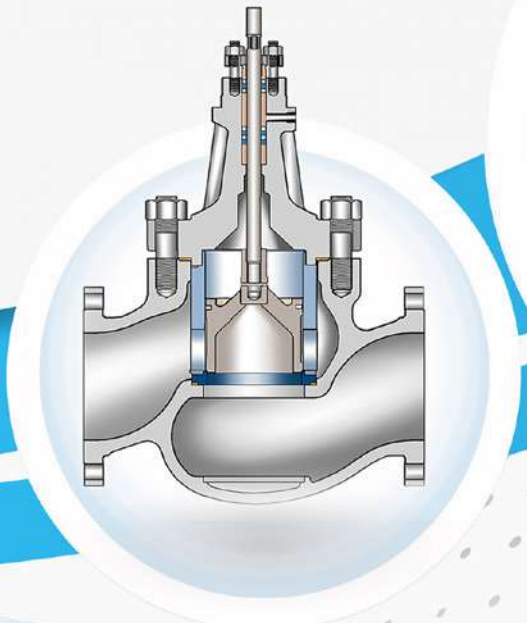
UNICORN VALVES

94000 SERIES CONTROL VALVES

CAGE GUIDIED

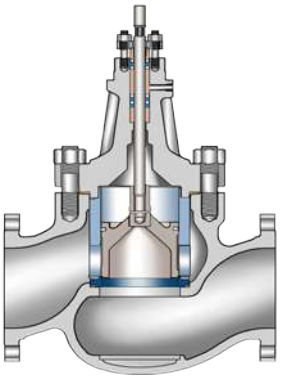


UVPL-CAT-94-01/2018

MODEL NUMBERING METHOD

94000 - Series Valve Code

1st 2nd: 9 4 — **Series Globe Cage Guided**



3rd: Plug seal

0. Undefined
1. Polymeric Seal
2. Graphite Seal
3. Metal Seal
4. Spring Energised Polymeric seal
5. With Pilot Plug

4th: Trim Type

0. Undefined
1. Standard
2. Single Stage Deci-Nill®/Cav-kill®
3. Double Stage Deci-Nill®/Cav-kill®
4. Double Stage Deci-Nill®
5. Double Stage Cav-kill®

5th: Flow Characteristics

0. Undefined
1. Linear
2. Equal Percentage
3. Modified

Sample Model Numbering

Model Number - 94 2 1 1

- 94 Globe Cage Guided
- 2 Graphite Seal
- 1 Standard
- 1 Linear

Note:

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

INTRODUCTION

SERIES 94000 - The characteristic of this design is the cylindrical outer cage and cylindrical inner balanced plug. The rigid cylindrical structure and Balanced plug makes the valve suitable for Higher flow and Heavy Pressure drop service.

94000 series valve

MAIN FEATURES

- Compact body with Streamlined flow path having high flow capacity and low pressure recovery
- Heavy Cage guiding offers excellent plug stability and eliminates trim vibration in the event of large pressure drop
- Rating ASME Class 150 thru 2500
- Flow characteristic: Linear, Equal Percentage or Customised
- Flow capacity: Full, Medium and Reduced ports / areas are available
- Bonnet type: Bolted and Pressure Seal(Optional)
- End Connection: RF, RTJ Flanges and Weld end connection. SW and threaded ends is upto and including 2"
- Rangeability 100:1
- Trim design Dec-Nill® and Cav-Kill® with multi holes on cage /plug to reduce the noise and control cavitation respectively
- Leakage Class: Standard is ANSI Class IV as per ANSI/FCI 70.2. Class V & VI are also available on request

General Description

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

Product Range — Table 1

Valve Size		ASME Class					
Inches	mm	150	300	600	900	1500	2500
2	50	●	●	●	●	●	●
3	80	●	●	●	●	●	●
4	100	●	●	●	●	●	●
6	150	●	●	●	●	●	●
8	200	●	●	●	●	●	●
10	250	●	●	●	●	●	●
12	300	●	●	●	●	●	●
14	350	●	●	●	●	●	
16	400	●	●	●	●	●	
18	450	●	●	●	●	●	
20	500	●	●	●			
24	600	●	●	●			

