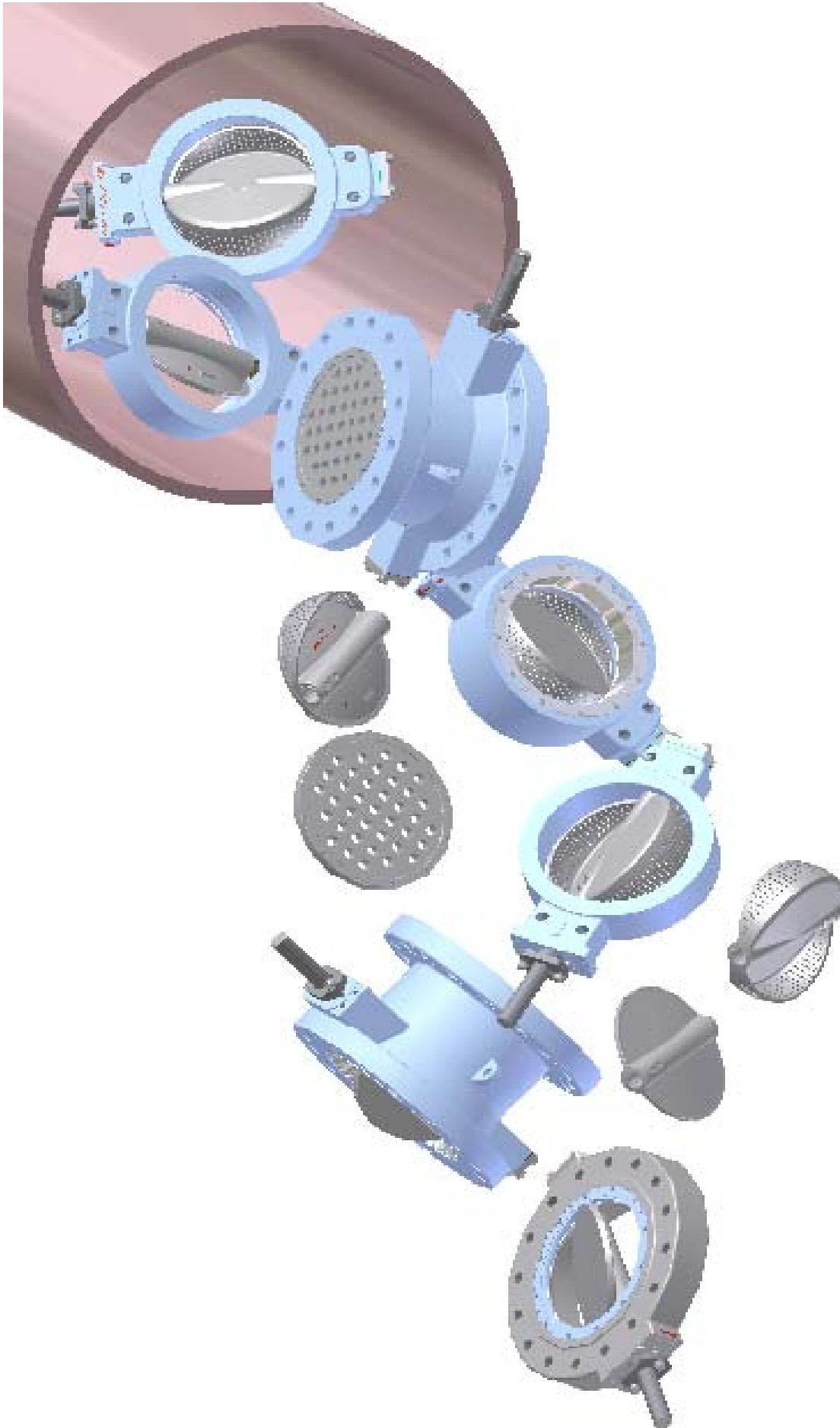


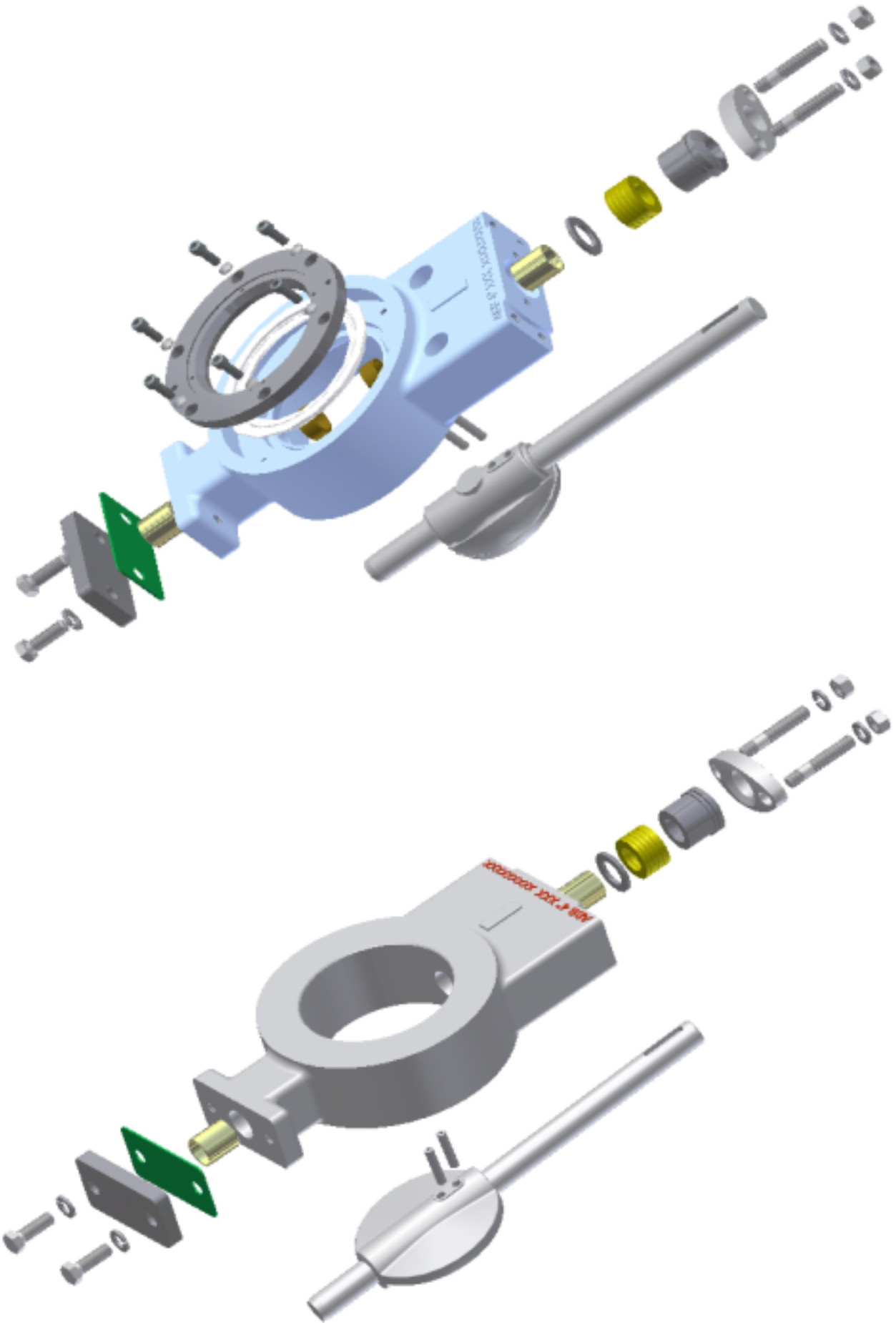
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**Series 63, 64, 65 & 66- Rotary Control Valves**

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## Series 63,64,65 & 66- Rotary Control Valves



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**Series 63, 64 and 65 High Performance Rotary Control Valves.  
Series 66 Low Leakage Rotary Control Valves.  
For ANSI 150 & 300LB Ratings**

## Features

The rotary valve has been developed by to give a flexible range of valves with many interchangeable parts and a minimum of maintenance. The construction of these valves together with options available will allow them to be used in many applications.

All seated valves have uninterrupted 360 degrees seal contact in the closed position due to the offset disc design. With the soft seated valves having a spring energised and pressure assisted seal the valve seating torques are low and seal life is long.

## Valve Types

- Standard Introseal soft seated valve
- Rotrol Introseal soft seated valve
- Standard Introseal metal seated valve
- Rotrol Introseal metal seated valve
- Standard Introseal Firesafe valve
- Rotrol Introseal Firesafe valve
- Standard Class II Control valve
- Rotrol Class II Control valve

## Body Styles and Ratings

Wafer, Lugged and Double Flanged connections are all available with body ratings up to ANSI 2500

## Performance

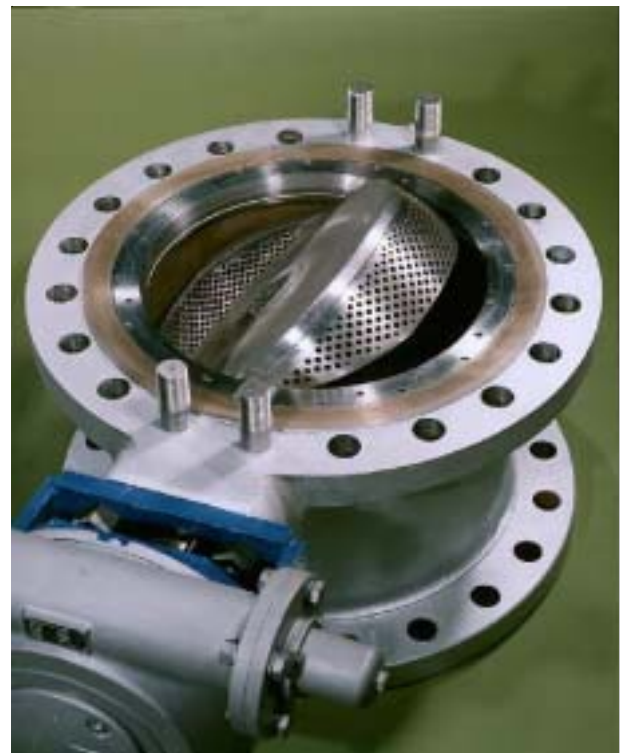
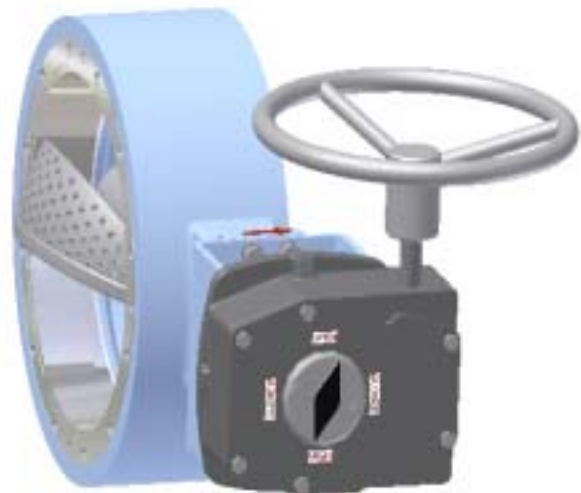
- Elimination of cavitation (Rotrol valves).
- Can control through 90 degrees (Rotrol valves).
- Excellent flow control rangeability.
- Low noise performance on both liquid and gas applications (Rotrol valves).
- Temperature ranges from -196 to +800<sup>o</sup> C.
- Leakage rates from ASME/ANSI B16.104 (ANSI/FCI 70-2) Class II to Class VI.
- Face to face dimensions to API 609 for Wafer and Lugged valves.

## Design Flexibility

- Can be operated by manual, electric, pneumatic or hydraulic actuators.
- Optional diffuser plates integral on Double flanged valves or loose with Wafer and Lugged valves.
- Full range of body and disc material options, with availability of hard facing.

## Quality Manufacturing

- Rigorously tested to ensure specified performance on site.
- Quality assurance systems in accordance with EN ISO9001



Typical Rotrol Control Valve

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## Series 63,64,65 & 66- Rotary Control Valves

### The Rotary Valves

Rotary valves have grown in popularity for the process industry in recent years. Rotary valves get their name from the rotary disc that acts as the control element. There are several reasons for using the rotary valve:

- More compact than a globe valve.
- Lighter in weight due to the compact design.
- Less expensive than a globe valve.
- Superior stem seal integrity.
- Superior seat sealing over globe valves.
- High flow co-efficients.

Our rotary control valves have been designed to comply with all the pressure and temperature ratings as used on a normal butterfly valve.

The basic materials of construction satisfy the majority of Rotary Control Valve applications. Surface coatings, overlays and heat treatments are available for steam and arduous service to provide resistance to wire drawing erosion.

### The Rotrol Valve Concept

A major disadvantage of conventional butterfly and ball valves when used in throttling applications, is the effect of cavitation which can commence at quite low values of differential pressure. This, coupled with high noise emissions may result in rapid mechanical wear and early failure of the valve components.

To offset these effects, we have developed a rotary control valve with improved performance capability.

Rotrol characteristics may be changed by varying the area, number and spacing of the flow orifices. The Rotrol disc has two semi-spherical contours which generate a modified equal percentage flow characteristic and arc to the valve shaft centre line.

The innovative design incorporates a profiled vane which has cowls on its leading and trailing edges. The function of these cowls, which normally cover about one third of the 90° travel, is to split up the flow stream and dissipate the energy created by the pressure drop across the valve. This allows the valve to handle higher pressure drops and higher velocities without the onset of cavitation and noise.

The effect of the disc is particularly important in applications where variations in pressure drop occur over the range of operating conditions. It provides stable and progressively smooth operation in nearly closed valve positions and predictable response throughout its full 90° travel.

This specialised valve comes into its own in severe service applications with its variable resistance trim where the pressure drops tends to be high in the controlling position but where high capacity throughputs in the fully open position are required with minimum pressure drop.

On the double flanged design, the downstream pipework can be removed with the valve left in 'situ' giving tight shut off isolation to the upstream process when the valve is specified with the INTROSEAL design seat. Integral diffusers can also be fitted at the valve outlet to enhance the valves performance.

Another advantage of the profiled disc has been the significant reduction in the amount of torque required to operate the valve, compared to the conventional ball and butterfly types. The profiled disc breaks up the fluid pattern associated with the butterfly valve that causes large forces to build up in particularly open positions. The inherent instability of the conventional butterfly valve is not present with the Rotrol design, therefore smaller, more compact actuators may be used to operate the valve over a full 90° of travel.

Operating torque requirements are about one half the conventional butterfly valve requirements over the major part of the control range.

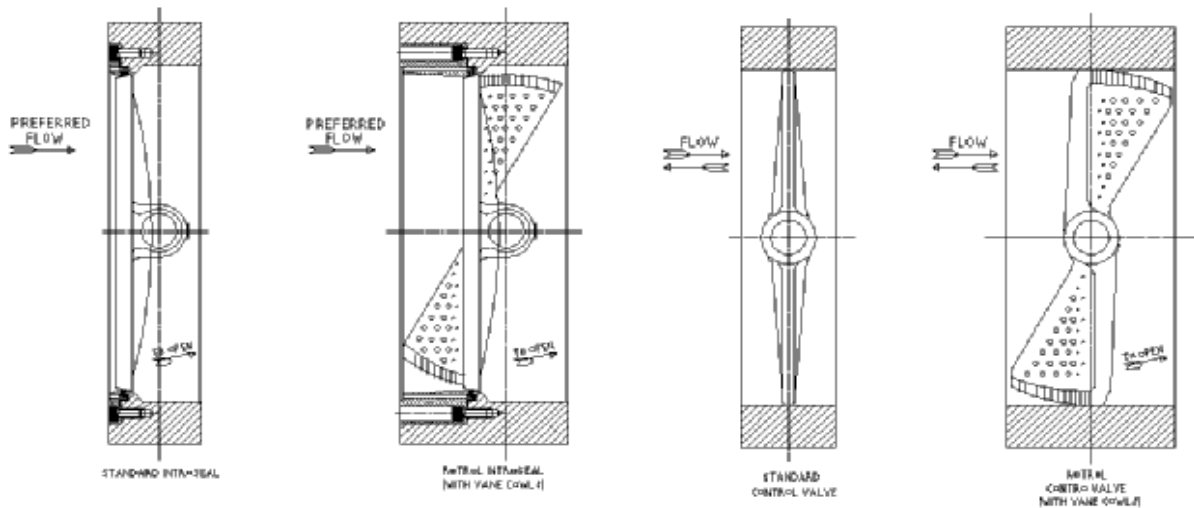
On tight shut off seating versions the seating forces are significantly less than conventional ball and butterfly type valves due to the design of the disc which promotes a cam action which disengages the vane from the seat within a few degrees of opening. This improves the sealing characteristics and reduces the seat wear. This has the advantage of our being able to fit smaller actuators due to the reduced actuator forces required.

The standard class II control valve gives measured leakage values to be less than 0.5% of the maximum Cv. The design permits a high rangeability in the region of 100:1 and the standard flow/pressure characteristic follows a modified equal percentage curve. The versatile design permits other characteristic curves to be generated, particularly when the optional diffuser pack is specified. The stable valve characteristics permit repeatable smooth operation with predictable response ensuring good control over a wide range of flowrates.

The rotary valve range is suitable for mounting all types of actuators and instruments.

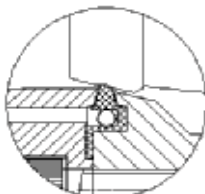


## DESIGN OUTLINES

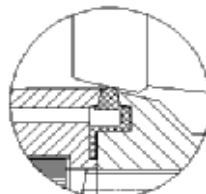


INTA-SEAL MEANS THE VALVE HAS A RIFT OF METAL SEAL RECESSED INTO THE BODY.  
INTA-SEAL (WITH VANE COWLS) MEANS THE VALVE DISC HAS ANTI-CAVITATION/WIRE REDUCING COWLS.

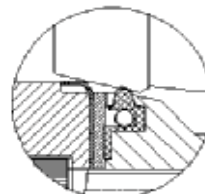
CONTROL VALVE MEANS THE VALVE HAS NO SEAL BETWEEN THE DISC AND THE BODY.  
CONTROL VALVE (WITH VANE COWLS) MEANS THE VALVE DISC HAS ANTI-CAVITATION/WIRE REDUCING COWLS.



