QTCV-T1 Series
Quiet Trim Control Valve

QTCV-T1 Provides Extended Control Capability and Moderate Noise Attenuation at a Competitive Price

Description:
The Becker QTCV-T1 Quiet Trim Control Valve is a trunnion-mounted rotary control valve designed for general control valve service. The QTCV-T1 features a rugged design that provides moderate noise attenuating capabilities with extended an turndown ratio. The QTCV-T1 features a side-entry, forged body and end closures that allows easy maintenance or repair of the control valve. The QTCV-T1 is ideal for use as a flow control valve or pressure control valve where predicted noise does not pose a problem. The QTCV-T1 is available in a variety of configurations from 4" (100 mm) bore to 36" bore (900 mm).

Figure 1.0 - Becker Model QTCV-T1 Ball Control Valve

Item:	QTCV-T1 Series Quiet Trim Control Valve
Classification:	Control Valve
Valve Type:	Rotary trunnion mounted ball
Applications:	Monitoring or Mild Service when installed above grade Severe service when installed Below Ground
Noise Attenuation:	7 dBA
Maximum Turndown:	200:1
Shutoff Class:	V
Flow characteristic:	Low gain modified equal percentage
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

Features

- **Noise Attenuation up to 7 dBA**
- **High turndown capability up to 200:1**
- **High pressure drop shutoff capability to Class V**
- **Bi-Directional Flow Capability**
- **Upstream and Downstream Seats**
- **Bi-Directional Noise Attenuation**
- **Self Cleaning Design when installed as left hand mount.**
- **Emergency Sealant System**
- **Easy maintenance and repair**
- **Wide array of configurations**
- **Equalized break torque and running torque**
- **Rugged design engineered for pipeline applications**

Figure 2.0 – Becker Model QTCV-T1 used as primary regulator in power plant
Becker Model QTCV-T1 provides moderate noise attenuation combined with high flow range-ability. Flow range ability is extremely important to ensure proper control during power plant startup when flow volume is minimal. The QTCV-T1 also provides excellent class V shutoff capability. The control valve is equipped with a becker RPSR actuator and a model VRP-SB-PID “power plant” controller.

QTCV-T1 Series
Quiet Trim Control Valve

BECKER
PRECISION EQUIPMENT

Features

High pressure drop shutoff capability
The rugged design of the QTCV-T1 allows for 80% psig full ANSI rated pressure drop across the control valve at shutoff. The rugged nature of the QTCV-T1 allows implementation in a wide array of demanding applications on natural gas pipeline. QTCV-T1 provides ANSI class V shut-off.

Better turndown capability
The low gain modified equal percentage characteristic of the QTCV-T1 provides high flow capacity combined with low volume control ability. QTCV-T1 Quiet Trim Control Valve can exhibit turndown ratio up to 200:1. The high turndown capabilities of the QTCV-T1 minimizes the number of regulator runs necessary as compared with globe pattern valves.

Minimal pressure drop
The Quiet Trim design of the QTCV-T1 features very high flow capacities that 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 and flow directions from right to left, the QTCV-T1 features a “clean sweep” capability that allows debris to pass through upon even a slight opening of the control valve. The feature prevents debris from scouring the face of the ball element or the control valve seats.

Easy maintenance and repair
The QTCV-T1 features a side-entry, forged body and end closures that allows easy maintenance or repair of the control valve. Unlike welded-body construction valves, the QTCV-T1 may be easily repaired and returned to service. This is an obvious benefit with respect to efficiency and economy.

Wide array of configurations
The QTCV-T1 features one of the widest arrays of rotary control valve configurations in the natural gas industry. QTCV-T1’s are available in ANSI ratings from 150-1500; bore sizes from 4” to 36”; and a full compliment of end connections and trim materials to suit your application perfectly.

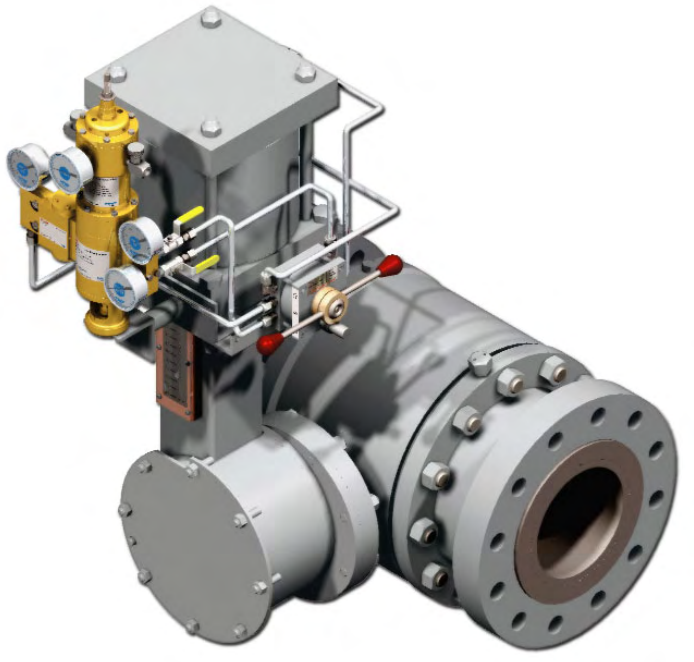
Stem Construction
The QTCV-T1 utilizes dual o-ring stem seals that can be serviced even while the control valve is under pressure. Additionally, the dual o-ring design can be utilized with confidence in Below Ground applications, unlike our competition’s gland type stem seal design.

