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.

**Drive Systems**

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.
**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.

**Measuring units**

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

**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.

The safety enclosure must be capable of containing any such projected rotor fragment.
## Important data at a glance

<table>
<thead>
<tr>
<th>Machine</th>
<th>HM 6</th>
<th>HM 60</th>
<th>HM 7</th>
<th>HM 70</th>
<th>HM 8</th>
<th>HM 80</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rotor weight, max [kg]</td>
<td>12500</td>
<td>20000</td>
<td>32000</td>
<td>50000</td>
<td>125000</td>
<td>250000</td>
</tr>
<tr>
<td>Diameter, max (D1) [mm]</td>
<td>2100</td>
<td>2100</td>
<td>2800</td>
<td>2800</td>
<td>3600</td>
<td>3600</td>
</tr>
<tr>
<td>Bearing journal diameter [mm]</td>
<td>40 - 180</td>
<td>50 - 200</td>
<td>60 - 250</td>
<td>70 - 300</td>
<td>70 - 300</td>
<td>70 - 300</td>
</tr>
<tr>
<td>Bearing centre distance (L1) [mm]</td>
<td>3150</td>
<td>4650</td>
<td>5050</td>
<td>5050</td>
<td>5800</td>
<td>5800</td>
</tr>
<tr>
<td>Minimum achievable residual unbal. [gmm]</td>
<td>15</td>
<td>20</td>
<td>32</td>
<td>40</td>
<td>80</td>
<td>120</td>
</tr>
<tr>
<td>Drive power [kW]</td>
<td>22</td>
<td>37</td>
<td>55</td>
<td>75</td>
<td>90</td>
<td>110</td>
</tr>
</tbody>
</table>

### Rotor drive
- 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 [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

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

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