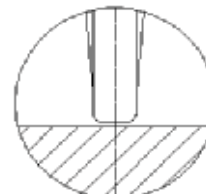
PRESSURE AND SPRING  
ENERGIZED SOFT SEAL  
(SERIES 41)



PRESSURE ENERGIZED  
METAL SEAL  
(SERIES 44)

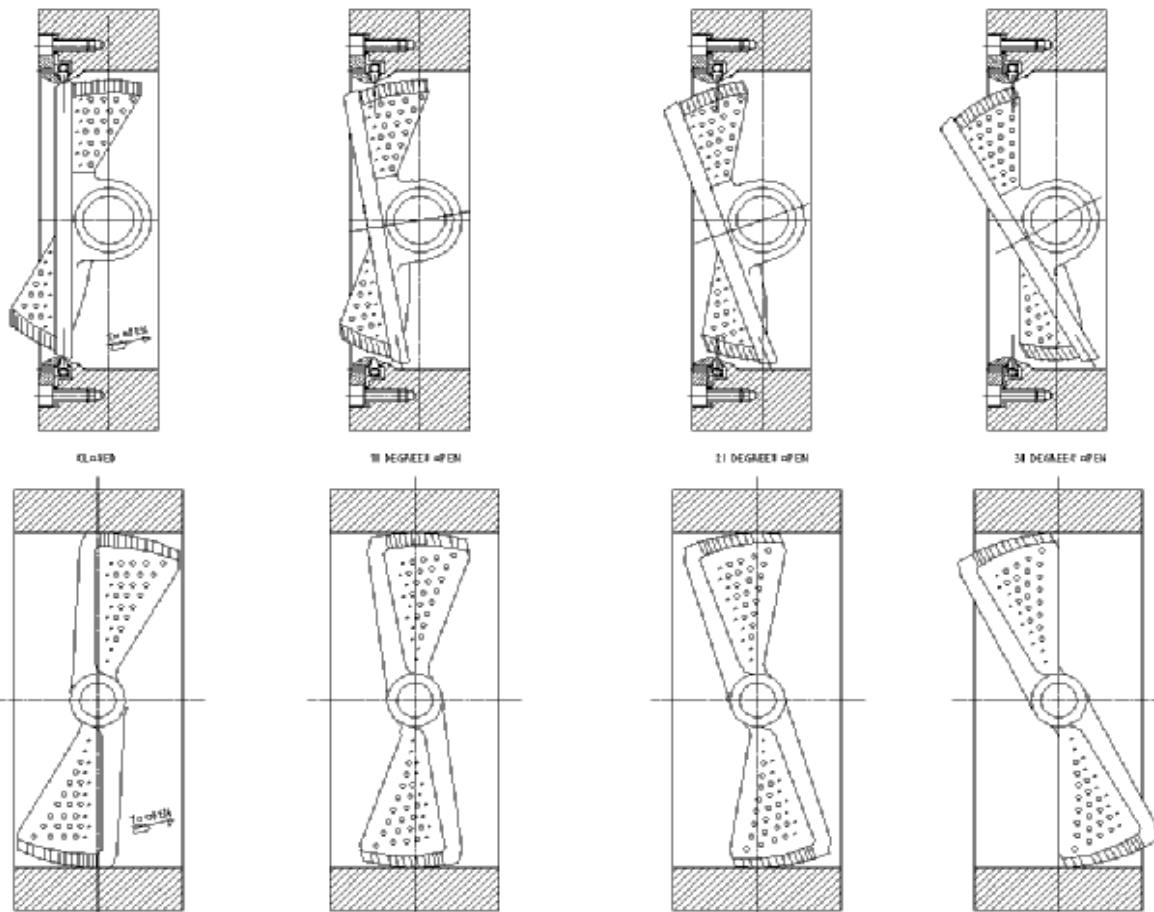


PRESSURE AND SPRING  
ENERGIZED PREFACE  
(SERIES 40)



CONTROL VALVE  
(SERIES 42)

## THE EFFECT OF THE COWLS OVER THE FIRST 30 DEGREES OF OPENING



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## Series 63,64,65 & 66- Rotary Control Valves

Table 1. Valve Specifications

| Series Number | Valve Type           | ANSI Rating | Disc Configuration | Body Style           | Leakage Class | Temperature (°C) |
|---------------|----------------------|-------------|--------------------|----------------------|---------------|------------------|
| 63            | Introseal Soft Seat  | 150 & 300   | Standard & Rotrol  | Wafer Flanged Lugged | VI            | -196 to +235     |
| 64            | Introseal Metal Seat | 150 & 300   | Standard & Rotrol  | Wafer Flanged Lugged | IV            | -196 to +600     |
| 65            | Introseal Firesafe   | 150 & 300   | Standard & Rotrol  | Wafer Flanged Lugged | VI            | -196 to +235     |
| 66            | Control (No seat)    | 150 & 300   | Standard & Rotrol  | Wafer Flanged Lugged | II            | -196 to +800     |

### Torque Requirements

#### **Torque characteristics**

Bearing friction, seal on seat friction, fluid dynamics on the disc and packing box friction are the primary factors in determining the torque requirements for a valve and are described below for convenience.

#### **Bearing Friction**

Any pressure drop across the disc places a direct load on the shaft bearings. The projected area of the disc decreases as the valve opens thus the bearing friction varies from maximum to a minimum as the disc rotates from closed to open.

#### **Seal on Seat Friction (Seating Torque)**

Seating torque is created by the interference between the valve disc and the Introseal seal varies with the contact area and is therefore related to valve size. This torque will only exist in the closed position and does not apply to a valve without seal.

#### **Fluid Dynamic Torque**

A Rotary valve disc is only balanced in either the closed or fully open position. In all other positions a dynamic torque is created by the flow velocity over the disc surface. The cowls on the Rotrol disc largely break up this effect and the dynamic torque is much less than a conventional disc.

#### **Packing Torque**

This is the torque required to overcome the tightness of the stuffing box to seal the shaft. This torque varies with the shaft size.

### Valve Selection Criteria

#### **Series 63**

For applications where 100% shut off (Class VI) is required in the closed position on liquids or gasses and where control of the flow through the pipeline is required. Can be used on temperatures ranging from -196 to +235 degrees C and pressures drops up to 100 Bar with the correct selection of materials.

#### **Series 64**

For applications where only a small leakage (Class IV) is allowed in the closed position or where an elevated temperature or an arduous service means a soft seat is not practical. These valves also can be used as control valves. Temperature ranges from -196 to +600 degrees C with pressures up to 100 Bar. Higher temperatures can be achieved but working conditions are subject to special scrutiny by our engineering department.

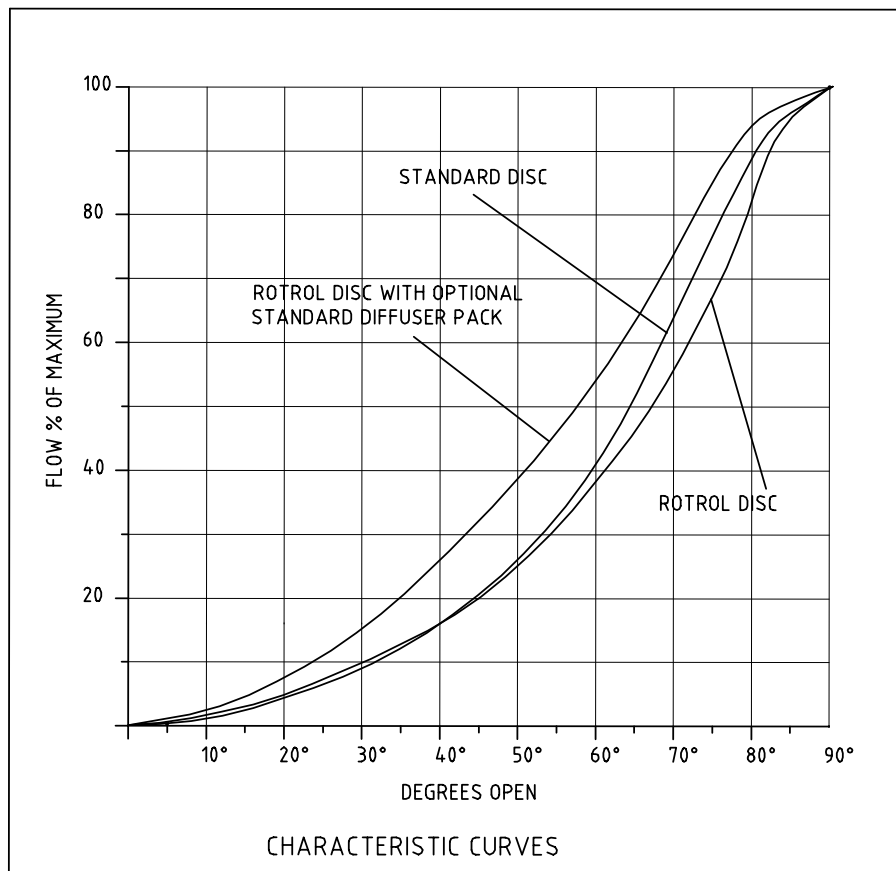
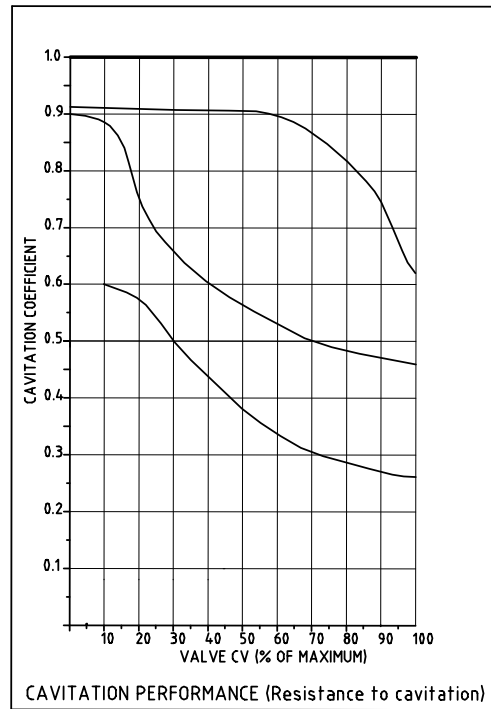
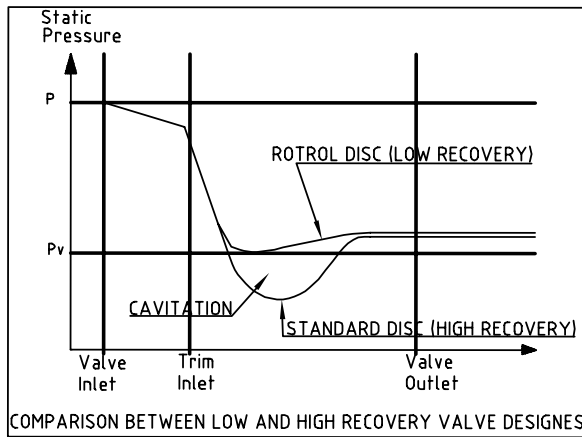
#### **Series 65**

For applications where a 100% shut off is required under normal operating conditions (as Series 63) but in the event of a fire when the soft seat deteriorates a backup metal seat will still maintain the integrity of the valve by only allowing a small leakage past the metal seal in the closed position. This valve will remain operable after a fire until it is safe to remove it and overhaul its seats.

#### **Series 66**

For applications where leakage in the closed position is not a problem, but where the control of the amount of liquid or gas through the pipeline is paramount. Operating temperature ranges from -196 to + 800 degrees C with the correct selection of materials. Pressure drops of up to 150 Bar can be handled. Class II leakage in the closed position is maintained for temperatures up to 200 degrees C. Leakrate increases at temperatures above 200 degrees C.

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Series 63,64,65 & 66- Rotary Control Valves

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## Series 63,64,65 & 66- Rotary Control Valves

Table 2. Standard Material of Construction

|                            |  |   |
|----------------------------|--|---|
| Valve Body                 | Carbon Steel ASTM A216 WCB                                     | Aluminium/Bronze                        |
| Disc                       | Carbon Steel ASTM A216 WCB<br>or Stainless Steel ASTM A351 CF8 | Monel                                   |
| Shaft                      | 17-4PH Stainless Steel   | Monel                                   |
| Inboard Bearings           | Glacier DU   | Aluminium Bronze (Graphite Impregnated) |
| Packing                    | PTFE Chevrons  | PTFE Chevrons                           |
| Packing Follower and Studs | Stainless Steel  | Stainless Steel                         |
| Maximum Temperature        | 235°C  | 235°C                                   |

Table 3. Recommended Maximum Velocities for Liquid Service

| Trim | Valve Size |           | Carbon Steel |     | Alloy Steel |     | Bronze, Cu, Ni, Alloy |     |
|------|------------|-----------|--------------|-----|-------------|-----|-----------------------|-----|
|      | in         | mm        | ft/s         | m/s | ft/s        | m/s | ft/s                  | m/s |
| Disc | 4-12       | 100-300   | 25           | 7.6 | 25          | 7.6 | 15                    | 4.6 |
|      | 14-24      | 350-600   | 15           | 4.6 | 15          | 4.6 | 9                     | 2.7 |
|      | Above 24   | Above 600 | 10           | 3   | 10          | 3   | 6                     | 1.8 |

Table 4. Recommended Maximum Velocities for Gas/Vapour Service

| Trim | Valve Size |           | Maximum Inlet |     | Maximum Outlet |     | Maximum Outlet Mach. No. for Required Noise Level |        |         |
|------|------------|-----------|---------------|-----|----------------|-----|---|--------|---------|
|      | in         | mm        | ft/s          | m/s | ft/s           | m/s | >95dBA  | <95dBA | <85 dBA |
| Disc | 4-12       | 100-300   | 200           | 61  | 350            | 107 | 0.3   | 0.2    | 0.1     |
|      | 14-24      | 350-600   | 100           | 30  |                |     |   |        |         |
|      | Above 24   | Above 600 | 80            | 24  |                |     |   |        |         |

Table 5. Typical Rangeability for Series 63, 64 & 65 Valves

| Valve Size |         | Standard Introseal |       | Rotrol Introseal |       | Rotrol Introseal with Diffuser Plate |       |
|------------|---------|--------------------|-------|------------------|-------|--------------------------------------|-------|
| in         | mm      | 0-60°              | 0-90° | 0-60°            | 0-90° | 0-60°                                | 0-90° |
| 4-10       | 100-250 | 16                 | 35    | 19               | 48    | 17                                   | 34    |
| 12-18      | 300-450 | 18                 | 40    | 21               | 53    | 19                                   | 39    |
| 20-36      | 500-900 | 20                 | 45    | 23               | 58    | 21                                   | 44    |

Table 6. Typical Rangeability for Series 66 Valves

| Valve Size |         | Standard Introseal |       | Rotrol Introseal |       | Rotrol Introseal with Diffuser Plate |       |
|------------|---------|--------------------|-------|------------------|-------|--------------------------------------|-------|
| in         | mm      | 0-60°              | 0-90° | 0-60°            | 0-90° | 0-60°                                | 0-90° |
| 4-10       | 100-250 | 32                 | 78    | 19               | 51    | 21                                   | 38    |
| 12-18      | 300-450 | 34                 | 83    | 21               | 56    | 23                                   | 43    |
| 20-36      | 500-900 | 36                 | 88    | 23               | 61    | 25                                   | 48    |



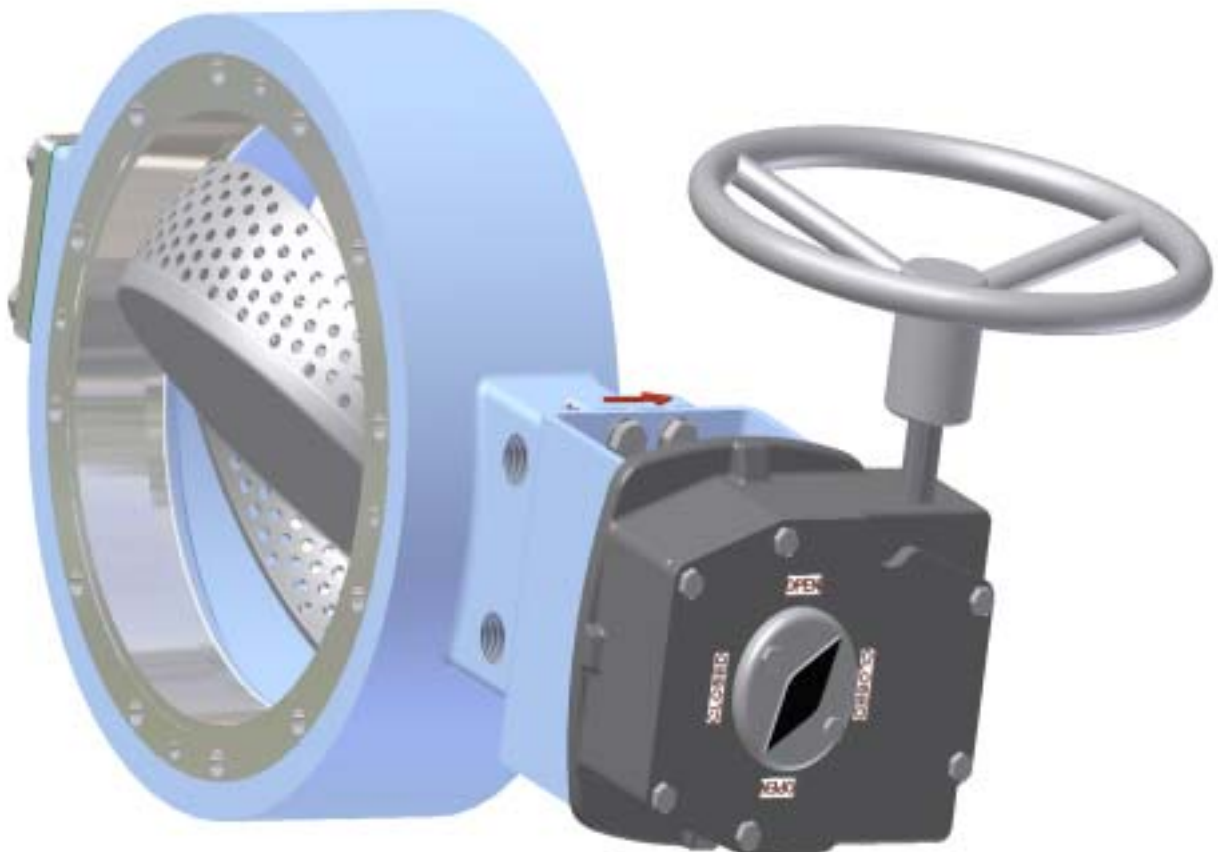
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## SERIES 63, 64 AND 65 CLASS 150LB AND 300LB

CV TABLES

TORQUE TABLES

DIMENSIONAL DRAWINGS



Series 63, 64, 65 & 66- Rotary Control Valves

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## Series 63,64,65 & 66-Rotary Control Valves

