

**PRATT**<sup>®</sup>  
INDUSTRIAL

**Sifer**<sup>®</sup>  
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# SB Series Wafer/Lug Butterfly Valves



Engineering Creative Solutions  
for Fluid Systems Since 1901

# ABOUT PRATT INDUSTRIAL

Pratt Industrial specializes in the design, engineering, and worldwide distribution of technologically advanced, industrial-use valves and actuators. Henry Pratt Company’s investment in Pratt Industrial combines the innovative resources of a century old company with the know-how of experts in industrial valve markets.

Pratt Industrial offers solutions that optimize manufacturing processes by engineering high-performance valves for all industrial applications.

Centrally located in Emporia, Kansas, Pratt Industrial has over 65,000 sq. feet of manufacturing and warehouse space, including a full-service machine shop for custom assemblies. Based on customers’ specific needs, Pratt Industrial’s knowledgeable and experienced staff of engineers and representatives can help to increase manufacturing productivity and efficiency by providing the right valve for the application.

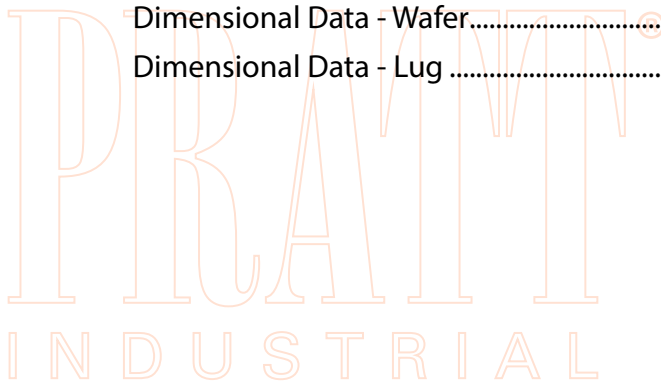
### Pratt Industrial serves the following markets:

- Mining
- Food/Beverage
- Power
- OEM’s
- Chemical/Pharmaceutical
- Desalination
- Petroleum/Oilfield
- Ultra Pure Water
- Transportation
- Marine
- Irrigation
- HVAC

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*Through experience, commitment and creative engineering, Pratt Industrial is uniquely suited to provide superior products for our customers’ special needs. For more information, contact our corporate headquarters in Emporia, Kansas.*

# CONSTRUCTION SPECIFICATION

## Pratt SB Series Butterfly Valves



Valve with Lever Operator



Valve with Gear Operator

**Sizes:** 2" through 12"

**Body:** Ductile Iron (65-45-12) and CF8M Stainless Steel

**Disc:** Ductile Iron Nickel Plated, Ductile Iron Nylon 11, CF8M Stainless Steel, Aluminum Bronze and SS Encapsulated PFA

**Stem:** 416 S.S. Heat Treated, 416 S.S./PFA

**Resilient Seat:** TEFLON/EPDM, TEFLON/BUNA, TEFLON/VITON, NEOPRENE, WHITE BUNA, BUNA-N, VITON and EPDM

**Actuation Options:** Worm Gear, Lever, Pneumatic, Electric

**Pressure Ratings:** Stainless Steel Disc with Teflon seat - 150 psi, PFA Disc with Teflon seat - 100 psi, any Disc with Resilient Seat - 230 psi

**NOTE:**

For installation between ANSI 125/150.

Substitute material may result in pressure rating change.

