

## HM 1 - HM 10 Horizontal Balancing Machines



- Modular structure
- Quick change-over from workpiece to the next
- High balancing accuracy
- Infinitely variable DC drive
- Optimum operating height
- Installation without bolting
- Protective device C 60 to ISO7475
- CAB 700 measuring instrument with clear digital display (CAB 920 with vector display available as option)

### Range of application

Universal balancing machines type HM1 and HM10 are ideally suited to small work-pieces such as electric armatures, turbochargers and spindles. The machines are conceived for seated or standing operators and can be used at varying locations.

Change-over to new rotor types is straightforward and only requires a minimum of time. Three different drive systems are available: Overslung, underslung or tangential belt drive. Unbalance correction can be achieved by addition of material (weights or balancing plasticine) directly on the machine or by removal of material on a separate machine tool.

Manual machining units are available as options.

### Design

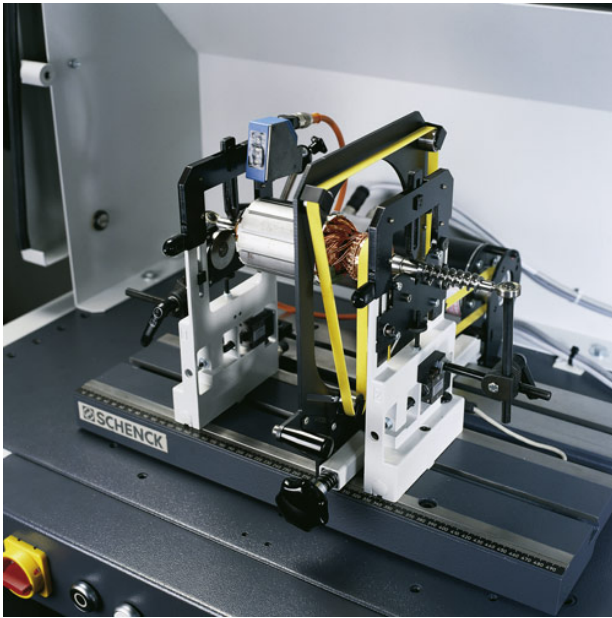
- Hard-bearing, horizontal balancing machine of table-top design.
- Permanently calibrated measuring instrument, digital signal processing.
- CAB 700 measuring instrument with graphics-capable color LCD display.
- Optional: CAB 920 with Windows operating system, TFT color screen and display of unbalance in vector form.
- Complete workplace essentially of the following components: Machine table, mechanical balancing unit

with roller or prism bearings and belt drive.

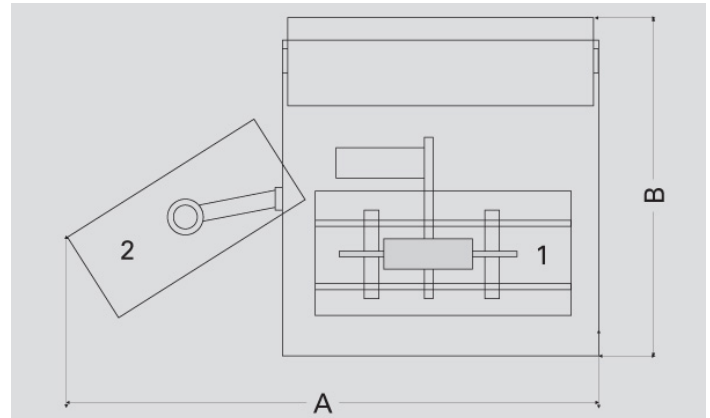
### Special features

- The machine can be mounted directly on the workshop floor without foundations and without bolting, and is immediately ready for use.
- Hard-bearing principle ensures quick change-over
- High balancing accuracy
- Optimum operating height
- Infinitely variable DC drive
- Automatic measuring cycle with settable acceleration, measuring and braking time.
- Can be extended with integral mass correction system.

## HM 1 - HM 10 Horizontal Balancing Machines



Balancing machine type HM10 with overslung belt drive and C60 protective device.



