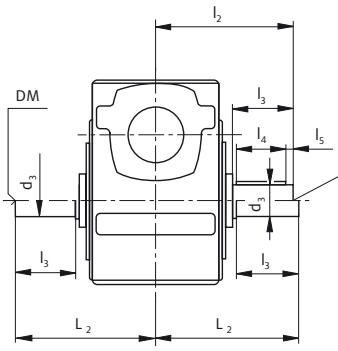
SVA
Slip-on model (hollow shaft at the output)



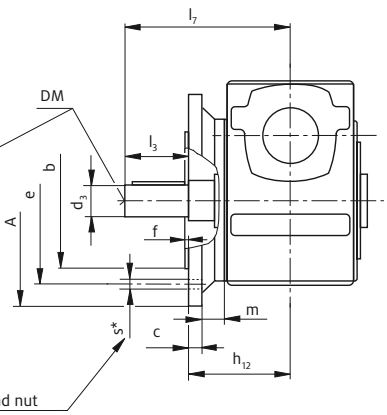
SVAF
Slip-on model with flange at the output

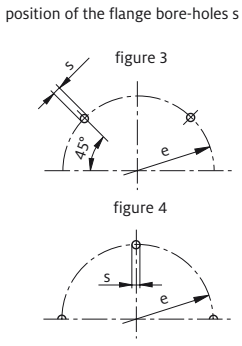


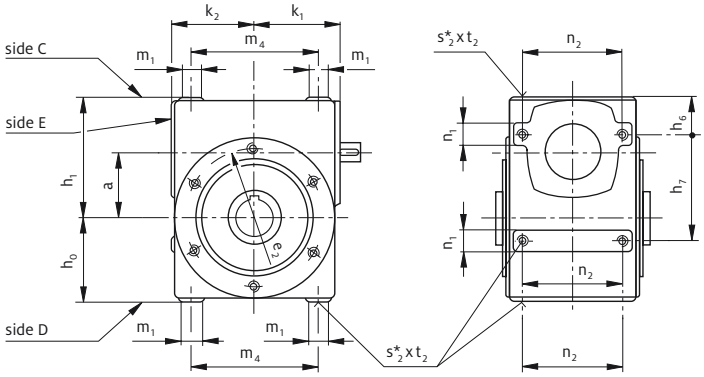
SVV
Type with solid shaft at the output



SVVF
Type with solid shaft and flange at the output







Centring DIN332 Design D / * strength class for screws 10.9

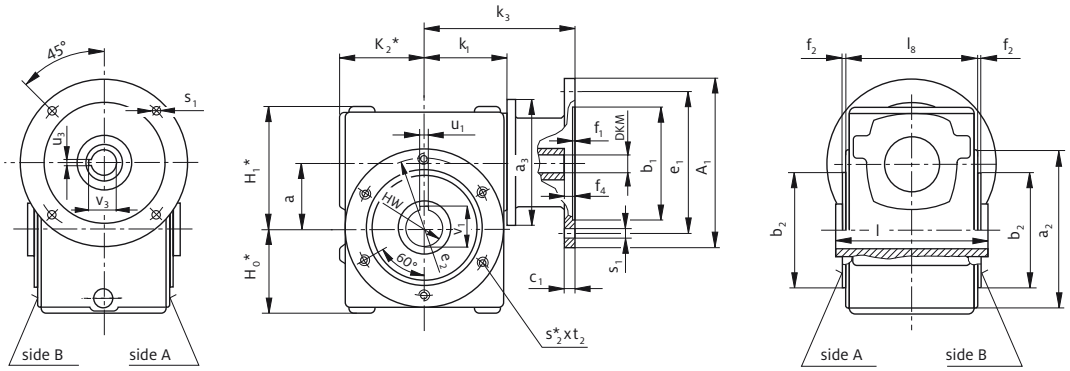
Size	Drive							
	Shaft end							
a	$d_{1_{k6}}$	l_1 l_{14}	l_{10} l_{11}	u_4/v_4	b_3	f_3	e_3	s_5 t_4
40	18	19 82	1.5 20	6/20.5			62	M6 10
50	18	19 89	1.5 20	6 /20.5	85	3.5	100	M6 13
63	18	19 101	1.5 20	6/20.5	85	4	100	M6 13
80	18	19 120	1.5 20	6/20.5	85	4	100	M6 13

Size	Output									
	Hollow shaft				Solid shaft					
a	HW_{H7}	$u_{1_{Js9}}/v1$	l l_0	Y α	$d_{3_{k6}}$	l_3	l_2 L_2	l_4 l_5	u_2/v_2 DM	l_7
40	20 22	6/22.8 6/24.8	90 75	2 30°	20	36	81.0 84.0	32 2	6/22.5 DM6	99
50	25 30	8/28.3 8/33.3	140 122	4 15°	25	50	120.0 123.5	40 7	8/28 DM10	140
63	30 35	8/33.3 10/38.3	145 127	4 15°	30	60	132.5 136.0	50 7	8/33 DM10	157
80	40 45	12/43.3 14/48.8	180 156	4 15°	35	70	160.0 163.5	56 7	12/38 DM12	190

Size	Output								Gear												
	Flange																				
a	A	b_{Js6}	e Figure	h_{12}	m	c	f	s	$b_{2_{Js6}}$	a_2 e_2	≈ f_2	$h_{0-0.5}$ ≈ H_0	$h_{1-0.5}$ ≈ H_1	h_6	h_7	$k_{1-0.2}$	$k_{2-0.5}$ ≈ K_2	l_8 ≈ l_9	m_4 ≈ m_1	n_2 ≈ n_1	s_2	t_2	Figure
40	120	80	100 4	63	15.0	8	3.0	6.6	72	105 85	2.5	49.5 51.5	71.5 73.5	11	75	58.5	56.0 58.0	80	75 15	48 15	M6	10	1
50	160	110	130 3	90	17.5	10	3.5	9.0	95	132 115	3.0	70.0 72.5	100.0 102.5	35	80	72.0	70.0 72.5	125 78	100 21	80 21	M8	14	1
63	200	130	165 3	97	22.5	12	3.5	11.0	110	152 130	3.5	80.0 82.5	115.0 117.5	38	100	84.0	77.5 80.0	125 81	125 21	95 21	M8	14	2
80	200	130	165 3	120	27.5	12	3.5	11.0	130	190 165	3.5	100.0 102.5	145.0 147.5	40	130	103.0	96.0 98.5	161 101	155 24	115 22	M10	16	2

Dimensions in mm / featherkey ways according to DIN 6885

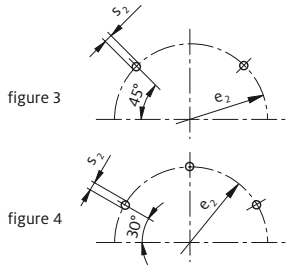
SKA
Slip-on model (hollow shaft at the output)

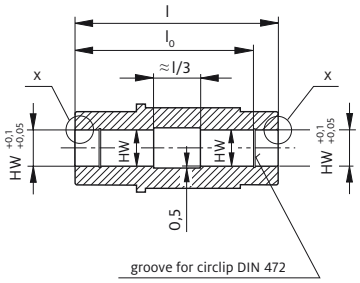


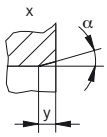
position of the tapped holes s 2 in the housing

figure 3

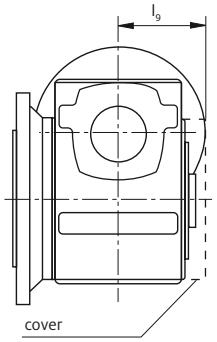
figure 4



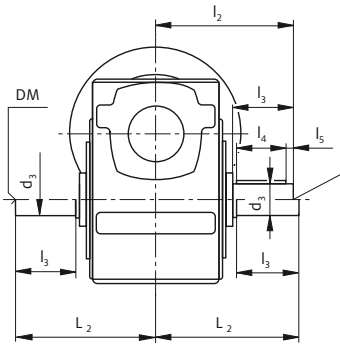




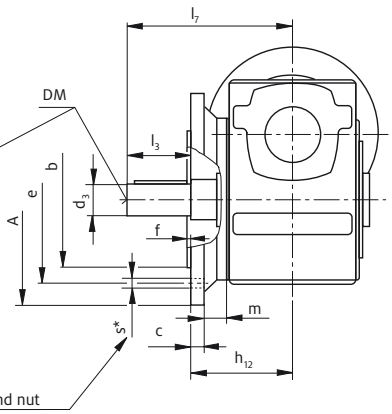
SKAF
Slip-on model with flange at the output



SKV
Type with solid shaft at the output



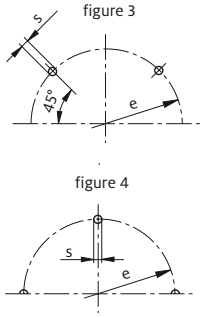
SKVF
Type with solid shaft and flange at the output

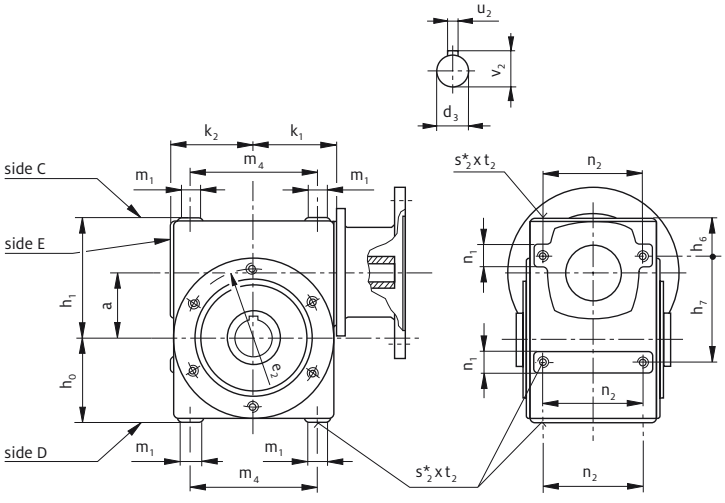


position of the flange bore-holes s

figure 3

figure 4





Centring DIN332 Form D / * strength class for screws 10.9

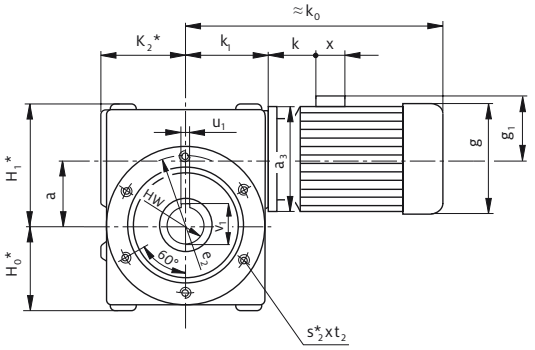
Size	for					Flange 1				Flange 2			
a	IEC-Motor	a_3	DKM	u_3	v_3	k_3 f_4	A_1 $b_{1_{H7}}$	e_1 s_1	c_1 f_1	k_3 f_4	A_1 $b_{1_{H7}}$	e_1 s_1	c_1 f_1
40	63	Ø 80	11	4	12.8	116 -	105 70	85 6.6	8 3	126 10	120 80	100 6.6	11 3.5
	71	Ø 80	14	5	16.3	116 -	105 70	85 6.6	8 3	126 10	120 80	100 6.6	11 3.5
	80**	Ø 80	19	6	21.8	126 10	120 80	100 6.6	11 3.5				
50	63	Ø 120	11	4	12.8	123 -	105 70	85 6.6	9 3	123 -	120 80	100 6.6	9 4
	71	Ø 120	14	5	16.3	123 -	105 70	85 6.6	9 3	123 -	140 95	115 9	9 4
	80	Ø 120	19	6	21.8	133 10	120 80	100 6.6	9 4	143 5	160 110	130 9	10 4
	90	Ø 120	24	8	27.3	143 20	140 95	115 9	10 4	143 5	160 110	130 9	10 4
	100**	Ø 120	28	8	31.3	153 15	160 110	130 9	10 4				
63	71	Ø 120	14	5	16.3	135 -	105 70	85 6.6	9 3	135 -	140 95	115 9	9 4
	80	Ø 120	19	6	21.8	145 10	120 80	100 6.6	9 4	155 5	160 110	130 9	10 4
	90	Ø 120	24	8	27.3	155 20	140 95	115 9	10 4	155 5	160 110	130 9	10 4
	100/112**	Ø 120	28	8	31.3	165 15	160 110	130 9	10 4				
80	80	Ø 120	19	6	21.6	164 10	120 80	100 6.6	9 4	174 5	160 110	130 9	10 4
	90	Ø 120	24	8	27.3	174 20	140 95	115 9	10 4	174 5	160 110	130 9	10 4
	100/112	Ø 120	28	8	31.3	184 15	160 110	130 9	10 4				

