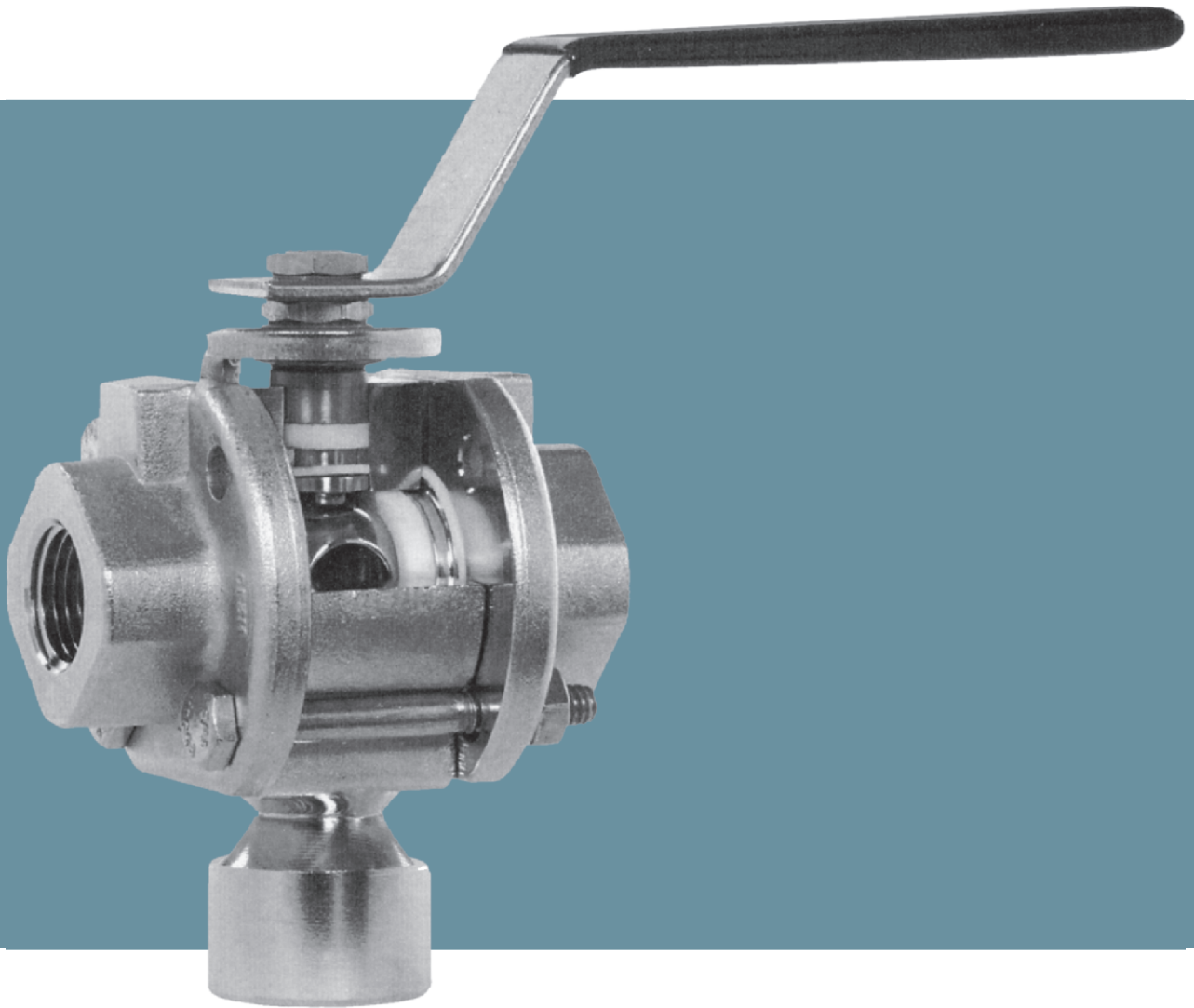
