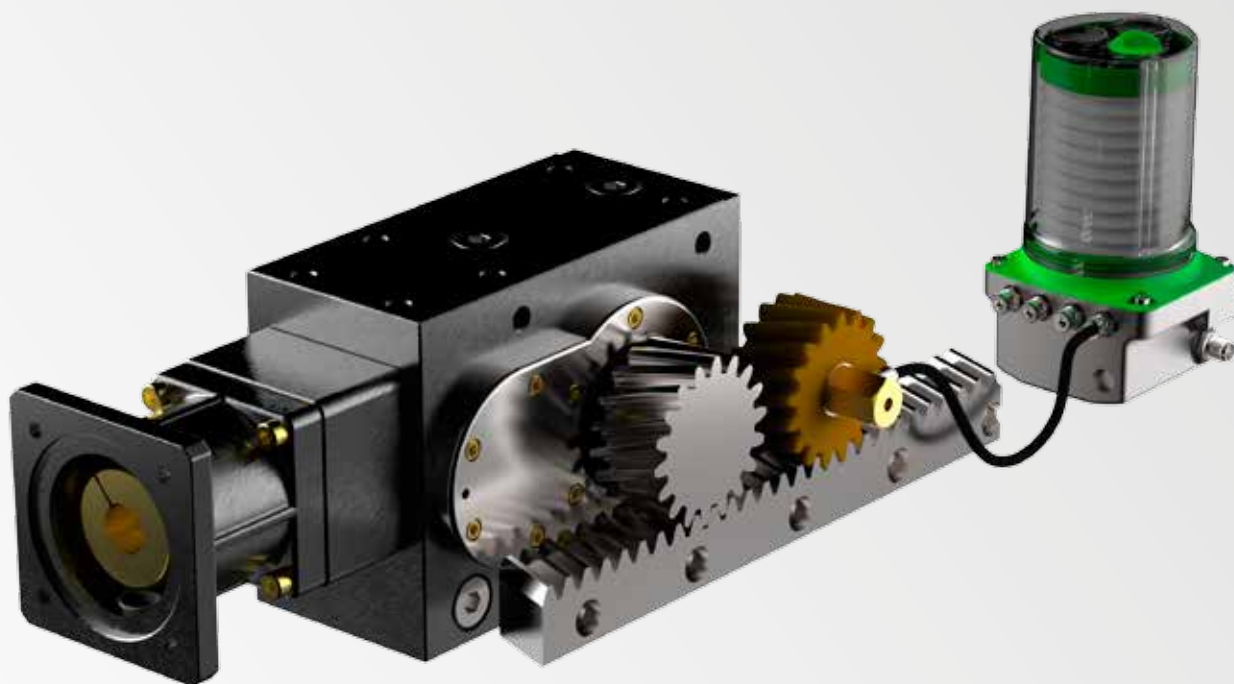
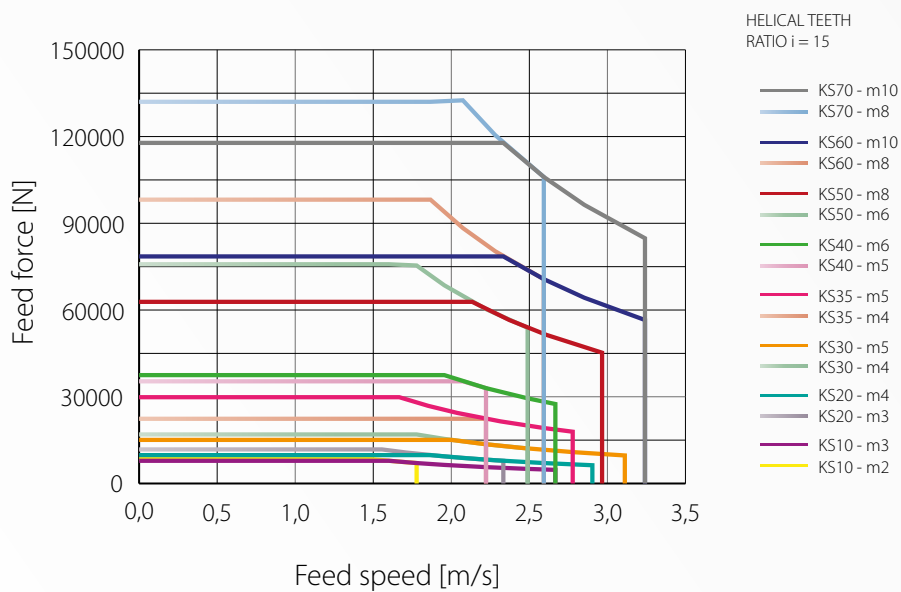




KS TWINGEAR^{SYSTEM} - FORCES AND SPEEDS with helical teeth and ratio $i=15$



KS-TWINGEAR^{SYSTEM}

KS10



TECHNICAL DATA

GEAR	Ratio i	[1]	15	20	25	30	40 ¹	50 ¹	60	75
	n _{1MAX}	[min ⁻¹]	8000							
	n _{1N}	[min ⁻¹]	on request							
	T _{2N}	[Nm]	150				110		75	
	T _{2B}	[Nm]	225				165		110	
	T _{2NOT}	[Nm]	300				220		150	
	Weight	[kg]	10							
	η ²	[%]	>92							>90

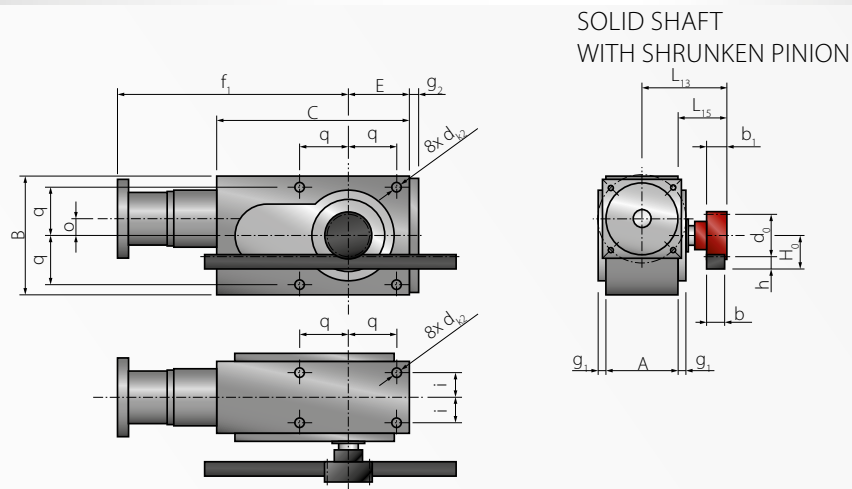
PROFESSIONAL	Module m	[mm]	STRAIGHT									HELICAL								
			2			3						2			3					
	Teeth z	[1]	25	28	30	18	20	22	25	28	30	25	28	30	18	20	22	25	28	30
	F _{vMAX} ³	[N]	2815	2567	2500	7500	6818	6250	5556	5000	4688	3506	3469	3458	7109	6460	5919	5258	4731	4434
	v _{MAX} ³	[m/s]	1,4	1,6	1,7	1,5	1,7	1,8	2,1	2,3	2,5	1,5	1,7	1,8	1,6	1,8	2,0	2,2	2,5	2,7
	T _{2N} ¹	[Nm]	75	76	78	150	150	150	150	150	150	98	108	114	150	150	150	150	150	150
	T _{2B} ¹	[Nm]	76	77	80	225	225	225	225	225	225	100	110	117	225	225	225	225	225	225
	T _{2NOT} ¹	[Nm]	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
	P _{A MAX}	[μm]	211	216	220	214	220	228	237	245	250	211	216	220	214	223	228	237	245	250
	P _{R MAX}	[μm]	46	51	55	49	55	60	69	77	82	46	51	55	49	55	60	69	77	82

