1. Ranges of parameters visible on UI

Table 1 UI parameters

Name	Symbol	Range			
		(mm)	(in)	(°)	-
module	m	0.5 … 20	0.03125 … 1		
pressure angle	α			14.5 … 25	
clearance factor	f_c				0.1 … 0.25[2]
thickness	t	0.5 … 1000	0.03125 … 40		
helix angle	β			10 … 40	
groove width	g_w	0.5 … 960[1]	0.03125 … 38[1]		
groove depth	g_d	0.1 … 10000[1]	0.00781 … 400[1]		
teeth number	z_1, z_2				6 … 200[3]
profile shift factor	x_1, x_2				-0.7 … 1[2, 4]
taper factor	f_{t1}, f_{t2}				0 … 0.5[2, 5]
backlash (linear)	j_1, j_2	-0.2 … 0.2	-0.01563 … 0.01563		
chamfer width factor	f_{cw}				0.1 … 0.25[2]
chamfer height factor	f_{ch}				0.1 … 0.25[2]
X-coordinate of wheel's center	dX	-6100 … 6100[6]	-310 … 310[6]		
Y-coordinate of wheel's center	dY	-6100 … 6100[6]	-310 … 310[6]		
wheel orientation angle	γ			0 … 360	

(1)   Visible for double helical gears; range can be also limited by thickness or root diameter,

(2)   related to module,

(3)   in case of external-internal or internal-external pair, teeth number of internal gear will be automatically changed if it is less than in external gear,

(4)   when automatically calculated (manual center distance) external gear's factor will be 0,

(5)   enabled for external gears,

(6)   they are edge limits; practically, range is strongly dependent of module, number of teeth, type of gears and type of tooth view; algorithm for calculating profiles automatically accepts only reasonable values, slightly different than basic dX, dY numbers for given settings.

The subscripts 1 and 2 denote pinion and wheel.

2. Parameters visible in 3rd mode of preview

Table 2 3rd mode parameters

Symbol	Meaning
z	number of teeth
d_w	working pitch diameter
d_b	base diameter
d_f	root diameter
d_a	outside diameter
α_w	working pressure angle
a	center distance
dX	X-coordinate of wheel's center[1]
dY	Y-coordinate of wheel's center[1]
γ	wheel orientation angle[1]
dir.	teeth direction[2]

(1) Visible only for wheel,

(2) right/left, only for non-straight teeth.

3. Information saved in components

Table 3 Components' information

Group	Symbol	Meaning
Radial parameters	d	pitch diameter
	d_w	working pitch diameter
	d_b	base diameter
	d_f	root diameter
	d_a	outside diameter
	x	profile shift factor
	f_t	taper factor
	j	backlash
	α_w	working pressure angle
	a	center distance
Land parameters [1]	α_a	pressure angle at outside diameter
	θ	half of top land angle at outside diameter
	s_a	top land thickness
Motion link formulas	*pinion (i) wheel (o)*	formula when pinion is the driving gear
	pinion (o) wheel (i)	formula when wheel is the driving gear
Ratio	η	ratio of pinion to wheel
Placement and rotation [2]	dX	X-coordinate of wheel's center
	dY	Y-coordinate of wheel's center
	γ	wheel orientation angle (around pinion's axis)
	δ	wheel rotation angle (around its own axis)

(1)   Visible only for external gears,

(2)   visible only for wheel.