Equalized break torque and running torque
The ball element of the QTCV-T1 Full Port Control Valve is specially coated and polished and a special seat spring arrangement is implemented on the QTCV-T1 control valve. This ensures smooth operation with equalized break torque 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-T1 valve seats provides increased seat sealing capability. The unique “piston effect principle” causes the control valve seats to seal regardless of relative pressure differential. Hence the design of the QTCV-T1 may seal from either the downstream or the upstream side of the control valve. This ensures flow shutoff even in the event that one of the control valve seats is damaged. This feature is exclusive to Becker control valve products.

Bi-Directional Flow Capability
The versatile and rugged design of the QTCV-T1 allows for bi-directional flow across the control valve. Note that pressure drop capabilities across the valve are reduced for reversed flow.

Rugged design engineered for pipeline applications
Unlike our competitors, the QTCV-T1 is designed for use in rugged pipeline applications where reliability and ruggedness count. The QTCV-T1 is designed for real world applications that demand a control valve that will provide continuous service with minimal maintenance requirements for many years.



Model QTCV-T1 Full Port Control Valve Provides Versatile Regulation at an Economical Price

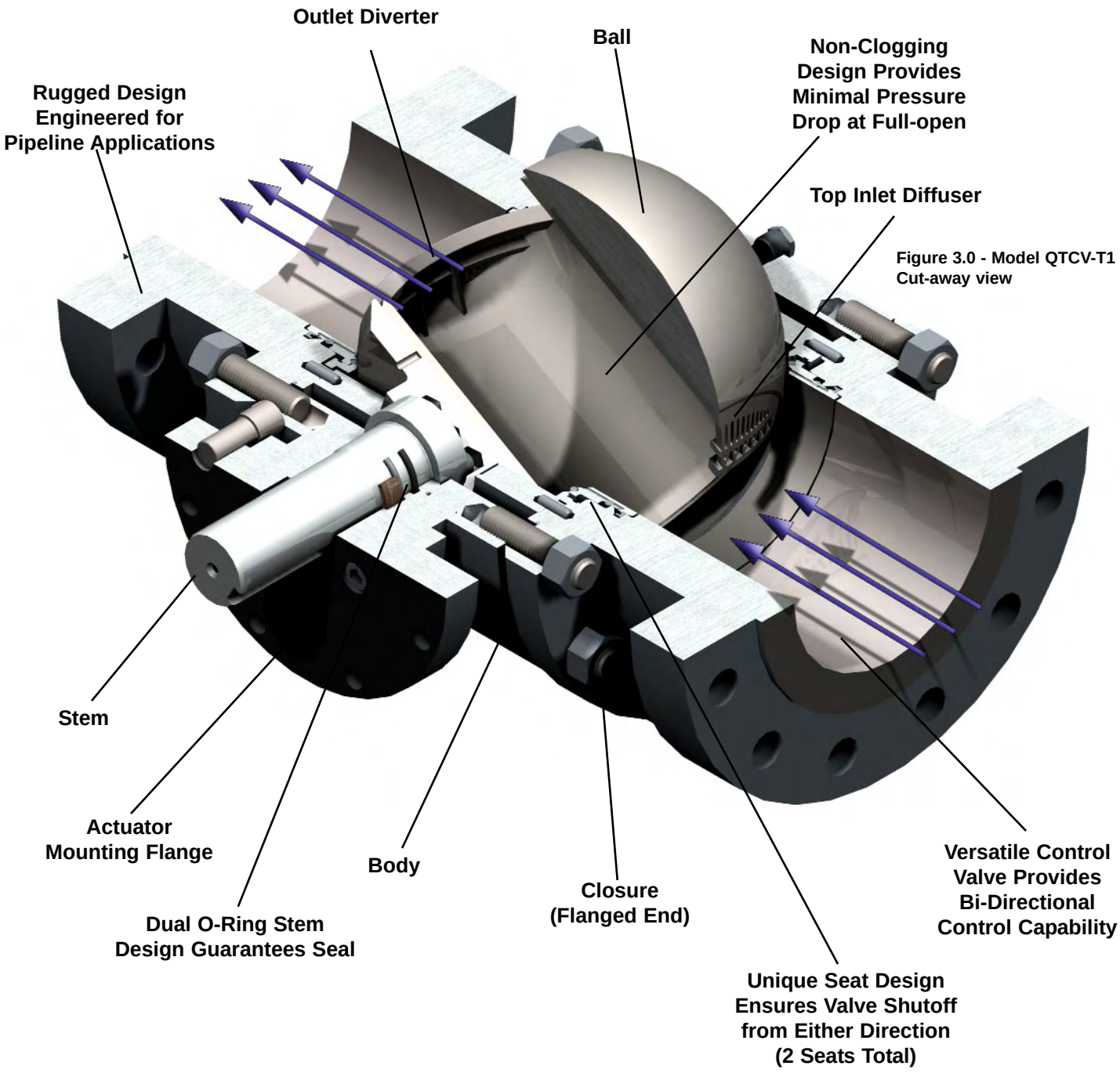
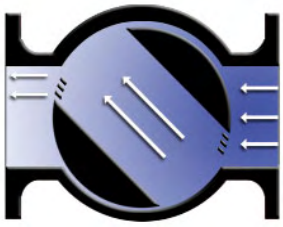