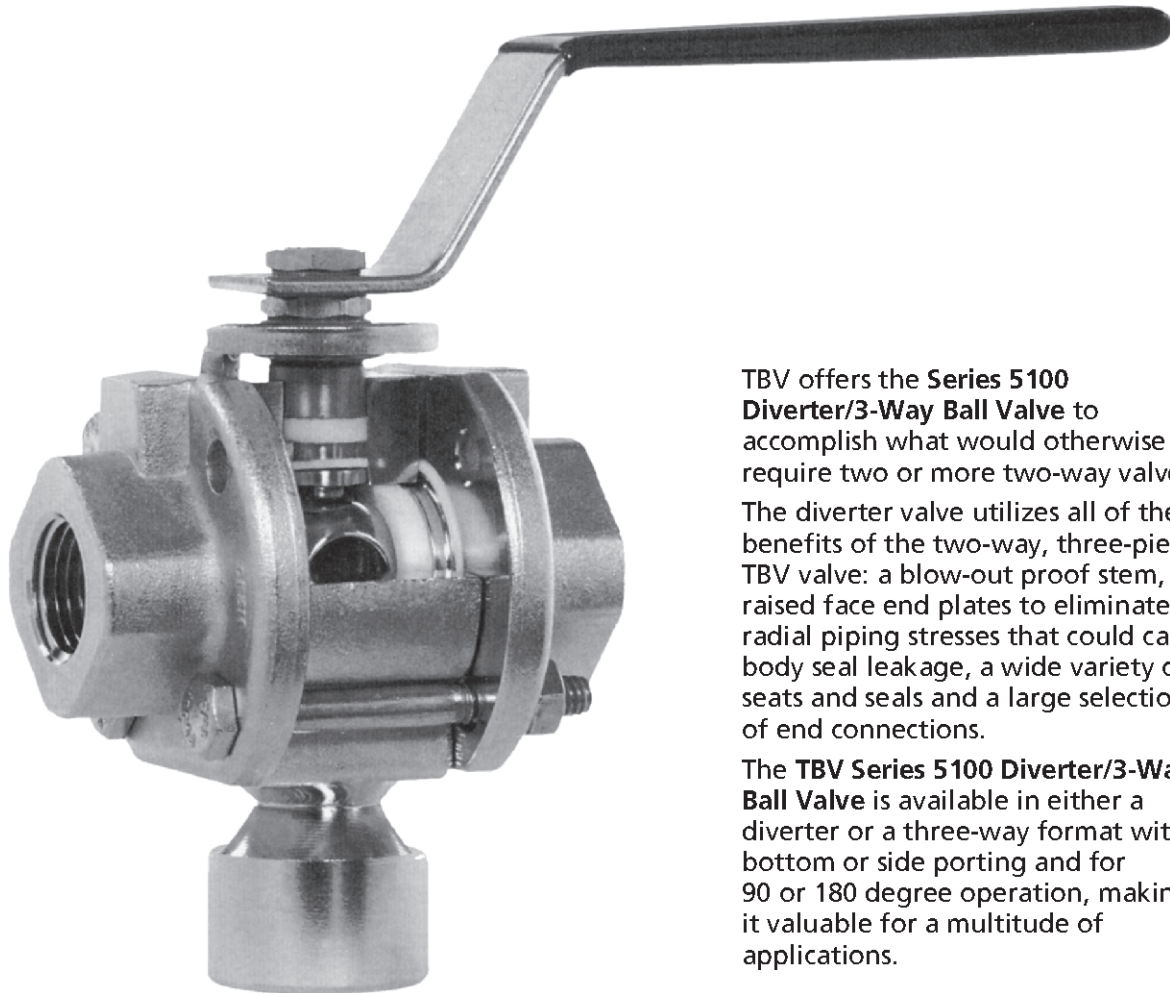


