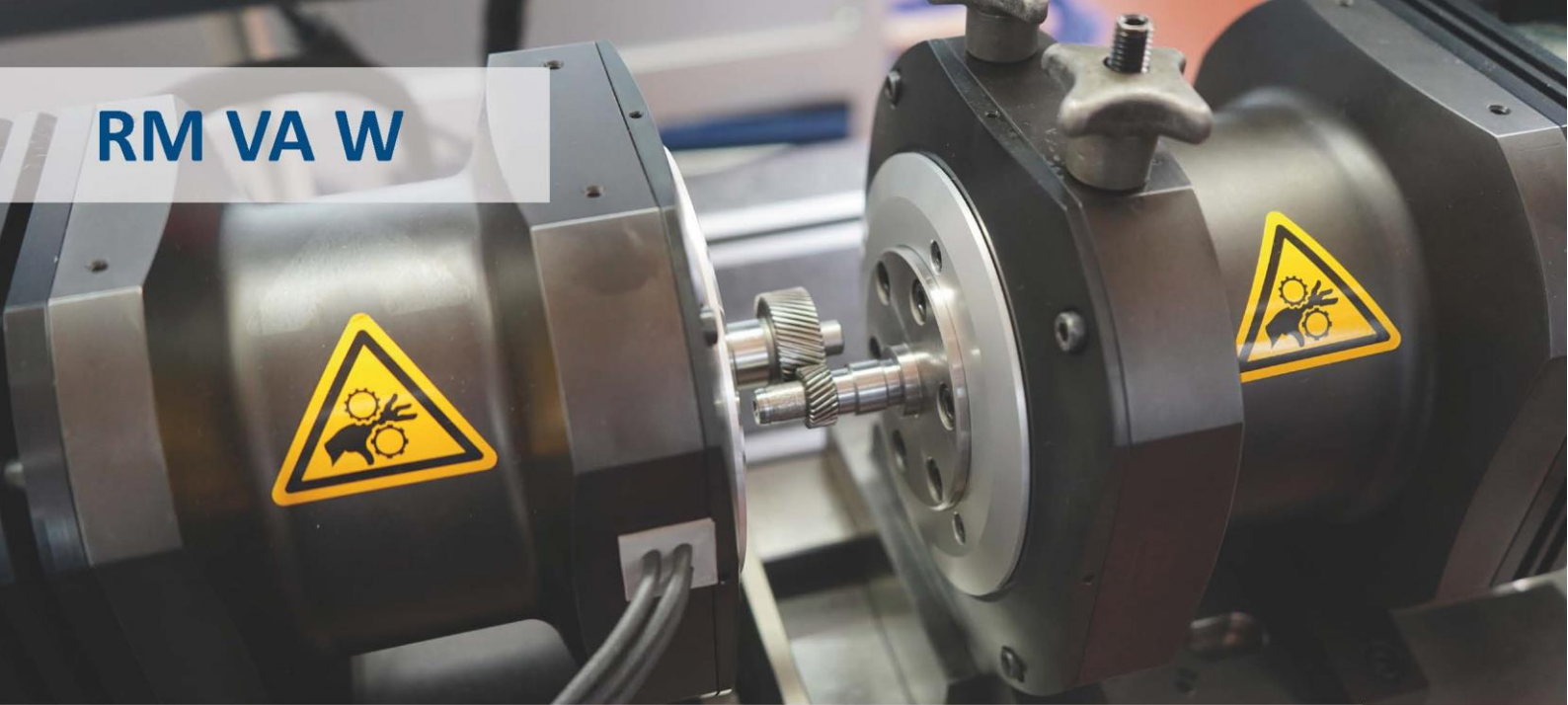


# RM VA W



## Einflankenwälzprüfung und Geräuschemessung

### Rotation measuring machine for inspection of Gear Wheels

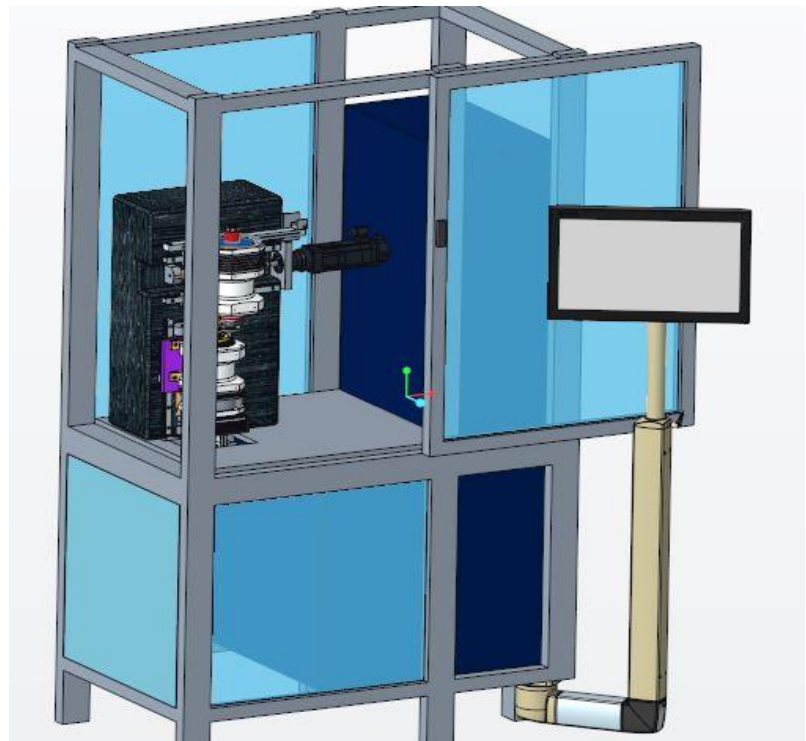
The machine performs a rolling inspection in single-flank contact. Frenco measuring electronics MEG32 detects the measuring points. Analysis for the single-flank inspection is done by Frenco measuring software RMpro and for the noise test by Discom ROTAS. Measurements are carried out simultaneously at high rotation speed.

Loading can be done by hand or automated with handling system. All parts are designed for high durability and stable results in continuous operation.

