Limiterque MX
Performance and Dimensions
for MX Series 05 through 150 Electric Actuators

FCD LMENSS2326-00 – 10/07 (Replaces 130-30000)
Flowserve Limitorque MX Actuators

Flowserve Limitorque MX actuators have been engineered to accommodate today's wide variety of valve designs and to meet international standards for valve and actuator interfaces.

MX Series 05 through 150 electric actuators can be used in applications requiring up to 1,700 ft-lb (2,307 N m) of torque and up to 75,000 lb (333 kN) of thrust.

Standard and extended torque and thrust bases are available for all unit sizes and a side-mounted handwheel option is offered for the MX-10 through 150.

Dimensions for all sizes of MX actuators, base options, and stem nuts are included in this document. Contact your local Limitorque distributor or Limitorque sales office for further information.

Typical MX-05 Unit

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Handwheel</td>
</tr>
<tr>
<td>2</td>
<td>Declutch Lever</td>
</tr>
<tr>
<td>3</td>
<td>Oil Fills</td>
</tr>
<tr>
<td>4</td>
<td>Control Cover</td>
</tr>
<tr>
<td>5</td>
<td>Control Panel Display</td>
</tr>
<tr>
<td>6</td>
<td>Control Knobs</td>
</tr>
<tr>
<td>7</td>
<td>Ground Lugs</td>
</tr>
<tr>
<td>8</td>
<td>Thrust/Torque Base</td>
</tr>
<tr>
<td>9</td>
<td>Conduit Entries</td>
</tr>
<tr>
<td>10</td>
<td>Terminal Compartment (Installation Kit)</td>
</tr>
<tr>
<td>11</td>
<td>Motor</td>
</tr>
<tr>
<td>12</td>
<td>Nameplate</td>
</tr>
</tbody>
</table>
### MX Series Performance Ratings for Units 05 through 150

**MX-05 through MX-40** (three-phase: 50 Hz/380, 400, 415, and 440 Volt: 60 Hz/208, 230, 380, 460, 525, 575 Volt)

**MX-85 through MX-150** (three-phase: 50 Hz/380*, 400, and 415 Volt: 60 Hz/380, 460, 525, 575 Volt)  
*380/50 multiply by 0.9

<table>
<thead>
<tr>
<th>Output Speed (RPM)</th>
<th>MX-05</th>
<th>MX-10</th>
<th>MX-20</th>
<th>MX-40</th>
<th>MX-85</th>
<th>MX-140</th>
<th>MX-150</th>
</tr>
</thead>
<tbody>
<tr>
<td>60 Hz</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>55</td>
<td>75</td>
<td>125</td>
<td>170</td>
<td>225</td>
<td>200</td>
<td>265</td>
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<tr>
<td>50 Hz</td>
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<td>18</td>
<td>55</td>
<td>75</td>
<td>125</td>
<td>170</td>
<td>225</td>
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<td>75</td>
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<td>170</td>
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<tr>
<td>40</td>
<td>55</td>
<td>75</td>
<td>125</td>
<td>170</td>
<td>225</td>
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<td>265</td>
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<tr>
<td>52</td>
<td>55</td>
<td>75</td>
<td>125</td>
<td>170</td>
<td>225</td>
<td>200</td>
<td>265</td>
</tr>
<tr>
<td>77</td>
<td>48</td>
<td>65</td>
<td>107</td>
<td>145</td>
<td>178</td>
<td>241</td>
<td>354</td>
</tr>
<tr>
<td>100</td>
<td>39</td>
<td>53</td>
<td>89</td>
<td>121</td>
<td>148</td>
<td>201</td>
<td>286</td>
</tr>
<tr>
<td>155</td>
<td>41</td>
<td>56</td>
<td>89</td>
<td>121</td>
<td>140</td>
<td>196</td>
<td>260</td>
</tr>
<tr>
<td>200</td>
<td>34</td>
<td>46</td>
<td>73</td>
<td>99</td>
<td>114</td>
<td>155</td>
<td>210</td>
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</table>