ULTIMATE	Module m	[mm]	STRAIGHT									HELICAL								
			2			3						2			3					
	Teeth z	[1]	25	28	30	18	20	22	25	28	30	25	28	30	18	20	22	25	28	30
	F _{vMAX} ³	[N]	6680	6714	6700	8333	7500	6818	6000	5357	5000	7841	7573	7069	7854	7069	6426	5655	5049	4712
	v _{MAX} ³	[m/s]	1,4	1,6	1,7	1,5	1,7	1,8	2,1	2,3	2,5	1,5	1,7	1,8	1,6	1,8	2,0	2,2	2,5	2,7
	T _{2N} ¹	[Nm]	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
	T _{2B} ¹	[Nm]	167	188	201	225	225	225	225	225	225	208	225	225	225	225	225	225	225	225
	T _{2NOT} ¹	[Nm]	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
	P _{A MAX}	[μm]	99	104	108	102	108	116	125	133	138	99	104	108	102	111	116	125	133	138
	P _{R MAX}	[μm]	46	51	55	49	55	60	69	77	82	46	51	55	49	55	60	69	77	82

ULTIMATE ^{PLUS}	Module m	[mm]	STRAIGHT									HELICAL								
			2			3						2			3					
	Teeth z	[1]	25	28	30	18	20	22	25	28	30	25	28	30	18	20	22	25	28	30
	F _{vMAX} ³	[N]	6680	6714	6700	8333	7500	6818	6000	5357	5000	7841	7573	7069	7854	7069	6426	5655	5049	4712
	v _{MAX} ³	[m/s]	1,4	1,6	1,7	1,5	1,7	1,8	2,1	2,3	2,5	1,5	1,7	1,8	1,6	1,8	2,0	2,2	2,5	2,7
	T _{2N} ¹	[Nm]	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
	T _{2B} ¹	[Nm]	167	188	201	225	225	225	225	225	225	208	225	225	225	225	225	225	225	225
	T _{2NOT} ¹	[Nm]	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
	P _{A MAX}	[μm]	87	92	96	91	96	104	111	119	124	87	92	96	91	99	104	111	119	124
	P _{R MAX}	[μm]	42	47	51	46	51	56	63	71	76	42	47	51	46	51	56	63	71	76

An explanation of how to use the tables can be found on pages 4-7.

DIMENSIONS



Module m		[mm]	2			3					
Teeth z		[1]	25	28	30	18	20	22	25	28	30
A		[mm]	75			75					
b		[mm]	24			29					
b ₁		[mm]	25			30					
B		[mm]	110			110					
C		[mm]	147,5			147,5					
d ₀	straight helical	[mm]	50	56	60	54	60	66	75	84	90
		[mm]	53,05	59,42	63,66	57,30	63,66	70,03	79,58	89,13	95,49
d _{k2}		[mm]	M8			M8					
E		[mm]	55			55					
g ₁		[mm]	10,5			10,5					
g ₂		[mm]	10,5			10,5					
h		[mm]	22			26					
H ₀	straight helical	[mm]	47	50	52	53	56	59	64	68	71
		[mm]	48,53	51,71	53,83	54,65	57,83	61,01	65,79	70,56	73,75
i		[mm]	28			28					
L ₁₃		[mm]	100			100					
L ₁₅		[mm]	62,5			62,5					
o		[mm]	7,5			7,5					
q		[mm]	44			44					

MOTOR ATTACHMENT

Flange		V1	V2	V3	V4	V5
Shaft -Ø d ₁	[mm]	9	11	14	14	14
Shaft length l	[mm]	23	26	30	30	30
Square u ₁	[mm]	55	75	75	90	90
Pitch circle -Ø v ₁	[mm]	63	75	75	95	100
Centering-Ø w ₁	[mm]	40	60	60	50	80
Threads 4x s ₁	[mm]	M5	M5	M5	M6	M6
f ₁	[mm]	184	194	194	197	197

¹ Reduced torques apply to the ratios 40 til 75. See the gear data for additional technical details.

² For bearing lifespan and gear efficiency calculations, visit www.gearfox.com

³ Values were determined at a ratio of 15:1.

All values assume sufficient lubrication and a well adjusted tooth contact pattern. Additional axial forces reduce the torque values.

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TECHNICAL DATA

GEAR	Ratio i	[1]	15	20	25	30	40 ¹	50 ¹	60	75
	n _{1MAX}	[min ⁻¹]	7000							
	n _{1N}	[min ⁻¹]	on request							
	T _{2N}	[Nm]	250				110		75	
	T _{2B}	[Nm]	375				165		110	
	T _{2NOT}	[Nm]	500				220		150	
	Weight	[kg]	16							
	η ²	[%]	>92							>90

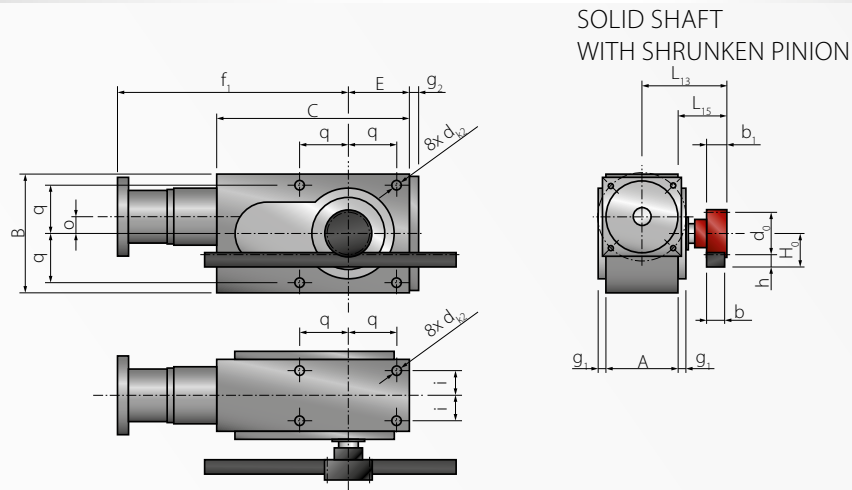
PROFESSIONAL	Module m	[mm]	STRAIGHT										HELICAL							
			3					4					3				4			
	Teeth z	[1]	20	22	25	28	18	20	22	25	28	20	22	25	28	18	20	22	25	28
	F _{vMAX} ³	[N]	8182	8056	7926	7778	9375	8523	7813	6944	6250	9647	9654	8764	7884	8887	8075	7399	6573	5913
	v _{MAX} ³	[m/s]	1,5	1,6	1,8	2,1	1,8	2,0	2,2	2,4	2,7	1,6	1,7	1,9	2,2	1,9	2,1	2,3	2,6	2,9
	T _{2N} ¹	[Nm]	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250
	T _{2B} ¹	[Nm]	270	290	321	350	375	375	375	375	375	336	367	375	375	375	375	375	375	375
	T _{2NOT} ¹	[Nm]	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
	P _{A MAX}	[μm]	211	219	226	233	224	230	236	245	546	214	219	226	233	224	230	236	249	258
	P _{R MAX}	[μm]	46	51	58	65	56	62	68	77	86	46	51	58	65	56	62	68	77	86

