



400 Series Profile Rail Linear Guides

Transport grade ball profile rail system

Features and Benefits

The 400 Series Profile Rail Linear Guide is the newest addition to the Thomson Linear Guide product line. The 400 Series is a cost effective, transport grade Profile Rail solution for cost-sensitive applications, and is a drop-in replacement with industry-standard envelope and hole patterns. Double-faced ball track bearing arrangements provide compliance during installation as well as equal load carrying capacity in all directions. Caged and non-caged carriages utilize the same rail design. This enables efficient use of inventory, as only one rail type needs to be stocked for either carriage type.

400 Series Ball/Caged Ball Assortment

| Width | Standard | | | Narrow | | | |
|------------|----------|---|---|--------|------|------|-------|
| Length | Long | | | Long | Long | Long | Short |
| Height | | | | | High | High | |
| Designator | A | B | C | D | E | F | G |
| SIZE MM | 15 | • | • | • | • | • | • |
| | 20 | • | • | • | • | • | • |
| | 25 | • | • | • | • | • | • |
| | 30 | • | • | • | • | • | • |
| | 35 | • | • | • | • | • | • |
| | 45 | • | • | • | • | • | • |
| | 55 | • | • | • | • | • | • |

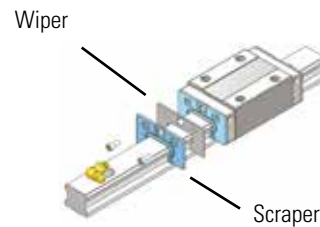
Low Noise and Vibration

Polymer ball-return tube reduces noise while retaining lubrication.



Modular Accessory Options

Standard double lip end and longitudinal seals retain lubrication while protecting the bearing from contamination. Additional seals and scrapers available.



Lubrication Channels

Channels direct lubricant to individual ball tracks to maximize lubrication effectiveness



Double-Faced Ball Tracks

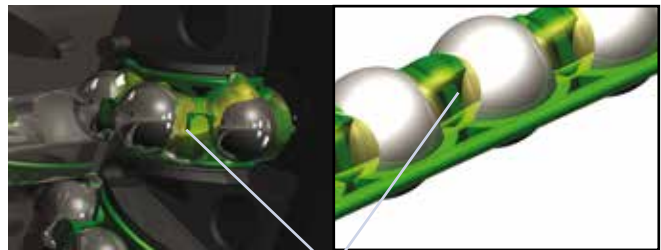
The 400 Series Linear Guide utilizes a 45°, face-to-face bearing arrangement, resulting in equal load-carrying capacity in all directions. The primary advantage of face-to-face configuration is that the rails are much more tolerant of mounting surface inaccuracies. This enables automation machine builders to reduce cost further by not having to prepare super-accurate mounting surfaces



400 Series Ball Cage

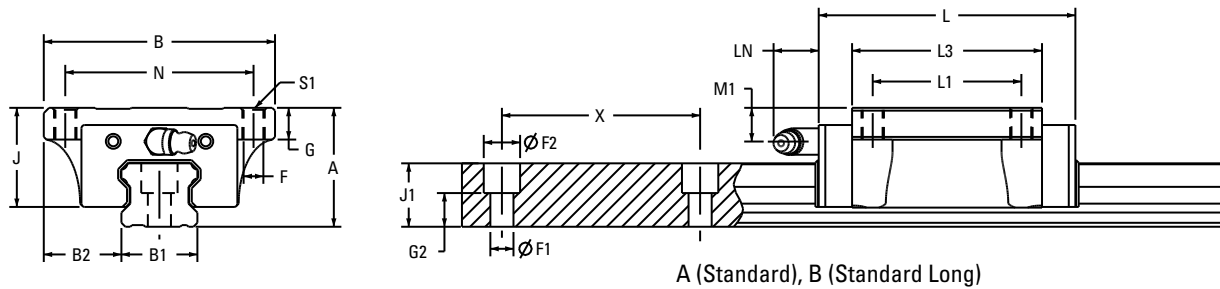
The 413 ball cage option provides:

- Increased running smoothness
- Low noise at high speeds
- Individual ball lubricant reservoirs