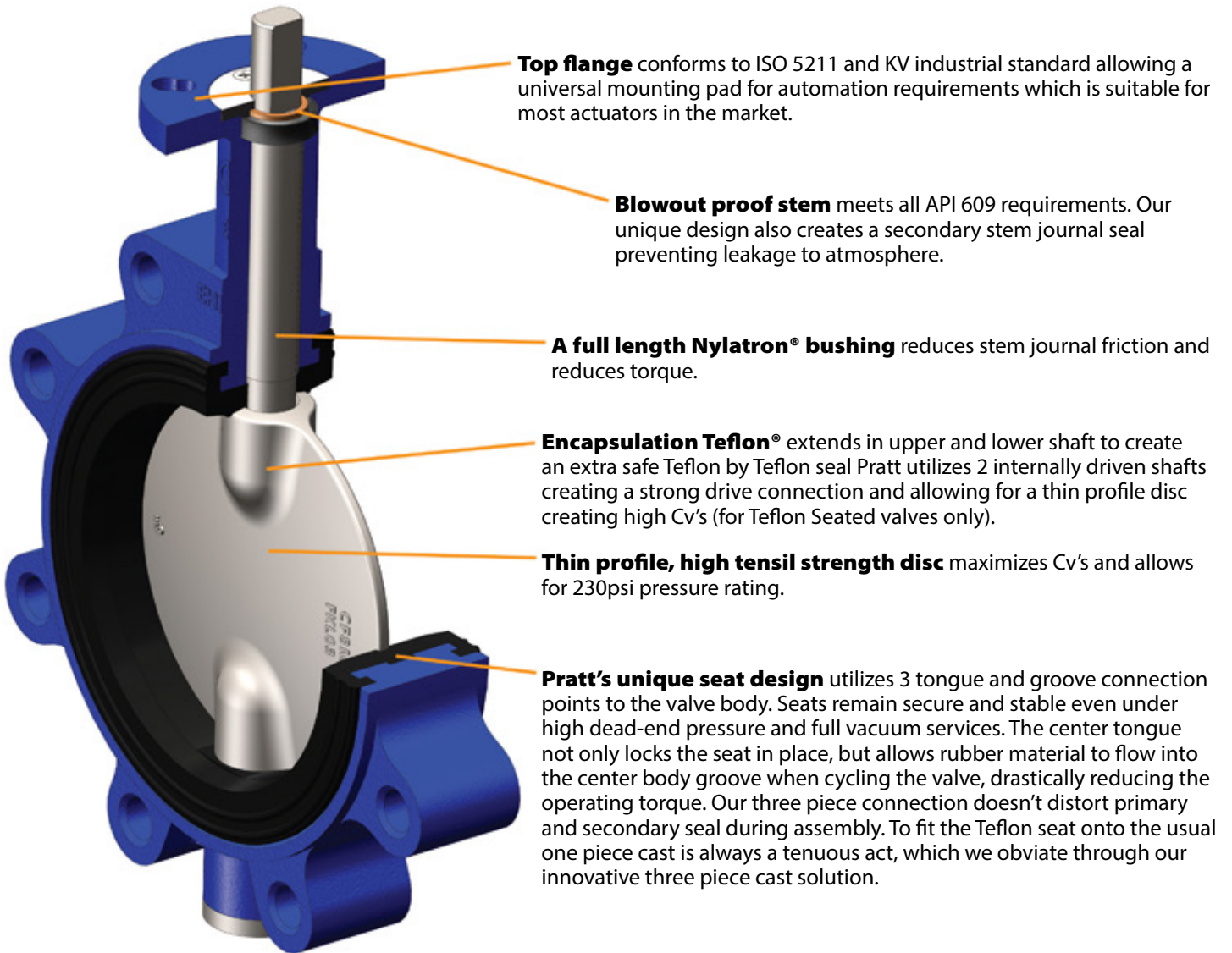
Contact factory for details.

**Features:**

- Innovative 3 point connection, tongue and groove seat allows for higher pressure rating and full Vacuum service.
- Unique secondary shaft seals prevent leakage from shaft.
- Our two piece shaft design provides maximum strength and a high flow characteristic disc.

## DESIGN DETAILS

### Pratt SB Series Butterfly Valve, sizes 2" through 12"



## SUGGESTED SPECIFICATIONS

### Pratt SB Series Wafer/Lug Butterfly Valve, sizes 2" through 12"

#### **General:**

Valves shall be of the Wafer or Lug design for installation between ANSI 125/150 flanges. All valves shall be capable of bi-directional, end of line, bubble tight service to rated pressure. Valves are also rated to full vacuum service. Design Standards: API 609 category A.