# TBV™ Series 5100 Diverter/3-Way Ball Valve



## SERIES 5100 BALL VALVE



TBV offers the **Series 5100 Diverter/3-Way Ball Valve** to accomplish what would otherwise require two or more two-way valves.

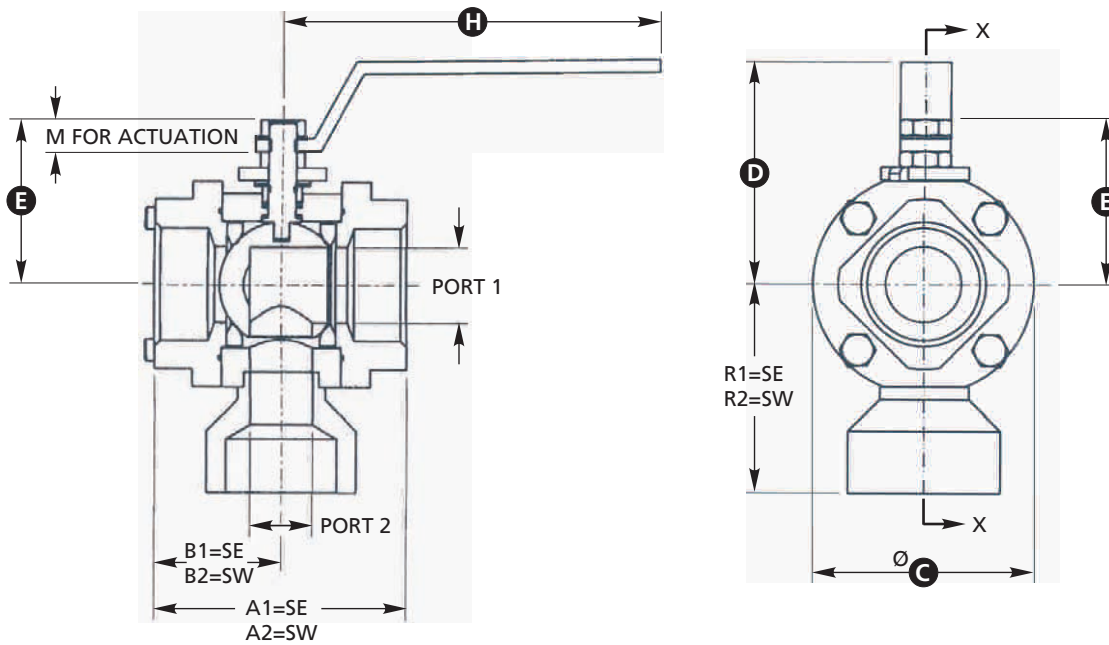
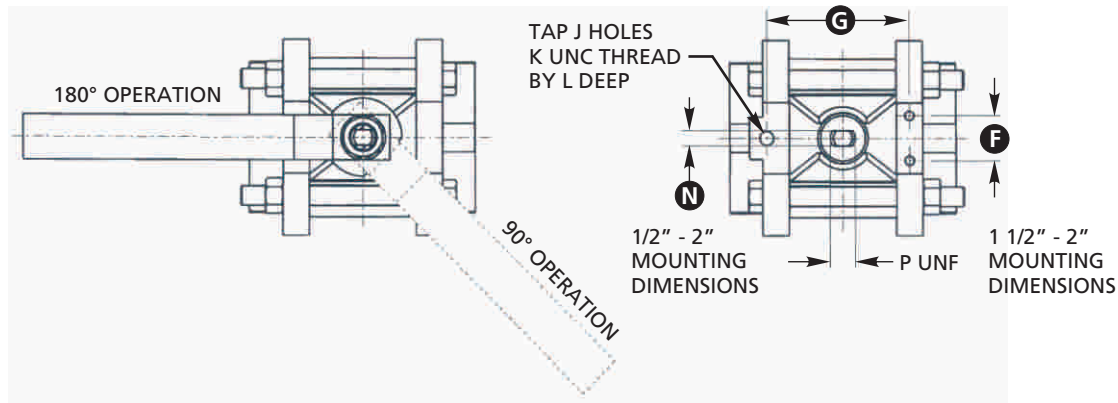
The diverter valve utilizes all of the benefits of the two-way, three-piece TBV valve: a blow-out proof stem, raised face end plates to eliminate radial piping stresses that could cause body seal leakage, a wide variety of seats and seals and a large selection of end connections.