ULTIMATE	Module m	[mm]	STRAIGHT										HELICAL							
			3					4					3				4			
	Teeth z	[1]	20	22	25	28	18	20	22	25	28	20	22	25	28	18	20	22	25	28
	F _{vMAX} ³	[N]	12500	11364	10000	8929	10417	9375	8523	7500	6696	11781	10710	9425	8415	9817	8836	8032	7069	6311
	v _{MAX} ³	[m/s]	1,5	1,6	1,8	2,1	1,8	2,0	2,2	2,4	2,7	1,6	1,7	1,9	2,2	1,9	2,1	2,3	2,6	2,9
	T _{2N} ¹	[Nm]	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250
	T _{2B} ¹	[Nm]	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375
	T _{2NOT} ¹	[Nm]	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
	P _{A MAX}	[μm]	99	107	114	121	112	118	124	133	434	102	107	114	121	112	118	124	137	146
	P _{R MAX}	[μm]	46	51	58	65	56	62	68	77	86	46	51	58	65	56	62	68	77	86

ULTIMATE ^{PLUS}	Module m	[mm]	STRAIGHT										HELICAL							
			3					4					3				4			
	Teeth z	[1]	20	22	25	28	18	20	22	25	28	20	22	25	28	18	20	22	25	28
	F _{vMAX} ³	[N]	12500	11364	10000	8929	10417	9375	8523	7500	6696	11781	10710	9425	8415	9817	8836	8032	7069	6311
	v _{MAX} ³	[m/s]	1,5	1,6	1,8	2,1	1,8	2,0	2,2	2,4	2,7	1,6	1,7	1,9	2,2	1,9	2,1	2,3	2,6	2,9
	T _{2N} ¹	[Nm]	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250
	T _{2B} ¹	[Nm]	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375
	T _{2NOT} ¹	[Nm]	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
	P _{A MAX}	[μm]	88	95	101	108	101	107	113	121	422	91	95	101	108	101	107	113	125	134
	P _{R MAX}	[μm]	43	47	53	60	51	57	63	71	80	43	47	53	60	51	57	63	71	80

An explanation of how to use the tables can be found on pages 4-7.

DIMENSIONS



Module m		[mm]	3				4				
Teeth z		[1]	20	22	25	28	18	20	22	25	28
A		[mm]	90				90				
b		[mm]	29				39				
b ₁		[mm]	30				40				
B		[mm]	140				140				
C		[mm]	180				180				
d ₀	straight helical	[mm]	60	66	75	84	72	80	88	100	112
		[mm]	63,66	70,03	79,58	89,13	76,39	84,88	93,37	106,10	118,84
d _{k2}		[mm]	M10				M10				
E		[mm]	70				70				
g ₁		[mm]	13				13				
g ₂		[mm]	13				13				
h		[mm]	26				35				
H ₀	straight helical	[mm]	56	59	63,5	68	71	75	79	85	91
		[mm]	57,83	61,01	65,79	70,56	73,20	77,44	81,69	88,05	94,42
i		[mm]	30				30				
L ₁₃		[mm]	115				115				
L ₁₅		[mm]	70				70				
o		[mm]	9				9				
q		[mm]	55				55				

MOTOR ATTACHMENT

Flange		V1	V2	V3	V4	V5	V6	V7	V8
Shaft -Ø d ₁	[mm]	11	14	14	14	19	19	19	19
Shaft length l	[mm]	26	30	30	30	40	40	40	40
Square u ₁	[mm]	75	75	90	90	90	90	115	115
Pitch circle -Ø v ₁	[mm]	75	75	95	100	95	100	130	115
Centering-Ø w ₁	[mm]	60	60	70	80	70	80	95	95
Threads 4x s ₁	[mm]	M5	M5	M6	M6	M8	M8	M8	M8
f ₁	[mm]	232	232	232	232	244	244	244	244

¹ Reduced torques apply to the ratios 40 til 75. See the gear data for additional technical details.

² For bearing lifespan and gear efficiency calculations, visit www.gearfox.com

³ Values were determined at a ratio of 15:1.

All values assume sufficient lubrication and a well adjusted tooth contact pattern. Additional axial forces reduce the torque values.

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TECHNICAL DATA

GEAR	Ratio i	[1]	15	20	25	30	40 ¹	50 ¹	60	75
	n _{1MAX}	[min ⁻¹]	6000							
	n _{1N}	[min ⁻¹]	on request							
	T _{2N}	[Nm]	480				360		250	
	T _{2B}	[Nm]	720				540		375	
	T _{2NOT}	[Nm]	960				720		500	
	Weight	[kg]	27							
	n ²	[%]	>92							>90

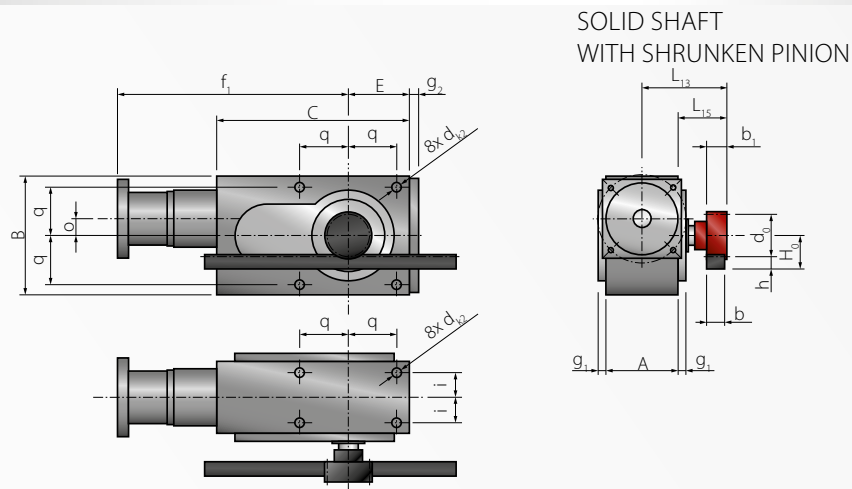
PROFESSIONAL	Module m	[mm]	STRAIGHT										HELICAL							
			4					5					4				5			
	Teeth z	[1]	20	22	25	28	18	20	22	25	28	20	22	25	28	18	20	22	25	28
	F _{vMAX} ³	[N]	16273	15000	13333	12000	14400	13091	12000	10667	9600	15503	14205	12620	11353	13650	12403	11364	10096	9083
	v _{MAX} ³	[m/s]	1,7	1,8	2,1	2,3	1,9	2,1	2,3	2,6	2,9	1,8	2,0	2,2	2,5	2,0	2,2	2,4	2,8	3,1
	T _{2N} ¹	[Nm]	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480
	T _{2B} ¹	[Nm]	716	720	720	720	720	720	720	720	720	720	720	720	720	720	720	720	720	720
	T _{2NOT} ¹	[Nm]	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960
	P _{A MAX}	[μm]	224	229	238	250	255	262	269	279	290	224	229	242	250	255	262	269	279	290
	P _{R MAX}	[μm]	56	61	70	78	63	70	77	87	98	56	61	70	78	63	70	77	87	98

