

Generate the code of your gearbox

Type Size Configuration Ratio Precision

HPG **060** **C** **I** **5** **PS**

HPG
High
Performance
Angle
Gearbox

030
045
060
090
120

Input
C

Output
1
2
3
4
5
6
7

i =
2
3
4
5
6
8
10
13.33
16
24
30
47
60

PS Standard
backlash
PR Reduced
backlash *

* PR can not be
selected in size
030

HPG 060

Input

Output

HPG 060 High performance angle gearboxes

Technical data sheet showing various views (front, side, rear, top, bottom) and dimensions for the HPG 060 gearbox. It includes a table of technical specifications and a section for the package (output flange including bearing & pinion).

Package

Package	Output flange including bearing & pinion
PS	Standard backlash
PR	Reduced backlash *

* PR can not be selected in size 030

See technical data sheets
on pages 28 et seq.

Güdel pinion

211320

Part. No.
acc. to catalogue



Example HPG 060 C-100

10. The output flange must be supported by the intermediate bearing and pinion of the output shaft.

* 12 for additional dimension

Input module gear	Pinion	Pinion	Pinion	Pinion	Pinion
Pinion 1	2	3	4	5	6
Pinion 2	7	8	9	10	11
Pinion 3	12	13	14	15	16
Pinion 4	17	18	19	20	21
Pinion 5	22	23	24	25	26
Pinion 6	27	28	29	30	31
Pinion 7	32	33	34	35	36
Pinion 8	37	38	39	40	41
Pinion 9	42	43	44	45	46
Pinion 10	47	48	49	50	51
Pinion 11	52	53	54	55	56
Pinion 12	57	58	59	60	61

Unless a pinion is
required

Request of the output flange

86

Assembly

L

Spacer elements (optional)

22

L6 Distance between pinion and housing [mm]

L5 Length output flange acc. to catalogue [mm]

R right
L left

H Height of spacer elements [mm]

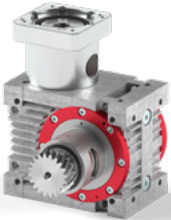
Mandatory for configuration 3, shrink disc on both sides.

Shrink disc

Your ideal drive train

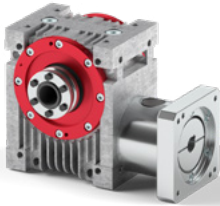
Unless a package is required (Output flange including bearing & pinion)

