

3/2-Way stainless steel & ceramic disc valve for hot water mixing



- Solution for hot water mixing
- Fast and accurate temperature control
- Ultra-tight shut off
- Robust with long life cycle
- ISO pad for direct actuator & positioner mount

Ceramic disc valve is combined with...



Rack & pinion

180° actuator



Type 8792/3

Digital positioner & process controller



Type 2655

Assembly of valve, actuator & controller

The Bürkert 3/2-way ceramic disc valve is designed for precision in fast proportional control applications. The ceramic shear action disc gives ultra-tight shut off even with very high pressure differential.

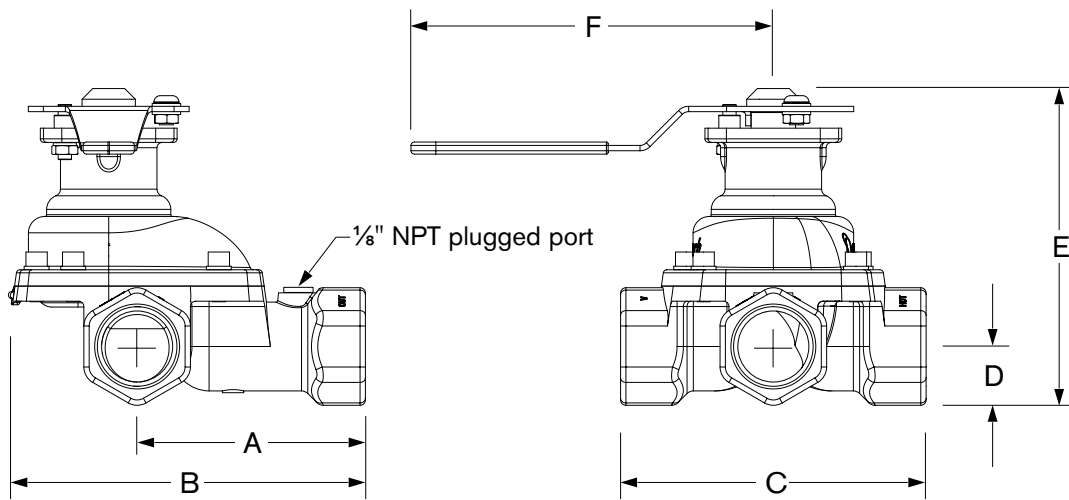
The ceramic material used in the moving discs has extreme resistance to wear and cavitation damage and is indicated for high speed, fast switching continuous applications.

Typically used in hot water mixing processes, the (optional) integrated temperature sensor teamed with Bürkert actuator and positioner delivers a stable temperature hot water supply.

The positioner & process controller Type 8793 completes this hot water mixing solution, with a built in RTD to control the system discretely.

