SCHENCK

Universal application

High balancing accuracy

Easy to upgrade through modular design and a wide range of accessories

Hard-bearing design ensures quick change-over from one rotor to the next

Ergonomically designed CAB 820 or CAB 920 measuring instrumentation with superior functionality

Full range of safety equipment for all protection classes

Horizontal Balancing Machines

Series HM6/HM60, HM7/HM70, HM8/HM80

Range of Application

Universal balancing machines series HM are designed for accurate 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.

Typical rotors are electrical armatures, rolls and turbines up to 250 tonnes, ventilators, pump impellers and drive elements.

Permanent calibration, ergonomic design and logical operating sequences 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 small batches.

Sequence of operation

- Manual loading of the rotor on the bearing pedestals, closing of counter bearings and coupling the drive system (belt or universal joint shaft).
- Closing of protection device and start of the automatic measuring sequence:
- Acceleration, determination and display of unbalance on the measuring instrument, deceleration. The measured unbalance values are retained after the measuring run is completed.
- Opening of the protection device, manual unbalance correction (if necessary).
- Verification of residual unbalance (measuring unit indicates whether the required tolerance has been reached) and unloading of the rotor from the machine.

Special features

- High ease of operation: Hard-bearing design eliminates the need for calibration runs.
- Machine provides for unbalance correction in two planes or separate correction of static and couple unbalance.
- Rotors can be mounted on their original shaft or balancing arbor on roller bearings or with oil sleeve bearings (available as option)
- Indexing angle display in case of belt drive.
- Automatic measuring cycle with selectable, infinitely variable acceleration, measuring and deceleration times.
- Upgradable with many supplementary modules, e.g. for mass correction.

HM bearing pedestals: Slim, robust bearing pedestals ensure high overall stiffness, high linearity and extremely low damping. Use of the Schenck hard-bearing principle, with the middle section of the bearing pedestal designed as a sturdy dynamometer. Sensors are arranged outside of the force path and are therefore insensitive to impacts.

Drive systems

Underslung Belt Drive (BU)

Universal-Joint Drive (U)

Selection of a drive system is determined by the shape of your rotors. Combinations of different drive systems on one machine are possible. Underslung belt drives (BU) provide for smooth operation and are universally applicable. Universal joint drives (U) in cases where high drive power is required.

Measuring units

Proven measuring technology
This machine series includes measuring technology in the accustomed Schenck top quality in two levels:
The CAB 920 SmartTouch combines maximum precision with simplest operation: the CAB 920 offers an ingeniously simple operating concept, whose logical relationships are clearly apparent at the first glance. The result is totally convincing: rapid and safe working with the minimum learning requirement – for every conceivable technical rotor variant.
The CAB 820 is the basic measuring unit, which sets the standards for its class. It offers absolute peak performance combined with every operating convenience, all at outstanding value for money.

This measuring unit is always the right solution when you want to achieve the balancing objective in your business quickly and without major effort.

Measuring unit CAB 920

Measuring unit CAB 820

Enclosures

The choice of protective enclosure is determined by the danger the rotor presents, with due consideration to the balancing speed, the method of unbalance correction and the maximum penetration energy of rotor components or fragments.
Depending upon the varying protection requirements, ISO 21940-23 specifies five protection classes (0, A, B, C, D) for balancing machines.

Series HM balancing machines usually require Class B or C enclosures. Safety class B should be chosen if contact with the rotor or parts of the drive systems may result in injury. Class C is to be used in cases where the hazard of fragments detaching from the rotor cannot be ruled out entirely. The size, shape, hardness and tangential speed of a projected fragment are used to calculate the penetration potential.


Protection Class B

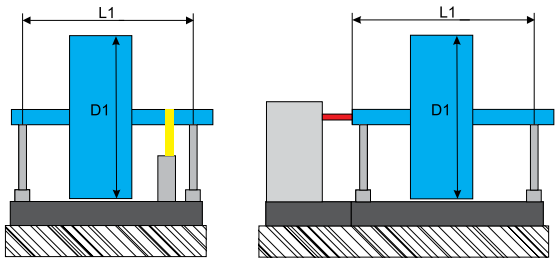
The safety enclosure must be capable of containing any such projected rotor fragment.


Protection Class C

Important data at a glance

Machine		HM 6	HM 60	HM 7	HM 70	HM 8	HM 80
Rotor weight, max	[kg]	12500	20000	32000	50000	125000	250000
Diameter, max (D1) (3)	[mm]	2100	2100	2800	2800	3600	3600
Bearing journal diameter	[mm]	40 - 180	50 - 200	60 - 250	70 - 300	70 - 300	70 - 300
Bearing centre distance (L1) (3)	[mm]	3150	4650	5050	5050	5800	5800
Minimum achievable residual unbal.	[gmm]	30	40	64	80	160	240
Drive power (3)	[kW]	22	37	55	75	90	110
Rotor drive (1)		U; BU (2)					
Power supply		400V ± 10%, 3Ph, 50Hz					
Measuring instrumentation		CAB 820 (c.f. Brochure RC 1057)					
Paint finish		RAL 7024 / 7035 graphite grey / light grey					
Options							
Measuring unit CAB 920		Reference system for peak power, ... (c.f. Brochure RC 1034)					
Additional software		Operator support, documentation, unbalance correction calculations					
Printer with mounting kit		For documentation of the balancing process					
Roller carriage inserts for rotor (3)	[mm]	180 - 320	200 - 400	250 - 500	300 - 600	300 - 600	300 - 600
Class B protection to ISO 21940-23		Protection against contact with rotating parts					
Class C protection to ISO 21940-23		Protection against projected fragments					

(1) Drive system: BU: Universal belt drive; U: Universal-joint drive, 3-speed
(2) As an option or additional
(3) Other data on request



Belt drive BU **Joint drive U**

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Balancing and Diagnostic Systems

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