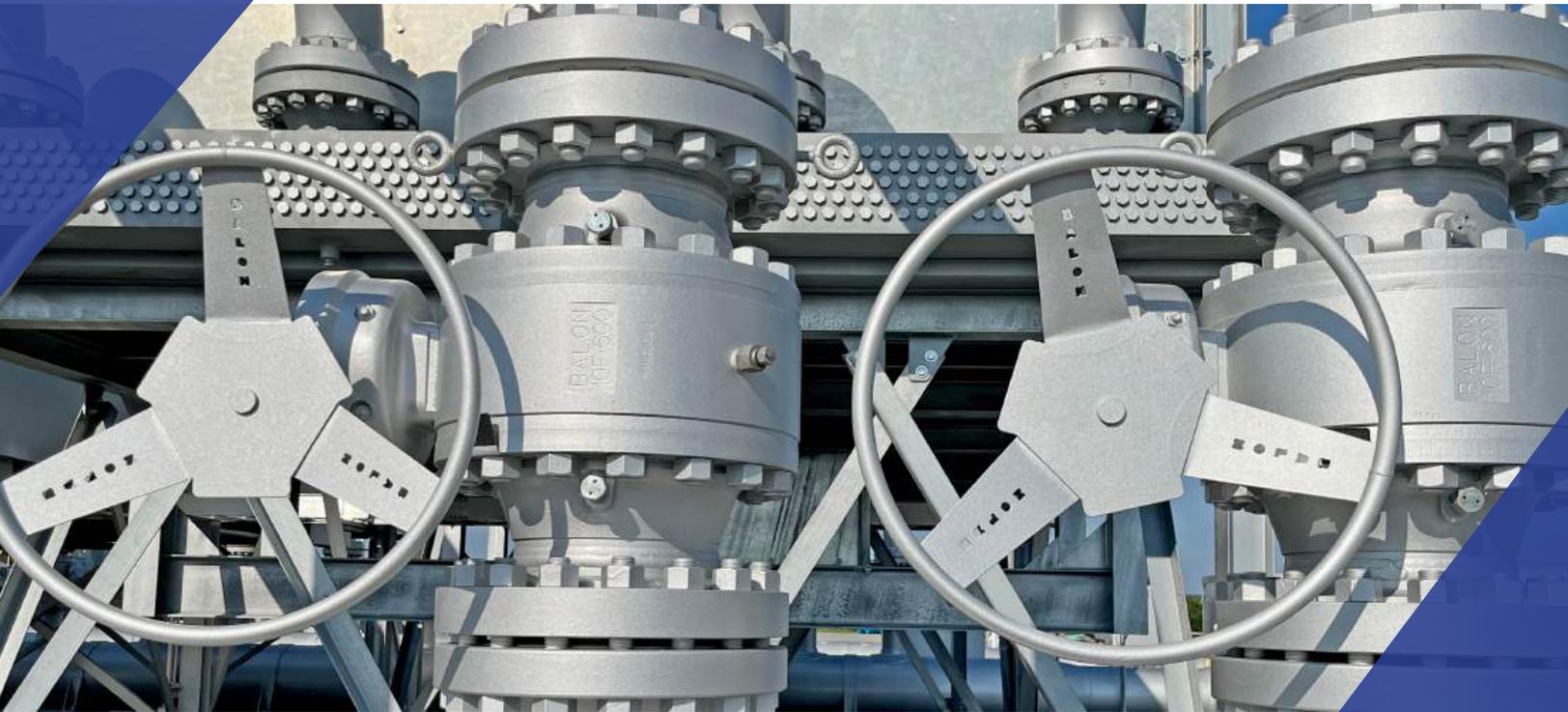


# BALON®

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**PRODUCT CATALOG**



## Ball Valves - Floating Series LM Page B-7

This carbon steel threaded end ball valve is available in 1/4" through 1". Stainless steel ball and stem are standard. Rugged valve for pressures up to 3000 PSI WP.



## Ball Valves - Floating Series F Fractional Pages B-8

Available in 1/4" through 1" - 3000 PSI WP. Also offered in LF2 forged steel for low-temp service to -50°F. NACE standard.



## Ball Valves - Floating Series LS Page B-35

Available in 1/4" through 1", this solid 316 stainless steel ball valve is the solution for corrosive applications. 2000 to 3000 PSI WP. It is widely used in odorant applications.



## Ball Valves - Floating Series S Threaded / Grooved Pages B-10, B-24, B-26, B-27, B-29, & B-31

Available in 1" through 6" in a variety of threaded/grooved end configurations, including the industry's first truly full port grooved end ball valve. Up to 5000 PSI WP and available in carbon steel, ductile iron, and "9D" nickel aluminum bronze.



## Ball Valves - Floating Series F Threaded / Grooved Pages B-11, B-25, B-30, & B-32

Available in sizes from 1" through 4", with pressures up to 5000 PSI WP. Offered in carbon steel, ductile iron, and "9D" nickel aluminum bronze. Also available in LF2 for low-temp service to -50°F.



## Ball Valves - Floating Series F Flanged End Lever Operated Pages B-12, B-14, B-16, B-18, B-28, & B-33

Available in carbon steel 1" through 6" ANSI 150, 300, 600, 900, and 1500. In ductile iron 2" through 6" ANSI 150 and "9D" nickel aluminum bronze 2" through 4" ANSI 150. Also available in LF2 for low-temp service to -50°F.



## Ball Valves - Floating Series F Flanged End Gear Operated Pages B-13, B-15, B-17, B-19, & B-34

Balon includes gear operators as a standard feature in 6" full port and larger ANSI 150 and 300 classes, 4" full port and larger ANSI 600 classes, and 3" ANSI 900 & 1500 class valves. Also available in low-temp service to -50°F.



## Ball Valves - Trunnion Series T Trunnion Mounted Pages T-4 through T-15

Available in 10" and 12" full port ANSI 150, 8" through 12" full port ANSI 300, 4" through 12" ANSI 600, and 4" ANSI 900. All in carbon steel standard, carbon steel NACE and stainless steel NACE trim configurations. Also available in low-temp at -50°F to 250°F.



## Ball Valves - Floating Series US UTILI SEAL Ball Valve Pages B-20 & B-21

Balon's weld x weld and weld x flange are designed for buried service and feature patented heat dissipating fins, heavy duty stops, and rugged forged steel components. Available in sizes 3/4" through 8" in ANSI 150 and ANSI 300 classes. Locking devices and 2" square operating nut are standard.



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## Balon: History



*Domer Scaramucci stands next to his father, Tito, sister Rosa Jean, brother, Tullio and mother, Zenaide. Dow, Oklahoma 1925.*



*Domer Scaramucci standing in front of the original building.*

Although Balon Corporation was founded in 1965, our story really begins in December 1911 with the birth of our founder, Dominico “Domer” Scaramucci, at the No. 4 Mining Camp near Dow, Oklahoma. His parents were Italian immigrant miners who instilled in him a work ethic and hopefulness that lasted a lifetime.

With an Oklahoma oil boom under way in the early 1930s, Domer pursued mechanical engineering studies at the University of Oklahoma, often hitchhiking to field locations to observe activity. Due to the Great Depression, Domer interrupted his studies to spend two years working for what was then a small company in Duncan, Oklahoma: Halliburton. On weekends he journeyed into the field with cementers, roustabouts, and roughnecks. By 1938, Domer was able to complete his degree at OU. On September 13, 1941, Domer married Ilene Wilkinson, who became a lifelong partner in his business activities.

Mr. Scaramucci had a successful career designing and licensing products for other manufacturers. Many of his designs had become industry standards by the time Balon was established in 1965. At the age of 54, at a time when most are thinking of retirement, he and Ilene embarked on what was a lifelong dream. Balon Corporation was launched in a 4,000-square-foot steel building on the corner of SE 32nd and Hattie Avenue in Oklahoma City, Oklahoma.

The average price of oil was around \$3.00 a barrel

in 1965. There was little primary oil development in America, but salt water injection projects were plentiful. Consequently, Balon’s first products were corrosion resistant ductile iron ball valves and, later, nickel aluminum bronze ball valves. These valves included features for which Balon would become known, including Multi-Seal seats and internally loaded, blowout-proof stems. In 1969, with Balon showing growth potential, the Scaramuccis hired Bill Shea as general manager. The Scaramuccis’ sons also joined the company as full time employees, Phil in 1969 and Jay in 1971.

With product line expansion, a strong marketing effort, and increasing demand for Balon products, Balon grew throughout the 1970s. By 1978, four additions had been made to the original manufacturing plant, including a two-story, 10,000-square-foot office building. Balon’s footprint along South Hattie Avenue increased to 95,000 square feet and there were 90 full-time employees.

1980 started with a boom. Oil prices were at an all-time high and the industry was buzzing. But oil prices peaked in 1981 and started to fall. The Penn Square Bank collapse in July 1982 reverberated from one side of the country to the other. It was a tough time in America’s oil and gas industry. Many valve manufacturers had begun to reduce expenses by cutting back on their domestic operations, choosing instead to manufacture overseas or import their products into the U.S.

Balon refused to participate in this trend! We focused on process improvements and new product development. Though at one point our hourly employees worked only two weeks per month, they were paid a full month's wage and there were no layoffs. Balon's focus paid off. With the strong demand for better valves and the support of an excellent group of domestic suppliers, Balon continued to expand its manufacturing facilities in Oklahoma City. By decade's end, Balon's plant had grown to 139,600 square feet with about 100 employees.



*Domer Scaramucci - 1990*

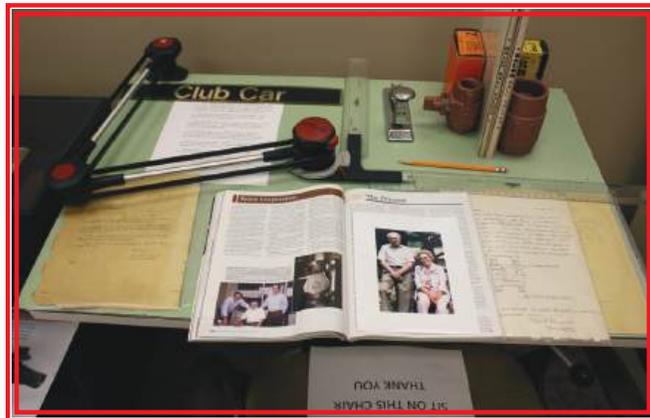
In the early 1990s, crude oil prices were trending lower as oil imports increased. Exploration and production companies began turning to natural gas production as advanced recovery methods were developed. Realizing that superior quality was needed, many companies began to standardize formally on Balon products. That set the stage for a sustained surge in growth at Balon Corporation. By the turn of the millennium, Balon's manufacturing plant covered 240,000 square feet with 164 employees.

Sadly, Domer Scaramucci passed away in December 1995. To the end, he remained at the heart of the daily activity of the company. Ilene

continued to be a visible presence at Balon until her own death in 2009.

In the years after the turn of the century, Balon has added significantly to its manufacturing space and continued to expand its product line. From the original 4,000-square-foot metal building at the corner of South Hattie Avenue and SE 32<sup>nd</sup> Street, a building that still stands as a daily reminder of our humble beginning, Balon has grown to become a modern manufacturing facility encompassing, at present, more than 1.5 million square feet.

We employ approximately 1,000 people in manufacturing and operate approximately 1,500 machines. More than 65 Balon field representatives make thousands of customer contacts around the world each year.



*Items from Balon Museum*

We wish to thank our loyal end users, the distributors who have supported them and us, our outstanding network of domestic raw material suppliers, and our employees, whose dedication and integrity have permitted us to successfully pursue our founder's mission. Our founder's innovative spirit and perseverance will continue to guide us as we look to the future.



## Our Commitment



### WHO WE ARE

Balon is a family-owned privately held company. We've grown from an initial 4,000 square foot building in 1965 to today's modern manufacturing facilities that encompass more than 1.5 million square feet under roof.

### SAFETY FIRST - QUALITY ASSURANCE - ACCOUNTABILITY

Balon's American-made valves are synonymous with superior quality and craftsmanship. Balon adheres to rigorous U.S. industry standards, employing cutting-edge technologies and stringent quality control measures. The commitment to excellence translates into valves that exceed performance expectations, providing a robust foundation for the energy sector's intricate systems.



### STRINGENT REGULATORY COMPLIANCE

The energy industry operates within a complex web of regulations and standards. Balon's American-made valves are manufactured with a keen focus on compliance with industry regulations, ensuring that energy facilities meet environmental, safety, and performance standards. By choosing Balon valves produced in the United States, energy companies can mitigate regulatory risks and demonstrate a commitment to responsible and sustainable operations.

### EFFICIENT ACCURATE ORDER FULFILLMENT

Balon ships all valves direct from its factory in Oklahoma City. Working closely with our supply chain partners, customer orders reach their destination in a very timely manner. Balon maintains large inventories of raw materials, finished parts and finished valves in Oklahoma City at our facilities. Balon's end user customers and supply chain partners receive immediate answers to inquiries and orders placed, lowering the cost of the supply chain process.



### ENHANCED PERFORMANCE AND EFFICIENCY

The reliability of valves is central to the operational efficiency of energy facilities. Balon's American-made valves are engineered to deliver optimal performance under diverse conditions, facilitating precise control of gases and fluid flow. This level of precision not only enhances the overall efficiency of energy processes but also contributes to the reduction of energy consumption and operational costs.

### LOCALIZED SUPPORT AND RAPID RESPONSE

Proximity matters in the fast-paced energy sector. Balon has over 65 factory-trained employees strategically located throughout North America who remain in regular contact with the people who engineer, purchase, install, and use Balon valves. When service or support is needed, Balon's valve professionals respond quickly to provide local, hands on support and minimize downtime.

## The Balon Mission

*1,500,000 sq ft manufacturing facility and 1,000 employees strong*



To assure growth for the Company and opportunity for all employees, it shall be our dedicated aim to:

- Produce valves with the safety of those who use them as our uppermost and defining goal.
- Provide our customers with valves that perform as promised, at a price reflective of their true value to the user.
- Meet the needs of our customers by maintaining a worldwide distributor network and a full-time staff of factory trained valve professionals in strategic geographical locations.
- Respond promptly and courteously to all customer and distributor inquiries, questions, and problems.
- Make certain that all Balon employees understand and implement our commitment to customer attention and customer satisfaction.
- Treat our vendors, customers, distributors and employees with equanimity and honesty.



## Leading the Pack Through Innovation



By the time Domer Scaramucci founded Balon Corporation in 1965, he had received 27 U.S. patents for new oilfield products and was widely recognized as an industry leader. Many of these early designs set the standard for valve technology still in use today. Driven by a spirit for innovation with an emphasis on safety, he laid the ground work for the company that Balon has become today.

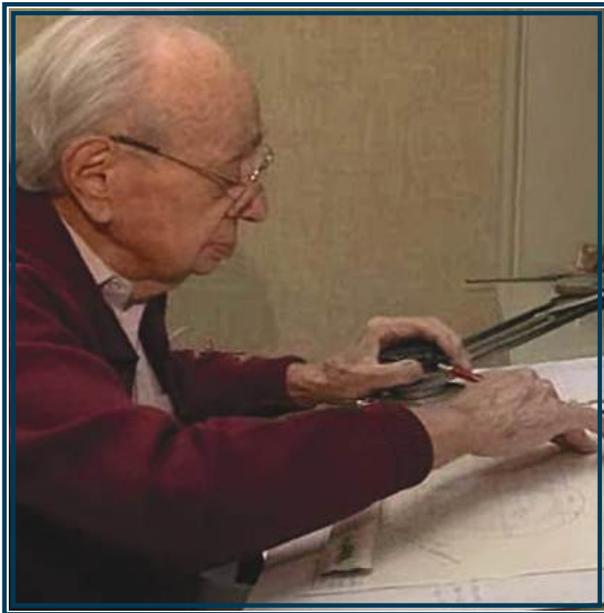
**Our founder's spirit of innovation and passion for safety continues today. With over 200 issued patents, Balon's commitment to deliver the benefits of**

**valve engineering and innovation to our customers remains paramount and the safety record of our products is unmatched.**

Balon has secured a distinguished reputation as an unprecedented innovator of design advances that have become industry standards in ball, check, and needle valves. We were first to develop many of the design enhancements that are the features of high quality valves and will continue to "**Lead the Pack**" through innovative design and state of the art manufacturing methods.

## Safety is No Accident: We do it by Design

At Balon, safety and quality are uppermost in our minds when we design and build valves. This commitment is reflected in the fact that Balon has produced over five decades of injury free service for countless users throughout the world.



**Founder - Domer Scaramucci**

We didn't achieve this exceptional safety record by avoiding tough applications. Instead, our safety record is the intentional result of a concerted effort to address possible hazards in the way we design and manufacture valves with an inherent margin of safety that surpasses others on the market.

A Balon valve should never be the cause of any accident. In each design change we pursue, we remain aware that our valves are integral to the safety of an operation, whether that operation is large or small. The fire safe features that are included in every Balon ball valve are a prime example of this philosophy.



In our design and manufacture of valves, we will always remember that our exceptional safety record is the pinnacle of our success.



## Balon Quality



It is Balon's goal to achieve customer satisfaction by providing valve products of clearly superior quality.

At Balon, superior products begin with innovative designs and quality, domestic raw materials. Balon cultivates long-term relationships exclusively with domestic suppliers who share our commitment to product integrity.



Raw materials are brought into our own manufacturing plant for processing. By taking full responsibility for the processing of all raw materials, Balon exercises total control over the Quality Assurance "QA" process. We have a plan for the inspection of every component following each machining operation. Tight tolerance bands are maintained in order to

achieve dimensional consistency from part to part and from valve to valve.

We take an "eyes open" approach to quality at Balon. All employees - whether they are machining components, assembling valves, or painting and boxing valves must keep their eyes open to any situation that might compromise quality.

As important as QA is within our plant, our concern for quality does not stop at Balon's shipping dock. Dozens of Balon field representatives sustain our commitment through thousands of customer contacts around the world every year. Customer feedback through our representatives helps us to achieve one of our primary objectives as a company, that of continuous product improvement.

Balon Corporation is licensed by the American Petroleum Institute to the API-6D Standard and by Bureau Veritas to Module H of the Pressure Equipment Directive (PED). Our QA program complies fully with the API Q1 Quality Standard.

At Balon Corporation, Quality Assurance is not merely a process. It is a culture that has been nurtured within our company from the beginning.

## Why Balon is American Made



There was a time when “Made in America” meant exactly that. Now, to some, it means something less. It means, perhaps, importing components for final assembly within the borders of the United States.

Let’s be clear. At Balon, “Made in America” means what it ought to mean. It means ordering raw materials from domestic

foundries and forging houses only. It means standing firmly by our tradition of manufacturing valves that are designed, machined, assembled, and tested, from start to finish, in our own plant in Oklahoma City, Oklahoma.

Settle for nothing less. Specify Balon by name.

### What does 100% Made in America mean to you?

	<b>BALON.</b>	<b>Others</b>
All Metal Components	USA	?
All Forgings and Castings	USA	?
All Machining Operations	USA	?
All Assembly Operations	USA	?
All Testing Operations	USA	?
All Packing and Shipping	USA	?
Meets API 641 Emission Standard	YES	?
Manufactured in Compliance with API Q1 Quality Standard	YES	?
Meets API 6FA Fire Test Standard	YES	?
Maintenance Free	YES	?
Can provide proof	YES	?

# Fugitive Emission Certified



Preventing fugitive pipeline emissions is both good business and critical to the safety of our communities and the environment. Valves are a key component in oil and gas operations and therefore play a vital role in preventing emissions. In 2016, the American Petroleum Institute (API) adopted API-641 to establish a uniform test method and emission acceptance criteria for quarter-turn valves.

Within days of the adoption, an independent, third-party laboratory began testing Balon valves using the new API-641 standard. The tests results proved Balon ball valves outperform API-641's criteria for Low-E products and certified every Balon ball valve is API-641 compliant. Because Balon made no changes to our designs, manufacturing

processes, or materials to achieve these results, users are assured that Balon valves installed before API-641 was first published meet the same emission standards as a brand new Balon valve.

Using Balon valves to prevent emissions reduces the cost of mandatory LDAR programs. Making API-641 compliance a standard feature in every Balon valve is another example of how Balon is lowering the cost of valve ownership by raising the threshold for valve quality.

We invite you to join with companies and users around the world who have made Balon their valve of choice. When quality matters, insist on Balon.



# Ball Valve Fire Safety

## A More Complete Solution to Fire Safety

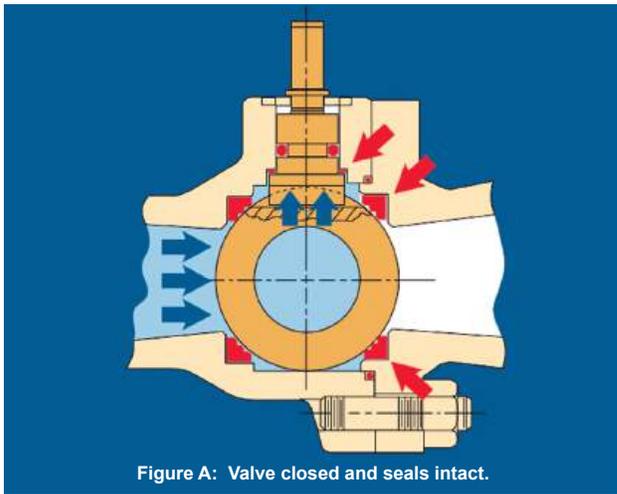


Figure A: Valve closed and seals intact.

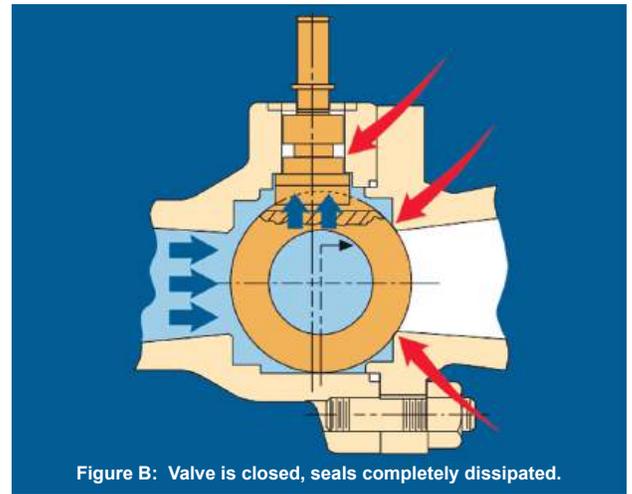


Figure B: Valve is closed, seals completely dissipated.

After many years of development and testing, Balon patented and introduced a ball valve that represented a dramatic turning point in valve safety. It was the first ball valve with the following:

- Back-seated stem to prevent stem blowout
- Packless stem gland housing which eliminates stem adjustment mechanisms
- Stem shear groove to assure controlled stem damage above the backseat
- Full Metal spectrum fire safety for metal-to-metal secondary sealing at all potential leak points

Balon then encased these safety improvements in a rugged bolted body assembly capable of withstanding violent thrust loading and line stresses common in high-pressure line applications.

Fire safety in ball valves has become a major consideration as more and more ball valves have been used in hazardous environments.

The Balon Ball Valve has been designed to provide maximum backup sealing in the event resilient seals are destroyed by heat or fire.

### Controlled Spacing

The interior components of the valve, with seals intact, can be seen in Figure "A". In the closed position the ball is held off of the secondary metal seat position.

The seat and seat pocket are made oversized in radial dimension, allowing close spacing of the ball and metal seat provision. In operation, with prime seals in place, this controlled spacing prevents damage to the surface finish of the ball.

It can also be seen that the stem is back-seated, and with seals in place the primary stem seal holds the stem off of the metal shoulder machined in the valve body.

In figure "B", the seals have been fully dissipated, the ball has moved downstream onto the secondary metal seat, and the stem has been checked, metal-to-metal, against the inner shoulder.

As can be seen, the stem is free to move upward when subjected to a slight amount of pressure, onto the machined metal inner shoulder, thus substantially restricting any flow past the stem into the atmosphere.

### Straight Ahead Ball Movement

The stem tongue is keyed into a linear milled slot, straight and perpendicular to the bore of the valve. In the closed position, the ball is free to move downstream onto the secondary metal seating, functioning at that moment as a simple ball check valve.

The ball itself is confined in the body with just enough vertical and horizontal clearance to assure free and easy operation. This keeps the ball in uniform alignment so that ball movement onto back-seating - should it become necessary - is consistently on a straight course, without deflection up, down or sideways.

The valve may be positioned in either vertical or horizontal installations, and retain its secondary metal-to-metal sealing capability.

These very simple provisions are intended to provide full operational safety in our valves. Every attempt has been made in our design to produce a valve that is safe and affordable.

**Balon Ball Valves have been successfully tested by an independent laboratory in accordance with API Standard 6FA "Fire Test for Resilient Seated Ball Valves". Results of this testing are available on request from Balon's headquarters.**

# Floating Ball Valves



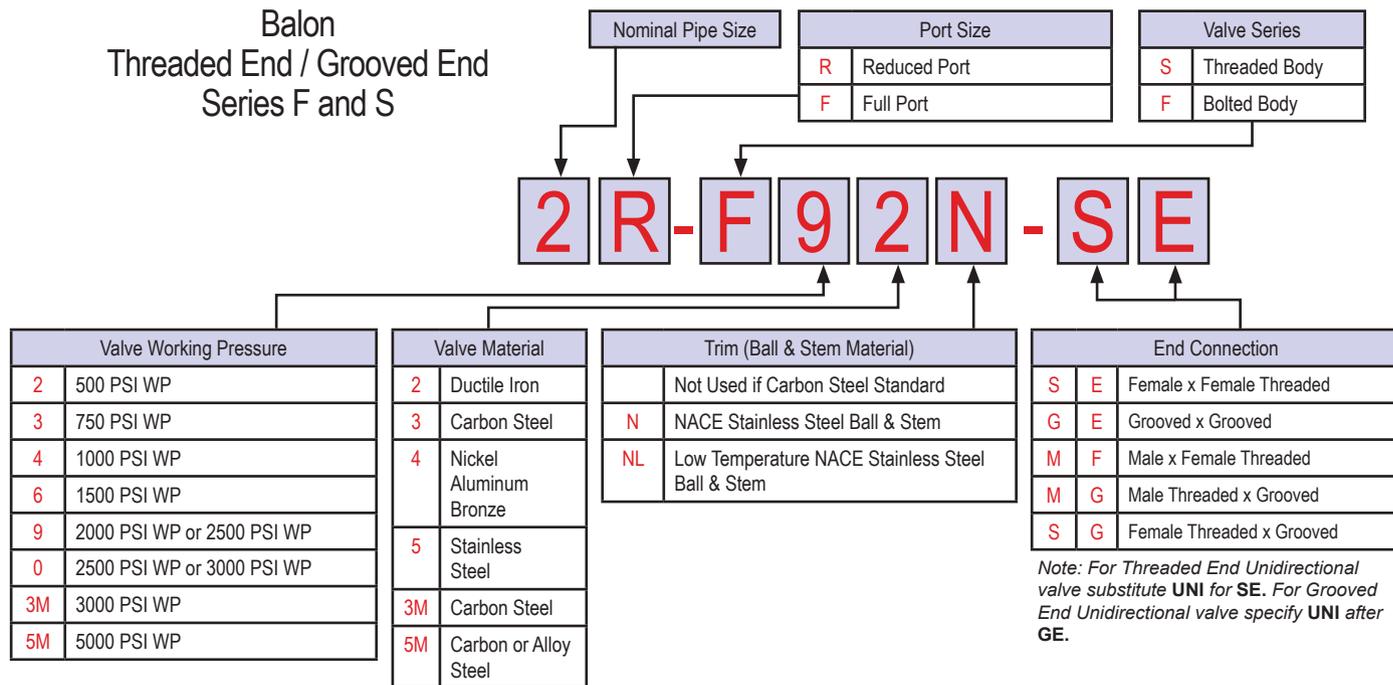
# BALON®

## FLOATING BALL VALVES

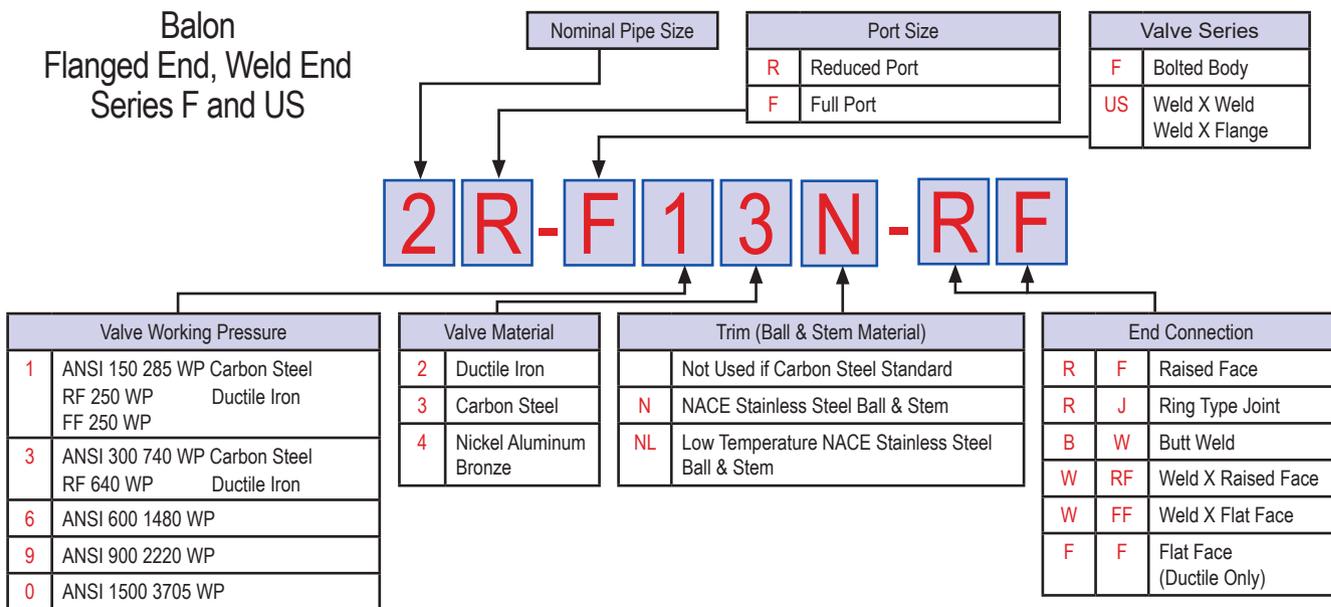
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# Floating Ball Valve Identification Key

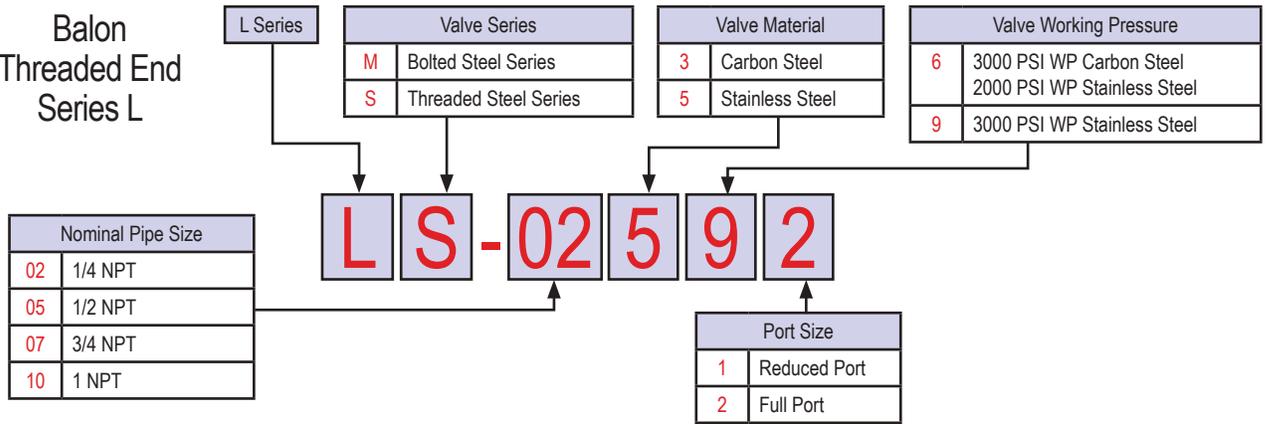
Balon  
Threaded End / Grooved End  
Series F and S



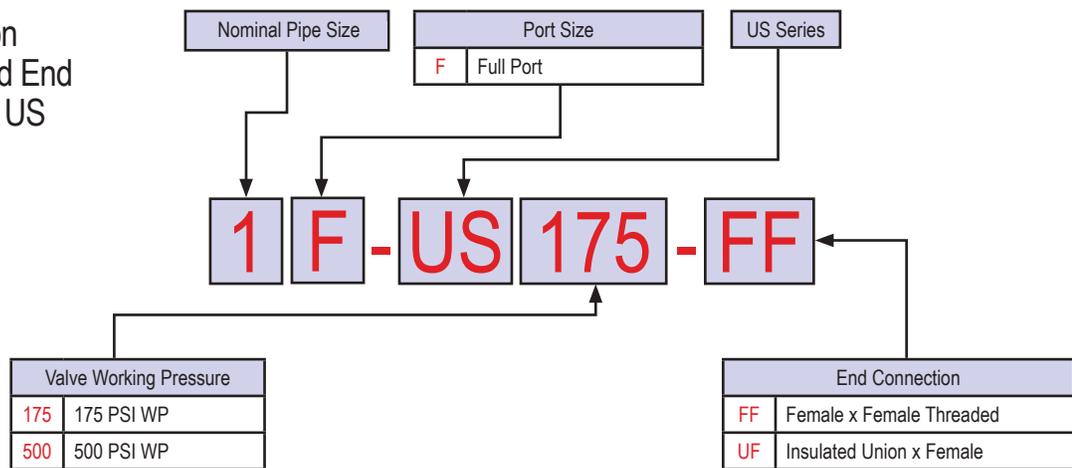
Balon  
Flanged End, Weld End  
Series F and US



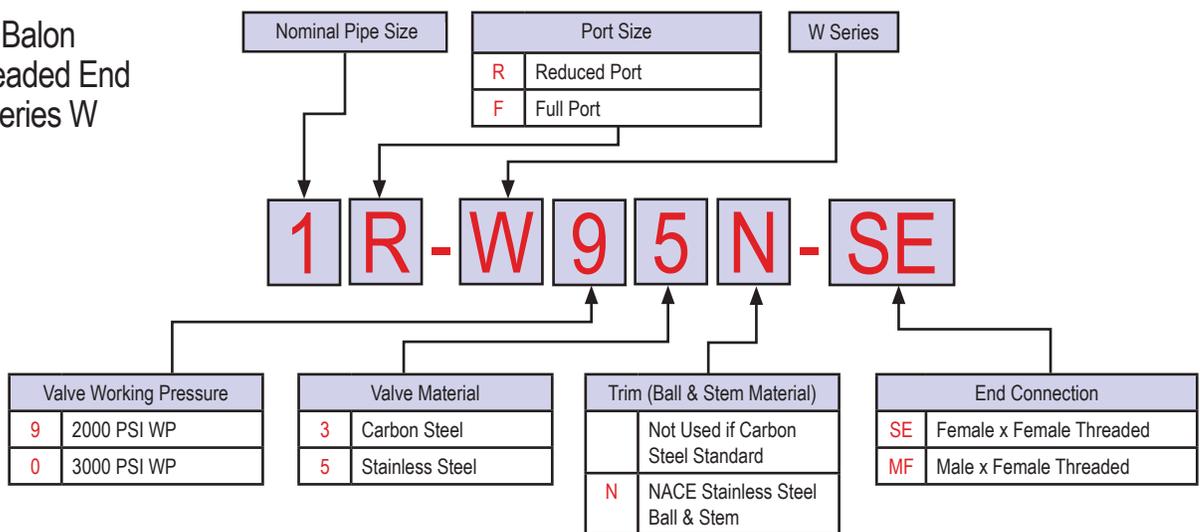
### Balon Threaded End Series L



### Balon Threaded End Series US



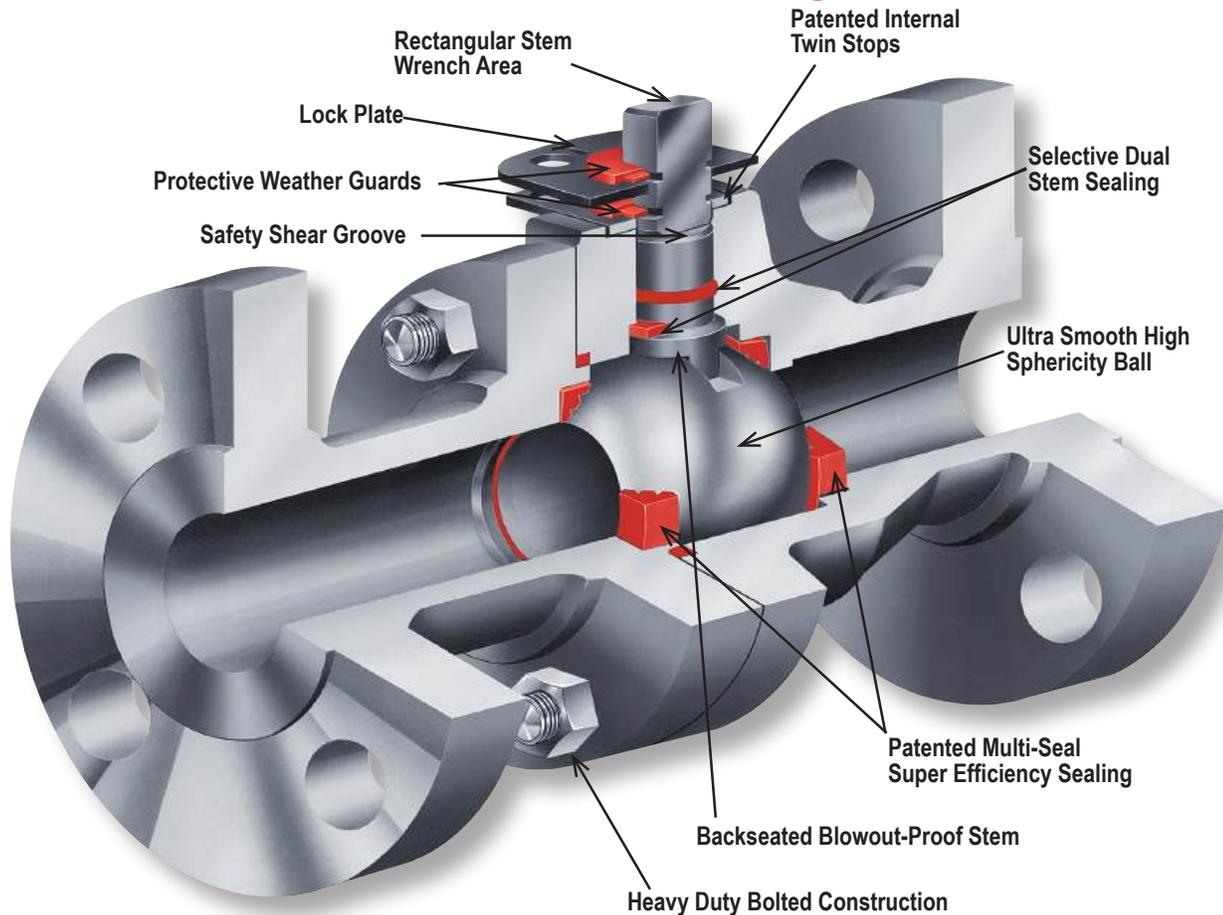
### Balon Threaded End Series W



Note: For any valves not listed please consult our Oklahoma City office.

# Ball Valve Cut-A-Way

## The Balon Valve: Totally Advanced



### Unique Sealing Approach

The Balon Ball Valve is the culmination of many years of arduous design and development effort which has been focused on providing a better choice in ball valves. It is a refinement of features proven superior during the use of Balon Ball Valves in millions of installations since 1965.

The multi-seal seat design has given impetus to the development of an overall valve which embodies several design improvements.

### Backseated Stem

Stems are backseated and blowout proof. And, they provide metal-to-metal backup sealing in the event of a fire. This secondary metal-to-metal sealing is also provided internally behind the seat area.

### Simplified Top Works

Bolts and glands and complicated stem assemblies are totally absent in the Balon valve to assure a simpler, more trouble-free valve.

Hazards associated with bolted stem retainer and packing adjustment screws or bolts have been eliminated. Even the stops are internal and give dual precise stopping support during opening and closing.

The stem area is grease-packed and protected by dual plastic weather guards to shield this vital area from external elements thereby eliminating the need for maintenance in the field.

### Precise Manufacturing Control

Balon uses only the highest quality materials to assure the strength and uniformity necessary for applications where valves are used. To further enhance the overall operational superiority of the valve, all balls are machined in-house by Balon's spherical machining process which assures a consistently accurate spherical contour. They are superbly finished and polished. This high integrity finish, along with multi-seal's advanced sealing capability, provides the highest sealing efficiency and substantially reduced operating torque.

### Emissions Tested - API 641

Balon certifies that all Balon ball valves are Low Emission products, as standard, per API 641 (fugitive emissions test method and acceptability criteria for quarter turn valves) as documented by an independent laboratory. **(See page 12 for more information.)**

# Multi-Seal

## Multi-Seal: The Heart of the Valve

**Notice the grooves.** These grooves loosely receive any grit that might be present when the valve is closed. When the valve is opened, the foreign matter washes harmlessly away. Where an ordinary valve seal could have been scored across its entire surface, Balon's seal is good as new.

**Notice the seal rings.** Not just one ring...a series. That's where Multi-Seal gets another big sealing edge over plain seals. The rings assure a concentrated seal, providing a bubble tight seal at high and low pressures. The tighter the seal...the better the shut-off.

**Notice the tapered outer walls.** These tapered walls on the Multi-Seal provide automatic seal-to-ball tensioning and self adjustment to wear. Much longer life and complete trouble-free performance is what you get. That's why you don't need a repair kit.

**How long will the Balon Multi-Seal last?** Our sales records of replacement seats indicate that most Balon valves sold have provided many years of trouble-free performance.

**It has been tested** on water pumped at 1,000 psi operating pressure with shock loading on shutoff up to 1,800 psi. After a million shutoffs, it still sealed bubble tight.



**Ordinary Seals** are damaged during shutoff. As flow is squeezed through fine-line opening, foreign particles are trapped. Complete shutoff grinds them into the seal. Results: premature damage, leakage, valve failure.



**Multi-Seal** receives particles loosely in grooves, to be washed harmlessly away during next opening. Valve seals bubble tight again, through repeated shutoffs.



**Multi-Seal's** series groove design features blunt-edge seal members for superior sealing efficiency. And the grooves form super-tight "fluid seal rings". Each seal member, working with the next one, creates exclusive "staged differential pressure sealing", for the tightest shutoff possible at all pressures.



**Multi-Seal** adjusts itself to wear! Outer walls are tapered to permit self-compensation to valve load and seal engagement demand. The design permits thrust loading to realign seat toward optimum sealing engagement.



**The Multi-Seal** design permits selection of seal material best suited to abrasive, high and low pressure applications in toughest services. And the relief pockets formed by the tapered walls, with the series grooving, provide self-compensation for swell to permit easy turning, long-life operation.

**It takes a better seal to make a better valve...and the best ball valve is a Balon.**

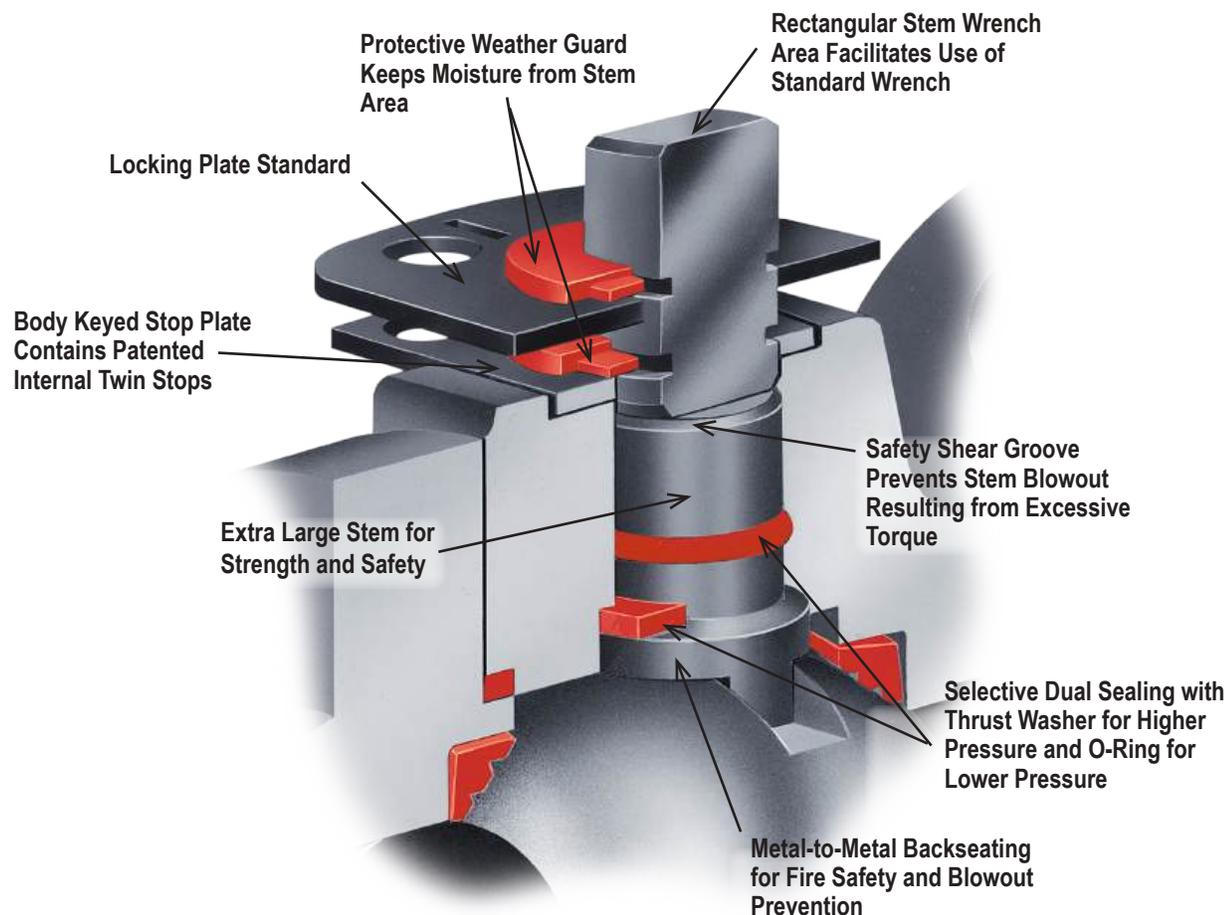
**BALON**

01.2025.Rev.1

# Stem Design

## An Advanced Concept in Stem Design

Balon has eliminated the need for grease fittings, lube channels, and regular lubrication.



In keeping with Balon's philosophy of design which envisions simplification and improvement instead of improvement by complication, the Balon stem design solves many problems associated with the common stem design. The overall utility of the ball valve is related in no small way to the basic stem design. Certain standard designs originated early and were followed through by ball valve manufacturers in the years following the advent of the ball valve itself during World War II.

### The Balon Stem: New Solutions For Old Problems

The Balon design represents the result of a total attack on specific problems associated with the outdated design. In the past, it has been a frequent practice to retain stems by use of external bolts or screws. Often these bolted arrangements also provided stem packing adjustment. The problem of leaking stems was amplified because of the complexity of the assembly itself.

The absence of backseating in early designs opened the way for stem blowout in the event of failure of the retaining assembly or as a result of forcible operation of the valve.

In many designs, double O-rings were used on the theory that if one O-ring failed to seal, the second O-ring would perform the sealing job. However, higher pressures trapped between the O-rings often caused high operating torque and other operating problems.

### A Combination of Improvements

As shown here, the Balon design is simple, yet solves these problems. The clean, functional design of the stem assembly represents dramatic improvement in many ways over conventional designs. As is true of the overall Balon approach, the Balon stem does not present just one special modification or design innovation. Rather, it represents the bringing together of interrelated improvements, resulting in total improvement and total superiority.

### Emissions Tested - API 641

Balon certifies that all Balon ball valves are Low Emission products, as standard, per API 641 (fugitive emissions test method and acceptability criteria for quarter turn valves) as documented by an independent laboratory. (see page 12 for more information.)

# Threaded End Connection

## Series LM Carbon Steel

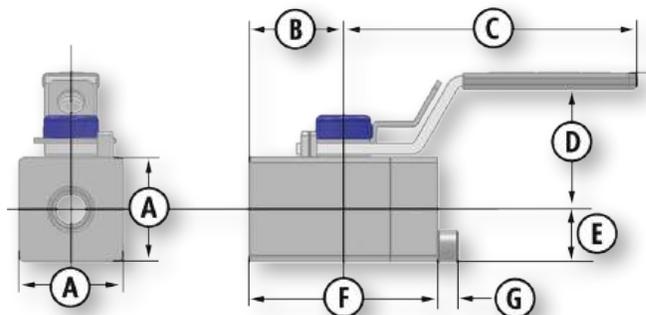
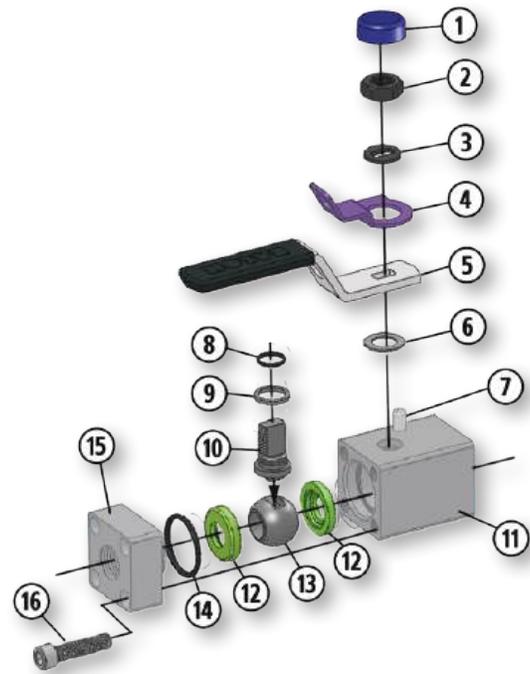
- 100% Made in USA
- 3000 PSI WP
- 1/4" Through 1"
- Bolted Body Construction
  - Certified Low Emission per API 641
  - Fire Safe Design
  - 316 Stainless Steel Ball and Stem Standard
  - Locking Device Standard
  - Multi-Seal Seats (See page B-5)



### Material Description

ITEM	PART NAME	MATERIAL (STANDARD)
1	Weather Guard	Polypropylene
2	Stem Nut	Carbon Steel
3	Spacer	Carbon Steel
4	Lock Plate	Carbon Steel
5	Handle*	Carbon Steel
6	Stem Washer	Acetal
7	Stop Pin	Carbon Steel
8	Stem O-Ring	Buna-N
9	Stem Seal	TFE
10	Stem	316 Stainless Steel
11	Body	AISI 1215
12	Ball Seat	Nylon 11 (TFE Optional**)
13	Ball	316 Stainless Steel
14	Body Seal	Buna-N
15	End Adapter	AISI 1215
16	Body Bolts	ASTM A193 B7M

\* Handle and lock device are standard on all Series LM Ball Valves.  
 \*\* Seat selection may result in de-rating of pressure. See Seat Pressure Ratings chart on page TD-4 for more information.



