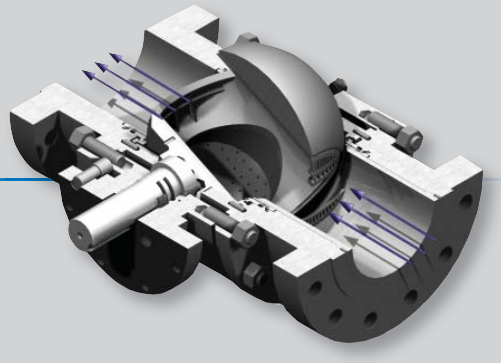
QTCV-T2 Series Quiet Trim Control Valve



QTCV-T2 Provides Extended Control Capability and Increased Noise Attenuation for Demanding Applications

Features

- "Tune-able" Noise Trim for Optimal Performance
- Noise attenuation up to 17 dBa
- High turndown capability up 300:1
- High pressure drop shutoff capability up to Class VI
- Bi-directional flow capability (noise reduction in proffered direction)
- Self cleaning design
- Emergency sealant system
- Easy maintenance and repair
- Wide array of configurations
- Equalized break torque and running torque
- Rugged design engineered for pipeline applications

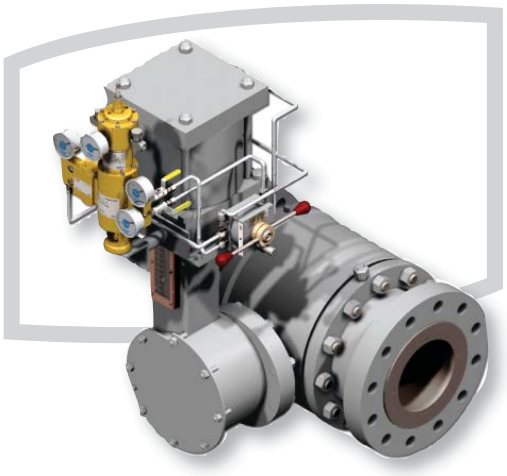
Figure 1 - The Ultimate in Noise Attenuation
The Becker Model QTCV-T2 provides up to 17 dBA of noise attenuation. The design of the QTCV-T2 exhibits high flow capacity combined with low flow control-ability with turndown ratios up to 300:1. The QTCV-T2 may be combined with other noise attenuation technologies in order to achieve additional noise attenuation. The regulators shown above incorporate Becker's unique below ground design for a total noise reduction up to 40 dBA.

Description

The Becker QTCV-T2 Quiet Trim Control Valve is a trunnion-mounted rotary control valve designed for moderate to severe service. The QTCV-T2 features a rugged design that provides very good noise attenuating capabilities, up to 17 dBA, with extended turndown ratio (300:1). The QTCV-T2 features a side-entry, forged body, and end closures that allow easy maintenance or repair of the control valve. The QTCV-T2 is ideal for use as a pressure control valve where noise may be a problem. The QTCV-T2 is available in a variety of configurations from 4" (100 mm) bore to 36" (900 mm) bore.

Specifications	
Classification	Control Valve
Valve Type	Rotary trunnion mounted ball
Applications	Monitoring or mild service when installed above ground and severe service when installed below ground
Noise Attenuation	17 dBa
Maximum Turndown	300:1
Shutoff Class	IV, VI Option
Flow Characteristic	Hyperbolic

Range of Product	
Size Range	4" (100mm) - 36" (900mm) bore
Pressure Ratings	ANSI Class 150-1500
End Connections	RFFE (standard), Weld, RTJ
Compatible Actuators	RPDA Series Actuators RPSR Series Actuators SYDA Series Actuators SYSR Series Actuators



High pressure drop shutoff capability

The QTCV-T2 design allows for 80% ANSI rated pressure drop across the control valve at shutoff. The rugged nature of the QTCV-T2 allows implementation in a wide array of demanding natural gas pipeline applications. QTCV-T2 provides ANSI Class IV flow shutoff.

Better turndown capability

The modified equal percentage characteristic of the QTCV-T2 provides high flow capacity combined with low volume controlability. QTCV-T2 can exhibit turndown ratio up to 300:1. This high turndown capability minimizes the number of regulator runs necessary as compared with globe pattern valves.

Minimal pressure drop

The design of the QTCV-T2 features high flow capacities which provide minimal pressure drop when the control valve is at full-open position.

Clean sweep feature

When installed with control valve stem in horizontal orientation, the QTCV-T2 features a “clean sweep” capability that allows debris to pass through even a slight opening of the control valve. This feature prevents debris from scouring the face of the ball element or the control valve seat.

Easy maintenance and repair

The QTCV-T2 features a side-entry, forged body, and end closures that allows easy maintenance or repair. Unlike welded-body construction valves, the QTCV-T2 may be easily repaired and returned to service.

Wide array of configurations

The QTCV-T2 features one of the widest arrays of rotary control valve configurations in the natural gas industry. QTCV-T2’s are available in ANSI ratings from 150-1500, bore sizes from 4” (100 mm) to 36”(900 mm), and a full compliment of end connections and trim materials for application custimization.

Stem construction

The QTCV-T2 utilizes dual O-ring stem seals that can be serviced even while the control valve is under pressure. Additionally, the dual O-ring design can be utilized with confidence in below ground applications, unlike our competitons’ gland type stem seal design.

Equalized break torque and running torque

The ball element of the QTCV-T2 is specially coated and polished and a seat spring arrangement is implemented. This ensures smooth operation with equalized break and running torque. These characteristics allow for extremely accurate control of the process variable even on the largest bore control valves.

Bi-directional sealing on seat (Piston Effect Principle)

The exclusive design of the QTCV-T2 valve seat provides increased seat sealing capability. The unique “piston effect principle” causes the control valve seat to seal regardless of relative pressure differential. Hence the QTCV-T2 may seal from either the upstream or downstream side of the valve seat. This feature is exlusive to Becker control valve products.