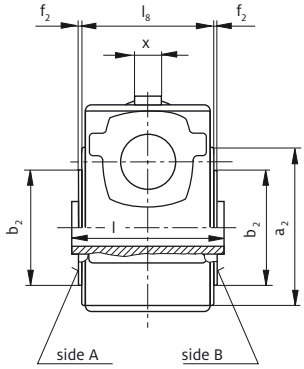
Size	Output									
	Hollow shaft				Solid shaft					
a	HW_{H7}	$u_{1_{js9}}/v_1$	l l_0	Y α	$d_{3_{k6}}$	l_3	l_2 L_2	l_4 l_5	u_2/v_2 DM	l_7
40	20 22	6/22.8 6/24.8	90 75	2 30°	20	36	81.0 84.0	32 2	6/22.5 DM6	99
50	25 30	8/28.3 8/33.3	140 122	4 15°	25	50	120.0 123.5	40 7	8/28 DM10	140
63	30 35	8/33.3 10/38.3	145 127	4 15°	30	60	132.5 136.0	50 7	8/33 DM10	157
80	40 45	12/43.3 14/48.8	180 156	4 15°	35	70	160.0 163.5	56 7	12/38 DM12	190

Size	Output								Gear														
	Flange																						
a	A	b_{js6}	e Figure	h_{12}	m	c	f	s	$b_{2_{js6}}$	a_2 e_2	≈ f_2	$h_{0-0.5}$ ≈ H_0	$h_{1-0.5}$ ≈ H_1	h_6	h_7	$k_{1-0.2}$	$k_{2-0.5}$ ≈ K_2	l_8 ≈ l_9	m_4 ≈ m_1	n_2 ≈ n_1	s_2	t_2	Figure
40	120	80	100 4	63	15.0	8	3.0	6.6	72	105 85	2.5	49.5 51.5	71.5 73.5	11	75	58.5	56.0 58.0	80 52	75 15	48 15	M6	10	1
50	160	110	130 3	90	17.5	10	3.5	9.0	95	132 115	3.0	70.0 72.5	100.0 102.5	35	80	72.0	70.0 72.5	125 78	100 21	80 21	M8	14	1
63	200	130	165 3	97	22.5	12	3.5	11.0	110	152 130	3.5	80.0 82.5	115.0 117.5	38	100	84.0	77.5 80.0	125 81	125 21	95 21	M8	14	2
80	200	130	165 3	120	27.5	12	3.5	11.0	130	190 165	3.5	100.0 102.5	145.0 147.5	40	130	103.0	96.0 98.5	161 101	155 24	115 22	M10	16	2

Dimensions in mm / featherkey ways according to DIN 6885
** only for the operation positions B3I

SMA
Slip-on model (hollow shaft at the output)





position of the tapped holes s_2 in the housing

figure 1

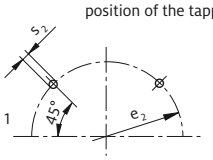
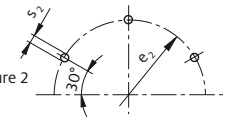
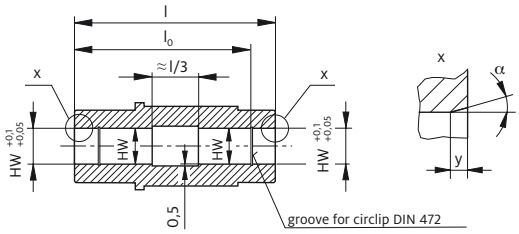
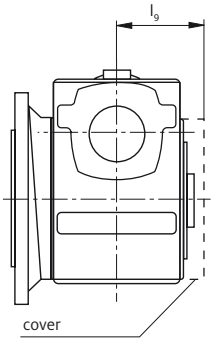


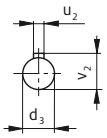
figure 2





SMAF
Slip-on model with flange at the output





position of the flange bore-holes s

figure 3

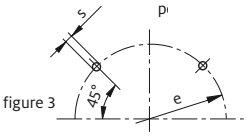
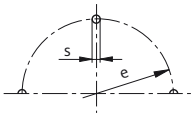
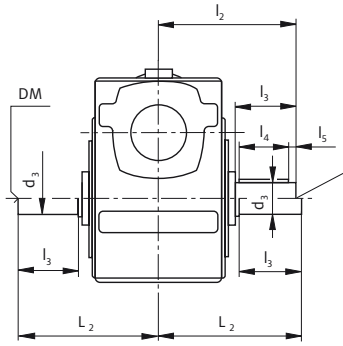
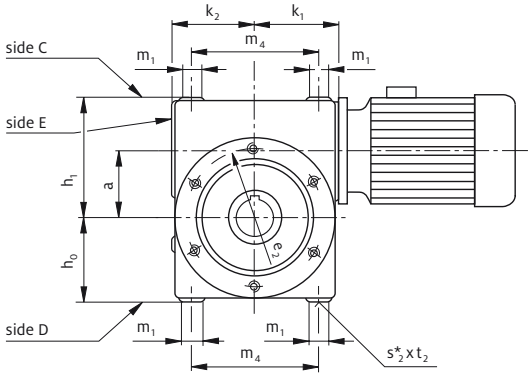


figure 4

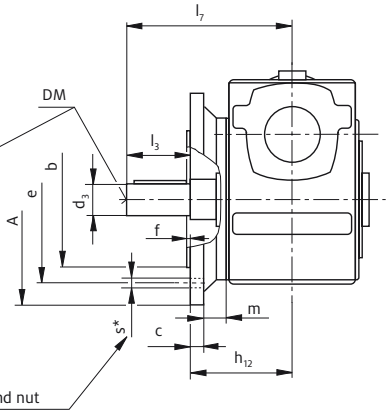


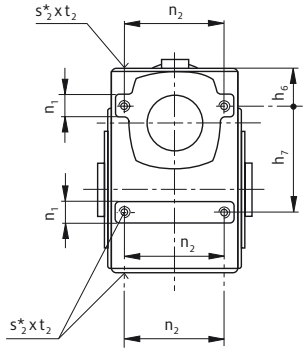
SMV
Type with solid shaft at the output





SMVF
Type with solid shaft and flange at the output





Centring DIN332 Form D / * strength class for screws 10.9

Size	for IEC-Motor						
a		a_3	$\approx k_0$	k	g	g_1	x
40	63	Ø 80	239	39.5	109	98.5	92
	71	Ø 80	258	38.5	124	104	92
	80**	Ø 80	291	44	139	112	92
50	63	Ø 120	253	26.5	109	99	92
	71	Ø 120	266	32.5	124	104	92
	80	Ø 120	298	38	139	112	92
	90 S	Ø 120	317	44	157	120	92
	90 L	Ø 120	339	44	157	120	92
63	71	Ø 120	278	32.5	124	104	92
	80	Ø 120	310	38	139	112	92
	90 S	Ø 120	329	44	157	120	92
	90 L	Ø 120	351	44	157	120	92
	100 L	Ø 120	360	34	177	128	92
	100 LX	Ø 120	385	36	196	137	92
80	80	Ø 120	329	38	139	112	92
	90 S	Ø 120	348	44	157	120	92
	90 L	Ø 120	370	44	157	120	92
	100 L	Ø 120	379	34	177	128	92
	100 LX	Ø 120	404	36	196	137	92
	112 M	Ø 120	439	36	196	137	92

Size	Output									
	Hollow shaft				Solid shaft					
a	HW_{H7}	$u_{1_{JS9}}/v_1$	l l_0	Y α	$d_{3_{k6}}$	l_3	l_2 L_2	l_4 l_5	u_2/v_2 DM	l_7
40	20 22	6/22.8 6/24.8	90 75	2 30°	20	36	81.0 84.0	32 2	6/22.5 DM6	99
50	25 30	8/28.3 8/33.3	140 122	4 15°	25	50	120.0 123.5	40 7	8/28 DM10	140
63	30 35	8/33.3 10/38.3	145 127	4 15°	30	60	132.5 136.0	50 7	8/33 DM10	157
80	40 45	12/43.3 14/48.8	180 156	4 15°	35	70	160.0 163.5	56 7	12/38 DM12	190

Size	Output								Gear														
	Flange																						
a	A	b_{JS6}	e Figure	h_{12}	m	c	f	s	$b_{2_{JS6}}$	a_2 e_2	$\approx f_2$	$h_{0-0.5}$ $\approx H_0$	$h_{1-0.5}$ $\approx H_1$	h_6	h_7	$k_{1-0.2}$	$k_{2-0.5}$ $\approx K_2$	l_8 $\approx l_9$	m_4 $\approx m_1$	n_2 $\approx n_1$	s_2	t_2	Figure
40	120	80	100 4	63	15.0	8	3.0	6.6	72	105 85	2.5	49.5 51.5	71.5 73.5	11	75	58.5	56.0 58.0	80 52	75 15	48 15	M6	10	1
50	160	110	130 3	90	17.5	10	3.5	9.0	95	132 115	3.0	70.0 72.5	100.0 102.5	35	80	72.0	70.0 72.5	125 78	100 21	80 21	M8	14	1
63	200	130	165 3	97	22.5	12	3.5	11.0	110	152 130	3.5	80.0 82.5	115.0 117.5	38	100	84.0	77.5 80.0	125 81	125 21	95 21	M8	14	2
80	200	130	165 3	120	27.5	12	3.5	11.0	130	190 165	3.5	100.0 102.5	145.0 147.5	40	130	103.0	96.0 98.5	161 101	155 24	115 22	M10	16	2

Dimensions in mm / featherkey ways according to DIN 6885
** only for the operation positions B3I

Torque converter bearings

Fig. 1

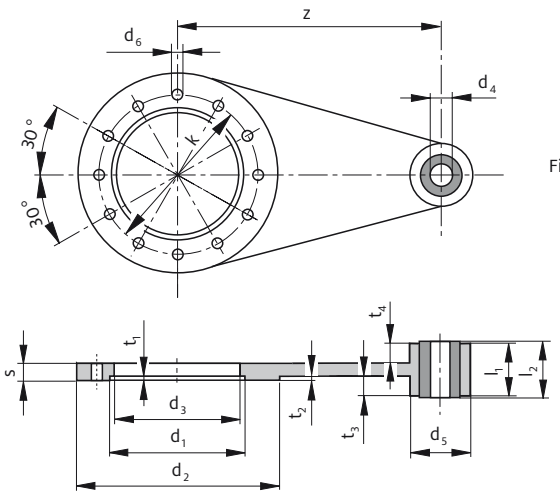
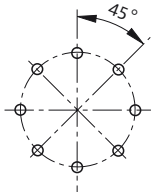


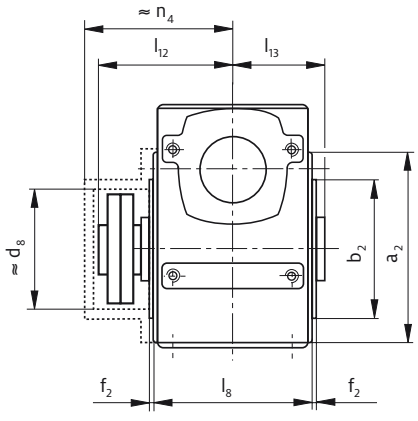
Fig. 2

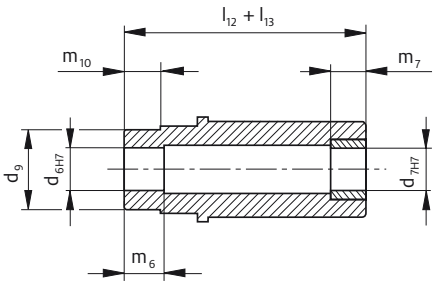


Size																	
a	$Z_{\pm 0.2}$	$d_{1_{H11}}$	d_2	d_3	$d_{4_{F8}}$	d_5	$d_{6_{+0.2}}$	Fig.	k	l_1	l_2	s	t_1	t_2	t_3	t_4	Hexagonal bolt [1]
40	110	72	100	60	12	40	6.6	2	85	32	36	12	4	2	12	10	4 x M6 x 20
50	130	95	136	85	12	40	9.0	1	115	32	36	14	4	2	11.5	9.5	4 x M8 x 25
63	160	110	153	100	12	40	9.0	1	130	32	36	14	4	3	11.5	9.5	6 x M8 x 25
80	200	130	193	120	12	50	11.0	1	165	32	36	14	4	3	11.5	9.5	6 x M10 x 25

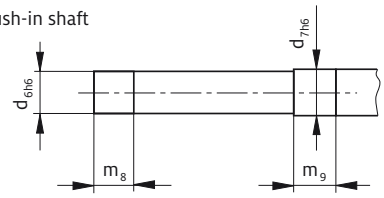
SMAS/SVAS/SKAS

Slip-on model with shrink-on disk





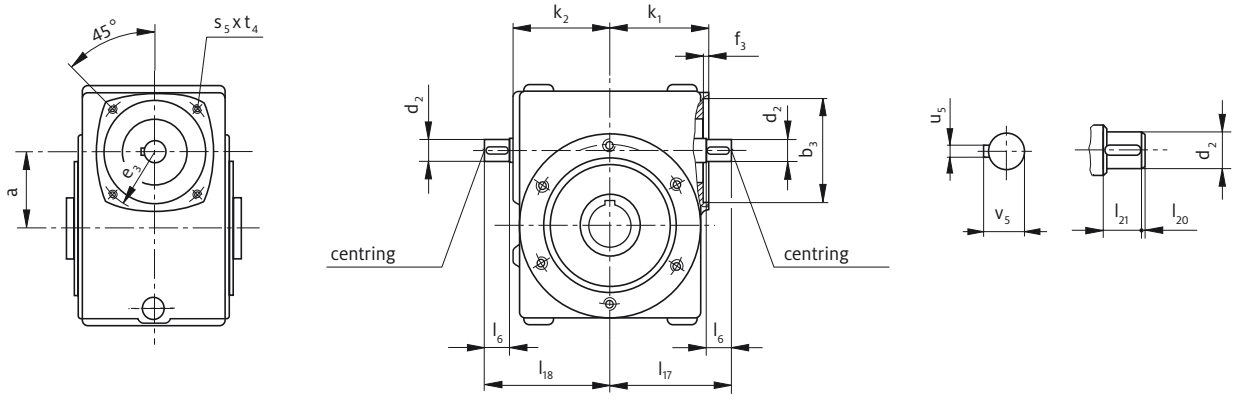
push-in shaft



Size	Hollow shaft														Cap	
a	a_2	$b_{2_{js6}}$	f_2	l_8	d_6	d_7	$d_{9_{f7}}$	m_6	m_7	m_8	m_9	m_{10}	l_{12}	l_{13}	d_8 ≈	n_4 ≈
40	105	72	2.5	80	20	22	30	20	22	25	28	23.0	68.0	45.0	70	77
50	132	75	3.0	125	35	36	44	40	25	45	30	27.5	100.0	70.0	86	110
63	152	110	3.5	125	35	36	44	40	25	45	30	27.5	97.5	72.5	86	110
80	190	130	3.5	161	40	45	50	45	28	50	35	30.0	118.0	90.0	93	130