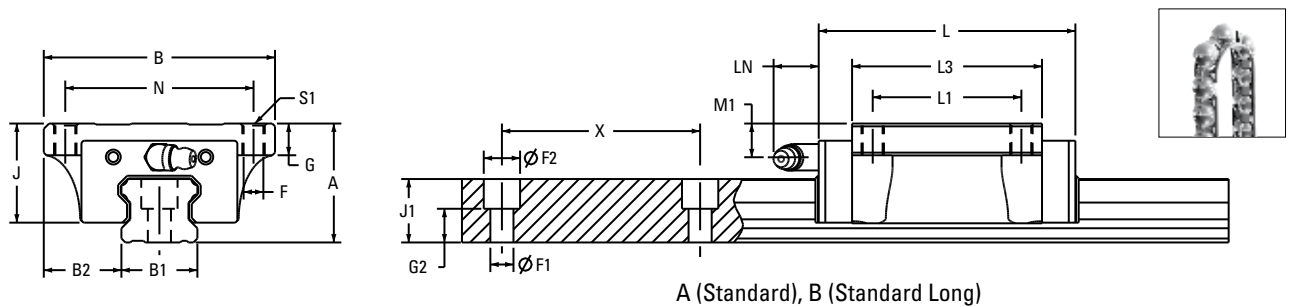
Lubricant

400 Series Specifications



411 Standard

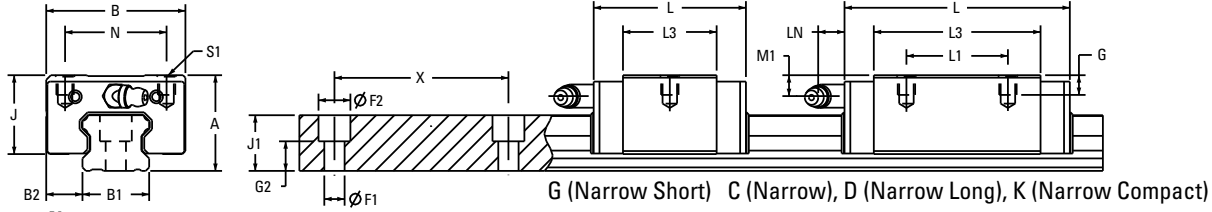
| Item | Assembly [mm] | | | | Carriage [mm] | | | | | | | | | Rail [mm] | | | | | | Load Rating | | Carriage Weight | Rail Weight | |
|----------|---------------|-----|------|------|---------------|-----|----|-----|------|------|-------|-----------|------|-----------|-------------------|------|-----|------|------|-------------|--------|-----------------|-------------|--------|
| | A | B | B2 | J | L | N | L1 | S1 | F | G | L3 | Oil H | M1 | LN | B1 +0.02 -0.05 | J1 | X | F1 | F2 | G2 | C [N] | C0 [N] | [kg] | [kg/m] |
| 411N15A0 | 24 | 47 | 16.0 | 20.7 | 58.6 | 38 | 30 | M5 | 4.4 | 8.0 | 40.2 | M4 X 0.7 | 5.5 | (5.0) | 15 | 13.0 | 60 | 4.5 | 7.5 | 7.0 | 9,300 | 19,600 | 0.21 | 1.28 |
| 411N15B0 | 24 | 47 | 16.0 | 20.7 | 66.1 | 38 | 30 | M5 | 4.4 | 8.0 | 47.7 | M4 X 0.7 | 5.5 | (5.0) | 15 | 13.0 | 60 | 4.5 | 7.5 | 7.0 | 11,300 | 23,700 | 0.23 | 1.28 |
| 411N20A0 | 30 | 63 | 21.5 | 25.5 | 69.3 | 53 | 40 | M6 | 5.4 | 9.0 | 48.5 | M6 X 1.0 | 7.1 | (15.6) | 20 | 16.3 | 60 | 6.0 | 9.5 | 7.8 | 14,300 | 30,500 | 0.40 | 2.15 |
| 411N20B0 | 30 | 63 | 21.5 | 25.5 | 82.1 | 53 | 40 | M6 | 5.4 | 9.0 | 61.3 | M6 X 1.0 | 7.1 | (15.6) | 20 | 16.3 | 60 | 6.0 | 9.5 | 7.8 | 18,600 | 39,500 | 0.46 | 2.15 |
| 411N25A0 | 36 | 70 | 23.5 | 30.2 | 79.2 | 57 | 45 | M8 | 7.0 | 10.0 | 57.5 | M6 X 1.0 | 10.2 | (15.6) | 23 | 19.2 | 60 | 7.0 | 11.0 | 10.2 | 20,100 | 41,100 | 0.57 | 2.88 |
| 411N25B0 | 36 | 70 | 23.5 | 30.2 | 93.9 | 57 | 45 | M8 | 7.0 | 10.0 | 72.2 | M6 X 1.0 | 10.2 | (15.6) | 23 | 19.2 | 60 | 7.0 | 11.0 | 10.2 | 25,900 | 52,800 | 0.72 | 2.88 |
| 411N30A0 | 42 | 90 | 31.0 | 35.0 | 94.8 | 72 | 52 | M10 | 8.6 | 11.0 | 67.8 | M6 X 1.0 | 8 | (15.6) | 28 | 22.8 | 80 | 9.0 | 14.0 | 10.8 | 29,700 | 54,600 | 1.10 | 4.45 |
| 411N30B0 | 42 | 90 | 31.0 | 35.0 | 105.0 | 72 | 52 | M10 | 8.6 | 11.0 | 78.0 | M6 X 1.0 | 8 | (15.6) | 28 | 22.8 | 80 | 9.0 | 14.0 | 10.8 | 38,500 | 70,700 | 1.34 | 4.45 |
| 411N35A0 | 48 | 100 | 33.0 | 40.5 | 111.5 | 82 | 62 | M10 | 8.6 | 12.0 | 80.5 | M6 X 1.0 | 8 | (16.0) | 34 | 26.0 | 80 | 9.0 | 14.0 | 14.0 | 42,400 | 81,100 | 1.50 | 6.25 |
| 411N35B0 | 48 | 100 | 33.0 | 40.5 | 123.5 | 82 | 62 | M10 | 8.6 | 12.0 | 92.5 | M6 X 1.0 | 8 | (16.0) | 34 | 26.0 | 80 | 9.0 | 14.0 | 14.0 | 52,900 | 101,400 | 1.90 | 6.25 |
| 411N45A0 | 60 | 120 | 37.5 | 51.1 | 129.0 | 100 | 80 | M12 | 10.6 | 15.5 | 94.0 | M8 X 1.25 | 14.4 | (16.0) | 45 | 31.1 | 105 | 14.0 | 20.0 | 14.1 | 58,000 | 108,900 | 2.27 | 9.60 |
| 411N45B0 | 60 | 120 | 37.5 | 51.1 | 145.0 | 100 | 80 | M12 | 10.6 | 15.5 | 110.0 | M8 X 1.25 | 14.4 | (16.0) | 45 | 31.1 | 105 | 14.0 | 20.0 | 14.1 | 69,000 | 129,500 | 2.68 | 9.60 |
| 411N55A0 | 70 | 140 | 43.5 | 57.3 | 155.0 | 116 | 95 | M14 | 12.6 | 18.5 | 116.0 | M8 X 1.25 | 14.0 | (16.0) | 53 | 38.0 | 120 | 16.0 | 23.0 | 18.0 | 69,800 | 133,400 | 3.44 | 13.80 |
| 411N55B0 | 70 | 140 | 43.5 | 57.3 | 193.0 | 116 | 95 | M14 | 12.6 | 18.5 | 154.0 | M8 X 1.25 | 14.0 | (16.0) | 53 | 38.0 | 120 | 16.0 | 23.0 | 18.0 | 94,200 | 178,900 | 4.63 | 13.80 |



