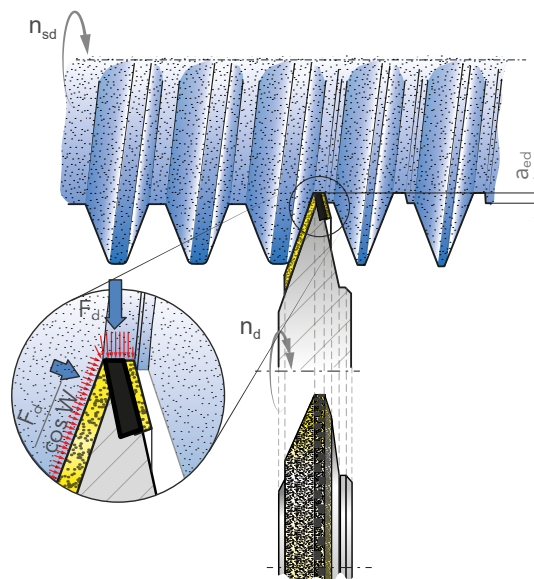


SMALL GEARS

The generating method of gear grinding is one of the most efficient processes for long-run production. Electroplated gear tools with long tool life are used for this process because of their aggressive dressing behavior. Innovative and continuous development of gear dresser manufacturing processes guarantees to deliver process optimized dressing solutions for all machine systems. DR. KAISER delivers these gear dresser solutions to customers all over the world.

CVD DIAMOND PROTECTION – THE ONLY WAY TO PROTECT THE OD

DR. KAISER introduced CVD diamond edge reinforcement in the field of electroplated dressing tools in the 1990's and has continuously developed it further. The outer diameter of the tapered tools is thus reliably protected against erosion wear, resulting in longer service lives. The electroplated positive dressing tools (RGF, RGM) can be re-lapped according to your requirements and replated several times. The edge reinforcement by CVD diamonds can also be applied to the reverse plated multi-rib tool systems (PGM). For small modules, sintered dressing discs (RF) in CVD diamond design can be used.



PROFILE ROLLERS FOR GENERATING GEAR GRINDING

Description	Type	Manufacturing process / Bonding	Diamond type used	Remark
Dressing Disc or Set of Dressing Discs	RGF	Electroplated single layer / nickel bond	G - Randomly distributed C - CVD diamond	For one-start dressing and different modules
Dressing Roller Assembly	RGM	Electroplated single layer / nickel bond	G - Randomly distributed C - CVD diamond	For one-start dressing with fixed modules
Multi-rib Roller	PGM	Reverse plated / nickel bond	G - Randomly distributed C - CVD diamond	For multi-start dressing
Dressing Disc or Set of Dressing Discs	RF	Reverse sintered / tungsten bond	H - Hand-set G - Randomly distributed	C - CVD diamond In special cases
Profile Roller	RG	Electroplated single layer / nickel bond	G - Randomly distributed C - CVD diamond	Double cone version for pre-profiling

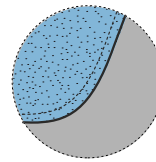
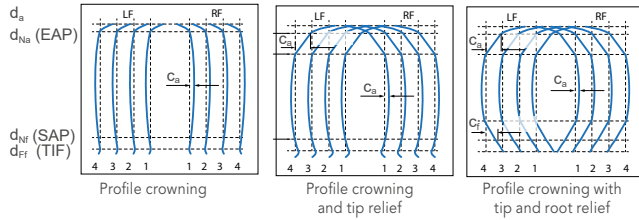
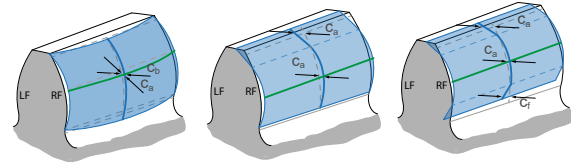
PROFILE ACCURACY IS THE KEY

The tooth flank profile is transferred to the grinding worm by the dressing process. Crowning and tip and root relief of the gears are therefore connected to the dressing tool. The calculation must be carried out by a mathematical rolling simulation before the tools are manufactured.

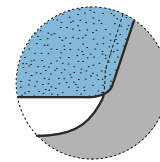
For profile roller sets, the design in the tooth root area must be taken into consideration. It depends upon whether you want to realize a "hobbed" protuberance, a defined tooth root transition radius or a defined ground tooth root.

Header and root relief can be produced as straight lines and also as tangential transitions or even multi-step to crowning. In the case of helical gears, entanglement effects affect the profile shape of the dresser and are taken into account accordingly in the design.

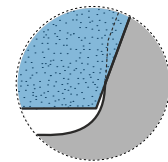
The gear specialists at DR. KAISER calculate the geometry for your dressing tools according to your gear drawing specifications using their own simulation software.



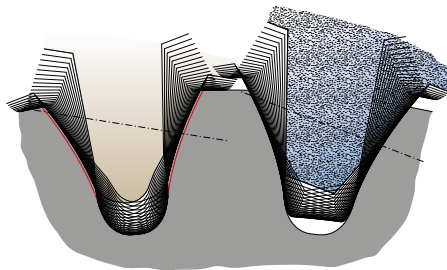
Tooth root machining



Transition radius



Protuberance milling



Hobbing simulation

Simulation gear grinding

DRESSING TOOLS FOR GEAR ROOTS

CVD diamond head dressing plates, dressing strips or tip radius rollers are used to create a defined tip radius on the grinding worm. Our gear wheel experts take over the design of the radius and angle geometry for your special application.

IMPORTANT STANDARDS