#### **Pressure Rating:**

SS Disc and Teflon Seat - 150 psi

Teflon Disc and Teflon Seat - 100 psi

Any Resilient Seat - 230 psi

#### **Body:**

Valve body shall be a 2 piece Ductile Iron ASTM A-536 (65-45-12) or CF8M, stainless steel construction with a laying length conforming to the latest revision of ISO 5752 and a flange connection B16.1/B16.5.

#### **Disc:**

Valve disc shall be Ductile iron ASTM A-536 Grade 65-45-12 with ENP plating or Nylon 11 coating, CF8M Stainless Steel, SS PFA encapsulated or Aluminum Bronze. Disc shall be designed to accommodate an upper and lower shaft with a thin center profile giving higher Cv values combined with strength.

#### **Shaft:**

Valve shaft shall be constructed of heat treated 416 stainless steel or 416 SS with PTFE encapsulation to create a Teflon by Teflon secondary seal for Teflon Seated Valves only. Valve shall be designed to accommodate (2) shafts (1 upper and 1 lower). The upper shaft shall have a positive engagement in the disc utilizing an internal square drive and shall be retained by the body Top Cap.

#### **Seat:**

Seat shall be Teflon® Elastomer, EPDM, Buna-N or Viton. Seat design shall consist of 3 Tongues (2 located on the side walls and 1 located in the center bore) that engage into 3 grooves in the body. These 3 tongue and groove connection points prevent seat movement in a radial and axial direction. Seats shall be field replaceable.

#### **Shaft Seals:**

Upper Shaft Seal shall be self-adjusting V-type and shall be suitable for Pressure or Vacuum service. Packing shall be located above the bushing and shall create a positive seal against the Top Cap.

#### **Bushings:**

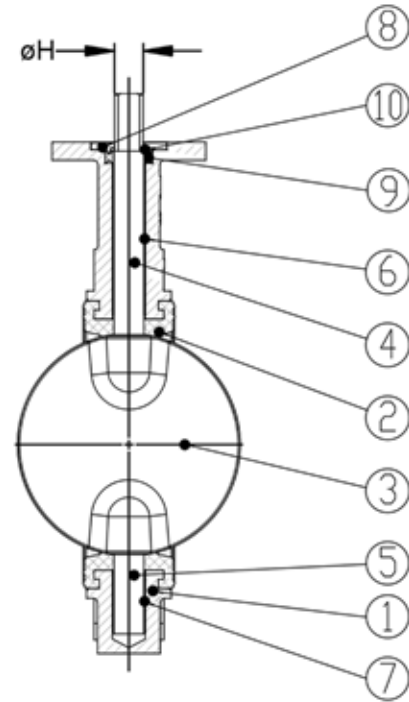
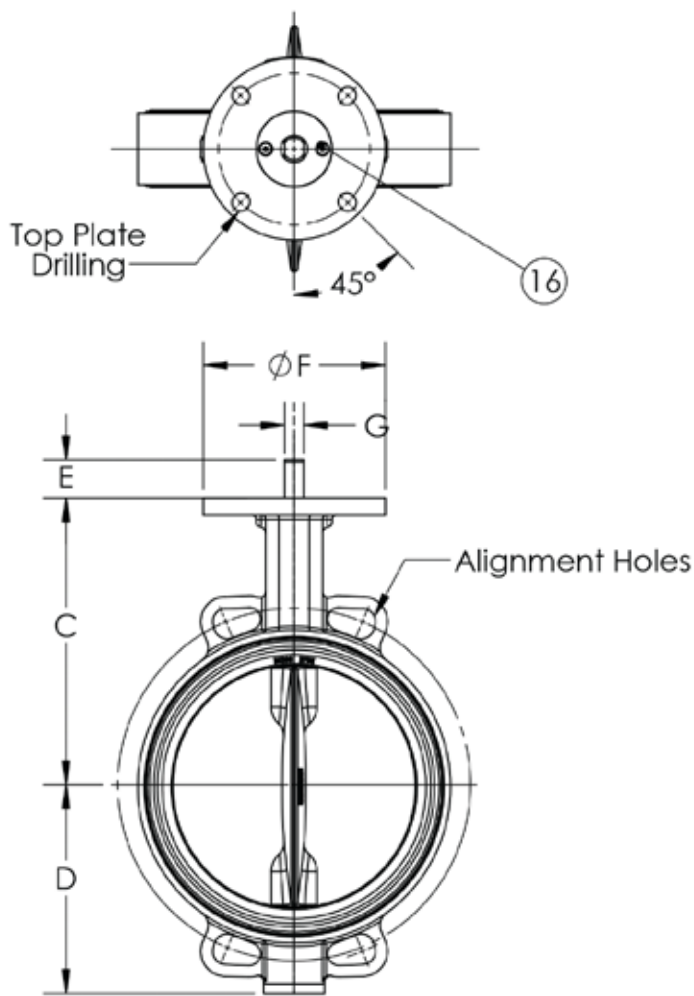
Valve shall consist of (2) full length Nylatron® bushings (upper and lower) offering superior protection against friction, corrosion and impacts. Pratt's unique bushings design provide protection against shaft side loading.