**Note 1:** MX-85, MX-140 and MX-150

#### Maximum Stem Capacity

<table>
<thead>
<tr>
<th>Type A Couplings</th>
<th>in.</th>
<th>mm</th>
<th>in.</th>
<th>mm</th>
<th>in.</th>
<th>mm</th>
<th>in.</th>
<th>mm</th>
<th>in.</th>
<th>mm</th>
<th>in.</th>
<th>mm</th>
<th>in.</th>
<th>mm</th>
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<tbody>
<tr>
<td>Type A1</td>
<td>1.26</td>
<td>32</td>
<td>1.57</td>
<td>40</td>
<td>2.36</td>
<td>60</td>
<td>2.64</td>
<td>67</td>
<td>3.50</td>
<td>88</td>
<td>3.50</td>
<td>88</td>
<td>3.50</td>
<td>88</td>
</tr>
<tr>
<td>Type A1E (Extended Nut)</td>
<td>1.26</td>
<td>32</td>
<td>1.57</td>
<td>40</td>
<td>2.36</td>
<td>60</td>
<td>2.64</td>
<td>67</td>
<td>3.50</td>
<td>88</td>
<td>3.50</td>
<td>88</td>
<td>3.50</td>
<td>88</td>
</tr>
<tr>
<td>Type B Couplings (Torque Only)2</td>
<td>in.</td>
<td>mm</td>
<td>in.</td>
<td>mm</td>
<td>in.</td>
<td>mm</td>
<td>in.</td>
<td>mm</td>
<td>in.</td>
<td>mm</td>
<td>in.</td>
<td>mm</td>
<td>in.</td>
<td>mm</td>
</tr>
<tr>
<td>Type B4</td>
<td>1</td>
<td>25.4</td>
<td>1.25</td>
<td>30</td>
<td>1.94</td>
<td>50</td>
<td>2.2</td>
<td>55</td>
<td>2.88</td>
<td>73</td>
<td>2.88</td>
<td>73</td>
<td>2.88</td>
<td>73</td>
</tr>
<tr>
<td>Type B4E (Extended)</td>
<td>0.75</td>
<td>19</td>
<td>0.91</td>
<td>22</td>
<td>1.56</td>
<td>41</td>
<td>1.78</td>
<td>46</td>
<td>2.25</td>
<td>57</td>
<td>2.25</td>
<td>57</td>
<td>2.25</td>
<td>57</td>
</tr>
<tr>
<td>Type B1 (Fixed Bore)3</td>
<td>N/A</td>
<td>42</td>
<td>N/A</td>
<td>42</td>
<td>N/A</td>
<td>60</td>
<td>N/A</td>
<td>60</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Type BL (Splined)</td>
<td>6 &amp; 38 Splines</td>
<td>6 &amp; 38 Splines</td>
<td>6 &amp; 38 Splines</td>
<td>6 &amp; 38 Splines</td>
<td>6 Splines</td>
<td>6 Splines</td>
<td>6 Splines</td>
<td>6 Splines</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum Bore and Keyway</td>
<td>in.</td>
<td>mm</td>
<td>in.</td>
<td>mm</td>
<td>in.</td>
<td>mm</td>
<td>in.</td>
<td>mm</td>
<td>in.</td>
<td>mm</td>
<td>in.</td>
<td>mm</td>
<td>in.</td>
<td>mm</td>
</tr>
<tr>
<td>Maximum Bore (B4)</td>
<td>1</td>
<td>25</td>
<td>1.25</td>
<td>30</td>
<td>1.94</td>
<td>50</td>
<td>2.2</td>
<td>55</td>
<td>2.88</td>
<td>73</td>
<td>2.88</td>
<td>73</td>
<td>2.88</td>
<td>73</td>
</tr>
<tr>
<td>Maximum Keyway</td>
<td>¼ sq.</td>
<td>8 x 7</td>
<td>¾ sq.</td>
<td>10 x 8</td>
<td>½ x ¾</td>
<td>14 x 9</td>
<td>¾ x ¾</td>
<td>16 x 10</td>
<td>¼ x ¾</td>
<td>20 x 12</td>
<td>½ x ¼</td>
<td>16 x 11</td>
<td>½ x ¼</td>
<td>16 x 11</td>
</tr>
<tr>
<td>Maximum Bore (B4E)</td>
<td>.75</td>
<td>18</td>
<td>0.91</td>
<td>22</td>
<td>1.56</td>
<td>41</td>
<td>1.78</td>
<td>46</td>
<td>2.25</td>
<td>56</td>
<td>2.25</td>
<td>56</td>
<td>2.25</td>
<td>56</td>
</tr>
<tr>
<td>Maximum Keyway</td>
<td>¾ sq.</td>
<td>6 x 6</td>
<td>¼ sq.</td>
<td>8 x 7</td>
<td>½ sq.</td>
<td>12 x 8</td>
<td>½ x ¾</td>
<td>14 x 9</td>
<td>½ x ¾</td>
<td>16 x 10</td>
<td>½ x ¾</td>
<td>16 x 10</td>
<td>0.625 sq.</td>
<td>18 x 11</td>
</tr>
</tbody>
</table>