Table 7. CV Values for Series 63,64 & 65 Standard (Introseal Soft Seal, Metalseal and Firesafe)

| Wafer, Lugged and Double Flanged - Class 150LB |     |                            |      |      |      |       |       |       |       |       |
|--|-----|----------------------------|------|------|------|-------|-------|-------|-------|-------|
| Valve Size                                     |     | Angle of Opening           |      |      |      |       |       |       |       |       |
|  |     | 10                         | 20   | 30   | 40   | 50    | 60    | 70    | 80    | 90    |
|  |     | Percentage of 90 degree CV |      |      |      |       |       |       |       |       |
| in   | mm  | 2.5                        | 6    | 12   | 20   | 31    | 44    | 60    | 82    | 100   |
| 4  | 100 | 9                          | 23   | 45   | 75   | 116   | 165   | 225   | 308   | 375   |
| 6  | 150 | 28                         | 68   | 135  | 225  | 349   | 495   | 675   | 923   | 1125  |
| 8  | 200 | 56                         | 135  | 270  | 450  | 698   | 990   | 1350  | 1845  | 2250  |
| 10   | 250 | 89                         | 215  | 429  | 715  | 1108  | 1573  | 2145  | 2932  | 3575  |
| 12   | 300 | 133                        | 320  | 639  | 1065 | 1651  | 2343  | 3195  | 4367  | 5325  |
| 14   | 350 | 153                        | 366  | 732  | 1220 | 1891  | 2684  | 3660  | 5002  | 6100  |
| 16   | 400 | 211                        | 507  | 1014 | 1690 | 2620  | 3718  | 5070  | 6929  | 8450  |
| 18   | 450 | 270                        | 648  | 1296 | 2160 | 3348  | 4752  | 6480  | 8856  | 10800 |
| 20   | 500 | 338                        | 810  | 1620 | 2700 | 4185  | 5940  | 8100  | 11070 | 13500 |
| 24   | 600 | 513                        | 1230 | 2460 | 4100 | 6355  | 9020  | 12300 | 16810 | 20500 |
| 28   | 700 | 725                        | 1740 | 3480 | 5800 | 8990  | 12760 | 17400 | 23780 | 29000 |
| 30   | 750 | 831                        | 1995 | 3990 | 6650 | 10308 | 14630 | 19950 | 27265 | 33250 |
| 32   | 800 | 959                        | 2303 | 4605 | 7675 | 11896 | 16885 | 23025 | 31468 | 38375 |
| 36   | 900 | 1197                       | 2873 | 5745 | 9575 | 14841 | 21065 | 28725 | 39258 | 47875 |

Table 8. CV Values for Series 63,64 & 65 Rotrol (Introseal Soft Seal, Metalseal and Firesafe)  
(CV at 90 = 40% of Standard Introseal Valve)

| Wafer, Lugged and Double Flanged - Class 150LB |     |                            |      |      |      |      |      |       |       |       |
|--|-----|----------------------------|------|------|------|------|------|-------|-------|-------|
| Valve Size                                     |     | Angle of Opening           |      |      |      |      |      |       |       |       |
|  |     | 10                         | 20   | 30   | 40   | 50   | 60   | 70    | 80    | 90    |
|  |     | Percentage of 90 degree CV |      |      |      |      |      |       |       |       |
| in   | mm  | 1.9                        | 7.7  | 13   | 21   | 33   | 39   | 57    | 86    | 100   |
| 4  | 100 | 3                          | 12   | 20   | 32   | 50   | 59   | 86    | 129   | 150   |
| 6  | 150 | 9                          | 35   | 59   | 95   | 149  | 176  | 257   | 387   | 450   |
| 8  | 200 | 17                         | 69   | 117  | 189  | 297  | 351  | 513   | 774   | 900   |
| 10   | 250 | 27                         | 110  | 186  | 300  | 472  | 558  | 815   | 1230  | 1430  |
| 12   | 300 | 40                         | 164  | 277  | 447  | 703  | 831  | 1214  | 1832  | 2130  |
| 14   | 350 | 46                         | 188  | 317  | 512  | 805  | 952  | 1391  | 2098  | 2440  |
| 16   | 400 | 64                         | 260  | 439  | 710  | 1115 | 1318 | 1927  | 2907  | 3380  |
| 18   | 450 | 82                         | 333  | 562  | 907  | 1426 | 1685 | 2462  | 3715  | 4320  |
| 20   | 500 | 103                        | 416  | 702  | 1134 | 1782 | 2106 | 3078  | 4644  | 5400  |
| 24   | 600 | 156                        | 631  | 1066 | 1722 | 2706 | 3198 | 4674  | 7052  | 8200  |
| 28   | 700 | 220                        | 893  | 1508 | 2436 | 3828 | 4524 | 6612  | 9976  | 11600 |
| 30   | 750 | 253                        | 1024 | 1729 | 2793 | 4389 | 5187 | 7581  | 11438 | 13300 |
| 32   | 800 | 292                        | 1182 | 1996 | 3224 | 5066 | 5987 | 8750  | 13201 | 15350 |
| 36   | 900 | 364                        | 1475 | 2490 | 4022 | 6320 | 7469 | 10916 | 16469 | 19150 |

Table 9. CV Values for Series 63,64 & 65 Rotrol (Introseal Soft Seal, Metalseal and Firesafe) With Integral or Loose Baffle Plates (CV at 90 = 75% of Rotrol Valve)

| Wafer, Lugged and Double Flanged - Class 150LB |     |                            |      |      |      |      |      |      |       |       |
|--|-----|----------------------------|------|------|------|------|------|------|-------|-------|
| Valve Size                                     |     | Angle of Opening           |      |      |      |      |      |      |       |       |
|  |     | 10                         | 20   | 30   | 40   | 50   | 60   | 70   | 80    | 90    |
|  |     | Percentage of 90 degree CV |      |      |      |      |      |      |       |       |
| in   | mm  | 2.5                        | 10.3 | 17.3 | 27.7 | 41.5 | 48.5 | 66.5 | 88.5  | 100   |
| 4  | 100 | 3                          | 12   | 20   | 31   | 47   | 55   | 75   | 100   | 113   |
| 6  | 150 | 9                          | 35   | 59   | 93   | 140  | 164  | 224  | 299   | 338   |
| 8  | 200 | 17                         | 69   | 117  | 187  | 280  | 327  | 449  | 597   | 675   |
| 10   | 250 | 27                         | 110  | 186  | 297  | 445  | 520  | 713  | 949   | 1073  |
| 12   | 300 | 40                         | 164  | 277  | 443  | 663  | 775  | 1062 | 1414  | 1598  |
| 14   | 350 | 46                         | 188  | 317  | 507  | 759  | 888  | 1217 | 1620  | 1830  |
| 16   | 400 | 64                         | 260  | 440  | 702  | 1052 | 1229 | 1686 | 2243  | 2535  |
| 18   | 450 | 82                         | 333  | 562  | 897  | 1345 | 1571 | 2155 | 2867  | 3240  |
| 20   | 500 | 103                        | 416  | 702  | 1122 | 1681 | 1964 | 2693 | 3585  | 4050  |
| 24   | 600 | 156                        | 632  | 1066 | 1704 | 2552 | 2983 | 4090 | 5443  | 6150  |
| 28   | 700 | 221                        | 893  | 1509 | 2410 | 3611 | 4220 | 5786 | 7700  | 8700  |
| 30   | 750 | 253                        | 1024 | 1730 | 2763 | 4140 | 4838 | 6633 | 8828  | 9975  |
| 32   | 800 | 292                        | 1182 | 1996 | 3189 | 4778 | 5584 | 7656 | 10189 | 11513 |
| 36   | 900 | 364                        | 1475 | 2490 | 3978 | 5960 | 6966 | 9551 | 12711 | 14363 |

Table 10. CV Values for Series 63,64 & 65 Standard (Introseal Soft Seal, Metalseal and Firesafe)

| Wafer, Lugged and Double Flanged - Class 300LB |     |                            |      |      |      |       |       |       |       |       |
|--|-----|----------------------------|------|------|------|-------|-------|-------|-------|-------|
| Valve Size                                     |     | Angle of Opening           |      |      |      |       |       |       |       |       |
|  |     | 10                         | 20   | 30   | 40   | 50    | 60    | 70    | 80    | 90    |
|  |     | Percentage of 90 degree CV |      |      |      |       |       |       |       |       |
| in   | mm  | 2.5                        | 6    | 12   | 20   | 31    | 44    | 60    | 82    | 100   |
| 4  | 100 | 9                          | 23   | 45   | 75   | 116   | 165   | 225   | 308   | 375   |
| 6  | 150 | 25                         | 61   | 122  | 203  | 315   | 447   | 609   | 832   | 1015  |
| 8  | 200 | 51                         | 122  | 243  | 405  | 628   | 891   | 1215  | 1661  | 2025  |
| 10   | 250 | 80                         | 193  | 386  | 644  | 998   | 1416  | 1931  | 2639  | 3218  |
| 12   | 300 | 120                        | 288  | 575  | 959  | 1486  | 2109  | 2876  | 3930  | 4793  |
| 14   | 350 | 137                        | 329  | 659  | 1098 | 1702  | 2416  | 3294  | 4502  | 5490  |
| 16   | 400 | 190                        | 456  | 913  | 1521 | 2358  | 3346  | 4563  | 6236  | 7605  |
| 18   | 450 | 236                        | 567  | 1134 | 1890 | 2930  | 4158  | 5670  | 7749  | 9450  |
| 20   | 500 | 295                        | 709  | 1417 | 2362 | 3662  | 5197  | 7087  | 9686  | 11812 |
| 24   | 600 | 436                        | 1046 | 2091 | 3485 | 5402  | 7667  | 10455 | 14289 | 17425 |
| 28   | 700 | 616                        | 1479 | 2958 | 4930 | 7642  | 10846 | 14790 | 20213 | 24650 |
| 30   | 750 | 707                        | 1696 | 3391 | 5652 | 8761  | 12435 | 16957 | 23175 | 28262 |
| 32   | 800 | 815                        | 1957 | 3914 | 6524 | 10112 | 14352 | 19571 | 26747 | 32618 |
| 36   | 900 | 1017                       | 2442 | 4883 | 8139 | 12615 | 17905 | 24416 | 33368 | 40693 |

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## Series 63,64,65 & 66- Rotary Control Valves

Table 11. CV Values for Series 63,64 & 65 Rotrol (Introseal Soft Seal, Metalseal and Firesafe)  
(CV at 90 = 40% of Standard Introseal Valve)

| Wafer, Lugged and Double Flanged - Class 300LB |     |                            |      |      |      |      |      |      |       |       |
|--|-----|----------------------------|------|------|------|------|------|------|-------|-------|
| Valve Size                                     |     | Angle of Opening           |      |      |      |      |      |      |       |       |
|  |     | 10                         | 20   | 30   | 40   | 50   | 60   | 70   | 80    | 90    |
|  |     | Percentage of 90 degree CV |      |      |      |      |      |      |       |       |
| in   | mm  | 1.9                        | 7.7  | 13   | 21   | 33   | 39   | 57   | 86    | 100   |
| 4  | 100 | 3                          | 12   | 20   | 32   | 50   | 59   | 86   | 129   | 150   |
| 6  | 150 | 8                          | 31   | 53   | 85   | 134  | 158  | 231  | 349   | 406   |
| 8  | 200 | 15                         | 62   | 105  | 170  | 267  | 316  | 462  | 697   | 810   |
| 10   | 250 | 24                         | 99   | 167  | 270  | 425  | 502  | 734  | 1107  | 1287  |
| 12   | 300 | 36                         | 148  | 249  | 403  | 633  | 748  | 1093 | 1649  | 1917  |
| 14   | 350 | 42                         | 169  | 285  | 461  | 725  | 856  | 1252 | 1889  | 2196  |
| 16   | 400 | 58                         | 234  | 395  | 639  | 1004 | 1186 | 1734 | 2616  | 3042  |
| 18   | 450 | 72                         | 291  | 491  | 794  | 1247 | 1474 | 2155 | 3251  | 3780  |
| 20   | 500 | 90                         | 364  | 614  | 992  | 1559 | 1843 | 2693 | 4063  | 4725  |
| 24   | 600 | 132                        | 537  | 906  | 1464 | 2300 | 2718 | 3973 | 5994  | 6970  |
| 28   | 700 | 187                        | 759  | 1282 | 2071 | 3254 | 3845 | 5620 | 8480  | 9860  |
| 30   | 750 | 215                        | 870  | 1470 | 2374 | 3731 | 4409 | 6444 | 9722  | 11305 |
| 32   | 800 | 248                        | 1005 | 1696 | 2740 | 4306 | 5088 | 7437 | 11221 | 13047 |
| 36   | 900 | 309                        | 1253 | 2116 | 3418 | 5371 | 6348 | 9278 | 13998 | 16277 |

Table 12. CV Values for Series 63,64 & 65 Rotrol (Introseal Soft Seal, Metalseal and Firesafe) With Integral or Loose Baffle Plates (CV at 90 = 75% of Rotrol Valve)

| Wafer, Lugged and Double Flanged - Class 300LB |     |                            |      |      |      |      |      |      |       |       |
|--|-----|----------------------------|------|------|------|------|------|------|-------|-------|
| Valve Size                                     |     | Angle of Opening           |      |      |      |      |      |      |       |       |
|  |     | 10                         | 20   | 30   | 40   | 50   | 60   | 70   | 80    | 90    |
|  |     | Percentage of 90 degree CV |      |      |      |      |      |      |       |       |
| in   | mm  | 2.5                        | 10.3 | 17.3 | 27.7 | 41.5 | 48.5 | 66.5 | 88.5  | 100   |
| 4  | 100 | 3                          | 12   | 20   | 31   | 47   | 55   | 75   | 100   | 113   |
| 6  | 150 | 8                          | 31   | 53   | 84   | 126  | 148  | 202  | 269   | 305   |
| 8  | 200 | 15                         | 62   | 105  | 168  | 252  | 295  | 404  | 538   | 608   |
| 10   | 250 | 24                         | 99   | 167  | 267  | 401  | 468  | 642  | 854   | 965   |
| 12   | 300 | 36                         | 148  | 249  | 398  | 597  | 697  | 956  | 1273  | 1438  |
| 14   | 350 | 42                         | 169  | 286  | 456  | 684  | 799  | 1095 | 1458  | 1647  |
| 16   | 400 | 58                         | 234  | 396  | 632  | 947  | 1107 | 1517 | 2019  | 2282  |
| 18   | 450 | 72                         | 291  | 492  | 785  | 1177 | 1375 | 1885 | 2509  | 2835  |
| 20   | 500 | 90                         | 364  | 614  | 982  | 1471 | 1719 | 2356 | 3136  | 3544  |
| 24   | 600 | 133                        | 537  | 906  | 1448 | 2169 | 2535 | 3476 | 4626  | 5228  |
| 28   | 700 | 187                        | 759  | 1282 | 2048 | 3069 | 3587 | 4918 | 6545  | 7395  |
| 30   | 750 | 215                        | 871  | 1470 | 2349 | 3519 | 4112 | 5638 | 7504  | 8479  |
| 32   | 800 | 248                        | 1005 | 1697 | 2711 | 4061 | 4746 | 6507 | 8660  | 9785  |
| 36   | 900 | 309                        | 1254 | 2117 | 3382 | 5066 | 5921 | 8118 | 10804 | 12208 |

Table 13. Torque Values to Unseat the Valve from Closed Position (150LB Rating)

| Valve Bore |     | Shaft Size | Unseating (Lbs.Ins)   |  |                     | Packing (Lbs.Ins) | Friction (Lbs.Ins) |
|------------|-----|------------|-----------------------|--|---------------------|-------------------|--------------------|
| in         | mm  |            | Series 63 Soft Seated | Series 64 Metal Seated (Up to 200 ° C) | Series 65 Fire Safe |                   |                    |
| 4          | 100 | 0.75       | 180+(0.9xDp)          | 360+(0.9xDp)                           | 225+(1.12xDp)       | 74                | 0.51xDp            |
| 6          | 150 | 0.75       | 264+(1.32xDp)         | 520+(1.32xDp)                          | 330+(1.56xDp)       | 74                | 1.4xDp             |
| 8          | 200 | 1          | 438+(2.19xDp)         | 875+(2.19xDp)                          | 548+(2.74xDp)       | 99                | 3.3xDp             |
| 10         | 250 | 1          | 660+(3.3xDp)          | 1950+(4.87xDp)                         | 825+(4.12xDp)       | 99                | 5.0xDp             |
| 12         | 300 | 1.25       | 1050+(5.05xDp)        | 3150+(7.87xDp)                         | 1312+(6.56xDp)      | 124               | 9.2xDp             |
| 14         | 350 | 1.5        | 1400+(7xDp)           | 4200+(10.5xDp)                         | 1750+(8.75xDp)      | 222               | 15xDp              |
| 16         | 400 | 1.5        | 1920+(9.6xDp)         | 5800+(14.5xDp)                         | 2400+(12xDp)        | 222               | 18.5xDp            |
| 18         | 450 | 1.75       | 2400+(12xDp)          | 7200+(18xDp)                           | 3000+(15xDp)        | 259               | 28.5xDp            |
| 20         | 500 | 2          | 2910+(14.5xDp)        | 9000+(22.5xDp)                         | 3638+(18.20xDp)     | 296               | 40xDp              |
| 24         | 600 | 2.25       | 4400+(22xDp)          | 13200+(33xDp)                          | 5500+(22xDp)        | 334               | 67xDp              |
| 28         | 700 | 2.5        | 5750+(28.75xDp)       | 17100+(42.75xDp)                       | 7187+(35.93xDp)     | 371               | 103xDp             |
| 30         | 750 | 3          | 6600+(33xDp)          | 19800+(49.5xDp)                        | 8250+(41.25xDp)     | 445               | 144xDp             |
| 32         | 800 | 3          | 7650+(38.25xDp)       | 23000+(57.5xDp)                        | 9560+(47.8xDp)      | 445               | 165xDp             |
| 36         | 900 | 3          | 9900+(49.5xDp)        | 29700+(74.25xDp)                       | 12375+(61.85xDp)    | 445               | 210xDp             |

Note:

Dp (Pressure Drop) in PSI.