Unless spacer elements are required



Example
HPG 060_CI_5_PS_21 I 320_86_53_22

Motor



Example
HPG 060_CI_5_PS

Order reference

Choose your appropriate motor interface

Motor fixing diameter

R130

d9

S110

t3.5

d24

L50

F

Motor mounting diameter

d9

S110

t3.5

d24

L50

F

Motor output shaft dimensions

d9

S110

t3.5

d24

L50

F

Motor interface

d9

S110

t3.5

d24

L50

F

Motor interface

d9

S110

t3.5

d24

L50

F

Motor interface

d9

S110

t3.5

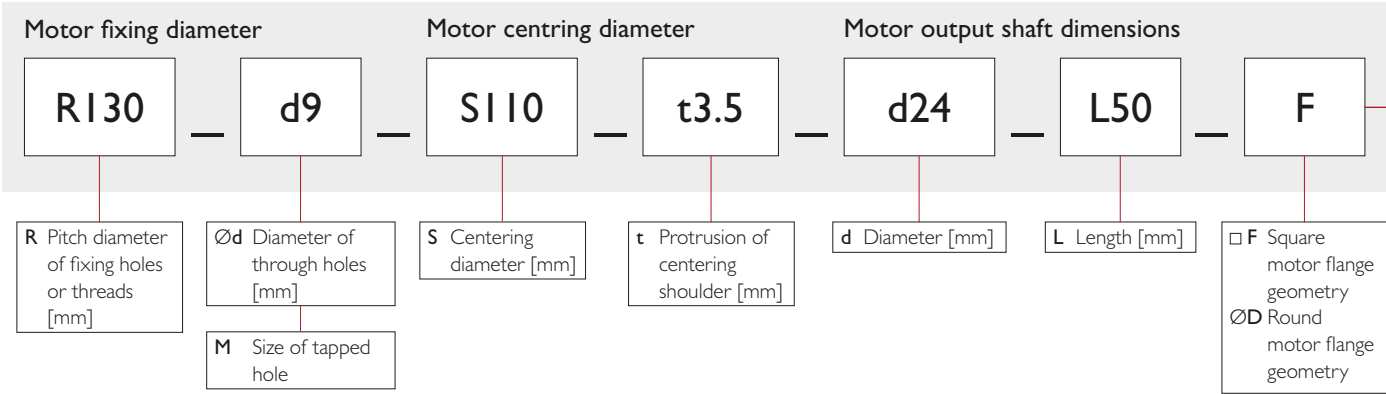
d24

L50

F

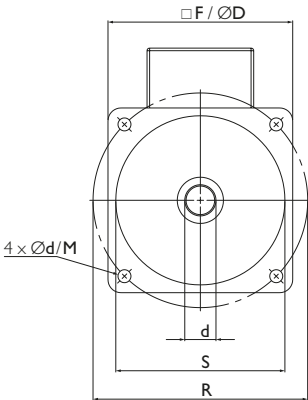
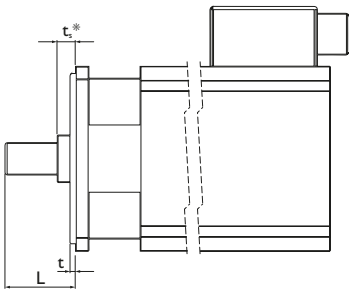