### Dimensional Data

SIZE	CATALOG NUMBER	PORT	A	B	C	D	E	F	G	LBS.	Cv
	STANDARD TRIM 316 SS BALL & STEM										
.25x.37x.25	LM-02362	.37	1.25	1.12	3.50	1.62	0.62	2.25	.25	1.0	-
.50x.37x.50	LM-05361	.37	1.25	1.12	3.50	1.62	0.62	2.25	.25	1.0	6
.75x.75x.75	LM-07362	.75	2.00	1.81	4.87	2.25	1.00	3.62	.37	3.5	-
1x.75x1	LM-10361	.75	2.00	1.81	4.87	2.25	1.00	3.62	.37	3.5	30

# Threaded End Connection

## Series F Carbon Steel

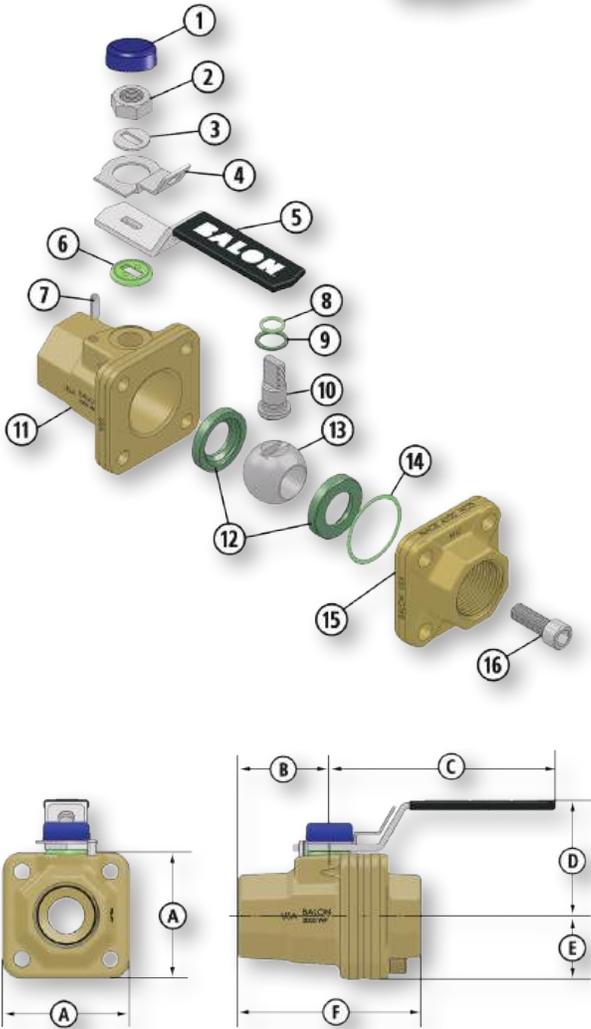
- 100% Made in USA
- 3000 PSI WP
- 1/4" Through 1"
- Bolted Body Construction
- NACE Standard
- Certified Low Emission per API 641
- Fire Safe Design
- Low-Torque Operation
- Multi-Seal Seats (See page B-5)
- Available in Low-Temp Service to -50°F

### Material Description

ITEM	PART NAME	MATERIAL (NACE)	LOW TEMP (NACE)
1	Weather Guard	Polypropylene	Polypropylene
2	Stem Nut	Carbon Steel	Carbon Steel
3	Spacer	Carbon Steel	Carbon Steel
4	Lock Plate	Carbon Steel	Carbon Steel
5	Handle*	Carbon Steel	Carbon Steel
6	Stem Washer	Acetal	Acetal
7	Stop Pin	Carbon Steel	Carbon Steel
8	Stem O-Ring	Fluorocarbon	Fluorocarbon
9	Stem Seal	TFE	TFE
10	Stem	316 Stainless Steel	316 Stainless Steel
11	Body	ASTM A105, Normalized/ A350 LF2 CL1	ASTM A350 LF2 CL1
12	Seat	Nylon 11 (TFE Optional**)	Nylon 11 (TFE Optional**)
13	Ball	316 Stainless Steel	316 Stainless Steel
14	Body Seal	Fluorocarbon	Fluorocarbon
15	End Adapter	ASTM A105, Normalized/ A350 LF2 CL1	ASTM A350 LF2 CL1
16	Body Bolts	ASTM A193 B7M/ A320 L7M	ASTM A320 L7M

\* Handle and lock device are standard.

\*\* Seat selection may result in de-rating of pressure. See Seat Pressure Ratings chart on page TD-4 for more information.



### Dimensional Data

SIZE	CATALOG NUMBER		PORT	WP	A	B	C	D	E	F	LBS.	Cv
	NACE TRIM 316 SS BALL & STEM	LOW TEMP 316 SS BALL & STEM										
.25x.375x.25	1/4F-F03N-SE	1/4F-F03NL-SE	.37	3000	1.75	1.12	3.50	1.88	0.88	2.25	1.0	-
.50x.375x.50	1/2R-F03N-SE	1/2R-F03NL-SE	.37	3000	1.75	1.19	3.50	1.88	0.88	2.38	1.0	6
.50x.50x.50	1/2F-F03N-SE	1/2F-F03NL-SE	.50	3000	1.92	1.38	3.50	1.96	0.96	3.00	1.6	-
.75x.75x.75	3/4F-F03N-SE	3/4F-F03NL-SE	.75	3000	2.62	1.81	4.87	2.56	1.31	3.62	3.3	-
1x.75x1	1R-F03N-SE	1R-F03NL-SE	.75	3000	2.62	1.88	4.87	2.56	1.31	3.75	3.3	30

# Socket Weld Connection

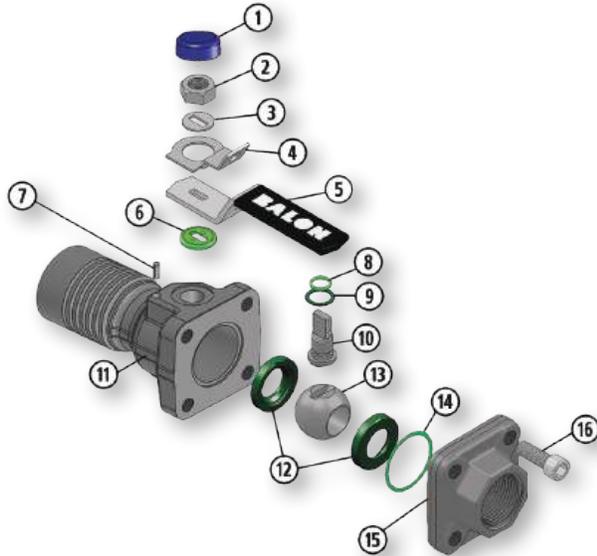
## Series F Carbon Steel

- 100% Made in USA
- 3000 PSI WP
- 1/2", 3/4", and 1"
- Bolted Body Construction
- NACE Standard
  - Certified Low Emission per API 641
  - Fire Safe Design
  - Low-Torque Operation
  - Multi-Seal Seats (See page B-5)
  - Available in Low-Temp Service to -50°F



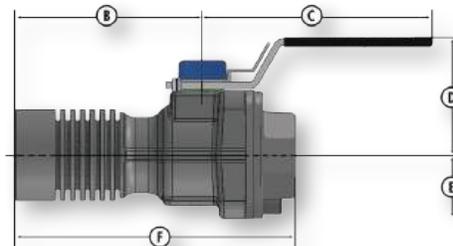
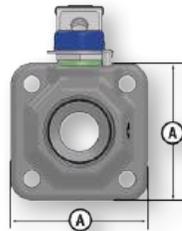
### Material Description

ITEM	PART NAME	MATERIAL (NACE)	LOW TEMP (NACE)
1	Weather Guard	Polypropylene	Polypropylene
2	Stem Nut	Carbon Steel	Carbon Steel
3	Spacer	Carbon Steel	Carbon Steel
4	Lock Plate	Carbon Steel	Carbon Steel
5	Handle	Carbon Steel	Carbon Steel
6	Stem Washer	Acetal	Acetal
7	Stop Pin	Carbon Steel	Carbon Steel
8	Stem O-Ring	Fluorocarbon	Fluorocarbon
9	Stem Seal	TFE	TFE
10	Stem	316 Stainless Steel	316 Stainless Steel
11	Body	ASTM A105, Normalized	ASTM A350 LF2 CL1
12	Seat	Nylon 11 (TFE Optional**)	Nylon 11 (TFE Optional**)
13	Ball	316 Stainless Steel	316 Stainless Steel
14	Body Seal	Fluorocarbon	Fluorocarbon
15	End Adapter	ASTM A105, Normalized	ASTM A350 LF2 CL1
16	Body Bolts	ASTM A193 B7M	ASTM A320 L7M



\* Handle and lock device are standard.

\*\* Seat selection may result in de-rating of pressure. See Seat Pressure Ratings chart on page TD-4 for more information.



### Dimensional Data

SIZE	CATALOG NUMBER		PORT	WP	A	B	C	D	E	F	LBS.	Cv
	NACE TRIM 316 SS BALL & STEM	LOW TEMP 316 SS BALL & STEM										
.50x.50x.50	1/2F-F03N-SWSE	-	.50	3000	1.92	3.38	3.50	1.96	0.96	5.00	2.00	-
.75x.75x.75	3/4F-F03N-SWSE	3/4F-F03NL-SWSE	.75	3000	2.62	4.16	4.87	2.56	1.31	5.97	4.47	-
1x75x1	1R-F03N-SWSE	1R-F03NL-SWSE	.75	3000	2.62	4.16	4.87	2.56	1.31	5.97	4.47	30

# Threaded End Connection



## Series S Carbon Steel

- 100% Made in USA
- To 5000 PSI WP
- 1" Through 2"
- Threaded Body Construction
  - Certified Low Emission per API 641
  - Fire Safe Design
  - NACE Option With 316 Stainless Steel Ball and Stem Available
  - Rugged Locking Device Standard
  - Multi-Seal Seats (See page B-5)
  - Available in Low-Temp Service to -50°F

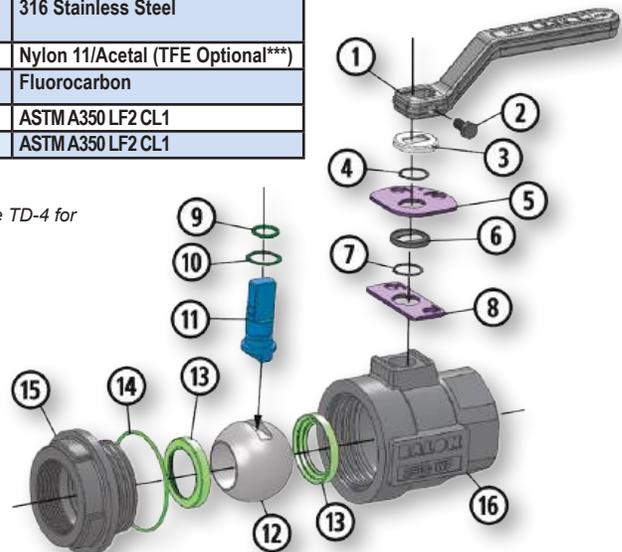
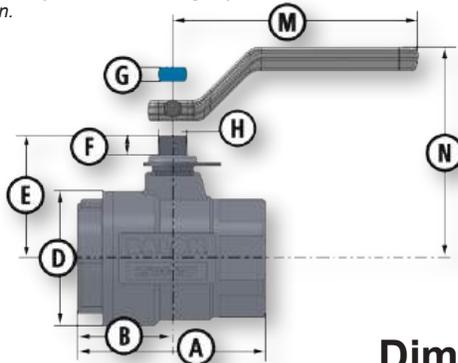
## Material Description

ITEM	PART NAME	MATERIAL (STANDARD)	MATERIAL (NACE)	LOW TEMP (NACE)
1	Handle*	Carbon Steel/Ductile Iron	Carbon Steel/Ductile Iron	Carbon Steel/Ductile Iron
2	Handle Bolt	Standard Hex Bolt	Standard Hex Bolt	Standard Hex Bolt
3	Weather Guard	Polypropylene	Polypropylene	Polypropylene
4	Lock Plate Retainer	Carbon Spring Steel	Carbon Spring Steel	Carbon Spring Steel
5	Lock Plate	Carbon Steel	Carbon Steel	Carbon Steel
6	Dust Cover	Polypropylene	Polypropylene	Polypropylene
7	Stop Plate Retainer	Carbon Spring Steel	Carbon Spring Steel	Carbon Spring Steel
8	Stop Plate	Carbon Steel	Carbon Steel	Carbon Steel
9	Stem O-Ring	Buna-N	Fluorocarbon	Fluorocarbon
10	Stem Seal	TFE	TFE	TFE
11	Stem	Carbon Steel	316 Stainless Steel	316 Stainless Steel
12	Ball	Carbon Steel Nickel Chrome Plated	316 Stainless Steel	316 Stainless Steel
13	Ball Seat	Nylon 11/Acetal (TFE Optional***)	Nylon 11/Acetal (TFE Optional***)	Nylon 11/Acetal (TFE Optional***)
14	Body O-Ring	Buna-N	Fluorocarbon	Fluorocarbon
15	End Adapter**	ASTM A105, Normalized	ASTM A105, Normalized	ASTMA350 LF2 CL1
16	Body**	ASTM A105, Normalized	ASTM A105, Normalized	ASTMA350 LF2 CL1

\* Handle is optional. Balon valves can also be operated with a standard open-end wrench.

\*\* Material for body and end adapter is AISI 4140 on 5000 PSI WP valve.

\*\*\* Seat selection may result in de-rating of pressure. See Seat Pressure Ratings chart on page TD-4 for more information.



## Dimensional Data

SIZE	CATALOG NUMBER			PORT	WP	A	B	D	E	F	G	H	M	N	LBS	HANDLE	Cv
	STANDARD TRIM CARBON STEEL BALL & STEM	NACE TRIM 316 SS BALL & STEM	LOW TEMP 316 SS BALL & STEM														
1x1x1	1F-S03-SE	N/A	1F-S03NL-SE	1	3000	4.0	2.00	2.75	2.37	.50	.340	.685	4.37	2.00	4.5	P-333-CS	-
2x1.5x2	2R-S93-SE	2R-S93N-SE	N/A	1.5	2500	5.5	2.75	4.25	3.62	.75	.434	.873	7.25	5.25	14	P-4128-CS	125
2x1.5x2	2R-S03-SE	2R-S03N-SE	N/A	1.5	3000	5.5	2.75	4.25	3.62	.75	.434	.873	7.25	5.25	14	P-4128-CS	125
2x1.5x2	2R-S5M-SE	2R-S5MN-SE	N/A	1.5	5000	5.5	2.75	4.25	3.62	.75	.434	.873	10.25	5.62	14	P-4129-CS	125
2x2x2	2F-S93-SE	2F-S93N-SE	N/A	2	2500	6.0	3.12	4.87	4.37	.75	.497	.998	10.25	6.20	18	P-4129-CS	-
2x2x2	2F-S03-SE	2F-S03N-SE	N/A	2	3000	6.0	3.12	4.87	4.37	.75	.497	.998	10.25	6.20	18	P-4129-CS	-

Balon manufactured Actuation Mounting Hardware available. Please see page A-2 for details.

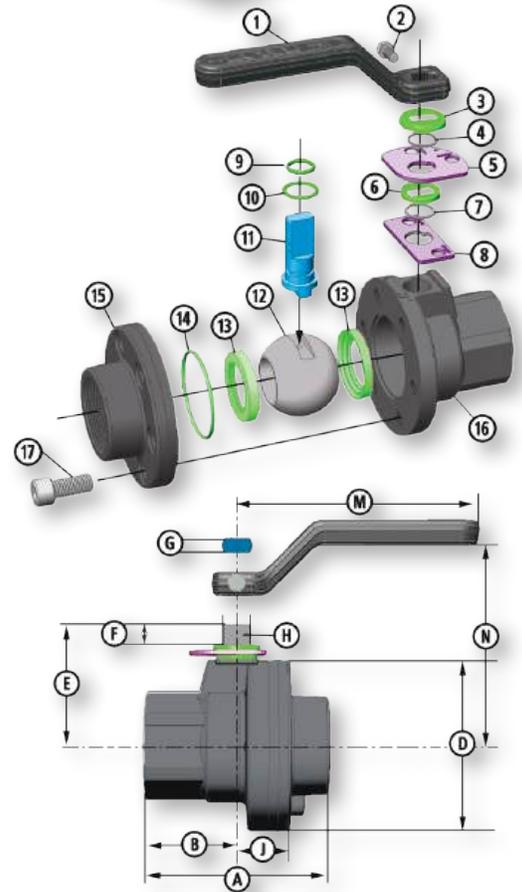
**BALON**

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# Threaded End Connection

## Series F Carbon Steel

- 100% Made in USA
- To 5000 PSI WP
- 1" Through 4"
- Bolted Body Construction
  - Certified Low Emission per API 641
  - Fire Safe Design
  - NACE Option With 316 Stainless Steel
  - Ball and Stem Available
- Bolted Body Protects Against End Adapter Rotation
- Rugged Locking Device Standard
- Multi-Seal Seats (See page B-5)



### Material Description

ITEM	PART NAME	MATERIAL (STANDARD)	MATERIAL (NACE)	LOW TEMP (NACE)
1	Handle*	Carbon Steel/Ductile Iron	Carbon Steel/Ductile Iron	Carbon Steel/Ductile Iron
2	Handle Bolt	Standard Hex Bolt	Standard Hex Bolt	Standard Hex Bolt
3	Weather Guard	Polypropylene	Polypropylene	Polypropylene
4	Lock Plate Retainer	Carbon Spring Steel	Carbon Spring Steel	Carbon Spring Steel
5	Lock Plate	Carbon Steel	Carbon Steel	Carbon Steel
6	Dust Cover	Polypropylene	Polypropylene	Polypropylene
7	Stop Plate Retainer	Carbon Spring Steel	Carbon Spring Steel	Carbon Spring Steel
8	Stop Plate	Carbon Steel	Carbon Steel	Carbon Steel
9	Stem O-Ring	Buna-N	Fluorocarbon	Fluorocarbon
10	Stem Seal	TFE	TFE	TFE
11	Stem	Carbon Steel	316 Stainless Steel	316 Stainless Steel
12	Ball	Carbon Steel Nickel Chrome Plated	316 Stainless Steel	316 Stainless Steel
13	Ball Seat	Nylon 11/Acetal (TFE Optional**)	Nylon 11/Acetal (TFE Optional**)	Nylon 11/Acetal (TFE Optional**)
14	Body O-Ring	Buna-N	Fluorocarbon	Fluorocarbon
15	End Adapter	ASTM A105, Normalized	ASTM A105, Normalized	ASTM A350LF2 CL1
16	Body	ASTM A105, Normalized	ASTM A105, Normalized	ASTM A350LF2 CL1
17	Body Bolts	ASTM A193 B7M	ASTM A193 B7M	A320L7M

\* Handle is optional. Balon valves can also be operated with a standard open-end wrench.

\*\* Seat selection may result in de-rating of pressure. See Seat Pressure Ratings chart on page TD-4 for more information.

### Dimensional Data

SIZE	CATALOG NUMBER			PORT	WP	A	B	D	E	F	G	H	J	M	N	LBS.	HANDLE	Cv
	STANDARD TRIM CARBON STEEL BALL & STEM	NACE TRIM 316 SS BALL & STEM	LOW TEMP 316 SS BALL & STEM															
1x1x1	1F-F93-SE	1F-F93N-SE	N/A	1	2500	3.87	1.93	3.37	2.37	0.50	.340	0.685	1.120	4.37	2.00	4.3	P-333-CS	-
1x1x1	1F-F03-SE	1F-F03N-SE	1F-F03NL-SE	1	3000	3.87	1.93	3.37	2.37	0.50	.340	0.685	1.120	4.37	2.00	4.0	P-333-CS	-
1x1x1	1F-F5M-SE*	1F-F5MN-SE*	-	1	5000	4.50	2.00	4.30	2.37	0.50	.340	0.685	1.72	4.37	2.00	8.6	P-333-CS	-
1.5x1.5x1.5	1.5F-F03-SE	1.5F-F03N-SE	N/A	1.5	3000	5.25	2.62	5.12	3.62	0.75	.434	0.873	1.620	7.25	5.25	12.8	P-4128-CS	-
2x1.5x2	2R-F93-SE	2R-F93N-SE	N/A	1.5	2500	5.50	2.75	5.12	3.62	0.75	.434	0.873	1.620	7.25	5.25	13.5	P-4128-CS	125
2x1.5x2	2R-F03-SE	2R-F03N-SE	2R-F03NL-SE	1.5	3000	5.50	2.75	5.12	3.62	0.75	.434	0.873	1.620	7.25	5.25	13.0	P-4128-CS	125
2x1.5x2	2R-F5M-SE	2R-F5MN-SE	N/A	1.5	5000	6.00	3.00	6.00	3.62	0.75	.434	0.873	1.750	10.25	5.62	20.0	P-4129-CS	125
2x2x2	2F-F93-SE	2F-F93N-SE	N/A	2	2000	5.75	2.87	6.12	4.37	0.87	.497	0.998	2.000	10.25	6.20	20.0	P-4129-CS	-
2x2x2	2F-F03-SE	2F-F03N-SE	2F-F03NL-SE	2	2500	5.75	2.87	6.12	4.37	0.87	.497	0.998	2.000	10.25	6.20	19.0	P-4129-CS	-
2x2x2	2F-F3M-SE	2F-F3MN-SE	N/A	2	3000	5.75	2.87	6.12	4.37	0.87	.497	0.998	2.000	10.25	6.20	20.0	P-4129-CS	-
3x2x3	3R-F93-SE	3R-F93N-SE	3R-F93NL-SE	2	2000	7.62	3.81	6.87	4.37	0.87	.497	0.998	2.060	10.25	6.20	32.0	P-4129-CS	180
3x3x3	3F-F63-SE	3F-F63N-SE	3F-F63NL-SE	3	1500	8.37	4.18	8.00	5.75	1.06	.747	1.373	2.375	20.0	7.75	46.0	P-4127-DI	-
3x3x3	3F-F03-SE	3F-F03N-SE	N/A	3	3000	8.37	4.18	8.56	5.75	1.08	.747	1.375	2.470	20.0	7.75	56.0	P-4127-DI	-
4x3x4	4R-F63-SE	4R-F63N-SE	4R-F63NL-SE	3	1500	8.87	4.43	8.00	5.75	1.06	.747	1.375	2.375	20.0	7.75	47.0	P-4127-DI	500

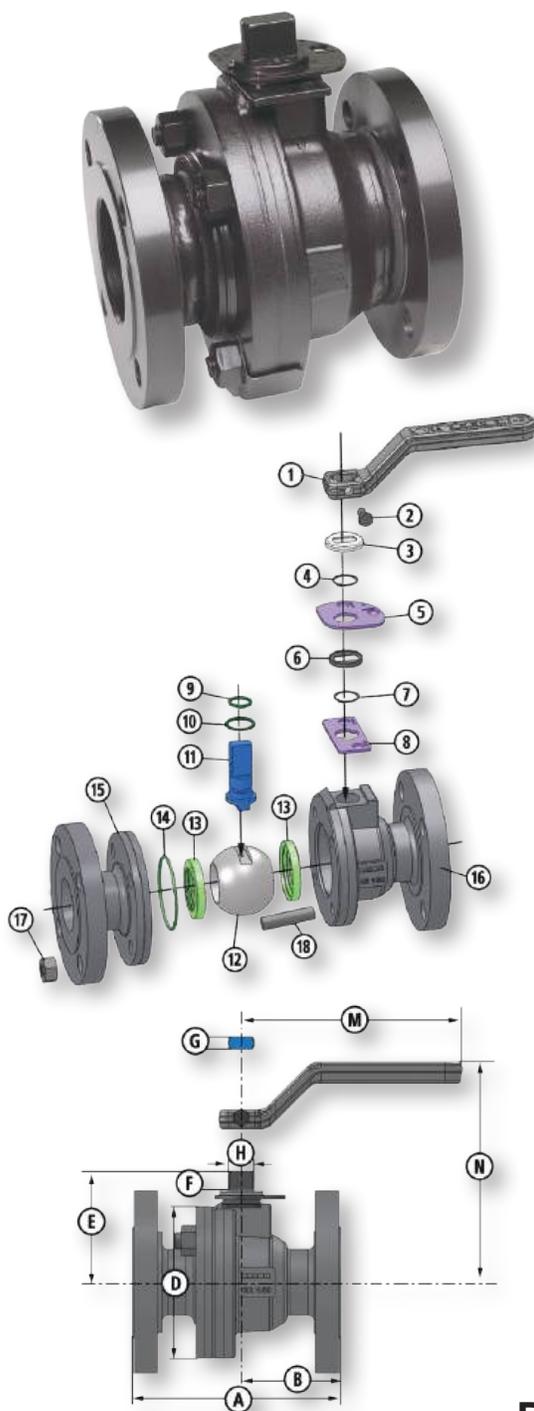
\* Available in fall 2025.

Balon manufactured Actuation Mounting Hardware available. Please see page A-2 for details.

# Flanged End Connection

## Series F Carbon Steel

- 100% Made in USA
- ANSI Class 150 (285 PSI WP)
- 1" Through 6"
- Bolted Body Construction
  - Certified Low Emission per API 641
  - Certified Fire Safe per API 6FA
  - NACE Option With 316 Stainless Steel Ball and Stem Available
- Rugged Locking Device Standard
- Multi-Seal Seats (See page B-5)
- Available in Low-Temp Service to -50°F



### Material Description

ITEM	PART NAME	MATERIAL (STANDARD)	MATERIAL (NACE)	LOW TEMP (NACE)
1	Handle*	Carbon Steel/ Ductile Iron	Carbon Steel/ Ductile Iron	Carbon Steel/ Ductile Iron
2	Handle Bolt	Standard Hex Bolt	Standard Hex Bolt	Standard Hex Bolt
3	Weather Guard	Polypropylene	Polypropylene	Polypropylene
4	Lock Plate Retainer	Carbon Spring Steel	Carbon Spring Steel	Carbon Spring Steel
5	Lock Plate	Carbon Steel	Carbon Steel	Carbon Steel
6	Dust Cover	Polypropylene	Polypropylene	Polypropylene
7	Stop Plate Retainer	Carbon Spring Steel	Carbon Spring Steel	Carbon Spring Steel
8	Stop Plate	Carbon Steel	Carbon Steel	Carbon Steel
9	Stem O-Ring	Buna-N	Fluorocarbon	Fluorocarbon
10	Stem Seal	TFE	TFE	TFE
11	Stem	Carbon Steel	316 Stainless Steel	316 Stainless Steel
12	Ball	Carbon Steel Nickel Chrome Plated	316 Stainless Steel	316 Stainless Steel
13	Ball Seat	Nylon 11 (TFE Optional**)	Nylon 11 (TFE Optional**)	Nylon 11 (TFE Optional**)
14	Body O-Ring	Buna-N	Fluorocarbon	Fluorocarbon
15	End Adapter	ASTM A105, Normalized	ASTM A105, Normalized	ASTM A350 LF2 CL1
16	Body	ASTM A105, Normalized	ASTM A105, Normalized	ASTM A350 LF2 CL1
17	Nuts	ASTM A194 2H	ASTM A194 2HM	ASTM A320 7M
18	Body Bolts	ASTM A193 B7	ASTM A193 B7M	ASTM A320 L7M

\* Handle is optional. Balon valves can also be operated with a standard open-end wrench.

\*\* Seat selection may result in de-rating of pressure. See Seat Pressure Ratings chart on page TD-4 for more information.

### Dimensional Data

SIZE	CATALOG NUMBER			PORT	A	B	D	E	F	G	H	M	N	LBS.	HANDLE	Cv
	STANDARD TRIM CARBON STEEL BALL & STEM	NACE TRIM 316 SS BALL & STEM	LOW TEMP 316 SS BALL & STEM													
1x1x1	1F-F13-RF	1F-F13N-RF	1F-F13NL-RF	1.0	5.0	2.00	3.37	2.37	0.50	.340	0.685	4.37	2.00	8.4	P-333-CS	-
2x1.5x2	2R-F13-RF	2R-F13N-RF	2R-F13NL-RF	1.5	7.0	3.25	5.00	3.62	0.75	.434	0.873	7.25	5.25	21.5	P-4128-CS	125
2x2x2	2F-F13-RF	2F-F13N-RF	2F-F13NL-RF	2.0	7.0	2.75	6.00	4.37	0.87	.497	0.998	10.25	6.20	28.0	P-4129-CS	-
3x2x3	3R-F13-RF	3R-F13N-RF	3R-F13NL-RF	2.0	8.0	3.00	6.00	4.37	0.87	.497	0.998	10.25	6.20	40.0	P-4129-CS	200
3x3x3	3F-F13-RF	3F-F13N-RF	3F-F13NL-RF	3.0	8.0	3.56	7.50	5.75	1.06	.747	1.373	20.00	7.75	54.0	P-4127-DI	-
4x3x4	4R-F13-RF	4R-F13N-RF	4R-F13NL-RF	3.0	9.0	4.06	7.87	5.75	1.06	.747	1.373	20.00	7.75	70.0	P-4127-DI	525
4x4x4	4F-F13-RF	4F-F13N-RF	4F-F13NL-RF	4.0	9.0	4.06	9.00	6.37	1.06	.747	1.373	20.00	8.37	80.0	P-4127-DI	-
6x4x6	6R-F13-RF	6R-F13N-RF	N/A	4.0	10.5	4.81	9.37	6.37	1.06	.747	1.373	20.00	8.37	102.0	P-4127-DI	800

Balon manufactured Actuation Mounting Hardware available. Please see page A-2 for details.  
Also available with Balon Gear Operator

**BALON**

01.2025.Rev.1

# Flanged End Connection

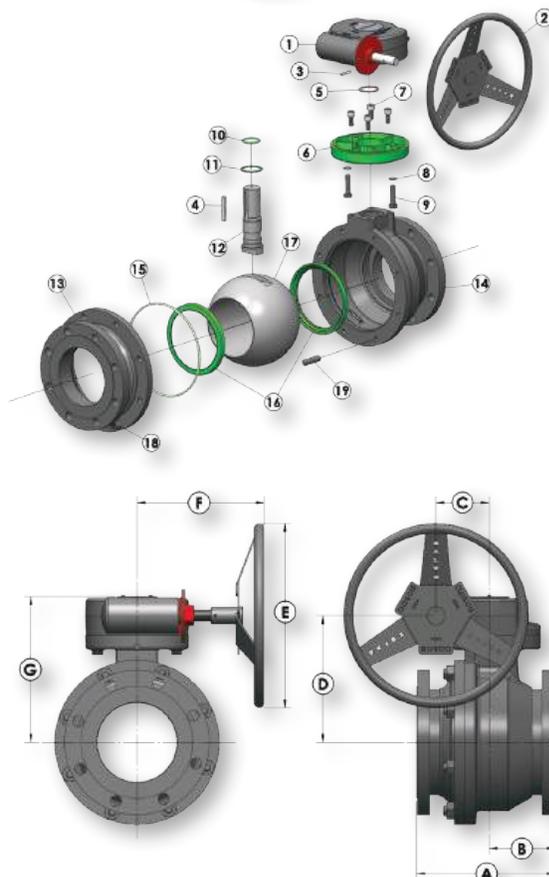
## Series F Carbon Steel

- 100% Made in USA
- ANSI Class 150 (285 PSI WP)
- 6" Through 10"
- Bolted Body Construction
  - Certified Low Emission per API 641
  - Certified Fire Safe per API 6FA
  - Exclusive Balon Gearbox (See page G-2)
  - NACE Option With 316 Stainless Steel Ball and Stem Available
- Multi-Seal Seats (See page B-5)
- Available in Low-Temp Service to -50°F



### Material Description

ITEM	PART NAME	MATERIAL (STANDARD)	MATERIAL (NACE)	LOW TEMP (NACE)
1	Gear Operator	Ductile Iron	Ductile Iron	Ductile Iron
2	Hand Wheel	Carbon Steel	Carbon Steel	Carbon Steel
3	Drive Pin	Carbon Spring Steel	Carbon Spring Steel	Carbon Spring Steel
4	Stem Key	Steel Key Stock	Steel Key Stock	Steel Key Stock
5	Stem Retainer Ring	Carbon Spring Steel	Carbon Spring Steel	Carbon Spring Steel
6	Mounting Plate	Ductile Iron	Ductile Iron	Ductile Iron
7	Mounting Plate Screws	Alloy Steel	Alloy Steel	Alloy Steel
8	Lock Washers	Carbon Steel	Carbon Steel	Carbon Steel
9	Mounting Screws	Alloy Steel	Alloy Steel	Alloy Steel
10	Stem O-Ring	Buna-N	Fluorocarbon	Fluorocarbon
11	Stem Seal	TFE	TFE	TFE
12	Stem	Carbon Steel	316 Stainless Steel	316 Stainless Steel
13	End Adapter*	ASTM A105, Normalized	ASTM A105, Normalized	ASTM A350 LF2 CL1
14	Body*	ASTM A105, Normalized	ASTM A105, Normalized	ASTM A350 LF2 CL1
15	Body O-Ring	Buna-N	Fluorocarbon	Fluorocarbon
16	Ball Seats	Nylon 11 (TFE Optional**)	Nylon 11 (TFE Optional**)	Nylon 11 (TFE Optional**)
17	Ball	Carbon Steel Nickel Chrome Plated	316 Stainless Steel	316 Stainless Steel
18	Nuts	ASTM A194 2H	ASTM A194 2HM	ASTM A320 7M
19	Body Bolts	ASTM A193 B7	ASTM A193 B7M	ASTM A320 L7M



\* Body/Adapter on 10R-F13 is ASTM A216 WCB or A352 LCC

\*\* Seat selection may result in de-rating of pressure. See Seat Pressure Ratings chart on page TD-4 for more information.

### Dimensional Data

SIZE	CATALOG NUMBER			PORT	A	B	C	D	E	F	G	LBS.	Cv
	STANDARD TRIM CARBON STEEL BALL & STEM	NACE TRIM 316 SS BALL & STEM	LOW TEMP 316 SS BALL & STEM										
6x6x6	6F-F13-RF	6F-F13N-RF	6F-F13NL-RF	6	10.5	4.50	4.00	9.75	14	9.0	11.19	230	-
6x6x6	6F-F13-RF15.5	6F-F13N-RF15.5	6F-F13NL-RF15.5	6	15.5	4.50	4.00	9.75	14	9.0	11.19	255	-
8x6x8	8R-F13-RF	8R-F13N-RF	N/A	6	11.5	5.12	4.00	9.75	14	9.0	11.19	285	2200
8x8x8	8F-F13-RF	8F-F13N-RF	8F-F13NL-RF	8	18.0	8.00	5.25	12.00	20	11.5	13.75	520	-
10x8x10	10R-F13-RF	10R-F13N-RF	N/A	8	21.0	9.00	5.25	12.00	20	11.5	13.75	580	4200

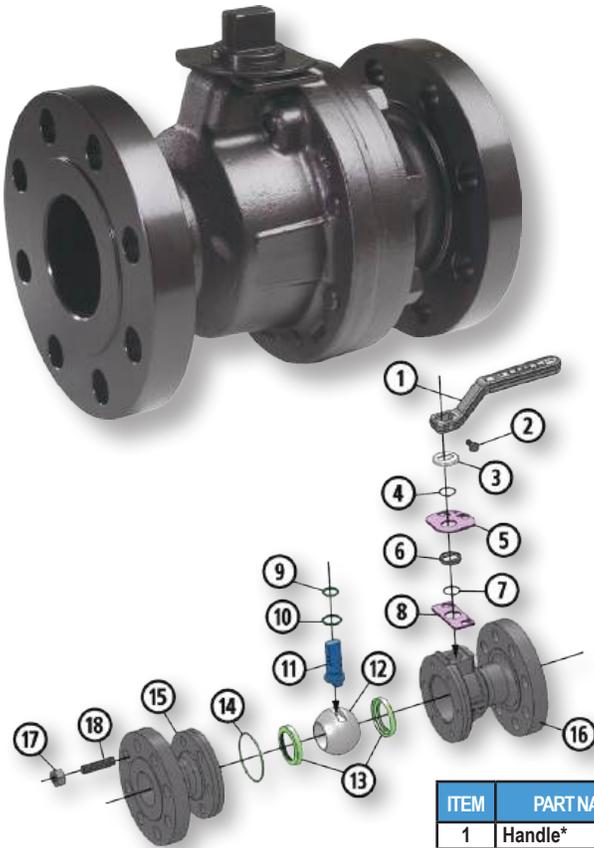
**BALON**

01.2025.Rev.1

# Flanged End Connection

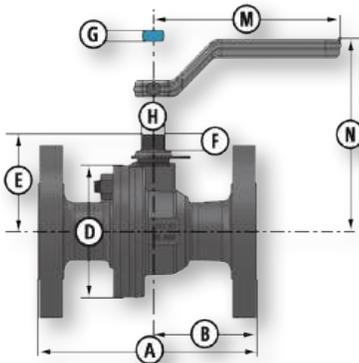
## Series F Carbon Steel

- 100% Made in USA
- ANSI Class 300 (740 PSI WP)
- 2" Through 6"
- Bolted Body Construction
  - Certified Low Emission per API 641
  - Certified Fire Safe per API 6FA
  - NACE Option With 316 Stainless Steel Ball and Stem Available
  - Rugged Locking Device Standard
  - Multi-Seal Seats (See page B-5)
  - Available in Low-Temp Service to -50°F



### Material Description

ITEM	PART NAME	MATERIAL (STANDARD)	MATERIAL (NACE)	LOW TEMP (NACE)
1	Handle*	Carbon Steel/Ductile Iron	Carbon Steel/Ductile Iron	Carbon Steel/Ductile Iron
2	Handle Bolt	Standard Hex Bolt	Standard Hex Bolt	Standard Hex Bolt
3	Weather Guard	Polypropylene	Polypropylene	Polypropylene
4	Lock Plate Retainer	Carbon Spring Steel	Carbon Spring Steel	Carbon Spring Steel
5	Lock Plate	Carbon Steel	Carbon Steel	Carbon Steel
6	Dust Cover	Polypropylene	Polypropylene	Polypropylene
7	Stop Plate Retainer	Carbon Spring Steel	Carbon Spring Steel	Carbon Spring Steel
8	Stop Plate	Carbon Steel	Carbon Steel	Carbon Steel
9	Stem O-Ring	Buna-N	Fluorocarbon	Fluorocarbon
10	Stem Seal	TFE	TFE	TFE
11	Stem	Carbon Steel	316 Stainless Steel	316 Stainless Steel
12	Ball	Carbon Steel Nickel Chrome Plated	316 Stainless Steel	316 Stainless Steel
13	Ball Seat	Nylon 11 (TFE Optional**)	Nylon 11 (TFE Optional**)	Nylon 11 (TFE Optional**)
14	Body O-Ring	Buna-N	Fluorocarbon	Fluorocarbon
15	End Adapter	ASTM A105, Normalized	ASTM A105, Normalized	ASTM A350 LF2 CL1
16	Body	ASTM A105, Normalized	ASTM A105, Normalized	ASTM A350 LF2 CL1
17	Nuts	ASTM A194 2H	ASTM A194 2HM	ASTM A320 7M
18	Body Bolts	ASTM A193 B7	ASTM A193 B7M	ASTM A320 L7M



\* Handle is optional. Balon valves can also be operated with a standard open-end wrench.

\*\* Seat selection may result in de-rating of pressure. See Seat Pressure Ratings chart on page TD-4 for more information.

### Dimensional Data

SIZE	CATALOG NUMBER			PORT	A	B	D	E	F	G	H	M	N	LBS.	HANDLE	Cv
	STANDARD TRIM CARBON STEEL BALL & STEM	NACE TRIM 316 SS BALL & STEM	LOW TEMP 316 SS BALL & STEM													
2x1.5x2	2R-F33-RF	2R-F33N-RF	2R-F33NL-RF	1.5	8.50	4.00	5.00	3.62	0.75	.434	0.873	7.25	5.25	29	P-4128-CS	125
2x2x2	2F-F33-RF	2F-F33N-RF	2F-F33NL-RF	2.0	8.50	3.75	6.50	4.37	0.87	.497	0.998	10.25	6.20	36	P-4129-CS	-
3x2x3	3R-F33-RF	3R-F33N-RF	3R-F33NL-RF	2.0	11.12	4.56	6.50	4.37	0.87	.497	0.998	10.25	6.20	60	P-4129-CS	200
3x3x3	3F-F33-RF	3F-F33N-RF	3F-F33NL-RF	3.0	11.12	5.12	8.00	5.75	1.06	.747	1.373	20.00	7.75	76	P-4127-DI	-
4x3x4	4R-F33-RF	4R-F33N-RF	4R-F33NL-RF	3.0	12.00	5.56	8.00	5.75	1.06	.747	1.373	20.00	7.75	98	P-4127-DI	525
4x4x4	4F-F33-RF	4F-F33N-RF	4F-F33NL-RF	4.0	12.00	5.50	9.37	6.37	1.06	.747	1.373	20.00	8.37	130	P-4127-DI	-
6x4x6	6R-F33-RF	6R-F33N-RF	N/A	4.0	15.87	7.44	10.00	6.37	1.06	.747	1.373	20.00	8.37	196	P-4127-DI	800

Balon manufactured Actuation Mounting Hardware available. Please see page A-2 for details.  
Also available with Balon Gear Operator.

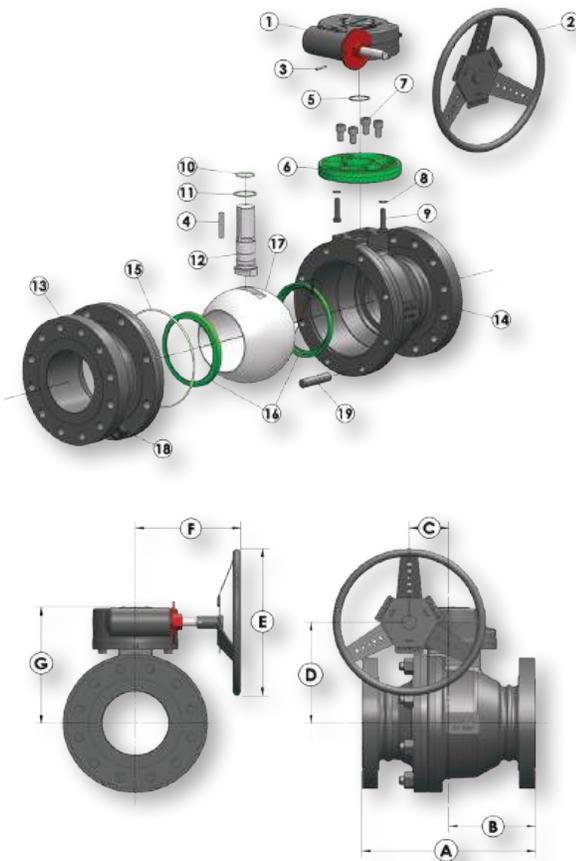
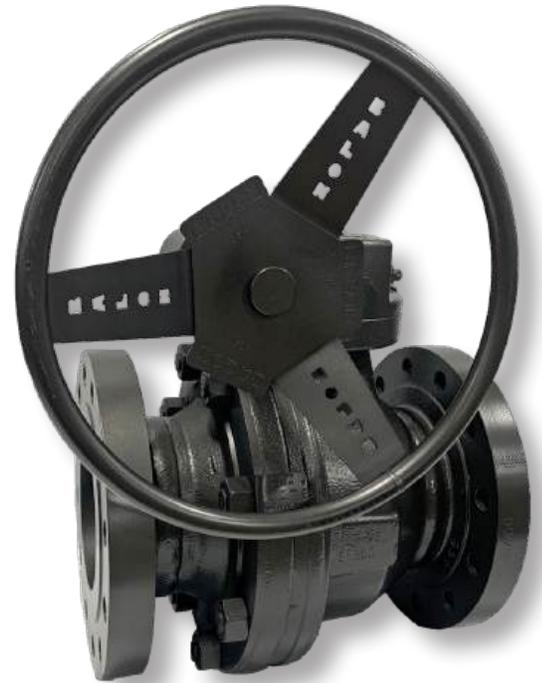
**BALON**

01.2025.Rev.1

# Flanged End Connection

## Series F Carbon Steel

- 100% Made in USA
- ANSI Class 300 (740 PSI WP)
- 6" Through 8"
- Bolted Body Construction
  - Certified Low Emission per API 641
  - Certified Fire Safe per API 6FA
  - Exclusive Balon Gearbox (See page G-2)
  - NACE Option With 316 Stainless Steel Ball and Stem Available
- Multi-Seal Seats (See page B-5)
- Available in Low-Temp Service to -50°F



### Material Description

ITEM	PART NAME	MATERIAL (STANDARD)	MATERIAL (NACE)	LOW TEMP (NACE)
1	Gear Operator	Ductile Iron	Ductile Iron	Ductile Iron
2	Hand Wheel	Carbon Steel	Carbon Steel	Carbon Steel
3	Drive Pin	Carbon Spring Steel	Carbon Spring Steel	Carbon Spring Steel
4	Stem Key	Steel Key Stock	Steel Key Stock	Steel Key Stock
5	Stem Retainer Ring	Carbon Spring Steel	Carbon Spring Steel	Carbon Spring Steel
6	Mounting Plate	Ductile Iron	Ductile Iron	Ductile Iron
7	Mounting Plate Screws	Alloy Steel	Alloy Steel	Alloy Steel
8	Lock Washers	Carbon Steel	Carbon Steel	Carbon Steel
9	Mounting Screws	Alloy Steel	Alloy Steel	Alloy Steel
10	Stem O-Ring	Buna-N	Fluorocarbon	Fluorocarbon
11	Stem Seal	TFE	TFE	TFE
12	Stem	Carbon Steel	316 Stainless Steel	316 Stainless Steel
13	End Adapter	ASTM A105, Normalized	ASTM A105, Normalized	ASTM A350 LF2 CL1
14	Body	ASTM A105, Normalized	ASTM A105, Normalized	ASTM A350 LF2 CL1
15	Body O-Ring	Buna-N	Fluorocarbon	Fluorocarbon
16	Ball Seats	Nylon 11 (TFE Optional*)	Nylon 11 (TFE Optional*)	Nylon 11 (TFE Optional*)
17	Ball	Carbon Steel Nickel Chrome Plated	316 Stainless Steel	316 Stainless Steel
18	Nuts	ASTM A194 2H	ASTM A194 2HM	ASTM A320 7M
19	Body Bolts	ASTM A193 B7	ASTM A193 B7M	ASTM A320 L7M

\* Seat selection may result in de-rating of pressure. See Seat Pressure Ratings chart on page TD-4 for more information.

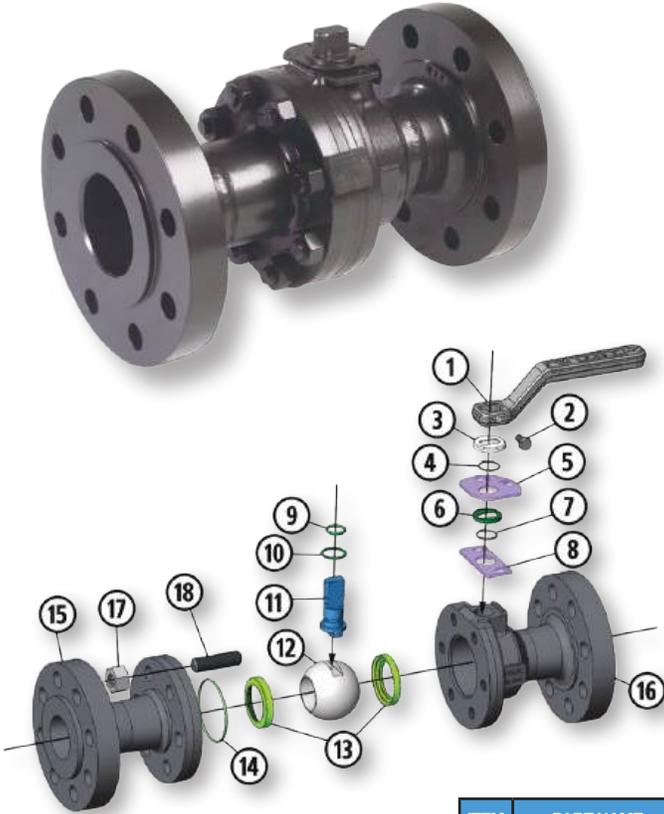
### Dimensional Data

SIZE	CATALOG NUMBER			PORT	A	B	C	D	E	F	G	LBS.	Cv
	STANDARD TRIM CARBON STEEL BALL & STEM	NACE TRIM 316 SS BALL & STEM	LOW TEMP 316 SS BALL & STEM										
6x6x6	6F-F33-RF	6F-F33N-RF	6F-F33NL-RF	6	15.87	7.38	4	9.75	14	9	11.19	307	-
8x6x8	8R-F33-RF	8R-F33N-RF	N/A	6	16.50	7.69	4	9.75	14	9	11.19	409	2200

# Flanged End Connection

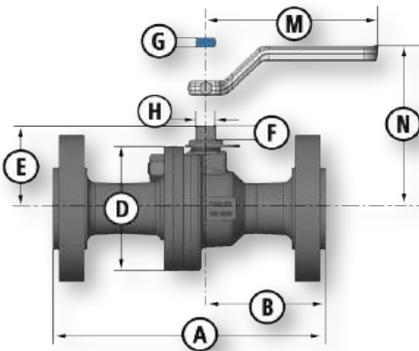
## Series F Carbon Steel

- 100% Made in USA
- ANSI Class 600 (1480 PSI WP)
- 1" Through 4"
- Bolted Body Construction
  - Certified Low Emission per API 641
  - Certified Fire Safe per API 6FA
  - NACE Option With 316 Stainless Steel Ball and Stem Available
- Rugged Locking Device Standard
- Multi-Seal Seats (See page B-5)
- Available in Low-Temp Service to -50°F



## Material Description

ITEM	PART NAME	MATERIAL (STANDARD)	MATERIAL (NACE)	LOW TEMP (NACE)
1	Handle*	Carbon Steel/Ductile Iron	Carbon Steel/Ductile Iron	Carbon Steel/Ductile Iron
2	Handle Bolt	Standard Hex Bolt	Standard Hex Bolt	Standard Hex Bolt
3	Weather Guard	Polypropylene	Polypropylene	Polypropylene
4	Lock Plate Retainer	Carbon Spring Steel	Carbon Spring Steel	Carbon Spring Steel
5	Lock Plate	Carbon Steel	Carbon Steel	Carbon Steel
6	Dust Cover	Polypropylene	Polypropylene	Polypropylene
7	Stop Plate Retainer	Carbon Spring Steel	Carbon Spring Steel	Carbon Spring Steel
8	Stop Plate	Carbon Steel	Carbon Steel	Carbon Steel
9	Stem O-Ring	Buna-N	Fluorocarbon	Fluorocarbon
10	Stem Seal	TFE	TFE	TFE
11	Stem	Carbon Steel	316 Stainless Steel	316 Stainless Steel
12	Ball	Carbon Steel	316 Stainless Steel	316 Stainless Steel
		Nickel Chrome Plated		
13	Ball Seat	Nylon 11 (TFE Optional**)	Nylon 11 (TFE Optional**)	Nylon 11 (TFE Optional**)
14	Body O-Ring	Buna-N	Fluorocarbon	Fluorocarbon
15	End Adapter	ASTM A105, Normalized	ASTM A105, Normalized	ASTM A350 LF2 CL1
16	Body	ASTM A105, Normalized	ASTM A105, Normalized	ASTM A350 LF2 CL1
17	Nuts	ASTM A194 2H	ASTM A194 2HM	ASTM A320 7M
18	Body Bolts	ASTM A193 B7	ASTM A193 B7M	ASTM A320 L7M



\* Handle is optional. Balon valves can also be operated with a standard open-end wrench.

\*\* Seat selection may result in de-rating of pressure. See Seat Pressure Ratings chart on page TD-4 for more information.

## Dimensional Data

SIZE	CATALOG NUMBER			PORT	A		B		D	E	F	G	H	M	N	LBS.	HANDLE	Cv
	STANDARD TRIM CARBON STEEL BALL & STEM	NACE TRIM 316 SS BALL & STEM	LOW TEMP 316 SS BALL & STEM		RF	RTJ	RF	RTJ										
	1x1x1	1F-F63	1F-F63N		1F-F63NL-RF	1.0	8.50	-										
2x1.5x2	2R-F63	2R-F63N	2R-F63NL-RF	1.5	11.5	-	5.06	-	5.37	3.62	0.75	.434	0.873	7.25	5.25	37.00	P-4128-CS	125
2x2x2	2F-F63	2F-F63N	2F-F63NL-RF	2.0	11.5	11.62	4.75	4.81	6.50	4.37	0.87	.497	0.998	10.25	6.20	48.00	P-4129-CS	-
3x2x3	3R-F63	3R-F63N	3R-F63NL-RF	2.0	14.0	-	5.75	-	6.62	4.37	0.87	.497	0.998	10.25	6.75	69.00	P-4129-CS	200
3x3x3	3F-F63	3F-F63N	3F-F63NL-RF	3.0	14.0	14.12	5.50	5.56	8.00	5.75	1.06	.747	1.373	20.00	7.75	90.00	P-4127-DI	-
4x3x4	4R-F63	4R-F63N	4R-F63NL-RF	3.0	17.0	-	6.87	-	8.62	5.75	1.06	.747	1.373	20.00	7.75	154.00	P-4127-DI	525

Balon manufactured Actuation Mounting Hardware available. Please see page A-2 for details.  
Also available with Balon Gear Operator.

