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Power measurement

Signal analysis of motor current

Vibro-acoustical diagnosis

Automatic unbalance measurement

Automatic test sequence

Balancing and diagnosis system for complete automobile cooling fans

EEJH

Application

Performance and objective noise test in final inspection of complete automobile fans

Measurement of dynamic and static unbalance in the fan plane for optimum unbalance correction.

Test Method

Signal analysis of motor current in the time and frequency range for detection of commutation errors.

Measuring of electrical power, revolution and direction of movement

VAD-method (**v**ibro-**a**coustical **d**iagnosis) for objective noise test by analysis of the structureborne noise signal in the time and frequency range.

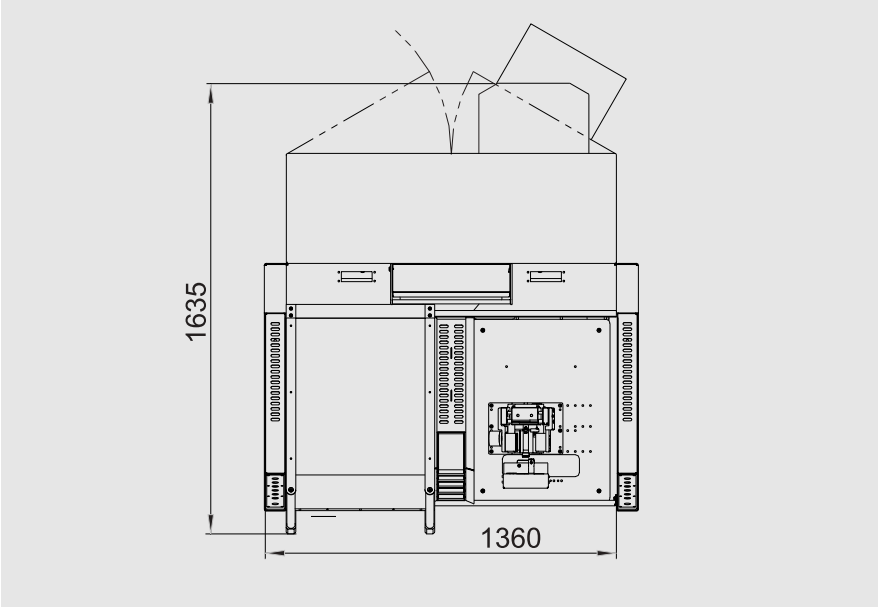
Determination of static and dynamic unbalance with manual fan indexing and operator guidance for manual unbalance correction.

Features

- Modular design with freely definable position of test rotors (e.g. original mounting position)
- One-channel or multi-channel objective noise test with integrated unbalance detection, optional testing of body noise
- Flexible application, simple change-over for different motor types
- PC-controlled test sequence
- Software modules for measuring of power output and VAD-methods as well as measuring of static and dynamic unbalance, large type data memory, operator guidance, diagnosis routines, statistics, process control, external interfaces.
- System adaptation to requirements of objective noise test such as insulation against structure-borne noise as well as highly repeatable sensor connection and clamping adapted to the test specimen.
- Control of brushless motors

Layout (example)

- Machine frame with unbalance measuring and calibration system
- Protective housing with widely opening loading door
- Integrated measuring and control cabinet with test stand com puter and supply unit for the test specimens
- Two-station machine with manual loading, automatically operated test sequence and manual correction of unbalance.



Important data at a glance

Test specimen	Complete automobile fans with incor porated PM motors
Test method	VAD, signal analysis, unbalance
Cycle time	Approx. 12 ... 20 sec depending on blower type and on station
Change-over time	< 5 min

SCHENCK

Balancing and
Diagnostic Systems

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