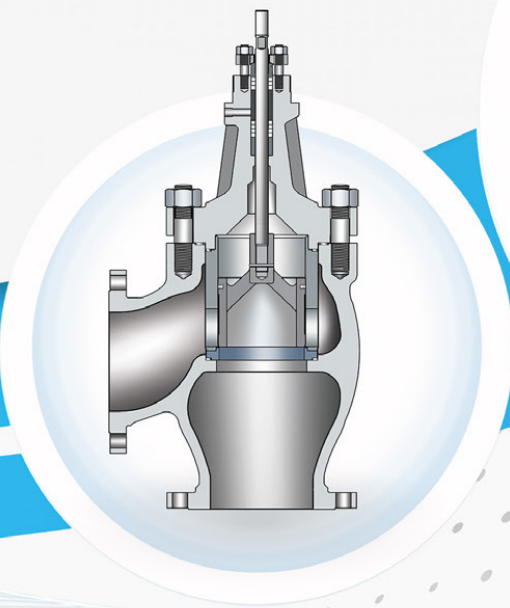
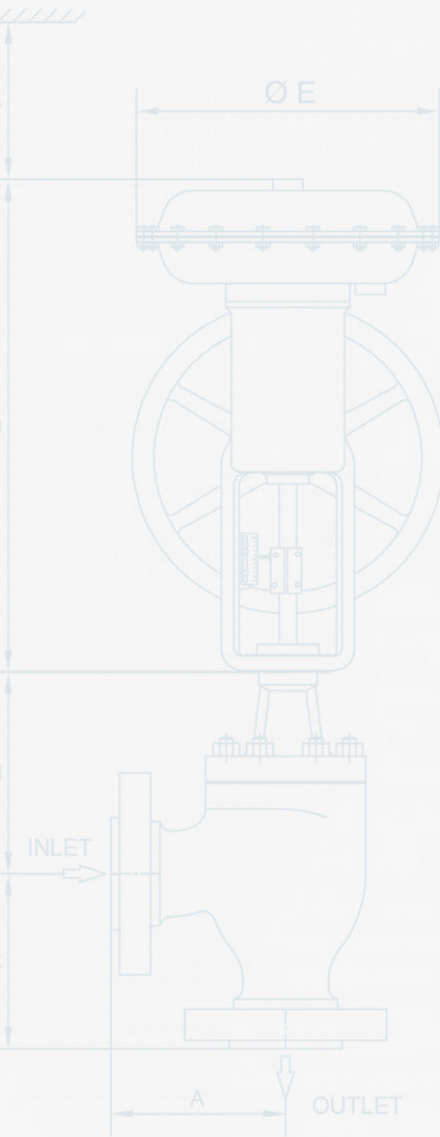
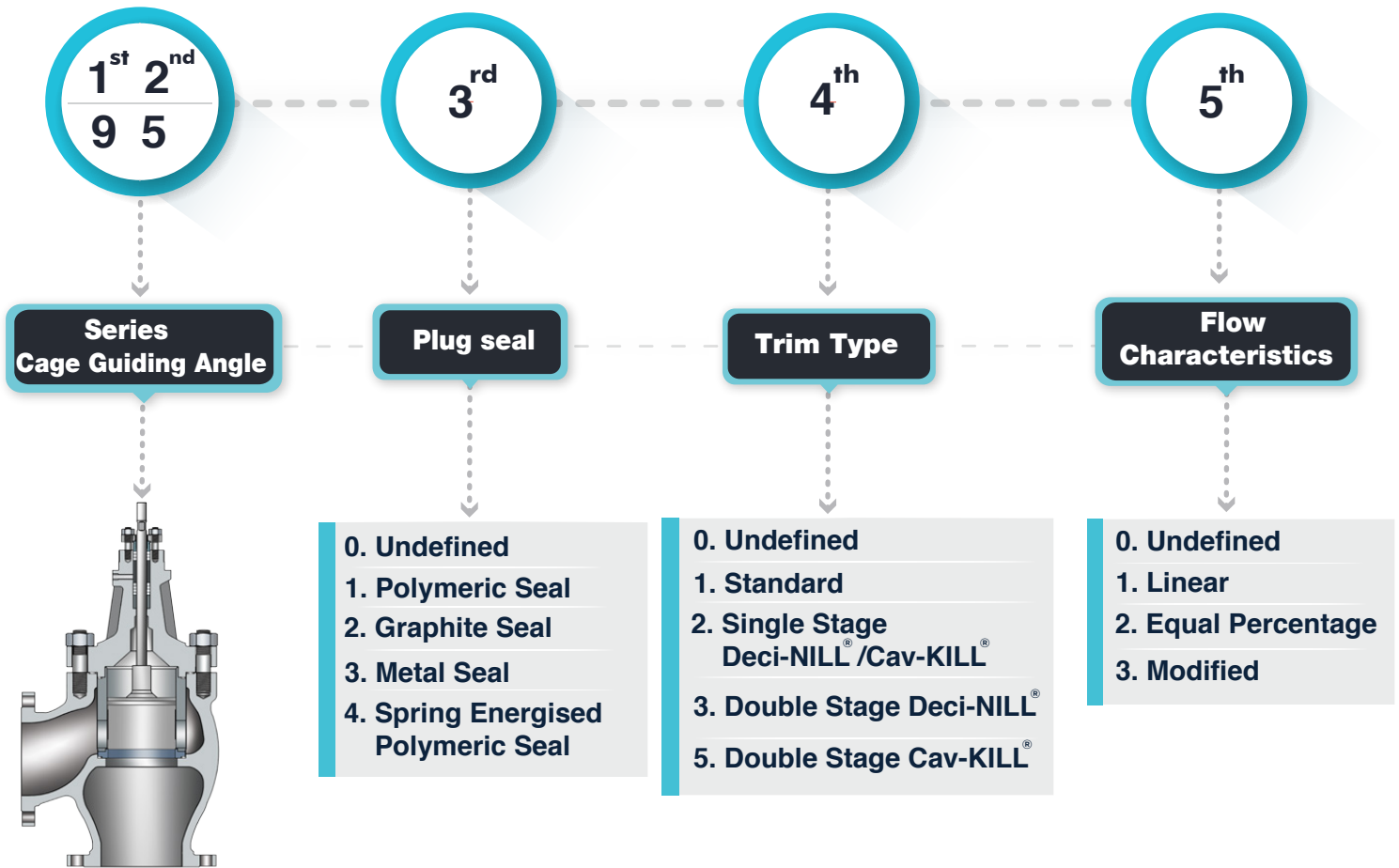


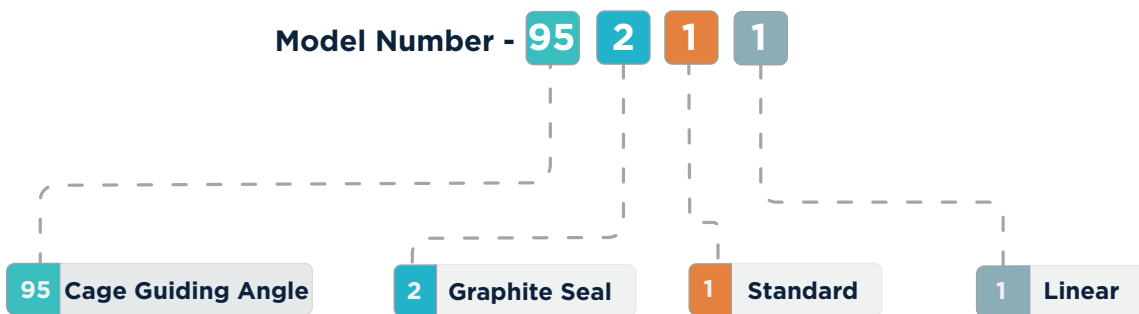
**95000 SERIES CONTROL VALVES**  
**CAGE GUIDING ANGLE TYPE**



## 95000 - Series Valve Code



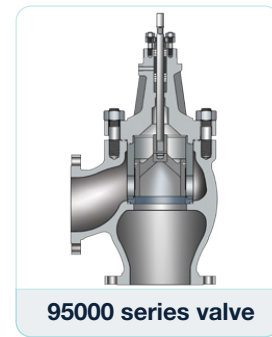
## Sample Model Numbering



### Note:

®Trade names noted throughout are for reference only. Unicorn valves reserves the right to supply trade named material or its equivalent.