**BALON**

01.2025.Rev.1

# Flanged End Connection

## Series F Carbon Steel

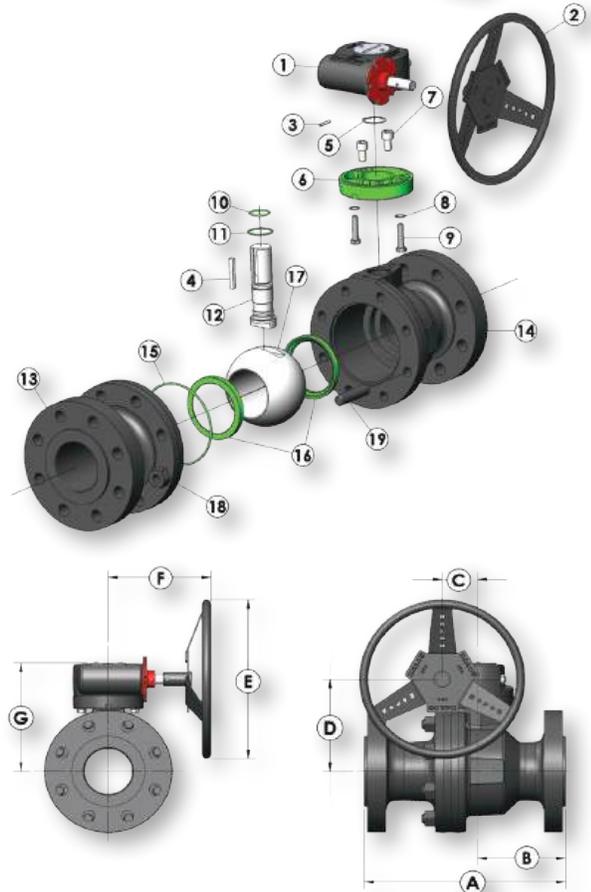
- 100% Made in USA
- ANSI Class 600 (1480 PSI WP)
- 4" Through 8"
- Bolted Body Construction
  - Certified Low Emission per API 641
  - Certified Fire Safe per API 6FA
  - Exclusive Balon Gearbox (See page G-2)
  - NACE Option With 316 Stainless Steel Ball and Stem Available
- Multi-Seal Seats (See page B-5)
- Available in Low-Temp Service to -50°F



### Material Description

ITEM	PART NAME	MATERIAL (STANDARD)	MATERIAL (NACE)	LOW TEMP (NACE)
1	Gear Operator	Ductile Iron	Ductile Iron	Ductile Iron
2	Hand Wheel	Carbon Steel	Carbon Steel	Carbon Steel
3	Drive Pin	Carbon Spring Steel	Carbon Spring Steel	Carbon Spring Steel
4	Stem Key	Steel Key Stock	Steel Key Stock	Steel Key Stock
5	Stem Retainer Ring	Carbon Spring Steel	Carbon Spring Steel	Carbon Spring Steel
6	Mounting Plate	Ductile Iron	Ductile Iron	Ductile Iron
7	Mounting Plate Screws	Alloy Steel	Alloy Steel	Alloy Steel
8	Lock Washers	Carbon Steel	Carbon Steel	Carbon Steel
9	Mounting Screws	Alloy Steel	Alloy Steel	Alloy Steel
10	Stem O-Ring	Buna-N	Fluorocarbon	Fluorocarbon
11	Stem Seal	TFE	TFE	TFE
12	Stem	Carbon Steel	316 Stainless Steel	316 Stainless Steel
13	End Adapter	ASTM A105, Normalized	ASTM A105, Normalized	ASTM A350 LF2 CL1
14	Body	ASTM A105, Normalized	ASTM A105, Normalized	ASTM A350 LF2 CL1
15	Body O-Ring	Buna-N	Fluorocarbon	Fluorocarbon
16	Ball Seats	Nylon 11 (TFE Optional*)	Nylon 11 (TFE Optional*)	Nylon 11 (TFE Optional*)
17	Ball	Carbon Steel Nickel Chrome Plated	316 Stainless Steel	316 Stainless Steel
18	Nuts	ASTM A194 2H	ASTM A194 2HM	ASTM A320 7M
19	Body Bolts	ASTM A193 B7	ASTM A193 B7M	ASTM A320 L7M

\* Seat selection may result in de-rating of pressure. See Seat Pressure Ratings chart on page TD-4 for more information.



### Dimensional Data

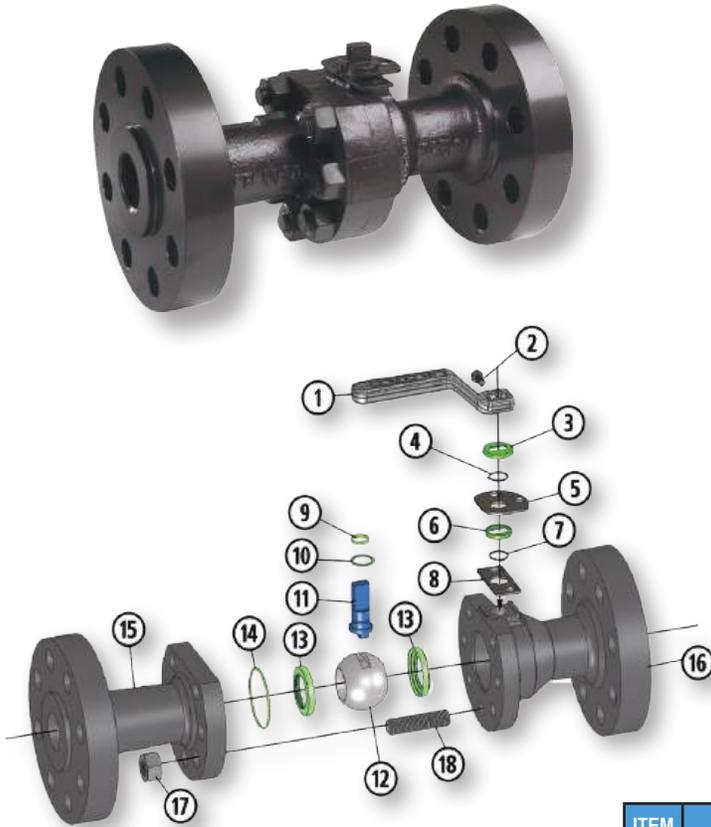
SIZE	CATALOG NUMBER			PORT	A		B		C	D	E	F	G	LBS.	Cv
	STANDARD TRIM CARBON STEEL BALL & STEM	NACE TRIM 316 SS BALL & STEM	LOWTEMP 316SS BALL & STEM		RF	RTJ	RF	RTJ							
	4x4x4	4F-F63	4F-F63N		4F-F63NL-RF	4	17	17.12							
6x4x6	6R-F63	6R-F63N	6R-F63NL-RF	4	22	-	9.88	-	3	8.19	14	9	9.69	340	800
6x6x6	6F-F63	6F-F63N	6F-F63NL-RF	6	22	22.12	8.62	8.68	4	9.75	20	11	11.19	440	-
8x6x8	8R-F63	8R-F63N	8R-F63NL-RF	6	26	-	10.62	-	4	9.75	20	11	11.19	570	2200



# Flanged End Connection

## Series F Carbon Steel

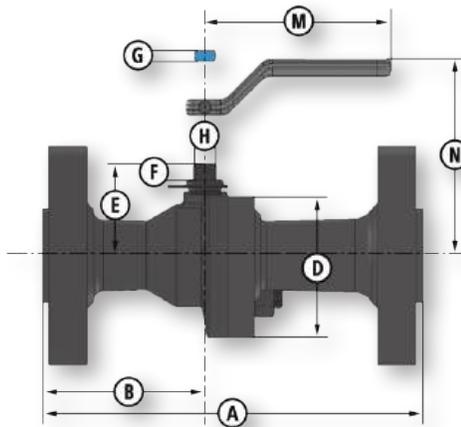
- 100% Made in USA
- ANSI Class 900 (2220 PSI WP)
- ANSI Class 1500 (3705 PSI WP)
- 2"
- Bolted Body Construction
  - Certified Low Emission per API 641
  - Certified Fire Safe per API 6FA
  - NACE Option With 316 Stainless Steel Ball and Stem Available
  - Rugged Locking Device Standard
  - Multi-Seal Seats (See page B-5)



## Material Description

ITEM	PART NAME	MATERIAL (STANDARD)	MATERIAL (NACE)
1	Handle*	Carbon Steel	Carbon Steel
2	Handle Bolt	Standard Hex Bolt	Standard Hex Bolt
3	Weather Guard	Polypropylene	Polypropylene
4	Lock Plate Retainer	Carbon Spring Steel	Carbon Spring Steel
5	Lock Plate	Carbon Steel	Carbon Steel
6	Dust Cover	Polypropylene	Polypropylene
7	Stop Plate Retainer	Carbon Spring Steel	Carbon Spring Steel
8	Stop Plate	Carbon Steel	Carbon Steel
9	Stem O-Ring	Buna-N	Fluorocarbon
10	Stem Seal	TFE	TFE
11	Stem	Carbon Steel	316 Stainless Steel
12	Ball	Carbon Steel Nickel Chrome Plated	316 Stainless Steel
13	Ball Seat	Nylon 11/Acetal	Nylon 11/Acetal
14	Body O-Ring	Buna-N	Fluorocarbon
15	End Adapter	ASTM A105, Normalized	ASTM A105, Normalized
16	Body	ASTM A105, Normalized	ASTMA105, Normalized
17	Nuts	ASTM A194 2H	ASTM A194 2HM
18	Body Bolts	ASTM A193 B7	ASTM A193 B7M

\* Handle is optional. Balon valves can also be operated with a standard open-end wrench.



## Dimensional Data

SIZE	CATALOG NUMBER		PORT	A		B		D	E	F	G	H	M	N	LBS.	HANDLE	Cv
	STANDARD TRIM CARBON STEEL BALL & STEM	NACE TRIM 316 SS BALL & STEM		RF	RTJ	RF	RTJ										
2x1.5x2	2R-F93	2R-F93N	1.5	14.50	14.62	6.31	6.37	6.25	3.62	.75	.434	.873	7.25	5.25	75	P-4128-CS	125
2x2x2	2F-F93	2F-F93N	2.0	14.50	14.62	6.00	6.06	7.00	4.37	.87	.497	.998	10.25	6.20	81	P-4129-CS	-
2x1.5x2	2R-F03	2R-F03N	1.5	14.5	14.62	6.31	6.37	6.25	3.62	.75	.434	.873	7.25	5.25	75	P-4128-CS	125

Balon manufactured Actuation Mounting Hardware available. Please see page A-2 for details.  
Also available with Balon Gear Operator.

**BALON**

01.2025.Rev.1

# Flanged End Connection

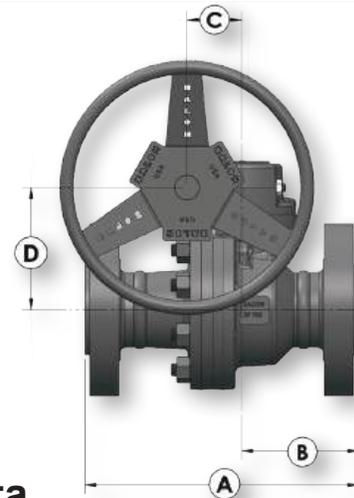
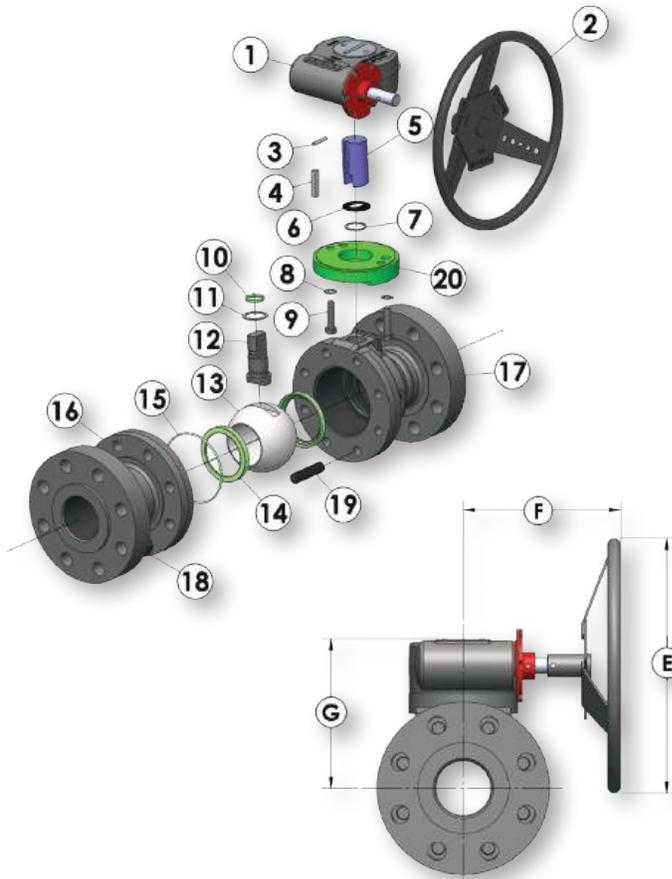
## Series F Carbon Steel

- 100% Made in USA
- ANSI Class 900 (2220 PSI WP)
- ANSI Class 1500 (3705 PSI WP)
- 3"
- Bolted Body Construction
  - Certified Low Emission per API 641
  - Certified Fire Safe per API 6FA
  - Exclusive Balon Gearbox (See page G-2)
  - NACE Option With 316 Stainless Steel Ball and Stem Available
  - Rugged Locking Device Standard
  - Multi-Seal Seats (See page B-5)



### Material Description

ITEM	PART NAME	MATERIAL (STANDARD)	MATERIAL (NACE)
1	Gear Operator	Ductile Iron	Ductile Iron
2	Hand Wheel	Carbon Steel	Carbon Steel
3	Drive Pin	Carbon Steel	Carbon Steel
4	Stem Key	Steel Key Stock	Steel Key Stock
5	Stem Drive Adapter	Carbon Steel	Carbon Steel
6	Weather Guard	Polypropylene	Polypropylene
7	Snap-Ring	Carbon Spring Steel	Carbon Spring Steel
8	Lock Washers	Carbon Steel	Carbon Steel
9	Mounting Screws	Alloy Steel	Alloy Steel
10	Stem O-Ring	Buna-N	Fluorocarbon
11	Stem Seal	TFE	TFE
12	Stem	Carbon Steel	316 Stainless Steel
13	Ball	Carbon Steel Nickel Chrome Plated	316 Stainless Steel
14	Ball Seats	Acetal	Acetal
15	Body O-Ring	Buna-N	Fluorocarbon
16	End Adapter	ASTM A105, Normalized	ASTMA105, Normalized
17	Body	ASTM A105, Normalized	ASTMA105, Normalized
18	Nuts	ASTM A194 2H	ASTM A194 2HM
19	Body Bolts	ASTM A193 B7	ASTM A193 B7M



### Dimensional Data

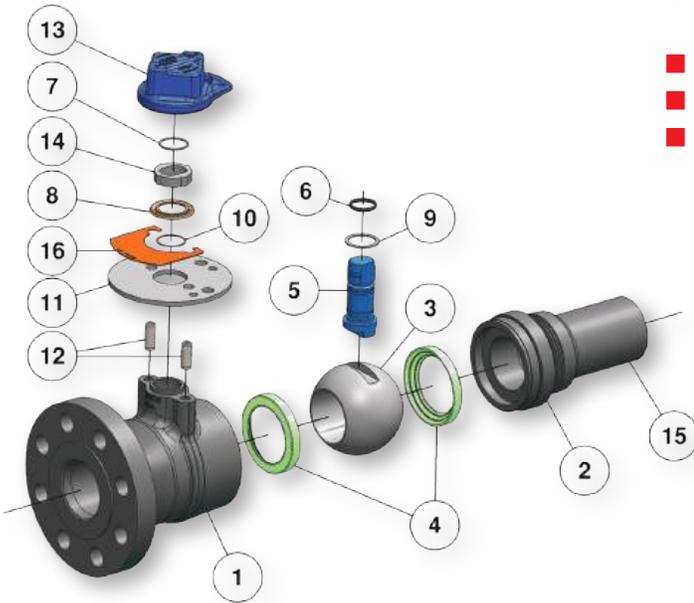
SIZE	CATALOG NUMBER		PORT	A	B	C	D	E	F	G	LBS.	Cv
	STANDARD TRIM CARBON STEEL BALL & STEM	NACE TRIM 316 SS BALL & STEM		RF	RF							
3x3x3	3F-F93	3F-F93N	3	15	6.38	3	6.75	14	9	8.12	183	-
3x2.5x3	3R-F03	3R-F03N	2.5	18.5	7.90	3	10	14	9	11.5	219	280

# Weld X Flange Connection

## Series US Weld X Flange Carbon Steel



- 100% Made in USA
- ANSI Class 150 (285 PSI WP)
- ANSI Class 300 (740 PSI WP)
- 2" Through 6"
- Welded Body Construction
  - Certified Low Emission per API 641
  - Fire Safe Design
  - Meets/Exceeds-ASME B16.34
  - Rugged Double Stops
  - Heat Dissipating Fins for Protection of Seats and Seals During Welding
- Each Valve Marked With A Unique Identification Number
- True Full Port for Hot Tap Service
- 316 Stainless Steel Stem Standard
- Multi-Seal Seats (See page B-5)



\* Note: Valve is fully welded and is not field repairable.

### Material Description

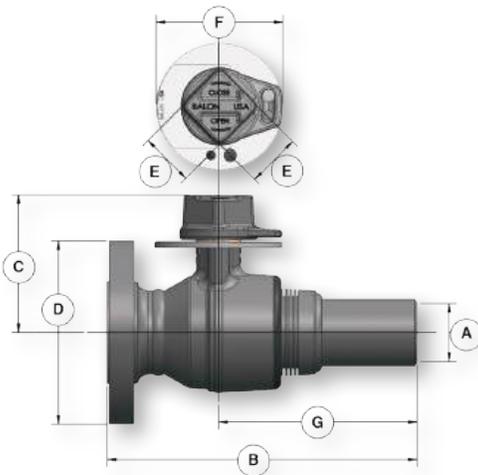
ITEM	PART NAME	MATERIAL (STANDARD)
1	Body	ASTM A105, Normalized
2	Adapter	ASTM A105, Normalized
3	Ball	Carbon Steel - Nickel Chrome Plated
4	Seats	Nylon 11
5	Stem	316 Stainless Steel
6	Stem O-Ring	Buna-N
7	Snap Ring	Carbon Steel
8	Weather Seal	Nylon 11
9	Stem Seal	TFE
10	Snap Ring	Carbon Steel
11	Lock Plate	Carbon Steel
12	Stop Pin	Stainless Steel
13	Drive Nut - 2" Square	Ductile Iron/Carbon Steel
14	Stem Connector	Carbon Steel
15	Pipe	ASTM A106 Grade C*
16	Tag	Stainless Steel

\* Also meets ASTM A106 Grade B

### Dimensional Data

SIZE	CATALOG	PORT/A	WP	B	C	D	E	F	G	LBS.	Cv
2x1.5x2	2R-US13-WRF	1.5	285	10.50	4.5	6.00	2	4.50	6.9	18.5	148
2x1.5x2	2R-US33-WRF	1.5	740	10.60	4.5	6.50	2	4.50	6.9	20.1	148
2x2x2	2F-US13-WRF	2.0	285	10.90	4.9	6.00	2	4.50	7.0	22.5	-
2x2x2	2F-US33-WRF	2.0	740	11.00	4.9	6.50	2	4.50	7.0	24.0	-
3x3x3	3F-US13-WRF	3.0	285	11.70	5.9	7.50	2	4.50	7.0	47.0	-
3x3x3	3F-US33-WRF	3.0	740	11.90	5.9	8.25	2	4.50	7.0	51.2	-
4x3x4	4R-US13-WRF	3.0	285	12.20	5.9	9.00	2	4.50	7.4	54.2	662
4x3x4	4R-US33-WRF	3.0	740	12.50	5.9	10.00	2	4.50	7.4	63.5	662
4x4x4	4F-US13-WRF	4.0	285	12.80	6.6	9.00	2	4.50	7.6	71.5	-
4x4x4	4F-US33-WRF	4.0	740	13.10	6.6	10.00	2	4.50	7.6	80.7	-
6x6x6	6F-US13-WRF*	6.0	285	16.74	12.4	11.00	2	5.25	9.0	138.0	-
6x6x6	6F-US33-WRF*	6.0	740	16.93	12.4	12.50	2	5.25	9.0	175.0	-

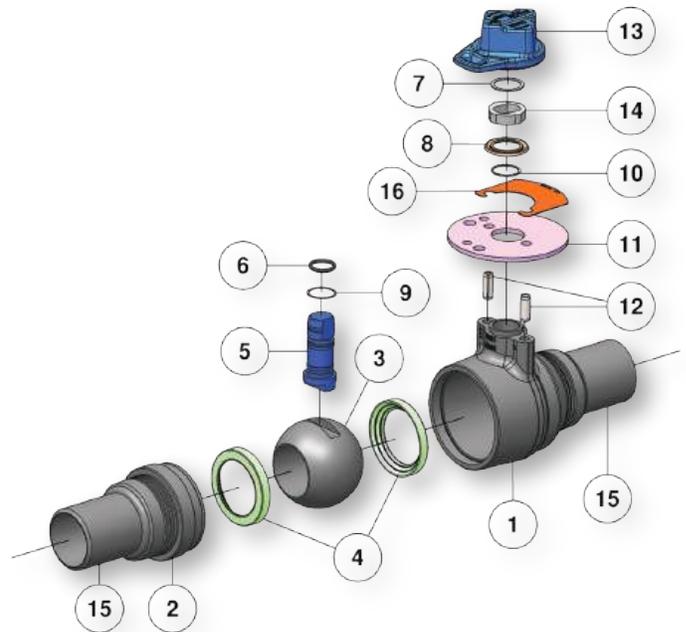
\* Also available with Gear Operator.  
Available with flat face flange in certain sizes.  
Please contact factory for additional information



# Weld X Weld Connection

## Series US Weld X Weld Carbon Steel

- 100% Made in USA
- ANSI Class 150 (285 PSI WP)
- ANSI Class 300 (740 PSI WP)
- 3/4" Through 8"
- Welded Body Construction
  - Certified Low Emission per API 641
  - Fire Safe Design
  - Meets/Exceeds-ASME B16.34
  - Rugged Double Stops
  - Heat Dissipating Fins for Protection of Seats and Seals During Welding
  - Each Valve Marked With A Unique Identification Number
  - True Full Port for Hot Tap Service
  - 316 Stainless Steel Stem Standard
  - Multi-Seal Seats (See page B-5)



Note: Valve is fully welded and is not field repairable.

### Material Description

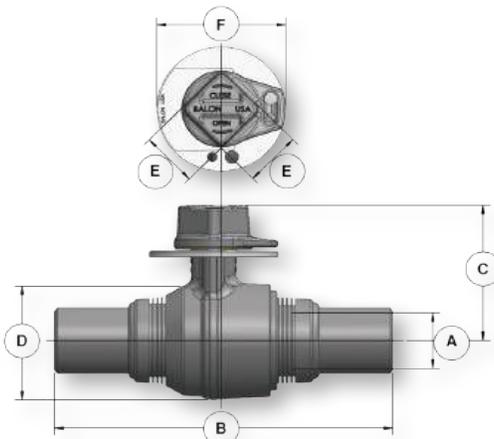
ITEM	PART NAME	MATERIAL (STANDARD)
1	Body	ASTM A105, Normalized
2	Adapter	ASTM A105, Normalized
3	Ball	Carbon Steel - Nickel Chrome Plated
4	Seats	Nylon 11
5	Stem	316 Stainless Steel
6	Stem O-Ring	Buna-N
7	Snap Ring	Carbon Steel
8	Weather Seal	Nylon 11
9	Stem Seal	TFE
10	Snap Ring	Carbon Steel
11	Lock Plate	Carbon Steel
12	Stop Pin	Stainless Steel
13	Drive Nut - 2" Square	Ductile Iron/Carbon Steel
14	Stem Connector	Carbon Steel
15	Pipe	ASTM A106 Grade C*
16	Tag	Stainless Steel

\*Also meets ASTM A106 Grade B

### Dimensional Data

SIZE	CATALOG	PORT/A	WP	B	C	D	E	F	LBS.	Cv
.75x.75x.75	3/4F-US13-BW	0.75	285	9.0	3.1	1.82	0.47	4.50	3.10	-
.75x.75x.75	3/4F-US33-BW	0.75	740	9.0	3.1	1.82	0.47	4.50	3.10	-
1x.75x1	1R-US13-BW	0.75	285	9.0	3.1	1.82	0.47	4.50	3.65	30
1x.75x1	1R-US33-BW	0.75	740	9.0	3.1	1.82	0.47	4.50	3.65	30
2x1.5x2	2R-US13-BW	1.50	285	11.8	4.5	3.48	2.00	4.50	14.00	148
2x1.5x2	2R-US33-BW	1.50	740	11.8	4.5	3.48	2.00	4.50	14.00	148
2x2x2	2F-US13-BW	2.00	285	11.8	4.9	4.28	2.00	4.50	18.00	-
2x2x2	2F-US33-BW	2.00	740	11.8	4.9	4.28	2.00	4.50	18.00	-
3x3x3	3F-US13-BW	3.00	285	11.8	5.9	6.05	2.00	4.50	38.00	-
3x3x3	3F-US33-BW	3.00	740	11.8	5.9	6.05	2.00	4.50	38.00	-
4x3x4	4R-US13-BW	3.00	285	12.8	5.9	6.05	2.00	4.50	41.00	662
4x3x4	4R-US33-BW	3.00	740	12.8	5.9	6.05	2.00	4.50	41.00	662
4x4x4	4F-US13-BW	4.00	285	12.8	6.6	7.50	2.00	4.50	58.00	-
4x4x4	4F-US33-BW	4.00	740	12.8	6.6	7.50	2.00	4.50	58.00	-
6x4x6	6R-US13-BW	4.00	285	15.5	6.6	7.50	2.00	4.50	63.00	800
6x4x6	6R-US33-BW	4.00	740	15.5	6.6	7.50	2.00	4.50	63.00	800
6x6x6	6F-US13-BW*	6.00	285	18.0	12.4	10.47	2.00	5.25	174.00	-
6x6x6	6F-US33-BW*	6.00	740	18.0	12.4	10.47	2.00	5.25	174.00	-
8x6x8	8R-US13-BW*	6.00	285	20.5	12.4	10.47	2.00	5.25	184.00	2200
8x6x8	8R-US33-BW*	6.00	740	20.5	12.4	10.47	2.00	5.25	184.00	2200

\* Also available with Gear Operator.



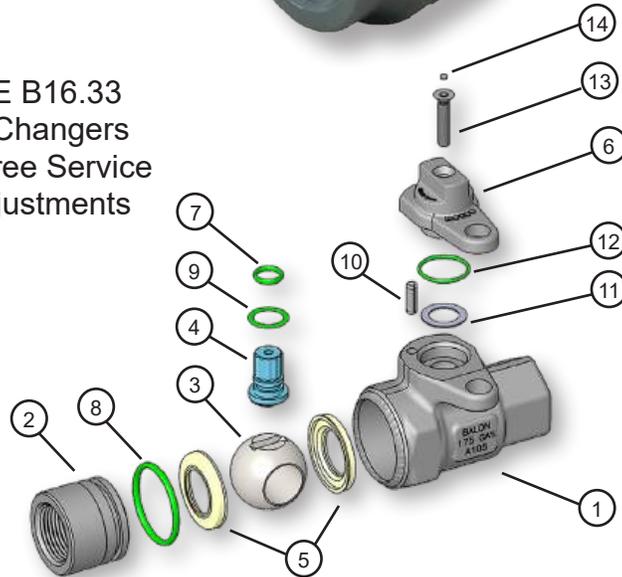
**BALON**

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# Threaded End Connection

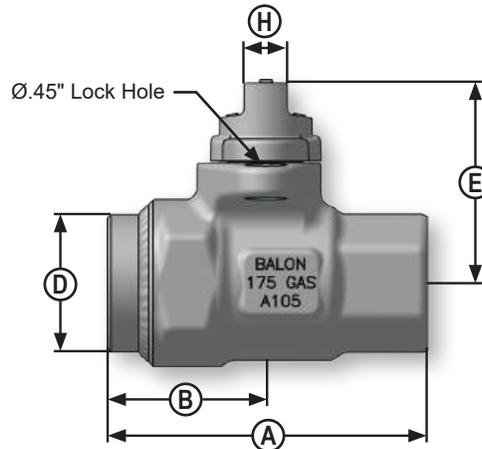
## Series US Carbon Steel Meter Valve

- 100% Made in USA
- 175 PSI WP
- 500 PSI WP
- 3/4" and 1"
- **Welded Body Construction**
  - Certified Low Emission Per API 641
  - Fire Safe Design
  - Individually Tested and Stamped to ASME B16.33
  - Full Port to Accommodate Industry Stop Changers
  - Designed for Decades of Maintenance Free Service
  - Does Not Require Grease or Periodic Adjustments
- Forged Steel Body
- Fully Welded Construction
- Redundant Seals Throughout
- Tamper Resistant Lock Nut
- Multi-Seal Seats (See page B-5)



### Material Description

ITEM	PART NAME	MATERIAL NACE (STANDARD)
1	Body	ASTM A105, Normalized
2	Adapter	ASTM A108 1018
3	Ball	Carbon Steel Nickel Chrome Plated
4	Stem	316 Stainless Steel
5	Seat	Polyketone
6	Drive Nut	Zinc Alloy
7	O-Ring	Buna-N
8	O-Ring	Fluorocarbon
9	O-Ring	Buna-N
10	Stop Pin	316 Stainless Steel
11	Stem Washer	Acetal
12	O-Ring	Buna-N
13	Screw	Stainless Steel
14	Tamper Resistant Device	Stainless Steel



### Dimensional Data

SIZE	CATALOG NUMBER	PORT	WP	A	B	D	E	H	LBS.
	STANDARD TRIM BALL & STEM*								
.75x.75x.75	3/4F-US175-FF	.75	175	3.51	1.71	1.82	2.10	0.48	1.7
.75x.75x.75	3/4F-US500-FF	.75	500	3.51	1.71	1.82	2.10	0.48	1.7
1x1x1	1F-US175-FF	1	175	3.90	1.94	1.86	2.40	0.48	2.7
1x1x1	1F-US500-FF	1	500	3.90	1.94	1.86	2.40	0.48	2.7

\* Also available with 1/8" NPT test port.

# Insulated Union Connection

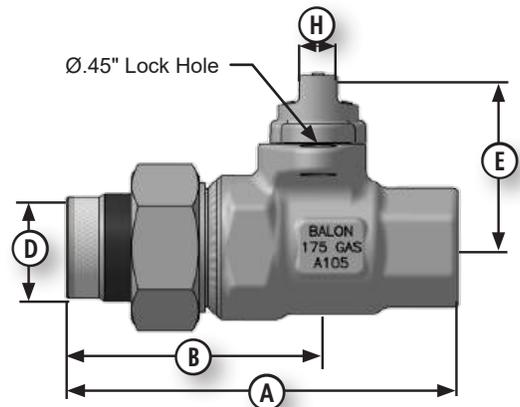
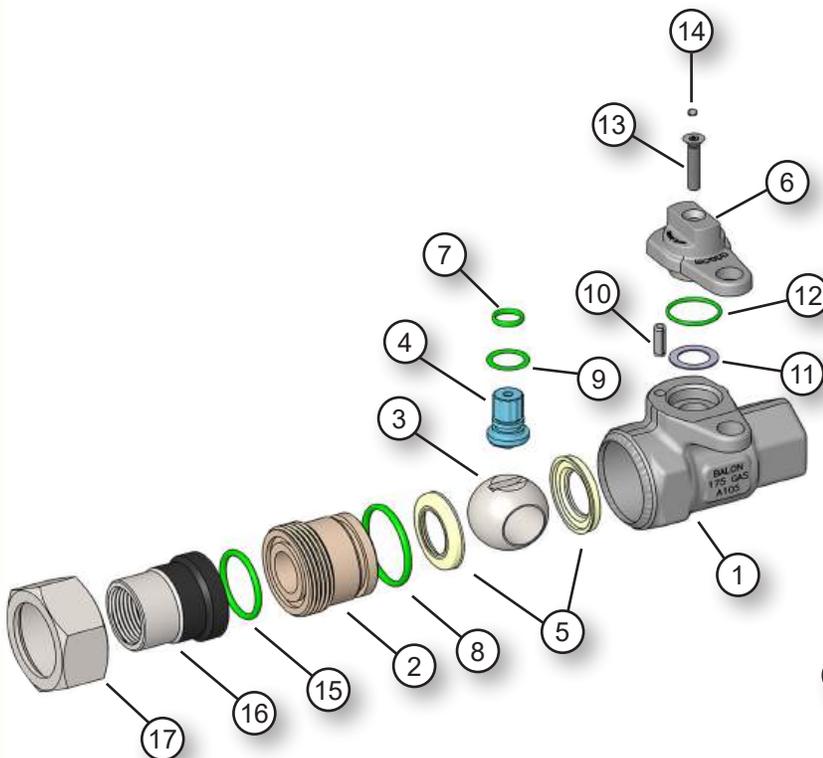
## Series US Carbon Steel Meter Valve

- 100% Made in USA
- 175 PSI WP
- 3/4" and 1"
- Welded Body Construction
  - Certified Low Emission Per API 641
  - Fire Safe Design
  - Individually Tested and Stamped to ASME B16.33
  - Full Port to Accommodate Industry Stop Changers
  - Designed for Decades of Maintenance Free Service
  - Does Not Require Grease or Periodic Adjustments
  - Forged Steel Body
  - Fully Welded Construction
  - Redundant Seals Throughout
  - Tamper Resistant Locking Wing
  - Multi-Seal Seats (See page B-5)



### Material Description

ITEM	PART NAME	MATERIAL NACE (STANDARD)
1	Body	ASTM A105, Normalized
2	Adapter	ASTM A108 1018
3	Ball	Carbon Steel Nickel Chrome Plated
4	Stem	316 Stainless Steel
5	Seat	Polyketone
6	Locking Wing	Zinc Alloy
7	O-Ring	Buna-N
8	O-Ring	Fluorocarbon
9	Stem Seal	TFE
10	Stop Pin	316 Stainless Steel
11	Stem Washer	Acetal
12	O-Ring	Buna-N
13	Screw	Stainless Steel
14	Tamper Resistant Device	Stainless Steel
15	O-Ring	Buna-N
16	Insulator	ASTM A108 1018/Polyketone
17	Union Nut	Carbon Steel



### Dimensional Data

SIZE	CATALOG NUMBER		PORT	WP	A	B	D	E	H	LBS.
	STANDARD TRIM	BALL & STEM*								
.75x.75x.75	3/4F-US175-UF		0.75	175	4.89	3.14	1.27	2.10	0.48	2.5
1x1x1	1F-US175-UF		1.00	175	5.61	3.67	1.48	2.40	0.48	3.5

\* Also available with 1/8" NPT test port.

# Threaded End Connection

## Series S Ductile Iron

- 100% Made in USA
- To 2000 PSI WP
- 1" Through 4"
- Threaded Body Construction
  - Certified Low Emission Per API 641
  - Fire Safe Design
  - NACE Option With 316 Stainless Steel Ball and Stem Available
  - High Grade Annealed Ductile Iron for Better Corrosion Resistance and Greater Yield Strength
  - Rugged Locking Device Standard
  - Multi-Seal Seats (See page B-5)

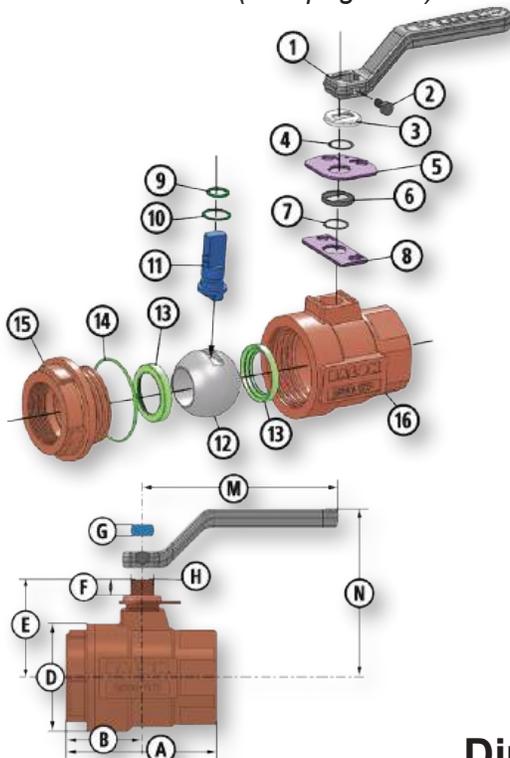


### Material Description

ITEM	PART NAME	MATERIAL (STANDARD)	MATERIAL (NACE)
1	Handle*	Carbon Steel/Ductile Iron	Carbon Steel/Ductile Iron
2	Handle Bolt	Standard Hex Bolt	Standard Hex Bolt
3	Weather Guard	Polypropylene	Polypropylene
4	Lock Plate Retainer	Carbon Spring Steel	Carbon Spring Steel
5	Lock Plate	Carbon Steel	Carbon Steel
6	Dust Cover	Polypropylene	Polypropylene
7	Stop Plate Retainer	Carbon Spring Steel	Carbon Spring Steel
8	Stop Plate	Carbon Steel	Carbon Steel
9	Stem O-Ring	Buna-N	Fluorocarbon
10	Stem Seal	TFE	TFE
11	Stem	Carbon Steel	316 Stainless Steel
12	Ball	Carbon Steel Nickel Chrome Plated	316 Stainless Steel
13	Ball Seat	Nylon 11 (TFE Optional**)	Nylon 11 (TFE Optional**)
14	Body O-Ring	Buna-N	Fluorocarbon
15	End Adapter	ASTM A395 Class 60-40-18 Fully Annealed	ASTM A395 Class 60-40-18 Fully Annealed
16	Body	ASTM A395 Class 60-40-18 Fully Annealed	ASTM A395 Class 60-40-18 Fully Annealed

\* Handle is optional. Balon valves can also be operated with a standard open-end wrench.  
 \*\* Seat selection may result in de-rating of pressure. See Seat Pressure Ratings chart on page TD-4 for more information.

Also available: Male x Female Threaded End Connection



### Dimensional Data

SIZE	CATALOG NUMBER		PORT	WP	A	B	D	E	F	G	H	M	N	LBS.	HANDLE	Cv
	STANDARD TRIM CARBON STEEL BALL & STEM	NACE TRIM 316 SS BALL & STEM														
1x1x1	1F-S42-SE	1F-S42N-SE	1.0	1000	3.87	1.93	2.25	2.37	0.50	.340	0.685	4.37	2.00	3.0	P-333-CS	-
1x1x1	1F-S62-SE	1F-S62N-SE	1.0	1500	3.87	1.93	2.25	2.37	0.50	.340	0.685	4.37	2.00	3.0	P-333-CS	-
1x1x1	1F-S92-SE	1F-S92N-SE	1.0	2000	4.00	2.00	2.50	2.37	0.50	.340	0.685	4.37	2.00	4.0	P-333-CS	-
2x1.5x2	2R-S32-SE	2R-S32N-SE	1.5	750	5.25	2.62	3.37	3.62	0.62	.434	0.873	7.25	5.25	8.0	P-4128-CS	125
2x1.5x2	2R-S42-SE	2R-S42N-SE	1.5	1000	5.25	2.62	3.37	3.62	0.75	.434	0.873	7.25	5.25	8.0	P-4128-CS	125
2x1.5x2	2R-S62-SE	2R-S62N-SE	1.5	1500	5.25	2.62	3.37	3.62	0.75	.434	0.873	7.25	5.25	8.5	P-4128-CS	125
2x1.5x2	2R-S92-SE	2R-S92N-SE	1.5	2000	5.50	2.75	3.75	3.62	0.75	.434	0.873	7.25	5.25	10.0	P-4128-CS	125
2x2x2	2F-S32-SE	2F-S32N-SE	2.0	750	5.75	2.87	4.25	4.37	0.75	.497	0.998	10.25	6.20	12.0	P-4129-CS	-
2x2x2	2F-S42-SE	2F-S42N-SE	2.0	1000	5.75	2.87	4.25	4.37	0.75	.497	0.998	10.25	6.20	13.0	P-4129-CS	-
2x2x2	2F-S62-SE	2F-S62N-SE	2.0	1500	6.00	3.00	4.75	4.37	0.75	.497	0.998	10.25	6.20	15.0	P-4129-CS	-
2x2x2	2F-S92-SE	2F-S92N-SE	2.0	2000	6.00	3.00	4.75	4.37	0.75	.497	0.998	10.25	6.20	16.0	P-4129-CS	-
3x3x3	3R-S32-SE	3R-S32N-SE	2.0	750	7.25	3.50	4.50	4.37	0.75	.497	0.998	10.25	6.20	17.8	P-4129-CS	180
3x3x3	3F-S32-SE	3F-S32N-SE	3.0	750	8.00	4.00	6.00	5.75	0.87	.747	1.373	20.00	7.75	31.0	P-4127-DI	-
3x3x3	3F-S42-SE	3F-S42N-SE	3.0	1000	8.75	4.37	6.00	5.75	0.87	.747	1.373	20.00	7.75	35.0	P-4127-DI	-
4x3x4	4R-S32-SE	4R-S32N-SE	3.0	750	8.75	4.37	6.00	5.75	0.87	.747	1.373	20.00	7.75	36.0	P-4127-DI	525
4x4x4	4F-S22-SE	4F-S22N-SE	4.0	500	9.37	4.68	7.50	6.37	1.06	.747	1.373	20.00	8.37	49.0	P-4127-DI	-

Balon manufactured Actuation Mounting Hardware available. Please see page A-2 for details.

**BALON**

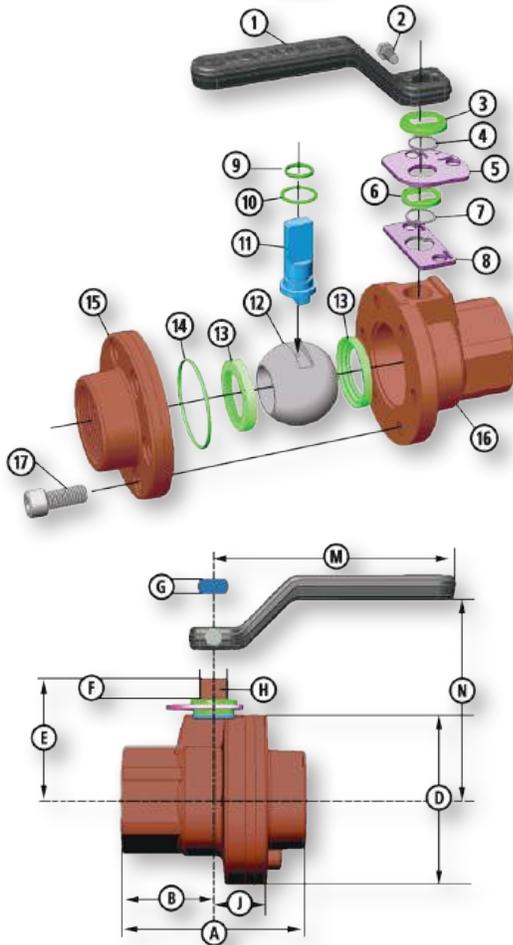
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# Threaded End Connection

## Series F Ductile Iron



- 100% Made in USA
- To 2000 PSI WP
- 1" Through 4"
- Bolted Body Construction
  - Certified Low Emission Per API 641
  - Fire Safe Design
  - NACE Option With 316 Stainless Steel Ball and Stem Available
  - Bolted Body Protects Against End Adapter Rotation
  - High Grade Annealed Ductile Iron for Better Corrosion Resistance and Greater Yield Strength
  - Rugged Locking Device Standard
  - Multi-Seal Seats (See page B-5)



### Material Description

ITEM	PART NAME	MATERIAL (STANDARD)	MATERIAL (NACE)
1	Handle*	Carbon Steel/Ductile Iron	Carbon Steel/Ductile Iron
2	Handle Bolt	Standard Hex Bolt	Standard Hex Bolt
3	Weather Guard	Polypropylene	Polypropylene
4	Lock Plate Retainer	Carbon Spring Steel	Carbon Spring Steel
5	Lock Plate	Carbon Steel	Carbon Steel
6	Dust Cover	Polypropylene	Polypropylene
7	Stop Plate Retainer	Carbon Spring Steel	Carbon Spring Steel
8	Stop Plate	Carbon Steel	Carbon Steel
9	Stem O-Ring	Buna-N	Fluorocarbon
10	Stem Seal	TFE	TFE
11	Stem	Carbon Steel	316 Stainless Steel
12	Ball	Carbon Steel Nickel Chrome Plated	316 Stainless Steel
13	Ball Seat	Nylon 11 (TFE Optional**)	Nylon 11 (TFE Optional**)
14	Body O-Ring	Buna-N	Fluorocarbon
15	End Adapter	ASTM A395 Class 60-40-18 Fully Annealed	ASTM A395 Class 60-40-18 Fully Annealed
16	Body	ASTM A395 Class 60-40-18 Fully Annealed	ASTM A395 Class 60-40-18 Fully Annealed
17	Body Bolts	ASTM A-193 B7M	ASTM A193 B7M

\* Handle is optional. Balon valves can also be operated with a standard open-end wrench.  
 \*\* Seat selection may result in de-rating of pressure. See Seat Pressure Ratings chart on page TD-4 for more information.

### Dimensional Data

SIZE	CATALOG NUMBER		PORT	WP	A	B	D	E	F	G	H	J	M	N	LBS.	HANDLE	Cv
	STANDARD TRIM CARBON STEEL BALL & STEM	NACE TRIM 316 SS BALL & STEM															
1x1x1	1F-F92-SE	1F-F92N-SE	1.0	2000	3.87	1.93	3.37	2.37	0.50	.340	0.685	1.120	4.37	2.00	4.0	P-333-CS	-
2x1.5x2	2R-F92-SE	2R-F92N-SE	1.5	2000	5.50	2.75	4.87	3.62	0.75	.434	0.873	1.620	7.25	5.25	12.4	P-4128-CS	125
2x2x2	2F-F62-SE	2F-F62N-SE	2.0	1500	5.75	2.87	6.12	4.37	0.87	.497	0.998	2.000	10.25	6.20	19.0	P-4129-CS	-
2x2x2	2F-F92-SE	2F-F92N-SE	2.0	2000	5.75	2.87	6.12	4.37	0.87	.497	0.998	2.000	10.25	6.20	19.0	P-4129-CS	-
2.5x2.5x2.5	2.5F-F62-SE	2.5F-F62N-SE	2.5	1500	7.00	3.50	6.87	5.25	1.06	.622	1.248	2.250	16.00	6.75	27.0	P-4126-DI	-
3x2x3	3R-F62-SE	3R-F62N-SE	2.0	1500	7.25	3.62	6.75	4.37	0.87	.497	0.998	2.120	10.25	6.20	26.0	P-4129-CS	180
3x2x3	3R-F92-SE	3R-F92N-SE	2.0	2000	7.25	3.62	6.75	4.37	0.87	.497	0.998	2.120	10.25	6.20	26.0	P-4129-CS	180
3x3x3	3F-F42-SE	3F-F42N-SE	3.0	1000	8.12	4.06	7.75	5.75	1.06	.747	1.373	2.375	20.00	7.75	40.0	P-4127-DI	-
4x3x4	4R-F32-SE	4R-F32N-SE	3.0	750	8.62	4.31	7.75	5.75	1.06	.747	1.375	2.375	20.00	7.72	42.0	P-4127-DI	500
4x3x4	4R-F42-SE	4R-F42N-SE	3.0	1000	8.62	4.31	7.75	5.75	1.06	.747	1.375	2.375	20.00	7.75	42.0	P-4127-DI	500
4x4x4	4F-F32-SE	4F-F32N-SE	4.0	750	9.37	4.68	9.25	6.37	1.06	.747	1.375	3.120	20.00	8.37	64.0	P-4127-DI	-

Balon manufactured Actuation Mounting Hardware available. Please see page A-2 for details.

**BALON**

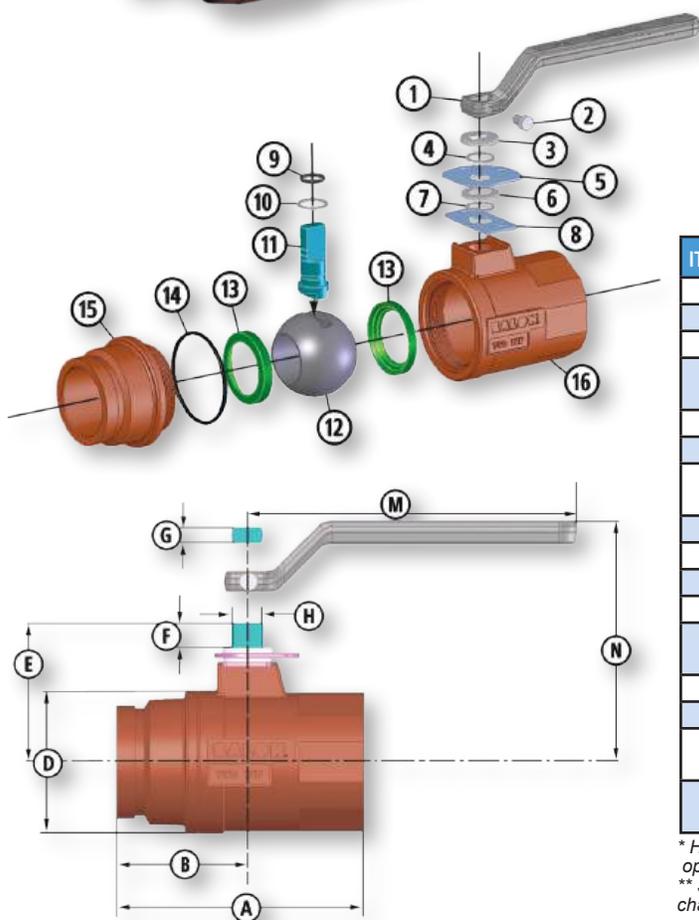
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# Female Threaded x Grooved End Connection

## Series S Ductile Iron



- 100% Made in USA
- 750 PSI WP
- 2" Through 4"
- Threaded Body Construction
  - Certified Low Emission Per API 641
  - Fire Safe Design
  - NACE Option With 316 Stainless Steel Ball and Stem Available
  - High Grade Annealed Ductile Iron for Better Corrosion Resistance and Greater Yield Strength
- Rugged Locking Device Standard
- Multi-Seal Seats (See page B-5)



### Material Description

ITEM	PART NAME	MATERIAL (STANDARD)	MATERIAL (NACE)
1	Handle*	Carbon Steel/Ductile Iron	Carbon Steel/Ductile Iron
2	Handle Bolt	Standard Hex Bolt	Standard Hex Bolt
3	Weather Guard	Polypropylene	Polypropylene
4	Lock Plate Retainer	Carbon Spring Steel	Carbon Spring Steel
5	Lock Plate	Carbon Steel	Carbon Steel
6	Dust Cover	Polypropylene	Polypropylene
7	Stop Plate Retainer	Carbon Spring Steel	Carbon Spring Steel
8	Stop Plate	Carbon Steel	Carbon Steel
9	Stem O-Ring	Buna-N	Fluorocarbon
10	Stem Seal	TFE	TFE
11	Stem	Carbon Steel	316 Stainless Steel
12	Ball	Carbon Steel Nickel Chrome Plated	316 Stainless Steel
13	Ball Seat	Nylon 11 (TFE Optional**)	Nylon 11 (TFE Optional**)
14	Body O-Ring	Buna-N	Fluorocarbon
15	End Adapter	ASTM A395 Class 60-40-18 Fully Annealed	ASTM A395 Class 60-40-18 Fully Annealed
16	Body	ASTM A395 Class 60-40-18 Fully Annealed	ASTM A395 Class 60-40-18 Fully Annealed

\* Handle is optional. Balon valves can also be operated with a standard open-end wrench.

\*\* Seat selection may result in de-rating of pressure. See Seat Pressure Ratings chart on page TD-4 for more information.

Also available: Male Threaded x Grooved End Connection

### Dimensional Data

SIZE	CATALOG NUMBER		PORT	WP	A	B	D	E	F	G	H	M	N	LBS.	HANDLE	Cv
	STANDARD TRIM CARBON STEEL BALL & STEM	NACE TRIM 316 SS BALL & STEM														
2x1.5x2	2R-S32-SG	2R-S32N-SG	1.5	750	5.50	2.68	3.37	3.62	.62	.434	0.873	7.25	5.25	8.0	P-4128-CS	140
3x2x3	3R-S32-SG	3R-S32N-SG	2.0	750	7.25	3.50	4.50	4.37	.75	.497	0.998	10.25	6.20	17.8	P-4129-CS	200
4x3x4	4R-S32-SG	4R-S32N-SG	3.0	750	8.87	4.50	6.00	5.75	.87	.747	1.373	20.00	7.75	36.0	P-4127-DI	550

Balon manufactured Actuation Mounting Hardware available. Please see page A-2 for details.