**Note 2:** Maximum bores for Type B couplings may require rectangular keys.

**Note 3:** Available in ISO base only.

#### Mounting Base (MSS SP-102/ISO 5210)

<table>
<thead>
<tr>
<th>MX-05</th>
<th>MX-10</th>
<th>MX-20</th>
<th>MX-40</th>
<th>MX-85</th>
<th>MX-140</th>
<th>MX-150</th>
</tr>
</thead>
<tbody>
<tr>
<td>FA10/F10</td>
<td>FA10/F10</td>
<td>FA14/F14</td>
<td>FA14/F14</td>
<td>FA16/F16</td>
<td>FA25/F25</td>
<td>FA25/F25</td>
</tr>
</tbody>
</table>

**Handwheel Ratio (STD/Optional)**

<table>
<thead>
<tr>
<th>MX-05</th>
<th>MX-10</th>
<th>MX-20</th>
<th>MX-40</th>
<th>MX-85</th>
<th>MX-140</th>
<th>MX-150</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct</td>
<td>Direct</td>
<td>Direct</td>
<td>Direct</td>
<td>Direct</td>
<td>Direct</td>
<td>Direct</td>
</tr>
</tbody>
</table>

**Side-Mounted Handwheel Efficiencies**

<table>
<thead>
<tr>
<th>MX-05</th>
<th>MX-10</th>
<th>MX-20</th>
<th>MX-40</th>
<th>MX-85</th>
<th>MX-140</th>
<th>MX-150</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>52%</td>
<td>54%</td>
<td>51%</td>
<td>53%/51%4</td>
<td>53%/51%4</td>
<td>53%/51%4</td>
</tr>
</tbody>
</table>