Dimensions in mm / 1) strength class for screws 8.8

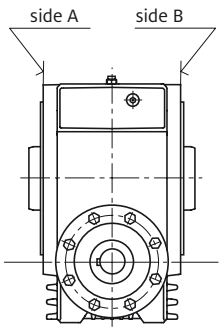
Gear with 2nd input shaft



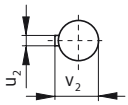
Size																	
a	d_{2k6}	centring DIN 332	l_6	l_{17}	l_{18}	l_{19}	l_{20}	l_{21}	u_5/v_5	b_{3H7}	k_1	k_2	f_3	e_3	e_4	s_5	t_4
40	14	A2.5 x 5.3	24	85	85	-	1.5	20	5/16	-	58.5	56	-	53	-	M6	10
50	18	A2.5 x 5.3	28	98	106	105	1.5	25	6/20.5	85	72	70	3.5	100	65	M6	13
63	18	A2.5 x 5.3	28	110	110	111	1.5	25	6/20.5	85	84	77.5	4	100	85	M6	13
80	18	A4 x 8.5	28	129	136	136	1.5	25	6/20.5	85	103	96	4	100	100	M6	13

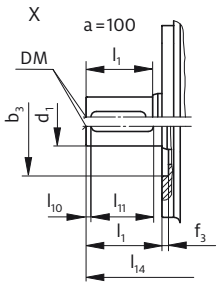
Dimensions in mm / featherkey ways according to DIN 6885

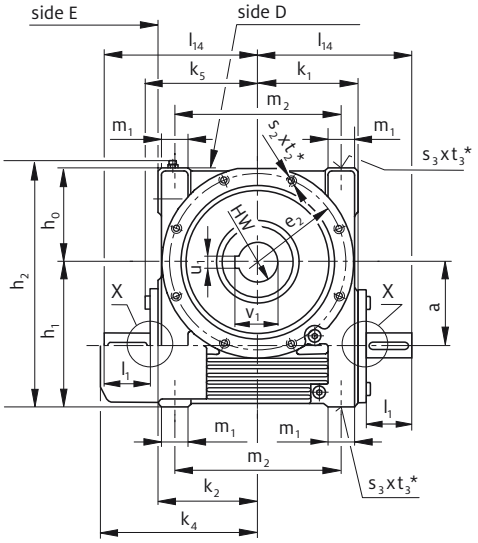
SVA
Slip-on model (hollow shaft at the output)

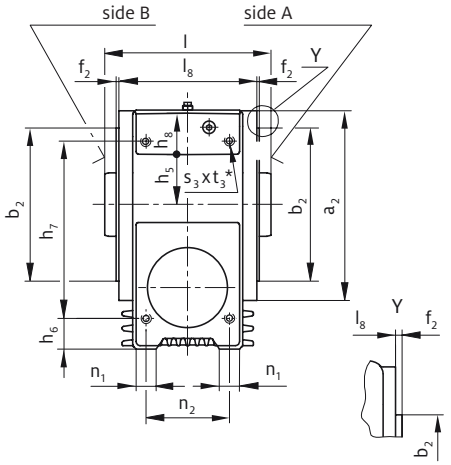


input shaft ends

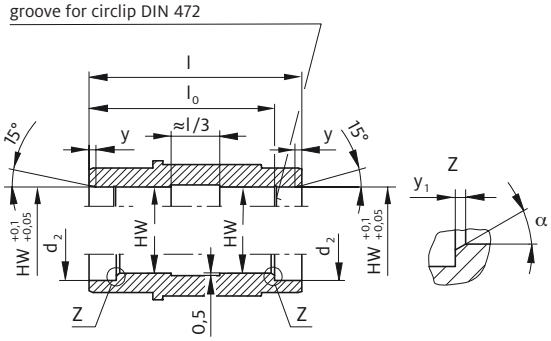




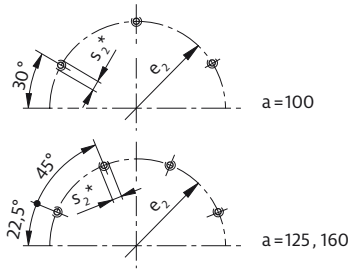




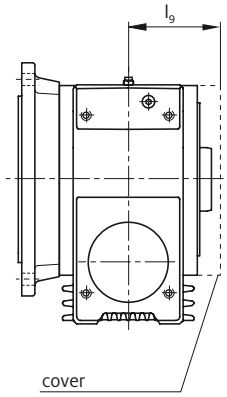
groove for circlip DIN 472



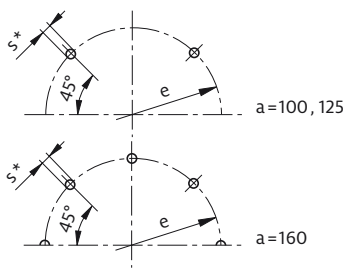
position of the tapped holes s_2 in the housing



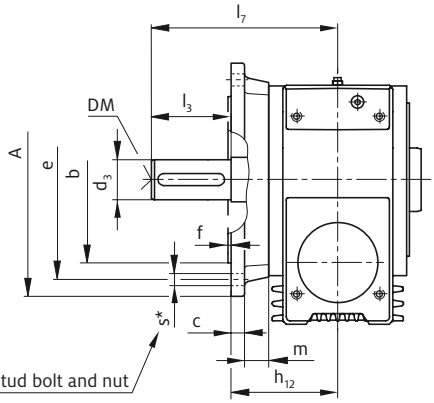
SVAF
Slip-on model with flange



position of the flange bore-holes s

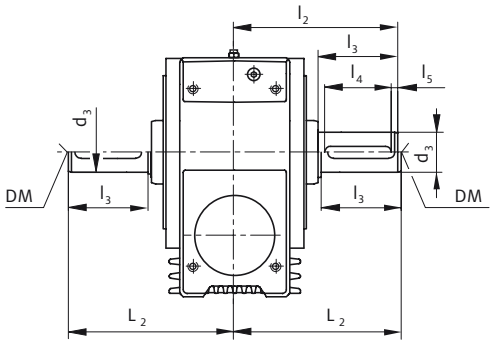


SVVF
Type with solid shaft and flange at the output

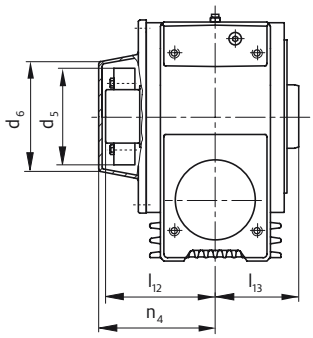


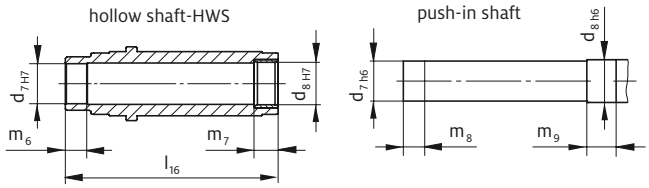
Centring DIN332 Form D / * strength class for screws 10.9

SVV
Type with solid shaft at the output



SVAS
Type with shrink-on disk and cover at the output





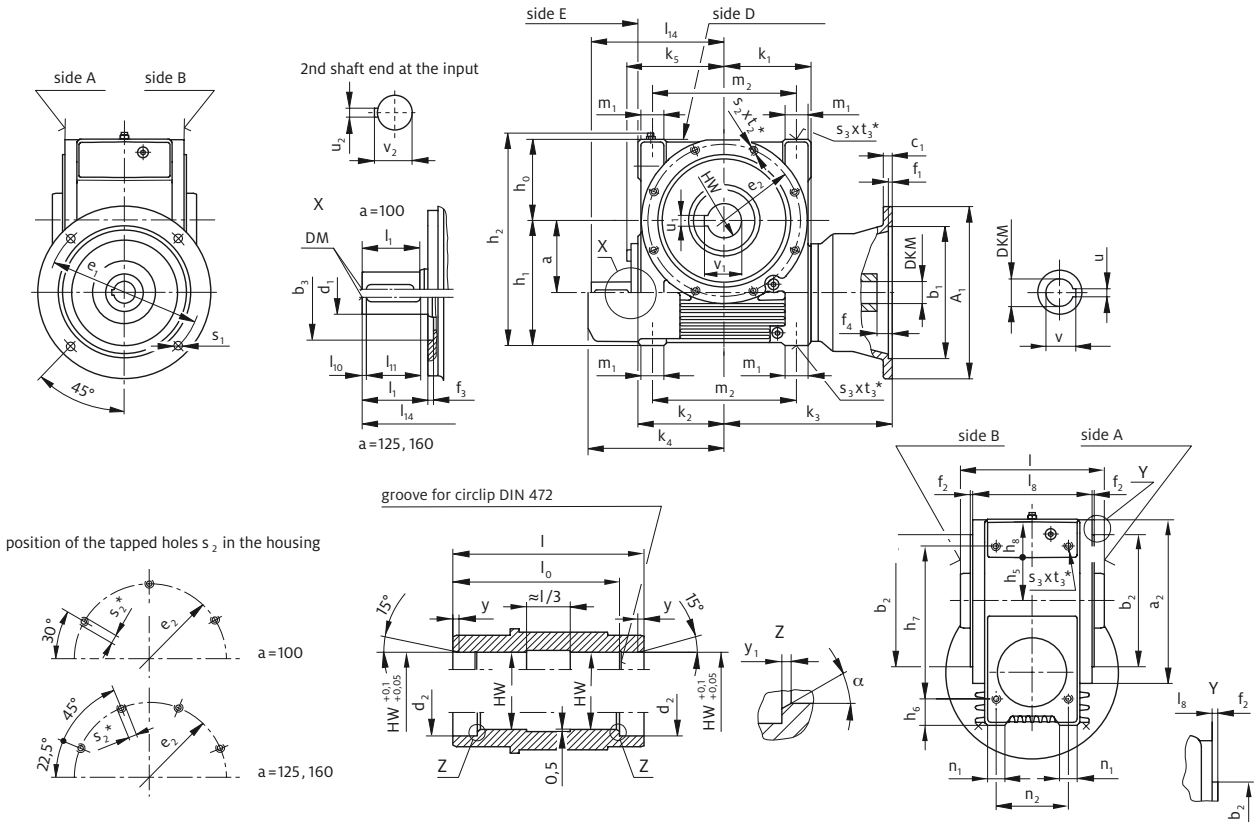
Size	2nd shaft end at the input					
a	b_3 f_3	$d_{1_{k6}}$	l_1	l_{10} l_{11}	l_{14}	u_2/v_2 DM
100	- -	30	50	5 40	190	8/33 DM 10
125	120 6.5	38	58	5 50	221	10/41 DM 12
160	120 6.5	42	72	4 63	276	12/45 DM 16

Size	Output																		
	Hollow shaft					Solid shaft						Hollow shaft-HWS					Cap-HWS	
a	HW_{H7}/d_2	$u_{1_{js9}}/v_1$	l l_0	y	y_1 α	d_3	l_3 l_2	L_2	l_4 l_5	u_2/v_2 DM	l_7	d_5 ≈ l_{12}	d_7 d_8	l_{13} l_{16}	m_6 m_7	m_8 m_9	d_6 ≈	n_4 ≈
100	50/- 60/65	14/53.8 18/64.4	218 188	6	3.5 15°	45 k6	90 199	199	80 5	14/48.5 DM16	228	110 141	50 52	109 250	45 38	50 43	125	150
125	60/- 70/80	18/64.4 20/74.9	250 220	6	3 30°	60 m6	120 245	245	100 10	18/64.4 DM20	280	145 165	65 66	125 290	62 40	65 45	165	175
160	70/- 80/-	20/74.9 22/85.4	270 245	4	- -	70 m6	140 275	284	125 7.5	20/74.5 DM20	325	170 184	75 80	135 319	40 45	40 55	216	201

