

RF500 Dual Rotating Iron Spectrometer

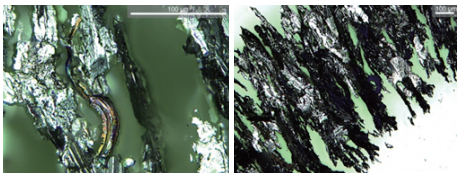


PRODUCT INTRODUCTION

The RF500 dual-head rotary ferrograph is a new type of oil analysis instrument for equipment operating conditions, which complies with NB/T 51068-2017 and Q-SH.014-2010. It uses a high-field gradient magnetic field to deposit ferromagnetic and paramagnetic particles generated by wear in equipment lubricating oil (or other liquid media) on a glass substrate (ferrogram), and arranges them in a ferromagnetic line graph according to the distribution of magnetic force. The dual-head rotary ferrograph adopts a dual-magnetic head design, which greatly improves the efficiency of ferrogram production and the tolerance for various contaminated oil samples. It is particularly suitable for qualitative and quantitative ferrographic analysis of severely contaminated oil. Then, a ferrographic microscope is used to observe the physical characteristics of wear particles such as size, shape, dimension, color, and surface texture, and to count the number of wear particles and identify the type of wear, thereby determining the wear state of the equipment.

APPLICATION FIELD

- Analyzing and diagnosing the operating conditions of equipment, and forecasting mechanical equipment failures due to wear.
- Identify the performance of lubricating oil and judge whether its use is normal;
- Formulate the running specifications of new machines to improve the performance of equipment reliability operation;
- The root cause parameters of hidden faults in equipment operation are collected for the study of friction and wear mechanism;
- To achieve the purpose of reducing the failure rate of equipment operation and prolonging the service life of equipment.



MAIN FEATURES

- At the same time, it is equipped with physical buttons and a 10.1-inch LCD touch screen;
- Notation channel: Dual-channel synchronous notation, independent of each other;
- It is equipped with automatic installation and fixing device for the spectrum;
- Dual-channel stepper motor control signal output, the motor works vertically, and there is no interference in the control respectively;
- With timekeeping function, the time of each status is stopped;
- Dual-head design, doubling the efficiency of spectroscopy; Strong magnetic head design, high abrasive deposition efficiency, with three concentric magnetic rings inside, middle and outside, depositing three different sizes of abrasive grains;
- The magnetic head speed is adjustable, and the operating time is adjustable, to suit oils of different viscosities and contaminated samples.
- The wear particle deposition area is large, providing a substantial amount of sample information for analysis.
- The cleaning system features an automatic injection function and device, with adjustable cleaning speed.
- The spectrum production, cleaning, and drying processes are equipped with timing functions, and both the cleaning fluid speed and cleaning duration are adjustable.
- Active pump-driven waste liquid recovery reduces the risk of pipeline blockages and improves recycling efficiency.
- The instrument features power outage protection and memory functions, allowing it to resume oil sample spectrum production upon reconnection to power.
- Equipped with a high-resolution dual optical path microscope and a 16-megapixel imaging system, along with a desktop computer.

TECHNICAL INDEX

Project	Data
The magnetic field gradient distribution in the wear particle deposition area is 100 to 1000 Gs, with the highest magnetic flux density at the working point being ≥ 600 Gs.	
Width 0.5 ± 0.2 mm; head outer ring inner diameter 29.0 ± 0.5 mm, large head particle deposition area, head inner ring inner diameter 11.5 ± 0.5 mm, width 0.5 ± 0.2 mm; head center ring inner diameter 19.0 ± 0.5 mm, width 0.5 ± 0.2 mm.	
The magnetic head has three working speed settings, with a default speed of 75 rpm/min for spectrum production, 150 rpm/min for cleaning, and 200 rpm/min for drying. Each speed setting can be adjusted within a certain range.	
Measurement range:	0 μ m ~ 3000 μ m;
The radial runout of the magnetic head during operation is less than ± 100 μ m, and the total end face runout is less than ± 100 μ m.	
Spectral glass substrate size:	55*55*0.17(mm);
The abrasive particles were uniformly deposited in the plane of the spectral sheet along the deposition ring with equal odds, basically without overlap, and the effective sample area of equal odds deposition was ≥ 47 mm ² , of which the sample area of equal odds deposition in the inner ring was ≥ 9 mm ² ;	
Reproducibility error:	The mean value error of qualitative iron spectra was <10% for 8 microscopic fields of view, and the mean value error of quantitative iron spectra was <15% for 4 microscopic fields of view;
Size:	700mm*280mm*240mm(Length × Width × Height);
Weight:	About 14kg;
Power supply:	220 \pm 10% VAC, 50Hz with 24V 6A power adapter;
Power consumption:	<150W;