413 Standard (Caged)

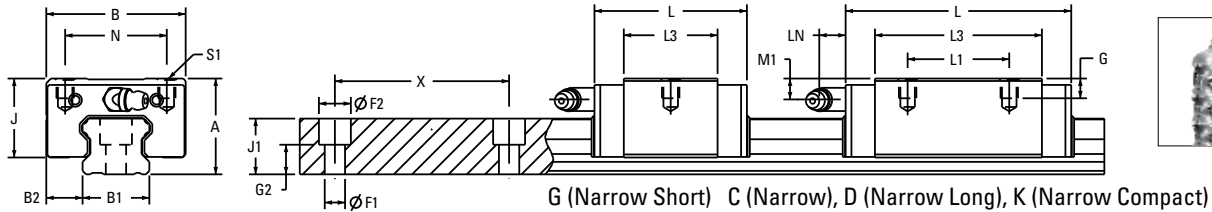
| Item | Assembly [mm] | | | | Carriage [mm] | | | | | | | | | Rail [mm] | | | | | | Load Rating | | Carriage Weight | Rail Weight | |
|----------|---------------|-----|------|------|---------------|-----|----|-----|------|------|-------|-----------|------|-----------|-------------------|------|-----|------|------|-------------|--------|-----------------|-------------|--------|
| | A | B | B2 | J | L | N | L1 | S1 | F | G | L3 | Oil H | M1 | LN | B1 +0.02 -0.05 | J1 | X | F1 | F2 | G2 | C [N] | C0 [N] | [kg] | [kg/m] |
| 413N15A0 | 24 | 47 | 16.0 | 20.7 | 58.6 | 38 | 30 | M5 | 4.4 | 8.0 | 40.2 | M4 X 0.7 | 5.5 | (5.0) | 15 | 13.0 | 60 | 4.5 | 7.5 | 7.0 | 9,300 | 19,600 | 0.21 | 1.28 |
| 413N15B0 | 24 | 47 | 16.0 | 20.7 | 66.1 | 38 | 30 | M5 | 4.4 | 8.0 | 47.7 | M4 X 0.7 | 5.5 | (5.0) | 15 | 13.0 | 60 | 4.5 | 7.5 | 7.0 | 11,300 | 23,700 | 0.23 | 1.28 |
| 413N20A0 | 30 | 63 | 21.5 | 25.5 | 69.3 | 53 | 40 | M6 | 5.4 | 9.0 | 48.5 | M6 X 1.0 | 7.1 | (15.6) | 20 | 16.3 | 60 | 6.0 | 9.5 | 7.8 | 14,300 | 30,500 | 0.40 | 2.15 |
| 413N20B0 | 30 | 63 | 21.5 | 25.5 | 82.1 | 53 | 40 | M6 | 5.4 | 9.0 | 61.3 | M6 X 1.0 | 7.1 | (15.6) | 20 | 16.3 | 60 | 6.0 | 9.5 | 7.8 | 18,600 | 39,500 | 0.46 | 2.15 |
| 413N25A0 | 36 | 70 | 23.5 | 30.2 | 79.2 | 57 | 45 | M8 | 7.0 | 10.0 | 57.5 | M6 X 1.0 | 10.2 | (15.6) | 23 | 19.2 | 60 | 7.0 | 11.0 | 10.2 | 20,100 | 41,100 | 0.57 | 2.88 |
| 413N25B0 | 36 | 70 | 23.5 | 30.2 | 93.9 | 57 | 45 | M8 | 7.0 | 10.0 | 72.2 | M6 X 1.0 | 10.2 | (15.6) | 23 | 19.2 | 60 | 7.0 | 11.0 | 10.2 | 25,900 | 52,800 | 0.72 | 2.88 |
| 413N30A0 | 42 | 90 | 31.0 | 35.0 | 94.8 | 72 | 52 | M10 | 8.6 | 11.0 | 67.8 | M6 X 1.0 | 8 | (15.6) | 28 | 22.8 | 80 | 9.0 | 14.0 | 10.8 | 29,700 | 54,600 | 1.10 | 4.45 |
| 413N30B0 | 42 | 90 | 31.0 | 35.0 | 105.0 | 72 | 52 | M10 | 8.6 | 11.0 | 78.0 | M6 X 1.0 | 8 | (15.6) | 28 | 22.8 | 80 | 9.0 | 14.0 | 10.8 | 38,500 | 70,700 | 1.34 | 4.45 |
| 413N35A0 | 48 | 100 | 33.0 | 40.5 | 111.5 | 82 | 62 | M10 | 8.6 | 12.0 | 80.5 | M6 X 1.0 | 8 | (16.0) | 34 | 26.0 | 80 | 9.0 | 14.0 | 14.0 | 42,400 | 81,100 | 1.50 | 6.25 |
| 413N35B0 | 48 | 100 | 33.0 | 40.5 | 123.5 | 82 | 62 | M10 | 8.6 | 12.0 | 92.5 | M6 X 1.0 | 8 | (16.0) | 34 | 26.0 | 80 | 9.0 | 14.0 | 14.0 | 52,900 | 101,400 | 1.90 | 6.25 |
| 413N45A0 | 60 | 120 | 37.5 | 51.1 | 129.0 | 100 | 80 | M12 | 10.6 | 15.5 | 94.0 | M8 X 1.25 | 14.4 | (16.0) | 45 | 31.1 | 105 | 14.0 | 20.0 | 14.1 | 58,000 | 108,900 | 2.27 | 9.60 |
| 413N45B0 | 60 | 120 | 37.5 | 51.1 | 145.0 | 100 | 80 | M12 | 10.6 | 15.5 | 110.0 | M8 X 1.25 | 14.4 | (16.0) | 45 | 31.1 | 105 | 14.0 | 20.0 | 14.1 | 69,000 | 129,500 | 2.68 | 9.60 |
| 413N55A0 | 70 | 140 | 43.5 | 57.3 | 155.0 | 116 | 95 | M14 | 12.6 | 18.5 | 116.0 | M8 X 1.25 | 14.0 | (16.0) | 53 | 38.0 | 120 | 16.0 | 23.0 | 18.0 | 69,800 | 133,400 | 3.44 | 13.80 |
| 413N55B0 | 70 | 140 | 43.5 | 57.3 | 193.0 | 116 | 95 | M14 | 12.6 | 18.5 | 154.0 | M8 X 1.25 | 14.0 | (16.0) | 53 | 38.0 | 120 | 16.0 | 23.0 | 18.0 | 94,200 | 178,900 | 4.63 | 13.80 |