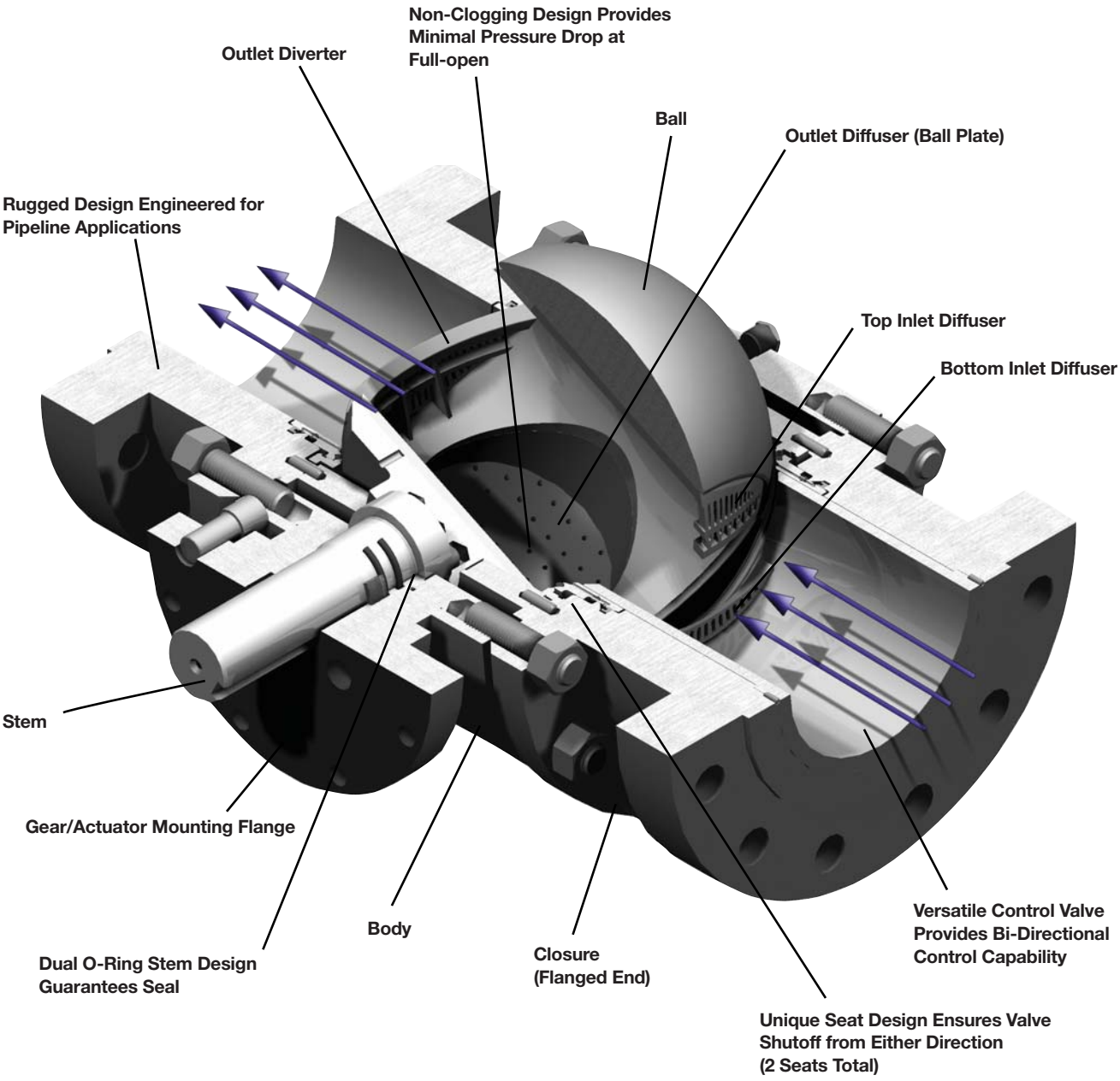
Bi-Directional flow capability

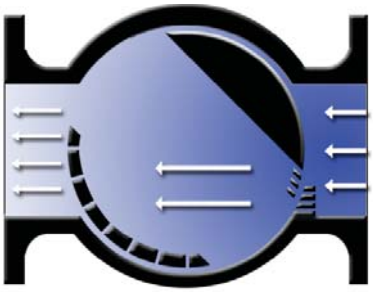
The versatile and rugged design of the QTCV-T2 allows for bi-directional flow across the control valve. Note that pressure drop capabilities across the valve are reduced to reverse flow.

Rugged design engineered for pipeline applications

The QTCV-T2 is designed for rugged pipeline applications that demand a control valve that will provide continuous service with minimal maintenance for many years.

Model QTCV-T2 Quiet Trim Control Valve Provides Versatile Regulation at an Economical Price





QTCV-T2 Quiet Trim Control Valve Features

- Noise attenuation to 17 dBA
- Turndown ratio up to 300:1
- Maximum shut off Class IV standard, Class VI option