Figure 3.0 - Model QTCV-T1
Cut-away view



QTCV-T1 Quiet Trim Control Valve Features:

- Noise Attenuation to 7dBA
- "Better" Turndown ratio up to 200:1
- Maximum Shut off Class V

Becker QTCV-T1 Quiet Trim Control Valve Components

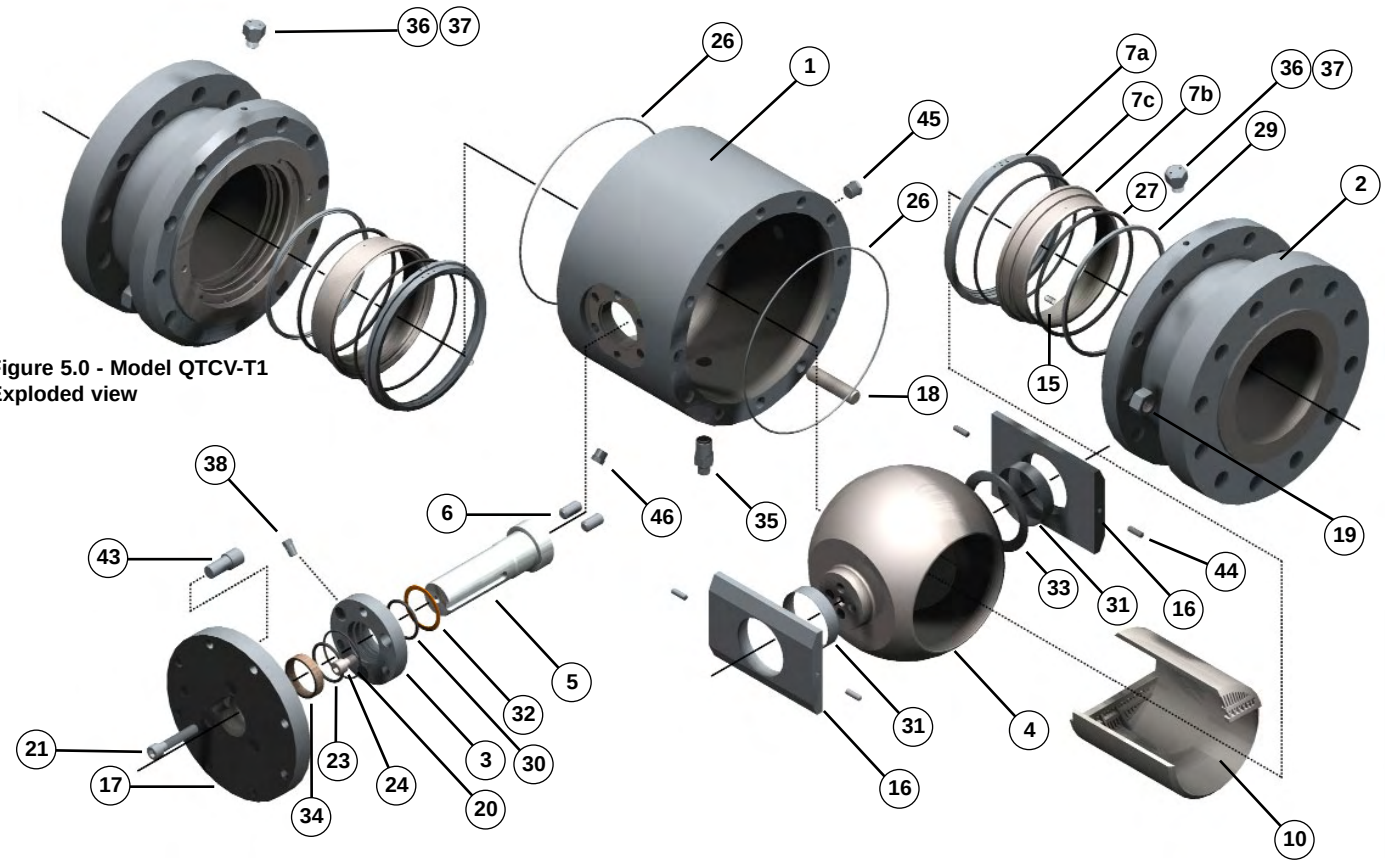


Figure 5.0 - Model QTCV-T1
Exploded view

Table 1.0 - Model QTCV-T1 Materials of Construction

Item	Description	Material	Item	Description	Material
1	Body	ASTM A350 LF2, A106	23	O-Ring, Stem	Viton
2	Closure (RFFE)	ASTM A350 LF2, A106	24	O-Ring, Gland Plate	Viton
3	Gland Plate	ASTM A36	26	O-Ring, Body	Viton
4	Ball	ASTM A395	27	O-Ring, Gasket, Seat	Viton
5	Stem	AISI 1018, 4140	28	O-Ring, Seat Seal	Viton
6	Stem Pin	AISI 4140	29	Seat U-Cup	Viton
7a	Seat Ring, Inner	ASTM A36	30	Gland Plate Gasket	Vellumoid
7b	Seat Ring, Outer	ASTM A36	31	Bearing	Teflon / Steel
7c	Lock Ring	T-304 SS	32	Thrust Washer, Upper	Filled Phenolic
7d	Pin, Seat Lock Ring	SS 300 Series	33	Thrust Washer, Lower	Filled Phenolic
8	Inlet Diverter	17-4 PH SS	34	Gland Bushing	AISI 1015
10	Ball Noise Trim	17-4 PH SS	35	Drain Fitting	AISI 1018
15	Seat Spring	Alloy X-750	36	Check Fitting	AISI 1018
16	Bearing Retainer	ASTM A36	37	Grease Fitting	AISI 1018
17	Adapter Plate	ASTM A36	38	Stem Vent Assembly	AISI 1018
18	Body Stud	ASTM A193 B7M	43	Anchor Pin	AISI 1018
19	Body Nut	ASTM A194 2HM	44	Pin, Bearing Retainer	AISI 4140
20	Capscrew, Gland Plate	ASTM A574M	45	Hex Plug	AISI 1018
21	Capscrew, Adapter Plate	ASTM A574M	46	Body Relief	AISI 1018

Table 2.0 - QTCV-T1 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 Vexton	
Coating:	All valves Sandblast per SP-10 &	
*Customer specified coatings applied upon request Note: Special configurations and materials are available. Please Consult Factory for your application requirements.		
General Design Specifications		
Maximum Control Cv	95% Max Cv	85° Travel (For All Systems)
