



Taylor Valve  
Technology

# R1 SERIES CONTROL CHOKE



Unique.

Precise.

Quality.

Reliable.

WORLDWIDE

SINCE 1958



# R1 SERIES CONTROL VALVES

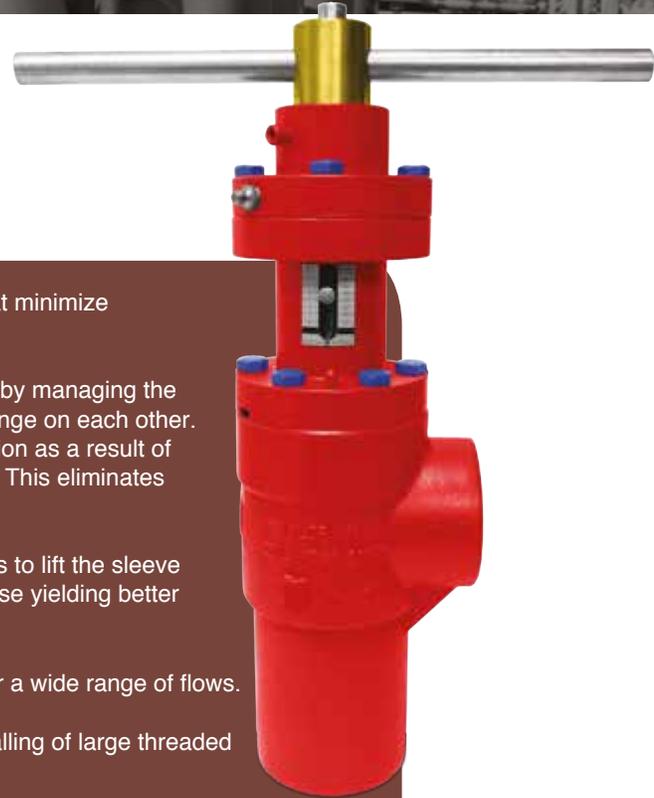
## FEATURES & Benefits

The R1 Series Control Valve features several unique design characteristics that minimize wear and maximize service life.

The nozzle and external sleeve trim is designed to contain turbulence and wear by managing the flow into the nozzle and centralizing it into bore causing the flow streams to impinge on each other. The valve body and outlet are protected from wear because the energy conversion as a result of the pressure drop is concentrated in the trim cavity before flow enters the outlet. This eliminates the typical wear problems in the valve outlet.

The sleeve design greatly reduces the breakaway and closing thrust requirements to lift the sleeve on and off seat as well as during stem travel making the control stable and precise yielding better accuracy and repeatability.

- **Accurate Control** - Multi-Orifice Nozzle design provides precise control over a wide range of flows.
- **Bolted Bonnet** - A bolted bonnet prevents corrosion, cross-threading and galling of large threaded connections. The design allows for simple assembly and disassembly.
- **Extended Mean Time Between Service** - Robust design, application of hardened materials, and efficient flow geometry results in maximum production potential and minimum service requirements.
- **Easy Maintenance** - All Control Choke Valves are designed with special actuator mounting systems so the choke can be maintained without disassembly of the actuator and components or instrument connections.
- **High Turndown Ratio** - Clean flow geometry, high capacity and accurate control means the valve is suitable for both start-up and end-of field-life-process scenarios. In short, our control choke valves offer a one-valve solution for the full process life.
- **Optional Features** - Control Valves can have trims and actuators custom designed for specific requirements. Such as special noise reduction trims, reduced port and maximum orifice trims for very high pressure or minimum pressure loss for a declining field.