400 Series Specifications



411 Narrow

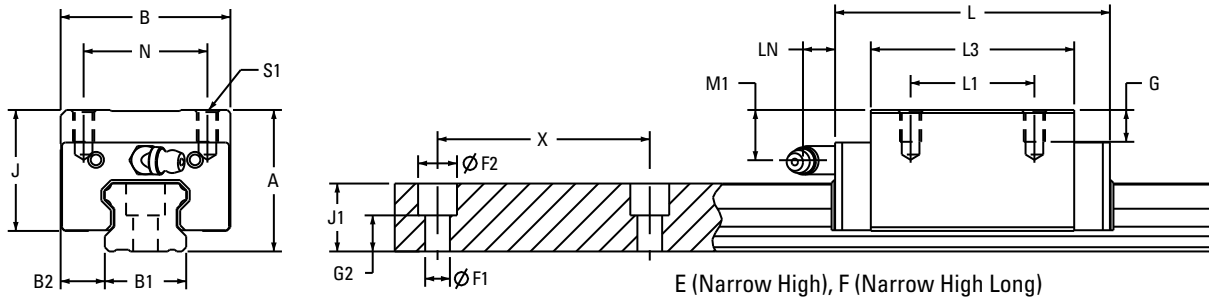
| Item | Assembly [mm] | | | | Carriage [mm] | | | | | | | | | Rail [mm] | | | | | | Load Rating | | Carriage Weight | Rail Weight |
|----------|---------------|-----|------|------|---------------|----|----|-----|------|-------|-----------|-------------|----|-------------------|-----|------|------|------|---------|-------------|-------|-----------------|-------------|
| | A | B | B2 | J | L | N | L1 | S1 | G | L3 | Oil H | M1 | LN | B1 +0.02 -0.05 | J1 | X | F1 | F2 | G2 | C [N] | O [N] | [kg] | [kg/m] |
| 411N15GO | 24 | 34 | 9.5 | 20.7 | 40.6 | 26 | -- | M4 | 4.8 | 22.2 | M4 X 0.7 | 5.5 (5.0) | 15 | 13.0 | 60 | 4.5 | 7.5 | 7.0 | 4,600 | 9,800 | 0.10 | 1.28 | |
| 411N15CO | 24 | 34 | 9.5 | 20.7 | 58.6 | 26 | 26 | M4 | 4.8 | 40.2 | M4 X 0.7 | 5.5 (5.0) | 15 | 13.0 | 60 | 4.5 | 7.5 | 7.0 | 9,300 | 19,600 | 0.17 | 1.28 | |
| 411N15DO | 24 | 34 | 9.5 | 20.7 | 66.1 | 26 | 26 | M4 | 4.8 | 47.7 | M4 X 0.7 | 5.5 (5.0) | 15 | 13.0 | 60 | 4.5 | 7.5 | 7.0 | 11,300 | 23,700 | 0.18 | 1.28 | |
| 411N20GO | 28 | 42 | 11.0 | 23.5 | 48.3 | 32 | -- | M5 | 5.5 | 27.5 | M6 X 1.0 | 5.1 (15.6) | 20 | 16.3 | 60 | 6.0 | 9.5 | 7.8 | 7,400 | 15,700 | 0.17 | 2.15 | |
| 411N20CO | 30 | 44 | 12.0 | 25.5 | 69.3 | 32 | 36 | M5 | 6.5 | 48.5 | M6 X 1.0 | 7.1 (15.6) | 20 | 16.3 | 60 | 6.0 | 9.5 | 7.8 | 14,300 | 30,500 | 0.31 | 2.15 | |
| 411N20KO | 28 | 42 | 11.0 | 23.5 | 69.3 | 32 | 32 | M5 | 5.5 | 48.5 | M6 X 1.0 | 5.1 (15.6) | 20 | 16.3 | 60 | 6.0 | 9.5 | 7.8 | 14,300 | 30,500 | 0.26 | 2.15 | |
| 411N25GO | 33 | 48 | 12.5 | 27.2 | 54.0 | 35 | -- | M6 | 6.8 | 32.3 | M6 X 1.0 | 7.2 (15.6) | 23 | 19.2 | 60 | 7.0 | 11.0 | 10.2 | 10,300 | 21,000 | 0.21 | 2.88 | |
| 411N25CO | 36 | 48 | 12.5 | 30.2 | 79.2 | 35 | 35 | M6 | 9.0 | 57.5 | M6 X 1.0 | 10.2 (15.6) | 23 | 19.2 | 60 | 7.0 | 11.0 | 10.2 | 20,100 | 41,000 | 0.40 | 2.88 | |
| 411N25DO | 36 | 48 | 12.5 | 30.2 | 108.6 | 35 | 50 | M6 | 9.0 | 86.9 | M6 X 1.0 | 10.2 (15.6) | 23 | 19.2 | 60 | 7.0 | 11.0 | 10.2 | 29,200 | 63,300 | 0.67 | 2.88 | |
| 411N25KO | 33 | 48 | 12.5 | 27.2 | 79.2 | 35 | 35 | M6 | 6.8 | 57.5 | M6 X 1.0 | 7.2 (15.6) | 23 | 19.2 | 60 | 7.0 | 11.0 | 10.2 | 20,100 | 41,100 | 0.38 | 2.88 | |
| 411N30GO | 42 | 60 | 16.0 | 35.0 | 64.2 | 40 | -- | M8 | 10.0 | 37.2 | M6 X 1.0 | 8.0 (15.6) | 28 | 22.8 | 80 | 9.0 | 14.0 | 10.8 | 14,700 | 27,000 | 0.50 | 4.45 | |
| 411N30CO | 42 | 60 | 16.0 | 35.0 | 94.8 | 40 | 40 | M8 | 10.0 | 67.8 | M6 X 1.0 | 8.0 (15.6) | 28 | 22.8 | 80 | 9.0 | 14.0 | 10.8 | 29,700 | 54,600 | 0.80 | 4.45 | |
| 411N30DO | 42 | 60 | 16.0 | 35.0 | 130.5 | 40 | 60 | M8 | 10.0 | 103.5 | M6 X 1.0 | 8.0 (15.6) | 28 | 22.8 | 80 | 9.0 | 14.0 | 10.8 | 42,900 | 86,700 | 1.16 | 4.45 | |
| 411N35GO | 48 | 70 | 18.0 | 40.5 | 75.5 | 50 | -- | M8 | 10.0 | 44.5 | M6 X 1.0 | 8.0 (15.6) | 34 | 26.0 | 80 | 9.0 | 14.0 | 14.0 | 21,200 | 40,700 | 0.80 | 6.25 | |
| 411N35CO | 48 | 70 | 18.0 | 40.5 | 111.5 | 50 | 50 | M8 | 10.0 | 80.5 | M6 X 1.0 | 8.0 (15.6) | 34 | 26.0 | 80 | 9.0 | 14.0 | 14.0 | 42,400 | 81,100 | 1.20 | 6.25 | |
| 411N35DO | 48 | 70 | 18.0 | 40.5 | 153.5 | 50 | 72 | M8 | 10.0 | 122.5 | M6 X 1.0 | 8.0 (15.6) | 34 | 26.0 | 80 | 9.0 | 14.0 | 14.0 | 58,300 | 125,300 | 1.84 | 6.25 | |
| 411N45CO | 60 | 86 | 20.5 | 51.1 | 129.0 | 60 | 60 | M10 | 15.5 | 94.0 | M8 X 1.25 | 14.4 (16.0) | 45 | 31.1 | 105 | 14.0 | 20.0 | 14.1 | 58,000 | 108,900 | 1.64 | 9.60 | |
| 411N45DO | 60 | 86 | 20.5 | 51.1 | 174.0 | 60 | 80 | M10 | 15.5 | 139.0 | M8 X 1.25 | 14.4 (16.0) | 45 | 31.1 | 105 | 14.0 | 20.0 | 14.1 | 79,700 | 163,300 | 2.42 | 9.60 | |
| 411N55CO | 70 | 100 | 23.5 | 57.3 | 155.0 | 75 | 75 | M12 | 18.0 | 116.0 | M8 X 1.25 | 14.0 (16.0) | 53 | 38.0 | 120 | 16.0 | 23.0 | 18.0 | 69,800 | 133,400 | 2.67 | 13.80 | |
| 411N55DO | 70 | 100 | 23.5 | 57.3 | 210.0 | 75 | 95 | M12 | 18.0 | 171.0 | M8 X 1.25 | 14.0 (16.0) | 53 | 38.0 | 120 | 16.0 | 23.0 | 18.0 | 157,700 | 253,600 | 3.97 | 13.80 | |