ULTIMATE	Module m	[mm]	STRAIGHT										HELICAL							
			4					5					4				5			
	Teeth z	[1]	20	22	25	28	18	20	22	25	28	20	22	25	28	18	20	22	25	28
	F _{vMAX} ³	[N]	18000	16364	14400	12857	16000	14400	13091	11520	10286	16965	15422	13572	12118	15080	13572	12338	10857	9694
	v _{MAX} ³	[m/s]	1,7	1,8	2,1	2,3	1,9	2,1	2,3	2,6	2,9	1,8	2,0	2,2	2,5	2,0	2,2	2,4	2,8	3,1
	T _{2N} ¹	[Nm]	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480
	T _{2B} ¹	[Nm]	720	720	720	720	720	720	720	720	720	720	720	720	720	720	720	720	720	720
	T _{2NOT} ¹	[Nm]	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960
	P _{A MAX}	[μm]	112	117	126	138	127	134	141	151	162	112	117	130	138	127	134	141	151	162
	P _{R MAX}	[μm]	56	61	70	78	63	70	77	87	98	56	61	70	78	63	70	77	87	98

ULTIMATE ^{PLUS}	Module m	[mm]	STRAIGHT										HELICAL							
			4					5					4				5			
	Teeth z	[1]	20	22	25	28	18	20	22	25	28	20	22	25	28	18	20	22	25	28
	F _{vMAX} ³	[N]	18000	16364	14400	12857	16000	14400	13091	11520	10286	16965	15422	13572	12118	15080	13572	12338	10857	9694
	v _{MAX} ³	[m/s]	1,7	1,8	2,1	2,3	1,9	2,1	2,3	2,6	2,9	1,8	2,0	2,2	2,5	2,0	2,2	2,4	2,8	3,1
	T _{2N} ¹	[Nm]	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480
	T _{2B} ¹	[Nm]	720	720	720	720	720	720	720	720	720	720	720	720	720	720	720	720	720	720
	T _{2NOT} ¹	[Nm]	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960
	P _{A MAX}	[μm]	101	106	114	126	112	118	124	134	144	101	106	118	126	112	118	124	134	144
	P _{R MAX}	[μm]	51	56	64	72	58	64	70	80	90	51	56	64	72	58	64	70	80	90

An explanation of how to use the tables can be found on pages 4-7.

DIMENSIONS



Module m		[mm]	4				5				
Teeth z		[1]	20	22	25	28	18	20	22	25	28
A		[mm]	110				110				
b		[mm]	39				49				
b ₁		[mm]	40				50				
B		[mm]	170				170				
C		[mm]	222				222				
d ₀	straight helical	[mm]	80	88	100	112	90	100	110	125	140
		[mm]	84,88	93,37	106,10	118,84	95,49	106,10	116,71	132,63	148,54
d _{k2}		[mm]	M12				M12				
E		[mm]	85				85				
g ₁		[mm]	13				13				
g ₂		[mm]	13				13				
h		[mm]	35				34				
H ₀	straight helical	[mm]	75	79	85	91	79	84	89	97	104
		[mm]	77,44	81,69	88,05	94,42	81,75	87,05	92,36	100,31	108,27
i		[mm]	37				37				
L ₁₃		[mm]	140				140				
L ₁₅		[mm]	85				85				
o		[mm]	14				14				
q		[mm]	67				67				

MOTOR ATTACHMENT

Flange		V1	V2	V3	V4	V5	V6	V7	V8	V9
Shaft -Ø d ₁	[mm]	14	14	19	19	19	19	24	24	24
Shaft length l	[mm]	30	30	40	40	40	40	50	50	50
Square u ₁	[mm]	90	90	90	115	115	115	115	140	140
Pitch circle -Ø v ₁	[mm]	100	95	100	130	115	130	130	165	165
Centering-Ø w ₁	[mm]	80	80	80	95	95	110	110	110	130
Threads 4x s ₁	[mm]	M6	M6	M6	M8	M8	M8	M10	M10	M10
f ₁	[mm]	281	281	281	281	281	281	291	291	291

¹ Reduced torques apply to the ratios 40 til 75. See the gear data for additional technical details.

² For bearing lifespan and gear efficiency calculations, visit www.gearfox.com

³ Values were determined at a ratio of 15:1.

All values assume sufficient lubrication and a well adjusted tooth contact pattern. Additional axial forces reduce the torque values.

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TECHNICAL DATA

GEAR	Ratio i	[1]	15	20	25	30	40 ¹	50 ¹	60	75
	n _{1MAX}	[min ⁻¹]	5000							
	n _{1N}	[min ⁻¹]	on request							
	T _{2N}	[Nm]	950				700		475	
	T _{2B}	[Nm]	1425				1050		710	
	T _{2NOT}	[Nm]	1900				1400		950	
	Weight	[kg]	52							
	n ²	[%]	>92							>90

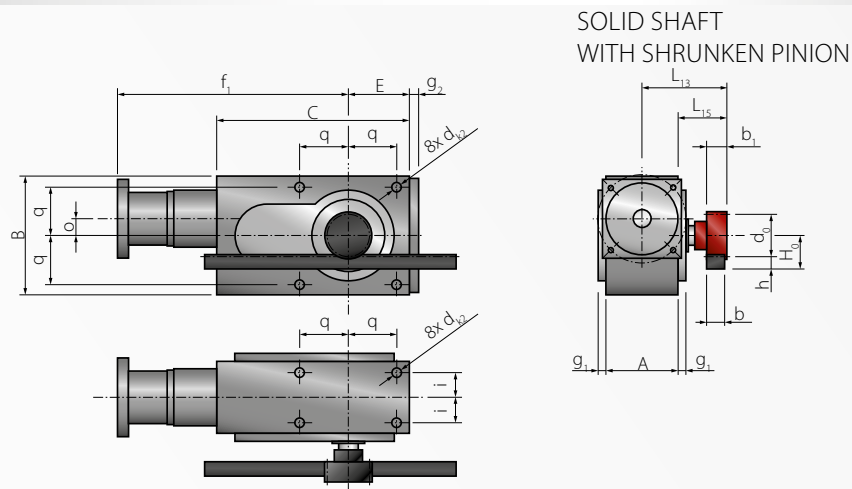
PROFESSIONAL	Module m	[mm]	STRAIGHT							HELICAL						
	Teeth z	[1]	4	5						4	5					
	F ³ _{vMAX}	[N]	30	18	20	22	25	28	30	30	18	20	22	25	28	30
	v ³ _{MAX}	[m/s]	16359	28500	25909	23750	21111	19000	17813	20011	27016	24547	22492	19982	17976	16848
	T ¹ _{2N}	[Nm]	2,1	1,6	1,7	1,9	2,2	2,4	2,6	2,2	1,7	1,9	2,0	2,3	2,6	2,8
	T ¹ _{2B}	[Nm]	910	950	950	950	950	950	950	950	950	950	950	950	950	950
	T ¹ _{2NOT}	[Nm]	1047	1425	1425	1425	1425	1425	1425	1354	1425	1425	1425	1425	1425	1425
	P _{A MAX}	[μm]	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
	P _{R MAX}	[μm]	256	255	262	269	279	290	297	256	255	262	269	279	290	297
		[μm]	84	63	70	77	87	98	105	84	63	70	77	87	98	105

ULTIMATE	Module m	[mm]	STRAIGHT							HELICAL						
			4	5						4	5					
	Teeth z	[1]	30	18	20	22	25	28	30	30	18	20	22	25	28	30
	F ³ _{vMAX}	[N]	23750	31667	28500	25909	22800	20357	19000	22384	29845	26861	24419	21488	19186	17907
	V ³ _{MAX}	[m/s]	2,1	1,6	1,7	1,9	2,2	2,4	2,6	2,2	1,7	1,9	2,0	2,3	2,6	2,8
	T ¹ _{2N}	[Nm]	950	950	950	950	950	950	950	950	950	950	950	950	950	950
	T ¹ _{2B}	[Nm]	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
	T ¹ _{2NOT}	[Nm]	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
	P _{A MAX}	[μm]	144	127	134	141	151	162	169	144	127	134	141	151	162	169
	P _{R MAX}	[μm]	84	63	70	77	87	98	105	84	63	70	77	87	98	105

