# HAYWARD Flow Control Systems

# True Union Ball Valves

## 1/4˝ to 6˝ - PVC, Corzan® CPVC, PPL



### Rugged, Heavy Wall Plastic Construction

Stands up to the most aggressive of applications. Hayward True Union Ball Valves can take the day to day abuse of industrial service and continue to function.

### True Union Design

This makes these valves very easy to maintain by allowing for easy removal from a piping system without breaking down piping connections. Just unscrew the two assembly nuts and lift the valve body out of the line.

### Advanced Design Features

Hayward True Union Ball Valves are superior performers. A fine-pitch seal retainer thread allows for accurate compensation for seat wear. Reversible seats make it easy to get a damaged valve back in service. Should the seats become damaged they need only to be removed, turned over, and reinstalled to put the valve back on line. These valves feature a double o-ring stem seal for twice the leakage protection of valves with only a single stem seal.

### Solid Actuator Mounting Design

For rock-solid actuator mounting, the valve incorporates a unique design that allows the actuator mounting bracket to mount directly to the valve without the need for glued or clamped-on mounting pads. This assures proper alignment of the actuator to the valve without creating any damaging side loads to cause premature stem seal failure. With this design, the valve can easily be adapted to manual operation – should the need ever arise.

### Never a Problem with Corrosion

Because of the valves' all plastic construction, they will never rust or corrode – and they can survive corrosive environments without the need for painting or expensive epoxy coating.

## Features

- Full Port Design
- Reversible PTFE Seats
- Easy Maintenance
- FPM or EPDM Seals
- Easily Automated
- Double O-Ring Stem Seals
- Adjustable Seat Retainer

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## Options

- Stem Extensions
- Lockouts
- Spring Return Handle
- Pneumatic Actuators
- Electric Actuators
- 2˝ Square Operating Nuts
- Drilled Balls for Sodium Hypochlorite Service

# Technical Information



## Parts List
## True Union Valve

1. Handle
2. O-ring seals
3. End connector
4. Seal retainer
5. Union nut
6. Ball
7. Body
8. Teflon seat*
9. Stem
10. Actuator Mounting Pad

\* O-Ring Backed Seats on 3″ & 4″ Sizes

## Dimensions - Inches / Millimeters

| Size | A | B | C | D1 | D2 | F | Weight (lb / kg) Soc / Thd | Weight (lb / kg) Flanged |
|------|---|---|---|----|----|---|-----|---------|
| 1/4 | 4.63 / 117 | 0.37 / 13 | 2.25 / 57 | 3.00 / 76 | 2.63 / 67 | N/A | 0.75 / 0.34 | N/A |
| 3/8 | 4.63 / 117 | 0.50 / 13 | 2.25 / 57 | 3.00 / 76 | 2.63 / 67 | N/A | 0.75 / 0.34 | N/A |
| 1/2 / 20* | 4.63 / 117 | 0.50 / 13 | 2.25 / 57 | 3.00 / 76 | 2.63 / 67 | 6.75 / 171 | 0.75 / 0.34 | 1.00 / 0.45 |
| 3/4 / 25* | 4.75 / 120 | 0.75 / 19 | 2.63 / 67 | 3.02 / 77 | 2.81 / 72 | 7.13 / 181 | 0.75 / 0.34 | 1.00 / 0.45 |
| 1 / 32* | 5.25 / 133 | 1.00 / 25 | 3.00 / 76 | 3.32 / 84 | 3.05 / 77 | 8.00 / 203 | 1.15 / 0.52 | 2.15 / 0.98 |
| 1-1/4 / 40* | 6.30 / 160 | 1.25 / 32 | 4.00 / 102 | 3.92/ 100 | 3.48 / 88 | 9.19 / 233 | 2.15 / 0.98 | 3.50 / 1.6 |
| 1-1/2 / 50* | 6.75 / 171 | 1.50 / 38 | 4.00 / 102 | 3.92/ 100 | 3.48 / 88 | 9.88 / 249 | 2.15 / 0.98 | 3.75 / 1.7 |
| 2 / 63* | 8.00 / 203 | 2.00 / 51 | 4.75 / 121 | 4.43/ 113 | 4.00 / 101 | 11.4 / 289 | 3.80 / 1.7 | 6.30 / 2.9 |
| 2-1/2 | 10.68 / 271 | 3.00 / 76 | 6.40 / 163 | 5.50 / 140 | 5.50 / 140 | 14.38 / 365 | 10.50 / 4.8 | 14.50 / 6.6 |
| 3 / 90* | 10.56 / 268 | 3.00 / 76 | 6.40 / 163 | 5.50 / 140 | 5.50 / 140 | 14.44 / 367 | 10.50 / 4.8 | 14.50 / 6.6 |
| 4 / 110* | 12.30 / 329 | 3.81 / 97 | 8.56 / 217 | 6.50 / 165 | 6.50 / 165 | 17.13 / 435 | 17.60 / 8.0 | 24.80 / 11.3 |
| 6 | N/A | 3.81 / 97 | 8.56 / 217 | 6.50 / 165 | 6.50 / 165 | 19.19 / 487 | N/A | 30.75 / 14.0 |

**\* Metric End Connections Available in:** BSP – Straight Thread, BSP TR – Tapered Thread and Metric Socket

## Selection Chart

| Size | Material | End. Conn | Seals | Pressure Rating |
|------|----------|-----------|-------|-----------------|
| 1/4″ - 3/8″ | PVC | Socket or Threaded | | |
| 1/2″ - 4″ | PVC or CPVC | Socket, Threaded or Flanged | FPM or EPDM | 225 PSI @70°F Non-Shock |
| 1/2″ - 2″ | PPL* | Threaded | | |
| 6″** | PVC or CPVC | Flanged | | |

\* natural PPL - 1/2" to 1-1/2" rated at 150PSI, 2" = 120PSI  
\*\* 4″ Valve venturied to 6″

## Cv Factors

| Size | Factor | Size | Factor |
|------|--------|------|--------|
| 1/4″ | 1.0 | 1-1/2″ | 90 |
| 3/8″ | 2.8 | 2″ | 150 |
| 1/2″ | 8.0 | 2-1/2″ | 340 |
| 3/4″ | 16.0 | 3″ | 490 |
| 1″ | 29.0 | 4″ | 600 |
| 1-1/4″ | 75.0 | 6″ | 550 |

## Operating Temperature/Pressure
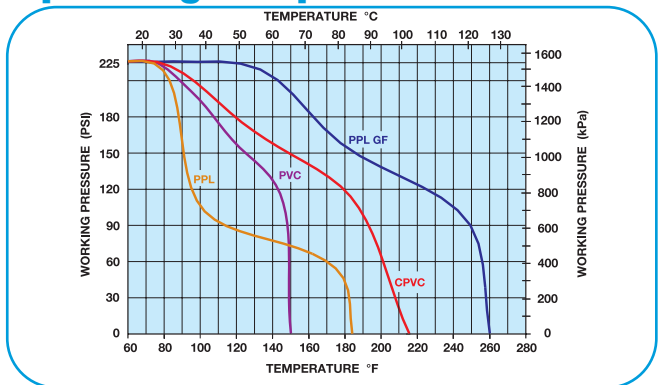


### Pressure Loss Calculation Formula

$$\Delta P = \left[\frac{Q}{Cv}\right]^2$$

$\Delta P$ = Pressure Drop  
Q = Flow in GPM  
Cv = Flow Coefficient