Master gear rotates for about 2 seconds with constant speed. Workpiece is loaded with constant torque; a braking system ensures permanent contact.

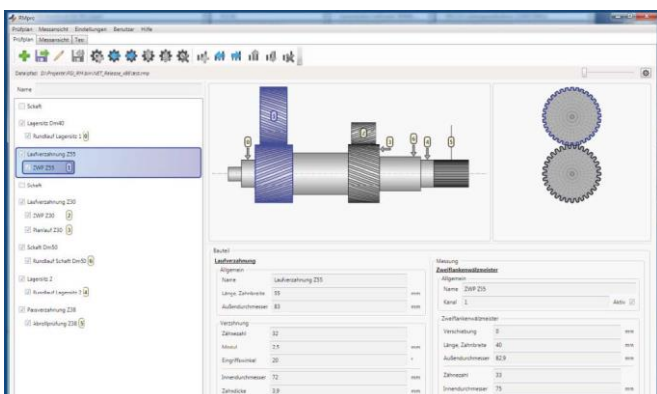
As an option the turning direction can be changed from forwards to backwards to also check the back flank.

The machine is optimized for minimum cycle times.



Spindles are aligned in vertical direction to ensure a proper clamping. Due to their large cross section, the spindles are positioned on opposite sides. As benefit we can handle small distances between axis, as well as inspection of internal gears.

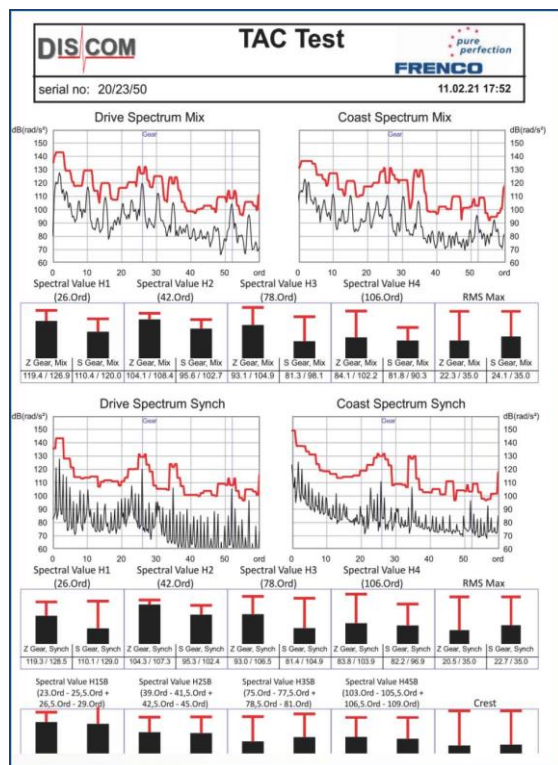
The master gear is driven side, the workpiece is the braking side.



