

BIE

Vertical Balancing Machine



Mastering the fine art of testing

B I E Make Vertical Balancing Machines are extremely robust and resistant to external adverse influences. The rough workshop environment in both one off and large volume production is where vertical balancing machine can prove their strength. Hard bearing type single plane vertical balancing machines are designed after years of experience. Occasional overloading caused by large initial unbalance or rotors which are slightly outside the specified weight range, are never a problem. Regardless of your application requirements, our vertical balancing machine will provide precision unbalance measurement and dependable long term stability.

Application - Flexible and Versatile

Vertical machine applications range from balancing in the repair workshop to fully automatic mass production. Manual, semi or fully automatic processes are available to meet the needs of any balancing requirements. These machines are most suited for balancing of disc type components like flywheels, clutch plate, impellers, etc.

Operation - Simple and Logical

Many practical details in the design of our vertical balancing machines make operation easy. Low space requirements, ergonomic operation and easy loading can make these machines an integral part of your facility. Our vertical balancing machines are permanently calibrated to reduce set up time and eliminates the need for special calibration runs. Accurate indication in balancing unit avoids the necessity of complicated conversions. Moreover unbalance can be directly corrected on the balancing machine speeds up the working process.

For corrections of the unbalance in the balancing machines

- Correction devices such as drilling head attachment or milling attachment, as per requirement of customer can be integrated with the balancing machine to accelerate productivity of the machine.
- Balancing and correction is a single operation means no unclamping and reclamping between measuring run and unbalance correction required increased accuracy.
- Ergonomic operation from a single position High operation Reliability.
- Robust mechanical design and durable electronic components for a long service life under severe operating conditions.
- Simple operation of machine and measuring instrument.
- Protection devices and safety measures to ensure safety at work.

Measurement units

The machines are provided with microprocessor based systems for measurement of unbalance in gms along with angular position. Salient features of the system are as follows :

■ Key board

Key board is provided for data feeding, Data of rotor such as correction radius, balancing tolerance can be fed by key operations. Hence accuracy of data feeding is accurate up to 1 digit.

■ **Digital display for unbalance indications**

Amount of unbalance along with angular position is displayed at selected correction radius. Angle and amount indications are more accurate and precise as compared to conventional analogue meters. Accuracy for amount indication is ± 1 digit and ± 1 digit for angle.

■ **Digital display for speed indication**

Three digit display is provided for indicating balancing speed in RPM as a standard feature.

■ **Auto Stop**

Machine once started, stops automatically after the unbalance readings are stabilized.

■ **Auto Compensation**

For compensating errors in unbalance indication, caused by mandrel error, automatic compensation facility is provided through software, as a standard feature.

■ **Auto Range**

Depending upon unbalance amount, fine or coarse range gets automatically selected till rotor gets balanced within tolerance limit. Manual operation of selecting multiplier is totally eliminated.

■ **Tolerance indicators**

An LED is provided, which glows when unbalance is reduced within selected balancing tolerance.

■ **Data Store**

Data of various rotors can be stored against respective rotor numbers. Hence there is no need to measure rotor dimensions or rotor data feeding when balancing of same type of rotor is to be carried out. Just call rotor type No. and machine is ready for balancing.

■ **Self check**

Panel is provided with "Self Check" mode to check proper functioning of digital display. (In this mode LEDs will glow in cyclic operation). This helps immediate fault detection.

Additional features on demand

- **Printer** : Dot matrix printer can be connected through a software. It shows trial runs, till rotor is balanced within selected balancing tolerance.

Sample Printout

Radius	120
Tolerance	100
Trial	001
45 gms	130°
Intolerance	

- Normal indication of unbalance is in polar form, Component indication for either 90° or 120° can be provided for specific requirements.

**BIE MAKE VERTICAL HARD BEARING SINGLE PLANE
DYNAMIC BALANCING MACHINE,
MODEL : FVBM-M.**

MODEL	UNIT	FVBM - 3	FVBM - 5	FVBM - 10	FVBM - 30	FVBM - 50	FVBM - 100	FVBM - 300
Weight of Rotor	Kg.	0.3 - 3	0.5 - 5	0.5 - 10	1 - 30	1.5 - 50	3 - 100	10 - 300
Max. Dia of Rotor	mm.	300	400	400	500	500	600	1000
Balancing Speed (n)	rpm	1000	1000	1000	750	600	500	350
Power of Drive Motor	Hp	0.33	0.33	0.75	1.5	1.5	3	5
Acceleration Capability in $GD^2 n^2$	$Kgm^2 n^2$	0.29×10^5	0.29×10^5	0.37×10^5	0.66×10^5	0.66×10^5	2.28×10^5	10.6×10^5
Mini. Unbalance Mass Measured	gm	0.01	0.01	0.01	0.1	0.1	0.1	0.1
Max. Unbalance Mass Measured	Kg.	0.2	0.2	0.2	1	1	2	2
Mini. Achievable Unbalance (For Max. Weight of Rotor)	Microns or gmm/kg	0.5	0.5	0.5	0.5	0.5	0.5	0.5

Machine Conforms to IS : 11723 - Part 1 - 1992

We can also supply Hardness Testers (Rockwell, Brinell, Vickers), Spring Testing Machines, Compression Testing Machines, Tensile Testing machines, Universal Testing Machines & Custom Built Testing Machines.

BIE reserves rights to change the above specifications due to constant improvement in designs.

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