

|   | 553                 | 10   | 012  | - D1 -     | M04        | - C293 -   | L04         | - E00 -             | B00 |     |     |     |  |                   |     |     |     |     |  |                  |     |     |     |     |
|---|---------------------|------|------|------------|------------|------------|-------------|---------------------|-----|-----|-----|-----|--|-------------------|-----|-----|-----|-----|--|------------------|-----|-----|-----|-----|
| <b>Table Series</b>   |                     |      |      |            |            |            |             |                     |     |     |     |     |  |                   |     |     |     |     |  |                  |     |     |     |     |
| 553 - 553 carriage  |                     |      |      |            |            |            |             |                     |     |     |     |     |  |                   |     |     |     |     |  |                  |     |     |     |     |
| 554 - 554 carriage  |                     |      |      |            |            |            |             |                     |     |     |     |     |  |                   |     |     |     |     |  |                  |     |     |     |     |
| 555 - 555 carriage  |                     |      |      |            |            |            |             |                     |     |     |     |     |  |                   |     |     |     |     |  |                  |     |     |     |     |
| <b>Carriage Length</b>  |                     |      |      |            |            |            |             |                     |     |     |     |     |  |                   |     |     |     |     |  |                  |     |     |     |     |
| 10 - 10 inches  |                     |      |      |            |            |            |             |                     |     |     |     |     |  |                   |     |     |     |     |  |                  |     |     |     |     |
| <b>Travel Length</b> (see page K-6)   |                     |      |      |            |            |            |             |                     |     |     |     |     |  |                   |     |     |     |     |  |                  |     |     |     |     |
| 012 - 12 to 360 inches  |                     |      |      |            |            |            |             |                     |     |     |     |     |  |                   |     |     |     |     |  |                  |     |     |     |     |
| <b>Drive Shaft</b> (see page K-7)   |                     |      |      |            |            |            |             |                     |     |     |     |     |  |                   |     |     |     |     |  |                  |     |     |     |     |
| D1 - Right Hand single shaft      D3 - Right Hand thru shaft<br>D2 - Left Hand single shaft      D4 - Left Hand thru shaft  |                     |      |      |            |            |            |             |                     |     |     |     |     |  |                   |     |     |     |     |  |                  |     |     |     |     |
| <b>Motor Mount</b> (see page K-20)  |                     |      |      |            |            |            |             |                     |     |     |     |     |  |                   |     |     |     |     |  |                  |     |     |     |     |
| M00 - none; just shaft extension      M04 - NEMA 34 mount (E)      M10 - NEMA 42 mount (E)<br>M99 - other      M05 - NEMA 34 mount (M)      M11 - NEMA 42 mount (M)   |                     |      |      |            |            |            |             |                     |     |     |     |     |  |                   |     |     |     |     |  |                  |     |     |     |     |
| <b>Coupling Options</b> (see pages K-24 & K-25)   |                     |      |      |            |            |            |             |                     |     |     |     |     |  |                   |     |     |     |     |  |                  |     |     |     |     |
| C000 - none      C293 to C303 - H197      C573 to C583 - G177      C684 to C691 - G260<br>C999 - none      C359 to C369 - H225      C639 to C649 - G220   |                     |      |      |            |            |            |             |                     |     |     |     |     |  |                   |     |     |     |     |  |                  |     |     |     |     |
| <b>Limit &amp; Home Switches</b> (see pages K-21 to K-23)   |                     |      |      |            |            |            |             |                     |     |     |     |     |  |                   |     |     |     |     |  |                  |     |     |     |     |
| <table style="width: 100%; border: none;"> <tr> <td style="width: 30%;">L00 - no switches</td> <td style="width: 10%;"></td> <td style="width: 10%;">Reed</td> <td style="width: 10%;">Hall</td> <td style="width: 10%;">Prox (NPN)</td> <td style="width: 10%;">Prox (PNP)</td> </tr> <tr> <td>L99 - other</td> <td>EOT &amp; home switches</td> <td>L04</td> <td>L07</td> <td>L10</td> <td>L13</td> </tr> <tr> <td></td> <td>EOT switches only</td> <td>L05</td> <td>L08</td> <td>L11</td> <td>L14</td> </tr> <tr> <td></td> <td>home switch only</td> <td>L06</td> <td>L09</td> <td>L12</td> <td>L15</td> </tr> </table> | L00 - no switches   |      | Reed | Hall       | Prox (NPN) | Prox (PNP) | L99 - other | EOT & home switches | L04 | L07 | L10 | L13 |  | EOT switches only | L05 | L08 | L11 | L14 |  | home switch only | L06 | L09 | L12 | L15 |
| L00 - no switches   |                     | Reed | Hall | Prox (NPN) | Prox (PNP) |            |             |                     |     |     |     |     |  |                   |     |     |     |     |  |                  |     |     |     |     |
| L99 - other   | EOT & home switches | L04  | L07  | L10        | L13        |            |             |                     |     |     |     |     |  |                   |     |     |     |     |  |                  |     |     |     |     |
|   | EOT switches only   | L05  | L08  | L11        | L14        |            |             |                     |     |     |     |     |  |                   |     |     |     |     |  |                  |     |     |     |     |
|   | home switch only    | L06  | L09  | L12        | L15        |            |             |                     |     |     |     |     |  |                   |     |     |     |     |  |                  |     |     |     |     |
| <b>Encoder Options</b> (see page K-27)  |                     |      |      |            |            |            |             |                     |     |     |     |     |  |                   |     |     |     |     |  |                  |     |     |     |     |
| E00 - none      E02 - rotary (1000 lines/rev)      E99 - other<br>E01 - rotary (500 lines/rev)      E03 - rotary (1270 lines/rev)   |                     |      |      |            |            |            |             |                     |     |     |     |     |  |                   |     |     |     |     |  |                  |     |     |     |     |
| <i>note: When selecting any rotary encoder option, the Drive Shaft D3 or D4 above is required.</i>  |                     |      |      |            |            |            |             |                     |     |     |     |     |  |                   |     |     |     |     |  |                  |     |     |     |     |
| <b>Power-off Brakes</b> (see page K-26)   |                     |      |      |            |            |            |             |                     |     |     |     |     |  |                   |     |     |     |     |  |                  |     |     |     |     |
| B00 - none      B05 - 24 VDC      B06 - 90 VDC      B99 - other   |                     |      |      |            |            |            |             |                     |     |     |     |     |  |                   |     |     |     |     |  |                  |     |     |     |     |
| <i>note: When selecting any brake option, the Drive Shaft D3 or D4 above is required.</i>   |                     |      |      |            |            |            |             |                     |     |     |     |     |  |                   |     |     |     |     |  |                  |     |     |     |     |

