GROUP

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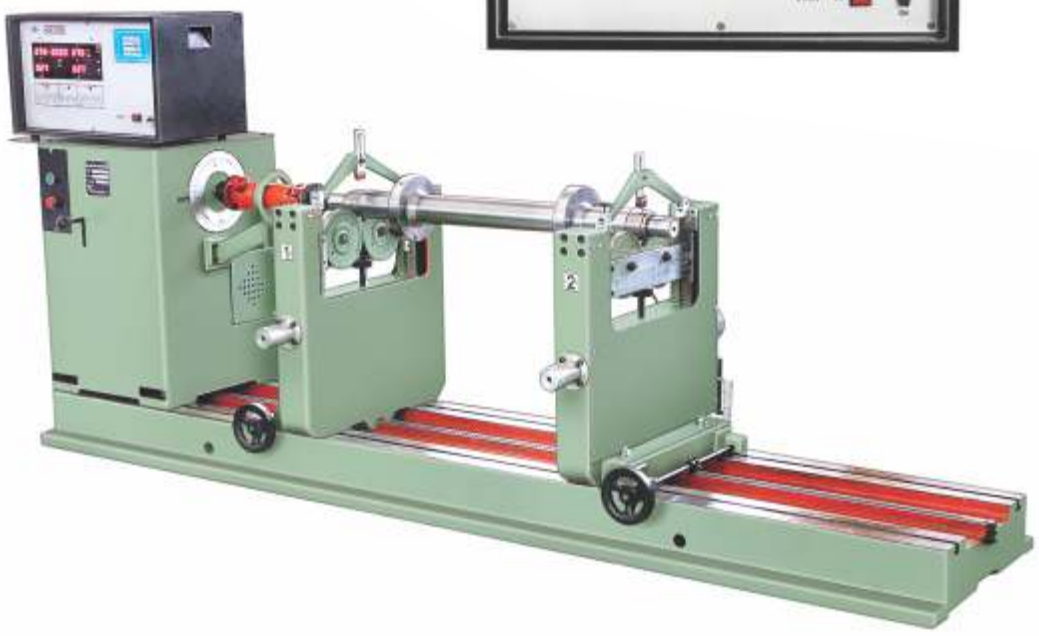
Dynamic Balancing Machines with Microprocessor Based Measuring Panel

Hard Bearing Models : HDM



Digital Display

Auto Stop

Simultaneous Indication

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Machines Model HDM are horizontal type universal hard bearing balancing machines provided with Microprocessor based measuring panel HDM-8500 for balancing different shapes of rotors like rotors of electrical machines, crankshafts, cylinders, Gas Compressors, flywheels, turbine rotors, rotors of centrifugal pumps and any other type of rotors of rotating machines.

These machines feature a very simple operation. The working cycle is fully automatic. From safety point of view a double press push button starts machine, measures and stores the unbalance values on DPMs for two planes simultaneously and stops machine (with brake if machine is provided with electrical braking facility). The measuring cycle in general is less than 10 seconds for normal rotors, which can be accelerated within 5 seconds.

To have smooth and gradual acceleration models HDM 3,000/7,000/10,000/20,000 are provided with slip ring motors in order not to have damage to drive coupling as well other rotating parts in drive system like gears etc. The starting of these machines is done manually by cutting remittances of starter in 4 to 5 steps.

Key-board facility provided on measuring panel for correct data feeding of rotor with 1 digit accuracy for its dimensions like A, B, C, R1 & R2. Tolerance limits of both correction planes i.e. t1, and t2 can be fed, so that when rotor is balanced within the limits respective LED is glow up, indicating no further correction necessary. For other details please refer 'Features of Measuring panel HDM-8500.'

The usable length of machine is established according to the longest rotor to be balanced. Extension beds can be supplied on request, which can be added to standard bed of machine. It is also possible to install an additional bed (Gap bed) with a pit between this bed and standard bed of machine in order to balance rotors having its outside diameter exceeding swing over standard bed. Models HD-7,000/10,000/20,000 are provided with fixed separate drives and hence gap-bed design is not possible.

HDM-8500

This is a Microprocessor based measuring panel suitable for FIE Hard Bearing Machine.