See order reference of the motor interfaces on pages 84 et seq.

Choose your appropriate motor interface



Coupling		Torque [Nm]	
Type		Standard applications	Applications in difficult conditions*
T19	5103-19	8.4	5.3
T24	5103-24	30	18.8
T28	5103-28	80	50
T38	5103-38	162	100
T42	5103-42	224	140

* High durability, high temperatures. For Support please contact Güdel.



* Motortable pages 84 and 85 apply for $t_s \leq t$.
If $t_s > t$ please contact Güdel.

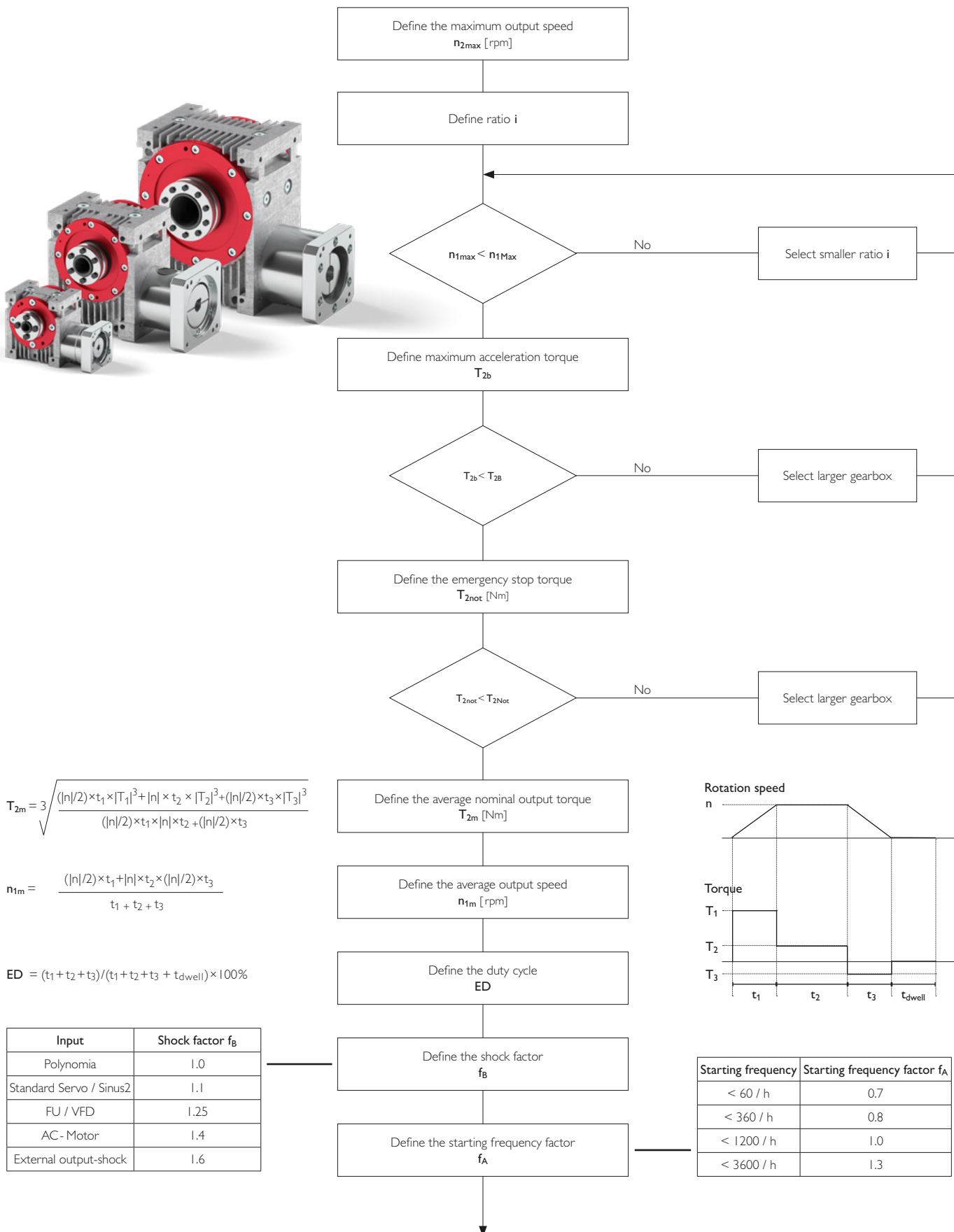
If desired motor configuration is not in table, please contact Güdel.