# Grooved End Connection

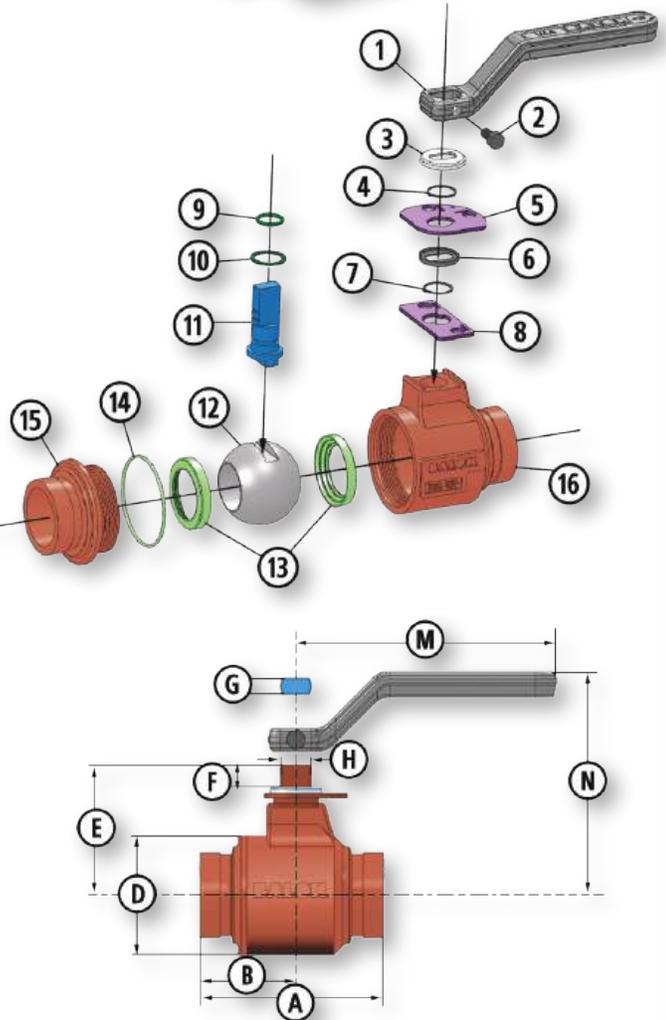
## Series S Ductile Iron

- 100% Made in USA
- To 1000 PSI WP
- 2" Through 6"
- Threaded Body Construction
  - Certified Low Emission Per API 641
  - Fire Safe Design
  - NACE Option With 316 Stainless Steel Ball and Stem Available
  - High Grade Annealed Ductile Iron for Better Corrosion Resistance and Greater Yield Strength
  - Rugged Locking Device Standard
  - Multi-Seal Seats (See page B-5)



### Material Description

ITEM	PART NAME	MATERIAL (STANDARD)	MATERIAL (NACE)
1	Handle*	Carbon Steel/Ductile Iron	Carbon Steel/Ductile Iron
2	Handle Bolt	Standard Hex Bolt	Standard Hex Bolt
3	Weather Guard	Polypropylene	Polypropylene
4	Lock Plate Retainer	Carbon Spring Steel	Carbon Spring Steel
5	Lock Plate	Carbon Steel	Carbon Steel
6	Dust Cover	Polypropylene	Polypropylene
7	Stop Plate Retainer	Carbon Spring Steel	Carbon Spring Steel
8	Stop Plate	Carbon Steel	Carbon Steel
9	Stem O-Ring	Buna-N	Fluorocarbon
10	Stem Seal	TFE	TFE
11	Stem	Carbon Steel	316 Stainless Steel
12	Ball	Carbon Steel Nickel Chrome Plated	316 Stainless Steel
13	Ball Seat	Nylon 11 (TFE Optional**)	Nylon 11 (TFE Optional**)
14	Body O-Ring	Buna-N	Fluorocarbon
15	End Adapter	ASTM A395 Class 60-40-18 Fully Annealed	ASTM A395 Class 60-40-18 Fully Annealed
16	Body	ASTM A395 Class 60-40-18 Fully Annealed	ASTM A395 Class 60-40-18 Fully Annealed



\* Handle is optional. Balon valves can also be operated with a standard open-end wrench.

\*\* Seat selection may result in de-rating of pressure. See Seat Pressure Ratings chart on page TD-4 for more information.

### Dimensional Data

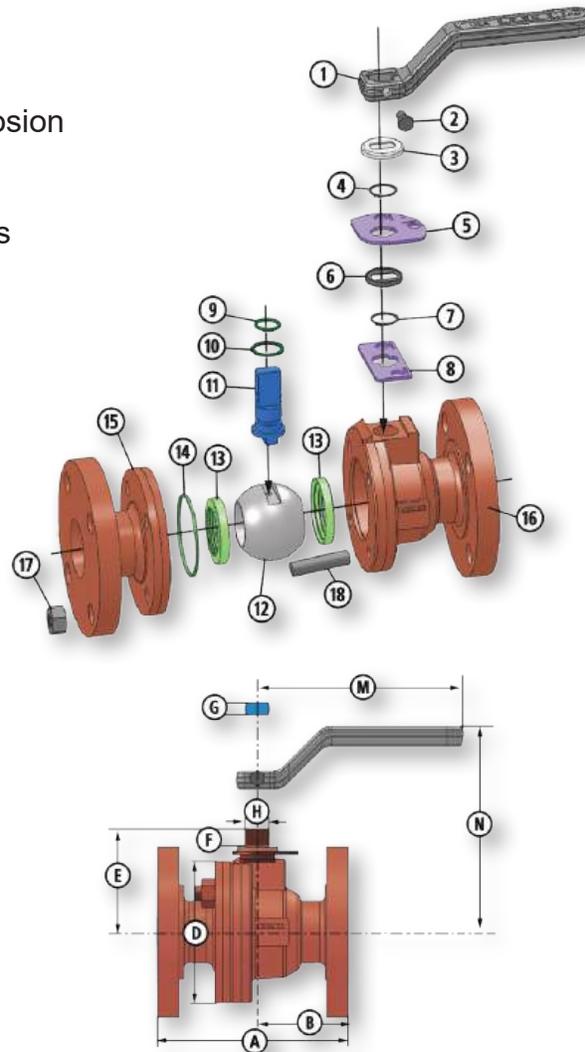
SIZE	CATALOG NUMBER		PORT	WP	A	B	D	E	F	G	H	M	N	LBS.	HANDLE	Cv
	STANDARD TRIM CARBON STEEL BALL & STEM	NACE TRIM 316 SS BALL & STEM														
2x1.5x2	2R-S32-GE	2R-S32N-GE	1.5	750	5.12	2.68	3.37	3.62	0.62	.434	0.873	7.25	5.25	7.5	P-4128-CS	140
2x2x2	2F-S32-GE	2F-S32N-GE	2.0	750	6.00	3.12	4.25	4.37	0.75	.497	0.998	10.25	6.20	12.0	P-4129-CS	-
3x2x3	3R-S32-GE	3R-S32N-GE	2.0	750	7.25	3.50	4.50	4.37	0.75	.497	0.998	10.25	6.20	17.0	P-4129-CS	200
3x3x3	3F-S32-GE	3F-S32N-GE	3.0	750	7.25	3.75	6.00	5.75	0.87	.747	1.373	20.00	7.75	31.0	P-4127-DI	-
4x3x4	4R-S32-GE	4R-S32N-GE	3.0	750	8.87	4.50	6.00	5.75	0.87	.747	1.373	20.00	7.75	34.0	P-4127-DI	550
4x4x4	4F-S22-GE	4F-S22N-GE	4.0	500	8.87	4.50	7.50	6.37	1.06	.747	1.373	20.00	8.37	49.0	P-4127-DI	-
6x4x6	6R-S22-GE	6R-S22N-GE	4.0	500	10.10	5.05	7.00	6.38	0.87	.747	1.373	20.00	8.38	57.0	P-4127-DI	800

Balon manufactured Actuation Mounting Hardware available. Please see page A-2 for details.

# Flanged End Connection

## Series F Ductile Iron

- 100% Made in USA
- ANSI Class 150 (250 PSI WP)  
Raised Face or Flat Face
- 2" Through 6"
- Bolted Body Construction
  - Certified Low Emission Per API 641
  - Fire Safe Design
  - NACE Option With 316 Stainless Steel  
Ball and Stem Available
  - High Grade Annealed Ductile Iron for Better Corrosion  
Resistance and Greater Yield Strength
  - Rugged Locking Device Standard
  - Eliminates High Maintenance of Lubricated Valves
  - Multi-Seal Seats (See page B-5)



### Material Description

ITEM	PART NAME	MATERIAL (STANDARD)	MATERIAL (NACE)
1	Handle*	Carbon Steel/Ductile Iron	Carbon Steel/Ductile Iron
2	Handle Bolt	Standard Hex Bolt	Standard Hex Bolt
3	Weather Guard	Polypropylene	Polypropylene
4	Lock Plate Retainer	Carbon Spring Steel	Carbon Spring Steel
5	Lock Plate	Carbon Steel	Carbon Steel
6	Dust Cover	Polypropylene	Polypropylene
7	Stop Plate Retainer	Carbon Spring Steel	Carbon Spring Steel
8	Stop Plate	Carbon Steel	Carbon Steel
9	Stem O-Ring	Buna-N	Fluorocarbon
10	Stem Seal	TFE	TFE
11	Stem	Carbon Steel	316 Stainless Steel
12	Ball	Carbon Steel Nickel Chrome Plated	316 Stainless Steel
13	Ball Seat	Nylon 11 (TFE Optional**)	Nylon 11 (TFE Optional**)
14	Body O-Ring	Buna-N	Fluorocarbon
15	End Adapter	ASTM A395 Class 60-40-18 Fully Annealed	ASTM A395 Class 60-40-18 Fully Annealed
16	Body	ASTM A395 Class 60-40-18 Fully Annealed	ASTM A395 Class 60-40-18 Fully Annealed
17	Nuts	ASTM A194 2H	ASTM A194 2HM
18	Body Bolts	ASTM A193 B7	ASTM A193 B7M

\* Handle is optional. Balon valves can also be operated with a standard open-end wrench.  
 \*\* Seat selection may result in de-rating of pressure. See Seat Pressure Ratings chart on page TD-4 for more information.

### Dimensional Data

SIZE	CATALOG NUMBER		PORT	WP	A	B	D	E	F	G	H	M	N	LBS.	HANDLE	Cv
	STANDARD TRIM CARBON STEEL BALL & STEM	NACE TRIM 316 SS BALL & STEM														
2x1.5x2	2R-F12	2R-F12N	1.5	250	7.00	3.25	5.00	3.62	0.75	.434	0.873	7.25	5.25	23	P-4128-CS	125
2x2x2	2F-F12	2F-F12N	2.0	250	7.00	2.75	6.00	4.37	0.87	.497	0.998	10.25	6.20	28	P-4129-CS	-
3x2x3	3R-F12	3R-F12N	2.0	250	8.00	3.00	6.00	4.37	0.75	.497	0.998	10.25	6.20	30	P-4129-CS	200
3x3x3	3F-F12	3F-F12N	3.0	250	8.00	3.56	7.50	5.75	1.06	.747	1.373	20.00	7.75	54	P-4127-DI	-
4x3x4	4R-F12	4R-F12N	3.0	250	9.00	4.06	7.87	5.75	0.87	.747	1.373	20.00	7.75	65	P-4127-DI	525
4x4x4	4F-F12	4F-F12N	4.0	250	9.00	4.06	9.00	6.37	1.06	.747	1.373	20.00	8.37	80	P-4127-DI	-
6x4x6	6R-F12	6R-F12N	4.0	250	10.50	4.81	9.25	6.37	1.06	.747	1.373	20.00	8.37	75	P-4127-DI	800

Balon manufactured Actuation Mounting Hardware available. Please see page A-2 for details.

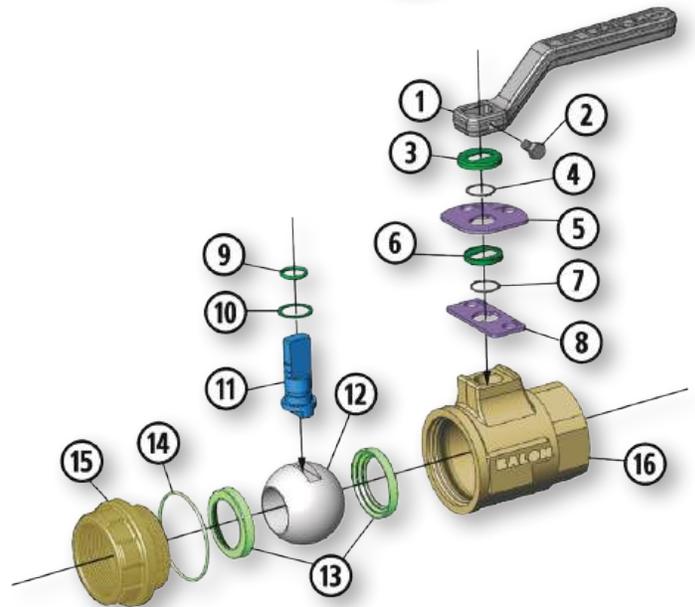
**BALON**

01.2025.Rev.1

# Threaded End Connection

## Series S "9D" Nickel Aluminum Bronze

- 100% Made in USA
- To 1000 PSI WP
- 2" Through 4"
- ASTM B148 GR 955 "9D"
- Threaded Body Construction
- NACE Standard
  - Certified Low Emission Per API 641
  - Fire Safe Design
  - Enhanced Protection Against CO<sup>2</sup> and Saltwater Corrosion
  - Minimizes Risk of Galling Associated with Stainless Steel
  - Exceptional Yield Strength
  - Multi-Seal Seats (See page B-5)

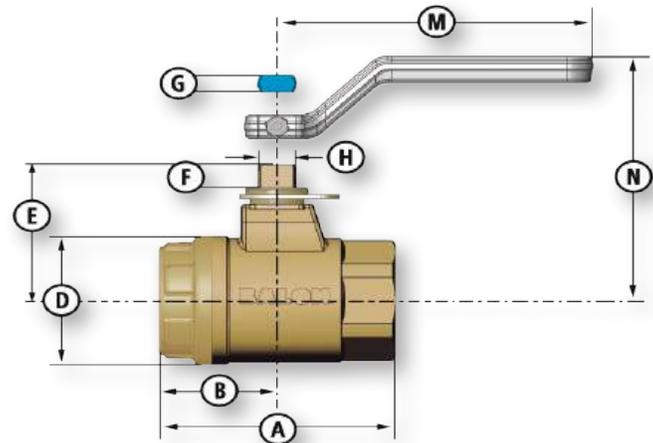


### Material Description

ITEM	PART NAME	MATERIAL NACE (STANDARD)
1	Handle*	Carbon Steel/Ductile Iron
2	Handle Bolt	Standard Hex Bolt
3	Weather Guard	Polypropylene
4	Lock Plate Retainer	Stainless Steel
5	Lock Plate	Stainless Steel
6	Dust Cover	Polypropylene
7	Stop Plate Retainer	Stainless Steel
8	Stop Plate	Stainless Steel
9	Stem O-Ring	Fluorocarbon
10	Stem Seal	TFE
11	Stem	316 Stainless Steel
12	Ball	316 Stainless Steel
13	Ball Seat	Nylon 11 (TFE Optional**)
14	Body O-Ring	Fluorocarbon
15	End Adapter	ASTM B148-9D (955)
16	Body	ASTM B148-9D (955)

\* Handle is optional. Balon valves can also be operated with a standard open-end wrench.

\*\* Seat selection may result in de-rating of pressure. See Seat Pressure Ratings chart on page TD-4 for more information.



### Dimensional Data

SIZE	CATALOG NUMBER	PORT	WP	A	B	D	E	F	G	H	M	N	LBS.	HANDLE	Cv
2x1.5x2	2R-S44N-SE	1.5	1000	5.25	2.66	3.38	3.66	0.75	.434	0.873	7.25	5.25	7.5	P-4128-CS	125
2x2x2	2F-S44N-SE	2.0	1000	5.75	2.88	4.25	4.38	0.75	.497	0.998	10.25	6.20	12	P-4129-CS	-
3x2x3	3R-S44N-SE	2.0	1000	7.25	3.50	4.50	4.38	0.75	.497	0.998	10.25	6.20	17	P-4129-CS	180
3x3x3	3F-S44N-SE	3.0	1000	8.75	4.38	6.00	5.75	0.88	.747	1.373	20.00	7.75	31	P-4127-DI	-
4x3x4	4R-S44N-SE	3.0	1000	8.75	4.38	6.00	5.75	0.88	.747	1.373	20.00	7.75	36	P-4127-DI	525
4x4x4	4F-S34N-SE	4.0	750	9.38	4.69	7.00	6.38	1.06	.747	1.373	20.00	8.38	52	P-4127-DI	-

Balon manufactured Actuation Mounting Hardware available. Please see page A-2 for details.

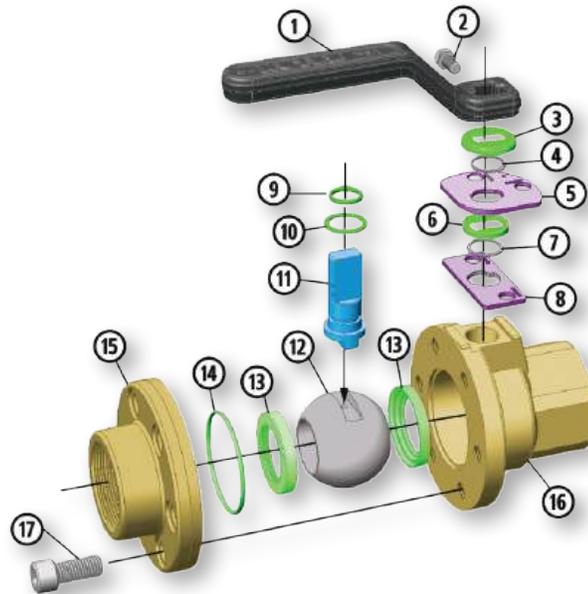
**BALON**

01.2025.Rev.1

# Threaded End Connection

## Series F "9D" Nickel Aluminum Bronze

- 100% Made in USA
- To 3000 PSI WP
- 1" Through 2"
- ASTM B148 GR 955 "9D"
- Bolted Body Construction
- NACE Standard
- Certified Low Emission Per API 641
- Fire Safe Design
- Enhanced Protection Against CO<sub>2</sub> and Saltwater Corrosion
- Minimizes Risk of Galling Associated with Stainless Steel
- Exceptional Yield Strength
- Multi-Seal Seats (See page B-5)

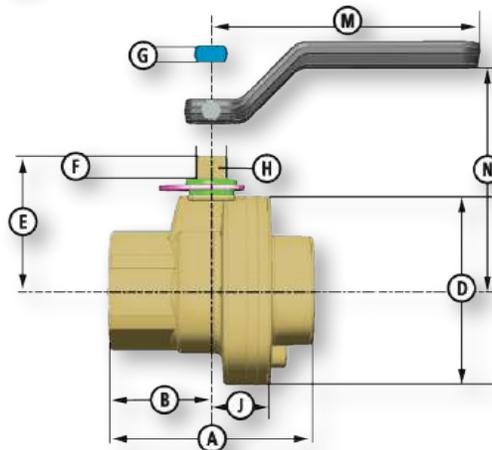


### Material Description

ITEM	PART NAME	MATERIAL NACE (STANDARD)
1	Handle*	Carbon Steel
2	Handle Bolt	Standard Hex Bolt
3	Weather Guard	Polypropylene
4	Lock Plate Retainer	Stainless Steel
5	Lock Plate	Stainless Steel
6	Dust Cover	Polypropylene
7	Stop Plate Retainer	Stainless Steel
8	Stop Plate	Stainless Steel
9	Stem O-Ring	Fluorocarbon
10	Stem Seal	TFE
11	Stem	316 Stainless Steel
12	Ball	316 Stainless Steel
13	Ball Seat	Nylon 11 (TFE Optional**)
14	Body O-Ring	Fluorocarbon
15	End Adapter	ASTM B148-9D (955)
16	Body	ASTM B148-9D (955)
17	Body Stud Bolts	ASTM A193 B7M

\* Handle is optional. Balon valves can also be operated with a standard open-end wrench.

\*\* Seat selection may result in de-rating of pressure. See Seat Pressure Ratings chart on page TD-4 for more information.



### Dimensional Data

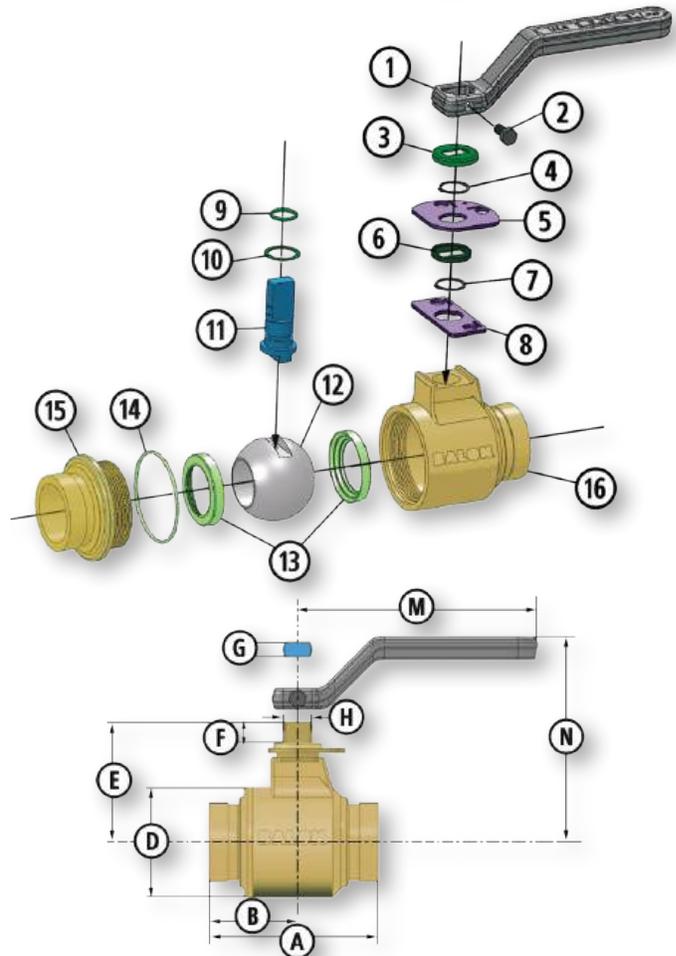
SIZE	CATALOG NUMBER	PORT	WP	A	B	D	E	F	G	H	J	M	N	LBS.	HANDLE	Cv
1x1x1	1F-F04N-SE	1.0	3000	3.87	1.93	3.37	2.37	.50	.340	.685	1.12	4.37	2.00	4.0	P-333-CS	-
2x1.5x2	2R-F04N-SE	1.5	3000	5.50	2.75	4.87	3.62	.75	.434	.873	1.62	7.25	5.25	12.5	P-4128-CS	125
2x2x2	2F-F94N-SE	2.0	2000	5.75	2.87	6.12	4.37	.87	.497	.998	2.00	10.25	6.20	19.0	P-4129-CS	-

Balon manufactured Actuation Mounting Hardware available. Please see page A-2 for details.

# Grooved End Connection

## Series S "9D" Nickel Aluminum Bronze

- 100% Made in USA
- To 1000 PSI WP
- 2" Through 6"
- ASTM B148 GR 955 "9D"
- Threaded Body Construction
- NACE Standard
  - Certified Low Emission Per API 641
  - Fire Safe Design
  - Enhanced Protection Against CO<sub>2</sub> and Saltwater Corrosion
  - Exceptional Yield Strength
  - Multi-Seal Seats (See page B-5)



### Material Description

ITEM	PART NAME	MATERIAL NACE (STANDARD)
1	Handle*	Carbon Steel/Ductile Iron
2	Handle Bolt	Standard Hex Bolt
3	Weather Guard	Polypropylene
4	Lock Plate Retainer	Stainless Steel
5	Lock Plate	Stainless Steel
6	Dust Cover	Polypropylene
7	Stop Plate Retainer	Stainless Steel
8	Stop Plate	Stainless Steel
9	Stem O-Ring	Fluorocarbon
10	Stem Seal	TFE
11	Stem	316 Stainless Steel
12	Ball	316 Stainless Steel
13	Ball Seat	Nylon 11 (TFE Optional**)
14	Body O-Ring	Fluorocarbon
15	End Adapter	ASTM B148-9D (955)
16	Body	ASTM B148-9D (955)

\* Handle is optional. Balon valves can also be operated with a standard open-end wrench.  
 \*\* Seat selection may result in de-rating of pressure. See Seat Pressure Ratings chart on page TD-4 for more information.

### Dimensional Data

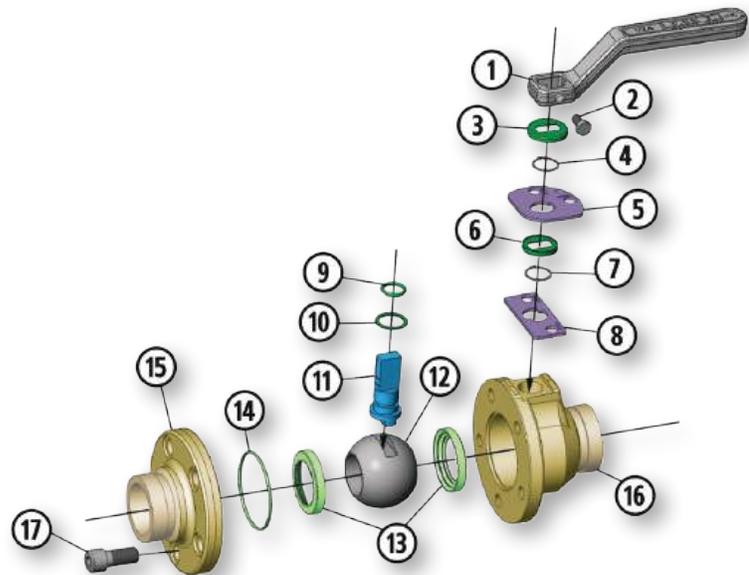
SIZE	CATALOG NUMBER		PORT	WP	A	B	D	E	F	G	H	M	N	LBS.	HANDLE	Cv
	NACE TRIM	BALL & STEM														
2x1.5x2	2R-S44N-GE	316 SS	1.5	1000	5.12	2.68	3.37	3.62	0.62	.434	0.873	7.25	5.25	7.5	P-4128-CS	140
2x2x2	2F-S44N-GE	316 SS	2.0	1000	6.00	3.12	4.25	4.37	0.75	.497	0.998	10.25	6.20	12.0	P-4129-CS	-
3x2x3	3R-S44N-GE	316 SS	2.0	1000	7.25	3.50	4.50	4.37	0.75	.497	0.998	10.25	6.20	16.0	P-4129-CS	200
3x3x3	3F-S44N-GE	316 SS	3.0	1000	7.25	3.75	6.00	5.75	0.87	.747	1.373	20.00	7.75	30.0	P-4127-DI	-
4x3x4	4R-S44N-GE	316 SS	3.0	1000	8.87	4.50	6.00	5.75	0.87	.747	1.373	20.00	7.75	34.0	P-4127-DI	550
4x4x4	4F-S34N-GE	316 SS	4.0	750	8.87	4.50	7.50	6.37	1.06	.747	1.373	20.00	8.37	48.0	P-4127-DI	-
6x4x6	6R-S34N-GE	316 SS	4.0	750	10.10	5.05	7.00	6.38	0.87	.747	1.373	20.00	8.38	57.0	P-4127-DI	800

Balon manufactured Actuation Mounting Hardware available. Please see page A-2 for details.

# Grooved End Connection

## Series F "9D" Nickel Aluminum Bronze

- 100% Made in USA
- 2000 PSI WP
- 2"
- ASTM B148 GR 955 "9D"
- Bolted Body Construction
- NACE Standard
  - Certified Low Emission Per API 641
  - Fire Safe Design
  - Enhanced Protection Against CO<sub>2</sub> and Saltwater Corrosion
  - Exceptional Yield Strength
  - Multi-Seal Seats (See page B-5)

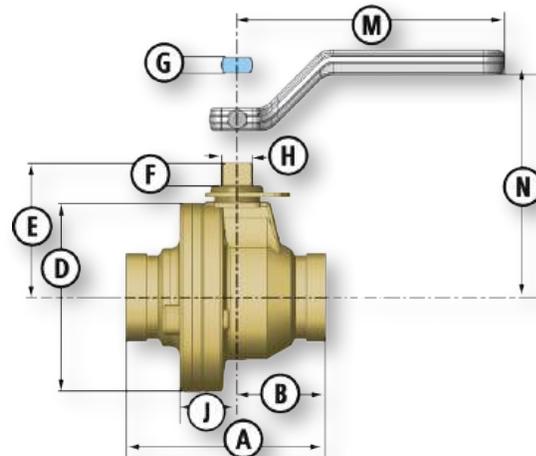


### Material Description

ITEM	PART NAME	MATERIAL NACE (STANDARD)
1	Handle*	Carbon Steel
2	Handle Bolt	Standard Hex Bolt
3	Weather Guard	Polypropylene
4	Lock Plate Retainer	Stainless Steel
5	Lock Plate	Stainless Steel
6	Dust Cover	Polypropylene
7	Stop Plate Retainer	Stainless Steel
8	Stop Plate	Stainless Steel
9	Stem O-Ring	Fluorocarbon
10	Stem Seal	TFE
11	Stem	316 Stainless Steel
12	Ball	316 Stainless Steel
13	Ball Seat	Nylon 11 (TFE Optional**)
14	Body O-Ring	Fluorocarbon
15	End Adapter	ASTM B148-9D (955)
16	Body	ASTM B148-9D (955)
17	Body Bolts	ASTM A193 B7M

\* Handle is optional. Balon valves can also be operated with a standard open-end wrench.

\*\* Seat selection may result in de-rating of pressure. See Seat Pressure Ratings chart on page TD-4 for more information.



### Dimensional Data

SIZE	CATALOG NUMBER	PORT	WP	A	B	D	E	F	G	H	J	M	N	LBS.	HANDLE	Cv
2x1.5x2	2R-F94N-GE	1.5	2000	5.5	2.75	4.87	3.62	.75	.497	.873	1.62	7.25	5.25	11.5	P-4128-CS	140

Balon manufactured Actuation Mounting Hardware available. Please see page A-2 for details.

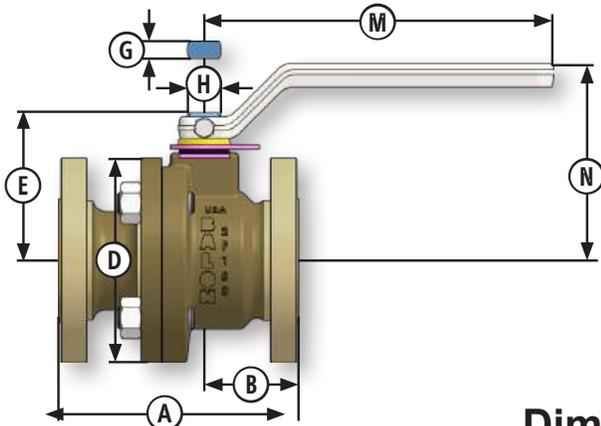
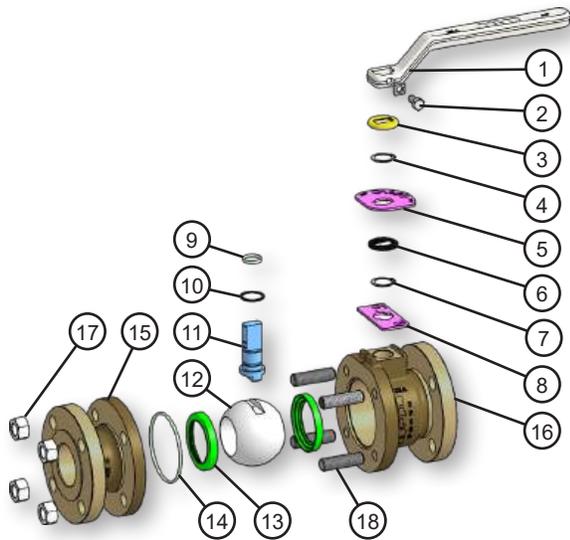


01.2025.Rev.1

# Flanged End Connection Series F "9D" Nickel Aluminum Bronze



- 100% Made in USA
- ANSI Class 150 (285 PSI WP)
- 2" Through 4"
- ASTM B148 GR 955 "9D"
- Bolted Body Construction
- NACE Standard
  - Certified Low Emission Per API 641
  - Fire Safe Design
  - Enhanced Protection Against CO2 and Saltwater Corrosion
- Exceptional Yield Strength
- Multi-Seal Seats (See page B-5)
- Rugged Locking Device Standard



## Material Description

ITEM	PART NAME	MATERIAL (NACE)
1	Handle*	Carbon Steel / Ductile Iron
2	Handle Bolt	Standard Hex Bolt
3	Weather Guard	Polypropylene
4	Lock Plate Retainer	Stainless Steel
5	Lock Plate	Stainless Steel
6	Dust Cover	Polypropylene
7	Stop Plate Retainer	Stainless Steel
8	Stop Plate	Stainless Steel
9	Stem O-Ring	Fluorocarbon
10	Stem Seal	TFE
11	Stem	316 Stainless Steel
12	Ball	316 Stainless Steel
13	Ball Seat	Nylon 11 (TFE Optional**)
14	Body O-Ring	Fluorocarbon
15	End Adapter	ASTM B148-9D (955)
16	Body	ASTM B148-9D (955)
17	Nuts	ASTM A194 7M
18	Body Bolts	ASTM A193 L7M

\* Handle is optional. Balon valves can also be operated with a standard open-end wrench.  
\*\* Seat selection may result in de-rating of pressure. See Seat Pressure Ratings chart on page TD-4 for more information.

## Dimensional Data

SIZE	CATALOG NUMBER		PORT	A	B	D	E	F	G	H	M	N	LBS.	HANDLE	Cv
	NACE TRIM	316 SS BALL & STEM													
2x2x2	2F-F14N-RF		2	7.0	2.75	6.00	4.37	0.87	.497	0.998	10.25	6.20	28.0	P-4129-CS	-
3x3x3	3F-F14N-RF		3	8.0	3.56	7.50	5.75	1.06	.747	1.373	20.0	7.75	54.0	P-4127-DI	-
4x4x4	4F-F14N-RF		4	9.0	4.06	9.00	6.37	1.06	.747	1.373	20.0	8.37	80.0	P-4127-DI	-

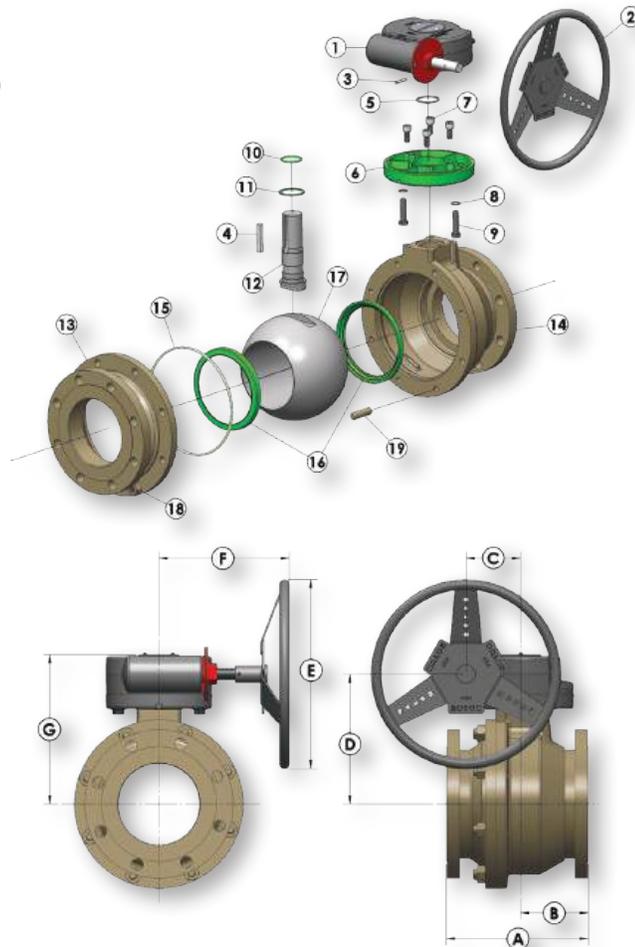
Balon manufactured Actuation Mounting Hardware available. Please see page A-2 for details.  
Also available with Balon Gear Operator

# Flanged End Connection

## Series F "9D"

## Nickel Aluminum Bronze

- 100% Made in USA
- ANSI Class 150 (285 PSI WP)
- 6" and 8" Full Port
- ASTM B148 GR 955 "9D"
- Bolted Body Construction
- NACE Standard
- Certified Low Emission Per API 641
- Fire Safe Design
- Enhanced Protection Against CO2 and Saltwater Corrosion
- Exceptional Yield Strength
- Exclusive Balon Gearbox (See page G-2)
- Multi-Seal Seats (See page B-5)



### Material Description

ITEM	PART NAME	MATERIAL (NACE)
1	Gear Operator	Ductile Iron
2	Hand Wheel	Carbon Steel
3	Drive Pin	Carbon Spring Steel
4	Stem Key	Steel Key Stock
5	Stem Retainer Ring	Carbon Spring Steel
6	Mounting Plate	Ductile Iron
7	Mounting Plate Screws	Alloy Steel
8	Lock Washers	Carbon Steel
9	Mounting Screws	Alloy Steel
10	Stem O-Ring	Fluorocarbon
11	Stem Seal	TFE
12	Stem	316 Stainless Steel
13	End Adapter	ASTM B148-9D (955)
14	Body	ASTM B148-9D (955)
15	Body O-Ring	Fluorocarbon
16	Ball Seats	Nylon 11 (TFE Optional*)
17	Ball	316 Stainless Steel
18	Nuts	ASTM A194 7M
19	Body Bolts	ASTM A193 L7M

\* Seat selection may result in de-rating of pressure. See Seat Pressure Ratings chart on page TD-4 for more information.

### Dimensional Data

SIZE	CATALOG NUMBER	PORT	A	B	C	D	E	F	G	LBS.	Cv
	NACE TRIM 316 SS BALL & STEM										
6x6x6	6F-F14N-RF	6	10.5	4.50	4.00	9.75	14	9.0	11.19	230	-
8x8x8	8F-F14N-RF	8	18.0	8.00	5.25	12.0	20	11.5	13.75	520	-

# Threaded End Connection

## Series LS Threaded End Stainless Steel

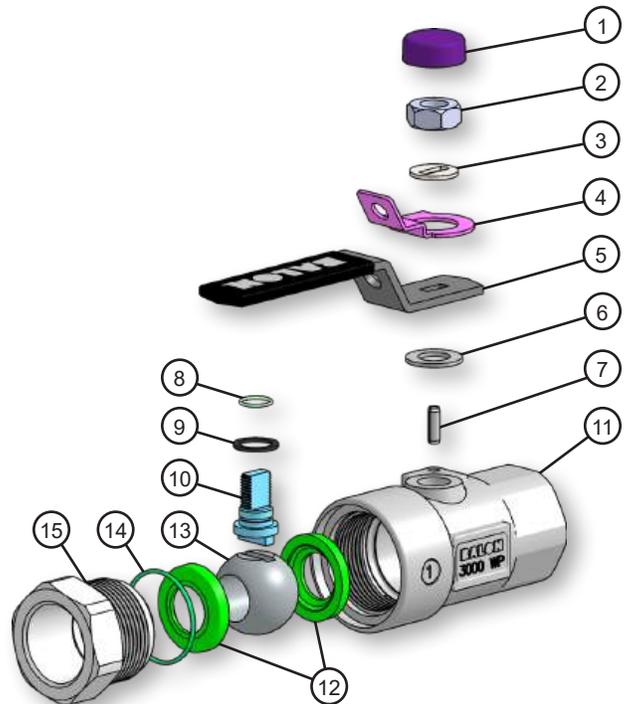
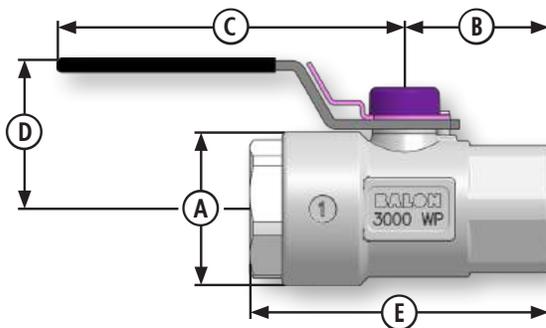


- 100% Made in USA
- 2000 to 3000 PSI WP
- 1/4" Through 1"
- Threaded Body Construction
- NACE Standard
- Certified Low Emission Per API 641
- Fire Safe Design
- Exclusive Patented Design Inhibits Loosening of End Adapter
- All Metal Components Made of Stainless Steel
- Multi-Seal Seats (See page B-5)

### Material Description

ITEM	PART NAME	MATERIAL (STANDARD)
1	Weather Guard	Polypropylene
2	Stem Nut	Stainless Steel
3	Spacer	Stainless Steel
4	Lock Plate	Stainless Steel
5	Handle*	Stainless Steel
6	Stem Washer	Acetal
7	Stop Pin	Stainless Steel
8	Stem O-Ring	Fluorocarbon
9	Stem Seal	TFE
10	Stem	316 Stainless Steel
11	Body	316 Stainless Steel
12	Ball Seat	Nylon 11 (TFE Optional**)
13	Ball	316 Stainless Steel
14	Body O-Ring	Fluorocarbon
15	Adapter	316 Stainless Steel

\* Handle and locking device standard on all Series LS Ball Valves.  
 \*\* Seat selection may result in de-rating of pressure. See Seat Pressure Ratings chart on page TD-4 for more information.



### Dimensional Data

SIZE	CATALOG NUMBER	PORT	WP	A	B	C	D	E	LBS.	Cv
.25x.37x.25	LS-02562	.37	2000	1.37	1.12	3.50	1.62	2.62	0.91	-
.25x.37x.25	LS-02592	.37	3000	1.37	1.12	3.50	1.62	2.62	0.91	-
.50x.37x.50	LS-05561	.37	2000	1.37	1.12	3.50	1.62	2.50	0.75	6
.50x.37x.50	LS-05591	.37	3000	1.37	1.43	3.50	1.62	3.00	1.00	6
.50x.50x.50	LS-05562	.50	2000	1.58	1.38	3.50	1.96	3.00	1.40	-
.50x.50x.50	LS-05592	.50	3000	1.58	1.38	3.50	1.96	3.00	1.40	-
.75x.75x.75	LS-07562	.75	2000	2.12	1.75	4.87	2.25	3.75	2.50	-
.75x.75x.75	LS-07592	.75	3000	2.12	1.75	4.87	2.25	3.75	2.50	-
1x.75x1	LS-10561	.75	2000	2.12	1.87	4.87	2.25	3.75	2.00	30
1x.75x1	LS-10591	.75	3000	2.12	2.00	4.87	2.25	4.12	2.50	30

# Female x Female Threaded End Connection

## Series W Carbon Steel

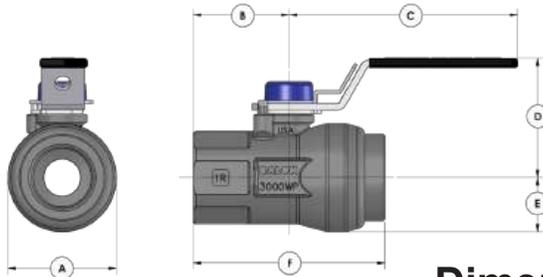
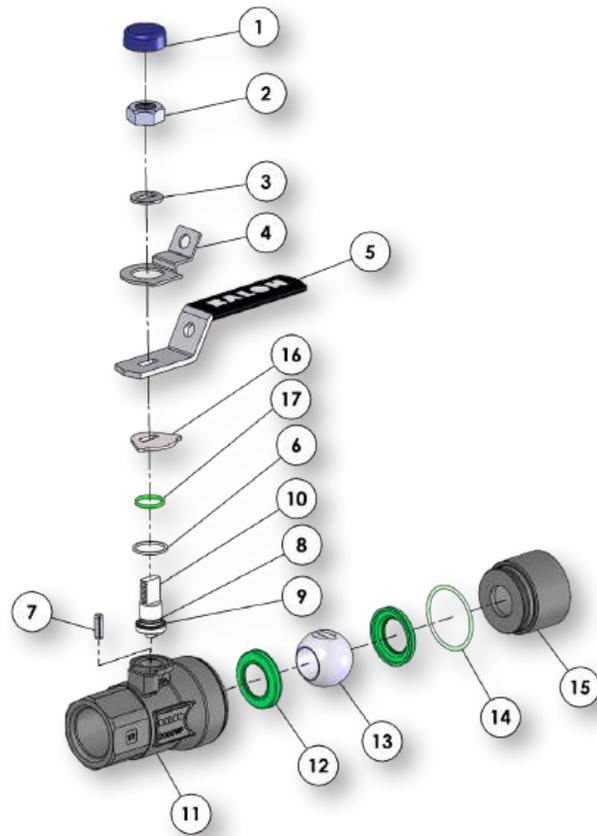
- 100% Made in USA
- 2000 to 3000 PSI WP
- 1/4" Through 1"
- Welded Body Construction
  - Certified Low Emission Per API 641
  - Fire Safe Design
  - Welded Top Works Keeps Travel Stops Intact When Handle is Removed
  - 316 Stainless Steel Ball and Stem Standard
  - Locking Device Standard
  - Multi-Seal Seats (See page B-5)



### Material Description

ITEM	PART NAME	MATERIAL (STANDARD)
1	Weather Guard	Polypropylene
2	Stem Nut	Carbon Steel
3	Spacer	CarbonSteel
4	Lock Plate	Carbon Steel
5	Handle*	Carbon Steel
6	Stem Washer	TFE
7	Stop Pin	Carbon Steel
8	Stem O-Ring	Fluorocarbon
9	Stem Seal	TFE
10	Stem	316 Stainless Steel
11	Body	ASTM A216 WCB
12	Ball Seat	Nylon/Polyketone
13	Ball	316 Stainless Steel
14	Body O-Ring	Fluorocarbon
15	Adapter	ASTM A108 1018
16	Stop Plate	Stainless Steel
17	O-Ring	Fluorocarbon

\* Handle and locking device standard on all Series W Ball Valves.



### Dimensional Data

SIZE	CATALOG NUMBER	PORT	WP	A	B	C	D	E	F	LBS.	Cv
.25x.375x.25	1/4F-W93-SE	.375	2000	1.17	1.13	3.50	1.90	.58	2.25	0.60	-
.25x.375x.25	1/4F-W03-SE	.375	3000	1.21	1.13	3.50	1.90	.61	2.25	0.65	-
.50x.375x.50	1/2R-W93-SE	.375	2000	1.38	1.28	3.50	1.90	.69	2.63	0.80	6
.50x.375x.50	1/2R-W03-SE	.375	3000	1.44	1.28	3.50	1.90	.72	2.63	0.91	6
.50x.50x.50	1/2F-W93-SE	.50	2000	1.42	1.37	3.50	1.98	.71	2.75	0.87	-
.50x.50x.50	1/2F-W03-SE	.50	3000	1.46	1.37	3.50	1.98	.73	2.75	0.95	-
.75x.75x.75	3/4F-W93-SE	.75	2000	2.09	1.69	4.87	2.41	1.04	3.50	2.19	-
.75x.75x.75	3/4F-W03-SE	.75	3000	2.19	1.69	4.87	2.41	1.04	3.50	2.34	-
1x.75x1	1R-W93-SE	.75	2000	2.19	1.94	4.87	2.41	1.09	3.88	2.25	30
1x.75x1	1R-W03-SE	.75	3000	2.19	1.94	4.87	2.41	1.09	3.88	2.65	30

# Male x Female Threaded End Connection

## Series W Carbon Steel

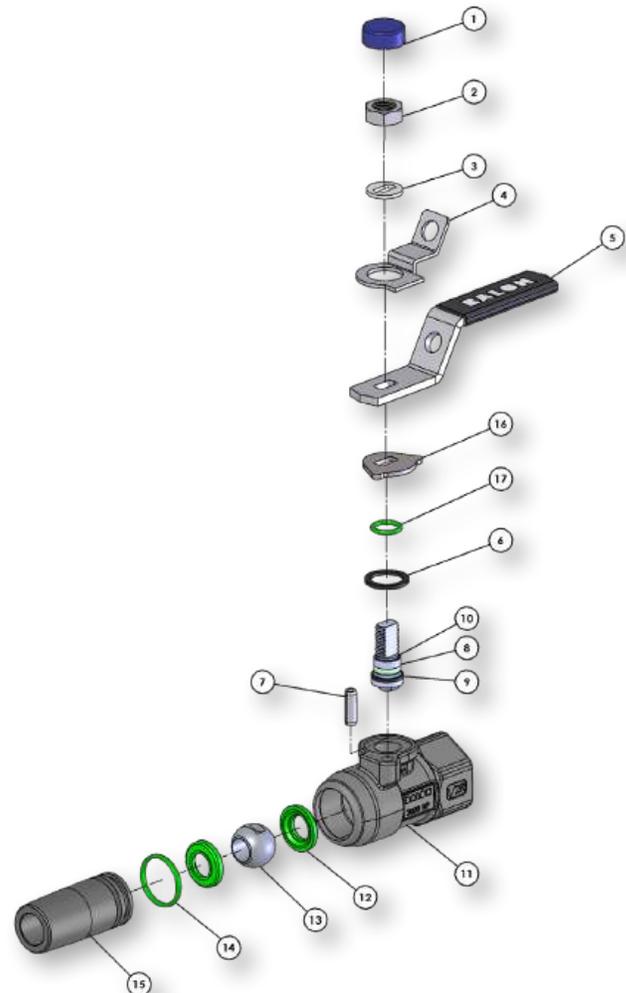
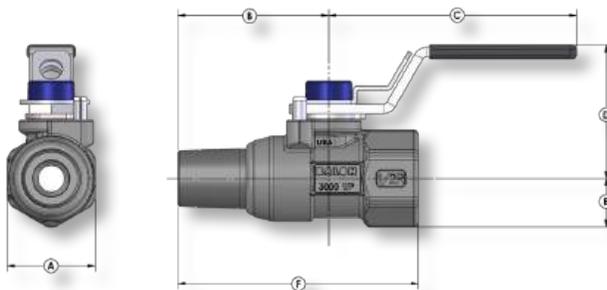


- 100% Made in USA
- 2000 to 3000 PSI WP
- 1/2" and 1" Reduced Port
- Welded Body Construction
  - Certified Low Emission Per API 641
  - Fire Safe Design
  - Welded Top Works Keeps Travel Stops Intact When Handle is Removed
- 316 Stainless Steel Ball and Stem Standard
- Locking Device Standard
- Multi-Seal Seats (See page B-5)

### Material Description

ITEM	PART NAME	MATERIAL (STANDARD)
1	Weather Guard	Polypropylene
2	Stem Nut	Carbon Steel
3	Spacer	CarbonSteel
4	Lock Plate	Carbon Steel
5	Handle*	Carbon Steel
6	Stem Washer	TFE
7	Stop Pin	Carbon Steel
8	Stem O-Ring	Fluorocarbon
9	Stem Seal	TFE
10	Stem	316 Stainless Steel
11	Body	ASTM A216 WCB
12	Ball Seat	Nylon/Polyketone
13	Ball	316 Stainless Steel
14	Body O-Ring	Fluorocarbon
15	Adapter	ASTM A108 1018
16	Stop Plate	Stainless Steel
17	O-Ring	Fluorocarbon

\* Handle and locking device standard on all Series W Ball Valves.



### Dimensional Data

SIZE	CATALOG NUMBER	PORT	WP	A	B	C	D	E	F	LBS.	Cv
.50x.375x.50	1/2R-W93-MF	.375	2000	1.07	2.15	3.50	1.90	.58	3.43	0.75	6
.50x.375x.50	1/2R-W03-MF	.375	3000	1.25	2.15	3.50	1.90	.69	3.43	0.89	6
1x.75x1	1R-W93-MF	.75	2000	2.09	1.70	4.87	2.41	1.04	3.64	2.10	30
1x.75x1	1R-W03-MF	.75	3000	2.19	1.70	4.87	2.41	1.09	3.64	2.26	30

# Female x Female Threaded End Connection

## Series W Stainless Steel

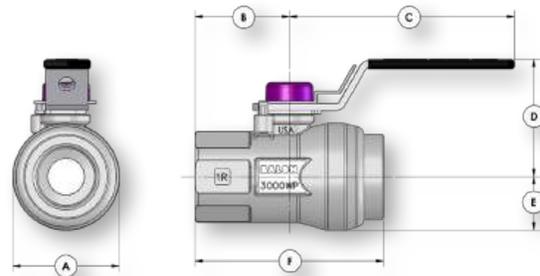
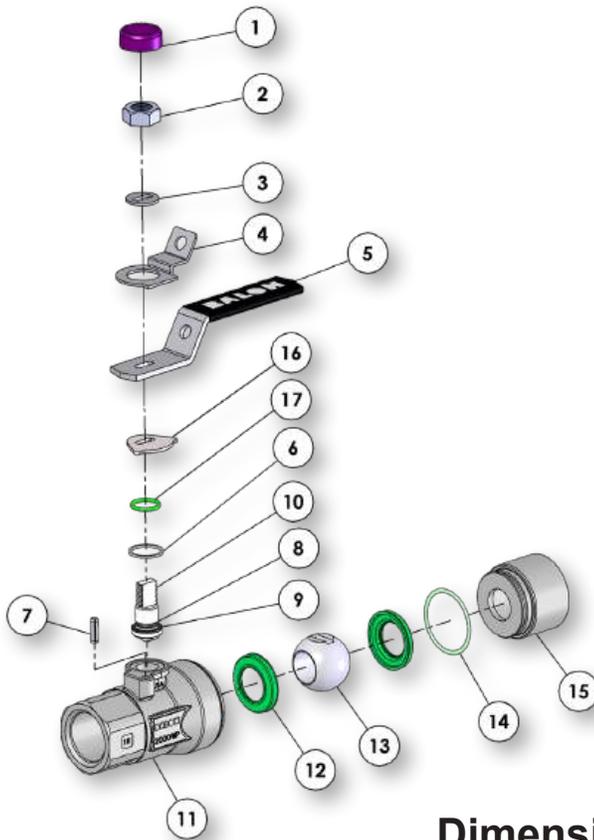
- 100% Made in USA
- 2000 to 3000 PSI WP
- 1/4" Through 1"
- Welded Body Construction
- NACE Standard
  - Certified Low Emission Per API 641
  - Fire Safe Design
  - Welded Top Works Keeps Travel Stops Intact When Handle is Removed
  - All Metal Components Made from Stainless Steel
  - Locking Device Standard
  - Multi-Seal Seats (See page B-5)



### Material Description

ITEM	PART NAME	MATERIAL (STANDARD)
1	Weather Guard	Polypropylene
2	Stem Nut	Stainless Steel
3	Spacer	Stainless Steel
4	Lock Plate	Stainless Steel
5	Handle*	Stainless Steel
6	Stem Washer	TFE
7	Stop Pin	Stainless Steel
8	Stem O-Ring	Fluorocarbon
9	Stem Seal	TFE
10	Stem	316 Stainless Steel
11	Body	ASTM A351 CF8M
12	Ball Seat	Nylon/Polyketone
13	Ball	316 Stainless Steel
14	Body O-Ring	Fluorocarbon
15	Adapter	316 Stainless Steel
16	Stop Plate	Stainless Steel
17	O-Ring	Fluorocarbon

\* Handle and locking device standard on all Series W Ball Valves.



