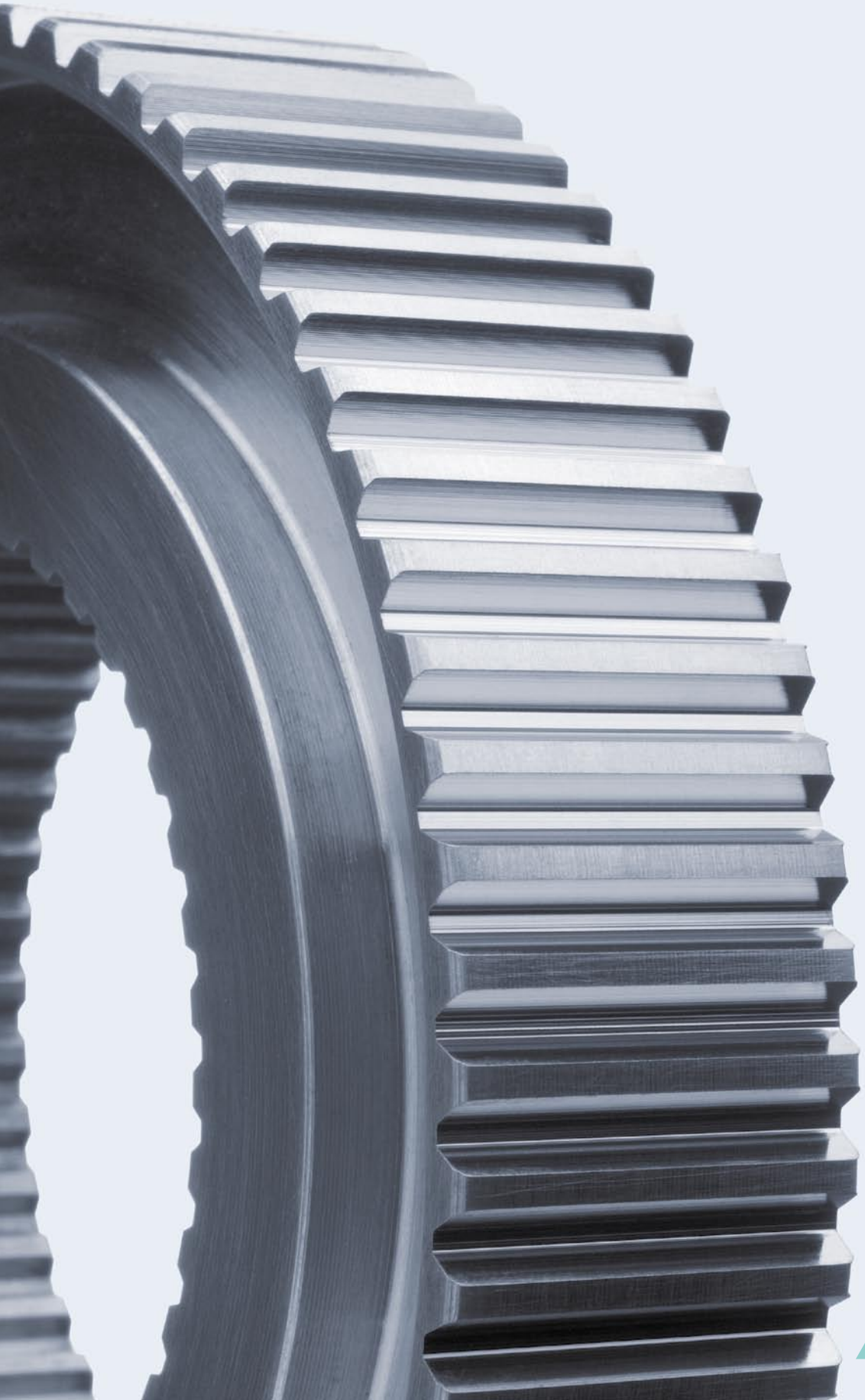
SCUDDING® QmS

Superior quality and speed in gear cutting

Quality **m**eets **S**peed



Profilator

SCUDDING® QmS - Quality meets Speed

SCUDDING® is a continuous gear generating process. Technically, it is a process between gear „hobbing“ and gear „shaping“. The SCUDDING® process can be used for a wide range of symmetrical gear applications as well as for non-symmetrical gear or profile applications such as belt pulleys and synchronizer gears. Many other, non gear-related applications still have to be explored. With the Wera Profilator machine design, the same machine can be used for internal and external SCUDDING® applications.