1 Measuring station 2 Measuring device  
Plan view (non-binding example)

# HM 1 - HM 10

## Horizontal Balancing Machines

Technical data at a glance	HM 1	HM 10
Measuring unit	CAB 700	CAB 700
Roller carriages	•	•
Overslung belt drive	•	•

### Rotor

Weight, max.	[kg]	10	16
Diameter, max.	[mm]	360	360
Bearing distance, max.	[mm]	450	450
Bearing journal distance	[mm]	5 - 50	6 - 70

### Machine

Width A	[mm]	900	900
Depth B	[mm]	600	600
Height C	[mm]	1520	1520
Balancing speed	[min <sup>-1</sup> ]	variable	variable
MARU	[gmm]	0,1	0,2
Air pressure	[kPa]	-	-
Power supply	[V]	230	230
Drive power	[kW]	0,2	0,2

Order-Nr.	R0060100.01	R0060200.01
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Order-Nr.	R0060101.01	R0060201.01
Software options	o.r.	o.r.
Underslung belt drive BU	Order-Nr. R0060103.01	R0060203.01
Tangential belt drive BT	Order-Nr. R0060104.01	R0060204.01
Various roller carriages	o.r.	o.r.
Report printer	Order-Nr. R0060105.01	R0060205.01
Protection device to ISO 7475	•	•
Mass correction system	o.r.	o.r.

2) Other data upon request

3) Mains configuration: 3 / PE AC 500Hz 400 V +6 / -10%

4) Minimum achievable residual unbalance per balancing plane

o.r. on request

## HM 20 - HM 30 Horizontal Balancing Machines



- Universally applicable
- High balancing accuracy
- Easy upgrading through modular structure and a wide range of accessories
- Hard-bearing principle ensures fast change-over
- CAB 700 or CAB 920 measuring instrument, with extensive operator prompting
- Extensive safety equipment for all protection classes

### Range of application

Universal balancing machines series HM enable precise balancing of a wide spectrum of rotors. They are suitable for cylindrical rotors having their own shaft journals and for balancing disc shaped rotors on balancing arbors.

Permanent calibration, ergonomic design and a logical operating sequence facilitate operation.

A modular design principle and a wide range of accessories make the machine highly flexible.

Schenck universal balancing machines series HM are a highly efficient investment, both for one-off rotors and for small batches.

### Sequence of operations

- Manually load work-piece on the bearing pedestals, close hold-down bearings and connect drive (belt drive or drive shaft).
- Close protection device and start automatic measuring sequence:
- Acceleration, determination and display of the unbalance on the measuring instrument, brake. The readout is retained on the measuring instrument even after the measuring run has ended.
- Open protection device, manually correct unbalance (if

required).

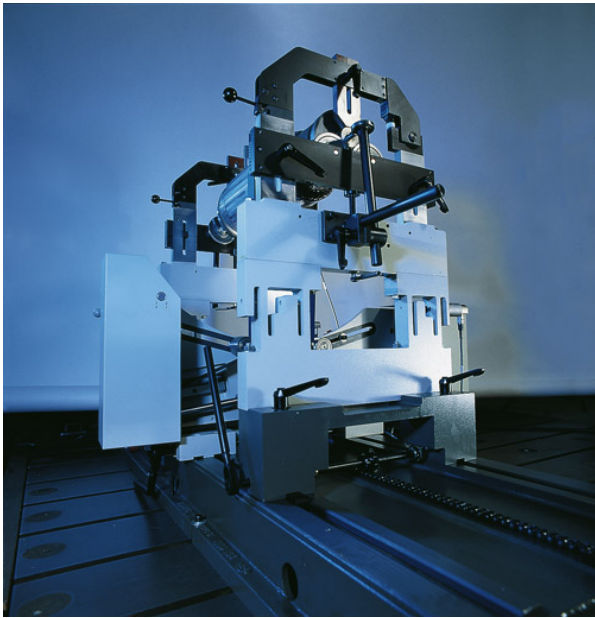
- Check correction result (with measuring instrument displaying whether the tolerance has been achieved) and unload the rotor from the machine.