**SERIES 95000** - The characteristic of this design is the cylindrical outer cage and cylindrical inner balanced plug. The rigid cylindrical structure and Balanced plug makes the valve suitable for Higher flow and Heavy Pressure drop service.



## MAIN FEATURES

Compact angle body with Streamlined flow path having high flow capacity and low pressure recovery

Heavy Cage guiding offers excellent plug stability and eliminates trim vibration in the event of large pressure drop

Rating ASME Class 150 thru 2500

Flow characteristic: Linear, Equal Percentage or Customised

Flow capacity: Full, Medium and Reduced ports / areas are available

Bonnet type: Bolted and Pressure Seal(Optional)

End Connection: RF, RTJ Flanges and Weld end connection. SW and threaded ends is upto and including 2"

Rangeability 100:1

Trim design Dec-NILL<sup>®</sup> and Cav-KILL<sup>®</sup> with multi holes on cage /plug to reduce the noise and control cavitation respectively

Leakage Class: Standard is ANSI Class IV as per ANSI/FCI 70.2. Class V & VI are also available on request

**General Description**

|   |  |
|---|--|
| <b>Product Range</b>                      | See Table 1                                |
| <b>Valve End Connection</b>               | See Table 2                                |
| <b>Body Type</b>                          | High Capacity Globe Angle Type             |
| <b>Material of Construction</b>           | Ductile Iron                               |
|   | Carbon Steel                               |
|   | Chrome-Molybdenum                          |
|   | Stainless Steel                            |
|   | Duplex Stainless Steel                     |
| <b>Packing Material</b>                   | Polymeric -46°C to 232°C                   |
|   | Graphite -196°C to 538°C                   |
| <b>Guide Type</b>                         | Heavy Cage Guided                          |
| <b>Flow Capacity</b>                      | Full                                       |
|   | Reduced                                    |
|   | Low  |
| <b>Trim Type</b>                          | Standard                                   |
|   | Single Stage Deci-NILL®                    |
|   | Double Stage Deci-NILL®                    |
|   | Single Stage Cav-KILL®                     |
|   | Double Stage Cav-KILL®                     |
| <b>Flow Characteristic</b>                | Linear                                     |
|   | Equal Percentage                           |
| <b>Seat Type</b>                          | Cage Clamp                                 |
| <b>Leakage Class as per ANSI/FCI 70.2</b> | III  |
|   | IV   |
|   | V  |
| <b>Maximum Valve Stroke</b>               | See Table 3                                |
| <b>Actuator Types<sup>(1)</sup></b>       | Spring Diaphragm                           |
|   | Piston Cylinder                            |
|   | Electrical Actuators                       |
| <b>Hand Wheel</b>                         | Optional                                   |
| <b>Temperature Range<sup>(2)</sup></b>    | -196°C to 593°C                            |
| <b>Special Applications<sup>(3)</sup></b> | Other Flange Facings/<br>BW Ends           |
|   | NACE Application                           |
|   | Customized Tirms<br>(Cv & characteristics) |

**Product Range / Table 1**

| Valve Size |     | ASME Class |     |     |     |      |      |
|------------|-----|------------|-----|-----|-----|------|------|
| Inches     | mm  | 150        | 300 | 600 | 900 | 1500 | 2500 |
| 2          | 50  | ●          | ●   | ●   | ●   | ●    | ●    |
| 3          | 80  | ●          | ●   | ●   | ●   | ●    |      |
| 4          | 100 | ●          | ●   | ●   | ●   | ●    |      |
| 6          | 150 | ●          | ●   | ●   | ●   | ●    |      |
| 8          | 200 | ●          | ●   | ●   |     |      |      |
| 10         | 250 | ●          | ●   | ●   |     |      |      |
| 12         | 300 | ●          | ●   | ●   |     |      |      |

**End connection / Table 2**

| Connection Type         | Valve Size |          |
|-------------------------|------------|----------|
|                         | 2"         | 3"to 24" |
| Flanged Raised Face     | ●          | ●        |
| Flanged Ring Type Joint | ●          | ●        |
| Flanged Tongue & Groove | ●          | ●        |
| Butt Weld End           | ●          | ●        |
| Socket Weld End         | ●          |          |
| Threaded End            | ●          |          |

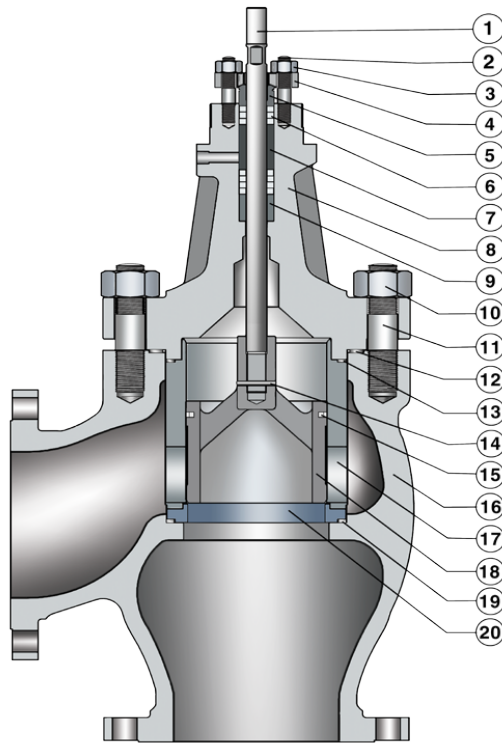
**Maximum Valve Stroke / Table 3**

| Valve Size |     | Maximum Valve Stroke |       |            |       |           |       |
|------------|-----|----------------------|-------|------------|-------|-----------|-------|
|            |     | Standard             |       | Deci-NILL® |       | Cav-KILL® |       |
| Inches     | mm  | Inches               | mm    | Inches     | mm    | Inches    | mm    |
| 2          | 50  | 0.75                 | 19.05 | 0.75       | 19.05 | 0.75      | 19.05 |
|            |     | 1.5                  | 38.1  | 1.5        | 38.1  |           |       |
| 3          | 80  | 2                    | 50.8  | 2          | 50.8  | 1.5       | 38.1  |
| 4          | 100 | 2                    | 50.8  | 2          | 50.8  | 2         | 50.8  |
| 6          | 150 | 2                    | 50.8  | 2.5        | 63.5  | 2.5       | 63.5  |
|            |     | 1.5                  | 38.1  |            |       |           |       |
|            |     | 2                    | 50.8  |            |       |           |       |
| 8          | 200 | 2.5                  | 63.5  | 2.5        | 63.5  | 2.5       | 63.5  |
|            |     | 2                    | 50.8  |            |       |           |       |
|            |     | 2.5                  | 63.5  |            |       |           |       |
| 10         | 250 | 2.5                  | 63.5  | 3          | 76.2  | 2.5       | 63.5  |
|            |     | 3                    | 76.2  |            |       |           |       |
| 12         | 300 | 3                    | 76.2  | 2.5        | 63.5  | 2.5       | 63.5  |
|            |     | 3.75                 | 95.25 |            |       |           |       |

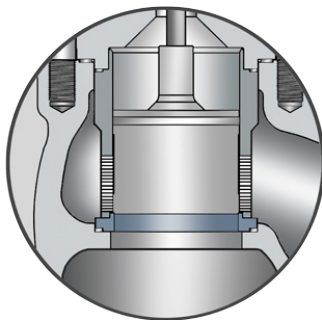
**Notes :**

1. Spring Diaphragm actuator(Single acting type) is standard. Piston cylinder(Single / Double acting type) and Electric actuators are available on request.
2. The brief details of Body,Bonnet,Trim,Stem,Bolt and nut materials with applicable temperature are given in the tables 4,5,6 and 7.
3. Special application valves are available on request.