### Dimensional Data

SIZE	CATALOG NUMBER	PORT	WP	A	B	C	D	E	F	LBS.	Cv
.25x.375x.25	1/4F-W95N-SE	.375	2000	1.17	1.13	3.50	1.90	.58	2.25	0.60	-
.25x.375x.25	1/4F-W05N-SE	.375	3000	1.21	1.13	3.50	1.90	.61	2.25	0.65	-
.50x.375x.50	1/2R-W95N-SE	.375	2000	1.38	1.28	3.50	1.90	.69	2.63	0.80	6
.50x.375x.50	1/2R-W05N-SE	.375	3000	1.44	1.28	3.50	1.90	.72	2.63	0.91	6
.50x.50x.50	1/2F-W95N-SE	.50	2000	1.42	1.37	3.50	1.98	.71	2.75	0.87	-
.50x.50x.50	1/2F-W05N-SE	.50	3000	1.46	1.37	3.50	1.98	.73	2.75	0.95	-
.75x.75x.75	3/4F-W95N-SE	.75	2000	2.09	1.69	4.87	2.41	1.04	3.50	2.19	-
.75x.75x.75	3/4F-W05N-SE	.75	3000	2.19	1.69	4.87	2.41	1.09	3.50	2.34	-
1x.75x1	1R-W95N-SE	.75	2000	2.19	1.94	4.87	2.41	1.09	3.88	2.25	30
1x.75x1	1R-W05N-SE	.75	3000	2.19	1.94	4.87	2.41	1.09	3.88	2.65	30

# Male x Female Threaded End Connection

## Series W Stainless Steel

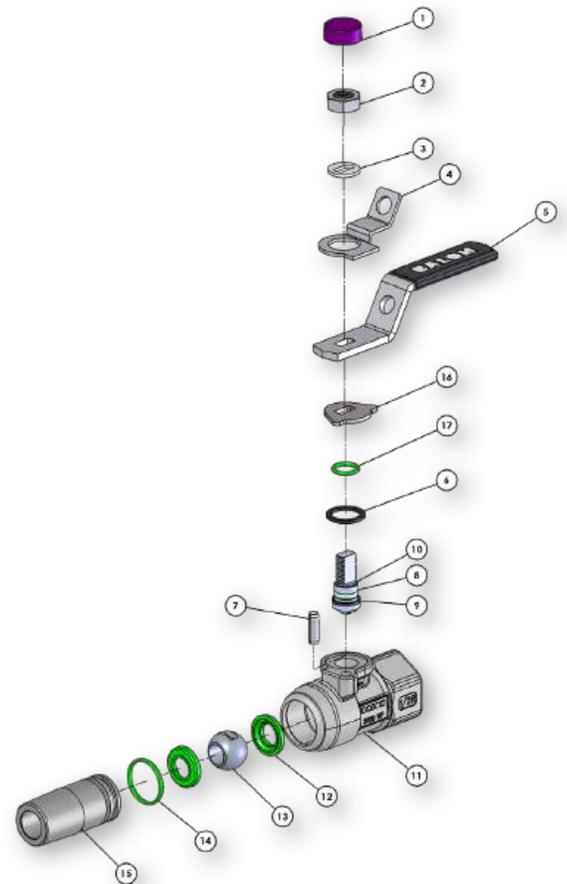
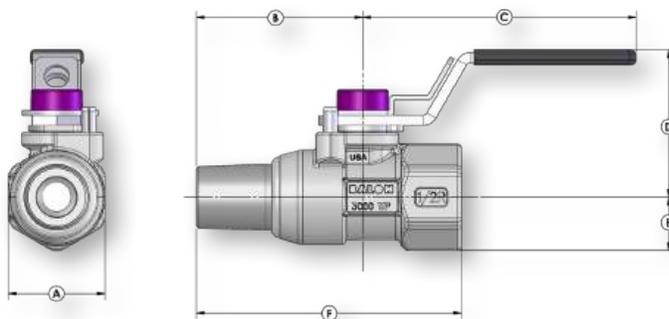


- 100% Made in USA
- 2000 to 3000 PSI WP
- 1/2" and 1" Reduced Port
- Welded Body Construction
- NACE Standard
- Certified Low Emission Per API 641
- Fire Safe Design
- Welded Top Works Keeps Travel Stops Intact When Handle is Removed
- All Metal Components Made from Stainless Steel
- Locking Device Standard
- Multi-Seal Seats (See page B-5)

### Material Description

ITEM	PART NAME	MATERIAL (STANDARD)
1	Weather Guard	Polypropylene
2	Stem Nut	Stainless Steel
3	Spacer	Stainless Steel
4	Lock Plate	Stainless Steel
5	Handle*	Stainless Steel
6	Stem Washer	TFE
7	Stop Pin	Stainless Steel
8	Stem O-Ring	Fluorocarbon
9	Stem Seal	TFE
10	Stem	316 Stainless Steel
11	Body	ASTM A351 CF8M
12	Ball Seat	Nylon/Polyketone
13	Ball	316 Stainless Steel
14	Body O-Ring	Fluorocarbon
15	Adapter	316 Stainless Steel
16	Stop Plate	Stainless Steel
17	O-Ring	Fluorocarbon

\* Handle and locking device standard on all Series W Ball Valves.



### Dimensional Data

SIZE	CATALOG NUMBER	PORT	WP	A	B	C	D	E	F	LBS.	Cv
.50x.375x.50	1/2R-W95N-MF	.375	2000	1.07	2.15	3.50	1.90	.58	3.43	0.75	6
.50x.375x.50	1/2R-W05N-MF	.375	3000	1.25	2.15	3.50	1.90	.69	3.43	0.89	6
1x.75x1	1R-W95N-MF	.75	2000	2.09	1.70	4.87	2.41	1.04	3.64	2.10	30
1x.75x1	1R-W05N-MF	.75	3000	2.19	1.70	4.87	2.41	1.09	3.64	2.26	30

# Trunnion Ball Valves



# BALON®

## TRUNNION BALL VALVES

### TRUNNION BALL VALVES

T-1

### TRUNNION VALVE IDENTIFICATION KEY

T-2

Trunnion Ball Valve Special Features

T-3

### SERIES T BALL VALVES

#### FLANGED END

Carbon Steel, ANSI 150 (10" Through 12")

T-4 - T-5

Carbon Steel, ANSI 300 (8" Through 12")

T-6 - T-7

Carbon Steel, ANSI 600 (4" Through 12")

T-8 - T-9

Carbon Steel, ANSI 900 (4")

T-10 - T-11

#### WELD END

Carbon Steel, ANSI 150 (4" Through 12")

T-12, T-15

Carbon Steel, ANSI 300 (4" Through 12")

T-13, T-15

Carbon Steel, ANSI 600 (4" Through 12")

T-14, T-15

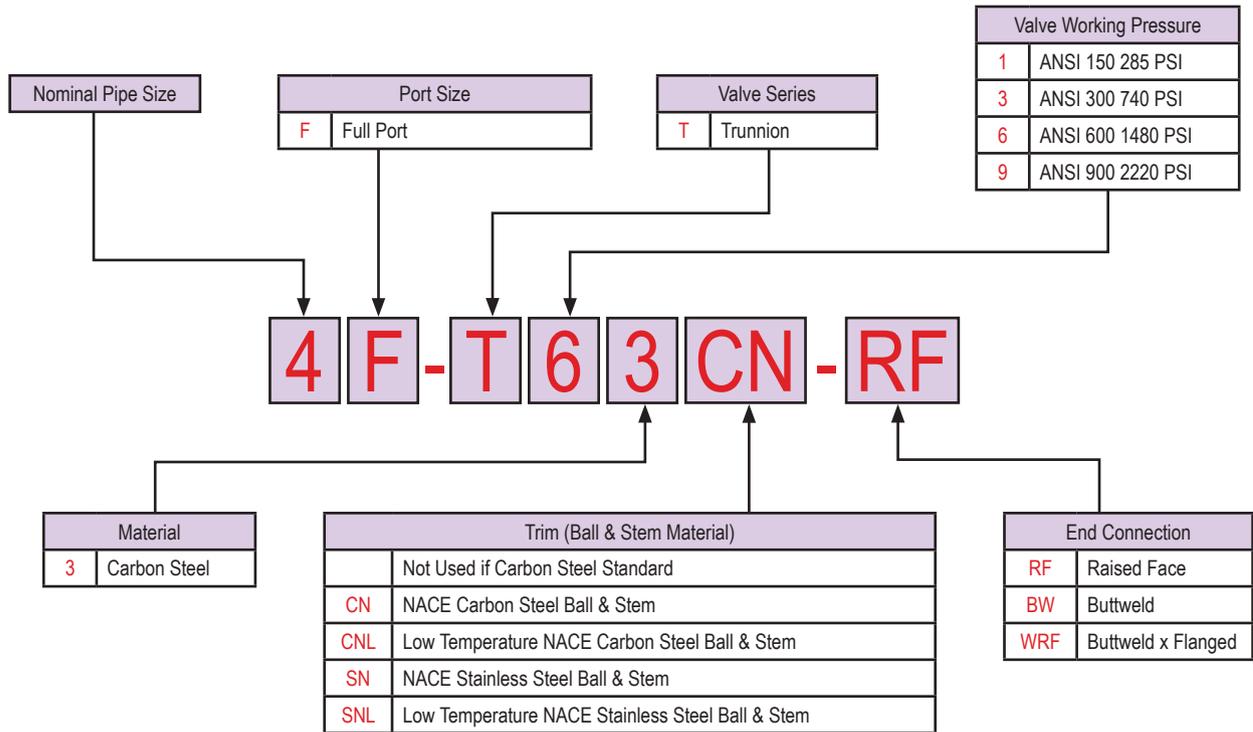
### TECHNICAL DATA

Standards and Specifications

TD-3

# Trunnion Ball Valve Identification Key

## Balon Trunnion Ball Valves



Note: For any valves not listed please consult factory.

# Trunnion Valve Features

## Trunnion Ball Valve Special Features



### **FULL-RANGE SEALING WITH MULTI-SEAL**

Most trunnion-mounted ball valves have difficulty sealing at both high and low pressures. Balon's Multi-Seal seats provide multi sealing surfaces for full-range sealing. This results in steady operating torques for low pressure applications and high pressure applications. Multi-Seal is standard in every valve.

### **BLOWOUT-PROOF STEM WITH SAFETY SHEAR GROOVE**

To prevent hazardous blowout, the Balon Series T stem is internally loaded and back-seated. And, as an added precaution each stem includes Balon's safety shear groove. If the stem should be inadvertently sheared, breakage occurs at a safe distance from the pressure zone.

### **LOAD-BEARING BLOCKS**

Balon has done away with the externally inserted lower trunnion, a hazardous leak path, a maintenance nuisance, and a blowout point. The Balon Series T incorporates load-bearing blocks. Even at maximum pressure, the blocks bear the load uniformly and reduce lateral stress, keeping the ball centered. Balon has eliminated the premature bearing failure associated with traditional trunnion valve designs.

### **DOUBLE-BLOCK-AND-BLEED AND SECONDARY SEALING**

Every Balon Series T includes a bleed fitting for double-block-and-bleed, and every valve allows grease injection for secondary sealing.

### **LOCKING DEVICE ON EVERY VALVE**

Balon Series T valves, like all Balon gear operated valves, feature standard locking devices in all sizes.

### **FIRE-SAFE AS STANDARD**

With Balon, there is no need to ask for "fire safe." Every Balon Series T ball valve is certified fire-safe per API 6FA.

### **EMISSIONS TESTED - API 641**

Balon trunnion valves successfully completed low emissions testing and are certified low emission per API 641. *See page 12 for more information.*

### **100% AMERICAN-MADE**

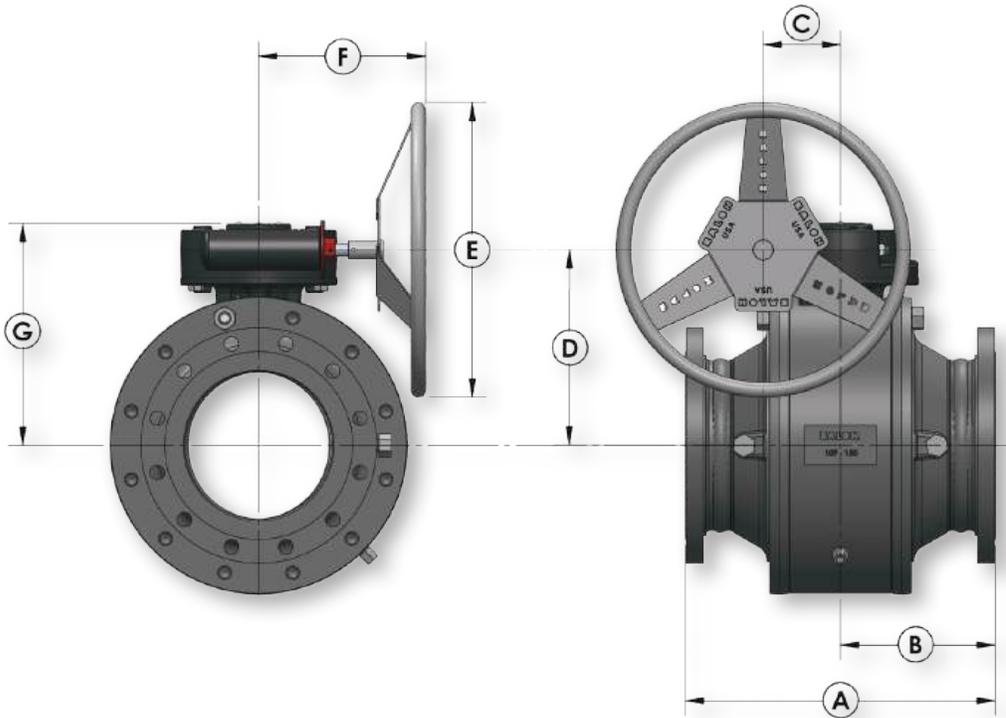
Like all Balon valves, the Series T comprises 100% domestic raw materials. All machining, assembly and testing work is performed in our Oklahoma City plant by Balon employees.

# Series T Trunnion Valves ANSI Class 150



## Series T Carbon Steel

- 100% Made in USA
- ANSI Class 150 (285 PSI WP)
- 10" through 12"
- Bolted Body Construction
  - Certified Low Emission Per API 641
  - Certified Fire Safe per API 6FA
  - Exclusive Balon Gearbox (See page G-2)
  - Multi-Seal Seats (See page B-5)
  - Temperature rating of -20° to 250°F
  - Available in Low-Temp Service to -50°F



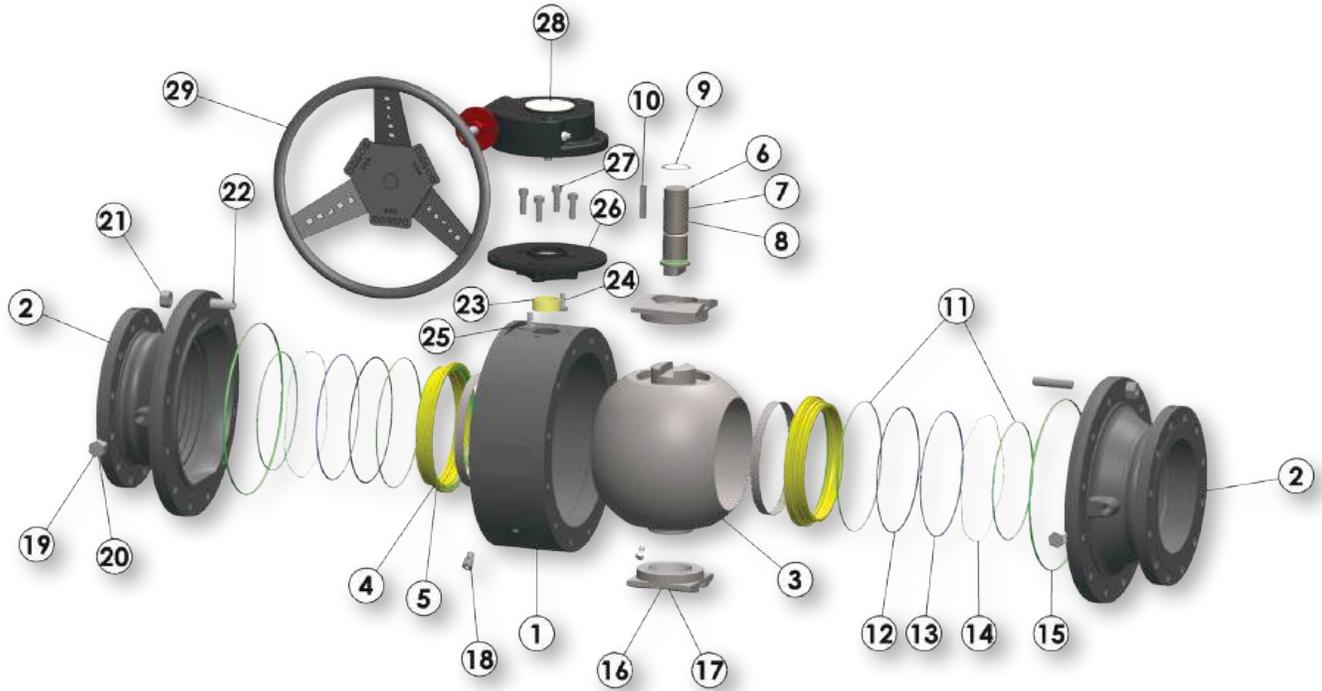
### Dimensional Data

SIZE	CATALOG NUMBER			PORT	A	B	C	D	E	F	G	LBS.
	STANDARD TRIM CARBON STEEL BALL & STEM	NACE TRIM CARBON STEEL BALL & STEM*	NACE TRIM 316 SS BALL & STEM*									
10x10x10	10F-T13-RF	10F-T13CN-RF*	10F-T13SN-RF*	10	21.00	10.50	5.25	13.26	20	13.56	15.25	937.5
12x12x12	12F-T13-RF	12F-T13CN-RF*	12F-T13SN-RF*	12	24.00	12.00	3.04	18.85	20	11.85	20.60	1481

\* NACE Valves are also available in low temp at -50° to 250°F. Call factory for details.

# Series T Trunnion Valves ANSI Class 150

## Series T Carbon Steel



### Material Description

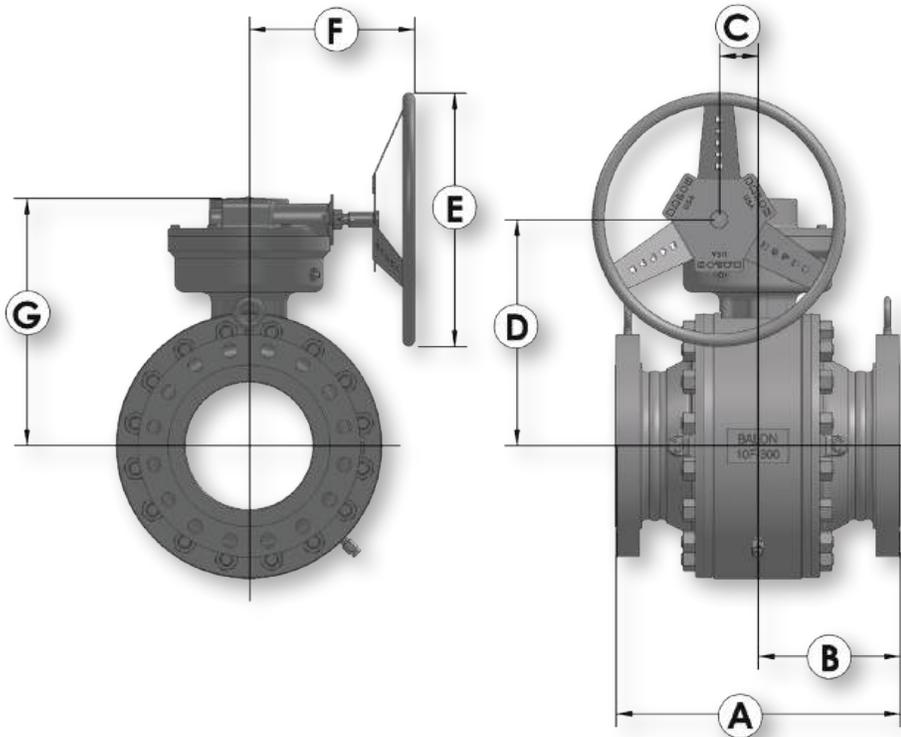
ITEM	PART NAME	STANDARD TRIM	CARBON STEEL NACE	STAINLESS STEEL NACE
1	Body	ASTM A105, Normalized	ASTM A105, Normalized	ASTM A105, Normalized
2	Adapter	ASTM A105, Normalized	ASTM A105, Normalized	ASTM A105, Normalized
3	Ball	Carbon Steel Nickel Chrome Plated	Carbon Steel Nickel Chrome Plated	316 Stainless Steel
4	Seat Carrier	Carbon Steel Nickel Chrome Plated	Carbon Steel Nickel Chrome Plated	316 Stainless Steel
5	Seat Insert	Nylon 11/Acetal	Nylon 11/Acetal	Nylon 11/Acetal
6	Stem	Carbon Steel	Carbon Steel	316 Stainless Steel
7	Stem O-Ring	Buna-N	Fluorocarbon	Fluorocarbon
8	Stem Thrust Washer	TFE	TFE	TFE
9	Snap Ring	Carbon Spring Steel	Carbon Spring Steel	Carbon Spring Steel
10	Stem Key	Steel Key Stock	Steel Key Stock	Steel Key Stock
11	Seat O-Ring	Buna-N	Fluorocarbon	Fluorocarbon
12	Fireseal	Graphite	Graphite	Graphite
13	Fireseal Support Ring	Stainless Steel	Stainless Steel	Stainless Steel
14	Spring	Inconel X-750	Inconel X-750	Inconel X-750
15	Body O-Ring	Buna-N	Fluorocarbon	Fluorocarbon
16	Bearing Block	Carbon Steel	Carbon Steel	Stainless Steel
17	Trunnion Bearing	316 SS/TFE	316 SS/TFE	316 SS/TFE
18	Bleed Fitting	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel
19	Sealant Injection Fitting	Alloy Steel	Alloy Steel	Alloy Steel
20	Internal Check Fitting	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel
21	Nuts	ASTM A194 2H	ASTM A194 2HM	ASTM A194 2HM
22	Studs	ASTM A193 B7	ASTM A193 B7M	ASTM A193 B7M
23	Stem Bearing	Glass/TFE	Glass/TFE	Glass/TFE
24	Hexhead Capscrew	Alloy Steel	Alloy Steel	Alloy Steel
25	Lock Washer	Alloy Steel	Alloy Steel	Alloy Steel
26	Adapter Plate	Ductile Iron	Ductile Iron	Ductile Iron
27	Capscrews	Alloy Steel	Alloy Steel	Alloy Steel
28	Gear Operator	Ductile Iron	Ductile Iron	Ductile Iron
29	Handwheel	Carbon Steel	Carbon Steel	Carbon Steel

# Series T Trunnion Valves ANSI Class 300



## Series T Carbon Steel

- 100% Made in USA
- ANSI Class 300 (740 PSI WP)
- 8" Through 12"
- Bolted Body Construction
  - Certified Low Emission Per API 641
  - Certified Fire Safe per API 6FA
  - Exclusive Balon Gearbox (See page G-2)
  - Multi-Seal Seats (See page B-5)
  - Temperature rating of -20° to 250°F
  - Available in Low-Temp Service to -50°F



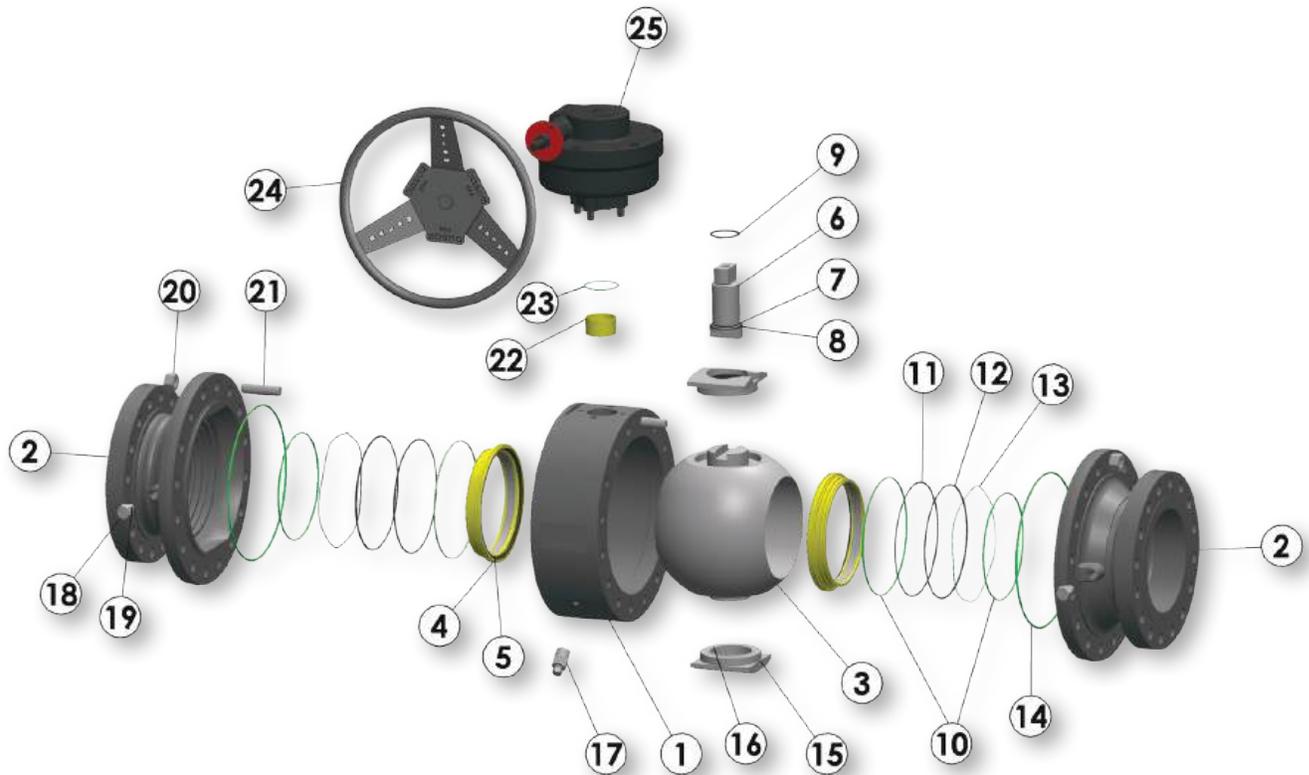
### Dimensional Data

SIZE	CATALOG NUMBER			PORT	A	B	C	D	E	F	G	LBS.
	STANDARD TRIM CARBON STEEL BALL & STEM	NACE TRIM CARBON STEEL BALL & STEM*	NACE TRIM 316 SS BALL & STEM*									
8x8x8	8F-T33-RF	8F-T33CN-RF*	8F-T33SN-RF*	8	19.75	9.37	5.25	11.75	20	11.56	13.67	684
10x10x10	10F-T33-RF	10F-T33CN-RF*	10F-T33SN-RF*	10	22.38	11.20	3.04	17.83	20	13.25	19.57	1200
12x12x12	12F-T33-RF	12F-T33CN-RF*	12F-T33SN-RF*	12	25.50	12.75	3.04	18.85	20	11.85	20.60	1670

\* NACE Valves are also available in low temp at -50° to 250°F. Call factory for details.

# Series T Trunnion Valves ANSI Class 300

## Series T Carbon Steel



### Material Description

ITEM	PART NAME	STANDARD TRIM	CARBON STEEL NACE	STAINLESS STEEL NACE
1	Body *	ASTM A105, Normalized	ASTM A105, Normalized	ASTM A105, Normalized
2	Adapter	ASTM A105, Normalized	ASTM A105, Normalized	ASTM A105, Normalized
3	Ball	Carbon Steel Nickel Chrome Plated	Carbon Steel Nickel Chrome Plated	316 Stainless Steel
4	Seat Carrier	Carbon Steel Nickel Chrome Plated	Carbon Steel Nickel Chrome Plated	316 Stainless Steel
5	Seat Insert	Nylon 11/Acetal	Nylon 11/Acetal	Nylon 11/Acetal
6	Stem	Carbon Steel	Carbon Steel	316 Stainless Steel
7	Stem O-Ring	Buna-N	Fluorocarbon	Fluorocarbon
8	Stem Thrust Washer	TFE	TFE	TFE
9	Snap Ring	Carbon Spring Steel	Carbon Spring Steel	Carbon Spring Steel
10	Seat O-Ring	Buna-N	Fluorocarbon	Fluorocarbon
11	Fireseal	Graphite	Graphite	Graphite
12	Fireseal Support Ring	Stainless Steel	Stainless Steel	Stainless Steel
13	Spring	Inconel X-750	Inconel X-750	Inconel X-750
14	Body O-Ring	Buna-N	Fluorocarbon	Fluorocarbon
15	Bearing Block	Carbon Steel	Carbon Steel	Stainless Steel
16	Trunnion Bearing	316 SS/TFE	316 SS/TFE	316 SS/TFE
17	Bleed Fitting	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel
18	Sealant Injection Fitting	Alloy Steel	Alloy Steel	Alloy Steel
19	Internal Check Fitting	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel
20	Nuts	ASTM A194 2H	ASTM A194 2HM	ASTM A194 2HM
21	Studs	ASTM A193 B7	ASTM A193 B7M	ASTM A193 B7M
22	Stem Bearing	Glass/TFE	Glass/TFE	Glass/TFE
23	Gear Operator O-Ring	Buna-N	Fluorocarbon	Fluorocarbon
24	Handwheel	Carbon Steel	Carbon Steel	Carbon Steel
25	Gear Operator	Ductile Iron	Ductile Iron	Ductile Iron

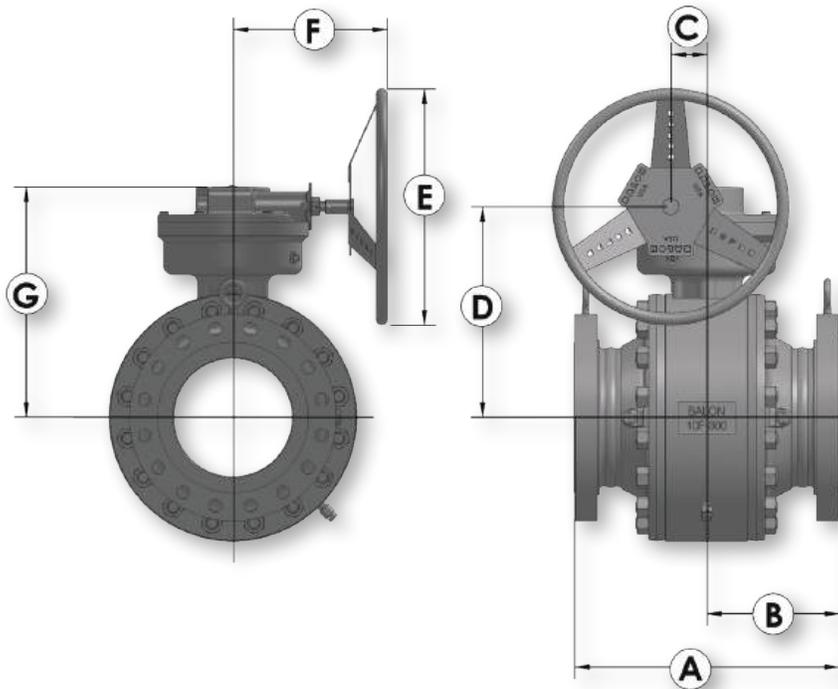
\* 8" body is ASTM A216 WCB

# Series T Trunnion Valves ANSI Class 600

## Series T Carbon Steel



- 100% Made in USA
- ANSI Class 600 (1480 PSI WP)
- 4" Through 12"
- Bolted Body Construction
- Certified Low Emission Per API 641
- Certified Fire Safe per API 6FA
- Exclusive Balon Gearbox (See page G-2)
- Multi-Seal Seats (See page B-5)
- Temperature rating of -20° to 250°F
- Available in Low-Temp Service to -50°F



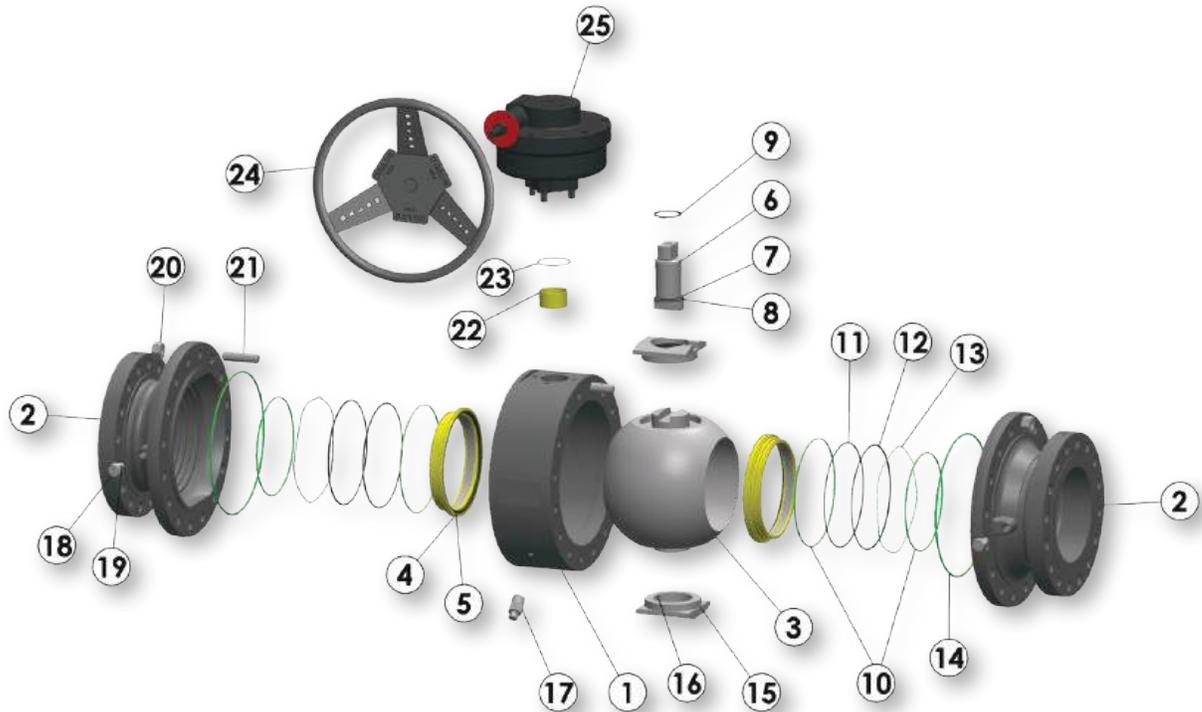
### Dimensional Data

SIZE	CATALOG NUMBER			PORT	A	B	C	D	E	F	G	LBS.
	STANDARD TRIM CARBON STEEL BALL & STEM	NACE TRIM CARBON STEEL BALL & STEM	NACE TRIM 316 SS BALL & STEM		RF	RF						
4x4x4	4F-T63	4F-T63CN*	4F-T63SN*	4	17	9.0	3.04	8.06	14	8.75	9.68	309
6x6x6	6F-T63	6F-T63CN*	6F-T63SN*	6	22	11.0	4.06	9.69	20	11.19	11.31	560
8x8x8	8F-T63	8F-T63CN*	8F-T63SN*	8	26	13.0	5.25	11.75	20	11.56	13.68	998
10x10x10	10F-T63	10F-T63CN*	10F-T63SN*	10	31	15.5	3.04	17.82	26	14.00	19.57	1550
12x12x12	12F-T63	12F-T63CN*	12F-T63SN*	12	33	16.5	3.04	18.53	26	14.00	20.28	2320

\* NACE Valves are also available in low temp at -50° to 250°F. Call factory for details.

# Series T Trunnion Valves ANSI Class 600

## Series T Carbon Steel



### Material Description

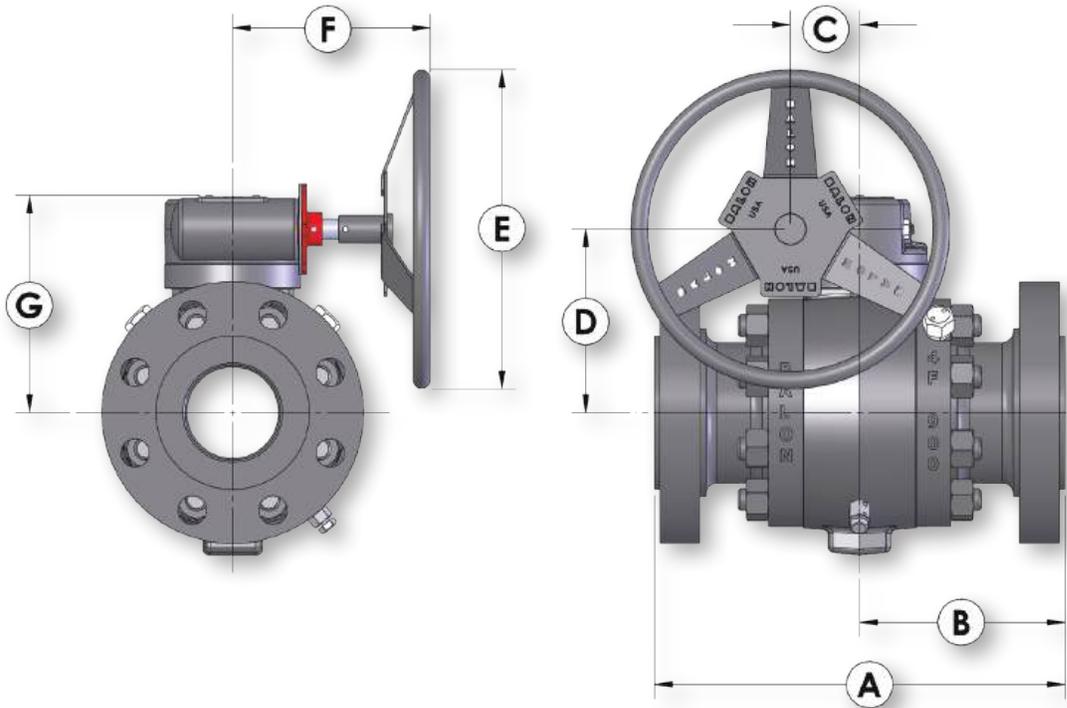
ITEM	PART NAME	STANDARD TRIM	CARBON STEEL NACE	STAINLESS STEEL NACE
1	Body	ASTM A105, Normalized	ASTM A105, Normalized	ASTM A105, Normalized
2	Adapter	ASTM A105, Normalized	ASTM A105, Normalized	ASTM A105, Normalized
3	Ball	Carbon Steel Nickel Chrome Plated	Carbon Steel Nickel Chrome Plated	316 Stainless Steel
4	Seat Carrier	Carbon Steel Nickel Chrome Plated	Carbon Steel Nickel Chrome Plated	316 Stainless Steel
5	Seat Insert	Nylon 11/Acetal	Nylon 11/Acetal	Nylon 11/Acetal
6	Stem	Carbon Steel	Carbon Steel	316 Stainless Steel
7	Stem O-Ring	Buna-N	Fluorocarbon	Fluorocarbon
8	Stem Thrust Washer	TFE	TFE	TFE
9	Snap Ring	Carbon Spring Steel	Carbon Spring Steel	Carbon Spring Steel
10	Seat O-Ring	Buna-N	Fluorocarbon	Fluorocarbon
11	Fireseal	Graphite	Graphite	Graphite
12	Fireseal Support Ring	Stainless Steel	Stainless Steel	Stainless Steel
13	Spring	Inconel X-750	Inconel X-750	Inconel X-750
14	Body O-Ring	Buna-N	Fluorocarbon	Fluorocarbon
15	Bearing Block	Carbon Steel	Carbon Steel	Stainless Steel
16	Trunnion Bearing	316 SS/TFE	316 SS/TFE	316 SS/TFE
17	Bleed Fitting	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel
18	Sealant Injection Fitting	Alloy Steel	Alloy Steel	Alloy Steel
19	Internal Check Fitting	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel
20	Nuts	ASTM A194 2H	ASTM A194 2HM	ASTM A194 2HM
21	Studs	ASTM A193 B7	ASTM A193 B7M	ASTM A193 B7M
22	Stem Bearing	Glass/TFE	Glass/TFE	Glass/TFE
23	Gear Operator O-Ring	Buna-N	Fluorocarbon	Fluorocarbon
24	Handwheel	Carbon Steel	Carbon Steel	Carbon Steel
25	Gear Operator	Ductile Iron	Ductile Iron	Ductile Iron

# Series T Trunnion Valves ANSI Class 900



## Series T Carbon Steel

- 100% Made in USA
- ANSI Class 900 (2220 PSI WP)
- 4"
- Bolted Body Construction
  - Certified Low Emission Per API 641
  - Certified Fire Safe per API 6FA
  - Exclusive Balon Gearbox (See page G-2)
  - Multi-Seal Seats (See page B-5)
  - Temperature rating of -20° to 250°F
  - Available in Low-Temp Service to -50°F



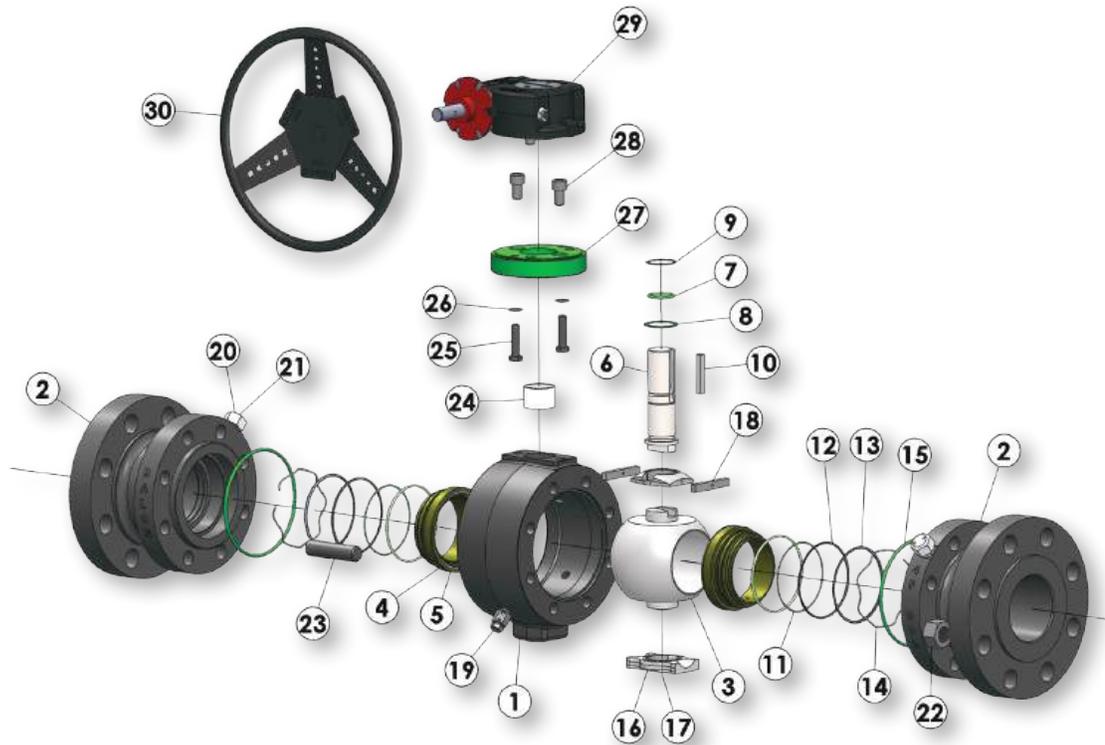
### Dimensional Data

SIZE	CATALOG NUMBER			PORT	A	B	C	D	E	F	G	LBS.
	STANDARD TRIM CARBON STEEL BALL & STEM	NACE TRIM CARBON STEEL BALL & STEM	NACE TRIM 316 SS BALL & STEM		RF	RF						
4x4x4	4F-T93	4F-T93CN*	4F-T93SN*	4	18	9	3.04	8.06	14	8.75	9.68	331

\* NACE Valves are also available in low temp at -50° to 250°F. Call factory for details.

# Series T Trunnion Valves ANSI Class 900

## Series T Carbon Steel



### Material Description

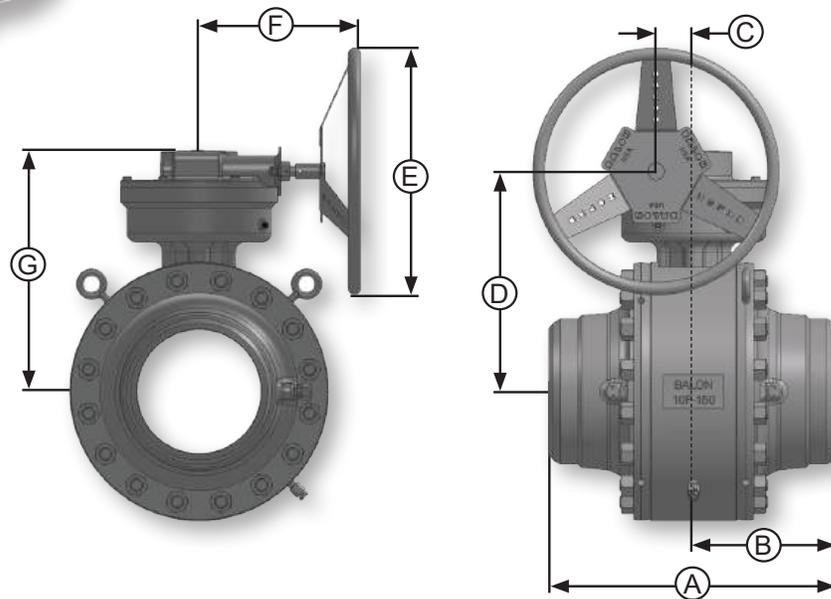
ITEM	PART NAME	STANDARD TRIM	CARBON STEEL NACE	STAINLESS STEEL NACE
1	Body	ASTM A105, Normalized	ASTM A105, Normalized	ASTM A105, Normalized
2	Adapter	ASTM A105, Normalized	ASTM A105, Normalized	ASTM A105, Normalized
3	Ball	Carbon Steel Nickel Chrome Plated	Carbon Steel Nickel Chrome Plated	316 Stainless Steel
4	Seat Carrier	Carbon Steel Nickel Chrome Plated	Carbon Steel Nickel Chrome Plated	316 Stainless Steel
5	Seat Insert	Nylon 11/Acetal	Nylon 11/Acetal	Nylon 11/Acetal
6	Stem	Carbon Steel	Carbon Steel	17- 4 Stainless Steel
7	Stem O-Ring	Buna-N	Fluorocarbon	Fluorocarbon
8	Stem Thrust Washer	TFE	TFE	TFE
9	Snap Ring	Carbon Spring Steel	Carbon Spring Steel	Carbon Spring Steel
10	Stem Key	Steel Key Stock	Steel Key Stock	Steel Key Stock
11	Seat O-Ring	Buna-N	Fluorocarbon	Fluorocarbon
12	Fireseal	Graphite	Graphite	Graphite
13	Fireseal Support Ring	Stainless Steel	Stainless Steel	Stainless Steel
14	Spring	Inconel X-750	Inconel X-750	Inconel X-750
15	Body O-Ring	Buna-N	Fluorocarbon	Fluorocarbon
16	Bearing Block	Carbon Steel	Carbon Steel	Stainless Steel
17	Trunnion Bearing	316 SS/TFE	316 SS/TFE	316 SS/TFE
18	Spacer Block	Stainless Steel	Stainless Steel	Stainless Steel
19	Bleed Fitting	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel
20	Sealant Injection Fitting	Alloy Steel	Alloy Steel	Alloy Steel
21	Internal Check Fitting	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel
22	Nuts	ASTM A194 2H	ASTM A194 2HM	ASTM A194 2HM
23	Studs	ASTM A193 B7	ASTM A193 B7M	ASTM A193 B7M
24	Stem Bearing	Glass/TFE	Glass/TFE	Glass/TFE
25	Hexhead Capscrew	Alloy Steel	Alloy Steel	Alloy Steel
26	Lock Washer	Alloy Steel	Alloy Steel	Alloy Steel
27	Adapter Plate	Ductile Iron	Ductile Iron	Ductile Iron
28	Capscrews	Alloy Steel	Alloy Steel	Alloy Steel
29	Gear Operator	Ductile Iron	Ductile Iron	Ductile Iron
30	Handwheel	Carbon Steel	Carbon Steel	Carbon Steel

# Series T Trunnion Valves Butt Weld Ends

## Series T Carbon Steel



- 100% Made in USA
- ANSI Class 150 (285 PSI WP)
- 4" through 12"
- Bolted Body Construction
  - Certified Low Emission Per API 641
  - Certified Fire Safe per API 6FA
  - Exclusive Balon Gearbox (See page G-2)
  - Multi-Seal Seats (See page B-5)
  - Temperature rating of -20° to 250°F
  - Available in Low-Temp Service to -50°F



### Dimensional Data

SIZE	CATALOG NUMBER		PORT	A	B	C	D	E	F	G	LBS.
	NACE TRIM CARBON STEEL BALL & STEM*	NACE TRIM 316 SS BALL & STEM*									
4x4x4	4F-T13CN-BW	4F-T13SN-BW	4	14.00	7.00	3.04	8.06	14	8.75	9.68	230
6x6x6	6F-T13CN-BW	6F-T13SN-BW	6	18.00	9.00	4.06	9.69	20	11.19	11.31	430
8x8x8	8F-T13CN-BW	8F-T13SN-BW	8	21.50	10.75	5.25	11.75	20	11.56	13.68	843
10x10x10	10F-T13CN-BW	10F-T13SN-BW	10	23.50	11.75	5.25	13.26	20	11.36	15.05	843
12x12x12	12F-T13CN-BW	12F-T13SN-BW	12	26.50	13.25	3.05	18.85	20	13.06	20.55	1458

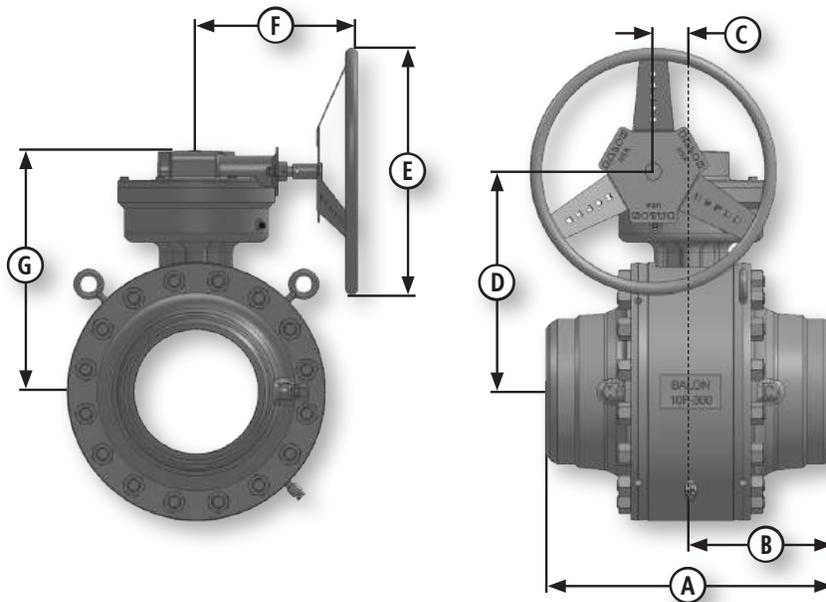
\* Also available in Weld x Flange 10" & 12".

Available in low temp at -50° to 250°F. Call factory for details.