The total torque to open = (Unseating Torque+Packing Torque+Frictional Torque)

Table 14. Torque Values to Unseat the Valve from Closed Position (300LB Rating)

| Valve Bore |     | Shaft Size | Unseating (Lbs.Ins)   |  |                     | Packing (Lbs.Ins) | Friction (Lbs.Ins) |
|------------|-----|------------|-----------------------|--|---------------------|-------------------|--------------------|
| in         | mm  |            | Series 63 Soft Seated | Series 64 Metal Seated (Up to 200 ° C) | Series 65 Fire Safe |                   |                    |
| 4          | 100 | 0.75       | 180+(0.9xDp)          | 360+(0.9xDp)                           | 225+(1.12xDp)       | 74                | 0.51xDp            |
| 6          | 150 | 1          | 264+(1.32xDp)         | 520+(1.32xDp)                          | 330+(1.56xDp)       | 99                | 1.7xDp             |
| 8          | 200 | 1.25       | 438+(2.19xDp)         | 875+(2.19xDp)                          | 548+(2.74xDp)       | 124               | 4.1xDp             |
| 10         | 250 | 1.25       | 660+(3.3xDp)          | 1950+(4.87xDp)                         | 825+(4.12xDp)       | 124               | 6.3xDp             |
| 12         | 300 | 1.5        | 1050+(5.05xDp)        | 3150+(7.87xDp)                         | 1312+(6.56xDp)      | 222               | 11xDp              |
| 14         | 350 | 2          | 1400+(7xDp)           | 4200+(10.5xDp)                         | 1750+(8.75xDp)      | 296               | 20xDp              |
| 16         | 400 | 2          | 1920+(9.6xDp)         | 5800+(14.5xDp)                         | 2400+(12xDp)        | 296               | 24.7xDp            |
| 18         | 450 | 2.25       | 2400+(12xDp)          | 7200+(18xDp)                           | 3000+(15xDp)        | 334               | 36xDp              |
| 20         | 500 | 2.75       | 2910+(14.5xDp)        | 9000+(22.5xDp)                         | 3638+(18.20xDp)     | 408               | 56xDp              |
| 24         | 600 | 3          | 4400+(22xDp)          | 13200+(33xDp)                          | 5500+(22xDp)        | 445               | 89xDp              |
| 28         | 700 | 3.5        | 5750+(28.75xDp)       | 17100+(42.75xDp)                       | 7187+(35.93xDp)     | 519               | 145xDp             |
| 30         | 750 | 3.5        | 6600+(33xDp)          | 19800+(49.5xDp)                        | 8250+(41.25xDp)     | 519               | 168xDp             |
| 32         | 800 | 3.5        | 7650+(38.25xDp)       | 23000+(57.5xDp)                        | 9560+(47.8xDp)      | 519               | 192xDp             |
| 36         | 900 | 3.5        | 9900+(49.5xDp)        | 29700+(74.25xDp)                       | 12375+(61.85xDp)    | 519               | 245xDp             |

Note:

Dp (Pressure Drop) in PSI.

The torque to open = (Unseating Torque+Packing Torque+Frictional Torque)

Conversion: 1 Lbs.Ins = 0.1129Nm

1 Nm = 8.85 Lbs.Ins



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## Series 63,64,65 & 66-Rotary Control Valves

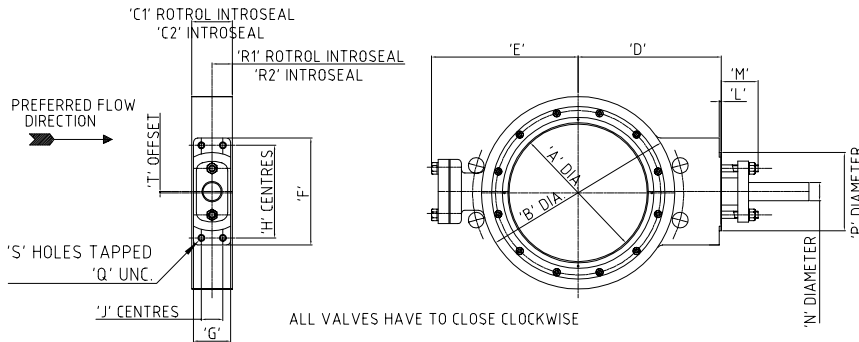


Table 15. Class 150LB Wafer Valves (Series 63,64 and 65)

| Valve Size |     | Dimensions |      |     |     |     |     |     |     |     |     |   |    |        |     |      |      |      |   |   |
|------------|-----|------------|------|-----|-----|-----|-----|-----|-----|-----|-----|---|----|--------|-----|------|------|------|---|---|
| in         | mm  | A          | B    | C1  | C2  | D   | E   | F   | G   | H   | J   | L | M  | N      | P   | Q    | R1   | R2   | S | T |
| 4          | 100 | 87         | 160  | 60  | 54  | 145 | 145 | 120 | 44  | 100 | 25  | 3 | 45 | 3/4"   | 90  | 3/8" | 24.5 | 24.5 | 4 | 1 |
| 6          | 150 | 138        | 215  | 80  | 59  | 185 | 180 | 150 | 50  | 130 | 30  | 3 | 45 | 3/4"   | 105 | 3/8" | 26   | 26   | 4 | 1 |
| 8          | 200 | 188        | 270  | 95  | 64  | 200 | 205 | 170 | 52  | 145 | 35  | 3 | 55 | 1"     | 105 | 3/8" | 30   | 27.5 | 4 | 2 |
| 10         | 250 | 238        | 324  | 130 | 72  | 230 | 240 | 170 | 64  | 145 | 35  | 3 | 55 | 1"     | 105 | 1/2" | 47.5 | 34.5 | 4 | 2 |
| 12         | 300 | 287        | 382  | 145 | 81  | 270 | 270 | 170 | 72  | 145 | 35  | 3 | 55 | 1 1/4" | 105 | 1/2" | 49   | 37   | 4 | 2 |
| 14         | 350 | 328        | 426  | 169 | 92  | 308 | 295 | 170 | 80  | 145 | 45  | 3 | 55 | 1 1/2" | 105 | 5/8" | 60   | 41.5 | 4 | 2 |
| 16         | 400 | 365        | 474  | 185 | 102 | 340 | 335 | 170 | 80  | 145 | 45  | 3 | 55 | 1 1/2" | 105 | 5/8" | 70   | 51   | 4 | 2 |
| 18         | 450 | 415        | 535  | 214 | 114 | 360 | 365 | 260 | 100 | 210 | 60  | 3 | 60 | 1 3/4" | 170 | 3/4" | 80   | 57   | 4 | 2 |
| 20         | 500 | 465        | 590  | 240 | 127 | 395 | 390 | 260 | 100 | 210 | 60  | 3 | 65 | 2"     | 170 | 3/4" | 90   | 63.5 | 4 | 2 |
| 24         | 600 | 563        | 695  | 290 | 154 | 480 | 460 | 260 | 125 | 210 | 90  | 3 | 65 | 2 1/4" | 170 | 3/4" | 110  | 77   | 4 | 2 |
| 28         | 700 | 665        | 805  | 340 | 165 | 540 | 530 | 260 | 150 | 210 | 100 | 3 | 65 | 2 1/2" | 170 | 1"   | 136  | 82.5 | 6 | 3 |
| 30         | 750 | 715        | 860  | 365 | 165 | 565 | 550 | 260 | 150 | 210 | 100 | 3 | 65 | 3"     | 170 | 1"   | 135  | 79   | 6 | 3 |
| 32         | 800 | 763        | 920  | 385 | 190 | 600 | 590 | 260 | 150 | 210 | 100 | 3 | 65 | 3"     | 170 | 1"   | 144  | 95   | 6 | 3 |
| 36         | 900 | 863        | 1028 | 430 | 200 | 655 | 645 | 260 | 150 | 210 | 100 | 3 | 65 | 3"     | 170 | 1"   | 165  | 100  | 6 | 3 |

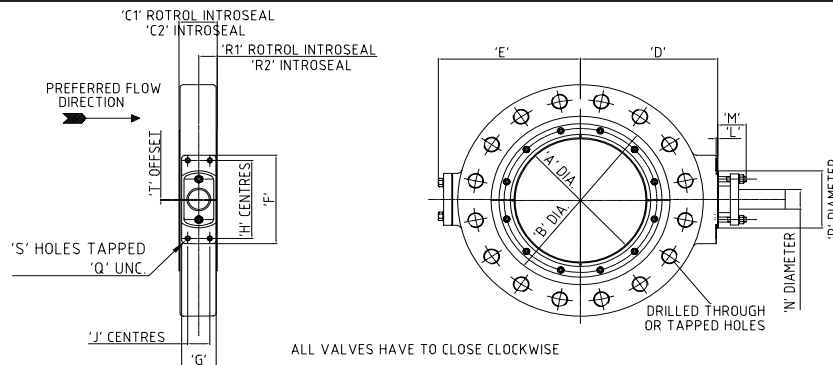


Table 16. Class 150LB Wafer Lugged Valves (Series 63,64 and 65)

| Valve Size |     | Dimensions |      |     |     |     |     |     |     |     |     |   |    |        |     |      |      |      |   |   |
|------------|-----|------------|------|-----|-----|-----|-----|-----|-----|-----|-----|---|----|--------|-----|------|------|------|---|---|
| in         | mm  | A          | B    | C1  | C2  | D   | E   | F   | G   | H   | J   | L | M  | N      | P   | Q    | R1   | R2   | S | T |
| 4          | 100 | 87         | 160  | 60  | 54  | 145 | 145 | 120 | 44  | 100 | 25  | 3 | 45 | 3/4"   | 90  | 3/8" | 24.5 | 24.5 | 4 | 1 |
| 6          | 150 | 138        | 215  | 80  | 59  | 185 | 180 | 150 | 50  | 130 | 30  | 3 | 45 | 3/4"   | 105 | 3/8" | 26   | 26   | 4 | 1 |
| 8          | 200 | 188        | 270  | 95  | 64  | 200 | 205 | 170 | 52  | 145 | 35  | 3 | 55 | 1"     | 105 | 3/8" | 30   | 27.5 | 4 | 2 |
| 10         | 250 | 238        | 324  | 130 | 72  | 230 | 240 | 170 | 64  | 145 | 35  | 3 | 55 | 1"     | 105 | 1/2" | 47.5 | 34.5 | 4 | 2 |
| 12         | 300 | 287        | 381  | 145 | 81  | 270 | 270 | 170 | 72  | 145 | 35  | 3 | 55 | 1 1/4" | 105 | 1/2" | 49   | 37   | 4 | 2 |
| 14         | 350 | 328        | 413  | 169 | 92  | 308 | 295 | 170 | 80  | 145 | 45  | 3 | 55 | 1 1/2" | 105 | 5/8" | 60   | 41.5 | 4 | 2 |
| 16         | 400 | 365        | 470  | 185 | 102 | 340 | 335 | 170 | 80  | 145 | 45  | 3 | 55 | 1 1/2" | 105 | 5/8" | 70   | 51   | 4 | 2 |
| 18         | 450 | 415        | 533  | 214 | 114 | 360 | 360 | 260 | 100 | 210 | 60  | 3 | 60 | 1 3/4" | 170 | 3/4" | 80   | 57   | 4 | 2 |
| 20         | 500 | 465        | 590  | -   | 127 | 395 | 390 | 260 | 100 | 210 | 60  | 3 | 65 | 2"     | 170 | 3/4" | -    | 63.5 | 4 | 2 |
| 24         | 600 | 563        | 692  | -   | 154 | 480 | 460 | 260 | 125 | 210 | 90  | 3 | 65 | 2 1/4" | 170 | 3/4" | -    | 87   | 4 | 2 |
| 28         | 700 | 665        | 801  | -   | 165 | 540 | 530 | 260 | 150 | 210 | 100 | 3 | 65 | 2 1/2" | 170 | 1"   | -    | 82.5 | 6 | 3 |
| 30         | 750 | 715        | 860  | -   | 165 | 565 | 550 | 260 | 150 | 210 | 100 | 3 | 65 | 3"     | 170 | 1"   | -    | 79   | 6 | 3 |
| 32         | 800 | 763        | 915  | -   | 190 | 600 | 590 | 260 | 150 | 210 | 100 | 3 | 65 | 3"     | 170 | 1"   | -    | 95   | 6 | 3 |
| 36         | 900 | 863        | 1022 | -   | 200 | 655 | 645 | 260 | 150 | 210 | 100 | 3 | 65 | 3"     | 170 | 1"   | -    | 100  | 6 | 3 |

Note: Only available to 18" 450mm for Rotrol Introseals - sizes above that are flanged.

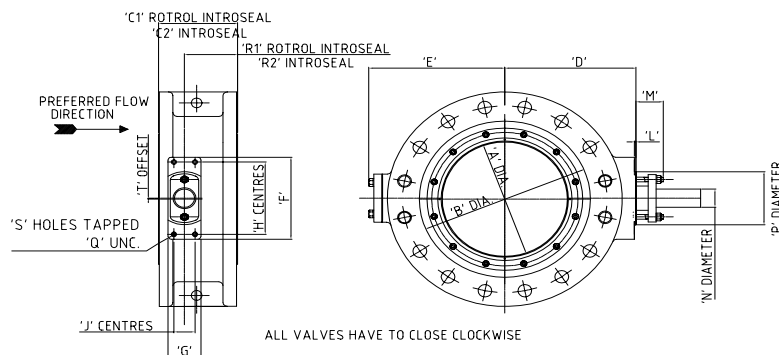


Table 17. Class 150LB Flanged Valves (Series 63,64 and 65)

| Valve Size |     | Dimensions |      |     |     |     |     |     |     |     |     |   |    |        |     |      |     |     |   |   |
|------------|-----|------------|------|-----|-----|-----|-----|-----|-----|-----|-----|---|----|--------|-----|------|-----|-----|---|---|
| in         | mm  | A          | B    | C1  | C2  | D   | E   | F   | G   | H   | J   | L | M  | N      | P   | Q    | R1  | R2  | S | T |
| 4          | 100 | 87         | 160  | 127 | 127 | 145 | 145 | 120 | 44  | 100 | 25  | 3 | 45 | 3/4"   | 90  | 3/8" | 77  | 77  | 4 | 1 |
| 6          | 150 | 138        | 215  | 140 | 140 | 185 | 180 | 150 | 50  | 130 | 30  | 3 | 45 | 3/4"   | 105 | 3/8" | 86  | 86  | 4 | 1 |
| 8          | 200 | 188        | 270  | 152 | 152 | 200 | 205 | 170 | 52  | 145 | 35  | 3 | 55 | 1"     | 105 | 3/8" | 87  | 87  | 4 | 2 |
| 10         | 250 | 238        | 324  | 165 | 165 | 230 | 240 | 170 | 64  | 145 | 35  | 3 | 55 | 1"     | 105 | 1/2" | 82  | 82  | 4 | 2 |
| 12         | 300 | 287        | 381  | 178 | 178 | 270 | 270 | 170 | 72  | 145 | 35  | 3 | 55 | 1 1/4" | 105 | 1/2" | 82  | 82  | 4 | 2 |
| 14         | 350 | 328        | 413  | 190 | 190 | 308 | 295 | 170 | 80  | 145 | 45  | 3 | 55 | 1 1/2" | 105 | 5/8" | 81  | 81  | 4 | 2 |
| 16         | 400 | 365        | 470  | 223 | 216 | 340 | 335 | 170 | 80  | 145 | 45  | 3 | 55 | 1 1/2" | 105 | 5/8" | 108 | 108 | 4 | 2 |
| 18         | 450 | 415        | 533  | 250 | 222 | 360 | 365 | 260 | 100 | 210 | 60  | 3 | 60 | 1 3/4" | 170 | 3/4" | 111 | 111 | 4 | 2 |
| 20         | 500 | 465        | 590  | 265 | 229 | 395 | 390 | 260 | 100 | 210 | 60  | 3 | 65 | 2"     | 170 | 3/4" | 115 | 115 | 4 | 2 |
| 24         | 600 | 563        | 692  | 313 | 267 | 480 | 460 | 260 | 125 | 210 | 90  | 3 | 65 | 2 1/4" | 170 | 3/4" | 134 | 134 | 4 | 2 |
| 28         | 700 | 665        | 801  | 350 | 292 | 540 | 530 | 260 | 150 | 210 | 100 | 3 | 65 | 2 1/2" | 170 | 1"   | 146 | 146 | 6 | 3 |
| 30         | 750 | 715        | 857  | 380 | 318 | 565 | 550 | 260 | 150 | 210 | 100 | 3 | 65 | 3"     | 170 | 1"   | 159 | 159 | 6 | 3 |
| 32         | 800 | 763        | 915  | 400 | 318 | 600 | 590 | 260 | 150 | 210 | 100 | 3 | 65 | 3"     | 170 | 1"   | 159 | 159 | 6 | 3 |
| 36         | 900 | 863        | 1022 | 430 | 330 | 655 | 645 | 260 | 150 | 210 | 100 | 3 | 65 | 3"     | 170 | 1"   | 165 | 165 | 6 | 3 |