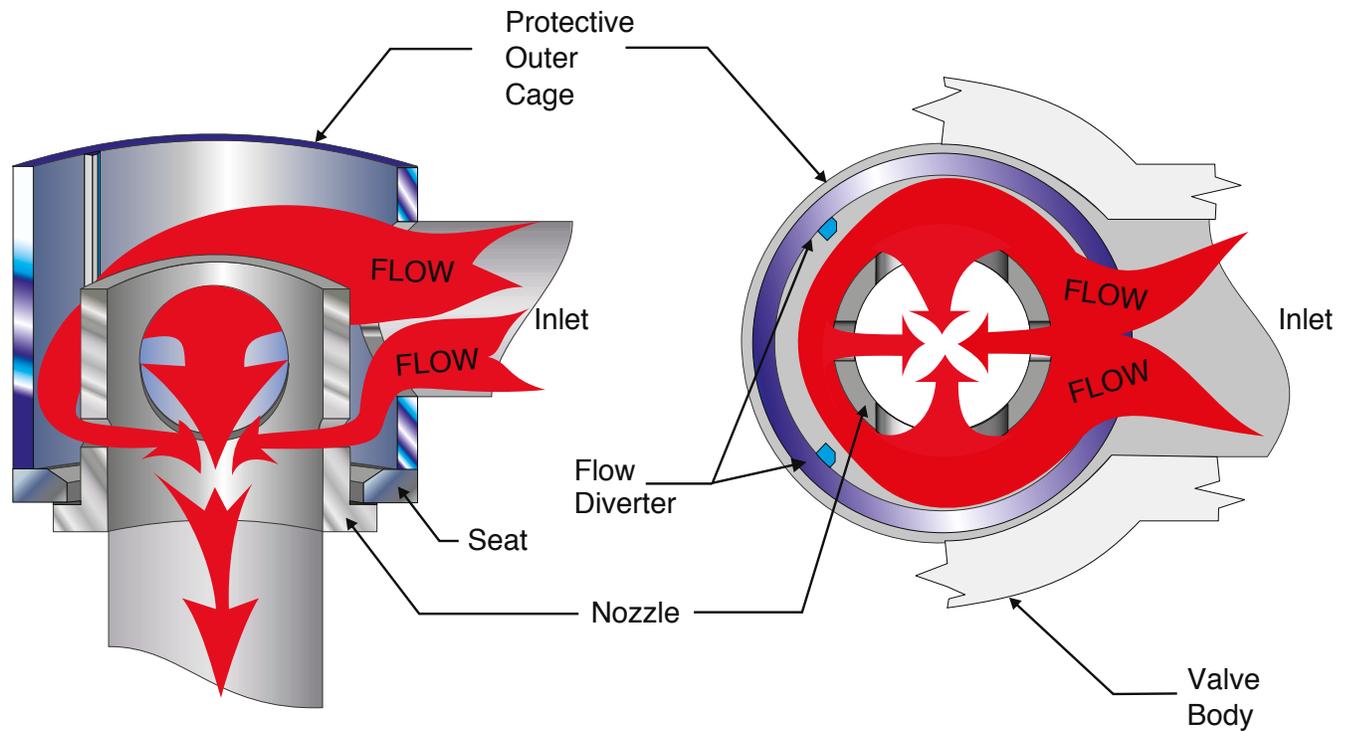


### Applications:

- Well Site Automated and Manual Application
- Water Injection Control Valve
- CO2 Injection Control Valve
- High Pressure Drop Applications
- Gas Lift Injection Control



# Dynamic Energy Conversion



Side view of the fluid flow through the valve

Flow converging in the center of the nozzle

When the valve is open and flow enters through the inlet of the valve into the protective cage, it is circulated around the annulus created by the cage, nozzle and sleeve assembly. The symmetry of the ports in the nozzle cause the high velocity fluid streams created by the pressure drop to collide into each other in the center of the trim. The impact of the streams converts the energy and protects the downstream components from damage.