Minimum Control Cv	0.4% Max Cv	10° Travel (Large Downstream Systems)
	1.5% Max Cv	15° Travel (Power Plant Type Systems)
Max. Pipe Velocity (Gas)	100 ft/sec Above Grade Applications	
	200 ft/sec Below Grade Applications	
Max. Pipe Velocity (Liquid)	30 ft/sec	
Face to Face	ANSI B16.10 see table	
Testing	B16.34	
Shut Off Classification:	Class V (Full ANSI Rating)*	
Max. Noise	110 dBA	
Max. Control △P	1000 psid (primary flow direction) 1000 psid (reverse flow direction)	
Max. 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 Temp. Trim	
*All QTCV Quiet Trim Control Valves are tested and shipped capable of Class V shutoff. If the QTCV-T1 is exposed to high pressure drop, repeated cycling, excessive contaminants, or conditions outside reasonable service the control valve leakage class could degrade.		

Table 3.0 - QTCV-T1 Technical Specifications

QTCV-T1 Port Definitions	Port Info	Item
Stem Lubrication Port	1/4 NPT	A
Upstream Seat Lubrication Port	Buttonhead	B
Downstream Seat Lubrication Port	Buttonhead	C
Body Blow-down Port	1/2" NPT Ball Valve	D
Upstream Valve Inlet Port	RFFE, WE, or RTJ	E
Downstream Valve Outlet Port	RFFE, WE, or RTJ	F

How it works

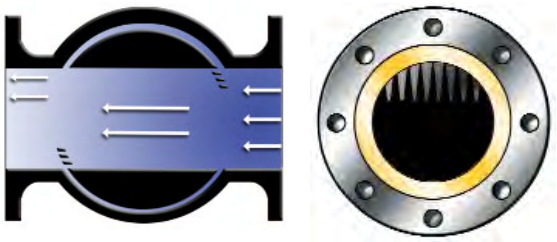


Figure 6.0 - Control valve in full-open position
When the QTCV-T1 is in the full-open position, the diffuser does not engage the flow. The flow media and any impurities can pass with minimal pressure drop. The full-open position provides high flow capacity with low pressure drop across the control valve.

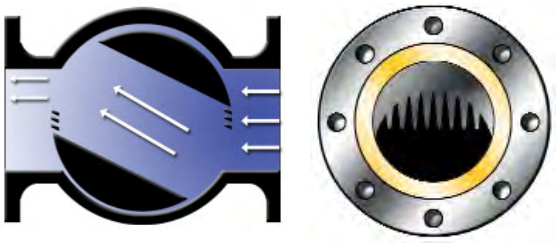


Figure 6.1 – Control valve partially closed
When the QTCV-T1 control valve is partially closed the inlet diffuser and outlet diffuser will begin to engage. The pressure drop across the control valve is taken in two stages, providing moderate noise attenuation. The control valve will still provide high flow capacity combined with moderate noise attenuation in this position.

