

Details of Strain gauge balances

Specification for Balances:

❖ Material: 17-4-PH

Size	6 Component Balance	Hinge Moment Balance	Roll Balance
Overall length (mm)	355	100	305
Thickness/Diameter (mm)	25	4	15
Width (mm)	-	12	-

❖ Load Chart:

Loads (Max)	6 Component Balance	Hinge Moment Balance	Roll Balance
F _x (kg) Axial	18	3.6	-
F _z (kg) Normal	30	4.11	-
F _y (kg) Side	11	-	-
M _x (kg cm) Rolling	120	27.6	3
M _y (kg cm) Pitching	180	111	-
M _z (kg cm)Yawing	66	-	-

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.