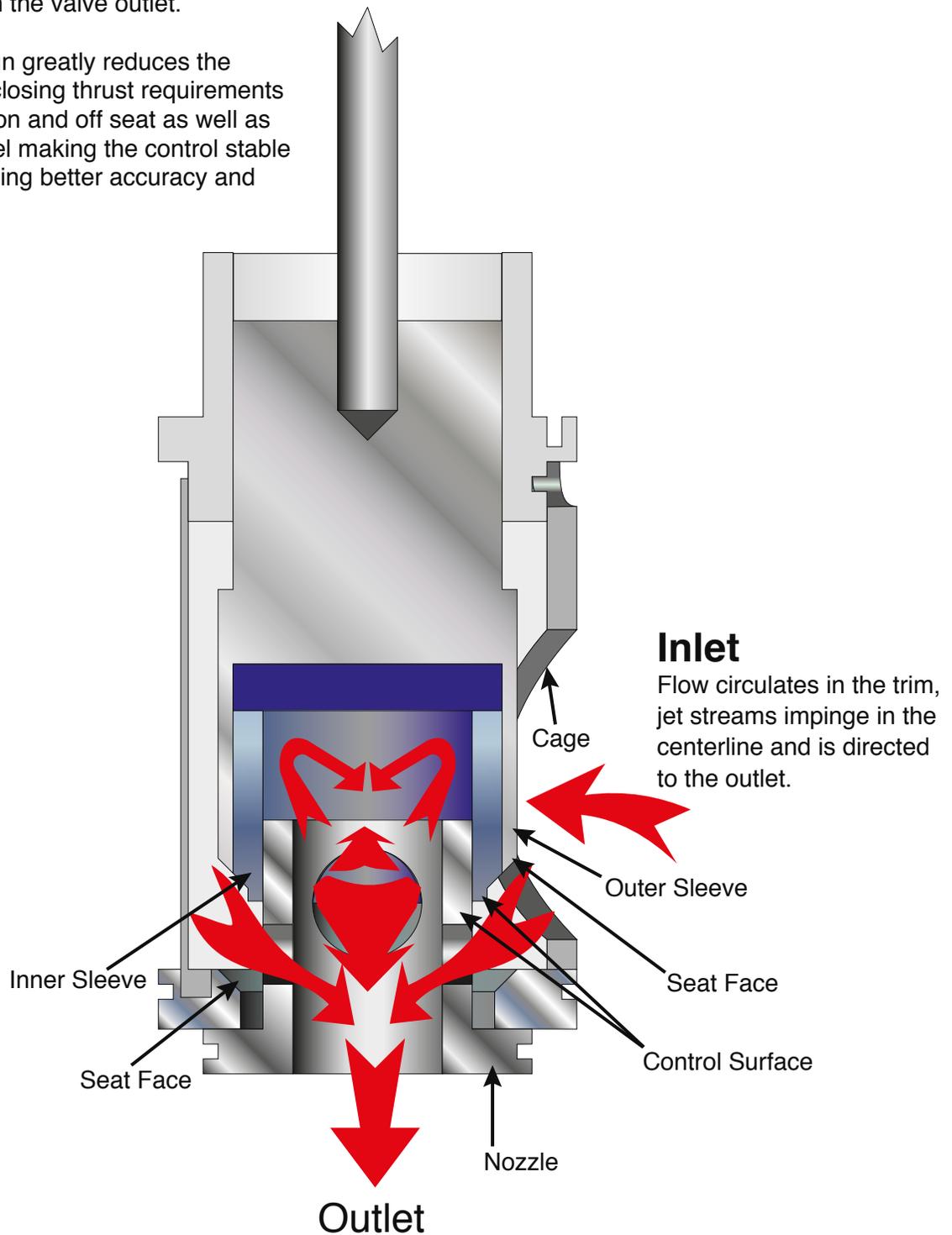
# Multi-Orifice Nozzle Technology

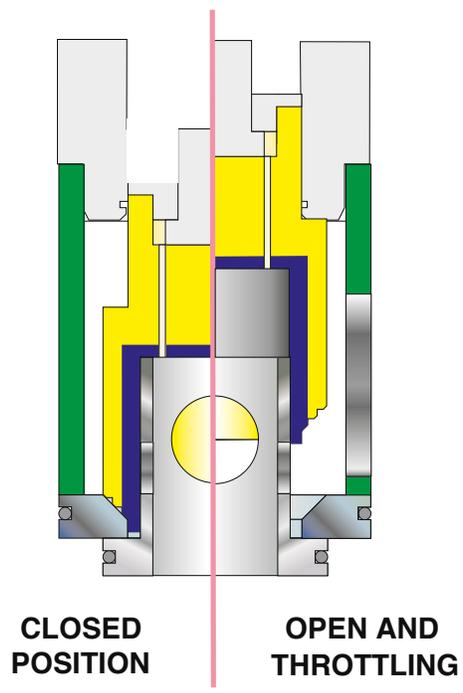
## Control Element

The R1 Series valve features several unique design characteristics that minimize wear and maximize service life.

