Motion Sizer Helpful Hints

Help Available - Motion Sizer has a comprehensive help file available by clicking the question mark symbol in the upper right of each screen.

Adding a mechanism to the motor - In the “Axis Design” screen, first select the desired mechanism, then use the “Append” button at the top of the screen to add the mechanism to the motor. After the first mechanism has been added, the “Insert” and “Replace” options become available.

Safety Factors -

1. Minimum Torque Margin - Motion Sizer safety factors operate differently than in the previous DOS based “sizing.exe” program. In the “Motor Selection” screen of Motion Sizer the default setting for “Min. Torque Margin” is set to 1, and the default setting for “Max. Torque Margin” is set to 20. With these settings, Motion Sizer will choose motors that have from 1 to 20 times the continuous or peak torque that the application requires. The default setting of 20 is too a 20% safety factor as it was in the old DOS based sizing.exe program. To select motors with at least a 20% torque margin, set the “Min. Torque Margin” to 1.2.

2. Displayed torque values - In the “Motor Selection” screen, the “Required from Motor” torque (includes both “Motor Rated Torque” and “Total Acceleration Torque”) is automatically multiplied by the “Min. Torque Margin” setting.

3. Default settings - The Safety Factor settings are stored with the main program, not the individual application files. For example, Application #1 is opened and uses a safety factor of 1.0 and is then saved. After Application #1 is closed, the safety factor will still be set to 1.0, and must be changed back to 1.0 for Application #1 to select the same motors as it did originally.

Inertia Ratio display - In the “Motor Selection” screen, the motor of interest must be selected by clicking on it to see the inertia ratio.

Motor Selection color codes - In the “Motor Selection” screen the motor automatically chosen by the “Auto Select” button is always highlighted in green. The selected motor (double click) is highlighted in dark yellow. The currently selected motor (single click) is highlighted in light gray.

Blank Reports - In the “Report Generator” the “Show Report” button at the top of the screen must be clicked to update and show the report.

Safety Factor checkbox - In the “Performance Curves” screen, there is a “Use Safety Factor” checkbox. If the box is checked, the “Application RMS Torque” and the “Application Peak Torque” values will be multiplied by the “Min. Torque Margin” when displayed.
Linear Servo Motor Product Differentiation

**Form Factor**
- X-Force
- LXR
- Ripped
- BLMA
- MX80L
- LX80L

**Technology**
- Ironless
- Slotless
- Ironcore

**Cogging Force**
- None
- Low

**Magnet Rail**
- Double row
- Single row

**Force/Volume**
- High
- Medium
- Low

**Attractive Force**
- None
- Low

**Heat Dissipation**
- Good

**Application**
- Rapid, smooth, accurate

**Continuous Force Range, N (lbs)**
- 24 to 881 (5 to 198)
- 20 to 246 (4.5 to 56)
- 154 to 2230 (35 to 501)
- 310 to 689 (70 to 155)
- 4 to 8 (0.9 to 1.8)
- 4 to 8 (0.9 to 1.8)

**Speed Range**
- >60m/s
- >2m/s
- >2m/s
- >2m/s
- >2m/s
- >2m/s

**Distinct Features**
- Patent forceder design, Zero cogging
- Resolution to 0.1 micron, pass through cable management
- Patent -Pendding anti-cog technology
- Rolling wheel bearings, Travels up to 6m
- Cleanroom and low-ESD options Cross-roller bearings
- Cleanroom option, Rescroulating bearings

**Choose this motor for**
- Smoothest motion
- Pre-Built Precision
- High Force
- Balanced ironcore
- Smallest form factor
- Longer travel lengths in compact form

Rotary Servo Motor Product Differentiation

**MPP**
- SE
- SM/SE
- SMN

**Technology**
- Segmented stator
- Bridged stator
- Slotless stator
- Segment stator

**Detent Torque**
- Very low inertia
- Low inertia
- Medium inertia

**Inertia**
- Very low inertia
- Low inertia
- Medium inertia
- Low inertia
- Lowest inertia

**# Poles**
- 8
- 8
- 4
- 4,6,12
- 4

**Advantages**
- High performance
- High T/J ratio
- Easy to control
- Smooth motion
- Broad selection
- High performance
- High T/J ratio
- High bandwidth

**Applications**
- Rapid moves, high bandwidth
- Rapid moves, high bandwidth
- Smooth motion, lower bandwidth
- Industrial, general purpose
- Rapid moves, high bandwidth
- Industrial, food grade
- No - SE - Lower inertia
- Yes - SE - High inertia

**Frame Sizes**
- 92, 100, 119, 142, 180, 230, 270
- 16, 23
- 16, 23
- 60, 82, 100, 114, 142
- 40, 66, 72, 89, 114, 142, 190, 205
- 70 / 34, 92

**Torque Range**
- 1.4 to 1434 in-lb
- 0.8 - 11.3 in-lb
- 12 - 140 in-lb
- 0.5 - 400 in-lb
- 6 - 61 in-lb

**Speed Range**
- 0 - 5000 rpm
- 0-7500 RPM
- 0-7500 RPM
- 0-7000 RPM
- 0-7500 RPM

**IP65 Option**
- IP65 standard, IP65 optional
- No
- Yes
- Yes
- Yes
- Yes

**Brake Option**
- Yes
- Yes
- Yes

**Gearboxes**
- Yes
- Yes
- Yes

**Resolver**
- Yes
- Yes
- Yes

**Absolute Enc.**
- Yes
- Yes
- Yes

**Encoder**
- Yes
- Yes
- Yes

**Custom Mods**
- Yes
- Yes
- Yes

**Choose this motor for**
- Wide range of motors, apps requiring short, yet high torque motor, industrial motor, full customization
- Rapid access-moves, excellent performance at lower speeds
- Higher inertia for mechanics, higher speeds, Ultra smooth motion
- Volume applications not requiring customization
- Wide range of motors in single family, food grade, customization
- No - SE - High bandwidth
- J - Lower bandwidth, inertia matching

Stepper Motor Product Differentiation

**LV**
- 11, 14, 17, 23, 34
- 17, 23, 34
- 23, 34
- 34, 42
- 34, 42

**Voltage**
- 80
- 170
- 170
- 340
- 170

**Drives**
- E-DC, XIX, OEM
- E-AC, Gemini, Zeta
- Gemini, Zeta, S
- Zeta240
- Gemini, Zeta, OEM, S

**Choose this motor for**
- Cost effective, broad power range
- Cost effective, broad power range
- Extra smooth
- 340VDC operation
- Highest torque

Dynaserv Direct Drive Product Differentiation

**DR5000**
- 3-52 ft-lb
- 0-255 ft-lb
- +/- 5 arc-sec
- Resolver
- Outer rotor construction, resolution to 4,096,000, large aperture

**DR1000**
- 3-148 ft-lb
- 0-1200 ft-lb
- +/- 1 arc-sec
- Resolver

**DM1000**
- 3-148 ft-lb
- 0-1200 ft-lb
- +/- 1 arc-sec
- Encoder

**Choose this motor for**
- Eliminates mechanical transmission, faster settling time, smooth low speed motion, zero backlash