(E) - English Interface  
(M) - Metric Interface

## Specifications

| Load Capacities                          |  | 553 & 554 Carriages       |                             | 555 Carriage              |                             |
|--|--|---------------------------|-----------------------------|---------------------------|-----------------------------|
| <b>Dynamic Horizontal</b>                | 2 million inches (50 km) of travel                                   | 10,500 lbs                | ( 4763 kg)                  | 9,120 lbs                 | ( 4136 kg) <sup>(1)</sup>   |
| <b>Dynamic Horizontal</b>                | 50 million inches (1270 km) of travel                                | 3,590 lbs                 | ( 1628 kg)                  | 3,119 lbs                 | ( 1414 kg) <sup>(1)</sup>   |
| <b>Static Horizontal</b>                 |  | 15,400 lbs                | ( 6985 kg)                  | 14,700 lbs                | ( 6668 kg) <sup>(1)</sup>   |
| <b>Dynamic Roll Moment</b>               | 2 million inches (50 km) of travel                                   | 410 ft-lbs                | ( 556 N-m)                  | 172 ft-lbs                | ( 233 N-m)                  |
| <b>Dynamic Roll Moment</b>               | 50 million inches (1270 km) of travel                                | 140 ft-lbs                | ( 190 N-m)                  | 59 ft-lbs                 | ( 80 N-m)                   |
| <b>Static Roll Moment</b>                |  | 650 ft-lbs                | ( 881 N-m)                  | 285 ft-lbs                | ( 386 N-m)                  |
| <b>Dyn. Pitch &amp; Yaw Moment</b>       | 2 million inches (50 km) of travel                                   | 1,215 ft-lbs              | ( 1647 N-m)                 | 510 ft-lbs                | ( 690 N-m)                  |
| <b>Dyn. Pitch &amp; Yaw Moment</b>       | 50 million inches (1270 km) of travel                                | 414 ft-lbs                | ( 561 N-m)                  | 174 ft-lbs                | ( 236 N-m)                  |
| <b>Static Pitch &amp; Yaw Moment</b>     |  | 1,775 ft-lbs              | ( 2406 N-m)                 | 845 ft-lbs                | ( 1145 N-m)                 |
| <b>Each Bearing Dyn. Capacity</b>        | 2 million inches (50 km) of travel                                   | 5,250 lbs                 | ( 2381 kg)                  | 4,560 lbs                 | ( 2068 kg) <sup>(1)</sup>   |
| <b>Each Bearing Dyn. Capacity</b>        | 50 million inches (1270 km) of travel                                | 1,795 lbs                 | ( 814 kg)                   | 1,559 lbs                 | ( 707 kg) <sup>(1)</sup>    |
| <b>Each Bearing Static Load Capacity</b> |  | 7,700 lbs                 | ( 3493 kg)                  | 7,350 lbs                 | ( 3334 kg) <sup>(1)</sup>   |
| <b>Maximum Belt Tensile Force</b>        |  | 675 lbs                   | ( 306 kg)                   | 675 lbs                   | ( 306 kg)                   |
| <b>Maximum Carriage Thrust Force</b>     |  | 475 lbs                   | ( 215 kg)                   | 475 lbs                   | ( 215 kg)                   |
| <b>Maximum Speed</b>                     |  | 118 in/sec                | ( 3 m/sec)                  | 197 in/sec                | ( 5 m/sec)                  |
| <b>Maximum Acceleration</b>              |  | 1,930 in/sec <sup>2</sup> | ( 49,0 m/sec <sup>2</sup> ) | 1,930 in/sec <sup>2</sup> | ( 49,0 m/sec <sup>2</sup> ) |
| <b>d<sub>2</sub></b>                     | Center to center distance (spacing) of each bearing on a single rail | 3.876 in                  | ( 98,4 mm)                  | 3.876 in                  | ( 98,4 mm)                  |
| <b>d<sub>r</sub></b>                     | Center distance of the bearing to top of carriage plate surface      | 1.508 in                  | ( 38,3 mm)                  | 1.626 in                  | ( 41,3 mm)                  |

