

## Active Balancing

# MecBalancer MB 4002



### Advantages

- Increase in product quality and machine availability
- Permanent vibration monitoring
- Version for space-saving installation in spindle bore
- No wear, non-contact energy transmission
- Suited for operation in wet environments
- Software for pre-balancing

### Applications

- Automatic balancing of grinding Wheels
- Balancing during operation
- Compensation of operational unbalance in one or two balancing planes
- Achieving perfect smooth running
- Monitoring of unbalance vibrations

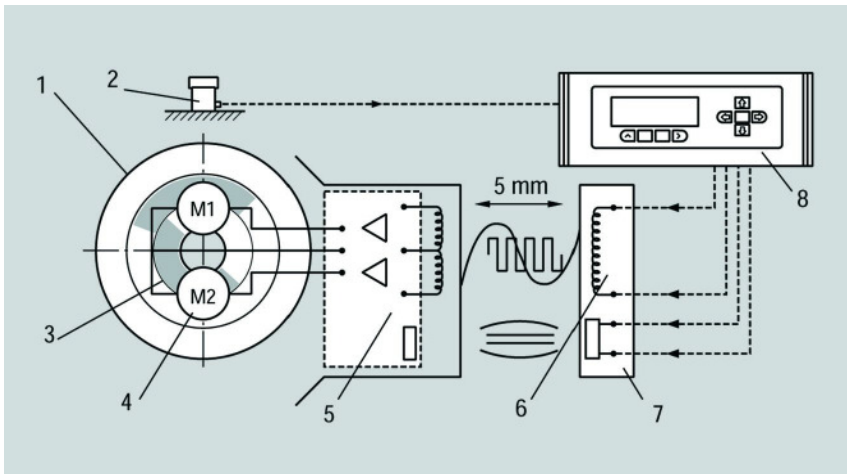
### Description

The active balancing system MB 4002 compensates rotor unbalance using the split component method. To this end, two freely movable weights are positioned in the rotating balancing head on the rotation axis. If the balancing weights are positioned directly opposing each other, their effect is neutralised. The full balancing capacity is obtained by placing the weights at the same angular position. By moving the weights to a specific angle, any unbalance correction with respect to magnitude and direction can be obtained within the above limits.

The balancing weights are moved by two small electrical positioning motors installed within the rotating balancing head. A transmission reduces the motor speed for accurate positioning of the balancing weights.

The energy to drive the actuator motors is transmitted contactless and thus wear-free. The NONCON receiver in the rotating balancing head is matched by a fixed NONCON sending unit on the stationary side.

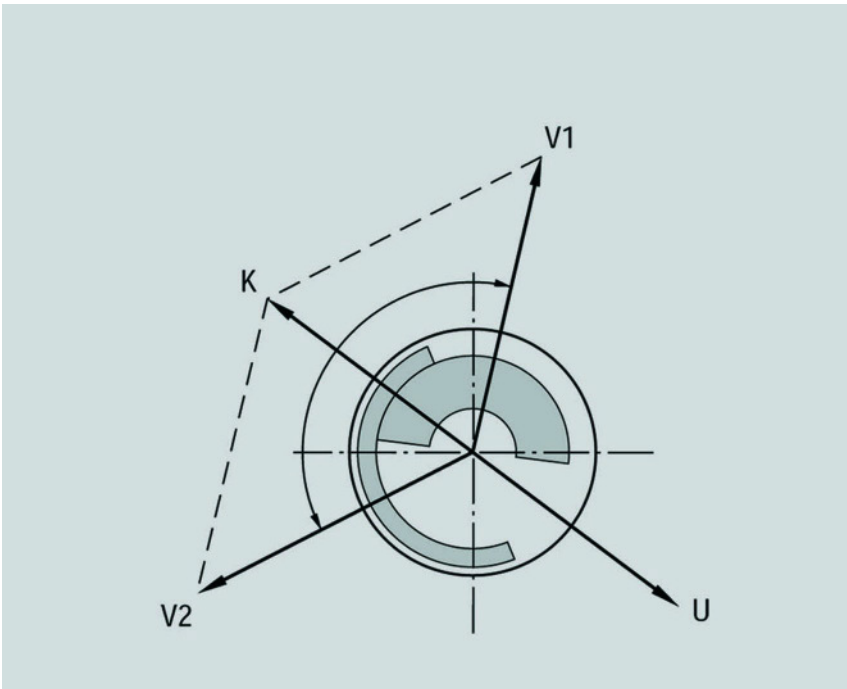
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MB 4002 function schematic

A control unit constantly receives the measured data - rotor speed and vibration. If the vibration exceeds a preset limit, an automatic balancing procedure is started by either the machine controller or the operator. The positioning motors receive the corresponding signals to move the balancing weights to the required position.

The MB 4002 balances automatically using an iteration procedure. The positions of the balancing weights required to compensate the unbalance in one or two planes are calculated based on the actual measuring data.



