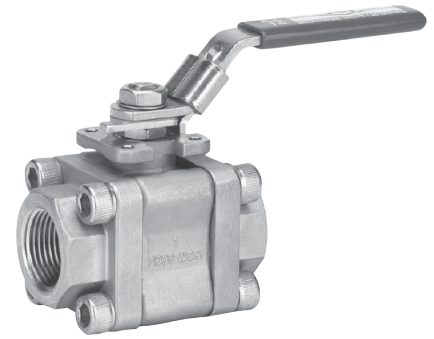


# 35 Series Ball Valve

## Milwaukee Valve Company

### 35RSS/35RCS AND 35FSS/35FCS

## 3-Piece Enclosed Bolt Fire-Safe Full & Standard Port Ball Valve



### Features and Benefits

- Locking Lever for Safety Lockout
- Live-Loaded Adjustable Stem Packing Arrangement for Longer Packing Life
- Vent Hole in Ball Slot for Cavity Venting
- Standard Grounded Ball and Stem
- ISO 5211 Mounting Pad for Easy Actuation
- Flexible Graphite Body Seals
- NACE Compliant for Sour Gas Service
- Blow-out Proof Stem
- Fire-safe to API 607 6<sup>th</sup> Ed
- Cantilever Seat Design for Low Operating Torques
- Meets the Latest: API, ASTM/ASME Standards

### Product Range

- Full and Standard Port Available
- Socket Weld and NPT Connections
- Size Range 1/4"-2"

### Operators Available

- Locking Lever and Oval Handle
- Pneumatic and Electric Actuation

### Materials of Construction

- Carbon Steel or CF8M Stainless Steel
- Ball: 316 Stainless Steel
- Stem: 316 Stainless Steel/17-4 (PEEK Seats)
- Seats: NXT 75/M-PTFE
- Seat Options: Multi-Fil, PEEK
- Packing: Graphite/PTFE

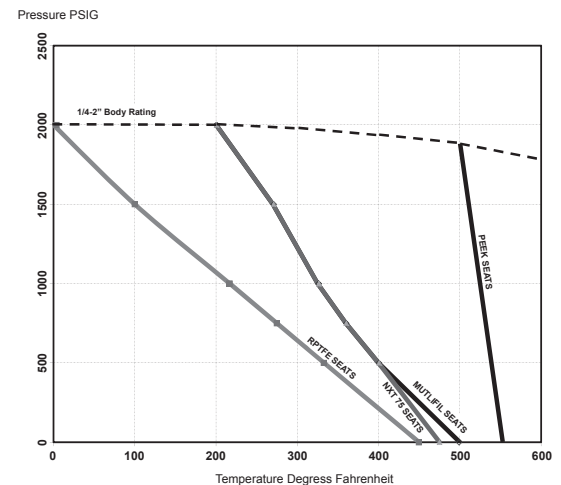
### Specifications

- Valves Sizes 1/4" through 2"
- Meets MSS-SP-110
- Meets ASME B16.34 design
- Valves Meet API 608
- Valves Meet API 607 6<sup>th</sup> Ed for Fire-Safe Testing
- Valves Tested to API 598 and MSS SP-72
- Valves Meet NACE MRO175

| Pressure Ratings: | Class 800 |
|-------------------|-----------|
| Carbon Steel      | 2000 psi  |
| Stainless Steel   | 2000 psi  |

Valve is rated 150 psi Steam @ 365°F.  
Multi-Fil PTFE Suitable for Steam Applications > 150 psi.

| TORQUES AND CV RATINGS |                                     |     |                      |                                     |     |
|------------------------|-------------------------------------|-----|----------------------|-------------------------------------|-----|
| VALVE SIZE STD PORT    | MAXIMUM BREAK AWAY TORQUE (in.lbs.) | CV  | VALVE SIZE FULL PORT | MAXIMUM BREAK AWAY TORQUE (in.lbs.) | CV  |
| 1/4                    | 50                                  | 5   | —                    | —                                   | —   |
| 3/8                    | 50                                  | 5   | —                    | —                                   | —   |
| 1/2                    | 50                                  | 15  | 1/2                  | 55                                  | 15  |
| 3/4                    | 55                                  | 25  | 3/4                  | 135                                 | 50  |
| 1                      | 135                                 | 40  | 1                    | 200                                 | 60  |
| 1 1/4                  | 200                                 | 50  | 1 1/4                | 350                                 | 110 |
| 1 1/2                  | 340                                 | 75  | 1 1/2                | 400                                 | 130 |
| 2                      | 420                                 | 120 | 2                    | 550                                 | 360 |