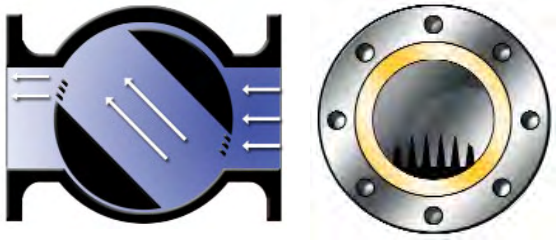
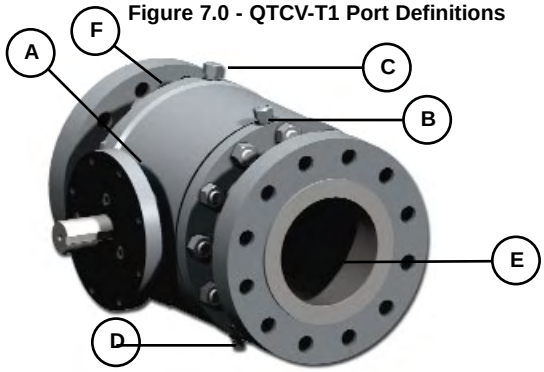


Figure 6.2 – Control valve near closed
When the QTCV-T1 control valve nears the closed position the inlet diffuser and outlet diffuser will fully engage. The flow media must pass through both the inlet diffuser and the outlet diffuser, providing optimum noise attenuation combined with excellent low flow volume control capability.

Figure 7.0 - QTCV-T1 Port Definitions



QTCV-T1 Series Control Valve Accessories/Options

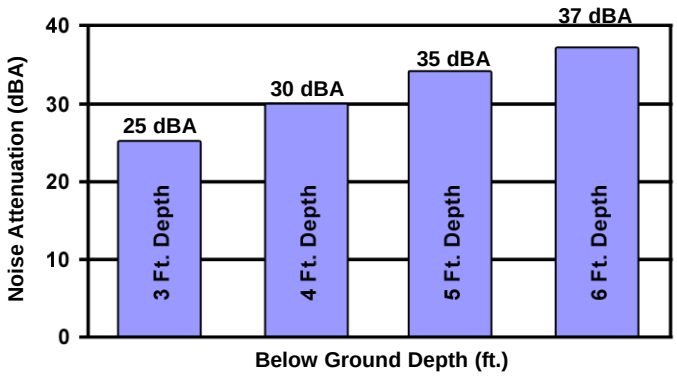
Realize Optimum Performance of your QTCV-T1 Control Valve with these popular accessories/options!

Figure 8.0 Installation of Becker Below Ground Ball Valve Regulator.
A large natural gas transmission company in New York City region 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 35 dBA noise attenuation with minimal additional costs.

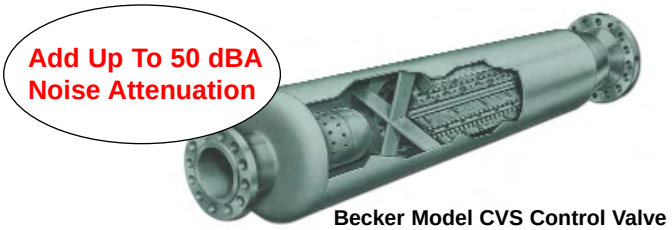
The Becker Below Ground Ball Valve Regulator option is unique to Becker and provides a multitude of benefits by direct burial of the control valve itself. The valve actuator, lubrication lines and drain lines are extended above grade while the ball valve remains Below Ground. Primary advantage of Becker 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/enclosures by utilizing the Fiberglass Cabinet
- Below Ground Regulator Option may be combined with other noise attenuation solutions

Below Ground Regulator Option providing additional noise attenuation

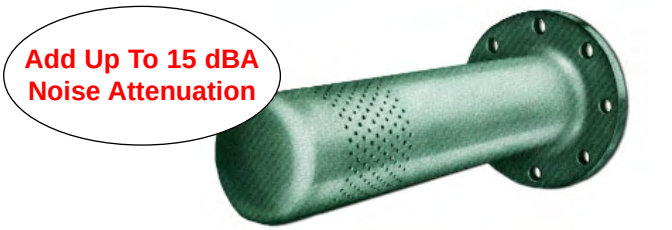


Noise Attenuation as Factor of Below Ground Depth. Typical Below Ground depths range from 3 feet burial to 6 feet burial Below Ground. The Below Ground depth is measured from centerline of pipe to grade. Below Ground noise attenuation usually provides from 25 dBA to 35 dBA noise attenuation for these buried depths.



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-T1 Series Control Valve Compatible Actuators

Becker Control Valve Actuators provide reliability and accuracy for all of your control valve applications

RPDA Rotary Piston Double Acting Actuator Series

The RPDA Rotary Piston Double Acting Actuator is designed for heavy duty control applications the 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 500 psig (3447 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
Max. 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 Series

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 500 psig (3447 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
Max. Supply Gas:	500 psig (3447 kPa)
Bleed to Pressure System:	Yes
Below Ground Design:	Yes
Maximum Valve Size:	16" bore
Minimum Valve Size:	2" bore
Stop Adjustment:	Internal

SYDA Scotch Yoke Double Acting Actuator Series

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
Max. 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

SYSR Scotch Yoke Spring Return Actuator Series

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 closed failure mode. The SYSR incorporates a "scotch-yoke" mechanism. The SYSR can accept power supply gas up to 130 psig (896 kPa). The SYSR Actuator may be easily field configured to reverse failure mode. The SYSR features a compact design that is convenient when installation space is a premium.