End connection — Table 2

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

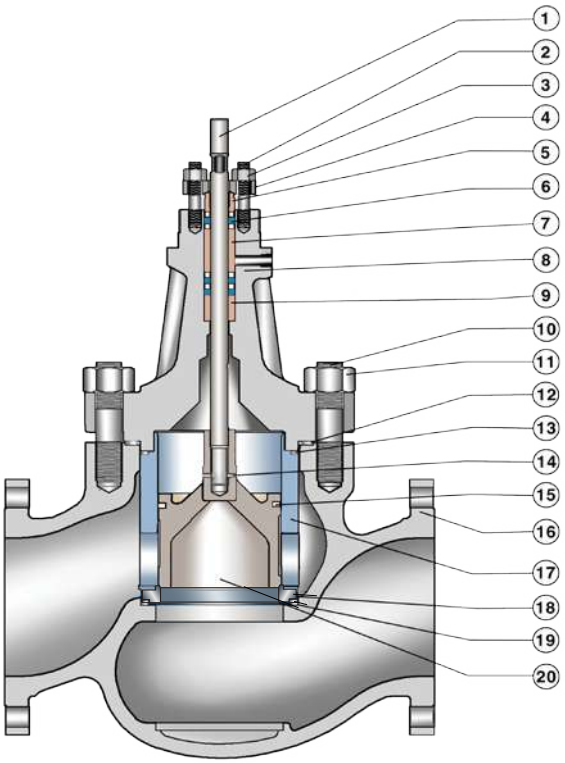
Maximum Valve Stroke — Table 3

Valve Size		Maximum Valve Stroke					
		Standard		Deci-Nill®		Cav-kill®	
Inches	mm	Inches	mm	Inches	mm	Inches	mm
2	50	1.5	38.1	1.5	38.1	1.5	38.1
3	80	2	50.8	2	50.8	1.5	38.1
4	100	2	50.8	2	50.8	2	50.8
6	150	2	50.8	2.5	63.5	2.5	63.5
8	200	2	50.8	3	76.2	3	76.2
10	250	3	76.2	3	76.2	3.5	88.9
12	300	3.75	95.25	5	127	5	127
16	400	5	127	6	152.4	6	152.4
18	450	7	177.8	7	177.8		
20	500	9	228.6	9	228.6		
24	600	11	279.4	15	381		

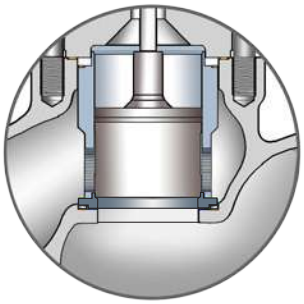
Notes :

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

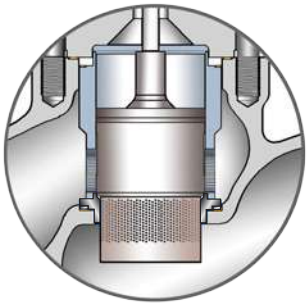
STANDARD CONSTRUCTION



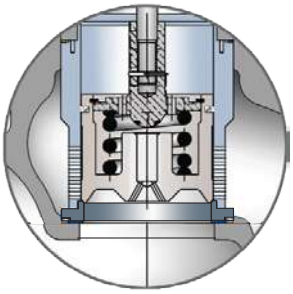
Part. No	Part Name
1	Valve Stem
2	Packing Stud
3	Packing Stud Nut
4	Packing Flange
5	Packing Follower
6	Packing
7	Packing Spacer
8	Bonnet
9	Guide Bush
10	Body Stud
11	Body Stud Nut
12	Body Gasket
13	Cage Gasket
14	Plug Pin
15	Seal Ring
16	Body
17	Cage
18	Seat Ring
19	Seat Ring Gasket
20	Plug



Single Stage Deci-Nill® & Cav-kill®
(Noise Reduction & Cavitation Control)



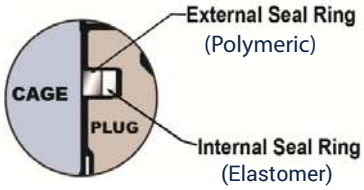
Double Stage Deci-Nill® & Cav-kill®
(Noise Reduction & Cavitation Control)



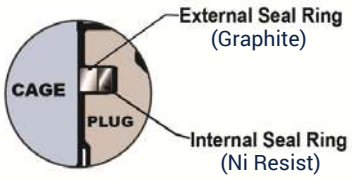
With Pilot Plug-Single Stage

Seal Ring Types

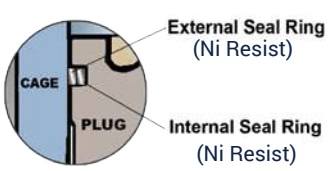
1.Polymeric Seal Ring
Model Number-94100