Becker QTCV-T2 Quiet Trim Control Valve Components

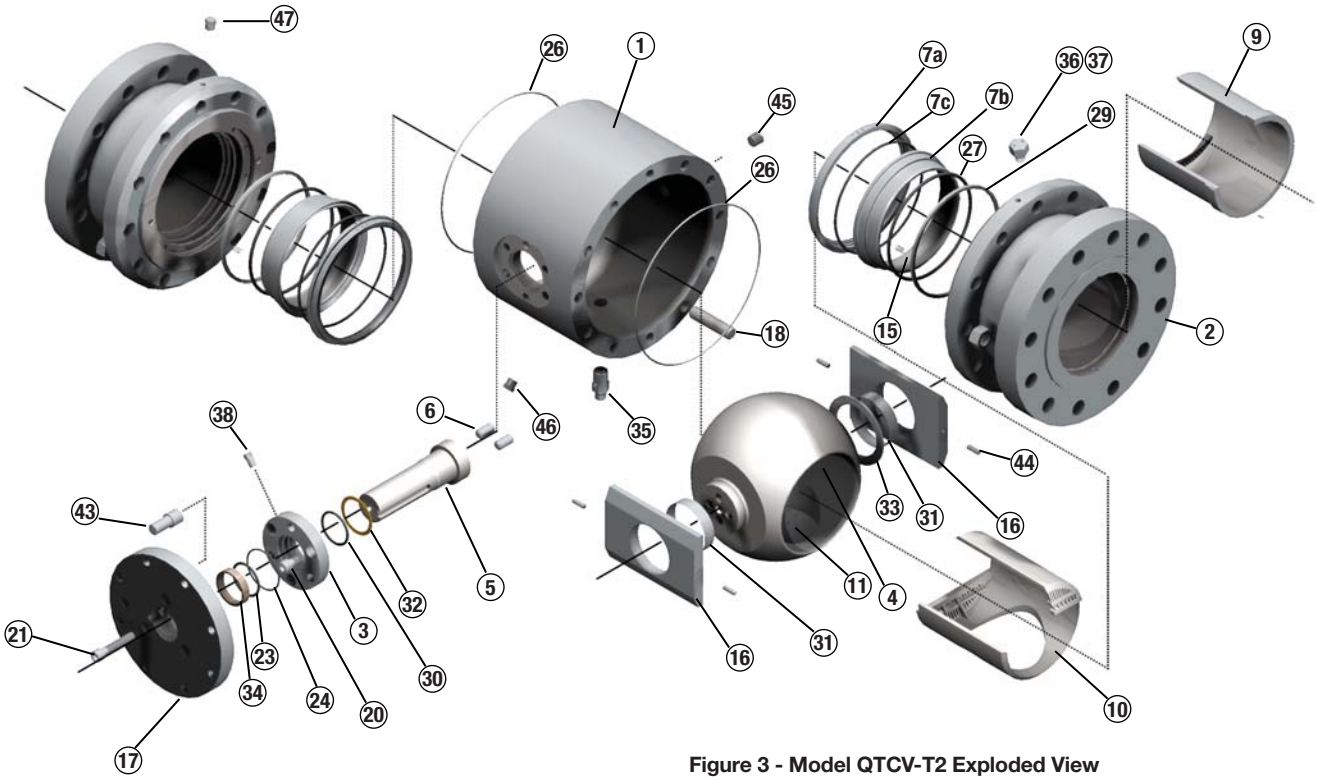


Figure 3 - Model QTCV-T2 Exploded View

Table 1

Model QTCV-T2 Materials of Construction					
Item	**Description**	**Material**	**Item**	**Description**	**Material**
1	Body	ASTM A350 LF2	23	O-Ring, Stem	Viton
2	Closure (RFFE)	ASTM A350 LF2	24	O-Ring, Gland Plate	Viton
3	Gland Plate	ASTM A350 LF2	26	O-Ring, Body	Viton
4	Ball	ASTM A350 LF2	27	O-Ring, Gasket, Seat	Viton
5	Stem	AISI 1018	28	O-Ring, Seat Seal	Viton
6	Stem Pin	AISI 4140	29	Seat U-Cup	Viton
7a	Seat Ring, Inner	ASTM A350 LF2	30	Gland Plate Gasket	Vellumoid
7b	Seat Ring, Outer	ASTM A350 LF2	31	Bearing	Teflon/Steel
7c	Lock Ring	T-304 SS	32	Thrust Washer, Upper	Steel/Ryton
7d	Pin, Seat Lock Ring	SS 300 Series	33	Thrust Washer, Lower	Steel/Ryton
8	Inlet Diverter	17-4 PH SS	34	Gland Bushing	AISI 1015
9	Inlet Diverter Sleeve		35	Drain Fitting	AISI 1018
10	Ball Noise Trim	17-4 PH SS	36	Check Fitting	AISI 1018
11	Ball Plate	17-4 PH SS	37	Grease Fitting	AISI 1018
15	Seat Spring	Alloy X-750	38	Stem Vent Assembly	AISI 1018
16	Bearing Retainer	ASTM A36	43	Anchor Pin	AISI 1018
17	Adapter Plate	ASTM A36	44	Pin, Bearing Retainer	AISI 4140
18	Body Stud	ASTM A193 B7M	45	Hex Plug	AISI 1018
19	Body Nut	ASTM A194 2HM	46	Body Relief	AISI 1018
20	Capscrew, Gland Plate	ASTM A574M	47	Hex Plug	AISI 1018
21	Capscrew, Adapter Plate	ASTM A574M			

Table 2

QTCV-T2 Technical Specifications		
Materials of Construction (Standard Configuration)		
Body Material	Carbon Steel	
Throttling Trim	Carbon Steel Ball 174-ph S.S. Trim	
Seat Seal Material	Viton or Vexon	
Coating	All valves sandblast per SP-10 and standard Becker primer and topcoat	
General Design Specifications		
Maximum Control Cv	95% Max Cv	85° Travel (for all systems)
Minimum Control Cv	0.5% Max Cv	7° Travel (large downstream Systems)
	1.5% Max Cv	15° Travel (power plant type systems)
Dowstream Velocity (gas)	100 ft/sec above ground applications 200 ft/sec below ground applications	
Max. Downstream Velocity (liquid)	30 ft/sec	
Face to Face	ANSI B16.10 see Table 5	
Testing	API 6D	
Shut Off Classification	Class IV (full ANSI rating)* Class VI option	
Maximum Recommended Noise	110 dBA	
Maximum Control Pressure	800 psig (primary flow direction) 800 psig (reverse flow direction)	
Maximum Exit Velocity	0.3 Mach (continuous service) 0.5 Mach (occasional service)	
Operating Temperature	-20°F to +350°F (-29°C to 177°C) standard -50°F to +350°F (-46°C to 177°C) optional low temperature trim	

*Customer specified coatings applied upon request
NOTE: Special configurations and materials are available. Please consult factory for your application requirements.

*All QTCV-T2s are tested and shipped capable of Class IV shutoff. If the QTCV-T2 is exposed to high pressure drop, repeated cycling, excessive contaminants, or conditions outside reasonable service the control valve leakage classcould degrade.