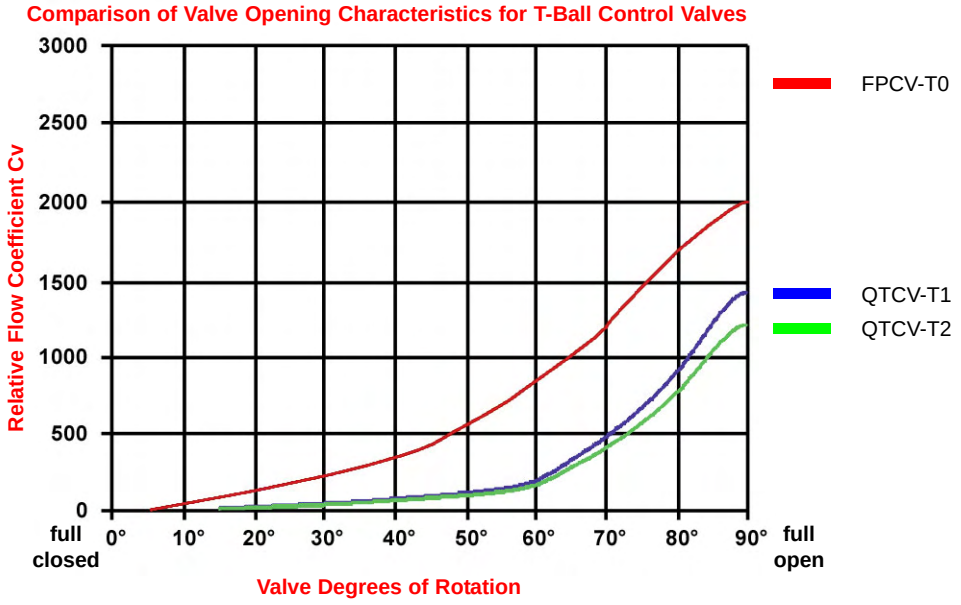
Specifications:	
Actuator Type:	Quarter Turn (90° Rotation)
Mechanism:	Scotch Yoke
Usage:	Moderate-duty
Action:	Single-Acting (fail open or fail closed)
Applications:	Throttling, On-Off
Max. Supply Gas:	130 psig (896 kPa)
Bleed to Pressure System:	Limited
Below Ground Design:	Not recommended
Maximum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

Table 4.0 - Model QTCV-T1 Control Valve Flow Coefficients

		Valve Degrees of Rotation								
Size(mm)	Min. Controllable Cv.	10°	20°	30°	40°	50°	60°	70°	80°	90°
4"(100)	2.0	2.0	10.0	18.0	31.0	51.0	84.0	232.0	382.0	590.0
6"(150)	4.5	4.6	23.0	40.0	70.0	115.0	190.0	552.0	906.0	1,398.0
8"(200)	8.0	8.2	41.0	71.0	125.0	205.0	337.0	875.0	1,401.0	2,148.0
10"(250)	12.5	12.8	63.0	111.0	196.0	320.0	527.0	1,407.0	2,242.0	3,468.0
12"(300)	18.0	18.0	91.0	160.0	282.0	461.0	759.0	1,788.0	2,875.0	4,749.0
16"(400)	32.0	33.0	162.0	284.0	501.0	819.0	1,350.0	3,097.0	5,148.0	8,222.0
20"(500)	50.1	51.1	254.0	444.0	783.0	1,280.0	2,109.0	4,776.0	7,721.0	12,595.0
24"(600)	72.0	74.0	365.0	640.0	1,128.0	1,844.0	3,036.0	6,878.0	11,118.0	18,137.0
30"(750)	113.0	115.0	571.0	1,000.0	1,762.0	2,881.0	4,744.0	10,746.0	17,372.0	28,340.0
36"(900)	162.0	166.0	822.0	1,440.0	2,538.0	4,149.0	6,832.0	15,475.0	25,016.0	40,809.0

(1) Flow Coefficients (Cv) are based upon ISA sizing equation criteria.
(2) Consult Becker Precision Equipment 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 ISA Sizing criteria see bulletin "FPCV-T0 universal Cv 1001".
(6) For sizing and station design software utilizing universal Gas sizing criteria, utilize Becker bpeSize program.

Figure 9.0 - Comparison of Valve Opening Characteristics for T-Ball Control Valves
Graph provides relative comparison for Models FPCV-T0, QTCV-T1 and QTCV-T2 control valves. Note difference in rate of opening and full open capacity between each control valve. Data based upon 6" (150) model FPCV-T0, QTCV-T1 and QTCV-T2 control valves.



WWW.BPE950.COM

Sizing software available! Control Valve sizing and station design software is available for free download from our website at www.bpe950.com . Contact Becker Precision Equipment for assistance!