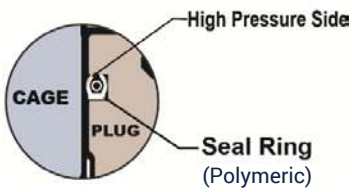
2.Graphite Seal Ring
Model Number-94200



3.Metal Seal Ring
Model Number-94300



4.Spring Energised Polymeric Seal Ring
Model Number-94400



Notes :

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

Temperature Range / Seat Leakage

Valve Model	Plug Seal Type	Valve Size		Temperature Range		Seat Leakage AS per ANSI / FCI 70.2 Class
		inches	mm	Minimum	Maximum	
94100	Polymeric Seal Ring	2-24	50 - 600	-20°F (-29°C)	300°F (149°C)	IV
94200	Graphite Seal Ring	2	50	-320°F (-196°C)	1050°F (566°C)	III
		3-4	80 - 100	-320°F (-196°C)	800°F (427°C)	III
		6-18	150 - 450	-320°F (-196°C)	850°F (454°C)	IV
		20&24	500 & 600	-51°F (-46°C)	650°F (343°C)	IV
94300	Metal Seal Ring	2	50	-320°F (-196°C)	1050°F (566°C)	II
		3-4	80 - 100	-320°F (-196°C)	800°F (427°C)	II
		6-18	150 - 450	-320°F (-196°C)	1050°F (566°C)	III
		20&24	500 & 600	-51°F (-46°C)	650°F (343°C)	III
94400	Spring Energised Polymeric Seal Ring	2-16	50 - 400	-148°F (-100°C)	450°F (232°C)	
94500	With Pilot Plug	2	50	-320°F (-196°C)	1050°F (566°C)	
		3-4	80 - 100	-320°F (-196°C)	800°F (427°C)	
		6-18	150 - 450	-320°F (-196°C)	1050°F (566°C)	

Model Number With Flow Direction

Model Number	94100	94200	94300	94400	94500
Seal Type	Polymeric Seal Ring	Graphite Seal Ring	Metal Seal Ring	Spring Energised Polymeric Seal Ring	With Pilot Plug[1]
94011/94012 Standard Trim (Linear/Equal Percentage)	94111/94112 Flow To Open(FTO) or Flow To Close(FTC)	94211/94212 Flow To Open(FTO) or Flow To Close(FTC)	94311/94312 Flow To Open(FTO) or Flow To Close(FTC)	94411/94412[2] Flow To Open(FTO) or Flow To Close(FTC)	94511/94512 Flow To Close(FTC)
94021/94022 Single Stage Deci-Nill® (Linear/Equal Percentage)	94121/ 94122 Flow To Open(FTO)	94221/ 94222 Flow To Open(FTO)	94321/ 94322 Flow To Open(FTO)	94421/ 94422 Flow To Open(FTO)	94521/ 94522 Flow To Close(FTC)
94021/94022 Single Stage Cav-Kill® (Linear/Equal Percentage)	94121/ 94122 Flow To Close(FTC)	94221/ 94222 Flow To Close(FTC)	94321/ 94322 Flow To Close(FTC)	94121/ 94422 Flow To Close(FTC)	94521/ 94522 Flow To Close(FTC)
94041 Double Stage Deci-Nill (Linear)	94141 Flow To Open(FTO)	94241 Flow To Open(FTO)	94341 Flow To Open(FTO)	94441 Flow To Open(FTO)	
94051 Double Stage cav-Kill (Linear)	94151 Flow To Close(FTC)	94251 Flow To Close(FTC)	94351 Flow To Close(FTC)	94451 Flow To Close(FTC)	

Notes :

1. Flow direction for Pilot Plug Seal configuration is always FTC.
2. 94411/94412 Spring Energised Polymeric Seal Ring must be installed with the seal opening to the high pressure side of the plug.