Motor					
R	Ød/M	S	t	d	L
63	d 4.5	40	2.5	9	20
63	d 5.4	40	2.5	9	20
63	d 5.5	40	2.5	9	25
64	d 5.4	40	2	9	20
70	d 4.5	40	2.5	9	20
70	d 4.5	50	3	11	30
70	d 4.5	50	3	14	30
70	d 5.5	50	3	14	30
75	d 5.5	60	2.5	11	23

Gearbox size									
030		045		060		090		120	
Coupling	L _{tot}	Coupling	L _{tot}	Coupling	L _{tot}	Coupling	L _{tot}	Coupling	L _{tot}
T19	153	T19	184						
T19	153	T19	184						
T19	153	T19	184						
T19	153	T19	184						
T19	153	T19	184						
T19	153	T19	184						
T19	153	T19	184						
T19	153	T24	191						

Motor						Gearbox size									
R	Ød/M	S	t	d	L	030		045		060		090		120	
						Coupling	L _{tot}	Coupling	L _{tot}	Coupling	L _{tot}	Coupling	L _{tot}	Coupling	L _{tot}
75	d 5.5	60	2.5	14	30	T19	153	T24	191	T24	232				
75	d 5.5	60	3	14	30	T19	153	T24	191	T24	232				
75	d 5.8	60	2.5	11	23	T19	153	T24	191						
75	d 6.5	60	3	14	30	T19	153	T24	191	T24	232				
90	d 6	70	3	19	35			T24	191	T28	236				
90	d 7	70	3	14	30	T19	153	T24	191	T28	236				
90	d 7	70	3	16	40	T19	160	T24	191	T28	236				
95	d 6.6	50	2.5	14	30	T19	153	T19	184						
100	d 7	80	3	14	30	T19	153	T24	191	T28	236	T28	297		
100	d 7	80	3	19	40			T24	191	T28	236	T28	297		
100	d 6.5	80	2.5	14	30	T19	153	T24	191	T28	236	T28	297		
100	d 6.5	80	3	19	40			T24	191	T28	236	T28	297		
100	d 6.6	80	4	10	32	T19	155	T24	195	T24	232				
100	d 6.6	80	5	14	37	T19	155	T24	195	T28	236	T28	297		
100	d 6.6	80	5	16	40	T19	162	T24	195	T28	236	T28	297		
115	d 9	95	3	19	40			T24	191	T28	236	T28	297	T38	373
115	d 7	95	3	24	45			T24	201	T28	253	T38	317	T38	373
115	d 10	95	3	19	40			T24	191	T28	236	T28	297	T38	373
130	d 9	95	3	19	40			T24	191	T28	236	T28	297	T38	373
130	d 9	95	3	24	50			T24	201	T28	253	T38	317	T38	373
130	d 9	110	3	24	50			T24	201	T28	253	T38	317	T38	373
130	d 9	110	3.5	24	50			T24	201	T28	253	T38	317	T38	373
130	d 9	110	3.5	19	40			T24	191	T28	236	T28	297	T38	373
130	M8	110	3.5	19	40			T24	191	T28	236				
130	M8	110	3.5	24	50			T24	201	T28	253				
130	M8	110	3.5	28	60					T28	269				
145	d 9	110	6	19	55			T24	206	T28	253	T38	318	T38	374
145	d 9	110	6	19	58					T28	253	T38	318	T38	374
145	d 9	110	6	22	58					T28	253	T38	318	T38	374
145	d 9	110	6	24	58					T28	253	T38	318	T38	374
145	d 9	110	6	28	63					T28	269	T38	318	T42	384
145	d 10	110	3.5	16	40			T24	191	T28	236	T28	298	T38	374
145	d 10	110	3.5	19	40			T24	191	T28	236	T28	298	T38	374
165	d 11	110	4	24	50					T28	253	T38	317	T38	373
165	d 11	130	3	28	60					T28	269	T38	317	T42	383
165	d 11	130	3.5	19	28					T28	236	T28	297		
165	d 11	130	3.5	24	50					T28	253	T38	317	T38	373
165	d 11	130	3.5	32	58					T28	269	T38	317	T42	383
165	d 11	130	4	32	58					T28	269	T38	317	T42	383
190	d 11	155	3.5	32	60							T38	317	T42	383
190	d 11	155	3.5	35	60							T38	317	T42	383
200	d 13.5	114.3	3.2	35	79							T38	335	T42	398
200	d 13.5	114.3	3.2	42	113									T42	448
215	d 14	130	4	32	60							T38	317	T42	383
215	d 14	130	4	38	60							T38	335	T42	383
215	d 13	180	4	28	60							T38	317	T42	383
215	d 13	180	4	38	80							T38	355	T42	398
215	d 14	180	4	28	42							T38	317	T38	373
215	d 14	180	4	28	60							T38	317	T42	383
215	d 14	180	4	32	58							T38	317	T42	383
215	d 14	180	4	32	60							T38	317	T42	383
215	d 14	180	4	32	80							T38	335	T42	398
215	d 14	180	4	38	80							T38	355	T42	398
235	d 13.5	200	4	42	116									T42	448
265	d 13	230	4	38	80									T42	398
265	d 14	230	4	38	80									T42	398
265	d 14	230	4	55	110									T42	448
300	d 18	250	5	42	110									T42	425
300	d 18	250	5	48	82									T42	425
300	d 18	250	5	48	110									T42	448
300	d 19	250	5	48	110									T42	448

Calculate your gearbox



	Size				
	030	045	060	090	120
$n_{1m} < 500 \text{ rpm}$	5.50	3.00	1.70	1.10	1.00
$n_{1m} < 1000 \text{ rpm}$	4.00	2.30	1.40	1.05	1.00
$n_{1m} < 1500 \text{ rpm}$	3.30	2.00	1.30	1.05	1.00
$n_{1m} < 3000 \text{ rpm}$	2.30	1.50	1.15	1.05	1.00
$n_{1m} < 4500 \text{ rpm}$	1.70	1.30	1.05	1.00	1.00
$n_{1m} < 6000 \text{ rpm}$	1.50	1.20	1.00		

Abrasion factor f_p^* for high-accuracy applications, otherwise $f_p = 1$.

	Size				
	030	045	060	090	120
$n_{1m} < 500 \text{ rpm}$	0.40	0.40	0.40	0.60	0.80
$n_{1m} < 1000 \text{ rpm}$	0.40	0.40	0.45	0.70	0.90
$n_{1m} < 1500 \text{ rpm}$	0.40	0.40	0.55	0.80	1.20
$n_{1m} < 3000 \text{ rpm}$	0.40	0.40	0.70	0.95 ^{a)}	2.00 ^{a)}
$n_{1m} < 4500 \text{ rpm}$	0.40	0.40	0.70	1.00 ^{a)}	2.80 ^{a)}
$n_{1m} < 6000 \text{ rpm}$	0.40	0.40	0.75		