### Special features

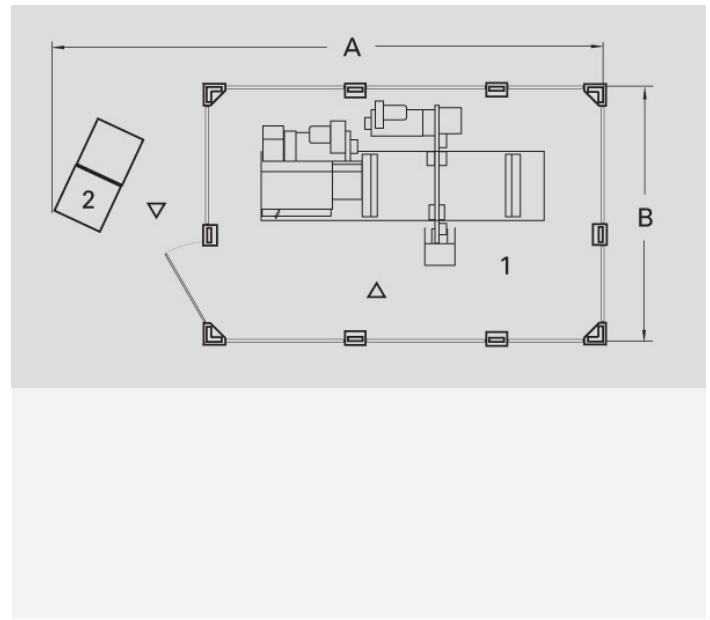
- Easy to operate – hard-bearing principle eliminates the need for calibration runs
- Provides for correction in two planes or separate according to static and couple unbalance
- Rotors can be mounted on their original shafts or on mounting arbors, optionally with mounted anti-friction bearings
- Angle indexing display in case of belt drive
- Automatic measuring cycle with infinitely variable settings for acceleration, measuring and braking time
- Upgradeable by many additional modules e.g. for mass correction



## HM 20 - HM 30 Horizontal Balancing Machines



HM bearing pedestals: Extremely slim but highly sturdy bearing pedestals guarantee high overall stiffness, high linearity and low damping. Use of the Schenck force-measuring principle, with the middle part of the bearing pedestal designed as a dynamometer. The sensors are arranged outside the force path and are therefore not affected by impacts.



1 Balancing machine 2 Controls and measuring device

Plan view (non-binding example)

## HM 20 - HM 30 Horizontal Balancing Machines

Technical data at a glance	HM 20	HM 3	HM 30
Measuring unit	CAB 700	CAB 700	CAB 700
Roller carriages	•	•	•
Underslung belt drive BU	•	•	•
End drive		•	•
Protective device as per ISO 7475	•	•	•

### Rotor

Weight, max.	[kg]	100	300	700
Diameter, max.	[mm]	1260	1260	1260
Bearing distance, max.	[mm]	1330	1330	1330
Bearing journal diameter	[mm]	9 - 140	9 - 140	10 - 160

### Machine

Width A	[mm]	2250	2250	2250
Depth B	[mm]	1650	2250	2250
Height C	[mm]	2000	2000	2000
Balancing speed, min.	[min <sup>-1</sup> ]	120	120	120
MARU	[gmm]	1,6	2,0	3,0
Air pressure	[kPa]	-	600	600
Power supply	[V]	400	400	400
Drive power	[kW]	1,1	2,2	2,2

Order-Nr.	R0060400.02	R0060500.02	R0060600.02
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Order-Nr.	R0060401.01	R0060501.01	R0060601.01
Software options	o.r.	o.r.	o.r.
Angular roller bearings	•	•	•
Overslung belt drive BK	•	•	•
Various roller carriages	o.r.	o.r.	o.r.
Report printer	Order-Nr.	R0060405.01	R0060505.01
Mass correction system	Order-Nr.	o.r.	o.r.