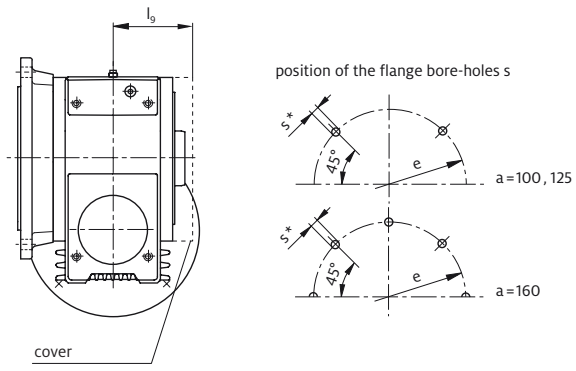
Size	Output						Gear													
	Flange																			
a	A	b	e	h_{12}	c m	f s	a_2 $b_{2_{js6}}$	e_2 ≈ f_2	$h_{0\text{-}0.5}$ $h_{1\text{-}0.5}$	≈ h_2 ≈ h_5	h_6 h_7	≈ h_8	k_1 k_2	≈ k_4 ≈ k_5	l_8 ≈ l_9	≈ m_1 ≈ m_2	≈ n_1	n_2 ≈n_4	s_2 t_2	s_3 t_3
100	250	180 js6	215	138	14 26.5	4 14	240 180	215 4	120 180	311 69	35 230	46	125 125	202 138	195 120	30 210	30	110 150	M12 20	M12 20
125	350	250 h6	300	160	20 36.5	5 18	288 230	265 4	142 217	370 75	46 266	62	150 150	237 170	207 137	40 250	30	125 175	M12 20	M16 28
160	450	350 h6	400	180	18 37	5 17.5	365 300	330 5	177 280	472 108	50 360	62	191 191	288 206	250 150	54 310	35	145 201	M16 28	M16 28

Dimensions in mm / featherkey ways according to DIN 6885
HWS = Slip-on model with shrink-on disk

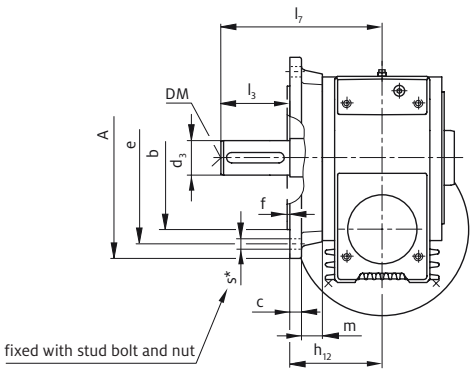
SKA
Slip-on model (hollow shaft at the output)



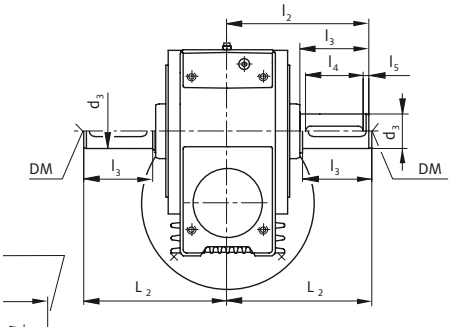
SKAF
Slip-on model with flange



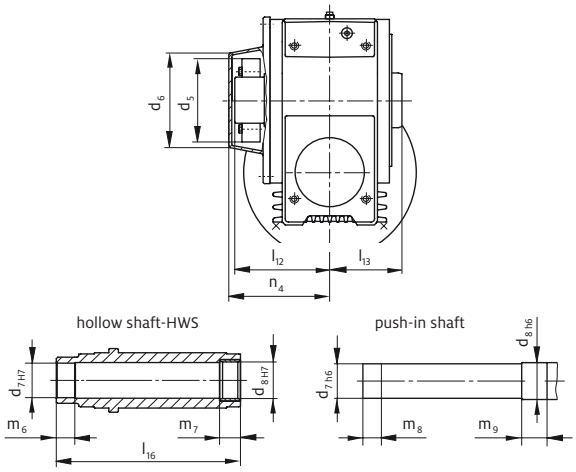
SKVF
Type with solid shaft and flange at the output



SKV
Type with solid shaft at the output



SKAS
Type with shrink-on disk and cover at the output



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Centring DIN332 Form D / * strength class for screws 10.9

Size	IEC-Motor					Flange			
a	Size	Shaft end	DKM	u	v	k_3 f_4	$ØA_1$ $b_{1_{H7}}$	e_1 s_1	c_1 f_1
100	90	Ø24x50	Ø24	8	27.3	256 2	200 130	165 Ø11	13 5
	100	Ø28x60	Ø28	8	31.3	256 2	200 130	165 Ø11	13 5
	112	Ø28x60	Ø28	8	31.3	256 2	200 130	165 Ø11	13 5
	100	Ø28x60	Ø28	8	31.3	265 2	250 180	215 Ø13.5	16 6
	112	Ø28x60	Ø28	8	31.3	265 2	250 180	215 Ø13.5	16 6
	132	Ø38x80	Ø38	10	41.3	276 10	250 180	215 Ø13.5	36 5
	132	Ø38x80	Ø38	10	41.3	281 14	300 230	265 M12	15 5
125	100	Ø28x60	Ø28	8	31.3	299 13	250 180	215 Ø13.5	16 7
	112	Ø28x60	Ø28	8	31.3	299 13	250 180	215 Ø13.5	16 7
	132	Ø38x80	Ø38	10	41.3	309 20	250 180	215 Ø13.5	26 5
	132	Ø38x80	Ø38	10	41.3	324 27.5	300 230	265 M12	16 7
	160	Ø42x110	Ø42	12	45.3	351 40.5	350 250	300 M16	20 7
160	100	Ø28x60	Ø28	8	31.3	340 0	250 180	215 Ø13.5	16 7
	112	Ø28x60	Ø28	8	31.3	340 0	250 180	215 Ø13.5	16 7
	132	Ø38x80	Ø38	10	41.3	360 20	250 180	215 Ø13.5	36 5
	132	Ø38x80	Ø38	10	41.3	365 25	300 230	265 M12	16 7
	160	Ø42x110	Ø42	12	45.3	392 40.5	350 250	300 M16	20 7
	180	Ø48x110	Ø48	14	51.8	392 40.5	350 250	300 M16	20 7

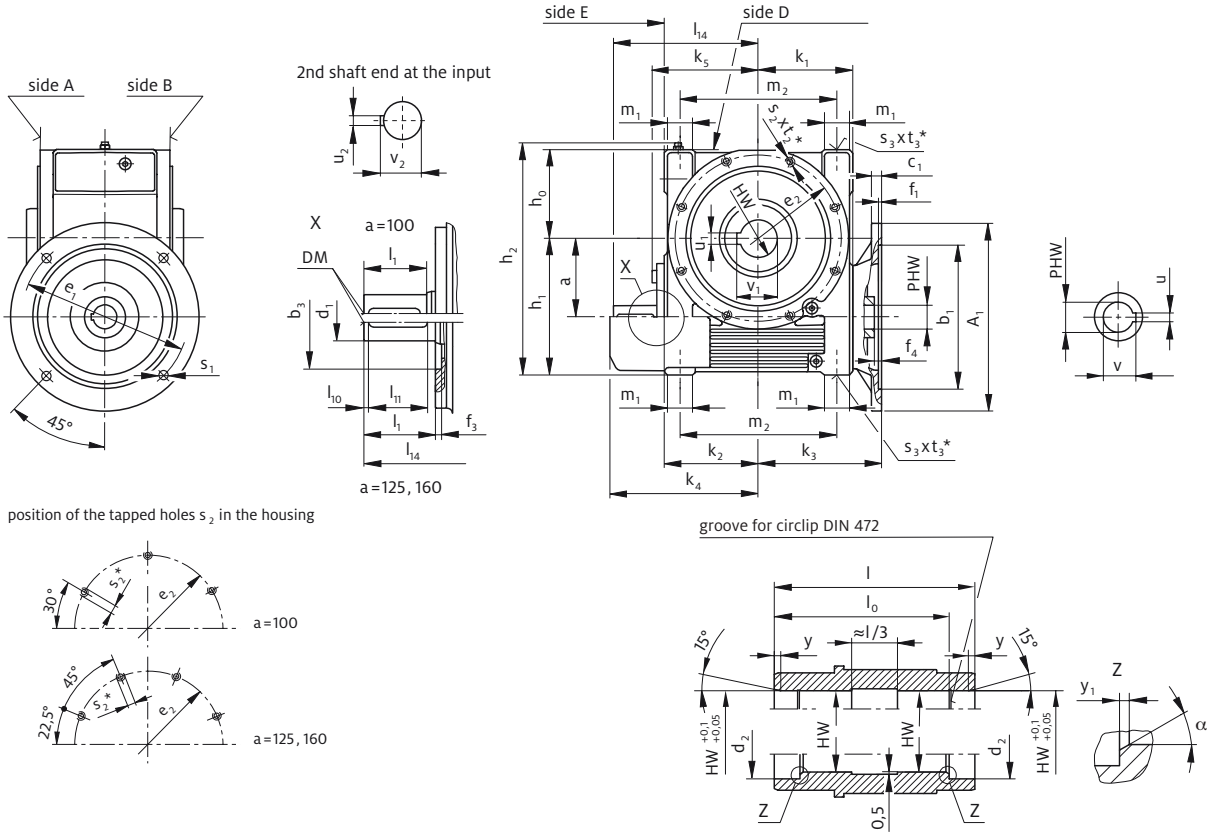
Size	2nd shaft end at the input					
a	b_3 f_3	$d_{1_{k6}}$	l_1	l_{10} l_{11}	l_{14}	u_2/v_2 DM
100	- -	30	50	5 40	190	8/33 DM10
125	120 6.5	38	58	5 50	221	10/41 DM12
160	120 6.5	42	72	4 63	276	12/45 DM16

Size	Output																	
	Hollow shaft					Solid shaft						Hollow shaft-HWS					Cap-HWS	
a	HW_{H7}/d_2	$u_{1_{js9}}/v_1$	l l_0	y	y_1 α	d_3	l_3 l_2	L_2	l_4 l_5	u_2/v_2 DM	l_7	d_5 ≈ l_{12}	d_7 d_8	l_{13} l_{16}	m_6 m_7	m_8 m_9	d_6 ≈	n_4 ≈
100	50/- 60/65	14/53.8 18/64.4	218 188	6	3.5 15°	45 k6	90 199	199	80 5	14/48.5 DM16	228	110 141	50 52	109 250	45 38	50 43	125	150
125	60/- 70/80	18/64.4 20/74.9	250 220	6	3 30°	60 m6	120 245	245	100 10	18/64.4 DM20	280	145 165	65 66	125 290	62 40	65 45	165	175
160	70/- 80/-	20/74.9 22/85.4	270 245	4	- -	70 m6	140 275	284	125 7.5	20/74.5 DM20	325	170 184	75 80	135 319	40 45	40 55	216	201

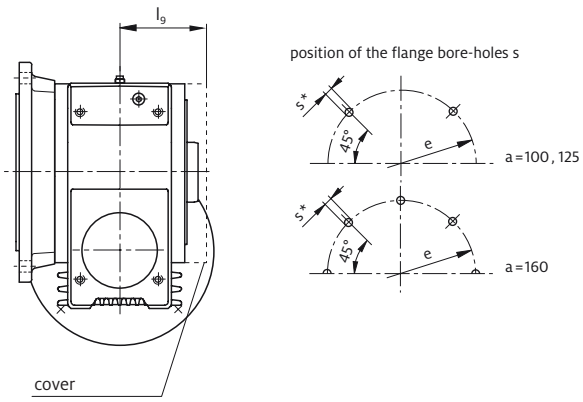
Size	Output						Gear													
	Flange																			
a	A	b	e	h_{12}	c m	f s	a_2 $b_{2_{js6}}$	e_2 ≈ f_2	$h_{0-0.5}$ $h_{1-0.5}$	≈ h_2 ≈ h_5	h_6 h_7	≈ h_8	k_1 k_2	≈ k_4 ≈ k_5	l_8 ≈ l_9	≈ m_1 ≈ m_2	≈ n_1	n_2 ≈n_4	s_2 t_2	s_3 t_3
100	250	180 js6	215	138	14 26.5	4 14	240 180	215 4	120 180	311 69	35 230	46	125 125	202 138	195 120	30 210	30	110 150	M12 20	M12 20
125	350	250 h6	300	160	20 36.5	5 18	288 230	265 4	142 217	370 75	46 266	62	150 150	237 170	207 137	40 250	30	125 175	M12 20	M16 28
160	450	350 h6	400	180	18 37	5 17.5	365 300	330 5	177 280	472 108	50 360	62	191 191	288 206	250 150	54 310	35	145 201	M16 28	M16 28

Dimensions in mm / featherkey ways according to DIN 6885
HWS = Slip-on model with shrink-on disk

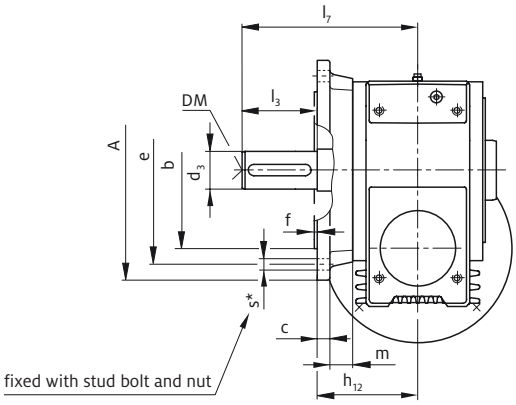
SPA
Slip-on model (hollow shaft at the output)



