List of Items & General Instructions

Wind Tunnel Balances:

**Quantity** : Each One 6-Component & Rolling balances.

**Dummy Balance** : Balance must be provided with a dummy balance made of Stainless steel.

**Calibration body** : Balance must be supplied with a calibration body made of Stainless steel.

**Fasteners** : 'Unbrako' make fasteners for connecting and removing the balance from calibration body.

**Calibration Report** : Balance must be supplied with 2 copies of calibration reports.
**Details of Strain gauge balances**

**Specification for Balances:**

- **Material:** 17-4-PH

<table>
<thead>
<tr>
<th>Size (mm)</th>
<th>6 - Component Balance</th>
<th>Roll Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall length</td>
<td>112</td>
<td>405</td>
</tr>
<tr>
<td>Diameter</td>
<td>12</td>
<td>15</td>
</tr>
</tbody>
</table>

**Load Chart:**

<table>
<thead>
<tr>
<th>Loads (Max)</th>
<th>6 - Component Balance</th>
<th>Roll Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fx (kg) Axial</td>
<td>18</td>
<td>-</td>
</tr>
<tr>
<td>Fz (kg) Normal</td>
<td>10</td>
<td>-</td>
</tr>
<tr>
<td>Fy (kg) Side</td>
<td>5</td>
<td>-</td>
</tr>
<tr>
<td>Mx (kg mm) Rolling</td>
<td>80</td>
<td>30</td>
</tr>
<tr>
<td>My (kg mm) Pitching</td>
<td>320</td>
<td>-</td>
</tr>
<tr>
<td>Mz (kg mm) Yawing</td>
<td>160</td>
<td>-</td>
</tr>
</tbody>
</table>

**Details of Strain Gauge Balances:**

- The Strain gauges must be self temperature compensated for the temperature range of 0 to 200°C.
- Gage Resistance must be 350Ω/1000Ω.
- The gauges must withstand high temperatures (up to 200°C).
- Bridges to have common DC power supply of up to 5Volts. Two sense lines must be provided for measurement of excitation voltage.
- Initial imbalance in each bridge must be <1mv.
- There must be minimum of 2 axial bridges (full) with output taken out in parallel.
- All bridges must be suitably color coded.
- Detailed calibration report must be provided with 6x6 matrix and complete geometrical and electrical drawings.
- Each balance must be supplied with a dummy balance and packaged in a suitable wooden box.
- Each balance must be supplied with a calibration body and necessary loading plates.
- The output of each bridge must be linear and non-linearity must not exceed 0.25%.
- The diagonal matrix must give a minimum sensitivity of 1mV/V for the maximum load but the sensitivity should not exceed 2mV/V for the maximum load.
- The other interaction terms should be within 1% of FS and a maximum of 5% interaction is permissible only for 2 out of 30 interaction terms.
- However the interaction terms must be linear and any non-linearity should not exceed 0.25%.
- Supply of 6 struts with angles -2 to 8 in steps of 2.
Special Screws

6 Componen Balance

Strut