ULTIMATE ^{PLUS}	Module m	[mm]	STRAIGHT							HELICAL						
			4	5						4	5					
	Teeth z	[1]	30	18	20	22	25	28	30	30	18	20	22	25	28	30
	F ³ _{vMAX}	[N]	23750	31667	28500	25909	22800	20357	19000	22384	29845	26861	24419	21488	19186	17907
	v ³ _{MAX}	[m/s]	2,1	1,6	1,7	1,9	2,2	2,4	2,6	2,2	1,7	1,9	2,0	2,3	2,6	2,8
	T ¹ _{2N}	[Nm]	950	950	950	950	950	950	950	950	950	950	950	950	950	950
	T ¹ _{2B}	[Nm]	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
	T ¹ _{2NOT}	[Nm]	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
	P _A MAX	[μm]	133	113	119	126	136	146	152	133	113	119	126	136	146	152
	P _R MAX	[μm]	79	59	65	72	82	92	98	79	59	65	72	82	92	98

An explanation of how to use the tables can be found on pages 4-7.

DIMENSIONS



Module m		[mm]	4	5					
Teeth z		[1]	30	18	20	22	25	28	30
A		[mm]	140	140					
b		[mm]	39	49					
b ₁		[mm]	40	50					
B		[mm]	210	210					
C		[mm]	275	275					
d ₀	straight	[mm]	120	90	100	110	125	140	150
	helical	[mm]	127,32	95,49	106,10	116,71	132,63	148,54	159,16
d _{k2}		[mm]	M16	M16					
E		[mm]	105	105					
g ₁		[mm]	16	16					
g ₂		[mm]	16	16					
h		[mm]	35	34					
H ₀	straight	[mm]	95	79	84	89	97	104	109
	helical	[mm]	98,66	81,75	87,05	92,36	100,31	108,27	113,58
i		[mm]	50	50					
L ₁₃		[mm]	174	174					
L ₁₅		[mm]	104	104					
o		[mm]	18	18					
q		[mm]	85	85					

MOTOR ATTACHMENT

Flange		V1	V2	V3	V4	V5	V6	V7	V8
Shaft -Ø d ₁	[mm]	19	19	24	24	24	32	32	32
Shaft length l	[mm]	40	40	50	50	50	60	60	60
Square u ₁	[mm]	115	115	115	140	140	140	190	190
Pitch circle -Ø v ₁	[mm]	115	130	130	165	165	165	215	215
Centering-Ø w ₁	[mm]	95	95	110	110	130	130	180	130
Threads 4x s ₁	[mm]	M8	M8	M8	M10	M10	M10	M12	M12
f ₁	[mm]	337	337	352	352	352	362	362	362

¹ Reduced torques apply to the ratios 40 til 75. See the gear data for additional technical details.

² For bearing lifespan and gear efficiency calculations, visit www.gearfox.com

³ Values were determined at a ratio of 15:1.

All values assume sufficient lubrication and a well adjusted tooth contact pattern. Additional axial forces reduce the torque values.

KS-TWINGEAR^{SYSTEM}

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TECHNICAL DATA

GEAR	Ratio i	[1]	15	20	25	30	40 ¹	50 ¹	60	75
	n _{1MAX}	[min ⁻¹]	4000							
	n _{1N}	[min ⁻¹]	on request							
	T _{2N}	[Nm]	1750				1300		900	
	T _{2B}	[Nm]	2625				1950		1350	
	T _{2NOT}	[Nm]	3500				2600		1800	
	Weight	[kg]	75							
	η ²	[%]	>92							>90

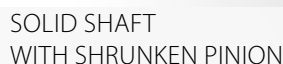
PROFESSIONAL	Module m	[mm]	STRAIGHT						HELICAL					
			5		6				5		6			
	Teeth z	[1]	28	30	22	25	28	30	28	30	22	25	28	30
	F _{vMAX} ³	[N]	31347	31175	36458	32407	29167	27344	33114	31037	34527	30674	27595	25864
	v _{MAX} ³	[m/s]	2,0	2,1	1,8	2,1	2,3	2,5	2,1	2,2	2,0	2,2	2,5	2,7
	T _{2N} ¹	[Nm]	1610	1650	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
	T _{2B} ¹	[Nm]	2351	2494	2625	2625	2625	2625	2625	2625	2625	2625	2625	2625
	T _{2NOT} ¹	[Nm]	3220	3300	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500
	P _{A MAX}	[μm]	261	266	257	270	279	285	261	266	261	270	279	285
	P _{R MAX}	[μm]	69	74	65	74	83	89	69	74	65	74	83	89

ULTIMATE	Module m	[mm]	STRAIGHT						HELICAL					
			5		6				5		6			
	Teeth z	[1]	28	30	22	25	28	30	28	30	22	25	28	30
	F _{vMAX} ³	[N]	37500	35000	39773	35000	31250	29167	35343	32987	37485	32987	29452	27489
	v _{MAX} ³	[m/s]	2,0	2,1	1,8	2,1	2,3	2,5	2,1	2,2	2,0	2,2	2,5	2,7
	T _{2N} ¹	[Nm]	1610	1650	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
	T _{2B} ¹	[Nm]	2625	2625	2625	2625	2625	2625	2625	2625	2625	2625	2625	2625
	T _{2NOT} ¹	[Nm]	3220	3300	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500
	P _{A MAX}	[μm]	133	138	129	142	151	157	133	138	133	142	151	157
	P _{R MAX}	[μm]	69	74	65	74	83	89	69	74	65	74	83	89

ULTIMATE ^{PLUS}	Module m	[mm]	STRAIGHT						HELICAL					
			5		6				5		6			
	Teeth z	[1]	28	30	22	25	28	30	28	30	22	25	28	30
	F _{vMAX} ³	[N]	37500	35000	39773	35000	31250	29167	35343	32987	37485	32987	29452	27489
	v _{MAX} ³	[m/s]	2,0	2,1	1,8	2,1	2,3	2,5	2,1	2,2	2,0	2,2	2,5	2,7
	T _{2N} ¹	[Nm]	1610	1650	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
	T _{2B} ¹	[Nm]	2625	2625	2625	2625	2625	2625	2625	2625	2625	2625	2625	2625
	T _{2NOT} ¹	[Nm]	3220	3300	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500
	P _{A MAX}	[μm]	119	124	115	128	136	142	119	124	119	128	136	142
	P _{R MAX}	[μm]	65	70	61	70	78	84	65	70	61	70	78	84

An explanation of how to use the tables can be found on pages 4-7.