The **TBV Series 5100 Diverter/3-Way Ball Valve** is available in either a diverter or a three-way format with bottom or side porting and for 90 or 180 degree operation, making it valuable for a multitude of applications.

- MANIFOLDING
- DIVERTING
- BLENDING
- REPLACES THE USE OF 2 OR MORE TWO-WAY VALVES

# SERIES 5100 BALL VALVE

## DIMENSIONAL INFORMATION

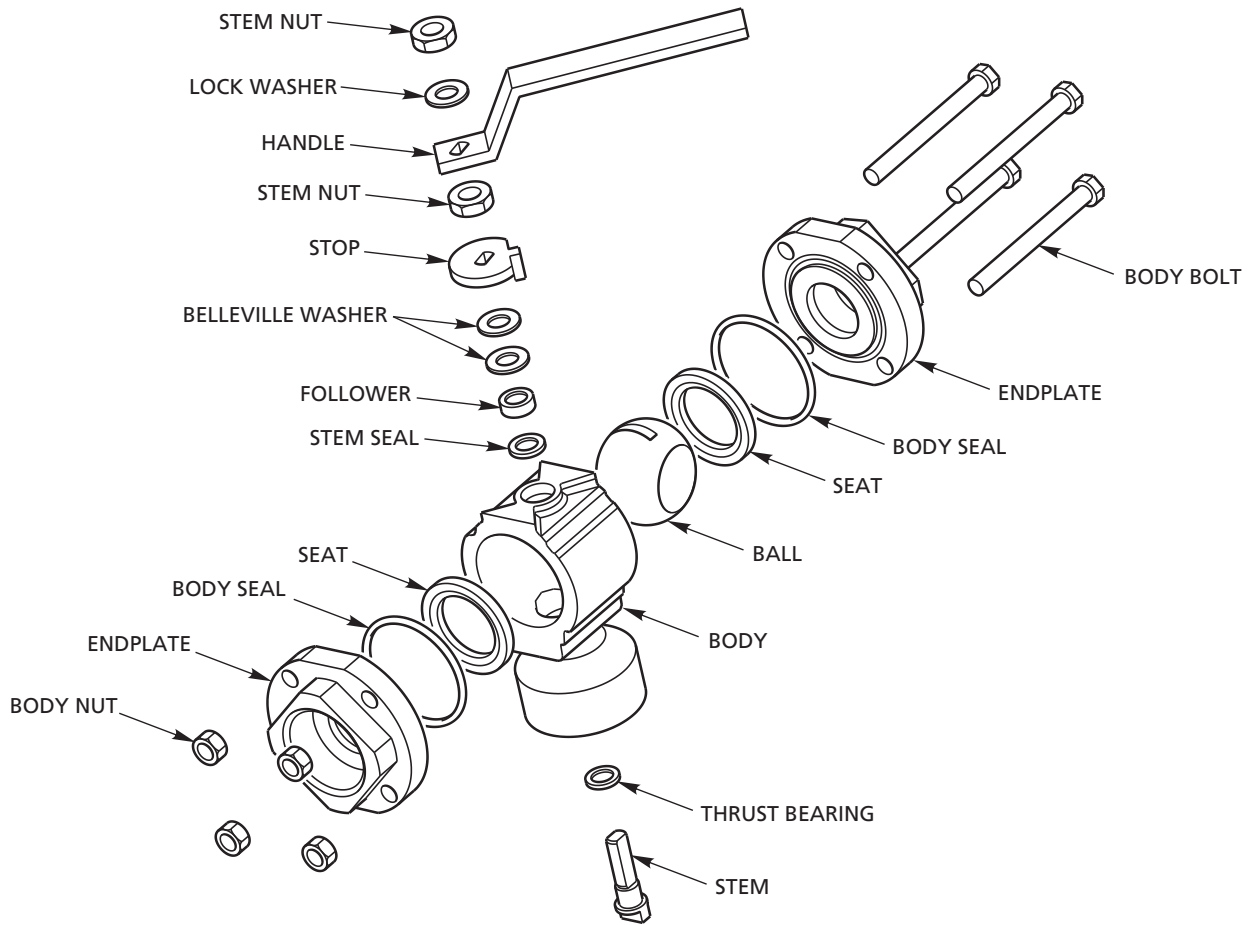


VALVE SIZE	PORT 1	PORT 2	A1	A2	B1	B2	C	D	E	F
1/2"	0.50	0.50	3.14	3.08	1.57	1.54	2.50	2.93	1.81	-
3/4"	0.50	0.50	3.14	3.08	1.57	1.54	2.50	2.93	1.81	-
1"	0.81	0.66	3.75	3.69	1.88	1.85	3.25	3.32	2.29	-
1 1/2"	1.25	1.25	4.76	4.70	2.38	2.35	4.12	4.20	2.99	1.00
2"	1.50	1.25	5.06	4.92	2.53	2.50	4.36	4.36	3.18	1.00

VALVE SIZE	G	H	J	K UNC	L	M	N	P UNF	R1	R2
1/2"	1.77	5.50	2	5/16-18	0.31	0.30	0.230	3/8-24	2.31	2.31