Table 5.0 - Model QTCV-T1 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)	9.000	(229)	12.000	(305)	17.000	(432)	18.000	(457)	21.500	(546)
6” (150)	15.500	(394)	15.900	(404)	22.000	(559)	24.000	(610)	27.750	(705)
8” (200)	18.000	(457)	19.800	(503)	26.000	(660)	29.000	(737)	32.750	(832)
10” (250)	21.000	(533)	22.400	(569)	31.000	(787)	33.000	(838)	39.000	(991)
12” (300)	24.000	(610)	25.500	(648)	33.000	(838)	38.000	(965)	44.500	(1130)
16” (400)	30.000	(762)	33.000	(838)	39.000	(991)	44.500	(1130)	54.500	(1384)
20” (500)	36.000	(914)	39.000	(991)	47.000	(1194)	52.000	(1321)	N/A	N/A
24” (600)	42.000	(1067)	45.000	(1143)	55.000	(1397)	61.000	(1549)	N/A	N/A
30” (750)	51.000	(1295)	55.000	(1397)	65.000	(1651)	74.000	(1880)	N/A	N/A
36” (900)	60.000	(1524)	68.000	(1727)	82.000	(2083)	90.000	(2286)	N/A	N/A

(1) Consult Becker Precision Equipment for additional information.

Table 6.0 – Model QTCV-T1 Standard Weights (RFFE)

	ANSI 150		ANSI 300		ANSI 600		ANSI 900		ANSI 1500	
Size (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	(575)
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	(1190)
12” (300)	1,435	(705)	1,675	(760)	2,025	(920)	2,700	(1230)	3,640	(1650)
16” (400)	2,250	(1020)	2,850	(1295)	3,375	(1530)	4,420	(2000)	8,800	(4000)
20” (500)	4,225	(1920)	4,575	(2075)	5,800	(2630)	7,610	(3450)	N/A	N/A
24” (600)	6,175	(2800)	6,775	(3075)	8,700	(3950)	12,100	(5490)	N/A	N/A
30” (750)	10,600	(4800)	12,275	(5575)	14,725	(6690)	21,000	(9530)	N/A	N/A
36” (900)	16,750	(7600)	18,525	(8400)	23,400	(10620)	29,900	(12200)	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 Precision Equipment for additional information.

Table 7.0 – Model QTCV-T1 Face to Face Dimenstions (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	17.125	(435)	18.125	(460)	21.625	(549)
6” (150)	N/A	N/A	N/A	N/A	22.125	(562)	24.125	(613)	28.000	(711)
8” (200)	N/A	N/A	N/A	N/A	26.125	(664)	29.125	(740)	33.125	(841)
10” (250)	N/A	N/A	N/A	N/A	31.125	(791)	33.125	(841)	39.375	(1000)
12” (300)	N/A	N/A	N/A	N/A	33.125	(841)	38.125	(968)	45.125	(1146)
16” (400)	N/A	N/A	N/A	N/A	39.125	(994)	44.875	(1140)	55.375	(1407)
20” (500)	N/A	N/A	N/A	N/A	47.250	(1200)	52.250	(1327)	N/A	N/A
24” (600)	N/A	N/A	N/A	N/A	55.625	(1413)	61.750	(1568)	N/A	N/A
30” (750)	N/A	N/A	N/A	N/A	65.250	(1657)	74.875	(1902)	N/A	N/A
36” (900)	N/A	N/A	N/A	N/A	82.625	(2099)	90.125	(2289)	N/A	N/A

(1) Consult Becker Precision Equipment for additional information.

Table 8.0 – Model QTCV-T1 Standard Weights (RTJ)

	ANSI 150		ANSI 300		ANSI 600		ANSI 900		ANSI 1500	
Size (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	(575)
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	(1190)
12” (300)	1,435	(705)	1,675	(760)	2,025	(920)	2,700	(1230)	3,640	(1650)
16” (400)	2,250	(1020)	2,850	(1295)	3,375	(1530)	4,420	(2000)	8,800	(4000)
20” (500)	4,225	(1920)	4,575	(2075)	5,800	(2630)	7,610	(3450)	N/A	N/A
24” (600)	6,175	(2800)	6,775	(3075)	8,700	(3950)	12,100	(5490)	N/A	N/A
30” (750)	10,600	(4800)	12,275	(5575)	14,725	(6690)	21,000	(9530)	N/A	N/A
36” (900)	16,750	(7600)	18,525	(8400)	23,400	(10620)	29,900	(12200)	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 Precision Equipment for additional information.

Table 9.0 - Model QTCV-T1 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)	12.000	(305)	12.000	(305)	17.000	(432)	18.000	(457)	21.500	(546)
6” (150)	18.000	(457)	18.000	(457)	22.000	(559)	24.000	(610)	27.750	(705)
8” (200)	20.500	(521)	20.500	(521)	26.000	(660)	29.000	(737)	32.750	(832)
10” (250)	22.000	(559)	22.000	(559)	31.000	(787)	33.000	(838)	39.000	(991)
12” (300)	25.000	(635)	25.000	(635)	33.000	(838)	38.000	(965)	44.500	(1130)
16” (400)	33.000	(838)	33.000	(838)	39.000	(991)	44.500	(1130)	54.500	(1384)
20” (500)	39.000	(991)	39.000	(991)	47.000	(1194)	52.000	(1321)	N/A	N/A
24” (600)	45.000	(1143)	45.000	(1143)	55.000	(1397)	61.000	(1549)	N/A	N/A
30” (750)	55.000	(1397)	55.000	(1397)	65.000	(1651)	74.000	(1880)	N/A	N/A
36” (900)	68.000	(1727)	68.000	(1727)	82.000	(2083)	90.000	(2286)	N/A	N/A

(1) Consult Becker Precision Equipment for additional information.