# Series T Trunnion Valves Butt Weld Ends

## Series T Carbon Steel

- 100% Made in USA
- ANSI Class 300 (740 PSI WP)
- 4" through 12"
- Bolted Body Construction
  - Certified Low Emission Per API 641
  - Certified Fire Safe per API 6FA
  - Exclusive Balon Gearbox (See page G-2)
  - Multi-Seal Seats (See page B-5)
  - Temperature rating of -20° to 250°F
  - Available in Low-Temp Service to -50°F



### Dimensional Data

SIZE	CATALOG NUMBER		PORT	A	B	C	D	E	F	G	LBS.
	NACE TRIM CARBON STEEL BALL & STEM*	NACE TRIM 316 SS BALL & STEM*									
4x4x4	4F-T33CN-BW	4F-T33SN-BW	4	14.00	7.00	3.04	8.06	14	8.75	9.68	230
6x6x6	6F-T33CN-BW	6F-T33SN-BW	6	18.00	9.00	4.06	9.69	20	11.19	11.31	430
8x8x8	8F-T33CN-BW	8F-T33SN-BW	8	21.50	10.75	5.25	11.75	20	11.56	13.68	843
10x10x10	10F-T33CN-BW	10F-T33SN-BW	10	23.50	11.75	3.05	17.83	20	13.06	19.55	1007
12x12x12	12F-T33CN-BW	12F-T33SN-BW	12	26.50	13.25	3.05	18.85	20	13.08	20.55	1475

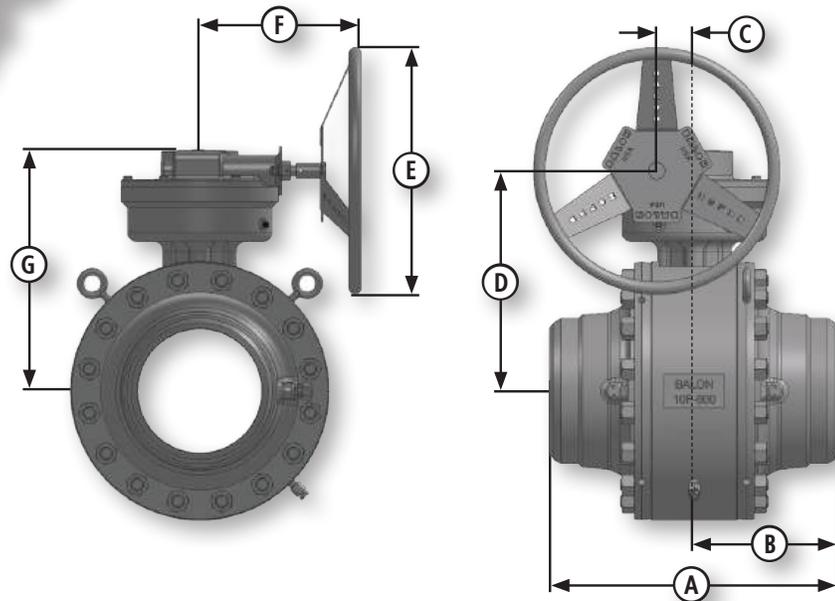
\* Also available in Weld x Flange 10" & 12".  
Available in low temp at -50° to 250°F. Call factory for details.

# Series T Trunnion Valves Butt Weld Ends

## Series T Carbon Steel



- 100% Made in USA
- ANSI Class 600 (1480 PSI WP)
- 4" through 12"
- Bolted Body Construction
  - Certified Low Emission Per API 641
  - Certified Fire Safe per API 6FA
  - Exclusive Balon Gearbox (See page G-2)
  - Multi-Seal Seats (See page B-5)
  - Temperature rating of -20° to 250°F
  - Available in Low-Temp Service to -50°F



### Dimensional Data

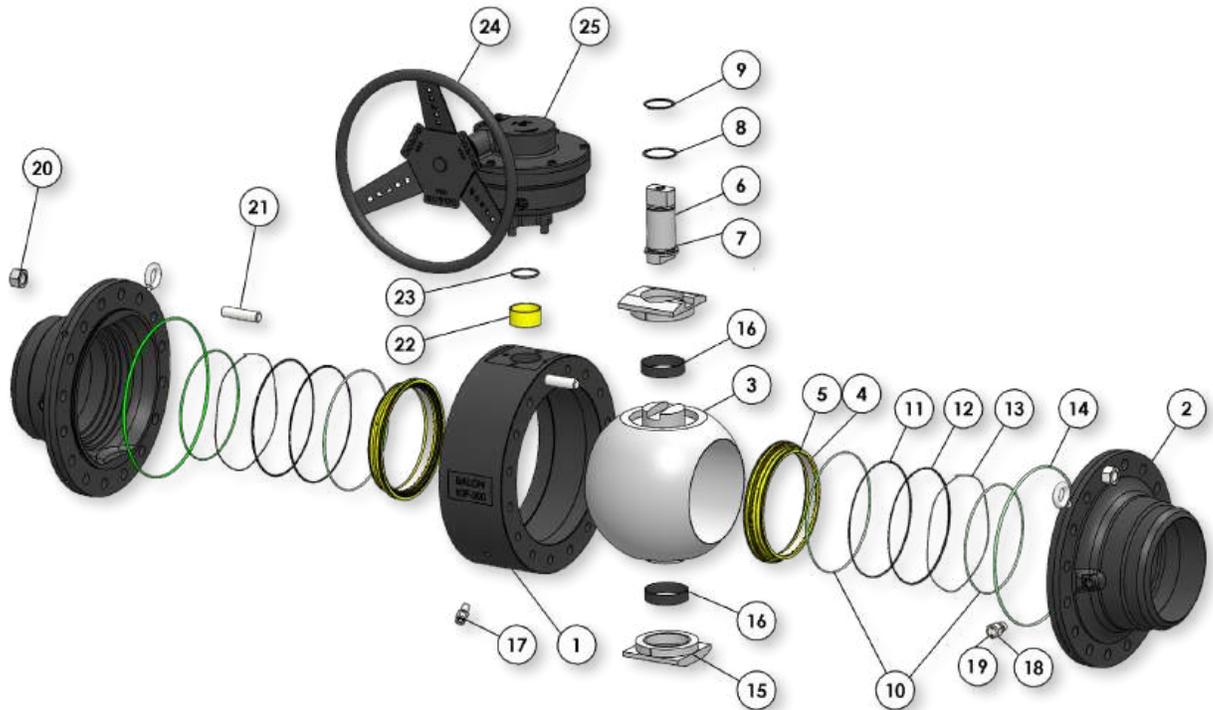
SIZE	CATALOG NUMBER		PORT	A	B	C	D	E	F	G	LBS.
	NACE TRIM CARBON STEEL BALL & STEM*	NACE TRIM 316 SS BALL & STEM*									
4x4x4	4F-T63CN-BW	4F-T63SN-BW	4	14.00	7.00	3.04	8.06	14	8.75	9.68	230
6x6x6	6F-T63CN-BW	6F-T63SN-BW	6	18.00	9.00	4.06	9.69	20	11.19	11.31	430
8x8x8	8F-T63CN-BW	8F-T63SN-BW	8	21.50	10.75	5.25	11.75	20	11.56	13.68	843
10x10x10	10F-T63CN-BW	10F-T63SN-BW	10	23.50	11.75	3.05	17.83	20	13.27	19.55	1078
12x12x12	12F-T63CN-BW	12F-T63SN-BW	12	26.50	13.25	3.05	19.56	26	13.28	21.25	1815

\* Also available in Weld x Flange.

Available in low temp at -50° to 250°F. Call factory for details.

# Series T Trunnion Valves Butt Weld Ends

## Series T Carbon Steel



### Material Description

ITEM	PART NAME	CARBON STEEL NACE	STAINLESS STEEL NACE
1	Body	ASTM A105, Normalized	ASTM A105, Normalized
2	Adapter	ASTM A350 LF2 40K SMYS	ASTM A350 LF2 40K SMYS
3	Ball	Carbon Steel Nickel Chrome Plated	316 Stainless Steel
4	Seat Carrier	Carbon Steel Nickel Chrome Plated	316 Stainless Steel
5	Seat Insert	Nylon 11/Acetal	Nylon 11/Acetal
6	Stem	Carbon Steel	316 Stainless Steel
7	Stem O-Ring	Fluorocarbon	Fluorocarbon
8	Stem Thrust Washer	TFE	TFE
9	Snap Ring	Carbon Spring Steel	Carbon Spring Steel
10	Seat O-Ring	Fluorocarbon	Fluorocarbon
11	Fireseal	Graphite	Graphite
12	Fireseal Support Ring	Stainless Steel	Stainless Steel
13	Spring	Inconel X-750	Inconel X-750
14	Body O-Ring	Fluorocarbon	Fluorocarbon
15	Bearing Block	Carbon Steel	Stainless Steel
16	Trunnion Bearing	316 SS/TFE	316 SS/TFE
17	Bleed Fitting	316 Stainless Steel	316 Stainless Steel
18	Sealant Injection Fitting	Alloy Steel	Alloy Steel
19	Internal Check Fitting	316 Stainless Steel	316 Stainless Steel
20	Nuts	ASTM A194 2HM	ASTM A194 2HM
21	Studs	ASTM A193 B7M	ASTM A193 B7M
22	Stem Bearing	Glass/TFE	Glass/TFE
23	Gear Operator O-Ring	Fluorocarbon	Fluorocarbon
24	Handwheel	Carbon Steel	Carbon Steel
25	Gear Operator	Ductile Iron	Ductile Iron



# BALON®

## GEAR OPERATOR

While developing and extending Balon's product line, it became essential to design and manufacture, in house, Balon's line of gear operators. Rather than relying on commodity gear operators manufactured by others, Balon's gear operators are specifically designed for operator safety and dependable functionality. This also eliminates ambiguity in service or inspection issues when assessing the performance of the valve and gear operator performance. It's Balon.

By incorporating rugged features and upgraded materials, the Balon gear operator extends service life and enhances both safety and ease of operation. And, as with every component of our valves, the Balon gear operator is 100% made in America by Balon Corporation.

Balon Gear Operator Models Standard Offering *		
B44 **	B64	B88
3F-F93	6F-F13	8F-F13
4F-F63	6F-F14	8F-F14
4F-T63	6F-F33	8F-T33
3R-F03	6F-F63	8F-T63
6R-F63	6F-T63	10R-F13
4F-T93	8R-F13	10F-T13
	8R-F33	
	8R-F63	
No. of Turns	No. of Turns	No. of Turns
11	16	22
B100	B132	B264
10F-T33	12F-T33	12F-T63
10F-T63		
12F-T13		
No. of Turns	No. of Turns	No. of Turns
25	33	66

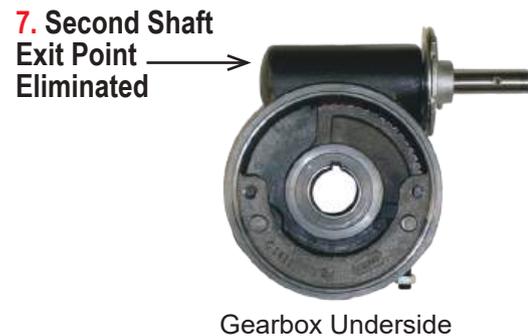
\* Gear operator models are also applicable on equivalent low-temp, high-temp, and uni-directional valves.

\*\*Balon Gear Operator Model B44 is available as an option on any Balon 3" bore or 4" bore carbon steel flanged valve. Please consult factory for details.



# Gear Operator Features

## B44, B64, B88



### 1. Rugged Locking Device Standard

A rugged locking device is standard with every Balon gearbox.

### 2. Ductile Iron Gearbox Housing

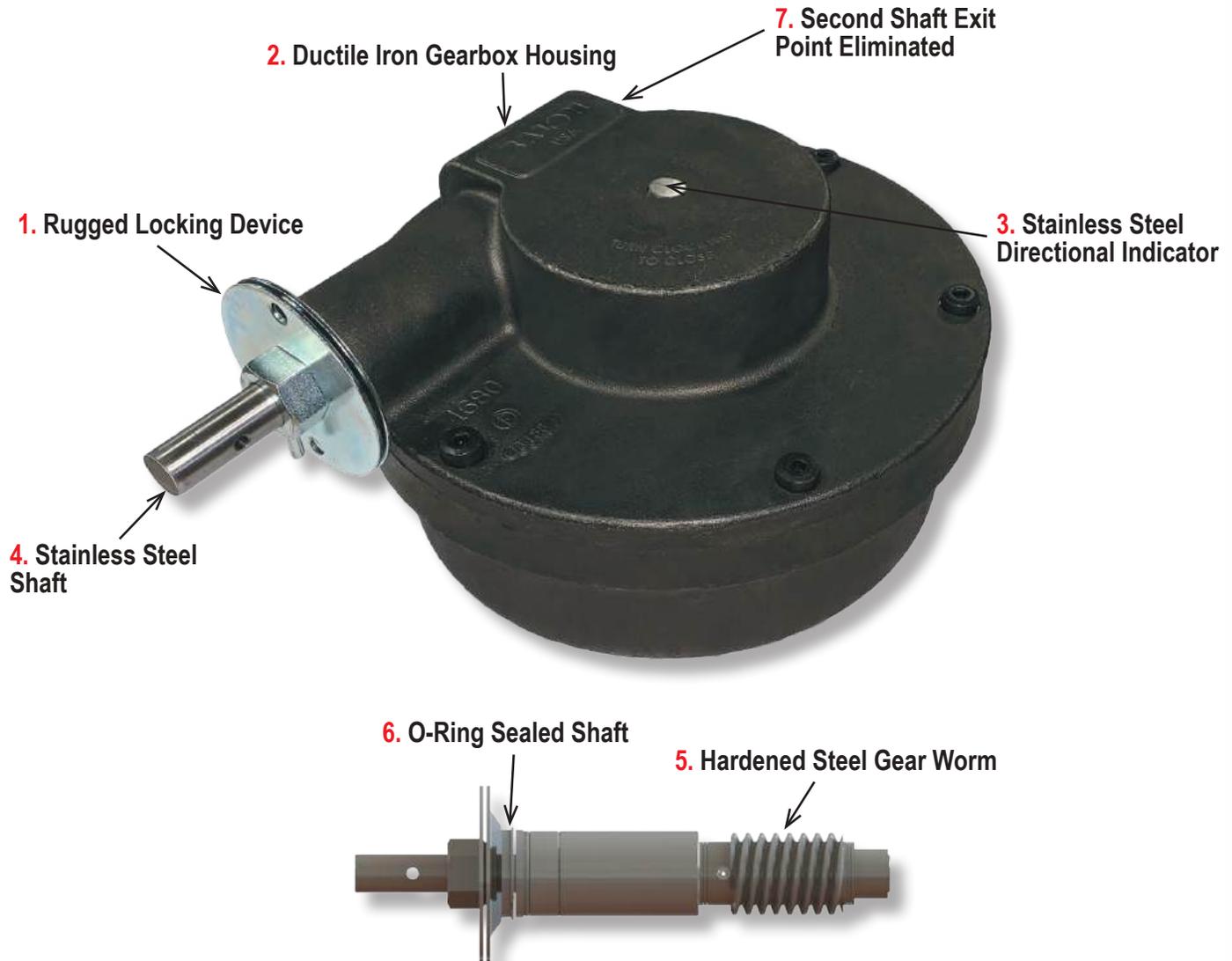
For all gearbox housings, Balon uses high-strength ductile iron, a more malleable material with a yield strength comparable to carbon steel.

### 3. Stainless Steel Directional Indicator

The Balon gearbox includes a low-profile stainless steel directional indicator. The indicator seal protects the stem journal from external contaminants.

# Gear Operator Features

## B100, B132, B264



### 4. Stainless Steel Shaft

All Balon gear operators are equipped with stainless steel shafts as standard, thus reducing corrosion concerns and assuring smoother gearbox operation.

### 5. Hardened Steel Worm

Gear worms are often susceptible to galling and wear. Balon takes the additional step of hardening our steel gear worms, making them highly resistant to galling and premature failure.

### 6-7. Suitable for Above Ground and Buried Service

The Balon gearbox is designed to prevent water and external contaminants from invading the box and causing corrosion and operating problems. **6)** The shaft is completely O-ring sealed. **7)** Balon has eliminated the second shaft exit point, a common *entry* point for external contaminants in more ordinary gearboxes

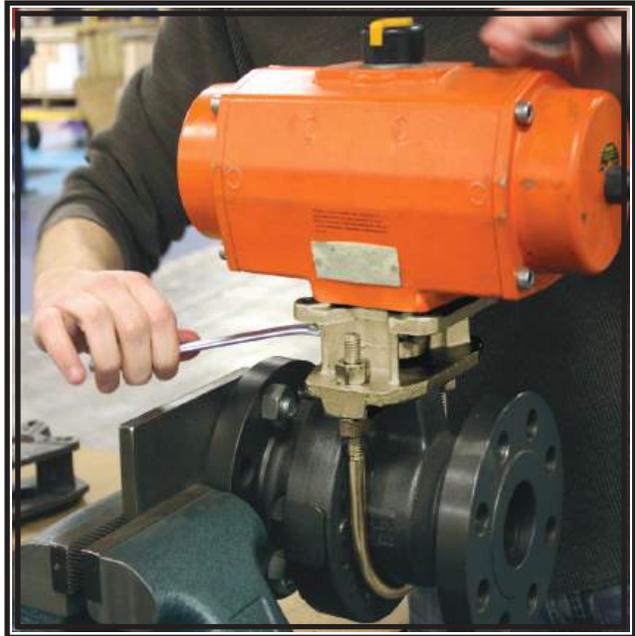
# Actuation Mounting Package

Actuation torque values for Balon ball valves may be found on Balon Corporation's website at [www.balon.com](http://www.balon.com).

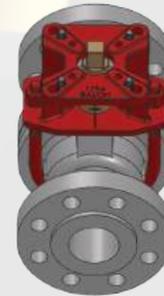
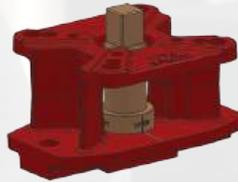
The breakaway torque values listed on our website do not contain any service or safety factors and are adequate for the operation of Balon ball valves equipped with standard seats and used to control clean liquid or gas at ambient temperature.

The run torque is approximately 50%, or one-half, of the breakaway torque. The re-seat torque is approximately 75%, or three-quarters, of the breakaway torque.

Corrosion, scale, build-up on the ball, or other service conditions can drastically alter torque requirements and should be given consideration when selecting actuation or automation equipment.



# BALON ACTUATION MOUNTING PACKAGE



Balon's Actuation Mounting Package includes everything required to safely and precisely mount an actuator to a floating Balon ball valve.

BALON VALVE BORE SIZE	BOLT CIRCLES	MALE PARALLEL SQUARE DRIVER	BOLTS IMPERIAL	BOLTS METRIC	BALON'S PART #
1" Full Port	F03 - 1.417" D.B.C. F04 - 1.653" D.B.C. F05 - 1.969" D.B.C. F07 - 2.759" D.B.C.	9mm	#10-24 X 5/8	M5 X 16mm	9-1F-ISO
			1/4-20 X 5/8	M6 X 16mm	
		11mm	#10-24 X 5/8	M5 X 16mm	11-1F-ISO
			1/4-20 X 5/8	M6 X 16mm	
		14mm	1/4-20 X 5/8	M6 X 16mm	14-1F-ISO
			5/16-18 X 7/8	M8 X 22mm	
		17mm	1/4-20 X 5/8	M6 X 16mm	17-1F-ISO
			5/16-18 X 7/8	M8 X 22mm	
2" Regular Port	F07 - 2.759" D.B.C. F10 - 4.015" D.B.C. F12 - 4.921" D.B.C.	17mm	5/16-18 X 7/8	M8 X 22mm	17-2R-ISO
			3/8-16 X 1	M10 X 25mm	
		19mm	5/16-18 X 7/8	M8 X 22mm	19-2R-ISO
			3/8-16 X 1	M10 X 25mm	
		22mm	5/16-18 X 7/8	M8 X 22mm	22-2R-ISO
			3/8-16 X 1	M10 X 25mm	
		27mm	3/8-16 X 1	M10 X 25mm	27-2R-ISO
			1/2-13 X 1	M12 X 30mm	
2" Full Port and 3" Regular Port	F07 - 2.759" D.B.C. F10 - 4.015" D.B.C. F12 - 4.921" D.B.C.	17mm	5/16-18 X 7/8	M8 X 22mm	17-2F/3R-ISO
			3/8-16 X 1	M10 X 25mm	
		19mm	5/16-18 X 7/8	M8 X 22mm	19-2F/3R-ISO
			3/8-16 X 1	M10 X 25mm	
		22mm	5/16-18 X 7/8	M8 X 22mm	22-2F/3R-ISO
			3/8-16 X 1	M10 X 25mm	
		27mm	3/8-16 X 1	M10 X 25mm	27-2F/3R-ISO
			1/2-13 X 1	M12 X 30mm	
3" Full Port and 4" Regular Port	F07 - 2.759" D.B.C. F10 - 4.015" D.B.C. F12 - 4.921" D.B.C. F14 - 5.512" D.B.C.	19mm	5/16-18 X 7/8	M8 X 22mm	19-3F/4R-ISO
			3/8-16 X 1	M10 X 25mm	
		22mm	5/16-18 X 7/8	M8 X 22mm	22-3F/4R-ISO
			3/8-16 X 1	M10 X 25mm	
		27mm	3/8-16 X 1	M10 X 25mm	27-3F/4R-ISO
			1/2-13 X 1	M12 X 30mm	
		36mm	1/2-13 X 1	M12 X 30mm	36-3F/4R-ISO
			5/8-11 X 1 1/4	M16 X 35mm	
4" Full Port and 6" Regular Port	F07 - 2.759" D.B.C. F10 - 4.015" D.B.C. F12 - 4.921" D.B.C. F14 - 5.512" D.B.C.	19mm	5/16-18 X 7/8	M8 X 22mm	19-4F/6R-ISO
			3/8-16 X 1	M10 X 25mm	
		22mm	5/16-18 X 7/8	M8 X 22mm	22-4F/6R-ISO
			3/8-16 X 1	M10 X 25mm	
		27mm	3/8-16 X 1	M10 X 25mm	27-4F/6R-ISO
			1/2-13 X 1	M12 X 30mm	
		36mm	1/2-13 X 1	M12 X 30mm	36-4F/6R-ISO
			5/8-11 X 1 1/4	M16 X 35mm	

Conforms to ISO 5211

Balon can accommodate most actuators with ISO or Non-ISO mounting dimensions. Please contact the factory for additional information.

ACTUATION PACKAGE

# BALON®

## TNT THREADED VALVE

### Installation Applications:

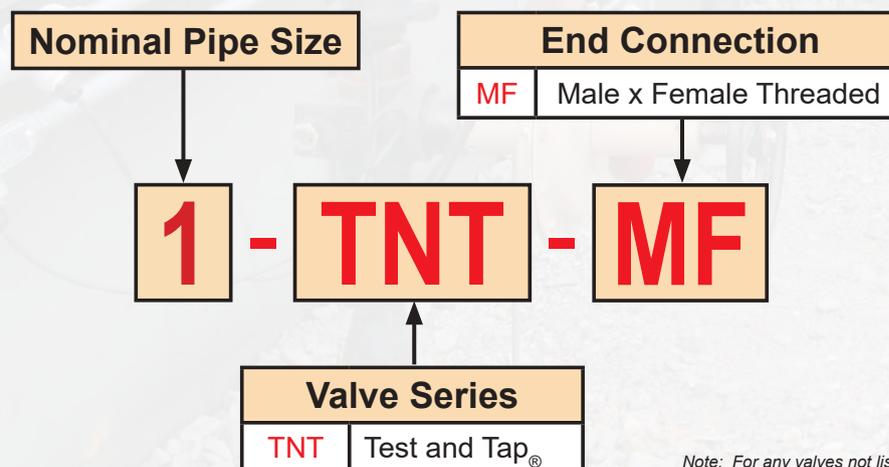
- ✓ Sampling
- ✓ Chemical Injection
- ✓ Relief Valve Testing
- ✓ Instrumentation Attachment
- ✓ Drains, Taps, Farm Taps, etc.
- ✓ ESD/Safety Pressure Switch Verification
- ✓ Pressure Relief on Blind End Applications



### BALON® TNT Valve:

- Fire Safe Design
- Ready to Install Off the Shelf
- Sizes Available 3/4", 1", 1 1/2", 2"
- 316 Stainless Steel Ball and Stem
- BALON Valve Has Bolted Construction
- Certified Low Emission Valve Per API 641
- NACE Standard and Rated -50°F to 212°F Service

### Test and Tap® Valve Identification Key



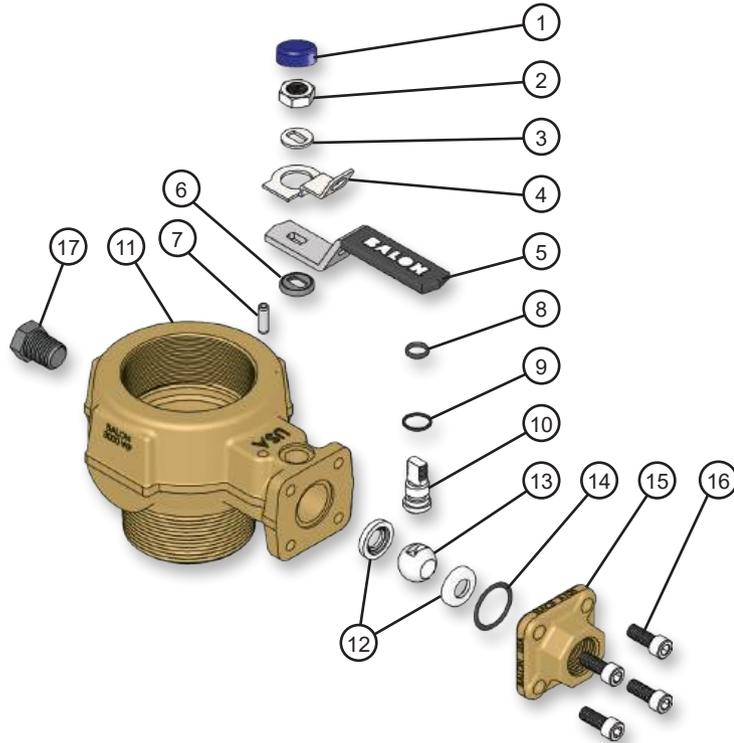
*Note: For any valves not listed please consult factory.*

# TEST AND TAP® VALVE - Threaded Series

## Material Description

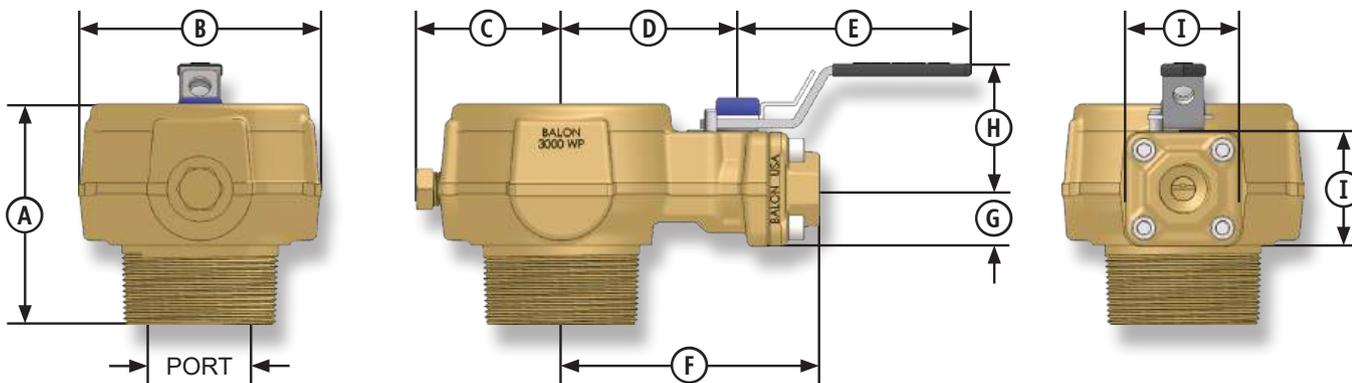
ITEM	PART NAME	MATERIAL (NACE)
1	Weather Guard	Polypropylene
2	Stem Nut	Carbon Steel
3	Spacer	Carbon Steel
4	Lock Plate	Carbon Steel
5	Handle*	Carbon Steel
6	Stem Washer	Acetal
7	Stop Pin	Carbon Steel
8	Stem O-Ring	Fluorocarbon
9	Stem Seal	TFE
10	Stem	316 Stainless Steel
11	Body	ASTM A350 LF2 CL1
12	Seat	Nylon 11 (TFE Optional)
13	Ball	316 Stainless Steel
14	Body O-Ring	Fluorocarbon
15	End Adapter	ASTM A350 LF2 CL1
16	Body Bolts	ASTM A320 L7M
17	NPT Pipe Plug	Carbon Steel

\* Handle and lock device are standard.



## Dimensional Data

SIZE	CATALOG NUMBER	PORT	WP	A	B	C	D	E	F	G	H	I	LBS
0.75	3/4-TNT-MF	0.75	3000	3.00	2.50	1.54	2.21	3.50	3.50	0.87	1.88	1.75	3.50
1.0	1-TNT-MF	0.91	3000	3.00	2.50	1.54	2.21	3.50	3.50	0.87	1.88	1.75	3.50
1.5	1.5-TNT-MF	1.38	3000	3.60	3.26	1.97	2.60	3.50	3.90	0.87	1.88	1.75	4.75
2.0	2-TNT-MF	1.88	3000	3.40	3.68	2.20	2.68	3.50	4.00	0.87	1.88	1.75	5.00



# BALON® TNT FLANGED VALVE

## Installation Applications:

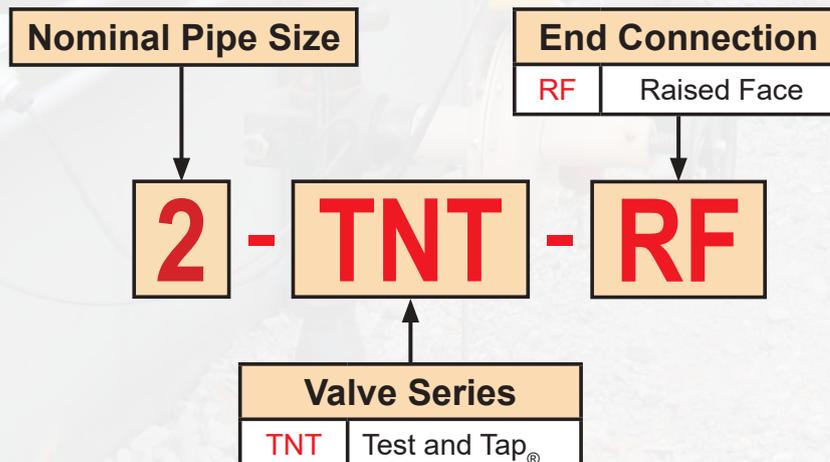
- ✓ Pressure Relief on Blind End Applications
- ✓ ESD/Safety Pressure Switch Verification
- ✓ Drains, Taps, Farm Taps, etc.
- ✓ Instrumentation Attachment
- ✓ Relief Valve Testing
- ✓ Chemical Injection
- ✓ Sampling

## BALON® TNT Valve:

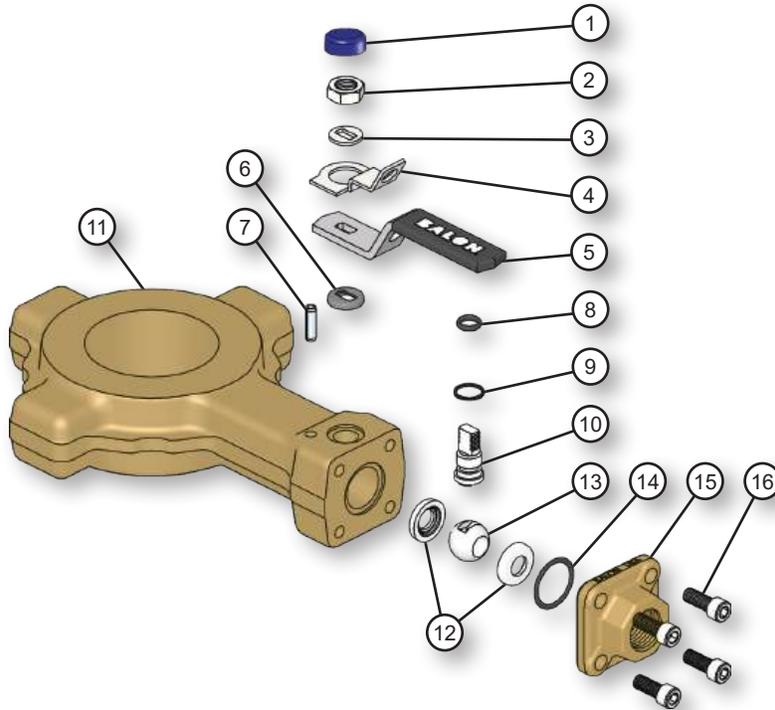
- Fire Safe Design
- Ready to Install Off the Shelf
- Sizes Available 2" Through 12"
- 316 Stainless Steel Ball and Stem
- BALON Valve Has Bolted Construction
- Certified Low Emission Valve Per API 641
- Single Size Fits 150/300/600 ANSI Class Flanges
- NACE Standard and Rated -50°F to 212°F Service
- Replaces Separate Bleed Ring, Nipple and Valve Commonly Used



## Test and Tap® Valve Identification Key



# TEST AND TAP™ VALVE - Flanged Series



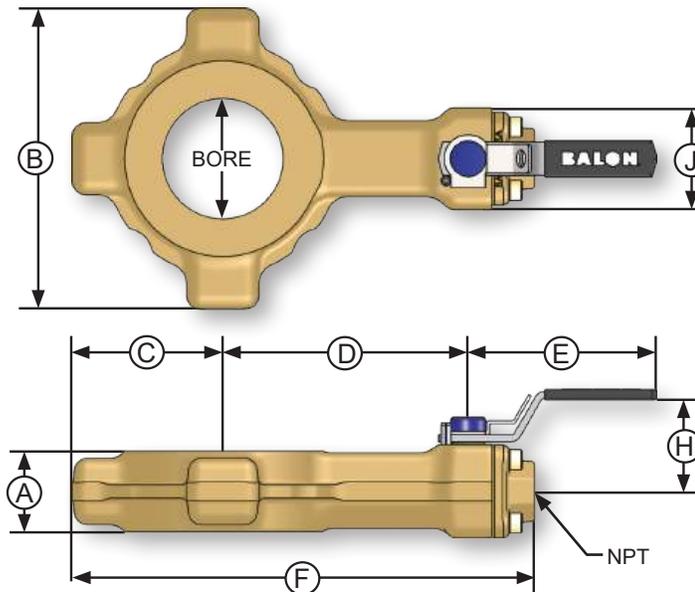
## Material Description

ITEM	PART NAME	MATERIAL (NACE)
1	Weather Guard	Polypropylene
2	Stem Nut	Carbon Steel
3	Spacer	Carbon Steel
4	Lock Plate	Carbon Steel
5	Handle*	Carbon Steel
6	Stem Washer	Acetal
7	Stop Pin	Carbon Steel
8	Stem O-Ring	Fluorocarbon
9	Stem Seal	TFE
10	Stem	316 Stainless Steel
11	Body	ASTM A350 LF2 CL1
12	Seat	Nylon 11 (TFE Optional)
13	Ball	316 Stainless Steel
14	Body O-Ring	Fluorocarbon
15	End Adapter	ASTM A350 LF2 CL1
16	Body Bolts	ASTM A320 L7M

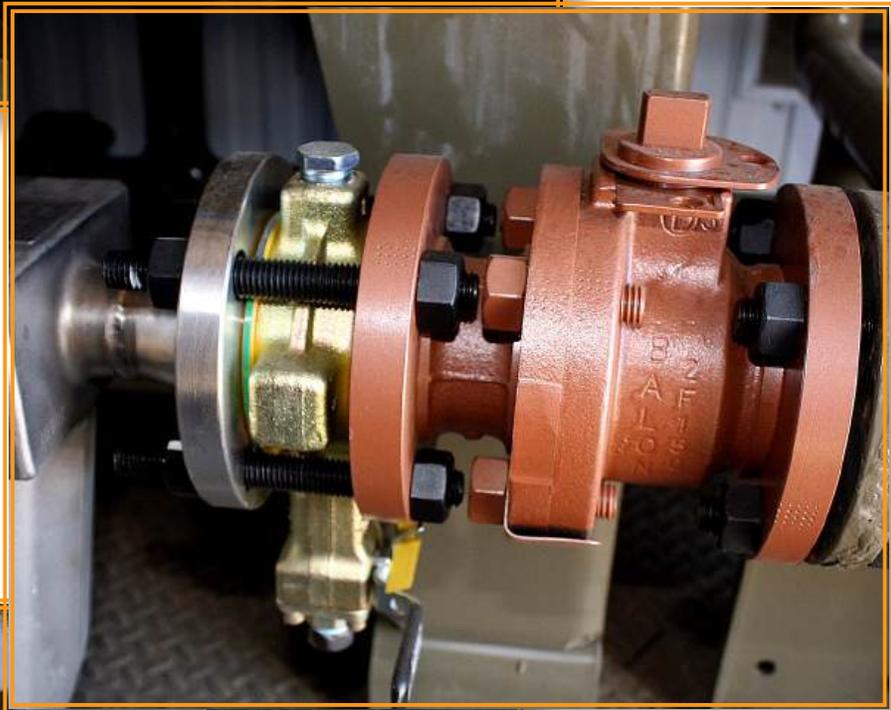
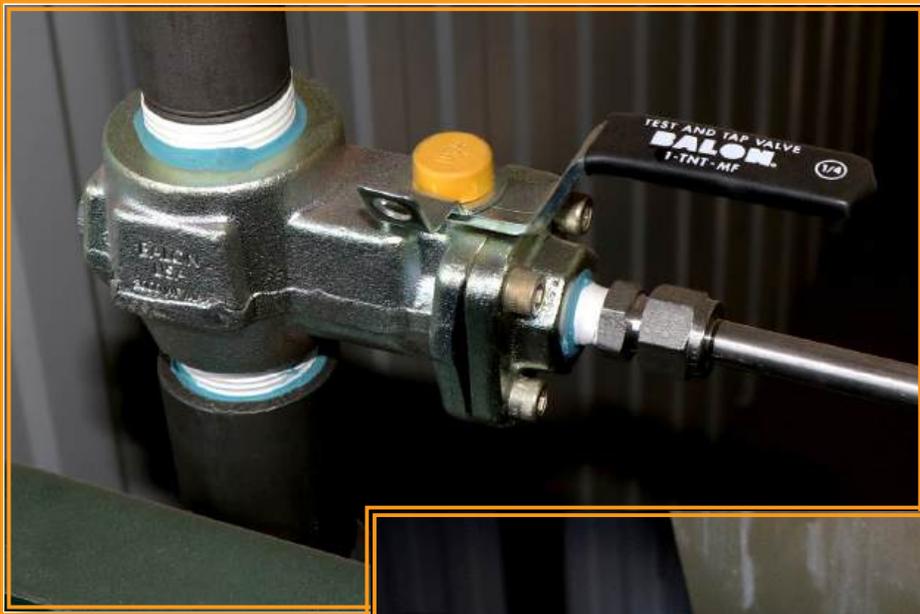
\* Handle and lock device are standard.  
Additional ports available on request.

## Dimensional Data

SIZE	CATALOG NUMBER	BORE	ANSI CLASS	A	B	C	D	E	F	H	J	NPT	LBS
2	2-TNT-RF	2.25	150/300/600	1.5	5.6	2.8	4.6	3.53	8.7	1.7	1.8	1/2"	6.9
3	3-TNT-RF	3.38	150/300/600	1.5	6.9	3.45	5.5	3.53	10.2	1.7	1.8	1/2"	8.9
4	4-TNT-RF	4.38	150/300/600	1.5	8.5	4.25	6.7	3.53	12.2	1.7	1.8	1/2"	12
6	6-TNT-RF	6.38	150/300/600	1.5	12.1	6.05	9.18	4.87	17.9	2.56	2.62	1"	21
8	8-TNT-RF	8.38	150/300/600	1.5	14.2	7.1	10.2	4.87	19.3	2.56	2.62	1"	27
10	10-TNT-RF	10.38	150/300/600	1.5	17.6	8.8	12.5	4.87	23.4	2.56	2.62	1"	35
12	12-TNT-RF	12.38	150/300/600	1.5	19.8	9.9	13.6	4.87	25.7	2.56	2.62	1"	40



NOTE: For any valve not listed, please consult factory.



# BALON®

## FREEZE RESISTANT UNI-DIRECTIONAL OPTION



Flow Indicator for  
UNI-Directional Valves Only

### UNI-Directional Valve

#### UNI-Directional Modification for Freeze Resistance

While no design can prevent a valve from freezing, Balon offers a UNI-Directional option that reduces the likelihood of a temporary freeze resulting in permanent damage to the valve. This design modification incorporates a relief hole in the upstream side of the closed ball. When water trapped inside the ball cavity freezes and expands, the relief hole allows dissipation of the increased internal pressure.

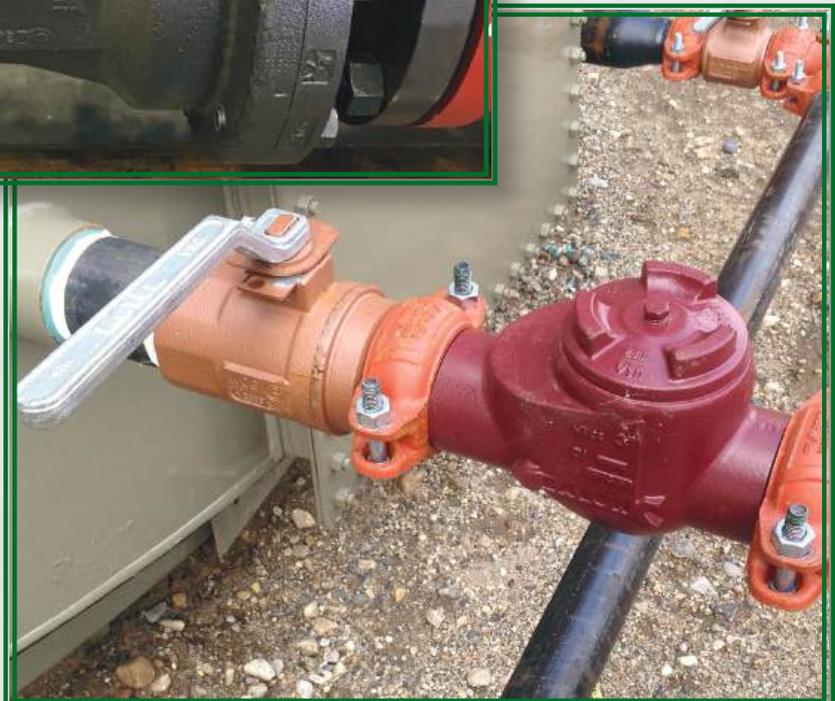
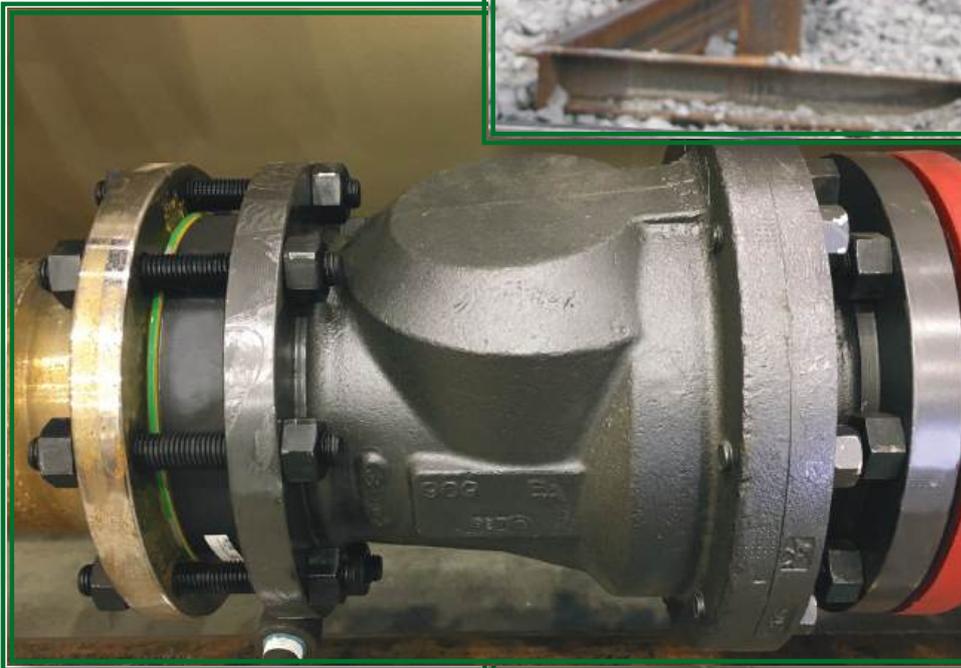
As shown in the photographs, the addition of the relief hole renders the valve uni-directional with the body side of the valve positioned upstream for proper sealing and operation on the downstream seat. The UNI-Directional option is also an effective way to reduce the possibility of pressure build-up due to thermal expansion. Balon's freeze-resistant, UNI-Directional option is available on every floating ball valve Balon offers. Please call the factory for pricing and availability when requesting the freeze resistant, UNI-Directional option.



Relief Hole, Upstream  
When Valve Is Closed



# SWING CHECK VALVES



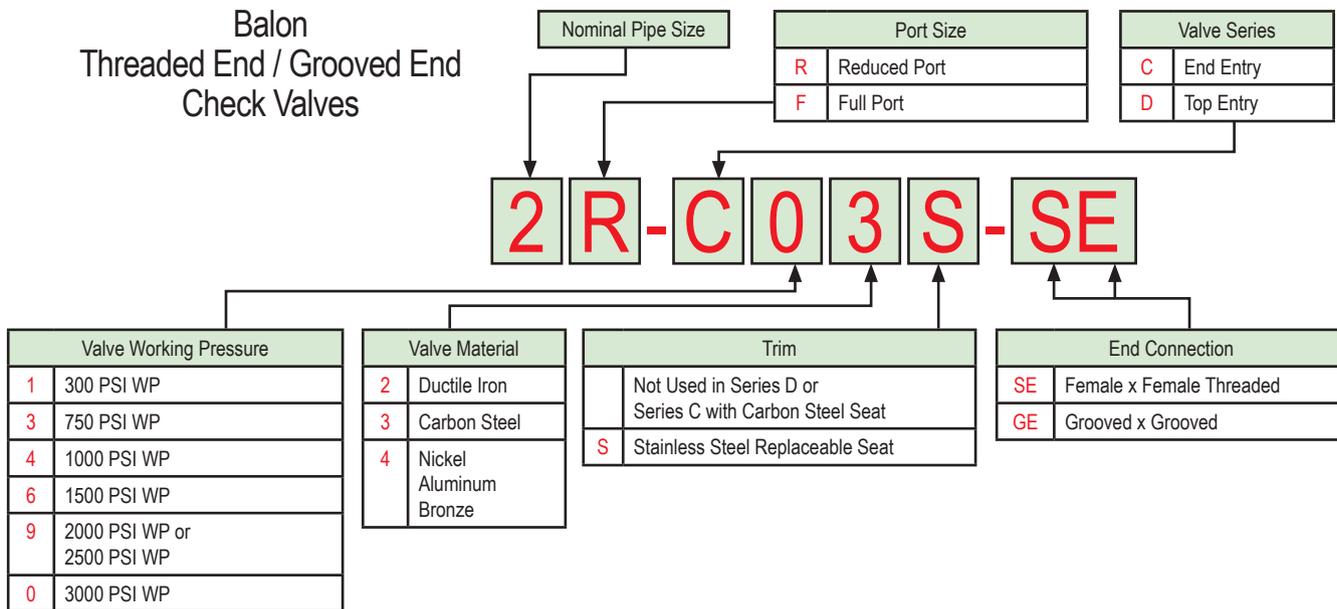
# BALON<sup>®</sup>

## SWING CHECK VALVES

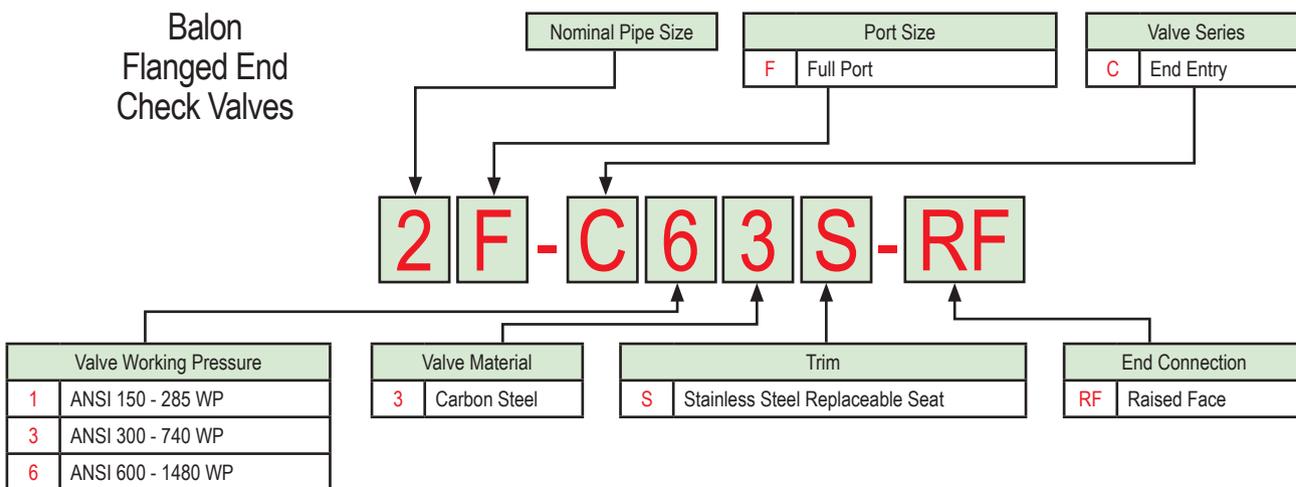
<b>BALON SWING CHECK VALVES</b>	C-1
<b>CHECK VALVE IDENTIFICATION KEY</b>	C-2
Balon Check Valve Features	C-3
<b>SERIES D CHECK VALVES</b>	
<b>CARBON STEEL VALVES</b>	
Female x Female Threaded End Connection	C-4
<b>DUCTILE IRON VALVES</b>	
Female x Female Threaded End Connection	C-5
Grooved x Grooved End Connection	C-6
<b>NICKEL ALUMINUM BRONZE VALVES</b>	
Female x Female Threaded End Connection	C-7
Grooved x Grooved End Connection	C-8
<b>SERIES C CHECK VALVES</b>	
<b>NICKEL ALUMINUM BRONZE VALVES</b>	
Female x Female Threaded End Connection	C-9 - C-10
<b>DUCTILE IRON VALVES</b>	
Female x Female Threaded End Connection	C-11 - C-12
<b>CARBON STEEL VALVES</b>	
Female x Female Threaded End Connection (1")	C-13
Grooved x Grooved End Connection	C-13
Female x Female Threaded End Connection (2")	C-14
Wafer Check	C-15 - C-16
Flanged End Connection	C-17 - C-19

# Check Valve Identification Key

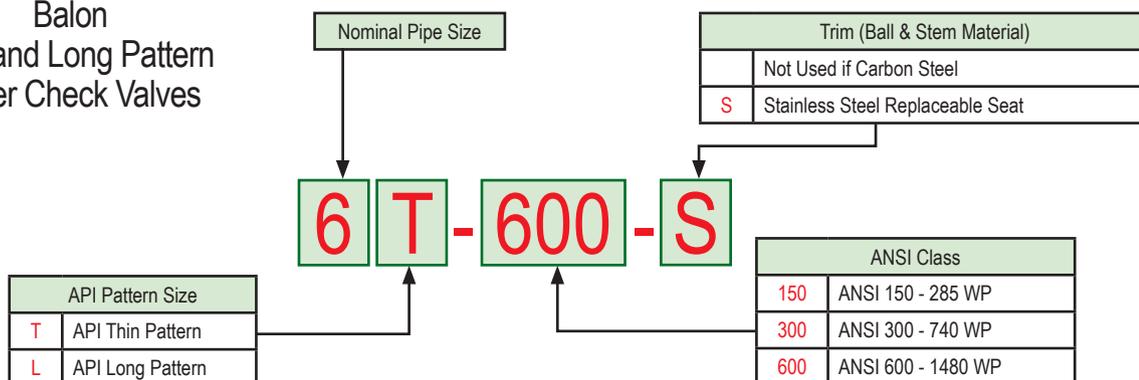
Balon Threaded End / Grooved End Check Valves



Balon Flanged End Check Valves



Balon Thin and Long Pattern Wafer Check Valves



Note: For any valves not listed please consult factory.

# Check Valve Features

## Series D Check Valves



The Balon Series D is a top-entry check valve which is available in carbon steel, ductile iron and "9D" nickel aluminum bronze.

All Series D are full port to allow for uninterrupted flow through the valve. As is the case with all of Balon's other check valves, all Series D meet NACE and include 316 stainless steel discs as standard components.

All Series D feature a specially designed, patented hinge-works consisting of a hinge pin and bearing block. As with the disc, the hinge and bearing block are also made of stainless steel. This special hinge-works supports the disc and encases the hinge in a stainless steel bearing that is fixed in place to prevent the hinge from rubbing against the dissimilar metal of the valve body.

In competitive check valves, this rubbing of dissimilar metals causes erosion and wear and can greatly shorten the useful life of the valve.

Balon's exclusive, patented hinge-works is yet another example of how Balon solves problems by raising the threshold of quality and lowering the cost of ownership.