MATERIAL TEMPERATURE LIMITS

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

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

Maximum and Minimum Temperature Limits For Stem Materials — Table 5

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

Maximum and Minimum Temperature Limits For Trim Materials — Table 6

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

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

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

*For other materials contact manufacturer

FLOW CO-EFFICIENT (Cv) VALUES*

Standard Trim — **Series - 94111/ 94211/ 94311/ 94411/ 94511**

Flow Characteristic: Linear | **Rating: ASME Class & Equivalent PN 150-2500** | **Direction: Flow To Open(FTO)**

Valve Size		Orifice Diameter		Travel		Rating 150-1500
Inches	mm	Inches	mm	Inches	mm	Applicable Cv values
2	50	1.82	46.2	0.75	19.05	16 & 40
2[1]	50	2.5	63.5	1.5	38.1	30 & 75
3	80	2.5	63.5	1.5	38.1	30 & 75
		3.5	88.9	2	50.8	60 & 155
4	100	2.5	63.5	1.5	38.1	30 & 75
		3.5	88.9	2	50.8	60 & 155
		4.4	111.8	2	50.8	95 & 240
6	150	3.5	88.9	2	50.8	60 & 155
		4.4	111.8	2	50.8	95 & 240
		5.15	130.8	2	50.8	400
8	200	4.4	111.8	2	50.8	240
		5.15	130.8	2	50.8	400
		6.5	165.1	1.5	38.1	415
		6.5	165.1	2.5	63.5	640
10	250	5.15	130.8	2	50.8	400
		6.5	165.1	1.5	38.1	415
		6.5	165.1	2.5	63.5	640
		8	203.2	1.5	38.1	510
		8	203.2	3	76.2	1000
12	300	6.5	165.1	1.5	38.1	415
		6.5	165.1	2.5	63.5	640
		8	203.2	1.5	38.1	510
		8	203.2	3	76.2	1000
		9.8	248.9	2	50.8	770
		9.8	248.9	3.75	95.25	1400
16	400	9.8	248.9	2	50.8	770
		9.8	248.9	3.75	95.25	1400
		13	330.2	2.5	63.5	1280
		13	330.2	4	101.6	2000
		13	330.2	5	127	2500
18	450	14.5	368.3	3.5	88.9	1620
		14.5	368.3	5	127	2310
		14.5	368.3	7	177.8	3240
20[1]	500	19	482.6	4	101.6	3000
		19	482.6	6	152.4	3900
		19	482.6	9	228.6	4500
24[1]	600	23	584.2	4	101.6	4300
		23	584.2	6	152.4	5600
		23	584.2	9	228.6	6500
		23	584.2	11	279.4	7000

Note:
1. Available only in ASME Class 150 to 600.

Valve Size		Orifice Diameter		Travel		Rating - 2500
Inches	mm	Inches	mm	Inches	mm	Applicable Cv values
2	50	1.82	46.2	0.75	19.05	16 & 40
3	80	2.5	63.5	1.5	38.1	75
4	100	3.5	88.9	2	50.8	155
6	150	4.4	111.8	2	50.8	240
8	200	6.5	165.1	2	50.8	400
10	250	6.5	165.1	2.5	36.5	640
12	300	8	203.2	3	76.2	1000
16	400	9.8	248.9	3.8	95.3	1400

FLOW CO-EFFICIENT (Cv) VALUES*

Standard Trim

Series - 94112/ 94212/ 94312/ 94412/ 94512

Flow Characteristic: Equal Percentage | **Rating: ASME Class & Equivalent PN 150-2500** | **Direction: Flow To Open(FTO)**

Valve Size		Orifice Diameter		Travel		Rating 150-1500
Inches	mm	Inches	mm	Inches	mm	Applicable Cv values
2	50	1.82	46.2	0.75	19.05	14 & 35
2[1]	50	2.5	63.5	1.5	38.1	26 & 65
3	80	2.5	63.5	1.5	38.1	26 & 65
		3.5	88.9	2	50.8	56 & 140
4	100	2.5	63.5	1.5	38.1	26 & 65
		3.5	88.9	2	50.8	56 & 140
		4.4	111.8	2	50.8	90 & 225
6	150	3.5	88.9	2	50.8	56 & 140
		4.4	111.8	2	50.8	90 & 225
		5.15	130.8	2	50.8	144 & 360
8	200	4.4	111.8	2	50.8	90 & 225
		5.15	130.8	2	50.8	144 & 360
		6.5	165.1	2.5	63.5	230 & 575
10	250	5.15	130.8	2	50.8	144 & 360
		6.5	165.1	2.5	63.5	230 & 575
		8	203.2	3	76.2	360 & 900
12	300	6.5	165.1	2.5	63.5	230 & 575
		9.8	248.9	3.75	95.3	500 & 1260
16	400	9.8	248.9	3.75	95.3	500 & 1260
		13	330.2	5	127	900 & 2250
18	450	14.5	368.3	5	127	1160
		14.5	368.3	7	177.8	2900
20[1]	500	19	482.6	4	101.6	1620
		19	482.6	9	228.6	4050
24[1]	600	23	584.2	6	152.4	2520
		23	584.2	11	279.4	6300

Note:
1. Available only in ASME Class 150 to 600.