413 Narrow (Caged)

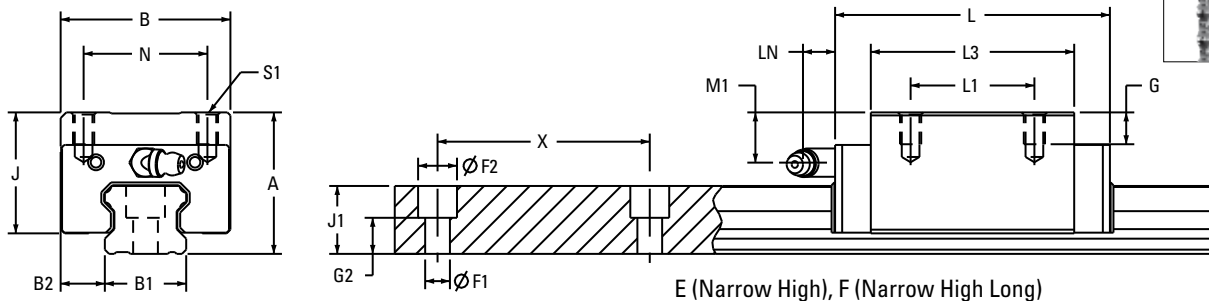
| Item | Assembly [mm] | | | | Carriage [mm] | | | | | | | | | Rail [mm] | | | | | | Load Rating | | Carriage Weight | Rail Weight |
|----------|---------------|-----|------|------|---------------|----|----|-----|------|-------|-----------|-------------|----|-------------------|-----|------|------|------|---------|-------------|--------|-----------------|-------------|
| | A | B | B2 | J | L | N | L1 | S1 | G | L3 | Oil H | M1 | LN | B1 +0.02 -0.05 | J1 | X | F1 | F2 | G2 | C [N] | C0 [N] | [kg] | [kg/m] |
| 413N15GO | 24 | 34 | 9.5 | 20.7 | 40.6 | 26 | -- | M4 | 4.8 | 22.2 | M4 X 0.7 | 5.5 (5.0) | 15 | 13.0 | 60 | 4.5 | 7.5 | 7.0 | 4,600 | 9,800 | 0.10 | 1.28 | |
| 413N15CO | 24 | 34 | 9.5 | 20.7 | 58.6 | 26 | 26 | M4 | 4.8 | 40.2 | M4 X 0.7 | 5.5 (5.0) | 15 | 13.0 | 60 | 4.5 | 7.5 | 7.0 | 9,300 | 19,600 | 0.17 | 1.28 | |
| 413N15DO | 24 | 34 | 9.5 | 20.7 | 66.1 | 26 | 26 | M4 | 4.8 | 47.7 | M4 X 0.7 | 5.5 (5.0) | 15 | 13.0 | 60 | 4.5 | 7.5 | 7.0 | 11,300 | 23,700 | 0.18 | 1.28 | |
| 413N20GO | 28 | 42 | 11.0 | 23.5 | 48.3 | 32 | -- | M5 | 5.5 | 27.5 | M6 X 1.0 | 5.1 (15.6) | 20 | 16.3 | 60 | 6.0 | 9.5 | 7.8 | 7,400 | 15,700 | 0.17 | 2.15 | |
| 413N20CO | 30 | 44 | 12.0 | 25.5 | 69.3 | 32 | 36 | M5 | 6.5 | 48.5 | M6 X 1.0 | 7.1 (15.6) | 20 | 16.3 | 60 | 6.0 | 9.5 | 7.8 | 14,300 | 30,500 | 0.31 | 2.15 | |
| 413N20KO | 28 | 42 | 11.0 | 23.5 | 69.3 | 32 | 32 | M5 | 5.5 | 48.5 | M6 X 1.0 | 5.1 (15.6) | 20 | 16.3 | 60 | 6.0 | 9.5 | 7.8 | 14,300 | 30,500 | 0.26 | 2.15 | |
| 413N25GO | 33 | 48 | 12.5 | 27.2 | 54.0 | 35 | -- | M6 | 6.8 | 32.3 | M6 X 1.0 | 7.2 (15.6) | 23 | 19.2 | 60 | 7.0 | 11.0 | 10.2 | 10,300 | 21,000 | 0.21 | 2.88 | |
| 413N25CO | 36 | 48 | 12.5 | 30.2 | 79.2 | 35 | 35 | M6 | 9.0 | 57.5 | M6 X 1.0 | 10.2 (15.6) | 23 | 19.2 | 60 | 7.0 | 11.0 | 10.2 | 20,100 | 41,000 | 0.40 | 2.88 | |
| 413N25DO | 36 | 48 | 12.5 | 30.2 | 108.6 | 35 | 50 | M6 | 9.0 | 86.9 | M6 X 1.0 | 10.2 (15.6) | 23 | 19.2 | 60 | 7.0 | 11.0 | 10.2 | 29,200 | 63,300 | 0.67 | 2.88 | |
| 413N25KO | 33 | 48 | 12.5 | 27.2 | 79.2 | 35 | 35 | M6 | 6.8 | 57.5 | M6 X 1.0 | 7.2 (15.6) | 23 | 19.2 | 60 | 7.0 | 11.0 | 10.2 | 20,100 | 41,000 | 0.38 | 2.88 | |
| 413N30GO | 42 | 60 | 16.0 | 35.0 | 64.2 | 40 | -- | M8 | 10.0 | 37.2 | M6 X 1.0 | 8.0 (15.6) | 28 | 22.8 | 80 | 9.0 | 14.0 | 10.8 | 14,700 | 27,000 | 0.50 | 4.45 | |
| 413N30CO | 42 | 60 | 16.0 | 35.0 | 94.8 | 40 | 40 | M8 | 10.0 | 67.8 | M6 X 1.0 | 8.0 (15.6) | 28 | 22.8 | 80 | 9.0 | 14.0 | 10.8 | 29,700 | 54,600 | 0.80 | 4.45 | |
| 413N30DO | 42 | 60 | 16.0 | 35.0 | 130.5 | 40 | 60 | M8 | 10.0 | 103.5 | M6 X 1.0 | 8.0 (15.6) | 28 | 22.8 | 80 | 9.0 | 14.0 | 10.8 | 42,900 | 86,700 | 1.16 | 4.45 | |
| 413N35GO | 48 | 70 | 18.0 | 40.5 | 75.5 | 50 | -- | M8 | 10.0 | 44.5 | M6 X 1.0 | 8.0 (15.6) | 34 | 26.0 | 80 | 9.0 | 14.0 | 14.0 | 21,200 | 40,700 | 0.80 | 6.25 | |
| 413N35CO | 48 | 70 | 18.0 | 40.5 | 111.5 | 50 | 50 | M8 | 10.0 | 80.5 | M6 X 1.0 | 8.0 (15.6) | 34 | 26.0 | 80 | 9.0 | 14.0 | 14.0 | 42,400 | 81,100 | 1.20 | 6.25 | |
| 413N35DO | 48 | 70 | 18.0 | 40.5 | 153.5 | 50 | 72 | M8 | 10.0 | 122.5 | M6 X 1.0 | 8.0 (15.6) | 34 | 26.0 | 80 | 9.0 | 14.0 | 14.0 | 58,300 | 125,300 | 1.84 | 6.25 | |
| 413N45CO | 60 | 86 | 20.5 | 51.1 | 129.0 | 60 | 60 | M10 | 15.5 | 94.0 | M8 X 1.25 | 14.4 (16.0) | 45 | 31.1 | 105 | 14.0 | 20.0 | 14.1 | 58,000 | 108,900 | 1.64 | 9.60 | |
| 413N45DO | 60 | 86 | 20.5 | 51.1 | 174.0 | 60 | 80 | M10 | 15.5 | 139.0 | M8 X 1.25 | 14.4 (16.0) | 45 | 31.1 | 105 | 14.0 | 20.0 | 14.1 | 79,700 | 163,300 | 2.42 | 9.60 | |
| 413N55CO | 70 | 100 | 23.5 | 57.3 | 155.0 | 75 | 75 | M12 | 18.0 | 116.0 | M8 X 1.25 | 14.0 (16.0) | 53 | 38.0 | 120 | 16.0 | 23.0 | 18.0 | 69,800 | 133,400 | 2.67 | 13.80 | |
| 413N55DO | 70 | 100 | 23.5 | 57.3 | 210.0 | 75 | 95 | M12 | 18.0 | 171.0 | M8 X 1.25 | 14.0 (16.0) | 53 | 38.0 | 120 | 16.0 | 23.0 | 18.0 | 157,700 | 253,600 | 3.97 | 13.80 | |