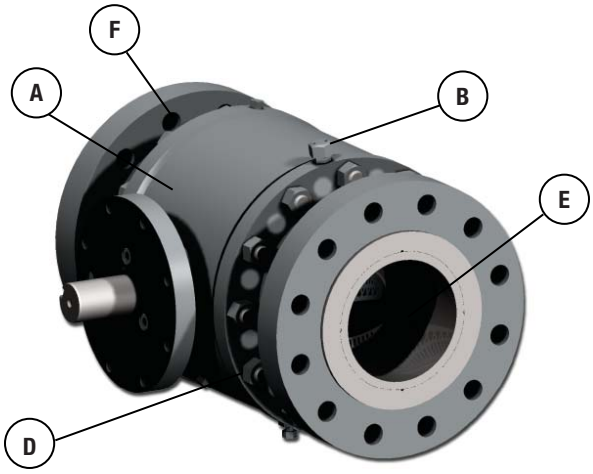


Figure 4 - QTCV-T2 Port Definitions

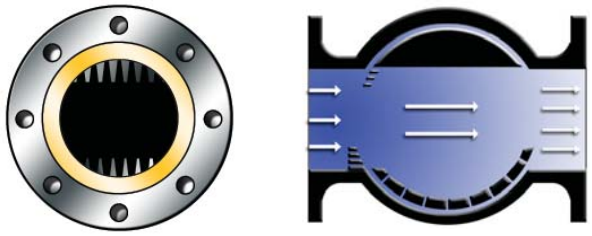


Figure 5.0 - Control valve in full-open position
When the QTCV-T2 is in the full-open position, the diffuser does not engage the flow. The flow media and any impurities can pass with minimal pressure drop. The full-open position provides high flow capacity with low pressure drop across the control valve.

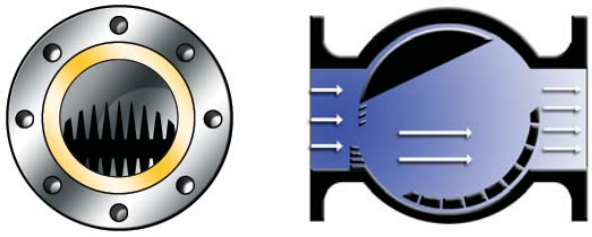


Figure 5.1 - Control valve partially closed
When the QTCV-T2 is partially closed the inlet and outlet diffuser will begin to engage. The pressure drop across the control valve is taken in two stages, providing optimum noise attenuation. The control valve will still provide high flow capacity combined with optimum noise attenuation in this position.

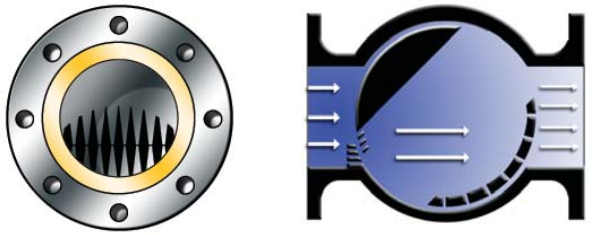


Figure 5.2 - Control valve near closed
When the QTCV-T2 nears the closed position the inlet and outlet diffuser will fully engage. The flow media must pass through both the inlet and outlet diffuser, providing excellent low flow volume control capability.

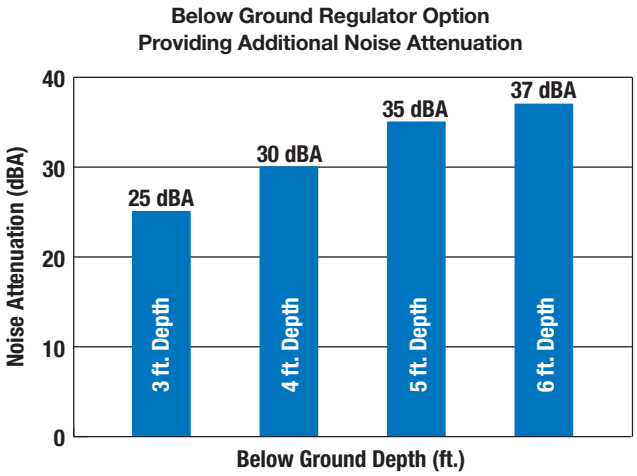
Table 3

QTCV-T2 Technical Specifications		
QTVC-T2 Port Definitions	**Port Information**	**Item**
Stem Lubrication Port	1/4" NPT	A
Upstream Seat Lubrication Port	Buttonhead	B
Body Blow-down Port	1/2" NPT Ball Valve	D
Upstream Valve Inlet Port	RFFE, WE, or RTJ	E
Downstream Valve Inlet Port	RFFE, WE, or RTJ	F

QTCV-T2 Series Control Valve Accessories/Options

Realize Optimum Performance of your QTCV-T2 Control Valve with these Popular Accessories and Options

Figure 6.0 - Installation of Becker Below Ground Ball Valve Regulator.
A natural gas transmission company installed Becker Below Ground Ball Valve Regulators to achieve maximum noise attenuation, minimal maintenance, and optimum cost effectiveness. The Below Ground Regulator can provide up to 37 dBA noise attenuation with minimal additional costs.



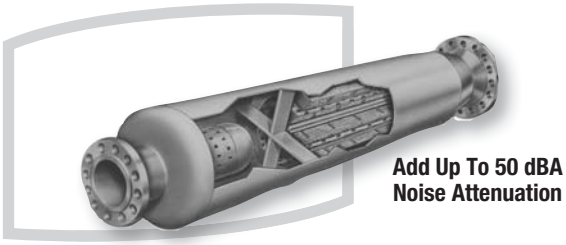
Noise Attenuation as a Factor of Below Ground Depth

Typical below ground depths range from 3 feet burial to 6 feet burial. The below ground depth is measured from centerline of pipe to ground. Below Ground noise attenuation usually provides from 25 dBA to 37 dBA noise attenuation for these buried depths.

