

# Part I Foundations

Chapter 2 Representing Position and Orientation

Chapter 3 Time and Motion



Torque motor  
Duplex ball-bearing  
slipring (50-contact)

Gyro error resolver (1X)  
Duplex ball-bearing  
slipring (40-contact)  
Multispeed resolver  
(1x and 5x)

Outer  
gimbal

Middle  
gimbal

Imu case  
(cutaway)

Duplex ball-bearing  
slipring (40-contact)

LM  
+ X-axis

$\theta_y$  OG axis

Torque motor  
Duplex ball-bea  
slipring (40-con

{S}

Xg

Ya

Zg

Xa

Za

Yg

{B}

$\theta_p$

Torque  
Duplex ball-  
slipring (

Duplex ball-bearing  
slipring (50-contact)