3/4"	1.77	5.50	2	5/16-18	0.31	0.30	0.230	3/8-24	2.31	2.31
1"	1.77	5.50	2	5/16-18	0.40	0.48	0.296	7/16-20	3.43	3.05
1 1/2"	2.68	7.55	4	1/4-20	0.50	0.65	0.340	9/16-18	3.67	3.60
2	2.98	7.55	4	1/4-20	0.50	0.71	0.340	9/16-18	4.12	4.12

## SERIES 5100 BALL VALVE ENGINEERING DATA



### SERIES 5100 90° CONFIGURATION

#### C<sub>v</sub> - DIVERTER

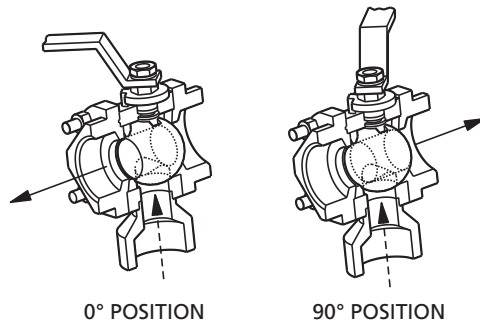
VALVE SIZE	STANDARD PORT C <sub>v</sub>	FULL PORT C <sub>v</sub>
1/2"	3	4
3/4"	4	12
1"	12	30
1 1/4"	30	30
1 1/2"	30	47
2"	47	84

#### MAXIMUM TORQUE - DIVERTER

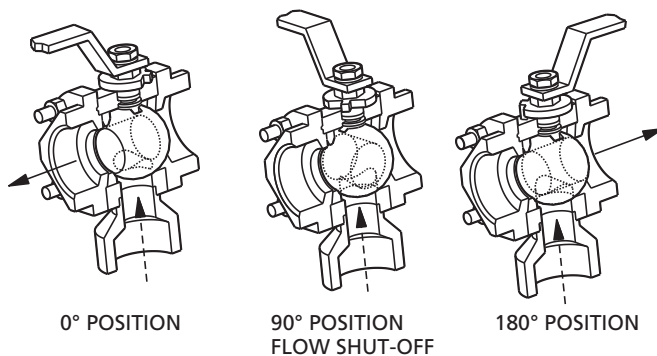
VALVE SIZE REDUCED PORT	VALVE SIZE FULL PORT	"T" VIRGIN	"U" ULTRAFIL
1/2"	1/2"	45	70
3/4"	1/2"	45	70
1"	3/4"	80	120
1 1/4"	-	180	225
1 1/2"	1" - 1 1/4"	280	350
2"	1 1/2"	425	600