2) Other data upon request

3) Mains configuration: 3 / PE AC 500Hz 400 V +6 / -10%

4) Minimum achievable residual unbalance per balancing plane



## HM 20 - HM 30 Horizontal Balancing Machines

5) Up to HM 10 with protection class C, in all other cases protection class B

o.r. On request

## HM 4 - HM 50 Horizontal Balancing Machines



- Universally applicable
- High balancing accuracy
- Easy to upgrade through modular construction and a wide range of accessories
- Hard-bearing principle ensures quick change-over from one workpiece to the next
- CAB 700 or CAB 920 measuring instrumentation with extensive operator prompting
- Full range of safety equipment for all protection classes

### Range of application

Universal balancing machines series HM are conceived for highly precise balancing of a wide spectrum of rotors. They are suitable for balancing cylindrical rotors with integral shaft journals and for balancing disc shaped rotors on balancing arbors.

Permanent calibration, ergonomic design and a logical operating sequence facilitate operation.

Their modular design principle and a wide range of accessories make the machine highly flexible.

Schenck universal balancing machines series HM are a highly efficient investment both for one-off rotors and for small batches.

### Sequence of operations

- Manually load work-piece on the bearing pedestals, close hold-down bearings and connect drive (belt drive or drive shaft)
- Close protection device and start automatic measuring sequence:
- Acceleration, determination and display of the unbalance on the measuring instrument, braking. The readout is retained on the measuring instrument even after the measuring run has ended.

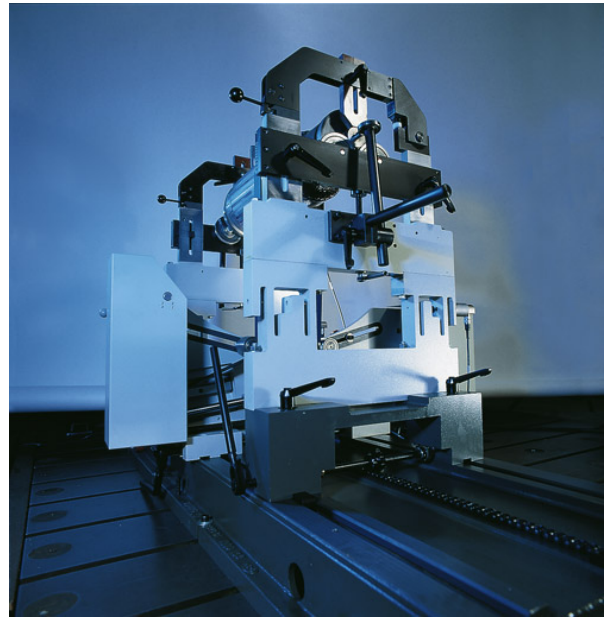
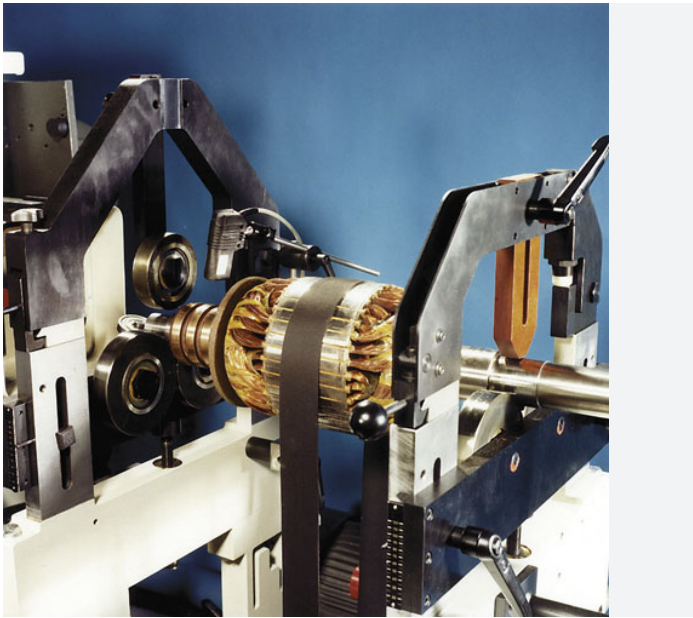
- Open protection device, manually correct unbalance (if required).
- Check correction result (with measuring instrument displaying whether the tolerance has been achieved) and unload the rotor from the machine.