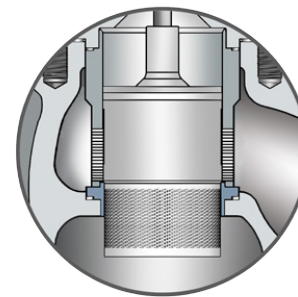
# STANDARD CONSTRUCTION



| Part. No | Part Name        |
|----------|------------------|
| 1        | Valve Stem       |
| 2        | Packing Stud     |
| 3        | Packing Stud Nut |
| 4        | Packing Flange   |
| 5        | Packing Follower |
| 6        | Packing          |
| 7        | Packing Spacer   |
| 8        | Bonnet           |
| 9        | Guide Bush       |
| 10       | Body Stud Nut    |
| 11       | Body Stud        |
| 12       | Body Gasket      |
| 13       | Cage Gasket      |
| 14       | Plug Pin         |
| 15       | Seal Ring        |
| 16       | Body             |
| 17       | Cage             |
| 18       | Plug             |
| 19       | Seat Ring Gasket |
| 20       | Seat Ring        |



**Single Stage Deci-NILL® & Cav-KILL®**  
(Noise Reduction & Cavitation Control)

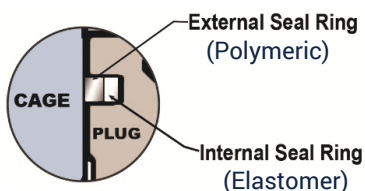


**Double Stage Deci-NILL® & Cav-KILL®**  
(Noise Reduction & Cavitation Control)

## Seal Ring Types

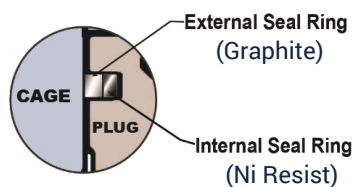
### 1. Polymeric Seal Ring

Model Number-95100



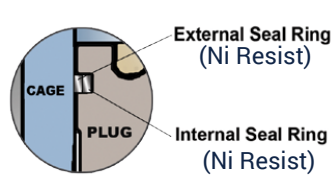
### 2. Graphite Seal Ring

Model Number-95200



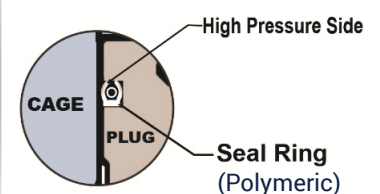
### 3. Metal Seal Ring

Model Number-95300



### 4. Spring Energised Polymeric Seal Ring

Model Number-95400



### Notes :

1. For Deci-NILL (Noise reduction) flow direction aids to Open.
2. For Cav-KILL (cavitation control) flow direction aids to Close.

**Temperature Range / Seat Leakage**

| Valve Model | Plug Seal Type                       | Valve Size |           | Temperature Range |                | Seat Leakage AS per ANSI / FCI 70.2 Class |
|-------------|--------------------------------------|------------|-----------|-------------------|----------------|---|
|             |                                      | inches     | mm        | Minimum           | Maximum        |   |
| 95100       | Polymeric Seal Ring                  | 2-24       | 50 - 600  | -20°F (-29°C)     | 300°F (149°C)  | IV  |
| 95200       | Graphite Seal Ring                   | 2          | 50        | -320°F (-196°C)   | 1050°F (566°C) | III                                       |
|             |                                      | 3-4        | 80 - 100  | -320°F (-196°C)   | 800°F (427°C)  | III                                       |
|             |                                      | 6-18       | 150 - 450 | -320°F (-196°C)   | 850°F (454°C)  | IV  |
|             |                                      | 20&24      | 500 & 600 | -51°F (-46°C)     | 650°F (343°C)  | IV  |
| 95300       | Metal Seal Ring                      | 2          | 50        | -320°F (-196°C)   | 1050°F (566°C) | II  |
|             |                                      | 3-4        | 80 - 100  | -320°F (-196°C)   | 800°F (427°C)  | II  |
|             |                                      | 6-18       | 150 - 450 | -320°F (-196°C)   | 1050°F (566°C) | III                                       |
|             |                                      | 20&24      | 500 & 600 | -51°F (-46°C)     | 650°F (343°C)  | III                                       |
| 95400       | Spring Energised Polymeric Seal Ring | 2-16       | 50 - 400  | -148°F (-100°C)   | 450°F (232°C)  |   |

**Model Number With Flow Direction**

| Model Number  | 95100   | 95200   | 95300   | 95400  |
|---|---|---|---|--|
| Seal Type   | Polymeric Seal Ring                                       | Graphite Seal Ring  | Metal Seal Ring   | Spring Energised Polymeric Seal Ring                                     |
| 95011/95012<br>Standard Trim<br>(Linear/ Equal Percentage)          | 95111/95112<br>Flow To Open(FTO) or<br>Flow To Close(FTC) | 95211/95212<br>Flow To Open(FTO) or<br>Flow To Close(FTC) | 95311/95312<br>Flow To Open(FTO) or<br>Flow To Close(FTC) | 95411/95412 <sup>(1)</sup><br>Flow To Open(FTO) or<br>Flow To Close(FTC) |
| 95021/95022<br>Single Stage Deci-NILL<br>(Linear/ Equal Percentage) | 95121/ 95122<br>Flow To Open(FTO)                         | 95221/ 95222<br>Flow To Open(FTO)                         | 95321/ 95322<br>Flow To Open(FTO)                         | 95421/ 95422<br>Flow To Open(FTO)  |
| 95021/95022<br>Single Stage Cav-KILL<br>(Linear/ Equal Percentage)  | 95121/ 95122<br>Flow To Close(FTC)                        | 95221/ 95222<br>Flow To Close(FTC)                        | 95321/ 95322<br>Flow To Close(FTC)                        | 95421/ 95422<br>Flow To Close(FTC)                                       |
| 95031<br>Double Stage Deci-NILL<br>(Linear)                         | 95131<br>Flow To Open(FTO)                                | 95231<br>Flow To Open(FTO)                                | 95331<br>Flow To Open(FTO)                                | 95431<br>Flow To Open(FTO)   |
| 95041<br>Double Stage cav-KILL<br>(Linear)                          | 95141<br>Flow To Close(FTC)                               | 95241<br>Flow To Close(FTC)                               | 95341<br>Flow To Close(FTC)                               | 95441<br>Flow To Close(FTC)  |

**Note :**

1. 95411/ 95412\* Spring Energised Polymeric Seal Ring must be installed with the seal opening to the high pressureside of the plug.

**Maximum and Minimum Temperature Limits For Body & Bonnet Materials / Table 4**

| Body/Bonnet Materials    | -320°F | -238°F | -148°F | -50°F | -20°F | 300°F | 450°F | 650°F | 750°F | 800°F | 850°F | 1000°F | 1050°F | 1100°F |
|--------------------------|--------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|
|                          | -196°C | -150°C | -100°C | -46°C | -29°C | 149°C | 232°C | 343°C | 400°C | 427°C | 454°C | 538°C  | 566°C  | 593°C  |
| ASTM A 216 Gr. WCB/A 105 |        |        |        |       |       |       |       |       |       |       |       |        |        |        |
| ASTM A 216 Gr. WCC       |        |        |        |       |       |       |       |       |       |       |       |        |        |        |
| ASTM A 217 Gr. C5        |        |        |        |       |       |       |       |       |       |       |       |        |        |        |
| ASTM A 217 Gr. C6        |        |        |        |       |       |       |       |       |       |       |       |        |        |        |
| ASTM A 217 Gr. WC9       |        |        |        |       |       |       |       |       |       |       |       |        |        |        |
| ASTM A 217 Gr. C12       |        |        |        |       |       |       |       |       |       |       |       |        |        |        |
| ASTM A 217 Gr. C12A      |        |        |        |       |       |       |       |       |       |       |       |        |        |        |
| ASTM A 352 Gr. LCC       |        |        |        |       |       |       |       |       |       |       |       |        |        |        |
| ASTM A 351 Gr. CF8       |        |        |        |       |       |       |       |       |       |       |       |        |        |        |
| ASTM A 351 Gr. CF8M      |        |        |        |       |       |       |       |       |       |       |       |        |        |        |
| ASTM A 351 Gr. CF3       |        |        |        |       |       |       |       |       |       |       |       |        |        |        |
| ASTM A 351 Gr. CF3M      |        |        |        |       |       |       |       |       |       |       |       |        |        |        |
| ASTM A 995 Gr. 4A        |        |        |        |       |       |       |       |       |       |       |       |        |        |        |
| ASTM A 995 Gr. 5A        |        |        |        |       |       |       |       |       |       |       |       |        |        |        |
| ASTM A 995 Gr. 6A        |        |        |        |       |       |       |       |       |       |       |       |        |        |        |