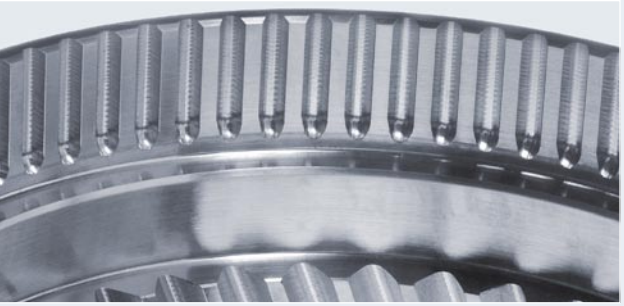
SCUDDING® Internal Gear

Ring Gear or Sliding Sleeve

Compared with shaping, SCUDDING® is very economical because the high number of simultaneously engaged cutting edges eliminates unproductive idle strokes.

Annulus Gear, Internal Helix

Previously, this gear was produced by an internal, helical broaching process. In the future, this gear will be produced considering heat-treat distortions. The SCUDDING® process allows precise and independent corrections/offsets of the gear geometry, crown and taper. These are optimized for the later assembly process. The SCUDDING® process produces diagonally crossed over cutting lines which improve the noise performance of the gear.



Annulus Gear, Internal Straight Blind Spline

Previously, this spline was produced by a shaping process. Since the shaping process needs a certain amount of run-out/over-cut, an undercut was required at the end of a spline. SCUDDING® cuts straight up to the shoulder, no undercut is required! This improves the functional strength of the component!

SCUDDING® External Gear

Synchro Gear with 1 Block-Tooth

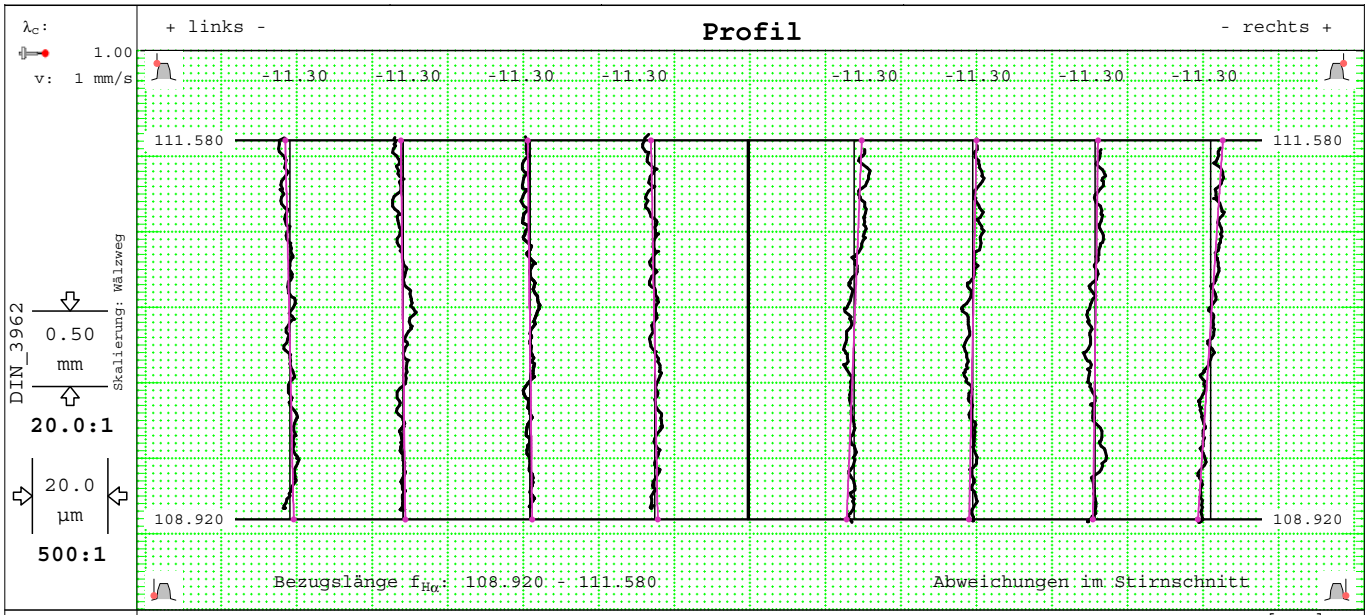
For the gear cutting of synchronizer parts with block-tooth features, SCUDDING® is the perfect process. The parallel incline of the tool and spindle axis allows an easy machining of non-symmetrical gear geometries. The cutting tool (number of teeth) for such an application is designed with a non-passing workpiece/tool-gear-ratio.