### Special features

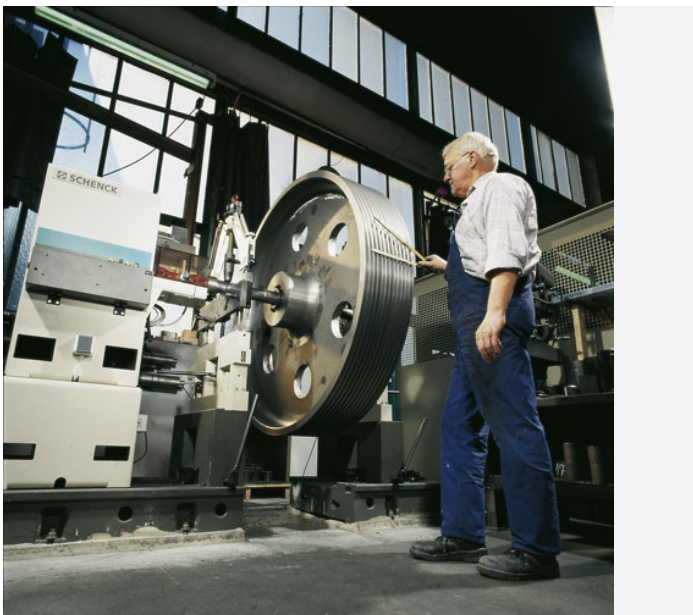
- Easy to operate – hard-bearing principle eliminates the need for calibration runs
- Provides for correction in two planes or separate correction of static and couple unbalance
- Rotors can be mounted on their original shafts or on mounting arbors, optionally with mounted anti-friction bearings
- Angle indexing display in case of belt drive
- Automatic measuring cycle with infinitely variable settings for acceleration, measuring and braking time
- Upgradeable by many additional modules e.g. for mass correction



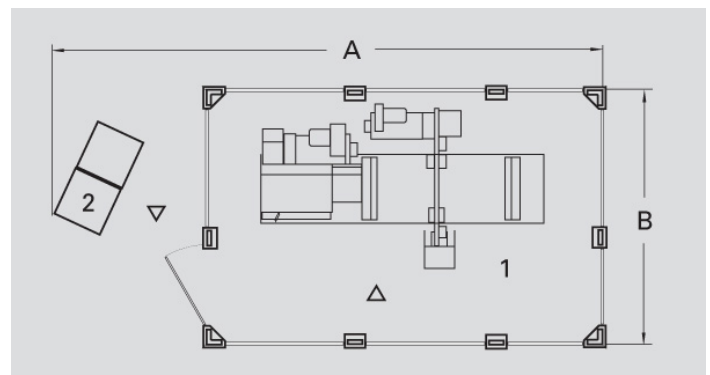
## HM 4 - HM 50 Horizontal Balancing Machines



HM bearing pedestals: Extremely slim and sturdy bearing pedestals guarantee high overall stiffness, high linearity and low damping. Use of the Schenck force-measuring principle, with the middle part of the bearing pedestal designed as a dynamometer. The sensors are arranged outside the force path and are therefore not affected by impacts. The shape of your rotors is an essential factor determining the selection of the drive system. Several drive systems can be combined on one machine.



Underslung belt drive (BU) ensures smooth running and universal applicability, whilst end drive (U) allows high drive powers.



1 Balancing machine  
2 Controls and measuring device  
Plan view (non-binding example)

## HM 4 - HM 50 Horizontal Balancing Machines

Technical data at a glance	HM 4	HM 40	HM 5	HM 50
Measuring instrument	CAB 700	CAB 700	CAB 700	CAB 700
Roller carriages	•	•	•	•
Underslung belt drive BU	•	•		
End drive			•	•
Protective device as per ISO 7475	•	•	•	•

### Rotor

Weight, max.	[kg]	1500	3000	5500	8000
Diameter, max.	[mm]	1600	1600	1600	1600
Bearing distance, max.	[mm]	1750	1750	2000	1980
Bearing journal diameter	[mm]	12 - 200	15 - 240	18 - 280	25 - 380