**Note 4:** Efficiencies for MX-85 and 140 are 51% with SGA and 53% without SGA.

#### MX Handwheel Rimpull

<table>
<thead>
<tr>
<th>Unit/Mounting</th>
<th>Handwheel Diameter (in.)</th>
<th>Gear Ratio</th>
<th>Rated Torque (ft-lb)</th>
<th>Efficiency</th>
<th>Rimpull at Rated Torque (lb)</th>
<th>Output Torque (ft-lb) at 20 lb Rimpull</th>
<th>Output Torque (ft-lb) at 40 lb Rimpull</th>
<th>Output Torque (ft-lb) at 60 lb Rimpull</th>
<th>Output Torque (ft-lb) at 80 lb Rimpull</th>
</tr>
</thead>
<tbody>
<tr>
<td>MX-05 Top</td>
<td>12</td>
<td>1</td>
<td>55</td>
<td>0.88</td>
<td>125</td>
<td>9</td>
<td>18</td>
<td>26</td>
<td>35</td>
</tr>
<tr>
<td>MX-05 Top</td>
<td>18</td>
<td>1</td>
<td>55</td>
<td>0.88</td>
<td>125</td>
<td>9</td>
<td>18</td>
<td>26</td>
<td>35</td>
</tr>
<tr>
<td>MX-10 Top</td>
<td>18</td>
<td>1</td>
<td>125</td>
<td>0.88</td>
<td>189</td>
<td>13</td>
<td>26</td>
<td>36</td>
<td>40</td>
</tr>
<tr>
<td>MX-10 Side</td>
<td>12</td>
<td>8</td>
<td>125</td>
<td>0.52</td>
<td>60</td>
<td>42</td>
<td>83</td>
<td>125</td>
<td>166</td>
</tr>
<tr>
<td>MX-20 Top</td>
<td>24</td>
<td>1</td>
<td>225</td>
<td>0.88</td>
<td>256</td>
<td>18</td>
<td>35</td>
<td>53</td>
<td>70</td>
</tr>
<tr>
<td>MX-20 Side</td>
<td>12</td>
<td>12</td>
<td>225</td>
<td>0.54</td>
<td>69</td>
<td>65</td>
<td>130</td>
<td>194</td>
<td>259</td>
</tr>
<tr>
<td>MX-40 Top</td>
<td>24</td>
<td>1</td>
<td>440</td>
<td>0.88</td>
<td>500</td>
<td>18</td>
<td>35</td>
<td>53</td>
<td>70</td>
</tr>
<tr>
<td>MX-40 Side</td>
<td>12</td>
<td>12</td>
<td>440</td>
<td>0.51</td>
<td>72</td>
<td>122</td>
<td>245</td>
<td>367</td>
<td>490</td>
</tr>
<tr>
<td>MX-85/140/150 w/o SGA</td>
<td>18</td>
<td>16</td>
<td>600</td>
<td>0.53</td>
<td>88</td>
<td>127</td>
<td>254</td>
<td>382</td>
<td>508</td>
</tr>
<tr>
<td>MX-85/140/150 w/ SGA</td>
<td>18</td>
<td>48</td>
<td>1574</td>
<td>0.51</td>
<td>86</td>
<td>367</td>
<td>734</td>
<td>1101</td>
<td>1469</td>
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</tbody>
</table>
MX Unit 05 Dimension Data

Dimensions in inches and millimeters.

**Top View**

- **Preferred Mounting**: Is with motor horizontal.
- **Declutch Lever**: Is padlockable in motor operation.

**View A**

- **Lubricant Fill**: With level
- **Declutch Lever**: Returns automatically to this position when released.
- **Hole**: 0.28” (7) dia. for padlock

**View B**

- **Display Window**: For display

**Side View**

- **Hole**: 0.22” (5.5) dia. x 0.43” (11) deep for self-tapping screw

**Front View**

- **Standard Handwheel**: 12” dia. [305]
- **Optional Size Available**: 18” dia.

**Table of Conduit Entries**

<table>
<thead>
<tr>
<th>POSITION</th>
<th>CONDUIT ENTRIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOP</td>
<td>PG21, PG23, PG21</td>
</tr>
<tr>
<td>MMB</td>
<td>M40, M32, M25, M20</td>
</tr>
<tr>
<td>MMB</td>
<td>M32, M25, M20</td>
</tr>
<tr>
<td>MMB</td>
<td>PG21, PG23, PG21</td>
</tr>
</tbody>
</table>

**Note**

- Do not open while energized
- Recommended clearance for cover removal
- Ground/Earthing Lug

**Preferred Mounting**

- Motor horizontal

**Dimensions in**

- Inches and millimeters

**View A**

- **Lubricant Drain**: For lubricant
- **Lubricant Fill**: With level

**View B**

- **Customer Terminals**: For terminals

**Detail of Conduit Entries**

- Recommended clearance for attaching to valve frame

- Stem Cover (when required): Length to suit valve travel threaded 1” NPT or fitted with pipe plug.

- Standard Handwheel: 12” dia. [305]
- Optional Size Available 18” [450] dia.
MX Unit 05 Base Details
Dimensions in inches and millimeters.

