Range of Application

Series 420 RBLR balancing machines are used for measurement and correction of the unbalance of car wheels in two planes. Steel and/or alloy wheels of varying dimensions with a variety of different wheel spigot diameters can be processed.

Unbalance correction is achieved by means of graded lead weights with integral or separate clip, or by means of graded or infinitely variable adhesive weights. The machines are used in large volume production in mixed or batch mode.

The machines can be interlinked with other plant components such as: valve insertion systems, tyre mounting, inflating and matching machines, tyre bead seat stabilisation machines, additional residual unbalance checking machines, etc.

Modular machine structure
Optimised for industrial balancing of a wide range of wheels on a single machine
Fully automatic sequence of operations
Flexible use through mixed mode operation
Short cycle times
Unbalance correction with knock on, clip-on or adhesive weights
Optional measurement of radial or lateral runout

Balancing machine for car wheels
Type 420 RBLR
Operating method

- Individual wheels are fed into the measuring station, and centered along the outer diameter. The wheel is then lowered onto the balancing unit and clamped.
- A measurement run is performed to determine the magnitude and angular position of unbalance, following which the wheel is indexed and correction locations are marked.
- The wheel is then unclamped, lifted and unloaded from the balancing machine for unbalance correction.

- Depending on the method of unbalance correction, knock on, clip on or adhesive weights are applied manually or automatically in the correction station or stations. For application of weights in the lower correction plane, the wheel is turned.
- The balanced wheel is then unloaded from the machine and transferred to the subsequent conveyor systems.

Design (Example)

The machine is made up of several modular working stations. The number of stations is dependent on the machine functions and throughput required. Interlinking of the individual stations by suitable conveyor systems enables the machine to operate fully automatically. Loading and unloading of the machine also takes place automatically. The modular machine concept provides for high ease of operation, easy change over from one workpiece type to the next, and fast trouble shooting. Processing of measurement data takes place with the help of the Schenck CAB 850 W measuring instrumentation, featuring software packages for calculation of optimum unbalance correction values or statistical parameters, self test, etc. The system is designed for intuitive operation with the help of a touch screen.

1 Wheel transfer
2 Wheel separation
3 Bar code reader (optional)
4 Measurement and marking
5 Working platform
6 Unbalance correction with wheel turn over device with options:
   - tilting system
   - automatic indexing
   - 2nd wheel turn over
7 Unloading
Technical features

- Standardized modules from a modular system
- Compact design
- Wheel spectrum ranging from 13”-20” disc wheel diameters, and outer diameters ranging from 500 - 900 mm
- High measuring accuracy, resulting, for example, from vibration-isolated spindle
- Minimum cycle times resulting from weight-optimized, speed-controlled lifting table
- Maximum wheel weight 50 kg
- CAB 850 W electronic measuring unit with touch screen as ergonomic control console for measuring system and PLC, with extensive test and statistic functions and automated eccentricity compensation by indexing
- Measuring system for radial and lateral runout and recognition of bulging and indentations
- Easy calibration through magnitude calibration with master wheel

Options

- Wheel turn over device with tilting system
- Automatic application of adhesive weights
- Bar code reader
- Clip insertion device
- Vertical correction unit
- Radial and lateral runout measuring system
## Important data at a glance

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Machine</strong></td>
<td><strong>Dimensions (WxHxD)</strong> mm</td>
<td>1200x2300x2900</td>
</tr>
<tr>
<td></td>
<td><strong>Machine weight</strong> kg</td>
<td>3000</td>
</tr>
<tr>
<td></td>
<td><strong>Air supply pressure</strong> bar</td>
<td>6,0</td>
</tr>
<tr>
<td></td>
<td><strong>Air consumption</strong> m³/h</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td><strong>Power supply</strong> V / Hz</td>
<td>400 / 50</td>
</tr>
<tr>
<td></td>
<td><strong>Control voltage DC</strong> V</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td><strong>Total connected load</strong> kVA</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td><strong>Balancing spindle speed</strong> min⁻¹</td>
<td>350</td>
</tr>
<tr>
<td></td>
<td><strong>Clamping method</strong></td>
<td>pneumatic</td>
</tr>
<tr>
<td></td>
<td><strong>Measuring unit</strong></td>
<td>Schenck CAB 850 W</td>
</tr>
<tr>
<td></td>
<td><strong>PLC</strong></td>
<td>Siemens S7</td>
</tr>
<tr>
<td></td>
<td><strong>Operation</strong></td>
<td>Touchscreen 15&quot;</td>
</tr>
<tr>
<td></td>
<td><strong>Control cabinet dimensions (WxHxD) mm</strong></td>
<td>1000x2000x600</td>
</tr>
<tr>
<td><strong>Wheel dimensions</strong></td>
<td><strong>Total wheel weight</strong> kg</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td><strong>Wheel outer diameter</strong> mm</td>
<td>500 - 900</td>
</tr>
<tr>
<td></td>
<td><strong>Wheel width</strong> mm</td>
<td>130 - 360</td>
</tr>
<tr>
<td></td>
<td><strong>Rim diameter</strong> inch</td>
<td>13 - 20</td>
</tr>
<tr>
<td></td>
<td><strong>Rim width</strong> inch</td>
<td>3,5 - 11</td>
</tr>
<tr>
<td><strong>Cycle time</strong></td>
<td><strong>Unbalance measurement</strong> s depending on wheel weight and marking process</td>
<td>9 - 14</td>
</tr>
</tbody>
</table>

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**SCHENCK**

Balancing and Diagnostic Systems

SCHENCK RoTec GmbH
Landwehrstraße 55
D-64293 Darmstadt

Tel.: +49 (0) 61 51 - 32 23 11
Fax: +49 (0) 61 51 - 32 23 15
eMail: rotec@schenck.net

Do not hesitate to contact us via the mentioned major facilities. For further informations please refer to http://www.schenck.net/rotec