Additional Features on Demand

1) Printer :

A matrix printer can be connected through available 'FIE' software. See sample printout. It shows trial runs till rotor is balanced within balancing tolerance.

```
ROTOR.NO:01        SERIAL.NO:0001
A=0155 mm    B=0785 mm    C=0455 mm
R1=0080 mm         R2=0080 mm
TL1=0150 g.mm      TL2=0150 g.mm

TRIAL:0001         SPEED=0500 R.P.M.
U1=076  gm.          U2=075  gm
ANGLE=037 Deg.-    ANGLE=038 Deg.-
TL1*40.53          TL2*40.00

TRIAL:0002         SPEED=0500 R.P.M.
U1=00.3 gm.          U2=00.0 gm
ANGLE=090 Deg.-    ANGLE=270 Deg.-
IN TOL             IN TOL
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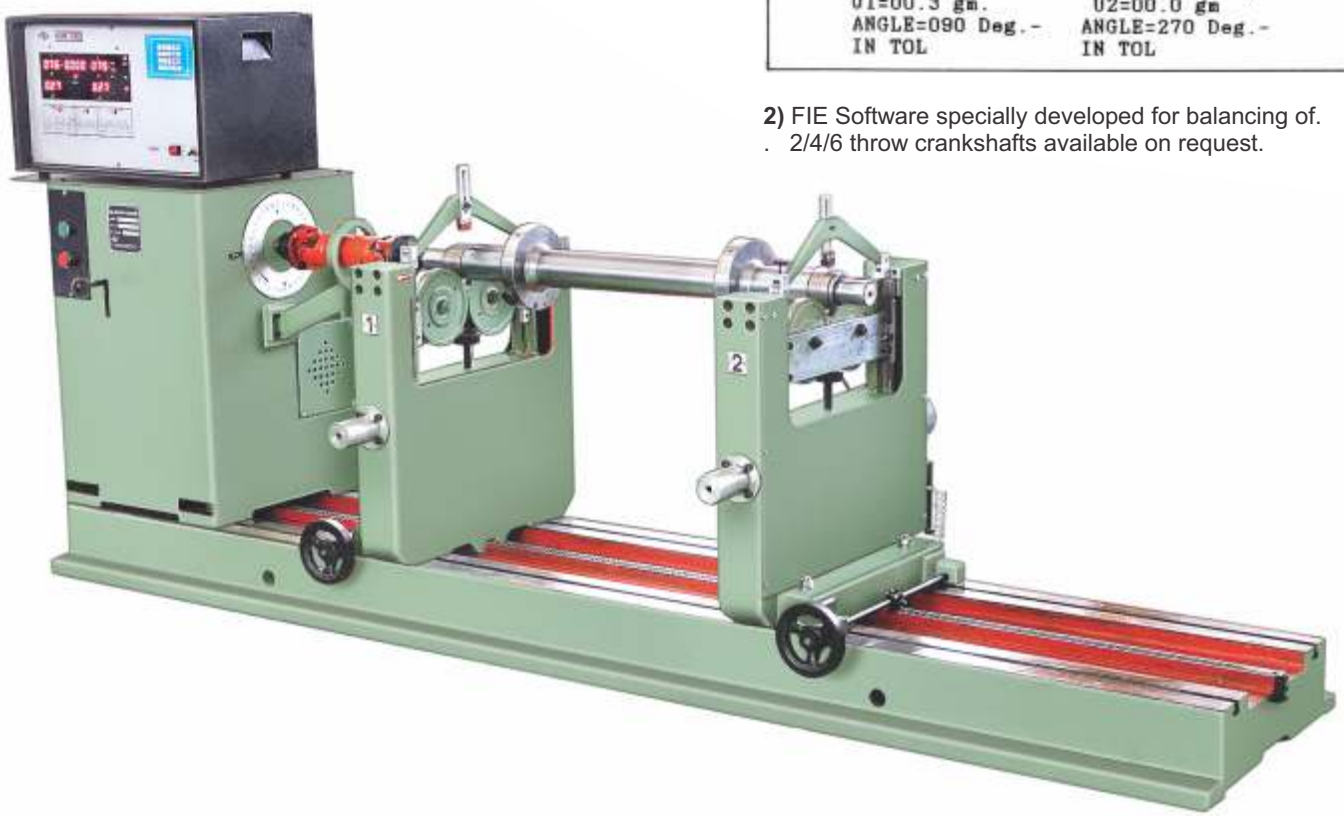
2) FIE Software specially developed for balancing of.
. 2/4/6 throw crankshafts available on request.



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STANDARD FEATURES :

1) Digital display for unbalance indication

Amount and angle for unbalance for both planes displayed on separate DPMS. Hence linear accuracy is very good as compared to Analog meter. Accuracy ±1 Digit for amount and ±1 Degree for angle.

2) Digital display for RPM indication

A DPM is provided to indicate balancing speed continuously as a standard feature.

3) Auto Stop

No necessary to stop machine once started. It stops automatically after stabilization of unbalance results.

4) Simultaneous Indication

Amount and Angle of unbalance in both planes displayed simultaneously and remains displayed (Stored) till next run. This totally eliminates operation of plane selector and reduces additional time for stabilization of readings in other plane.

5) Key-board

Data of rotor dimensions and balancing tolerance i.e. values of A,B,C, R1,R2,tI1,tI2, are fed by key operation. Hence accuracy of data feedings accurate upto 1 digit.

6) Tolerance Indicators

Separate LEDS are provided for both planes which glow when unbalance is reduced within balancing tolerance.

7) Auto-range

Depending upon whether unbalance amount is more or less a respective course or fine range gets automatically selected till rotor gets balanced within tolerance limits.

Multiplier operation is totally eliminated.

8) Data Store

Data of various rotors can be stored against respective rotor type nos. Hence no need of measuring of rotor dimensions or rotor data feeding when repeat balancing operation required.