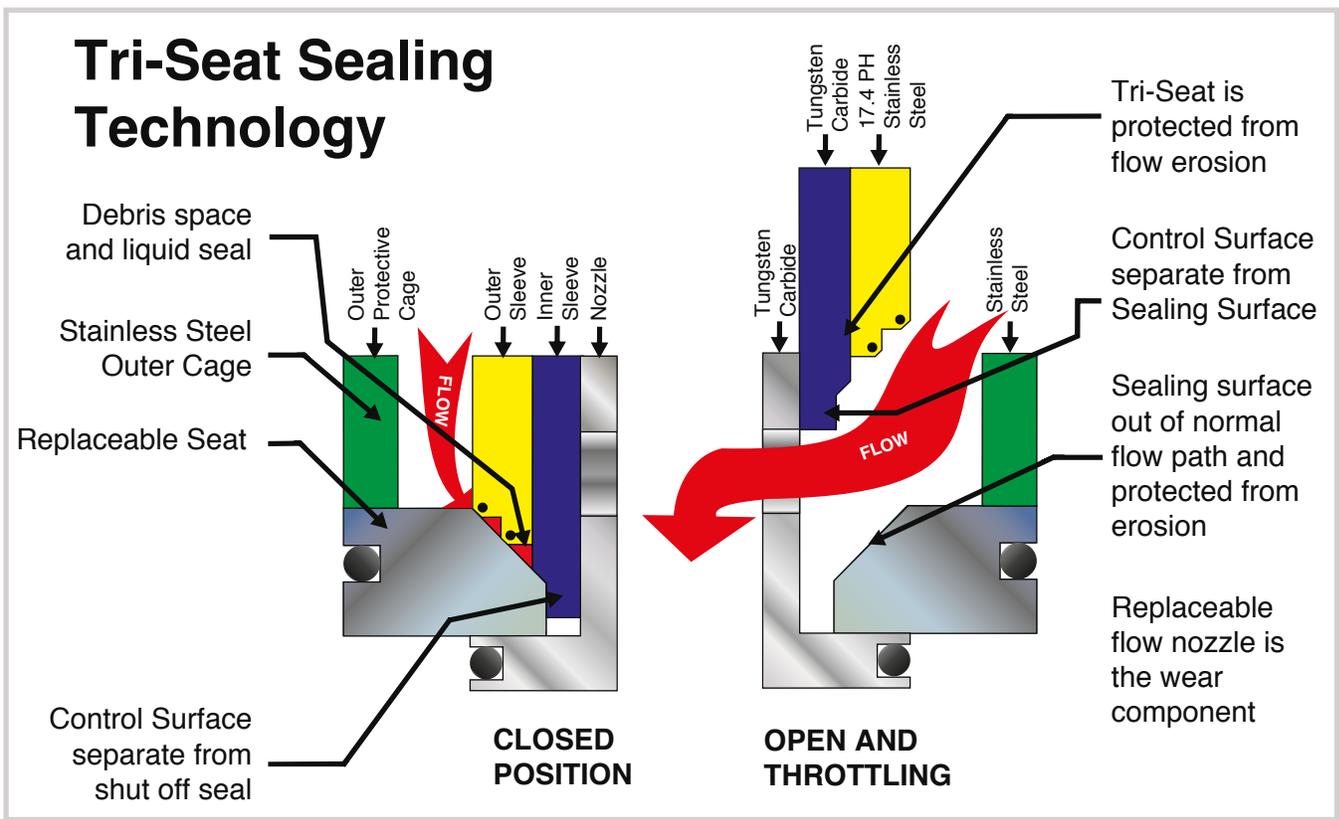
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