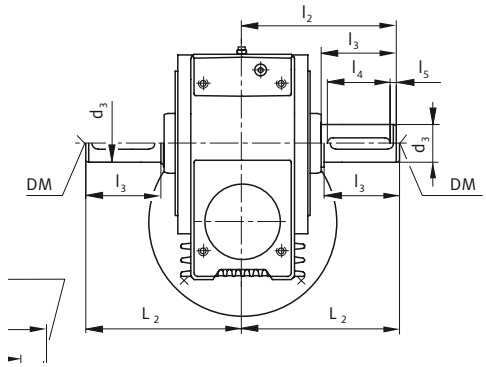
SPAF
Slip-on model with flange



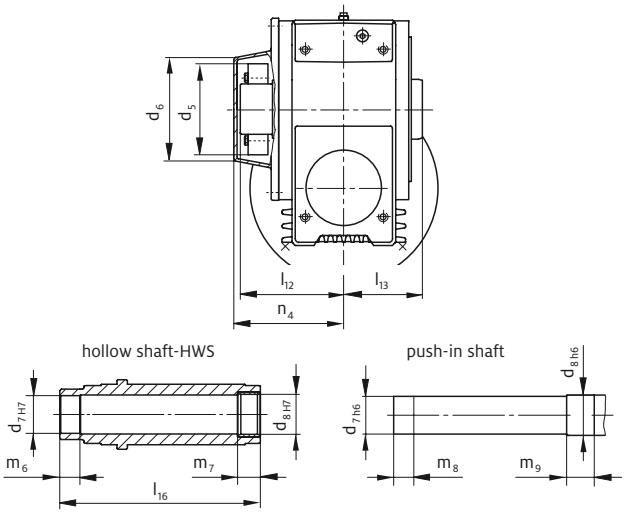
SPVF
Type with solid shaft and flange at the output



SPV
Type with solid shaft at the output



SPAS
Type with shrink-on disk and cover at the output



Centring DIN332 Form D / * strength class for screws 10.9

Size	IEC-Motor					Flange			
a	Size	Shaft end	PHW	u	v	k_3 f_4	A_1 $b_{1_{H7}}$	e_1 s_1	c_1 f_1
100	90	Ø24x50	Ø24	8	27.3	162 1	200 130	165 Ø11	14 6
	100	Ø28x60	Ø28	8	31.3	162 1	200 130	165 Ø11	14 6
	112	Ø28x60	Ø28	8	31.3	162 1	200 130	165 Ø11	14 6
	100	Ø28x60	Ø28	8	31.3	170 9	250 180	215 Ø13.5	16 5
	112	Ø28x60	Ø28	8	31.3	170 9	250 180	215 Ø13.5	16 5
	132	Ø38x80	Ø38	10	41.3	170 9	250 180	215 Ø13.5	16 5
	132	Ø38x80	Ø38	10	41.3	187 26	300 230	265 M12	15 5
125	100	Ø28x60	Ø28	8	31.3	195 5	250 180	215 Ø13.5	16 5
	112	Ø28x60	Ø28	8	31.3	195 5	250 180	215 Ø13.5	16 5
	132	Ø38x80	Ø38	10	41.3	195 5	250 180	215 Ø13.5	16 5
	132	Ø38x80	Ø38	10	41.3	195 5	300 230	265 M12	16 5
	160	Ø42x110	Ø42	12	45.3	225 35	350 250	300 M16	22 7
160	100	Ø28x60	Ø28	8	31.3	236 8	250 180	215 Ø13.5	16 5
	112	Ø28x60	Ø28	8	31.3	236 8	250 180	215 Ø13.5	16 5
	132	Ø38x80	Ø38	10	41.3	236 8	250 180	215 Ø13.5	16 5
	132	Ø38x80	Ø38	10	41.3	236 8	300 230	265 M12	16 5
	160	Ø42x110	Ø42	12	45.3	266 38	350 250	300 M16	22 7
	180	Ø48x110	Ø48	14	51.8	266 38	350 250	300 M16	22 7

Size	2nd shaft end at the input					
a	b_3 f_3	$d_{1_{k6}}$	l_1	l_{10} l_{11}	l_{14}	u_2/v_2 DM
100	- -	30	50	5 40	190	8/33 DM10
125	120 6.5	38	58	5 50	221	10/41 DM12
160	120 6.5	42	72	4 63	276	12/45 DM16

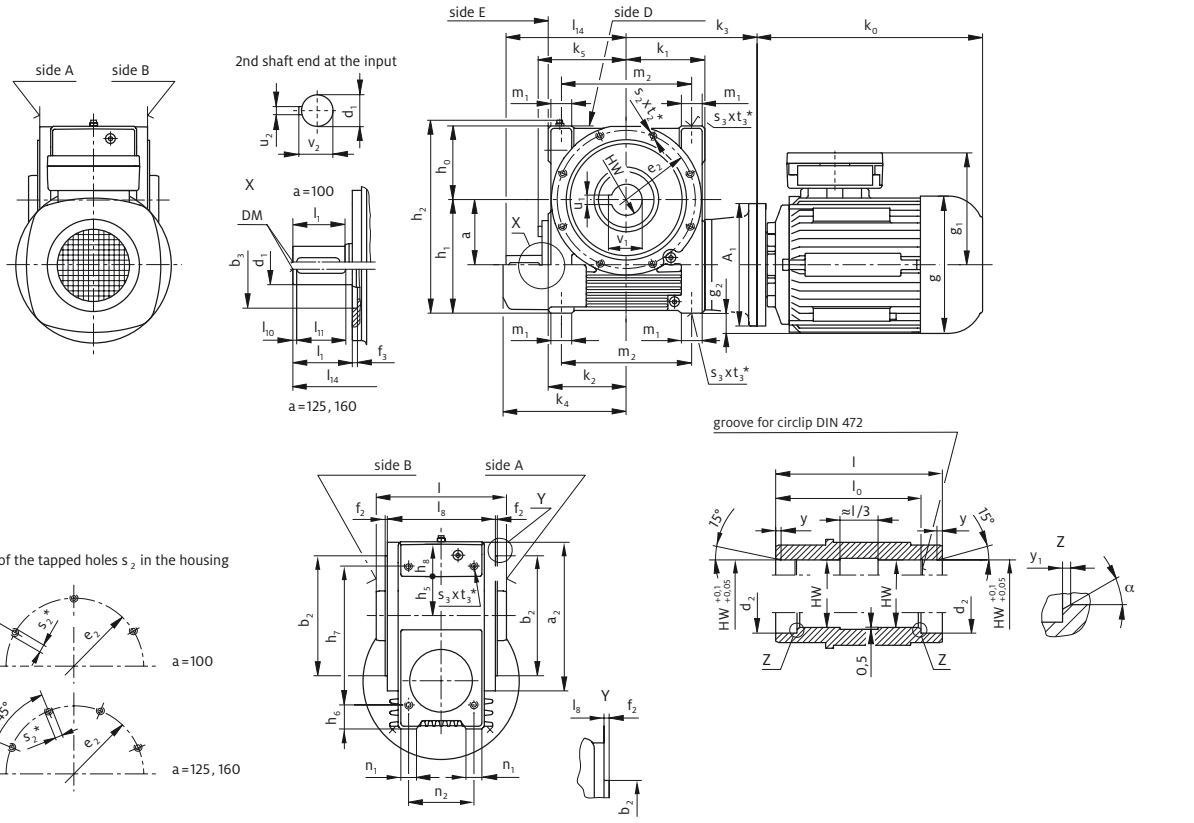
Size	Output																	
	Hollow shaft					Solid shaft						Hollow shaft-HWS					Cap-HWS	
a	HW_{H7}/d_2	$u_{1_{Js9}}/v_1$	l l_0	y	y_1 α	d_3	l_3 l_2	L_2	l_4 l_5	u_2/v_2 DM	l_7	d_5 ≈ l_{12}	d_7 d_8	l_{13} l_{16}	m_6 m_7	m_8 m_9	d_6 ≈	n_4 ≈
100	50/- 60/65	14/53.8 18/64.4	218 188	6	3.5 15°	45 k6	90 199	199	80 5	14/48.5 DM16	228	110 141	50 52	109 250	45 38	50 43	125	150
125	60/- 70/80	18/64.4 20/74.9	250 220	6	3 30°	60 m6	120 245	245	100 10	18/64.4 DM20	280	145 165	65 66	125 290	62 40	65 45	165	175
160	70/- 80/-	20/74.9 22/85.4	270 245	4	- -	70 m6	140 275	284	125 7.5	20/74.5 DM20	325	170 184	75 80	135 319	40 45	40 55	216	201

Size	Output						Gear														
	Flange																				
a	A	b	e	h_{12}	c m	f s	a_2 $b_{2\ js6}$	e_2 ≈ f_2	$h_{0\text{-}0.5}$ $h_{1\text{-}0.5}$	≈ h_2 ≈ h_5	h_6 h_7	≈ h_8	k_1 k_2	≈ k_4 ≈ k_5	l_8 ≈ l_9	≈ m_1 ≈ m_2	≈ n_1	n_2 ≈n_4	s_2 t_2	s_3 t_3
100	250	180 js6	215	138	14 26.5	4 14	240 180	215 4	120 180	311 69	35 230	46	125 125	202 138	195 120	30 210	30	110 150	M12 20	M12 20
125	350	250 h6	300	160	20 36.5	5 18	288 230	265 4	142 217	370 75	46 266	62	150 150	237 170	207 137	40 250	30	125 175	M12 20	M16 28
160	450	350 h6	400	180	18 37	5 17.5	365 300	330 5	177 280	472 108	50 360	62	191 191	288 206	250 150	54 310	35	145 201	M16 28	M16 28

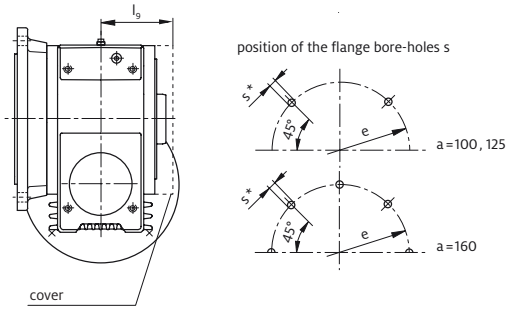
Dimensions in mm / featherkey ways according to DIN 6885
HWS = Slip-on model with shrink-on disk

Dimension sheets
Size SP 100.1 – 160.1/
SK 100.1 – 160.1

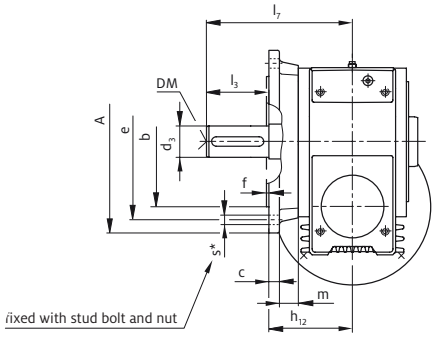
SPA/SKA with motor
Slip-on model (hollow shaft at the output)



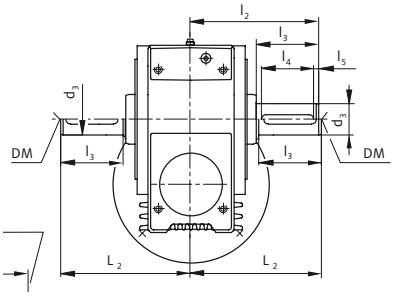
SPAF/SKAF
Slip-on model with flange



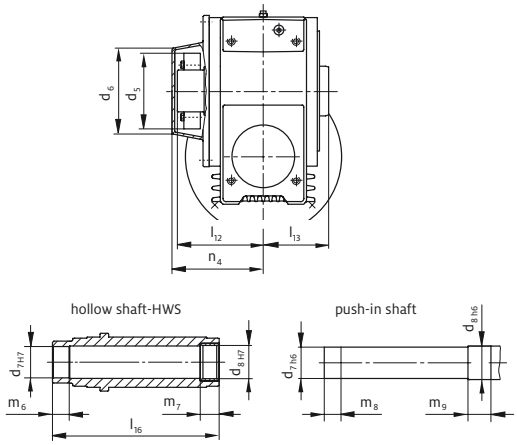
SPVF/SKVF
Type with solid shaft and flange at the output



SPV/SKV
Type with solid shaft at the output



SPAS/SKAF
Type with shrink-on disk and cover at the output



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Centring DIN332 Form D / * strength class for screws 10.9

Size	IEC-Motor							
a	Size	A_1	g ≈	g_1 ≈	g_2 ≈	k_o ≈	k_3 Type SP...	k_3 Type SK...
100	100L	250	177	127	9	271	170	256
	100LX/112M2,6,8	250	196	137	18	297	170	256
	112M4	250	196	137	18	331	170	276
	132S2.4.6.8	250	217	178	29	379	170	276
	132SX2/M6.8	250	217	178	29	399	170	276
	132M4/MX6	250	258	199	49	401	170	276
125	100LX	250	196	137	6	297	195	299
	112M	250	196	137	6	331	195	299
	132S	250	217	178	17	379	195	309
	132SX2/M6.8	250	217	178	17	399	195	309
	132M4/MX6	250	258	199	37	401	195	309
	160M/MX8	350	258	214	37	449	225	351
	160MX2	350	313	242	65	461	225	351
	160L	350	313	242	65	499	225	351
160	112M	250	196	137	5	331	236	340
	132S	250	217	178	5	379	236	360
	132M4/MX6	250	258	199	9	399	236	360
	132M6.8	250	217	178	5	401	236	360
	160M/MX8	350	258	214	55	449	266	392
	160MX2	350	313	242	55	461	266	392
	160L/180M4.L6.8	350	313	242	55	499	266	392
	180M2	350	351	261	55	525	266	392
	180L4	350	351	261	55	570	266	392