**Maximum and Minimum Temperature Limits For Stem Materials / Table 5**

| Stem Material                  | -320°F | -238°F | -148°F | -50°F | -20°F | 300°F | 450°F | 650°F | 750°F | 800°F | 850°F | 1000°F | 1050°F | 1100°F |
|--------------------------------|--------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|
|                                | -196°C | -150°C | -100°C | -46°C | -29°C | 149°C | 232°C | 343°C | 400°C | 427°C | 454°C | 538°C  | 566°C  | 593°C  |
| A479 Ty 304                    |        |        |        |       |       |       |       |       |       |       |       |        |        |        |
| A479 Ty 316                    |        |        |        |       |       |       |       |       |       |       |       |        |        |        |
| A479 Ty 316L                   |        |        |        |       |       |       |       |       |       |       |       |        |        |        |
| A638 Gr. 660                   |        |        |        |       |       |       |       |       |       |       |       |        |        |        |
| Nirtonic-50UNS S20910          |        |        |        |       |       |       |       |       |       |       |       |        |        |        |
| Super Duplex UNS 32750         |        |        |        |       |       |       |       |       |       |       |       |        |        |        |
| Inconel 625                    |        |        |        |       |       |       |       |       |       |       |       |        |        |        |
| SA-479-XM-19 (S20910)          |        |        |        |       |       |       |       |       |       |       |       |        |        |        |
| A564-630 (17-4 PH) Cond. H1075 |        |        |        |       |       |       |       |       |       |       |       |        |        |        |

**Maximum and Minimum Temperature Limits For Trim Materials / Table 6**

| Trim materials                  | -320°F | -238°F | -148°F | -50°F | -20°F | 300°F | 450°F | 650°F | 750°F | 800°F | 850°F | 1000°F | 1050°F | 1100°F |
|---------------------------------|--------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|
|                                 | -196°C | -150°C | -100°C | -46°C | -29°C | 149°C | 232°C | 343°C | 400°C | 427°C | 454°C | 538°C  | 566°C  | 593°C  |
| A743 GR CA6NM Class B           |        |        |        |       |       |       |       |       |       |       |       |        |        |        |
| A743 GR CA6NM C-B Chrom Plated  |        |        |        |       |       |       |       |       |       |       |       |        |        |        |
| SA-479-XM-19 (S20910)           |        |        |        |       |       |       |       |       |       |       |       |        |        |        |
| ASTM A 479 Ty 304               |        |        |        |       |       |       |       |       |       |       |       |        |        |        |
| ASTM A 479 Ty 304 Stellite Seat |        |        |        |       |       |       |       |       |       |       |       |        |        |        |
| ASTM A 479 Ty 304 Full Stellite |        |        |        |       |       |       |       |       |       |       |       |        |        |        |
| ASTM A 479 Ty 316               |        |        |        |       |       |       |       |       |       |       |       |        |        |        |
| ASTM A 479 Ty 316 Stellite Seat |        |        |        |       |       |       |       |       |       |       |       |        |        |        |
| ASTM A 479 Ty 316 Full Stellite |        |        |        |       |       |       |       |       |       |       |       |        |        |        |
| ASTM A276 Ty 440                |        |        |        |       |       |       |       |       |       |       |       |        |        |        |
| ASTM A 351 Gr. CF8              |        |        |        |       |       |       |       |       |       |       |       |        |        |        |
| ASTM A 351 Gr. CF8M             |        |        |        |       |       |       |       |       |       |       |       |        |        |        |
| Monel                           |        |        |        |       |       |       |       |       |       |       |       |        |        |        |
| Hastealloy Grade B              |        |        |        |       |       |       |       |       |       |       |       |        |        |        |
| Hastealloy Grade c              |        |        |        |       |       |       |       |       |       |       |       |        |        |        |
| ASTM A 564 Ty 630 (17-4PH)      |        |        |        |       |       |       |       |       |       |       |       |        |        |        |

**Maximum and Minimum Temperature Limits For Bolt & Nut Materials / Table 7**

| Stud/Bolt Materials | Nut Materials  | -320°F | -238°F | -148°F | -50°F | -20°F | 300°  | 450°F | 650°F | 750°F | 800°F | 850°F | 1000°F | 1050°F | 1100°F |
|---------------------|----------------|--------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|
|                     |                | -196°C | -150°C | -100°C | -46°C | -29°C | 149°C | 232°C | 343°C | 400°C | 427°C | 454°C | 538°C  | 566°C  | 593°C  |
| A193 Gr B7          | A194 Gr 2H     |        |        |        |       |       |       |       |       |       |       |       |        |        |        |
| A193 Gr B7M         | A194 Gr 2HM    |        |        |        |       |       |       |       |       |       |       |       |        |        |        |
| A193 Gr B8          | A194 Gr 8      |        |        |        |       |       |       |       |       |       |       |       |        |        |        |
| A193 Gr B8 CL 2     | A194 Gr 8      |        |        |        |       |       |       |       |       |       |       |       |        |        |        |
| A193 Gr B8M         | A194 Gr 8M     |        |        |        |       |       |       |       |       |       |       |       |        |        |        |
| A193 Gr B16         | A194 Gr 8      |        |        |        |       |       |       |       |       |       |       |       |        |        |        |
| A320 Gr L7          | A194 Gr 4 or 7 |        |        |        |       |       |       |       |       |       |       |       |        |        |        |
| A320 Gr B8(CL 1&2)  | A194 Gr 8      |        |        |        |       |       |       |       |       |       |       |       |        |        |        |
| A320 Gr B8M(CL 1&2) | A194 Gr 8M     |        |        |        |       |       |       |       |       |       |       |       |        |        |        |
| A453 Gr 660         | A194 Gr 8      |        |        |        |       |       |       |       |       |       |       |       |        |        |        |

\*For other materials contact manufacturer

# FLOW CO-EFFICIENT (Cv) VALUES\*



## Standard Trim

Series - 95111/ 95211/ 95311/ 95411

Flow Characteristic: Linear

Rating: ASME Class & Equivalent PN 150-2500

Direction: Flow To Open(FTO)