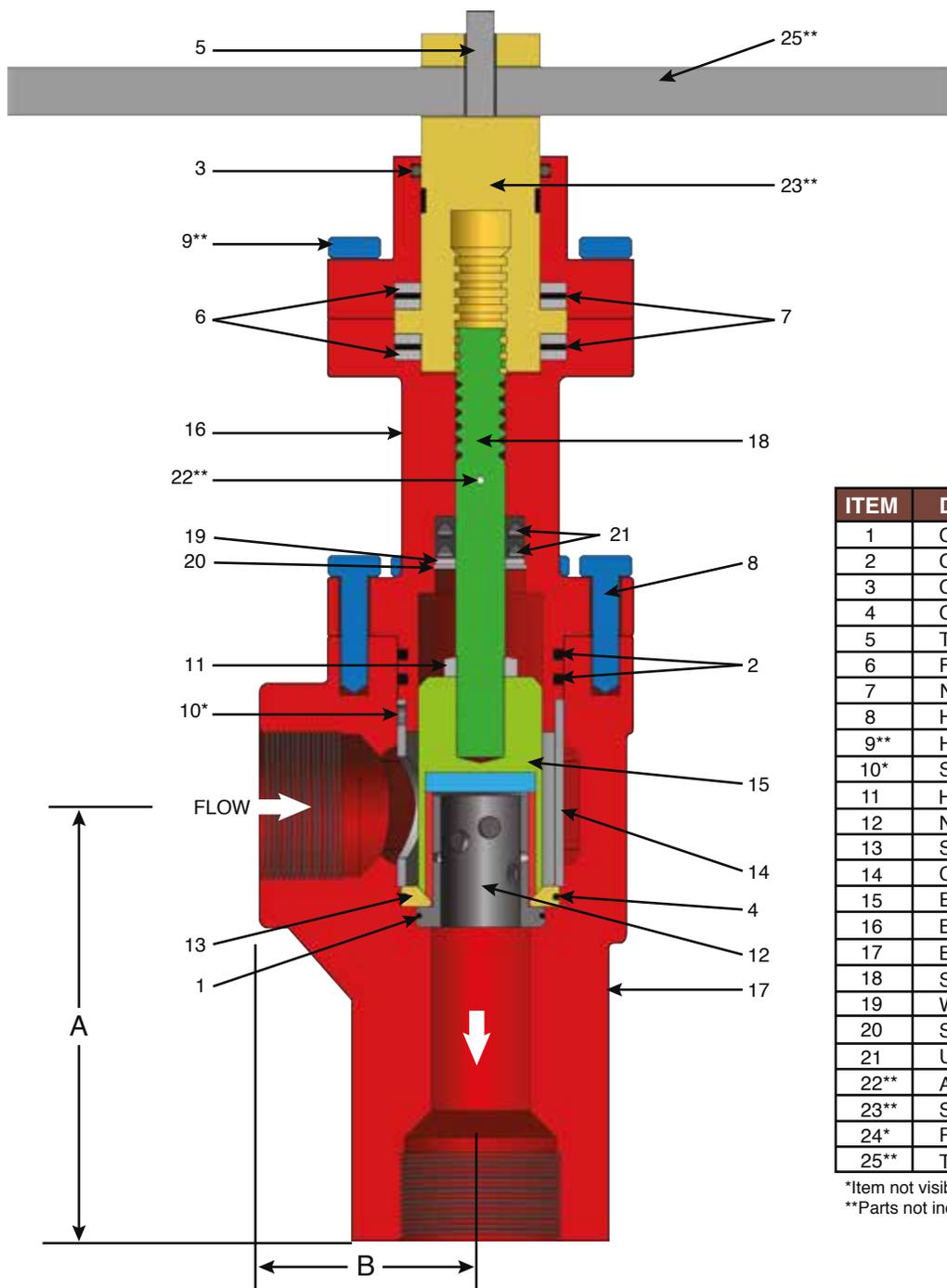
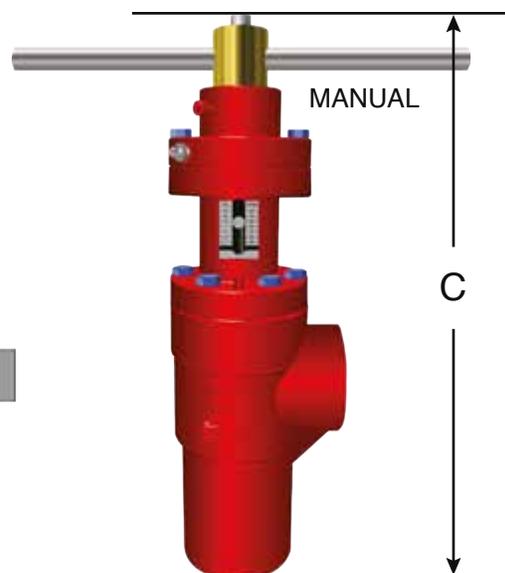


