



Model HZ-9705A Single-sided Vertical De-weighting Balancing Machine



Product Introduction

HZ-9705A

Revision A

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Original Instructions

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LIXIAN- HZ-9705A



Single-sided Vertical De-weighting Balancing Machine

Lixian series machine #97

Overview

The balancing machine is an instrument used to determine the unbalance of the rotor. The balancing machine is a hard-supported balancing machine. The swing frame is very rigid. The measurement result of the dynamic balancing machine is used to correct the unbalance of the rotor, so that the vibration generated when the rotor rotates or acts on the vibration on the bearing is reduced to the allowable range to achieve the purpose of reducing vibration, improving performance and improving product quality.

HZ-9705A Single-sided Vertical De-weighting Balancing Machine , is a new type of balancer equipment that has developed rapidly in recent years and has a wide range of uses. It is suitable for calibrating the single-sided balance of disc-shaped workpieces in the vertical state. It is mainly suitable for fans, blades, impellers, and Various disc-shaped parts such as brakes, clutches, brake drums, chucks, grinding wheels, saw blades, pulleys, etc. are tested and corrected for balance.



Application

It is mainly composed of high-precision mechanical parts and advanced electrical parts, a combination of hard-supported balancing machines. This series of products is one of the single-sided vertical weight-removing balancing machines developed, designed and manufactured by our company based on core technologies at home and abroad. It is currently the most advanced model in the world and is used in various disc workpieces, such as: brake discs, clutches, brake drums, water pump impellers, flywheels, gears, pulleys, flanges, fan impellers, saw blades, tools , Balance detection and correction of parts such as grinding wheels, traction wheels, lathe chucks, etc.,

This machine is equipped with special clamps and de-weighting device, which is convenient for clamping, which improves the work efficiency for users. It is characterized by high precision, high efficiency, convenient operation, intuitive display, rapid measurement, stable performance, and the speed is controlled by a frequency conversion speed control device and other advantages.

The electromechanical measurement system can be equipped with a microcomputer digital display measurement system or a computer measurement system.

Features

1. The professionally designed swing frame can effectively transmit mechanical force, is sturdy and reliable, has low vibration resistance and good rigidity;
2. High sensitivity sensor, good linearity, durable and reliable;
3. Permanent calibration measurement principle, high accuracy, allowing extremely high initial imbalance;
4. Equipped with special fixtures, with higher accuracy and easier clamping;
5. Advanced electrical measurement system, friendly man-machine interface, complete functions

Purpose

An unbalanced rotor generates a pressure on its supporting structure and the rotor itself during its rotation, and causes vibration. Therefore, the dynamic balance of the rotor is very necessary. The balancing machine is to check the dynamic balance of the rotor in the rotating state. The function of dynamic balance is:

- Improve the quality of the rotor and its components
- Reduce noise
- Reduce vibration
- Improve the trial life of supporting parts (bearings)
- Reduce user discomfort
- Reduce the power consumption of the product

Technical Parameters

Model	HZ-9705A-16	HZ-9705A-42	HZ-9705A-65	HZ-9705A-100
Max Mass of Workpiece(kg)	16	42	65	100
Max Diameter of Workpiece(mm)	Ø800			Ø1000
Balance speed (r/min)	Frequency stepless speed regulation			
Motor Power (KW)	1.5		2.2	3
The smallest achievable residual unbalance (g.mm/min)	emar≤2			
Unbalance reduction rate (%)	URR≥95%			
De-weighting device	Equipped with Xihu brand drilling machine, with force cancellation structure			
Measuring surface	Single side			
Measuring system	Microcomputer digital electrical measurement system (optional computer measurement system)			
Note: The technical parameters of the above series of balancing machines are for reference only. The specific parameters and quotations need to be determined according to the actual situation of the rotor of the user's workpiece, and can also be customized.				

Unbalance amount calculation

$$m_{per} = M \times G \times \frac{60}{2\pi \times r \times n} \times 10^3 (g)$$

Where **m_{per}** is the allowable unbalance:

M: represents the weight of the rotor, the unit is kg

G: represents the balance accuracy grade of the rotor, the unit is mm/s

r: represents the correction radius of the rotor, the unit is mm

n: represents the speed of the rotor, the unit is rpm.