Valve Size		Orifice Diameter		Travel		Rating - 2500
Inches	mm	Inches	mm	Inches	mm	Applicable Cv values
2	50	1.82	46.2	0.75	19.05	14 & 35
3	80	2.5	63.5	1.5	38.1	65
4	100	3.5	88.9	2	50.8	140
6	150	4.4	111.8	2	50.8	225
8	200	5.15	130.8	2	50.8	360
10	250	6.5	165.1	2.5	63.5	575
12	300	8	203.2	3	76.2	900
16	400	9.8	248.9	3.75	95.3	1260

FLOW CO-EFFICIENT (Cv) VALUES*

Single Stage Deci-Nill®/Cav-Kill®

Series - 94121/ 94221/ 94321/ 94421/ 94521

Flow Characteristic: Linear | **Rating: ASME Class & Equivalent PN 150-2500** | **Direction: Flow To Open (FTO) & Flow To Close(FTC)**

Valve Size		Orifice Diameter		Travel		Rating 150-1500
Inches	mm	Inches	mm	Inches	mm	Applicable Cv values
2	50	1.82	46.2	0.75	19.05	10, 13, 17, 23 & 30
2[1]	50	2.5	63.5	1.5	38.1	25, 32, 43, 58 & 72
3	80	2.5	63.5	1.5	38.1	25, 32, 43,58 & 72
		3.5	88.9	2	50.8	40, 54, 95 & 125
4	100	2.5	63.5	1.5	38.1	25, 32, 43, 58 & 72
		3.5	88.9	2	50.8	40, 54, 72, 95, 125
		4.4	111.8	2	50.8	65, 85, 110, 150 & 195
6	150	3.5	88.9	2	50.8	40, 54, 72, 95 & 125
		4.4	111.8	2	50.8	65, 85, 110, 150 & 195
		5.15	130.8	2.5	63.5	100, 130, 175, 230 & 300
8	200	4.4	111.8	2	50.8	65, 85, 110, 150 & 195
		5.15	130.8	2.5	63.5	100, 130, 175, 230 & 300
		6.5	165.1	2.5	63.5	160, 210, 270 & 360
		6.5	165.1	3	76.2	500
10	250	5.15	130.8	2.5	63.5	100, 130, 175, 230 & 300
		6.5	165.1	2.5	63.5	160, 210, 270 & 360
		6.5	165.1	3	76.2	500
		8	203.2	2.5	63.5	200, 260 & 360
		8	203.2	3.5	88.9	500 & 650
12	300	6.5	165.1	2.5	63.5	160, 210, 270 & 360
		6.5	165.1	3	76.2	500
		9.8	248.9	2.5	63.5	450 & 600
		9.8	248.9	4	101.6	810
		9.8	248.9	5	127	1100
16	400	9.8	248.9	2.5	63.5	450 & 600
		9.8	248.9	4	101.6	810
		9.8	248.9	5	127	1100
		13	330.2	2.5	63.5	730
		13	330.2	4	101.6	990 & 1300
		13	330.2	6	152.4	1800
18	450	14.5	368.3	3.5	88.9	1070
		14.5	368.3	5	127	1390 & 1850
		14.5	368.3	7	177.8	2430
20[1]	500	19	482.6	4	101.6	1900
		19	482.6	6	152.4	2800
		19	482.6	9	228.6	3500
24[1]	600	23	584.2	4	101.6	2700
		23	584.2	6	152.4	3500
		23	584.2	9	228.6	4800
		23	584.2	11	279.4	5400
		23	584.2	15	381	6600

Note:

1. Available only in ASME Class 150 to 600.

Valve Size		Orifice Diameter		Travel		Rating - 2500
Inches	mm	Inches	mm	Inches	mm	Applicable Cv values
2	50	1.82	46.2	0.75	19.05	10, 13, 17, 23 & 30
3	80	2.5	63.5	1.5	38.1	72
4	100	3.5	88.9	2	50.8	125
6	150	4.4	111.8	2	50.8	195
8	200	5.15	130.8	2.5	63.5	300
10	250	6.5	165.1	3	76.2	500
12	300	8	203.2	3.5	88.9	650
16	400	9.8	248.9	5	127	1100