| Valve Size |     | ASME Class | % Lift |       | Travel |       | 10       | 20  | 30  | 40  | 50  | 60  | 70   | 80   | 90   | 100  |
|------------|-----|------------|--------|-------|--------|-------|----------|-----|-----|-----|-----|-----|------|------|------|------|
| Inches     | mm  |            | Inches | mm    | Inches | mm    | Rated Cv |     |     |     |     |     |      |      |      |      |
| 2          | 50  | 900-2500   | 1.81   | 46    | 0.75   | 19.05 | 1.4      | 2.7 | 4.2 | 6   | 8   | 10  | 12   | 14   | 15   | 16   |
|            |     |            | 1.81   | 46    | 0.75   | 19.05 | 2.0      | 4.9 | 8.3 | 13  | 19  | 25  | 30   | 35   | 38   | 40   |
| 2          | 50  | 150-600    | 2.5    | 63.2  | 1.5    | 38.1  | 2.7      | 5.1 | 7.9 | 11  | 15  | 19  | 23   | 26   | 29   | 30   |
| 3          | 80  | 150-1500   | 3.5    | 88.5  | 2      | 50.8  | 5        | 10  | 16  | 22  | 30  | 38  | 46   | 52   | 58   | 60   |
|            |     |            | 3.5    | 88.5  | 2      | 50.8  | 8        | 19  | 31  | 50  | 73  | 96  | 118  | 135  | 147  | 155  |
| 4          | 100 | 150-1500   | 3.5    | 88.5  | 2      | 50.8  | 9        | 16  | 25  | 35  | 48  | 60  | 72   | 83   | 91   | 95   |
|            |     |            | 3.5    | 88.5  | 2      | 50.8  | 8        | 19  | 31  | 50  | 73  | 96  | 118  | 135  | 147  | 155  |
|            |     |            | 4.5    | 111.5 | 2      | 50.8  | 12       | 29  | 48  | 77  | 113 | 149 | 182  | 208  | 227  | 239  |
| 6          | 150 | 150-1500   | 4.5    | 111.5 | 2      | 50.8  | 7        | 15  | 28  | 41  | 58  | 74  | 94   | 117  | 144  | 165  |
|            |     |            | 4.5    | 111.5 | 2      | 50.8  | 12       | 29  | 48  | 77  | 113 | 149 | 182  | 208  | 227  | 239  |
| 8          | 200 | 150-600    | 5      | 129.5 | 2      | 50.8  | 20       | 52  | 92  | 148 | 203 | 259 | 307  | 347  | 375  | 399  |
|            |     |            | 5      | 129.5 | 1.5    | 38.1  | 17       | 37  | 71  | 104 | 145 | 187 | 236  | 294  | 360  | 414  |
| 10         | 250 | 150-600    | 6.5    | 164.5 | 2.5    | 63.5  | 32       | 83  | 147 | 236 | 325 | 415 | 492  | 556  | 600  | 638  |
|            |     |            | 6.5    | 164.5 | 2.5    | 63.5  | 20       | 46  | 87  | 128 | 179 | 229 | 290  | 361  | 443  | 509  |
|            |     |            | 6.5    | 164.5 | 2.5    | 63.5  | 32       | 83  | 147 | 236 | 325 | 415 | 492  | 556  | 600  | 638  |
| 12         | 300 | 150-600    | 8      | 202   | 3      | 76.2  | 50       | 130 | 229 | 369 | 509 | 648 | 768  | 868  | 938  | 998  |
|            |     |            | 8      | 202   | 3      | 76.2  | 31       | 69  | 131 | 193 | 269 | 346 | 438  | 546  | 668  | 768  |
|            |     |            | 8      | 202   | 3      | 76.2  | 50       | 130 | 229 | 369 | 509 | 648 | 768  | 868  | 938  | 998  |
|            |     |            | 9.6    | 245   | 3.75   | 95.25 | 70       | 182 | 321 | 517 | 712 | 908 | 1075 | 1215 | 1313 | 1397 |

## Standard Trim

Series - 95112/ 95212/ 95312/ 95412

Flow Characteristic: Equal Percentage

Rating: ASME Class & Equivalent PN 150-2500

Direction: Flow To Open(FTO)

| Valve Size |     | ASME Class | % Lift |       | Travel |       | 10       | 20  | 30  | 40  | 50  | 60  | 70  | 80  | 90   | 100  |
|------------|-----|------------|--------|-------|--------|-------|----------|-----|-----|-----|-----|-----|-----|-----|------|------|
| Inches     | mm  |            | Inches | mm    | Inches | mm    | Rated Cv |     |     |     |     |     |     |     |      |      |
| 2          | 50  | 900-2500   | 1.8    | 46.5  | 0.75   | 19.05 | 0.2      | 0.4 | 0.8 | 1.3 | 2.1 | 3.8 | 7   | 10  | 12   | 14   |
|            |     |            | 1.8    | 46.5  | 0.75   | 19.05 | 0.5      | 1.1 | 2.0 | 3.2 | 5.2 | 9.5 | 17  | 25  | 31   | 35   |
| 2          | 50  | 150-600    | 2.5    | 63.2  | 1.5    | 38.1  | 0.3      | 0.8 | 1.5 | 2.3 | 4.0 | 7.0 | 12  | 18  | 23   | 26   |
| 3          | 80  | 150-1500   | 3.5    | 88.5  | 2      | 50.8  | 0.7      | 2   | 3   | 5   | 8   | 15  | 27  | 39  | 50   | 56   |
|            |     |            | 3.5    | 88.5  | 2      | 50.8  | 1.8      | 4   | 8   | 13  | 21  | 38  | 67  | 100 | 124  | 140  |
| 4          | 100 | 150-1500   | 3.5    | 88.5  | 2      | 50.8  | 1.2      | 3   | 5   | 8   | 13  | 24  | 43  | 64  | 81   | 90   |
|            |     |            | 3.5    | 88.5  | 2      | 50.8  | 1.8      | 4   | 8   | 13  | 21  | 38  | 67  | 100 | 124  | 140  |
|            |     |            | 4.5    | 111.5 | 2      | 50.8  | 3        | 7   | 13  | 20  | 33  | 61  | 107 | 160 | 200  | 224  |
| 6          | 150 | 150-1500   | 4.5    | 111.5 | 2      | 50.8  | 4        | 8   | 15  | 24  | 35  | 54  | 80  | 108 | 130  | 144  |
|            |     |            | 4.5    | 111.5 | 2      | 50.8  | 3        | 7   | 13  | 20  | 33  | 61  | 107 | 160 | 200  | 224  |
| 8          | 200 | 150-600    | 5      | 129.5 | 2      | 50.8  | 9        | 21  | 39  | 60  | 87  | 135 | 200 | 268 | 325  | 359  |
|            |     |            | 5      | 129.5 | 2      | 50.8  | 6        | 14  | 25  | 39  | 56  | 86  | 128 | 172 | 207  | 229  |
| 10         | 250 | 150-600    | 6.5    | 164.5 | 2.5    | 63.5  | 14       | 34  | 62  | 97  | 140 | 214 | 319 | 429 | 520  | 574  |
|            |     |            | 6.5    | 164.5 | 2.5    | 63.5  | 9        | 21  | 39  | 60  | 87  | 135 | 200 | 268 | 325  | 359  |
|            |     |            | 8      | 202   | 3      | 76.2  | 23       | 53  | 97  | 151 | 218 | 336 | 499 | 670 | 813  | 898  |
| 12         | 300 | 150-600    | 8      | 202   | 3      | 76.2  | 13       | 30  | 54  | 84  | 122 | 187 | 277 | 373 | 452  | 499  |
|            |     |            | 8      | 202   | 3      | 76.2  | 23       | 53  | 97  | 151 | 218 | 336 | 499 | 670 | 813  | 898  |
|            |     |            | 9.6    | 245   | 3.75   | 95.25 | 32       | 75  | 136 | 211 | 305 | 470 | 698 | 939 | 1139 | 1257 |



# FLOW CO-EFFICIENT (Cv) VALUES\*



Single Stage Deci-NILL® /Cav-KILL®

Series - 95121/ 95221/ 95321/ 95421

Flow Characteristic: Linear

Rating: ASME Class & Equivalent PN 150-2500

Direction: Flow To Open (FTO) & Flow To Close(FTC)