Table 10.0 – Model QTCV-T1 Standard Weights (Weld End)

	ANSI 150		ANSI 300		ANSI 600		ANSI 900		ANSI 1500	
Size (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	(195)	425	(195)	450	(204)	650	(295)	970	(440)
8” (200)	725	(330)	725	(330)	840	(380)	950	(430)	1,190	(540)
10” (250)	1,050	(475)	1,025	(465)	1,250	(570)	1,400	(640)	1,840	(835)
12” (300)	1,450	(660)	1,450	(660)	1,700	(770)	2,200	(1000)	2,660	(1210)
16” (400)	2,150	(975)	2,350	(1065)	2,825	(1280)	4,420	(1590)	6,750	(3070)
20” (500)	4,050	(1840)	4,050	(1840)	5,100	(2310)	7,610	(2730)	N/A	N/A
24” (600)	6,000	(2730)	6,000	(2725)	8,025	(3640)	12,100	(4150)	N/A	N/A
30” (750)	10,400	(4720)	10,925	(4960)	13,450	(6110)	21,000	(7490)	N/A	N/A
36” (900)	16,650	(7560)	16,650	(7560)	20,860	(9380)	29,900	(9730)	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 Precision Equipment for additional information.

QTCV-T1 Series
Quiet Trim Control Valve

BECKER PRECISION EQUIPMENT

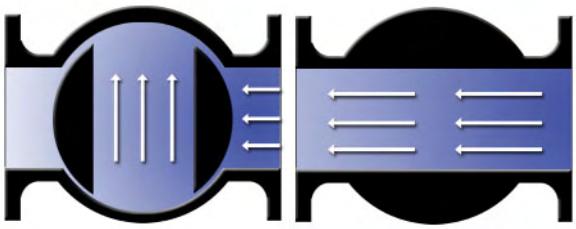
Choose the Perfect Rotary Control Valve for Your Application!

Becker Precision Equipment 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.

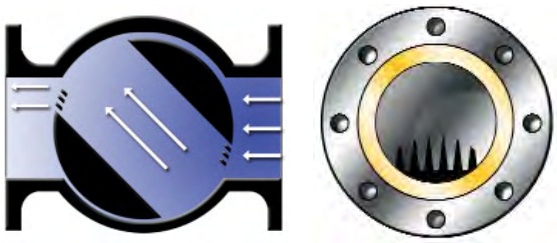
Becker Precision Equipment Control Valve Selection Criteria	FPCV-T0	QTCV-T1	QTCV-T2	CVEZ	CVET	NOTES
Performance Specifications						
Max. Noise Attenuation	NA	7 dBA	15 dBA	NA	25 dBA	
Max. Turndown Ratio	100:1	200:1	300:1	30:1	30:1	
Max. Shutoff Class	VI	V	IV	VI	VI	
Control Valve Accessories/Options						
Low Temperature Trim	•	•	•	•	•	
Surge Control Spec	•	•	•	•	•	
Alternate Trim Materials	•	•	•	•	•	
Below Grade Design	•	•	•			
CVS Control Valve Silencer	•	•	•	•	•	
CVD Control Valve Diffuser	•	•	•	•	•	
Quik Change "Characterize-able" Trims				•	•	
Removable Noise Trim				•	•	
Compatible Actuators						
RPDA Series	•	•	•			
RPSR Series	•	•	•			
SYDA Series	•	•	•			
SYSR Series	•	•	•			
LPDA Series				•	•	
LPSR Series				•	•	
LD Series				•	•	

Table 11.0 - Selection table for Becker Control Valves and Actuators

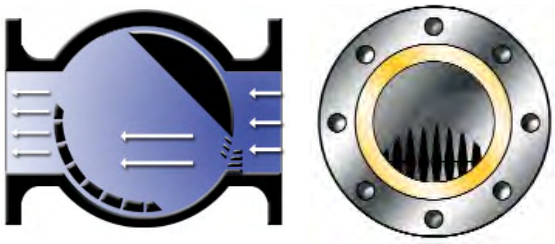
*CAUTION: This information is intended as a guideline for application of Becker Precision Equipment products. Becker strongly recommends consulting Becker Engineering prior to application of any product.



Model FPCV-T0
- Max Noise Attenuation 0 dBA (above ground)
- Max turndown ratio 100:1
- Max Shutoff Class VI



Model QTCV-T1
- Max Noise Attenuation 7 dBA
- Max turndown ratio 200:1
- Max Shutoff Class V



Model QTCV-T2
- Max Noise Attenuation 15 dBA
- Max turndown ratio 300:1
- Max Shutoff Class IV

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