| How To Order Milwaukee Valve 35 Series Three Piece Enclosed Bolt Ball Valve |                          |                                                      |                           |                                                       |                                                                                                                                                  |                                                                                                      |                                                                                                    |   |                                                                                                              |
|-----------------------------------------------------------------------------|--------------------------|------------------------------------------------------|---------------------------|-------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|---|--------------------------------------------------------------------------------------------------------------|
| Series                                                                      | Port Size                | Body Material                                        | Ball / Stem Material      | End Piece Configuration                               | Seat Material                                                                                                                                    | External Options                                                                                     | Internal Options                                                                                   |   | Size                                                                                                         |
| XX                                                                          | X                        | X                                                    | X                         | X                                                     | X                                                                                                                                                | XX                                                                                                   | XX                                                                                                 | X | XXX                                                                                                          |
| 35                                                                          | R - Standard<br>F - Full | C - Carbon Steel (WCB)<br>S - Stainless Steel (CF8M) | S - Stainless Steel (316) | 0 - FNPT<br>1 - Socket Weld<br>6 - Socket Weld / FNPT | N - NXT Std<br>1 - Virgin PTFE<br>2 - Reinforced PTFE (15% Gls.)<br>3 - Multi-Fil PTFE (Steam Seat 250 psi)<br>6 - Peek **<br>** Contact Factory | LL - Stainless Latch-Lock Handle<br>LO - Stainless Oval Handle<br>LXH - Extended Locking Handle (3") | A - Assemble Dry<br>V - Vented Ball<br>O - Oxygen Clean *<br>C - Chlorine Clean<br>*Stainless Only | - | 014 - 1/4"<br>038 - 3/8"<br>012 - 1/2"<br>034 - 3/4"<br>100 - 1"<br>114 - 1-1/4"<br>112 - 1-1/2"<br>200 - 2" |

| Example Product Numbers                                                                                                                             |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 35RCS02LL -034 (3/4" Standard Port Carbon Steel Body, Stainless Trim, Female NPT End Pieces, Gls. Fld Seats, SS Latch-Lock Handle,)                 |  |
| 35FSS13LL -100 (1" Full Port Stainless Steel Body, Stainless Trim, Socket Weld End Pieces, Multi-Fil PTFE Seats, SS Latch-Lock Handle,)             |  |
| 35RSS02LLV -034 (3/4" Standard Port Stainless Steel Body, Stainless Trim, Female NPT End Pieces, Gls. Fld Seats, SS Latch-Lock Handle, Vented Ball) |  |