Annex

The balanced quality grades of commonly used various rigid vermilion drills

Balance quality grade	Eper. ω mm/s	Type of rotor
G 0.4	0.4	Spindle, grinding wheel, motor rotor and gyroscope of precision grinder
G 1	1	Tape recorder and record player, CD, DVD drive, grinding machine spindle drive and electric cabinet, small armature for special requirements
G 2.5	2.5	Gas and steam turbines, machine tool drives, special requirements of medium and large motor rotors, computer storage drums or disks, turbine compressor rotors, small armatures that do not meet one of the two conditions of G6.3, turbo-driven pumps
G 6.3	6.3	Paper machine drums, printing press drums, main turbine gears of merchant ships and marine vessels, high-speed separator drums, fans, fans, blowers, rotor parts of aviation gas turbines, flywheels, pump impellers, machine tools and general machinery, generally medium-sized And large motor rotor (shaft center height of more than 80mm) mass-produced small armatures whose installation conditions are not sensitive to vibrations. Vibration isolation devices are provided, and individual parts of the engine with special requirements. Supercharger rotors.
G 16	16	Drive shafts with special requirements (propeller shafts, universal joint drive shafts), parts of grinders, parts of agricultural machinery, individual parts of automobile engines, crankshaft drive parts of six-cylinder and multi-cylinder engines with special requirements, metallurgy, chemical industry, Parts of continuous process machinery in petroleum and other refineries, main turbine gears of ships (merchant ships), centrifugal separator drums
G 40	40	Automobile wheels, hubs, rims, wheel assemblies, drive shafts,

		elastically installed six-cylinder or more high-speed four-stroke (gasoline or diesel) engine crankshaft drive devices, and engine crankshaft drive devices for automobiles, trucks and locomotives.
G 100	100	Crankshaft drive device of six-cylinder or more high-speed diesel engine, complete engine (gasoline or diesel) of automobile, truck and locomotive
G 250	250	Rigidly mounted high-speed four-cylinder diesel engine crankshaft drive device
G 630	630	Rigidly installed crankshaft drive device of large four-stroke engine, elastically installed crankshaft drive device of marine diesel engine
G 1600	1600	Rigidly mounted crankshaft drive device of large two-stroke engine
G 4000	4000	Crankshaft drive device of low-speed marine diesel engine with odd number of cylinders rigidly installed

Note: Before you choose a balancing machine, you should first determine the balance level of the rotor

注： 在您选择平衡机之前应该先确定转子的平衡等级

Product Support

Lixian® provides documentation, including manuals and online help, that can answer many of the questions you may have. It is recommended that you review the documentation sent with the system you purchased for possible solutions to your questions.

If you cannot find answers in these sources, contact Lixian® Service directly. A list of Lixian® offices is available on our website at www.lyxyantech.com. In the US and Canada, you can call directly at +86-137-1188-8650.

HZ-9705A Power Requirements and Cords

Power requirements

Table 2. HZ-9705A Power requirements

Parameter	Specification
Maximum Power (VA)	256
Single Phase Voltage (Vac) (±10%)	220~240,100~120 (customize)
Frequency - Hz	47 to 63
Length of Power Cable - m (ft)	2.44 (8)



For 230 Vac operation, the frame is normally set to 240 V.

The 230 Vac option on the voltage selector is designed for 220 Vac ±10%.

Warning



Electrical hazard - to ensure safety and Electromagnetic Compatibility (EMC) the facility's receptacle must be a 3-wire grounded receptacle. The ground must be a low impedance earth ground in accordance with national and/or local regulations.

Warning



You must use GFCI (Ground Fault Circuit Interruption) protection on all power sources if your testing system includes water or any other fluid.

If your system includes any fluids (e.g. water-cooled grips, BioPuls baths, food testing fixtures), you must use GFCI protection on all power sources to protect the operator from fluids that might leak into the load frame electronics.

LIXIAN

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