

# Moment Weight Scales

## Single Axis and Tri-Axis Scales

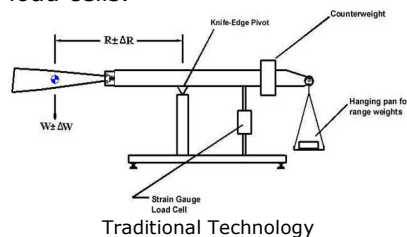


### Description

Space Electronics manufactures the most accurate moment weight scales in the world.

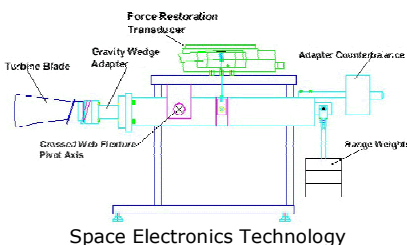
### Basic Concept

Most manufacturers use knife-edge pivots and strain gauge load cells.



Accuracy is limited by the dynamic range of load cells;

knife-edge pivots are easily damaged and wear over time. Space Electronics instruments use crossed-web flexure pivots and force restoration technology, resulting in instruments which are at least 10 times more accurate than other methods and are also more resistant to damage in production environment.



### Types of Moment Weight Scales

Space Electronics manufactures 2 different series of moment weight scales.

MW Series are our high accuracy single axis moment weight scales.

MW40KF and MW904F are high accuracy tri-axis moment weight scales.

### Radius Compensation

Most moment weight scales require that the blade be fixtured at the exact same radius as the blade has in the engine. Since our system measures both weight and moment, the computer can compensate for blade radius.

### Adaptors

Space Electronics Gravity Wedge Blade Adaptors (patented technology) are more repeatable and easier to use than any other style of adaptor. The unique slanted aperture guides the blade into position and the lower wedge clamps the blade at its Z-plane. Repeatability of better than 1 part in 100,000 is obtained with these adaptors.

### Blade Distribution Software

After all the blades have been measured, our blade distribution software will distribute the set in a pattern that minimizes the overall rotor unbalance. The unbalance of the hub can be entered and the blades will be distributed to correct for the hub unbalance.

### General Technical Specifications (see specific product sheet for a particular model)

|   | MW150  | MW900  | MW5K   | MW12K  | MW20K  | MW28K  | MW904F    | MW40KF |
|---|--------|--------|--------|--------|--------|--------|-----------|--------|
| Single Axis or Tri-Axis Scales                    | Single | Single | Single | Single | Single | Single | Tri       | Tri    |
| Maximum Weight of Blade and Tooling (kg)          | 2.3    | 13.6   | 13.6   | 27.2   | 45.4   | 45.4   | 22.7      | 68     |
| Maximum Radial Moment that can be Measured (kg-m) | 0.1    | 0.65   | 3.6    | 8.6    | 14.4   | 20     | Unlimited | 20.9   |
| Readout Sensitivity (g-cm)                        | 0.072  | 0.72   | 0.72   | 3.6    | 7.2    | 7.2    | 5         | 1.44   |
| Linearity (% of blade value)                      | 0.03%  | 0.03%  | 0.03%  | 0.03%  | 0.03%  | 0.03%  | N/A       | N/A    |