| Valve Size |     | ASME Class | % Lift |       | Travel |       | 10       | 20  | 30   | 40   | 50    | 60    | 70    | 80   | 90  | 100 |
|------------|-----|------------|--------|-------|--------|-------|----------|-----|------|------|-------|-------|-------|------|-----|-----|
| Inches     | mm  |            | Inches | mm    | Inches | mm    | Rated Cv |     |      |      |       |       |       |      |     |     |
| 2          | 50  | 900-2500   | 1.85   | 47    | 0.75   | 19.05 | 1.0      | 2.0 | 2.99 | 3.99 | 4.99  | 5.99  | 6.98  | 8.0  | 9   | 10  |
|            |     |            | 1.85   | 47    | 0.75   | 19.05 | 1.7      | 3.4 | 5.09 | 6.78 | 8.48  | 10.17 | 11.87 | 13.6 | 15  | 17  |
|            |     |            | 1.85   | 47    | 0.75   | 19.05 | 2.3      | 4.6 | 6.88 | 9.18 | 11.47 | 13.77 | 16.06 | 18   | 21  | 23  |
|            |     |            | 1.85   | 47    | 0.75   | 19.05 | 3.0      | 6   | 9    | 12   | 15    | 18    | 21    | 24   | 27  | 30  |
| 2          | 50  | 150-600    | 2.5    | 63.5  | 1.5    | 38.1  | 2.5      | 5   | 7    | 10   | 12    | 15    | 17    | 20   | 22  | 25  |
|            |     |            | 2.5    | 63.5  | 1.5    | 38.1  | 3        | 6   | 10   | 13   | 16    | 19    | 22    | 26   | 29  | 32  |
| 3          | 80  | 150-1500   | 3.5    | 88.5  | 2      | 50.8  | 4        | 8   | 12   | 16   | 20    | 24    | 28    | 32   | 36  | 40  |
|            |     |            | 3.5    | 88.5  | 2      | 50.8  | 5        | 11  | 16   | 22   | 27    | 32    | 38    | 43   | 49  | 54  |
|            |     |            | 3.5    | 88.5  | 2      | 50.8  | 7        | 14  | 22   | 29   | 36    | 43    | 50    | 58   | 65  | 72  |
|            |     |            | 3.5    | 88.5  | 2      | 50.8  | 10       | 19  | 29   | 38   | 48    | 57    | 67    | 76   | 86  | 95  |
| 4          | 100 | 150-1500   | 4.5    | 111.5 | 2      | 50.8  | 7        | 13  | 20   | 26   | 33    | 39    | 46    | 52   | 59  | 65  |
|            |     |            | 4.5    | 111.5 | 2      | 50.8  | 9        | 17  | 26   | 34   | 43    | 51    | 60    | 68   | 77  | 85  |
|            |     |            | 4.5    | 111.5 | 2      | 50.8  | 11       | 22  | 33   | 44   | 55    | 66    | 77    | 88   | 99  | 110 |
|            |     |            | 4.5    | 111.5 | 2      | 50.8  | 15       | 30  | 45   | 60   | 75    | 90    | 105   | 120  | 135 | 150 |
| 6          | 150 | 150-1500   | 5      | 129.5 | 2.5    | 63.5  | 10       | 20  | 30   | 40   | 50    | 60    | 70    | 80   | 90  | 100 |
|            |     |            | 5      | 129.5 | 2.5    | 63.5  | 13       | 26  | 39   | 52   | 65    | 78    | 91    | 104  | 117 | 130 |
|            |     |            | 5      | 129.5 | 2.5    | 63.5  | 18       | 35  | 53   | 70   | 88    | 105   | 123   | 140  | 158 | 175 |
|            |     |            | 5      | 129.5 | 2.5    | 63.5  | 23       | 46  | 69   | 92   | 115   | 138   | 161   | 184  | 206 | 229 |
| 8          | 200 | 150-600    | 6.5    | 164.5 | 2.5    | 63.5  | 16       | 32  | 48   | 64   | 80    | 96    | 112   | 128  | 144 | 160 |
|            |     |            | 6.5    | 164.5 | 2.5    | 63.5  | 21       | 42  | 63   | 84   | 105   | 126   | 147   | 168  | 189 | 209 |
|            |     |            | 6.5    | 164.5 | 2.5    | 63.5  | 27       | 54  | 81   | 108  | 135   | 162   | 189   | 215  | 242 | 269 |
|            |     |            | 6.5    | 164.5 | 2.5    | 63.5  | 36       | 72  | 108  | 144  | 180   | 215   | 251   | 287  | 323 | 359 |
| 10         | 250 | 150-600    | 8      | 202   | 2.5    | 63.5  | 20       | 40  | 60   | 80   | 100   | 120   | 140   | 160  | 180 | 200 |
|            |     |            | 8      | 202   | 2.5    | 63.5  | 26       | 52  | 78   | 104  | 130   | 156   | 182   | 207  | 233 | 259 |
|            |     |            | 8      | 202   | 2.5    | 63.5  | 36       | 72  | 108  | 144  | 180   | 215   | 251   | 287  | 323 | 359 |
|            |     |            | 8      | 202   | 3.5    | 88.9  | 50       | 100 | 150  | 200  | 249   | 299   | 349   | 399  | 449 | 499 |
| 12         | 300 | 150-600    | 9.6    | 245   | 2.5    | 63.5  | 45       | 90  | 135  | 180  | 224   | 269   | 314   | 359  | 404 | 449 |
|            |     |            | 9.6    | 245   |        |       | 60       | 120 | 180  | 239  | 299   | 359   | 419   | 479  | 539 | 599 |
|            |     |            | 9.6    | 245   | 4      | 101.6 | 81       | 162 | 242  | 323  | 404   | 485   | 566   | 646  | 727 | 808 |

# FLOW CO-EFFICIENT (Cv) VALUES\*



## Single Stage Deci-NILL® /Cav-KILL®

Series - 95122/ 95222/ 95322/ 95422

Flow Characteristic: Equal Percentage

Rating: ASME Class & Equivalent PN 150-2500

Direction: Flow To Open (FTO) & Flow To Close(FTC)

| % Lift     |     |            |          |       |        |       | 10       | 20  | 30  | 40  | 50   | 60   | 70   | 80   | 90   | 100 |
|------------|-----|------------|----------|-------|--------|-------|----------|-----|-----|-----|------|------|------|------|------|-----|
| Valve Size |     | ASME Class | Orific Ø |       | Travel |       | Rated Cv |     |     |     |      |      |      |      |      |     |
| Inches     | mm  |            | Inches   | mm    | Inches | mm    |          |     |     |     |      |      |      |      |      |     |
| 2          | 50  | 900-2500   | 1.83     | 46.5  | 0.75   | 19.05 | 0.2      | 0.3 | 0.6 | 1.0 | 1.6  | 3.0  | 5    | 7.9  | 9.8  | 11  |
|            |     |            | 1.8      | 46.5  | 0.75   | 19.05 | 0.2      | 0.5 | 0.9 | 1.5 | 2.4  | 4.4  | 7.6  | 11.4 | 14.2 | 16  |
|            |     |            | 1.8      | 46.5  | 0.75   | 19.05 | 0.3      | 0.7 | 1.3 | 2.1 | 3.4  | 6.3  | 11.0 | 16.5 | 20.3 | 23  |
| 2          | 50  | 150-600    | 2.5      | 63.5  | 1.5    | 38.1  | 0.3      | 0.8 | 1.5 | 2.4 | 3.8  | 7.1  | 12.4 | 18   | 23   | 26  |
| 3          | 80  | 150-1500   | 3.5      | 88.5  | 2      | 50.8  | 0.6      | 1.3 | 2.7 | 4.4 | 7.1  | 12.8 | 22   | 34   | 41   | 47  |
|            |     |            | 3.5      | 88.5  | 2      | 50.8  | 0.9      | 1.9 | 3.8 | 6.2 | 10.1 | 18.2 | 32   | 48   | 59   | 67  |
| 4          | 100 | 150-1500   | 4.5      | 111.5 | 2      | 50.8  | 0.9      | 2.2 | 4.0 | 6.2 | 10.3 | 19.0 | 33   | 50   | 62   | 70  |
|            |     |            | 4.5      | 111.5 | 2      | 50.8  | 1.3      | 3.1 | 5.8 | 8.9 | 14.7 | 27.1 | 47   | 71   | 89   | 100 |
| 6          | 150 | 150-1500   | 5        | 129.5 | 2.5    | 63.5  | 3        | 6   | 12  | 18  | 27   | 41   | 61   | 82   | 99   | 110 |
|            |     |            | 5        | 129.5 | 2.5    | 63.5  | 4        | 9   | 17  | 26  | 38   | 58   | 86   | 116  | 140  | 155 |
| 8          | 200 | 150-600    | 6.5      | 164.5 | 3      | 76.2  | 4        | 11  | 19  | 30  | 44   | 67   | 100  | 135  | 163  | 180 |
|            |     |            | 6.5      | 164.5 | 3      | 76.2  | 6        | 15  | 28  | 44  | 64   | 97   | 145  | 195  | 235  | 259 |
| 10         | 250 | 150-600    | 8        | 202   | 3.5    | 88.9  | 6        | 14  | 25  | 39  | 56   | 86   | 128  | 172  | 207  | 229 |
|            |     |            | 8        | 202   | 3.5    | 88.9  | 9        | 20  | 37  | 57  | 83   | 128  | 190  | 253  | 307  | 339 |
| 12         | 300 | 150-600    | 9.6      | 245   | 5      | 127   | 10       | 24  | 43  | 67  | 97   | 150  | 221  | 298  | 362  | 399 |
|            |     |            | 9.6      | 245   | 5      | 127   | 15       | 34  | 62  | 97  | 140  | 214  | 319  | 429  | 520  | 574 |