Just call rotor type no. and machine is ready for balancing.

9) Self Check

Panel is provided with "Self-Check" mode which checks proper functioning of digital displays, LEDs is cyclic operation.

This helps immediate fault detection.

TECHNICAL SPECIFICATIONS

"FIE" HORIZONTAL TYPE UNIVERSAL HARD BEARING BALANCING MACHINES

MODELS	UNIT	HDM-10	HDM-30	HDM-50	HDM-100	HDM-300	HDM-650	HDM-1,000	HDM-3,000	HDM-7,000	HDM-10,000	HDM-20,000
Weight of Rotor	kg	0.5-10	1-30	2-50	3-100	10-300	20-650	10-1,000	30-3,000	70-7,000	100-10,000	200-20,000
Max. Weight on each pedestal	kg	7.5	22.5	30	75	180	480	600	1,800	5,250	6,000	12,000
Max. diameter of rotor over bed	mm	600	600	600	1,000	1,000	1,200	1,600	2,000	2,400	2,400	3,000
Max. distance measured from coupling end ro extreme bearing centre.	mm	480	480	1,100	1,350	1,350	1,650	1,650	2,400	3,300	3,300	3,200
Min. distance between Roller bearing of pedestals	mm	75	75	75	90	110	300	350	500	560	560	660
Rotor journal dia	mm	5-50	5-50	5-50	15-80	20-120	20-120	25-140	35-200	55-300	55-300	70-300
Balancing speed (n)	RPM	1,000	700	700	600	500	350	300,600	250,500	200,400	200,400	200,400
Power of drive motor	HP	0.33	0.75	0.75	1.5	3	5	7.5	20	30	40	60
Acceleration Capability (GD^2n^2)	kgm^2n^2	$0.29x10^6$	$0.37x10^6$	$0.37x10^6$	$0.88x10^6$	$3.9x10^6$	$8.56x10^6$	$14.12x10^6$	$88x10^6$	$168x10^6$	$216x10^6$	$301x10^6$
Minimum unbalance mass measured	g	0.01	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1	1	1
Maximum unbalance mass measured	kg	0.4	4	4	4	4	4	4	4	40	40	40
Unbalance reduction ratio	%	95	95	95	95	95	95	95	95	95	95	95
Minimum achievable unbalance per Rotor Weight (for max. weight or rotor)	gmm/kg	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

- The balancing speed depends upon selection of the rotor diameter, where drive is to be given and the motor pulley diameter.
- All the machines above operate on mains supply of 400 to 440 V, 3Ø, 50 cycles.
- Due to constant R&D, specifications and features are subject to change without notice. The dimensions given above are approximate.

**** PC & Printer is not in our standard scope of supply.***

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Manufactured By :

Fuel Instruments & Engineers Pvt. Ltd.