#### **Testing:**

All valves shall be leak tested in the factory at their rated pressure per API 598.

# DIMENSIONAL DATA

## SB Series BFV, Wafer

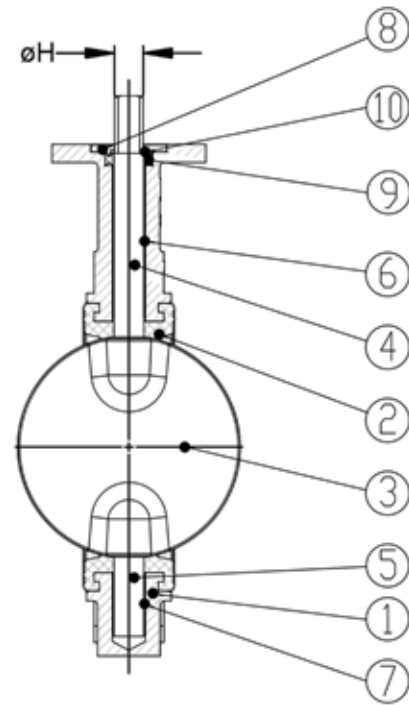
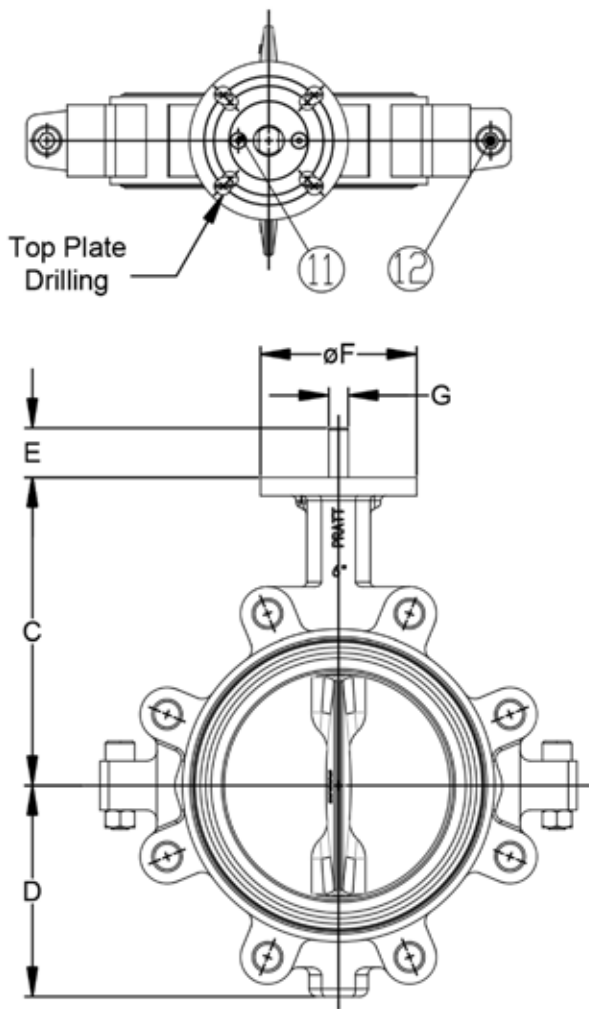