## SERIES 5100 BALL VALVE

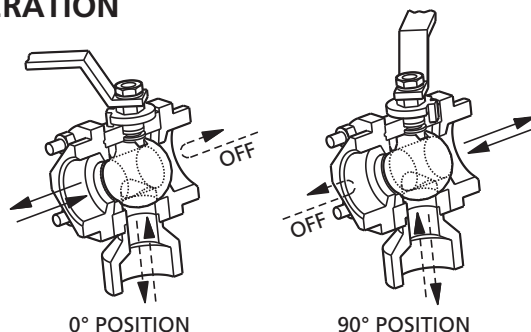
### 90° OPERATION



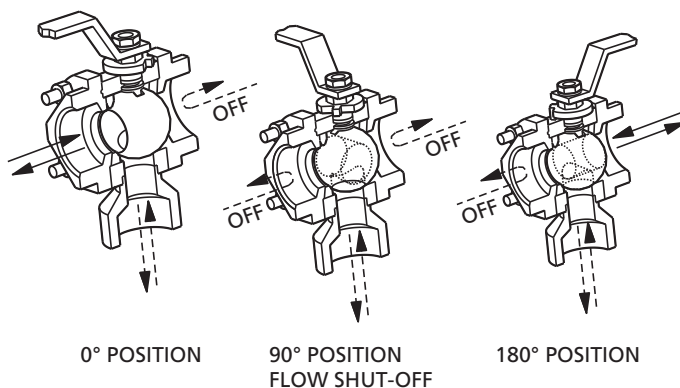
### 180° OPERATION



### 90° OPERATION



### 180° OPERATION



### OPTIONS FOR OPERATION DIVERTER CONFIGURATION

The TBV Series 5100 Diverter/3-Way Ball Valve finds uses in many applications including manifolding, diverting and blending.

It reduces costs by requiring the operation of only one valve.

The diverter valve is designed to accept media flow from one common port (on the side or the bottom) and seals only on the downstream seat.

The TBV Series 5100 Diverter/3-Way Ball Valve is available in two styles, the 90 or 180 degree operation.

The 90 degree operation redirects the flow from the bottom port to either side port.

There is no mechanical stop to locate the off position in 180 degree operation, but flow may be shut-off completely at the 90 degree position.

### OPTIONS FOR OPERATION 3-WAY CONFIGURATION (OPTION "TW")

The TBV Series 5100 Diverter/3-Way Ball Valve is also available in a 3-way configuration.

The 3-way offers all of the benefits of the diverter, but incorporates specially loaded seats that use a higher pre-load to keep the ball seated on the upstream side.

The special seats prevent the ball from being pushed off the seat from upstream pressure, preventing leakage into the body cavity.

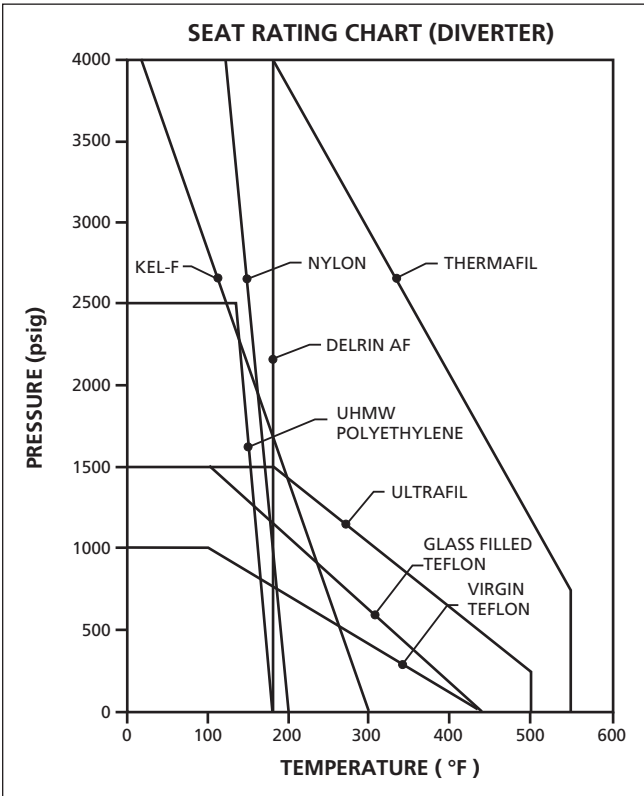
The added benefit of this design allows the 3-way to accept flow from any of the three ports, increasing the number of possible flow directions.