The Becker Below Ground Ball Valve Regulator option is unique to Becker and provides a multitude of benefits by direct burial of the control valve itself. The valve actuator, lubrication lines, and drain lines are extended above ground-while the ball valve remains below ground. The primary advantage of Becker Below Ground Regulators is inexpensive noise attenuation in excess of 25 dBA.

- More than 25 dBA noise attenuation
- Less ambient heat loss
- May use smaller adjacent piping diameter
- Smaller station footprint
- Most economical noise attenuation
- May eliminate need for buildings and enclosures by utilizing the fiberglass cabinet
- Below Ground Regulator option may be combined with other noise attenuation solutions

Becker Model CVS Control Valve Silencer



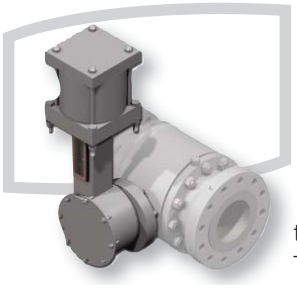
The CVS Control Valve Silencer is a noise attenuating device that is installed immediately downstream of any control valve regulator to provide noise reduction of up to 50 dBA. The CVS is available in a variety of configurations and designs to accommodate almost any natural gas regulation facility. The CVS may be combined with other Becker noise attenuating products in order to provide additional noise reduction.

Becker Model CVD Series Control Valve Diffuser

The CVD Series Control Valve Diffuser is a noise attenuating device that is installed immediately downstream of any control valve regulator to provide noise reduction of up to 15 dBA. The CVD is available in a variety of configurations and designs to accommodate any natural gas regulation facility. The CVD may be combined with other Becker noise attenuating products in order to provide additional noise reduction.

QTCV-T2 Series Control Valve Compatible Actuators

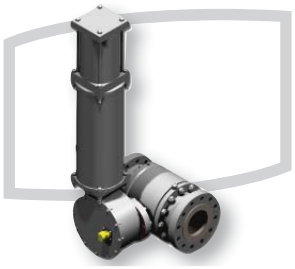
Becker Control Valve Actuators Provide Reliability and Accuracy for all Control Valve Applications



RPDA Rotary Piston Double-Acting Actuator

The RPDA Rotary Piston Double-Acting Actuator is designed for heavy duty control applications that require optimum performance. The RPDA is typically utilized when applications require a "lock last" failure mode. The RPDA incorporates a crank-arm mechanism specifically designed for the rigors of throttling control valve applications. The RPDA can accept high pressure power supply gas up to 400 psig (2758 kPa) enabling the use of smaller actuators or Becker's exclusive Bleed to Pressure System (BPS™) feature.

Specifications	
Actuator Type	Quarter turn (90° rotation)
Mechanism	Crank-arm
Usage	Heavy-duty
Action	Double-acting
Applications	Throttling, On-Off
Maximum Supply Gas	500 psig (3447 kPa)
Bleed to Pressure System	Yes
Below Ground Design	Yes
Maximum Valve Size	42" bore
Minimum Valve Size	2" bore
Stop Adjustment	Internal



RPSR Rotary Piston Spring Return Actuator

The RPSR Rotary Piston Spring Return Actuator is designed for heavy duty control applications the require optimum performance. The RPSR is typically utilized when applications require the control valve to fail-open or fail-closed upon loss of power supply gas. The RPSR incorporates a crank-arm mechanism specifically designed for the rigors of throttling control valve applications. The RPSR can accept high pressure power supply gas up to 400 psig (2758 kPa) enabling the use of smaller actuators or Becker's exclusive Bleed to Pressure System (BPS™) feature.

Specifications	
Actuator Type	Quarter Turn (90° rotation)
Mechanism	Crank-arm
Usage	Heavy-duty
Action	Single-acting, (fail-open or fail-closed)
Applications	Throttling, On-Off, Surge Control
Maximum Supply Gas	500 psig (3447 kPa))
Bleed to Pressure Sys	Yes
Below Ground Design	Yes
Maximum Valve Size	16" bore
Minimum Valve Size	2" bore
Stop Adjustment	Internal

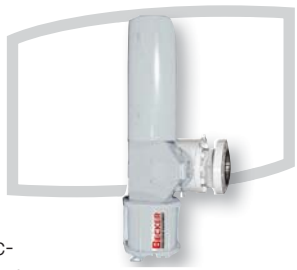
SYDA Scotch Yoke Double-Acting Actuator

The SYDA Scotch Yoke Double-Acting Actuator is designed as an economical actuator for moderate duty control applications. The SYDA is typically utilized when applications require "lock last" failure mode. The SYDA incorporates a scotch-yoke mechanism. The SYDA can accept power supply gas up to 130 psig (896 kPa). The SYDA features a compact design that is convenient when installation space is a premium.

Specifications	
Actuator Type	Quarter Turn (90° rotation)
Mechanism	Scotch Yoke
Usage	Moderate-duty
Action	Double-acting
Applications	Throttling, On-Off
Maximum Supply Gas	130 psig (896 kPa)
Bleed to Pressure System	Limited
Below Ground Design	Not recommended
Maximum Valve Size	42" bore
Minimum Valve Size	2" bore
Stop Adjustment	External

QTCV-T2 Series Control Valve Compatible Actuators (cont.)

SYSR Scotch Yoke Spring Return Actuator



The SYSR Scotch Yoke Spring Return Actuator is designed as an economical actuator for moderate duty control applications. The SYSR is typically utilized when applications require the control valve to fail-open or fail-closed mode. The SYSR incorporates a scotch-yoke mechanism. The SYSR can accept power supply gas up to 130 psig (896 kPa). The SYSR may be easily field configured to reverse failure mode. The SYSR features a compact design that is convenient when installation space is a premium.