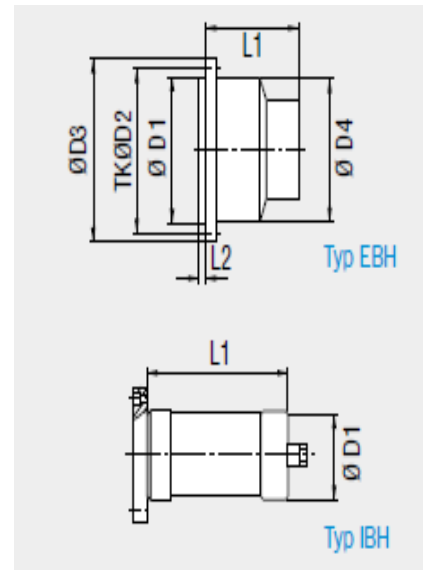
Unbalance compensation

The balancing heads are available in flange mount, external mount or space-saving internal mount versions. In conjunction with the NONCON sending unit, they are perfectly suited for operation in wet environments.

If the rotor unbalance is larger than the balancing head capacity, a manual pre-balance is required. For this purpose the MB 4002 has suitable pre-balancing, software that supports the split-component method of balancing.



Types of balancing heads

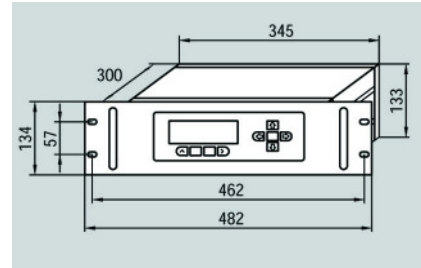


## Technical data balancing heads

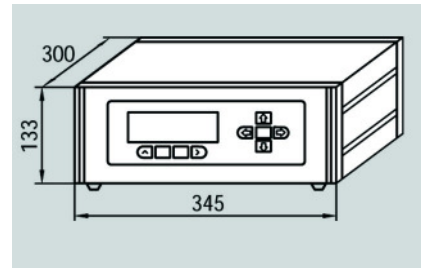
External balancing heads Type	Ø D1 fit / D2 hole circle / D3 flange	Length L1 + L2	Capacity
EBH 200	80 mm / 98 mm / 110 mm	102 mm	200 gcm
EBH 400	80 mm / 98 mm / 110 mm	102 mm	400 gcm
EBH 650	95 mm / 106 mm / 120 mm	104 mm	650 gcm
EBH 800	95 mm / 106 mm / 120 mm	104 mm	800 gcm
EBH 1350	95 mm / 106 mm / 120 mm	104 mm	1350 gcm
EBH 1500	95 mm / 106 mm / 120 mm	104 mm	1500 gcm
EBH 1700	95 mm / 106 mm / 120 mm	104 mm	1700 gcm
EBH 2850	114 mm / 126 mm / 140 mm	104 mm	2850 gcm
EBH 3300	114 mm / 126 mm / 140 mm	104 mm	3300 gcm
EBH 4300	114 mm / 126 mm / 140 mm	104 mm	4300 gcm
Internal balancing heads Type	Ø D1 fit	Length L1	Capacity
IBH 42/ 400	42 mm	120 mm	400 gcm
IBH 42 / 700	42 mm	230 mm	700 gcm
IBH 50 / 1000	50 mm	160 mm	1000 gcm
IBH 50 / 1800	50 mm	220 mm	1800 gcm
IBH 55 / 1350	55 mm	120 mm	1350 gcm
IBH 55 / 2400	55 mm	180 mm	2400 gcm
IBH 60 / 1500	60 mm	120 mm	1500 gcm
IBH 60 / 2800	60 mm	220 mm	2800 gcm
IBH 63 / 1500	63 mm	110 mm	1500 gcm
IBH 63 / 2000	63 mm	160 mm	2000 gcm
IBH 70 / 2200	70 mm	120 mm	2200 gcm
IBH 70 / 2700	70 mm	190 mm	2700 gcm
IBH 80 / 3000	80 mm	120 mm	3000 gcm
IBH 80 / 3500	80 mm	180 mm	3500 gcm



Control unit with separate operator panel



Rack version



Desktop version

## Technical data

### Measuring electronics

Balancing planes	1/2
Vibration sensor	1/2
Rotational speed range	300 - 100,000 RPM
Vibration displacement range	0,01 - 100 µm
Control panel	IP67, keypad with pressure point
Display	4x20 LCD, illuminated
I/O interface	24 V, 25 pin D-Sub
Dimensions WxHxD	
● Dimensions - 19" rack version	482 mm x 134 mm x 300 mm
● Dimensions - desktop version	345 mm x 133 mm x 300 mm
Mains supply	115/230 V, 50-60 HZ, 80 W
Weight	approx. 6 kg.
<b>NONCON - sending unit</b>	
Operating frequency	<10 kHz
Transmission gap	up to 5 mm
Diameter x Length	75 x 30 mm

## Options

- 2 plane system
- 4 channel system
- Control unit available as a 19" rack mount unit or case version
- Control unit with separate operator panel
- Custom balancing heads

## Scope of supply

- Control unit
- Balancing head in external or internal mount version
- Vibration sensor SA 5004 with 5 m connection cable
- NONCON - sending unit with 5 m connection cable
- Operating instructions