# SERIES 5100 BALL VALVE

## FEATURES AND BENEFITS

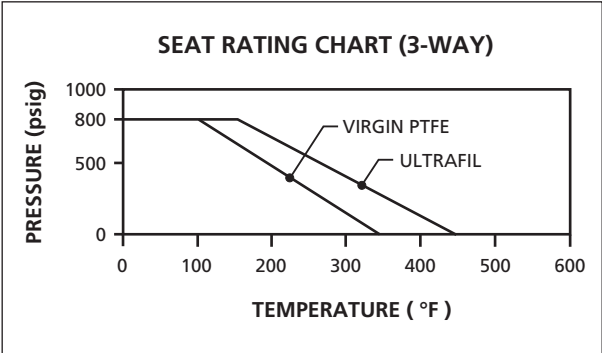
FEATURES	BENEFITS
Raised Face End Plates	Positive alignment, elimination of radial stresses.
Totally Encapsulated Body Seals	Elimination of cold flow. High performance over wide temperature and pressure range.
Configuration Options	Available in 90 and 180 degree operations in both two and three-way configurations.
Variety of Seating Materials*	Wide range of process media and service conditions.
Flexible Lip Seat Design*	Low operating torque.
Integral Actuation Bosses (Optional)	Ease of automation.
Live Loaded Stem	Pressure and temperature recovery, stem seal integrity with a low operating torque.
Blowout Proof Stem	Operator safety.
Heavy Duty Handle and Stop	Ease of operation, long life.
Fully Traceable Materials	Certification of all pressure retaining parts available for stringent specification requirements.
Metal and Graphite Seats*	Available for abrasive services and temperatures to 1000°F. Consult factory for recommendation.
Modular Design	Diverse valve configurations to meet a variety of piping requirements.
Oxygen Service	Includes cleaning with an appropriate degreaser, black light inspection tagging for oxygen service and double bagging and sealing in 4 mil polyethylene bags.
Chlorine Service	Requires cleaning with an appropriate degreaser, tagging for chlorine service, double bagging and sealing in 4 mil polyethylene bags.