FLOW CO-EFFICIENT (Cv) VALUES*

Single Stage Deci-Nill®/Cav-Kill®

Series - 94122/ 94222/ 94322/ 94422/ 94522

Flow Characteristic: Equal Percentage | **Rating: ASME Class & Equivalent PN 150-2500** | **Direction: Flow To Open (FTO) & Flow To Close(FTC)**

Valve Size		Orifice Diameter		Travel		Rating 150-1500
Inches	mm	Inches	mm	Inches	mm	Applicable Cv values
2	50	1.82	46.2	0.75	19.05	11, 16 & 23
2[(1)]	50	2.5	63.5	1.5	38.1	26, 38 & 54
3	80	2.5	63.5	1.5	38.1	26, 38 & 54
		3.5	88.9	2	50.8	47, 67 & 96
4	100	2.5	63.5	1.5	38.1	26, 38 & 54
		3.5	88.9	2	50.8	47, 67 & 96
		4.4	111.8	2	50.8	70, 100 & 145
6	150	3.5	88.9	2	50.8	47, 67 & 96
		4.4	111.8	2	50.8	70, 100 & 145
		5.5	130.8	2.5	63.5	110, 155 & 225
8	200	4.4	111.8	2	50.8	70, 100 & 145
		5.5	130.8	2.5	63.5	110, 155 & 225
		6.5	165.1	3	76.2	180, 260 & 375
10	250	5.5	130.8	2.5	63.5	110, 155 & 225
		6.5	165.1	3	76.2	180, 260 & 375
		8	203.2	3.5	88.9	230, 340 & 485
12	300	6.5	165.1	3	76.2	180, 260 & 375
		9.8	248.9	5	127	400, 575 & 825
16	400	9.8	248.9	5	127	400, 575 & 825
		13	330.2	6	152.4	665, 950 & 1350

Note:
1. Available only in ASME Class 150 to 600.

Valve Size		Orifice Diameter		Travel		Rating - 2500
Inches	mm	Inches	mm	Inches	mm	Applicable Cv values
2	50	1.82	46.2	0.75	19.05	11, 16 &23
3	80	2.5	63.5	1.5	38.1	54
4	100	3.5	88.9	2	50.8	96
6	150	4.4	111.8	2	50.8	145
8	200	5.15	130.8	2.5	63.5	225
10	250	6.5	165.1	3	76.2	375
12	300	8	203.2	3.5	88.9	485
16	400	9.8	248.9	5	127	825

FLOW CO-EFFICIENT (Cv) VALUES*

Double Stage Deci-Nill®

Series - 94141/ 94241/ 94341/ 94441/ 94541

Flow Characteristic: Linear | **Rating: ASME Class & Equivalent PN 150-2500** | **Direction: Flow To Open (FTO)**

Valve Size		Orifice Diameter		Travel		Rating 150-1500
Inches	mm	Inches	mm	Inches	mm	Applicable Cv values
2	50	1.82	46.2	0.75	19.05	12, 19 & 24
2[1]	50	2.5	63.5	1.5	38.1	30, 43 & 53
3	80	2.5	63.5	1.5	38.1	30, 43 & 53
		3.5	88.9	2	50.8	50, 75 & 95
4	100	2.5	63.5	1.5	38.1	30, 43 & 53
		3.5	88.9	2	50.8	50, 75 & 95
		4.4	111.8	2	50.8	72, 105 & 130
6	150	3.5	88.9	2	50.8	50, 75 & 95
		4.4	111.8	2	50.8	72, 105 & 130
		5.15	130.8	2.5	63.5	96, 150 & 190
8	200	4.4	111.8	2	50.8	72, 105 & 130
		5.15	130.8	2.5	63.5	96, 150 & 190
		6.5	165.1	2.5	63.5	155 & 250
		6.5	165.1	3	76.2	300
10	250	5.15	130.8	2.5	63.5	96, 150 & 190
		6.5	165.1	2.5	63.5	155 & 250
		6.5	165.1	3	76.2	300
		8	203.2	2.5	63.5	230
		8	203.2	3	76.2	350 & 420
12	300	6.5	165.1	2.5	63.5	155 & 250
		6.5	165.1	3	76.2	300
		9.8	248.9	2.5	63.5	375
		9.8	248.9	4	101.6	600
		9.8	248.9	5	127	725
16	400	9.8	248.9	2.5	63.5	375
		9.8	248.9	4	101.6	600
		9.8	248.9	5	127	725
		13	330.2	2.5	63.5	500
		13	330.2	4	101.6	800
		13	330.2	6	152.4	1105
18	450	14.5	368.3	3.5	88.9	730
		14.5	368.3	5	127	1170
		14.5	368.3	7	177.8	1460
20[1]	500	19	482.6	4	101.6	1100
		19	482.6	6	152.4	1600
		19	482.6	9	228.6	2300
24[1]	600	23	584.2	4	101.6	1300
		23	584.2	6	152.4	1900
		23	584.2	9	228.6	2800
		23	584.2	11	279.4	3200
		23	584.2	15	381	4200