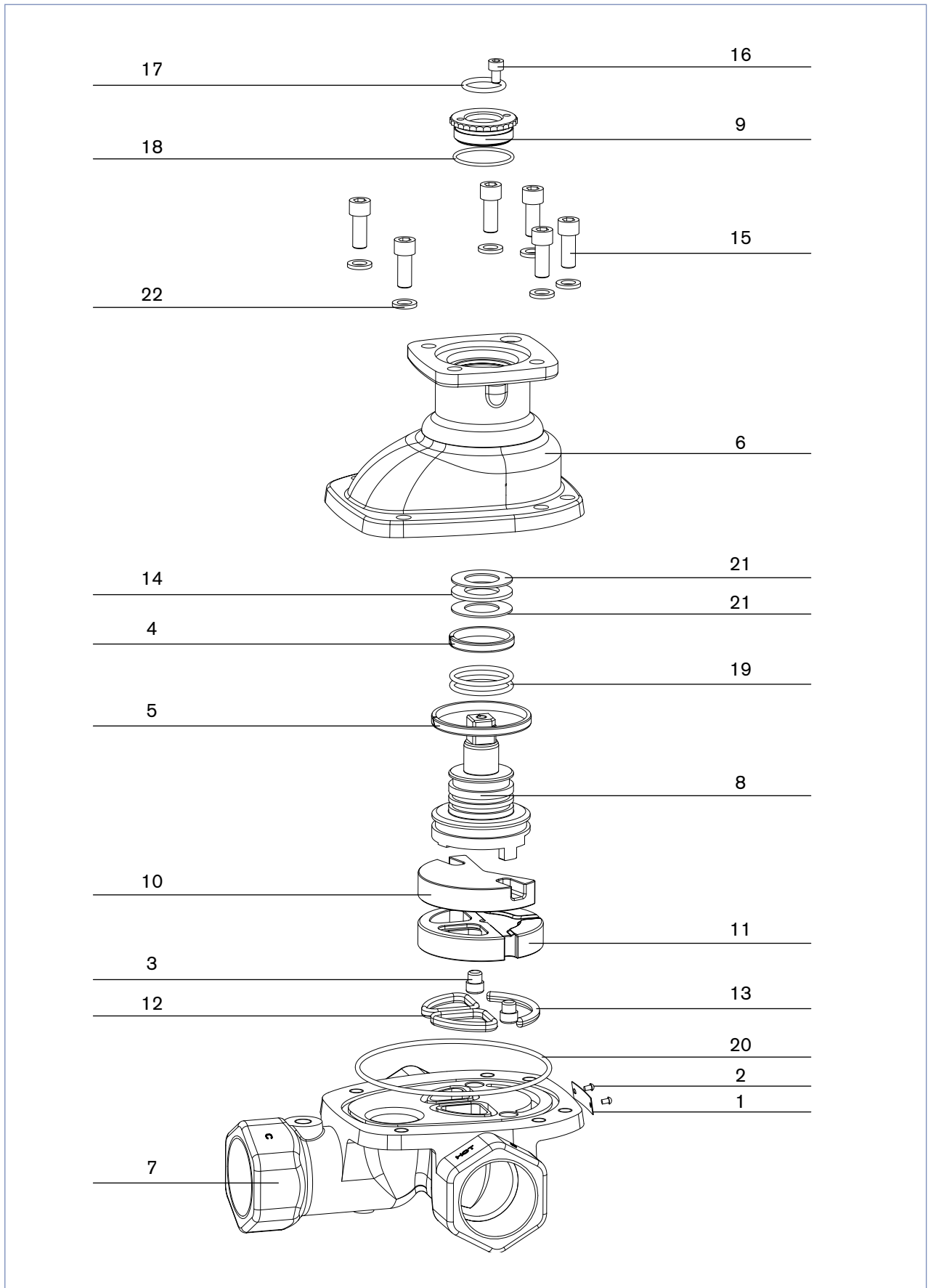
Technical data	
Size	20mm, 25mm, 40mm, 50mm
Body material	Stainless steel 316 (CF8M)
Discs	Ceramic
Trim material	EPDM [for water, glycol, steam, solvents, alcohols, more] NBR [mineral oils, petro-based hydraulic fluids] Viton [mineral oils, petro-based hydraulic fluids]
Media	Water, steam, hydroxides, solvents, alcohols, several acids, ketone & silicone oils, mineral oils, petro-based hydraulic fluids, hydrocarbons
Media temperature	-25 to +125°C [material dependent]
Port connections	Threaded BSP [Plugged port for temperature sensor NPT]
Operating pressure	0..10 bar
Actuation	Recommended assembly with Type 2050 180° rack & pinion pneumatic actuator and Type 8793 positioner & process controller for hot water mixing applications
Lockable handle	Manual device

Dimensions [mm]



Size	A	B	C	D	E	F	G	Thread size: Inlet BSP	Thread size: Outlet BSP	Wt [Kg]
20mm	91	138	120	23	132	165	448	3/4"	1"	2.0
25mm	108	163	120	29	145	165	455	1"	1 1/4 "	2.5
40mm	131	199	172	33	180	204	484	1 1/2"	1 1/2"	5.0
50mm	178	271	220	48	213	204	565	2"	2 1/2"	10