| Other  | 553, 554 & 555 Carriages  |
|--|---|
| <b>Table Material</b>                          | Base Extrusion, Carriage, & End Plates - 6061 anodized aluminum |
| <b>Linear Rail Material</b>                    | Case Hardened Steel   |
| <b>Belt Properties</b>                         | Black, 50 mm wide, Polyurethane, Steel reinforced belt          |
| <b>Drive Pulley Weight</b>                     | 1.500 lbs ( 0,68 kg)  |
| <b>Drive Pulley Diameter</b>                   | 2.569 in ( 65,25 mm)  |
| <b>Drive Lead</b>                              | 8.071 in ( 205,00 mm)   |
| <b>Belt Stretch - x Load (lbs or N)</b>        | 0.00006 in/ft per lbs ( 0,00114 mm/m per N)                     |
| <b>Unidirectional Repeatability</b>            | +/- 0.001 in (+/- 0,0254 mm)                                    |
| <b>Bidirectional Repeatability</b>             | +/- 0.004 in (+/- 0,1016 mm)                                    |
| <b>Position Accuracy (Belt) <sup>(2)</sup></b> | < 0.010 in/ft (< 0,254 mm/300mm)                                |
| <b>Orthogonality (multi-axis systems)</b>      | < 60 arc-seconds  |
| <b>Friction Coefficient</b>                    | < 0.01  |
| <b>Breakaway Torque <sup>(3)</sup></b>         | < 16 lb-in (1,808 N-m)  |
| <b>Motor Mount</b>                             | NEMA 34 & 42 Mounts, Metric Mounts, and Gearheads               |
| <b>Coupling</b>                                | Two (2) different styles available                              |

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### Footnotes:

- (1) Derate value by 50 % when load is applied to the open end of the bearing (inverted configuration).
- (2) Position accuracy varies based on belt stretch. The given rating is based upon a carriage speed of 5 inches/sec (127 mm/sec) and a no load condition.
- (3) This is a nominal value. Breakaway torque will increase, or decrease, based on belt tension.