The Trim configuration has been field-tested and proven to deliver superior wear resistance and performance. The trim controls high velocity fluid during pressure reduction by directing the flow to the center of the flow nozzle. The Erosive Energy is contained within the expendable trim components away from the valve wall which is additionally protected by a replaceable sleeve, reducing the potential for release of fluids to the environment. The seat and Tri-seating surfaces on the sleeve are separate from the controlling surfaces and out of the flow path to maintain an ANSI class V shut off.



# R1 Cutaway View

**R1 Control Choke**  
 Cv = 12 (Standard), 6, 3  
 Bean Size = 47/64ths  
 Stroke Length = 1"  
 Stem Diameter = 0.625"  
 MAWP = 5,000 PSIG



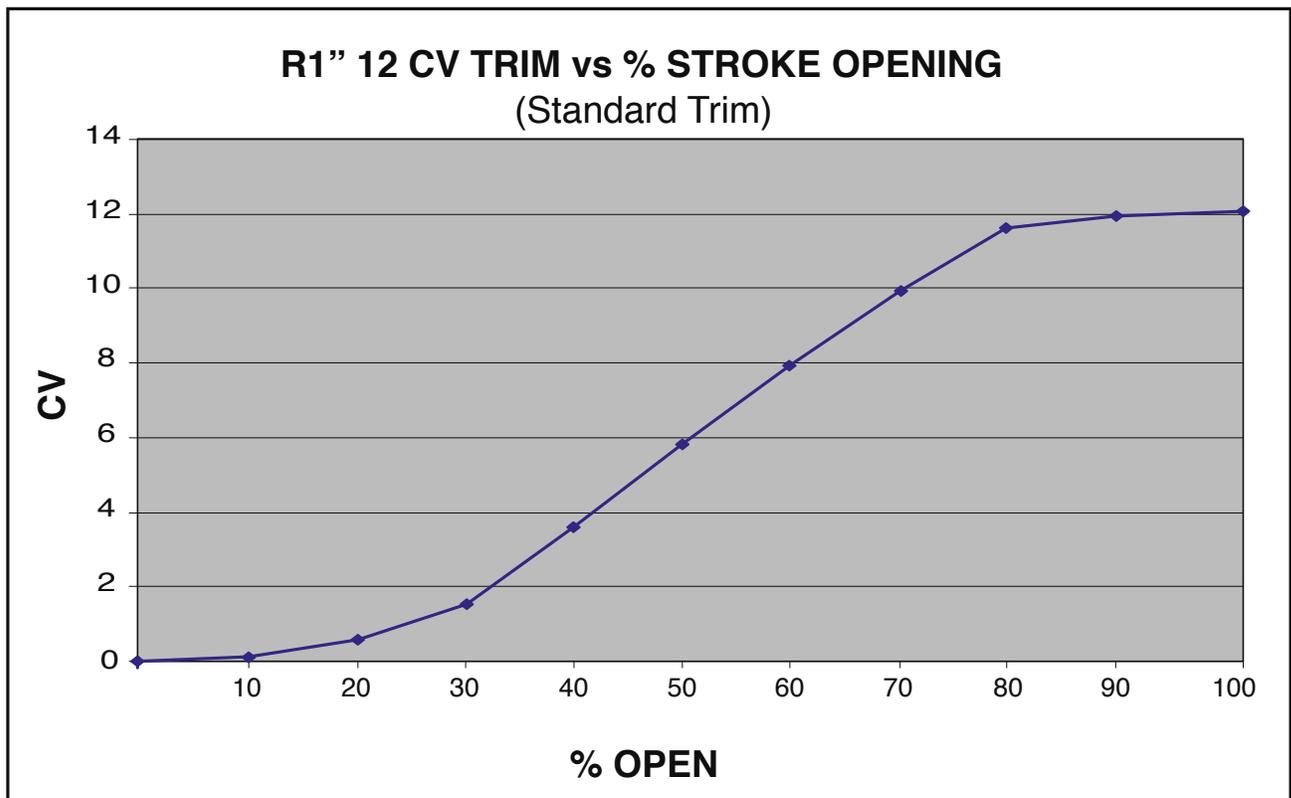
ITEM	DESCRIPTION	QTY
1	O-RING 2-029	1
2	O-RING 2-225	2
3	O-RING 2-222	1
4	O-RING 2-032	1
5	THUMB SCREW	1
6	FLAT WASHER	4
7	NEEDLE ROLLER BEARING	2
8	HEX BOLT	6
9**	HEX BOLT	4
10*	SET SCREW	1
11	HEX NUT (Lock Nut)	1
12	NOZZLE	1
13	SEAT	1
14	CAGE	1
15	EXTERNAL SLEEVE ASSEMBLY	1
16	BONNET	1
17	BODY/FLANGE WELDMENT	1
18	STEM	1
19	WASHER	1
20	SNAP RING	1
21	U-CUP SEALS	2
22**	ANTI-ROTATIONAL DEVICE	1
23**	STEM ADAPTER/DRIVE PLATE	1
24*	PIPE PLUG	1
25**	TURN HANDLE	1