Exploded view



Materials

Item	Description	Qty	Material	20mm	25mm	40mm	50mm
1	Name Plate	1	316 stainless steel				
2	U Hammer Drive Screw	2	316 stainless steel				
3	Pin	2	316 stainless steel				
4	Wear Ring	1	trim dependent	*	*	*	*
5	Wear Ring	1	trim dependent	*	*	*	*
6	Bonnet	1	CF8M (316) stainless steel				
7	Body	1	CF8M (316) stainless steel				
8	Spindle	1	316 stainless steel				
9	Gland Nut	1	316 stainless steel				
10	Top Disc	1	trim dependant	**	**	**	**
11	Bottom Disc	1	trim dependant	**	**	**	**
12	Inlet Energizers	2	silicone rubber	*	*	*	*
13	Disc Energizer	1	silicone rubber	*	*	*	*
14	Needle Roller Bearing	1	stainless steel	*	*	*	*
15	Screw Body/Bonnet	6 or 8	304 stainless steel				
16	Screw Locking	1	304 stainless steel				
17	O-Ring Gland Internal	1	trim dependant	*	*	*	*
18	O-Ring Gland External	1	trim dependant	*	*	*	*
19	O-Ring Spindle	2	trim dependant	*	*	*	*
20	O-Ring Body/Bonnet	1	trim dependant	*	*	*	*
21	Thrust Washer	2	C-Cr steel	*	*	*	*

* EPDM/Nitrile/Viton included in trim kit

** Alumina ceramic disc set included in trim kit

Trim Options

These are general recommendations for trim material based on media type and temperature. For your specific application please speak with a Bürkert engineer.

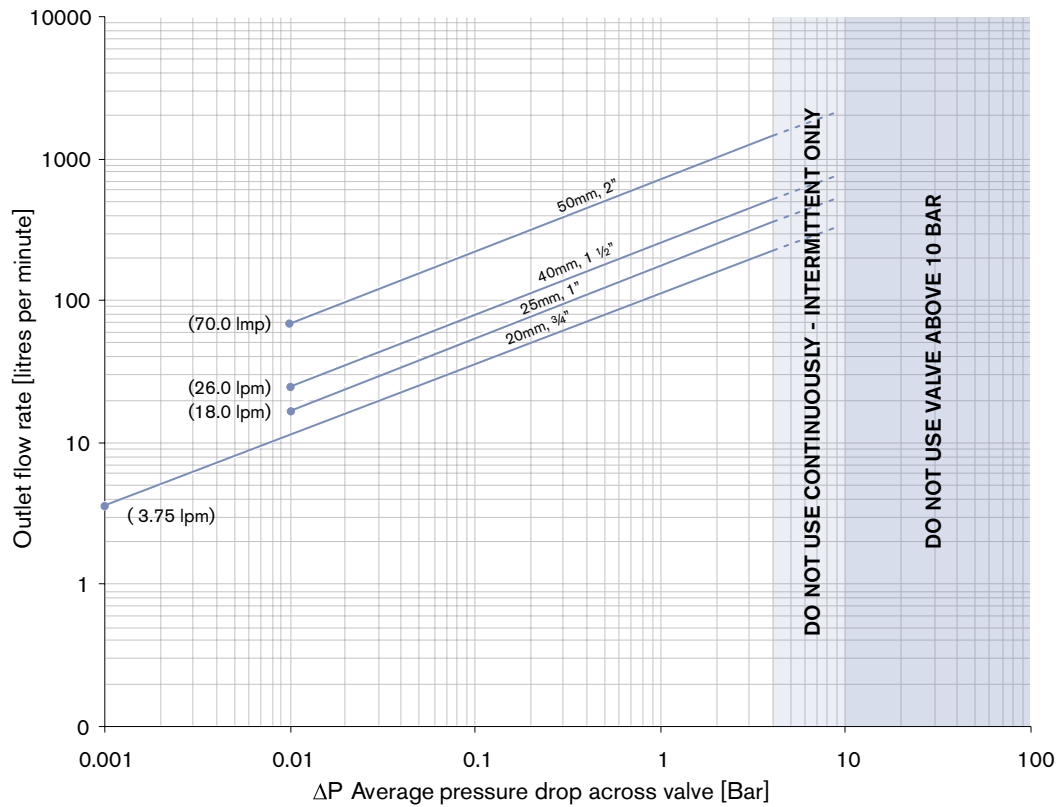
Call 1300 888 868 [Aust] or 0800 BURKERT [NZ].