\* Diverter Model Only



**SEAT MATERIAL IDENTIFICATION CODE**

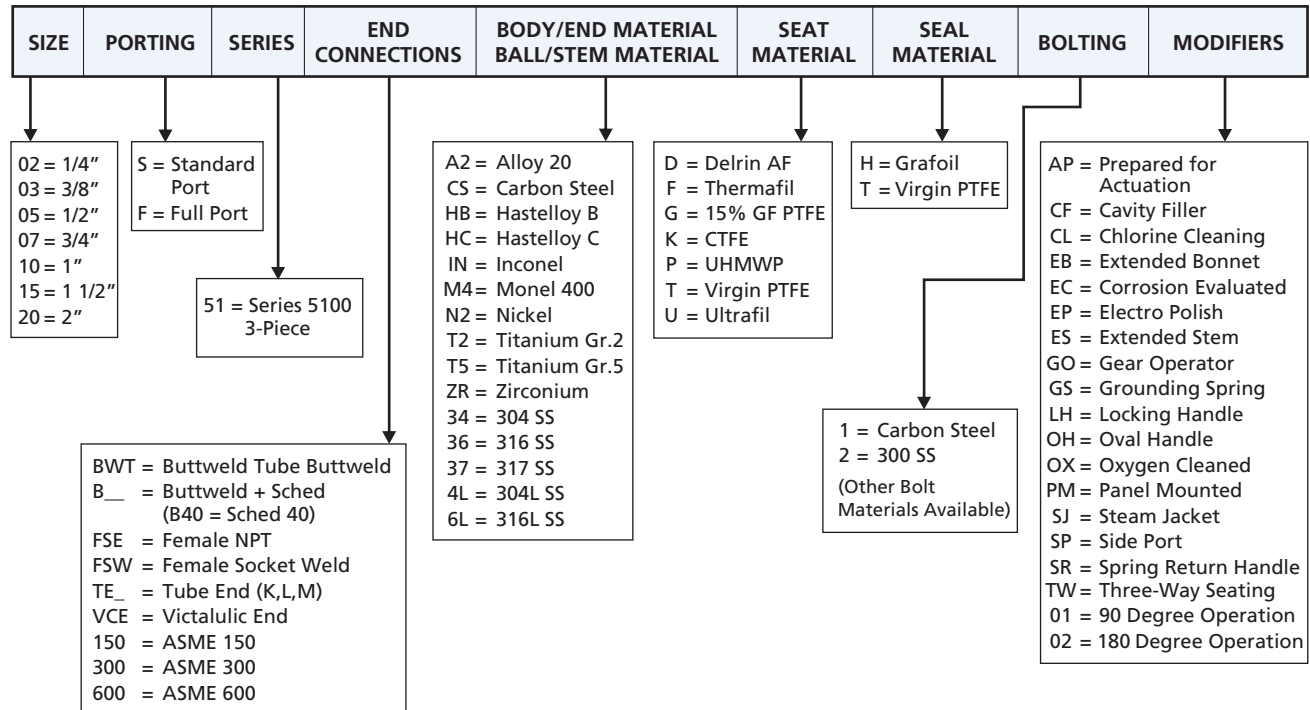
T - Virgin PTFE	White
G - Reinforced PTFE	White with Red Speckles
U - Ultrafil	Black
F - Thermafil (Carbon Filled PEEK)	Black
P - UHMWPE	Translucent White
D - Delrin	Dark Brown
K - CTFE	Translucent
H - Graphite	Black
M - Metal	Silver



Extended pressures and temperatures may be achieved by altering design for specific applications. Consult factory with service conditions. **The valve rating is the lesser of the body rating and the seat rating.** TBV manufactures an extensive line of high pressure valves capable of the full seat ratings shown. Consult factory for details.

# SERIES 5100 BALL VALVE

## HOW TO ORDER



For additional ordering information on flanged diverters, see the TBV General Brochure, Corrosion Resistant and Cryogenic Valves.

### Example:

10S 51 FSE 6L36 UT 201AP = 1" Standard Port, Series 5100, Female NPT, 316L Stainless Steel Body/End, 316 Stainless Steel Ball/Stem, Ultrafil Seats, Virgin PTFE Body Seals with Stainless Steel Bolting, 90° Operation, Prepared for Actuation.

### SERVICE RELATED OPTIONS

- Steam Service** - Saturated steam can be handled within the following limits:
- Diverter Model Only* 250 psi/406°F with Ultrafil seats  
450 psi/459°F with Thermafil seats  
Super heated steam up to 489°F can be handled at lower pressures.
- Vacuum Service** - Standard TBV valves rated up to 20 microns of absolute pressure, specially prepared valves rated to .01 microns.  
*Diverter Model Only*
- Oxygen, chlorine cleaning and other special service cleaning are available.**
- Actuation and actuator prepping available-consult factory.**
- Leakage rates** - Soft seats are bubble-tight exceeding Class VI requirements of ASME B16.104 Standard.

### SPECIAL SERVICES

- Chlorine
- Steam
- Vacuum Service
- High Temperature
- Hydraulics
- Hydrofluoric Acid
- Oxygen Service
- High Pressure
- Thermal Fluids

Extended pressures and temperatures may be achieved by altering designs for specific applications.

Consult factory with service conditions.

### CERTIFICATIONS



Please contact Cameron's Valves & Measurement group for current Terms and Conditions and Trademark information.

**VALVES & MEASUREMENT**

3250 Briarpark Drive, Suite 300

Houston, Texas 77042

USA Toll Free 800 323 9160

For the most current contact and location information go to: [www.c-a-m.com](http://www.c-a-m.com)