## Double Stage Deci-NILL®

Series - 95131/ 95231/ 95331/ 95431

Flow Characteristic: Linear

Rating: ASME Class & Equivalent PN 150-2500

Direction: Flow To Open (FTO)

| % Lift     |     |            |          |      |        |       | 10       | 20  | 30  | 40  | 50  | 60   | 70   | 80   | 90   | 100 |
|------------|-----|------------|----------|------|--------|-------|----------|-----|-----|-----|-----|------|------|------|------|-----|
| Valve Size |     | ASME Class | Orific Ø |      | Travel |       | Rated Cv |     |     |     |     |      |      |      |      |     |
| Inches     | mm  |            | Inches   | mm   | Inches | mm    |          |     |     |     |     |      |      |      |      |     |
| 2          | 50  | 900-2500   | 1.89     | 48   | 0.75   | 19.05 | 1.2      | 2.4 | 3.6 | 4.8 | 6.0 | 7.2  | 8.4  | 9.6  | 10.8 | 12  |
|            |     |            | 1.89     | 48   | 0.75   | 19.05 | 1.9      | 3.8 | 5.7 | 7.6 | 9.5 | 11.4 | 13.3 | 15.2 | 17.1 | 19  |
|            |     |            | 1.89     | 48   | 0.75   | 19.05 | 2.4      | 4.8 | 7   | 10  | 12  | 14   | 17   | 19   | 22   | 24  |
| 2          | 50  | 150-600    | 2.5      | 63.5 | 1.5    | 38.1  | 3        | 6   | 9   | 12  | 15  | 18   | 21   | 24   | 27   | 30  |
| 3          | 8   | 150-1500   | 3.5      | 88   | 2      | 50.8  | 5        | 10  | 15  | 20  | 25  | 30   | 35   | 40   | 45   | 50  |
|            |     |            | 3.5      | 88   | 2      | 50.8  | 8        | 15  | 23  | 30  | 38  | 45   | 53   | 60   | 68   | 75  |
| 4          | 100 | 150-1500   | 4.4      | 111  | 2      | 50.8  | 7        | 14  | 22  | 29  | 36  | 43   | 50   | 58   | 65   | 72  |
|            |     |            | 4.4      | 111  | 2      | 50.8  | 11       | 21  | 32  | 42  | 53  | 63   | 74   | 84   | 95   | 105 |
| 6          | 150 | 150-1500   | 5.1      | 130  | 2.5    | 63.5  | 10       | 19  | 29  | 38  | 48  | 58   | 67   | 77   | 86   | 96  |
|            |     |            | 5.1      | 130  | 2.5    | 63.5  | 15       | 30  | 45  | 60  | 75  | 90   | 105  | 120  | 135  | 150 |
| 8          | 200 | 150-600    | 6.5      | 165  | 2.5    | 63.5  | 16       | 31  | 47  | 62  | 78  | 93   | 109  | 124  | 140  | 155 |
|            |     |            | 6.5      | 165  | 2.5    | 63.5  | 25       | 50  | 75  | 100 | 125 | 150  | 175  | 200  | 224  | 249 |
| 10         | 250 | 150-600    | 8        | 202  | 2.5    | 63.5  | 23       | 46  | 69  | 92  | 115 | 138  | 161  | 184  | 206  | 229 |
|            |     |            | 8        | 202  | 3      | 76.2  | 35       | 70  | 105 | 140 | 175 | 209  | 244  | 279  | 314  | 349 |
| 12         | 300 | 150-600    | 9.6      | 245  | 2.5    | 63.5  | 38       | 75  | 113 | 150 | 188 | 224  | 262  | 299  | 337  | 374 |
|            |     |            | 9.6      | 245  | 4      | 101.6 | 60       | 120 | 180 | 239 | 299 | 359  | 419  | 479  | 539  | 599 |

## Double Stage Cav-KILL®

Series - 95141/ 95241/ 95341/ 95441

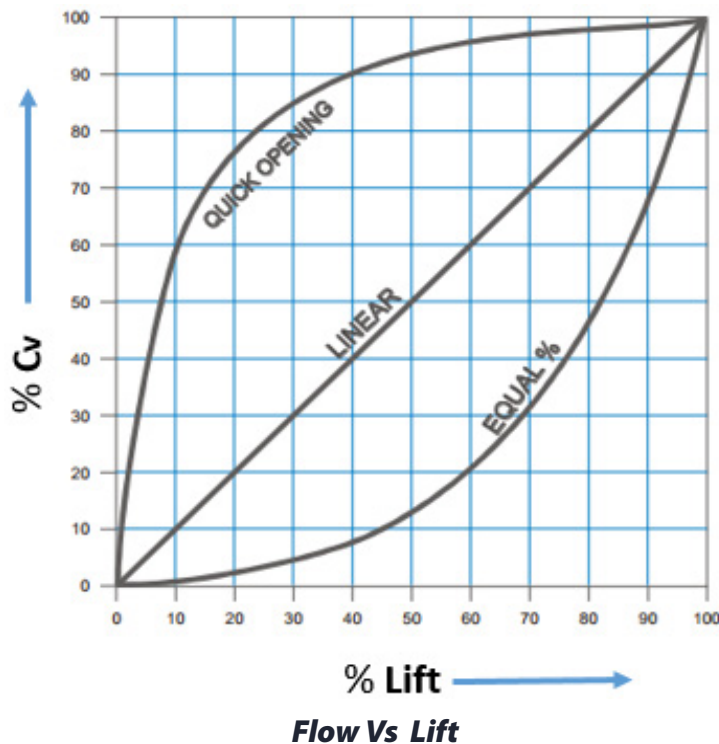
Flow Characteristic: Linear

Rating: ASME Class & Equivalent PN 150-2500

Direction: Flow To Close (FTC)