Non-thrust (Torque Only) Bases

<table>
<thead>
<tr>
<th>Type</th>
<th>Base Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1</td>
<td><img src="image" alt="Type B1 Diagram" /></td>
</tr>
<tr>
<td>B4</td>
<td><img src="image" alt="Type B4 Diagram" /></td>
</tr>
<tr>
<td>B4E</td>
<td><img src="image" alt="Type B4E Diagram" /></td>
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</tbody>
</table>

Stem Nut Bore Details

<table>
<thead>
<tr>
<th>Type</th>
<th>Base Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1 (Fixed Bore and Key)</td>
<td><img src="image" alt="Type B1 Fixed Bore Diagram" /></td>
</tr>
<tr>
<td>B4 (Variable Bore)</td>
<td><img src="image" alt="Type B4 Variable Bore Diagram" /></td>
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<tr>
<td>B4E (Variable Bore)</td>
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Thrust Bases

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<td><img src="image" alt="Type A1 Diagram" /></td>
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<tr>
<td>A1E (Extended Reach)</td>
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</table>

Splined Stem Nuts

<table>
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<tr>
<th>Type</th>
<th>Base Details</th>
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</thead>
<tbody>
<tr>
<td>BL</td>
<td><img src="image" alt="Type BL Diagram" /></td>
</tr>
<tr>
<td>BL6 (6 Splines)</td>
<td><img src="image" alt="Type BL6 Diagram" /></td>
</tr>
<tr>
<td>BL38 (38 Splines)</td>
<td><img src="image" alt="Type BL38 Diagram" /></td>
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</table>

Base Details

<table>
<thead>
<tr>
<th>Type</th>
<th>Base Details</th>
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<tbody>
<tr>
<td>F10</td>
<td><img src="image" alt="Type F10 Diagram" /></td>
</tr>
<tr>
<td>FA10</td>
<td><img src="image" alt="Type FA10 Diagram" /></td>
</tr>
</tbody>
</table>

Note 1: Mounting face for attaching to valve flange.
Note 2: Millimeter dimensions are in parentheses.
MX Unit 10 Dimension Data

Dimensions in inches and millimeters.

**Top View**

- Standard Handwheel 12" Dia. (305)
- Controls Compartment
- Terminal Compartment

**Side View**

- Standard Handwheel 12" Dia. (305)
- Controls Compartment
- Terminal Compartment

**Side-mounted Option: Side View**

- Standard Handwheel 18" Dia. (450)
- Controls Compartment
- Terminal Compartment

**View B**

- Lever Returns Automatically to this Position When Released
- Manual Override Hole 0.28" [7] Dia. for Padlock
- Handwheel Removed for Clarity
- Detail of Declutch Lever
- Lubricant Drain

**Front View**

- Stem Cover (When Required) Length to suit valve travel. Threaded 2" NPT or fitted with pipe plug.
- Display Window

**View A**

- Ground/Earthing Lug
- Recommended Clearance for Cover Removal (To avoid damage)
- Customer Terminals
- Detail of Conduit Entries

---

**Conduit Entries**

<table>
<thead>
<tr>
<th>POSITION</th>
<th>1/2&quot; NPT</th>
<th>3/4&quot; NPT</th>
<th>1&quot; NPT</th>
</tr>
</thead>
<tbody>
<tr>
<td>STANDARD</td>
<td>M32, M25</td>
<td>M40, M25, M32, M20</td>
<td>M32, M25</td>
</tr>
<tr>
<td>OPTIONS</td>
<td>M20, M25, M32, M20</td>
<td>M20, M25, M32, M20</td>
<td>M20</td>
</tr>
</tbody>
</table>
MX Unit 10 Base Details

Dimensions in inches and millimeters.

Non-thrust (Torque Only) Bases

Type B1

Type B4

Type B4E (Extended Reach)

Stem Nut Bore Details

Type B1 (Fixed Bore and Key)

Type B4 (Variable Bore)

Type B4E (Variable Bore)

Thrust Bases

Type A1

Type A1E (Extended Reach)

Base Details

F10

Splined Stem Nuts

Type BL

Type BL6 (6 Splines)

Type BL38 (38 Splines)

Note 1: Mounting face for attaching to valve flange.

Note 2: Millimeter dimensions are in parentheses.
MX Unit 20 Dimension Data

Dimensions in inches and millimeters.