## Dimensions & Specifications

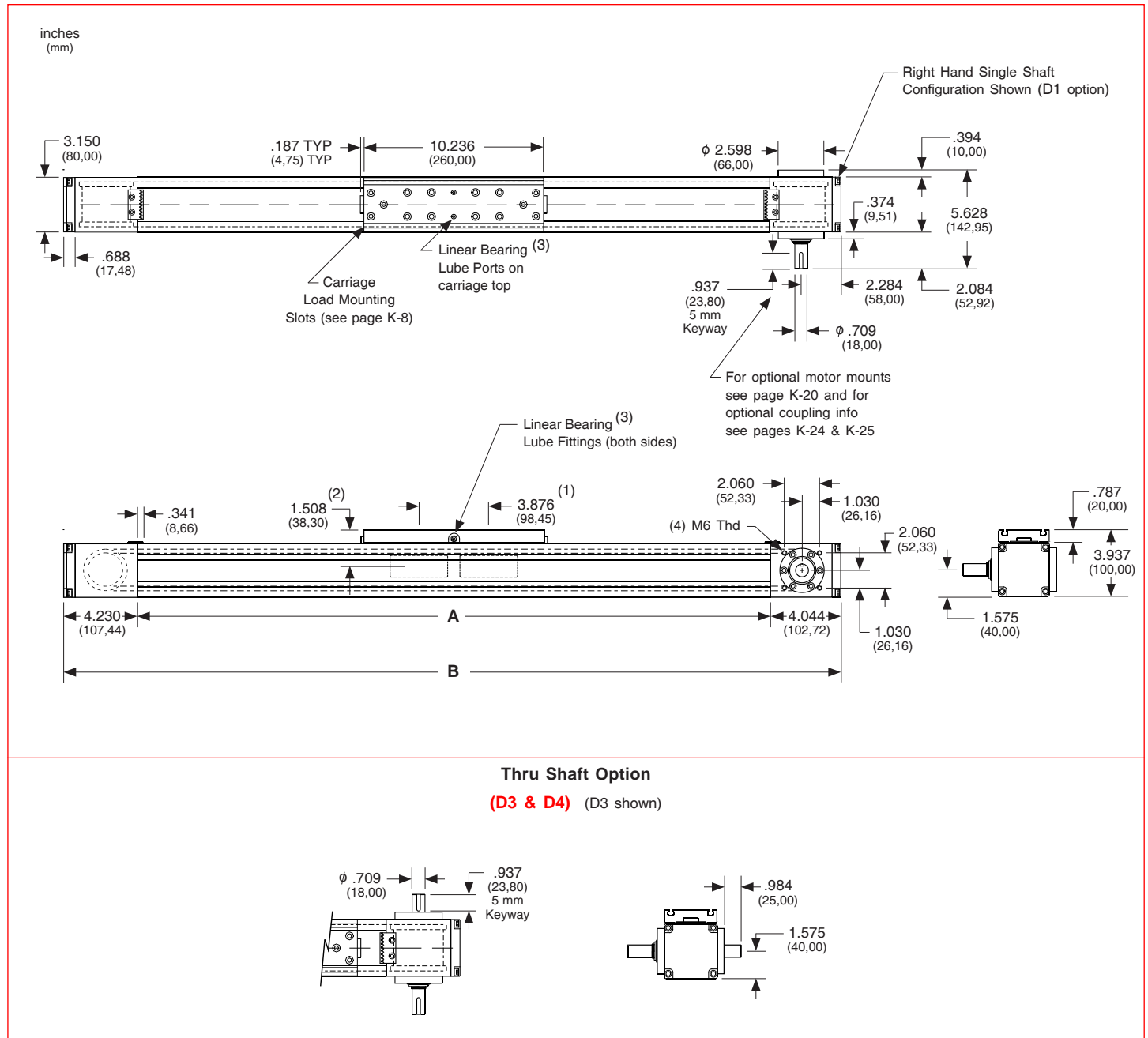
| Model Number | Travel <sup>(1)</sup><br>Length<br>inches<br>(mm) | Table Dimensions<br>inches<br>(mm) |                     | Belt<br>Weight<br>lbs<br>(kg) | Table Weight<br>(553 & 554 Carriages)<br>lbs<br>(kg) | Table Weight<br>(555 Carriage)<br>lbs<br>(kg) |
|--------------|---|------------------------------------|---------------------|-------------------------------|--|---|
|              |   | A                                  | B                   |                               |  |   |
| 55x10012     | 12<br>(300)                                       | 24.00<br>(609,6)                   | 32.275<br>(819,8)   | 0.29<br>(0,13)                | 24.1<br>(10,9)                                       | 23.0<br>(10,4)                                |
| 55x10018     | 18<br>(455)                                       | 30.00<br>(762,0)                   | 38.275<br>(972,2)   | 0.40<br>(0,18)                | 27.3<br>(12,4)                                       | 26.0<br>(11,8)                                |
| 55x10024     | 24<br>(605)                                       | 36.00<br>(914,4)                   | 44.275<br>(1124,6)  | 0.51<br>(0,23)                | 30.6<br>(13,9)                                       | 29.2<br>(13,2)                                |
| 55x10030     | 30<br>(760)                                       | 42.00<br>(1066,8)                  | 50.275<br>(1277,0)  | 0.62<br>(0,28)                | 33.9<br>(15,4)                                       | 32.3<br>(14,7)                                |
| 55x10036     | 36<br>(910)                                       | 48.00<br>(1219,2)                  | 56.275<br>(1429,4)  | 0.72<br>(0,33)                | 37.2<br>(16,9)                                       | 35.5<br>(16,1)                                |
| 55x10048     | 48<br>(1215)                                      | 60.00<br>(1524,0)                  | 68.275<br>(1734,2)  | 0.94<br>(0,43)                | 43.8<br>(19,9)                                       | 41.8<br>(19,0)                                |
| 55x10060     | 60<br>(1520)                                      | 72.00<br>(1828,8)                  | 80.275<br>(2039,0)  | 1.15<br>(0,52)                | 50.3<br>(22,8)                                       | 48.0<br>(21,8)                                |
| 55x10072     | 72<br>(1825)                                      | 84.00<br>(2133,6)                  | 92.275<br>(2343,8)  | 1.37<br>(0,62)                | 56.9<br>(25,8)                                       | 54.3<br>(24,6)                                |
| 55x10084     | 84<br>(2130)                                      | 96.00<br>(2438,4)                  | 104.275<br>(2648,6) | 1.58<br>(0,72)                | 63.5<br>(28,8)                                       | 60.6<br>(27,5)                                |
| 55x10096     | 96<br>(2435)                                      | 108.00<br>(2743,2)                 | 116.275<br>(2953,4) | 1.80<br>(0,82)                | 70.1<br>(31,8)                                       | 66.9<br>(30,3)                                |