### Machine

Width A	[mm]	3150	3150	4200	4200
Depth B	[mm]	2700	2700	3750	3750
Height C	[mm]	2000	2000	2000	2000
Balancing speed, min.	[min -1]	120	120	120	120
MARU	[gmm]	5	8	16	20
Air pressure	[kPa]	600	600	600	600
Power supply	[V]	400	400	400	400
Drive power	[kW]	7,5	7,5	7,5	7,5


Order-Nr.	R0060700.01	R0060800.01	R0060900.01	R0061000.01
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Order-Nr.	R0060701.01	R0060801.01	R0060901.01	R0061001.01
Software options	o.r.	o.r.	o.r.	o.r.
Underslung belt drive BU	Order-Nr.	-	-	R0060203.01 R0060203.01
End drive	Order-Nr.	•	•	- -
Various roller carriages	o.r.	o.r.	o.r.	o.r.
Report printer	Order-Nr.	R0060705.01	R0060805.01	R0060905.01 R0061005.01
Mass correction system	Order-Nr.	o.r.	o.r.	o.r.

2) Other data on request

3) Main configuration: 3 / PE AC 500Hz 400 V +6 / -10%

4) Minimum achievable residual unbalance per balancing plane

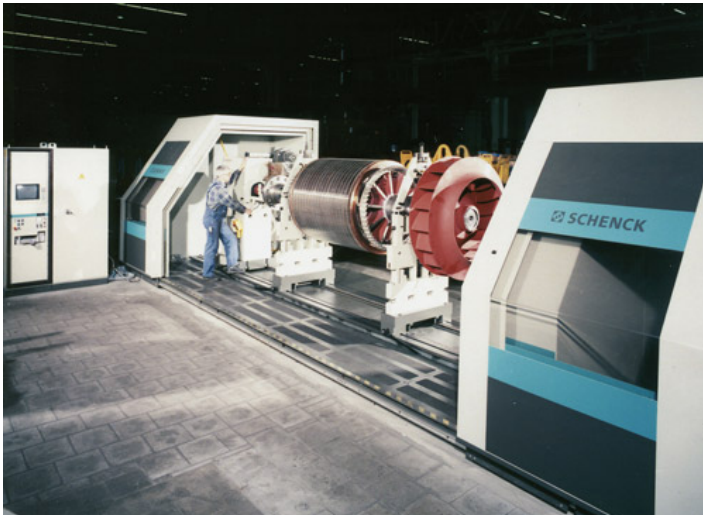
A large industrial machine, likely a horizontal balancing machine, with a prominent rotating drum and various mechanical components. The machine is white and blue, and the background is a light grey.

## HM 4 - HM 50 Horizontal Balancing Machines

5) Up to HM10 with protection class C, in all other cases protection class B

o.r. On request

## HM 6 - HM 80 Horizontal Balancing Machines



- Universally applicable through modular design
- Safe handling through economic design concept
- Full range of safety equipment for all protection classes
- Easy change-over to different rotors

### Range of application

Universal balancing machines series HM6-HM80 are conceived for precise balancing of both rigid and flexible rotors.

Typical applications are:

- Blowers and fans for a variety of industries
- High-speed and low-speed rollers for paper and thin sheet production
- Electrical short-circuit armatures and generators for the electrical industry
- Separators / centrifuges for water processing

### Design

Due to their modular structure, these machines can be adapted easily to the task in hand. The length of the machine bed is dependent on the length of the rotor, the required height of the bearing pedestals is determined by the rotor diameter. If the rotor is mounted on its own bearing journals, these will be supported by roller carriages. Depending on the requirements imposed by the rotor, sleeve bearings may also be used.