Top View

Side View

Side-mounted Option: Side View

View B

Front View

Side-mounted Option: Front View

View A
MX Unit 20 Base Details

Dimensions in inches and millimeters.

Non-thrust (Torque Only) Bases

Type B1

Type B4

Type B4E (Extended Reach)

Stem Nut Bore Details

Type B1 (Fixed Bore and Key)

Type B4 (Variable Bore)

Type B4E (Variable Bore)

Thrust Bases

Type A1

Type A1E (Extended Reach)

Base Details

F14

Splined Stem Nuts

Type BL

Type BL6 (6 Splines)

Type 36T

FA14

Note 1: Mounting face for attaching to valve flange.

Note 2: Millimeter dimensions are in parentheses.
MX Unit 40 Dimension Data

Dimensions in inches and millimeters.

**Top View**

- Declutch lever is padlockable in motor operation
- Standard handwheel 24" [610] dia.
- Lubricant fill
- Controls compartment
- Serial text plate
- Motor
- Motor
- Preferred mounting is with motor horizontal

**Side View**

- Hole 0.22" [5.5] dia.
- Stem cover (when required)
- View B
- View A

**Side-mounted Option: Side View**

- Tapped M6 x 0.31 [8] deep
- Tapped M8 x 0.31 [8] deep
- Hole 0.22" [5.5] dia.
- For self-tapping screw

**Front View**

- Display window
- Stem cover (when required)
- Motor
- Control panel

**View B**

- Lever returns automatically when released
- To engage manual override
- Length to suit valve travel. Threaded MPT or fitted with pipe plug.

**View A**

- Customer terminals
- Detail of conduit entries

### Table: Conduit Entries

<table>
<thead>
<tr>
<th>Position</th>
<th>INCHES</th>
<th>MILLIMETERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>GROUND/EARTHING LUG</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OIL FILLER/DRAIN PLUG</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ALLOWANCE FOR COVER REMOVAL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MOUNTING FACE FOR ATTACHING TO VALVE FLANGE</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Options

- M22
- M22
- M22
- PG21
- PG21
- PG21
MX Unit 40 Bases
Dimensions in inches and millimeters.

Non-thrust (Torque Only) Bases

Type B1

Type B4

Type B4E (Extended Reach)

Stem Nut Bore Details

Type B1 (Fixed Bore and Key)

Type B4 (Variable Bore)

Type B4E (Variable Bore)

Thrust Bases

Type A1

Type A1E (Extended Reach)

Base Details

F14

Splined Stem Nuts

Type BL

Type BL6 (6 Splines)

FA14

Note 1: Mounting face for attaching to valve flange.
Note 2: Millimeter dimensions are in parentheses.
MX Unit 85 Dimension Data

Dimensions in inches and millimeters.

**Top View**

- **Lubricant Fill**
- **Control Panel**
- **Terminal Compartment**
- **Motors**
- **Preferred Mounting is with Motor Horizontal.**

**Side View**

- **Lubricant Drain**
- **Handwheel Removed for Clarity**
- **Leaving Automatic 100% Torque Operation**

**Front View**

- **Display Window**
- **Lever Returns Manually When Released**

**View A**

- **Customer Terminal**
- **Detail of Conduit Entries**
MX Unit 85 Bases
Dimensions in inches and millimeters.

**Thrust Bases**

Type A1

![Type A1 Diagram]

Type A1E (Extended Reach)

![Type A1E Diagram]

Type B4

![Type B4 Diagram]

Type B4E (Extended Reach)

![Type B4E Diagram]

**Type B4E (Variable Bore)**

![Type B4E Diagram]

**Base Details**

**F16**

- Pilot dia.: 5.11 (129.22) 5.12 (130.05)
- 4 holes M20 x 2.5 x 40.0 mm deep. Equispaced as shown on 6.50 (165) B.C. straddle centerline

**FA16**

- Pilot dia.: 4.996 (126.96) 5.006 (127.00)
- 4 holes 3/8-10 tap x 1.57 deep. Equispaced as shown on 6.50 (165) B.C. straddle centerline

**F25**

- Pilot dia.: 7.966 (199.80) 7.972 (199.95)
- 8 holes M16 x 2 x 32 mm deep. Equispaced as shown on 10.00 (254.0) B.C. straddle centerline

**FA25**

- Pilot dia.: 5.996 (152.30) 5.998 (152.36)
- 8 holes 3/8-11 tap x 1.26 deep. Equispaced as shown on 10.00 (254.0) B.C. straddle centerline

Note 1: Mounting face for attaching to valve flange.
Note 2: Millimeter dimensions are in parentheses.
MX Unit 140 Dimension Data
Dimensions in inches and millimeters.
MX Unit 140 Bases
Dimensions in inches and millimeters.