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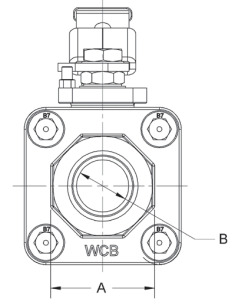
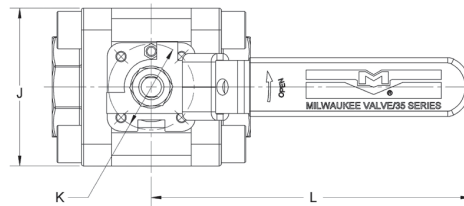
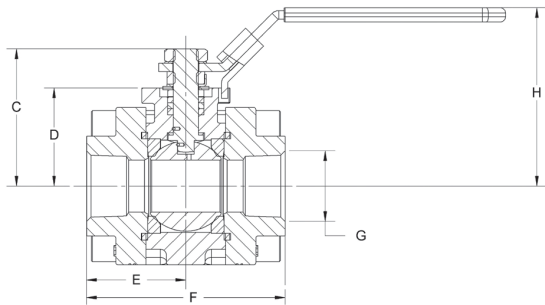
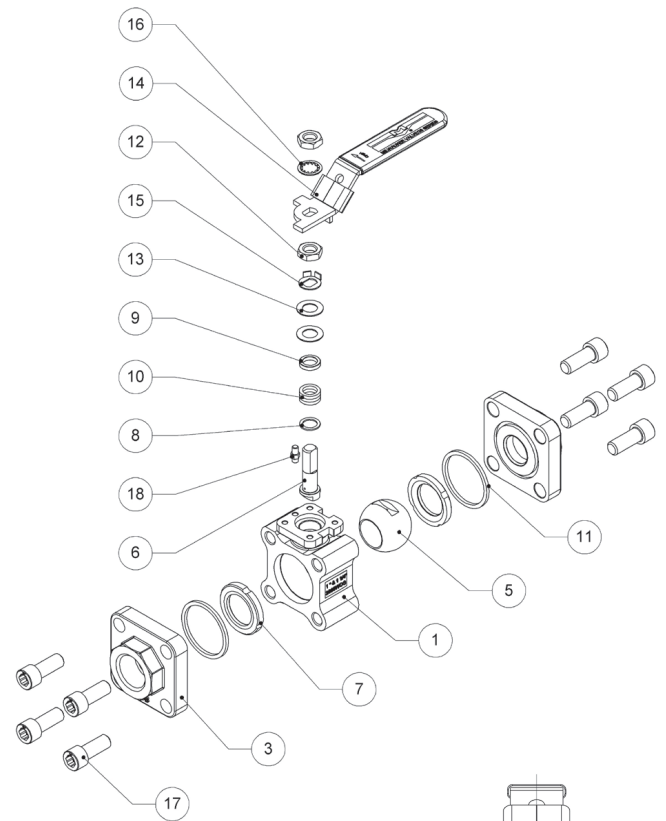
⚠ State of California Prop 65 **WARNING:** Cancer and Reproductive Harm. For more information visit [www.p65warnings.ca.gov](http://www.p65warnings.ca.gov).



# 35RSS/35RCS 1/4" to 2" and 35FSS/35FCS 1/2" to 1-1/2"

| ITEM | DESCRIPTION           | MATERIAL                                    |
|------|-----------------------|---------------------------------------------|
| 1    | BODY MACHINED         | CS ASTM A216 GR WCB<br>SS ASTM A351 GR CF8M |
| 3    | END CAP MACHINED      | CS ASTM A216 GR WCB<br>SS ASTM A351 GR CF8M |
| 5    | BALL                  | SS ASTM A351 CF8M                           |
| 6    | STEM                  | ASTM A479 TYPE 316<br>*ASTM 17-4 PH H1150   |
| 7    | SEAT                  | NXT 75/M-PTFE/PEEK                          |
| 8    | THRUST WASHER         | NXT 75/M-PTFE/PEEK                          |
| 9    | FOLLOWER              | ASTM A479 TYPE 316                          |
| 10   | STEM PACKING          | GRAPHITE                                    |
| 11   | BODY SEAL             | FLEXIBLE GRAPHITE                           |
| 12   | STEM NUT              | ASTM A194 GR8 TYPE 304                      |
| 13   | DISC SPRING           | ASTM A276 TYPE 304                          |
| 14   | HANDLE ASSY           | 304 SS                                      |
| 15   | COLLAR, NUT RETAINING | ASTM A276 TYPE 304                          |
| 16   | LOCK WASHER           | ASTM A276 TYPE 304                          |
| 17   | BOLT, SHCS            | ASTM A193-BB TYPE 304                       |
| 18   | STOP PIN              | ASTM A276 TYPE 304                          |