Note:
1. Available only in ASME Class 150 to 600.

Valve Size		Orifice Diameter		Travel		Rating - 2500
Inches	mm	Inches	mm	Inches	mm	Applicable Cv values
2	50	1.82	46.2	0.75	19.05	12, 19 &24
3	80	2.5	63.5	1.5	38.1	53
4	100	3.5	88.9	2	50.8	95
6	150	4.4	111.8	2	50.8	130
8	200	5.15	130.8	2.5	63.5	190
10	250	6.5	165.1	3	76.2	300
12	300	8	203.2	3	76.2	420
16	400	9.8	248.9	5	127	725

FLOW CO-EFFICIENT (Cv) VALUES*

Double Stage Cav-Kill®

Series - 94151/ 94251/ 94351/ 94451/ 94551

Flow Characteristic: Linear | **Rating: ASME Class & Equivalent PN 150-2500** | **Direction: Flow To Close (FTC)**

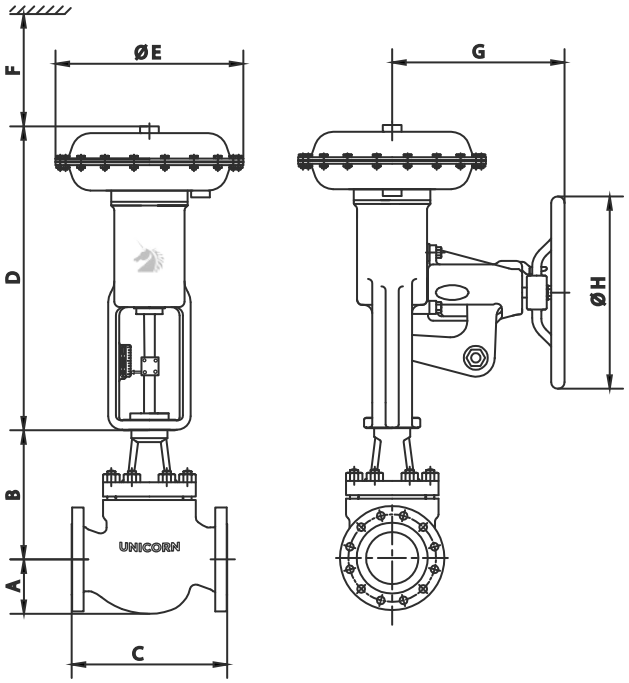
Valve Size		Orifice Diameter		Travel		Rating 150-1500
Inches	mm	Inches	mm	Inches	mm	Applicable Cv values
2	50	1.52	38.6	0.75	19.05	9, 13 & 15
2[(1)]	50	2.15	54.6	1.5	38.1	23, 35 & 44
3	80	2.15	54.6	1.5	38.1	23, 35 & 44
		3.2	80	1.5	38.1	40, 65 & 80
4	100	2.15	54.6	1.5	38.1	23, 35 & 44
		3.2	80	1.5	38.1	40, 65 & 80
		3.2	80	2	50.8	93
		4	102.2	2	50.8	65, 105 & 125
6	150	3.15	80	1.5	38.1	40, 65 & 80
		3.15	80	2	50.8	93
		4	102.2	2	50.8	65, 105 & 125
		4.8	121.3	2.5	63.5	100, 160 & 195
8	200	4	102.2	2	50.8	65, 105 & 125
		4.8	121.3	2.5	63.5	100, 160 & 195
		6.15	156	2.5	63.5	170 & 260
		6.15	156	3	76.2	320
10	250	4.8	121.3	2.5	63.5	100, 160 & 195
		6.15	156	2.5	63.5	170 & 260
		6.15	156	2.5	63.5	320
		7.6	193.8	2.5	63.5	230
		7.6	193.8	3.5	88.9	380 & 450
12	300	6.15	156	2.5	63.5	170 & 260
		6.15	156	3	76.2	320
		7.6	193.8	2.5	63.5	230
		7.6	193.8	3.5	88.9	380 & 450
		9.4	238	2.5	63.5	400
		9.4	238	4	101.6	640
		9.4	238	5	127	800
16	400	9.4	238	2.5	63.5	400
		9.4	238	4	63.5	640
		9.4	238	5	101.6	640
		13	330.2	2.5	63.5	600
		13	330.2	4	101.6	950
		13	330.2	6	152.4	1310