| 55x10108     | 108<br>(2740)                                     | 120.00<br>(3048,0)                 | 128.275<br>(3258,2) | 2.01<br>(0,91)                | 76.7<br>(34,8)                                       | 73.2<br>(33,2)                                |
| 55x10120     | 120<br>(3045)                                     | 132.00<br>(3352,8)                 | 140.275<br>(3563,0) | 2.23<br>(1,01)                | 83.2<br>(37,8)                                       | 79.4<br>(36,0)                                |
| 55x10132     | 132<br>(3350)                                     | 144.00<br>(3657,6)                 | 152.275<br>(3867,8) | 2.44<br>(1,11)                | 89.8<br>(40,8)                                       | 85.7<br>(38,9)                                |
| 55x10144     | 144<br>(3655)                                     | 156.00<br>(3962,4)                 | 164.275<br>(4172,6) | 2.66<br>(1,21)                | 96.4<br>(43,7)                                       | 92.0<br>(41,7)                                |
| 55x10180     | 180<br>(4572)                                     | 192.00<br>(4876,8)                 | 200.275<br>(5087,0) | 3.30<br>(1,50)                | 116.1<br>(52,7)                                      | 110.8<br>(50,3)                               |
| 55x10240     | 240<br>(6096)                                     | 252.00<br>(6400,8)                 | 260.275<br>(6611,0) | 4.38<br>(1,99)                | 149.0<br>(67,6)                                      | 142.2<br>(64,5)                               |
| 55x10300     | 300<br>(7620)                                     | 312.00<br>(7924,8)                 | 320.275<br>(8135,0) | 5.45<br>(2,47)                | 181.9<br>(82,5)                                      | 173.6<br>(78,7)                               |
| 55x10360     | 360<br>(9144)                                     | 372.00<br>(9448,8)                 | 380.275<br>(9659,0) | 6.52<br>(2,96)                | 214.8<br>(97,4)                                      | 204.9<br>(92,9)                               |

- x = 3; 553 Carriage; Carriage weight = 7.98 lbs. (3,62 kg)
- x = 4; 554 Carriage; Carriage weight = 7.98 lbs. (3,62 kg)
- x = 5; 555 Carriage; Carriage weight = 7.14 lbs. (3,24 kg)

### Footnotes:

(1) Longest possible travel is 30 feet (9,1 meters). Any travel length less than 30 feet (9,1 meters) can be provided.

## Dimensions



### Footnotes:

- (1) This value is center to center distance (spacing) of each bearing on a single rail ( $d_2$ ).
- (2) This value is the center distance of the bearing to top of carriage plate surface ( $d_1$ ) for the 553 & 554 carriages. For the 555 carriage  $d_1 = 1.626$  inches (41,3 mm).
- (3) Two lube ports on carriage top and lube fittings on each side of the 553 & 555 carriages are all interconnected. Only one port is required to lubricate both linear bearings. The 554 carriage will not have any lube ports.