400 Series Specifications



411 Narrow High

| Item | Assembly [mm] | | | | Carriage [mm] | | | | | | | | Rail [mm] | | | | | | Load Rating | | Carriage Weight [kg] | Rail Weight [kg/m] | |
|----------|---------------|-----|------|------|---------------|----|----|-----|------|-------|-----------|------|-----------|--------------|------|-----|------|------|-------------|--------|----------------------|--------------------|--------|
| | A | B | B2 | J | L | N | L1 | S1 | G | L3 | Oil H | M1 | LN | B1 +.02 -.05 | J1 | X | F1 | F2 | G2 | C [N] | | | C0 [N] |
| 411N15E0 | 28 | 34 | 9.5 | 24.7 | 58.6 | 26 | 26 | M4 | 6.0 | 40.2 | M4 X 0.7 | 9.5 | (5.0) | 15 | 13.0 | 60 | 4.5 | 7.5 | 7.0 | 9,300 | 19,600 | 0.19 | 1.28 |
| 411N20F0 | 30 | 44 | 12.0 | 25.5 | 82.1 | 32 | 50 | M5 | 6.5 | 61.3 | M6 X 1.0 | 7.1 | (15.6) | 20 | 16.3 | 60 | 6.0 | 9.5 | 7.8 | 18,600 | 39,500 | 0.36 | 2.15 |
| 411N25E0 | 40 | 48 | 12.5 | 34.2 | 79.2 | 35 | 35 | M6 | 9.0 | 57.5 | M6 X 1.0 | 14.2 | (15.6) | 23 | 19.2 | 60 | 7.0 | 11.0 | 10.2 | 20,100 | 41,100 | 0.45 | 2.88 |
| 411N25F0 | 40 | 48 | 12.5 | 34.2 | 93.9 | 35 | 50 | M6 | 9.0 | 72.2 | M6 X 1.0 | 14.2 | (15.6) | 23 | 19.2 | 60 | 7.0 | 11.0 | 10.2 | 25,900 | 52,800 | 0.66 | 2.88 |
| 411N30E0 | 45 | 60 | 16.0 | 38.0 | 94.8 | 40 | 40 | M8 | 12.0 | 67.8 | M6 X 1.0 | 11.0 | (15.6) | 28 | 22.8 | 80 | 9.0 | 14.0 | 10.8 | 29,700 | 54,600 | 0.91 | 4.45 |
| 411N30F0 | 45 | 60 | 16.0 | 38.0 | 105.0 | 40 | 60 | M8 | 12.0 | 78.0 | M6 X 1.0 | 11.0 | (15.6) | 28 | 22.8 | 80 | 9.0 | 14.0 | 10.8 | 38,500 | 70,700 | 1.04 | 4.45 |
| 411N35E0 | 55 | 70 | 18.0 | 47.5 | 111.5 | 50 | 50 | M8 | 12.0 | 80.5 | M6 X 1.0 | 15.0 | (15.6) | 34 | 26.0 | 80 | 9.0 | 14.0 | 14.0 | 42,400 | 81,100 | 1.50 | 6.25 |
| 411N35F0 | 55 | 70 | 18.0 | 47.5 | 123.5 | 50 | 72 | M8 | 12.0 | 92.5 | M6 X 1.0 | 15.0 | (15.6) | 34 | 26.0 | 80 | 9.0 | 14.0 | 14.0 | 52,900 | 101,400 | 1.80 | 6.25 |
| 411N45E0 | 70 | 86 | 20.5 | 61.1 | 129.0 | 60 | 60 | M10 | 18.0 | 94.0 | M8 X 1.25 | 24.4 | (16.0) | 45 | 31.1 | 105 | 14.0 | 20.0 | 14.1 | 58,000 | 108,900 | 2.28 | 9.60 |
| 411N45F0 | 70 | 86 | 20.5 | 61.1 | 145.0 | 60 | 60 | M10 | 18.0 | 110.0 | M8 X 1.25 | 24.4 | (16.0) | 45 | 31.1 | 105 | 14.0 | 20.0 | 14.1 | 69,000 | 129,500 | 2.67 | 9.60 |
| 411N55E0 | 80 | 100 | 23.5 | 67.3 | 155.0 | 75 | 75 | M12 | 18.0 | 116.0 | M8 X 1.25 | 14 | (16.0) | 53 | 38.0 | 120 | 16.0 | 23.0 | 18.0 | 69,800 | 133,400 | 3.42 | 13.80 |
| 411N55F0 | 80 | 100 | 23.5 | 67.3 | 193.0 | 75 | 95 | M12 | 18.0 | 154.0 | M8 X 1.25 | 14 | (16.0) | 53 | 38.0 | 120 | 16.0 | 23.0 | 18.0 | 94,200 | 178,900 | 5.08 | 13.80 |



413 Narrow High (Caged)

| Item | Assembly [mm] | | | | Carriage [mm] | | | | | | | | Rail [mm] | | | | | | Load Rating | | Carriage Weight [kg] | Rail Weight [kg/m] | |
|----------|---------------|-----|------|------|---------------|----|----|-----|------|-------|-----------|------|-----------|--------------|------|-----|------|------|-------------|--------|----------------------|--------------------|--------|
| | A | B | B2 | J | L | N | L1 | S1 | G | L3 | Oil H | M1 | LN | B1 +.02 -.05 | J1 | X | F1* | F2* | G2 | C [N] | | | C0 [N] |
| 413N15E0 | 28 | 34 | 9.5 | 24.7 | 58.6 | 26 | 26 | M4 | 6.0 | 40.2 | M4 X 0.7 | 9.5 | (5.0) | 15 | 13.0 | 60 | 4.5 | 7.5 | 7.0 | 9,300 | 19,600 | 0.19 | 1.28 |
| 413N20F0 | 30 | 44 | 12.0 | 25.5 | 82.1 | 32 | 36 | M5 | 6.5 | 61.3 | M6 X 1.0 | 7.1 | (15.6) | 20 | 16.3 | 60 | 6.0 | 9.5 | 7.8 | 18,600 | 39,500 | 0.36 | 2.15 |
| 413N25E0 | 40 | 48 | 12.5 | 34.2 | 79.2 | 35 | 35 | M6 | 9.0 | 57.5 | M6 X 1.0 | 14.2 | (15.6) | 23 | 19.2 | 60 | 7.0 | 11.0 | 10.2 | 20,100 | 41,000 | 0.45 | 2.88 |
| 413N25F0 | 40 | 48 | 12.5 | 34.2 | 93.9 | 35 | 35 | M6 | 9.0 | 72.2 | M6 X 1.0 | 14.2 | (15.6) | 23 | 19.2 | 60 | 7.0 | 11.0 | 10.2 | 25,900 | 52,800 | 0.66 | 2.88 |
| 413N30E0 | 45 | 60 | 16.0 | 38.0 | 94.8 | 40 | 40 | M8 | 12.0 | 67.8 | M6 X 1.0 | 11.0 | (15.6) | 28 | 22.8 | 80 | 9.0 | 14.0 | 10.8 | 29,700 | 54,600 | 0.91 | 4.45 |
| 413N30F0 | 45 | 60 | 16.0 | 38.0 | 105.0 | 40 | 40 | M8 | 12.0 | 78.0 | M6 X 1.0 | 11.0 | (15.6) | 28 | 22.8 | 80 | 9.0 | 14.0 | 10.8 | 38,500 | 70,700 | 1.04 | 4.45 |
| 413N35E0 | 55 | 70 | 18.0 | 47.5 | 111.5 | 50 | 50 | M8 | 12.0 | 80.5 | M6 X 1.0 | 15.0 | (15.6) | 34 | 26.0 | 80 | 9.0 | 14.0 | 14.0 | 42,400 | 81,100 | 1.50 | 6.25 |
| 413N35F0 | 55 | 70 | 18.0 | 47.5 | 123.5 | 50 | 50 | M8 | 12.0 | 92.5 | M6 X 1.0 | 15.0 | (15.6) | 34 | 26.0 | 80 | 9.0 | 14.0 | 14.0 | 52,900 | 101,400 | 1.80 | 6.25 |
| 413N45E0 | 70 | 86 | 20.5 | 61.1 | 129.0 | 60 | 60 | M10 | 18.0 | 94.0 | M8 X 1.25 | 24.4 | (16.0) | 45 | 31.1 | 105 | 14.0 | 20.0 | 14.1 | 58,000 | 108,900 | 2.28 | 9.60 |
| 413N45F0 | 70 | 86 | 20.5 | 61.1 | 145.0 | 60 | 80 | M10 | 18.0 | 110.0 | M8 X 1.25 | 24.4 | (16.0) | 45 | 31.1 | 105 | 14.0 | 20.0 | 14.1 | 69,000 | 129,500 | 2.67 | 9.60 |
| 413N55E0 | 80 | 100 | 23.5 | 67.3 | 155.0 | 75 | 75 | M12 | 18.0 | 116.0 | M8 X 1.25 | 14 | (16.0) | 53 | 38.0 | 120 | 16.0 | 23.0 | 18.0 | 69,800 | 133,400 | 3.42 | 13.80 |
| 413N55F0 | 80 | 100 | 23.5 | 67.3 | 193.0 | 75 | 95 | M12 | 18.0 | 154.0 | M8 X 1.25 | 14 | (16.0) | 53 | 38.0 | 120 | 16.0 | 23.0 | 18.0 | 94,200 | 178,900 | 5.08 | 13.80 |