Note:
1. Available only in ASME Class 150 to 600.

Valve Size		Orifice Diameter		Travel		Rating - 2500
Inches	mm	Inches	mm	Inches	mm	Applicable Cv values
2	50	1.52	38.6	0.75	19.05	9, 13 & 15
3	80	2.15	54.6	1.5	38.1	44
4	100	3.15	80	1.5	38.1	80
6	150	4	102.2	2	50.8	125
8	200	4.8	121.3	2.5	63.5	195
10	250	6.15	156	3	76.2	320
12	300	7.6	193.8	3.5	88.9	450
16	400	9.4	238	5	127	800

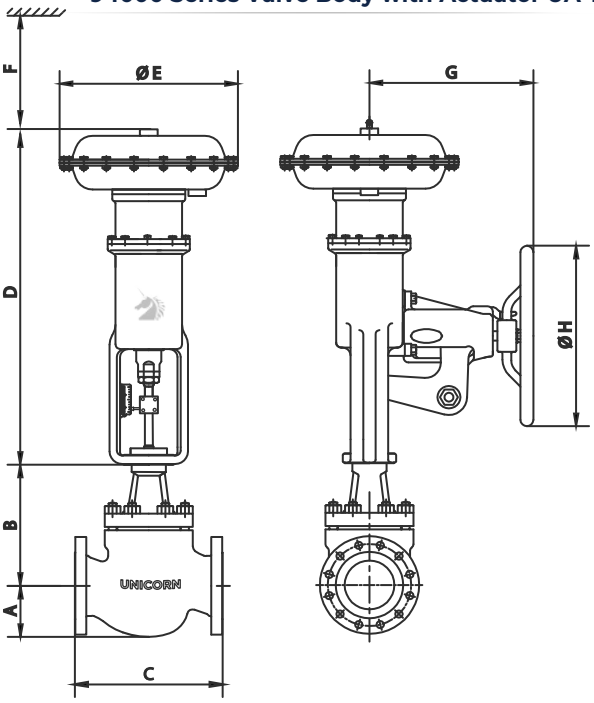
DIMENSIONS*

94000 Series Valve Body with Actuator UA-11



Without Handwheel | With Handwheel

94000 Series Valve Body with Actuator UA-12



Without Handwheel | With Handwheel

Dimensions Of Valve

Valve Size		A						B				C					
Inches	mm	150	300	600	900	1500	2500	<=300	600	900-1500	2500	150	300	600	900	1500	2500
2	50	94	94	94	57	57	130	250	250	216	262	254	267	286	374	375	400
3	80	114	114	114	143	143	175	300	300	300	357	298	318	337	441	460	660
4	100	140	140	140	159	159	200	300	300	300	357	352	368	394	511	530	737
6	150	198	198	198	217	217	263	398	390	390	391	451	473	508	714	768	-
8	200	186	186	191	191	205	300	496	496	521	450	543	568	610	914	972	-
10	250	220	220	228	230	244	362	550	550	570	615	673	708	752	1092	1067	-
12	300	325	325	335	345	360	415	620	620	626	632	737	775	819	1130	-	-
16	400	440	440	450	460	485	-	694	694	805	699	1016	1057	1108	1390	-	-
18	450	519	519	531	532	558	-	856	856	-	-	1136	1190	1310	1475	-	-
20	500	670	670	680	690	-	-	867	904	-	-	1660	1705	1766	1804	-	-
24	600	805	805	820	-	-	-	1016	1045	-	-	1200	2058	2120	-	-	-

Dimensions Of Actuator

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

Notes:

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

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

Notes

UNICORN VALVES

Revolutionizing The Flow

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