## Single flank inspection and evaluation with RMpro:

General settings (number of rotations etc.) are done in Frencro RMpro Software. There are separate inspection graphs for forward and backward measurements. An FFT analysis of individual orders is made from these graphs. Results are shown as amplitude in  $\mu\text{m}$ .

Merkmale									
M-ID	Auswertung	Merkmal		Ist-Q. (Soll)	Toleranz	Eingriffsgrenze	Istwert	Tol. Balken	
EWP	EWP Vorwärts	Wälzfehler	F'	5 (4)	0,0110	0,0088	0,0112	<div style="width: 100%;"></div>	
EWP	EWP Vorwärts	Wälzsprung	f'	1 (4)	0,0050	0,0040	0,0017	<div style="width: 33%;"></div>	
EWP	EWP Vorwärts	Langwelliger Anteil	f''		---	---	0,0103	<div style="width: 100%;"></div>	
EWP	EWP Vorwärts	Kurzwelliger Anteil	fk'		---	---	0,0009	<div style="width: 100%;"></div>	
EWP	EWP Vorwärts	Fourieranalyse [1]	F''		---	---	5,15 $\mu$	<div style="width: 100%;"></div>	
EWP	EWP Rückwärts	Wälzfehler	F'	4 (4)	0,0110	0,0088	0,0099	<div style="width: 90%;"></div>	
EWP	EWP Rückwärts	Wälzsprung	f'	1 (4)	0,0050	0,0040	0,0015	<div style="width: 30%;"></div>	
EWP	EWP Rückwärts	Langwelliger Anteil	f''		---	---	0,0091	<div style="width: 100%;"></div>	
EWP	EWP Rückwärts	Kurzwelliger Anteil	fk'		---	---	0,0008	<div style="width: 100%;"></div>	
EWP	EWP Rückwärts	Fourieranalyse [1]	F''		---	---	4,38 $\mu$	<div style="width: 100%;"></div>	
M-ID	Auswertung	Merkmal		Obere Tol.	Untere Tol.	Obere EG.	Untere EG.	Istwert	Tol. Balken
EWP	EWP	Drehflankenspiel	jt'	---	---	---	---	0,1285	<div style="width: 100%;"></div>



## Noise test with DISCOM:

The rotational accelerations of an axis are measured by a special rotating sensor that is rigidly attached to the axis of the workpiece. The signals from the receiving unit are transmitted to the PC by evaluation electronics.

The evaluation is carried out by software from DISCOM. The results of the Discom analysis are exported to a database. In addition, a report can be generated for each workpiece. Only the access to the large amount of data makes initial teaching and continuous process evaluation possible. Database software is included in scope of supply.

Export of data from Frencro to Discom is possible to match the data from flank inspection with data from noise inspection. It is also possible to export results from Discom to RMpro and export them combined as one DFQ-file. The complete FFT Analysis remains in the Discom database.

## Advanced single flank inspection with high rotation speed

- Single flank inspection with workpiece and master gear
- High-resolution recording of the resulting angle deviation
- Several rotations with high rotation speed, braking with defined torque
- Cycle time approx. 2 seconds (about 10 complete rotations)
- Workpiece on clamping mandrel
- Electrical drive for master gear
- Electrical feed of linear axes (measuring/open) for optimized speed and gentle running-in
- Compact design
- Data logging with fast Frencro MEG32 electronics
- SPC system or drives and axes
- Software RMpro for single flank inspection
- Communication to handling system with Profibus and Frencro ITM