*Note: Mounting hole dimensions of 411 and 413 F Style carriages are different.

Accuracy Class

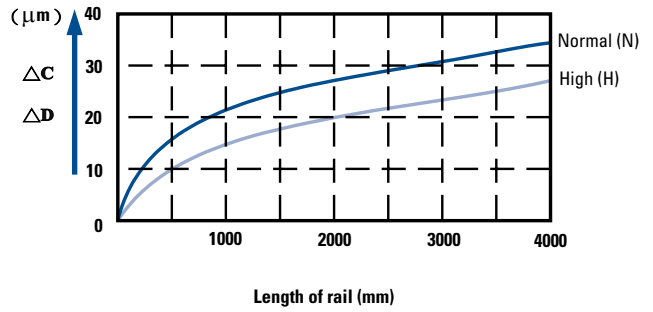
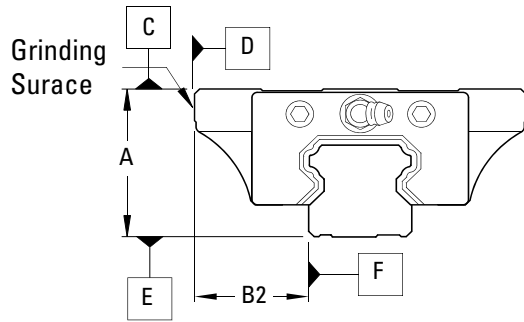
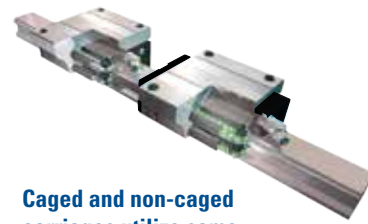


Fig. 1-1 400 Series rail length and running parallelism

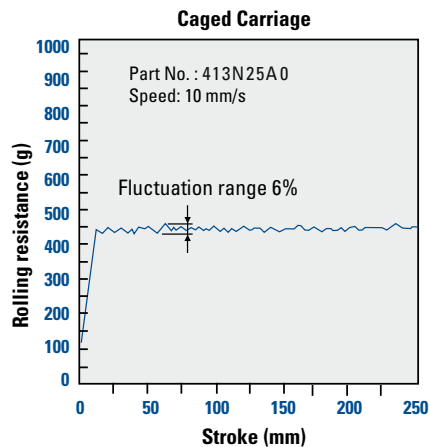
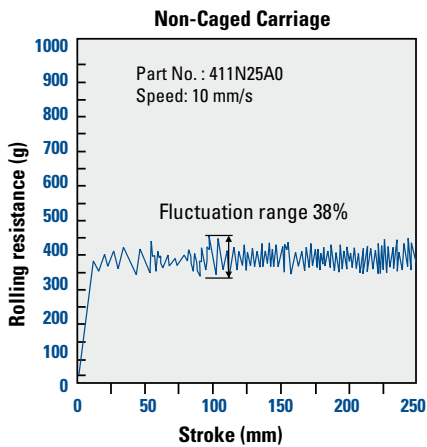
| Grade | Normal (N) | High (H) |
|--|-----------------------|----------|
| Item | | |
| Height Tolerance (A) | ± 0.1 | ± 0.04 |
| Width Tolerance (B2) | ± 0.1 | ± 0.04 |
| Pair variation max (ΔA) | 0.03 | 0.02 |
| Pair variation max (ΔB2) | 0.03 | 0.02 |
| Running parallelism of carriage surface C with respect to surface E. | Δ C refer to Fig. 1-1 | |
| Running parallelism of carriage surface D with respect to surface F. | Δ D refer to Fig. 1-1 | |