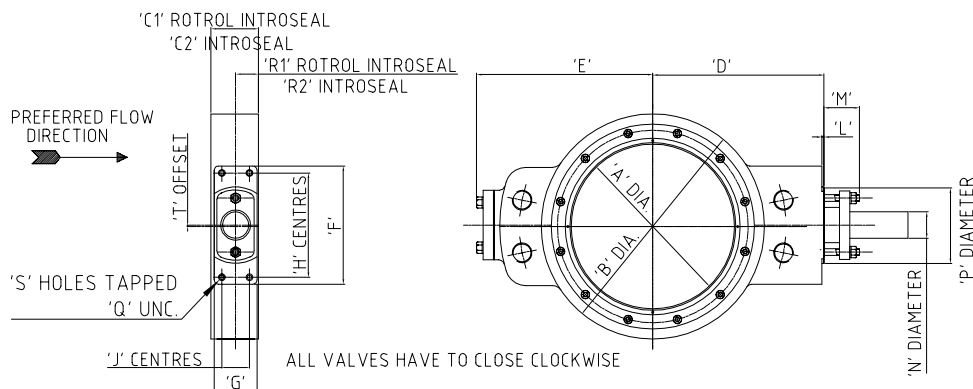


Table 18. Class 300LB Wafer Valves (Series 63,64 and 65)

| Valve Size |     | Dimensions |      |     |     |     |     |     |     |     |     |   |    |        |     |      |      |      |   |   |
|------------|-----|------------|------|-----|-----|-----|-----|-----|-----|-----|-----|---|----|--------|-----|------|------|------|---|---|
| in         | mm  | A          | B    | C1  | C2  | D   | E   | F   | G   | H   | J   | L | M  | N      | P   | Q    | R1   | R2   | S | T |
| 4          | 100 | 87         | 160  | 60  | 54  | 145 | 145 | 120 | 44  | 100 | 25  | 3 | 45 | 3/4"   | 80  | 3/8" | 24.5 | 24.5 | 4 | 1 |
| 6          | 150 | 138        | 216  | 80  | 59  | 185 | 180 | 150 | 50  | 130 | 30  | 3 | 55 | 1"     | 105 | 3/8" | 26   | 26   | 4 | 1 |
| 8          | 200 | 188        | 270  | 100 | 73  | 225 | 220 | 170 | 64  | 145 | 35  | 3 | 55 | 1 1/4" | 105 | 3/8" | 35   | 36.5 | 4 | 2 |
| 10         | 250 | 238        | 324  | 128 | 83  | 250 | 265 | 170 | 70  | 145 | 35  | 3 | 55 | 1 1/4" | 105 | 1/2" | 45   | 45   | 4 | 2 |
| 12         | 300 | 287        | 382  | 145 | 92  | 285 | 285 | 170 | 80  | 145 | 35  | 3 | 55 | 1 1/2" | 105 | 1/2" | 49   | 48   | 4 | 2 |
| 14         | 350 | 328        | 426  | 170 | 117 | 325 | 340 | 250 | 100 | 210 | 60  | 3 | 65 | 2"     | 170 | 3/4" | 59   | 59   | 4 | 2 |
| 16         | 400 | 365        | 474  | 190 | 133 | 350 | 360 | 260 | 100 | 210 | 60  | 3 | 65 | 2"     | 170 | 3/4" | 66.5 | 66.5 | 4 | 2 |
| 18         | 450 | 415        | 535  | 215 | 149 | 400 | 400 | 260 | 100 | 210 | 60  | 3 | 65 | 2 1/4" | 170 | 3/4" | 74.5 | 74.5 | 4 | 2 |
| 20         | 500 | 465        | 590  | 240 | 159 | 430 | 430 | 260 | 125 | 210 | 90  | 3 | 65 | 2 3/4" | 170 | 3/4" | 79.5 | 79.5 | 6 | 2 |
| 24         | 600 | 563        | 695  | 282 | 181 | 530 | 505 | 260 | 150 | 210 | 90  | 3 | 65 | 3"     | 170 | 3/4" | 90   | 90   | 6 | 2 |
| 28         | 700 | 665        | 805  | 340 | 209 | 595 | 580 | 260 | 150 | 210 | 100 | 3 | 65 | 3 1/2" | 170 | 1"   | 115  | 104  | 6 | 3 |
| 30         | 750 | 715        | 860  | 350 | 241 | 625 | 605 | 260 | 150 | 210 | 100 | 3 | 65 | 3 1/2" | 170 | 1"   | 120  | 120  | 6 | 3 |
| 32         | 800 | 763        | 920  | 385 | 241 | 650 | 640 | 260 | 150 | 210 | 100 | 3 | 65 | 3 1/2" | 170 | 1"   | 144  | 120  | 6 | 3 |
| 36         | 900 | 863        | 1028 | 440 | 260 | 710 | 700 | 260 | 150 | 210 | 100 | 3 | 65 | 3 1/2" | 170 | 1"   | 165  | 130  | 6 | 3 |

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## Series 63,64,65 & 66-Rotary Control Valves

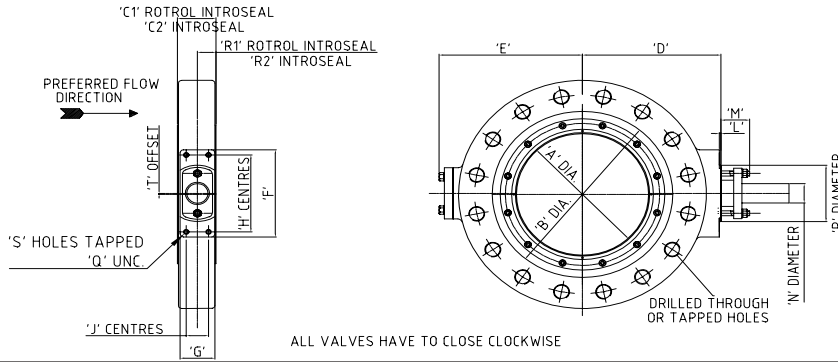


Table 19. Class 300LB Wafer Lugged Valves (Series 63,64 and 65)

| Valve Size |     | Dimensions |      |     |     |     |     |     |     |      |     |   |    |        |     |      |      |      |   |   |
|------------|-----|------------|------|-----|-----|-----|-----|-----|-----|------|-----|---|----|--------|-----|------|------|------|---|---|
| in         | mm  | A          | B    | C1  | C2  | D   | E   | F   | G   | H    | J   | L | M  | N      | P   | Q    | R1   | R2   | S | T |
| 4          | 100 | 87         | 160  | 60  | 54  | 145 | 145 | 120 | 44  | 100  | 25  | 3 | 45 | 3/4"   | 80  | 3/8" | 24.5 | 24.5 | 4 | 1 |
| 6          | 150 | 138        | 216  | 80  | 59  | 185 | 180 | 150 | 50  | 130  | 30  | 3 | 55 | 1"     | 105 | 3/8" | 26   | 26   | 4 | 1 |
| 8          | 200 | 188        | 270  | 100 | 73  | 225 | 220 | 170 | 64  | 145  | 35  | 3 | 55 | 1 1/4" | 105 | 1/2" | 35   | 36.5 | 4 | 1 |
| 10         | 250 | 238        | 324  | 128 | 83  | 250 | 265 | 170 | 70  | 145  | 35  | 3 | 55 | 1 1/4" | 105 | 1/2" | 45   | 45   | 4 | 2 |
| 12         | 300 | 287        | 381  | 145 | 92  | 285 | 285 | 170 | 80  | 145  | 35  | 3 | 55 | 1 1/2" | 105 | 1/2" | 49   | 48   | 4 | 2 |
| 14         | 350 | 328        | 413  | 170 | 117 | 325 | 340 | 260 | 100 | 210  | 60  | 3 | 65 | 2"     | 170 | 3/4" | 59   | 59   | 4 | 2 |
| 16         | 400 | 365        | 470  | 190 | 133 | 350 | 360 | 260 | 100 | 210  | 60  | 3 | 65 | 2"     | 170 | 3/4" | 66.5 | 66.5 | 4 | 2 |
| 18         | 450 | 415        | 535  | 215 | 149 | 400 | 400 | 260 | 100 | 210  | 60  | 3 | 60 | 2 1/4" | 170 | 3/4" | 74.5 | 74.5 | 4 | 2 |
| 20         | 500 | 465        | 590  | -   | 159 | 430 | 430 | 260 | 125 | 210  | 90  | 3 | 65 | 2 3/4" | 170 | 3/4" | -    | 79.5 | 6 | 2 |
| 24         | 600 | 563        | 692  | -   | 181 | 530 | 505 | 260 | 150 | 210  | 90  | 3 | 65 | 3"     | 170 | 3/4" | -    | 90   | 6 | 2 |
| 28         | 700 | 665        | 801  | -   | 209 | 595 | 580 | 260 | 150 | 210  | 100 | 3 | 65 | 3 1/2" | 170 | 1"   | -    | 104  | 6 | 3 |
| 30         | 750 | 715        | 857  | -   | 241 | 625 | 605 | 260 | 150 | 210  | 100 | 3 | 65 | 3 1/2" | 170 | 1"   | -    | 120  | 6 | 3 |
| 32         | 800 | 763        | 915  | -   | 241 | 650 | 640 | 260 | 150 | 210  | 100 | 3 | 65 | 3 1/2" | 170 | 1"   | -    | 120  | 6 | 3 |
| 36         | 900 | 863        | 1022 | -   | 260 | 710 | 700 | 260 | 150 | 2100 | 100 | 3 | 65 | 3 1/2" | 170 | 1"   | -    | 130  | 6 | 3 |

Note: Only available to 18" 450mm for Rotrol Introseals - sizes above that are flanged.

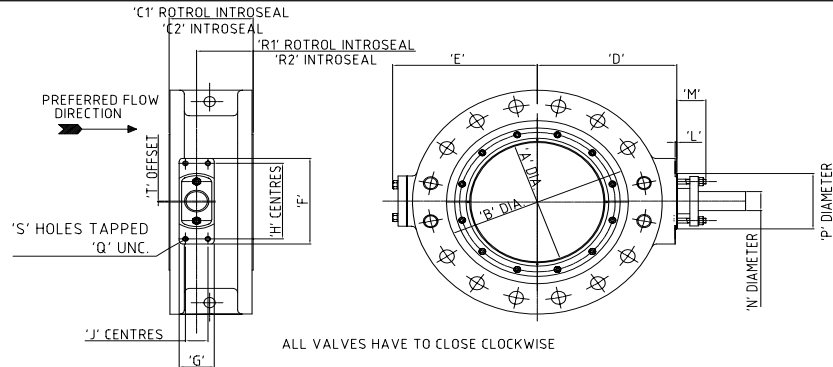


Table 20. Class 300LB Double Flanged (Series 63,64 and 65)

| Valve Size |     | Dimensions |      |     |     |     |     |     |     |     |     |   |    |        |     |      |     |     |   |   |
|------------|-----|------------|------|-----|-----|-----|-----|-----|-----|-----|-----|---|----|--------|-----|------|-----|-----|---|---|
| in         | mm  | A          | B    | C1  | C2  | D   | E   | F   | G   | H   | J   | L | M  | N      | P   | Q    | R1  | R2  | S | T |
| 4          | 100 | 87         | 160  | 127 | 127 | 145 | 145 | 120 | 44  | 100 | 25  | 3 | 45 | 3/4"   | 80  | 3/8" | 77  | 77  | 4 | 1 |
| 6          | 150 | 138        | 216  | 140 | 140 | 185 | 180 | 150 | 50  | 130 | 30  | 3 | 45 | 1"     | 105 | 3/8" | 80  | 80  | 4 | 1 |
| 8          | 200 | 188        | 270  | 152 | 152 | 225 | 220 | 170 | 64  | 145 | 35  | 3 | 55 | 1 1/4" | 105 | 1/2" | 87  | 87  | 4 | 2 |
| 10         | 250 | 238        | 324  | 165 | 165 | 250 | 265 | 170 | 70  | 145 | 35  | 3 | 55 | 1 1/4" | 105 | 1/2" | 82  | 82  | 4 | 2 |
| 12         | 300 | 287        | 381  | 178 | 178 | 285 | 285 | 170 | 80  | 145 | 35  | 3 | 55 | 1 1/2" | 105 | 1/2" | 82  | 82  | 4 | 2 |
| 14         | 350 | 328        | 413  | 207 | 190 | 325 | 340 | 260 | 100 | 210 | 60  | 3 | 55 | 2"     | 170 | 3/4" | 95  | 95  | 4 | 2 |
| 16         | 400 | 365        | 470  | 231 | 216 | 350 | 360 | 260 | 100 | 210 | 60  | 3 | 55 | 2"     | 170 | 3/4" | 108 | 108 | 4 | 2 |
| 18         | 450 | 415        | 535  | 250 | 222 | 400 | 400 | 260 | 100 | 210 | 60  | 3 | 60 | 2 1/4" | 170 | 3/4" | 111 | 111 | 4 | 2 |
| 20         | 500 | 465        | 590  | 275 | 229 | 430 | 430 | 260 | 125 | 210 | 90  | 3 | 65 | 2 3/4" | 170 | 3/4" | 114 | 114 | 6 | 2 |
| 24         | 600 | 563        | 692  | 325 | 267 | 530 | 505 | 260 | 150 | 210 | 90  | 3 | 65 | 3"     | 170 | 3/4" | 134 | 134 | 6 | 2 |
| 28         | 700 | 665        | 801  | 371 | 292 | 595 | 570 | 260 | 150 | 210 | 100 | 3 | 65 | 3 1/2" | 170 | 1"   | 146 | 146 | 6 | 3 |
| 30         | 750 | 715        | 857  | 390 | 318 | 625 | 605 | 260 | 150 | 210 | 100 | 3 | 65 | 3 1/2" | 170 | 1"   | 159 | 159 | 6 | 3 |
| 32         | 800 | 763        | 915  | 400 | 318 | 650 | 640 | 260 | 150 | 210 | 100 | 3 | 65 | 3 1/2" | 170 | 1"   | 159 | 159 | 6 | 3 |
| 36         | 900 | 863        | 1022 | 440 | 330 | 710 | 700 | 260 | 150 | 210 | 100 | 3 | 65 | 3 1/2" | 170 | 1"   | 165 | 165 | 6 | 3 |

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## SERIES 66 CLASS 150LB AND 300LB

CV TABLES

TORQUE TABLES

DIMENSIONAL DRAWINGS



Series 63, 64, 65 & 66- Rotary Control Valves

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## Series 63,64,65 & 66-Rotary Control Valves

Table 21. CV Values for Series 66 Standard (Swing Through Class II Valves)

Wafer, Lugged and Double Flanged - Class 150LB

| Valve Size |     | Angle of Opening           |      |      |      |       |       |       |       |       |
|------------|-----|----------------------------|------|------|------|-------|-------|-------|-------|-------|
|            |     | 10                         | 20   | 30   | 40   | 50    | 60    | 70    | 80    | 90    |
|            |     | Percentage of 90 degree CV |      |      |      |       |       |       |       |       |
| in         | mm  | 1.2                        | 4.2  | 9    | 16   | 26    | 41    | 64    | 89    | 100   |
| 4          | 100 | 9                          | 30   | 64   | 114  | 185   | 292   | 456   | 634   | 712   |
| 6          | 150 | 19                         | 68   | 145  | 258  | 420   | 662   | 1034  | 1437  | 1615  |
| 8          | 200 | 34                         | 120  | 257  | 456  | 741   | 1169  | 1824  | 2537  | 2850  |
| 10         | 250 | 54                         | 188  | 402  | 714  | 1161  | 1831  | 2858  | 3974  | 4465  |
| 12         | 300 | 78                         | 271  | 581  | 1034 | 1680  | 2649  | 4134  | 5749  | 6460  |
| 14         | 350 | 97                         | 339  | 727  | 1292 | 2100  | 3311  | 5168  | 7187  | 8075  |
| 16         | 400 | 129                        | 451  | 966  | 1718 | 2791  | 4401  | 6870  | 9554  | 10735 |
| 18         | 450 | 164                        | 575  | 1231 | 2189 | 3557  | 5609  | 8755  | 12175 | 13680 |
| 20         | 500 | 200                        | 698  | 1496 | 2660 | 4323  | 6816  | 10640 | 14796 | 16625 |
| 24         | 600 | 291                        | 1017 | 2180 | 3876 | 6299  | 9932  | 15504 | 21560 | 24225 |
| 28         | 700 | 396                        | 1385 | 2967 | 5274 | 8571  | 13516 | 21098 | 29339 | 32965 |
| 30         | 750 | 456                        | 1596 | 3420 | 6080 | 9880  | 15580 | 24320 | 33820 | 38000 |
| 32         | 800 | 523                        | 1831 | 3924 | 6977 | 11337 | 17878 | 27907 | 38808 | 43605 |
| 36         | 900 | 667                        | 2334 | 5002 | 8892 | 14450 | 22786 | 35568 | 49462 | 55575 |

Table 22. CV Values for Series 66 Rotrol (Swing Through Class II Valves)

Cv at 90 = 40% of Standard Valve

Wafer, Lugged and Double Flanged - Class 150LB

| Valve Size |     | Angle of Opening           |      |      |      |      |      |       |       |       |
|------------|-----|----------------------------|------|------|------|------|------|-------|-------|-------|
|            |     | 10                         | 20   | 30   | 40   | 50   | 60   | 70    | 80    | 90    |
|            |     | Percentage of 90 degree CV |      |      |      |      |      |       |       |       |
| in         | mm  | 1.8                        | 5    | 10   | 16   | 25   | 38   | 55    | 80    | 100   |
| 4          | 100 | 5                          | 14   | 28   | 46   | 71   | 108  | 157   | 228   | 285   |
| 6          | 150 | 12                         | 32   | 65   | 103  | 162  | 245  | 355   | 517   | 646   |
| 8          | 200 | 21                         | 57   | 114  | 182  | 285  | 433  | 627   | 912   | 1140  |
| 10         | 250 | 32                         | 89   | 179  | 286  | 447  | 679  | 982   | 1429  | 1786  |
| 12         | 300 | 47                         | 129  | 258  | 413  | 646  | 982  | 1421  | 2067  | 2584  |
| 14         | 350 | 58                         | 162  | 323  | 517  | 808  | 1227 | 1777  | 2584  | 3230  |
| 16         | 400 | 77                         | 215  | 429  | 687  | 1074 | 1632 | 2362  | 3435  | 4294  |
| 18         | 450 | 98                         | 274  | 547  | 876  | 1368 | 2079 | 3010  | 4378  | 5472  |
| 20         | 500 | 120                        | 333  | 665  | 1064 | 1663 | 2527 | 3658  | 5320  | 6650  |
| 24         | 600 | 174                        | 485  | 969  | 1550 | 2423 | 3682 | 5330  | 7752  | 9690  |
| 28         | 700 | 237                        | 659  | 1319 | 2110 | 3297 | 5011 | 7252  | 10549 | 13186 |
| 30         | 750 | 274                        | 760  | 1520 | 2432 | 3800 | 5776 | 8360  | 12160 | 15200 |
| 32         | 800 | 314                        | 872  | 1744 | 2791 | 4361 | 6628 | 9593  | 13954 | 17444 |
| 36         | 900 | 400                        | 1112 | 2223 | 3557 | 5558 | 8447 | 12227 | 17784 | 22230 |



Table 23. CV Values for Series 66 Rotrol (Swing Through Class II Valves) With Integral or Loose Baffle Plates (CV at 90 = 65% of Rotrol Valve)

| Wafer, Lugged and Double Flanged - Class 150LB |     |                            |      |      |      |      |      |       |       |       |
|--|-----|----------------------------|------|------|------|------|------|-------|-------|-------|
| Valve Size                                     |     | Angle of Opening           |      |      |      |      |      |       |       |       |
|  |     | 10                         | 20   | 30   | 40   | 50   | 60   | 70    | 80    | 90    |
|  |     | Percentage of 90 degree CV |      |      |      |      |      |       |       |       |
| in   | mm  | 2.3                        | 9.2  | 15   | 22   | 37   | 54   | 74    | 94    | 100   |
| 4  | 100 | 5                          | 17   | 28   | 41   | 68   | 100  | 137   | 174   | 185   |
| 6  | 150 | 10                         | 39   | 63   | 92   | 155  | 227  | 311   | 395   | 420   |
| 8  | 200 | 20                         | 68   | 111  | 163  | 274  | 400  | 548   | 697   | 741   |
| 10   | 250 | 27                         | 107  | 174  | 255  | 430  | 627  | 859   | 1091  | 1161  |
| 12   | 300 | 39                         | 155  | 252  | 370  | 621  | 907  | 1243  | 1579  | 1680  |
| 14   | 350 | 48                         | 194  | 315  | 462  | 777  | 1134 | 1554  | 1974  | 2100  |
| 16   | 400 | 64                         | 258  | 419  | 614  | 1033 | 1507 | 2065  | 2624  | 2791  |
| 18   | 450 | 82                         | 328  | 534  | 782  | 1316 | 1921 | 2632  | 3343  | 3557  |
| 20   | 500 | 100                        | 399  | 648  | 951  | 1599 | 2334 | 3199  | 4063  | 4323  |
| 24   | 600 | 145                        | 582  | 945  | 1386 | 2330 | 3401 | 4661  | 5921  | 6299  |
| 28   | 700 | 198                        | 791  | 1286 | 1886 | 3171 | 4628 | 6342  | 8057  | 8571  |
| 30   | 750 | 228                        | 912  | 1482 | 2174 | 3656 | 5335 | 7311  | 9287  | 9880  |
| 32   | 800 | 262                        | 1047 | 1701 | 2494 | 4195 | 6122 | 8390  | 10657 | 11337 |
| 36   | 900 | 334                        | 1334 | 2167 | 3179 | 5346 | 7803 | 10693 | 13583 | 14450 |