\* Used with PEEK seated valves



| Full Port |        |      |          |      |      |      |       |                  |         |         |       |       |      |       |
|-----------|--------|------|----------|------|------|------|-------|------------------|---------|---------|-------|-------|------|-------|
| Size      | Units  | A    | B (Port) | C    | D    | E    | F     | G (NPT)          | G1 (SW) | G2 (SW) | H     | J     | K    | L     |
| 1/2       | Inches | 1.35 | .57      | 1.98 | 1.44 | 1.37 | 2.74  | 1/4"-18NPT       | .87     | 0.38    | 2.62  | 2.15  | 1.42 | 4.21  |
|           | mm     | 34.2 | 14.5     | 50.2 | 36.5 | 34.8 | 69.6  |                  | 22.0    | 9.6     | 66.6  | 54.7  | 36.0 | 107.0 |
| 3/4       | Inches | 1.88 | .81      | 2.23 | 1.61 | 1.59 | 3.19  | 3/4"-14NPT       | 1.07    | 0.5     | 3.18  | 2.59  | 1.65 | 5.00  |
|           | mm     | 47.7 | 20.6     | 56.7 | 41.0 | 40.4 | 81.0  |                  | 27.3    | 12.7    | 80.7  | 65.9  | 42.0 | 127.0 |
| 1         | Inches | 1.88 | .98      | 2.58 | 1.84 | 1.87 | 3.74  | 1.0"-11 1/2NPT   | 1.34    | 0.5     | 3.35  | 2.96  | 1.61 | 6.02  |
|           | mm     | 47.7 | 24.9     | 65.5 | 46.8 | 47.5 | 95.0  |                  | 34.0    | 12.7    | 85.1  | 75.1  | 41.0 | 152.9 |
| 1 1/4     | Inches | 2.25 | 1.25     | 3.23 | 2.07 | 2.13 | 4.26  | 1 1/4"-11 1/2NPT | 1.69    | 0.5     | 3.77  | 3.41  | 1.97 | 7.80  |
|           | mm     | 57.0 | 31.8     | 82.0 | 52.6 | 54.1 | 108.2 |                  | 42.9    | 12.7    | 95.8  | 86.6  | 50.0 | 198.1 |
| 1 1/2     | Inches | 2.69 | 1.50     | 3.51 | 2.33 | 2.52 | 5.04  | 1 1/2"-11 1/2NPT | 1.92    | 0.5     | 4.00  | 4.14  | 1.97 | 7.80  |
|           | mm     | 68.2 | 38.1     | 89.2 | 59.1 | 64.0 | 128.0 |                  | 48.9    | 12.7    | 101.5 | 105.1 | 50.0 | 198.1 |

For 2" Full Port dimension see next page

| Size  | Units  | A    | B (Port) | C    | D    | E    | F     | G (NPT)          | G1 (SW) | G2 (SW) | H     | J     | K    | L     |
|-------|--------|------|----------|------|------|------|-------|------------------|---------|---------|-------|-------|------|-------|
| 1/4   | Inches | 1.17 | .43      | 1.83 | 1.28 | 1.36 | 2.72  | 1/4"-18NPT       | .57     | 0.38    | 2.45  | 1.91  | 1.42 | 4.21  |
|       | mm     | 29.6 | 11.0     | 46.4 | 32.5 | 34.5 | 69.0  |                  | 14.4    | 9.6     | 62.1  | 48.4  | 36.0 | 107.0 |
| 3/8   | Inches | 1.17 | .43      | 1.83 | 1.28 | 1.36 | 2.72  | 3/8"-18NPT       | .70     | 0.38    | 2.45  | 1.91  | 1.42 | 4.21  |
|       | mm     | 29.6 | 11.0     | 46.4 | 32.5 | 34.5 | 69.0  |                  | 17.8    | 9.6     | 62.1  | 48.4  | 36.0 | 107.0 |
| 1/2   | Inches | 1.35 | .57      | 1.98 | 1.44 | 1.37 | 2.74  | 1/2"-18NPT       | .87     | 0.38    | 2.59  | 2.15  | 1.42 | 4.21  |
|       | mm     | 34.2 | 14.5     | 50.2 | 36.5 | 34.8 | 69.6  |                  | 22.0    | 9.6     | 65.8  | 54.7  | 36.0 | 107.0 |
| 3/4   | Inches | 1.55 | .57      | 1.93 | 1.44 | 1.45 | 2.90  | 3/4"-14NPT       | 1.07    | 0.5     | 2.59  | 2.15  | 1.42 | 4.21  |
|       | mm     | 39.5 | 14.5     | 49.0 | 36.5 | 36.9 | 73.7  |                  | 27.3    | 12.7    | 65.8  | 54.7  | 36.0 | 107.0 |
| 1     | Inches | 1.88 | .81      | 2.25 | 1.61 | 1.59 | 3.19  | 1.0"-11 1/2NPT   | 1.34    | 0.5     | 3.14  | 2.59  | 1.65 | 5.00  |
|       | mm     | 47.7 | 20.6     | 57.0 | 41.0 | 40.4 | 81.0  |                  | 34.0    | 12.7    | 79.7  | 65.9  | 42.0 | 127.0 |
| 1 1/4 | Inches | 2.25 | .98      | 2.58 | 1.84 | 1.87 | 3.74  | 1 1/4"-11 1/2NPT | 1.69    | 0.5     | 3.31  | 2.96  | 1.61 | 6.02  |
|       | mm     | 57.0 | 24.9     | 65.5 | 46.8 | 47.5 | 95.0  |                  | 42.8    | 12.7    | 84.1  | 75.1  | 41.0 | 152.9 |
| 1 1/2 | Inches | 2.58 | 1.25     | 3.23 | 2.07 | 2.13 | 4.26  | 1 1/2"-11 1/2NPT | 1.93    | 0.5     | 3.71  | 3.41  | 1.97 | 7.80  |
|       | mm     | 65.5 | 31.8     | 82.0 | 52.6 | 54.1 | 108.2 |                  | 48.9    | 12.7    | 94.3  | 86.6  | 50.0 | 187.1 |
| 2     | Inches | 3.18 | 1.50     | 3.51 | 2.33 | 2.52 | 5.04  | 2.0"-11 1/2NPT   | 2.42    | 0.6     | 3.97  | 4.14  | 1.97 | 7.80  |
|       | mm     | 80.8 | 38.1     | 89.2 | 59.1 | 64.0 | 128.0 |                  | 61.5    | 15.2    | 100.8 | 105.1 | 50.0 | 198.1 |