Size	2nd shaft end at the input					
a	b_3 f_3	d_{1k6}	l_1	l_{10} l_{11}	l_{14}	u_2/v_2 DM
100	- -	30	50	5 40	190	8/33 DM10
125	120 6.5	38	58	5 50	221	10/41 DM12
160	120 6.5	42	72	4 63	276	12/45 DM16

Size	Output																	
	Hollow shaft					Solid shaft						Hollow shaft-HWS					Cap-HWS	
a	HW_{H7}/d_2	u_{1js9}/v_1	l l_0	y	y_1 α	d_3	l_3 l_2	L_2	l_4 l_5	u_2/v_2 DM	l_7	d_5 ≈ l_{12}	d_7 d_8	l_{13} l_{16}	m_6 m_7	m_8 m_9	d_6 ≈	n_4 ≈
100	50/- 60/65	14/53.8 18/64.4	218 188	6	3.5 15°	45 k6	90 199	199	80 5	14/48.5 DM16	228	110 141	50 52	109 250	45 38	50 43	125	150
125	60/- 70/80	18/64.4 20/74.9	250 220	6	3 30°	60 m6	120 245	245	100 10	18/64.4 DM20	280	145 165	65 66	125 290	62 40	65 45	165	175
160	70/- 80/-	20/74.9 22/85.4	270 245	4	- -	70 m6	140 275	284	125 7.5	20/74.5 DM20	325	170 184	75 80	135 319	40 45	40 55	216	201

Size	Output						Gear													
	Flange																			
a	A	b	e	h_{12}	c m	f s	a_2 $b_{2\,js6}$	e_2 ≈ f_2	$h_{0-0.5}$ $h_{1-0.5}$	≈ h_2 ≈ h_5	h_6 h_7	≈ h_8	k_1 k_2	≈ k_4 ≈ k_5	l_8 ≈ l_9	≈ m_1 ≈ m_2	≈ n_1	n_2 ≈n_4	s_2 t_2	s_3 t_3
100	250	180 js6	215	138	14 26.5	4 14	240 180	215 4	120 180	311 69	35 230	46	125 125	202 138	195 120	30 210	30	110 150	M12 20	M12 20
125	350	250 h6	300	160	20 36.5	5 18	288 230	265 4	142 217	370 75	46 266	62	150 150	237 170	207 137	40 250	30	125 175	M12 20	M16 28
160	450	350 h6	400	180	18 37	5 17.5	365 300	330 5	177 280	472 108	50 360	62	191 191	288 206	250 150	54 310	35	145 201	M16 28	M16 28

Dimensions in mm / featherkey ways according to DIN 6885
HWS = Slip-on model with shrink-on disk

Torque converter bearings

Fig. 1

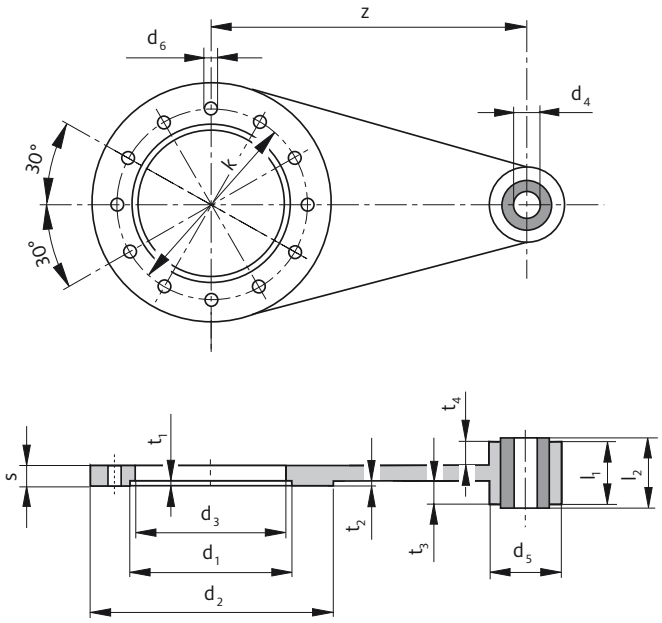


Fig. 2

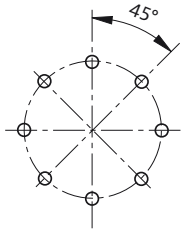
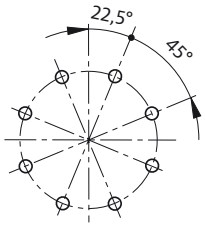


Fig. 3



Size																	
	$Z_{\pm 0.2}$	$d_{1_{H8}}$	d_2	d_3	$d_{4_{H9}}$	d_5	$d_{6_{+0.25}}$	Fig.	k	l_1	l_2	s	t_1	t_2	t_3	t_4	Hexagonal bolt [1]
100	250	180	243	170	20	70	13.5	1	215	56	70	16	5	3	21	22	8xM12x35-DIN 933
125	310	230	294	220	20	70	13.5	2	265	56	70	18	5	3	19	22	8xM12x35-DIN 933
160	380	300	374	290	24	80	18	3	330	90	115	20	6	3	44.5	28.5	8xM16x40-DIN 912

Dimensions in mm / 1) strength class for screws 8.8

Driving power P_1 [kW]
Rated speeds n_1, n_2 [1/min]
Output torques T_2, T_{2max} [Nm]
Operating efficiency η [%]
Gear ratio i_{actual}
on use with synthetic lubricant

S 40.1

Size		n_1 = 250 1/min					n_1 = 1400 1/min				
a	i_{actual}	n_2	T_2	P_1	η	$T_{2\,max}$*	n_2	T_2	P_1	η	$T_{2\,max}$*
40	79.00	3.16	37	0.03	44.0	64	17.72	37	0.11	64.0	52
	60.00	4.17	50	0.05	48.0	58	23.33	44	0.19	58.0	58
	51.00	4.90	60	0.05	56.0	78	27.45	41	0.19	63.0	78
	39.00	6.41	72	0.08	58.0	95	35.90	58	0.32	68.0	95
	29.00	8.62	73	0.11	60.0	105	48.28	51	0.36	72.0	105
	25.50	9.80	50	0.08	68.0	70	54.90	37	0.28	77.0	70
	19.50	12.82	60	0.11	71.0	85	71.79	52	0.48	81.0	85
	14.50	17.24	65	0.16	74.0	95	96.55	49	0.60	83.0	95
	12.75	19.61	44	0.11	79.0	60	109.80	31	0.42	85.0	60
	9.75	25.64	55	0.18	81.0	70	143.59	44	0.75	88.0	70
	7.25	34.48	60	0.26	84.0	70	193.10	46	1.03	90.0	70

S 50.1

Size		n_1 = 250 1/min					n_1 = 1400 1/min				
a	i_{actual}	n_2	T_2	P_1	η	$T_{2\,max}$*	n_2	T_2	P_1	η	$T_{2\,max}$*
50	83.00	3.01	70	0.05	45.0	105	16.87	60	0.20	54.0	105
	62.00	4.03	110	0.01	47.0	130	22.58	95	0.37	61.0	130
	51.00	4.90	100	0.09	55.0	150	27.45	82	0.35	68.0	150
	38.00	6.58	135	0.16	58.0	190	36.84	115	0.62	72.0	190
	29.00	8.62	145	0.21	62.0	205	48.28	110	0.74	75.0	205
	25.50	9.80	90	0.13	71.0	135	54.90	74	0.53	80.0	135
	19.00	13.16	120	0.23	73.0	170	73.68	105	0.98	83.0	170
	14.50	17.24	131	0.32	75.0	190	96.55	97	1.17	84.0	190
	12.75	19.61	65	0.17	80.0	105	109.80	60	0.79	87.0	105
	9.50	26.32	120	0.41	81.0	150	147.37	90	1.54	90.0	150
	7.25	34.48	125	0.54	83.0	160	193.10	95	2.09	92.0	160
	4.83	51.76	120	0.76	86.0	140	289.86	87	2.84	93.0	140

S 63.1

Size		n_1 = 250 1/min					n_1 = 1400 1/min				
a	i_{actual}	n_2	T_2	P_1	η	$T_{2\,max}$*	n_2	T_2	P_1	η	$T_{2\,max}$*
63	106.00	2.36	95	0.05	44.0	145	13.21	95	0.23	56.0	145
	82.00	3.05	145	0.10	45.0	240	17.07	145	0.41	63.0	240
	61.00	4.01	192	0.16	52.0	175	22.95	150	0.55	65.0	175
	51.00	4.90	180	0.15	60.0	330	27.45	160	0.63	73.0	330
	39.00	6.41	263	0.28	63.0	390	35.90	170	0.85	75.0	390
	29.00	8.62	255	0.37	62.0	400	48.28	187	1.21	78.0	400
	25.50	9.80	173	0.24	73.0	290	54.90	147	1.02	83.0	290
	19.50	12.82	260	0.47	75.0	335	71.79	180	1.61	84.0	335
	14.50	17.24	252	0.59	77.0	360	96.55	180	2.12	86.0	360
	12.75	19.61	155	0.38	83.0	220	109.80	132	1.69	90.0	220
	9.75	25.64	230	0.74	84.0	300	143.59	168	2.78	91.0	300
	7.25	34.48	235	0.98	87.0	315	193.10	145	3.12	94.0	315
	4.83	51.76	200	1.22	89.0	280	289.86	143	4.62	94.0	280

* The maximum output torques may be reached quite often in momentary load but they may not be exceeded.

Technical data
Power tables S 80.1 / S 100.1

Driving power P_1 [kW]
Rated speeds n_1, n_2 [1/min]
Output torques T_2, T_{2max} [Nm]
Operating efficiency η [%]
Gear ratio i_{actual}
on use with synthetic lubricant

S 80.1

Size		n_1 = 250 1/min					n_1 = 1400 1/min				
a	i_{actual}	n_2	T_2	P_1	η	$T_{2\,max}$*	n_2	T_2	P_1	η	$T_{2\,max}$*
80	110.00	2.27	195	0.11	42.0	350	12.73	185	0.41	60.0	350
	82.00	3.05	270	0.18	49.0	500	17.07	265	0.72	66.0	500
	62.00	4.03	364	0.28	54.0	560	22.58	270	0.93	69.0	560
	53.00	4.72	325	0.27	60.0	490	26.42	285	1.07	74.0	490
	40.00	6.25	470	0.48	64.0	800	35.00	340	1.60	78.0	800
	30.00	8.33	490	0.64	67.0	800	46.67	395	2.38	81.0	800
	26.50	9.43	285	0.38	75.0	430	52.83	250	1.63	85.0	430
	20.00	12.50	470	0.80	77.0	720	70.00	325	2.74	87.0	720
	15.00	16.67	450	0.99	79.0	800	93.33	260	2.86	89.0	800
	13.25	18.87	230	0.55	83.0	320	105.66	180	2.19	91.0	320
	10.00	25.00	450	1.37	86.0	610	140.00	275	4.29	94.0	610
	7.25	34.48	400	1.64	88.0	680	193.10	270	5.81	94.0	680
	5.00	50.00	360	2.09	90.0	590	280.00	230	7.10	95.0	590

S 100.1

Size		n_1 = 250 1/min					n_1 = 1400 1/min				
a	i_{actual}	n_2	T_2	P_1	η	$T_{2\,max}$*	n_2	T_2	P_1	η	$T_{2\,max}$*
100	107.00	2.34	500	0.24	50.0	700	13.08	450	0.99	62.0	700
	82.00	3.05	599	0.37	51.0	1002	17.07	599	1.70	63.0	1002
	63.00	3.97	886	0.67	55.0	1125	22.22	817	2.76	69.0	1125
	52.00	4.81	750	0.62	61.0	950	26.92	590	2.31	72.0	950
	40.00	6.25	1250	1.26	65.0	1400	35.00	810	3.96	75.0	1400
	30.00	8.33	1100	1.37	70.0	1700	46.67	750	4.70	78.0	1700
	26.00	9.62	700	0.93	76.0	900	53.85	525	3.61	82.0	900
	20.00	12.50	1200	2.01	78.0	1380	70.00	720	6.07	87.0	1380
	15.00	16.67	1170	2.55	80.0	1500	93.33	720	8.00	88.0	1500
	13.00	19.23	545	1.31	84.0	710	107.69	470	6.02	88.0	710
	10.00	25.00	1000	3.08	85.0	1000	140.00	680	10.84	92.0	1000
	7.50	33.33	1050	4.21	87.0	1280	186.67	580	12.32	92.0	1280
	5.00	50.00	960	5.46	92.0	1250	280.00	610	19.03	94.0	1250

* The maximum output torques may be reached quite often in momentary load but they may not be exceeded.

