**Multiplanar Balancing**

BrgD

BrgC

**Y**

Motor

**Z**

**Y**

**X**

**FCx**

**t**

**FDx**

**t**





**Y**

**X**

**Y**

**Z**

**plane**

**for B**

**plane**

**for A**

**in-plane primary balancing (static balancing)**







forces in X  Eq. 1

forces in Y  Eq. 2

**secondary dynamic balancing to prevent shaking moments**



moments in Y  Eq. 3

moments in X  Eq. 4





 for only one imbalance 







for only one imbalance 