Rotors requiring high torques are driven through variable-speed gearboxes and universal joint shaft. Lightweight rotors with smooth surfaces may be driven with the help of a belt

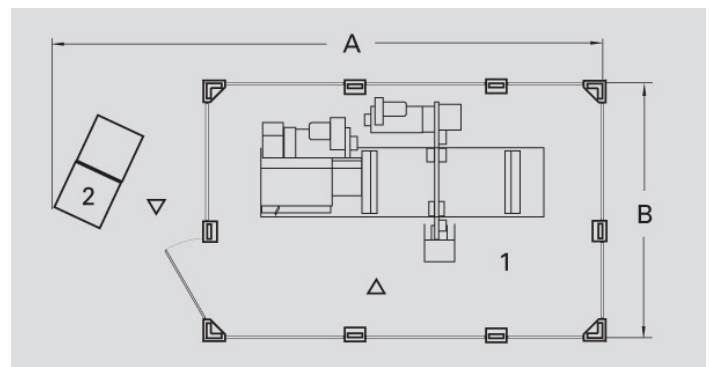
drive system.

### Special features

- With the appropriate machine design and a suitable protection device the machines can also be used for high-speed balancing
- Bearing force monitoring for automatic shut-down in case of overload
- Contact-free measurement of concentric running of rollers
- Graphical display of acceleration curve with 1f and 2f measurement (CAB 920)
- Wide range of supplementary modules, e.g. for mass correction



## HM 6 - HM 80 Horizontal Balancing Machines



1 Balancing machine  
2 Controls and measuring device  
Plan view (non-binding example)

## HM 6 - HM 80 Horizontal Balancing Machines

Technical data at a glance		HM 6	HM 60	HM 7	HM 70	HM 8	HM 80
Measuring unit		CAB 700	CAB 700	CAB 700	CAB 700	CAB 700	CAB 700
Roller carriages		•	•	•	•	•	•
Universal-joint shaft drive		•	•	•	•	•	•
Underslung belt drive BU		•	•	•	•	•	•
Protective device as per ISO 7475		•	•	•	•	•	•
<b>Rotor</b>							
Weight, max.	[kg]	12 500	20 000	32 000	50 000	125 000	250 000
Diameter	[mm]	2100	2100	2800	2800	3600	3600
Bearing distance, max	[mm]	3150	4650	5050	5050	5800	5800
Bearing journal diameter	[mm]	40 - 320	50 - 400	60 - 500	70 - 600	-	-
<b>Machine</b>							
Width A	[mm]	4650	5100	6600	6600	7800	7800
Depth B	[mm]	4050	4050	4050	4050	4500	4500
Height C	[mm]	2000	2000	2000	2000	2000	2000
Balancing speed, min.	[min <sup>-1</sup> ]	120	120	120	120	120	120
MARU	[gmm]	30	40	64	80	160	240
Air pressure	[kPa]	600	600	600	600	600	600
Power supply	[V]	400	400	400	400	400	400
Drive power	[kW]	22	37	55	75	90	110

	Order-Nr.	R0061100.01	R0061200.01	R0061300.01	R0061400.01	R0061500.01	R0061600.01
	Order-Nr.	R0061101.01	R0061201.01	R0061301.01	R0061401.01	R0061501.01	R0061601.01
Software options	Order-Nr.	o.r.	o.r.	o.r.	o.r.	o.r.	o.r.
Underslung belt drive	Order-Nr.	R0060203.01	R0060203.01	R0060203.01	R0060203.01	-	-
Tangential belt drive BT	Order-Nr.	-	-	-	-	-	-
Various roller carriage	Order-Nr.	o.r.	o.r.	o.r.	o.r.	o.r.	o.r.
Report printer	Order-Nr.	R0061105.01	R0061205.01	R0061305.01	R0061405.01	R0061505.01	R0061605.01
Mass correction system	Order-Nr.	o.r.	o.r.	o.r.	o.r.	o.r.	o.r.

2) Other data on request

3) Main configuration: 3 / PE AC 500Hz 400 V +6 / -10%

4) Minimum achievable residual unbalance per balancing plane

A large industrial machine, likely a horizontal balancing machine, with a prominent rotating drum and various mechanical components. The machine is white and blue, and the background is a light grey.

## HM 6 - HM 80 Horizontal Balancing Machines

5) Alternatively or additionally

o.r. On request