DIMENSIONS



MOTOR ATTACHMENT

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KS-TWINGEAR^{SYSTEM}

KS50



TECHNICAL DATA

GEAR	Ratio i	[1]	15	20	25	30	40 ¹	50 ¹	60	75
	n _{1MAX}	[min ⁻¹]	4000							
	n _{1N}	[min ⁻¹]	on request							
	T _{2N}	[Nm]	3200				3200		2550	
	T _{2B}	[Nm]	4800				4800		3825	
	T _{2NOT}	[Nm]	6400				6400		5100	
	Weight	[kg]	115							
	η ²	[%]	>92							>90

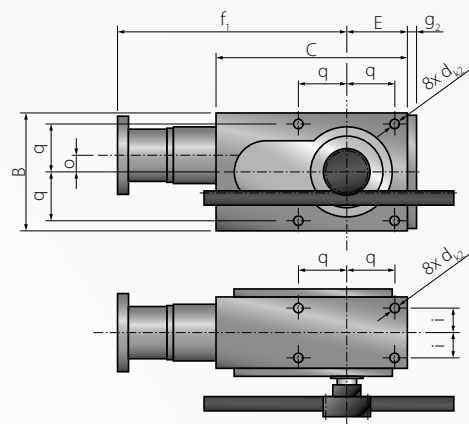
PROFESSIONAL	Module m	[mm]	STRAIGHT										HELICAL							
			6					8					6				8			
	Teeth z	[1]	18	20	22	25	28	18	20	22	25	18	20	22	25	28	18	20	22	25
	F _{vMAX} ³	[N]	50517	49379	49264	48975	48689	60000	54545	50000	44444	60257	55683	56032	56089	50459	56876	51678	47351	42067
	v _{MAX} ³	[m/s]	1,5	1,7	1,8	2,1	2,3	2,0	2,2	2,5	2,8	1,6	1,8	2,0	2,2	2,5	2,1	2,4	2,6	3,0
	T _{2N} ¹	[Nm]	2558	2792	3029	3200	3200	3200	3200	3200	3200	3019	3200	3200	3200	3200	3200	3200	3200	3200
	T _{2B} ¹	[Nm]	3031	3259	3547	3967	4382	4800	4800	4800	4800	3814	3879	4260	4800	4800	4800	4800	4800	4800
	T _{2NOT} ¹	[Nm]	6300	6300	6300	6300	6300	6300	6300	6300	6300	6301	6302	6303	6300	6300	6400	6400	6400	6400
	P _{A MAX}	[μm]	254	261	267	277	286	273	282	291	304	250	257	267	277	286	273	282	291	308
	P _{R MAX}	[μm]	58	65	71	81	90	77	86	95	108	58	65	71	81	90	77	86	95	108

ULTIMATE	Module m	[mm]	STRAIGHT										HELICAL							
			6					8					6				8			
	Teeth z	[1]	18	20	22	25	28	18	20	22	25	18	20	22	25	28	18	20	22	25
	F _{vMAX} ³	[N]	60185	58600	58788	59027	57143	66667	60000	54545	48000	75800	71251	68544	60318	53856	62832	56549	51408	45239
	v _{MAX} ³	[m/s]	1,5	1,7	1,8	2,1	2,3	2,0	2,2	2,5	2,8	1,6	1,8	2,0	2,2	2,5	2,1	2,4	2,6	3,0
	T _{2N} ¹	[Nm]	2821	3146	3200	3200	3200	3200	3200	3200	3200	3200	3200	3200	3200	3200	3200	3200	3200	3200
	T _{2B} ¹	[Nm]	3250	3516	3880	4427	4800	4800	4800	4800	4800	4343	4536	4800	4800	4800	4800	4800	4800	4800
	T _{2NOT} ¹	[Nm]	6300	6300	6300	6300	6300	6301	6302	6303	6304	6300	6300	6300	6300	6300	6301	6302	6303	6304
	P _{A MAX}	[μm]	126	133	139	149	158	145	154	163	176	122	129	139	149	158	145	154	163	180
	P _{R MAX}	[μm]	58	65	71	81	90	77	86	95	108	58	65	71	81	90	77	86	95	108

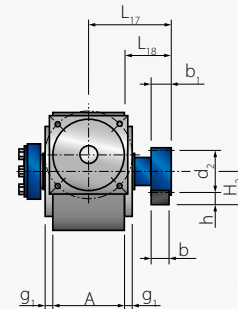
ULTIMATE ^{PLUS}	Module m	[mm]	STRAIGHT										HELICAL							
			6					8					6				8			
	Teeth z	[1]	18	20	22	25	28	18	20	22	25	18	20	22	25	28	18	20	22	25
	F _{vMAX} ³	[N]	60185	58600	58788	59027	57143	66667	60000	54545	48000	75800	71251	68544	60318	53856	62832	56549	51408	45239
	v _{MAX} ³	[m/s]	1,5	1,7	1,8	2,1	2,3	2,0	2,2	2,5	2,8	1,6	1,8	2,0	2,2	2,5	2,1	2,4	2,6	3,0
	T _{2N} ¹	[Nm]	2821	3146	3200	3200	3200	3200	3200	3200	3200	3200	3200	3200	3200	3200	3200	3200	3200	3200
	T _{2B} ¹	[Nm]	3250	3516	3880	4427	4800	4800	4800	4800	4800	4343	4536	4800	4800	4800	4800	4800	4800	4800
	T _{2NOT} ¹	[Nm]	6300	6300	6300	6300	6300	6301	6302	6303	6304	6300	6300	6300	6300	6300	6301	6302	6303	6304
	P _{A MAX}	[μm]	113	119	125	134	144	131	139	148	160	109	115	125	134	144	134	142	151	167
	P _{R MAX}	[μm]	55	61	67	76	86	73	81	90	102	55	61	67	76	86	73	81	90	102

An explanation of how to use the tables can be found on pages 4-7.

DIMENSIONS



PINION SHAFT WITH SHRINK DISC



Module m		[mm]	6					8			
Teeth z		[1]	18	20	22	25	28	18	20	22	25
A		[mm]	210					210			
b		[mm]	59					79			
b ₁		[mm]	60					80			
B		[mm]	280					280			
C		[mm]	383					383			
d ₂	straight helical	[mm]	108	120	132	150	168	144	160	176	200
		[mm]	114,59	127,32	140,06	159,16	178,25	152,79	169,77	186,74	212,21
d _{k2}		[mm]	M16					M16			
E		[mm]	140					140			
g ₁		[mm]	16					16			
g ₂		[mm]	23					23			
h		[mm]	43					43			
H ₂	straight helical	[mm]	97	103	109	118	127	143	151	159	171
		[mm]	100,30	106,66	113,03	122,58	132,13	147,39	155,88	164,37	177,1
i		[mm]	75					75			
L ₁₇		[mm]	254					254			
L ₁₈		[mm]	149					149			
o		[mm]	32					32			
q		[mm]	110					110			

MOTOR ATTACHMENT

Flange		V1	V2	V3	V4
Shaft -Ø d ₁	[mm]	32	32	38	48
Shaft length l	[mm]	60	60	80	85
Square u ₁	[mm]	190	190	190	260
Pitch circle -Ø v ₁	[mm]	215	215	215	300
Centering-Ø w ₁	[mm]	180	130	180	250
Threads 4x s ₁	[mm]	M12	M12	M12	M16
f ₁	[mm]	481	481	490	490

¹ Reduced torques apply to the ratios 40 til 75. See the gear data for additional technical details.

² For bearing lifespan and gear efficiency calculations, visit www.gearfox.com

³ Values were determined at a ratio of 15:1.

All values assume sufficient lubrication and a well adjusted tooth contact pattern.

The force transmission in the system relies on the usage of a shrink disc. Additional axial forces reduce the torque values.