Specifications	
Actuator Type:	Quarter Turn (90° rotation)
Mechanism:	Scotch Yoke
Usage:	Moderate-duty
Action:	Single-acting (fail-open or fail-closed)
Applications:	Throttling, On-Off
Maximum Supply Gas:	130 psig (896 kPa)
Bleed to Pressure Sys:	Limited
Below Ground Design:	Not recommended
Maximum Valve Size:	36" bore
Minimum Valve Size:	2" bore
Stop Adjustment:	Internal

Table 4

Model QTCV-T2 Control Valve Flow Coefficients (Cv) Based Upon ISA Sizing Equation Criteria										
Size (mm)	Minimum Controllable Cv.	Valve Degree of Rotation								
		10°	20°	30°	40°	50°	60°	70°	80°	90°
4"(100)	2.0	2.0	12.0	22.0	40.0	60.0	91.0	228	374	578
6"(150)	4.5	4.5	25.0	51.0	90.0	136	205	541	888	1371
8"(200)	8.0	8.0	48.0	91.0	160	241	364	858	1373	2105
10"(250)	12.5	12.5	74.0	142	250	377	569	1380	2198	3399
12"(300)	18.0	18.0	107	204	359	542	818	1752	2818	4655
16"(400)	32.0	32.0	191	363	638	964	1455	3036	5046	8059
20"(500)	50.1	50.1	299	567	998	1506	2274	4682	7568	12346
24"(600)	72.0	72.0	430	815	1438	2168	3274	6742	10898	17778
30"(750)	113.0	113.0	671	1274	2247	3369	5116	10534	17028	27779
36"(900)	162.0	162.0	966	1834	3234	4880	7367	15168	24520	40001
X_t	0.99	0.99	0.95	0.78	0.75	0.64	0.44	0.42	0.40	0.35
F_1	0.96	0.96	0.96	0.94	0.92	0.87	0.83	0.80	0.70	0.59

(1) Flow coefficients (Cv) are based upon ISA sizing equation criteria.
(2) Consult Becker Control Valves for additional information.
(3) Minimum controllable (Cv) based upon natural gas pipeline systems that do not feed power plants or similar small downstream systems.
(4) For sizing software utilizing ISA criteria, utilize Becker T-Ball Noise Attenuating Ball Valve Sizing Program.
(5) For flow coefficients (Cv) based upon universal sizing criteria see bulletin "QTCV-T2 Quiet Trim Control Valve Universal Cv 1001".
(6) For sizing and station design software utilizing universal gas sizing criteria, utilize Becker bpeSize program.
NOTE: Due to Dresser's dedication to new product development and enhancement data provided is subject to change.
Please check with our manufacturing facility for the most recent data."

www.dresser.com/becker

Control Valve sizing and station design software is available for free download from our website at www.dresser.com/becker.

Figure 6 - Comparison of Valve Opening Characteristics for T-Ball Control Valves

Graph provides relative comparison of FPCV-T0, QTCV-T1, QTCV-T2, and QTCV-T4 control valves. Note difference in rate of opening and full-open capacity between each control valve. Data based upon 6" (150mm) FPCV-T0, QTCV-T1, QTCV-T2, and QTCV-T4 control valves.

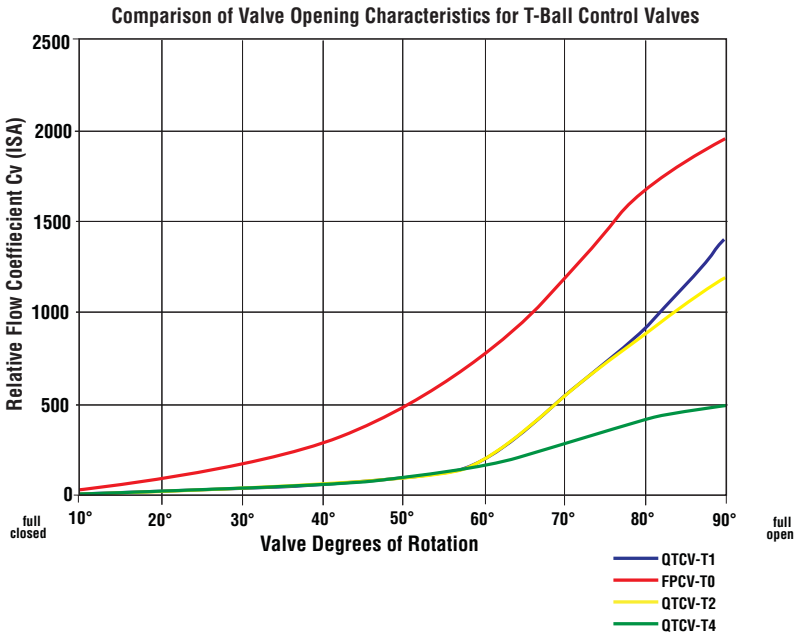


Table 5

Model QTCV-T2 Face to Face Dimensions (RFFE)										
Size	**ANSI 150**		**ANSI 300**		**ANSI 600**		**ANSI 900**		**ANSI 1500**	
Inches (mm)	**Inches**	**mm**	**Inches**	**mm**	**Inches**	**mm**	**Inches**	**mm**	**Inches**	**mm**
4" (100)	9.0	(229)	12.0	(305)	17.0	(432)	18.0	(457)	21.5	(546)
6" (150)	15.5	(394)	15.9	(403)	22.0	(559)	24.0	(610)	27.8	(705)
8" (200)	18.0	(457	19.8	(502)	26.0	(660)	29.0	(737)	32.8	(832)
10" (250)	21.0	(533)	22.4	(568)	31.0	(787)	33.0	(838)	39.0	(991)
12" (300)	24.0	(610)	25.5	(648)	33.0	(838)	38.0	(965)	44.5	(1,130)
16" (400)	30.0	(762)	33.0	(838)	39.0	(991)	44.5	(1,130)	54.5	(1,384)
20" (500)	36.0	(914)	39.0	(991)	47.0	(1,194)	52.0	(1,321)	65.5	(1,664)
24" (600)	42.0	(1,067)	45.0	(1,143)	55.0	(1,397)	61.0	(1,549)	80.5	(2,045)
30" (750)	51.0	(1,295)	55.0	(1,397)	65.0	(1,651)	74.0	(1,880)	N/A	(N/A)
36" (900)	60.0	(1,524)	68.0	(1,727)	82.0	(2,083)	90.0	(2,286)	N/A	(N/A)

(1) Consult Becker Control Valves for additional information.