Table 24. CV Values for Series 66 Standard (Swing Through Class II Valves)

| Wafer, Lugged and Double Flanged - Class 300LB |     |                            |      |      |      |       |       |       |       |       |
|--|-----|----------------------------|------|------|------|-------|-------|-------|-------|-------|
| Valve Size                                     |     | Angle of Opening           |      |      |      |       |       |       |       |       |
|  |     | 10                         | 20   | 30   | 40   | 50    | 60    | 70    | 80    | 90    |
|  |     | Percentage of 90 degree CV |      |      |      |       |       |       |       |       |
| in   | mm  | 1.2                        | 4.2  | 9    | 16   | 26    | 41    | 64    | 89    | 100   |
| 4  | 100 | 9                          | 30   | 64   | 114  | 185   | 292   | 456   | 634   | 712   |
| 6  | 150 | 19                         | 68   | 145  | 258  | 420   | 662   | 1034  | 1437  | 1615  |
| 8  | 200 | 31                         | 108  | 231  | 410  | 667   | 1052  | 1642  | 2283  | 2565  |
| 10   | 250 | 48                         | 169  | 362  | 643  | 1045  | 1648  | 2572  | 3576  | 4019  |
| 12   | 300 | 70                         | 244  | 523  | 930  | 1512  | 2384  | 3721  | 5174  | 5814  |
| 14   | 350 | 87                         | 305  | 654  | 1163 | 1890  | 2980  | 4651  | 6468  | 7268  |
| 16   | 400 | 116                        | 406  | 870  | 1546 | 2512  | 3961  | 6183  | 8599  | 9662  |
| 18   | 450 | 144                        | 503  | 1077 | 1915 | 3112  | 4908  | 7661  | 10653 | 11970 |
| 20   | 500 | 175                        | 611  | 1309 | 2328 | 3782  | 5964  | 9310  | 12947 | 14547 |
| 24   | 600 | 247                        | 865  | 1853 | 3295 | 5354  | 8442  | 13178 | 18326 | 20591 |
| 28   | 700 | 336                        | 1177 | 2522 | 4483 | 7285  | 11488 | 17933 | 24938 | 28020 |
| 30   | 750 | 388                        | 1357 | 2907 | 5168 | 8398  | 13243 | 20672 | 28747 | 32300 |
| 32   | 800 | 445                        | 1557 | 3336 | 5930 | 9637  | 15196 | 23721 | 32987 | 37064 |
| 36   | 900 | 567                        | 1984 | 4251 | 7558 | 12282 | 19368 | 30233 | 42042 | 47239 |

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## Series 63,64,65 & 66-Rotary Control Valves

Table 25. CV Values for Series 66 Rotrol (Swing Through Class II Valves)  
Cv at 90 = 40% of Standard Valve)

| Wafer, Lugged and Double Flanged - Class 300LB |     |                            |     |      |      |      |      |       |       |       |
|--|-----|----------------------------|-----|------|------|------|------|-------|-------|-------|
| Valve Size                                     |     | Angle of Opening           |     |      |      |      |      |       |       |       |
|  |     | 10                         | 20  | 30   | 40   | 50   | 60   | 70    | 80    | 90    |
|  |     | Percentage of 90 degree CV |     |      |      |      |      |       |       |       |
| in   | mm  | 1.8                        | 5   | 10   | 16   | 25   | 38   | 55    | 80    | 100   |
| 4  | 100 | 5                          | 14  | 28   | 46   | 71   | 108  | 157   | 228   | 285   |
| 6  | 150 | 12                         | 32  | 65   | 103  | 162  | 245  | 355   | 517   | 646   |
| 8  | 200 | 18                         | 51  | 103  | 164  | 257  | 390  | 564   | 821   | 1026  |
| 10   | 250 | 29                         | 80  | 161  | 257  | 402  | 611  | 884   | 1286  | 1607  |
| 12   | 300 | 42                         | 116 | 233  | 372  | 581  | 884  | 1279  | 1860  | 2326  |
| 14   | 350 | 52                         | 145 | 291  | 465  | 727  | 1105 | 1599  | 2326  | 2907  |
| 16   | 400 | 70                         | 193 | 386  | 618  | 966  | 1469 | 2126  | 3092  | 3865  |
| 18   | 450 | 86                         | 239 | 479  | 766  | 1197 | 1819 | 2633  | 3830  | 4788  |
| 20   | 500 | 105                        | 291 | 582  | 931  | 1455 | 2211 | 3200  | 4655  | 5819  |
| 24   | 600 | 148                        | 412 | 824  | 1318 | 2059 | 3130 | 4530  | 6589  | 8237  |
| 28   | 700 | 202                        | 560 | 1121 | 1793 | 2802 | 4259 | 6164  | 8966  | 11208 |
| 30   | 750 | 233                        | 646 | 1292 | 2067 | 3230 | 4910 | 7106  | 10336 | 12920 |
| 32   | 800 | 267                        | 741 | 1483 | 2372 | 3706 | 5634 | 8154  | 11861 | 14826 |
| 36   | 900 | 340                        | 945 | 1890 | 3023 | 4724 | 7180 | 10393 | 15116 | 18896 |

Table 26. CV Values for Series 66 Rotrol (Swing Through Class II Valves) With Integral or Loose Baffle Plates (CV at 90 = 60% of Rotrol Valve)

| Wafer, Lugged and Double Flanged - Class 300LB |     |                            |      |      |      |      |      |      |       |       |
|--|-----|----------------------------|------|------|------|------|------|------|-------|-------|
| Valve Size                                     |     | Angle of Opening           |      |      |      |      |      |      |       |       |
|  |     | 10                         | 20   | 30   | 40   | 50   | 60   | 70   | 80    | 90    |
|  |     | Percentage of 90 degree CV |      |      |      |      |      |      |       |       |
| in   | mm  | 2.3                        | 9.2  | 15   | 22   | 37   | 54   | 74   | 94    | 100   |
| 4  | 100 | 4                          | 16   | 26   | 38   | 63   | 92   | 126  | 161   | 171   |
| 6  | 150 | 9                          | 36   | 58   | 85   | 143  | 209  | 287  | 364   | 388   |
| 8  | 200 | 14                         | 57   | 92   | 135  | 228  | 332  | 456  | 579   | 616   |
| 10   | 250 | 22                         | 89   | 145  | 212  | 357  | 521  | 714  | 907   | 964   |
| 12   | 300 | 32                         | 129  | 209  | 307  | 516  | 753  | 1033 | 1312  | 1395  |
| 14   | 350 | 40                         | 161  | 262  | 384  | 645  | 942  | 1291 | 1640  | 1744  |
| 16   | 400 | 54                         | 214  | 348  | 510  | 858  | 1252 | 1716 | 2180  | 2319  |
| 18   | 450 | 66                         | 265  | 431  | 632  | 1063 | 1551 | 2126 | 2700  | 2873  |
| 20   | 500 | 81                         | 322  | 524  | 768  | 1292 | 1885 | 2584 | 3282  | 3491  |
| 24   | 600 | 114                        | 456  | 741  | 1087 | 1829 | 2669 | 3657 | 4645  | 4942  |
| 28   | 700 | 155                        | 621  | 1009 | 1479 | 2488 | 3631 | 4976 | 6321  | 6725  |
| 30   | 750 | 179                        | 716  | 1163 | 1705 | 2868 | 4186 | 5736 | 7287  | 7752  |
| 32   | 800 | 205                        | 821  | 1334 | 1957 | 3291 | 4804 | 6583 | 8362  | 8895  |
| 36   | 900 | 262                        | 1047 | 1701 | 2494 | 4195 | 6122 | 8390 | 10657 | 11337 |

Table 27. Packing Torque

| Shaft Size (in)    | 0.5 | 0.75 | 1  | 1.25 | 1.5 | 1.75 | 2   | 2.25 | 2.5 | 2.75 | 3   | 3.5 |
|--------------------|-----|------|----|------|-----|------|-----|------|-----|------|-----|-----|
| Torque (Lbs. Ins.) | 37  | 74   | 99 | 124  | 222 | 259  | 296 | 334  | 371 | 408  | 445 | 519 |

Table 28. Torque Values for Series 66 Standard Rotary Control Valves (Lbs. Ins.)

| Valve Size |     | Class | Shaft Dia<br>in | Ft/P-<br>SI | Angle of Opening |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |      |      |
|------------|-----|-------|-----------------|-------------|------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|------|------|
| in         | mm  |       |                 |             | 0                | 5    | 10   | 15   | 20   | 25   | 30   | 35   | 40   | 45   | 50   | 55   | 60   | 65   | 70   | 75    | 80    | 85   | 90   |
| 4          | 100 | 150   | 0.5             | 0.47        | 0.47             | 0.73 | 0.79 | 0.92 | 1.05 | 1.24 | 1.43 | 1.81 | 2.39 | 3.09 | 3.99 | 5.21 | 6.93 | 9.81 | 13.1 | 17    | 21    | 14.4 | 0.47 |
| 4          | 100 | 300   | 0.75            | 0.71        | 0.71             | 0.96 | 1.03 | 1.15 | 1.28 | 1.47 | 1.67 | 2.05 | 2.63 | 3.33 | 4.23 | 5.44 | 7.17 | 10   | 13.3 | 17.2  | 21.2  | 14.7 | 0.71 |
| 6          | 150 | 150   | 0.75            | 1.59        | 1.59             | 2.45 | 2.67 | 3.1  | 3.53 | 4.18 | 4.83 | 6.12 | 8.1  | 10.4 | 13.5 | 17.6 | 23.4 | 33.1 | 44.1 | 57.3  | 70.7  | 48.7 | 1.59 |
| 6          | 150 | 300   | 1               | 2.12        | 2.12             | 2.98 | 3.2  | 3.63 | 4.06 | 4.71 | 5.36 | 6.65 | 8.6  | 11   | 14   | 18.1 | 23.9 | 33.7 | 44.7 | 57.8  | 71.2  | 49.2 | 2.12 |
| 8          | 200 | 150   | 0.75            | 2.82        | 2.82             | 4.87 | 5.38 | 6.41 | 7.43 | 8.97 | 10.5 | 13.6 | 18.2 | 23.8 | 31   | 40.7 | 54.5 | 77.6 | 104  | 135   | 167   | 114  | 2.82 |
| 8          | 200 | 300   | 1               | 3.76        | 3.76             | 5.81 | 6.32 | 7.35 | 8.37 | 9.91 | 11.4 | 14.5 | 19.1 | 24.8 | 31.9 | 41.7 | 55.5 | 78.5 | 105  | 136   | 168   | 115  | 3.76 |
| 10         | 250 | 150   | 1               | 5.88        | 5.88             | 9.88 | 10.9 | 12.9 | 14.9 | 17.9 | 20.9 | 26.9 | 35.9 | 46.9 | 60.9 | 79.9 | 107  | 152  | 203  | 264   | 326   | 224  | 5.88 |
| 10         | 250 | 300   | 1.25            | 7.35        | 7.35             | 11.4 | 12.4 | 14.4 | 16.4 | 19.4 | 22.4 | 28.4 | 37.4 | 48.4 | 62.4 | 81.4 | 108  | 153  | 204  | 265   | 327   | 225  | 7.35 |
| 12         | 300 | 150   | 1               | 8.47        | 8.47             | 15.4 | 17.1 | 20.6 | 24.0 | 29.2 | 34.4 | 44.8 | 60.3 | 79.3 | 104  | 136  | 183  | 261  | 349  | 454   | 561   | 385  | 8.47 |
| 12         | 300 | 300   | 1.5             | 12.7        | 12.7             | 19.6 | 21.3 | 24.8 | 28.3 | 33.4 | 38.6 | 49   | 64.5 | 83.5 | 108  | 141  | 187  | 265  | 353  | 459   | 566   | 389  | 12.7 |
| 14         | 350 | 150   | 1.25            | 14.4        | 14.4             | 23.7 | 26.0 | 30.7 | 35.3 | 42.3 | 49.3 | 63.3 | 84.2 | 110  | 142  | 187  | 249  | 354  | 473  | 615   | 759   | 522  | 14.4 |
| 14         | 350 | 300   | 1.75            | 20.2        | 20.2             | 29.5 | 31.8 | 36.5 | 41.1 | 48.1 | 55.1 | 69   | 90   | 116  | 148  | 192  | 255  | 360  | 478  | 620   | 765   | 527  | 20.2 |
| 16         | 400 | 150   | 1.25            | 18.8        | 18.8             | 33.0 | 36.5 | 43.6 | 50.7 | 61.4 | 72   | 93.3 | 125  | 164  | 214  | 281  | 377  | 537  | 717  | 934   | 1154  | 792  | 18.8 |
| 16         | 400 | 300   | 2               | 30.1        | 30.1             | 44.3 | 47.8 | 54.9 | 62.0 | 72.7 | 83.3 | 105  | 137  | 176  | 225  | 293  | 388  | 548  | 729  | 945   | 1165  | 803  | 30.1 |
| 18         | 450 | 150   | 1.5             | 28.6        | 28.6             | 49.1 | 54.2 | 64.5 | 74.8 | 90.2 | 106  | 136  | 183  | 239  | 311  | 408  | 547  | 778  | 1040 | 1353  | 1671  | 1148 | 28.6 |
| 18         | 450 | 300   | 2.25            | 42.9        | 42.9             | 63.4 | 68.5 | 78.8 | 89.1 | 104  | 120  | 151  | 197  | 253  | 325  | 423  | 561  | 792  | 1054 | 1367  | 1685  | 1162 | 42.9 |
| 20         | 500 | 150   | 1.5             | 35.3        | 35.3             | 63.8 | 70.9 | 85.2 | 99.5 | 121  | 142  | 185  | 249  | 328  | 428  | 563  | 756  | 1077 | 1441 | 1876  | 2318  | 1590 | 35.3 |
| 20         | 500 | 300   | 2.5             | 58.8        | 58.8             | 87.3 | 94.5 | 109  | 123  | 144  | 166  | 209  | 273  | 351  | 451  | 587  | 779  | 1100 | 1464 | 1899  | 2341  | 1614 | 58.8 |
| 24         | 600 | 150   | 1.75            | 59.3        | 59.3             | 110  | 122  | 147  | 172  | 210  | 248  | 323  | 436  | 575  | 751  | 989  | 1329 | 1894 | 2535 | 3302  | 4081  | 2799 | 59.3 |
| 24         | 600 | 300   | 3               | 102         | 102              | 152  | 164  | 190  | 215  | 252  | 290  | 366  | 479  | 617  | 793  | 1032 | 1371 | 1937 | 2578 | 3344  | 4123  | 2841 | 102  |
| 28         | 700 | 150   | 2               | 92.2        | 92.2             | 173  | 193  | 234  | 274  | 335  | 396  | 517  | 699  | 922  | 1205 | 1590 | 2136 | 3046 | 4078 | 5313  | 6567  | 4503 | 92.2 |
| 28         | 700 | 300   | 3.5             | 161         | 161              | 242  | 263  | 303  | 343  | 404  | 465  | 586  | 768  | 991  | 1274 | 1659 | 2205 | 3116 | 4148 | 5382  | 6636  | 4573 | 161  |
| 30         | 750 | 150   | 2               | 106         | 106              | 206  | 231  | 281  | 331  | 406  | 481  | 631  | 857  | 1132 | 1482 | 1958 | 2633 | 3760 | 5036 | 6562  | 8114  | 5561 | 106  |
| 30         | 750 | 300   | 3.5             | 185         | 185              | 285  | 310  | 360  | 410  | 486  | 561  | 711  | 936  | 1211 | 1562 | 2037 | 2713 | 3839 | 5115 | 6642  | 8193  | 5641 | 185  |
| 32         | 800 | 150   | 2.5             | 151         | 151              | 273  | 303  | 364  | 425  | 517  | 608  | 791  | 1066 | 1402 | 1829 | 2409 | 3233 | 4606 | 6162 | 8024  | 9916  | 6803 | 151  |
| 32         | 800 | 300   | 3               | 181         | 181              | 303  | 333  | 394  | 455  | 547  | 638  | 822  | 1096 | 1432 | 1859 | 2439 | 3263 | 4636 | 6193 | 8054  | 9946  | 6833 | 181  |
| 36         | 900 | 150   | 2.5             | 191         | 191              | 366  | 410  | 497  | 585  | 716  | 848  | 1110 | 1505 | 1986 | 2600 | 3432 | 4614 | 6585 | 8819 | 11491 | 14207 | 9739 | 191  |
| 36         | 900 | 300   | 3               | 229         | 229              | 404  | 448  | 535  | 623  | 754  | 886  | 1148 | 1543 | 2024 | 2638 | 3470 | 4652 | 6623 | 8857 | 11529 | 14245 | 9777 | 229  |

Note: Packing torque to be added to the above to obtain total torque (refer to Table 27)

Table 29. Torque Values for Series 66 Rotrol Rotary Control Valves (Lbs. Ins.)