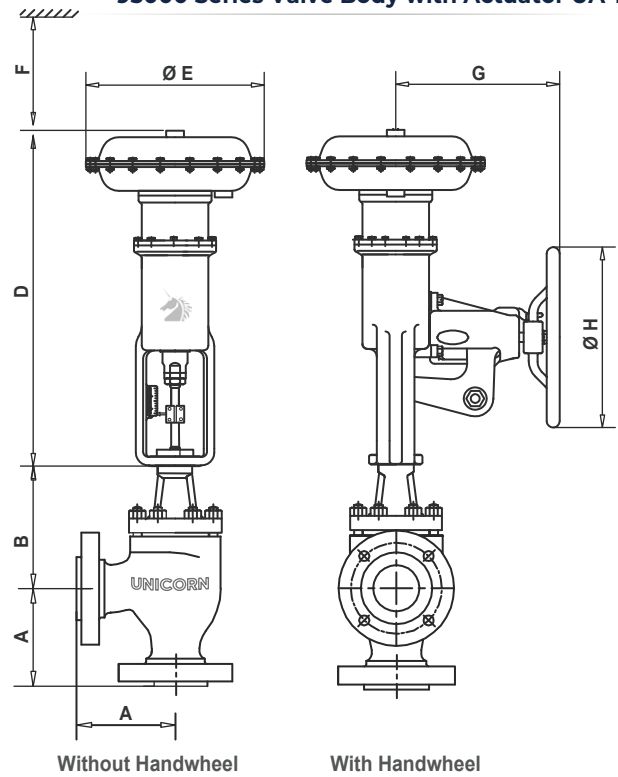
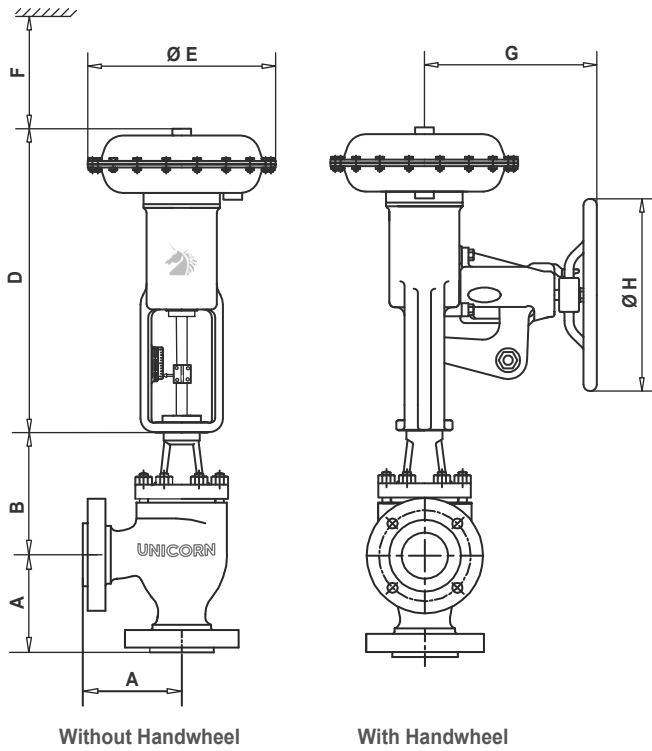
| Valve Size |           | ASME Class | % Lift |      | Travel |       | 10       | 20   | 30   | 40   | 50   | 60   | 70   | 80   | 90  | 100 |
|------------|-----------|------------|--------|------|--------|-------|----------|------|------|------|------|------|------|------|-----|-----|
| Inches     | mm        |            | Inches | mm   | Inches | mm    | Rated Cv |      |      |      |      |      |      |      |     |     |
| 2          | 50        | 900-2500   | 1.89   | 48   | 0.75   | 19.05 | 0.9      | 1.8  | 2.7  | 3.6  | 4.5  | 5.4  | 6.3  | 7.2  | 8   | 9   |
|            |           |            | 1.89   | 48   | 0.75   | 19.05 | 1.3      | 2.6  | 3.9  | 5.2  | 6.5  | 7.8  | 9.1  | 10.4 | 12  | 13  |
|            |           |            | 1.89   | 48   | 0.75   | 19.05 | 1.5      | 3.0  | 4.5  | 6.0  | 7.5  | 9.0  | 10.5 | 12.0 | 13  | 15  |
| 3          | 80        | 150-1500   | 3.5    | 88   | 1.5    | 38.1  | 4.0      | 8.0  | 12.0 | 16.0 | 20.0 | 23.9 | 28   | 32   | 36  | 40  |
|            |           |            | 3.5    | 88   | 1.5    | 38.1  | 6.5      | 13.0 | 20.0 | 25.9 | 32.9 | 38.9 | 46   | 52   | 59  | 65  |
| 4 & 6      | 100 & 150 | 150-1500   | 3.5    | 88.0 | 2.0    | 50.8  | 9.3      | 18.6 | 27.9 | 36.9 | 46.9 | 55.9 | 65   | 74   | 84  | 93  |
| 4          | 100       | 150-1500   | 4.4    | 111  | 2      | 50.8  | 6        | 13   | 20   | 26   | 33   | 39   | 46   | 52   | 59  | 65  |
|            |           |            | 4.4    | 111  | 2      | 50.8  | 10       | 21   | 32   | 42   | 53   | 63   | 74   | 84   | 95  | 105 |
| 6          | 150       | 150-1500   | 5.1    | 130  | 2.5    | 63.5  | 10       | 20   | 30   | 40   | 50   | 60   | 70   | 80   | 90  | 100 |
|            |           |            | 5.1    | 130  | 2.5    | 63.5  | 16       | 32   | 48   | 64   | 80   | 96   | 112  | 128  | 144 | 160 |
| 8          | 200       | 150-600    | 6.5    | 165  | 2.5    | 63.5  | 17       | 34   | 51   | 68   | 85   | 102  | 119  | 136  | 153 | 170 |
|            |           |            | 6.5    | 165  | 2.5    | 63.5  | 26       | 52   | 78   | 104  | 130  | 156  | 182  | 207  | 233 | 259 |
| 10         | 250       | 150-600    | 8      | 202  | 2.5    | 63.5  | 23       | 46   | 69   | 92   | 115  | 138  | 161  | 184  | 206 | 229 |
|            |           |            | 8      | 202  | 3.5    | 88.9  | 38       | 76   | 114  | 152  | 190  | 227  | 265  | 303  | 341 | 379 |
| 12         | 300       | 150-600    | 9.6    | 245  | 2.5    | 63.5  | 40       | 80   | 120  | 160  | 200  | 239  | 279  | 319  | 359 | 399 |
|            |           |            | 9.6    | 245  | 4      | 101.6 | 64       | 128  | 192  | 255  | 319  | 383  | 447  | 511  | 575 | 638 |

### Flow Characteristic



**95000 Series Valve Body with Actuator UA-11**

**95000 Series Valve Body with Actuator UA-12**



**Dimensions Of Valve**

| Valve Size |     | A   |     |     |     |      |      | B     |     |          |      |
|------------|-----|-----|-----|-----|-----|------|------|-------|-----|----------|------|
| Inches     | mm  | 150 | 300 | 600 | 900 | 1500 | 2500 | <=300 | 600 | 900-1500 | 2500 |
| 2          | 50  | 127 | 134 | 143 | 187 | 188  | 200  | 250   | 250 | 216      | 262  |
| 3          | 80  | 149 | 159 | 168 | 221 | 230  | 330  | 300   | 300 | 300      | 357  |
| 4          | 100 | 176 | 184 | 197 | 256 | 265  | 369  | 300   | 300 | 300      | 357  |
| 6          | 150 | 226 | 237 | 254 | 357 | 384  | -    | 398   | 390 | 390      | 391  |
| 8          | 200 | 272 | 284 | 305 | 457 | 486  | -    | 496   | 496 | 521      | 450  |
| 10         | 250 | 337 | 354 | 376 | 546 | 534  | -    | 550   | 550 | 570      | 615  |
| 12         | 300 | 369 | 388 | 410 | 565 | -    | -    | 620   | 620 | 626      | 632  |

**Dimensions Of Actuator**

| Actuator Type    | Actuator Model | Actuator Size | Actuator Stroke(inches) | Actuator Stroke(mm) | D    | Ø E | F   | G   | Ø H |
|------------------|----------------|---------------|-------------------------|---------------------|------|-----|-----|-----|-----|
| Spring Diaphragm | UA-11          | 30            | 0.75                    | 19.05               | 470  | 335 | 112 | 230 | 250 |
|                  | UA-12          | 30            | 0.75                    | 19.05               | 510  | 335 | 112 | 230 | 250 |
|                  | UA-11          | 35            | 1.5                     | 38.1                | 575  | 386 | 112 | 290 | 300 |
|                  | UA-12          | 35            | 1.5                     | 38.1                | 635  | 386 | 112 | 290 | 300 |
|                  | UA-11          | 40            | 2                       | 50.8                | 740  | 452 | 170 | 408 | 450 |
|                  | UA-12          | 40            | 2                       | 50.8                | 840  | 452 | 170 | 408 | 450 |
|                  | UA-11          | 45            | 2.5                     | 63.5                | 780  | 532 | 180 | 408 | 450 |
|                  | UA-12          | 45            | 2.5                     | 63.5                | 1110 | 532 | 180 | 408 | 450 |
|                  | UA-11          | 50            | 4                       | 101.6               | 950  | 532 | 180 | 470 | 570 |
|                  | UA-12          | 50            | 4                       | 101.6               | 1240 | 532 | 180 | 470 | 570 |

**Notes:**

1. Actuator Model UA-11 is a Direct Actuator (Air To Close).
2. Actuator Model UA-12 is a Reverse Actuator (Air To Open).

\*Manufacturer reserves the right to change the dimensions and Cv values as part of continuous development.



# Notes

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# UNICORN VALVES

Revolutionizing The Flow



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