Driving power P_1 [kW]
Rated speeds n_1, n_2 [1/min]
Output torques T_2, T_{2max} [Nm]
Operating efficiency η [%]
Gear ratio i_{actual}
on use with synthetic lubricant

S 125.1

Size		n_1 = 250 1/min					n_1 = 1400 1/min				
a	i_{actual}	n_2	T_2	P_1	η	$T_{2\,max}$*	n_2	T_2	P_1	η	$T_{2\,max}$*
125	83.00	3.01	1167	0.67	55.0	1953	16.87	1167	3.08	67.0	1953
	62.00	4.03	1731	1.24	59.0	2211	22.58	1243	4.08	72.0	2211
	52.00	4.81	1250	0.98	64.0	1780	26.92	1050	3.90	76.0	1780
	40.00	6.25	2080	2.03	67.0	2250	35.00	1250	5.80	79.0	2250
	29.00	8.62	1870	2.41	70.0	2300	48.28	1140	7.12	81.0	2300
	26.00	9.62	1100	1.42	78.0	1550	53.85	890	5.90	85.0	1550
	20.00	12.50	1900	3.11	80.0	2250	70.00	1150	9.58	88.0	2250
	14.50	17.24	1840	4.05	82.0	2300	96.55	1090	12.25	90.0	2300
	13.00	19.23	890	2.11	85.0	1200	107.69	760	9.42	91.0	1200
	10.00	25.00	1750	5.27	87.0	2200	140.00	1000	15.76	93.0	2200
	7.25	34.48	1610	6.53	89.0	2190	193.10	900	19.57	93.0	2190
	4.83	51.76	1680	9.90	92.0	2100	289.86	870	27.80	95.0	2100

S 160.1

Size		n_1 = 250 1/min					n_1 = 1400 1/min				
a	i_{actual}	n_2	T_2	P_1	η	$T_{2\,max}$*	n_2	T_2	P_1	η	$T_{2\,max}$*
160	84.00	2.98	2347	1.24	59.0	4062	16.67	2347	5.69	72.0	4062
	63.00	3.97	3552	2.31	64.0	4390	22.22	2266	7.03	75.0	4390
	54.00	4.63	2795	1.99	68.0	3400	25.93	2135	7.43	78.0	3400
	40.00	6.25	3765	3.47	71.0	4250	35.00	2270	10.15	82.0	4250
	30.00	8.33	3500	4.13	74.0	4350	46.67	2100	12.22	84.0	4350
	27.00	9.26	2150	2.64	79.0	3300	51.85	1950	12.31	86.0	3300
	20.00	12.50	3610	5.76	82.0	4250	70.00	2100	17.49	88.0	4250
	15.00	16.67	3350	6.88	85.0	4350	93.33	2000	21.25	92.0	4350
	13.50	18.52	1800	3.97	88.0	2400	103.70	1510	17.63	93.0	2400
	10.00	25.00	3200	9.31	90.0	4250	140.00	1900	29.63	94.0	4250
	7.50	33.33	3010	11.67	90.0	4350	186.67	1800	37.43	94.0	4350
	5.00	50.00	2750	15.65	92.0	4350	280.00	1690	52.16	95.0	4350

* The maximum output torques may be reached quite often in momentary load but they may not be exceeded.

Technical data
Size S 40.1 – 160.1

Driving power P_1 [kW]
Rated speeds n_1, n_2 [1/min]
Output torques T_2
Gear ratio i_{actual}
radial forces F_{R1}, F_{R2}

Radial forces n_1 = 1400 1/min

S 40.1					
i_{actual}	n_2	P_1	T_2	F_{R1}	F_{R2}
79	17.7	0.10	37	300	1900
60	23.3	0.19	44	300	1650
51	27.5	0.19	41	•	1550
39	35.9	0.32	58	300	1550
29	48.3	0.36	51	300	1400
25.5	54.9	0.30	37	•	1380
19.5	71.8	0.48	52	300	1250
14.5	96.6	0.60	49	300	1000
12.75	109.8	0.42	31	•	1030
9.75	143.6	0.75	44	300	950
7.25	193.1	1.03	46	300	870

S 50.1					
i_{actual}	n_2	P_1	T_2	F_{R1}	F_{R2}
83	16.9	0.20	60	500	5000
62	22.6	0.37	95	500	5000
51	27.5	0.35	82	•	5000
38	36.8	0.62	115	500	5000
29	48.3	0.74	110	500	4800
25.5	54.9	0.53	74	•	4300
19	73.7	1.00	105	500	3800
14.5	96.6	1.17	97	500	3500
12.75	109.8	0.79	60	•	3300
9.5	147.4	1.54	90	500	2900
7.25	193.1	2.09	95	500	2400
4.83	289.9	2.83	87	500	2250

S 63.1					
i_{actual}	n_2	P_1	T_2	F_{R1}	F_{R2}
106	13.2	0.21	95	800	6500
82	17.1	0.41	145	800	6300
61	23.0	0.55	150	800	6100
51	27.5	0.63	160	•	6000
39	35.9	0.85	170	800	5950
29	48.3	1.21	187	800	5700
25.5	54.9	1.02	147	•	5000
19.5	71.8	1.61	180	800	4750
14.5	96.6	2.12	180	800	4300
12.75	109.8	1.69	132	•	3850
9.75	143.6	2.78	168	800	3000
7.25	193.1	3.12	145	800	2900
4.83	289.9	4.61	143	800	2800

S 80.1					
i_{actual}	n_2	P_1	T_2	F_{R1}	F_{R2}
110	12.7	0.41	185	1000	8000
82	17.1	0.95	265	1000	7800
62	22.6	0.93	270	1000	7700
53	26.4	1.06	285	•	7600
40	35.0	1.60	340	1000	7500
30	46.7	2.38	395	1000	6100
26.5	52.8	1.63	250	•	6000
20	70.0	2.73	325	1000	5800
15	93.3	2.86	260	1000	4500
13.25	105.7	2.19	180	•	4200
10	140.0	4.29	275	1000	3900
7.5	186.7	5.61	270	1000	3600
5	280.0	7.10	230	1000	3250

S 100.1					
i_{actual}	n_2	P_1	T_2	F_{R1}	F_{R2}
107.0	13.08	0.99	450	•	10000
82.0	17.07	1.70	599	•	10000
63.0	22.22	2.76	817	•	10000
52.0	26.92	2.31	590	•	10000
40.0	35.00	3.96	810	•	10000
30.0	46.67	4.70	750	•	9500
26.0	53.85	3.61	525	•	9900
20.0	70.00	6.07	720	•	7900
15.0	93.33	8.00	720	•	6700
13.0	107.69	6.02	470	•	7100
10.0	140.00	10.84	680	•	5400
7.5	186.67	12.32	580	•	5000
5.0	280.00	19.03	610	•	•

S 125.1					
i_{actual}	n_2	P_1	T_2	F_{R1}	F_{R2}
83.00	16.87	3.08	1167	•	14000
62.00	22.58	4.08	1243	•	14000
52.00	26.92	3.90	1050	•	14000
40.00	35.00	5.80	1250	•	12300
29.00	48.28	7.12	1140	•	10800
26.00	53.85	5.90	890	•	11200
20.00	70.00	9.58	1150	•	8900
14.50	96.55	12.25	1090	•	7800
13.00	107.69	9.42	760	•	8200
10.00	140.00	15.76	1000	•	6300
7.25	193.10	19.57	900	•	5500
4.83	289.86	27.80	870	•	•

S 160.1					
i_{actual}	n_2	P_1	T_2	F_{R1}	F_{R2}
84.0	16.67	5.76	2347	•	18000
63.0	22.22	7.14	2266	•	18000
54.0	25.93	7.43	2135	•	18000
40.0	35.00	10.15	2270	•	17500
30.0	46.67	12.22	2100	•	15500
27.0	51.85	12.31	1950	•	15200

S 160.1					
i_{actual}	n_2	P_1	T_2	F_{R1}	F_{R2}
20.0	70.00	17.49	2100	•	12400
15.0	93.33	21.25	2000	•	11000
13.5	103.70	17.63	1510	•	11700
10.0	140.00	29.63	1900	•	8500
7.5	186.67	37.43	1800	•	7400
5.0	280.00	52.16	1690	•	•

* The values given for F_{R1} apply likewise to types SM and SK.
1) Axial forces can absorb up to 50 % off the permissible radial forces.
You can find further information on radial forces in the chapter »Introduction«, on page 10.
• Ask GFC for further clarification.

Masses [kg] without oil

Basic version		Attachment parts											
SVA		Solid shaft		Output flange	Torque bearing	Cover	Shrink-on disk complete	with motor flange SK A1 =				Coupling	
a	kg	1 Shaft	2 Shafts					105	120	140	160	24	28
40.1	5.2	0.35	0.5	1.1	1.0	0.5	1.6	1.0	1.2	1.5		0.25	0.6
50.1	11.0	0.80	1.0	1.6	1.4	0.5	2.0	1.0	1.2	1.5	2.0	0.25	0.6
63.1	14.5	1.4	1.6	3.6	1.7	1.0	2.0	1.0	1.2	1.5	2.0	0.25	0.6
80.1	26.5	2.2	2.5	4.9	2.6	1.6	2.4	1.0	1.2	1.5	2.0	0.25	0.6

Basic version with fan		Attachment parts													
SVA		Solid shaft		Output flange	Torque bearing	Cover	Shrink-on disk complete	SPA with motor flange A 1 =				SKA with motor flange + coupling A 1 =			
a	kg	1 Shaft	2 Shafts					200	250	300	350	200	250	300	350
100	46	4.8	6.0	6.0	7.5	4.2	4.4	50	52	60	-	55	58	65	-
125	84	9.8	12.6	11.7	6.6	5.1	7	-	88	91	96	-	96	100	106
160	157	14	20.0	18	12	11	13.8	-	161	164	169	-	169	173	180

Lubricant quantities (synthetic oil)

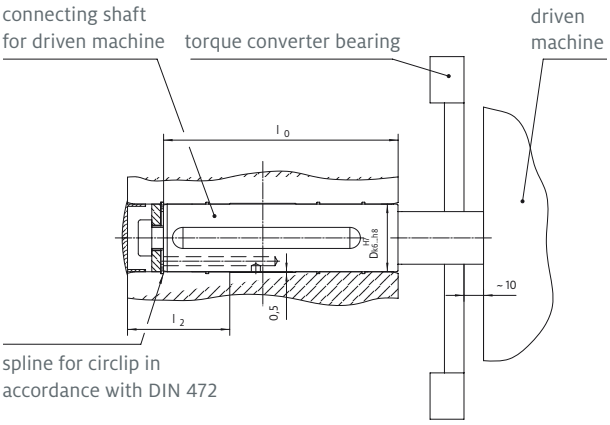
Size	Service position									
	B3		B3I		B6		B8		V5/V5 II	
	[l]	[kg]	[l]	[kg]	[l]	[kg]	[l]	[kg]	[l]	[kg]
S40.1	0.18	0.19	0.30	0.32	0.30	0.32	0.28	0.29	0.20	0.21
S50.1	0.45	0.47	0.65	0.68	0.65	0.68	0.75	0.79	0.55	0.58
S63.1	0.63	0.67	1.0	1.05	1.0	1.05	1.1	1.16	0.75	0.79
S80.1	1.3	1.36	2.0	2.1	2.0	2.1	2.5	2.63	1.5	1.58
S 100.1	1.7	1.8	3.0	3.15	3.0	3.15	3.8	4.0	3.0	3.15
S 125.1	2.0	2.1	4.0	4.2	4.0	4.2	6.5	6.8	4.0	4.2
S 160.1	4.2	4.4	8.5	8.9	8.5	8.9	12.3	12.9	7.7	8.1

Mounting and assembly of attachable gearbox/gearbox motors

Attachable worm gearboxes are to be axially attached on the work machine shaft. The exertion of force with an elastic socket dampens torque impacts and prevents tension in the actuator. Always consider that this leads to shifting of shafts between the force machine and the worm shaft. It is recommended to flange the force machines to the attachable gearbox or use jointed shafts.

Size	D	l_0	l_2
40	20;22	75	30.35
50	25;30	122	54
63	30;35	127	52
80	40;45	156	60

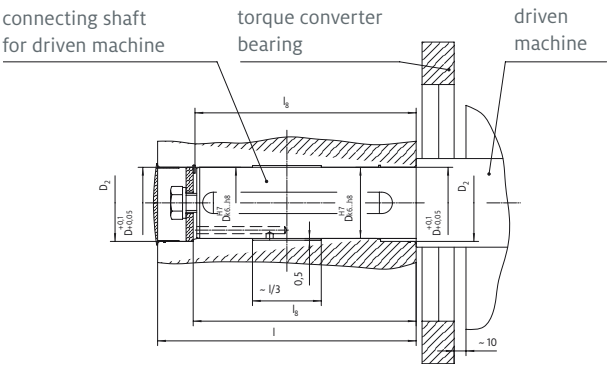
Dimensions in mm



Following a longer period of use, attachable gearboxes can be difficult to pull off (due to weather-related or ambient influences and frictional corrosion). To make this process easier, we recommend the designation of a drill hole in the shaft end of the work machine prior to assembly (see illustration above). Through this drill hole, if necessary (following the connection of an injector or a pump), one should be able to apply rust remover to the wheel-body centre position. This requires the crosswise drill hole to open out into the area of the inside thread of the hollow shaft. To avoid tribo-corrosion, it is recommended to treat the work-machine shaft with a MoS2 surface-protector.