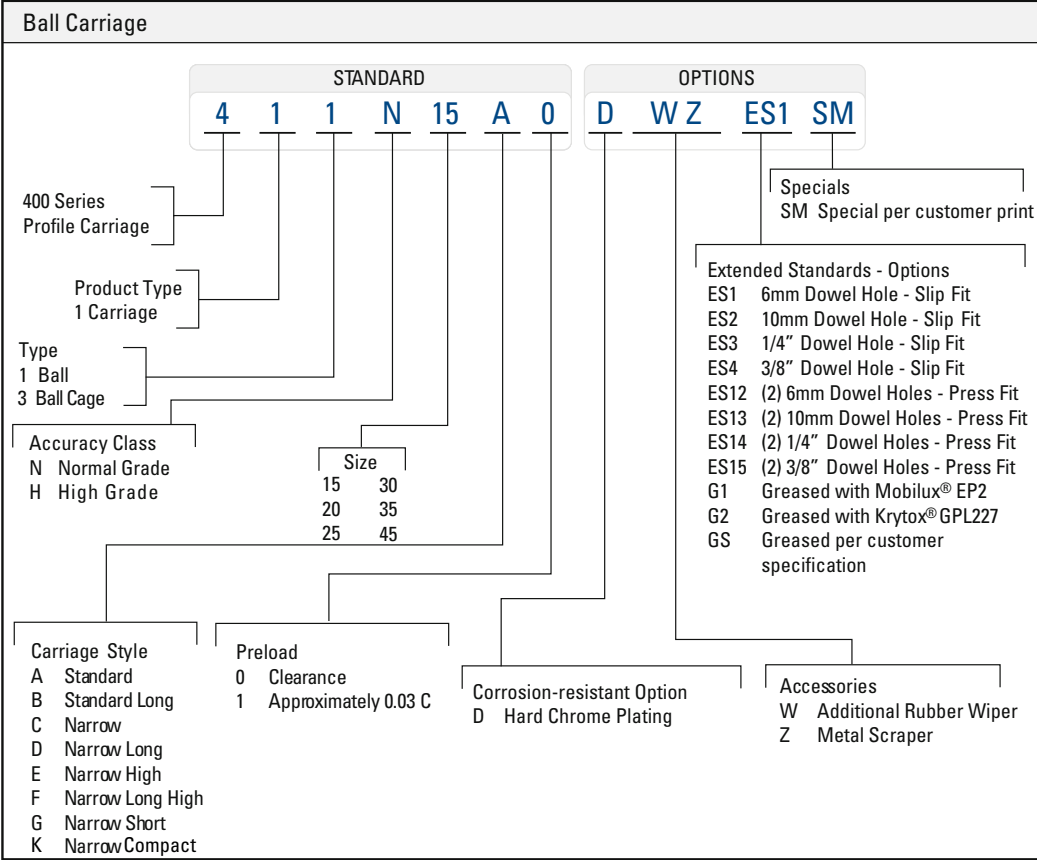
All items in mm.



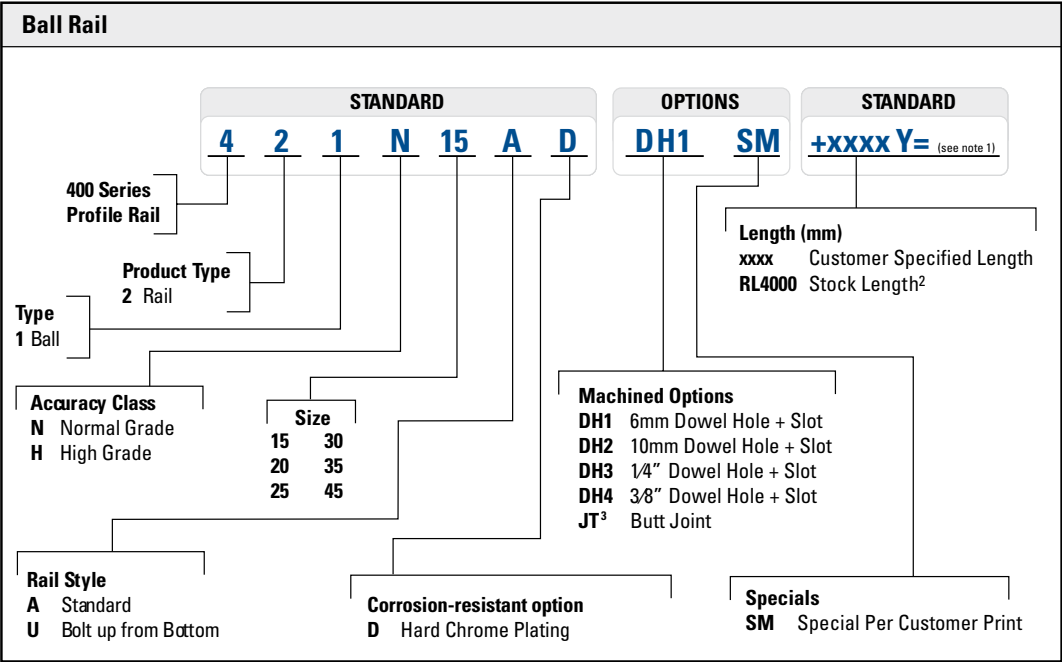
Caged and non-caged carriages utilize same rail design

413 Caged Ball Carriage Increased Running Smoothness





1. Carriage does not retain ball bearings when end cap is removed. Removal of end caps can result in loss of ball bearings.
 2. Carriage dynamic load ratings based on a travel life of 50 km.



1. Y = Distance from end of rail to center of first mounting hole, Y1 = Y2 unless specified.
 2. Stock length of rails are considered random length, total length may exceed specified length, and Y1/Y2 are not equal. To be used only by customer who will cut to length.
 3. Customer drawing required at time of quote and order.

USA, CANADA and MEXICO

Thomson
203A West Rock Road
Radford, VA 24141, USA
Phone: 1-540-633-3549
Fax: 1-540-633-0294
E-mail: thomson@thomsonlinear.com
Literature: literature.thomsonlinear.com

EUROPE

United Kingdom

Thomson
Phone: +44 (0) 1271 334 500
Fax: +44 (0) 1271 334 501
E-mail: sales.uk@thomsonlinear.com

Germany

Thomson
Nürtinger Straße 70
72649 Wolfschlügen
Phone: +49 (0) 7022 504 0
Fax: +49 (0) 7022 504 405
E-mail: sales.germany@thomsonlinear.com

France

Thomson
Phone: +33 (0) 243 50 03 30
Fax: +33 (0) 243 50 03 39
E-mail: sales.france@thomsonlinear.com

Italy

Thomson
Largo Brughetti
20030 Bovisio Masciago
Phone: +39 0362 594260
Fax: +39 0362 594263
E-mail: info@thomsonlinear.it

Spain

Thomson
Rbla Badal, 29-31 7th, 1st
08014 Barcelona
Phone: +34 (0) 9329 80278
Fax: +34 (0) 9329 80278
E-mail: sales.esm@thomsonlinear.com

Sweden

Thomson
Estridsväg 10
29109 Kristianstad
Phone: +46 (0) 44 24 67 00
Fax: +46 (0) 44 24 40 85
E-mail: sales.scandinavia@thomsonlinear.com

ASIA

Asia Pacific

Thomson
750, Oasis, Chai Chee Road,
#03-20, Technopark @ Chai Chee,
Singapore 469000
E-mail: sales.hk@thomsonlinear.com

China

Thomson
Rm 2205, Scitech Tower
22 Jianguomen Wai Street
Beijing 100004
Phone: +86 400 6661 802
Fax: +86 10 6515 0263
E-mail: sales.china@thomsonlinear.com

India

Thomson India
1001, Sigma Building
Hiranandani Business Park
Powai, Mumbai – 400076
Phone: +91 22 422 70 300
Fax: +91 22 422 70 338
E-mail: sales.india@thomsonlinear.com

Japan

Thomson
Minami-Kaneden 2-12-23, Suita
Osaka 564-0044
Phone: +81-6-6386-8001
Fax: +81-6-6386-5022
E-mail: csinfo_dicgj@danaher.co.jp

Korea

Thomson
F12 Ilsong Bldg, 157-37
Samsung-dong, Kangnam-gu
Seoul (135-090)
Phone: +82 2 6917 5049
Fax: +82 2 6917 5007
E-mail: sales.korea@thomsonlinear.com

SOUTH AMERICA

Thomson
Sao Paulo, SP Brasil
Phone: +55 11 3879 6600
Fax: +55 11 3879 6656
Email: sales.brasil@thomsonlinear.com

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