The 1/4, 3/8, 1/2 Valves are full port

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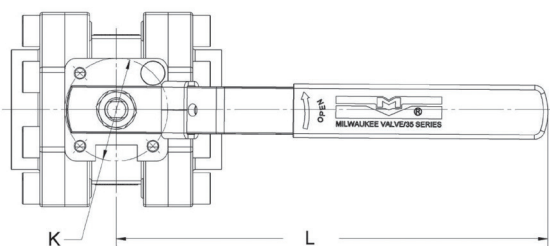
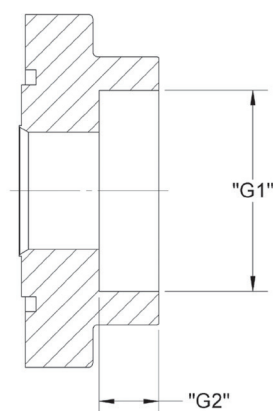
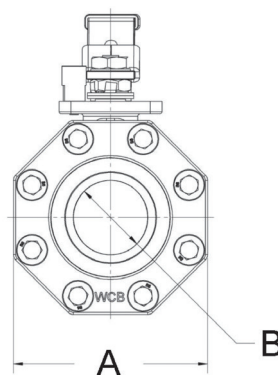
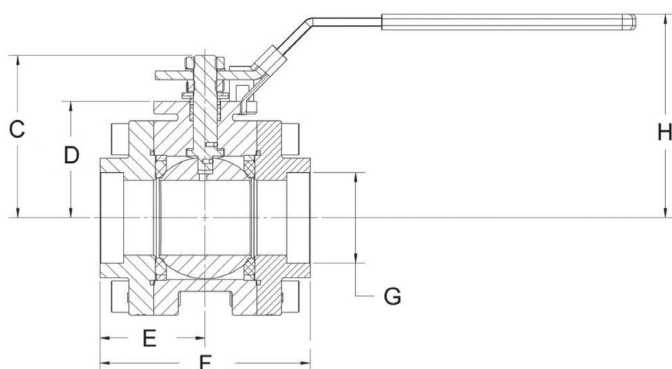
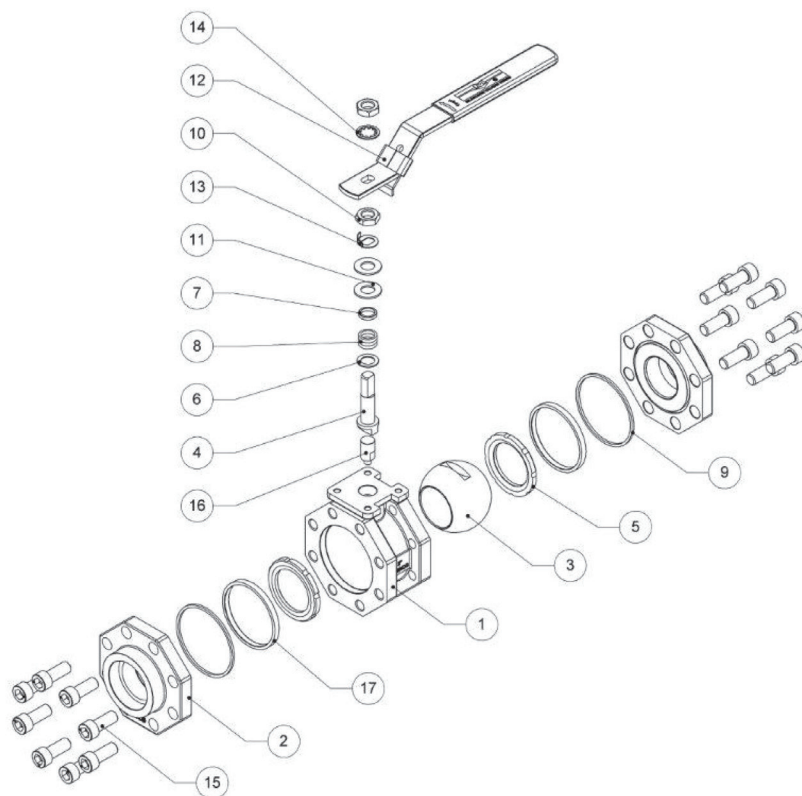
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# 35FSS/35FCS 2"