| Valve Size |     | Class | Shaft Dia<br>in | Ft/P-<br>SI | Angle of Opening |      |      |      |      |      |       |      |      |      |      |      |      |      |      |      |      |      |      |
|------------|-----|-------|-----------------|-------------|------------------|------|------|------|------|------|-------|------|------|------|------|------|------|------|------|------|------|------|------|
| in         | mm  |       |                 |             | 0                | 5    | 10   | 15   | 20   | 25   | 30    | 35   | 40   | 45   | 50   | 55   | 60   | 65   | 70   | 75   | 80   | 85   | 90   |
| 4          | 100 | 150   | 0.5             | 0.47        | 0.47             | 0.47 | 0.57 | 0.6  | 0.66 | 0.85 | 1.11  | 1.37 | 1.69 | 2.13 | 2.65 | 3.29 | 4.12 | 5.14 | 6.55 | 8.53 | 10.5 | 6.74 | 0.47 |
| 4          | 100 | 300   | 0.75            | 0.71        | 0.71             | 0.71 | 0.80 | 0.83 | 0.9  | 1.09 | 1.35  | 1.6  | 1.92 | 2.37 | 2.88 | 3.52 | 4.35 | 5.38 | 6.79 | 8.77 | 10.7 | 6.98 | 0.71 |
| 6          | 150 | 150   | 0.75            | 1.59        | 1.59             | 1.59 | 1.91 | 2.02 | 2.24 | 2.88 | 3.75  | 4.61 | 5.69 | 7.20 | 8.93 | 11.1 | 13.9 | 17.4 | 22.1 | 28.8 | 35.3 | 22.8 | 1.59 |
| 6          | 150 | 300   | 1               | 2.12        | 2.12             | 2.12 | 2.44 | 2.55 | 2.76 | 3.41 | 4.28  | 5.14 | 6.22 | 7.73 | 9.46 | 11.6 | 14.4 | 17.9 | 22.6 | 29.3 | 35.8 | 23.3 | 2.12 |
| 8          | 200 | 150   | 0.75            | 2.82        | 2.82             | 2.82 | 3.59 | 3.85 | 4.36 | 5.89 | 7.94  | 9.99 | 12.6 | 16.1 | 20.2 | 25.4 | 32   | 40.2 | 51.5 | 67.3 | 82.7 | 53   | 2.82 |
| 8          | 200 | 300   | 1               | 3.76        | 3.76             | 3.76 | 4.53 | 4.79 | 5.3  | 6.84 | 8.88  | 10.9 | 13.5 | 17.1 | 21.2 | 26.3 | 32.9 | 41.1 | 52.4 | 68.3 | 83.6 | 53.9 | 3.76 |
| 10         | 250 | 150   | 1               | 5.88        | 5.88             | 5.88 | 7.38 | 7.88 | 8.88 | 11.9 | 15.9  | 19.9 | 24.9 | 31.9 | 39.9 | 49.9 | 62.9 | 78.9 | 101  | 132  | 162  | 104  | 5.88 |
| 10         | 250 | 300   | 1.25            | 7.35        | 7.35             | 7.35 | 8.85 | 9.35 | 10.4 | 13.4 | 17.4  | 21.4 | 26.4 | 33.4 | 41.4 | 51.4 | 64.4 | 80.4 | 102  | 133  | 163  | 105  | 7.35 |
| 12         | 300 | 150   | 1               | 8.47        | 8.47             | 8.47 | 11.1 | 11.9 | 13.7 | 18.8 | 25.7  | 32.7 | 41.3 | 53.4 | 67.2 | 84.5 | 107  | 135  | 173  | 226  | 278  | 178  | 8.47 |
| 12         | 300 | 300   | 1.5             | 12.7        | 12.7             | 12.7 | 15.3 | 16.2 | 17.9 | 23.1 | 30    | 36.9 | 45.5 | 57.6 | 71.5 | 88.7 | 111  | 139  | 177  | 230  | 282  | 182  | 12.7 |
| 14         | 350 | 150   | 1.25            | 14.4        | 14.4             | 14.4 | 17.9 | 19.1 | 21.4 | 28.4 | 37.7  | 47   | 58.6 | 74.9 | 93.5 | 117  | 147  | 184  | 235  | 308  | 377  | 242  | 14.4 |
| 14         | 350 | 300   | 1.75            | 20.2        | 20.2             | 20.2 | 23.7 | 24.8 | 27.1 | 34.1 | 43.4  | 52.7 | 64.4 | 80.6 | 99.3 | 123  | 153  | 190  | 241  | 313  | 383  | 248  | 20.2 |
| 16         | 400 | 150   | 1.25            | 18.8        | 18.8             | 18.8 | 24.1 | 25.9 | 29.5 | 40.1 | 54.3  | 68.5 | 86.2 | 111  | 139  | 175  | 221  | 278  | 356  | 466  | 572  | 366  | 18.8 |
| 16         | 400 | 300   | 2               | 30.1        | 30.1             | 30.1 | 35.4 | 37.2 | 40.7 | 51.4 | 65.6  | 79.8 | 97.5 | 122  | 151  | 186  | 232  | 289  | 367  | 477  | 583  | 378  | 30.1 |
| 18         | 450 | 150   | 1.5             | 28.6        | 28.6             | 28.6 | 36.3 | 38.8 | 44   | 59.4 | 79.9  | 100  | 126  | 162  | 203  | 254  | 321  | 403  | 516  | 675  | 829  | 532  | 28.6 |
| 18         | 450 | 300   | 2.25            | 42.9        | 42.9             | 42.9 | 50.6 | 53.1 | 58.3 | 73.7 | 94.2  | 115  | 140  | 176  | 217  | 269  | 335  | 418  | 530  | 690  | 844  | 546  | 42.9 |
| 20         | 500 | 150   | 1.5             | 35.3        | 35.3             | 35.3 | 46   | 49.5 | 56.7 | 78.1 | 107   | 135  | 171  | 221  | 278  | 349  | 442  | 556  | 713  | 934  | 1148 | 734  | 35.3 |
| 20         | 500 | 300   | 2.5             | 58.8        | 58.8             | 58.8 | 69.5 | 73.1 | 80.2 | 102  | 130   | 159  | 194  | 244  | 301  | 373  | 465  | 580  | 736  | 958  | 1172 | 758  | 58.8 |
| 24         | 600 | 150   | 1.75            | 59.3        | 59.3             | 59.3 | 78.1 | 84.4 | 97   | 135  | 185   | 235  | 298  | 386  | 487  | 612  | 776  | 977  | 1253 | 1643 | 2020 | 1291 | 59.3 |
| 24         | 600 | 300   | 3               | 102         | 102              | 102  | 120  | 127  | 139  | 177  | 227   | 278  | 340  | 428  | 529  | 655  | 818  | 1019 | 1296 | 1685 | 2062 | 1333 | 102  |
| 28         | 700 | 150   | 2               | 92.2        | 92.2             | 92.2 | 123  | 133  | 153  | 214  | 295   | 375  | 477  | 618  | 780  | 983  | 1246 | 1569 | 2015 | 2642 | 3249 | 2075 | 92.2 |
| 28         | 700 | 300   | 3.5             | 161         | 161              | 161  | 192  | 202  | 222  | 283  | 364   | 445  | 546  | 687  | 849  | 1052 | 1315 | 1638 | 2084 | 2711 | 3318 | 2144 | 161  |
| 30         | 750 | 150   | 2               | 106         | 106              | 106  | 143  | 156  | 181  | 256  | 356   | 456  | 581  | 756  | 957  | 1207 | 1532 | 1938 | 2483 | 3259 | 4010 | 2558 | 106  |
| 30         | 750 | 300   | 3.5             | 185         | 185              | 185  | 223  | 235  | 260  | 335  | 435   | 536  | 661  | 836  | 1036 | 1286 | 1612 | 2012 | 2563 | 3338 | 4089 | 2638 | 185  |
| 32         | 800 | 150   | 2.5             | 151         | 151              | 151  | 196  | 212  | 242  | 334  | 456   | 578  | 730  | 944  | 1188 | 1493 | 1890 | 2378 | 3050 | 3996 | 4911 | 3141 | 151  |
| 32         | 800 | 300   | 3.5             | 211         | 211              | 211  | 257  | 272  | 302  | 394  | 516   | 638  | 791  | 1004 | 1248 | 1554 | 1950 | 2439 | 3110 | 4056 | 4971 | 3201 | 211  |
| 36         | 900 | 150   | 2.5             | 191         | 191              | 191  | 256  | 278  | 322  | 453  | 629   | 804  | 1023 | 1329 | 1680 | 2118 | 2687 | 3388 | 4352 | 5709 | 7023 | 4483 | 191  |
| 36         | 900 | 300   | 3.5             | 267         | 267              | 267  | 332  | 354  | 398  | 530  | 705</ |      |      |      |      |      |      |      |      |      |      |      |      |

# kentintrol

## Series 63,64,65 & 66- Rotary Control Valves

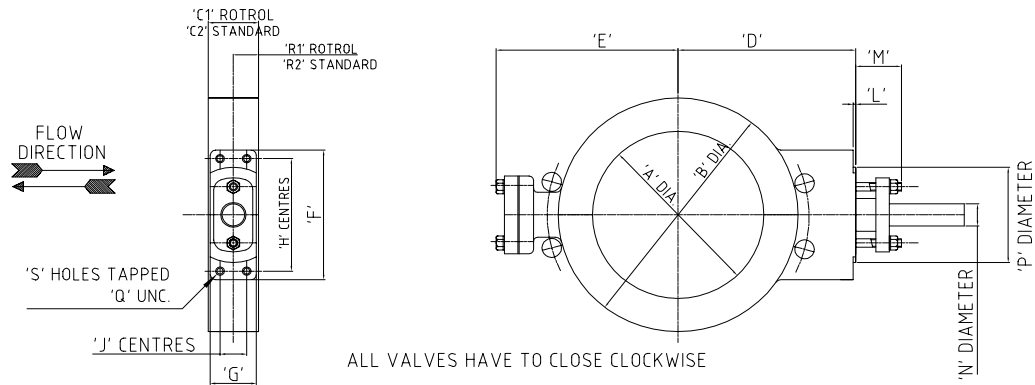


Table 30. Class 150LB Wafer Valves (Series 66)

| Valve Size |     | Dimensions |      |     |     |     |     |     |     |     |     |   |    |        |     |      |       |      |   |
|------------|-----|------------|------|-----|-----|-----|-----|-----|-----|-----|-----|---|----|--------|-----|------|-------|------|---|
| in         | mm  | A          | B    | C1  | C2  | D   | E   | F   | G   | H   | J   | L | M  | N      | P   | Q    | R1    | R2   | S |
| 4          | 100 | 102        | 160  | 60  | 54  | 145 | 145 | 120 | 38  | 100 | 25  | 3 | 40 | 1/2"   | 90  | 3/8" | 30    | 24.5 | 4 |
| 6          | 150 | 152        | 215  | 80  | 59  | 185 | 180 | 150 | 50  | 130 | 30  | 3 | 45 | 3/4"   | 105 | 3/8" | 40    | 26   | 4 |
| 8          | 200 | 203        | 270  | 110 | 64  | 200 | 205 | 170 | 52  | 145 | 35  | 3 | 45 | 3/4"   | 105 | 3/8" | 55    | 27.5 | 4 |
| 10         | 250 | 254        | 324  | 130 | 72  | 230 | 240 | 170 | 64  | 145 | 35  | 3 | 55 | 1"     | 105 | 1/2" | 65    | 34.5 | 4 |
| 12         | 300 | 305        | 382  | 164 | 81  | 270 | 270 | 170 | 64  | 145 | 35  | 3 | 55 | 1"     | 105 | 1/2" | 82    | 44   | 4 |
| 14         | 350 | 340        | 426  | 170 | 92  | 308 | 295 | 170 | 80  | 145 | 45  | 3 | 55 | 1 1/4" | 105 | 5/8" | 85    | 41.5 | 4 |
| 16         | 400 | 390        | 474  | 216 | 102 | 340 | 335 | 170 | 80  | 145 | 45  | 3 | 55 | 1 1/4" | 105 | 5/8" | 108   | 51   | 4 |
| 18         | 450 | 440        | 535  | 222 | 114 | 360 | 365 | 260 | 100 | 210 | 60  | 3 | 60 | 1 1/2" | 170 | 3/4" | 111   | 57   | 4 |
| 20         | 500 | 490        | 590  | 229 | 127 | 395 | 390 | 260 | 100 | 210 | 60  | 3 | 65 | 1 1/2" | 170 | 3/4" | 114.5 | 63.5 | 4 |
| 24         | 600 | 590        | 695  | 300 | 154 | 480 | 460 | 260 | 125 | 210 | 90  | 3 | 65 | 1 3/4" | 170 | 3/4" | 150   | 77   | 4 |
| 28         | 700 | 690        | 805  | 360 | 165 | 540 | 530 | 260 | 150 | 210 | 100 | 3 | 65 | 2"     | 170 | 1"   | 180   | 82.5 | 6 |
| 30         | 750 | 740        | 860  | 380 | 165 | 565 | 550 | 260 | 150 | 210 | 100 | 3 | 65 | 2"     | 170 | 1"   | 190   | 82.5 | 6 |
| 32         | 800 | 790        | 920  | 400 | 190 | 600 | 590 | 260 | 150 | 210 | 100 | 3 | 65 | 2 1/2" | 170 | 1"   | 200   | 95   | 6 |
| 36         | 900 | 890        | 1027 | 460 | 200 | 655 | 645 | 260 | 150 | 210 | 100 | 3 | 65 | 2 1/2" | 170 | 1"   | 230   | 100  | 6 |

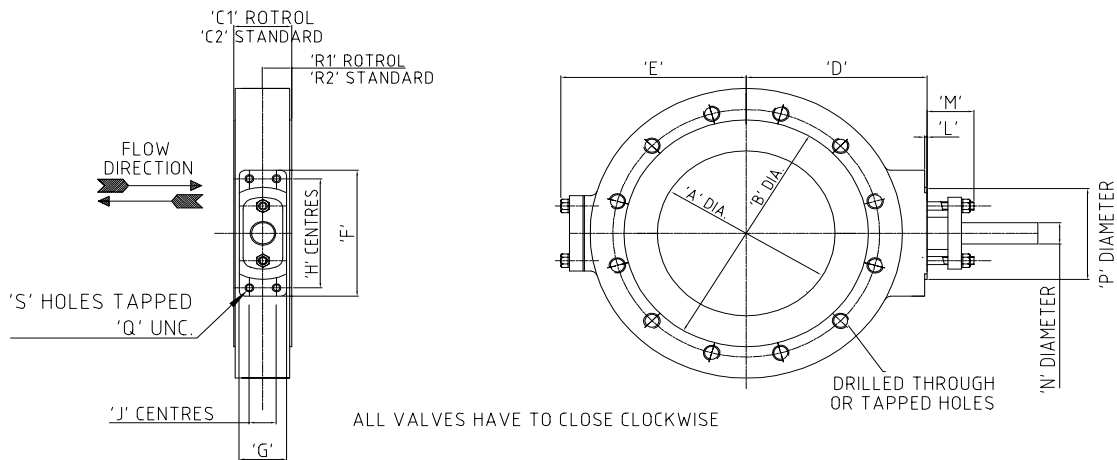


Table 31. Class 150LB Wafer Lugged Valves (Series 66)

| Valve Size |     | Dimensions |      |     |     |     |     |     |     |     |     |   |    |        |     |      |     |      |   |
|------------|-----|------------|------|-----|-----|-----|-----|-----|-----|-----|-----|---|----|--------|-----|------|-----|------|---|
| in         | mm  | A          | B    | C1  | C2  | D   | E   | F   | G   | H   | J   | L | M  | N      | P   | Q    | R1  | R2   | S |
| 4          | 100 | 102        | 160  | 60  | 54  | 145 | 145 | 120 | 44  | 100 | 25  | 3 | 40 | 1/2"   | 90  | 3/8" | 30  | 24.5 | 4 |
| 6          | 150 | 152        | 215  | 80  | 59  | 185 | 180 | 150 | 50  | 130 | 30  | 3 | 45 | 3/4"   | 105 | 3/8" | 40  | 26   | 4 |
| 8          | 200 | 203        | 270  | 110 | 64  | 200 | 205 | 170 | 52  | 145 | 35  | 3 | 45 | 3/4"   | 105 | 3/8" | 55  | 27.5 | 4 |
| 10         | 250 | 254        | 324  | 130 | 72  | 230 | 240 | 170 | 64  | 145 | 35  | 3 | 55 | 1"     | 105 | 1/2" | 65  | 34.5 | 4 |
| 12         | 300 | 305        | 381  | 164 | 81  | 270 | 270 | 170 | 72  | 145 | 35  | 3 | 55 | 1"     | 105 | 1/2" | 82  | 44   | 4 |
| 14         | 350 | 340        | 413  | 170 | 92  | 308 | 295 | 170 | 80  | 145 | 45  | 3 | 55 | 1 1/4" | 105 | 5/8" | 85  | 41.5 | 4 |
| 16         | 400 | 390        | 474  | 216 | 102 | 340 | 335 | 170 | 80  | 145 | 45  | 3 | 55 | 1 1/4" | 105 | 5/8" | 108 | 51   | 4 |
| 18         | 450 | 440        | 533  | 222 | 114 | 360 | 365 | 260 | 100 | 210 | 60  | 3 | 60 | 1 1/2" | 170 | 3/4" | 111 | 57   | 4 |
| 20         | 500 | 490        | 590  | -   | 127 | 395 | 390 | 260 | 100 | 210 | 60  | 3 | 65 | 1 1/2" | 170 | 3/4" | -   | 63.5 | 4 |
| 24         | 600 | 590        | 692  | -   | 154 | 480 | 460 | 260 | 125 | 210 | 90  | 3 | 65 | 1 3/4" | 170 | 3/4" | -   | 77   | 4 |
| 28         | 700 | 690        | 801  | -   | 165 | 540 | 530 | 260 | 150 | 210 | 100 | 3 | 65 | 2"     | 170 | 1"   | -   | 82.5 | 6 |
| 30         | 750 | 740        | 860  | -   | 165 | 565 | 550 | 260 | 150 | 210 | 100 | 3 | 65 | 2"     | 170 | 1"   | -   | 82.5 | 6 |
| 32         | 800 | 790        | 915  | -   | 190 | 600 | 590 | 260 | 150 | 210 | 100 | 3 | 65 | 2 1/2" | 170 | 1"   | -   | 95   | 6 |
| 36         | 900 | 890        | 1022 | -   | 200 | 655 | 645 | 260 | 150 | 210 | 100 | 3 | 65 | 2 1/2" | 170 | 1"   | -   | 100  | 6 |

Note: Only available to 18" 450mm for Rotrol Introseals - sizes above that are flanged