\*Item not visible in sectioned view

\*\*Parts not included on actuator

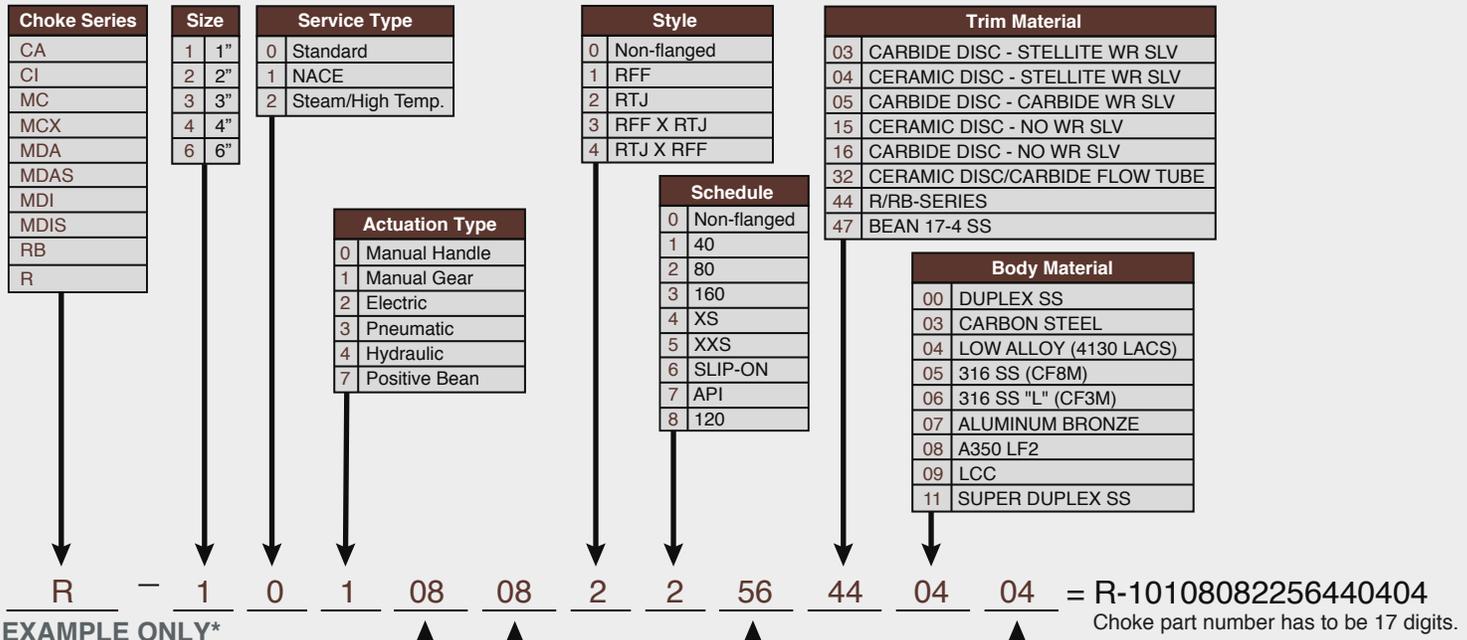
# R1 Dimensions and Weights

1" BODY STANDARD DIMENSIONS AND WEIGHTS						2" BODY STANDARD DIMENSIONS AND WEIGHTS					
CONNECTIONS		DIM. END-to-END IN. (MM.) +/- .10		WEIGHT		CONNECTIONS		DIM. END-to-END IN. (MM.) +/- .10		WEIGHT	
INLET	OUTLET	A	B	LB.	KG.	INLET	OUTLET	A	B	LB.	KG.
1" FNPT	1" FNPT	5.53 (140)	2.80 (71)	23	10.44	2" FNPT	2" FNPT	5.58 (142)	2.74 (70)	22	9.99
1" FNPT	1" FNPT	5.58 (142)	2.74 (70)	23	10.44	2" BUTT WELD	2" BUTT WELD	5.58 (142)	2.74 (70)	22	9.99
1" BUTT WELD	1" BUTT WELD	5.58 (142)	2.74 (70)	22	9.99	2" 150 RFJ	2" 150 RFJ	8.17 (208)	5.33 (135)	33	14.98
1" 150 RFJ	1" 150 RFJ	7.86 (200)	5.02 (128)	28	12.71	2" 150 RTJ	2" 150 RTJ	8.36 (212)	5.52 (140)	33	14.98
1" 150 RTJ	1" 150 RTJ	8.05 (204)	5.21 (132)	28	12.71	2" 300 RFF	2" 300 RFF	8.42 (214)	5.58 (142)	39	17.71
1" 300 RFF	1" 300 RFF	8.11 (206)	5.27 (134)	30	13.62	2" 300 RTJ	2" 300 RTJ	8.67 (220)	5.83 (148)	39	17.71
1" 300 RTJ	1" 300 RTJ	8.30 (211)	5.46 (139)	30	13.62	2" 600 RFF	2" 600 RFF	8.80 (224)	5.96 (151)	45	20.43
1" 600 RFF	1" 600 RFF	8.36 (212)	5.52 (140)	30	13.62	2" 600 RTJ	2" 600 RTJ	8.86 (225)	6.02 (153)	45	20.43
1" 600 RTJ	1" 600 RTJ	8.36 (212)	5.52 (140)	30	13.62	2" 900/1500 RFF	2" 900/1500 RFF	9.92 (252)	7.08 (180)	72	32.69
1" 900/1500 RFF	1" 900/1500 RFF	8.80 (224)	5.96 (151)	40	18.16	2" 900/1500 RTJ	2" 900/1500 RTJ	9.98 (253)	7.14 (181)	72	32.69
1" 900/1500 RTJ	1" 900/1500 RTJ	8.80 (224)	5.96 (151)	40	18.16	2" 2500 RFF	2" 2500 RFF	10.92 (277)	8.08 (205)	106	48.12
1" 2500 RFF	1" 2500 RFF	9.42 (239)	6.58 (167)	46	20.88	2" 2500 RTJ	2" 2500 RTJ	10.98 (279)	8.14 (207)	106	48.12
1" 2500 RTJ	1" 2500 RTJ	9.42 (239)	6.58 (167)	46	20.88	2-1/16" 3000 API	2-1/16" 3000 API	9.98 (253)	7.14 (181)	74	33.60
						2-1/16" 5000 API	2-1/16" 5000 API	9.98 (253)	7.14 (181)	76	34.50
						2-9/16" 3000 API	2-9/16" 3000 API	10.11 (257)	7.27 (185)	94	42.68
						2-9/16" 5000 API	2-9/16" 5000 API	10.11 (257)	7.27 (185)	96	43.58