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TECHNICAL DATA

GEAR	Ratio i	[1]	15	20	25	30	40 ¹	50 ¹	60	75
	n _{1MAX}	[min ⁻¹]	3500							
	n _{1N}	[min ⁻¹]	on request							
	T _{2N}	[Nm]	5000				5000		4050	
	T _{2B}	[Nm]	7500				7500		6075	
	T _{2NOT}	[Nm]	10000				1000		8100	
	Weight	[kg]	190							
	n ²	[%]	>92							>90

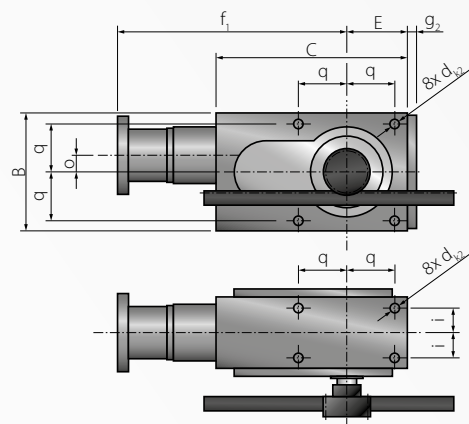
PROFESSIONAL	Module m	[mm]	STRAIGHT								HELICAL							
			8				10				8				10			
	Teeth z	[1]	18	20	22	25	18	20	22	25	18	20	22	25	18	20	22	25
	F _{vMAX} ³	[N]	89975	84420	78125	69444	75000	68182	62500	55556	88868	80747	73986	65730	71095	64598	59188	52584
	v _{MAX} ³	[m/s]	1,8	2,0	2,2	2,4	2,2	2,4	2,7	3,1	1,9	2,1	2,3	2,6	2,3	2,6	2,9	3,2
	T _{2N} ¹	[Nm]	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000
	T _{2B} ¹	[Nm]	7198	7429	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500
	T _{2NOT} ¹	[Nm]	8900	8900	8900	8900	8900	8900	8900	8900	8900	8900	8900	8900	8900	8900	8900	8900
	P _{A MAX}	[μm]	250	257	263	272	268	276	283	295	250	257	263	276	288	296	303	315
	P _{R MAX}	[μm]	54	61	67	76	68	76	83	95	54	61	67	76	68	76	83	95

ULTIMATE	Module m	[mm]	STRAIGHT								HELICAL							
			8				10				8				10			
	Teeth z	[1]	18	20	22	25	18	20	22	25	18	20	22	25	18	20	22	25
	F _{vMAX} ³	[N]	104167	93750	85227	75000	83333	75000	68182	60000	98175	88357	80325	70686	78540	70686	64260	56549
	v _{MAX} ³	[m/s]	1,8	2,0	2,2	2,4	2,2	2,4	2,7	3,1	1,9	2,1	2,3	2,6	2,3	2,6	2,9	3,2
	T _{2N} ¹	[Nm]	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000
	T _{2B} ¹	[Nm]	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500
	T _{2NOT} ¹	[Nm]	8900	8900	8900	8900	8900	8900	8900	8900	8900	8900	8900	8900	8900	8900	8900	8900
	P _{A MAX}	[μm]	122	129	135	144	140	148	155	167	122	129	135	148	144	152	159	171
	P _{R MAX}	[μm]	54	61	67	76	68	76	83	95	54	61	67	76	68	76	83	95

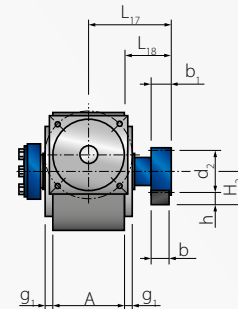
ULTIMATE ^{PLUS}	Module m	[mm]	STRAIGHT								HELICAL							
			8				10				8				10			
	Teeth z	[1]	18	20	22	25	18	20	22	25	18	20	22	25	18	20	22	25
	F _{vMAX} ³	[N]	104167	93750	85227	75000	83333	75000	68182	60000	98175	88357	80325	70686	78540	70686	64260	56549
	v _{MAX} ³	[m/s]	1,8	2,0	2,2	2,4	2,2	2,4	2,7	3,1	1,9	2,1	2,3	2,6	2,3	2,6	2,9	3,2
	T _{2N} ¹	[Nm]	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000
	T _{2B} ¹	[Nm]	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500
	T _{2NOT} ¹	[Nm]	8900	8900	8900	8900	8900	8900	8900	8900	8900	8900	8900	8900	8900	8900	8900	8900
	P _{A MAX}	[μm]	108	114	119	128	125	132	139	149	111	117	122	135	128	135	142	152
	P _{R MAX}	[μm]	50	56	61	70	63	70	77	87	50	56	61	70	63	70	77	87

An explanation of how to use the tables can be found on pages 4-7.

DIMENSIONS



PINION SHAFT WITH SHRINK DISC



Module m	[mm]	8				10			
Teeth z	[1]	18	20	22	25	18	20	22	25
A	[mm]	240				240			
b	[mm]	79				99			
b ₁	[mm]	80				100			
B	[mm]	360				360			
C	[mm]	475				475			
d ₂	straight [mm]	144	160	176	200	180	200	220	250
	helical [mm]	152,79	169,77	186,74	212,21	190,99	212,21	233,43	265,26
d _{k2}	[mm]	M20				M20			
E	[mm]	180				180			
g ₁	[mm]	18				18			
g ₂	[mm]	25				25			
h	[mm]	71				71			
H ₂	straight [mm]	143	151	159	171	179	189	199	214
	helical [mm]	147,39	155,88	164,37	177,10	184,49	195,10	205,71	221,63
i	[mm]	80				80			
L ₁₇	[mm]	301				301			
L ₁₈	[mm]	181				181			
o	[mm]	38				38			
q	[mm]	140				140			

MOTOR ATTACHMENT

Flange		V1	V2	V3	V4
Shaft -Ø d ₁	[mm]	32	32	38	48
Shaft length l	[mm]	60	60	80	85
Square u ₁	[mm]	190	190	190	260
Pitch circle -Ø v ₁	[mm]	215	215	215	300
Centering-Ø w ₁	[mm]	180	130	180	250
Threads 4x s ₁	[mm]	M12	M12	M12	M16
f ₁	[mm]	558	558	568	568

¹ Reduced torques apply to the ratios 40 til 75. See the gear data for additional technical details.

² For bearing lifespan and gear efficiency calculations, visit www.gearfox.com

³ Values were determined at a ratio of 15:1.

All values assume sufficient lubrication and a well adjusted tooth contact pattern.

The force transmission in the system relies on the usage of a shrink disc. Additional axial forces reduce the torque values.

KS-TWINGEAR^{SYSTEM}

KS70



TECHNICAL DATA

GEAR	Ratio i	[1]	15	20	25	30	40 ¹	50 ¹	60	75
	n _{1MAX}	[min ⁻¹]	3500							
	n _{1N}	[min ⁻¹]	on request							
	T _{2N}	[Nm]	7500				7500		5100	
	T _{2B}	[Nm]	11250				11250		7650	
	T _{2NOT}	[Nm]	15000				15000		10200	
	Weight	[kg]	300							
	η ²	[%]	>92							>90