## Series C Check Valves



Balon has breathed new life into the check valve by providing a fresh approach that conquers common swing check valve problems of the past.

Check valves often are subjected to damaging service requiring periodic replacement of internal components. Yet the design of most check valves prevents replacement of one of the most important components in a check valve; the seat, which can lead to premature valve failure.

Balon's Series C Check Valves solve this problem by using an innovative cartridge assembly that affords the user an economical and easy way to replace the entire checking mechanism (the disc, seal and seat) in the field, thereby extending the life of the valve.

**1. Notice the Seat...**it is an integral part of the replaceable module and not cast into the body as in other check valves.

**2. Notice the Resilient Seal...**it is firmly anchored into the seat rather than the disc, protecting it from the destructive abrading and blasting effect of the flow.

**3. Notice the Disc...**it has an integral pivot pin. No problem with wear prone pins and bushings. A positive solution to early mechanical failure.

**4. Notice the Pivot Bearing...**it is part of the seat module and not the valve body. It is a replaceable part, allowing complete valve renewal.

### NOTE:

*Use of swing check valves in reciprocating compressor service can substantially reduce service life.*

# Threaded End Connection



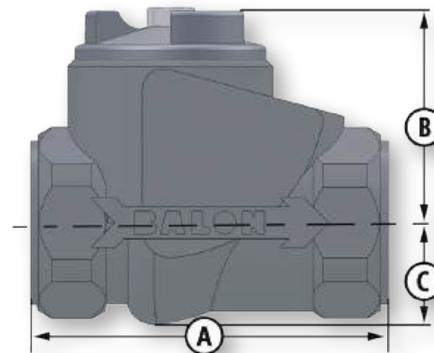
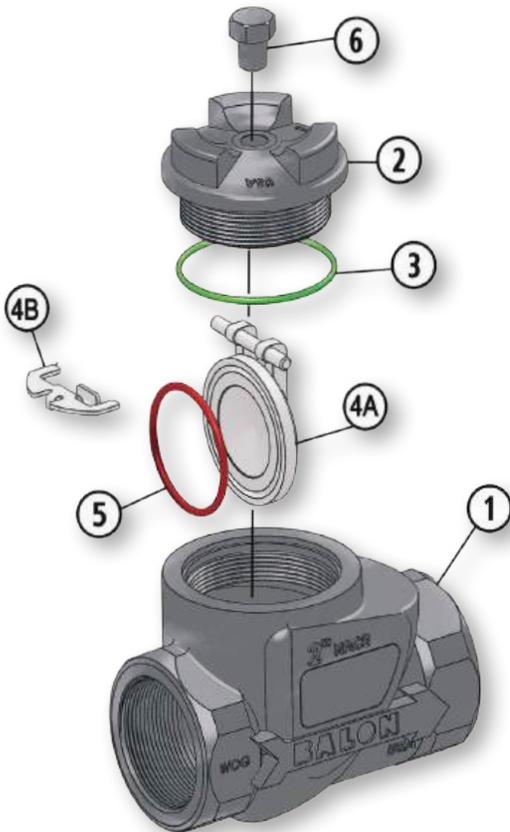
## Series D Carbon Steel

- 100% Made in USA
- Top Entry Swing Check Valve
- To 2500 PSI WP
- 1" Through 2"
- Threaded Body Construction
- NACE Standard
- Patented Hinge-Works for Extended Life
- Replaceable 316 Stainless Steel Disc Standard
- Improved by Design for Easier Bonnet Removal

### Material Description

ITEM	PART NAME	DESCRIPTION
1	Body	ASTM A216 WCB/A105, Normalized
2	Bonnet	ASTM A216 WCB/A105, Normalized
3	Bonnet Seal	Fluorocarbon (Buna-N Optional)
4A	Disc	Replaceable 316 Stainless Steel
4B	Disc Hanger	316 Stainless Steel
5	Disc Seal	Fluorocarbon
6*	Pipe Plug	Carbon Steel

\* Not available in 1"



### Dimensional Data

SIZE	CATALOG	PORT	WP	A	B	C	LBS.
1	1F-D63-SE	1	1500	4.25	2.87	1.12	4.5
1	1F-D93-SE	1	2500	4.25	2.87	1.12	4.5
2	2F-D63-SE	2	1500	6.00	3.75	1.81	12
2	2F-D93-SE	2	2500	6.00	3.75	1.81	12

# Threaded End Connection

## Series D Ductile Iron

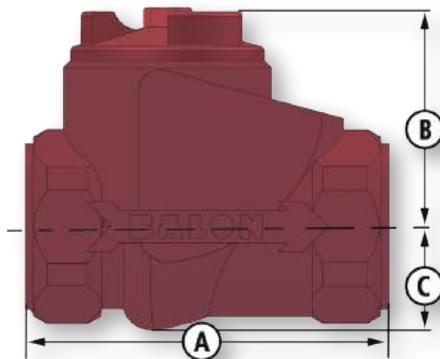
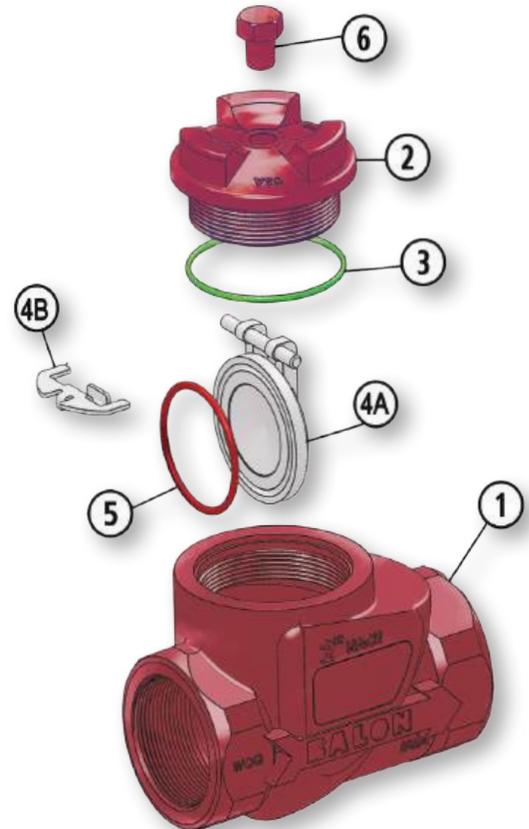
- 100% Made in USA
- Top Entry Swing Check Valve
- To 2000 PSI WP
- 1" Through 4"
- Threaded Body Construction
- NACE Standard
- High Grade Annealed Ductile Iron for Better Corrosion Resistance and Greater Yield Strength
- Patented Hinge-Works for Extended Life
- Replaceable 316 Stainless Steel Disc Standard
- Improved by Design for Easier Bonnet Removal



### Material Description

ITEM	PART NAME	DESCRIPTION
1	Body	ASTM A395 Class 60-40-18 Fully Annealed
2	Bonnet	ASTM A395 Class 60-40-18 Fully Annealed
3	Bonnet Seal	Fluorocarbon (Buna-N Optional)
4A	Disc	Replaceable 316 Stainless Steel
4B	Disc Hanger	316 Stainless Steel
5	Disc Seal	Fluorocarbon
6*	Pipe Plug	Carbon Steel

\* Not available in 1"



### Dimensional Data

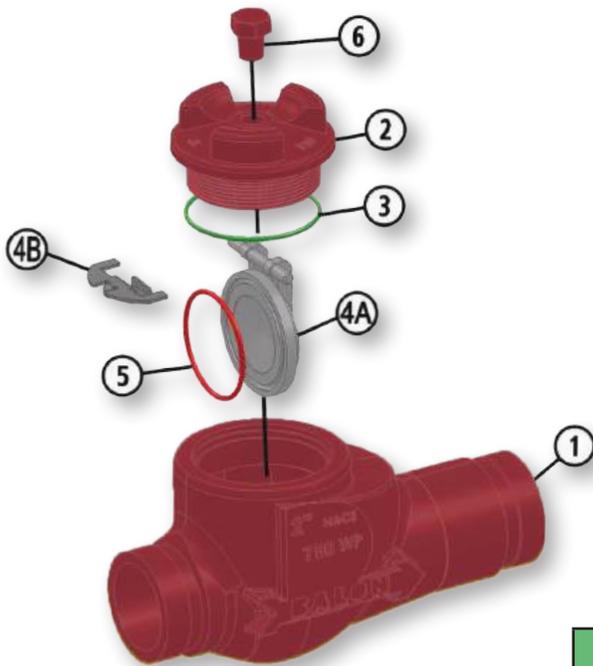
SIZE	CATALOG	PORT	WP	A	B	C	LBS.
1	1F-D42-SE	1	1000	4.25	2.87	1.12	4
1	1F-D92-SE	1	2000	4.25	2.87	1.12	4
2	2F-D12-SE	2	300	6.00	3.75	1.81	10
2	2F-D32-SE	2	750	6.00	3.75	1.81	10
2	2F-D42-SE	2	1000	6.00	3.75	1.81	10
2	2F-D62-SE	2	1500	6.00	3.75	1.87	11
2	2F-D92-SE	2	2000	6.00	3.75	1.87	11
3	3F-D32-SE	3	750	8.00	4.45	2.43	21
4	4F-D32-SE	4	750	10.00	5.54	3.00	36

# Grooved End Connection

## Series D Ductile Iron

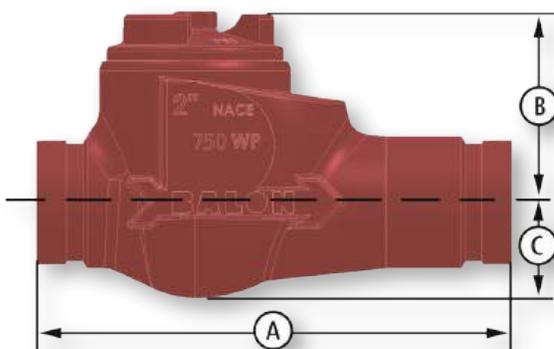


- 100% Made in USA
- Top Entry Swing Check Valve
- 750 PSI WP
- 2" Through 4"
- Threaded Body Construction
- NACE Standard
- High Grade Annealed Ductile Iron for Better Corrosion Resistance and Greater Yield Strength
- Patented Hinge-Works for Extended Life
- Replaceable 316 Stainless Steel Disc Standard
- Fully Machined Grooves
- Improved by Design for Easier Bonnet Removal



### Material Description

ITEM	PART NAME	DESCRIPTION
1	Body	ASTM A395 Class 60-40-18 Fully Annealed
2	Bonnet	ASTM A395 Class 60-40-18 Fully Annealed
3	Bonnet Seal	Fluorocarbon
4A	Disc	Replaceable 316 Stainless Steel
4B	Disc Hanger	316 Stainless Steel
5	Disc Seal	Fluorocarbon
6	Pipe Plug	Carbon Steel



### Dimensional Data

SIZE	CATALOG	PORT	WP	A	B	C	LBS.
2	2F-D32-GE	2	750	9.00	3.58	1.82	10
3	3F-D32-GE	3	750	10.75	4.50	2.45	20
4	4F-D32-GE	4	750	12.00	5.54	2.95	36

# Threaded End Connection

## Series D "9D" Nickel Aluminum Bronze

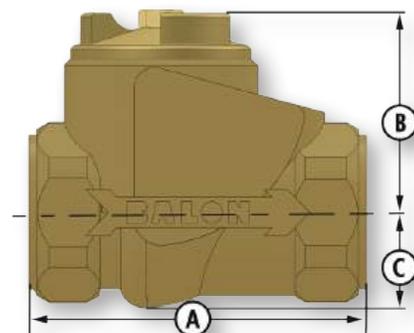
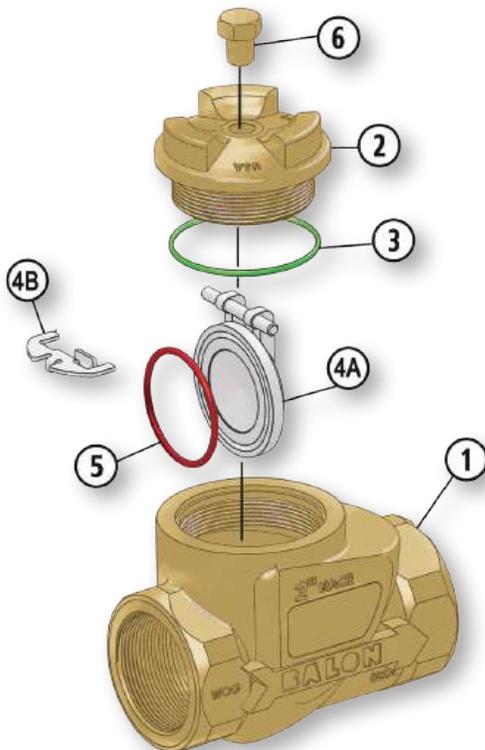
- 100% Made in USA
- Top Entry Swing Check Valve
- To 2000 PSI WP
- 1" Through 4"
- ASTM B148 GR 955 "9D"
- Threaded Body Construction
- NACE Standard
  - Enhanced Protection Against CO<sup>2</sup> and Saltwater Corrosion
  - Replaceable 316 Stainless Steel Disc Standard
  - Exceptional Yield Strength
  - Improved by Design for Easier Bonnet Removal
  - Minimizes Risk of Galling Associated with Stainless Steel



### Material Description

ITEM	PART NAME	DESCRIPTION
1	Body	ASTM B148 GR 955
2	Bonnet	ASTM B148 GR 955
3	Bonnet Seal	Fluorocarbon
4A	Disc	Replaceable 316 Stainless Steel
4B	Disc Hanger	316 Stainless Steel
5	Disc Seal	Fluorocarbon
6*	Pipe Plug	316 Stainless Steel

\* Not available in 1"



### Dimensional Data

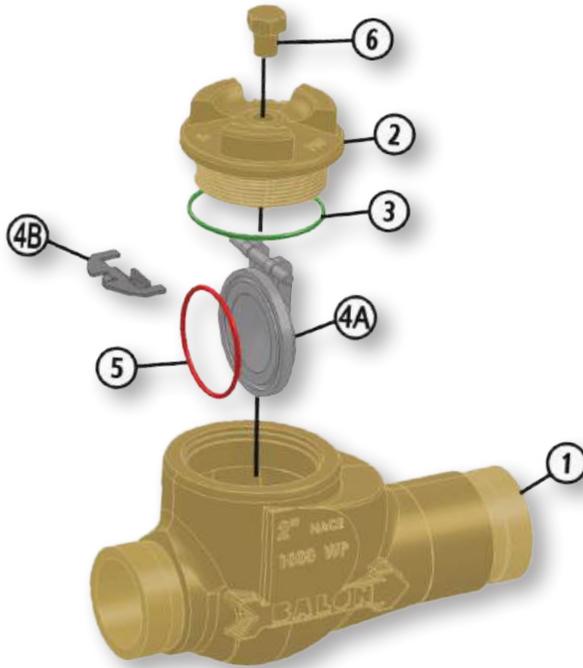
SIZE	CATALOG	PORT	WP	A	B	C	LBS.
1	1F-D94-SE	1	2000	4.25	2.87	1.12	4
2	2F-D44-SE	2	1000	6.00	3.75	1.87	9.8
2	2F-D94-SE	2	2000	6.00	3.75	1.87	11
3	3F-D44-SE	3	1000	8.00	4.45	2.43	21
4	4F-D44-SE	4	1000	10.00	5.54	3.00	36

# Grooved End Connection

## Series D "9D" Nickel Aluminum Bronze

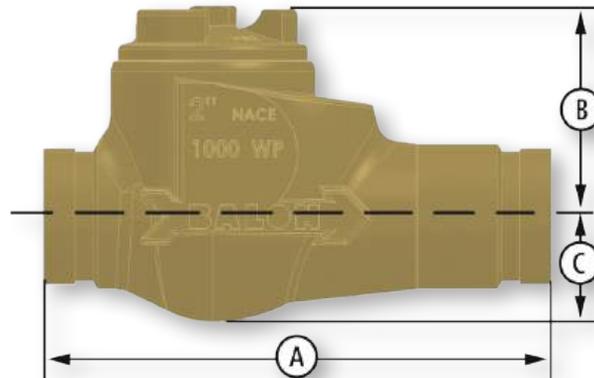


- 100% Made in USA
- Top Entry Swing Check Valve
- 1000 PSI WP
- 2" Through 6"
- ASTM B148 GR 955 "9D"
- Threaded Body Construction
- NACE Standard
- Enhanced Protection Against CO<sub>2</sub> and Saltwater Corrosion
- Replaceable 316 Stainless Steel Seat Disc Cartridge Standard
- Exceptional Yield Strength
- Improved by Design for Easier Bonnet Removal
- Fully Machined Grooves



### Material Description

ITEM	PART NAME	DESCRIPTION
1	Body	ASTM B148 GR 955
2	Bonnet	ASTM B148 GR 955
3	Bonnet Seal	Fluorocarbon
4A	Disc	Replaceable 316 Stainless Steel
4B	Disc Hanger	316 Stainless Steel
5	Disc Seal	Fluorocarbon
6	Pipe Plug	316 Stainless Steel



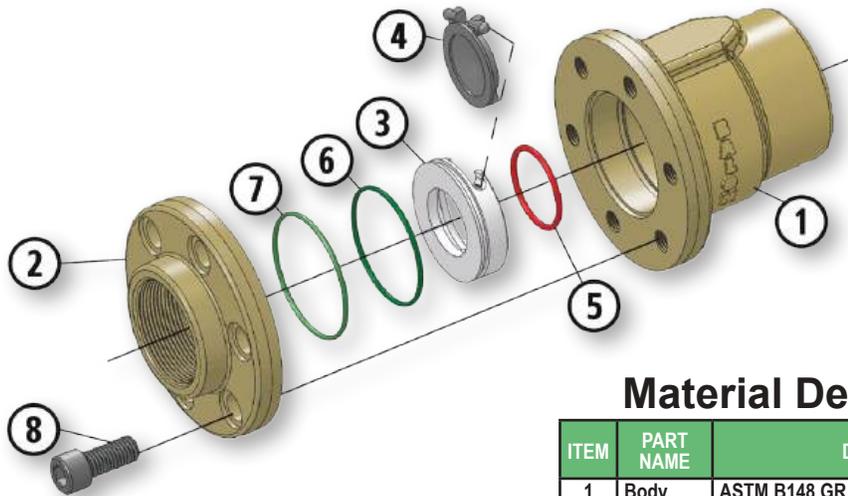
### Dimensional Data

SIZE	CATALOG	PORT	WP	A	B	C	LBS.
2	2F-D44-GE	2	1000	9.00	3.58	1.82	9.75
3	3F-D44-GE	3	1000	10.75	4.50	2.45	21.00
4	4F-D44-GE	4	1000	12.00	5.54	2.95	36.00
6	6R-D44-GE	4	1000	12.00	5.54	2.95	38.6

# Threaded End Connection

## Series C "9D" Nickel Aluminum Bronze

- 100% Made in USA
- 3000 PSI WP
- 2"
- ASTM B148 GR 955 "9D"
- Bolted Body Construction
- NACE Standard
  - Enhanced Protection Against CO<sub>2</sub> and Saltwater Corrosion
  - Improved Seat Design Protects Seal From Flow
  - Replaceable 316 Stainless Steel Seat Disc Cartridge Standard
  - Exceptional Yield Strength
  - Minimizes Risk of Galling Associated with Stainless Steel

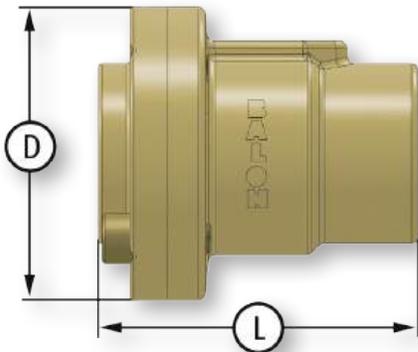


### Material Description

ITEM	PART NAME	DESCRIPTION
1	Body	ASTM B148 GR 955
2	Adapter	ASTM B148 GR 955
3	Seat	Replaceable 316 Stainless Steel
4	Disc	Replaceable 316 Stainless Steel
5	O-Ring	Seat Seal: Fluorocarbon
6	O-Ring	Assembly Seal: Fluorocarbon
7	O-Ring	Body Seal: Fluorocarbon
8	Bolts	ASTM A193 B7M

### Dimensional Data

SIZE	CATALOG	PORT	D	L	LBS.
2	2R-C04S-SE	1.5	4.88	5.37	10.9



# Threaded End Connection

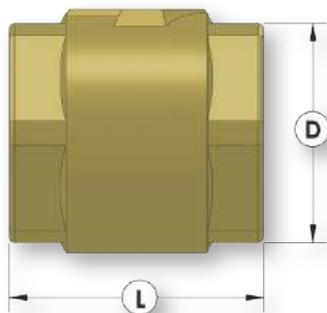
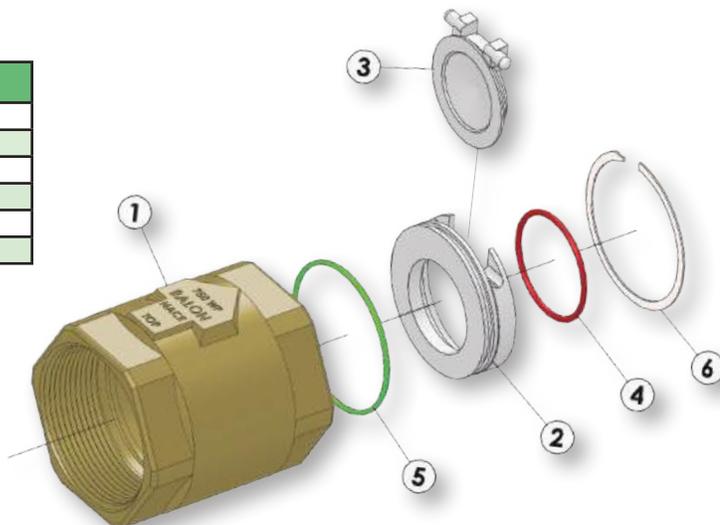
## Series C "9D" Nickel Aluminum Bronze

- 100% Made in USA
- Swing Check Valve
- 750 PSI WP
- 2" Through 3"
- ASTM B148 GR 955 "9D"
- One Piece Body
- NACE Standard
- Enhanced Protection Against CO<sub>2</sub> and Saltwater Corrosion
- Improved Seat Design Protects Seal From Flow
- Replaceable 316 Stainless Steel Seat Disc Cartridge Standard
- Exceptional Yield Strength
- Minimizes Risk of Galling Associated with Stainless Steel



### Material Description

ITEM	PART NAME	DESCRIPTION
1	Body	ASTM B148 GR 955
2	Seat	Replaceable 316 Stainless Steel
3	Disc	Replaceable 316 Stainless Steel
4	O-Ring	Seat Seal: Fluorocarbon
5	O-Ring	Body Seal: Fluorocarbon
6	Retaining Ring	316 Stainless Steel



### Dimensional Data

SIZE	CATALOG	PORT	D	L	LBS.
2	2R-C34S-SE	1.25	3.00	3.62	3.3
3	3R-C34S-SE	2.00	4.25	4.50	7.3

# Threaded End Connection

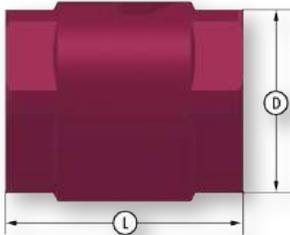
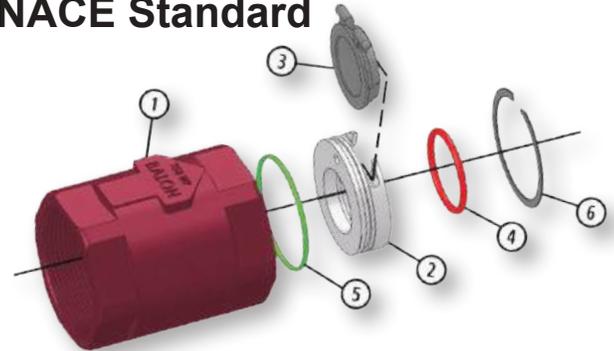
## Series C Ductile Iron

- 100% Made in USA
- 750 PSI WP
- 2" Through 3"
- One Piece Body
- NACE Standard



### Material Description

ITEM	PART NAME	DESCRIPTION
1	Body	ASTM A395 Class 60-40-18 Fully Annealed
2	Seat	Replaceable Carbon Steel
3	Disc	Replaceable 316 Stainless Steel
4	O-Ring	Seat Seal: Fluorocarbon
5	O-Ring	Body Seal: Buna-N
6	Retaining Ring	316 Stainless Steel



### Dimensional Data

SIZE	CATALOG NUMBER	PORT	D	L	LBS.
2	2R-C32-SE	1.25	3.00	3.62	3.3
3	3R-C32-SE	2.00	4.25	4.50	7.3

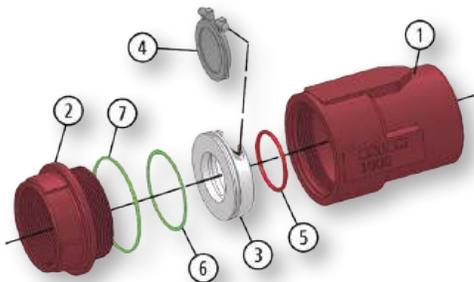
- High Grade Annealed Ductile Iron for Better Corrosion Resistance and Greater Yield Strength
- Improved Seat Design Protects Seal From Flow

- Replaceable 316 Stainless Steel Seat Disc Cartridge Standard

- 100% Made in USA
- 1000 PSI WP
- 2"
- Threaded Body Construction



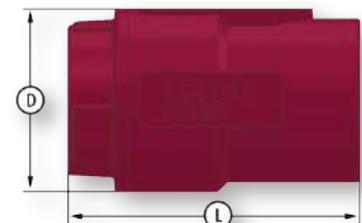
### Material Description



ITEM	PART NAME	CARBON STEEL SEAT	STAINLESS STEEL SEAT
		1	Body
2	Adapter	ASTM A395 Class 60-40-18 Fully Annealed	ASTM A395 Class 60-40-18 Fully Annealed
3	Seat	Replaceable Carbon Steel	Replaceable 316 Stainless Steel
4	Disc	Replaceable 316 Stainless Steel	Replaceable 316 Stainless Steel
5	O-Ring	Seat Seal: Fluorocarbon	Seat Seal: Fluorocarbon
6	O-Ring	Assembly Seal: Buna-N	Assembly Seal: Fluorocarbon
7	O-Ring	Body Seal: Buna-N	Body Seal: Fluorocarbon

### Dimensional Data

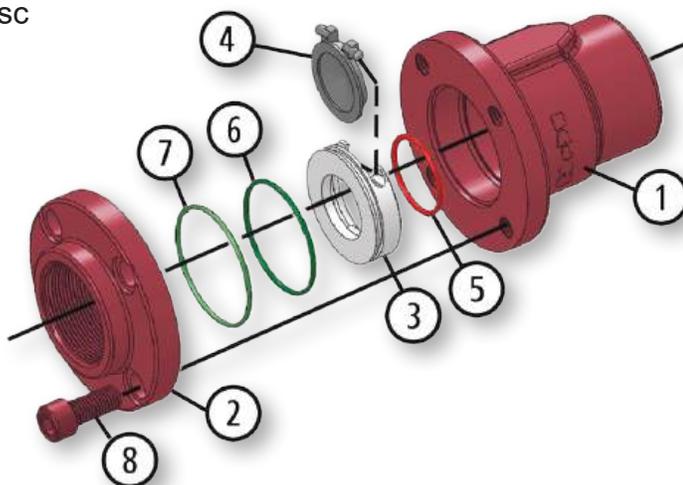
SIZE	CATALOG NUMBER		PORT	D	L	LBS.
	CARBON STEEL SEAT	STAINLESS STEEL SEAT				
2	2R-C42-SE	2R-C42S-SE	1.5	3.37	5.37	6



# Threaded End Connection

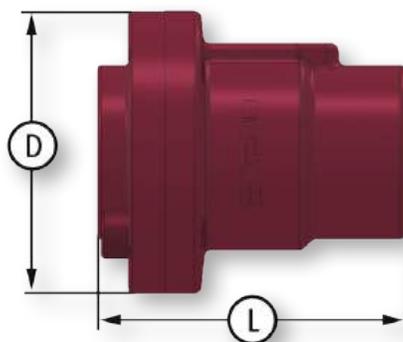
## Series C Ductile Iron

- 100% Made in USA
- 2000 PSI WP
- 2" Through 3"
- Bolted Body Construction
- NACE Standard
- Bolted Body Protects Against End Adapter Rotation
- High Grade Annealed Ductile Iron for Better Corrosion Resistance and Greater Yield Strength
- Improved Seat Design Protects Seal From Flow
- Replaceable 316 Stainless Steel Seat Disc Cartridge Standard



### Material Description

ITEM	PART NAME	CARBON STEEL SEAT	STAINLESS STEEL SEAT
1	Body	ASTM A395 Class 60-40-18 Fully Annealed	ASTM A395 Class 60-40-18 Fully Annealed
2	Adapter	ASTM A395 Class 60-40-18 Fully Annealed	ASTM A395 Class 60-40-18 Fully Annealed
3	Seat	Replaceable AISI 1018 Carbon Steel	Replaceable 316 Stainless Steel
4	Disc	Replaceable 316 Stainless Steel	Replaceable 316 Stainless Steel
5	O-Ring	Seat Seal: Fluorocarbon	Seat Seal: Fluorocarbon
6	O-Ring	Assembly Seal: Buna-N	Assembly Seal: Fluorocarbon
7	O-Ring	Body Seal: Buna-N	Body Seal: Fluorocarbon
8	Bolts	ASTM A193 B7M	ASTM A193 B7M



### Dimensional Data

SIZE	CATALOG NUMBER		PORT	D	L	LBS.
	CARBON STEEL SEAT	STAINLESS STEEL SEAT				
2	2R-C92-SE	2R-C92S-SE	1.5	4.87	5.50	10.0
3	3R-C92-SE	3R-C92S-SE	2.0	6.75	7.25	24.3

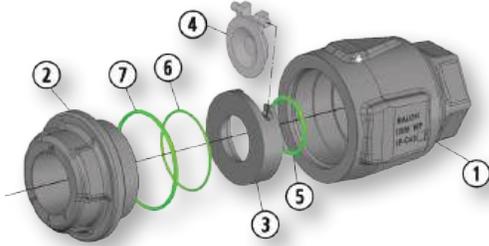
# Threaded / Grooved End

## Series C Carbon Steel

- 100% Made in USA
- To 3000 PSI WP
- 1"
- Threaded Body Construction



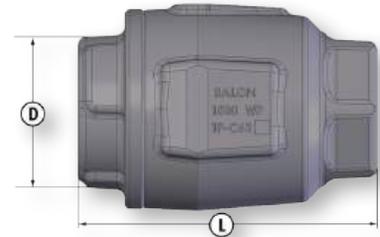
### Material Description



ITEM	PART NAME	CARBON STEEL SEAT	STAINLESS STEEL SEAT
1	Body	ASTM A105, Normalized	ASTM A105, Normalized
2	Adapter	ASTM A105, Normalized	ASTM A105, Normalized
3	Seat	Replaceable Carbon Steel	Replaceable 316 Stainless Steel
4	Disc	Replaceable 316 Stainless Steel	Replaceable 316 Stainless Steel
5	O-Ring	Seat Seal: Fluorocarbon	Seat Seal: Fluorocarbon
6	O-Ring	Assembly Seal: Buna-N	Assembly Seal: Fluorocarbon
7	O-Ring	Body Seal: Buna-N	Body Seal: Fluorocarbon

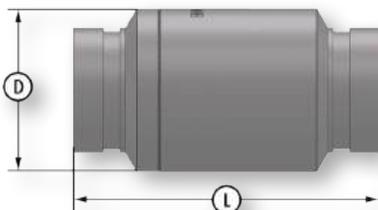
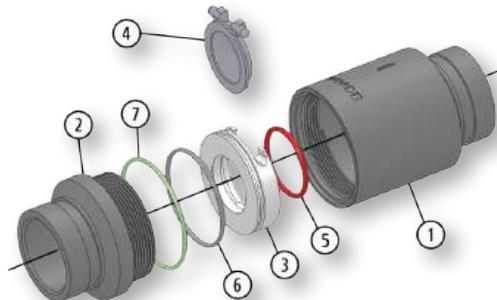
### Dimensional Data

SIZE	CATALOG NUMBER		PORT	WP	D	L	LBS.
	CARBON STEEL SEAT	STAINLESS STEEL SEAT					
1	1F-C63-SE	1F-C63S-SE	1	1500	2.75	4.25	4.2
1	1F-C03-SE	1F-C03S-SE	1	3000	2.75	4.25	4.2



- Replaceable 316 Stainless Steel Disc Seat Disc Cartridge Standard
- Improved Seat Design Protects Seal From Flow
- 100% Made in USA
- 1000 PSI WP
- 2" Through 3"
- Threaded Body Construction

- NACE Standard



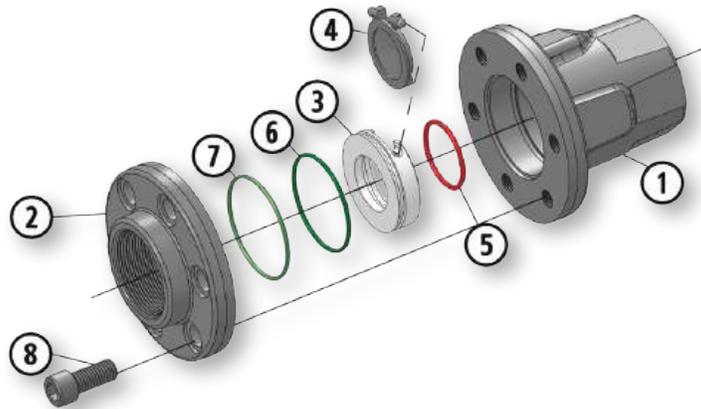
### Dimensional Data

SIZE	CATALOG NUMBER		PORT	D	L	LBS.
	CARBON STEEL SEAT	STAINLESS STEEL SEAT				
2	2R-C43-GE	2R-C43S-GE	1.5	3.12	5.87	5.3
3	3R-C43-GE	3R-C43S-GE	2.0	4.00	6.50	9.8

# Threaded End Connection

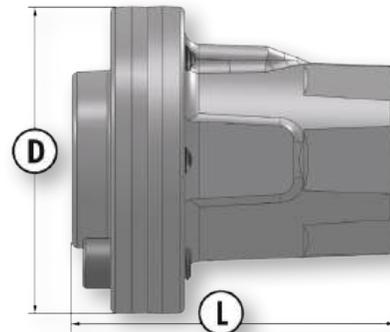
## Series C Carbon Steel

- 100% Made in USA
- 3000 PSI WP
- 2"
- Bolted Body Construction
- NACE Standard
- Bolted Body Protects Against End Adapter Rotation
- Improved Seat Design Protects Seal From Flow
- Replaceable 316 Stainless Steel Seat Disc Cartridge Standard



### Material Description

ITEM	PART NAME	CARBON STEEL SEAT	STAINLESS STEEL SEAT
1	Body	ASTM A105, Normalized	ASTM A105, Normalized
2	Adapter	ASTM A105, Normalized	ASTM A105, Normalized
3	Seat	Replaceable Carbon Steel	Replaceable 316 Stainless Steel
4	Disc	Replaceable 316 Stainless Steel	Replaceable 316 Stainless Steel
5	O-Ring	Seat Seal: Fluorocarbon	Seat Seal: Fluorocarbon
6	O-Ring	Assembly Seal: Buna-N	Assembly Seal: Fluorocarbon
7	O-Ring	Body Seal: Buna-N	Body Seal: Fluorocarbon
8	Bolts	ASTM A193 B7M	ASTM A193 B7M



### Dimensional Data

SIZE	CATALOG NUMBER		PORT	D	L	LBS.
	CARBON STEEL SEAT	STAINLESS STEEL SEAT				
2	2R-C03-SE	2R-C03S-SE	1.5	4.87	5.37	11.7

# Wafer Check Valves

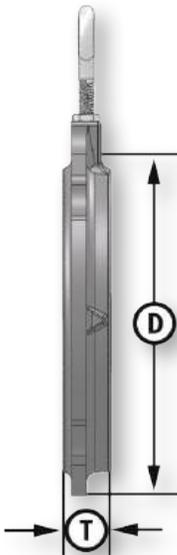
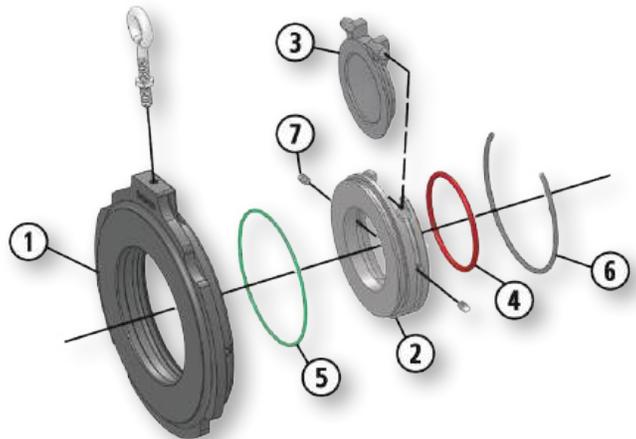
## Wafer Check Valves Carbon Steel



- 100% Made in USA
- ANSI 150 (285 PSI WP)
- ANSI 300 (740 PSI WP)
- ANSI 600 (1480 PSI WP)
- 2" Through 6"
- Forged Steel Body Construction
- NACE Standard
- Improved Seat Design Protects Seal From Flow
- Replaceable 316 Stainless Steel Seat Disc  
Cartridge Standard
- Larger Port Sizes Than Other Brands

### Material Description

ITEM	PART NAME	CARBON STEEL SEAT	STAINLESS STEEL SEAT
1	Body	ASTM A105, Normalized	ASTM A105, Normalized
2	Seat	Replaceable Carbon Steel	Replaceable 316 Or 17-PH Stainless Steel
3	Disc	Replaceable 316 Stainless Steel	Replaceable 316 Stainless Steel
4	O-Ring	Seat Seal: Fluorocarbon	Seat Seal: Fluorocarbon
5	O-Ring	Assembly Seal: Buna-N	Assembly Seal: Fluorocarbon
6	Retainer	Stainless Steel	Stainless Steel
7	Set Screw	Stainless Steel	Stainless Steel



### Dimensional Data

SIZE	CATALOG NUMBER		PORT	D	T	STUD LENGTH	LBS.
	CARBON STEEL SEAT	STAINLESS STEEL SEAT					
2	2T-150	2T-150S	1.25	4.12	0.75	4.25	2.50
2	2T-300	2T-300S	1.25	4.37	0.75	4.50	2.50
2	2T-600	2T-600S	1.25	4.37	0.75	5.25	2.50
3	3T-150	3T-150S	2.00	5.37	0.75	4.50	4.40
3	3T-300	3T-300S	2.00	5.87	0.75	5.25	4.40
3	3T-600	3T-600S	2.00	5.87	0.75	6.00	4.40
4	4T-150	4T-150S	2.81	6.87	0.75	4.50	7.00
4	4T-300	4T-300S	2.81	7.12	0.75	5.50	6.95
4	4T-600	4T-600S	2.62	7.62	0.87	7.00	8.50
6	6T-150	6T-150S	4.50	8.75	0.87	5.00	13.5
6	6T-300	6T-300S	4.50	9.87	0.87	5.75	13.6
6	6T-600	6T-600S	4.00	10.50	1.12	8.00	19.00

# Wafer Check Valves

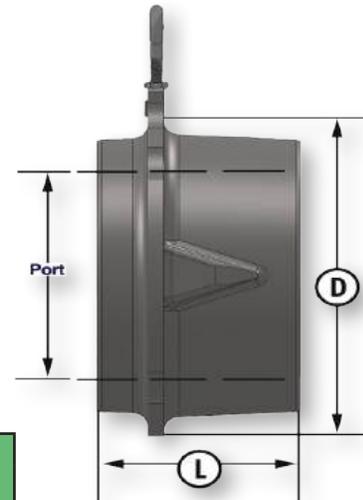
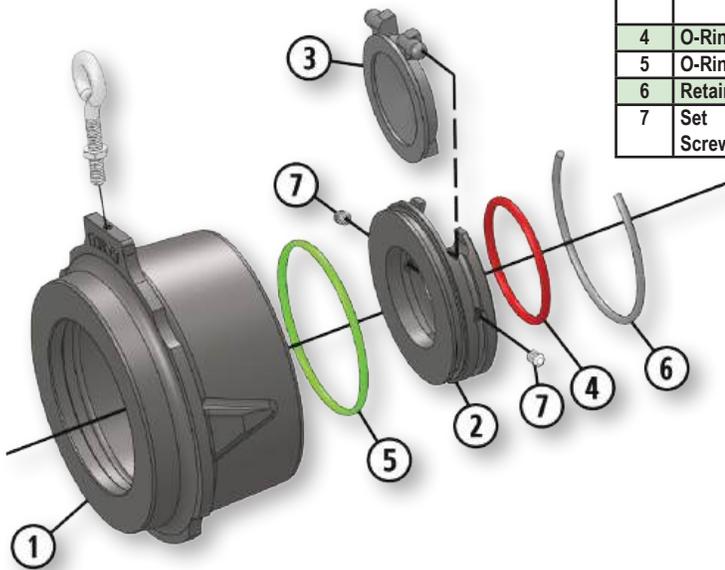
## Wafer Check Valves Carbon Steel



- 100% Made in USA
- ANSI 150 (285 PSI WP)
- ANSI 300 (740 PSI WP)
- ANSI 600 (1480 PSI WP)
- 2" Through 6"
- Forged Steel Body Construction
- NACE Standard
- Improved Seat Design Protects Seal From Flow
- Replaceable 316 Stainless Steel Seat Disc Cartridge Standard
- Larger Port Sizes Than Other Brands

### Material Description

ITEM	PART NAME	CARBON STEEL SEAT	STAINLESS STEEL SEAT
1	Body	ASTM A105, Normalized	ASTM A105, Normalized
2	Seat	Replaceable Carbon Steel	Replaceable 316 Or 17-PH Stainless Steel
3	Disc	Replaceable 316 Stainless Steel	Replaceable 316 Stainless Steel
4	O-Ring	Seat Seal: Fluorocarbon	Seat Seal: Fluorocarbon
5	O-Ring	Assembly Seal: Buna-N	Assembly Seal: Fluorocarbon
6	Retainer	Stainless Steel	Stainless Steel
7	Set Screw	Stainless Steel	Stainless Steel



### Dimensional Data

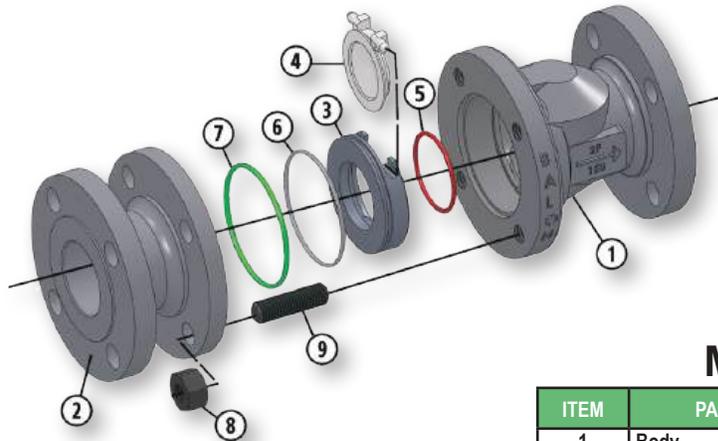
SIZE	CATALOG NUMBER		PORT	D	L	STUD LENGTH	LBS.
	CARBON STEEL SEAT	STAINLESS STEEL SEAT					
2	2L-150	2L-150S	1.50	4.12	2.37	5.75	4.9
2	2L-300	2L-300S	1.50	4.37	2.37	6.25	4.9
2	2L-600	2L-600S	1.50	4.37	2.37	6.75	4.9
3	3L-150	3L-150S	2.00	5.37	2.87	6.50	11.8
3	3L-300	3L-300S	2.00	5.87	2.87	7.25	11.8
3	3L-600	3L-600S	2.00	5.87	2.87	8.00	11.8
4	4L-150	4L-150S	3.00	6.87	2.87	6.50	15.0
4	4L-300	4L-300S	3.00	7.12	2.87	7.75	15.0
4	4L-600	4L-600S	3.00	7.87	3.12	9.25	16.0
6	6L-150	6L-150S	4.75	8.75	3.87	8.00	34.0
6	6L-300	6L-300S	4.75	9.87	3.87	9.00	34.8
6	6L-600	6L-600S	4.75	10.50	5.37	12.50	48.0

# Flanged End Connection

## Series C Carbon Steel

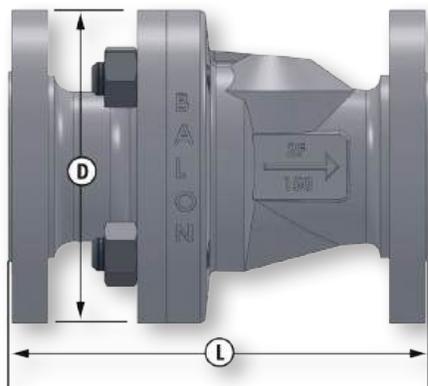


- 100% Made in USA
- ANSI Class 150 (285 PSI WP)
- 2" Through 6"
- Bolted Body Construction
- NACE Standard
- Improved Seat Design Protects Seal From Flow
- Replaceable 316 Stainless Steel Seat Disc Cartridge Standard



### Material Description

ITEM	PART NAME	DESCRIPTION
1	Body	ASTM A216 WCB/A105, Normalized
2	Adapter	ASTM A216 WCB/A105, Normalized
3	Seat	Replaceable 316 Stainless Steel
4	Disc	Replaceable 316 Stainless Steel
5	O-Ring	Seat Seal: Fluorocarbon
6	O-Ring	Assembly Seal: Fluorocarbon
7	O-Ring	Body Seal: Fluorocarbon
8	Nuts	ASTM A194 2HM
9	Body Bolts	ASTM A193 B7M



### Dimensional Data

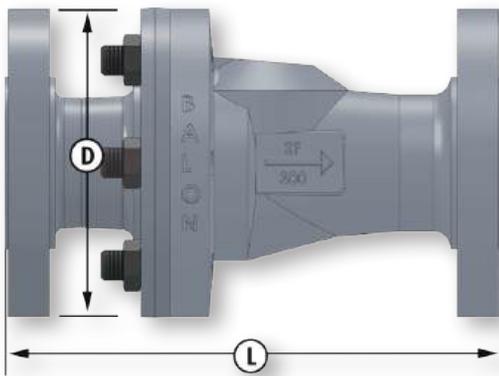
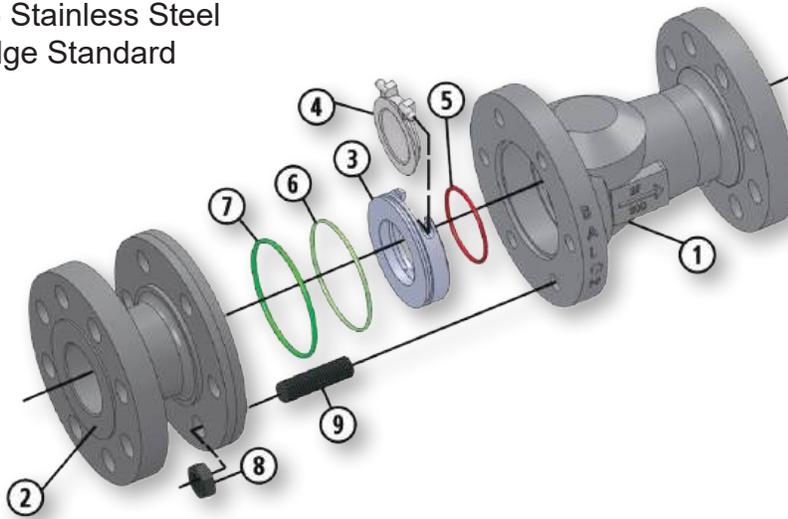
SIZE	CATALOG	PORT	D	L	LBS.
2	2F-C13S-RF	2	6.00	8.0	27
3	3F-C13S-RF	3	7.50	9.5	48
4	4F-C13S-RF	4	9.00	11.5	74
6	6F-C13S-RF	6	12.75	14.0	162

# Flanged End Connection

## Series C Carbon Steel



- 100% Made in USA
- ANSI Class 300 (740 PSI WP)
- 2" Through 6"
- Bolted Body Construction
- NACE Standard
- Improved Seat Design Protects Seal From Flow
- Replaceable 316 Stainless Steel Seat Disc Cartridge Standard



### Material Description

ITEM	PART NAME	DESCRIPTION
1	Body	ASTM A216 WCB/A105, Normalized
2	Adapter	ASTM A216 WCB/A105, Normalized
3	Seat	Replaceable 316 Stainless Steel
4	Disc	Replaceable 316 Stainless Steel
5	O-Ring	Seat Seal: Fluorocarbon
6	O-Ring	Assembly Seal: Fluorocarbon
7	O-Ring	Body Seal: Fluorocarbon
8	Nuts	ASTM A194 2HM
9	Body Bolts	ASTM A193 B7M

### Dimensional Data

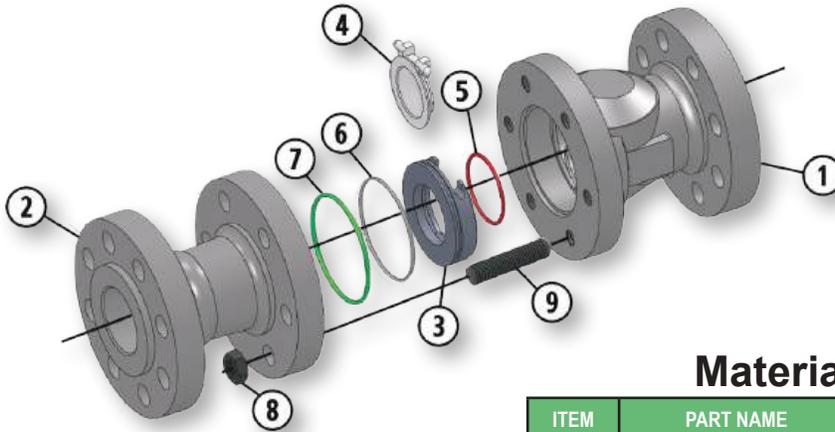
SIZE	CATALOG	PORT	D	L	LBS.
2	2F-C33S-RF	2	6.50	10.5	37
3	3F-C33S-RF	3	8.00	12.5	74
4	4F-C33S-RF	4	9.37	14.0	111
6	6F-C33S-RF	6	13.25	17.5	268

# Flanged End Connection

## Series C Carbon Steel



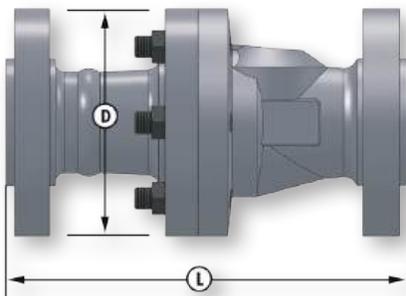
- 100% Made in USA
- ANSI Class 600 (1480 PSI WP)
- 2" Through 6"
- Bolted Body Construction
- NACE Standard
- Improved Seat Design Protects Seal From Flow
- Replaceable 316 Stainless Steel Seat Disc Cartridge Standard



### Material Description

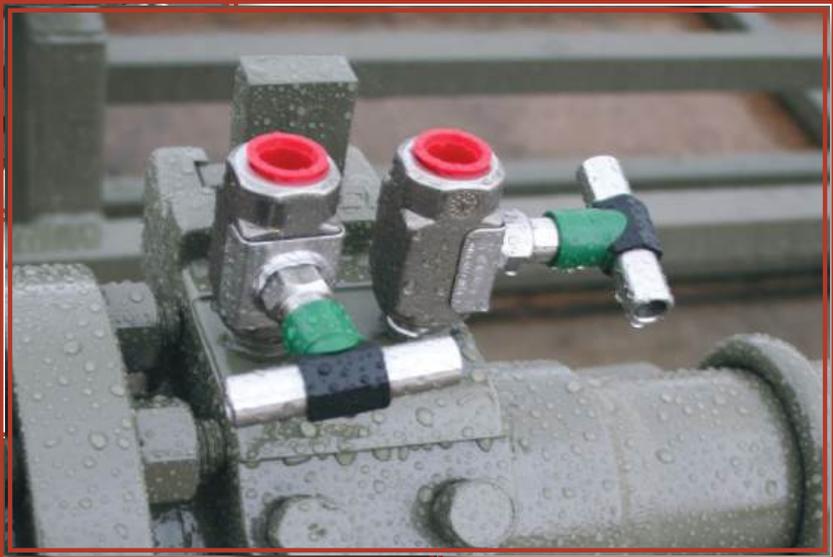
ITEM	PART NAME	DESCRIPTION
1	Body	ASTM A216 WCB/A105, Normalized
2	Adapter	ASTM A216 WCB/A105, Normalized
3	Seat	Replaceable 316 Stainless Steel
4	Disc	Replaceable 316 Stainless Steel
5	O-Ring	Seat Seal: Fluorocarbon
6	O-Ring	Assembly Seal: Fluorocarbon
7	O-Ring	Body Seal: Fluorocarbon
8	Nuts	ASTM A194 2HM
9	Body Bolts	ASTM A193 B7M

### Dimensional Data



SIZE	CATALOG	PORT	D	L	LBS.
2	2F-C63S-RF	2	6.50	11.5	42
3	3F-C63S-RF	3	8.00	14.0	80
4	4F-C63S-RF	4	10.75	17.0	188
6	6F-C63S-RF	6	13.75	22.0	384

# Needle Valves



# BALON®

## NEEDLE VALVES

### BALON NEEDLE VALVES

N-1

### NEEDLE VALVE IDENTIFICATION KEY

N-2

Balon Needle Valve Features

N-3

### CARBON STEEL NEEDLE VALVES

6,000 PSI WP Resilient Seated

N-4

10,000 PSI WP Metal Seated

N-5

### 316 STAINLESS STEEL SEATED NEEDLE VALVES

6,000 PSI WP Resilient Seated

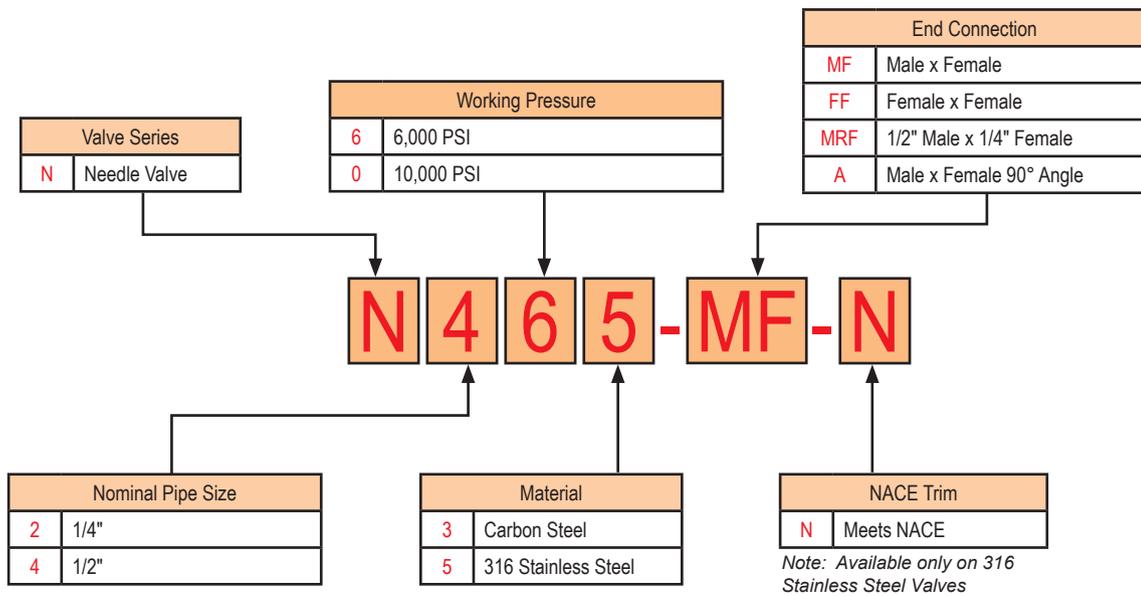
N-6

10,000 PSI WP Metal Seated

N-7

# Needle Valve Identification Key

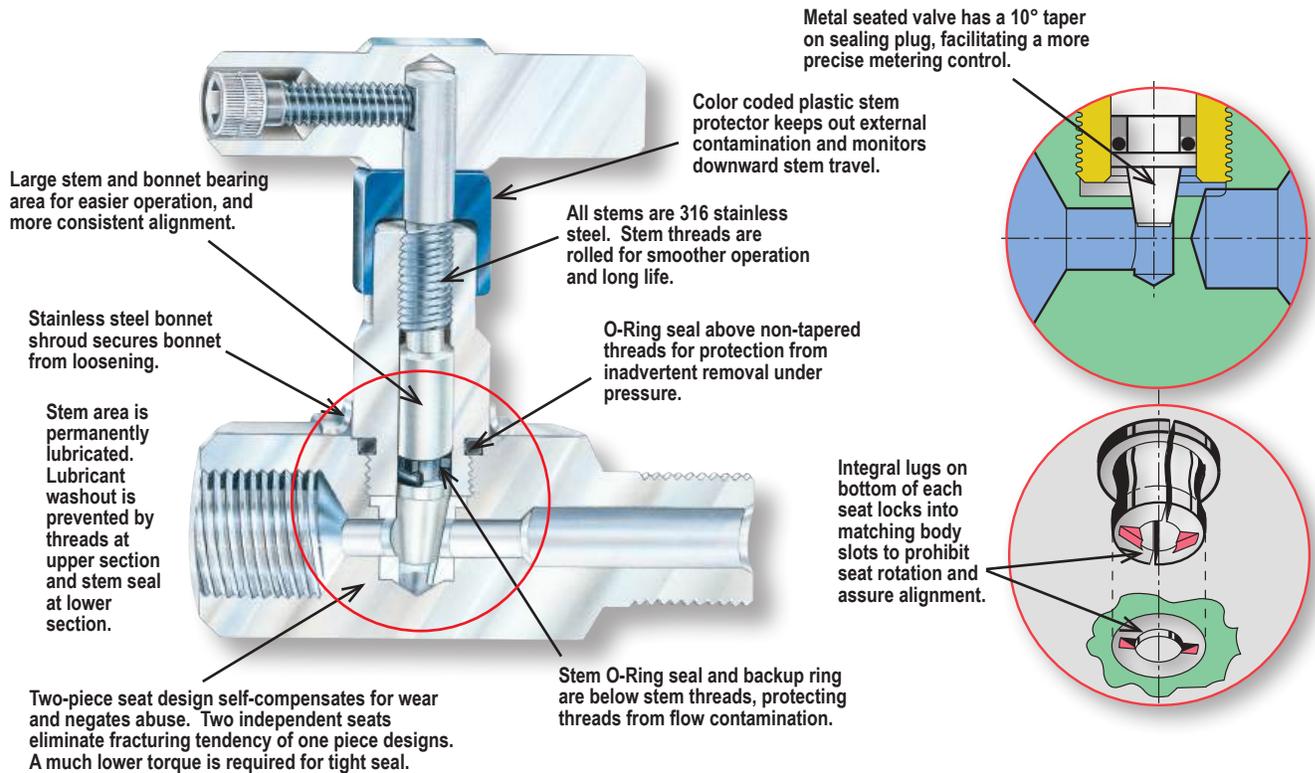
## Balon Carbon Steel / Stainless Steel Needle Valves



*Note: For any valves not listed please consult factory.*

# Needle Valve Features

## Balon: The Benchmark for Needle Valves



### INTEGRATED STEM AND BONNET DESIGN

Balon's stem and bonnet assembly presents a number of balanced features integrated in such a way as to provide improvement in stem operation, service life, and overall safety.