Table 6

Model QTCV-T2 Standard Weights (RFFE)										
Size	**ANSI 150**		**ANSI 300**		**ANSI 600**		**ANSI 900**		**ANSI 1500**	
Inches (mm)	**Lbs.**	**Kg.**	**Lbs.**	**Kg.**	**Lbs.**	**Kg.**	**Lbs.**	**Kg.**	**Lbs.**	**Kg.**
4" (100)	210	(95)	240	(109)	295	(134)	355	(161)	430	(195)
6" (150)	330	(200)	485	(220)	550	(250)	850	(390)	1,270	(570)
8" (200)	610	(350)	825	(375)	975	(440)	1,225	(560)	1,650	(750)
10" (250)	975	(500)	1,175	(535)	1,550	(700)	1,800	(820)	2,620	(1,190)
12" (300)	1,435	(705)	1,675	(760)	2,025	(920)	2,700	(1,230)	3,640	(1,650)
16" (400)	2,250	(1,020)	2,850	(1,295)	3,375	(1,530)	4,420	(2,000)	8,800	(4,000)
20" (500)	4,225	(1,920)	4,575	(2,075)	5,800	(2,630)	7,610	(3,450)	N/A	(N/A)
24" (600)	6,175	(2,800)	6,775	(3,075)	8,700	(3,950)	12,100	(5,490)	N/A	(N/A)
30" (750)	10,600	(4,800)	12,275	(5,575)	14,725	(6,690)	21,000	(9,530)	N/A	(N/A)
36" (900)	6,750	(7,600)	18,525	(8,400)	23,400	(10,620)	29,900	(12,200)	N/A	(N/A)

(1) Weights are for bare-stem valve and do not include actuator, instrumentation, accessories, or packaging materials.
(2) Non-standard sizes and reduced port designs available.
(3) Consult Becker Control Valves for additional information.

Table 7

Model QTCV-T2 Face to Face Dimensions (RTJ)										
Size	**ANSI 150**		**ANSI 300**		**ANSI 600**		**ANSI 900**		**ANSI 1500**	
Inches (mm)	**Inches**	**mm**	**Inches**	**mm**	**Inches**	**mm**	**Inches**	**mm**	**Inches**	**mm**
4" (100)	N/A	(N/A)	N/A	(N/A)	17.1	(435)	18.1	(460)	21.6	(549)
6" (150)	N/A	(N/A)	N/A	(N/A)	22.1	(562)	24.1	(613)	28.0	(711)
8" (200)	N/A	(N/A)	N/A	(N/A)	26.1	(664)	29.1	(740)	33.1	(841)
10" (250)	N/A	(N/A)	N/A	(N/A)	31.1	(791)	33.1	(841)	39.4	(1,000)
12" (300)	N/A	(N/A)	N/A	(N/A)	33.1	(841)	38.1	(968)	45.1	(1,146)
16" (400)	N/A	(N/A)	N/A	(N/A)	39.1	(994)	44.9	(1,140)	55.4	(1,407)
20" (500)	N/A	(N/A)	N/A	(N/A)	47.3	(1,200)	52.5	(1,334)	N/A	(N/A)
24" (600)	N/A	(N/A)	N/A	(N/A)	55.4	(1,407)	61.8	(1,568)	N/A	(N/A)
30" (750)	N/A	(N/A)	N/A	(N/A)	29.1	(1,740)	74.9	(1,902)	N/A	(N/A)
36" (900)	N/A	(N/A)	N/A	(N/A)	82.6	(2,099)	91.1	(2,315)	N/A	(N/A)

(1) Consult Becker Control Valves for additional information.

Table 8

Model QTCV-T2 Standard Weights (RTJ)										
Size	**ANSI 150**		**ANSI 300**		**ANSI 600**		**ANSI 900**		**ANSI 1500**	
Inches (mm)	**Lbs.**	**Kg.**	**Lbs.**	**Kg.**	**Lbs.**	**Kg.**	**Lbs.**	**Kg.**	**Lbs.**	**Kg.**
4" (100)	N/A	(N/A)	N/A	(N/A)	295	(134)	355	(161)	430	(195)
6" (150)	N/A	(N/A)	N/A	(N/A)	550	(249)	850	(386)	1,270	(576)
8" (200)	N/A	(N/A)	N/A	(N/A)	975	(442)	1,225	(556)	1,650	(748)
10" (250)	N/A	(N/A)	N/A	(N/A)	1,550	(703)	1,800	(816)	2,620	(1,188)
12" (300)	N/A	(N/A)	N/A	(N/A)	2,025	(919)	2,700	(1,225)	3,640	(1,651)
16" (400)	N/A	(N/A)	N/A	(N/A)	3,375	(1,531)	4,420	(2,005)	8,800	(3,992)
20" (500)	N/A	(N/A)	N/A	(N/A)	5,800	(2,631)	7,610	(3,452)	N/A	(N/A)
24" (600)	N/A	(N/A)	N/A	(N/A)	8,700	(3,946)	12,100	(5,488)	N/A	(N/A)
30" (750)	N/A	(N/A)	N/A	(N/A)	14,725	(6,679)	21,000	(9,525)	N/A	(N/A)
36" (900)	N/A	(N/A)	N/A	(N/A)	23,400	(10,614)	29,900	(13,562)	N/A	(N/A)

(1) Weights are for bare-stem valve and do not include actuator, instrumentation, accessories, or packaging materials.
(2) Non-standard sizes and reduced port designs available.
(3) Consult Becker Control Valves for additional information.