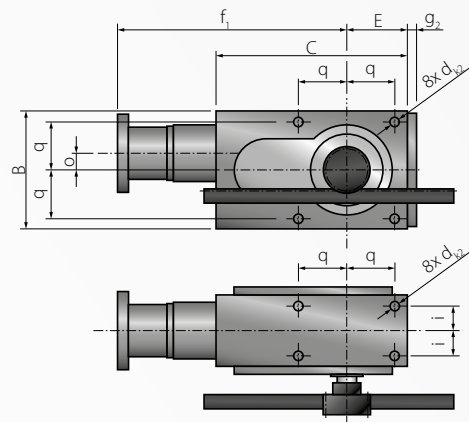
PROFESSIONAL			STRAIGHT							HELICAL						
	Module m	[mm]	8				10			8				10		
	Teeth z	[1]	18	20	22	25	18	20	22	18	20	22	25	18	20	22
	F _{vMAX} ³	[N]	89975	84420	84073	83519	112500	102273	93750	107199	103012	103718	98595	106642	96896	88783
	V _{MAX} ³	[m/s]	1,8	2,0	2,2	2,4	2,2	2,4	2,7	1,9	2,1	2,3	2,6	2,3	2,6	2,9
	T _{2N} ¹	[Nm]	6264	6731	7301	7500	7500	7500	7500	7351	7500	7500	7500	7500	7500	7500
	T _{2B} ¹	[Nm]	7198	7429	8071	9020	11250	11250	11250	9047	9568	10514	11250	11250	11250	11250
	T _{2NOT} ¹	[Nm]	13998	15000	15000	15000	15000	15000	15000	15000	15000	15000	15000	15000	15000	15000
	P _{A MAX}	[μm]	242	247	252	260	258	260	266	242	247	252	264	278	284	290
	P _{R MAX}	[μm]	46	51	56	64	58	64	70	46	51	56	64	58	64	70

ULTIMATE	Module m	[mm]	STRAIGHT							HELICAL						
	Teeth z	[1]	8				10			8				10		
	F _{vMAX} ³	[N]	18	20	22	25	18	20	22	18	20	22	25	18	20	22
	V _{MAX} ³	[m/s]	104792	105000	105330	105720	125000	112500	102273	132012	127706	120487	106029	117810	106029	96390
	T _{2N} ¹	[Nm]	1,8	2,0	2,2	2,4	2,2	2,4	2,7	1,9	2,1	2,3	2,6	2,3	2,6	2,9
	T _{2B} ¹	[Nm]	6662	7346	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500
	T _{2NOT} ¹	[Nm]	7545	8400	9269	10572	11250	11250	11250	10085	10840	11250	11250	11250	11250	11250
	P _{A MAX}	[μm]	14061	15000	15000	15000	15000	15000	15000	15000	15000	15000	15000	15000	15000	15000
	P _{R MAX}	[μm]	114	119	124	132	130	132	138	114	119	124	136	134	140	146
		[μm]	46	51	56	64	58	64	70	46	51	56	64	58	64	70

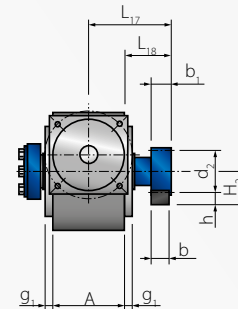
ULTIMATE ^{PLUS}			STRAIGHT							HELICAL						
	Module m	[mm]	8				10			8				10		
	Teeth z	[1]	18	20	22	25	18	20	22	18	20	22	25	18	20	22
	F ³ _{vMAX}	[N]	104792	105000	105330	105720	125000	112500	102273	132012	127706	120487	106029	117810	106029	96390
	v ³ _{MAX}	[m/s]	1,8	2,0	2,2	2,4	2,2	2,4	2,7	1,9	2,1	2,3	2,6	2,3	2,6	2,9
	T ¹ _{2N}	[Nm]	6662	7346	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500
	T ¹ _{2B}	[Nm]	7545	8400	9269	10572	11250	11250	11250	10085	10840	11250	11250	11250	11250	11250
	T ¹ _{2NOT}	[Nm]	14061	15000	15000	15000	15000	15000	15000	15000	15000	15000	15000	15000	15000	15000
	P ¹ _{A MAX}	[μm]	100	105	109	116	117	119	125	103	108	112	123	117	123	129
	P ¹ _{R MAX}	[μm]	42	47	51	58	52	58	64	42	47	51	58	52	58	64

An explanation of how to use the tables can be found on pages 4-7.

DIMENSIONS



PINION SHAFT WITH SHRINK DISC



Module m		[mm]	8				10		
Teeth z		[1]	18	20	22	25	18	20	22
A		[mm]	280				280		
b		[mm]	79				99		
b ₁		[mm]	80				100		
B		[mm]	450				450		
C		[mm]	585				585		
d ₂	straight helical	[mm]	144	160	176	200	180	200	220
		[mm]	152,79	169,77	186,74	212,21	190,99	212,21	233,43
d _{k2}		[mm]	M20				M20		
E		[mm]	225				225		
g ₁		[mm]	18				18		
g ₂		[mm]	25				25		
h		[mm]	71				89		
H ₂	straight helical	[mm]	143	151	159	171	179	189	199
		[mm]	147,39	155,88	164,37	177,10	184,49	195,10	205,71
i		[mm]	90				90		
L ₁₇		[mm]	341				341		
L ₁₈		[mm]	201				201		
o		[mm]	42				42		
q		[mm]	175				175		

MOTOR ATTACHMENT

Flange		VX
Shaft -Ø d ₁	[mm]	on request
Shaft length l	[mm]	
Square u ₁	[mm]	
Pitch circle -Ø v ₁	[mm]	
Centering-Ø w ₁	[mm]	
Threads 4x s ₁	[mm]	
f ₁	[mm]	

¹ Reduced torques apply to the ratios 40 til 75. See the gear data for additional technical details.

² For bearing lifespan and gear efficiency calculations, visit www.gearfox.com

³ Values were determined at a ratio of 15:1.

All values assume sufficient lubrication and a well adjusted tooth contact pattern.

The force transmission in the system relies on the usage of a shrink disc. Additional axial forces reduce the torque values.

KS-TWINGEAR^{SYSTEM}

ORDER KEY



KS50 - PRO - 025 - 1 3 2 04 - SG 020 17

Gear size

KS10KS-TwinGear KS10
KS20KS-TwinGear KS20
KS30KS-TwinGear KS30
KS35KS-TwinGear KS35
KS40KS-TwinGear KS40
KS50KS-TwinGear KS50
KS60KS-TwinGear KS60
KS70KS-TwinGear KS70

Precision class

PRO.....Professional
ULT.....Ultimate
ULP.....Ultimate^{PLUS}

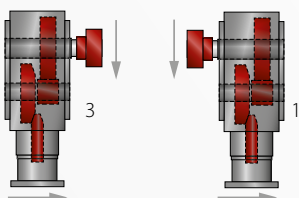
Ratio

015..... $i = 15^1$
040..... $i = 40^1$
etc.

¹ available ratios
two-stage
15, 20, 25, 30, 40, 50, 60, 75

Direction of rotation / pinion location

1.....Pinion on side 1
3.....Pinion on side 3



Max. input speed

1..... $< 250 \text{ min}^{-1}$
2..... $< 1000 \text{ min}^{-1}$
3..... $< 2000 \text{ min}^{-1}$
4..... $< 3500 \text{ min}^{-1}$
5..... $\geq 3500 \text{ min}^{-1}$

Number of teeth pinion

18, 20,, 28, 30²
² available numbers of teeth
see catalogue pages
Additional executions on request

Module

020.....Module 2
030.....Module 3
040.....Module 4
...
100.....Module 10

Pinion

SG.....Straight pinion
SS.....Helical pinion
RG.....Straight pinion shaft
RS.....Helical pinion shaft

Motor attachment

04.....V4 (V1...V9³, VX⁴)

³ See catalogue for available
flanges

⁴ More dimensions on request

Mounting position

1.....MP1
2.....MP2
3.....MP3
4.....MP4
5.....MP5
6.....MP6