All stems are 316 stainless steel for corrosion resistance and longer life.

Stem threads are located above the stem sealing area so they are protected against contamination from the flow, again contributing to smoother operation and longer life. The thread area is lubricated at the factory, and the stem seal prevents washout of the lubricant, making for a permanently lubricated valve.

The stem threads are rolled for smoother operation and longer life. Note also that the stem and bonnet bearing area is larger than normally encountered. This makes for more precise stem alignment, gives a "superb quality feel" of operation, and enhances overall sealability.

An O-ring provides the primary stem sealing with a back-up ring providing lower friction, longer seal life, and a permanently adjusted stem seal arrangement. The color coded plastic stem protector keeps external contamination out of the thread area.

The thick cross sectional area limits and cushions downward handle movement, helping to prevent overtightening of the stem.

The stainless steel bonnet shroud fits over the hex wrench flats of the bonnet and secures it into position to impede loosening by vibration or other undetected causes.

The bonnet also contains an O-ring seal above the threads. Because these threads are not tapered, forcible removal of the bonnet would

result in early blow-out of the O-ring and immediate leakage, warning against further removal of the bonnet. Conventional designs with tapered threads and no O-ring would not give warning of an impending blowout.

No other needle valve on the market today provides such a complete and rational approach to solving existing operational and safety concerns.

### ADVANCE SEALING CONCEPT

Balon's exclusive seat design is a split two-piece design consisting of two counter positioned conical sections. This arrangement provides independent bidirectional sealing. On closing, downward movement of sealing plug transmits force radially. Each seat section "floats" laterally, slightly promoting self-compensation for wear, as well as resistance to distortion, scoring, binding, and permanent set, all common maladies of needle valves in general. Since each seat section responds to the cleaving effect of the sealing plug, bubble tight sealing occurs early, with less stem torque required than in other designs.

The split seat configuration preempts seat fracturing, a common cause of valve leakage. Two seats acting separately but also in concert, offer higher integrity sealing and extended service life.

Integral lugs on the bottom of each seat section lock into matching recesses in the valve body. Seat rotation is denied. Alignment is assured and consistently maintained.

The Balon concept is not merely an answer to needle valve sealing problems, it constitutes a continued effort to raise the threshold of quality and lower the cost of ownership.

# Threaded Needle Valves

## 6000 PSI / Resilient Seated

- 100% Made in USA
- 316 Stainless Steel Stem Standard
- Non-Rotating Seats
- Bonnet Locking Shroud
- Precise Metering
- Split Seat Design
- Maximum Temp 200°

### Material Description

ITEM	PART NAME	CARBON STEEL VALVE
1	Body (MxF) (90°)	A732-13Q (Investment Casting)
2	Body (FxF)	AISI 1215
3	Body (MxF)	AISI 1018
4	Handle	Carbon Steel
5	Handle Bolt	SHCS Zinc Plated
6	Bonnet Cover	Polypropylene
7	Bonnet	AISI 1045
8	Bonnet O-Ring	Buna-N
9	Stem	316 Stainless Steel
10	Stem Back-up Ring	Buna-N
11	Stem O-Ring	Buna-N
12	Resilient Seat (2 Piece)	Acetal
13	Bonnet Locking Shroud	304 Stainless Steel



Diagram A (M x F)

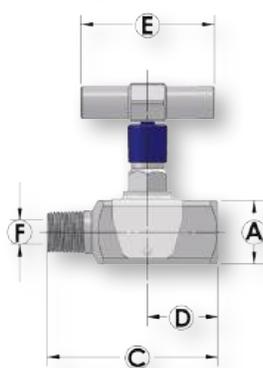


Diagram B (F x F)

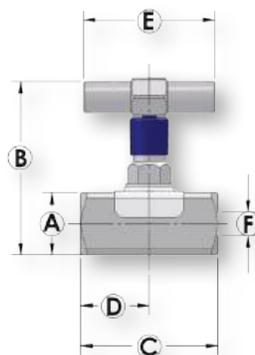
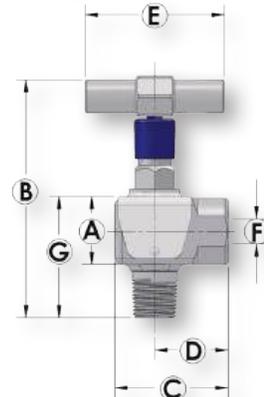


Diagram C (M x F) Angle



### Dimensional Data

SIZE	CATALOG NUMBER	SEAT	DIAGRAM	A	B	C	D	E	F	G	LBS.
	CARBON STEEL										
.25	N263-MF	Resilient	A	1.25	3.87	3.25	1.37	2.62	.219	N/A	1.5
.25	N263-FF	Resilient	B	1.25	3.87	2.75	1.37	2.62	.219	N/A	1.5
.50	N463-MF	Resilient	A	1.25	3.87	3.37	1.37	2.62	.219	N/A	1.5
.50x.25	N463-MRF	Resilient	A	1.25	3.87	3.37	1.37	2.62	.219	N/A	1.5
.50	N463-FF	Resilient	B	1.25	3.87	2.75	1.37	2.62	.219	N/A	1.5
.50	N463-A	Resilient	C	1.25	4.87	2.12	1.37	2.62	.219	2.25	1.5

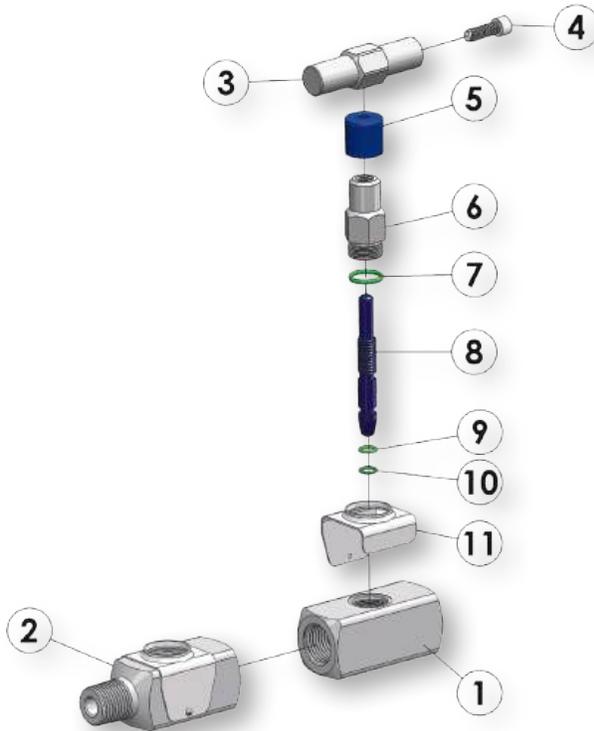
**BALON**

01.2025.Rev.1

# Threaded Needle Valves

## 10000 PSI / Metal Seated

- 100% Made in USA
- 316 Stainless Steel Stem Standard
- Bonnet Locking Shroud
- Precise Metering
- Maximum Temp 200°



### Material Description

ITEM	PART NAME	CARBON STEEL VALVE
1	Body (FxF)	AISI 1215
2	Body (MxF)	AISI 1018
3	Handle	Carbon Steel
4	Handle Bolt	SHCS Zinc Plated
5	Bonnet Cover	Polypropylene
6	Bonnet	AISI 1045
7	Bonnet O-Ring	Buna-N
8	Stem	316 Stainless Steel
9	Stem Back-up Ring	Buna-N
10	Stem O-Ring	Buna-N
11	Bonnet Locking Shroud	304 Stainless Steel

Diagram A (M x F)

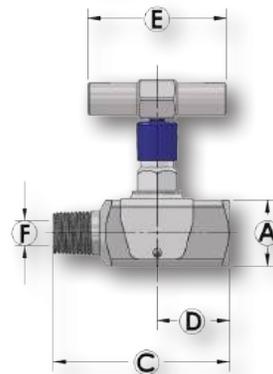
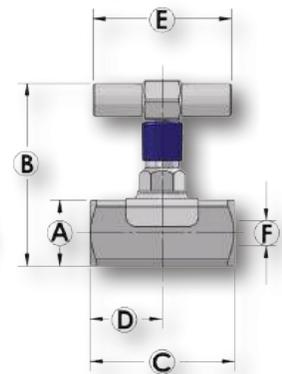


Diagram B (F x F)



### Dimensional Data

SIZE	CATALOG NUMBER	SEAT	DIAGRAM	A	B	C	D	E	F	LBS.
	CARBON STEEL									
.25	N203-MF	Metal	A	1.25	3.87	3.25	1.37	2.62	.219	1.5
.50	N403-MF	Metal	A	1.25	3.87	3.37	1.37	2.62	.219	1.5
.50	N403-FF	Metal	B	1.25	3.87	2.75	1.37	2.62	.219	1.5

# Threaded Needle Valves

**6000 PSI / Resilient Seated**



- 100% Made in USA
- 316 Stainless Steel Stem Standard
- Non-Rotating Seats
- Bonnet Locking Shroud
- Precise Metering
- Split Seat Design
- Maximum Temp 200°

## Material Description

ITEM	PART NAME	STAINLESS STEEL
1	Body (FxF)	316 Stainless Steel
2	Body (MxF)	316 Stainless Steel
3	Handle	303 Stainless Steel
4	Handle Bolt	18-8 Stainless Steel
5	Bonnet Cover	Polypropylene
6	Bonnet	316 Stainless Steel
7	Bonnet O-Ring	Buna-N (NACE Fluorocarbon)
8	Stem	316 Stainless Steel
9	Stem Back-up Ring	Buna-N (NACE Fluorocarbon)
10	Stem O-Ring	Buna-N (NACE Fluorocarbon)
11	Resilient Seat (2 Piece)	Acetal
12	Bonnet Locking Shroud	304 Stainless Steel
13	Handle Cover	Polypropylene

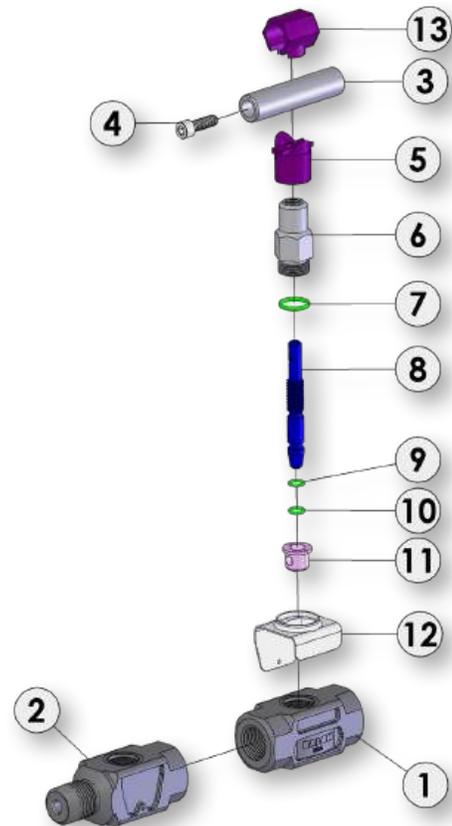


Diagram A (M x F)

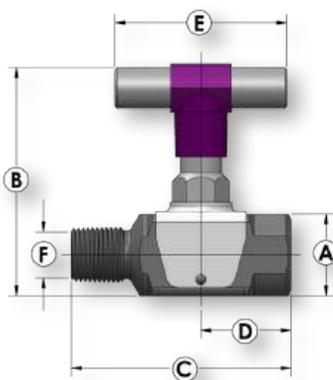
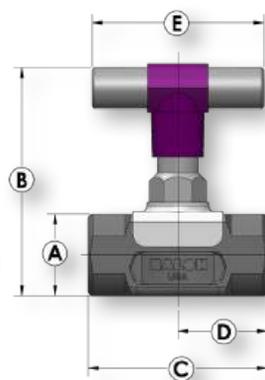


Diagram B (F x F)



## Dimensional Data

SIZE	CATALOG NUMBER		SEAT	DIAGRAM	A	B	C	D	E	F	LBS.
	STAINLESS STEEL	NACE									
.25	N265-MF	N265-MFN	Resilient	A	1.25	3.87	3.25	1.37	2.62	.219	1.5
.50	N465-MF	N465-MFN	Resilient	A	1.25	3.87	3.37	1.37	2.62	.219	1.5
.50	N465-FF	N465-FFN	Resilient	B	1.25	3.87	2.75	1.37	2.62	.219	1.5

# Threaded Needle Valves

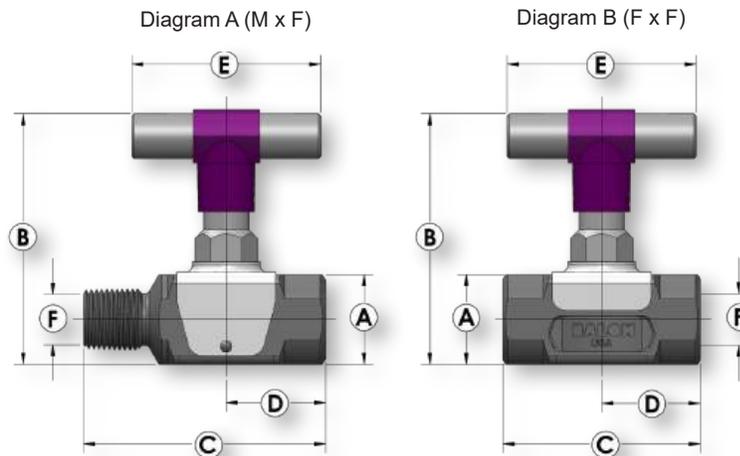
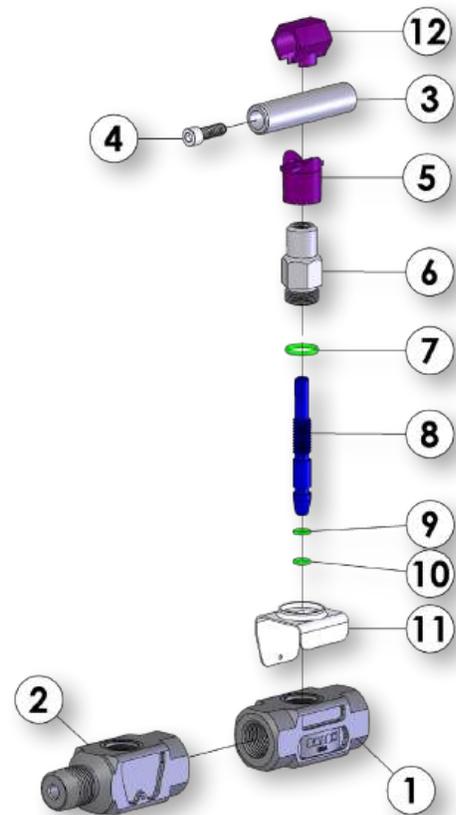
## 10000 PSI / Metal Seated

- 100% Made in USA
- 316 Stainless Steel Stem Standard
- Bonnet Locking Shroud
- Precise Metering
- Maximum Temp 200°



### Material Description

ITEM	PART NAME	STAINLESS STEEL
1	Body (Fx F)	316 Stainless Steel
2	Body (Mx F)	316 Stainless Steel
3	Handle	303 Stainless Steel
4	Handle Bolt	18-8 Stainless Steel
5	Bonnet Cover	Polypropylene
6	Bonnet	316 Stainless Steel
7	Bonnet O-Ring	Buna-N (NACE Fluorocarbon)
8	Stem	316 Stainless Steel
9	Stem Back-up Ring	Buna-N (NACE Fluorocarbon)
10	Stem O-Ring	Buna-N (NACE Fluorocarbon)
11	Bonnet Locking Shroud	304 Stainless Steel
12	Handle Cover	Polypropylene



### Dimensional Data

SIZE	CATALOG NUMBER		SEAT	DIAGRAM	A	B	C	D	E	F	LBS.
	STAINLESS STEEL	NACE									
.25	N205-MF	N205-MFN	Metal	A	1.25	3.87	3.25	1.37	2.62	.219	1.5
.50	N405-MF	N405-MFN	Metal	A	1.25	3.87	3.37	1.37	2.62	.219	1.5
.50	N405-FF	N405-FFN	Metal	B	1.25	3.87	2.75	1.37	2.62	.219	1.5

# Ball Valve Accessories

SIZE & PORT	PART NO.	LBS.	LENGTH	IMAGE
1" Full Port	P-333-CS*	0.25	4 3/8"	
1.5" Full - 2" Reg Port	P-4128-CS**	1.25	8 1/4"	
2" Full - 3" Reg Port	P-4129-CS**	1.75	11"	
2.5" Full Port	P-4126-DI**	3.00	11"	
3" Full - 6" Reg Port	P-4127-DI**	4.00	18"	
1" Full - 6" Reg Port Flat	P-982-CS-CH	0.10	N/A	
1.5" Full - 6" Reg Port Round	P-1243-CS	0.10	N/A	
1.5" Full - 2" Reg Port	P-1181-FM	1.00	2"	
2" Full - 3" Reg Port	P-1182-FM	1.00	2"	
3" Full - 6" Reg Port	P-1183-FM	1.00	2"	
All Balon Gear Operators	2-SQ-NUT	2.00	2"	

\* Optional handle. Held on with snap ring.

\*\* Optional handle. Held in place with set-screw.

Consult ball valve dimensional data tables for corresponding handle part numbers.

# Application Guide

This Balon "Media and Application Guide" provides assistance to the engineer in selecting the best material for a particular service. The final selection of materials however, requires the judgement of the user because it may be necessary to sacrifice certain physical properties of a material to take better advantage of others.

Information contained in the following chart is believed to be reliable and is intended to be used by trained personnel at their own discretion and risk. Due to many factors which affect the rate of corrosion, we suggest that final acceptability be established by test under actual operating conditions.

Ratings are based on media at ambient temperatures except as noted.

**E - Excellent    G - Good    F - Fair    U - Unsatisfactory    BLANK - Insufficient Data**

VALVE MATERIAL				SEAT AND SEAL MATERIAL				VALVE MATERIAL				SEAT AND SEAL MATERIAL			
Media *	Carbon Steel	Ductile Iron	316 SS	Buna-N	Viton	Nylon 11	TFE	Media *	Carbon Steel	Ductile Iron	316 SS	Buna-N	Viton	Nylon 11	TFE
Air	E	E	E	E	E	E	E	Isopropyl Alcohol	G	G	G	G	E	G	E
Alcohols	G	G	E	E	E	F	E	- Ether	E	G	E	G	U	E	E
Amines (conc.)	E	E	E	U	U	E	E	JP-4 Fuel	E	E	E	E	E	E	E
Ammonia, Anhydrous	E	G	E	F	U	E	E	JP-5 Fuel	E	E	E	E	E	E	E
- Aqueous	E	E	E	F	U	G	E	JP-6 Fuel	E	E	E	E	E	E	E
- Solutions	G	G	E	F	U	G	E	Kerosene	G	G	E	E	E	E	E
Benzene or Benzol	G	G	E	U	E	E	E	Liquefied Pet. Gas (LPG)	G	G	G	E	E	E	E
Brines	F	F	G	E	E	E	E	Lubricating Oil	E	E	E	E	E	E	E
Bunker Oils (Fuels)	G	G	E	E	E	E	E	Mercaptan (Conc.)	G	G	E	F	E	G	E
Butane	E	E	E	E	E	E	E	Methane	E	E	E	E	E	E	E
Carbolic Acid (Phenol)	U	U	G	U	G	U	E	Muriatic Acid	U	U	U	G	E	U	E
Carbon Dioxide, Dry	E	F	E	G	G	G	E	Naphtha	G	G	E	G	E	E	E
Carbonic Acid	U	U	G	G	E	E	E	Naphthalene	E	G	E	U	E	E	E
Carbon Tetrachloride, Dry	F	F	E	U	E	E	E	Natural Gas	E	E	E	E	E	E	E
- Wet	U	U	G	U	E	E	E	Nitrogen	E	E	E	E	E	E	E
Carbonated Water	G	G	E	E	E	G	E	Oil, Animal	E	E	E	E	E	E	E
Crude Oil, Sweet	E	E	E	E	E	E	E	- Cottonseed	F	F	G	E	E	E	E
- Sour	G	G	E	F	G	G	E	- Fish	G	G	E	E	E	E	E
Diethylamine (DEA)	E	E	E	U	U	E	E	- Fuel	G	G	E	E	E	E	E
Diesel Fuels	E	E	E	E	E	E	E	- Lube	E	E	E	E	E	E	E
Dowtherm A and E	G	G	E	U	E	E	E	- Mineral	G	G	E	E	E	E	E
Drilling Mud	G	G	E	E	E	E	E	- Petroleum, Refined	E	G	E	E	E	E	E
Ethane	E	E	E	E	E	E	E	Oil-Water Mixtures	E	E	E	E	E	E	E
Ethylene	E	E	E	U	E	E	E	Parafin	G	G	E	G	E	E	E
Ethylene Glycol	G	G	G	E	E	G	E	Pentane	G	G	E	U	E	E	E
Fuel Oil	G	G	E	E	E	E	E	Producer Gas	G	G	G	E	E	E	E
Gas, Manufactured	G	G	G	E	E	E	E	Propane	E	E	E	E	E	E	E
- Natural	G	G	E	E	E	E	E	Propyl Alcohol	E	E	E	E	E	E	E
- Odorizers	G	G	E	U	E	G	E	Propylene Glycol	E	E	E	E	E	F	E
- Sour	G	G	E	F	E	E	E	Sea Water	U	U	E	E	E	E	E
Gasoline, Leaded	E	G	E	G	E	E	E	Sodium Acetate	G	G	G	G	U	G	E
- Unleaded	E	G	E	F	E	E	E	- Hydroxide, Cold, 20%	E	E	E	G	G	E	E
- Aviation	E	G	E	G	E	E	E	- Hydroxide, Hot, 20%	F	F	G	G	G	G	E
- Motor	E	G	E	F	E	E	E	- Hydroxide, Cold, 50%	G	G	G	F	F	F	F
Glycols	G	G	G	E	E	G	E	- Hydroxide, Hot, 50%	G	G	G	U	F	U	F
Heptane	E	E	E	E	E	E	E	- Hydroxide, Cold, 70%	F	F	G	U	F	F	F
Hexane	E	E	E	E	E	E	E	- Hydroxide, Hot, 70%	G	F	G	U	F	U	U
Hydraulic Oil								Steam (212 F)	E	E	E	U	U	U	E
- Petroleum Base	E	E	E	E	E	E	E	Stoddard Solvent	G	G	G	E	E	G	E
- Phosphate Base	E	E	E	U	E	E	E	Sulfur Dioxide (Dry)	G	G	E	U	U	F	E
Hydrochloric Acid								Sulfuric Acid, 0-7%	F	F	G	F	E	G	E
- Air Free	U	U	U	F	E	U	E	- 20%	U	U	F	U	E	U	E
Hydrofluoric Acid	U	U	U	U	U	U	F	- 50%	U	U	U	U	E	U	E
Hydrogen Gas	G	G	E	E	E	E	E	- 100%	U	U	U	U	E	U	E
Hydrogen Sulfide, Dry (Conc.)	G	G	E	F	F	E	E	Toluene or Toluol	E	E	E	U	E	E	E
Wet (Conc.)	F	U	G	U	F	E	E	Water, Distilled, Aerated	U	U	E	E	G	E	E
Illuminating Gas	E	E	E	E	E	E	E	- Fresh	F	F	E	E	E	E	E
Iso-Octane	E	G	E	E	E	E	E	- Sea	U	U	E	E	E	E	E
								Wax Emulsions	E	G	E	E	E	E	E
								Waxes	E	E	E	E	E	E	E
								Xylene, Dry	E	E	E	U	E	E	E

\* Consult Oklahoma City office for compatibility of Nickel Aluminum Bronze Material.

Balon valves contain grease and are not suitable for oxygen service due to an increased risk of combustion or explosion.

TD - TECHNICAL DATA

# Flow Coefficient Data/Standards & Specs

## Flow Coefficient Data

### Cv Ratings of Full Bore Valve

Depending upon pipe schedule with which they are used, Balon full bore valves have bore sizes exceeding or nearly equaling the pipe inside diameter. The best method of computing system pressure losses is to consider the valve an equivalent length of pipe.

Using the Cv method of rating full bore valves does not provide good accuracy. The reason for this is that Cv tests do not provide valid data until the measured pressure drop equals at least 2 psi. In the relatively short length involved in a valve,

extremely high velocities are required to generate that pressure drop.

At these high velocities (which are well beyond those used in industry), other effects such as vibration and pulsation are then created by "super turbulent" flow. The net results are Cv ratings which are lower than would be derived if pressure losses could be consistently measured at velocities in the usable range.

Cv data for reduced port valves are listed on the product pages.

For more information visit our website at [www.balon.com](http://www.balon.com)

## Standards and Specifications

Balon utilizes the following standards in the manufacture of ball valves. It should be noted that not all styles, configurations and materials used in Balon valves meet all of these standards in their entirety.

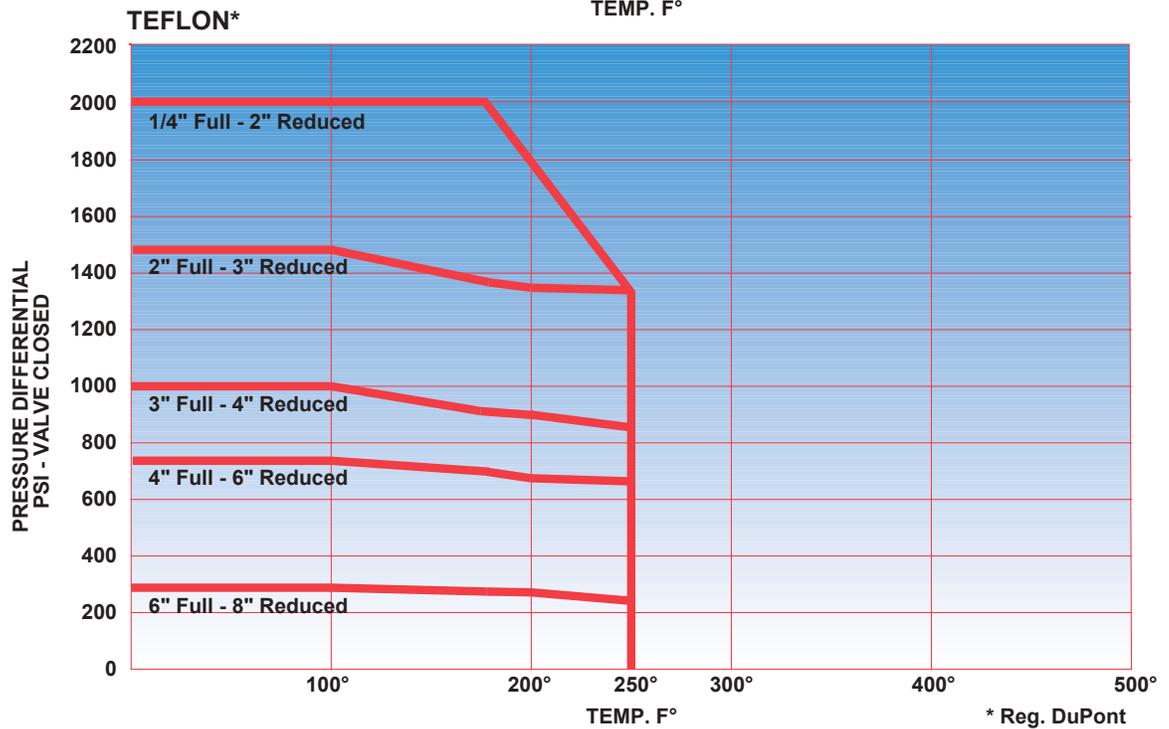
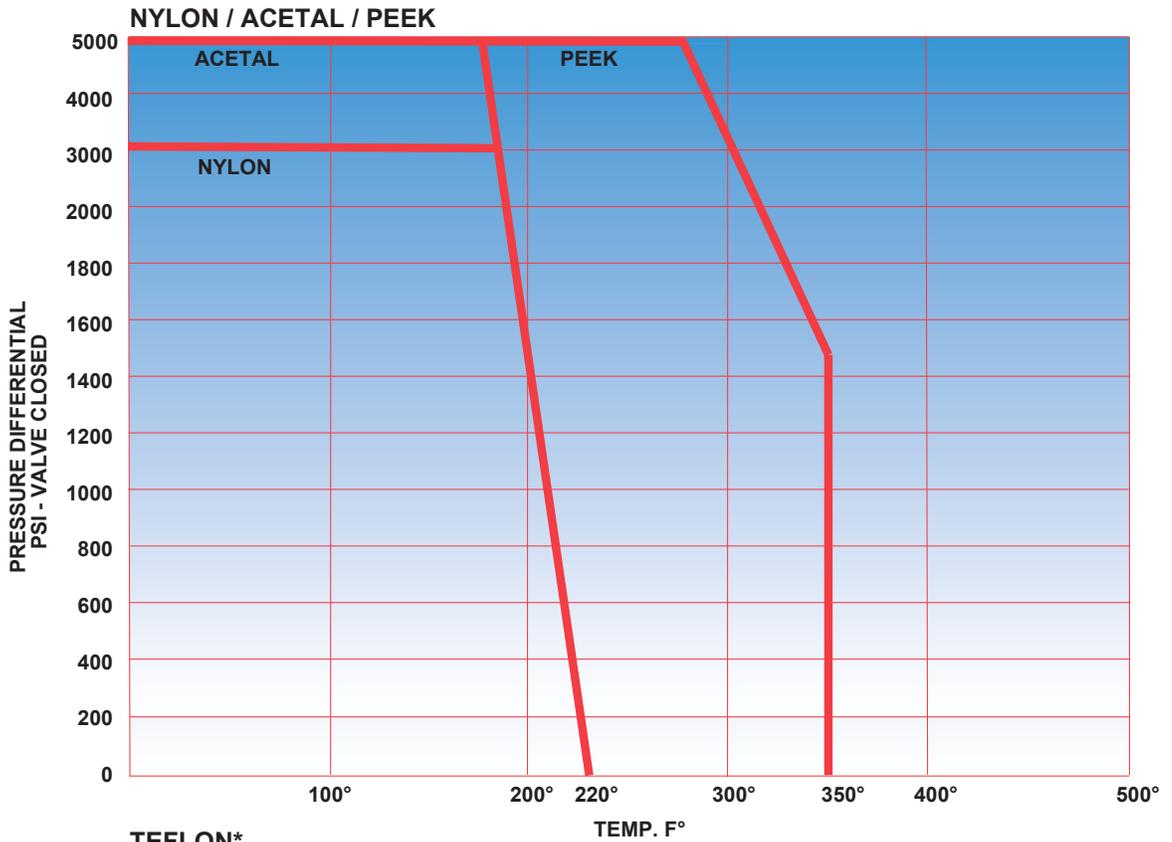
The user therefore, should specify a given standard if there is a need to assure total compliance with a given standard.

API..... (American Petroleum Institute)	MSS..... (Manufacturers Standardization Society)
API-641..... Type Testing of Quarter Turn Valves For Fugitive Emissions	MSS-SP6..... Standard Finishes For Contact Faces Of Pipe Flanges And Connection End Flanges Of Valves And Fittings
API-6FA..... Fire Test For Resilient-Seated Valves	MSS-SP25..... Standard Marking System For Valves, Fittings, Flanges And Fittings
API 5B..... Inspection Of Threads	MSS-SP72..... Ball Valves With Flanged Or Butt Welding Ends For General Service
API-6D..... Specification for Pipeline and Piping Valves	NACE MR-01-75... Sulfide Stress Cracking, Resistant Metallic Material For Oil Field Equipment (NACE Materials Are Optional And Must Be Specified On Purchase Orders)
API-Q1..... Quality Programs	
API-594..... Wafer Check Valves	
ASME..... (American Society of Mechanical Engineers)	
ASME-B..... 16.5 - Pipe Flanges And Flanged Fittings	
ASME-B..... 16.10 - Face-To-Face End-To-End Dimensions	
ASME-B..... 16.42 Ductile Iron Pipe Flanges And Flanged Fittings	
ASME-B..... 16.34 - Valves - Flanged End, Threaded And Butt Weld	
ASME-B..... (B1.20.1) - Pipe Threads General Purpose (Inch)	

CE marking to the PED available on most products

# Seat Pressure Ratings

## Seat Pressure & Temperature Ratings



All Balon valves are rated for a minimum temperature of -20°F, except for valves designated as low temperature valves, which are rated for a minimum temperature of -50°F.



# Terms and Conditions

Balon reserves the right to change these Terms and Conditions from time to time. To view the current version, please visit Balon's website: <http://www.balon.com/indexTandC.html>.

**Order Acceptance:** Any written or oral purchase order received from Buyer by Balon Corporation ("Balon" or "Seller") shall be construed as a written acceptance of Balon's offer to sell in accordance with these Terms and Conditions of sale. Balon's acceptance of Buyer's order is expressly conditioned on Buyer's agreement to these Terms and Conditions. The terms and conditions of Balon's proposal and acknowledgment (if any), including without limitation the terms and conditions set forth below, shall prevail over any conflicting or different terms in Buyer's order. Buyer's terms of purchase will not be considered a counteroffer. All terms and conditions proposed by Buyer which are different from or in addition to these Terms and Conditions are expressly rejected by Balon and shall not become a part of Buyer's order. Balon's Terms and Conditions shall control the transaction.

**Quotations, Prices and Discounts:** Balon's quotations do not constitute an offer to sell. Buyer's order constitutes an offer to purchase in accordance with these Terms and Conditions. All quotations are subject to confirmation by Balon after receipt of Buyer's order. Oral or written statements, including quotations, regarding product availability or the time from receipt of order to shipment are estimates and subject to prior sale. Unless specifically stated otherwise in the quotation, prices quoted are subject to change without notice. Absent a valid quotation or written agreement between Balon and Buyer, the price in effect at the time of shipment, including any escalation formula, will apply to all sales. Unless otherwise expressly stated in writing, Balon communicates all prices in U.S. Dollars for shipment Ex Works at Balon's plant in Oklahoma City (as defined in Incoterms 2020 issued by the International Chamber of Commerce) at Buyer's expense. Unless expressly stated otherwise, quotations do not include any material certifications or documents related to traceability. Any such documents must be requested at the time of order. All published prices and discounts are subject to change without notice. While Balon Corporation strives to provide accurate product and pricing information, pricing or typographical errors may occur. In the event that Balon communicates incorrect price or incorrect information for an item Balon in its sole discretion may refuse or cancel any orders placed for that item.

**Invoice Terms:** Payment for all materials, products, and services at the full Invoice stated net price must be received in hand, in good funds at Balon Corporation during normal business hours within thirty (30) calendar days from the date of Invoice (the "Due Date"). The amount of each Invoice for which Balon has not received payment in hand, in good funds at Balon Corporation during normal business hours by the Due Date, shall be subject to the maximum legal interest rate per annum, or such lesser rate as Balon may determine in its sole discretion, computed daily commencing on the Due Date and continuing until Balon has received in hand, in good funds all amounts due in connection with such Invoice, including without limitation all interest accrued thereon. Balon reserves the right to impose a minimum billing charge on all sales, change orders or order supplements.

**Taxes, Duties and Exports:** Any tax or other charge imposed by law on the sale or production of goods or the performance of services shall be paid by the Buyer, unless the law specifically provides that such payment must be made by Balon, in which case Buyer shall reimburse Balon for such payment as part of the purchase price. Custom duties, consular fees, insurance charges, and other comparable charges will be borne solely by Buyer. Consular fees for legalizing invoices, stamping bills of lading, or other documents required by the laws of any country or destination are not included in quotations or selling prices. Balon assumes no responsibility for any fines or other charges imposed due to errors or incorrect declarations.

**Literature:** Published information such as catalogs, brochures, or other literature is subject to change without notice.

**Freight Allowance, Transfer of Title, Risk of Loss, Allowances, and Claims:** All shipments are Ex Works at Balon's plant in Oklahoma City, Oklahoma (as defined in Incoterms 2020 issued by the International Chamber of Commerce), provided Balon will load shipments to the selected carrier or shipper at Balon's plant. Title and risk of loss to all goods transfer to Buyer upon Balon's tender of such goods to the carrier or shipper, regardless of who pays shipping or transportation costs. Balon will allow freight charges via least expensive way (determined by Balon in its sole discretion) for shipment to one destination within the continental United States (excluding Alaska and Hawaii) or Canada on orders with either (1) a minimum product weight of 2,000 pounds or more or (2) an aggregate net price of \$20,000 or more for product and excluding any tax or other charges. Buyer may request a different method or carrier than that chosen by Balon, at Buyer's expense on a collector prepaid basis. To qualify for freight allowance, the quantity of each line item on the order must be in whole multiples of Balon's standard carton quantities. When an order includes items with different delivery lead times, Balon will schedule the order to ship complete on a date that corresponds to the item with the longest lead time. If customer requests items to ship sooner, Balon will place those items on a separate order and determine the freight allowance based on the product weight and net invoice amount of each shipment. Balon will not combine the weights or net invoice amounts of multiple shipments to determine freight allowance. However, if one shipment independently qualifies for freight allowance, Balon will allow freight on all other shipments to the same destination, on the same day, via the same carrier. Unless requested in writing by the Buyer and acknowledged in writing by Balon, Balon will not insure shipments against damage or loss in transit. If agreed by Balon in writing, Balon will use reasonable efforts to place insurance at Buyer's expense as nearly as possible in accordance with Buyer's written instructions. In such case Balon acts only as agent between the insurance company and the Buyer, Balon is not liable for deviations or discrepancies between Buyer's written instructions and any insurance provided by or on behalf of the carrier, and Balon assumes no liability whatsoever. Any claims for shipping loss, breakage, or damage (obvious or concealed) are Buyer's responsibility and must be made directly to the carrier or insurer, as applicable. Buyer must submit all claims for shortages to Balon in writing within thirty (30) days from receipt of shipment and must include a copy of the packing list for the applicable shipment.

**Shipping Schedules:** Shipping schedules are given as accurately as conditions permit and effort will be made to make shipments as scheduled. Balon will not be responsible for any deviations in meeting shipping schedules nor for any losses or damages (including but not limited to any consequential, exemplary, indirect, incidental, punitive, or special damages) incurred or suffered by Buyer or any third party arising out of or in connection with any deviations in the scheduled shipping of Buyer's Order. Balon shall have additional time within which to perform as may be reasonably necessary under the circumstances and shall have the right to apportion its production among its customers in such a manner as Balon deems equitable in its sole discretion.

**Cancellation:** Orders which have been accepted and entered by Balon shall not be subject to cancellation except by permission of and on the terms prescribed by Balon Corporation, which may include cancellation or restocking charges.

**Return Policy:** Products may not be returned without prior authorization from Balon. Buyer may request authorization to return eligible product to Balon within one (1) year after the date of such Buyer's original purchase from Balon. A product is not eligible for return unless it (1) has been properly stored and not previously sold by Buyer, (2) is unused, (3) is of Balon's current manufacturing design,



(4) is in new condition suitable for immediate resale as determined by Balon in its sole discretion, (5) is not designated by Balon as a special or build-to-order item, and (6) was purchased by Buyer directly from Balon. Balon generally schedules product returns on a first-come, first-served basis at a rate that allows Balon sufficient time to process each return. Costs and expenses of returning product to Balon, including freight, are the sole responsibility of Buyer. Unused products of current manufacturing design may be returned only upon issuance of a written Return Authorization Form by Balon's Oklahoma City office. Credit will be issued only on products which are received by Balon within one (1) year after the date of original purchase and returned by prepaid freight at Buyer's expense together with a copy of Balon's Return Authorization Form and documents which verify the original purchase order number and original invoice number. Any credit will be reduced by any cost incurred by Balon in restoring products to saleable condition. Credit may be used only for the purchase of merchandise and is not subject to cash reimbursement or cash payment. All returns are final.

**Limited Warranty:** Balon warrants its products against defects in material and workmanship for one (1) year from the original date of shipment. Buyer has one (1) year from the original date of shipment to notify Balon, in writing, of any alleged defect in or non-conformance of any product. Upon Balon's request, Buyer shall return the product F.O.B. to Balon's designated plant or service location at Buyer's sole cost and expense. Balon shall have no liability for removal or reinstallation of products. If, in Balon's sole judgment, the product does not conform or is found to be defective in material or workmanship, then Balon, at its sole option, shall either repair the product, replace the product, or repay to Buyer the full price paid by Buyer for such product, without interest. If any stipulated remedy shall fail in its essential purpose, Balon shall refund the purchase price of such product, without interest, as the sole and exclusive remedy for any and all claims whether in contract, strict liability, tort, or otherwise. Any modification of the product will void any remaining warranty.

THIS LIMITED WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES AND REMEDIES, WHETHER EXPRESS, IMPLIED, OR STATUTORY, INCLUDING ANY WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, OR NON-INFRINGEMENT. IN NO EVENT SHALL BALON BE LIABLE FOR ANY DAMAGES OF ANY KIND OR NATURE IN EXCESS OF THE PURCHASE PRICE OF THE PRODUCT(S) ALLEGED TO BE DEFECTIVE, INCLUDING BUT NOT LIMITED TO ANY CONSEQUENTIAL, EXEMPLARY, INDIRECT, INCIDENTAL, PUNITIVE, OR SPECIAL DAMAGES, LOSS OF ANTICIPATED PROFITS, LOSS OF USE OF EQUIPMENT, OR OF ANY INSTALLATION, SYSTEM, OR FACILITY INTO OR AT WHICH BALON'S PRODUCT(S) MAY BE USED OR INSTALLED. PROVIDED, HOWEVER, BALON SHALL NOT BE RESPONSIBLE FOR ANY LOSS OR DAMAGE OF ANY KIND OR NATURE IF THE PRODUCT IS: USED IN A SERVICE OR UNDER CONDITIONS FOR WHICH IT WAS NOT MANUFACTURED; SUBJECTED TO PRESSURE IN EXCESS OF THE MAXIMUM OPERATING PRESSURE FOR SUCH PRODUCT AS DETERMINED BY BALON IN ITS SOLE DISCRETION; TAMPERED WITH OR ALTERED BY ANYONE OTHER THAN AN AUTHORIZED REPRESENTATIVE OF BALON; OR NOT MAINTAINED IN STRICT ACCORDANCE WITH BALON'S RECOMMENDED MAINTENANCE PROCEDURES.

This Limited Warranty may only be altered, amended, expanded, modified, rescinded, or terminated in writing signed by an authorized officer of Balon at its office in Oklahoma City, Oklahoma that expressly states as its purpose to amend, modify, or rescind this Limited Warranty in whole or in part.

**Not Intended for Nuclear Use:** The products sold hereunder are not designed or manufactured for use in or with any atomic installation or activity.

**Design Changes:** Balon, in its sole discretion, shall have the right to manufacture the products provided hereunder as far in advance of its estimated shipping schedule as it deems appropriate. Balon expressly reserves the right to change or modify the design and construction of any product in the course of its manufacturing process without incurring any obligation or liability to furnish or install such changes, modifications, or improvements to products previously or subsequently sold. Balon will fill accepted orders that refer to any edition of CSA Z245.15 with product that meets CSA Z245.15-17. Balon expressly rejects the designation of any different revision of this standard and also expressly rejects all references to optional or supplemental requirements. Buyer agrees the elastomeric materials listed in BER-007, a copy of which is available on request, are resistant to rapid gas decompression and satisfy the requirements API Specification 6D.

**Indemnification:** Buyer agrees to hold Balon and its affiliates and their respective agents, directors, employees, officers, and shareholders harmless from any and all attorneys' fees, claims, damages, expert witness fees, fines, litigation costs, losses, and remediation expenses to real or personal property, arising in whole or in part from the discharge, escape, loss, or spill of hydrocarbons, hazardous waste, or other pollutants, regardless of whether such discharge, escape, loss, or spill either results from or arises out of the negligence or sole negligence of Balon, its affiliates or their respective agents, directors, employees, officers, and shareholders or results from or arises out of any defect in the design or manufacture of Balon's products or results from or arises out of a failure by Balon to warn against any foreseeable danger. Buyer acknowledges and agrees that this indemnity shall apply both to property owned or controlled by Buyer and property owned or controlled by any third party.

**Modification, Rescission and Waiver:** Balon's Terms and Conditions of Sale herein may only be amended, modified, or rescinded by a written instrument signed by an authorized officer of Balon at its office in Oklahoma City, Oklahoma that expressly states as its purpose to amend, modify or rescind these Terms and Conditions of Sale in whole or in part. Failure by Balon to insist in any one or more instances upon the performance of any of these Terms and Conditions of Sale or the failure of Balon to exercise any of its rights hereunder shall not be construed as a waiver or relinquishment of any such term, condition, or right hereunder and shall not affect Balon's right to insist upon strict performance and compliance with regard to any unexecuted portions of this contract or future performance of these terms and conditions. In the event an ambiguity or question of intent or interpretation arises, this Agreement shall be construed as if drafted jointly by the Parties and no presumption or burden of proof shall arise favoring or disfavoring any Party by virtue of the authorship of any of the provisions of this Agreement.

**Choice of Law, Forum and Venue:** These Terms and Conditions of Sale shall for all purposes be governed by and interpreted and enforced in accordance with the laws of the State of Oklahoma, without reference to or application of any conflict of laws provision which would direct the application of the law of any other jurisdiction. The provisions of the United Nations Convention on Contracts for the International Sale of Goods (CISG) shall not apply to this Agreement. Except for the definition of "Ex Works" used above, no provisions of Incoterms 2020 are incorporated into these Terms and Conditions. Buyer agrees (i) not to file or institute any action, lawsuit or proceeding asserting any claim, defense, offset, or right against Balon or any of its affiliates or any of their respective agents, directors, employees, officers, or shareholders that relates in any way to any product sold or service supplied by Balon or to these Terms and Conditions of Sale (an "Action") before any court, tribunal forum or venue other than the state or federal district courts located within Oklahoma County, Oklahoma (collectively, the "Oklahoma Courts") and (ii) to submit, without objection, in any Action to the in personam jurisdiction of the Oklahoma Courts.

# We Don't Import Valves - We Make Them



# We Don't Export Jobs - We Create Them



**THANK YOU FOR SPECIFYING BALON VALVES.**

WE ARE DEDICATED TO PROVIDING YOU WITH THE BEST QUALITY, VALUE AND SERVICE POSSIBLE. WE VALUE THE TRUST YOU HAVE PUT IN OUR PRODUCTS AND WE WOULD LIKE TO EXPRESS OUR SINCERE GRATITUDE. YOUR FEEDBACK IS VERY IMPORTANT TO US. PLEASE CONTACT OUR OFFICE IF YOU HAVE ANY QUESTIONS OR CONCERNS.



**BALON**

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