| ITEM | DESCRIPTION      | MATERIAL                                    |
|------|------------------|---------------------------------------------|
| 1    | BODY MACHINED    | SS ASTM A351 GR CF8M<br>CS ASTM A216 GR WCB |
| 2    | END CAP MACHINED | SS ASTM A351 GR CF8M<br>CS ASTM A216 GR WCB |
| 3    | BALL             | SS ASTM A351 CF8M                           |
| 4    | STEM             | ASTM A479 TYPE 316<br>*ASTM 17-4 PH H1150   |
| 5    | SEAT             | NXT 75/M-PTFE/PEEK                          |
| 6    | THRUST WASHER    | NXT 75/M-PTFE/PEEK                          |
| 7    | FOLLOWER         | ASTM A479 TYPE 316                          |
| 8    | STEM PACKING     | GRAPHITE                                    |
| 9    | BODY SEAL        | FLEXIBLE GRAPHITE                           |
| 10   | STEM NUT         | ASTM A194 GR8 TYPE 304                      |
| 11   | DISC SPRING      | ASTM A479 TYPE 304                          |
| 12   | HANDLE ASSY      | 304 SS                                      |
| 13   | LOCK TAB         | ASTM A276 TYPE 304                          |
| 14   | LOCK WASHER      | ASTM A582 TYPE 303                          |
| 15   | BOLT, SHCS       | ASTM A193-B8 TYPE 304                       |
| 16   | STOP PIN         | ASTM A276 TYPE 304                          |
| 17   | SEAT SHEATH      | ASTM A479 TYPE 316                          |

\* Used with PEEK seated valves



| Full Port |        |       |          |       |      |      |       |                |         |         |       |       |       |
|-----------|--------|-------|----------|-------|------|------|-------|----------------|---------|---------|-------|-------|-------|
| Size      | Units  | A     | B (Port) | C     | D    | E    | F     | G (NPT)        | G1 (SW) | G2 (SW) | H     | K     | L     |
| 2         | Inches | 5.20  | 2.00     | 4.34  | 3.11 | 2.81 | 5.63  | 2.0"-11 1/2NPT | 2.42    | 0.6     | 5.44  | 5.20  | 11.54 |
|           | mm     | 132.0 | 50.8     | 110.3 | 79.0 | 71.5 | 143.0 |                | 61.5    | 15.2    | 138.2 | 132.0 | 293.0 |

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