Trim	Maximum Temperature [°C]	Media	Typical Applications
EPDM	-25 to +125°C	Water and Glycol applications; ideal	Water, steam, hydroxides, solvents, alcohols, most acids, ketone & silicone oils
Nitrile	-25 to +100°C	Applications with mineral oils up to 100°C	Petroleum based hydraulic fluid, hydrocarbons
Viton	+100 to +125°C	Applications with mineral oils above 100°C	Petroleum based hydraulic fluid, hydrocarbons

Break-Torque value [Nm/ at 0 bar]

Size (Full)	20mm	25mm	40mm	50mm
Shut off at 0 bar	3	4	6	9
Shut off at 10 bar	3	6	17	21

Pressure chart



Flow

Valve size	Degrees open														
	10	30	60	90	120	150	160	170	200	230	260	270	300	330	350
20mm	0	2.8	4.1	5.5	6.1	6.8	7	6.8	6.1	5.5	5	3.7	2.3	0.9	0
25mm	0	4.4	6.5	8.7	9.6	10.6	10.9	10.6	9.6	8.7	8	5.8	3.6	1.5	0
40mm	0	6.3	9.5	12.6	14.5	16.4	17	16.4	14.5	12.6	11.6	8.4	5.3	2.1	0
50mm	0	17.5	26.3	35	37.7	40.4	41.3	40.4	37.7	35	32.1	23.3	14.6	5.8	0

Technical

Size	Flow [@ 90° open, 1bar, 20°C]	Flow [@ 160° open, 1bar, 20°C]	Pressure [max]
20mm	5.5	7	10
25mm	8.7	10.9	10
40mm	12.6	17	10
50mm	35	41.3	10

Hot water mixing solution

Ceramic disc valve assembled with pneumatic actuator and Type 8793 process controller.



Rilsan coated pneumatic actuator

Bürkert's range of pneumatic actuators for quarter turn valves fulfil a wide variety of on/off process applications. This model is for 180° function, for 3-way hot water mixing applications. These actuators are extremely robust to deliver exceptionally long service life.

The actuator is protected against corrosion by double coating of epoxy (cataphoresis) and Rilsan (internal & external). All materials are resistant to oxidation (silicone free); they are even rated to be water-actuated. Valve systems with this actuator are suited to field deployment in the toughest environments.

A wide selection of accessories is available including:

- Limit switches
- Positioners
- Manual override



Positioner & process controller

The Type 8793 digital electropneumatic process controller can be operated by standard current and voltage signals or via a Profibus interface. In addition to the digital display the valve position is signaled by a prominent mechanical indicator.

The actual process value is directly supplied to the device as 4-20 mA, PT100 or frequency signal. The process controller calculates the position setpoint for the subordinated positioner through variance comparison. Due to the analogue feedback all analogue values on the controlling level can be transferred.

Features include:

- Compact metal housing
- Graphic display with backlight
- Push-button commissioning of both process controller and positioner
- Unlimited feedbacks and features
- Standard IEC 534-6 / VDI VDE 3845 mount



Ordering information

Contact Bürkert; on request

Call 1 300 888 868 (Australia) or 0800 BURKERT (NZ)