a) Maximum duty cycle 80%
b) Maximum duty cycle 60%

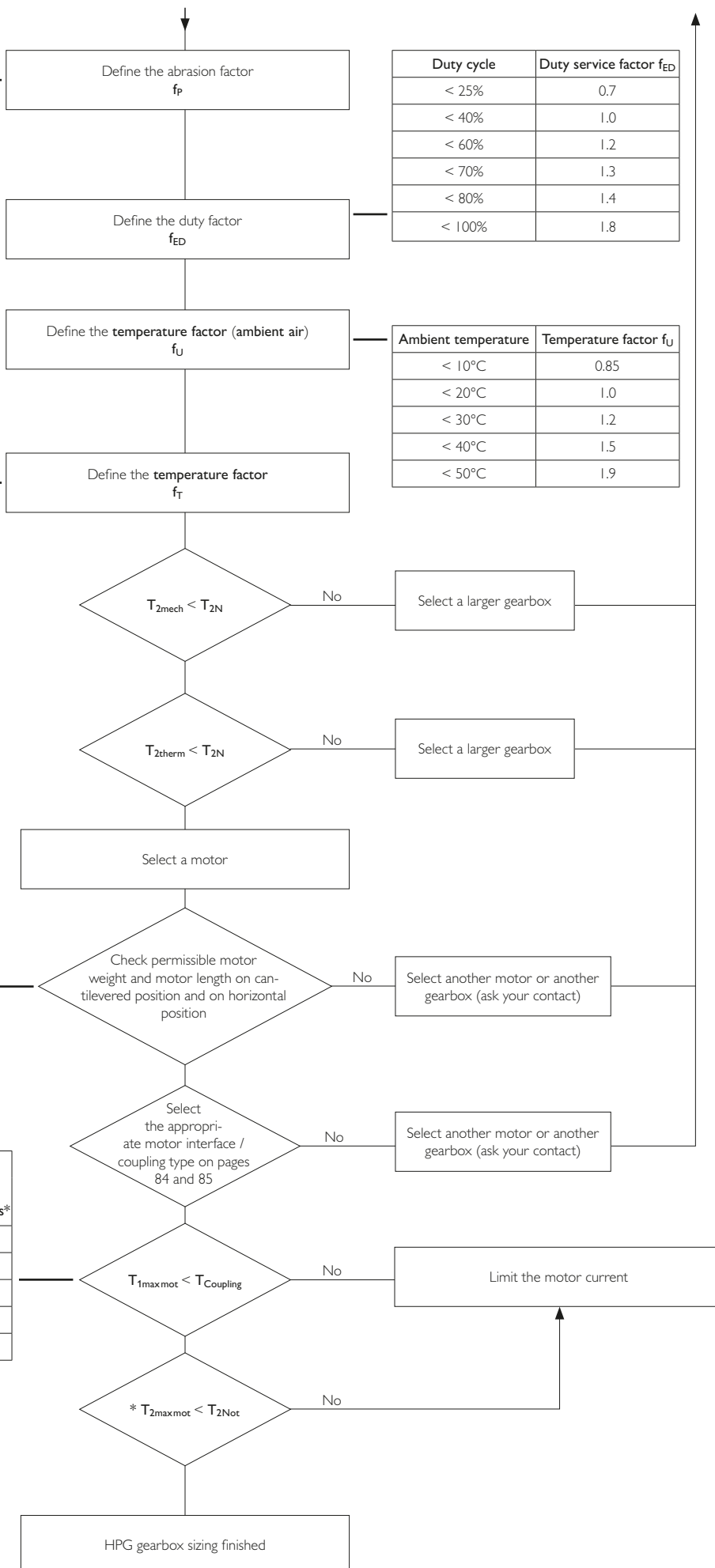
Mechanical output torque
 $T_{2mech} = T_{2m} \times f_p \times f_A \times f_p^*$

Thermic output torque
 $T_{2therm} = T_{2m} \times f_{ED} \times f_T \times f_U$

	Motor limitation				
	030	045	060	090	120
Mass [kg]	6	13	25	50	85
Length [mm]	225	300	375	500	625

Coupling		Torque [Nm]	
Type		Standard applications	Applications in difficult conditions*
T19	5103-19	8.4	5.3
T24	5103-24	30	18.8
T28	5103-28	80	50
T38	5103-38	162	100
T42	5103-42	224	140

* High durability, high temperatures. For Support please contact Güdel.



* When the engine is under full load, the gear must not be damaged.

$$T_{2maxmot} = T_{1maxmot} \times i \times \eta$$

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