Part No.	Part Name	Material	Qty.
1	Wafer Body	A536 65-45-12, CF8M	1
2	Seat	TEFLON/EPDM/NBR/VITON	1
3	Disc	CF8M/AB/DI/NYLON 11/PFA	1
4	Upper Stem	A582-SS41600	1
5	Lower Stem	A582-SS41600	1
6	Upper Bushing	NYLATRON	1
7	Lower Bushing	NYLATRON	1
8	Top Cap	AISI 1020	1
9	V-packing	NBR/VITON	1
10	Retaining Washer	AISI 304	1
11	Top Cap Bolt	AISI 304	1
12	Body Bolt	WCBI/AISI 304	1

Size	lbs	ΦA	ΦB	C	D	E	ΦF	G	ΦH	L	Key	Pratt Standard Top Plate Drilling			ISO 5211 Top Plate Drilling			Alignment Holes		
												Bolt Circle	No. of Holes	Hole Dia.	Bolt Circle	No. of Holes	Hole Dia.	Bolt Circle	No. of Holes	Hole Dia.
2"	5.51	1.079	3.500	5.000	2.579	1.260	4.000	0.375	0.563	1.693	-	3.25	4	0.437	2.760	4	0.402	4.75	4	0.75
2.5"	6.39	1.862	4.094	5.500	2.854	1.260	4.000	0.375	0.563	1.811	-	3.25	4	0.437	2.760	4	0.402	5.5	4	0.75
3"	7.49	2.429	4.646	5.709	3.642	1.260	4.000	0.375	0.563	1.811	-	3.25	4	0.437	2.760	4	0.402	6	4	0.75
4"	10.58	3.500	5.827	6.496	4.429	1.260	4.000	0.437	0.625	.047	-	3.25	4	0.437	2.760	4	0.402	7.5	4	0.75
5"	15.65	4.567	7.205	7.500	4.921	1.260	4.000	0.500	0.750	2.205	-	3.25	4	0.437	2.760	4	0.402	8.5	4	0.88
6"	17.63	5.433	7.992	7.874	5.433	1.260	4.000	0.500	0.750	2.205	-	3.25	4	0.437	2.760	4	0.402	9.5	4	0.88
8"	31.52	7.744	10.315	9.500	6.811	1.260	6.000	0.625	0.875	2.362	-	5	4	0.563	4.921	4	0.563	11.75	4	0.88
10"	50.03	9.646	12.598	10.866	8.110	2.000	6.000	-	1.125	2.677	1/4" * 1/4"	5	4	0.563	4.921	4	0.563	14.25	4	1
12"	67.00	11.339	14.567	12.205	9.713	2.000	6.000	-	1.125	3.071	1/4" * 1/4"	5	4	0.563	4.921	4	0.563	17	4	1

# DIMENSIONAL DATA

## SB Series BFV, Lug



Part No.	Part Name	Material	Qty.
1	Lug Body	A536 65-45-12, CF8M	1
2	Seat	TEFLON/EPDM/NBR/VITON	1
3	Disc	CF8M/AB/DI/NYLON 11/PFA	1
4	Upper Stem	A582-SS41600	1
5	Lower Stem	A582-SS41600	1
6	Upper Bushing	NYLATRON	1
7	Lower Bushing	NYLATRON	1
8	Top Cap	AISI 1020	1
9	V-packing	NBR/VITON	1
10	Retaining Washer	AISI 304	1
11	Top Cap Bolt	AISI 304	1
12	Body Bolt	WCBI/AISI 304	1