Thrust Bases

- **Type A1**
  - Diameter: 2.3 (59)
  - Diameter: 3.65 (92.8)
  - Diameter: 3.3 (85)
  - Diameter: 4.4 (112)
  - Diameter: 4.6 (117)

- **Type A1E (Extended Reach)**
  - Diameter: 2.3 (59)
  - Diameter: 3.65 (92.8)
  - Diameter: 3.3 (85)
  - Diameter: 4.4 (112)
  - Diameter: 4.6 (117)

- **Type B4**
  - Diameter: 3.1 (79)

- **Type B4E (Extended Reach)**
  - Diameter: 3.1 (79)

- **Type B4E (Variable Bore)**
  - Diameter: 3.1 (79)

Stem Nut Bore Details
- **Type A1E (Extended Reach)**
  - Diameter: 5.0 (127)

Thrust Bases

Base Details

- **F25**
  - Diameter: 7.866 (199.80)
  - Diameter: 7.872 (199.95)
  - Pilot dia.: 11.8
  - 8 holes: M16 x 32 mm deep. Equispaced as shown on 10.00 (254.0) B.C.

- **FA25**
  - Diameter: 5.996 (152.30)
  - Diameter: 5.998 (152.36)
  - Pilot dia.: 11.8
  - 8 holes: 5/16-11 tap x 1.26 deep. Equispaced as shown on 10.00 (254.0) B.C. straddle centerline

**Note 1:** Mounting face for attaching to valve flange.
**Note 2:** Millimeter dimensions are in parentheses.
MX Unit 150 Dimension Data
Dimensions in inches and millimeters.

Top View

View B

Side View

Front View

View A

Dimensions in inches and millimeters.
### MX Unit 150 Bases
Dimensions in inches and millimeters.

#### Thrust Bases

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>Diagram</th>
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<tbody>
<tr>
<td>A1</td>
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<tr>
<td>A1E</td>
<td>(Extended Reach)</td>
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</tbody>
</table>

#### Stem Nut Bore Details

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>B4</td>
<td>(Variable Bore)</td>
<td><img src="image" alt="Type B4 (Variable Bore) Diagram" /></td>
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#### Thrust Bases

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<td><img src="image" alt="Type B4 Diagram" /></td>
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<tr>
<td>B4E</td>
<td>(Extended Reach)</td>
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#### Base Details

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<tbody>
<tr>
<td>F25</td>
<td></td>
<td><img src="image" alt="F25 Diagram" /></td>
</tr>
<tr>
<td>FA25</td>
<td></td>
<td><img src="image" alt="FA25 Diagram" /></td>
</tr>
</tbody>
</table>

- **F25**
  - Diameter: 11.8
  - 8 holes: M16 x 32 mm deep. Equispaced as shown on 10.00 (254.0) B.C.

- **FA25**
  - Diameter: 11.8
  - 8 holes: 5/16-11 tap x 1.26 deep. Equispaced as shown on 10.00 (254.0) B.C. straddle centerline

**Note:**
- Mounting face for attaching to valve flange.
- Millimeter dimensions are in parentheses.

---

**Thrust Bases**

- **Type A1**
  - Diameter: 11.8
  - 8 holes: M16 x 32 mm deep. Equispaced as shown on 10.00 (254.0) B.C.

- **Type A1E (Extended Reach)**
  - Diameter: 11.8
  - 8 holes: 5/16-11 tap x 1.26 deep. Equispaced as shown on 10.00 (254.0) B.C. straddle centerline
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