

Uncompromising Accuracy

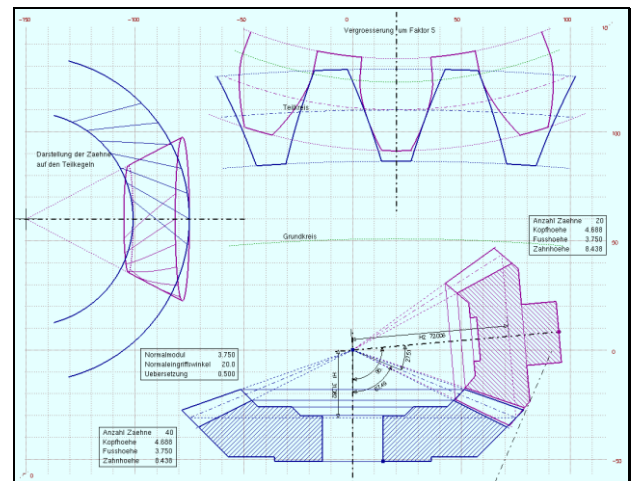
Flexible and Efficient

- Gear module for programming of bevel gears and pinions for 5-axis-machining on standard milling machines
- Easy intuitive handling
- Maximum flexibility and optimized milling paths



The shortest way ...

- for manufacturing bevel gears and pinions
- for DIN-type gears as well as Gleason or Klingelnberg type
- straight, helical, circular or spiral gearing
- perfect for machining of all type of material and hardness



EUKLID GearCAM Bevel is a practical software module, which combines ease of use, fast implementation and uncompromising accuracy in an ideal way.

This allows economic production of bevel gears and pinions with standard tools on 5-axis universal milling machines.

The manufacture of gear wheels is an extremely demanding process, since high precision is required. **EUKLID GearCAM Bevel** supports this production process effectively and dependably. The definition of the gear is done by type specific design parameters, which are common in the manufacture of gears.

EUKLID GearCAM Bevel provides several tools, which gives the user the option to check the entered values in a very comfortable and understandable way.

Furthermore there is an almost fully automated generation of milling programs, where the user is also allowed to bring in his experiences into gear manufacturing.



CAD

Definition, like gear experts do.

The type specific gear data can be entered in a user-friendly CAD dialog, which is specifically optimized for bevel gears and pinions.

Further data, like blendings, chamfers or flank corrections can be entered here as well.

Input data	
Left	Right
48	12
90	
22,5	
16,239	
0,2	0,2
0	0
0,1	0,1
0	0
2	2
1	1
150	150
975	243,75
0,1	0,1
20	
250	

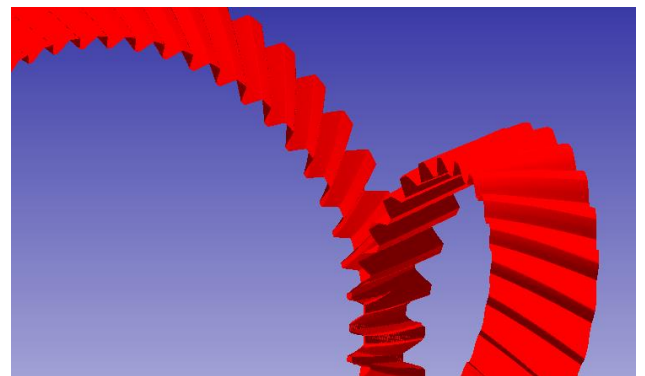
Several graphic modes are available to support the user in checking the entered data of the gear pair for correctness and plausibility.

Out of the gear definition **EUKLID GearCAM Bevel** calculates additional gear parameters and measurements, which can be used to compare them with the drawing in order to verify the correct settings.

Calculated data	
Radius	Diameter
0,25	0,25
75,964	14,036
502,503	502,503
121,875	487,5
427,503	427,503
4020,028	251,252
3714,022	232,126
197,909	12,369
21,11	14,615
12,991	19,486
3977,808	222,022

As the next step **EUKLID GearCAM Bevel** generates a 3D model of the gear, which is highly demanded to accuracy.

This geometry is the basis for the following CAM part, where milling paths will be generated.



Alternatively the user is allowed, to bring in his own 3D data model and instruct **EUKLID GearCAM Bevel** to use it for machining.

CAM

5-Axis-Milling in mathematical perfection.

Milling path generation is done almost automatically in **EUKLID GearCAM Bevel**.

Based upon user defined tolerances, offsets (allowance) and technology settings, the milling paths for roughing, pre-finishing and finishing are created in parts of a second.

CAM parameter

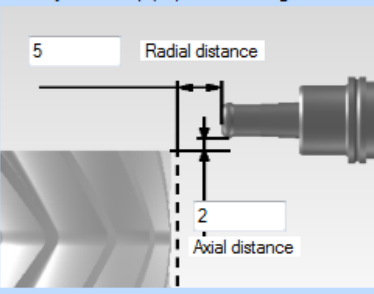
0,3 Blank allowance 0,05 Collision distance opposite

Roughing	Pre-Finishing	Finishing	
2	2	2	Max. sidestep [mm]
0	0	0	Root rounding [mm]
0,2	0,01	0	Root offset [mm]
0,3	0,07	0	Flanc offset [mm]
0,3	0,05	0	Tip offset [mm]
0,01	0,05	0,001	Flank tolerance [mm]
0,25	0,01	0,02	Tolerance root rounding [...]
0,001	0,002	0,0001	Forward tolerance helix [...]

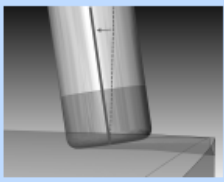
	PID	TNO	Trajectories
▶	A1	21	31
	A2	22	35
	A3	23	39
	A4	24	4
	Bw-	26	87
	B-v-	27	63
	Cw-	28	87

Security distance (rapid) / Forward angle

5 Radial distance



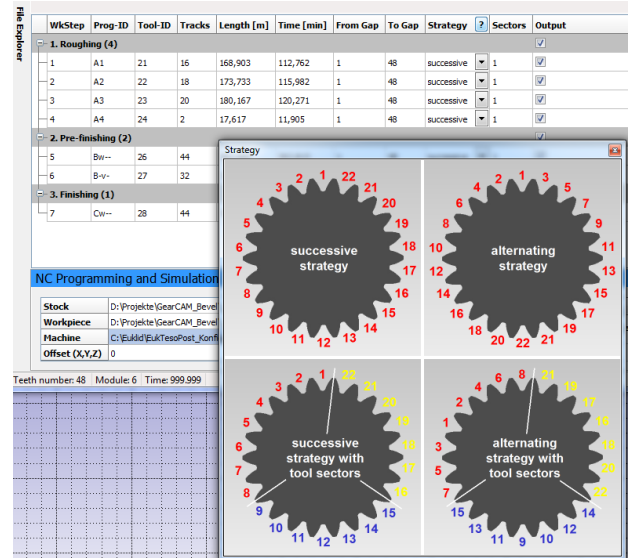
2 Axial distance



Forward angle [°]

2

Intelligent strategies give the ability to the user to produce with maximal accuracy and systematically spread inevitable deviations resulted for manufacturing reasons.



For verification of milling paths **EUKLID GearCAM Bevel** provides excellent simulation tools. Therewith conclusions about the achievable surface quality is possible as well as the checking of axis range for linear and rotary axes. Upcoming collisions between machine parts or tool holder a work piece will be checked and reported to the user in a very reliable way.