Taylor Valve R Control Valves

# Choke Nomenclature



Inlet Connection		Outlet Connection	
01	1" FNPT	41	6" 600
02	1" BUTT WELD	42	6" 900
03	1" SOCKET WELD	43	6" 1500
04	1" VICTAULIC	44	6" 2500
05	1" 150	45	8" 150
06	1" 300	46	8" 300
07	1" 600	47	8" 600
08	1" 900/1500	48	8" 900
09	1" 2500	49	8" 1500
10	2" FNPT	50	8" 2500
12	2" BUTT WELD	51	2-1/16" 3000
13	2" SOCKET WELD	52	2-1/16" 5000
14	2" VICTAULIC	53	2-1/16" 10000
15	2" 150	54	2-9/16" 3000
16	2" 300	55	2-9/16" 5000
17	2" 600	56	2-9/16" 10000
18	2" 900/1500	57	3-1/8" 3000
19	2" 2500	58	3-1/8" 5000
20	3" FNPT	59	3-1/8" 10000
21	3" BUTT WELD	60	4-1/16" 3000
22	3" SOCKET WELD	61	4-1/16" 5000
23	3" 150	62	1-13/16" 10000
24	3" 300	63	3-1/16" 5000
25	3" 600	64	3/4" 600#
26	3" 900	65	1.5" 900/1500
27	3" 1500	66	3-1/16" 10000
28	3" 2500	67	7-1/16" 5000
29	4" FNPT	68	1-13/16" 15000
30	4" BUTT WELD	69	2-1/16" 15000
31	4" SOCKET WELD	75	1" UNION
32	4" VICTAULIC	76	3" 602M x 3" 602F Union
33	4" 150	80	10" 600
34	4" 300	81	10" 900
35	4" 600	82	10" 1500
36	4" 900	83	10" 2500
37	4" 1500	84	2-9/16" 15000
38	4" 2500	85	6" Butt Weld
39	6" 150		
40	6" 300		

Orifice Size			
01	(2) 1/8" RND PORTS	29	48/64 BEAN
02	(2) 3/16" RND PORTS	34	32/64 BEAN
03	(2) 1/4" RND PORTS	43	40/64 BEAN
04	(2) 3/8" RND PORTS	44	34/64 BEAN
05	(2) 1/2" RND PORTS	45	28/64 BEAN
06	(2) 5/8" PIE PORTS	46	30/64 BEAN
07	(2) 3/4" RND PORTS	53	10/64 BEAN
08	(2) 7/8" RND PORTS	63	11/64 BEAN
10	(2) 1-3/16" RND PORTS	64	14/64 BEAN
11	(2) 1-1/4" RND PORTS	65	15/64 BEAN
14	(2) 1-1/2" RND PORTS	66	16/64 BEAN
30	(2) 3/4" PIE PORTS	67	19/64 BEAN
35	(2) 1" ROUND PORTS	68	20/64 BEAN
38	(2) 2" PIE PORTS	69	24/64 BEAN
40	(2) 1-1/4" PIE PORTS	70	21/64 BEAN
41	(2) 1-3/8" PIE PORTS	71	22/64 BEAN
42	(2) 1-1/8" RND PORTS	72	23/64 BEAN
47	(2) 1-1/2" PIE PORTS	73	27/64 BEAN
49	(2) 5/8" RND PORTS	74	29/64 BEAN
54	(2) 2.92 PIE HOLES	75	25/64 BEAN
55	3 CV	76	17/7" RND PORTS
56	12 CV	77	7/64 BEAN
57	164 CV	78	54/64 BEAN
58	420 CV	79	44/64 BEAN
59	64 CV	80	45/64 BEAN
60	35 CV	81	47/64 BEAN
22	17/64 BEAN	82	51/64 BEAN
23	18/64 BEAN	83	35/64 BEAN
24	8/64 BEAN	84	37/64 BEAN
25	13/64 BEAN	85	6 CV
26	4/64 BEAN	87	12/64 BEAN
27	38/64 BEAN	88	78 CV
28	36/64 BEAN		

Seal Material	
00	HNBR/HSN
01	NBR
03	EPDM
04	FKM (VITON)
05	NEOPRENE
06	NBR (PEROXIDE CURED)
07	STEAM SEALS
09	AFLAS
12	KALREZ

PINS	
I	INCONEL (Optional)

Butt weld connections MUST specify a schedule.  
 All API connections are "RTJ" style by default.  
 API flange bore (SCHEDULE) is specified by API.

\*For more options, contact Taylor Valve.

REVISED: 10-05-17