Size	D (HW)	D_2 ±0.1	l	l_0
100.1	50 60	- 65	218	188
125.1	60 70	- 80	250	220
160.1	70 80	- -	270	245

Dimensions in mm



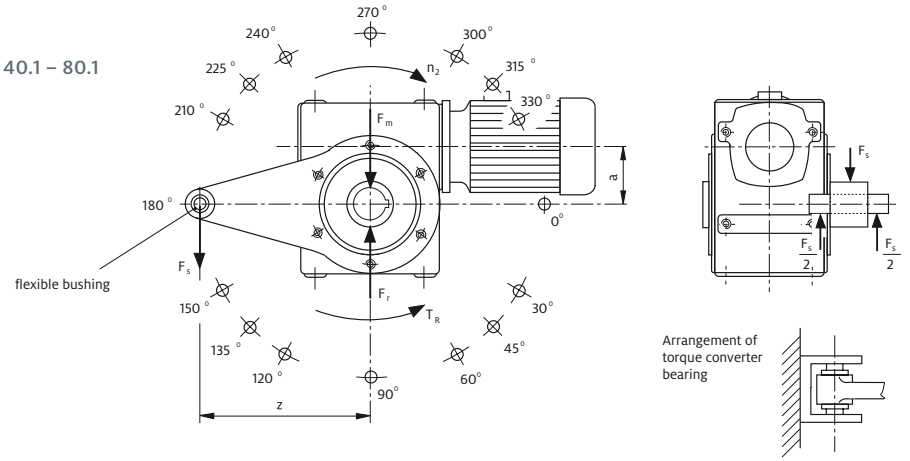
Application guideline for the attachment of torque supports

In attachable gearbox motors/gearboxes and torque supports, exterior forces are exerted on the work machine shaft. The force-exertion point and the direction of the action of the exterior force depend on the position of the torque support and on the direction of rotation. The torque support must be designated for attachment on the work-machine side of the gearbox motor/gearbox. This minimizes the bending wear on the work machine shaft due to exterior forces. The mounting bolt for the torque support must be positioned on both sides.

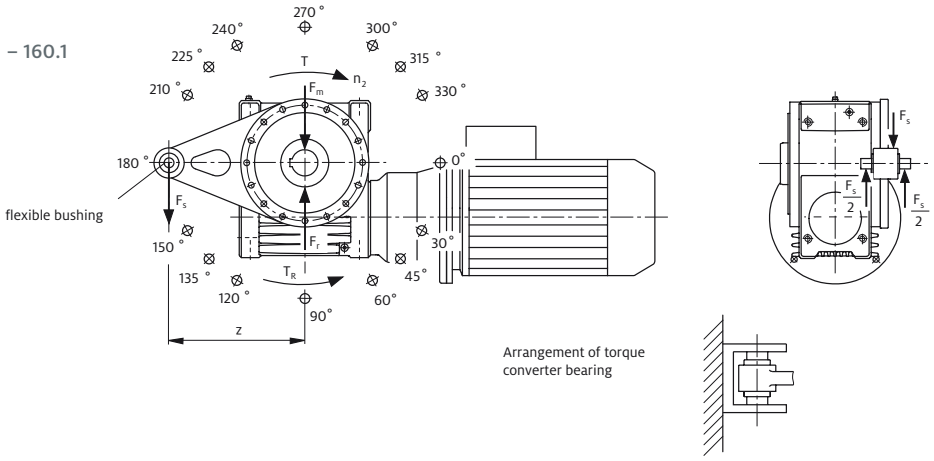
Forces exerted:
F_m = force from the mass
F_s = force exerted on the torque-support mounting bolts
F_r = exterior force exerted on the work machine shaft
z = lever length for the torque support
n_2 = rotation speed of the hollow shaft
T = output-drive torques
T_R = reaction torque on the gearbox housing

The output-drive torque equals the reaction torque; however, in the opposite direction. The appropriate selection of the force-exertion point and the direction of the action of the exterior force can achieve (along with the force from the gearbox mass) a reduction in the exterior force exerted upon the work machine shaft.

S 40.1 – 80.1



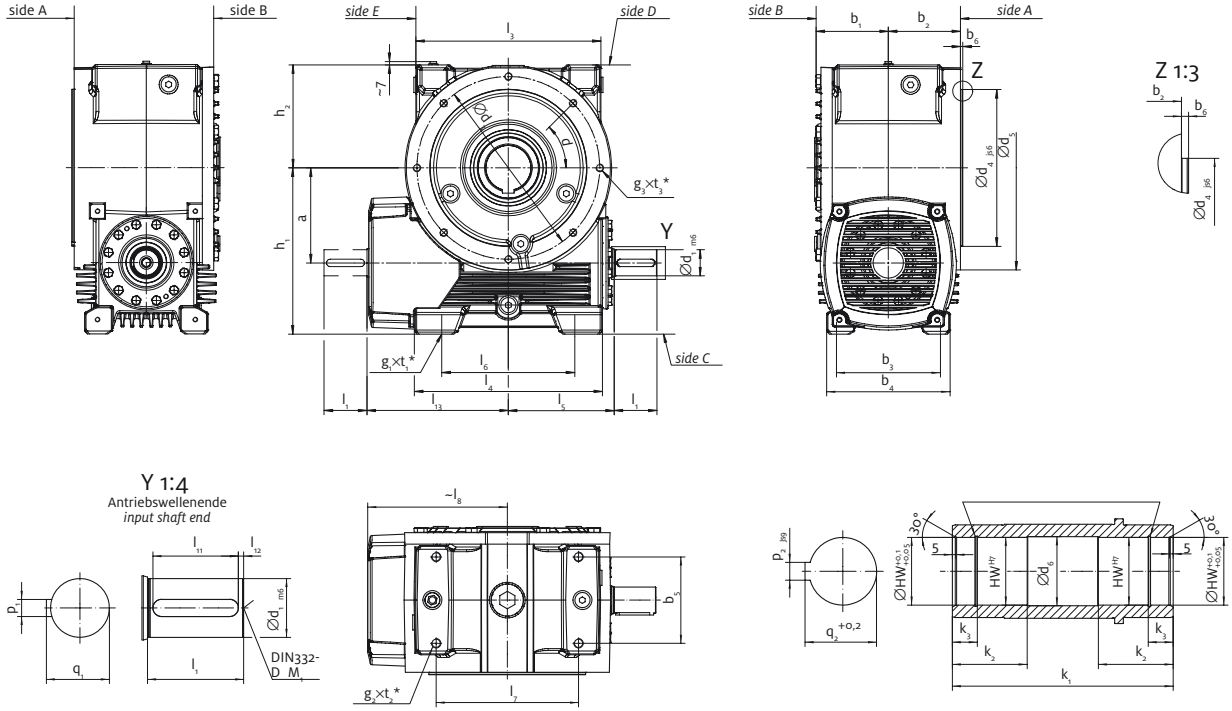
S 100.1 – 160.1



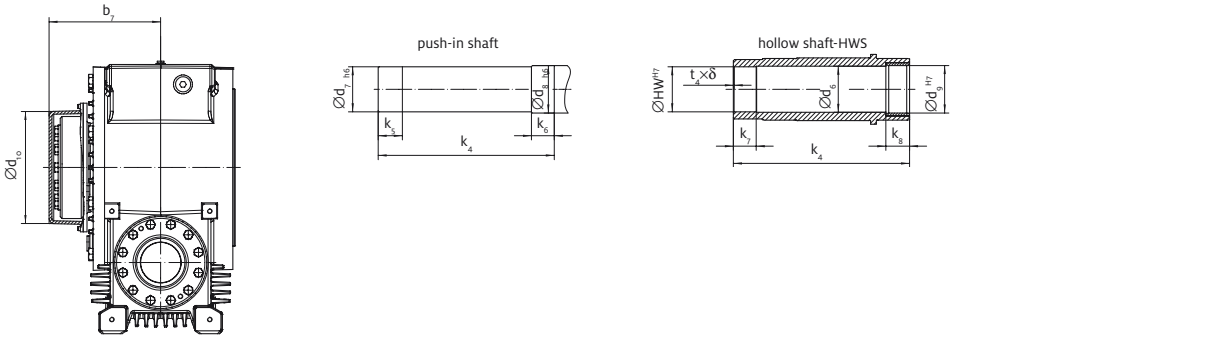
Possible mounting positions for torque converter bearing

Size	0°	30°	45°	60°	90°	120°	135°	150°	180°	210°	225°	240°	270°	300°	315°	330°
40					×		×		×		×		×		×	
50					×				×		×		×		×	
63				×	×	×		×	×	×		×	×	×		
80				×	×	×		×	×	×		×	×	×		
100.1					×	×		×	×	×		×	×	×		×
125.1					×		×		×		×		×		×	
160.1					×		×		×		×		×		×	

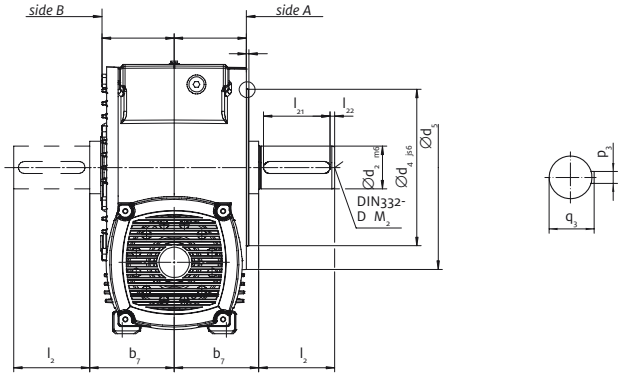
SVA
Slip-on model (hollow shaft at the output)



SVAS
type with shrink-on disk and cover at the output



SVV
worm gear



Size	Output														
	Hollow shaft			Solid shaft			shrink-on disk Hollow shaft				push-in shaft			cover	
a	HW d_6	k_1 p_2 q_2	k_2 k_3	d_2 l_2	l_{21} l_{22}	p_3 q_3 M_2	HW d_6	d_9 k_4	k_7 k_8	t_4 x δ	d_7 d_8	k_4 k_5	k_6	d_{10} b_7	
200	95_{H7}	310	105	90_{m6}	140	25/95	95_{H7}	100_{H7}	48	1,6 x 45°	95_{h6}	371	48	236	
	97	$25_{JS9}/100,4^{+0,2}$	35	160	10	M24	97	371	50		100_{h6}	51		235	
225	105_{H7}	340	111	100_{m6}	140	28/106	105_{H7}	110_{H7}	53	2,5 x 45°	105_{h6}	408	53	286	
	107	$28_{JS9}/111,4^{+0,2}$	37	180	20	M24	107	408	60		110_{h6}	56		262	
250	115_{H7}	370	126	110_{n6}	160	28/116	115_{H7}	120_{H7}	57	2,5 x 45°	115_{h6}	442	57	286	
	117	$32_{JS9}/122,4^{+0,2}$	39	200	20	M24	117	442	60		120_{h6}	60		277	
280	125_{H7}	400	135	120_{n6}	180	32/127	125_{H7}	130_{H7}	63	2,5 x 45°	125_{h6}	480	63	313	
	127	$32_{JS9}/132,4^{+0,2}$	41	220	20	M24	127	480	65		130_{h6}	66		302	
315	140_{H7}	440	148	140_{n6}	200	36/148	140_{H7}	150_{H7}	78	2,5 x 45°	140_{h6}	537	78	353	
	142	$36_{JS9}/148,4^{+0,3}$	47	240	20	M30	142	537	80		150_{h6}	82		340	

Size	Gear											
a	h_1 h_2	l_3 l_4	l_5 l_8	l_{13}	d_3 g_3 x t_3	α	l_7 g_2 x t_2	b_5 b_3	l_6 g_1 x t_1	b_1 b_2	b_4 b_6	d_4 d_5
200	350	390	223	223	385	8 x 45°	300	182	280	152	260	330_{JS6}
	217	396	294		M16 x 31		M20 x 32	219	M20 x 32	152	5	430
225	390	438	245	327	430	12 x 30°	335	200	300	166	280	375_{JS6}
	242	444	323		M16 x 36		M24 x 38	234,5	M24 x 38	167	5	484
250	430	476	270	358	480	12 x 30°	400	220	340	181	309	420_{JS6}
	267	496	354		M16 x 37		M24 x 40	265,5	M24 x 40	181	5	534
280	480	564	318	392	335	12 x 30°	400	240	430	197	346	465_{JS6}
	298	560	382		M20 x 41		M30 x 50	290	M30 x 45	196	6	593
315	530	594	355	434	600	12 x 30°	450	265	480	217	374	530_{JS6}
	331	614	427		M20 x 44		M30 x 50	310	M30 x 50	216	6	650

Size	Input		
a	d_1 l_1	l_{11} l_{12}	p_1/q_1 M_1
200	55_{m6}	80	16/59
	90	5	M20
225	60_{m6}	90	18/64
	100	5	M20
250	65_{m6}	90	18/69
	105	6	M20
280	70_{m6}	90	20/74,5
	110	10	M20
315	75_{m6}	100	20/79,5
	120	10	M20

Ratio				
S 200.1	S 225.1	S 250.1	S 280.1	S 315.1
5	•	5	•	5
7.5	•	7.75	•	7.5
10	•	10	•	10.25
13.25	•	13	•	13.25
15	•	15.5	•	15
20	•	20	•	20.5
26.5	•	26	•	26.5
30	•	31	•	30
34	35	35	35	36
40	•	40	•	41
53	•	52	•	53
63	•	61	•	60
83	•	83	•	82
110	•	108	•	109

• on request