Size	lbs	ΦA	ΦB	C	D	E	ΦF	G	ΦH	L	Key	Pratt Standard Top Plate Drilling			ISO 5211 Top Plate Drilling			Tapped Lug Data		
												Bolt Circle	No. of Holes	Hole Dia.	Bolt Circle	No. of Holes	Hole Dia.	Bolt Circle	No. of Holes	Tapped
2"	7.05	1.079	3.500	5.000	2.579	1.260	4.000	0.375	0.563	1.693	-	3.25	4	0.437	2.760	4	0.402	4.75	4	5/8"
2.5"	8.15	1.862	4.094	5.500	2.854	1.260	4.000	0.375	0.563	1.811	-	3.25	4	0.437	2.760	4	0.402	5.5	4	5/8"
3"	11.24	2.429	4.646	5.709	3.642	1.260	4.000	0.375	0.563	1.811	-	3.25	4	0.437	2.760	4	0.402	6	4	5/8"
4"	14.55	3.500	5.827	6.496	4.429	1.260	4.000	0.437	0.625	2.047	-	3.25	4	0.437	2.760	4	0.402	7.5	8	5/8"
5"	20.72	4.567	7.205	7.500	4.921	1.260	4.000	0.500	0.750	2.205	-	3.25	4	0.437	2.760	4	0.402	8.5	8	3/4"
6"	22.92	5.433	7.992	7.874	5.433	1.260	4.000	0.500	0.750	2.205	-	3.25	4	0.437	2.760	4	0.402	9.5	8	3/4"
8"	38.35	7.744	10.315	9.500	6.811	1.260	6.000	0.625	0.875	2.362	-	5	4	0.563	4.921	4	0.563	11.75	8	3/4"
10"	62.59	9.646	12.598	10.866	8.110	2.000	6.000	-	1.125	2.677	1/4" * 1/4"	5	4	0.563	4.921	4	0.563	14.25	12	7/8"
12"	83.53	11.339	14.567	12.205	9.713	2.000	6.000	-	1.125	3.071	1/4" * 1/4"	5	4	0.563	4.921	4	0.563	17	12	7/8"


# SB SERIES PART NUMBER ORDERING INFORMATION


Valve Model		ANSI Class	Size	Body	Disc	Stem	Seat	Options
<b>XX</b>		<b>XXX</b>	<b>XXX</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>XX</b>
<b>SB1</b>	Wafer	<b>125</b> Class 125	<b>020</b> 2"	<b>8</b> Ductile Iron	<b>9</b> DI/ENP	<b>9</b> STEEL	<b>9</b> BUNA	<b>01</b> UC DISC
<b>SB2</b>	Lug		<b>025</b> 2 1/2"	<b>7</b> 316SS/CF8M	<b>8</b> DI/Nylon-11	<b>8</b> 416	<b>8</b> EPDM	<b>02</b> SILICONE FREE
			<b>030</b> 3"		<b>7</b> AL. BRONZE	<b>7</b> DUPLEX	<b>7</b> VITON	<b>03</b> O2 CLEANED
			<b>040</b> 4"		<b>6</b> CF8M	<b>6</b> 316	<b>6</b> WHITE BUNA	<b>04</b> SPECIAL PAINTING
			<b>050</b> 5"		<b>5</b> PFA	<b>5</b> MONEL	<b>5</b> TEFLON/EPDM	<b>05</b> SPECIAL BOLTING
			<b>060</b> 6"		<b>4</b> MONEL	<b>4</b> HAST. C 276	<b>4</b> TEFLON/BUNA	<b>06</b> ANTISTATIC
			<b>080</b> 8"		<b>3</b> HAST C 276	<b>3</b> 17/4	<b>3</b> TEFLON/VITON	<b>07</b> SPECIAL PACKING
			<b>100</b> 10"		<b>2</b> 17/4 PH	<b>2</b> ALLOY 20	<b>2</b> NAT. RUBBER	
			<b>120</b> 12"		<b>1</b> ALLOY 20		<b>1</b> NEOPRENE	
					<b>0</b> DUPLEX 2205		<b>Q</b> CARBOX	
					<b>H</b> SMO255			
					<b>M</b> CF8M/NYLON 11			

### Wafer/Lug Butterfly Valve Ordering Example

Example Part #: SB2-125-020-8888

 Standard Product

 Special Order Product

 Options only show in the figure number if there is an option

\* Other material and options available upon request

# PRATT®

## INDUSTRIAL

### Pratt Industrial

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