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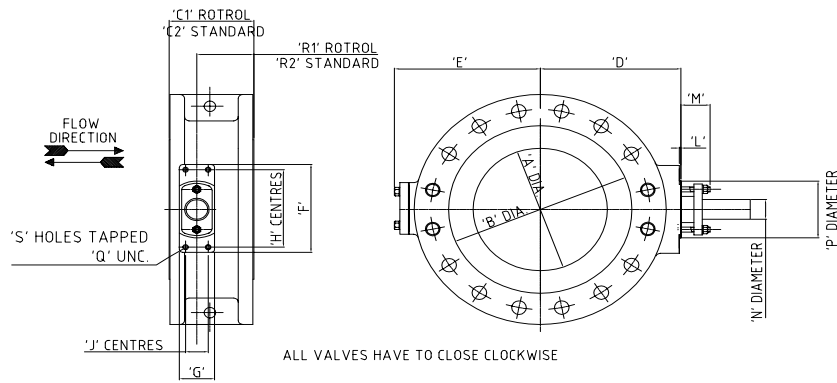


Table 32. Class 150LB Flanged Valves(Series 66)

| Valve Size |     | Dimensions |      |     |     |     |     |     |     |     |     |   |    |        |     |      |       |       |   |
|------------|-----|------------|------|-----|-----|-----|-----|-----|-----|-----|-----|---|----|--------|-----|------|-------|-------|---|
| in         | mm  | A          | B    | C1  | C2  | D   | E   | F   | G   | H   | J   | L | M  | N      | P   | Q    | R1    | R2    | S |
| 4          | 100 | 102        | 160  | 127 | 127 | 145 | 145 | 120 | 44  | 100 | 25  | 3 | 40 | 1/2"   | 90  | 3/8" | 77    | 77    | 4 |
| 6          | 150 | 152        | 215  | 140 | 140 | 185 | 180 | 150 | 50  | 130 | 30  | 3 | 45 | 3/4"   | 105 | 3/8" | 86    | 86    | 4 |
| 8          | 200 | 203        | 270  | 152 | 152 | 200 | 205 | 170 | 52  | 145 | 35  | 3 | 45 | 3/4"   | 105 | 3/8" | 87    | 87    | 4 |
| 10         | 250 | 254        | 324  | 165 | 165 | 230 | 240 | 170 | 64  | 145 | 35  | 3 | 55 | 1"     | 105 | 1/2" | 82    | 82    | 4 |
| 12         | 300 | 305        | 381  | 178 | 178 | 270 | 270 | 170 | 72  | 145 | 35  | 3 | 55 | 1"     | 105 | 1/2" | 82    | 82    | 4 |
| 14         | 350 | 340        | 413  | 190 | 190 | 308 | 295 | 170 | 80  | 145 | 45  | 3 | 55 | 1 1/4" | 105 | 5/8" | 81    | 81    | 4 |
| 16         | 400 | 390        | 470  | 216 | 216 | 340 | 335 | 170 | 80  | 145 | 45  | 3 | 55 | 1 1/4" | 105 | 5/8" | 108   | 108   | 4 |
| 18         | 450 | 440        | 533  | 222 | 222 | 360 | 365 | 260 | 100 | 210 | 60  | 3 | 60 | 1 1/2" | 170 | 3/4" | 111   | 111   | 4 |
| 20         | 500 | 490        | 590  | 229 | 229 | 395 | 390 | 260 | 100 | 210 | 60  | 3 | 65 | 1 1/2" | 170 | 3/4" | 114.5 | 114.5 | 4 |
| 24         | 600 | 590        | 692  | 300 | 267 | 480 | 460 | 260 | 125 | 210 | 90  | 3 | 65 | 1 3/4" | 170 | 3/4" | 150   | 133.5 | 4 |
| 28         | 700 | 690        | 801  | 360 | 292 | 540 | 530 | 260 | 150 | 210 | 100 | 3 | 65 | 2"     | 170 | 1"   | 180   | 146   | 6 |
| 30         | 750 | 740        | 857  | 380 | 318 | 565 | 550 | 260 | 150 | 210 | 100 | 3 | 65 | 2"     | 170 | 1"   | 190   | 159   | 6 |
| 32         | 800 | 790        | 915  | 400 | 318 | 600 | 590 | 260 | 150 | 210 | 100 | 3 | 65 | 2 1/2" | 170 | 1"   | 200   | 159   | 6 |
| 36         | 900 | 890        | 1022 | 460 | 330 | 655 | 645 | 260 | 150 | 210 | 100 | 3 | 65 | 2 1/2" | 170 | 1"   | 230   | 165   | 6 |

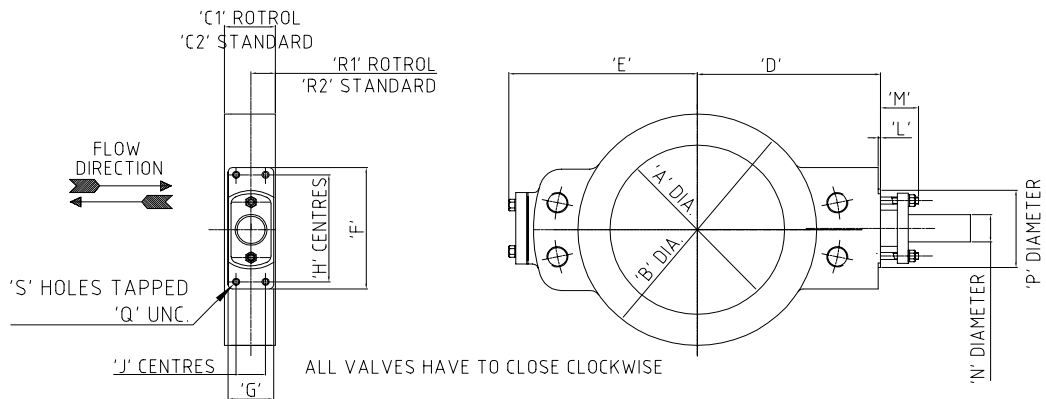


Table 33. Class 300LB Wafer Valves(Series 66)

| Valve Size |     | Dimensions |      |     |     |     |     |     |     |     |     |   |    |        |     |      |       |       |   |
|------------|-----|------------|------|-----|-----|-----|-----|-----|-----|-----|-----|---|----|--------|-----|------|-------|-------|---|
| in         | mm  | A          | B    | C1  | C2  | D   | E   | F   | G   | H   | J   | L | M  | N      | P   | Q    | R1    | R2    | S |
| 4          | 100 | 102        | 160  | 60  | 54  | 145 | 145 | 120 | 44  | 100 | 25  | 3 | 45 | 3/4"   | 80  | 3/8" | 30    | 24.5  | 4 |
| 6          | 150 | 152        | 216  | 80  | 59  | 185 | 180 | 150 | 50  | 130 | 30  | 3 | 55 | 1"     | 105 | 3/8" | 40    | 26    | 4 |
| 8          | 200 | 203        | 270  | 110 | 73  | 225 | 220 | 170 | 64  | 145 | 35  | 3 | 55 | 1"     | 105 | 1/2" | 55    | 36.5  | 4 |
| 10         | 250 | 254        | 324  | 130 | 83  | 250 | 265 | 170 | 70  | 145 | 35  | 3 | 55 | 1 1/4" | 105 | 1/2" | 65    | 45.5  | 4 |
| 12         | 300 | 305        | 382  | 164 | 92  | 285 | 285 | 170 | 80  | 145 | 35  | 3 | 55 | 1 1/2" | 105 | 1/2" | 82    | 48    | 4 |
| 14         | 350 | 340        | 426  | 170 | 117 | 325 | 340 | 260 | 100 | 210 | 60  | 3 | 65 | 1 3/4" | 170 | 3/4" | 85    | 58.5  | 4 |
| 16         | 400 | 390        | 474  | 216 | 133 | 350 | 360 | 260 | 100 | 210 | 60  | 3 | 65 | 2"     | 170 | 3/4" | 108   | 66.5  | 4 |
| 18         | 450 | 430        | 535  | 222 | 149 | 400 | 400 | 260 | 100 | 210 | 60  | 3 | 65 | 2 1/4" | 170 | 3/4" | 111   | 74.5  | 4 |
| 20         | 500 | 480        | 590  | 229 | 159 | 430 | 430 | 260 | 125 | 210 | 90  | 3 | 65 | 2 1/2" | 170 | 3/4" | 114.5 | 79.5  | 6 |
| 24         | 600 | 580        | 695  | 300 | 181 | 530 | 505 | 260 | 150 | 210 | 90  | 3 | 65 | 3"     | 170 | 3/4" | 150   | 90.5  | 6 |
| 28         | 700 | 685        | 805  | 360 | 209 | 595 | 580 | 260 | 150 | 210 | 100 | 3 | 65 | 3"     | 170 | 1"   | 180   | 104.5 | 6 |
| 30         | 750 | 735        | 860  | 380 | 241 | 625 | 605 | 260 | 150 | 210 | 100 | 3 | 65 | 3"     | 170 | 1"   | 190   | 120.5 | 6 |
| 32         | 800 | 785        | 920  | 400 | 241 | 650 | 640 | 260 | 150 | 210 | 100 | 3 | 65 | 3"     | 170 | 1"   | 200   | 120.5 | 6 |
| 36         | 900 | 985        | 1027 | 460 | 260 | 710 | 700 | 260 | 150 | 210 | 100 | 3 | 65 | 3"     | 170 | 1"   | 230   | 130   | 6 |



# kentintrol

## Series 63,64,65 & 66- Rotary Control Valves

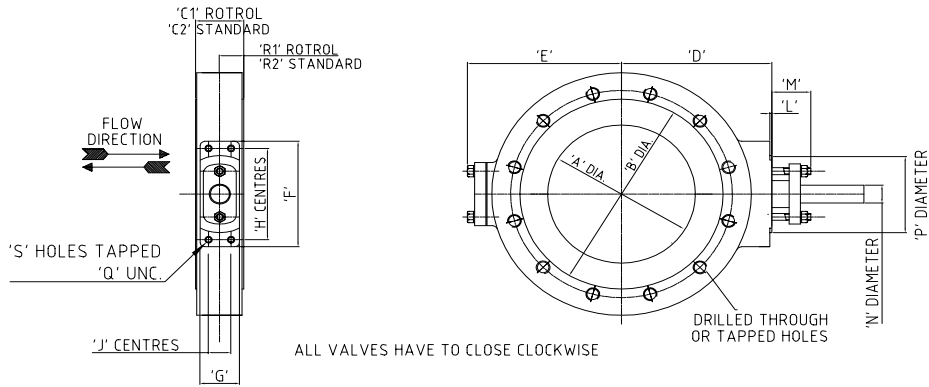


Table 34. Class 300LB Wafer Lugged Valves(Series 66)

| Valve Size |     | Dimensions |      |     |     |     |     |     |     |     |     |   |    |        |     |      |     |       |   |  |
|------------|-----|------------|------|-----|-----|-----|-----|-----|-----|-----|-----|---|----|--------|-----|------|-----|-------|---|--|
| in         | mm  | A          | B    | C1  | C2  | D   | E   | F   | G   | H   | J   | L | M  | N      | P   | Q    | R1  | R2    | S |  |
| 4          | 100 | 102        | 160  | 60  | 54  | 145 | 145 | 120 | 44  | 100 | 25  | 3 | 45 | 3/4"   | 90  | 3/8" | 30  | 24.5  | 4 |  |
| 6          | 150 | 152        | 216  | 80  | 59  | 185 | 180 | 150 | 50  | 130 | 30  | 3 | 55 | 1"     | 105 | 3/8" | 40  | 26    | 4 |  |
| 8          | 200 | 203        | 270  | 110 | 73  | 225 | 220 | 170 | 64  | 145 | 35  | 3 | 55 | 1"     | 105 | 1/2" | 55  | 36.5  | 4 |  |
| 10         | 250 | 254        | 324  | 130 | 83  | 250 | 265 | 170 | 70  | 145 | 35  | 3 | 55 | 1 1/4" | 105 | 1/2" | 65  | 45.5  | 4 |  |
| 12         | 300 | 305        | 381  | 164 | 92  | 285 | 285 | 170 | 80  | 145 | 35  | 3 | 55 | 1 1/2" | 105 | 1/2" | 82  | 48    | 4 |  |
| 14         | 350 | 340        | 413  | 170 | 117 | 325 | 340 | 260 | 100 | 210 | 60  | 3 | 55 | 1 3/4" | 170 | 3/4" | 85  | 58.5  | 4 |  |
| 16         | 400 | 390        | 470  | 216 | 133 | 350 | 360 | 260 | 100 | 210 | 60  | 3 | 65 | 2"     | 170 | 3/4" | 108 | 66.5  | 4 |  |
| 18         | 450 | 430        | 535  | 222 | 149 | 400 | 400 | 260 | 100 | 210 | 60  | 3 | 65 | 2 1/4" | 170 | 3/4" | 111 | 74.5  | 4 |  |
| 20         | 500 | 480        | 590  | -   | 159 | 430 | 430 | 260 | 125 | 210 | 90  | 3 | 65 | 2 1/2" | 170 | 3/4" | -   | 79.5  | 6 |  |
| 24         | 600 | 580        | 692  | -   | 181 | 530 | 505 | 260 | 150 | 210 | 90  | 3 | 65 | 3"     | 170 | 3/4" | -   | 90.5  | 6 |  |
| 28         | 700 | 685        | 801  | -   | 209 | 595 | 580 | 260 | 150 | 210 | 100 | 3 | 65 | 3"     | 170 | 1"   | -   | 104.5 | 6 |  |
| 30         | 750 | 735        | 857  | -   | 241 | 625 | 605 | 260 | 150 | 210 | 100 | 3 | 65 | 3"     | 170 | 1"   | -   | 120.5 | 6 |  |
| 32         | 800 | 785        | 915  | -   | 241 | 650 | 640 | 260 | 150 | 210 | 100 | 3 | 65 | 3"     | 170 | 1"   | -   | 120.5 | 6 |  |
| 36         | 900 | 885        | 1022 | -   | 260 | 710 | 700 | 260 | 150 | 210 | 100 | 3 | 65 | 3"     | 170 | 1"   | -   | 130   | 6 |  |

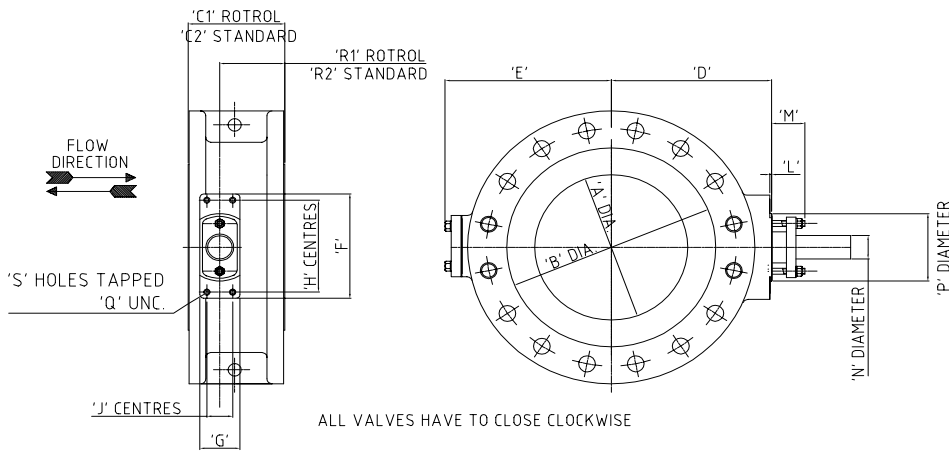


Table 35. Class 300LB Flanged Valves(Series 66)

| Valve Size |     | Dimensions |      |     |     |     |     |     |     |     |     |   |    |        |     |      |       |       |   |  |
|------------|-----|------------|------|-----|-----|-----|-----|-----|-----|-----|-----|---|----|--------|-----|------|-------|-------|---|--|
| in         | mm  | A          | B    | C1  | C2  | D   | E   | F   | G   | H   | J   | L | M  | N      | P   | Q    | R1    | R2    | S |  |
| 4          | 100 | 102        | 160  | 127 | 127 | 145 | 145 | 120 | 44  | 100 | 25  | 3 | 45 | 3/4"   | 90  | 3/8" | 77    | 77    | 4 |  |
| 6          | 150 | 152        | 215  | 140 | 140 | 185 | 180 | 150 | 50  | 130 | 30  | 3 | 55 | 1"     | 105 | 3/8" | 80    | 80    | 4 |  |
| 8          | 200 | 203        | 270  | 152 | 152 | 225 | 220 | 170 | 64  | 145 | 35  | 3 | 55 | 1"     | 105 | 1/2" | 87    | 87    | 4 |  |
| 10         | 250 | 254        | 324  | 165 | 165 | 250 | 265 | 170 | 70  | 145 | 35  | 3 | 55 | 1 1/4" | 105 | 1/2" | 82    | 82    | 4 |  |
| 12         | 300 | 305        | 381  | 178 | 178 | 285 | 285 | 170 | 80  | 145 | 35  | 3 | 55 | 1 1/2" | 105 | 1/2" | 82    | 82    | 4 |  |
| 14         | 350 | 340        | 413  | 190 | 190 | 325 | 340 | 260 | 100 | 210 | 60  | 3 | 65 | 1 3/4" | 170 | 3/4" | 95    | 95    | 4 |  |
| 16         | 400 | 390        | 470  | 216 | 216 | 350 | 360 | 260 | 100 | 210 | 60  | 3 | 65 | 2"     | 170 | 3/4" | 108   | 108   | 4 |  |
| 18         | 450 | 430        | 535  | 222 | 222 | 400 | 400 | 260 | 100 | 210 | 60  | 3 | 65 | 2 1/4" | 170 | 3/4" | 111   | 111   | 4 |  |
| 20         | 500 | 480        | 590  | 229 | 229 | 430 | 430 | 260 | 125 | 210 | 90  | 3 | 65 | 2 1/2" | 170 | 3/4" | 114.5 | 114.5 | 6 |  |
| 24         | 600 | 580        | 692  | 300 | 267 | 530 | 505 | 260 | 150 | 210 | 90  | 3 | 65 | 3"     | 170 | 3/4" | 150   | 133.5 | 6 |  |
| 28         | 700 | 685        | 801  | 360 | 292 | 595 | 580 | 260 | 150 | 210 | 100 | 3 | 65 | 3"     | 170 | 1"   | 180   | 146   | 6 |  |
| 30         | 750 | 735        | 857  | 380 | 318 | 625 | 605 | 260 | 150 | 210 | 100 | 3 | 65 | 3"     | 170 | 1"   | 190   | 159   | 6 |  |
| 32         | 800 | 785        | 915  | 400 | 318 | 650 | 640 | 260 | 150 | 210 | 100 | 3 | 65 | 3"     | 170 | 1"   | 200   | 159   | 6 |  |
| 36         | 900 | 885        | 1022 | 460 | 330 | 710 | 700 | 260 | 150 | 210 | 100 | 3 | 65 | 3"     | 170 | 1"   | 230   | 165   | 6 |  |

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