Hub

SCUDDING® is a continuous gear generating process. With the Wera Profilator „Fly-Cutter“ concept, internal and external gears can be produced.
For SCUDDING® of helical gears, the tool is designed as a straight gear. The cross-axis angle is set in accordance to the workpiece. SCUDDING® can produce predetermined flank corrections. Taper and crown can be set via the machine parameters.

Gear quality DIN 5-7

SCUDDING® produces non-comparable, opposed results:
High cutting force, high gear quality (DIN 5-7) and a low surface roughness (Rz 2-3).



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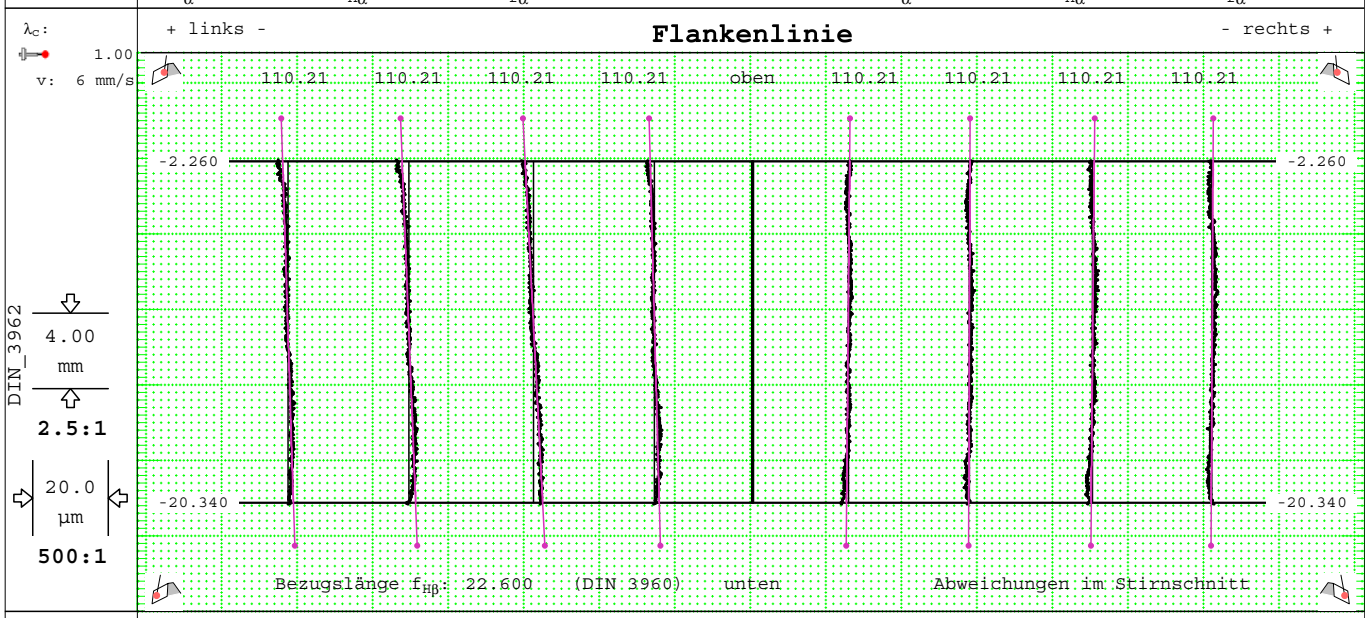
F_α µm	9	22	5	6	5	5	6	6	7	6	6	7	9	22
$f_{f\alpha}$ µm	9	16	4	6	5	4	7	7	5	6	6	4	9	16
$f_{H\alpha}$ µm	9	±14	2	1	1	2	4	7	4	2	1	7	9	±14
ø	F_α 6		$f_{H\alpha}$ 2		$f_{f\alpha}$ 5				F_α 7		$f_{H\alpha}$ 3		$f_{f\alpha}$ 5	



	Qn	[...]	55	37	19	1	Qa	Qa	1	19	37	55	Qn	[...]
F_β µm	9	32	5	6	6	4	5	2	3	3	3	3	9	32
$f_{f\beta}$ µm	9	18	3	4	2	2	5	3	3	3	3	3	9	18
$f_{H\beta}$ µm	9	±28	3	5	6	3	5	1	-1	0	-1	-1	9	±28

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