Table 9

Model QTCV-T2 Face to Face Dimensions (Weld End)										
Size	**ANSI 150**		**ANSI 300**		**ANSI 600**		**ANSI 900**		**ANSI 1500**	
Inches (mm)	**Inches**	**mm**	**Inches**	**mm**	**Inches**	**mm**	**Inches**	**mm**	**Inches**	**mm**
4" (100)	12.0	(305)	12.0	(305)	17.0	(432)	18.0	(457)	21.6	(549)
6" (150)	18.0	(457)	18.0	(457)	22.0	(559)	24.0	(610)	27.8	(705)
8" (200)	20.5	(521)	20.5	(521)	26.0	(660)	29.0	(737)	32.8	(832)
10" (250)	22.0	(559)	22.0	(559)	31.0	(787)	33.0	(838)	39.0	(991)
12" (300)	25.0	(635)	25.0	(635)	33.0	(838)	38.0	(965)	44.5	(1,130)
16" (400)	33.0	(838)	33.0	(838)	39.0	(991)	44.5	(1,130)	54.5	(1,384)
20" (500)	39.0	(991)	39.0	(991)	47.0	(1,194)	52.0	(1,321)	N/A	(N/A)
24" (600)	45.0	(1,143)	45.0	(1,143)	55.0	(1,397)	61.0	(1,549)	N/A	(N/A)
30" (750)	55.0	(1,397)	55.0	(1,397)	65.0	(1,651)	74.0	(1,880)	N/A	(N/A)
36" (900)	68.0	(1,727)	68.0	(1,727)	82.0	(2,083)	90.0	(2,286)	N/A	(N/A)

(1) Consult Becker Control Valves for additional information.

Table 10

Model QTCV-T2 Standard Weights (Weld End)										
Size	**ANSI 150**		**ANSI 300**		**ANSI 600**		**ANSI 900**		**ANSI 1500**	
Inches (mm)	**Lbs.**	**Kg.**	**Lbs.**	**Kg.**	**Lbs.**	**Kg.**	**Lbs.**	**Kg.**	**Lbs.**	**Kg.**
4" (100)	200	(91)	200	(91)	235	(107)	255	(116)	290	(132)
6" (150)	425	(193)	425	(193)	450	(204)	650	(295)	970	(440)
8" (200)	725	(329)	725	(329)	840	(380)	950	(431)	1,190	(540)
10" (250)	1,050	(476)	1,025	(465)	1,250	(570)	1,400	(635)	1,840	(835)
12" (300)	1,450	(658)	1,450	(658)	1,700	(770)	2,200	(998)	2,660	(1,207)
16" (400)	2,150	(975)	2,350	(1,066)	2,825	(1,281)	3,500	(1,588)	6,750	(3,062)
20" (500)	4,050	(1,837)	4,050	(1,837)	5,100	(2,313)	6,020	(2,731)	N/A	(N/A)
24" (600)	6,000	(2,722)	6,000	(2,722)	8,025	(3,640)	9,140	(4,146)	N/A	(N/A)
30" (750)	10,400	(4,717)	10,925	(4,955)	13,450	(6,101)	16,500	(7,484)	N/A	(N/A)
36" (900)	16,650	(7,552)	16,650	(7,552)	20,860	(9,642)	24,500	(11,113)	N/A	(N/A)

(1) Weights are for bare-stem valve and do not include; actuator, instrumentation, accessories or packaging materials.
(2) Non-Standard sizes and reduced port designs available.
(3) Consult Becker Control Valves for additional information.

Choose the Perfect Rotary Control Valve for Your Application

Becker Control Valves has a wide variety of rotary control valves with a variety of features that ensure the optimum solution for your application needs. Refer to the figures below to assist you in selecting the proper rotary control valve.

Table 11

Selection table for Becker Control Valves and Actuators						
	FPCV-T0	**QTCV-T1**	**QTCV-T2**	**QTCV-T4**	**CVEZ**	**CVET**
Performance Specifications						
Max. Noise Attenuation	NA	7 dBA	17 dBA	25 dBA	NA	25 dBA
Max. Turndown Ratio	100:1	200:1	300:1	200:1	30:1	30:1
Max. Shutoff Class	VI	V	IV	IV	VI	VI
Control Valve Accessories/Options						
Low Temperature Trim	•	•	•	•	•	•
Surge Control Specs	•	•	•	•	•	•
Alternate Trim Materials	•	•	•	•	•	•
Below Ground Design	•	•	•	•		
CVS Control Valve Silencer	•	•	•	•	•	•
CVD Control Valve Diffuser	•	•	•	•	•	•
Quick Change "Characterize-able" Trims					•	•
Removable Noise Trim					•	•
Compatible Actuators						
RPDA Series	•	•	•	•		
RPSR Series	•	•	•	•		
SYDA Series	•	•	•	•		
SYSR Series	•	•	•	•		
LPDA Series					•	•
LPSR Series					•	•
LD Series					•	•

*CAUTION: This information is intended as a guideline for application of Becker Control Valve products. Dresser strongly recommends consulting Becker Engineering prior to application of any product.

NOTE: Due to Dresser's dedication to new product development and enhancement data provided is subject to change.

Please check with our manufacturing facility for the most recent data."

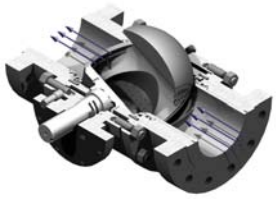
Additional resources are available on our website. Sales literature, sizing software, and technical manuals are available for download at **www.dresser.com/becker**

FPCV-T0 Series Quiet Trim Control Valve

- High turndown capability up 100:1
- High pressure drop shutoff capability to Class VI

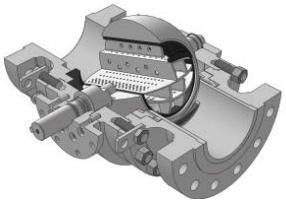
QTCV-T1 Series Quiet Trim Control Valve

- Noise attenuation up to 7 dBA
- High turndown capability up 200:1
- High pressure drop shutoff capability to Class V



QTCV-T2 Series Quiet Trim Control Valve

- Noise attenuation up to 17 dBA
- High turndown capability up 300:1
- High pressure drop shutoff capability to Class IV



QTCV-T4 Series Quiet Trim Control Valve

- Noise attenuation up to 25 dBA
- High turndown capability up 200:1
- High pressure drop shutoff capability to Class IV

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